

October 2006

FREIGHT RAILROADS

Industry Health Has
Improved, but
Concerns about
Competition and
Capacity Should Be
Addressed





Highlights of [GAO-07-94](#), a report to congressional requesters

Why GAO Did This Study

The Staggers Rail Act deregulated the freight rail industry, relying on competition to set rates, and allowed for differential pricing (charging higher rates to those more dependent on rail). The act gave the Surface Transportation Board (STB) authority to develop remedies for shippers “captive” to one railroad and set a threshold for shippers to apply for rate relief. GAO was asked to review (1) changes in the railroad industry since the Staggers Rail Act, including rates and competition; (2) STB actions to address competition and captivity concerns and alternatives that could be considered; and (3) freight demand and capacity projections and potential federal policy responses. GAO examined STB data, conducted interviews, and held an expert panel.

What GAO Recommends

GAO recommends that STB analyze the state of competition and consider appropriate actions. GAO also recommends that DOT consider strategies to level the playing field for all freight modes to maximize public benefits from federal investment. STB disagreed with our recommendation because it would take resources from efforts it believes will address GAO concerns, among other reasons. We recognize STB’s efforts, but believe further analysis is needed. STB should seek more resources from Congress if needed. DOT took no position on our recommendation.

www.gao.gov/cgi-bin/getrpt?GAO-07-94.

To view the full product, including the scope and methodology, click on the link above. For more information, contact JayEtta Z. Hecker at (202) 512-2834 or heckerj@gao.gov.

FREIGHT RAILROADS

Industry Health Has Improved, but Concerns about Competition and Capacity Should Be Addressed

What GAO Found

Changes in the railroad industry since the Staggers Rail Act are widely viewed as positive, as the industry’s financial health has improved and most rates have declined; however, concerns over competition and captivity remain. Rail rates generally declined between 1985 and 2000, then increased slightly from 2001 through 2004. Concerns about competition and captivity remain as traffic is concentrated in fewer railroads. It is difficult to determine the number of “captive” shippers as proxy measures can overstate or understate captivity. Nevertheless, GAO’s analysis of limited available measures indicates that the extent of captivity appears to be dropping, but the percentage of traffic traveling at rates substantially over the threshold for rate relief has increased. Also, some areas with access to only one major railroad have higher percentages of traffic traveling at rates above the threshold. These findings may reflect reasonable economic practices by the railroads or a possible abuse of market power. GAO’s analysis is limited by available data and proxy measures but suggests that shippers in selected markets may be paying excessive rates, meriting further inquiry and analysis.

While STB has taken action, further efforts to improve its rate relief processes and assess competition could help address competition and captivity concerns and inform the merits of proposed alternative approaches. STB’s rate relief processes are largely inaccessible and rarely used. STB recognizes this and is taking steps to improve its processes. STB has broad statutory authority to inquire into and report on railroad industry practices and, given a reasonable possibility that some shippers may be paying excessive rates, an assessment of competition could determine whether there is sufficient evidence that market power is being abused in specific markets. While competition between railroads may not always be feasible, alternative approaches have costs and benefits that should be carefully considered to ensure the balance envisioned in the Staggers Rail Act—including the railroads’ need for adequate revenues.

Significant increases in freight traffic are forecast, and the industry’s ability to meet them is largely uncertain. Investments in rail projects can produce public benefits, such as reducing highway congestion. As a result, federal and state governments have increasingly participated in freight rail projects. In 2005, for example, Congress provided \$100 million for rail improvements in the Chicago area. Congress faces additional decisions about potential federal policy responses in years ahead. Responses should recognize that the freight transportation system includes many modes that are treated differently by the federal government and functions in a competitive marketplace and a constrained federal funding environment. In developing a National Freight Policy, the Department of Transportation (DOT) has made a good start by providing context for those decisions and DOT can help sustain the role of the competitive marketplace through strategies that promote a level playing field for freight transportation decision making and acknowledge the constrained federal fiscal environment by focusing federal involvement where demonstrable, wide-ranging public benefits exist.

Contents

Letter		1
	Results in Brief	3
	Background	6
	Railroad Industry Increasingly Healthy and Rates Generally Down Since Enactment of the Staggers Rail Act, but Concerns about Competition and Captivity Remain	9
	Despite STB's Actions, Analysis of Competitive Markets Is Needed to Address Lack of Effective Relief for Captive Shippers	38
	Uncertainty about Future Freight Rail Demand and Capacity Points to Opportunities for a More Strategic Federal Approach to Rail Infrastructure	53
	Conclusions	64
	Recommendations for Executive Action	66
	Agency Comments and Our Evaluation	67
Appendix I	Participants in GAO's Expert Panel	72
Appendix II	Objectives, Scope, and Methodology	74
Appendix III	Comments from the Surface Transportation Board	77
	GAO Comments	83
Appendix IV	GAO Contact and Staff Acknowledgments	87
Related GAO Products		88
Tables		
	Table 1: Changes in Percentage of Industry Revenue and Tonnage on Origin and Destination Routes with Access to One Class I Railroad	28
	Table 2: Possible Changes in R/VC Ratios	30
	Table 3: Potential Public Benefits of Rail Transportation Investments	58

Figures

Figure 1: Railroads' Tax-Adjusted Return on Investment, 1980-2004	10
Figure 2: Trends in Industry Rail Rates, 1985-2004	12
Figure 3: Commodity Rate Changes, 1985-1989, 1990-1999, and 2000-2004	13
Figure 4: Rate Changes for Coal, Grain, Miscellaneous Mixed Shipments, and Motor Vehicles, 1985-2004	14
Figure 5: Rail Rate Increases and Decreases across 604 Routes, and for Long-, Medium-, and Short-distance Routes, 2000 through 2004	15
Figure 6: Tonnage Carried by Railcar Ownership, 1987-2004	17
Figure 7: Miscellaneous Revenue Tracked in Carload Waybill Sample, 2000-2004	18
Figure 8: Percentage of Railroad Market Represented by Four Largest Class I Railroads, 1985-2004	20
Figure 9: Comparison of Rates Charged on Long-distance Grain Routes, 1997-2004	22
Figure 10: Rate Changes after the Introduction of a Second Carrier	23
Figure 11: Comparison of Rate Changes from Champaign, Illinois, Economic Area to New Orleans, Louisiana, Economic Area and Champaign, Illinois, Economic Area to Atlanta, Georgia, Economic Area, 1990-2004	24
Figure 12: Number of Class I Railroads Serving Economic Areas, 2004	26
Figure 13: Percentage of All Industry Tonnage Originating in Economic with Access to One Class I Railroad, 2004	27
Figure 14: Changes in Percentage of All Industry Traffic Tonnage with Access to One Class I Railroad Originating in Economic Areas, 1994 through 2004	29
Figure 15: Percentage of Industry Tonnage and Revenue Generated from Traffic Traveling at Rates Equal to or Greater Than 180 Percent R/VC, 1985-2004	31
Figure 16: Tonnage Traveling at Rates over 300 Percent R/VC, 1985-2004	32
Figure 17: Percentage of Tonnage by R/VC, 1985 and 2004	33
Figure 18: Changes in Percentage of Tonnage Traveling at Rates over 300 Percent R/VC, by Originating Economic Area, 1985 through 2004	34
Figure 19: Long-distance Grain Route Changes in Percentage of Tonnage Traveling at Rates over 300 Percent R/VC, 1985-2004	35

Figure 20: Overlap between Percentage of Tonnage over Threshold for Rate Relief and Access to Only One Class I Railroad	37
Figure 21: Reciprocal Switching	45
Figure 22: Terminal Agreements	47
Figure 23: Trackage Rights	48
Figure 24: Bottleneck Rates	50
Figure 25: Paper Barriers	51

Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
ATA	American Trucking Association
BEA	Bureau of Economic Analysis
CBO	Congressional Budget Office
CDOT	Colorado Department of Transportation
CREATE	Chicago Region Environmental and Transportation Efficiency program
DOT	Department of Transportation
FAF	Freight Analysis Framework
FHWA	Federal Highway Administration
FOA	Final Offer Arbitration
GDP	gross domestic product
ICC	Interstate Commerce Commission
RRIF	Railroad Rehabilitation and Improvement Financing
R/VC	revenue to variable cost
RRIF	Railroad Rehabilitation and Improvement Financing program
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
STB	Surface Transportation Board

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United States Government Accountability Office
Washington, DC 20548

October 6, 2006

Congressional Requesters:

Over 25 years ago, Congress transformed federal regulation of the railroad industry. After almost 100 years of economic regulation, the railroad industry was in serious economic trouble in the 1970s, with rising costs, losses, and bankruptcies. In response, Congress passed the Railroad Revitalization and Regulatory Reform Act of 1976 and the Staggers Rail Act of 1980. Together, these pieces of legislation substantially deregulated the railroad industry. In particular, the 1980 act encouraged greater reliance on competition to set rates and gave railroads increased freedom to price their services according to market conditions, including the freedom to use differential pricing—that is, to recover a greater proportion of their costs from rates charged to shippers with a greater dependency on rail transportation. At the same time, the 1980 act anticipated that some shippers might not have competitive alternatives—commonly referred to as “captive shippers”—and gave the Interstate Commerce Commission (ICC), and later the Surface Transportation Board (STB), the authority to establish a process so that shippers could obtain relief from unreasonably high rates. However, only a rate that produces revenue equal to at least 180 percent of the variable cost of transporting the shipment can be challenged. Since the passage of the Staggers Rail Act in 1980, we have issued several reports on the freight railroad industry.¹ These reports described the significant changes that have taken place in the railroad industry and reported that rates have generally decreased, but shippers and others have found the rate relief process long, complex, and expensive.

Policymakers continue to believe that the federal government should provide a viable process to protect shippers against unreasonably high rates, as well as address competition issues, while still balancing the interests of both railroads and shippers. Over the past 10 years, significant consolidation has taken place in the freight railroad industry, while railroads—particularly Class I railroads²—have seen their productivity and financial health improve. Railroad officials worry that any attempt to

¹See the list of related GAO products at the end of this report.

²As of 2004, a Class I railroad is any railroad with operating revenue above \$277.7 million.

increase economic regulation will reduce carriers' ability to earn sufficient revenues and limit future infrastructure investment. At the same time, a number of academic and government studies are predicting a significant increase in the demand for freight rail over the next 10 to 15 years. In light of these concerns, we reviewed

- the changes that have occurred in the freight railroad industry since the enactment of the Staggers Rail Act, including changes in rail rates and competition in the industry;
- the actions STB has taken to address concerns about competition and captivity and any alternative approaches that could be considered to address remaining concerns; and
- the projections for freight traffic demand over the next 15 to 25 years, the freight railroad industry's projected ability to meet that demand, and potential federal policy responses.

To fulfill our objectives, we examined STB's *Carload Waybill Sample* from 1985 through 2004 (the latest data available at the time of our review).³ This database includes information on rail rates, tonnage, federal regulation, and other statistics but disguises some revenues to avoid disclosing confidential business information to the public. We obtained a version of the *Carload Waybill Sample* that did not disguise revenues. We held an expert panel consisting of 11 individuals with expertise in the freight railroad industry and the economics of transportation deregulation. Those individuals are listed in appendix I. We also interviewed, and reviewed information from, representatives of each Class I railroad in North America, shipper groups, economists, and experts in the rail industry. In addition, we reviewed pending legislation, transportation planning literature, and forecasts of future freight rail demand and capacity, including syntheses of such forecasts; and interviewed federal and state transportation officials, financial market analysts, national association representatives, and transportation experts. We determined that the data used in this report were sufficiently reliable for the purpose of our review. We conducted our review from June 2005 to August 2006 in accordance with generally accepted government auditing standards. Details of our objectives, scope, and methodology appear in appendix II.

³The *Carload Waybill Sample* is a sample of railroad waybills (in general, documents prepared from bills of lading that authorize railroads to move shipments and collect freight charges); the sample contains information on rail rates.

Results in Brief

The changes that have occurred in the railroad industry since the enactment of the Staggers Rail Act are widely viewed as positive, since the financial health of the industry has improved and most rates have declined since 1985. However, concerns about competition and captivity in the industry remain. The freight railroad industry's financial health improved substantially as railroads cut costs through productivity improvements; streamlined and right-sized their rail networks; implemented new technologies; and expanded business into new markets, such as the intermodal market.⁴ Between 1985 and 2000, rail rates generally declined, but then increased slightly from 2001 through 2004.⁵ Although rates have declined since 1985, they have not done so uniformly, and rates for some commodities are significantly higher than rates for others. Several factors could have contributed to recent rate increases, including broad changes in the domestic and world economy, the emergence of a capacity-constrained environment in which demand exceeds supply, and consolidation in the 1990s in the industry leading to changes in competition. Other costs, such as fuel surcharges, have also shifted to shippers, and STB has not clearly tracked the revenues the railroads have raised from some of these charges. Some concerns about competition and captivity in the industry remain because traffic is concentrated in fewer railroads. It is difficult to determine precisely how many shippers are captive because available proxy measures can overstate or understate captivity. In addition, STB does not accurately collect railroad revenue data. Nevertheless, our analysis of available measures indicates that the extent of captivity appears to be dropping, but the percentage of industry traffic traveling at rates substantially over the statutory threshold for rate relief has increased. For example, the amount of traffic traveling at rates over 300 percent of the railroad's variable cost increased from 4 percent in 1985 to 6 percent in 2004. Furthermore, some areas with access to one Class I railroad have higher percentages of traffic traveling at rates that exceed the statutory threshold for rate relief. These findings may reflect reasonable economic practices by the railroads in an environment of excess demand, or they may indicate a possible abuse of market power. We are recommending that STB conduct a rigorous analysis of the state of competition nationwide and, where appropriate, consider the range of

⁴The intermodal market consists of containers and trailers that can be carried on ships, trucks, or rail.

⁵While rate data are not available for 2005 and 2006, shippers, railroads, and financial analysts with whom we spoke told us that rates have generally increased during those years.

actions available to address problems associated with the potential abuse of market power. In addition, we are recommending that STB review its method of data collection to ensure consistent and accurate reporting of railroad revenues, including fuel surcharges.

STB has taken a number of actions to improve the rate relief process and assess competition, but further actions could help address remaining competition and captivity concerns. The Staggers Rail Act and the ICC Termination Act encouraged competition as the preferred method to protect shippers from unreasonable rates and granted STB broad legislative authority to monitor the performance of the railroad industry. Under this authority, STB established both a standard and a simplified rate relief process so that captive shippers could obtain relief from unreasonable rates. However, these processes have proven to be largely inaccessible because the standard process is expensive, time consuming, and complex, and the simplified process has not been used. During our review, STB took steps to refine its processes, including issuing a proposed rule making to clarify eligibility for the simplified process. Ultimately, our analysis suggests a reasonable possibility that shippers in selected markets may be paying excessive rates, and an assessment of competition would determine if this situation reflects reasonable economic practices by the railroads in an environment of excess demand or an abuse of market power. This assessment could also provide further information about the extent of captivity and the merits of proposed approaches to enhance the competitive options available to shippers. These approaches—such as providing trackage rights to allow a railroad to run on another railroad’s track for a fee— have been suggested by shipper groups, economists, and others. Each of these approaches has costs and benefits and should be carefully considered to ensure that the approach is designed to achieve the balance set out in the Staggers Rail Act, including consideration of the revenue adequacy of the railroads. However, not all markets may have the demand needed to support competition among railroads, and so some areas where shippers are captive are likely to persist. In this regard, there are also a number of proposals to make the rate relief process more accessible, such as the increased use of arbitration to settle disputes, and each of these proposals has advantages and drawbacks.

Significant increases in freight traffic over the next 10 to 15 years are forecasted, and the railroad industry’s ability to meet future demand is largely uncertain. Investments in rail projects can produce benefits for the public—for example, shifting truck freight traffic to railroads can reduce highway congestion. To obtain such benefits, governments have

increasingly been participating in freight rail improvement projects. For example, Missouri state and local governments supported two major rail-bridge projects to reduce delays in Kansas City. At the federal level, Congress, in 2005, provided \$100 million for rail infrastructure improvements in the Chicago area. In the years ahead, Congress is likely to receive further requests for funding and face additional decisions about potential federal policy responses and the federal role in the nation's freight railroad infrastructure. Such policy responses need to recognize that the freight transportation system encompasses many modes that are treated differently by the federal government and are on systems owned, funded, and operated by both the public and private sectors. Furthermore, the freight transportation system functions in a competitive marketplace, and the federal fiscal funding environment is highly constrained. As a result, policy and decision makers are challenged to ensure that federal involvement is consistent with competition in the freight marketplace and that federal funding decisions reflect widespread public priorities. In developing a draft National Freight Policy, the Department of Transportation (DOT) has made a good start by providing a context for decisions about how to apply a more strategic, systemwide approach, in general, and how to craft a federal policy response to freight rail investment needs in particular. We are recommending that DOT, as it continues to draft a National Freight Policy, consider strategies to sustain the role of competitive market forces by creating a level playing field for all freight modes and recognize the highly constrained federal fiscal environment by developing mechanisms to assess and maximize public benefits from federally financed freight transportation investments.

We provided a draft of this report to DOT and STB. In oral comments, DOT took no position on our recommendation related to the National Freight Policy. In written comments, STB stated that it has already responded to our recommendation on its method of data collection through a proposed rule making on collecting fuel surcharge data. While we commend STB for its proposed rule making, STB has not yet implemented this change, and other revenues may still not be accurately tracked. STB also disagreed with our recommendation to conduct a rigorous analysis of competitive markets to identify the state of competition nationwide, inquire into pricing practices in specific markets, and consider appropriate actions available to address problems associated with the potential abuse of market power. STB commented that this recommendation was based on inconclusive findings and would divert resources away from current initiatives. We disagree that our recommendation was based on inconclusive findings. Our analysis of multiple sources suggests a reasonable possibility that shippers in some markets may be paying

excessive rates. We believe that such a possibility merits further inquiry and analysis. We recognize that STB has limited resources and modified our draft to recommend that STB request additional resources from Congress if it determines that it needs more resources to conduct an analysis of competition. STB also stated that it has several rule makings under way that are designed to improve the rate relief process and would address many of our concerns. STB stated that it would be far more practical for STB to finish these reforms to ensure that captive shippers have an effective forum to seek rate relief. While we commend STB for recognizing and taking action to address problems with the rate relief process, we believe action beyond improvements to the rate relief process is needed. In particular, these STB rule makings are designed to improve processes available to shippers after they have been charged a rate they consider to be unreasonable. In contrast, we believe that an analysis of the state of competition and the possible abuse of market power, along with the range of options STB has to address competition issues, could more directly further the legislatively defined goal of ensuring effective competition among rail carriers. STB's comments are in appendix III.

Background

In the past, the ICC regulated almost all of the rates that railroads charged shippers. The Railroad Revitalization and Regulatory Reform Act of 1976 and the Staggers Rail Act of 1980 greatly increased reliance on competition to set rates in the railroad industry. Specifically, these acts allowed railroads and shippers to enter into confidential contracts that set rates and prohibited ICC from regulating rates where railroads had either effective competition or rates negotiated between the railroad and the shipper. Furthermore, the ICC Termination Act of 1995 abolished ICC and transferred its regulatory functions to STB. Taken together, these acts anchor the federal government's role in the freight rail industry by establishing numerous goals for regulating the industry, including to

- allow, to the maximum extent possible, competition and demand for services to establish reasonable rates for transportation by rail;
- minimize the need for federal regulatory control over the rail transportation system and require fair and expeditious regulatory decisions when regulation is required;
- promote a safe and efficient rail transportation system by allowing rail carriers to earn adequate revenues, as determined by STB;

-
- ensure the development and continuation of a sound rail transportation system with effective competition among rail carriers and with other modes to meet the needs of the public and the national defense;
 - foster sound economic conditions in transportation and ensure effective competition and coordination between rail carriers and other modes:
 - maintain reasonable rates where there is an absence of effective competition and where rail rates provide revenues that exceed the amount necessary to maintain the rail system and attract capital;
 - prohibit predatory pricing and practices to avoid undue concentrations of market power; and
 - provide for the expeditious handling and resolution of all proceedings.

While the Staggers Rail and ICC Termination Acts reduced regulation in the railroad industry, they maintained STB's role as the economic regulator of the industry. The federal courts have upheld STB's general powers to monitor the rail industry, including its ability to subpoena witnesses and records and to depose witnesses. In addition, STB can revisit its past decisions if it discovers a material error, or new evidence, or if circumstances have substantially changed.

Two important components of the current regulatory structure for the railroad industry are the concepts of revenue adequacy and demand-based differential pricing. Congress established the concept of revenue adequacy as an indicator of the financial health of the industry. STB determines the revenue adequacy of a railroad by comparing the railroad's return on investment with the industrywide cost of capital. For instance, if a railroad's return on investment is greater than the industrywide cost of capital, STB determines that railroad to be revenue adequate. Historically, ICC and STB have rarely found railroads to be revenue adequate—a result that many observers relate to characteristics of the industry's cost structure. Railroads incur large fixed costs to build and operate networks that jointly serve many different shippers. Some fixed costs can be attributed to serving particular shippers, and some costs vary with particular movements, but other costs are not attributable to particular shippers or movements. Nonetheless, a railroad must recover these costs if the railroad is to continue to provide service over the long run. To the extent that railroads have not been revenue adequate, they may not have been fully recovering these costs.

The Staggers Rail Act recognized the need for railroads to use demand-based differential pricing to promote a healthy rail industry and enable it to raise sufficient revenues to operate, maintain and, if necessary, expand the system in a deregulated environment. Demand-based differential pricing, in theory, permits a railroad to recover its joint and common costs—those costs that exist no matter how many shipments are transported, such as the cost of maintaining track— across its entire traffic base by setting higher rates for traffic with fewer transportation alternatives than for traffic with more alternatives. Differential pricing recognizes that some customers may use rail if rates are low—and have other options if rail rates are too high or service is poor. Therefore, rail rates on these shipments generally cover the directly attributable (variable) costs, plus a relatively low contribution to fixed costs. In contrast, customers with little or no practical alternative to rail—“captive” shippers—generally pay a much larger portion of fixed costs. Moreover, even though a railroad might incur similar incremental costs while providing service to two different shippers that move similar volumes in similar car types traveling over similar distances, the railroad might charge the shippers different rates. Furthermore, if the railroad is able to offer lower rates to the shipper with more transportation alternatives, that shipper still pays some of the joint and common costs. By paying even a small part of total fixed cost, competitive traffic reduces the share of those costs that captive shippers would have to pay if the competitive traffic switched to truck or some other alternative. Consequently, while the shipper with fewer alternatives makes a greater contribution toward the railroad’s joint and common costs, the contribution is less than if the shipper with more alternatives did not ship via rail.

The Staggers Rail Act further requires that the railroads’ need to obtain adequate revenues to be balanced with the rights of shippers to be free from, and to seek redress from, unreasonable rates. Railroads incur variable costs—that is, the costs of moving particular shipments—in providing service. The Staggers Rail Act stated that any rate that was found to be below 180 percent of a railroad’s variable cost for a particular shipment could not be challenged as unreasonable and authorized ICC, and later STB, to establish a rate relief process for shippers to challenge the reasonableness of a rate. STB may consider the reasonableness of a rate only if it finds that the carrier has market dominance over the traffic at issue—that is, if (1) the railroad’s revenue is equal to or above 180 percent of the railroad’s variable cost (R/VC) and (2) the railroad does not face effective competition from other rail carriers or other modes of transportation.

Railroad Industry Increasingly Healthy and Rates Generally Down Since Enactment of the Staggers Rail Act, but Concerns about Competition and Captivity Remain

The changes that have occurred in the railroad industry since the enactment of the Staggers Rail Act are widely viewed as positive. The railroad industry's financial health improved substantially as it cut costs, boosted productivity, and right-sized its networks. Rail rates generally declined between 1985 and 2000 but increased slightly from 2001 through 2004. Likewise, rail rates have declined since 1985 for certain commodity groups and routes despite some increases since 2001, but rates have not declined uniformly, and some commodities are paying significantly higher rates than others. For example, from 1985 through 2004, coal rates declined 35 percent while grain rates increased 9 percent.⁶ Concerns about competition and captivity in the industry remain because traffic is concentrated in fewer railroads. It is difficult to determine precisely how many shippers are captive to one railroad. Nevertheless, our analysis indicates that the extent of potential captivity appears to be dropping, but that the percentage of all industry traffic running at rates substantially over the statutory threshold for rate relief—traffic traveling at rates over 180 percent R/VC—has increased. Furthermore, some areas with access to only one Class I railroad have higher percentages of traffic traveling at rates that exceed the statutory threshold for rate relief. This situation may reflect reasonable economic practices by the railroads in an environment of excess demand, or it may represent an abuse of market power.

Railroad Industry's Financial Health Has Improved Substantially

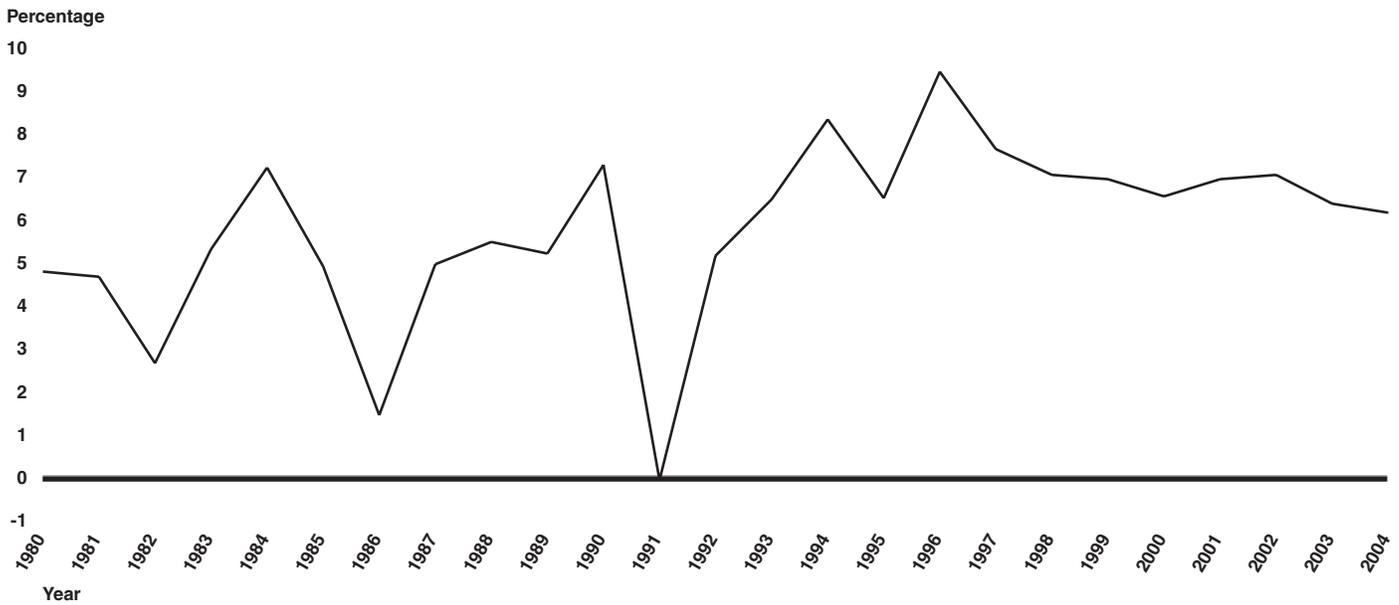
There is widespread consensus that the freight rail industry has benefited from the Staggers Rail Act. Ten of the 11 members of our expert panel believed that the Staggers Rail Act has had a strongly positive overall effect on freight railroad companies, while 8 believed the Staggers Rail Act had a strongly positive effect on shipping companies. In addition, various measures indicate an increasingly strong freight railroad industry. Freight railroads' improved financial health is illustrated by a general increase in return on investment since 1980, as shown in figure 1.⁷ Freight railroads have also cut costs by streamlining their workforces; right-sizing their rail

⁶All of our rate changes—increases and decreases—are presented in nominal terms.

⁷Return on investment measures the profit made on assets used to provide transportation services. Return on investment is based on STB's methodology for determining revenue adequacy.

networks; and reducing track miles, equipment, and facilities to more closely match demand.⁸

Figure 1: Railroads' Tax-Adjusted Return on Investment, 1980-2004



Source: STB.

Freight railroads have also expanded their business into new markets—such as the intermodal market—and implemented new technologies, including larger cars, and are currently developing new scheduling and train control systems. Some observers believe that the competition faced by railroads from other modes of transportation has created incentives for innovative practices, and that the ability to enter into confidential contracts with shippers has permitted railroads to make specific investments and to develop service arrangements tailored to the requirements of different shippers.⁹

⁸Clifford Winston, *Deregulation of Network Industries – What’s Next?* (Washington: AEI-Brookings Joint Center for Regulatory Studies: 2000), pp. 43-44.

⁹Gallamore, pp. 511-515.

Freight rail is an important component of our nation's economy. Approximately 42 percent of all intercity freight in the United States, measured in ton-miles,¹⁰ moves on rail lines. Freight rail is particularly important to producers and users of certain commodities. For example, about 70 percent of automobiles manufactured domestically and about 70 percent of coal delivered to power plants moves on freight rail.

Industrywide Rates Declined from 1985 through 2000 and Rose Slightly from 2001 through 2004

Rail rates across the freight railroad industry have generally declined since the enactment of the Staggers Rail Act. Because changes in traffic patterns over time (for example, hauls over longer distances) can result in a decrease in the average revenue per ton-mile, purely relying on cents per ton-mile can present misleading industrywide rate trends. Therefore, we developed a set of rail rate indexes¹¹ to examine trends in rail rates over the 1985 through 2004 period. These indexes account for changes in traffic patterns over time that could affect revenue statistics but do not account for inflation. To provide a measure for inflation, we also included the price index for the gross domestic product (GDP) in figure 2.

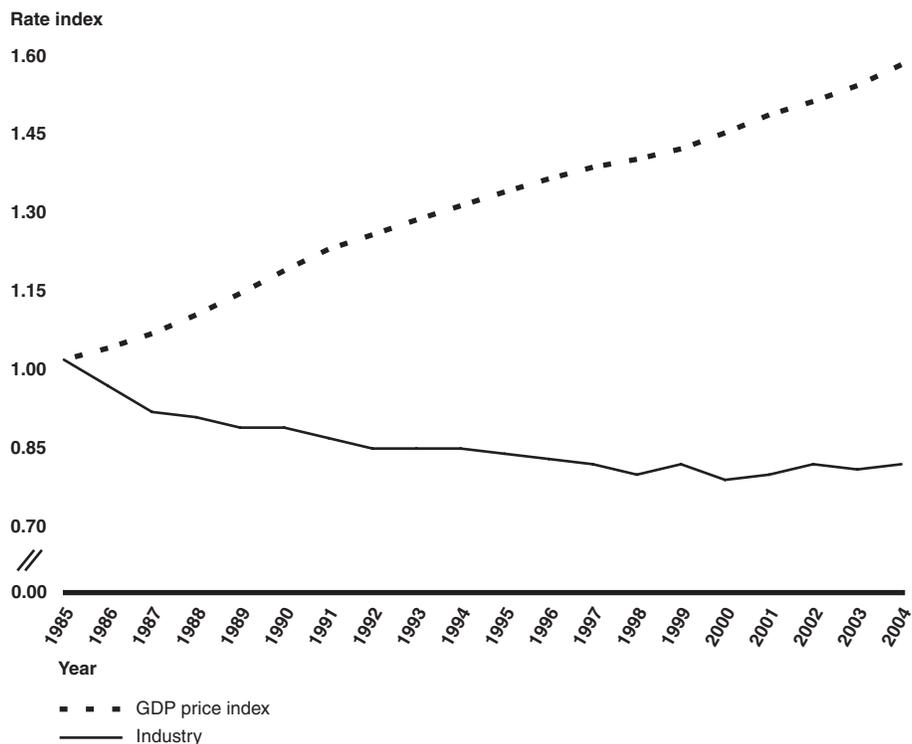
From 1985 through 1987, rail rates dropped by 10 percent and then continued to decline, although not as steeply, through 1998. Rates increased in 1999, then dropped again in 2000. In 2001 and 2002 rates rose again. Rates were nearly flat in 2003 and 2004, finishing approximately 3 percent above rates in 2000, but were 20 percent below 1985 rates (These trends are shown in figure 2). While our rail rate index does not reflect the general effects of inflation, the continuous increases in the GDP price index over this period indicate that real rates decreased by more than 20

¹⁰A ton-mile is a standard industry measure that represents 1 ton of freight transported 1 mile.

¹¹We constructed rate indexes to examine trends in rail rates over the 1985 to 2004 period. These indexes define traffic patterns for a given commodity in terms of census region to census region flows of that commodity, and we calculated the average revenue per ton-mile for each of these traffic flows. The index is calculated as the weighted average of these traffic flows in each year, expressed as a percentage of the value for 1985, where the weights reflect the traffic patterns in 2004. By fixing the weights as of one period of time, we attempted to measure pure price changes rather than calculating the average revenue per ton-mile in each year. Over time, changes in traffic patterns could result in a substitution of lower priced traffic for higher priced traffic, or vice versa, so that a decrease in average revenue per ton-mile might partly reflect this change in traffic patterns. The rate index for the overall industry was defined similarly, except that the traffic pattern bundle was defined in terms of broad commodity, census region of origin, and mileage block categories. For comparison purposes, we also present the price index for gross domestic product over this period.

percent from 1985 through 2004. Rate data are not available for 2005 and 2006, but shippers, railroad officials, and financial analysts with whom we spoke told us that rates have generally increased during those years.

Figure 2: Trends in Industry Rail Rates, 1985-2004

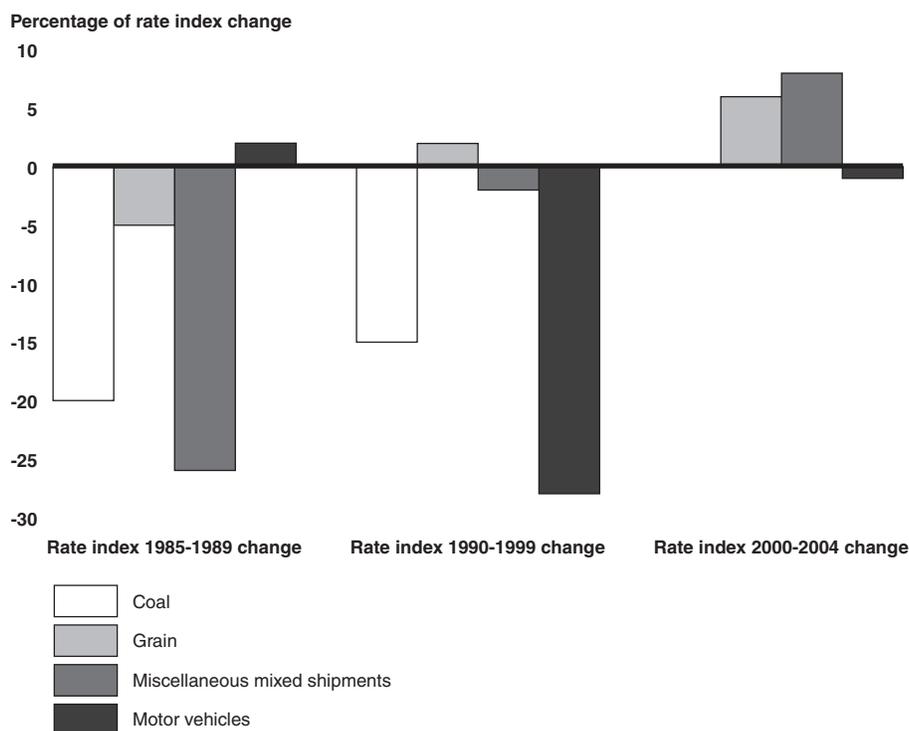


Source: GAO analysis of STB data.

For Many Commodities and Particular Routes, Rates Have Also Declined Since 1985, but Declines Are Not Uniform

Similar to industrywide changes in rail rates, the rates for many commodities have declined since 1985 and have recently increased. In 2004, four commodities each made up 5 percent or more of freight railroad revenue—grain, coal, motor vehicles, and miscellaneous mixed shipments. In both the 1985 through 1989 and the 1990 through 1999 intervals, the rates for most of these commodities declined, while in 2000 through 2004, the rates increased for two commodities and decreased for two (see fig. 3).

Figure 3: Commodity Rate Changes, 1985-1989, 1990-1999, and 2000-2004



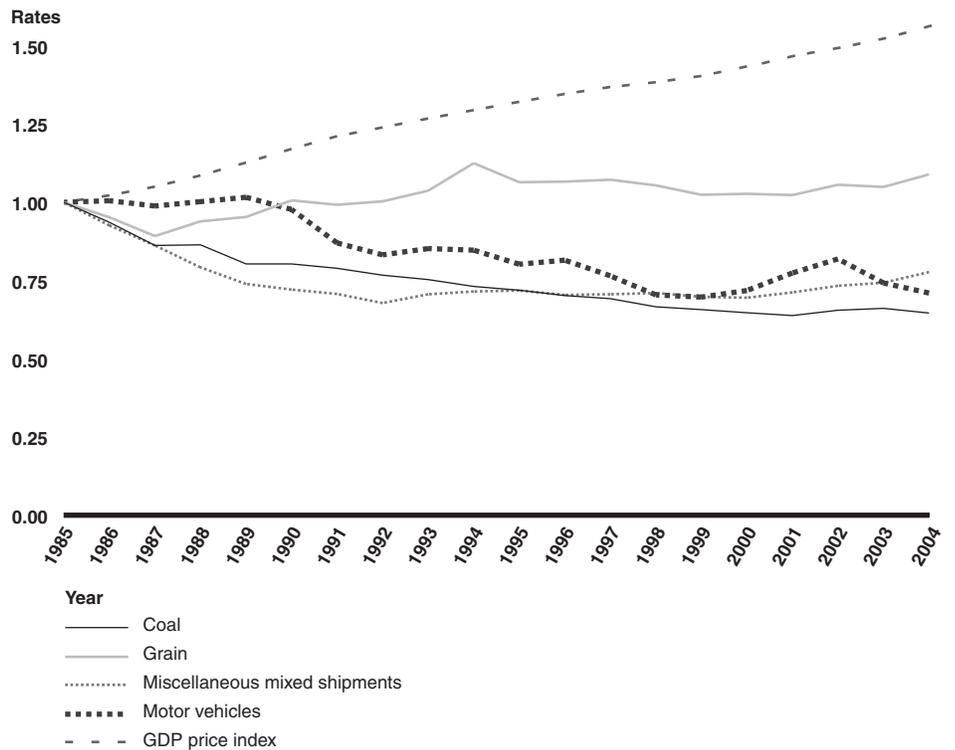
Source: GAO analysis of STB data.

Note: From 2000 to 2004, the rate index for coal was largely unchanged.

Although many rates have decreased, rates have not declined uniformly, and rates for some commodities are significantly higher than for others. Figure 4 compares commodity rates for coal, grain, miscellaneous mixed shipments, and motor vehicles from 1985 through 2004 using our rail rate index. Over the 20-year period most rates declined, with coal rates dropping the most sharply by 35 percent. Miscellaneous mixed shipments and motor vehicle rates also declined, although to a lesser extent than coal rates. Grain rates initially declined from 1985 through 1987, but then

diverged from the other commodity trends and increased, resulting in a net 9 percent increase by 2004.

Figure 4: Rate Changes for Coal, Grain, Miscellaneous Mixed Shipments, and Motor Vehicles, 1985-2004



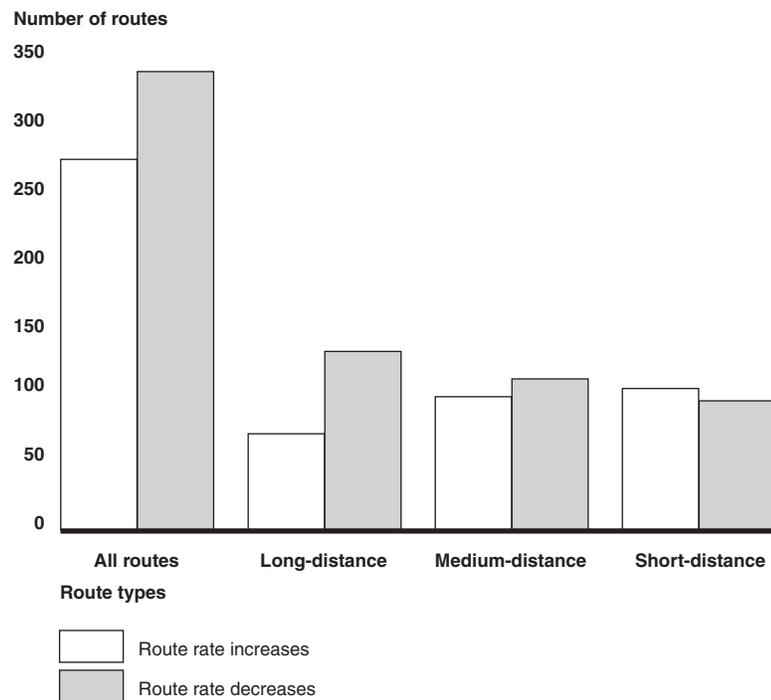
Source: GAO analysis of STB data.

We examined rate changes for commodities traveling along hundreds of particular routes and found that the rates on a majority of the routes we analyzed decreased from 2000 through 2004. Figure 5 shows that from 2000 through 2004 rail rates decreased on about 55 percent of the routes in our analysis¹² (334 of 604 routes). More specifically, the rates for most long-distance (over 1,000 miles) and medium-distance (501 to 1,000 miles) routes decreased. In one distance category, short-distance routes (up to 500 miles), there were more routes with increases (103) than decreases

¹²Our initial route universe consisted of 932 commodity routes, but we removed 328 routes that did not have large enough samples in some years to be valid, or they were not collected in the *Carload Waybill Sample* in either 2000 or 2004.

(94), from 2000 through 2004. While figure 5 shows that, for the long-distance routes we examined, the number of routes with rate decreases was nearly twice the number of routes with rate increases. Many of the largest rate increases were on long-distance routes carrying miscellaneous mixed shipments—which include intermodal goods—that originated in the Los Angeles-Long Beach-Riverside, California, economic area and terminated at various destinations across the country. Several shipper groups reported that many rate increases occurred after 2004; however, data are not available for 2005 and 2006.

Figure 5: Rail Rate Increases and Decreases across 604 Routes, and for Long-, Medium-, and Short-distance Routes, 2000 through 2004



Source: GAO analysis of STB data.

Many Factors May Have Contributed to Recent Rate Increases

Several factors could have contributed to recent rate increases. Ongoing industry and economic changes have influenced how railroads have set their rates. Since the Staggers Rail Act was enacted, the railroad industry and the economic environment in which it operates have changed considerably. After years of reducing the size of its workforce and shedding track capacity, the industry is increasingly operating in a

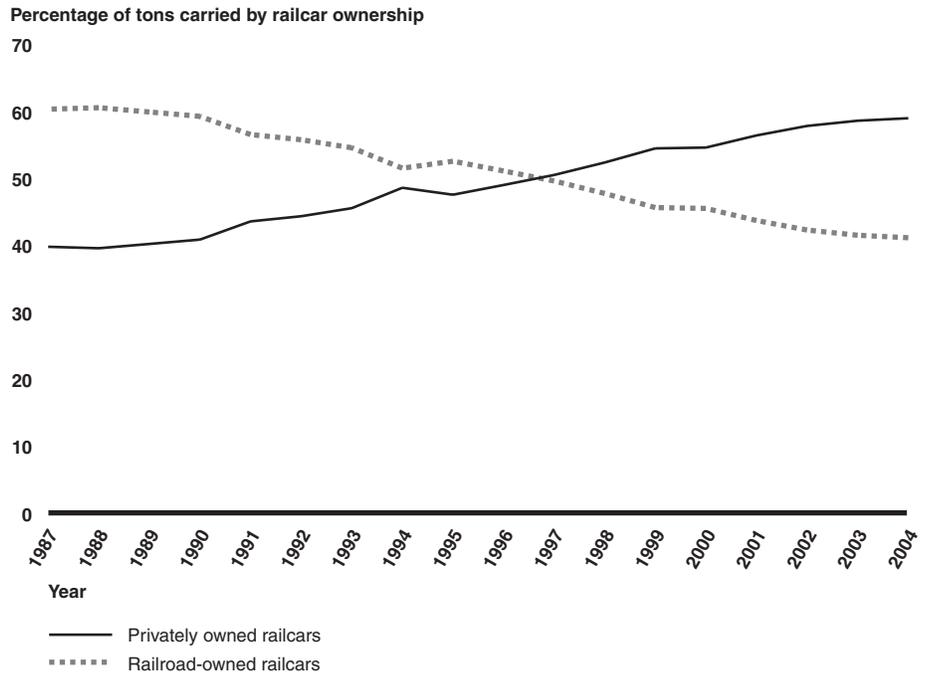
capacity-constrained environment in which the demand for its services exceeds its capacity in some areas. In addition, the industry has more recently increased employment and invested in increased capacity in key traffic corridors. Additionally, changes in broader domestic and world economic conditions have led to changes in the mix and profitability of traffic carried by railroads. For example, railroads have developed high-volume traffic by shipping import and export containers, leading them to price these shipments differently. According to DOT officials, some shippers—such as those in the automobile and chemical industries—may pay higher rates in order to secure higher quality service or due to liability issues. Lastly, the rail industry has continued to consolidate, potentially increasing the market power of the largest railroads. Our analysis included rate data through 2004,¹³ and according to freight railroad officials, shippers, and financial analysts, since 2004, rates have continued to increase as the demand for freight rail service has increased, and rail capacity has not kept pace with demand.

Other Costs Have Shifted to Shippers, and Some Charges Are Not Accurately Tracked

While rates have generally decreased since 1985, other costs have been passed on to shippers, some of which STB has not accurately tracked. Several shippers with whom we spoke agreed that rates have dropped over the long-term, but they also said that rates do not reflect the total cost of shipping by rail. According to some shippers, costs have shifted from the railroads to shipping companies, including the costs of railcar ownership. Figure 6 shows that tons carried by railcar ownership has shifted nearly 20 percent since 1985, indicating less tonnage shipped on railcars owned by freight railroad companies.

¹³According to STB officials, the 2005 waybill data will become available in Fall 2006.

Figure 6: Tonnage Carried by Railcar Ownership, 1987-2004



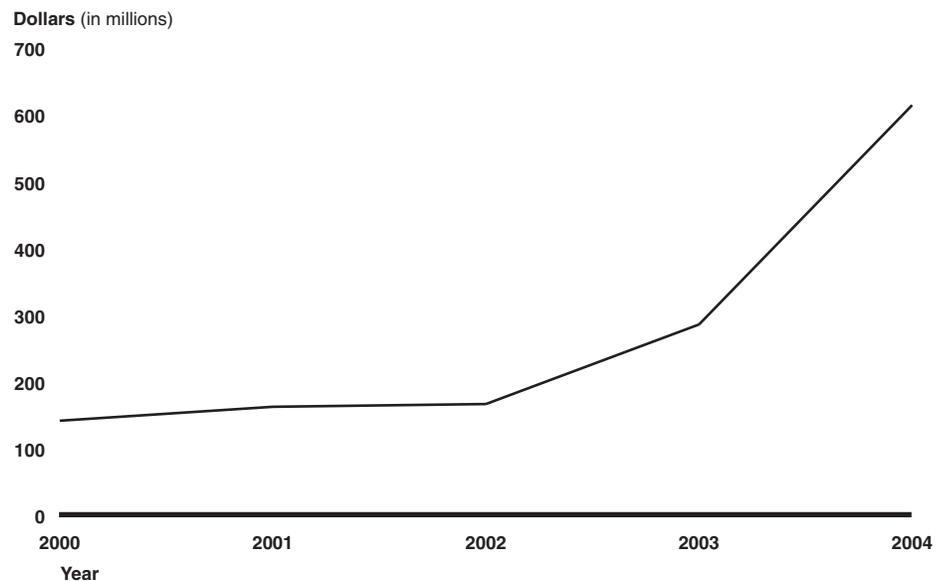
Source: GAO analysis of STB data.

Besides rates, other costs that shippers reported were infrastructure upgrade costs, fuel surcharges,¹⁴ and congestion fees. Conversely, one Class I railroad told us that some rates in the *Carload Waybill Sample* do not account for rebates or incentives that may change the actual rate paid by the shipper. We are unable to report on the full extent of all costs because STB has not accurately tracked the railroad revenues associated with some of these charges. For example, freight railroad companies do not consistently report revenues raised from fuel surcharges for use in the *Carload Waybill Sample*. Some railroads report fuel surcharges as part of their general revenues, while others categorize the surcharges separately under a miscellaneous revenue category, and still other railroads may not report revenue collected from fuel surcharges at all. Shippers have expressed deep concerns over how fuel surcharges relate to actual fuel costs. Other railroad revenues, such as those generated at railcar

¹⁴Fuel surcharges are charges associated with recouping the cost of fuel. How fuel surcharges are calculated varies among Class I railroads because some use a mileage-based system while others use a percentage of the base rate.

auctions¹⁵ and through congestion fees, may not be included in the waybill sample either. Understanding what railroads do and do not report as miscellaneous revenue in the waybill sample may be of increasing importance because fuel surcharges have become more prevalent, and railroad revenue reported as miscellaneous revenue has substantially risen in recent years. From 2000 through 2004, the miscellaneous revenue reported in the waybill sample has more than quadrupled in value, from \$141 million to \$614 million (see fig. 7). Although an increase in value, \$614 million still represents less than 1.5 percent of the approximately \$42 billion in freight railroad revenue reported for 2004. Since 2004, miscellaneous revenue may have further increased as railroad and shipper groups with whom we spoke said that many fuel surcharge increases took effect in 2005. During our review, STB proposed to more closely track and otherwise monitor revenues associated with fuel surcharges.

Figure 7: Miscellaneous Revenue Tracked in Carload Waybill Sample, 2000-2004



Source: GAO analysis of STB data.

¹⁵At railcar auctions, railroad companies auction to the highest bidder the guaranteed delivery of a set number of railcars at specified future delivery dates. If railroads fail to deliver the railcars at the specified time, the railroads may pay a penalty to the shippers; if shippers find they cannot use the railcars at the time delivered then the shipper may pay a penalty to the railroad.

Competition and Captivity Concerns Remain

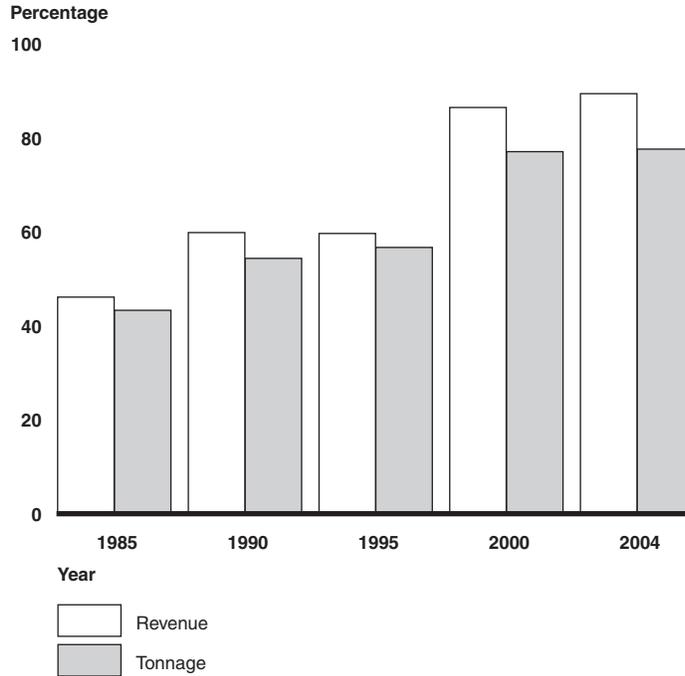
Concerns about competition and captivity in the railroad industry remain because traffic is concentrated in fewer railroads, although there is disagreement on the state of competition in the industry. It is difficult to determine the number of captive shippers, because proxy measures can overstate or understate captivity, but our analysis of available measures indicates that the extent of captivity is dropping. At the same time, the percentage of all industry traffic running substantially over the statutory threshold for rate relief has increased from about 4 percent of tonnage in 1985 to about 6 percent of tonnage in 2004. Furthermore, some economic areas with access to one Class I railroad have higher percentages of traffic traveling at rates that exceed the statutory threshold for rate relief.

The Freight Railroad Industry Has Become More Concentrated

During the past 30 years, the freight railroad industry has become more concentrated. In 1976, there were 30 independent Class I railroad systems, consisting of 63 Class I railroads operating in the United States. Currently there are seven railroad systems, consisting of seven Class I railroads. Nearly half of that reduction was attributable to consolidations.¹⁶ The railroad industry is dominated by four Class I railroads—two in the East and two in the West. As figure 8 shows, the market share of these four Class I railroads has been increasing and accounted for over 89 percent of the industry's revenues in 2004.

¹⁶Other reasons for the reduction in the number of Class I railroads include carrier bankruptcies and a series of changes in the threshold for qualifying as a Class I railroad (from \$5 million in annual revenue in 1976 to \$250 million in 1992).

Figure 8: Percentage of Railroad Market Represented by Four Largest Class I Railroads, 1985-2004



Source: GAO analysis of STB data.

There is significant disagreement on the state of competition in the rail industry and on whether or not federal regulation—resulting from legislation such as the Staggers Rail Act—has ensured effective competition among railroads. This disagreement was represented on our panel of 11 experts, 6 of whom indicated that rail-to-rail competition has been achieved (either “greatly” or “somewhat”) and 4 of whom maintained that effective competition had not been achieved.¹⁷ One member of our panel viewed less competition among rail carriers as a negative development because it can result in less efficient railroad companies and fewer options for shipping companies. Another member of our panel said that industry consolidation was essential to achieving an efficient and complete rail network under fewer, but ultimately stronger, railroad companies. Other experts also pointed to the hundreds of short-line

¹⁷One participant did not respond to this question.

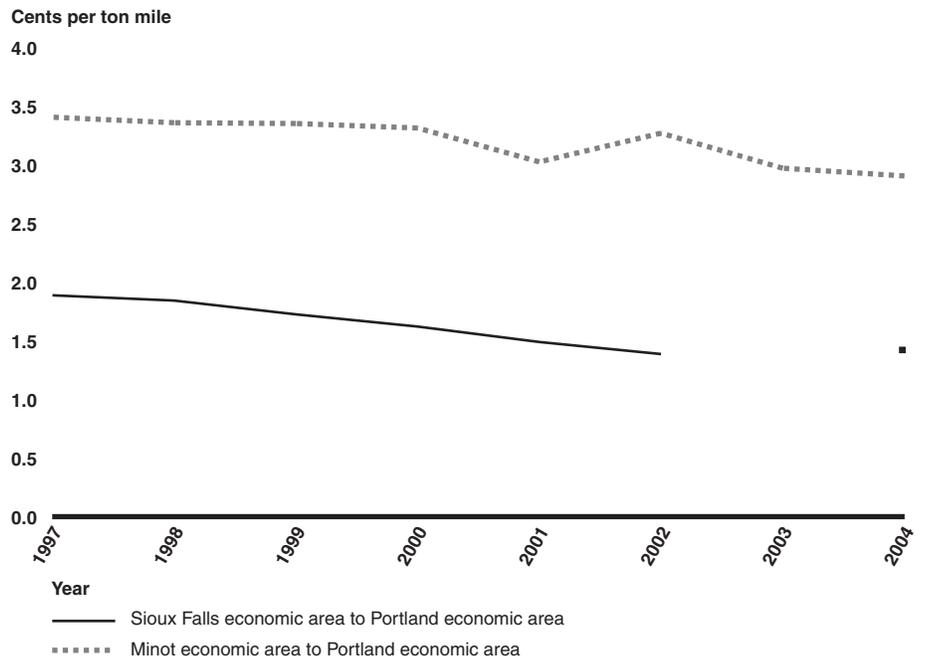
railroads¹⁸ that have come into being since the enactment of the Staggers Rail Act, as well as increases in other competitive options for shippers from other modes such as trucks and barges.

A reduction in competitive options can have a significant impact on the rates railroads charge shippers. There are a variety of contexts that affect how railroads compete with each other and with other modes, such as when route origins and destinations can both be reached by more than one railroad, or by multiple modes of transportation.¹⁹ Comparing two routes for shipping the same commodity, but using a different number of rail carriers, can illustrate this effect. Figure 9 shows two long-distance grain routes that both terminate in the Portland, Oregon, economic area from different origin points. Both routes carry comparable tonnage, but the route originating in the economic area in and around Sioux Falls, South Dakota, is served by two Class I railroads, whereas the route from the Minot, North Dakota, economic area is served by one Class I railroad. The rates for the Minot route are roughly double the rates for the Sioux Falls route.

¹⁸A short-line railroad is an independent railroad company that operates over a short distance.

¹⁹Winston, pp. 54-57.

Figure 9: Comparison of Rates Charged on Long-distance Grain Routes, 1997-2004



Source: GAO analysis of STB data.

Note: For some years, data have been removed due to insufficient sample size.

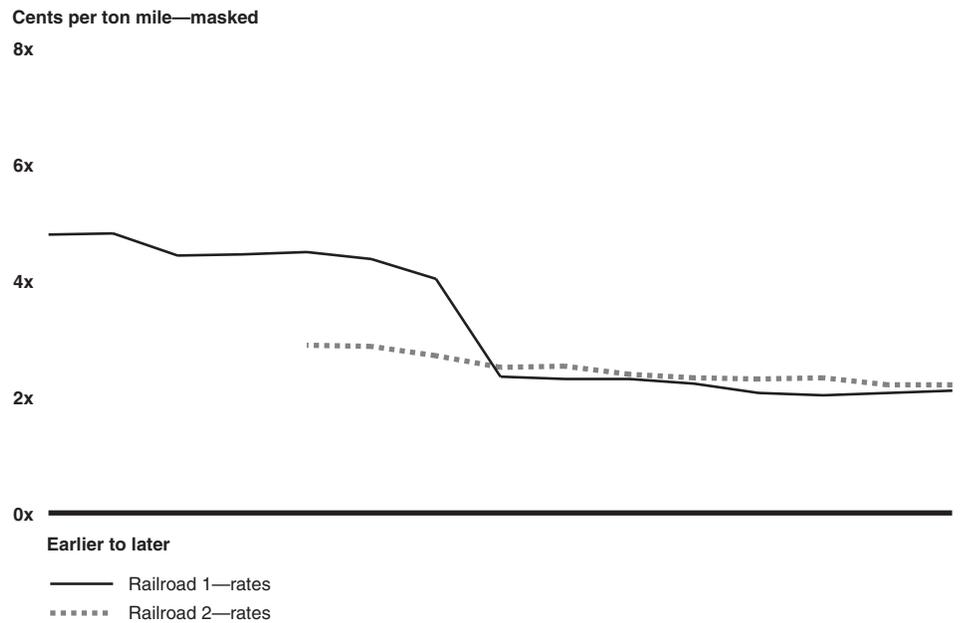
The ability to build out to another railroad can also create competition and improve railroad rates for some shippers. For example, following a build-out,²⁰ a shipper gained access to a second railroad at an origin point that had previously been served by one Class I railroad.²¹ Figure 10 shows that within a few years after the introduction of service by the second railroad, the rates had dropped significantly. Because even a short segment build-out can be quite costly, shippers are unlikely to pursue build-out options without a substantial traffic base. Some experts with whom we spoke said that situations like the one depicted in figure 9 reflect the reality of differential pricing in the freight railroad industry, or they suggest that other factors such as differences in the length of two different routes may be the cause of rate discrepancies. Others believe that a significant rate

²⁰A build-out is a shipper's option to build (or have some other party build) a track connection to a competing railroad.

²¹We do not provide information identifying the location or the shipper involved because doing so could reveal proprietary information.

decrease after the introduction of competition is evidence that railroads are extracting monopoly rates from captive shippers.

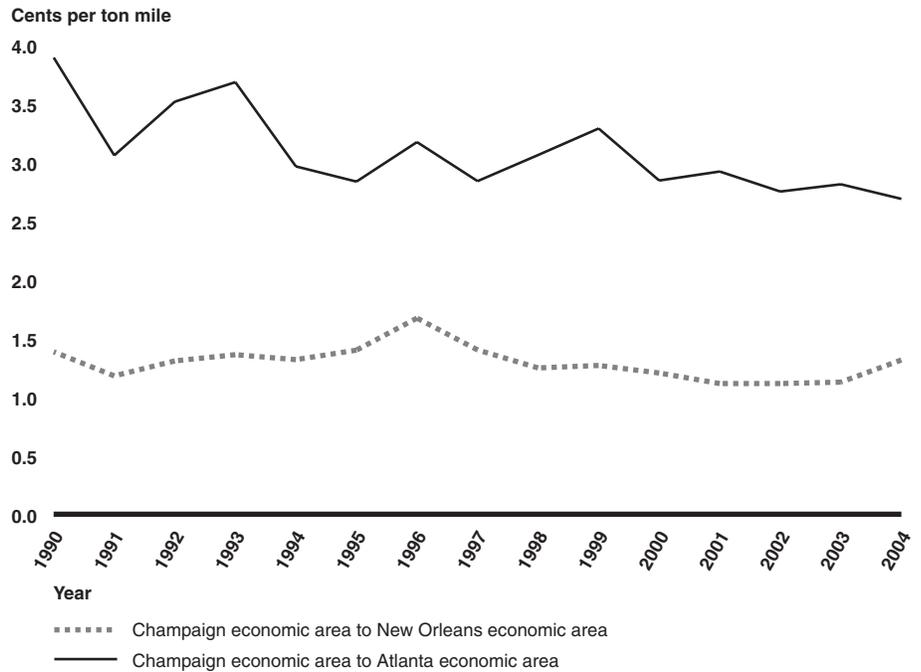
Figure 10: Rate Changes after the Introduction of a Second Carrier



Source: GAO analysis of STB data.

While competition between rail carriers is particularly important in some cases, in other cases, competition between rail and other transportation modes, such as trucks and barges, may be more important. Particularly for bulk commodities (i.e., grain), when shipper locations can be served by barge transportation, rail rates will be lower relative to rail costs than on routes that are not conducive to barge competition. Figure 11 depicts costs and revenues for two routes, one (from the Champaign, Illinois economic area to the New Orleans, Louisiana economic area) with rail and barge options, and the other (from the Champaign, Illinois economic area to the Atlanta, Georgia economic area) with just a rail option. Although both routes have the same origin, for shipping the same commodity over a comparable distance, the route with the barge option has consistently lower rates than the route with just rail service.

Figure 11: Comparison of Rate Changes from Champaign, Illinois, Economic Area to New Orleans, Louisiana, Economic Area and Champaign, Illinois, Economic Area to Atlanta, Georgia, Economic Area, 1990-2004



Source: GAO analysis of STB data.

Besides the number of rail carriers serving a location, the use of contracts for rail service can affect the competitive landscape. The Staggers Rail Act allowed railroad and shipping companies to enter into confidential contracts for rail service and also placed all traffic running under contract outside the remaining rate regulations. According to railroad and shipper groups, the duration of contracts has declined, in part because of the railroads' desire to quickly react to shifting market demand, which can result in charging higher rates. Other shippers were concerned that moving away from confidential contracts to public pricing could represent price signaling and further reduce competition between railroads. In 2004, 70 percent of tonnage and 71 percent of industry revenue moved under contract.

Captive Shippers Are
Difficult to Identify, but
Available Measures
Indicate Captivity
Dropping in the Railroad
Industry

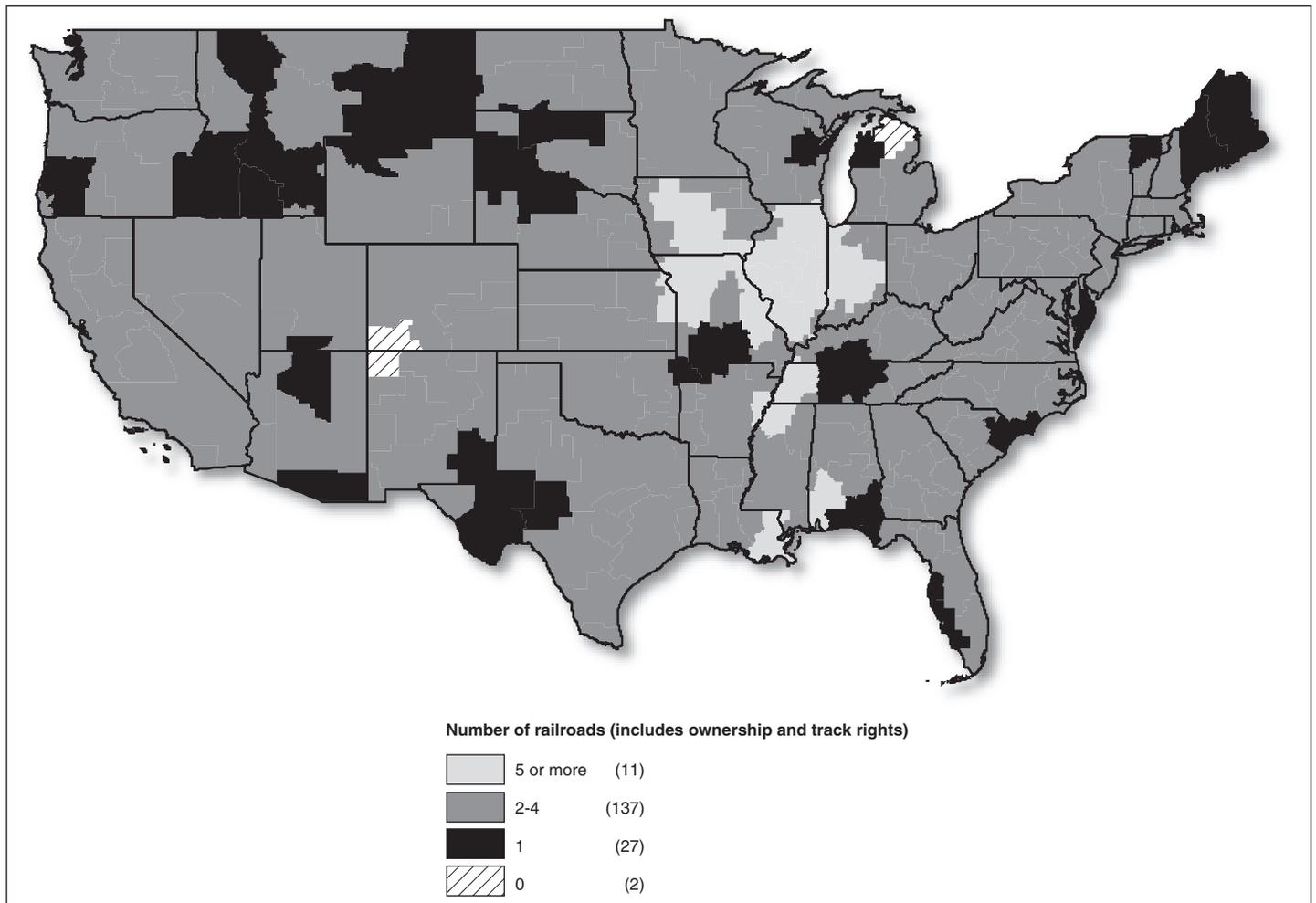
It is difficult to determine precisely how many shippers are “captive” to one railroad because the proxy measures that provide the best indication can overstate or understate captivity.²² One way of determining potential captivity is to identify which Bureau of Economic Analysis (BEA) economic areas were served by only one Class I railroad.²³ In 2004, 27 of the 177 BEA economic areas were served by only one Class I railroad.²⁴ As shown in figure 12, these areas include parts of Montana, North Dakota, New Mexico, Maine, and smaller areas in several states.

²²Jerry Ellig, “Railroad Deregulation and Consumer Welfare,” *Journal of Regulatory Economics* (The Netherlands: Kluwer Academic Publishers: 2002), p. 156.

²³Economic areas are those areas defined by BEA, which defines the relevant regional economic markets in the United States.

²⁴The number of carriers serving a given location is not indicated in the *Carload Waybill Sample*. We obtained this additional information from DOT.

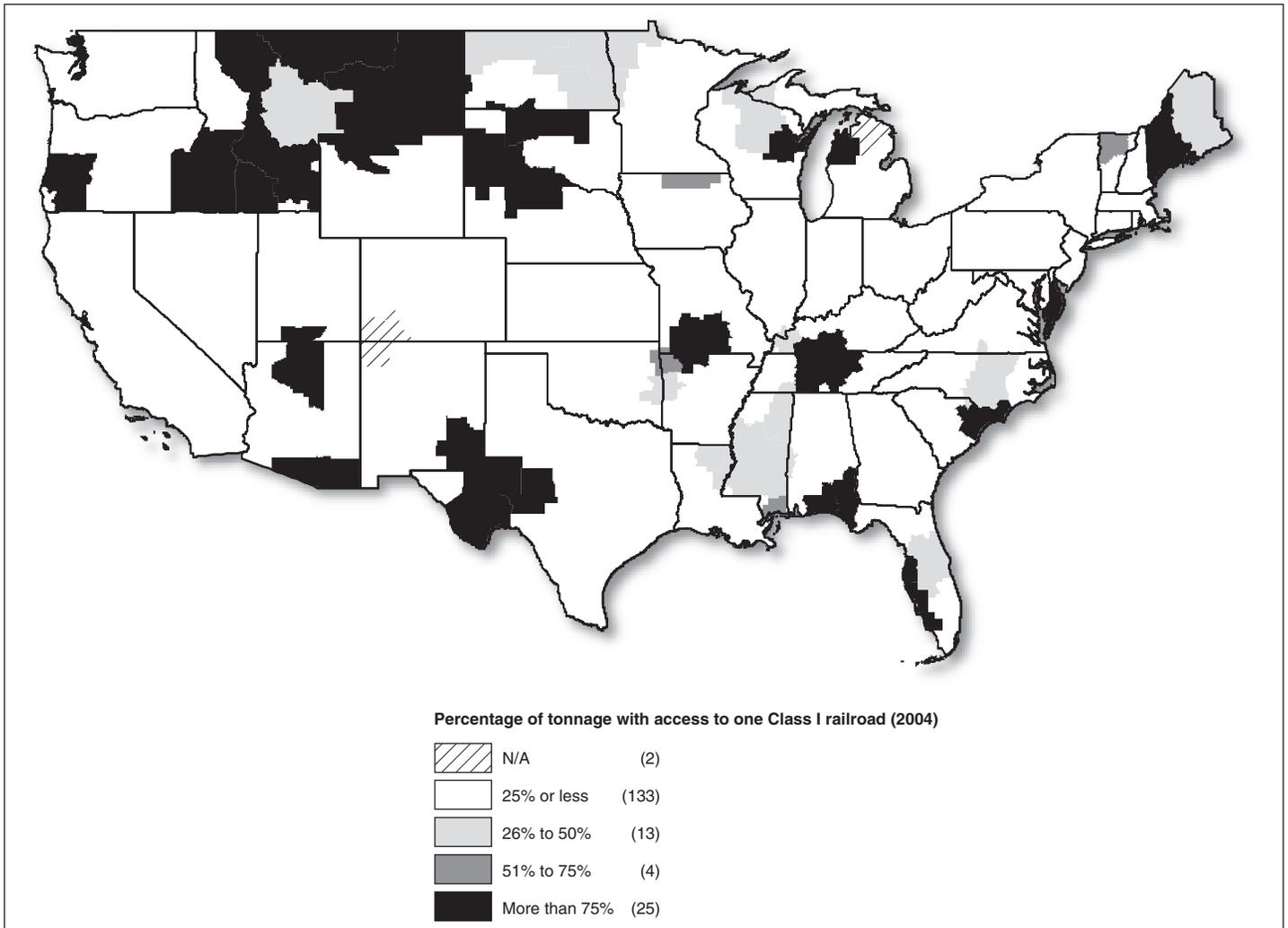
Figure 12: Number of Class I Railroads Serving Economic Areas, 2004



Source: GAO analysis of BEA and GIS data.

Another way of looking at potential captivity is to calculate how much route tonnage originating in a given economic area has access to only one Class I railroad. Figure 13 shows the percentage in 2004 of all industry tonnage originating in economic areas with access to only one Class I railroad. In particular, economic areas with more than 75 percent of tonnage shipped on one railroad appear most prevalent in states such as Montana, Idaho, North Dakota, and Texas. Tonnage originating in these economic areas varies widely, from a little over 55,000 tons to over 36 million tons.

Figure 13: Percentage of All Industry Tonnage Originating in Economic with Access to One Class I Railroad, 2004



Source: GAO analysis of BEA, DOT, and STB data.

According to our analysis of available measures, the overall extent of captivity appears to be dropping in the freight railroad industry. We examined tonnage, revenue, and access statistics for all routes—originating and terminating in economic areas—captured in the *Carload Waybill Sample* and other DOT data. In 2004, origin and destination routes with access to only one Class I railroad carried 12 percent of industry revenue and 10 percent of industry tonnage, which represents a decline

from 1994, when 22 percent of industry revenue and 21 percent of industry tonnage moved on routes served by one Class I railroad (see table 1).²⁵

Table 1: Changes in Percentage of Industry Revenue and Tonnage on Origin and Destination Routes with Access to One Class I Railroad

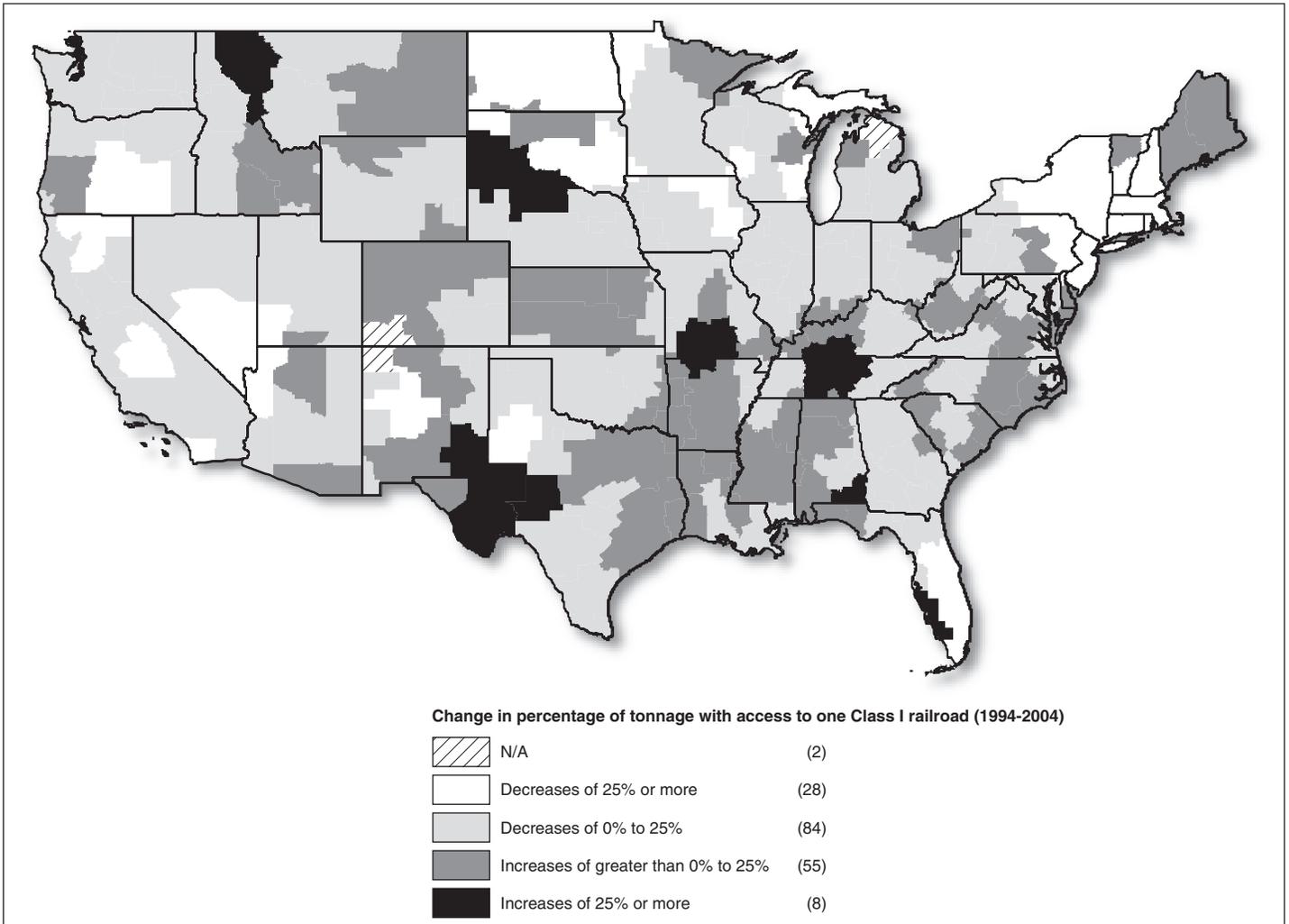
Year	Percentage of revenue	Percentage of tonnage
1994	22.87	20.59
2004	12.29	10.43

Source: GAO analysis of BEA, DOT, and STB data.

This decline suggests that more railroad traffic is traveling on routes with access to more than one Class I railroad. While overall industry tonnage with access to more than one Class I railroad appears to have increased, some economic areas have a higher percentage of all industry traffic tonnage shipping on one Class I railroad. From 1994 through 2004, parts of states such as Texas, Tennessee, and Montana experienced increases of 25 percent or more in tonnage with access to one Class I railroad while parts of other states such as Oregon, New York, and Florida saw their percentages of tonnage with access to one Class I railroad drop by more than 25 percent (see fig. 14).

²⁵For our analysis of access to one or more Class I railroads, we examined data for 1994 and 2004, the earliest and latest years for which such data were available.

Figure 14: Changes in Percentage of All Industry Traffic Tonnage with Access to One Class I Railroad Originating in Economic Areas, 1994 through 2004



Source: GAO analysis of BEA, DOT, and STB data.

While examining BEA areas provides a proxy measure for captivity, a number of factors may understate or overstate whether shippers are actually captive. The first three factors may work to understate the extent of captivity among shippers. First, routes originating within economic areas served by multiple Class I railroads may still be captive if only one Class I railroad serves their destination, and a shipper must use that one railroad for that particular route. Second, some BEA areas are quite large, so a shipper within the area may have access to only one railroad, even

though there are two or more railroads within the broader area. Third, an origin may only be served by one Class I railroad, but one Class I railroad does not serve the entire route, meaning the route may be partially captive, although more than one Class I railroad provides service between its origin and destination. Two additional limitations may work to overstate the number of locations captive to one railroad. First, this analysis accounts for Class I railroads only and does not account for competitive rail options that might be offered by Class II or III railroads²⁶ such as the Guilford Rail System, which operates in northern New England. Second, this analysis considers only competition among rail carriers and does not examine competitive options offered by rail and other transportation alternatives such as trucks and barges.

Amount of Potentially Captive Traffic Traveling at Rates at Levels Substantially above the Threshold for Rate Relief Has Increased

To determine potential captivity, we applied another measure— traffic traveling at rates equal to or greater than 180 percent R/VC, which is part of the statutory threshold for bringing a rate relief case before STB. STB regards traffic at or above this threshold as “potentially captive.” As with BEA areas, examining R/VC levels as a proxy measure for captivity can also understate or overstate captivity. For example, it is possible for the R/VC ratio to increase while the rate paid by a shipper is declining. Assume that in Year 1, a shipper is paying a rate of \$20 and the railroad’s variable cost is \$12; the R/VC ratio—a division of the rate and the variable cost—would be 167 percent. If in Year 2, the variable costs decline by \$2 from \$12 to \$10 and the railroad passes this cost savings directly on to the shipper in the form of a reduced rate, the shipper would pay \$18 instead of \$20. However, as shown in table 2, because both revenue and variable cost decline, the R/VC ratio increases to 180 percent.

Table 2: Possible Changes in R/VC Ratios

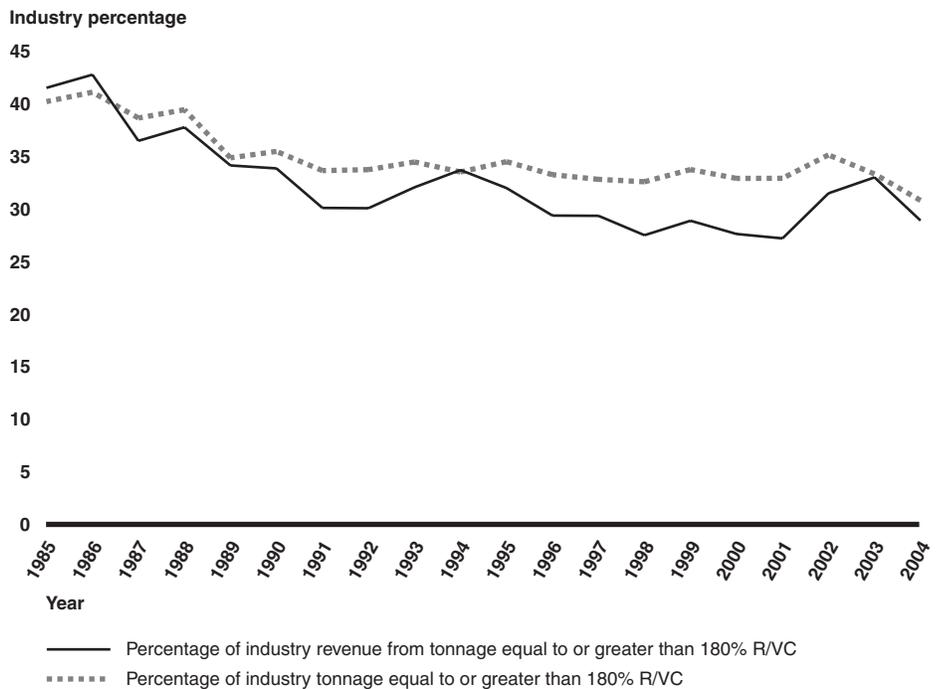
Year	Revenue collected	Variable costs	R/VC
Year 1	\$20.00	\$12.00	167%
Year 2	\$18.00	\$10.00	180%

Source: GAO.

²⁶STB classifies railroads according to operating revenues. Class II railroads had revenues of \$20 million to \$250 million, and class III railroads had revenues of less than \$20 million in 1991 dollars.

Since 1985, and as a percentage of all traffic, the amount of potentially captive traffic traveling at rates over 180 percent R/VC and the revenue generated from that traffic have both declined. Revenue generated from traffic traveling at rates over 180 percent R/VC decreased from 41 percent of all industry revenue in 1985 to 29 percent in 2004 (see fig. 15).

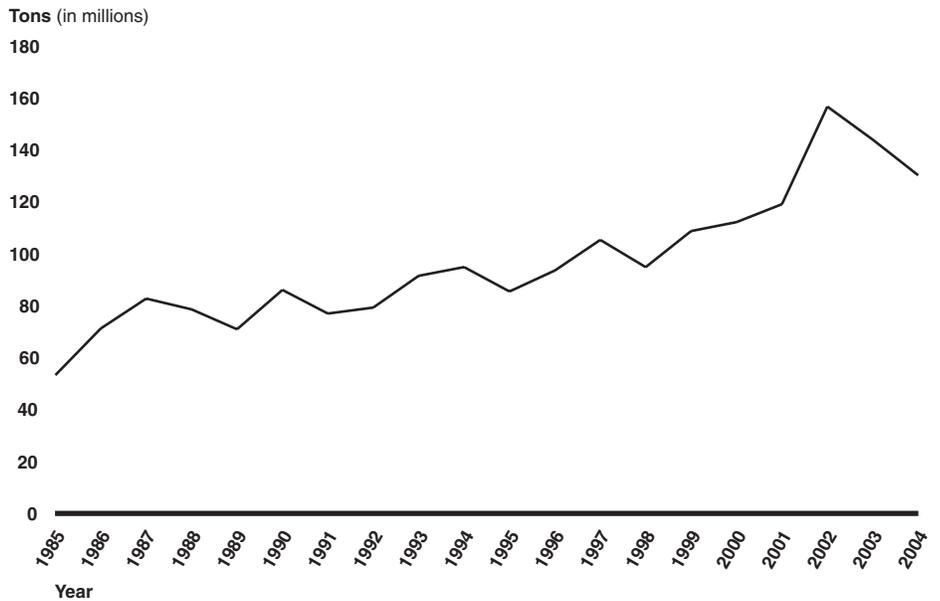
Figure 15: Percentage of Industry Tonnage and Revenue Generated from Traffic Traveling at Rates Equal to or Greater Than 180 Percent R/VC, 1985-2004



Source: GAO analysis of STB data.

However, since 1985, tonnage from traffic traveling at rates substantially over the threshold for rate relief has increased. Total industry tonnage has increased significantly (from 1.37 billion tons in 1985 to 2.14 billion tons in 2004), with the tonnage traveling at rates above 300 percent R/VC more than doubling—from about 53 million tons in 1985 to over 130 million tons in 2004 (see fig. 16).

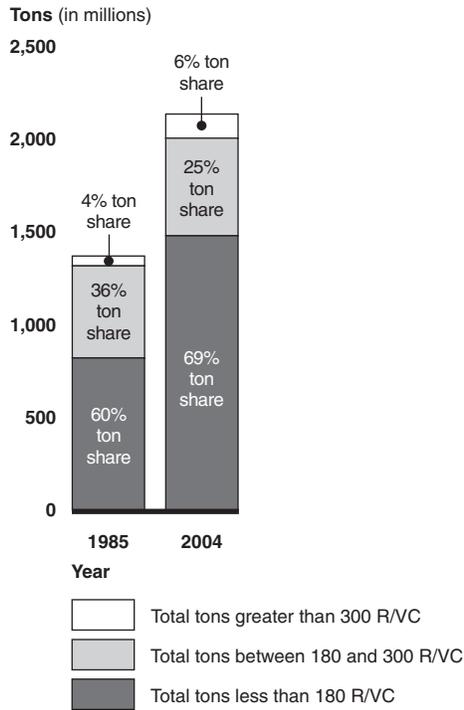
Figure 16: Tonnage Traveling at Rates over 300 Percent R/VC, 1985-2004



Source: GAO analysis of STB data.

As a percentage of all industry traffic, traffic traveling at rates between 180 and 300 percent R/VC decreased from 36 percent in 1985 to 25 percent in 2004. In contrast, the percentage of all industry traffic traveling at rates above 300 percent R/VC increased from 4 percent in 1985 to 6 percent in 2004 (see fig. 17).

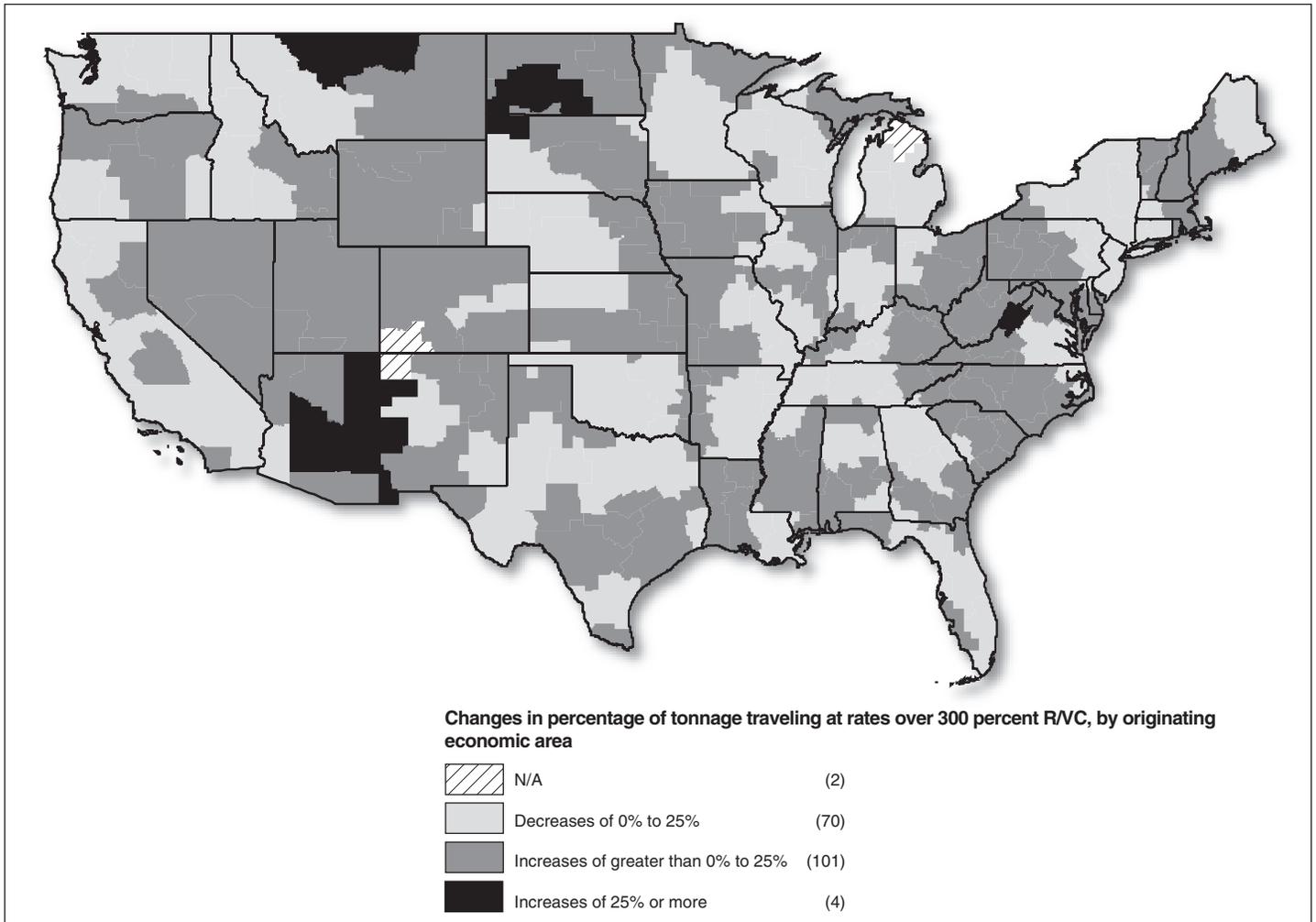
Figure 17: Percentage of Tonnage by R/VC, 1985 and 2004



Source: GAO analysis of STB data.

Increases in traffic traveling at rates over 300 percent R/VC appear widely distributed throughout the country, although in some areas increases have been higher than in others. Four economic areas located in parts of Montana, New Mexico, North Dakota, and West Virginia had the largest increases in traffic traveling at rates over 300 percent R/VC, with an increase of more than 25 percent from 1985 through 2004 (see fig. 18).

Figure 18: Changes in Percentage of Tonnage Traveling at Rates over 300 Percent R/VC, by Originating Economic Area, 1985 through 2004

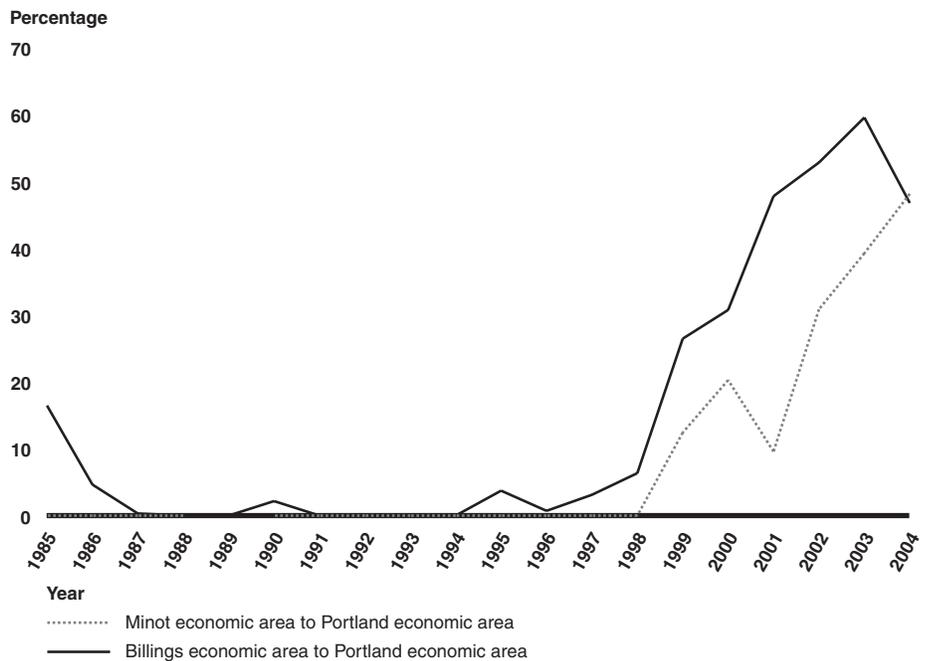


Source: GAO analysis of BEA, DOT, and STB data.

In addition to national changes, significant increases in traffic traveling at rates over 300 percent R/VC can be seen in certain states, for certain commodities, and for certain routes. For example, in 1985 virtually no coal originating in Ohio traveled at rates over 300 percent R/VC. In 2004, nearly half of coal traffic originating in Ohio traveled at rates over 300 percent R/VC. Increases in traffic traveling at rates over 300 percent R/VC can also be seen at the route level. Figure 19 shows the amount of traffic traveling at rates over 300 percent R/VC on long-distance grain routes from the Minot, North Dakota, and Billings, Montana, economic areas to the

Portland-Vancouver-Beaver Falls, Oregon, economic area. Of the routes we examined, these two had the highest percentage of traffic traveling at rates over 300 percent R/VC for 2004, and on both routes, this traffic had substantially increased over 1985 levels.²⁷

Figure 19: Long-distance Grain Route Changes in Percentage of Tonnage Traveling at Rates over 300 Percent R/VC, 1985-2004



Source: GAO analysis of STB data.

For both the Minot and Billings routes, increases in R/VC from 1985 through 2004 were driven more by increases in revenue than by changes in variable cost. From 1985 through 2004, revenue from all grain traffic—not just traffic traveling at rates above the statutory threshold for rate relief—on the Minot, North Dakota, to the Portland-Vancouver-Beaver Falls, Oregon, economic area increased from approximately \$18.4 million to approximately \$30.8 million. Variable cost increased at a much slower

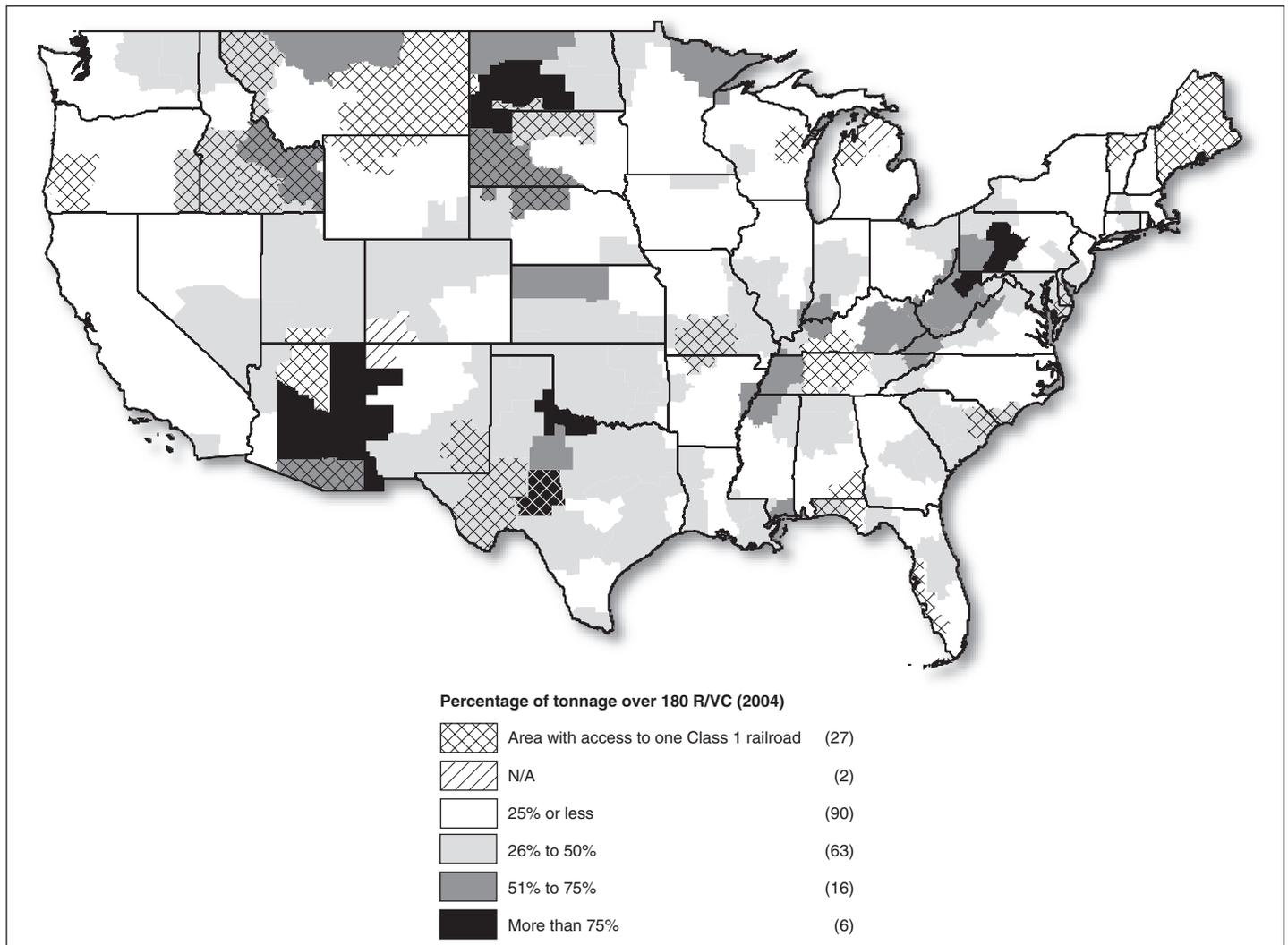
²⁷By contrast, the long-distance grain route shown in figure 9 (from the Sioux Falls, South Dakota, economic area to the Portland, Oregon, economic area) had no traffic traveling at rates over 300 percent R/VC for 2004.

pace, rising from approximately \$12.2 million to approximately \$12.4 million. For the route from the Billings, Montana, economic area to the Portland-Vancouver-Beaver Falls, Oregon, economic area, grain revenue more than tripled, from approximately \$11.2 million in 1985 to approximately \$42.7 million in 2004. Variable cost also increased substantially—although still not as much as revenue—rising from approximately \$5.5 million to approximately \$15.1 million.

Some Areas with Access to One Railroad Have Higher Percentages of Traffic Traveling at Rates That Exceed the Threshold for Rate Relief

Some economic areas with access to one Class I railroad also have more than half of their traffic traveling at rates that exceed the statutory threshold for rate relief. For example, parts of New Mexico and Idaho with access to one Class I railroad have more than half of all traffic originating in those same areas traveling at rates over 180 percent R/VC (see fig. 20). However, there are instances in which an economic area may have access to two or more Class I railroads and still have more than 75 percent of its traffic traveling at rates over 180 percent R/VC, as well as other instances in which an economic area may have access to one Class I railroad and have less than 25 percent of its traffic traveling at rates over 180 percent R/VC. Yet there are parts of the country with access to one Class I railroad that also have higher percentages of traffic traveling at rates over the statutory threshold for rate relief.

Figure 20: Overlap between Percentage of Tonnage over Threshold for Rate Relief and Access to Only One Class I Railroad



Source: GAO analysis of BEA, DOT, and STB data.

Our analysis shows that some areas of the country with access to only one Class I railroad have higher levels of traffic traveling at rates over the statutory threshold for rate relief. This situation may reflect reasonable economic practices by railroads in an environment of excess demand, or it may represent an abuse of market power. Our analysis provides an important first step in assessing competitive markets nationally, but it is imperfect given the inherent limitations of the *Carload Waybill Sample* and of the proxy measures available for weighing captivity. When

combined with comments from participants on our expert panel and interviews with shipper and railroad groups, the results of our analysis suggest that shippers in selected markets may be paying excessive rates, meriting further inquiry and analysis.

Despite STB's Actions, Analysis of Competitive Markets Is Needed to Address Lack of Effective Relief for Captive Shippers

The Staggers Rail and ICC Termination Acts promoted greater reliance on competition as the preferred method to protect shippers from unreasonable rates and granted STB broad authority to monitor the performance of the railroad industry. STB has taken a number of actions to provide protections for captive shippers from unreasonable rates in the absence of effective competition, including establishing a process for captive shippers to obtain relief from unreasonable rates. Despite STB's actions, there is little effective relief for captive shippers because STB's standard rate relief process is largely inaccessible. While STB continues to refine its practices, an assessment of competitive markets would provide further information about the extent of captivity among shippers and the merits of a range of proposed actions to enhance competitive options available to shippers. In addition, changes to the rate relief process could provide greater protection from unreasonable rates.

STB Has Broad Authority to Monitor the Railroad Industry

The Staggers Rail and ICC Termination Acts encourage competition as the preferred way to protect shippers and to promote the financial health of the railroad industry. At the same time, the acts give STB the authority to

- *adjudicate rate cases* to resolve disputes between captive shippers and railroads upon receiving a complaint from a shipper;
- *approve rail transactions*, such as mergers, consolidations, acquisitions, and trackage rights;
- *prescribe new regulations*, such as rules for competitive access and merger approvals; and
- *inquire into and report on rail industry practices*, including obtaining information from railroads on its own initiative and holding hearings to inquire into areas of concern, such as competition.

The federal courts have upheld STB's general powers to monitor the rail industry, including its ability to subpoena witnesses and records and depose witnesses.

STB has the authority and ability to inquire into and report on railroad practices, and it also has authority to take a number of actions based on the results of that inquiry. First, STB could issue a general rule making that would alter the administrative rules for the industry. For example, STB has the authority to require a railroad to make their terminal facilities available to another railroad under certain circumstances. Second, STB could reopen a past decision if it found a material error in the case, new evidence emerged, or circumstances affecting the case substantially changed. Finally, if STB received a complaint from a shipper, it could then launch a formal investigation and prescribe specific remedies to address the complaint.

STB Has Taken Actions to Protect Captive Shippers

Under its adjudicatory authority, STB has taken a number of actions to provide protection for captive shippers. STB determines the reasonableness of challenged rates in the absence of competition upon receiving a complaint from a shipper. The rate relief process is the principal method by which shippers seek relief from unreasonable rates. STB developed standard rate case guidelines, under which captive shippers can challenge a rail rate and appeal to STB for rate relief. Under the standard rate relief process, STB assesses whether the railroad dominates the shipper's transportation market and, if it finds market dominance, proceeds with further assessments to determine whether the actual rate the railroad charges the shipper is reasonable. STB requires that the shipper demonstrate how much an optimally efficient railroad would need to charge the shipper and construct a hypothetical, perfectly efficient railroad that would replace the shipper's current carrier. As part of the rate relief process, both the railroad and the shipper have the opportunity to present their facts and views to STB, as well as to present new evidence. In 1999,²⁸ we reported that shippers and shippers' associations indicated that constructing a hypothetical railroad is difficult, particularly for small shippers, because the time and cost associated with the model's development may outweigh the compensation afforded the shipper should STB determine that the challenged rate was unreasonable. Since we reported on the process in 1999, STB has taken several actions to reduce potential barriers for filing a complaint. For example, STB now conducts mediation to begin cases, has added staff to process cases, and

²⁸GAO, *Railroad Regulation: Current Issues Associated with the Rate Relief Process*, GAO/RCED-99-46 (Washington, D.C.: Feb. 26, 1999).

has eliminated certain criteria for assessing whether a railroad dominates a shipper's market.²⁹

STB also created alternatives to the standard rate relief process, developing simplified guidelines, as Congress required, for cases in which the standard rate guidelines would be too costly or infeasible given the value of the cases. Under these simplified guidelines, captive shippers who believe that their rate is unreasonable can appeal to STB for rate relief, even if the value of the disputed traffic makes it too costly or infeasible to apply the standard guidelines. In addition, STB created a voluntary arbitration option that parties can use to resolve disputes over rates.

Under its authority to approve rail transactions, STB has approved railroad mergers that it finds consistent with the public interest. STB has also taken action to ensure that any potential merger-related harm to competition is mitigated. STB's mitigation efforts have focused on preserving competition where it could be lost at 2-to-1 points,³⁰ for example, by imposing conditions that allow one railroad to operate over the tracks of another railroad (called trackage rights). STB has historically not taken action to introduce service where shippers have service by only one carrier.

Under its authority to prescribe new regulations, STB established a process by which shippers can file a complaint if they are captive to one railroad and believe that the railroad is engaged in anticompetitive behavior. Under this process, if the shipper proves that the railroad is engaged in anticompetitive behavior, STB can prescribe remedies such as trackage rights that would give the shipper access to another railroad.

²⁹In December 1998 and July 1999, STB excluded product and geographic competition as factors to be considered in market dominance proceedings, finding that the applicable law did not require consideration of those factors; that consideration of those factors unduly burdened shippers attempting to bring rate cases; and that the exclusion of those factors would not have any substantial effect on the rates that the railroads could charge in the marketplace (See Surface Transportation Board "News" releases Nos. 99-32, issued on Jul. 2, 1999, and 98-82, issued on Dec. 21, 1998). The railroad industry sought judicial review of the Board's decisions, and in *Association of Am. Railroads v. STB*, 237 F.3d 676 (D.C. Cir. 2001), the United States Court of Appeals for the District of Columbia Circuit (Court) remanded (returned) the matter for the Board's further consideration. On remand, STB provided additional analysis to support its earlier decision, and the court then affirmed (upheld) STB's action, in *Association of Am. Railroads v. STB*, 306 F.3d 1108 (D.C. Cir. 2002).

³⁰2-to-1 points are where shippers currently have access to two carriers but could lose access to one of them through a merger or acquisition.

Finally, under its authority to inquire into and report on the rail industry, STB instituted proceedings to review rail access and competition issues. For example, in April 1998, at the request of Congress, STB commenced a review of access and competitive service in the rail industry. In April 1998, STB decided to consider revising its competitive access rules. However, in its December 1998 report to Congress, STB declined to take further action on this issue because it had adopted new rules giving shippers temporary access to alternative routing options during periods of poor service. In addition, STB observed that the competitive access issue raises basic policy questions that are more appropriately resolved by Congress. In 2001, STB adopted new regulations for rail mergers that require the applicant to demonstrate that the merger would enhance, not just preserve, competition.

Efforts Have Led to Little Effective Relief

Despite STB's efforts, there is widespread agreement that STB's standard rate relief process is inaccessible to most shippers and does not provide for expeditious handling and resolution of complaints. The process remains expensive, time consuming, and complex. While STB does not keep records of the cost of a rate case, shippers we interviewed agreed that the process can cost approximately \$3 million per litigant. Shippers told us that, to initiate a case, the case would need to involve several million dollars so that it would be worthwhile to spend \$3 million on a case that they could possibly lose. Thus, shippers noted that only large-volume shippers, such as coal shippers, with set origins and destinations have the money to be able to afford the STB rate relief process. In addition, shippers said that they do not use the process because it takes so long for STB to reach a decision. Lastly, shippers continue to state that the process is both time consuming and difficult because it calls for them to develop a hypothetical competing railroad to show what the rate should be and to demonstrate that the existing rate is unreasonable. Since 2001, only 10 cases have been filed, and these cases took between 2.6 and 3.6 years—an average of 3.3 years per case—to complete. Of those 10 cases, 9 were filed by coal shippers.

The simplified guidelines also have not effectively provided relief for captive shippers. Although these simplified guidelines have been in place since 1997, a rate case has not been decided under the process set out by the guidelines. STB held public hearings in April 2003 and July 2004 to examine why shippers have not used the guidelines and to explore ways to improve them. At these hearings, numerous organizations provided comments to STB on measures that could clarify the simplified guidelines, but no action was taken. STB observed that parties urged changes to make

the process more workable, but disagreed on what those changes should be. Several shipper organizations told us that shippers are concerned about using the simplified guidelines because they believe the guidelines will be challenged in court, resulting in lengthy litigation. STB officials told us that they—not the shippers—would be responsible for defending the guidelines in court. STB officials also said that if a shipper won a small rate case, STB could order reparations to the shipper before the case was appealed to the courts.

STB's arbitration option has never been used. Under this approach, an arbitrator would decide the rate, using a "give and take" approach—that is, the arbitrator would determine the rate without being required to pick one of the two offers. According to STB officials, this option has not been used, in part, because the cases that go before STB are contentious, with high monetary stakes. As a result, there is less willingness from either side to arbitrate.

Shippers have not obtained relief through STB's "competitive access" rules. Under these rules, shippers can file a complaint to request that one railroad obtain access to another railroad's tracks when necessary to remedy anticompetitive behavior by the owning railroad. Shippers who file a complaint must show that the owning railroad has engaged in anticompetitive behavior. To date, STB has found that all complaints have failed to prove that the owning railroad has engaged in anticompetitive behavior.

STB Continues to Refine the Process

During our review, STB has continued to refine its processes for shippers to obtain relief from unreasonable rates and competitive access. For example, STB recently proposed a rule making to make changes to the simplified guidelines in order to respond to comments gathered at the STB hearings held in April 2003 and July 2004 to examine why those guidelines have not been used by shippers and to explore ways to improve the guidelines. In addition, STB is seeking public comment on several measures it has proposed to adopt regarding railroad practices involving fuel surcharges. The proposals follow STB's May 2006 public hearing on how railroads calculate and charge fuel surcharges and respond to extensive testimony on these charges submitted to STB by the rail industry, the public, and railroad customers. STB announced its intent to hold a public hearing on certain issues related to rail transportation rates for grain. Lastly, STB recently requested written comments and held a public hearing in response to a petition filed by a shipper group to prevent, or put a time limit on, paper barriers, which are contractual agreements

that may be made when a Class I railroad either sells or leases some of its track to another railroad (typically a short line railroad or regional railroad), but stipulates that virtually all traffic that originates on that line must interchange with the Class I railroad that sold the tracks or pay a penalty.

Assessment of Competitive Markets and Changes to Rate Relief Process Could Provide More Relief

The results of our analysis suggest a reasonable possibility that shippers in selected markets may be paying excessive rates related to a lack of competition in these markets. While our analysis of available measures shows that the extent of captivity appears to be dropping in the freight railroad industry, shippers that may be captive are paying substantially over the statutory threshold for initiating a rate relief case. This situation may simply reflect reasonable economic practices by railroads in an increasingly constrained environment in which demand for rail services increasingly exceeds supply, or it may represent an abuse of market power. Our analysis provides an important first step in assessing competitive markets nationally, but it is imperfect given the inherent limitations of the *Carload Waybill Sample* and the proxy measures available for weighing captivity. A more rigorous analysis of competitive markets nationally is needed—one that identifies the state of competition nationwide and inquires into pricing practices in specific markets. If this assessment determines that market power is being abused or the goals of the Staggers Rail Act are not being met, STB could consider several methods to ease competition concerns, such as initiating a generally applicable rule making; or, if a complaint is filed, providing specific remedies to increase competition.

Shipper groups, economists, and other experts in the rail industry have suggested several alternative approaches as remedies that could provide more competitive options to shippers in areas of inadequate competition or excessive market power. These groups view these approaches as more effective than the rate relief process in promoting a greater reliance on competition to protect shippers against unreasonable rates. Some

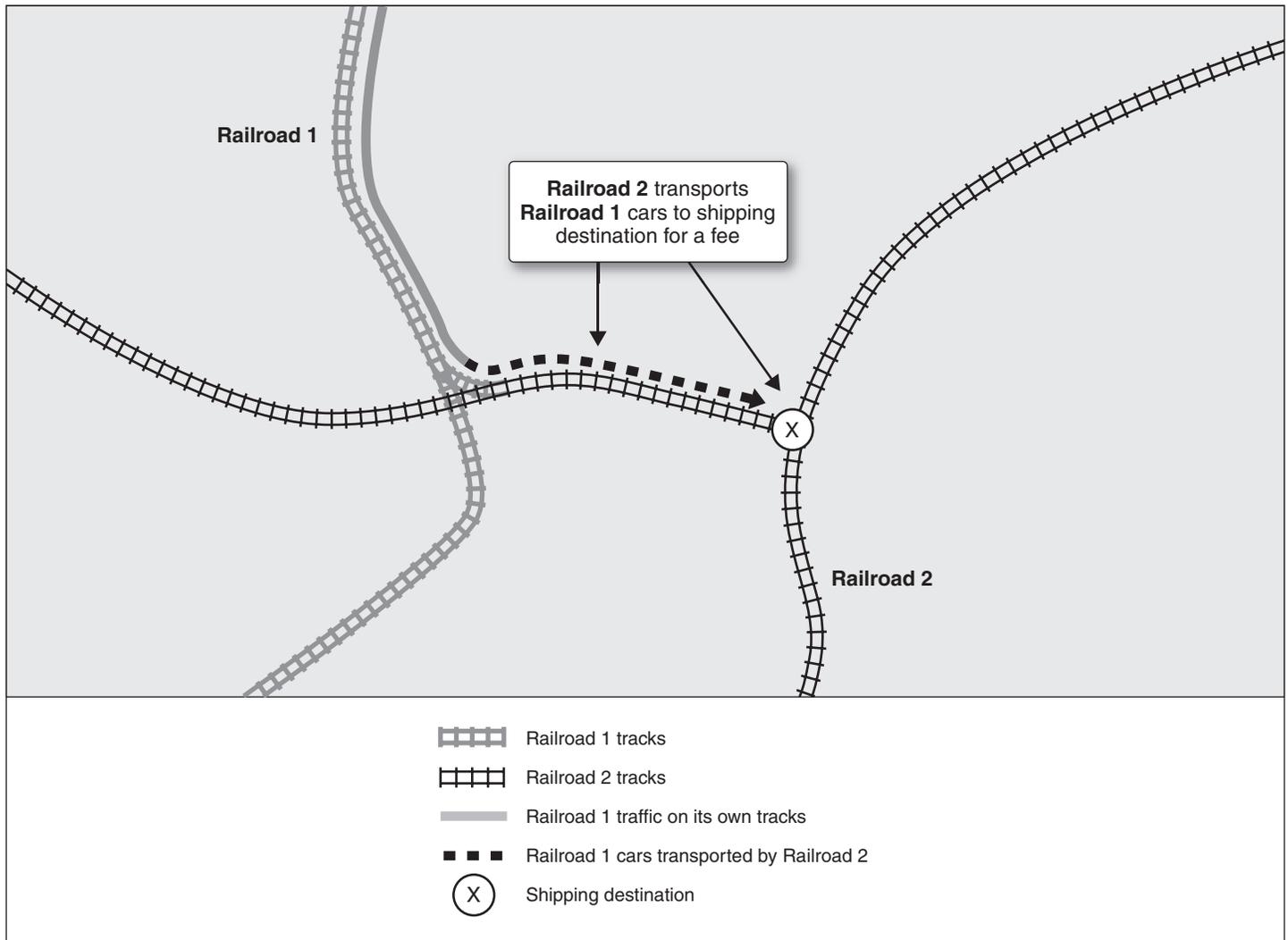
proposals would require legislative change, or a reopening of past STB decisions.³¹

These approaches each have potential costs and benefits. On the one hand, they could expand competitive options, reduce rail rates, and decrease the number of captive shippers as well as reduce the need for both federal regulation and a rate relief process. On the other hand, reductions in rail rates could affect railroad revenues and limit the railroads' ability and potential willingness to invest in their infrastructure. In addition, some markets may not have the level of demand needed to support competition among railroads. However, in markets that do, the targeted approaches frequently proposed by shipper groups and others include the following:

- *Reciprocal switching*: This approach would allow STB to require railroads serving shippers that are close to another railroad to transport cars of a competing railroad for a fee. The shippers would then have access to railroads that do not reach their facilities. This approach is similar to the mandatory interswitching in Canada, which enables a shipper to request a second railroad's service if that second railroad is within approximately 18 miles. Some Class I railroads already interchange traffic using these agreements, but they oppose being required to do so. Under this approach, STB would oversee the pricing of switching agreements. This approach could also reduce the number of captive shippers by providing a competitive option to shippers with access to a proximate but previously inaccessible railroad and thereby reduce traffic eligible for the rate relief process (see fig. 21).

³¹Another proposal, articulated by economists Curtis Grimm and Cliff Winston, calls for the elimination of STB. This proposal recognizes that captive shippers have likely been hurt by a lack of competition, but it states that allowing the Department of Justice to review rail mergers instead of STB and ending the potential for reregulation of the industry could lead railroad officials and shippers to negotiate an agreement to address remaining rail competition concerns. Curtis Grimm and Clifford Winston, "Competition in the Deregulated Railroad Industry: Sources, Effects, and Policy Issues," (AEI – Brookings Institution. Washington, D.C.: 2000).

Figure 21: Reciprocal Switching

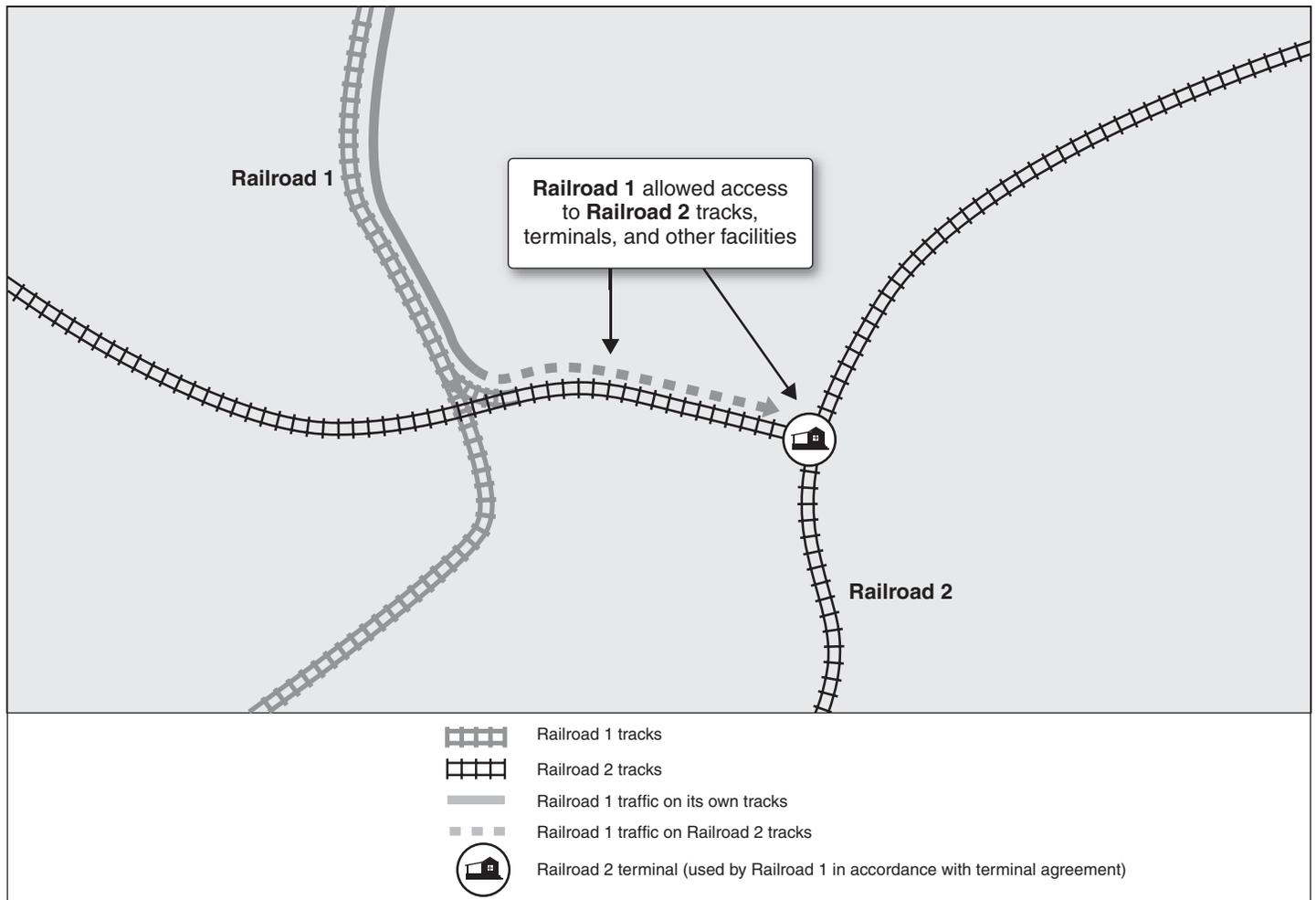


Source: GAO.

- **Terminal agreements:** This approach would require one railroad to grant access to its terminal facilities or tracks to another railroad, enabling both railroads to interchange traffic or gain access to traffic coming from shippers off the other railroad's lines for a fee. Current regulation requires a shipper to demonstrate anticompetitive conduct by a railroad before STB will grant access to a terminal by a nonowning railroad unless there is an emergency or when a shipper can demonstrate poor service and a second railroad is willing and able to provide the service requested. This

approach would require revisiting the current requirement that railroads or shippers demonstrate anticompetitive conduct in making a case to gain access to a railroad terminal in areas where there is inadequate competition. The approach would also make it easier for competing railroads to gain access to the terminal areas of other railroads and could increase competition between railroads. However, it could also reduce revenues to all railroads involved and adversely affect the financial condition of the rail industry. Also, shippers could benefit from increased competition but might see service decline (see fig. 22).

Figure 22: Terminal Agreements

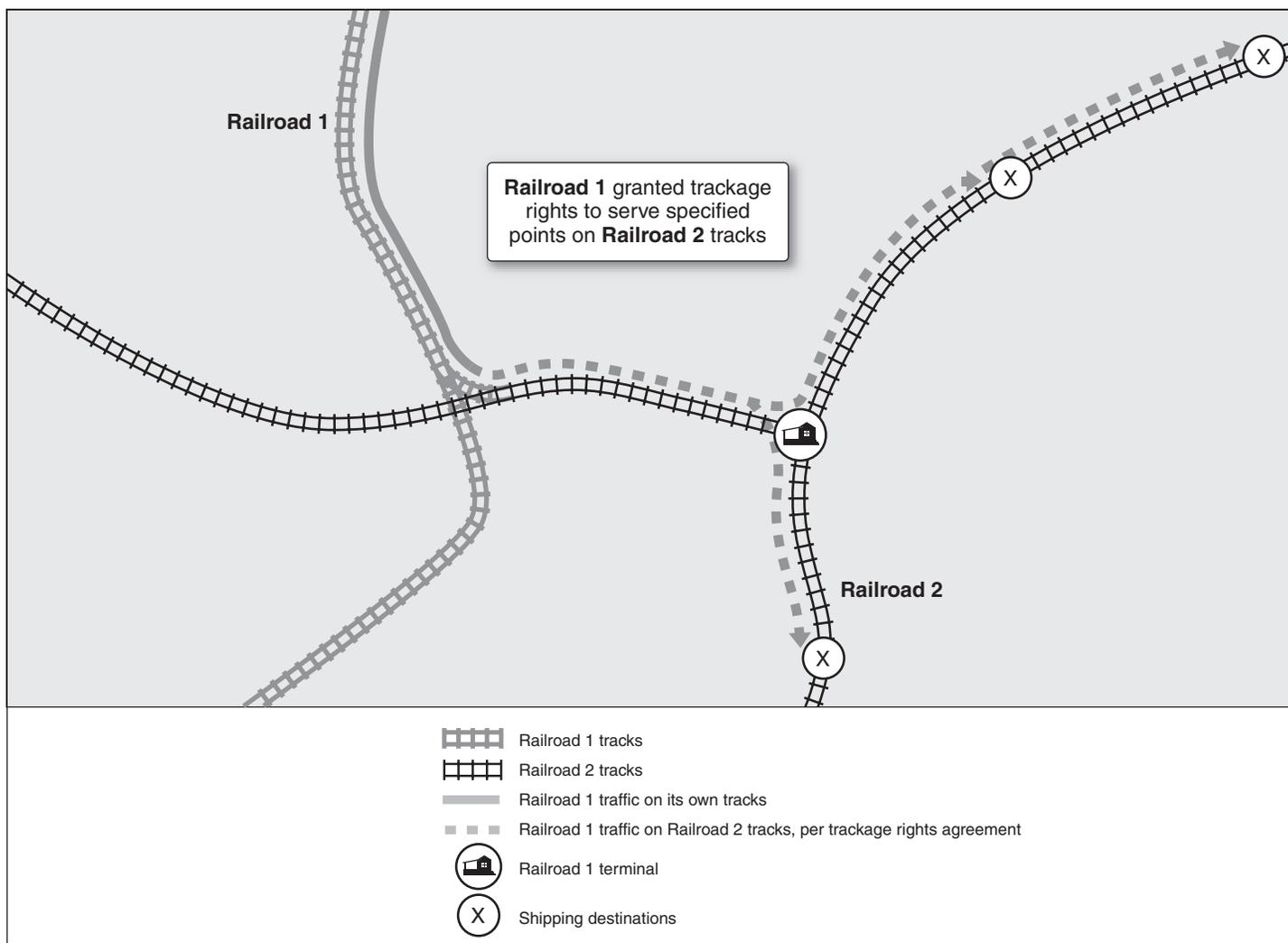


Source: GAO.

- *Trackage rights:* This approach would require one railroad to grant access to its tracks to another railroad, enabling railroads to interchange traffic beyond terminal facilities for a fee. In the past, STB has imposed conditions requiring that a merging railroad must grant another railroad trackage rights to preserve competition when a merger would reduce a shipper's access to railroads from two to one. While this approach could potentially increase rail competition and decrease rail rates, it could also discourage owning railroads from maintaining the track or providing high-quality service, since the value of lost use of track may not be

compensated by the user fee and may decrease return on investment (see fig. 23).

Figure 23: Trackage Rights



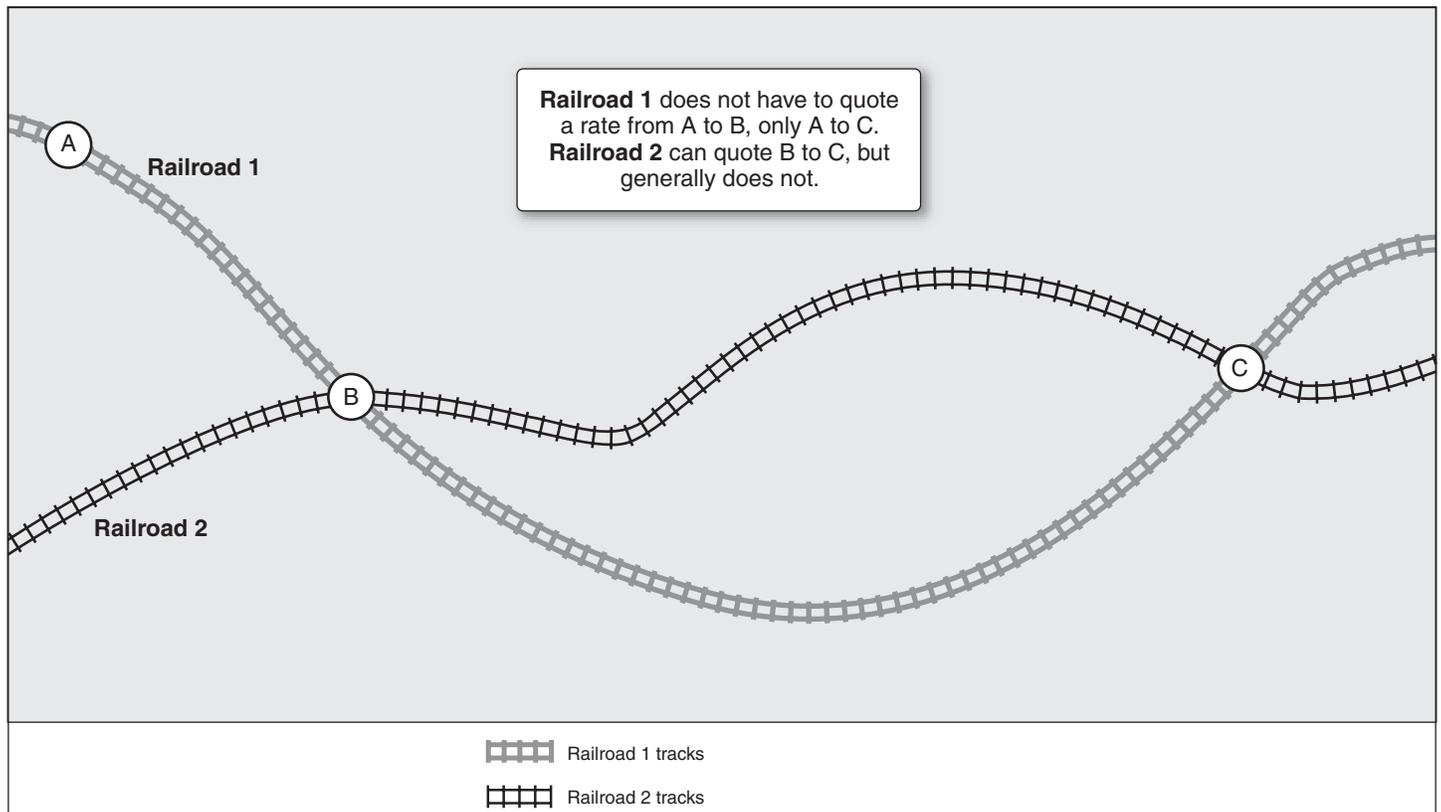
Source: GAO.

“Bottleneck” rates: This approach would require a railroad to establish a rate, and thereby offer to provide service, for any two points on the railroad’s system where traffic originates, terminates, or can be interchanged. Some shippers have more than one railroad that serves them at their origin and/or destination points, but have at least one portion of a

rail movement for which no alternative rail route is available. This portion is referred to as the “bottleneck segment.” STB’s decision that a railroad is not required to quote a rate for the bottleneck segment has been upheld in federal court.³² STB’s rationale was that statute and case law precluded it from requiring a railroad to provide service on a portion of its route when the railroad serves both the origin and destination points and provides a rate for such movement. STB requires a railroad to provide service for the bottleneck segment only if the shipper had prior arrangements or a contract for the remaining portion of the shipment route. On the one hand, requiring railroads to establish bottleneck rates would force short-distance routes on railroads when they served an entire route and could result in loss of business and potentially subject the bottleneck segment to a rate complaint. On the other hand, this approach would give shippers access to a second railroad, even if a single railroad was the only railroad that served the shipper at its origin and/or destination points, and could potentially reduce rates (see fig. 24).

³²The U.S. Court of Appeals for the Eighth Circuit affirmed STB decision that a bottleneck carrier generally need not quote a separate rate for the bottleneck portion of the route. *Mid-American Energy Co. v. Surface Transportation Board*, 169 F. 3d 1099 (8th Cir.: Feb. 10, 1999). The D.C. Circuit affirmed STB holding that separately challengeable bottleneck rates can be required whenever a shipper has a contract over the nonbottleneck segment of a through movement. *Union Pacific Railroad v. Surface Transportation Board*, 202 F. 3d 337 (D.C. Cir.: 2000).

Figure 24: Bottleneck Rates

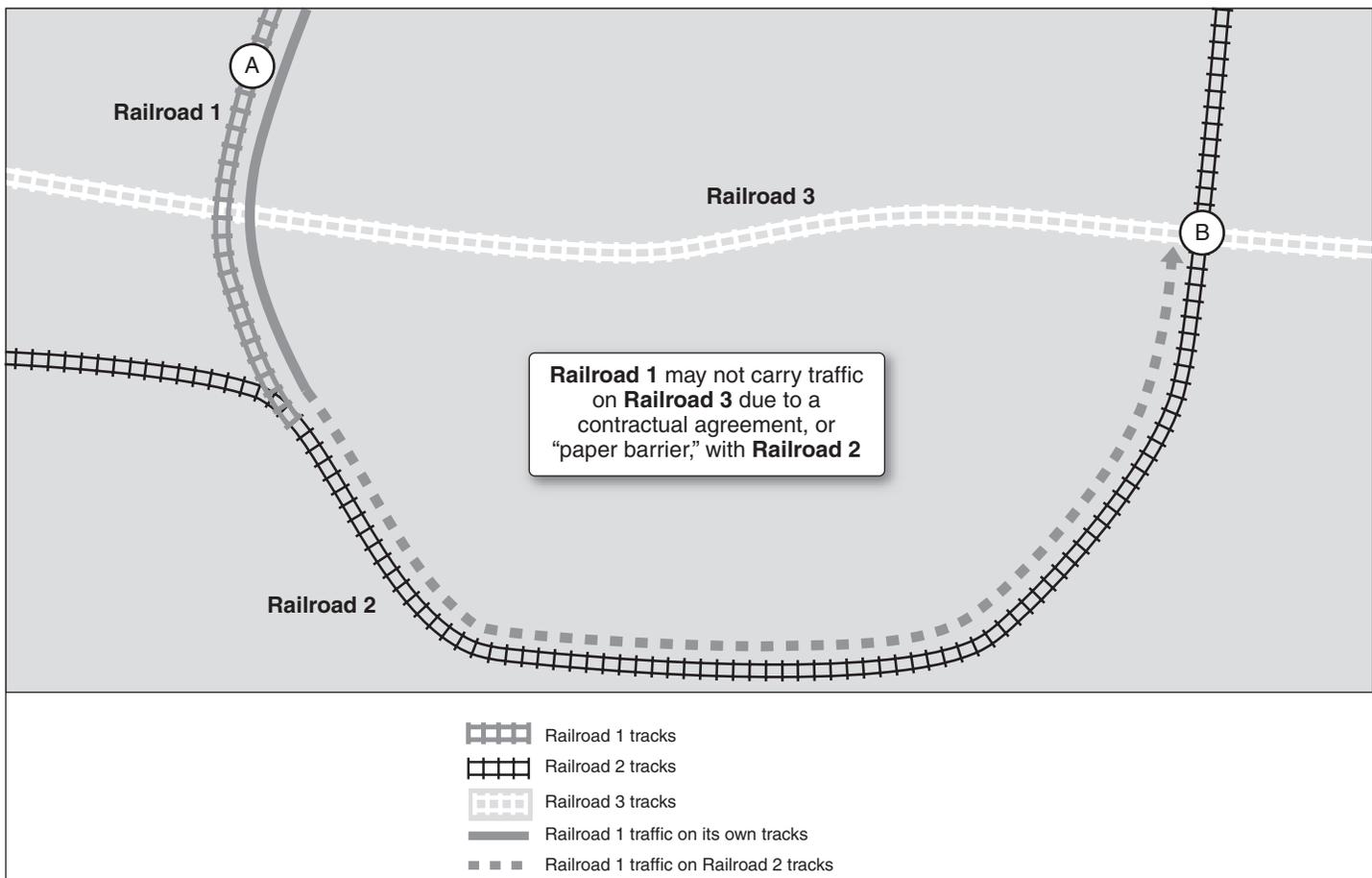


Source: GAO.

Paper barriers: This approach would prevent or, put a time limit on, paper barriers, which are contractual agreements that can occur when a Class I railroad either sells or leases long term some of its track to other railroads (typically a short-line railroad and/or regional railroad). These agreements stipulate that virtually all traffic that originates on that line must interchange with the Class I railroad that originally leased the tracks or pay a penalty. Since the 1980s, approximately 500 short lines have been created by Class I railroads selling a portion of their lines; however, the extent to which paper barriers are a standard practice is unknown because they are part of confidential contracts. When this type of agreement exists, it can inhibit smaller railroads that connect with or cross two or more Class I rail systems from providing rail customers access to competitive service. Eliminating paper barriers could affect the railroad industry's overall capacity since Class I railroads may abandon lines instead of selling them to smaller railroads and thereby increase the cost of entering

a market for a would-be competitor. In addition, an official from a railroad association told us that it is unclear if a federal agency could invalidate privately negotiated contracts (see fig. 25).

Figure 25: Paper Barriers



Source: GAO.

It will be important for policymakers, in evaluating these alternative approaches, to carefully consider the impact of each approach on the balance set out in the Staggers Rail Act. One significant consideration is the revenue adequacy of the railroads. The Staggers Rail Act established revenue adequacy as a goal for the industry and allowed the railroads to use differential pricing to increase their revenues. While the specific method for determining revenue adequacy has been controversial, the overall trend in revenue adequacy may be more important. In its last

report for 2004, STB determined that one railroad is revenue adequate and that others are approaching revenue adequacy. It is too early to determine that the industry as a whole is achieving revenue adequacy. Nevertheless, this improvement in the railroads' financial condition represents a significant shift in the rail industry because for decades after the enactment of the Staggers Rail Act, the railroads were all considered revenue inadequate. The railroads need sufficient revenue for infrastructure investment to keep pace with increased demand. However, each of these changes could decrease the amount of revenue the railroads receive. Yet, as the railroad's revenue adequacy improves, the question arises as to what degree the railroads should continue to rely, for their investment needs, on obtaining significantly higher prices from those with greater reliance on rail transportation.

To prevent problems with unreasonable rates, some shipper groups propose targeted approaches that would provide them with more competitive options. A number of different approaches have also been suggested to make the rate relief process less expensive, more expeditious, and therefore potentially more accessible. Each of the proposed approaches has both advantages and drawbacks. These approaches include the following:

- *Increase the use of simplified guidelines:* The simplified guidelines use standard industry average figures for revenue data instead of requiring the shipper to create a hypothetical railroad. This approach would reduce the time and complexity of the process; however, it may not provide such an accurate and precise a measure as the standard process. Both shippers and railroad officials with whom we spoke agree that it is confusing to determine who is eligible to use the process and how it would work. STB recently issued a proposed rule making to pursue changes to the simplified guidelines to provide captive shippers greater access to regulatory remedies for unreasonable rail rates.
- *Increase the use of arbitration:* Under arbitration, two parties present their case before an arbitrator, who determines the rate. This process replaces the shipper's requirement to create a hypothetical railroad. Proponents of arbitration argue that the threat of arbitration can induce railroads and shippers to resolve their own problems and limit the need for federal regulation. In addition, the process is quicker and cheaper than the standard rate relief process. For example, Canada offers an arbitration process known as Final Offer Arbitration (FOA), under which both parties submit their best and final offers, and the arbitrator considers the argument from both sides and picks one rate offer from either the railroad

or the shipper. FOA is quicker—statutorily, once the process begins it has to be completed within 60 days, or 30 days for disputes involving freight charges of less than \$750,000, unless the parties agree to a different time frame. In addition, FOA is cheaper—estimates ranged up to \$1 million Canadian dollars, for both parties. On the other hand, the decisions are good for only 1 year, so the process could in theory be revisited annually. Critics of this approach suggest that arbitration decisions may not be based on economic principles, such as the revenue and cost structure of the railroad, and arbitrators may not be knowledgeable about the railroad industry. Furthermore, opinions differ significantly about which types of disputes should be covered and what standards (if any) should apply.

- *Develop an alternative cost methodology:* STB could develop an alternative to the cost methodology used under the standard process in which a shipper must demonstrate how much an optimally efficient railroad would need to charge a shipper by constructing a hypothetical, perfectly efficient railroad that would replace its current carrier. For example, STB could use a long-run incremental cost approach to evaluate and decide rate cases. This process, which is used by the Federal Energy Regulatory Commission for regulating rates charged by pipeline companies, bases rates on the actual incremental cost of moving a particular shipment, plus a reasonable rate of return. This approach allows for a quick, standard method for setting prices, but does not take into account the need for differential pricing or the railroad's need to charge higher rates in order to become revenue adequate. Structuring rate regulation around actual costs can also create potential disincentives for the regulated entity to control its costs.

Uncertainty about Future Freight Rail Demand and Capacity Points to Opportunities for a More Strategic Federal Approach to Rail Infrastructure

Recent forecasts predict that the demand for freight and freight rail transport will grow significantly in the future. While forecasts have limitations as guides to investing in new transportation infrastructure, they can present a plausible picture of future freight demand and capacity. Whether private rail companies will be able and willing to invest in new infrastructure capacity to meet projected future demand is uncertain. New rail capacity not only benefits each private rail company network, but it also has the potential to benefit the public by improving traffic flow, air quality, and safety at the national, state, and local levels. As a result, the public sector has increasingly been investing in freight rail projects. Federal involvement in the freight system should be consistent with the competitive marketplace and ensure that funding decisions reflect widespread public priorities.

Forecasts of Significant Freight Rail Traffic Growth Provide a Plausible Outlook for the Future

The demand for freight transportation in general and freight rail specifically is forecasted to increase, according to recent studies.³³ Several of these studies also quantify their projections of the volume and value of future freight demand. The Freight Analysis Framework (FAF) is a comprehensive database and policy analysis tool maintained by DOT to help identify needed freight capacity improvements. In 2002, DOT projected, using this tool, that overall domestic and international freight demand would increase by more than 65 percent and 84 percent, respectively, by 2020. In 2003, the American Association of State Highway and Transportation Officials (AASHTO) released the *Freight Rail Bottom Line Report*, prepared by a consulting firm. This report describes the industry and its benefits to the nation, estimates the industry's investment needs and capacity to meet these needs, and quantifies the consequences of underinvestment, including highway deterioration and congestion. The AASHTO study projected that, by 2020, overall domestic freight demand by ton would increase by 57 percent and international demand would increase by 99 percent. In 2005, the American Trucking Association's (ATA) report *U.S. Freight Transportation Forecast to 2016* projected tonnage and revenues for all freight modes. The report predicted that overall freight volume would increase by about 32 percent between 2004 and 2016.

Freight rail demand is projected to increase less than overall freight demand and to grow at a slower rate than demand for other modes—such as truck and air freight. FAF projects that freight rail tonnage will grow about 55 percent by 2020, but this growth will not be as dramatic as for truck and air, and will account for a much smaller share of the market when measured on the basis of shipment value. AASHTO predicts that freight rail tonnage will increase 44 percent by 2020. However, it notes that this forecast actually indicates that rail will lose some market share. This estimate also assumes that considerable investment will be required—up to about \$4 billion annually—to meet future demand. According to ATA's forecast, freight rail tonnage will grow annually by 2.4 percent to 2010 and by 2.1 percent to 2016. While rail intermodal traffic is forecast to grow rapidly, the study anticipates that rail's overall share of total freight

³³Studies by the AASHTO, DOT, and American Trucking Association made specific freight and freight rail forecasts. Studies by the Transportation Research Board (TRB), the National Cooperative Research Program (NCHRP 20-24(33)) administered by TRB, and a consortium of Midwestern states and universities (Upper Midwest Freight Corridor Study) also assessed future freight demand and capacity issues.

tonnage will decrease slightly from about 15.6 percent in 2004 to about 15.4 percent in 2016.

However, how many factors can affect the accuracy of these predictions. Freight markets are volatile and unpredictable, and thus freight demand forecasts may prove to be off the mark. Similarly, much freight traffic is determined by trade that originates outside the United States. Moreover, since the data and models used to develop these freight demand forecasts are largely proprietary,³⁴ we could not assess the validity or reasonableness of the assumptions used to develop the predictions.³⁵ Nevertheless, forecasts of freight and freight rail demand are useful as one plausible scenario for the future. As the Congressional Budget Office (CBO) observed in a January 2006 report, forecasts of demand are best viewed as illustrative rather than quantitatively accurate.³⁶

Railroads' Investments in Capacity to Meet Potential Demand Are Uncertain

If demand does develop as forecasted, it is uncertain how able and willing railroads will be to invest in new capacity. Railroads do not prepare long-term capacity plans because of concern about the potential for significant economic changes—for example, officials at one Class I railroad stated that they prepare capacity improvements plans and demand projections for 3 to 5 years into the future, with frequent revisions. In addition, the railroads we interviewed were generally unwilling to discuss their future investment plans with us in any detail because this is business proprietary information. It is therefore difficult to comment on how railroads are likely to choose among their competing investment priorities for the future compared with various demand scenarios.

Railroads' ability and willingness to invest in new capacity to meet demand reflects a number of key considerations. For privately owned rail companies, a key business consideration is maximizing returns for shareholders. To do so, realizing the greatest return on investment from

³⁴The 2002 FAF used proprietary models to describe domestic and international commodity flows for rail, water, air, and highways and forecasted freight flows for 2010 and 2020. A second generation DOT FAF (being published in 2006) does not use proprietary models and covers commodity flows for 2002 to 2035.

³⁵We were able to interview some of the consultants who authored these reports and other rail experts. We also independently corroborated information in these reports through our expert panel.

³⁶Congressional Budget Office, *Freight Rail Transportation: Long Term Issues* (Washington, D.C.: January 2006).

each investment decision is essential and is reinforced by pressure from shareholders. Rail investment involves private companies taking a substantial risk which becomes a fixed cost on their balance sheets, one on which they are accountable to stockholders and for which they must make capital charges year in and year out for the life of the investment. A railroad contemplating such an investment must be confident that the market demand for that infrastructure will hold up for 30 to 50 years. This is in sharp contrast to other modes such as highway infrastructure, which is paid for largely by public funds. Maximizing a rail company's competitive position in key markets is important in deciding on investments in the company network's size and facilities. For example, the growth of intermodal transport is a major development for freight rail because it stands to be the largest revenue generator for the Class I railroads. As a result, there is intense competition for this business, although intermodal business also means that freight rail both competes and cooperates with other freight modes. However, intermodal growth depends on the railroads' ability to invest in the new capacity needed to meet this demand.

Investment considerations are complicated by the current status of rail infrastructure. Although the rail network has been downsized, the infrastructure remains extensive but aging. Replacing, maintaining, and upgrading this infrastructure is extremely costly, as the Transportation Research Board emphasized in its analysis of critical transportation issues.³⁷ Predicting the extent to which future rail investments will keep pace with projected freight rail demand is complicated by the extent of current rail needs. For example, an annual assessment of America's infrastructure³⁸ conducted by the American Society of Civil Engineering gave rail infrastructure a "C-" grade and noted that, for the first time in 90 years, limited capacity has created significant bottlenecks in the national rail network. However, railroads must invest in new infrastructure, new equipment, and substantial new capacity to handle additional traffic in order to remain viable and effective, a rail industry representative told our expert panel.

³⁷Transportation Research Board, *Critical Issues in Transportation* (Washington, D.C.: Jan. 2006).

³⁸American Society of Civil Engineering, *2005 Report Card for America's Infrastructure* (Washington, D.C.: 2005).

Today, freight railroads are sufficiently profitable to be investing at record levels. Major freight railroads have reported³⁹ that they expect to invest about \$8 billion in infrastructure during 2006—a 21 percent increase over 2005—and have told us that they plan to continue making infrastructure investments. However, not all of this investment is planned for capital or new capacity. Although we requested additional detail about how the rail industry’s \$8 billion estimated investment was divided between new capacity and maintenance or renewal of existing capacity, the Association of American Railroads indicated that this information is not currently available but will be part of a special study on railroad spending trends.

Rail Capacity Investments Can Produce Private and Public Sector Benefits

While private rail networks obtain benefits and improve their profitability from investments in their capacity, these investments also can benefit the public. In fact, some public benefits can be large in comparison to anticipated benefits to the private rail network, as the CBO report pointed out. For example, shifting truck freight traffic to railroads can reduce highway congestion for passenger and commercial vehicles, potentially reducing or avoiding public expenditures that otherwise would be needed to build additional highway capacity or provide additional maintenance to accommodate growing truck traffic. Depending on the rail infrastructure project, the public could realize several types of benefits, as described in table 3.

³⁹ Association of American Railroads (AAR), (Washington, D.C.: Mar. 16, 2006).

Table 3: Potential Public Benefits of Rail Transportation Investments

Category	Potential public benefit
Economic	<ul style="list-style-type: none">• Lower transportation costs through higher productivity, making it cheaper to produce and distribute goods/services• Improve global competitiveness through increased efficiency• Strengthen local, regional, state economies• Expand industry, employment, tax base
Transportation system	<ul style="list-style-type: none">• Capture each mode's advantages in moving passengers/freight• Improve overall system performance• Strengthen intermodal connections• Improve transportation network efficiency for the future• Improve passenger/freight rail interactions
Mobility/Congestion	<ul style="list-style-type: none">• Relieve highway congestion by shifting highway freight to rails• Reduce public investment to prevent highway deterioration by preventing diversion of heavy rail freight to roads• Give passengers/freight access to more modes• Decrease travel time, increase reliability
Environmental/Air quality	<ul style="list-style-type: none">• Reduce emissions/improve air quality by reducing congestion• Consume about one-fourth to one-third less fuel than trucks
Safety and security	<ul style="list-style-type: none">• Reduce crashes through redesigned/eliminated highway-rail crossings• Provide redundant capacity to respond to operational/congestion, national security, and weather problems

Source: GAO analysis.

Rail projects can vary widely in the extent to which they may generate public as well as private benefits; whether benefits are realized by the private or public sector at the national, state, and local levels; and how the benefits are quantified for the purpose of fairly apportioning project financing. Determining what benefits and costs are associated with a rail infrastructure project and who benefits is important in deciding whether public funds for public benefits are justified—but this is a difficult determination.⁴⁰ For example, one rail infrastructure project that reduces system bottlenecks may generate benefits to the national economy by lowering the costs of producing and distributing goods. Another rail project that eliminates or improves highway-rail crossings may primarily produce local benefits by reducing accidents, time lost waiting for trains to pass, pollution and noise from idling trains, and delays of emergency

⁴⁰GAO, *Highway and Transit Investments: Options for Improving Information on Projects' Benefits and Costs and Increasing Accountability for Results*, GAO-05-172 (Washington, D.C.: Jan. 24, 2005).

vehicles at crossings. The same project also may produce national benefits by reducing the impact of train delays on the system.

Public Sector's Growing Freight Rail Investments Focus on Securing Public Benefits

Increasingly, governments at all levels have been investing in freight rail improvement projects that offer potential public benefits. At the state and local levels, government involvement has ranged from planning and coordination to collaboration and investment with freight rail companies and other stakeholders. Some states have been investing to help short-line railroads maintain track in their states for almost 20 years. Other states—such as Florida, Virginia, New York, and Pennsylvania—are creating significant new programs to invest in rail projects. Over 30 states have published freight plans that describe their goals and approach to freight and freight rail.

The scope of state and local freight rail investments continues to expand. For example, Missouri state and local governments, in partnership with railroads and other stakeholders, supported two major rail bridge flyover⁴¹ projects to reduce rail delays in Kansas City. These projects—totaling \$134 million—were expected to provide economic benefits and reduce rail transit time through the city by about 2 hours. The project also used an innovative institutional arrangement that created a special type of corporation to facilitate its funding. Colorado's Department of Transportation (CDOT), other public entities, and two Class I railroads are exploring an ambitious partnership to relocate freight train facilities away from the heavily populated Front Range area of the state, as the two railroads proposed. CDOT initiated a benefit-cost study⁴² that found sufficient public transportation, economic development, land use, safety, environmental, and passenger rail facilitation benefits to warrant investing public dollars in the project—estimated to cost about \$1.17 billion.

The federal government also has been involved in freight rail projects. In 1997, DOT provided a \$400 million loan for the \$2.4 billion Alameda Corridor project to leverage funds from ports, railroads, and local governments. As a result, a 20-mile trench for trains was constructed to

⁴¹Railroad flyover bridges separate one set of tracks from another—such as freight and passenger trains.

⁴²DMJM+Harris and HDR (the Consultant Team), *Final Report Project No. C SWOO-242 Public Benefits & Costs Study of the Proposed BNSF/UP Front Range Railroad Infrastructure Rationalization Project* (May 18, 2005).

eliminate numerous rail-highway crossings and reduce rail transport time to and from the ports of Los Angeles and Long Beach—a significant gateway for freight imported from Asia and distributed throughout the United States. In 2005, Congress provided \$100 million to the \$1.5 billion Chicago Region Environmental and Transportation Efficiency (CREATE) program. Its objective is to cut train delays and congestion and improve passenger rail service by separating 25 rail-highway crossings, building 6 passenger/freight train flyovers, and upgrading tracks and controls to improve service for the one-third of the nation's rail traffic that comes through Chicago each day. Railroads and state and local governments are contributing to the program's financing. In 2005, Congress also passed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which increased the authorized level of funds available under the Railroad Rehabilitation and Improvement Financing (RRIF) program from \$3.5 billion to \$35 billion over a 5-year period. This program provides loans or loan guarantees that are available to states or railroads for projects to acquire, improve, or rehabilitate rail infrastructure.

A number of proposals before Congress would increase federal funding for freight railroad projects. One proposal calls for the creation of a Railroad Trust Fund that would be similar to the Highway Trust Fund, which is used to pay for highway construction and improvements. Another proposal calls for a railroad investment tax credit. Under this proposal, railroads or shippers would receive a 25 percent tax credit for money spent to expand rail infrastructure.

Federal Response to Freight Investments Should Reflect a National Policy That Is Impartial Toward All Modes and Produces Maximum Public Benefits from Public Investments

Federal decision makers face considerable uncertainty about the future of freight transportation coupled with considerable certainty that the federal deficit will be a long-term constraint on federal investment. At the same time, Congress will continue to face policy and funding decisions that will affect all freight modes and have a critical impact in shaping the nation's rail system and infrastructure. As we have noted in our past work,⁴³ a strategic systemwide approach to transportation planning and funding that focuses on all modes is increasingly important to meet expectations for more efficient freight transport, growing freight demand, and more connections between modes.

Federal funding constraints enhance the need for a strategic federal approach to freight infrastructure investment, and the implications of these constraints are a critical feature of a national freight policy. Given major projected demographic shifts and future federal health and retirement commitments, federal revenues may barely cover interest on the federal debt by 2040—leaving no money for either mandatory or discretionary programs. According to our simulations, balancing the budget could require cutting federal spending by as much as 60 percent, raising taxes by up to 2-1/2 times their current level, or some combination of the two.⁴⁴ We have concluded that the impending federal fiscal crisis will require a fundamental reexamination of all federal programs.⁴⁵ For example, our assessment of the federal highway grant program raised significant issues, such as the absence of a clear federal mission and role since the completion of the interstate highway system and the absence of a link between federal funding and goals or outcome measures.

DOT has taken an important step toward a more comprehensive freight strategy by publishing a draft *Framework for a National Freight Policy*⁴⁶ for comment. It is a step for which we found considerable support among

⁴³GAO, *21st Century Challenges*, [GAO-05-325SP](#) (Washington, D.C.: Feb. 1, 2005), GAO, *Freight Transportation: Short Sea Shipping Option Shows Importance of Systematic Approach to Public Investment Decisions*, [GAO-05-768](#) (Washington, D.C.: July 29, 2005), and GAO, *Freight Transportation: Strategies Needed to Address Planning and Financing Limitations*, [GAO-04-165](#) (Washington, D.C.: Dec. 19, 2003).

⁴⁴GAO, *Highway Finance: States' Expanding Use of Tolling Illustrates Diverse Challenges and Strategies*, [GAO-06-554](#) (Washington, D.C.: Jun. 28, 2006).

⁴⁵[GAO-05-325SP](#).

⁴⁶DOT, *(Draft) A Framework for a National Freight Policy*, (Washington, D.C.: Apr. 10, 2006).

public and private freight stakeholders. A systemwide, rather than a modal, perspective is critical to a national freight policy. As the AASHTO study emphasized, investments at the freight system level are needed to respond to nationally significant corridor choke points, intermodal connections, and urban rail interchanges.

With federal fiscal constraints as the backdrop, two major policy principles will need to be considered as DOT continues to develop this national policy. These principles are, first, to adopt a mode-neutral approach—one that takes a consistent policy and funding approach to all modes and establishes a level playing field for competition in the freight marketplace—and, second, to maximize public benefits—particularly benefits to the national transportation system—from public transportation investments.

Adopting a Mode-Neutral Approach

Under a mode-neutral approach, each mode would pay the full costs for the infrastructure facilities and services that it used as well as the costs that its use imposed on others—such as added air pollution, congestion, and accident risks⁴⁷—through taxes and user fees. No single mode would be at a competitive disadvantage. A mode-neutral federal freight policy and investment strategy would be consistent with the competitive market's central role in the freight system. Encouraging a market-based approach and competition that fosters economic efficiency and innovation is a key consideration in dealing with the privately owned freight rail industry, as we have reported.⁴⁸

Currently, as we have pointed out, federal programs treat different freight modes differently. For example, trucks and barges use infrastructure that is owned and maintained by the government, while rail companies use infrastructure that they pay to own and maintain. The trucking and barge industries pay fees and taxes to use this government-funded infrastructure, but their payments generally do not cover the costs they impose on highways and waterways, thereby giving the trucking and barge industries a competitive price advantage over railroads.⁴⁹ The most recent Federal

⁴⁷Transportation Research Board/National Research Council, *Paying Our Way: Estimating Marginal Social Costs of Freight Transportation*, National Academy Press (Washington, D.C.: 1996).

⁴⁸GAO, *Physical Infrastructure: Crosscutting Issues Planning Conference Report*, [GAO-02-139](#) (Washington, D.C.: Oct. 1, 2001).

⁴⁹GAO, *Railroad Competitiveness: Federal Laws and Policies Affect Railroad Competitiveness*, [GAO/RCED-92-16](#) (Washington, D.C.: Nov. 5, 1991).

Highway Administration (FHWA) highway cost allocation study⁵⁰ evaluates highway costs attributable to different vehicle classes and the extent to which their user fees cover their responsibility for highway costs. According to the study, combination unit trucks⁵¹ paid 80 percent of their cost responsibility and the heaviest combinations paid half of their cost responsibility. The study concluded that only the very lightest combination trucks pay their share of federal highway cost responsibility. A recent CBO report⁵² also concluded that trucks and barges do not pay their full share of highway costs and reported that rail may be at a competitive disadvantage, since other modes are effectively being subsidized. CBO also observed that if all modes do not pay their full costs, the result is inefficient use of roads and waterways and greater government spending than otherwise would be necessary if capacity investments are made in anticipation of demand that does not occur.

Maximizing Public Benefits from Public Transportation Investments

As DOT develops and applies a national freight policy, our second critical principle will be an important consideration—public investments should depend on clearly defined public benefits.⁵³ Benefit-cost analysis can be a useful tool to define benefits, as our expert panel on this subject concluded.⁵⁴ Because this analysis identifies the greatest net benefits by comparing the monetary value of each project’s benefits and costs, it can help public and private stakeholders evaluate project alternatives.

States have had experience in evaluating whether rail projects could yield sufficient public benefits to warrant investments of public dollars in the projects, and their experience can inform a national freight policy. For

⁵⁰DOT/Federal Highway Administration. Office of Transportation Policy Studies, *Addendum to the 1997 Federal Highway Cost Allocation Study Final Report* (Washington, D.C.: May 2000).

⁵¹Combination unit trucks are trucks that weigh 50,000-100,000 pounds.

⁵²CBO, *Freight Rail Transportation: Long-Term Issues*, p. 22.

⁵³This observation parallels the conclusion and recommendations by the Transportation Research Board (TRB), which called for the development of a national policy to promote better management and investment decisions to maintain and improve freight capacity. TRB described detailed principles to guide future decisions about using, enlarging, funding or regulating the freight transportation system. TRB, *Freight Capacity for the 21st Century*, (Washington, D.C.: 2003) pp. 5-13.

⁵⁴GAO, *Highlights of an Expert Panel: The Benefits and Costs of Highway and Transit Investments*, [GAO-05-423SP](#) (Washington, D.C.: May 6, 2005).

example, the state of Washington's Freight Mobility Strategic Investment Board leverages transportation dollars by working with public and private stakeholders to fund projects that deliver public benefits. The board's project scoring criteria reflect anticipated benefits, such as freight mobility for the project area; freight mobility for the region, state, and nation; general mobility; safety; freight and economic value; environment; project partnership; consistency with regional and state plans; location on a Strategic Freight Corridor; and cost benefit.

However, federal decision makers have no such criteria to use in considering potential freight rail investments. As we have pointed out, the federal funding structure for surface transportation and federal program incentives tend to focus decision makers' attention on highway and transit projects, rather than on freight or freight rail concerns. And, although state and local transportation decision makers consider benefit-cost analyses, these analyses often do not have a decisive impact on investment decisions.⁵⁵ As DOT has noted, a fair, balanced approach to allocating public and private funding is a prerequisite for public-private partnerships.⁵⁶ We have also raised concerns about federal tax policies. For railroads, some industry groups have proposed freight rail tax credits to encourage investment. However, our work has shown that it is difficult to target tax credits to the desired activities and outcomes and ensure that tax credits generate the desired new investments, as opposed to substituting for investment that would have occurred anyway.⁵⁷

Conclusions

The Staggers Rail Act achieved far-ranging benefits in helping to create and sustain a healthy and vibrant freight railroad industry, as well as an efficient rail transportation system that supports the important role freight plays in the nation's economy. Critical to the Staggers Rail Act was the concept of balance—on one hand, the act sought to allow rail carriers to earn adequate revenues so that they could meet their current and future capital needs. On the other hand, the act recognized the need for a

⁵⁵GAO, *Surface Transportation: Many Factors Affect Investment Decisions*, [GAO-04-744](#) (Washington, D.C.: Jun. 30, 2004).

⁵⁶U.S. Department of Transportation, *Report to Congress on Public-Private Partnerships* (Washington, D.C.: December 2004).

⁵⁷GAO, *Government Performance and Accountability: Tax Expenditures Represent a Substantial Federal Commitment and Need to be Reexamined*, [GAO-05-690](#) (Washington, D.C.: Sept. 23, 2005).

remnant regulatory regime that would maintain reasonable rates and prohibit undue concentrations of market power in areas where no effective competition existed. The act recognized that it was vital for the federal government to promote competition and rely on it to set rates. Without a doubt, rates have decreased for most shippers, and most shippers are better off in the post-Staggers environment than they were previously. This outcome suggests that widespread and fundamental changes to the relationship between the railroads and their customers are not needed. Nevertheless, the evidence also suggests some basis for believing that—more than 25 years after the act’s passage—the balance it envisioned has not been fully achieved.

The continued existence of pockets of potential captivity, together with the increase in traffic at higher thresholds, at a time when the railroads are, for the first time in decades, experiencing increasing economic health, raises the question whether rail rates in selected markets reflect justified and reasonable pricing practices, or an abuse of market power by the railroads. Answering this question requires a rigorous, national analysis of competitive markets. Our analysis provides an important first step; however, we are constrained by the inherent limitations of the *Carload Waybill Sample* and the available proxy measures for assessing captivity. In contrast, STB has the statutory authority to inquire into and report on railroad practices and could conduct a rigorous analysis of competition in the freight rail industry that would rely on more than sample data and could determine whether the inappropriate exercise of market power is occurring in specific markets. Should STB find evidence of abuse, it could consider several methods for creating the balance envisioned by the Staggers Rail Act. For example, STB could consider initiating a generally applicable rule making to address competition issues or prescribe specific remedies in response to a complaint.

In assessing competition within the freight rail industry, STB needs accurate data on railroad revenues. The data that STB currently collects—in particular, the use of the *Carload Waybill Sample* to report on the railroads’ finances—are not always captured consistently, making it difficult to accurately track railroad revenues. Specifically, while we determined that, in general, the data in the Waybill were suitably reliable for our reporting purposes, we also found that some data, including data on fuel surcharges, were not accurately captured. Accurate data would provide for more accurate tracking of railroad revenues and railroad charges to potentially captive shippers and other shippers. This information would help STB to obtain a clearer picture of the actual fees paid by shippers.

STB is also responsible for ensuring the expeditious handling and resolution of rate disputes, but the current process for settling these disputes is ineffective. There are a number of potential alternatives to the current process, and STB has recognized the limits of the process and taken further action to improve it. These actions are commendable and need to be pursued; absent further action, the promise of the Staggers Rail Act and the balance it envisioned may never be fully realized.

These are difficult issues that require careful balancing of the railroads' need to earn adequate revenues with shippers' need for competition and reasonable rates during a time of uncertainty about the capacity of freight railroads to meet future demand for freight rail service. While predictions and scenarios for the future of freight rail vary, it is likely that multiple levels of government will continue to be involved in the nation's freight system. Additional investment in freight rail infrastructure can produce public benefits, and many state and local governments are involved in freight rail infrastructure projects. Congress has provided federal assistance as well, and further requests for and decisions about federal assistance to rail infrastructure are likely. Decision makers will be challenged to ensure that federal involvement is consistent with competition in the freight marketplace, reflects widespread public priorities, and offers benefits that warrant the commitment of federal funds. DOT's draft National Freight Policy represents a good start in this direction.

Recommendations for Executive Action

To ensure an appropriate balance between the interests of railroads and shippers, we recommend that the Chairman of the Surface Transportation Board take the following two actions:

- Undertake a rigorous analysis of competitive markets to identify the state of competition nationwide; in specific markets, determine whether the inappropriate exercise of market power is occurring; and, where appropriate, consider the range of actions available to address problems associated with the potential abuse of market power. If the Chairman determines that STB requires more resources to conduct this analysis, then STB should request additional resources from Congress.
- Review STB's method of data collection to ensure that all freight railroads are consistently and accurately reporting all revenues collected from shippers, including fuel surcharges and other costs not explicitly captured in all railroad rate structures.

To ensure the efficiency and effectiveness of our nation's freight system, we are making the following recommendation to the Secretary of Transportation:

- As DOT continues to develop a national freight policy and a possible federal policy response, consider strategies to (1) sustain the role of competitive market forces by creating a level playing field for all freight modes and (2) recognize the fiscally constrained federal funding environment by developing mechanisms to assess and maximize public benefits from federally financed freight transportation investments.

Agency Comments and Our Evaluation

STB provided written comments on a draft of this report. These comments are presented and evaluated in appendix III. STB generally agreed with our assessment of the improving financial health of the freight railroad industry and potential public benefits for freight rail infrastructure projects. However, STB disagreed with our recommendation to undertake a rigorous analysis of competitive markets in the rail industry because it believed the findings underlying the recommendation were inconclusive, their on-going efforts will address many of our concerns, and a rigorous analysis would divert resources from other efforts. Specifically, STB stated that our recommendation was based on two findings—first, that rail rates have increased for some shippers and, second, that the amount of traffic with rates reflecting high R/VC ratios has increased in some areas. STB stated that recent increases in rail rates are not surprising and that R/VC ratios can increase when rates and costs are falling and that these findings do not suggest market abuses. STB also noted that it has several rule makings under way related to the standard rate relief process and the simplified rate relief process. STB suggested that, given the limitations on its resources and the aggressive agenda already under way, rather than undertake this competitive markets analysis, a more practical approach would be for STB to finish its reforms to ensure that captive shippers have an effective forum to seek rate relief if a railroad is charging unreasonable rates. Concerning our recommendation that STB review its method of data collection to ensure that all freight railroads are consistently and accurately reporting all revenues collected from shippers, STB stated that the revenue in question represents a small portion of all revenues and that revenue data submitted by freight railroads are audited and otherwise checked to ensure quality. Furthermore, STB has initiated a rule making to improve the tracking of fuel surcharges.

While STB's efforts have been helpful, we continue to believe that STB should undertake a rigorous analysis of competitive markets to identify

the state of competition nationwide; in specific markets, determine whether the inappropriate exercise of market power is occurring; and, where appropriate, consider the range of actions available to address problems associated with the potential abuse of market power. STB's comments do not accurately characterize the underlying support for our recommendation. We did not base this recommendation on an increase in rail rates or suggest that rate increases alone suggest increased captivity. On the contrary, we recognize that rates have declined and that available measures suggest that the extent of captivity has dropped. Furthermore, STB's response suggests that rail rates and the amount of traffic with high R/VC ratios were the only data we examined—they were not. We examined several factors, including data on the amount of tonnage originating in economic areas that have access to only one Class I railroad, data on the amount of tonnage traveling over 300 percent R/VC, and the amount of tonnage that originates in areas with access to only one Class I railroad and travels at rates that exceed the statutory threshold for rate relief. Our report explicitly acknowledges the limitations in the *Carload Waybill Sample* and of the proxy measures available for weighing captivity, including R/VC levels. At the same time, our analyses, when combined with comments from participants on our expert panel and interviews with shipper and railroad groups, suggest a reasonable possibility that shippers in selective markets may be paying excessive rates related to a lack of competition. This provides the impetus for STB—which has the statutory authority to inquire into and report on railroad practices—to analyze competitive markets in the rail industry and, where appropriate, consider the range of actions to address problems associated with the potential abuse of market power. Also, this analysis would rely on more than sample data and could analyze the exercise of market power in specific markets.

Regarding STB's position that it has several rule makings under way that address many of our concerns, we commend STB for recognizing and taking action to address problems with the rate relief process, but we believe action is needed beyond improvements to the rate relief process. These rule makings, if implemented, are designed to improve the processes available to shippers, after shippers have been charged a rate that they consider to be unreasonable. In contrast, we believe that an analysis of the state of competition and the possible abuse of market power, along with the range of options STB has to address competition issues, could more directly further legislatively defined goals to ensure effective competition among rail carriers as the preferred means to both promoting a sound rail transportation system and maintaining reasonable rates. Regarding STB's assertion that conducting a rigorous analysis of

competition would divert resources away from its on-going initiatives, we modified our draft to recommend that STB request additional resources from Congress if it determines it needs more resources to conduct an analysis of competition. We also believe that STB should review its method of data collection to ensure that all freight railroads are consistently and accurately reporting all revenues. STB commented that it had already responded to this concern by proposing a standardized report for fuel surcharges; however, while we commend STB for its efforts to capture these data, we also note STB has not yet implemented standardized reporting of fuel surcharges and that other revenues besides fuel surcharges may not be included in the Waybill. STB also provided technical comments that we incorporated in this report, as appropriate.

We requested comments on a draft of this report from the Acting Secretary of Transportation or her representative. On September 21, 2006, DOT officials, including the Deputy Associate Administrator for Policy, Federal Railroad Administration, and the Chief Economist, Office of Transportation Policy, Office of the Secretary, provided us with oral comments on the draft. In its comments, DOT emphasized the need for the report to clearly recognize the rationale and importance of differential pricing; the nature and relatively small extent of potentially unreasonable pricing in the rail freight marketplace; and the impact of capacity constraints on rail pricing and services. DOT also suggested that our report should recognize certain factors, including that competition between railroads is not possible in all markets because the level of demand may not support more than one railroad, and that investment in freight rail infrastructure entails substantial private risk. In contrast, highway investment has been largely publicly financed. DOT did not take a position on our recommendation concerning the draft National Freight Policy, but stated that efforts are under way to develop more effective tools for gauging the extent to which proposed freight investments provide public benefits. DOT also endorsed the views contained in STB's September 15, 2006, letter (see app. III). We made changes to this report to reflect DOT's comments, as appropriate. DOT also provided a number of technical corrections, which we incorporated as appropriate.

We will send copies to the appropriate congressional committees, the Chair and Vice-Chairs of the Surface Transportation Board, and the Secretary of Transportation. We will also make copies available to others on request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff has any questions, please contact me at (202) 512-2834 or heckerj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. See appendix V for a list of major contributors to this report.

A handwritten signature in black ink, reading "Jayetta Z. Hecker". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

JayEtta Z. Hecker
Director, Physical Infrastructure Issues

List of Congressional Requesters

The Honorable Daniel K. Inouye
Co-Chairman, Committee on Commerce, Science, and Transportation
United States Senate

The Honorable Conrad Burns
United States Senate

The Honorable Byron Dorgan
United States Senate

The Honorable Frank Lautenberg
United States Senate

The Honorable Trent Lott
United States Senate

The Honorable John McCain
United States Senate

The Honorable Mark Pryor
United States Senate

The Honorable Gordon Smith
United States Senate

Appendix I: Participants in GAO's Expert Panel

Louis S. Thompson (Moderator)
Principal
Thompson, Galenson and Associates, LLC

Paul Bingham
Global Insights

George Borts
Department of Economics
Brown University

George Eads
Vice President
CRA International

Robert Gallamore
Director
Transportation Center
Northwestern University

Darius Gaskins
Founding Partner
Norbridge, Inc.

Carl Martland
Senior Research Associate
Massachusetts Institute of Technology
Department of Civil and Environmental Engineering

Michael F. McBride
Partner
LeBouef, Lamb, Greene & MacRae, LLP

Gerard McCullough
Department of Applied Economics
University of Minnesota

Linda Morgan
Chair of the Transportation Practice Group
Covington & Burling, LLP

**Appendix I: Participants in GAO's Expert
Panel**

John V. Wells
Chief Economist
U.S. Department of Transportation

Appendix II: Objectives, Scope, and Methodology

We used the Surface Transportation Board's (STB) *Carload Waybill Sample* to identify railroad rates from 1985 through 2004 (the latest rate data available at the time of our review), which we then analyzed to determine rate changes. The *Carload Waybill Sample* is a sample of railroad waybills (in general, documents prepared from bills of lading authorizing railroads to move shipments and collect freight charges) submitted by railroads annually. We used these data to obtain information on rail rates across the industry, for certain commodities and for certain routes by shipment size and length of haul. According to STB officials, revenues derived from the *Carload Waybill Sample* are not adjusted for such things as year-end rebates and refunds that may be provided by railroads to shippers that exceed certain volume commitments.

Some railroad movements contained in the *Carload Waybill Sample* are governed by contracts between shippers and railroads. To avoid disclosure of confidential business information, STB disguises the revenues associated with these movements before making this information available to the public. Consistent with our statutory authority to obtain agency records, we obtained a version of the *Carload Waybill Sample* that did not disguise revenues associated with railroad movements made under contract. Therefore, the rate analysis presented in this report presents a truer picture of rail rate trends than analyses that may be based solely on publicly available information. Since much of the information contained in the *Carload Waybill Sample* is confidential, rail rates and other data contained in this report that were derived from this database have been aggregated at a level sufficient to protect this confidentiality.

We used rate indexes and average rates to measure rate changes over time. A rate index attempts to measure price changes over time by holding constant the underlying collection of items that are consumed (in the context of this report, items shipped). This approach differs from comparing average rates in each year because, over time, higher- or lower-priced items can constitute different shares of the items consumed. Comparing average rates can confuse changes in prices with changes in the composition of the goods consumed. In the context of railroad transportation, rail rates and revenues per ton-mile are influenced, among other things, by the average length of haul. Therefore, comparisons of average rates over time can be influenced by changes in the mix of long- and short-haul traffic. Our rate indexes attempted to control for the distance factor by defining the underlying traffic as 2004 commodity flows between pairs of census regions. To examine the rate trends on specific traffic corridors, we first chose a level of geographic aggregation for corridor end points. We defined end points as the regional economic areas

defined by the Department of Commerce's Bureau of Economic Analysis. An economic area is a collection of counties in and about a metropolitan area (or other center of economic activity); there are 179 economic areas¹ in the United States, and each of the nation's 3,141 counties is included in an economic area.² We placed each corridor in one of three distance-related categories: 0 to 500 miles, 501 to 1,000 miles, and more than 1,000 miles. Although these distance categories are somewhat arbitrary, they represent reasonable proxies for short-, medium-, and long-distance shipments by rail.

To determine the areas with access to one or more Class I railroads, we obtained railroad systems data from the Department of Transportation, which accounted for trackage rights, mergers, and other industry developments affecting access. For issues related to revenue-to-variable cost ratios, we used data from the *Carload Waybill Sample* to identify the specific revenues and variable costs and to compute R/VC ratios for the commodities and markets we examined. Using this information, we then identified those commodities and areas whose R/VC ratios were above or below the 180 percent R/VC level, as well as those areas above the 300 percent R/VC level.

To identify the actions STB has taken to address competition and captivity concerns, we interviewed officials and reviewed information from all seven North American Class I railroads, several shipper groups and associations and STB officials; and we met with experts in the railroad industry. We reviewed characteristics of STB's current rate relief process, as well as changes STB has made to the process, and conducted a comprehensive analysis of STB cases since 2000. We also held an expert panel through the National Academy of Sciences, consisting of 11 individuals with expertise in the freight railroad industry and the economics of transportation deregulation. Moreover, we conducted a legal analysis of current statutes related to STB's authority. To discern potential alternatives, we reviewed pending legislation, testimonies before Congress, previous GAO reports, STB decisions, rule makings, and proposed rule makings, and conducted a summary analysis of interviews.

¹Our analysis included 177 economic areas because we did not include the two economic areas in Alaska and Hawaii.

²The Bureau of Economic Analysis updated definitions of each economic area in November 2004.

To assess future freight demand and the freight railroad industry's ability to meet such demand, we reviewed transportation planning literature and forecasts of future freight rail demand and capacity in the United States. This review also included state freight plans and major freight rail projects. We synthesized information on freight and freight rail, as well as various forecasts to identify similar and dissimilar themes. We also reviewed involvement by the federal government in freight railroad projects, including related legislation and funding decisions. We interviewed several state and federal transportation officials to gather further information on public-private partnerships, freight railroad projects, and DOT's draft National Freight Policy. We also interviewed freight railroad representatives, financial market analysts, national association representatives, and transportation experts. For selected public-private partnerships, we analyzed the genesis of such projects, motivations for involvement from the public and private sectors, and benefit-cost analyses that were conducted to support project funding decisions.

We determined that the data used in this report were sufficiently reliable for the purpose of our review. We conducted our review from June 2005 to August 2006 in accordance with generally accepted government auditing standards.

Appendix III: Comments from the Surface Transportation Board

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



Office of the Chairman

Surface Transportation Board
Washington, D.C. 20423-0001

September 15, 2006

Ms. JayEtta Z. Hecker
Director
Physical Infrastructure Issues
Government Accountability Office
441 G Street, NW
Washington, DC 20548

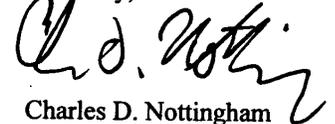
Dear Ms. Hecker:

The Surface Transportation Board has received the draft version of the Government Accountability Office (GAO) report entitled "Freight Railroads: Industry Health Has Improved, but Concerns about Competition and Captivity Should Be Addressed" (GAO-06-1057).

We have reviewed the draft and are submitting the agency's formal comments which are attached. If you have any questions, please contact William Huneke, Chief Economist and Associate Director, at 202-565-1538.

We appreciate the opportunity to work with you on this matter.

Sincerely,


Charles D. Nottingham

Enclosure

cc: Steve Cohen, Assistant Director, GAO
Vice Chairman Mulvey
Commissioner Buttrey
William Huneke

Comments of the Surface Transportation Board

**“Freight Railroads: Industry Health Has Improved, but Concerns about
Competition and Captivity Should be Addressed” (GAO-06-1057)**

September 15, 2006

The STB appreciates the opportunity to comment on this report and commends the GAO staff for their efforts in studying these complex issues. We are pleased with the report’s finding that the changes in the rail industry since the Staggers Act have been positive. As the report shows, railroads have seen their productivity and financial health improve, and inflation-adjusted rail rates have fallen as carriers have passed cost savings back to their customers. We share GAO’s concern that further rail investment is needed to meet the significant rise in demand predicted over the next 10 to 15 years, and that further investment would provide broad public benefits by improving highway traffic flow, air quality, and safety at the national, state and local levels. We also agree with GAO’s ultimate finding that “widespread and fundamental changes to the relationship between the railroads and their customers are not needed.”

Based on its national study into the state of competition, GAO offers two recommendations for Board action. One recommendation is that the Board review its data collection methods to ensure that all freight revenues are consistently and accurately reported. For example, the report highlights the current inconsistent treatment by railroads of their fuel surcharge revenues. The agency has already responded to this industry concern by proposing standardized monthly reports of Class I railroads’ fuel surcharges. Moreover, as GAO notes, the amount of revenues reported as “miscellaneous revenue” represents less than 1.5% of the total freight rail revenue reported for 2004.

See comment 1.

See comment 2.

The Board will continue its ongoing efforts to ensure the accuracy and reliability of the data collected from railroads. Each year, the Class I railroads submit to the STB reports containing extensive financial and operational data needed to assist the agency in fulfilling its regulatory responsibilities. This information is audited and reviewed by the Board and by independent accounting firms. Railroads also submit waybill data for a sample of individual movements. The waybill data are carefully reviewed for accuracy each year by two contractors, and the Board conducts its own series of checks on the waybill data as well. If at any of these stages there appears to be inconsistent or questionable data, the reporting railroad is immediately contacted for clarification or correction. And where a significant recurring problem is detected, the STB will take the steps necessary to ensure it has the information it needs to carry out its statutory responsibilities.

See comment 3.

The other recommendation for the Board is that the STB conduct its own rigorous analysis of competitive markets to identify the state of competition nationwide; inquire into railroad pricing practices in specific markets where it finds evidence of an inappropriate exercise of market power; and consider actions to address any potential market abuses. This recommendation is based on two findings in the report: (1) that rail rates have increased in nominal terms since 1980 for some shippers; and (2) that, even though the overall extent of shipper captivity has dropped, the amount of traffic with rates reflecting high revenue-to-variable cost (R/V C) ratios has increased in some areas.

See comment 4.

These observations, however, do not suggest market abuses. The rate changes shown in this report have not been adjusted for inflation. The reported 9% increase in rates for grain shipments (from 1985 to 2004) has not kept pace with inflation over that

same time period. And the modest increase in rates from 2000 to 2004 is not surprising, given the escalation in costs during that time period.

See comment 5 and 6.

The analysis of R/VC ratios is also inconclusive. For example, in Figure 19, it is reported that the amount of grain traffic transported from Minot to Portland at rates with an R/VC ratio above 300% increased from 1985-2004. But as shown in Figure 9, even without accounting for inflation, grain rates per ton-mile from Minot to Portland had fallen. Thus, the change in R/VC ratios must be due to a drop in costs per ton-mile, as more grain is shipped in lower-cost shuttle trains or the railroad has implemented other cost-saving measures. R/VC ratios do not provide a reliable measure of changes in captivity over time, because they can increase even when rates are falling where a carrier's costs are also falling. For example, as GAO has previously observed, if rail revenues are \$2 and variable costs are \$1, the R/VC ratio would be 200%. However, if revenues decreased to \$1.50 and variable costs decreased to \$0.50, the ratio becomes 300%. Under this scenario, "although railroads have passed all cost reductions along to shippers in terms of lower rates, the increased R/VC ratio makes it appear as though the shipper is worse off." GAO/RCED-99-93, *Railroad Regulation* at 65 (April 1999).

See comment 7.

It is noteworthy that the STB has several important rulemakings underway which bear directly on most of GAO's concerns. Specifically, GAO reports widespread belief that the STB's standard rate relief process is inaccessible to most shippers because it is too expensive, time consuming, and complex. Earlier this year, the agency instituted a rulemaking intended to resolve contentious issues in its standard rate relief process. If implemented, these changes should reduce the complexity of those cases and

See comment 8.

dramatically reduce the cost by simplifying the evidentiary inquiry. Final rules will be issued this fall.

GAO also concludes that the agency's simplified guidelines – which were defended vigorously by the STB and the shipper community when challenged by the railroad community in federal court – have not proven effective because no captive shipper has used them. However, earlier this year the STB launched a major rulemaking to reform and modernize its simplified rate relief guidelines to ensure that all shippers have an effective forum to bring rate complaints. The proposed revisions are the culmination of public hearings and considerable internal study by STB staff. Comments from over 65 parties are expected by the end of this year, with final rules to follow early next year. These important reforms will be pursued concurrently with the agency's regular docket of cases requiring Board adjudication.

Given the aggressive agenda already underway at the Board, we are hesitant to divert resources and attention away from these pending initiatives to undertake another prolonged national study. GAO has already used its full resources to carefully review the only comprehensive dataset for railroad pricing; interviewed and reviewed information from the railroads, shippers, economists, and experts in the rail industry; and heard from a panel of experts in the freight rail industry and in the economics of freight rail transportation. Finding nothing conclusive, GAO recommends that this far-smaller agency conduct yet another analysis. Because most of GAO's concerns involve the possibility that some shippers may be paying excessive rates, we believe that a far more practical approach is for the STB to finish the important reforms to its rate complaint

See comment 8.

See comment 9.

See comment 6.

See comment 10.

procedures to ensure that captive shippers have an effective forum to seek rate relief if a railroad is charging unreasonably high rates.

The STB will remain vigilant in monitoring the rail industry and will initiate inquiries, regulatory proceedings, and recommendations to Congress as future facts and circumstances require.

The following are GAO's comments on the Surface Transportation Board's letter dated September 15, 2006.

GAO Comments

1. STB commented that we conducted a national study into the state of competition. We did not conduct such a study. Our study included a broad focus on changes in the freight railroad industry since the Staggers Rail Act, the actions STB has taken to address concerns about competition and captivity, and future freight demand and capacity. The data we collected and analysis we performed—such as a review of rate changes over 20 years—were too broad to represent a national study of the state of competition. It is the limitations in the scope of our analysis of competition, along with limitations in the data available to us and a reasonable possibility that shippers in selected markets may be paying excessive rates, which led us to recommend that STB conduct a more rigorous analysis of competition.
2. STB commented that it has already addressed our recommendation to improve data collection by proposing standardized monthly reports of fuel surcharges and also described its efforts to ensure the accuracy and reliability of data in the Waybill. We commend STB for its recent action on fuel surcharges, which occurred during our review, but we also note STB has not yet implemented standardized reporting of fuel surcharges. In addition, other revenues besides fuel surcharges may not be included in the Waybill. Specifically, revenues generated through railcar auctions and congestion fees may not be included. While the reported miscellaneous revenue is a small percentage of all revenue, it is not known how much miscellaneous revenue is not reported. Complete data would provide for more accurate tracking of railroad revenues and would help STB to obtain a clearer picture of actual fees paid by shippers. While we commend STB for its actions to audit and review Waybill data, these accuracy checks do not address our concern that STB is not collecting the full range of revenue data.
3. STB commented that our recommendation for STB to conduct an analysis of competition is based on two findings—that rail rates have increased since 1980 and that the amount of traffic with high R/VC ratios has increased in some areas. Our recommendation is not based on these two findings, but on an analysis of multiple sources, such as data on the amount of tonnage originating in economic areas that have access to only one Class I railroad, data on the amount of tonnage traveling over 300 percent R/VC, and the amount of tonnage that originates in areas with access to only one Class I railroad and travels at rates that exceed the statutory threshold for rate relief. This analysis

provides an important first step in assessing competitive markets nationally; but it is imperfect, given the limitations of measures used to weigh captivity and limitations in the *Carload Waybill Sample*. The results of our analysis, when combined with comments from participants on our expert panel and interviews with shipper and railroad groups, suggest a reasonable possibility that shippers in selective markets may be paying excessive rates related to a lack of competition in these markets. It is precisely the inconclusiveness of the available data—and STB’s authority and responsibility to monitor and ensure effective competition in the freight rail industry—that led us to recommend a rigorous analysis of competition by STB. Also, we examined rates since 1985, not 1980.

4. STB commented that an increase in rates does not suggest market abuses and that the rate changes in our report were not adjusted for inflation. We agree that a change in a rate does not necessarily suggest the exercise of market power. While our rates were not adjusted for inflation, we constructed rate indexes, which account for changes in traffic patterns over time that could affect revenue statistics. We also included the price index for the GDP to provide a measure for inflation. However, our recommendation is not based on recent rate increases. Our recommendation is based on our analyses of multiple sources, such as data on the amount of tonnage originating in economic areas that have access to only one Class I railroad, data on the amount of tonnage traveling over 300 percent R/VC, and the amount of tonnage that originates in areas with access to only one Class I railroad and travels at rates that exceed the statutory threshold for rate relief.
5. STB commented that figure 19 shows an increase in grain traffic which traveled at rates above 300 percent R/VC and figure 9 shows that grain rates per ton-mile had fallen along that same route, so the change in R/VC must be due to a drop in costs per ton-mile. We disagree that the change in R/VC in figure 19 must be due to a drop in costs per ton-mile. Figure 19 shows only the amount of traffic on the route that traveled at rates above 300 percent R/VC, while figure 9 shows the cents per ton-mile for all traffic along that route (not just traffic that traveled at rates above 300 percent R/VC). Therefore, the decrease in cents per ton mile shown in figure 9 may reflect a decrease in rates for traffic along that route that traveled at rates below 300 percent R/VC.
6. STB commented that the measures used in our analysis are not conclusive. The fact that our analysis is inherently limited by available data and proxy measures lends more weight to our recommendation.

Specifically, our analysis provides an important first step in assessing competitive markets nationally, but it is imperfect given the limitations of measures used to weigh captivity and limitations in the *Carload Waybill Sample*. We do not conclusively state that there are shippers who are captive to one railroad and paying rates that reflect an abuse of market power. However, the results of our analysis, when combined with comments from participants on our expert panel and interviews with shipper and railroad groups, suggest a reasonable possibility that shippers in selective markets may be paying excessive rates related to a lack of competition in these markets. We believe that STB is the agency that has the authority and responsibility to conduct an inquiry into the potential abuse of market power and utilize its range of options to address competition issues.

7. STB commented that R/VC levels do not provide a reliable measure of changes in captivity because they can increase when rates are falling. We agree that an analysis of R/VC levels is not a conclusive measure of the use of market power. However, the use of R/VC as an indicator of railroad pricing power is well-documented both by Congress in the Staggers Rail Act and by STB, which uses R/VC levels in its process for determining unreasonable rates. While we acknowledge the limitations of the ratio in our report, and even include an example like the one cited above, we believe that R/VC ratios can be used as one of several proxy measure to determine potential captivity. In fact, STB refers to traffic traveling at or above 180 percent R/VC as “potentially captive.”
8. STB commented that they have several important rule makings under way which bear directly on our concerns, including changes to the standard and simplified rate relief processes. While we commend STB for taking action to improve its rate relief processes, we note that these rule makings are designed to make changes to the standard and simplified rate relief processes and are not designed to analyze the state of competition or the possible abuse of market power. In contrast, we believe that an analysis of the state of competition or the possible abuse of market power, along with the range of options STB has to address competition issues, could more directly further legislatively defined goals to ensure effective competition among rail carriers as the preferred means to both promoting a sound rail transportation system and maintaining reasonable rates.
9. STB commented that it is hesitant to divert resources away from its pending initiatives to respond to our recommendation. We have modified our draft to recommend that, if STB determined that it needs more resources to undertake a rigorous analysis of competitive

markets to identify the state of competition nationwide, it should request additional resources from Congress.

10. STB commented that, as a small agency, a more practical approach to addressing concerns about captive shippers would be for STB to continue reforming its rate complaint procedures, rather than conduct another analysis. While we commend STB for continuing its efforts to improve its standard and simplified rate relief processes, these rule makings will not address our concerns. Specifically, these rule makings are designed to improve processes available to shippers *after* they have been charged a rate they consider to be unreasonable; these rule makings are not designed to analyze the state of competition or the possible abuse of market power. In contrast, we believe that an analysis of the state of competition or the possible abuse of market power, along with the range of options STB has to address competition issues, could more directly further legislatively defined goals to ensure effective competition among rail carriers as the preferred means to both promoting a sound rail transportation system and maintaining reasonable rates. We believe that STB is the agency that is uniquely positioned to inquire into and report on railroad practices and could conduct an analysis of competition that would rely on more than sample data and could determine whether the inappropriate exercise of market power is occurring in specific markets. STB has the authority to subpoena witnesses and records. Following its inquiry, STB could also consider initiating a generally applicable rule making to address competition issues or prescribe specific remedies in response to a complaint. We recognize that STB has limited resources, and we have modified our draft to recommend that, if STB determines that it needs more resources to conduct an analysis of competition, it should request additional resources from Congress.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

JayEtta Z. Hecker, (202) 512-2834

Staff Acknowledgments

In addition to those named above, individuals making key contributions to this report include Ashley Alley, Steve Brown, Matthew T. Cail, Sheranda S. Campbell, Steve Cohen, Elizabeth Eisenstadt, Libby Halperin, Richard Jorgenson, Tom McCool, John Mingus, Josh Ormond, and John W. Shumann.

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