

ECONOMIC ANALYSIS GROUP DISCUSSION PAPER

The Economics of Railroad “Captive Shipper” Legislation

by

Russell Pittman *
EAG 10-1 January 2010

EAG Discussion Papers are the primary vehicle used to disseminate research from economists in the Economic Analysis Group (EAG) of the Antitrust Division. These papers are intended to inform interested individuals and institutions of EAG’s research program and to stimulate comment and criticism on economic issues related to antitrust policy and regulation. The Antitrust Division encourages independent research by its economists. The views expressed herein are entirely those of the author and are not purported to reflect those of the United States Department of Justice.

Information on the EAG research program and discussion paper series may be obtained from Russell Pittman, Director of Economic Research, Economic Analysis Group, Antitrust Division, U.S. Department of Justice, LSB 9446, Washington, DC 20530, or by e-mail at russell.pittman@usdoj.gov. Comments on specific papers may be addressed directly to the authors at the same mailing address or at their e-mail address.

Recent EAG Discussion Paper and EAG Competition Advocacy Paper titles are listed at the end of this paper. To obtain a complete list of titles or to request single copies of individual papers, please write to Janet Ficco at the above mailing address or at janet.ficco@usdoj.gov or call (202) 307-3779. Beginning with papers issued in 1999, copies of individual papers are also available from the Social Science Research Network at www.ssrn.com. In addition, recent papers are now available on the Department of Justice website at http://www.usdoj.gov/atr/public/eag/discussion_papers.htm.

* Director of Economic Research, Economic Analysis Group, Antitrust Division, U.S. Department of Justice, and Visiting Professor, New Economic School, Moscow. The author thanks Ken Heyer, Donna Kooperstein, Henry Posner III, Oliver Richard, Carl Shapiro, and Lou Thompson for comments on an earlier draft.

The Antitrust Division encourages independent research by its economists. The views expressed herein are entirely those of the author and are not purported to reflect those of the U.S. Department of Justice.

Abstract

Recent rate increases by U.S. freight railroads have refocused attention on regulation, deregulation, and regulatory reforms in the railroad industry. Legislation introduced into Congress would render a variety of railroad behavior newly subject to the jurisdiction of the antitrust statutes, with potential enforcement by the Antitrust Division and the FTC and through lawsuits brought by state attorneys general or private parties. This paper considers the economic issues raised by legislation and the likely impacts on competition and welfare.

October 2009 version

JEL codes: K21, K23, L41, L42, L43, L51, L92

Keywords: freight railroads, captive shippers, antitrust, regulation

Recent rate increases by freight railroads have refocused attention on regulation, deregulation, and regulatory reforms in the railroad industry. Specifically, some shippers have complained that a lack of competition among railroads adversely affects their shipping options and makes them “captive” to the high rates charged by the railroad companies serving them. While such complaints have a long history in the railroad industry, significant rate increases since the early 2000s, coupled with increased profits by the large railroads, have given them greater weight. Specifically, depending on the index used and components included, average rail freight charges declined in the 1980s, may have leveled off or even increased a bit in the 1990s, but seem to have increased significantly since 2000. Similarly, railroad industry profitability increased slowly and gradually from 1998 through 2004 and then began a more rapid increase.¹ (The current economy-wide recession has halted this upward trend for now, though the rail industry seems to be suffering less than many others.²)

In January of 2009, legislation was introduced in the U.S. House of Representatives and Senate to address these issues. H.R. 233 and S. 146, the “Railroad Antitrust Enforcement Act of 2009”, would amend existing federal statutes so as to render railroad mergers, acquisitions, collective ratemaking, other coordination, and other “anticompetitive conduct” subject to the jurisdiction of the antitrust statutes, with potential enforcement both by the Antitrust Division, which has decades of experience and expertise on railroad matters,³ and the FTC, and through lawsuits brought by state attorneys general or private parties. Similar legislation has been introduced regularly in previous years. In this paper, I consider the economic issues raised by legislation such as this and seek to evaluate its likely effects on competition and welfare.

¹ Christensen Associates (2008), chapter 8.

² “US Railroads are holding up as the healthiest segment of the North American freight carrying industry” (John Boyd, *Journal of Commerce*, August 17, 2009). “The industry remains profitable, though at a somewhat lower level” (Don Phillips, *Trains Magazine*, August 2009). “Rail prices remain rather boringly firm” (ABH Consulting, August 18, 2009).

³ For example, the Antitrust Division filed comments and sometimes expert testimony in the proposed mergers of the Santa Fe and Southern Pacific railroads (1986), the Union Pacific/MKT (1988), the DRGW/Southern Pacific (1988), the Wisconsin Central/Fox Valley (1992), the Burlington Northern/Santa Fe (1995), the Union Pacific/Southern Pacific (1996; <http://www.usdoj.gov/atr/public/testimony/0718.htm>), and the Canadian National/Great Lakes Transport (2004; <http://www.usdoj.gov/atr/public/comments/202651.htm>), as well as regulatory filings in a variety of matters including the formation (1974) and re-authorization (1988) of TTX and the dividing up of Conrail by CSX and Norfolk Southern (1998; http://www.usdoj.gov/atr/public/press_releases/1998/212657.htm).

1.0 Background

The types of railroad behavior addressed by legislation to protect “captive shippers” – mergers, as well as some categories of coordinated and unilateral actions – have in the past enjoyed a broad antitrust exemption, subject to enforcement by the Surface Transportation Board (STB) and formerly the Interstate Commerce Commission (ICC) rather than the courts, and judged under a “public interest” standard rather than the more targeted competition standards set down by the Sherman and Clayton Acts and jurisprudence. Remedial legislation introduced in previous Congresses would have gone further than H.R. 233 and S. 146 in the direction of command-and-control regulation, not only removing antitrust exemptions but also, for example, requiring railroads serving captive shippers either

- a) to permit trains from competing railroads to operate over the track of the serving railroad in order to provide competitive pick-up or delivery to the shipper (i.e., compulsory “trackage rights agreements”, with the access charge regulated) or
- b) to offer to carry freight to or from the nearest connection to a competing railroad and to interchange it there, rather than insisting on providing the “long haul” themselves (so-called “reciprocal switching agreements”, with the “short haul” tariff regulated).⁴

“Captive shipper” is an STB term of art describing a goods shipper lacking economic alternatives to the single railroad serving it, those alternatives being either intramodal – competition from other railroads – or intermodal – competition from carriers using other modes, such as road or water. (Whether an alternative is an “economic” alternative is often not a close call; water transport may be either available or not, and truck transport is generally uneconomic for bulk commodities such as coal.) A former STB chairman has estimated that 15-20 percent of all rail movements involve captive shippers;⁵ he has also noted that, under the STB’s distinction between smaller captive

⁴ See, for example, H.R. 2125 and S. 953, the “Railroad Competition and Service Improvement Act,” introduced into the 110th Congress in May, 2007.

⁵ “An estimate by the former chairman of the ... (STB) is that about 80% of rail customers are served by only one railroad, but that because most of these customers can also ship by other modes, only about 15%

shippers, who may bring cases under the streamlined “small rate case procedures”, and larger captive shippers, who must use the “large rate case procedures”, the latter class consists entirely of about 75 coal shippers (Nober, 2003). Recent rough STB calculations suggest that around two-thirds of captive traffic (as measured by revenues) consists of coal and chemical shipments.⁶

Under existing statutes and STB jurisprudence, the STB may intervene in the rate set by a railroad to a particular shipper only if four conditions are met: a) the rate exceeds 180 percent of the variable cost of carrying the traffic; b) a “qualitative” STB assessment determines that there is no feasible, economic transportation alternative for the traffic involved, c) the rate is found to cross-subsidize other traffic on the railroad, and d) the railroad company overall is earning a rate of return greater than its cost of capital. The variable cost measure is defined precisely in STB jurisprudence, as is the cross-subsidization test – the latter using a complex regulatory construct called the “stand-alone-cost” test.⁷

The background to the broader issue is that the U.S. freight railroad industry has become much more concentrated in the decades since the substantial deregulation implemented by the Staggers Act of 1980, with only two class I railroads now serving most of the western United States (the Union Pacific Southern Pacific [UPSP] and the Burlington Northern Santa Fe [BNSF]), two class I’s serving most of the east (the Norfolk Southern [NS] and the CSX), one running north-south in the heartland (the Kansas City Southern [KCS]), and two Canadian class I’s with some U.S. operations and major U.S. connections (the Canadian National [CN] and the Canadian Pacific [CP]).⁸ The Antitrust Division argued at the STB in favor of more stringent conditions than were imposed in the BNSF merger and against the UPSP merger, but under existing law it did

to 20% of all rail movements would be judged captive by the STB.” (Fritelli 2007, at 1) Another extremely rough estimate is the calculation of the GAO that in 2004, 12 percent of rail industry revenue and 10 percent of industry tonnage traveled on origin-destination routes with access to only a single class I railroad in both origin and destination Bureau of Economic Analysis economic areas (GAO 2006).

⁶ Calculated from Table 5 in STB, *Simplified Standards for Rail Rate Cases* (Ex Parte No. 646), September 4, 2007.

⁷ See, e.g., Nober (2004); STB, *Simplified Standards for Rail Rate Cases*; and *BNSF v. STB*, case 06-1372, U.S. Court of Appeals for the DC Circuit, May 20, 2008.

⁸ The STB divides railroads into class I, class II, and class III based on annual revenues. Currently a class I railroad is one with annual revenues exceeding \$277 million; a class II has revenues between \$20.5 million and \$270 million; and a class III has revenues less than \$20.5 million.

not have jurisdiction to challenge the mergers directly under the Clayton Act.⁹ (The Division has more recently argued against those claiming efficiencies and benefits from the UPSP merger *ex post*.)¹⁰

In recent years, the STB has apparently determined that the merger era has gone far enough – first imposing a moratorium on major consolidations and then lifting the moratorium but announcing that significantly more stringent conditions than in the past must be met for approval of further major consolidations:

Because of the small number of remaining Class I railroads, the fact that rail mergers are no longer needed to address significant excess capacity in the rail industry, and the transitional service problems that have accompanied recent rail mergers, we believe that future merger applicants should bear a heavier burden to show that a major rail combination is consistent with the public interest.¹¹

A separate and relevant recent development is that since around 2000 the class I railroads have increased their earnings to the point where earnings are arguably – though not uncontroversially – close to the railroad industry’s cost of capital, as required under part d of the prerequisites for STB rate imposition discussed earlier. According to the recent Christensen Associates study for the STB, in 2005 the profitability of the BNSF rose above the industry’s cost of capital, whether measured by the STB’s old (discounted cash flow, “DCF”) or new (capital asset pricing model, “CAPM”) methodology; NS profitability rose above the cost of capital according to the new methodology in 2004 and 2005; CSX profitability did the same in 2005; and only UPSP earned less than both measures of the cost of capital in 2005 – though UPSP profitability had exceeded the newer measure in 2002 and 2003.¹²

⁹ Brief of the U.S. Department of Justice, *Proposed Merger of the Burlington Northern and Santa Fe Railroads*, Finance Docket No. 32549, Surface Transportation Board, June 29, 1995, and Brief of the U.S. Department of Justice, *Proposed Merger of the Union Pacific and Southern Pacific Railroads*, Finance Docket No. 32760, Surface Transportation Board, June 3, 1996.

¹⁰ See the discussion by DAAG Bruce McDonald in the proceedings of the Antitrust Modernization Commission, http://govinfo.library.unt.edu/amc/commission_hearings/pdf/051205_Regulated_Industries_Transcript_refo_rm.pdf, at 58, discussing Karikari, *et al.* (2002) and Breen (2004).

¹¹ STB Ex Parte No. 582 (Sub-No. 1), “Major Rail Consolidation Procedures,” June 11, 2001. For a discussion, see Kwoka and White (2004).

¹² See Christensen Associates (2008), chapter 8.

Finally, among shippers who are not “captive” there remains great variation in the degree to which they have economic options to substitute away from a particular railroad to ship their goods, whether to other railroads (intramodal competition) or to shippers using modes such as road and water (intermodal competition). In particular, standard assumption and practice in goods transport is that bulk goods (for example, coal) and goods traveling long distances (for example, over 500 miles) travel more economically by rail (or, where feasible, water), while high-value goods (for example, many manufactured goods other than bulk chemicals) and goods traveling shorter distances travel more economically by truck.¹³ A complication to this standard practice is that railroads have recaptured some of the higher value traffic lost over the years to trucks by utilizing containers rather than boxcars or other specialized rolling stock – so-called “intermodal” shipping.¹⁴

2.0 *The Problem: Recovering the cost of the network*

Arguably the principal economic issue here concerns the means used by network owners to recover the common costs of constructing and operating the network. Like other network industries, railroads have large common, fixed, and sunk costs that are by definition not uniquely allocable to particular lines of business or operations. In the case of railroads, a widely accepted working figure is that fixed costs of infrastructure constitute about 25 percent of total costs.¹⁵

There are a number of ways for an industry with high fixed costs to set prices for their recovery, and each has its own advantages and disadvantages. At the high price end, an unregulated profit-maximizing seller would set a monopoly price, with society suffering from the associated reduction in output and deadweight loss in welfare. At the low price end, a regulated seller could be ordered to satisfy traditional “first best” conditions by charging a price equal to marginal cost, with society benefiting from the associated high level of output but forced to make up the fixed costs in some other way –

¹³ See, e.g., Pittman (1990) and Kwoka and White (2004).

¹⁴ Note that this definition of “intermodal shipping” co-exists uneasily with the definition of “intermodal competition” cited above.

¹⁵ Of course the precise figure depends on time frames and the definition of “fixed” costs. In discussing the current economic downturn, one analyst noted that “rails can usually drop operating expenses about 40%+ of the volume decline.” ABH Consulting, “Nothing to See Here, Just Listen to the Whispers....”, July 7, 2009.

for example, through subsidies paid out of taxation, with the corresponding deadweight losses associated with taxation as well as the negative incentive effects of subsidies. The traditional “happy medium” chosen between those two in U.S. regulatory practice has been “fully allocated cost” pricing – basically prices set at average costs, with a portion of fixed costs added to marginal costs according to some unavoidably arbitrary formula associated with, for example, shipment weight, distance, and/or value – with a deadweight welfare loss remaining but smaller than in the monopoly case.¹⁶

With the Staggers Act of 1980 and then the *Coal Rate Guidelines* of 1985 and the *Non-Coal Guidelines* of 1996, the ICC and STB adopted the economists’ preferred “second best” alternative to these three options: price discrimination. In particular, the agency decisions recognized that a particular type of third degree price discrimination – “Ramsey pricing” – constitutes a methodology for an enterprise to recoup a given amount of fixed costs with a minimum loss of social welfare.¹⁷ Under Ramsey pricing, rates are set in inverse proportion to the elasticity of demand of each customer, in order to minimize the reduction in output stemming from the necessity of charging prices exceeding marginal cost.¹⁸ In the case of freight railways, the elasticity of demand of an individual shipper is most closely related to that shipper’s ability to switch from this rail carrier to other rail carriers or to carriers using other modes, though – as this elasticity is one of *derived* demand – it also reflects to a generally smaller degree the elasticity of demand for the product being shipped, the products for which that product is an input, and so on down the vertical chain. Although the setting of prices by a railroad according to individual shipper demand elasticities sounds complex, Laffont and Tirole (2000) show that this requires no more information than that used by any non-regulated enterprise to set discriminatory prices in a profit-maximizing way.

Unfortunately, however, Ramsey pricing, being a form of price discrimination, is discriminatory: different shippers, and especially different classes of shippers, pay rates for rail shipping that vary a great deal, both in absolute terms and in relation to the railroad’s cost of serving them, and those who pay the higher rates question the fairness

¹⁶ Kahn (1970) provides an authoritative discussion.

¹⁷ BSNF v. STB (2008), at 4.

¹⁸ See generally Viscusi, et al. (2005), especially at 415-417, and, more technically, Laffont and Tirole (2000), especially at 102-104. I discuss this issue in the context of railroad infrastructure access charges in Pittman (2004).

of the system. Economists argue that price discrimination is not necessarily welfare harming and may in fact be welfare improving, especially when used as here to cover large fixed costs. For example, if too high a percentage of common costs is charged to customers with more elastic shipping demand, those customers may switch to road or water carriers instead – thereby depriving the railroad of what coverage of fixed costs those customers were providing, and *increasing* the amount that must be covered by remaining customers.¹⁹ And the discrimination suffered by captive shippers under STB jurisdiction is not unlimited: the stand-alone-cost test cited above provides a ceiling beyond which shippers may not be forced to pay for the fixed costs of the system. Nevertheless it is true, as shippers argue, that the stand-alone-cost test is complex and expensive to utilize and adjudicate – and it certainly does not, and is not intended to, *prevent* discrimination.

3.0 *Proposed legislation*

The primary thrust of recent legislative proposals responding to complaints that rail freight rates are both high and discriminatory has been to eliminate the exemption from the antitrust laws afforded much railroad behavior under current statutes. (This is also the primary thrust of the endorsement of the 2007 legislation by the Antitrust Section of the American Bar Association – almost half of the content of its “Comments” discusses the importance of limiting exemptions of any kind to the antitrust laws.) While the antitrust exemption does not protect all anticompetitive activity, and thus will not affect practices already subject to the antitrust laws,²⁰ eliminating the antitrust exemption

¹⁹ As one industry analyst notes, advocates of the proposed legislation are in effect attacking “other rail customers ... rather than railroads.... Railroading is a capital intensive industry that needs a certain amount of revenue to pay for day-to-day operations and support capital spending programs that shippers demand.... If customers must provide the money for rail capital programs, the battle really is about how cost responsibility is apportioned.” Larry Kaufman, “Shipper vs carrier or shipper vs. shipper?” *Argus Rail Business*, September 28, 2009.

²⁰ Railroads “already face civil and criminal liability for [cartel] violations of the Sherman Act (e.g., price-fixing, market allocation, bid rigging), and have been successfully sued for violating that Act....” STB, Letter to Congressional Committee Chairs, September 13, 2007, footnote omitted. See also Daniel Machalaba and John R. Wilke, “Railroads Face Probe Over Prices for Shipping Coal,” *Wall Street Journal*, February 17, 2005, A2.

may indeed both improve the situations facing some captive shippers and increase overall economic welfare.²¹

There are two classes of railroad behavior which those supporting such legislation may hope will come under increased scrutiny and attack if jurisdiction is granted to the antitrust enforcement agencies: “paper barriers” and refusals to deal.²²

3.1 *Paper barriers*

The first issue, paper barriers, is a seemingly obscure railroad issue that may have significant competitive implications. A common phenomenon since the passage of the Staggers Act – and indeed a generally acknowledged success story for the industry – has been the frequent spin-offs (or, alternatively, leasing) of small, lightly used rail lines by class I railroads either to groups of local shippers to form a new class III railroad or to an existing operator of a class II or class III railroad. In some cases these lines may have been abandoned by the class I if they could not have been sold or leased. One reason for the survival and success of the spin-offs is arguably that the newly independent local lines are less constrained than the class I’s by union rules and wages; indeed the president of the new line may also be its locomotive operator. Another reason is that these spin-offs constitute a reallocation of assets from large firms efficient at the “wholesale” level to smaller but more cost- and service-focused firms efficient at the “retail” level.²³ The American Short Line and Regional Railroad Association estimates that “short lines now originate or terminate one out of every four rail cars moved by the domestic railroad industry.”²⁴

The issue to be addressed by many legislative proposals is that the spin-offs creating or extending these short lines often come with a contract restriction: the newly independent local line must hand its interline cargo over exclusively to its former parent, rather than to other class I’s to which it may connect. (Alternatively, there may be strong financial incentives to favor the former parent.) These contractual prohibitions to dealing

²¹ For other views, see Baker and Mullins (2009) and Sagers (2009).

²² See also Brennan (2009).

²³ “Rail operator: re-regulation would hurt shortlines,” *Argus Rail Business*, 12 November 2007. See also Murray (2004) and Fritelli (2007): “Especially in agricultural states, short-line railroads perform a gathering function, linking mostly rural shippers to high-volume Class I main lines.”

²⁴ STB, *Review of Rail Access and Competition Issues – Renewed Petition of the Western Coal Traffic League*, Ex Parte No. 575 (Sub-No. 1), October 29, 2007, at 3.

with competitors of the former parent line are termed “paper barriers” by shippers – the rail industry prefers the more neutral term “interchange commitments” – and reformers wish to prohibit them.²⁵ No one knows how many spin-offs have been accompanied by these restrictions; the STB imposed a reporting requirement only very recently and did not include a requirement to account for existing agreements.²⁶ However, the widespread nature of shipper complaints suggests that the number may be large.

Limiting or even getting rid of paper barriers may well be a good idea, but the potential costs should not be ignored. First, in some cases the efficiency gains that would be the subject of bargaining between the buyer and seller railroads may be smaller than the monopoly profits lost to the seller by the requirement to introduce competition. Second, in some cases potential short-line operators may lack access to the capital necessary for the purchase or lease of these lines at fully remunerative prices, so that transactions at lower prices accompanied by long-term traffic agreements may act as financing arrangements for these transactions.²⁷ For both reasons, possible results of a prohibition on paper barriers would be both more abandonments²⁸ and fewer spin-offs.²⁹ These costs of a rules change may not outweigh the benefits of increased competition for shippers on those lines that are spun off despite the rules change, but they should not be ignored. On the other hand, one well known analyst generally sympathetic to the rail industry view of regulation and legislation regards this issue as a “no-brainer” that doesn’t “appear worth fighting over”, as it would not “cost railroads much revenue”.³⁰

More broadly, it seems likely that paper barriers would be treated less sympathetically by antitrust enforcers and courts than they have been by the STB (though the two recent STB rulings in this area may suggest a tightening of STB restrictions as

²⁵ A good case for their elimination is provided by a former Division attorney in Massa (2001).

²⁶ STB, *Disclosure of Rail Interchange Commitments*, Ex Parte No. 575 (Sub-No. 1), May 21, 2008.

²⁷ Fratelli (2007), at 7. I discuss comparable financial arrangements regarding the construction of sidetracks in Pittman (1991).

²⁸ Note, however, that the abandonment option is not a simple one. The Staggers Act significantly reduced the barriers to a railroad abandoning a line, but abandonment remains regulated and constrained. STB permission must be applied for, and the STB will consider petitions from other potential users of the line, including class II and III railroads. See, e.g., Lim and Lovell (2009).

²⁹ The Association of American Railroads argues that interchange commitments are “core requirements without which [spin-off] transactions would not and could not take place.” STB, *Review of Rail Access and Competition Issues*, at 4.

³⁰ Larry Kaufman, “Rail regulatory reform: Why the delay?”, *Argus Rail Business*, November 2, 2009.

well).³¹ In general, contracts for the sale of assets that impose restrictions on the future competitive conduct of the buyer – for example, agreements not to compete with the seller in the future – are treated under the rule of reason in antitrust jurisprudence: they are not *per se* illegal, but they are frowned upon if they impose restrictions greater than necessary to achieve the efficiencies of the transaction itself.³² In particular, courts have ordered that such restrictions be limited in scope “in regard to time, territory, and type of product,” and permanent agreements not to compete are frowned upon.³³

So the likely outcome of the imposition of antitrust jurisdiction to the creation of paper barriers would be possibly some minor reduction in the number of sales of small, local lines to local shippers and class II and III railroads but also a reduction in the time frame of paper barriers for those sales that do remain, and thus an increase in competition for shippers at the end of the new time frame – perhaps 3-5 years. To the degree that paper barriers are a contractual response to financial constraints, and to the degree that barriers in the 3-5 year range are sufficient to address those constraints, the discouragement effect on spin-offs may be small. As argued by one shippers group in its petition for the STB to address the issue, “even if paper barriers may help preserve some trackage for continued use, it does not necessarily follow that paper barriers imposed as a condition of track sale or lease should be continued in perpetuity.”³⁴

Note, by the way, that an agreement among the class I and smaller railroads, endorsed by the STB, has already limited the ability of a class I to impose paper barriers for future business attracted by a new local spin-off (Massa, 2001). Note also that an *ex post* removal of paper barriers on lines spun off in the past would constitute the forced rewriting of one provision of complex contracts: the class I’s losing the contractual protection would generally have insisted on a higher price for spinning off the line had they known that they would subsequently lose its business. As argued by Henry Posner III, chairman of the Railroad Development Corporation and operator of the class II Iowa Interstate Railroad:

³¹ STB, *Review of Rail Access and Competition Issues and Disclosure of Rail Interchange Commitments*. For a brief summary, see <http://www.thompsonhine.com/publications/publication1256.html>.

³² *National Society of Professional Engineers v. U.S.*, 435 U.S. 679, 689 (1978).

³³ Regarding the application of the tying provisions of antitrust law to paper barriers, see Massa (2001) and Bush (2007). Regarding covenants not to compete in general, see ABA (2007), at I.C.5.b., from which the quotation (citations removed) is taken.

³⁴ National Grain and Feed Association, News Release, March 22, 2006.

If I were a Class I, I at least would certainly want a much higher purchase price from a buyer if I didn't have the prospect of holding onto traffic. Many Class III railroads have been formed from pieces of Class Is – at a discount – because of the Class Is' ability to implement paper barriers.... [If paper barriers were imposed *ex post*,] existing Class III buyers would, in effect, be receiving a windfall profit at the expense of the Class I seller.³⁵

On the other hand, since future revenue streams are discounted when deals such as these are made and priced, this objection loses its force the longer past the contract date the policy change is imposed. Indeed, in many cases the net present value would have already approached zero for transactions that occurred many years ago. Thus, an antitrust decision eliminating this restriction would surely benefit consumers by increasing competition and lowering shipping costs.

3.2 *Refusals to deal*

The second way in which the types of legislative proposals under discussion here might be expected to help captive shippers may be in their supplementation of STB jurisdiction by that of the Antitrust Division and the courts (including private enforcement) for “refusals to deal” by the railroad serving the shipper. In this case the “refusal” is that of the railroad serving the captive shipper to either

- a) allow the trains of a competing railroad to serve the shipper over the monopoly railroad's tracks, or
- b) offer to carry the shipper's goods only to the nearest interchange with a competing railroad, rather than insisting on hauling the goods for the entire route itself.

These two services are termed in the industry “trackage rights” and “reciprocal switching”, respectively. Some legislative proposals for mandatory reciprocal switching or quotation of a rate to a nearby connecting carrier would order or permit the STB to impose the same outcomes in a regulatory fashion that the current legislation would aim for under the Sherman Act.

³⁵ “Rail operator: re-regulation would hurt shortlines,” *Argus Rail Business*, 12 November 2007.

An important question that has apparently not been addressed about such a requirement is how it would work and what would be its ground-level implications in the real world – especially, how far a captive shipper typically is located from the nearest competing railroad, and thus how intrusive a requirement to deal would be on the railroad serving the captive shipper directly. The Christensen Associates report argues from a set of stylized facts that if policies such as reciprocal switching are required over short distances only, the resulting loss of system economies will be relatively small. The cost of creating and operating a trackage rights regime almost certainly increases with the distance of track involved, but the direct cost of a reciprocal switching regime does not seem obviously to increase with the distance from the shipper to the switch. Professor Curtis Grimm has suggested that the majority of captive shippers may be within perhaps 100 km of a competing railroad, with the most important exceptions probably electric utilities located outside metro areas and some rural grain shippers, while rail expert Louis Thompson believes that something like 100-150 km might be necessary to account for the majority of captive shippers.³⁶ 100 km would be a fairly long distance for frequent regulatory or judicial imposition of trackage rights.³⁷

Lawsuits brought by the Antitrust Division, by state attorneys general, or by shippers charging illegal refusals to deal might indeed force concessions by the railroads to captive shippers, either in the forms just suggested or in lower rates charged to settle the complaints. There are, however, two factors that could limit the amount of relief that this change in the law would actually bring to captive shippers.

First of all, a refusal to deal is a relatively uncommon antitrust offense. The Supreme Court has stated that, in general, a seller “has a right to deal, or refuse to deal, with whomever it likes, as long as it does so independently.”³⁸ At the same time, the Supreme Court has recently stated that “[u]nder certain circumstances, a refusal to cooperate with rivals can constitute anticompetitive conduct and violate §2.”³⁹

Refusals to deal have generally been found unlawful only when they have been part of a clear scheme to reduce competition – for example, to enforce an illegal tying

³⁶ Personal communications with the author.

³⁷ For a broader discussion of the workability of shared access regimes, see Gómez-Ibáñez (2009).

³⁸ *Monsanto Co. v. Spray-Rite Service Co.*, 465 U.S. 717 (1988), at 760-61.

³⁹ *Verizon Communications v. Trinko*, 540 U.S. 398 (2004).

arrangement – rather than simply because the “deal” refused would have been more advantageous to the buyer than the one offered.⁴⁰ In this respect a refusal by one railroad company to allow trackage rights to a competing railroad or to hand over traffic at a nearby interchange point with a competing railroad may be at least somewhat comparable to its simply charging a high price: unpleasant for the customer, but not anti-competitive in the sense of the Sherman and Clayton Acts, and so not easily subject to antitrust challenge.

The possibility of court orders to allow switching would also raise an enforcement issue that is at the heart of judicial reluctance to impose dealing requirements generally: the necessity of monitoring and regulating the price and quality of the “deal” supplied under duress.⁴¹ (On the other hand, Professor Grimm points out that the Canadian regime of mandatory reciprocal switching is administered with a short and simple rate schedule.) A further complication is that these would be unusual refusal-to-deal cases, as a complaining shipper would be seeking not only compulsory “deals” between itself and the defendant but also between the defendant and its competitor.

Second, recall that, thanks to the string of large mergers, U.S. railroading is now a very concentrated industry. The experience with mandatory switching or short hauls to hand-offs in Canada and Mexico has been somewhat disappointing, at least in part for a reason that is likely to restrict benefits in the United States as well: a competing duopolist fears that if it takes advantage of the opportunity to serve a shipper captive to its rival, the rival will in turn take advantage of the opportunity to serve its own captive shippers, and competition will break out throughout the system.⁴² (This argument has some echoes of the facts alleged in the *Twombly* case, in which each of the Regional Bell Operating Companies chose not to seek to enter the geographic markets of the other, despite legislated encouragement to do so.⁴³) Even if antitrust enforcers were to begin bringing Sherman Act or Clayton Act cases against refusals to deal by railroads serving

⁴⁰ See generally ABA (2007), at I.D.2.e.

⁴¹ See *Verizon Communications v. Trinko*, 540 U.S. 398 (2004) (“We have been very cautious in recognizing such exceptions, because of the uncertain virtue of forced sharing and the difficulty of identifying and remedying anticompetitive conduct by a single firm.”).

⁴² For Canada, see Ouellet (2000); for Mexico, see the discussion in OECD (2006).

⁴³ *Bell Atlantic Corp. v. Twombly*, 125 S. Ct. 1955 (2007).

captive shippers, and even if those cases received favorable receptions in court, strong relief would require the cooperation of the competing duopolist.⁴⁴

In fact there is something of a natural experiment whose outcome supports this concern. Under the “bottleneck” rulings of the STB, a railroad that serves a captive shipper and interconnects near the shipper with a competing railroad is required to offer the shipper the alternative of a short haul to its competitor at a (potentially) regulated rate if the shipper can present an already signed contract with the competitor for its portion of the route. Consistent with the “concentrated industry” hypothesis, in practice the competing railroads have not signed such contracts with shippers (Fritelli 2007).

The best outcome for captive shippers might be if the threat of such litigation outcomes forced the railroads to negotiate lower rates rather than risk going to court.

3.3 Mergers

One reason for the current market power enjoyed by the U.S. class I railroads is the past mergers that have already been allowed by the STB – some of which, as noted above, were either opposed by the Antitrust Division or recommended only with more stringent conditions than were imposed by the STB. The result of these mergers has been two mammoth regional duopolies in which neither duopolist aggressively seeks to poach business from the other. Thus, had antitrust jurisdiction rested with the Antitrust Division at the time these mergers were proposed, the industry likely would be more competitive today.⁴⁵

As noted above, it is some consolation that the STB, having permitted these mergers in the past, has apparently decided that enough is enough: it has issued new regulations requiring a much stronger showing of public *benefits* to future major mergers

⁴⁴ “Let’s assume that legislation reverses the bottleneck doctrine that says a railroad cannot be required to quote or file a rate for part of a move that it already can handle in its entirety, thereby retaining an effective monopoly on the traffic in question. BNSF, for example, might set a bottleneck rate that would require UP to compensate it fully for the use of its line and the opportunity cost of its investment in the line. In the limited capacity environment, UP might choose not to bid for the traffic, choosing to allocate its capacity to business where it has more attractive pricing power. How do you force two normally competitive railroads – the same concept applies to NS and CSX in the East – to act contrary to their self-interest?” “What happens if shippers prevail on legislation?”, *Argus Rail Business*, 7 December 2009.

⁴⁵ Given that these mergers seem very unlikely to be undone, through either regulatory proceedings or litigation, and that entry of new class I railroads into the marketplace is not expected, it seems at least arguably appropriate for the STB to increase the protections that it provides to captive shippers.

– not simply a showing of a lack of competitive harm – than in the past. These requirements may take one or more forms, depending on the circumstances:

- Requiring future merger applicants to suggest conditions that would enhance, not merely preserve, competition;
- Requiring specific plans for how congestion problems will be addressed should they appear;
- Strengthening post-merger monitoring, and requiring compensation or compensatory acts if promised benefits do not appear; and/or
- Requiring forecasts as to how the proposed merger will cause subsequent merger scenarios to play out.

Future proposals for major U.S. railroad consolidations will thus arguably face a much more skeptical STB than have past proposals, and it is probably no accident that no such proposals have been put forward since the announcement of the new standards in mid 2001.

At this point in the evolution of the U.S. railroad industry, it seems much more likely that any merger of class I railroads would be of the end-to-end rather than the parallel variety; neither the STB nor (if they are granted jurisdiction) the Antitrust Division and the courts seem likely to approve mergers between either the two remaining western class I's or the two remaining eastern class I's. Whether further end-to-end mergers – perhaps resulting in one or two U.S. transcontinental railroads – would be a good thing or a bad thing is a separate matter. No one disagrees that end-to-end rail mergers have the potential to increase efficiency as they create single line service from former interline moves; indeed some of the class I's currently devote significant management attention to reducing the inefficiencies inherent in interconnection (Pittman 2009).

On the other hand, the econometric literature suggests that the U.S. class I's have already exhausted potential economies of system size and are at or near the point of exhausting potential economies of density.⁴⁶ And reducing the number of major U.S. railroads any further runs the risk of forfeiting other aspects of competition that have

⁴⁶ See, e.g., Wilson (1997), Bitzan (1999 and 2000), Schmidt (2001), Ivaldi and McCullough (2001 and 2008), Bitzan and Keeler (2007), and Christensen Associates (2008).

value for the economy – in technological and service improvements, for example, or in competition to provide incentives for new shippers to locate on a particular line. Given the merger record of the STB, granting merger authority to the Antitrust Division seems sensible to protect existing competition into the future.

4.0 Conclusion

Captive shippers are currently subject to some regulatory protection. Whether they are subject to “enough” protection would seem to be a matter of equity and fairness more than economic efficiency, since economic *efficiency* dictates that precisely those shippers who have the fewest economic options – those who are captive – should contribute the most to the fixed costs of the railroad network. Moreover, railroading is a capital intensive industry that requires continual investment for both maintenance and expansion in order to support economic growth; one cannot expect that investment if the investors are not permitted to earn a good return on it. A direct result of reduced investment in rail infrastructure would be higher costs, congestion, higher rates, and thus more freight traffic switching from railroads to trucks.⁴⁷ Having said all this, however, it does appear that the class I railroad companies are finally earning something like normal returns on capital, and perhaps even something in excess of normal returns, so that measures to restrict or even reduce the amount contributed by captive shippers to railroad returns would be appropriate.

The most direct and obvious path for this would be tighter STB regulation of rates charged to captive shippers. It is not the purpose of this paper to analyze possible revisions to STB regulations. However, the four factors listed above as predicates to STB action – P/VC exceeding a floor of 180%, a qualitative finding of no economic options, the stand-alone-cost test, and the railroad revenue adequacy test – may provide a framework for considering possible changes. For example, the stand-alone-cost test is an expensive, complex, and time-consuming regulatory requirement,⁴⁸ and as the journal

⁴⁷ For a discussion of railroad investment requirements going forward, see Cambridge Systematics (2007).

⁴⁸ As summarized on the website of the shippers’ organization Consumers United for Rail Equity, “‘Stand alone cost’ refers to the expenses associated with a captive rail customer building and operating its own hypothetical efficient railroad. To develop this hypothetical railroad, the captive rail customer must retain lawyers, accountants, railroad economists and other such experts in this multi-million dollar exercise. The STB uses ‘stand alone cost’ to determine if a captive rail customer rate is ‘unreasonably high.’... The only

article on which it is based (Faulhaber, 1975) makes clear, its only claim to welfare enhancement is as a condition for the elimination of incentives for hit-and-run entry to serve a subset of customers – a factor that the serving railroad has every incentive to take account of on its own.⁴⁹ A possible route for simultaneously strengthening and streamlining the regulatory process would be to eliminate this portion of the exercise and replace it with a P/VC ceiling. However, this would be the topic for a different paper.

Proposed legislative changes that would place more railroad behavior under the jurisdiction of the antitrust laws – in particular, restrictions on the creation of “paper barriers” in conjunction with the spin-off of local and regional rail lines, and restrictions on the ability of railroads to “refuse to deal” with competing railroads regarding the traffic of captive shippers – may act to limit the ability of railroads with market power to exploit that power at the expense of captive shippers. In particular, it seems likely that antitrust jurisdiction would impose time limits on the “exclusive dealing” requirements or incentives that often accompany the spin-off of a line from a class I railroad to a class II or III, and this would increase the level of competition enjoyed by shippers in the longer term. Other types of policies, such as mandatory switching – whether achieved through regulation or through antitrust challenge – face greater hurdles owing to the already highly concentrated structure of the U.S. railroad industry, but may nevertheless have some effectiveness in protecting captive shippers as well.

successful rate cases under this process have involved those coal movements that are moved over densely traveled rail lines.’

⁴⁹ See also Hausman and Myers (2002) and Faulhaber (2005) on imperfections in the translation of theory into regulatory practice.

References

- ABA, *Antitrust Law Developments*, 6th ed., Chicago: American Bar Association, 2007.
- Baker, Don, and Bill Mullins, "Railroad Antitrust Reform – A Train To Nowhere?", *GCP: The Antitrust Chronicle*, September 2009.
- Bitzan, John D., "The Structure of Railroad Costs and the Benefits/Costs of Mergers," *Research in Transportation Economics* 5 (1999), 1-52.
- _____, "Railroad Cost Conditions – Implications for Policy," unpublished paper, Upper Great Plains Transportation Institute, North Dakota State University, May 10, 2000.
- _____, and Theodore E. Keeler, "Economies of Density and Regulatory Change in the U.S. Railroad Freight Industry," *Journal of Law and Economics* 50 (2007), 157-179.
- Breen, Denis A., "The Union Pacific/Southern Pacific Rail Merger: A Retrospective on Merger Benefits," *Review of Network Economics* 3 (2004), 283-322.
- Brennan, Timothy J., "The changing antitrust/regulation interface in the US: Railways and beyond," presented at the Australian Railway Business Economics Conference, Perth, July 2009.
- Bush, Darren, "The Intersection of Competition Policy and Surface Transportation Regulatory Policy: An Examination of S. 772, the Railroad Antitrust Enforcement Act," Testimony before the Senate Antitrust Subcommittee of the Judiciary Committee, October 3, 2007.
- Cambridge Systematics, "National Rail Freight Infrastructure Capacity and Investment Study," prepared for the Association of American Railroads, September 2007.
- Christensen Associates, *A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals that Might Enhance Competition*, prepared for the Surface Transportation Board, November 2008.
- Faulhaber, Gerald R., "Cross-Subsidization: Pricing in Public Enterprises," *American Economic Review* 65 (1975), 966-977.
- _____, "Cross-Subsidy Analysis with More than Two Services," *Journal of Competition Law and Economics* 1 (2005), 441-448.
- Frittelli, John, *CRS Report for Congress: Railroad Access and Competition Issues*, Washington, DC: Congressional Research Service, August 2007.
- GAO, *Freight Railroads: Industry Health Has Improved, but Concerns about Competition and Capacity Should Be Addressed*, Washington, DC: Government Accountability Office, October 2006.
- Gómez-Ibáñez, José A., "When Open Access Works: Lessons from North America's Railroads," working paper, Kennedy School of Government and Graduate School of Design, Harvard University, September 2009.

Hausman, Jerry, and Stewart Myers, "Regulating the U.S. Railroads: The Effects of Sunk Costs and Asymmetric Risk," *Journal of Regulatory Economics* 22 (2002), 287-310.

Ivaldi, Marc, and Gerard McCullough, "Density and Integration Effects on Class I U.S. Freight Railroads," *Journal of Regulatory Economics* 19 (2001), 161-182.

_____, and _____, "Subadditivity Tests for Network Separation with an Application to U.S. Railroads," *Review of Network Economics* 7 (2008), 159-171.

Kahn, Alfred E., *The Economics of Regulation: Principles and Institutions*, New York: Wiley, 1970.

Karikari, John Agyei, Stephen M. Brown, and Mehrzad Nadji, "The Union Pacific/Southern Pacific Railroads Merger: Effect of Trackage Rights on Rates," *Journal of Regulatory Economics* 22 (2003), 271-285.

Kwoka, John E., Jr., and Lawrence J. White, "Manifest Destiny? The Union Pacific and Southern Pacific Railroad Merger (1996)," in Kwoka and White, eds., *The Antitrust Revolution: Economics, Competition, and Policy*, 4th ed., New York: Oxford, 2004.

Laffont, Jean-Jacques, and Jean Tirole, *Competition in Telecommunications*, Cambridge: MIT, 2000.

Lim, Siew Hoon, and C.A. Knox Lovell, "Profit and Productivity of US Class I Railroads," *Managerial and Decision Economics* 30 (2009), 423-442.

MacDonald, James M., "Competition and Rail Rates for the Shipment of Corn, Soybeans, and Wheat," *RAND Journal of Economics* 18 (1987), 151-163.

_____, "Railroad Deregulation, Innovation, and Competition: Effects of the Staggers Act on Grain Transportation," *Journal of Law and Economics* 37 (1989a), 63-95.

_____, "Concentration and Railroad Pricing," in Leonard W. Weiss, ed., *Concentration and Price* (Cambridge: MIT, 1989b), 205-212.

Majure, W. Robert, "Verified Statement" on behalf of the U.S. Department of Justice before the Surface Transportation Board, Finance Docket No. 32670, concerning the proposed merger of the Union Pacific and Southern Pacific Railroads, 1996.

Murray, Tom, "A Different Way to Run a Railroad: Regional Versus Network Carriers," *Journal of Transportation Law, Logistics and Policy* 71 (2004), 293-302.

Massa, Salvatore, "A Tale of Two Monopolies: Why Removing Paper Barriers Is a Good Idea," *Transportation Journal* (2001).

Nober, Roger, Testimony before the Senate Surface Transportation and Merchant Marine Subcommittee of the Commerce, Science and Transportation Committee, Hearing on Railroad Shipper Issues and S. 919, the Railroad Competition Act of 2003, October 23, 2003.

_____, Testimony before the Railroad Subcommittee of the House Transportation and Infrastructure Committee, Hearing on the Status of Railroad Economic Regulation, March 31, 2004.

OECD, "Structural Reform in the Rail Industry," *OECD Journal of Competition Law and Policy* 8 (2006), 67-175.

Ouellet, David, "The Canadian Railway System – A Regulatory Attempt to Encourage Competition in a Rail Duopoly," presented at the Seminar on Railway Reform, Restructuring and Competition, OECD and Russian Ministry for Antimonopoly Policy, Moscow, December 2000.

Pittman, Russell W., "Railroads and Competition: The Santa Fe/Southern Pacific Merger Proposal," *Journal of Industrial Economics* 39 (1990), 24-26.

_____, "Specific Investments, Contracts, and Opportunism: The Evolution of Railroad Sidetrack Agreements," *Journal of Law and Economics* 34 (1991), 565-589.

_____, "Russian Railways Reform and the Problem of Non-Discriminatory Access to Infrastructure," *Annals of Public and Cooperative Economics* 75 (2004), 167-192.

_____, "Railway Mergers and Railway Alliances: Competition Issues and Lessons for Other Network Industries," *Competition and Regulation in Network Industries* 10 (2009), 259-278.

Sagers, Chris, "Competition Come Full Circle? Pending Legislation to Repeal the U.S. Railroad Exemptions," *GCP: The Antitrust Chronicle*, September 2009.

Schmidt, Stephen, "Market structure and market outcomes in deregulated rail freight markets," *International Journal of Industrial Organization* 19 (2001), 99-131.

Viscusi, W. Kip, Joseph E. Harrington, Jr., and John M. Vernon, *Economics of Regulation and Antitrust*, 4th ed., Cambridge, MA: MIT Press, 2005.

Wilson, Wesley, "Cost Savings and Productivity in the Railroad Industry," *Journal of Regulatory Economics* 11 (1997), 21-40.

Winston, Clifford, Scott M. Dennis, and Vikram Maheshri, "Duopoly Equilibrium over Time in the Railroad Industry," unpublished paper, September 2007.