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July 26, 2016

Ms. Cynthia T. Brown
Chief, Section of Administration
Office of Proceedings
Surface Transportation Board
395 E Street, S.W.
Washington, DC 20423

Re: EP 704 (Sub-No 1), *Review of Commodity, Boxcar, and TOFC/COFC Exemptions*

Dear Ms. Brown:

Enclosed for filing in the above-referenced proceeding are the comments of the Association of American Railroads.

Thank you for your assistance in this matter.

Respectfully,

/s/ Geoffrey Sigler	/s/ Cynthia Richman
Geoffrey Sigler	Cynthia Richman

Counsel for the Association of American Railroads

Enclosure

BEFORE THE SURFACE TRANSPORTATION BOARD

Ex Parte No. 704 (Sub-No. 1)

Review of Commodity, Boxcar, and TOFC/COFC Exemptions

COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS

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INTRODUCTION AND EXECUTIVE SUMMARY

The Association of American Railroads (AAR) submits these comments in response to the Surface Transportation Board's Notice of Proposed Rulemaking, EP 704 (Sub-No. 1), *Review of Commodity, Boxcar, and TOFC/COFC Exemptions* (STB served Mar. 23, 2016) (NPRM). AAR's members transport commodities covered by the class exemptions referenced in this proposal and have a strong interest in the Board's proposed revocation of these exemptions.[1]

The Board's proposal should be set aside, because it would undermine rather than promote competition. It also conflicts directly with Congress's explicit statutory mandate to *deregulate* this industry to the maximum extent possible. That mandate resulted from Congress's recognition that excessive regulation discouraged reinvestment and interfered with the railroads' ability to maintain a safe and efficient rail system while offering competitive prices and high-quality service to consumers. To reverse the crippling effect of stifling regulation, Congress eased regulatory burdens and adopted measures intended to enable freight railroads—which operate on infrastructure that they own, build, maintain, and pay for themselves—to compete effectively with other modes of transport. This market-based approach brought about a renaissance in the freight railroad industry. Today, America's freight rail system is the envy of the world. It provides enormous competitive advantages for U.S. businesses and a strong foundation for the American economy that redounds to the benefit of consumers in innumerable ways—precisely the results that Congress intended.

But with this NPRM, the Board proposes to reverse course *sua sponte*—without any new congressional mandate or other request to do so—by revoking several commodity exemptions in

[1] AAR's membership includes all seven Class I freight railroads as well as smaller non-Class I and passenger railroads. AAR members are united in working toward a single goal: to ensure U.S. railroads remain the safest, most efficient, cost-effective, and environmentally sound freight transportation mode in the world.

an unprecedented and concerning shift toward re-regulation. Not only does this proposal reflect misguided economic policy, it simply cannot be squared with Congress's express statutory command that the Board exempt railroads from regulation *to the maximum extent* possible and revoke exemptions only when *necessary* to carry out the rail transportation policy laid out in § 10101.[2] *See* 49 U.S.C. §§ 10502(a), (d). The Board's proposal gets things exactly backwards, by treating regulation—rather than *de*-regulation—as the presumptive goal of the statutory scheme.

There are numerous glaring problems with the Board's proposal. It neglects to explain how it could possibly be squared with the first two goals of the statutory Rail Transportation Policy (RTP), which requires the Board "to allow, *to the maximum extent possible*, competition and the demand for services to establish reasonable rates for transportation by rail" and "to minimize the need for Federal regulatory control over the rail transportation system." 49 U.S.C. §§ 10101(1), (2) (emphasis added). Even with respect to the other RTP goals it does reference, the NPRM lacks any supporting findings to show that wholesale re-regulation of these commodity groups is *necessary* to effectuate these goals or that railroads have abused (or even possess) market power—findings that the statute requires. *Id.* §§ 10502(a)(1)(B), (d). As explained in the accompanying expert statements, the record here simply does not support such

[2] The legislative history anticipated that revocation would be available as a remedy for specific instances of abuse of market power. H.R. Conf. Rep. 104-422, at 169 (1995), *reprinted in* 1995 U.S.C.C.A.N. 850, 854 ("When considering a revocation request, the Board should continue to require *demonstrated abuse of market power* that can be remedied *only by* reimposition of regulation or that regulation is *needed* to carry out the national transportation policy.") (emphases added). The Board has recognized that this was Congress's intent. *See, e.g.*, *WTL Rail Corp. Pet. for Decl. Order & Interim Relief; WTL Rail Corp. Pet. for Partial Revocation of Exemption*, EP 230 (Sub-No. 9), 2006 WL 392132, at *2 (S.T.B. served Feb. 17, 2006) ("Reconciling the RTP with the statutory admonition to be liberal in granting exemptions when regulation is not necessary to protect against abuse of market power, we have held that the extent of railroad market power is an essential issue in exemption revocation proceedings.").

findings, nor could it given the competitive conditions for transport of the commodities at issue. *See* Verified Statement of Mark Israel and Jonathan Orszag at 5, (July 26, 2016) ("Israel/Orszag Statement"); Verified Statement of Michael Baranowski and Benton Fisher at 5 (July 26, 2016) ("Baranowski/Fisher Statement").

The proposal fails to support the need for any revocations, let alone the need for sweeping re-regulation of five entire commodity groups. And the proposal completely ignores the process Congress already established for aggrieved shippers to request limited revocations, if they can demonstrate an *actual* abuse of market power. 49 U.S.C. §§ 10502(b), (d). In this regard, the Board's proposal contradicts the very statute it purports to implement. It is also fraught with numerous other substantive and procedural flaws:

First, the NPRM acknowledges that revenue to variable cost (R/VC) ratios above 180 percent cannot, standing alone, establish market power or abuse of market power. Yet it provides no other methodology or other coherent explanation as to why revocation is required. Indeed, the Board imbues the R/VC threshold with significance that is entirely divorced from its limited and express statutory purpose. Pursuant to statute, R/VC ratios below 180 percent are conclusively presumed not to reflect market power. But the Board, turning the statutory language on its head, concludes in the NPRM that R/VC levels in excess of 180 presumptively demonstrate market power. This approach not only contradicts the plain language of the statute, but ignores the numerous, fundamental, and well-documented limitations of R/VC as a determinant of market power.

Second, the only evidence the NPRM cites besides R/VCs to justify revocation is scant, anecdotal, and consistently one-sided. The NPRM cites isolated, unsubstantiated claims of market distortions by a handful of individual shippers, without addressing the contradictory evidence, including studies and economic analysis that bear directly on the decision at issue and refute these claims.

Third, as noted above, the NPRM entirely fails to address more limited alternatives to the proposed blanket revocations. Nor does it provide any justification for why alternatives—including the remedy Congress provided in the statute—are inadequate to accommodate shipper interests.

Finally, the Board has failed to follow reasonable rulemaking procedures. Five years after the Board held hearings on the general topic of revocation, it suddenly announced this revocation plan with respect to five specific commodities. As Commissioner Begeman's vigorous dissent and Vice Chairman Miller's reluctant concurrence make clear, in doing so, the Board is proceeding on the basis of an inadequate and stale record. The NPRM also suggests that the Board might even attempt to revoke additional exemptions that it did not discuss in the NPRM, which would only compound all of the foregoing errors and also introduce new ones, by failing to provide interested parties notice and a meaningful opportunity to comment.

In light of its numerous flaws, the Board should abandon this proposal, which marks an abrupt departure from the deregulatory mandate enacted by Congress. The Board's adherence to that mandate has steadfastly benefitted the rail industry, shippers, and U.S. consumers for nearly four decades. There is simply no lawful reason to change course.

BACKGROUND

A. Congress Mandated Deregulation Of The Railroad Industry.

The exemption provisions at issue here are rooted in the Railroad Revitalization and Regulatory Reform Act of 1976, Pub. L. No. 94-210, 90 Stat. 31 (1976) ("4-R Act"). At the time of the 4-R Act's enactment, the railroad industry was in a state of severe financial and operational distress; several railroads were in bankruptcy, on the brink of bankruptcy, or suffering serious financial decline. Congress recognized that these conditions were the direct result of nearly a century of excessive and stifling regulation by the Interstate Commerce Commission (ICC), the Board's predecessor agency. *See, e.g.*, S. Rep. No. 94-499, at 2 (1975), *reprinted in* 1976 U.S.C.C.A.N. 14, 16. The 4-R Act amended the Interstate Commerce Act to allow competitive forces to play a greater role, including by giving the ICC power to exempt certain services or transactions from regulation. This exemption provision was modest, however, and only permitted the ICC to grant an exemption when, among other things, the matter was "limited in scope" and application of the regulation at issue "would serve little or no useful purpose." 4-R Act § 207.

In 1980, Congress took the next step toward reversing the corrosive effects of overregulation by passing the Staggers Act, Pub. L. No. 96-448, 94 Stat. 1895 (1980). Congress recognized that the railroad industry remained heavily burdened by "unnecessary and inefficient" regulations, and that "greater reliance on the marketplace" was "essential to achieve maximum utilization of railroads, to save energy and combat inflation." H.R. Conf. Rep. 96-1430, at 79 (1980), *reprinted in* 1980 U.S.C.C.A.N. 4110, 4111. Significantly, the Staggers Act adopted the federal Rail Transportation Policy (RTP), which codified the congressional preference "to allow, *to the maximum extent possible*, competition and the demand for services to establish reasonable rates for transportation by rail" and "to minimize the need for Federal regulatory control over the rail transportation system." *See* former 49 U.S.C. § 10101a (now codified at *id.* § 10101) (emphasis added). It also strengthened and expanded the exemption provision to reflect Congress's expectation that the agency "reduce its exercise of authority to instances where regulation is *necessary* to protect against abuses of market power," remove "*as many as possible* of [its] restrictions on changes in prices and services by rail carriers," and "adopt a policy of reviewing carrier actions after the fact to correct *abuses of market power*." H.R. Conf. Rep. 96-1430, at 105 (emphases added).

In 1995, Congress enacted the ICC Termination Act (ICCTA), which further strengthened the exemption provision, now codified at Section 10502. *See* Pub. L. No. 104-88 § 10502, 109 Stat. 803, 808 (1995). Congress observed that deregulation had "led to a dramatic revitalization of the rail industry while protecting significant shipper and national interests" and that, in particular, "exemptions have proven highly beneficial to shippers and railroads." S. Rep. No. 104-176, at 6, 8 (1995). Thus, Congress made it "an explicit part of the agency's *statutory duty* to utilize exemptions *to the maximum extent* permissible under the law." H.R. Rep. No. 104-311, at 96 (1995), 1995 U.S.C.C.A.N. 793, 808 (emphases added).

Consistent with these directives, Section 10502 provides that "the Board, *to the maximum extent* consistent with this part, *shall* exempt a person, class of persons, or a transaction or service *whenever* the Board finds" that regulation "is *not necessary* to carry out the [rail] transportation policy of Section 10101" and "is *not needed* to protect shippers from the *abuse of market power*." 49 U.S.C. §10502(a) (emphases added). By contrast, the statute provides that the Board "*may* revoke an exemption," in whole or in part, *only* when regulation "is *necessary* to carry out the transportation policy of Section 10101." *Id.* § 10502(d) (emphases added).

Congress stressed that the revocation authority found in Section 10502(d) must be exercised sparingly. The Conference Report accompanying the ICCTA explained that "[w]hen considering a revocation request, the Board should continue to require *demonstrated abuse of market power* that can be remedied *only by* reimposition of regulation or that regulation is *needed* to carry out the national transportation policy." H.R. Conf. Rep. 104-422, at 169 (1995), *reprinted in* 1995 U.S.C.C.A.N. 850, 854 (emphases added). The Conference Report further stated that Congress "expects the Board to examine all competitive transportation factors that restrain rail carriers' actions and that affect the market for transportation of the particular commodity or type of service for which revocation has been requested." *Id.*; *see also* S. Rep. No. 104-176, at 8-9 (same).

Last year, Congress passed the STB Reauthorization Act of 2015, Pub. L. No. 114-110 (2015). While reauthorizing the Board for the first time since it was created twenty years ago, Congress had the opportunity to change these important deregulatory provisions. It did not do so.

B. Wholesale Revocation Of An Exemption Would Be Unprecedented.

The Board has long recognized that the statutory scheme described above "reveals a Congressional intention to have the [agency] be liberal in granting exemptions and to correct problems with particular exemptions after the problems actually arise." *Ass'n of Am. Railroads-Petition to Exempt Indus. Dev. Activities from 49 U.S.C. S 10761(a), 10761(a)(1), 11902, 11903, & 11904(a)*, EP 346 (Sub-No. 26), 8 I.C.C.2d 365, 377 (I.C.C. Mar. 24, 1992). Thus, consistent with the "Congressional admonition on exemptions," the agency's "[e]xemption analysis [has] take[n] a broad-brush approach to analysis of the competitive environment as a whole and [has] look[ed] to the remedy of partial revocation to address specific competitive situations should that become necessary." *Santa Fe S. Pac. Corp.-Control- S. Pac. Transp. Co.*, FD 30400, 2 I.C.C.2d 709, 741 & n.28. (I.C.C. July 24, 1986).

In the early and mid-1990s, the ICC, and then the Board, exempted the specific commodities at issue here from regulation after evaluating relevant market conditions. In the ensuing decades, only a handful of shippers petitioned the Board to revoke an existing exemption, and, when reviewing such petitions, the Board has heeded the statute's deregulatory mandate. In 2000, for example, the Board rejected a petition to partially revoke one of the exemptions at issue here because, as the Board explained, an "exemption will be revoked where regulation is shown to be *necessary*," and "[t]hat showing *cannot* be made" where the carrier "*lacks market dominance* over the . . . movements at issue." *FMC Wyo. Corp. v. Union Pac. R.R.*, EP 346 (Sub-No. 29A), 2000 WL 33527851, at *13 n.17 (STB served May 12, 2000) (emphases added). The agency has *never* issued a broad revocation of an entire commodity group. Rather, in those rare instances in which the Board has revoked an exemption, it has surgically applied the revocation only "to the extent necessary" to address specific factual circumstances with respect to specific movements. *See Granite State Concrete Co., Inc. & Milford-Bennington R.R. Co., Inc.*, STB Docket No. 42083, Fed. Carr. Cas. (CCH) ¶ 37124 (STB served Sept. 15, 2003); *see also Granite State Concrete Co., Inc. & Milford-Bennington R.R. Co., Inc.*, STB Docket No. 42083, Fed. Carr. Cas. (CCH) ¶ 37165 (STB served Sept. 24, 2004).

C. The Board's 2011 Hearing Supported the Exemptions.

On October 21, 2010, the Board announced that it would "hold a hearing to explore the continuing utility of and the issues surrounding the categorical exemptions under § 10502." Notice at 3, EP 704 (Sub-No. 1), *Review of Commodity, Boxcar, and TOFC/COFC Exemptions* (STB served Oct. 21, 2010). The Board characterized the 2011 proceeding as "primarily an informational hearing" on the current role of exemptions in general, Transcript of Hearing at 19, *Review of Commodity, Boxcar, and TOFC/COFC Exemptions* (Feb. 24, 2011) (statement of Commissioner Mulvey) (hereinafter "Tr."), and it urged stakeholders "not to read too much into it," because it merely reflected the Board's desire "to stay current" on the issue and "doesn't mean anything in particular," *id.* at 15 (statement of Vice Chairman Nottingham). The Board received written comments from several shippers and railroads and heard oral testimony from twenty-one witnesses.

Several railroads and railroad associations, including AAR, submitted comments (and supporting evidence) demonstrating that revoking existing exemptions would be misguided. AAR included in its submission a detailed statement from Dr. Robert D. Willig, Professor of Economics and Public Affairs at Princeton University. Statement of Robert Willig in AAR Comment, *Review of Commodity, Boxcar, and TOFC/COFC Exemptions*, EP 704 (Sub-No. 1) (filed Jan. 31, 2011) (hereinafter "Willig Statement"). Drawing on the data and findings from a report commissioned by the Board (the "Christensen Report"),[3] Willig explained that increases in rail rates beginning in 2004 coincided with a sharp increase in marginal costs (which are not directly reflected by R/VC ratios) as well as a dramatic increase in traffic volumes (i.e., demand). *Id.* at 12-14. The railroads responded by investing more than $73.4 billion to expand capacity and increase efficiency. *Id.* at 15. Willig explained that "[t]his kind of response is precisely what we would expect under well-functioning market forces" and "is at odds with an industry in

[3] Lauritis R. Christensen Associates, Inc., *A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals That Might Enhance Competition* (Nov. 2009) ("Christensen Report"), *available at* http://www.stb.dot.gov/stb/elibrary/CompetitionStudy.html. The Board commissioned the Christensen Report in response to a 2006 report by the Government Accountability Office (GAO), which observed that rail rates had generally declined between 1985 and 2000 but had then slightly increased from 2001 to 2004 and recommended that the Board undertake further analysis. *See* GAO Report, *Freight Railroads: Industry Health Has Improved, but Concerns about Competition and Capacity Should Be Addressed*, GAO-07-94, at 3 (October 6, 2006). The Christensen Report concluded that the increases in rail rates observed in the GAO Report were "largely the result of increases in fixed and marginal costs—related to increases in the railroad industry's input prices and diminishing productivity growth—and *not due to an increased exercise of market power.*" Christensen Report, Executive Summary at 38 (emphasis added). "One effect of this slowing productivity growth," the Report explained, "is a diminished ability of railroads to absorb increases in their input prices in recent years." *Id.* at 18. The Report explained that rail "price increases since 2003 have largely matched marginal cost increases," *id.* at 22, that "[e]conomies of density and fixed costs require railroad pricing above short-run marginal cost to achieve revenue sufficiency," *id.* at 5, and that, on the whole, "the Class I railroad industry does not appear to be earning above normal profit," *id.* Perhaps most notably for purposes of this proceeding, the Report warned that "[t]he ratio of revenue to URCS variable cost (R/VC) . . . is not a reliable indicator of market dominance." *Id.* at 5.

which capacity is being artificially withheld as an exercise of market power aimed at raising rates." *Id.* at 16.

Willig further observed that the upward trend in rail rates "that began around 2003-04 is precisely what we should have expected in a healthy rail industry." *Id.* at 10. He pointed out that "there is nothing in the economics of competition that implies that prices in competitive markets should move in only one direction—downward," but rather, in competitive markets, prices "properly move down *and up* with the interaction of supply and demand." *Id.* at 9-10. Willig explained how "strong demand and rising volumes pushing against effective limits of capacity resulted in increases in average rail industry rates of return in the first half of the 2000s" and then, "as would be expected, those rates of return deteriorated with the deep recession of recent years." *Id.* at 18. He noted that, if anything, "these patterns should tell us that rail industry financial health is precariously at the mercy of overall supply and demand conditions in the economy." *Id.* He warned that "[c]ertainly, there is no basis for asserting that improved financial health for individual railroads or for the industry as a whole is the product of abuses of market power or across-the-board diminutions in competition" that "warrant wholesale revocation of exemptions." *Id.*

Some proponents of revocation submitted unsubstantiated statements claiming that railroads possess "pricing power" over their shipments. Other shippers, however, opposed general revocation of the commodity exemptions. For example, United States Gypsum Company (USG), which ships several exempt commodities at issue in these proceedings, stated that "the classification of 'exempt' works for USG." USG Comments at 3, *Review of Commodity, Boxcar, and TOFC/COFC Exemptions*, EP 704 (Sub-No. 1) (filed on Jan. 25, 2011). USG explained that "[m]arket based rates better serve [its] interests versus rates developed on the basis of 'will they survive a shipper rate challenge,'" and it warned that "the loss of 'market' based solutions will only point to one thing for USG, increased cost and lost opportunities." *Id.*

The Board took no further action in these proceedings until five years later, when it issued the current NPRM.

D. Five Years Later, The Board Proposes Wholesale Revocation Of Five Commodity Groups Based on R/VC Ratios.

On March 23, 2016, without first providing interested parties with the opportunity to supplement the record, the Board issued the current NPRM proposing to revoke, in full, "the existing class exemptions under 49 C.F.R. Part 1039 for (1) crushed or broken stone or rip rap [herein after "crushed stone"]; (2) hydraulic cement; and (3) coke produced from coal, primary iron or steel products, and iron or steel scrap, wastes or tailings" [hereinafter "coke, iron, and steel scrap"]." NPRM at 1.[4] The Board also "invite[d] interested parties to file, during the comment period for these proposed rules, comments regarding the possible revocation of other commodity class exemptions." *Id.*

The record upon which the NPRM relied for the proposed revocations consisted of "the oral testimony and written comments" from the 2011 hearings, "waybill rate data for years 1992 through 2013, and other industry information." NPRM at 3. Because the Board failed to release this information when it issued the NPRM, AAR requested all materials underlying the proposed rules, as well as the waybill rate data from 1987 to 2014 and other data relied upon by the

[4] The NPRM proposes to revoke a total of five commodity exemptions: STCC Nos. 14-2, crushed or broken stone or rip rap; 29-914, coke produced from coal; 33-12, primary iron or steel products (plates, pipes, and rods); 40-211, iron or steel scrap, wastes, or tailings; and 32-4, hydraulic cement. The NPRM discusses coke, iron, and steel scrap (STCC Nos 29-914, 33-12, and 40-211) collectively. *Id.*

Board.[5] The Board responded by posting a handful of Excel spreadsheets on its website and providing the waybill data under protective order.[6] The Board invoked the Freedom of Information Act's (FOIA) deliberative process privilege with respect to all other information underlying the proposed rules. *See* Decision, *Review of Commodity, Boxcar, and TOFC/COFC Exemptions*, EP 704 (Sub-No. 1) (STB served May 6, 2016).

The NPRM relied on waybill data to derive R/VC ratios for the subject commodity groups. *Id.* at 4. Although the Board acknowledged that "R/VC ratios in excess of the market dominance threshold of 180% do not, standing alone, establish market power or an abuse of such power," *id.* at n.7, the NPRM in fact relied on R/VC levels as the sole methodological justification for the proposed revocations.[7]

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[5] Although the Board stated that it relied only on waybill rate data from 1992 to 2013, AAR requested data going back to 1987, shortly before the first exemptions were granted, in order to gain a full picture of the data over the full time period of the exemptions.

[6] The documents released in response to AAR's request were posted on the STB's website and consist of two spreadsheets released in response to AAR's initial request (unredacted versions of which were disclosed under protective order) and three documents released in response to AAR's FOIA appeal. *See* http://www.stb.dot.gov/stb/rail/Exemption.html.

[7] The NPRM's characterization of R/VC ratios above 180 percent as "the market dominance threshold," NPRM at 4, n.7, is misleading. As further discussed below, the statutory provision governing the Board's determination of market dominance provides that an R/VC ratio above 180 percent "does *not* establish a presumption" of market dominance, and that, instead, R/VC ratios below 180 percent are conclusively presumed *not* to possess market dominance. 49 U.S.C. § 10707(d) (emphases added). Thus, because the statute provides that an R/VC ratio above 180 percent only triggers the Board's jurisdiction, for regulated commodities, to determine *whether* a given rail carrier possesses market dominance, i.e., whether there is "an absence of effective competition from other rail carriers or modes of transportation for the transportation to which a rate applies," *id.* § 10707(a), (b), the NPRM's observation that a certain percentage of traffic is moved at R/VC ratios above 180 percent did not amount to a finding of market dominance.

With respect to crushed stone, the Board reasoned that, although "it appears that railroads still have a relatively small modal market share of the overall commodity group," the testimony of a single shipper, Texas Crushed Stone (TCS), "suggests that trucking does not effectively limit railroad market power with respect to this commodity group." NPRM at 5.[8] It further reasoned that "waybill data analysis demonstrates that the average R/VC ratio for potentially captive traffic for this commodity group increased" by nine percent from 1992 to 2013, and that "the percentage of potentially captive traffic by revenue for this commodity group," i.e., the percentage moved at R/VC ratios in excess of 180 percent, had also increased during this time period. *Id.* at 5-6. The Board concluded that these changes "indicate that revocation of the exemption *may* be necessary to carry out the RTP provisions" cited in the NPRM. *Id.* at 6 (emphasis added).

With respect to coke, iron, and steel scrap, the NPRM noted that some steel and coke production facilities had relocated to other parts of the country, and that the average length of "non-intermodal" transport of these commodities via truck had increased. *Id.* at 7. The NPRM speculated that geographic relocation of some of the manufacturing plants for these commodities could mean that other modes of transport had become less viable. But the NPRM noted that the Board lacked "modal market share data over time (between railroads, trucks, and barge) with regard to these commodity groups," which it acknowledged would be "helpful in assessing the degree to which the geographic migration may have affected intermodal competition." *Id.* at 8. The NPRM further found the increase in the length of "non-intermodal movements" via truck to

[8] The NPRM makes no effort to reconcile TCS's testimony with contradictory evidence in the record. *See, e.g.*, Tr. at 216 (testimony from Union Pacific representative that "Texas Crushed Stone . . . is a great example of the significant competition in the aggregates market . . . . We have worked hard to regain the portion of business that we have lost from them, but they have consistently identified that they have had more other [*sic*] competitive options").

be "one indication" that "railroads *may* be enjoying *more* market power now" than when the exemptions were first adopted, based on the unsupported assertion that "[t]rucking becomes less viable when the length of the haul exceeds 500 miles." *Id.* 7 & n.12 (emphases added). The NPRM did not explain how intermodal carriage, i.e. shipments made via more than one form of transport, would impact this analysis. The NPRM further pointed to waybill rate data to conclude that the proportion of traffic moved at R/VC ratios above 180 percent had increased, which, in its view, "*suggests* that railroads *may* be exerting increased market power over shippers of these commodities." *Id.* at 8 (emphases added).

With respect to hydraulic cement, the NPRM reasoned that "increases in both the R/VC ratio for potentially captive traffic and the percentage of potentially captive traffic by revenue are *possible indicators* of increased railroad market power." *Id.* at 10 (emphasis added). The NPRM reasoned that this R/VC data, together with general assertions made in unidentified shipper testimony and statistics cited in Portland Cement Association's (PCA) comment letter—which, though unsubstantiated, were taken at face value—supported revocation of the exemption for hydraulic cement. *Id.* at 9-10.

Despite the tentative and inconclusive nature of these findings, the NPRM concluded that revocation, in whole, of these commodity exemptions was "necessary to foster sound economic conditions in transportation, 49 U.S.C. § 10101(5), maintain reasonable rates where there is an absence of effective competition, § 10101(6), and prohibit predatory pricing and practices, avoid undue concentrations of market power, and prohibit unlawful discrimination, § 10101(12)." NPRM at 4.

Vice Chairman Miller concurred in the decision, but wrote "separately to express [her] frustration at the lengthy delay by the Board to take any action on this matter, and the narrow analysis that was used to reach this result." NPRM at 14 (Vice Chairman Miller, concurring). She noted that, "given the long wait," she had hoped that "the Board would at least conduct a thorough and wide-ranging analysis," but, as the NPRM "makes clear, that was not the case." *Id.* Vice Chairman Miller noted that the NPRM "mainly relies on two pieces of data: the change in R/VC ratios over the last two decades and the percentage of traffic moved by rail that is 'potentially captive' (i.e., above 180% R/VC)," which she acknowledged was "not the strongest foundation on which to propose new rules." *Id.* Vice Chairman Miller also criticized the decision for failing to "provide an analysis of all other commodities that are currently exempt from regulation" or to consider "whether commodities that are currently regulated should be exempted," instead choosing "to look only at commodities that are already exempt," while "ignor[ing] the request from Norfolk Southern Railway (NSR) for the Board to examine four commodities that NSR claims no longer require Board regulation." *Id.*

Because she was "unsatisfied with this limited analysis," Vice Chairman Miller "requested the Board's Office of Economics (OE) to conduct such analysis," without which she "would not have felt comfortable voting to approve this decision." *Id.* at 14-15. She noted that, although she joined the Chairman in voting to approve the proposed rules, she agreed with dissenting Commissioner Begeman "that the record on which we are basing this decision is less than robust and could benefit from additional information" and that she could understand Commissioner Begeman's "concern about proceeding directly to a NPRM." *Id.* at 15. Nevertheless, she concluded that "our stakeholders have waited for five years for the Board to take action," and that she was thus "reluctant to proceed in a fashion that will add even more time to get to a final rule." *Id.*

Commissioner Begeman dissented from the proposed rules. Mindful that the statute "directs the Board to exercise its exemption authority broadly," and that this statutory directive remains unchanged, she concluded that the Board should not "narrow or revoke exemptions granted under that authority absent compelling circumstances." *Id.* at 16 (Commissioner Begeman, dissenting). Far from showing compelling circumstances, Commissioner Begeman explained that "[t]he 'record' the majority is relying on to support its proposed changes is a waybill-based hunch using limited information on these commodities." *Id.* at 15. Moreover, Commissioner Begeman explained that the record was "created over half a decade ago." *Id.* As a result, the proposal "fails to account" for "[c]onsiderable and important events [that] have taken place since the February 2011 hearing and the 2013 waybill cutoff, including the 2014 rail service crisis that impacted shippers and carriers across the country and the significant shifts in service demand for coal, oil, and other important commodities," as well as "[f]uel prices," which "changed dramatically" over that period. *Id.* at 16. Commissioner Begeman thus concluded that the Board should have "ask[ed] the parties to update the record so that the Board c[ould] propose an informed rule based on up-to-date information," rather than adopting the proposed rules, which are "completely uninformed by any of these or other current market considerations." *Id.* at 16. But instead, Commissioner Begeman observed that "the majority appears to be taking the path of least resistance to close a languishing docket," "without really knowing whether the revocations are justified." *Id.*

DISCUSSION

The Board should abandon the proposed NPRM because it directly conflicts with the explicit congressional mandate to deregulate the railroad industry, ignores key aspects of the RTP that the Board is required to consider, and fails to make the statutory findings required to revoke an exemption. Moreover, the Board has failed to articulate a coherent justification for the

NPRM, instead accepting the unsupported assertions of certain shippers at face value (and entirely ignoring the testimony of other shippers like USG), while relying on a metric that has been widely acknowledged to be a flawed measure even to indicate, much less establish, the existence of market power. In the process, the Board completely ignores evidence in the record that supports upholding the exemptions. The Board's unprecedented decision also marks an abrupt shift from its longstanding policy and entirely fails to assess whether the existing remedial process, or at least a narrowly tailored alternative, might be appropriate, assuming there was some basis for a limited revocation (which there is not). Finally, the Board has failed to adhere to its basic duty of reasoned decision-making under the Administrative Procedure Act (APA), 5 U.S.C. § 553, by pressing ahead with the proposed rules based on a stale and inadequate record and without providing parties with proper notice and a meaningful opportunity to comment.

I. The Proposed Rules Do Not Meet The Statutory Requirements For Exemption.

The NPRM ignores the congressional mandate to minimize regulation of the railroad industry and, on its face, fails to make the statutorily required finding that there is an abuse of market power or that the RTP otherwise requires revocation of the listed exemptions. Because the proposed rules are "contrary to clear congressional intent," they are not entitled to deference. *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 843 n.9 (1984).

A. The Board's Proposed Rules Ignore The Congressional Mandate To Minimize Federal Regulation Of The Railroad Industry.

The plain language of Section 10502, read together with the statutory scheme as a whole, reflects Congress's policy judgment in favor of *de*-regulation of the railroad industry. Section 10502 provides that the Board "shall" exercise its exemption authority "to the maximum extent" consistent with the statute and that it "may" revoke exemptions, in whole or in part, only when "necessary" to effectuate the RTP goals in Section 10101. Section 10101's first two goals, in turn, provide that "it is the policy of the United States Government . . . to allow, *to the maximum extent possible*, competition and the demand for services to establish reasonable rates for transportation by rail," 49 U.S.C. § 10101(1) (emphasis added), and "to minimize the need for Federal regulatory control over the rail transportation system," *id.* § 10101(2). The Board "must consider all aspects of the [rail transportation] policy bearing on the propriety of the exemption and must supply an acceptable rationale therefor. Only by doing so can [the Board] avoid the taint of arbitrariness." *Illinois Commerce Comm'n v. I.C.C.*, 787 F.2d 616, 627 (D.C. Cir. 1986).

Courts and the agency alike have recognized that this statutory language mandates the "deregulation of the entire railroad industry to the maximum extent possible in conformity with the national rail transportation policy," *Brae Corp. v. United States*, 740 F.2d 1023, 1043 (D.C. Cir. 1984), and that "the RTP contemplates that market discipline in competitive markets, rather than government regulation, is the best way to ensure a healthy transportation system that will most efficiently meet the needs of the shipping public," *Improvement of TOFC/COFC Regulations (Pickup & Delivery)*, EP 230 (Sub-No. 7), 6 I.C.C.2d 208, 214-15 (I.C.C. Nov. 27, 1989). As the D.C. Circuit has previously stated, the "maximum extent possible" language, "so forcefully expressed, manifests a preference for market-based rather than regulatory rate setting," and the Board may not simply ignore this "strong language favoring rail deregulation," as it has done here. *Ass'n of Am. R.Rs. v. Surface Transp. Bd.*, 237 F.3d 676, 677, 680 (D.C. Cir. 2001).

The statute protects individual shippers from abuse of market power by providing a right to petition the Board for revocation and receive expeditious review, 49 U.S.C. §§ 10502(b), (d). The agency has recognized that, in considering revocations, the statute requires it to take a targeted, narrow approach, "look[ing] to the remedy of partial revocation to address specific competitive situations should that become necessary." *Santa Fe S. Pac. Corp.-Control- S. Pac.*

Transp. Co., FD 30400, 2 I.C.C.2d at 741; *see also California High-Speed Rail Authority Construction Exemption in Fresno, Kings, Tulare, & Kern Ctys., Cal.*, FD 35724 (Sub-No. 1), 2014 WL 3973120, at *45 (Aug. 11, 2014) ("Exemptions are to be used 'to the maximum extent' consistent with our governing statute.") (quoting 49 U.S.C. § 10502).

The Board completely ignores the deregulatory mandate and proposes to re-regulate these commodity groups in their entirety. The Board's rationale for the revocations suggests that it has things exactly backwards, viewing regulation—rather than *de*-regulation—as the presumptive goal of the statutory scheme. The NPRM concludes that re-regulation is necessary because "there have been many changes in the railroad industry" in the period since the exemptions of the subject commodities were adopted. NPRM at 3. But those changes—which by congressional design reflect the expanded role of market forces in the rate setting function—do not, without more, provide a basis for ignoring the statute's deregulatory mandate.

Moreover, even if the Board believed that the ICCTA *should* be updated to permit blanket re-regulation of the railroad industry, "an agency may not rewrite clear statutory terms to suit its own sense of how the statute should operate." *Util. Air Regulatory Grp. v. E.P.A.*, 134 S. Ct. 2427, 2446 (2014). Such action would amount to the "'unauthorized assumption by an agency of major policy decisions properly made by Congress.'" *W. Union Tel. Co. v. FCC*, 729 F.2d 811, 817 (D.C. Cir. 1984) (quoting *Am. Ship Bldg. Co. v. N. L. R. B.*, 380 U.S. 300, 318 (1965)). Thus, "[i]f the scheme proves unworkable, the [Board] must return to Congress and seek appropriate legislation," but it "cannot simply ignore Congress' words and attempt to write a new statute out of whole cloth." *Id.*

Because the Board's proposed revocations ignore core RTP goals and directly contradict the statutory "mandate to deregulate," *Brae Corp.*, 740 F.2d at 1059, the Board should decline to adopt them.

B. The Board Failed To Make The Statutorily Required Findings To Revoke The Class Exemptions.

Section 10502(d) provides that "the Board may revoke an exemption, to the extent it specifies, when it finds that application in whole or in part of [the statute] is *necessary* to carry out the [rail] transportation policy of Section 10101." 49 U.S.C. § 10502(d) (emphasis added). Even with respect to the RTP goals it does mention, however, the NPRM fails to make findings anywhere close to establishing that regulation "necessary" to effectuate them. Nor does the Board make a finding that railroads possess (much less that they have abused) market power with respect to the traffic at issue—which the Board itself has deemed to be "an essential issue in exemption revocation proceedings." *WTL Rail Corp. Pet. for Decl. Order & Interim Relief; WTL Rail Corp. Pet. for Partial Revocation of Exemption*, EP 230 (Sub-No. 9), 2006 WL 392132, at *2 (S.T.B. served Feb. 17, 2006). The record does not support such findings here. Because the Board did not—and on this record could not—find that wholesale revocation of the listed commodity exemptions "is *necessary* to carry out" those aspects of the RTP it identified, its proposed rules are invalid. *Id.* § 10502(d).

As the Board has previously recognized, an exemption can "be revoked *only* where regulation is shown to be *necessary*," and "[t]hat showing *cannot* be made" where the carrier "*lacks market dominance* over the . . . movements at issue." *FMC Wyo. Corp. v. Union Pac. R.R.*, NOR 42022, slip op. at 13 n.17 (STB served May 12, 2000) (emphases added). Here, the NPRM points only to R/VC ratios and vague "market place changes," which it tentatively concludes "*suggest*[] that railroads *may* be exerting increased market power over shippers of these commodities." NPRM at 8 (emphases added); *see also id.* at 5, 10. The NPRM makes no finding—and the record contains no evidence—that railroads actually possess market power with respect to the commodities at issue, much less that there is a "*demonstrated abuse of market power* that can be remedied *only by* reimposition of regulation or that regulation is *needed* to carry out the national transportation policy." H.R. Conf. Rep. 104-422, at 169 (emphases added). Indeed, as discussed in more detail *infra*, Dr. Mark A. Israel and Mr. Jonathan M. Orszag's analysis, which properly discusses the various sources of competition that constrain rail rates, conclusively rejects any basis for revocation. *See* Israel/Orszag Statement at 29.

Instead, the NPRM's analysis of each of the commodity exemptions it proposes to revoke boils down to an observation that average R/VC ratios increased in 2013 as compared to the early nineties—a time when Congress, in passing the ICCTA, had determined that further deregulatory efforts were still required to fully revitalize the railroad industry. The Board did not—and indeed on this record *could not*—make the findings required to support its "belie[f] that reestablishing regulatory oversight [over the NPRM commodities] is *necessary* to foster sound economic conditions in transportation, 49 U.S.C. § 10101(5), maintain reasonable rates *where there is an absence of effective competition*, § 10101(6), and *prohibit predatory pricing and practices, avoid undue concentrations of market power, and prohibit unlawful discrimination*, § 10101(12)." NPRM at 4 (emphases added). Rather, as the accompanying expert statements make clear, the evidence in the record—and sound application of established economic principles that the Board has previously recognized—demonstrates that the exemptions should *not* be categorically revoked.

Because the Board has ignored the plain language of the statute and failed to draw "a rational connection between the facts found and the choice made," its proposed rules are invalid.

Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983) (quotation marks omitted).

II. The NPRM's Reliance On R/VC As The Basis For Revocation Is Arbitrary.

In addition to contradicting the statute, the NPRM relies on R/VC levels together with isolated snippets of individual shippers' testimony as the bases for its proposal. As Commissioner Begeman points out, this approach is ultimately "a waybill-based hunch," which is woefully inadequate to establish the "compelling circumstances" required by statute to warrant revocation. NPRM at 15-16 (Commissioner Begeman, dissenting). By employing "perfunctory analysis" and "relying only on generalized conclusions, . . . the Board [has] 'entirely failed to consider an important aspect of the problem,' making its assessment [of market conditions] arbitrary and capricious." *AEP Texas N. Co. v. Surface Transp. Bd.*, 609 F.3d 432, 441-42 (D.C. Cir. 2010).

A. R/VC Is Not A Reliable Indicator Of Market Power.

Although the NPRM observes, correctly, that "R/VC ratios in excess of . . . 180% do not, standing alone, establish market power or an abuse of such power," NPRM at 4, n.7, the Board relies almost exclusively on R/VC ratios as the basis for its proposal. Because of its numerous, fundamental, and well-documented limitations, however, R/VC is simply "not a reliable indicator of market dominance," Christensen Report, Executive Summary, at E-5, and thus cannot serve as the sole methodological basis for revoking the listed commodity exemptions.

Congress sanctioned use of R/VC levels to *limit* the Board's jurisdiction, based on a legislative compromise set out in the statutory scheme: The statute provides that, when assessing the reasonableness of a rail rate for those commodities that are regulated, "the Board shall find that the rail carrier . . . does *not* have market dominance" if the "revenue-variable cost percentage for such transportation . . . is less than 180 percent." 49 U.S.C. § 10707(d)(1)(A) (emphasis added). The Board's reliance on R/VC ratios *above* 180 percent as a basis to revoke exemptions directly contradicts the statute, which expressly states that an R/VC ratio "equal to or greater than 180 percent does *not* establish a presumption" that a rail carrier possesses market power or that a rail rate is unreasonable. *Id.* § 10707(d)(2) (emphases added). In this regard, the NPRM also conflicts with the Board's prior recognition of "the dangers inherent in relying on average numbers," and its admonition that—even for those commodities subject to regulation—"R/VC benchmarks can only provide the starting point for a rate reasonableness analysis, not the end result." *Rate Guidelines-Non-Coal Proceedings*, EP 347 (Sub-No. 2), 1996 WL 741358, at *11 (S.T.B. served Dec. 31, 1996).

Beyond its limited jurisdictional role, the R/VC threshold of 180 percent lacks any independent economic significance with respect to establishing that market power exists. As explained in the accompanying expert reports, the Board's method of calculating the "variable cost" component of R/VC via the Uniform Railroad Costing System (URCS)—which is largely based on system-wide average unit costs, rather than calculations based on movement specific-characteristics—provides, at most, a rough proxy that does not accurately reflect the true cost of a given shipment. Moreover, "R/VC does not properly account for important elements relevant to determining rates, including quality, investment, and a properly calculated measure of marginal cost," and thus "R/VC levels and changes may have nothing to do with competition or market power." Israel/Orszag Statement at 9. As a result, "reliance on R/VC to determine market power will lead to flawed conclusions." *Id.* at 9-10.

Numerous independent studies—including one commissioned by the Board itself—have consistently concluded that R/VC is *not* a reliable indicator of market power.

The STB-commissioned Christensen Report identified numerous reasons why R/VC is an unreliable method for determining that a carrier possesses market power. For one, "[t]he R/VC ratio is problematic as an indicator of market-dominant behavior" because "it inextricably combines local market structure factors with various other cost and demand-related factors." Christensen Report, Vol. 2 – Analysis of Competition, Capacity, and Service Quality, Ch. 11, 11-25. Thus, the report concluded that "R/VC, aggregated by commodity and county, is in fact weakly correlated with railroad and water competition measures and in our view should *not* serve as a stand-alone measure of market-dominant behavior." *Id.* (emphasis added). The report also identified methodological flaws in the R/VC data contained in the Carload Waybill Sample data that could "materially affect the measured shares of shipments exceeding 180 percent R/VC." *Id.* The report observed, for example, that the method for measuring average R/VC changed in 2003, resulting in a sudden "jump in the average R/VC for intermodal shipments." *Id.* Thus, the report warned that "methodological changes and other large shifts in R/VC ratios over time complicate evaluation of R/VC trends." *Id.* The report further noted that "measuring shipment-level costs is limited by latent cost-causing factors, which may include shipment characteristics unmeasured or not measurable using available data." *Id.* at 11-26. Thus, "[t]he implication is that much of the R/VC variation is related to factors *other than* market structure features that determine shipper captivity." *Id.* (emphasis added). In light of "[t]he weak relationships between R/VC ratios and market structure factors," the report warned that "regulatory reforms that would establish R/VC tests as the sole quantitative indicator of a railroad's market dominance are inappropriate." *Id.*

A study by the Transportation Research Board (TRB), conducted in response to a 2005 request from Congress, likewise concluded that R/VC lacks any "meaningful connection to a shipment's rate or to the level of market power possessed by the railroad." TRB Special Report 318: Modernizing Freight Rail Regulation (2015), at 4. The TRB Report explained that "because most railroad costs are shared by traffic and cannot be unambiguously divided and allocated to individual units of traffic," the Board's methods used to "assign variable costs to shipments by allocating portions of a railroad's total expenses are economically invalid and produce unreliable results." *Id.*

Another recent econometric study, conducted by Professors Wilson and Wolak, similarly concluded that URCS variable cost, upon which the Board's R/VC ratios are based, "is based on econometric models that are unlikely to be representative of how incremental rail costs are incurred" and that, as a result, they are "unlikely to have any meaningful relationship to the increase in railroad costs that are caused by providing a shipment." Wesley W. Wilson & Frank A. Wolak, *Freight Rail Costing and Regulation: The Uniform Rail Costing System* (May 2016), at 36. The authors found "tremendous variation in URCS variable costs for the same shipment across railroads," and thus one railroad could be deemed to be potentially market dominant and another deemed not to be potentially market dominant even though both have "the same shipment characteristics and revenues." *Id.* at 27. The authors further noted that R/VC ratios based on the URCS variable cost of a shipment yielded results that "would be inconsistent with rational behavior of a railroad," because the railroad would be shipping at a loss. *Id.* at 36.

Moreover, the accompanying verified statement of Mr. Michael R. Baranowski and Mr. Benton V. Fisher explains that "[d]ramatic changes in railroad traffic mix and operating practices have taken place since the Board exempted from regulation the commodities at issue in this proceeding," during which time "the Board's URCS model, used to develop the variable costs that form the basis of the Board's proposed revocations, has remained largely static."

Baranowski/Fisher Statement at 4. Baranowski and Fisher catalogue key differences between intermodal transport (i.e., combined service through both rail and trucking for segments of a shipment) and carload transport (i.e., freight rail-only transport), which "make intermodal operations more efficient than other railroad traffic." *Id.* at 8-9. But the URCS model does not sufficiently recognize these efficiencies as being attributable to intermodal shipments and thus allocates these efficiencies to carload (i.e., rail-only) traffic, thereby producing understated variable costs for the costs of carload shipments, including the commodities at issue in this proceeding. *Id.*[9] The authors further explain how the effects of this lack of granularity are exacerbated by the exponential growth of total volumes shipped via intermodal service, which have grown at a pace more than 10 times faster than carload shipments in the past two decades, now accounting for nearly half of all shipment volumes. *Id.* at 11. As a result of these distortions in the URCS calculations, "the variable costs of the NPRM commodities fail to account fully for the actual costs associated with providing the service" and thus, "[t]he resulting R/VC ratios for the NPRM commodities are overstated." *Id.* at 12-13. The impact of this distortion is substantial. Based on analysis of the available data, Baranowski and Fisher "have determined that between 45 and 100 percent of the observed change in R/VC ratio observed by the Board is attributable to the failure of URCS to keep pace with industry-wide changes." *Id.* at 5. Thus, they conclude that "a significant proportion of the changes observed by the Board are a function of the relative growth in intermodal traffic between 1992 and 2013 and the systematic

[9] The authors clarify that, because of the manner in which shipments are coded under the URCS model, "all of the shipments for which the Board proposes to revoke their exemption are carload shipments," and thus the R/VC figures relied on by the Board do not include data attributable to intermodal shipments. *Id.* at 8.

over-assignment of costs to intermodal shipments by the Board's Uniform Rail Costing System." *Id.* at 2.[10]

Additionally, Israel and Orszag identify several examples to illustrate how changes in R/VC ratios—particularly aggregated to the nationwide level—are not a reliable indicator of market power. They point out, for example, that "R/VC ratios are . . . quite variable" with respect to the subject commodities, Israel/Orszag Statement at 12. Taking hydraulic cement as an example, they show that "among all counties from which hydraulic cement originated, the lowest R/VC observed was 39 percent and the highest was 508 percent." *Id.* at 13. For additional context, they also analyzed the 5th and 95th percentiles of county-level R/VCs calculated, and found that "90 percent of county-level R/VCs" for hydraulic cement ranged from "between 104 percent and 324 percent," further showing that the lowest and highest values are not "simply outliers." *Id.* They note that "[s]imilar ranges were found for all of the subject commodities," and conclude that "[t]his variability shows that R/VCs vary widely from county to county, indicating geographic variation in shipment circumstances for each of the subject commodities." *Id.* In light of this wide variation, the authors warn that, even assuming R/VC could be used to measure market power, "basing decisions to revoke exemptions everywhere on *nationwide* R/VCs (rather than individual analysis) will result in imposing regulation on *competitive* traffic" and that "[a]t the very least, this type of geographic variability suggests that

[10] Indeed, the Board itself acknowledged that URCS is an antiquated system. The Board explained in a report to Congress that URCS "relies on special studies that date back to the 1930s-1960s and most likely do not reflect current railroad operations." STB Report to Congress Regarding URCS (May 27, 2010), at 13. Although the ICC had adopted URCS with the expectation that it would "review URCS regularly" and periodically "reassess[] the fundamentals of URCS," this never happened. *Id.* at 5. Instead, "due to budget and staffing limitations, only one limited review of URCS has ever occurred, and it did not address questions about URCS' underlying fundamentals." *Id.* The regressions underlying URCS have also not been reviewed in many years, and the STB Report admitted that "the original URCS regression estimates may not reflect the current railroad industry." *Id.* at 21.

relying on a nationwide R/VC is not appropriate, and that detailed examination of competitive circumstances (detailed below) is necessary to determine whether (and where) policy changes are necessary." *Id.* at 13-14. Israel and Orszag also observe that "R/VC ratios can be quite volatile," as analysis of the waybill data reveals that "more than half of the lanes exhibited increases or decreases of greater than 15%." *Id.* at 16. The authors warn that this volatility "is far from a trivial set of exceptions and thus makes clear that R/VC is not a reliable indicator of competition or market power." *Id.*

Further, and of critical significance to the NPRM, Israel and Orszag have provided several illustrations demonstrating that "R/VC (and the 180 benchmark in particular) is not a reliable indicator of market power, including because it often labels routes with significant competition as subject to market power and because it does not even consistently fall in cases where competition has clearly increased." *Id.* at 14. *First*, Israel and Orszag concluded that 34% of the 750 STCC/Destination combinations analyzed have average R/VC ratios above 180 *despite being served by two Class I carriers*. *Id.* at 15. *Second*, Israel and Orszag's analysis of the waybill data with respect to "locations that went from sole-served (by Conrail) to dual-served (by CSX and NS) after the Conrail transaction" reveals that "R/VC ratios do not consistently fall in response to newly increased competition, as they should if R/VC were a reliable indicator of market power." *Id.* at 15-16. The authors observed that "there was no clear pattern of changes in R/VC following the shift to dual access, with many going up, many going down, and many staying the same," and they noted that this again "makes clear that R/VC is not a reliable indicator of competition or market power." *Id.* at 16.

In sum, the NPRM relies on nationwide average R/VC ratios and the proportion of traffic moved at R/VC ratios above 180 percent as the primary basis for the proposed revocations, without acknowledging the indisputable limitations of R/VC, which render it wholly incapable of serving as the sole determinant of market power. Because the Board's proposal fails "to give R/VC any glimmer of supporting principle or intellectual coherence," *Burlington N. R. Co. v. I.C.C.*, 985 F.2d 589, 597 (D.C. Cir. 1993), its reliance on R/VC for the purpose of these proceedings is arbitrary and capricious.

B. The Board Ignored Sources Of Competition That It Previously Recognized As Key To Assessing Market Power.

The NPRM arbitrarily relies on R/VC while ignoring widely-accepted economic methodologies for assessing market power. The Board should not ignore traditional economic evidence of competition when assessing whether the railroads hold market power under this statutory scheme. *Cf. Comcast Cable Commc'ns, LLC v. F.C.C.*, 717 F.3d 982, 91-92 (D.C. Cir. 2013) (Kavanaugh, J., concurring) (explaining that when "the statute incorporates an antitrust term of art," the agency's analysis should be informed by "antitrust principles").

As Israel and Orszag explain, "[i]t is a well-established principle in antitrust economics and policy that a proper examination of whether a specific market is subject to market dominance must consider all relevant sources of competition." Israel/Orszag Statement at 17. In this case, the relevant sources of competition include: (1) *intramodal competition*: shippers with access to more than one railroad can threaten to switch to the competing railroad in order to obtain more favorable rates; (2) *intermodal competition*: similarly, competition from other modes of transport constrains rail rates because shippers can shift their business to these alternate modes—in whole or in part—in response to increases in rail rates; (3) *competition from substitute products*: shippers who are able to use substitute products to meet their production needs can respond to a railroad's increase in shipping rates for product A by switching to product B, which is shipped at a lower rate by an alternative carrier; thus railroads must set rates that are competitive with those for substitute products or else they risk losing business; and (4) *geographic competition*: competition between different geographic locations from which to obtain the product in question or to which to ship it for downstream use further constrain railroads' ability to raise prices. *Id.* at 18-19. As discussed below, with respect to each of the commodity groups in question, railroads face multiple forms of competition that constrain pricing.

This is not uncharted territory—the Board has long recognized and considered this sort of economic evidence in assessing market power. As the ICC explained in an early exemption decision, abuse of market power "may occur only in the absence of effective actual or potential competition" and "[c]ompetition may come either from other railroads, other modes (trucks or water carriers), or market competition between the product in question and competing products or regions." *Rail Gen. Exemption Auth.—Misc. Agric. Commodities*, EP 346 (Sub-No. 14), 367 I.C.C. 298, 302 (1983). Indeed, as the NPRM acknowledges, the Board's decision to adopt the exemptions at issue here took into account these various sources of competition. *See Rail Gen. Exemption Auth.—Pet. Of AAR to Exempt Rail Transp. Of Selected Commodity Groups*, EP 346 (Sub-No. 29), 9 I.C.C.2d 969, 974-75, 978, 979-81 (I.C.C. Sept. 17, 1993) (citing to evidence of intermodal competition, intramodal competition, and product competition—as well as the high percentage of commodities moved under contract rates—as a basis for exempting exempt crushed stone, coke from coal, and primary iron and steel products from regulation); *see also Rail Gen. Exemption Auth.—Exemption of Ferrous Recyclables*, EP 346 (Sub-No. 35), 1995 WL 294272, at *4 (S.T.B. served May 16, 1995) (finding transport of iron and steel scrap to be "extremely competitive from both an intramodal and geographic standpoint"); *Rail General Exemption Authority—Exemption of Hydraulic Cement*, EP 346 (Sub-No. 34), 1995 WL 438371, at *4 (S.T.B. served July 26, 1995) (finding that railroads face extensive intramodal, intermodal, and geographic competition in transport of hydraulic cement). In other contexts, economists apply statistical models using a variety of data inputs to assess how markets compare with other markets known to be competitive.

Yet, in the current NPRM, the Board appears to eschew important economic indicators of competition in favor of R/VC ratios, which, as described above, are incapable of serving as a stand-alone determinant of market power. The Board's failure to apply *at least* the same level of analysis of competitive factors in deciding to re-regulate these commodities as it did when it exempted them contradicts the plain language of the statute, which directs the Board to exempt "to the maximum extent" consistent with the statute and to revoke an exemption only when "necessary to carry out the transportation policy of Section 10101." 49 U.S.C. §10502(a), (d). It is also arbitrary and capricious. "The Board's brief, generalized statement" that R/VC ratios have increased as compared to when the exemptions were adopted "fail[s] to provide an 'adequate explanation' to allow the STB to ignore factors and reasoning it has previously—and consistently—found controlling." *New York Cross Harbor R.R. v. Surface Transp. Bd.*, 374 F.3d 1177, 1183 (D.C. Cir. 2004).

C. The Record Does Not Support The NPRM's Proposal.

Aside from relying on R/VC ratios in excess of 180 percent, which the NPRM correctly acknowledges "do *not*, standing alone, establish market power or abuse of such power," NPRM at 4, n.7 (emphasis added), the Board offers only a string of stale and limited anecdotes that the NPRM characterizes as a "variety of marketplace changes," *id.*, as the basis for concluding that re-regulation of these entire commodity groups is necessary. But the Board's selective reliance on isolated testimony cannot replace the market-level analysis of competition that is required to determine whether railroads possess market power, which the Board has recognized is a necessary precondition for revocation.

First, the NPRM improperly takes at face value the unsupported assertions of a handful of individual shippers that railroads unduly exercise power and/or that trucking does not present a feasible alternative to rail and relies on these assertions to draw conclusions with respect to the entire commodity groups at issue. *See* NPRM at 5 (relying on unsupported assertions in TCS's testimony as the sole basis, other than R/VC ratios, for proposing to revoke the exemption of crushed stone); *id.* at 6-7 (relying on assertion of AK Steel that "its facilities are captive to a single railroad and are subject to monopoly railroad power and market dominant pricing"); *id.* at 10 (relying on unsubstantiated claims of PCA to conclude that trucking is not a viable alternative for shipping hydraulic cement). As Israel and Orszag note, however, "dated customer complaints presented by individual shippers about their specific situations may be of limited probative value and are not a substitute for a market-level analysis of competition" and thus reliance on such isolated complaints "is not a sound basis for concluding railroads possess market power." Israel/Orszag Statement at 9. Moreover, because the NPRM simply accepted these shippers' assertions as true without evaluating them, it failed to discuss the many instances of intramodal competition established in the record.

Second, these shippers' claims—and the NPRM's reliance on them—do not hold up against review of the evidence. As shown in the analysis conducted by Israel and Orszag, consideration of the various sources of competition—which must be part of any assessment of market power—reveals that railroad pricing is constrained with respect to each of the subject commodities, just as when the agency initially adopted these exemptions:

Crushed Stone (STCC 14-2): Rail rates for crushed stone are constrained by at least intermodal and geographic competition, and likely product competition as well. *First*, only a very small proportion of crushed stone—between seven and ten percent—is moved by rail. *See* Israel/Orszag Statement at 22. Thus, railroads possess nowhere near the market share necessary to be able to exercise market power over shippers of this commodity group. Instead, this small modal market share means that railroads necessarily face competition from *at least* one other mode of transport for this commodity. *Id.* at 20. Yet, although the NPRM acknowledges that railroads "still have a relatively small modal market share of the overall commodity group," it dismisses this key fact based on R/VC ratios together with one shipper's unsubstantiated assertions that trucks are not viable competition and that "the preponderance of its shipments were captive." NPRM at 5. *Second*, there is significant geographic dispersion of production and distribution centers for crushed stone, which indicates that railroads face geographic competition, as well as a range of substitute products available to end customers, both of which conditions further constrain rail pricing. Israel/Orszag Statement at 20, 27.

Primary Iron and Steel Products: The data show that rail rates for iron and steel customers are constrained by at least intramodal, intermodal, and geographic competition. With respect to intermodal and intramodal competition, a significant amount of steel is moved on routes with multiple rail options on both ends, and more than half of all steel production is moved on modes other than rail. *Id.* at 20. Shippers also have numerous geographic options, as steel is produced at over 100 facilities across the United States and there are significant imports of steel. *Id.* at 20, 27-28. Rather than considering these various forms of competition, however, the NPRM simply points to geographic shifts in steel production and assumes that any increase in the average length of haul for these shipments makes trucking less viable, thereby eliminating competition. The NPRM fails to square this assumption with the other sources of competition noted above, and also does not consider that the shift in production may actually *protect* purchasers of steel by offering increased geographic alternatives from which to choose. *Id.* at 21.

Steel Scrap and Waste: Rail rates for scrap are likewise constrained by at least intramodal, intermodal, and geographic competition. Analysis of the waybill data shows that significant volumes of steel scrap are shipped on rail lanes with intramodal competition on both ends, and that nearly 60 percent of steel scrap is shipped on modes other than rail. *See id.* at 21. Moreover, scrap processing yards are located throughout the United States, and thus "geographic competition is likely significant here, with a given railroad unlikely to be able to sustain a price increase based on market power over one particular route." *Id.* at 28. The NPRM ignores these various forms of competition, however, and instead simply assumes that revocation is warranted based on a relatively modest increase in the average length of haul and in R/VC ratios. NPRM at 7-8. "The Board provides no other analysis of any other competitive alternative, including alternative transportation options or the 'pervasive' geographic competition noted by the ICC in its original decision." Israel/Orszag Statement at 8.

Coke from Coal (STCC 29-914): Analysis of the data likewise reveals that rail rates for coke from coal are constrained by at least intramodal, intermodal, and product competition. A significant volume of coke from coal is moved on routes with rail competition at both ends, which indicates that railroads face intramodal competition. *Id.* at 22. Moreover, rail transport makes up a relatively small modal market share for this commodity group, as "[n]early two-thirds of coke is transported on modes other than rail." *Id.* at 21. Rail pricing is also constrained by product competition, as certain steel producers can use coke from petroleum as a substitute. *Id.* In addition, "competition from steel producers using technologies (e.g., mini-mills) that do not use coke" can serve to further "constrain the ability for a railroad to increase shipment prices to an integrated steel mill without causing that mill to lose sales to other producers and thus depressing its demand for rail movements." *Id.* The NPRM points to a shift in steel production away from blast furnaces (which use coke as an input for steel production) and toward EAFs (which use recycled steel as their primary input) to conclude that railroads face "less competition from the trucking industry." NPRM at 8-9. But the NPRM fails to consider "whether and how the ability to use substitute products (a factor specifically noted by the ICC in granting the exemption) provides coal shippers protection from rail market power, including because attempts to increase rail prices to coal shippers will divert steel production toward other forms of coke or toward mini mills, thus depressing demand for rail shipments of coke from coal whether or not there are direct shipment alternatives." Israel/Orszag Statement at 8.

Hydraulic Cement (STCC 32-4): Rail rates for hydraulic cement "are constrained by at least intermodal and geographic competition, and product substitution is also possible." *Id.* at 21. Rail accounts for the transport of only around 25 percent of cement shipments, while trucks remain the predominant choice for these shippers. *Id.* Additionally, geographic competition constrains rail rates for cement shipment, as cement production and distribution centers are widely dispersed around the country, and several products can be substituted for cement, depending on their end-use, which further prevents railroads from extracting unreasonable prices. *Id.* The Board ignored all of these factors constraining rail prices, however, and instead simply assumes that a reduction in the number of production facilities and an increase in the average length of haul render trucking less feasible. NPRM at 10. Even though the NPRM notes that the ICC had found there to be "pervasive" competition from intramodal and intermodal transportation alternatives, *id.*, the Board failed to present any investigation of these, or other, competitive alternatives. Israel/Orszag Statement at 9.

Finally, the NPRM totally ignored the evidence and testimony in the record that refuted certain shippers' claims and challenged the Board's assumptions. The Willig Statement, for example, described in detail why increased R/VC ratios in the context of increased marginal costs, strained capacity, and increased demand are consistent with a competitive marketplace functioning precisely as Congress intended. *See* Willig Statement at 12-22. Yet the NPRM inexplicably ignores the Willig Statement. Moreover, the Board completely ignores the findings contained in the Christensen Report—an independent study that the Board itself commissioned with $1 million of taxpayer dollars. Tr. at 83 (statement of Vice Chairman Nottingham). That report, which Vice Chairman Nottingham described as "the most important study that the Board has commissioned in many decades," *id.*, is directly on point and, like the Willig Statement, refutes the Board's reliance on R/VC to adopt the proposed revocations, *see supra* Part II.A. Yet the Board apparently does not deem this report to be part of the record in this rulemaking, even though it was discussed at length during the 2011 hearings and relied on in the Willig Statement. *See* Tr. at 55-56, 83. Finally, the Board ignored testimony from shippers, such as USG, who strongly opposed revocation of existing exemptions.

The Board "must do more than simply ignore comments that challenge its assumptions and must come forward with [an] explanation [of why] its view is based on . . . reasonable analysis." *ALLTEL Corp. v. FCC*, 838 F.2d 551, 558 (D.C. Cir. 1988). The NPRM's conclusions, which rest on a one-sided review of the record that takes assertions from individual shippers at face value and ignores evidence and testimony going to the core issues in these proceedings, cannot satisfy the Board's duty to provide a coherent basis for its conclusions sufficient to show that it has engaged in reasoned decision-making. *See, e.g.*, *Butte Cty., Cal. v. Hogen*, 613 F.3d 190, 194 (D.C. Cir. 2010).

III. The Board May Not Ignore The Option Of More Limited Measures.

The proposed rules are invalid for the additional reason that the Board has failed to consider obvious alternatives to wholesale revocation of the listed commodity exemptions. "It is well settled that an agency has a duty to consider responsible alternatives to its chosen policy and to give a reasoned explanation for its rejection of such alternatives." *City of Brookings Mun. Tel. Co. v. F.C.C.*, 822 F.2d 1153, 1169 (D.C. Cir. 1987) (quotation marks omitted). That duty is particularly important here, because the Board is statutorily required to issue exemptions "to the maximum extent" consistent with the statutory scheme, 49 U.S.C. § 10502(a), and to regulate only when "necessary" to address concrete instances of abuse of market power, *id.* § 10502(d); thus, the statute *requires* the Board to consider more narrowly targeted alternatives to its proposal.

First, the NPRM fails to explain why the existing remedy provided by Congress is inadequate to protect shippers' interests. As noted above, the statute provides shippers with the right to petition for revocation of an existing exemption, 49 U.S.C. § 10502(d), which the Board is then required to resolve expeditiously, within a set period of time, *id.* § 10502(b). Yet, as Vice Chairman Nottingham observed at the 2011 hearing, there are "very few cases" in the decades following adoption of these exemptions "where industries or companies have come in and availed themselves of the statutory right . . . to petition the Board . . . for a partial or complete revocation." Tr. at 14. That shippers of the subject commodities (or other commodities) have not initiated these proceedings over the years (including in the years since the 2011 hearing) hardly supports a conclusion that this process is inadequate; to the contrary, it undermines the Board's premise that there is widespread abuse of market power that needs to be rectified through wholesale revocations. There is not even evidence that any of the shippers who attended the 2011 hearing to advocate for the proposed revocations had ever petitioned for revocation of these exemptions, before or after the hearing. This strongly calls into question the Board's reliance on individual shipper testimony to justify any revocation *at all*—much less to justify the wholesale revocations proposed in the NPRM.

Despite the lack of any record that the few shippers on whose testimony the Board relies have *even attempted to* "avail[] themselves of the tool that's been available for so many years to seek relief," *id.*, the Board now concludes—*five years* after it last held hearings on the issue—that, absent wholesale revocation, *all* shippers of the subject commodities lack "an appropriate, meaningful path to the Board." NPRM at 4. That the Board has taken no action in response to the 2011 hearings until now further undermines its contention that revocation of these exemptions is necessary to effectuate the RTP, which "require[s] fair and expeditious regulatory decisions when regulation is required." 49 U.S.C. § 10101(2). If the record truly contained compelling evidence of shipper captivity and abuse of market power, it stands to reason that the Board would have acted much sooner to remedy it. Thus, the absence of any action by the Board or any protests from the complaining shippers in the intervening five years is itself powerful evidence that the Board's proposed revocations are unwarranted.

Second, the NPRM ignores the other avenues shippers already have to obtain redress from the Board. As Vice Chairman Nottingham explained at the hearing, "just because one works in an exempt commodity field does not preclude a shipper from coming to this Board for informal relief through our Rail Consumer Assistance Program" (RCAP). Tr. at 90-91. As Commissioner Begeman notes, "[e]ven if a commodity is exempt . . . the Board is not uninterested," and it continues to "conduct broad oversight of exempt commodities." NPRM at

16 (Begeman, Chairman, dissenting). Thus, shippers of exempt commodities continue to have avenues, such as the RCAP and the Rail Shipper Transportation Advisory Council, to "provide the Board with key rail service demand information" and to have the Board "resolve the questions and problems of exempt commodity shippers." *Id.* Yet the NPRM simply assumes that wholesale revocation of these exemptions is the only answer, without so much as mentioning the availability of these alternative forms of redress.

Finally, even assuming the facts warranted further action by the Board, none of the facts or analysis cited in the NPRM supports the Board's decision "to revoke the[se] exemptions, *in whole*," NPRM at 10, rather than to provide for more targeted, case-by-case remedies to address specific facts and circumstances. The Board's longstanding practice has been to consider revocations "on a case-by-case basis" that is "factually driven," as opposed to a "blanket revocation, going back to the pre-Staggers case where every commodity was regulated" and the government "over-regulated to the detriment of our nation's transportation system." Tr. at 234 (Statement of Commissioner Mulvey). Yet the NPRM inexplicably fails even to mention the possibility of more limited relief, much less to provide a reasoned justification for concluding that such relief would be inadequate. The NPRM's reasoning thus marks an abrupt and unexplained departure from its settled precedents. The courts have warned that "such abrupt shifts in policy . . . constitute 'danger signals' that the [agency] may be acting inconsistently with its statutory mandate." *Office of Commc'n of United Church of Christ v. F.C.C.*, 707 F.2d 1413, 1425 (D.C. Cir. 1983).

IV. The Board Has Failed To Follow Reasonable Rulemaking Procedures.

Not only is the NPRM substantively flawed in ways that go to the heart of the proposal, but the Board has violated the APA's basic procedural requirements, thereby rendering any resulting rules arbitrary and capricious.

A. The Proposed Rules Are Based On Stale, Inadequate Data.

The Board failed to take action for five years after its initial hearings on this issue and now insists on proceeding based on a stale record that the Board itself admits lacks key information. At the very least, as Commissioner Begeman states, the Board should have "first ask[ed] interested stakeholders to update the docket, and then propose[d] whatever changes are necessary." *Id.* at 15 (Commissioner Begeman, dissenting). Its failure to do so provides yet another basis for invalidating the proposal.

The Board has acknowledged that the record it is relying on, which ultimately consists of a handful of Excel spreadsheets and waybill sample data, is scant. As Vice Chairman Miller acknowledges, the Board failed to "conduct a thorough and wide-ranging analysis," and "the record on which we are basing this decision is less than robust and could benefit from additional information." *Id.* at 15 (Vice Chairman Miller, concurring). Vice Chairman Miller nevertheless concludes that the Board should press ahead based on this insufficient record because "stakeholders have waited for five years for the Board to take action" and updating the record would "add even more time to get to a final rule." *Id.* The NPRM itself reveals that the proposal is not informed by data that it acknowledges would "be helpful" to the Board's assessment. NPRM at 8. Moreover, at the 2011 hearings, then-Commissioner Mulvey stated that "[o]f all the pleadings that we got," he found that "only one of them really had the kind of facts and the kind of analysis that we would be looking for[] [if] we were going to consider whether or not an exemption should continue." Tr. at 234. And even if the record in 2011 had provided sufficient support for the proposal, which it did not, Commissioner Begeman correctly points out that "[c]onsiderable and important events have taken place since the February 2011 hearing and the 2013 waybill cutoff," and the "proposed rule is completely uninformed by any of these or other current market conditions." *Id.* at 16 (Commissioner Begeman, dissenting).

As explained above, analysis of the waybill data and other available evidence shows that railroads continue to face pervasive competition from various sources. *See supra* Part II; Israel/Orszag Statement at 19-28. Thus, the NPRM's conclusory observation—based on the waybill data and a five-year-old record—that average R/VC ratios have increased falls far short of establishing the "compelling circumstances" required by statute to warrant revocation. NPRM at 16 (Commissioner Begeman, dissenting).

The Board's decision to press ahead with the blanket revocation of several commodity exemptions based on a stale and insufficient record in order to avoid "add[ing] even more time to get to a final rule," NPRM at 15 (Vice Chairman Miller, concurring), is patently unreasonable. An agency's claim that further proceedings would be "administratively burdensome . . . cannot overcome a clear congressional command." *Ethyl Corp. v. E.P.A.*, 306 F.3d 1144, 1150 (D.C. Cir. 2002). Here, the statute requires that, "when the facts relied upon by the [Board] are insufficient, by themselves, to support its ultimate conclusion [with respect to Section 10502] *with certainty*, it must identify the uncertainties, explain why it acted prior to 'engaging in a search for further evidence,' and state what considerations led it to resolve the uncertainties as it did." *Brae Corp.*, 740 F.2d at 1039 (emphasis added) (internal citation omitted). The NPRM does not come close to meeting this standard, and thus the proposed rules cannot pass muster.

B. If The Board Engaged In Further Analysis, It Has Improperly Withheld That Analysis From Review.

The Board's proposal is also flawed because it has invoked FOIA's deliberative process privilege to withhold most of the documents it identified as underlying the proposed rules, thereby violating the APA's notice-and-comment requirements, 5 U.S.C. § 553, and rendering its resulting rules invalid. The Board has released a handful of Excel spreadsheets, but maintains that all other documents underlying the proposed rules are subject to FOIA's deliberative process privilege. This refusal prevents stakeholders from meaningfully commenting on the proposal, and it also raises the distinct possibility that some of the Board's own, undisclosed analysis undermines its proposal. And the Board's strategy of selective disclosure is particularly problematic here, in light of how scant the Board's analysis was to begin with.

The D.C. Circuit has recognized the "obvious proposition that studies upon which an agency relies in promulgating a rule must be made available during the rulemaking in order to afford interested persons meaningful notice and an opportunity for comment." *Am. Radio Relay League, Inc. v. F.C.C.*, 524 F.3d 227, 237 (D.C. Cir. 2008). "It is not consonant with the purpose of a rule-making proceeding to promulgate rules on the basis of inadequate data, or on data that, [to a] critical degree, is known only to the agency." *Id.* (quotation marks omitted). Thus, to the extent the Board has withheld analysis that would reveal more rigorous review of market conditions, it has deprived the parties to this rulemaking of their right to provide meaningful comments, thereby rendering the resulting rules arbitrary and capricious.

C. The NPRM Suggests That The Board Might Revoke Additional Exemptions Without Following Proper Rulemaking Procedures.

Finally, the Board invites "comments regarding the possible revocation of other commodity class exemptions," NPRM at 1, without specifying the parameters of its inquiry in this proceeding. Any information the Board receives in response to this NPRM with respect to commodities not covered by this proposal cannot form the basis for adopting additional revocations absent a new rulemaking.

The APA requires that an agency's proposed rules fairly apprise interested parties of the subjects and issues addressed in the proceeding, and the agency's final rule must be the "logical outgrowth" of its proposal. *See, e.g.*, *CSX Transp., Inc. v. Surface Transp. Bd.*, 584 F.3d 1076, 1079-80 (D.C. Cir. 2009). Here, the agency has added open-ended inquiry into a proceeding proposing to revoke certain commodity groups. But there is no information or analysis to support this type of action. Moreover, the NPRM itself, through Vice Chairman Miller's concurrence, reveals that there is no basis for any further revocations. *See* NPRM at 14 (Vice Chairman Miller, concurring) (explaining that, after reviewing an undisclosed analysis conducted by the Board's Office of Economics at her request, "I believe that the railroads have likely not increased market power for any exempt commodities other than those addressed in this decision").

As detailed above, the NPRM falls far short of the standard required to revoke even those exemptions it actually did discuss. Any decision to revoke additional exemptions would be tainted by precisely the same flawed and problematic reasoning, thereby further violating Congress's express mandate. At the very least, any decision to revoke additional commodities must be the subject of new and separate proceedings that provide parties with proper notice and a meaningful opportunity to comment.

CONCLUSION

In enacting the statutory scheme that underlies the Board's proposal, Congress determined that competition and demand for services is the best way to ensure a competitive and efficient national transport system that benefits American consumers and the economy. The record shows that market forces are continuing to yield precisely the results that Congress intended. The Board's proposed wholesale revocation of several commodity exemptions based on scant and severely flawed analysis marks a dangerous and unprecedented shift toward re-regulation, in direct contradiction of Congress's express policy judgment. The resulting rules would harm—rather than advance—the modernized, efficient, and resilient rail transportation system that the statutory scheme has brought about. Thus, for all the reasons discussed above, the Board should withdraw this proposal and decline to use these proceedings as a forum for adopting further revocations.

Dated: July 26, 2016

Respectfully submitted,

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BEFORE THE
SURFACE TRANSPORTATION BOARD

REVIEW OF COMMODITY, BOXCAR, AND TOFC/COFC EXEMPTIONS

Docket No. EP 704 (Sub-No. 1)

VERIFIED STATEMENT OF

Mark Israel
and
Jonathan Orszag

July 26, 2016

I. INTRODUCTION AND STATEMENT OVERVIEW

A. Witness Introduction

Mark Israel is a Senior Managing Director at Compass Lexecon. Prior to joining Compass Lexecon, Dr. Israel served as an Associate Professor at Northwestern University's Kellogg School of Management. Dr. Israel received his Ph.D. in Economics from Stanford University in 2001.

Dr. Israel has substantial experience applying economic analysis and econometric tools to antitrust cases, including litigation matters and regulatory proceedings. He has served as an expert for both the federal government and private parties in cases involving industries including food distribution, telecommunications, cable television, broadband internet service, airlines, railroads, shipping, financial markets, credit cards, consumer retail, and many others.

Dr. Israel has written numerous academic articles on topics including competition economics, merger policy, telecommunications, airlines, insurance markets, and applied econometrics. His research has been published in leading scholarly and applied journals including *The American Economics Review*, *The Rand Journal of Economics*, *The Review of Industrial Organization*, *Antitrust Source*, and the *Global Competition Review*, and has been presented to business, government, and academic audiences around the world. A full copy of Dr. Israel's curriculum vitae is included as Exhibit A.

Jonathan Orszag is a Senior Managing Director and member of the Executive Committee of Compass Lexecon. Mr. Orszag holds a M.Sc. from Oxford University, which he attended as a Marshall Scholar. Mr. Orszag holds a degree in economics from Princeton University, where he graduated *summa cum laude*.

Mr. Orszag has consulted for a variety of public-sector entities and private-sector firms ranging from small businesses to Fortune 500 companies. These engagements have involved a wide array of matters, from entertainment and telecommunications issues to issues affecting transportation industries. Mr. Orszag has provided testimony to the U.S. Congress, U.S. courts, the European Court of First Instance, the Federal Communications

Commission, and other domestic and foreign regulatory bodies on a range of issues, including competition policy, industry structure, and fiscal policy.

Previously, Mr. Orszag served as the Assistant to the U.S. Secretary of Commerce and Director of the Office of Policy and Strategic Planning and as an Economic Policy Advisor on President Clinton's National Economic Council. For his work at the White House, Mr. Orszag was presented the Corporation for Enterprise Development's 1999 leadership award for "forging innovative public policies to expand economic opportunity in America." A full copy of Mr. Orszag's curriculum vitae is included as Exhibit B.

B. Purpose and Summary of Findings

We have been asked by the Association of American Railroads ("AAR") to provide comments on a proposal by the Surface Transportation Board ("STB" or "the Board") to "revoke the existing class exemptions…for (1) crushed stone or broken stone or rip rap; (2) hydraulic cement; and (3) coke produced from coal, primary iron or steel products, and iron or steel scrap, wastes, or tailings."[1]

We assess, from an economic perspective, the types of evidence that STB has used in evaluating the competitive conditions for these commodities; consider alternative evidence that is more informative in assessing those competitive conditions; and draw implications for the commodities in question. Specifically, we (1) evaluate the reliability of R/VC as a measure of market power;[2] (2) assess other competitive factors that one should consider in a full competitive analysis; and (3) draw some basic implications for the subject commodities.

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[1] Surface Transportation Board, Docket No. EP 704 (Sub-No. 1) Review of Commodity, Boxcar, and TOFC/COFC Exemptions, Decision, March 23, 2016 (hereinafter "NPRM"), at 1. The specific products covered by the Board's NPRM include the following STCC codes: 14-2 (crushed or broken stone or rip rap); 29-914 (coke produced from coal); 33-12 (primary iron or steel products (plates, pipes, and rods); 40-211 (iron steel, scrap, wastes, or tailings); and 32-4 (hydraulic cement).

[2] R/VC is a measure developed by the STB that divides a railroad's revenue for a specific movement to a corresponding measure of that railroad's variable cost for that traffic. Variable costs are identified by the Board using their Uniform Rail Costing System and are an allocation of system-wide costs based on the characteristics of a shipment. See Section III for a more detailed discussion of the method for calculating variable costs. However, the NPRM refers to aggregated, commodity-wide R/VC ratios in its discussion of why it proposes complete revocation of these class exemptions.

A brief summary of our findings in these four areas is presented below.

1. R/VC is Not a Reliable Indicator of Market Power

- R/VC is a not a valid measure of market power. It is well known that accounting costs are not economic costs and thus that accounting margins do not provide valid measures of market power. This is certainly the case with R/VC: The variable cost measure includes certain fixed costs (such as investments in road assets, for example) at a default 50 percent, does not include the required competitive return on capital investments (including investments in quality of service) that need to be reflected in a true economic cost, and includes variable costs that are not true measures of shipment-specific marginal costs.
- The variable costs used in the R/VC ratios are estimates based on system-wide average costs that fail to reflect accurately the costs actually incurred for particular movements. For example, it uses the average joint facilities costs for an entire railroad instead of the payments that a railroad makes for a specific movement, and it uses system average equipment rental for a car type rather than the actual per diem applicable to a shipment.[3]
- Further, the 180 threshold that the Board seems to use as a measure for determining what constitutes excessive margins is not based on any sound economic analysis of relevant competitive circumstances and, as such, it is not indicative of market power.
- We demonstrate that reliance on R/VC as a measure of market power can lead to flawed conclusions. In particular, we show that R/VC does not respond reliably to changes in competitive circumstances and that a non-trivial proportion of these competitive situations are associated with R/VCs above 180, which, under the Board's method, would result in an erroneous conclusion of market power at these competitive locations.

2. A Wide Range of Competitive Options Needs to be Considered in any Reliable Competitive Assessment

- A proper analysis of competition – which is necessary to reach a conclusion of market power – considers all relevant sources of competitive discipline. In this case, that includes at least: (i) intramodal competition with other railroads, (ii) intermodal competition with other non-rail transportation options, (iii) competition with substitute products (e.g., a producer of paper who is able to shift to using recycled paper rather than wood pulp if their rail rates for transporting wood pulp rose and transportation costs represented a significant share of costs benefits from product competition), and (iv) competition between different geographic locations from which to obtain the product in question or to which to ship it for downstream production.

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[3] See STB Ex Parte No. 657 (Sub-No.1), "Major Issues in Rail Rate Cases," Decision, October 30, 2006 at 58.

- We investigate the extent to which these alternative forms of competition are likely to constrain rail rates for each subject commodity and find evidence of competition for each commodity. Such a finding demonstrates that it is necessary to conduct a detailed and individual examination of each commodity in order to assess the question of rail market power.

3. Implications for Subject Commodities

- For the commodities in question:
  - We find that the Board's analysis does not present any reliable evidence of changed economic circumstances that supports an inference of market power for the commodities in question, that the R/VC analysis cited by the Board is not a reliable indicator of market power, and that the Board's proposal presented no investigation of alternate sources of competition.
  - Our analysis of competitive alternatives demonstrates that railroads face multiple forms of competition for each of the subject commodities.
- In sum, we do not observe evidence that shippers of the subject commodities need regulation to protect them from purported rail market power and thus there is no economic basis for revoking the exemption from regulation for the subject commodities.

II. BACKGROUND

A. Exemptions are used to implement the statutory mandate to maximize reliance on competition

Policies established by the Surface Transportation Board, including rate regulation, must be consistent with implementing the National Rail Transportation Policy ("RTP"), which states: "In regulating the railroad industry, it is the policy of the United States Government…to allow, to the maximum extent possible, competition and the demand for services to establish reasonable rates for transportation by rail."[4] Congress gave regulators authority to issue exemptions in cases where regulation is not necessary to promote competition because either (1) the issue is of limited scope or (2) the shippers in question do not need protection from abuse of market power.[5]

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[4] 49 U.S.C. § 10101.
[5] 49 USC § 10502.

The plain language of these policies and statutes thus guides our economic work. In particular, we evaluate whether the shippers in question need protection from purported rail market power, an economic question that must be analyzed according to established economic principles, must be grounded in ***reliable*** and ***accepted*** analytical methods that consider all forms of competition, and must be supported by data and economic analysis that clearly supports an inference of market power. And in interpreting our findings, we bear in mind the guidance – consistent with basic economic principles – that competition should be relied on "to the maximum extent possible," which, in the present context, we take to mean that evidence sufficient to support an inference of market power with a high degree of confidence should be required before an exemption is revoked and regulation reinstated.

The Interstate Commerce Commission ("ICC"), the predecessor agency to the STB, evaluated the initial exemption requests based on this principle, finding that transportation for the commodities in question was competitive and that regulation was not necessary to protect shippers from abuse of market power.[6] In support of their decisions, the ICC properly considered a broad range of competitive factors, including (i) intramodal competition from other railroads; (ii) intermodal competition from other transportation modes; (iii) product competition from substitute commodities; and (iv) geographic competition allowing shippers and/or producers to meet their needs from a variety of geographical areas. The ICC concluded that railroads faced competition for each of the commodities at issue in this proceeding based on detailed, commodity-specific analyses.

- **Crushed Stone (STCC 14-2):** The ICC cited evidence of intermodal competition, in the form of relatively low rail market shares and generally short lengths-of-haul to support their finding that "market characteristics are not consistent with a finding of market power."[7] The ICC also pointed to high percentages of contract moves (considered to represent competitive rates resulting from individual negotiations), and declining rates as further indications that railroads faced competition to discipline rates for crushed stone.

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[6] See, e.g., See Rail Gen. Exemption Auth. – Pet. Of AAR to Exempt Rail Transp. Of Selected Commodity Groups, 9 I.C.C.2d 969 (September 17, 1993), at 4.

[7] See Rail Gen. Exemption Auth. – Pet. Of AAR to Exempt Rail Transp. Of Selected Commodity Groups, 9 I.C.C.2d 969 (September 17, 1993), at 4.

- **Coke from Coal (STCC 29-914):** The ICC found that "intramodal competition, product competition, and depressed prices" were evidence that railroads faced sufficient competition for transporting coke.[8]
- **Primary Iron and Steel Products (STCC 33-12):** The ICC cited intermodal competition in the form of fluctuating rail market share, and intramodal competition from multiple railroads to support their finding that transportation for primary iron and steel products was competitive.[9] The ICC also noted the high volume of traffic moving under contract rates as further evidence of discipline on rail rates.
- **Iron or Steel Scrap (STCCs 33-12 and 40-211):** The ICC cited intramodal competition with other railroads, intermodal competition with trucks and barges, and "exceptionally strong" geographic competition to support exemption of iron and steel scrap.[10]
- **Hydraulic Cement (STCC 32-4):** ICC cited intermodal competition from trucks and barges, intramodal competition with other railroads, and "extensive geographic competition to support their finding that railroads faced "pervasive competition in the transportation of hydraulic cement."[11]

In granting these exemptions, the ICC conducted a detailed commodity-specific investigation to evaluate market power. The law establishes that exemptions can be revoked if revocation is necessary to carry out the Rail Transportation Policy, which mandates relying "to the maximum extent possible [on] competition and demand for services to establish reasonable rates."[12] An economic analysis meeting this standard – that is, an analysis demonstrating that competition is no longer sufficient to establish reasonable rates because of rail market power - must be as detailed and rigorous as the one conducted in granting the exemption. In any case, determinations of market power must be grounded in reliable evidence based on accepted, methodologically sound economic analysis.

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8 See Rail Gen. Exemption Auth. – Pet. Of AAR to Exempt Rail Transp. Of Selected Commodity Groups, 9 I.C.C.2d 969 (September 17, 1993), at 6.
9 See Rail Gen. Exemption Auth. – Pet. Of AAR to Exempt Rail Transp. Of Selected Commodity Groups, 9 I.C.C.2d 969 (September 17, 1993), at 7.
10 NPRM at6.
11 Rail General Exemption Authority – Exemption of Hydraulic Cement, EP 346 (Sub-No. 34) 10 ICC 2d 649 (July 26, 1995).
12 49 U.S. Code §§ 10101, 10502.

B. The Board's Proposal

In the Notice of Proposed Rulemaking, issued on March 23, 2016, the STB proposes to "…revoke the exemptions, in whole, of STCC No. 14-2, crushed or broken stone or rip rap; STCC 29-914, coke produced from coal; STCC No. 33-12, primary iron or steel products (plates, pipes, and rods); STCC No. 40-211, iron or steel scrap, wastes or tailings; and STCC No. 32-4, hydraulic cement, because regulation of these commodities is necessary to carry out the RTP [Rail Transportation Policy]."[13]

The Board's primary analytical support for this proposal (building on testimony from shippers) comes from the calculation of revenue-to-variable-cost ratios. For example, the Board notes "…waybill rate data for these commodities shows a substantial increase in revenue from potentially captive traffic (i.e., traffic with a revenue-to-variable cost (R/VC) ratio of more than 180%)"[14] and that "…changes point toward an increased likelihood of railroad market power for each of these specific commodity groups."[15] Despite correctly acknowledging the economic fact that "R/VC ratios in excess of the market dominance threshold of 180% do not, standing alone, establish market power or an abuse of such power,"[16] the Board appears to rely almost entirely on R/VC analysis as support for its conclusion that purported rail market power for these commodities has increased. It does so in spite of evidence that railroads continue to face significant competition from alternative sources.

- **Crushed Stone (STCC 14-2):** Despite noting that railroads "…still have a relatively small modal market share of the overall commodity group..," the Board points to testimony from one shipper,[17] coupled with an increase in the R/VC ratio of "potentially captive" traffic from 232.2 percent to 254.9 percent as indications that revocation "may be necessary."[18] The Board seems to dismiss the relevance of low rail market share and offers no analysis of other competitive alternatives.

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[13] NPRM at 10. See also, NPRM at 1 and 3.
[14] NPRM at 4.
[15] NPRM at 4.
[16] NPRM at 4, footnote 7.
[17] Texas Crushed Stone offered testimony in 2011 asserting that trucks were not viable competition and that "the preponderance of its shipments were captive…" NPRM at 5.
[18] NPRM at 5-6.

- **Primary Iron and Steel Products:** The Board cites geographic shifts in steel production as a factor eliminating competition and supports this conclusion by citing an increase in length of haul, the percentage of revenue from "potentially captive" (i.e., R/VC >180) traffic, and the average R/VC of the "potentially captive" traffic.[19] The Board does not appear to consider any alternative sources of competition, including whether the noted shift in production provides protection for purchasers of steel by offering increased geographic alternatives from which to choose.
- **Iron or Steel Scrap (STCCs 33-12 and 40-211):** The Board notes that average length of haul for iron or steel scrap has increased 114 miles, and then offers only that the percentage of revenue that was "potentially captive" has doubled from approximately 22 percent to approximately 44 percent (based on analysis of R/VC) and that the average R/VC of "potentially captive" traffic has increased "by four points" as support for revocation.[20] The Board provides no other analysis of any other competitive alternative, including alternative transportation options or the "pervasive" geographic competition noted by the ICC in its original decision.
- **Coke from Coal (STCC 29-914):** The Board cites the shift in steel production away from blast furnaces (that use coke as an important input for steel production) toward EAFs (that use recycled steel (i.e., scrap) as their main input) as support for concerns that railroads face "less competition from the trucking industry…" As additional support for these "concerns," the Board notes an almost-3-fold increase in "potentially captive" traffic (as measured by R/VC>180) and a 23-point increase in R/VCs (from 225.0 percent in 1992 to 248.2 percent in 2013).[21] The Board has apparently failed to consider whether and how the ability to use substitute products (a factor specifically noted by the ICC in granting the exemption) provides coal shippers protection from rail market power. This includes considering whether attempts to increase rail prices to coal shippers will divert steel production toward other forms of production (e.g., mini mills), thus depressing demand for rail shipments of coke from coal whether or not there are direct shipment alternatives.
- **Hydraulic Cement (STCC 32-4):** The Board concludes that changes in the cement industry (described by industry groups in 2011), including a decrease in the number of production facilities (from 179 to under 100) and an increase in average length of haul, "appear to have significantly reduced the effectiveness of competitive transportation alternatives."[22] The Board cites an increase in R/VC ratio for "potentially captive" traffic and an increase in amount of "potentially captive" traffic (based on R/VC analysis) as "further support" for

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[19] NPRM at 8.
[20] NPRM at 7-8.
[21] NPRM at 8-9.
[22] NPRM at 10.

revocation.[23] Though noting that the ICC found "pervasive" competition from intramodal and intermodal transportation alternatives, the Board did not present any investigation of these - or any other - competitive alternatives.

C. Implications for This Proceeding

The Board's proposal justifies a move away from competition and to re-regulation of these five commodities based largely on analysis of R/VC and statements and allegations made by complaining shippers. Such an approach is inconsistent with well-settled economic methodology for assessing market power, which must be based on a detailed analysis of reliable, well-accepted metrics of competition. To the contrary, R/VC is not a reliable metric of the extent of competition. It cannot be used as a benchmark for the purpose of identifying areas of potential concern, and it does not provide reliable evidence of market power. Further, dated customer complaints presented by individual shippers about their specific situations may be of limited probative value, are not a substitute for a market-level analysis of competition, and are not a sound basis for concluding railroads possess market power.[24]

Instead, rigorous analysis of the competitive situation is required to determine if there are legitimate competitive concerns. The rest of this report explains these conclusions, describes the types of competitive analysis that needs to be done, and draws some implications for the commodities at issue.

III. R/VC IS NOT A RELIABLE INDICATOR OF MARKET POWER

A. Summary

R/VC is a flawed indicator of market power as a matter of economic theory and empirical evidence. R/VC does not properly account for important elements relevant to determining rates, including quality, investment, and a properly calculated measure of marginal cost. Hence, R/VC levels and changes may have nothing to do with competition or market power, and reliance on R/VC to determine market power will lead to flawed

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[23] NPRM at 10.
[24] Heyer, Ken, "Predicting the Competitive Effects of Mergers by Listening to Customers," Economic Analysis Group Discussion Paper, EAG-06-11, September 2006.

conclusions. In this section, we detail the shortcomings of R/VC, provide empirical evidence of its flaws, and discuss implications for the subject commodities.

B. R/VC is not a reliable indicator of market power

1. Only true economic margins, based on true economic marginal costs, can even potentially serve as reliable metrics of market power

One commonly used method for evaluating market power is to use the markup of price over marginal cost, also known as a price-cost margin or the Lerner index.[25] While this measure is widely accepted in the economics profession, its proper use is ***predicated*** on having a true economic marginal cost available – that is, the true increase in economic cost (including capital cost) due to an additional unit of output.[26] The STB's estimation of variable costs described below is not a proper measure of marginal cost and, as such, R/VC is not a meaningful methodology for measuring market power.[27]

The idea that competitive prices will equal marginal cost and, therefore, that observed prices above marginal cost can be relied upon as evidence of market power, rests on two concepts: (1) that true economic marginal costs can be readily measured, and (2) that competitive prices are necessarily equal to marginal costs. First, as a matter of basic economics, properly calculating marginal costs is very difficult given generally available accounting data.[28] Second, economics teaches that prices are equal to marginal costs under a very restrictive set of assumptions associated with the concept of "perfect competition." These assumptions – including that all firms are selling homogenous products between which consumers are indifferent and that buyers and sellers are price takers, with no ability to influence market prices - generally do not apply to most industries, rarely occur in

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[25] Dennis W. Carlton and Jeffrey M. Perloff, *Modern Industrial Organization*, 4th edition, 2005 (hereinafter, *Carlton and Perloff*) at 247, 254.

[26] *Carlton and Perloff* at 254.

[27] In a situation like this, in which the available measure of cost does not measure economic marginal cost, changes in rates cannot, on their own, be taken as evidence of market power, because one cannot rule out the possibility (indeed likelihood) that the price changes were driven by cost changes,

[28] Bresnahan, Timothy F., "Empirical Studies of Industries with Market Power," Handbook of Industrial Organization (Schmalensee and Willig, eds.), Vol. II, Chapter 17, at 1012-1013.

practice, and certainly do not apply to the rail industry.[29] Furthermore, it is well known in the rail industry that, given large fixed costs, at least some traffic must recover more than the movement-specific marginal cost in order to cover fixed costs and thus sustain the network.[30]

2. R/VC is not a true economic margin and is not a reliable metric of market power

The URCS methodology is a complex system of cost allocation based on a three-part method that allocates railroad costs to individual shipments based on estimates derived from regression analysis.[31] The variable costs calculated for specific movements are allocations of system-wide variable costs and do not reflect the movement-specific characteristics relevant to setting rates. Because allocating system-wide average costs to shipments is not the same as measuring the increase in costs due to an incremental shipment, the URCS methodology cannot be used in direct analyses of market power that are predicated on using economic marginal cost (such as the Lerner index). Reliance on such a flawed measure of cost leads to unreliable conclusions when it is used to assess whether a particular movement is priced above competitive levels.[32]

In addition, calculating a true economic marginal cost (and thus, true economic margin) for individual rail movements is likely impossible because there is no clear, non-arbitrary method for accurately allocating the shared costs of the network to individual movements.[33] The Transportation Research Board, ("TRB"), in response to a 2005 request from Congress, conducted a study of the US freight rail industry and strongly concluded that R/VC has no "meaningful connection" to a railroad's market power:

> The methods used by STB to assign variable costs to shipments by allocating portions of a railroad's total expenses are economically invalid and produce

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[29] *Carlton and Perloff* at 84-85, 642-643. See, also, C*arlton and Perloff* at 57 for a more detailed discussion of all of the assumptions underlying the model of perfect competition.
[30] Ex Parte 347 (Sub-No. 1), Coal Rate Guidelines, Nationwide, ICC 2d 520 1985, at 3.
[31] For a detailed description of the URCS methodology, see Surface Transportation Board Report to Congress Regarding the Uniform Rail Costing System, May 27, 2010 at 5-6.
[32] For a more detailed discussion of the flaws in the URCS system, see the Verified Statement of Michael R. Baranowski and Benton V. Fisher.
[33] Wilson, Wesley W. and Frank A. Wolak, "Freight Rail Costing and Regulation: The Uniform Rail Costing System," Review of Industrial Organization, published online May 3, 2016.

> unreliable results because most railroad costs are shared by traffic and cannot be unambiguously divided and allocated to individual units of traffic. The allocations, made by STB through use of its Uniform Railroad Costing System (URCS), are inevitably arbitrary and therefore cannot have a stable or meaningful connection to a shipment's rate or to the level of market power possessed by the railroad.[34]

That same TRB report also states that, "[n]o cost allocation scheme can yield economically valid relationships for assessing a railroad's rate levels or market power."[35] Given the inherent difficulty of calculating a true marginal cost, any screening method must rely on something beyond just variable cost to identify areas of potential concern.

3. Economic literature is clear that R/VC is not a reliable metric of market power

Several independent studies show how the conceptual and practical problems with URCS manifest themselves in an unreliable R/VC measure:

- The Christensen study, commissioned by the Board, finds that nearly one-third of shipped ton-miles from 2005-2006 have an R/VC ratio that is either inexplicably low (below one) or high (greater than three).[36]
- The TRB Report found that, in 2012, 20 percent of rail traffic had a rate lower than the variable cost estimate, meaning these movements were being priced at a loss, an outcome that is "nonsensical, or at least very difficult to reconcile with the railroad industry's profit motive."[37]
- An academic paper by Wilson and Wolak agrees with these findings and notes that, "[m]ovements with R/VC values that are less than one are clearly inconsistent with rational decision-making, because it would imply that the railroad loses money by providing the shipment."[38]

In addition to having frequently implausible values, R/VC ratios are also quite variable. In one example, even after aggregating up from the shipment level, wheat shipments at the county-level from 2001 to 2006 were found to have R/VC ratios that

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[34] Committee for a Study of Freight Rail Transportation and Regulation, "Modernizing Freight Rail Regulation," Transportation Research Board of the National Academies, Washington, DC., 2015 (hereinafter, *TRB Study*) at 2-3.
[35] *TRB Study* at 70.
[36] A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals that Might Enhance Competition, Laurits R. Christensen Associates, Vol. 2, (November 2009) (hereinafter, *Christensen Report*), Table 11-8.
[37] *TRB Study* at 75.
[38] Wilson, Wesley W. and Frank A. Wolak, "Freight Rail Costing and Regulation: The Uniform Rail Costing System," Review of Industrial Organization, published online May 3, 2016, at 16 and Figure 2.

varied from 43 percent to 516 percent.[39] The authors of this study note that while variation in R/VC is possible, the range observed is quite large relative to their other measures of market structure, implying that "much of the R/VC variation is related to factors other than market structure…"[40]

We see similar variability when looking at county-level R/VC for the subject commodities. For each commodity, we calculated county-level R/VCs for 2014 by aggregating the revenues associated with traffic originating in a given county and dividing by the corresponding total variable costs. Taking hydraulic cement as an example, among all counties from which hydraulic cement originated, the lowest R/VC observed was 39 percent and the highest was 508 percent. For additional context, we also considered the 5th and 95th percentile of county-level R/VCs calculated, meaning that 90 percent of the counties for which R/VCs were calculated lie in the range bounded by those values. For hydraulic cement, 90 percent of county-level R/VCs lie between 104 percent and 324 percent. Looking at the 5th and 95th percentile mitigates the concern that the lowest and highest values are simply outliers. Similar ranges were found for all of the subject commodities.[41] This analysis shows that R/VCs vary widely from county to county, indicating geographic variation in shipment circumstances for each of the subject commodities.

Consistent with the conclusions noted above with respect to wheat, the variation in county-level R/VC discussed above suggests that R/VCs are not reliable indicators of market power and that using them as though they are will lead to misleading conclusions. For example, in at least some situations where there is more localized competition, basing decisions to revoke exemptions everywhere on *nationwide* R/VCs (rather than individual analysis) will result in imposing regulation on ***competitive*** traffic. At the very least, this type of geographic variability suggests that relying on a nationwide R/VC is not appropriate, and that detailed examination of competitive circumstances (detailed below) is

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[39] *Christensen Report* at 11-26 and Figure 11-3.
[40] *Christensen Report* at 11-26.
[41] A table (County-Level R/VC Analysis – Highly Confidential) reporting the minimum, maximum, 5th percentile and 95th percentile for all of the subject commodities is included in the Highly Confidential workpapers accompanying this report.

necessary to determine whether (and where) policy changes are necessary.

Perhaps not surprisingly given the myriad issues described above, R/VC ratios appear to show little to no relationship with competitive conditions. The independent study conducted on behalf of the Board by Christensen Associates provides empirical support for the proposition that R/VC ratios are not meaningfully related to market structure, reporting weak correlations between R/VC ratios and measures of market power. The authors write, "[w]e find that R/VC, aggregated by commodity and county, is in fact weakly correlated with railroad and water competition measures and in our view should not serve as a standalone measure of market-dominant behavior."[42] Wilson and Wolak find that rates in excess of the 180 percent R/VC threshold could plausibly be driven by differences in allocation rules across railroads rather than differences in market structure. Put another way, the authors find "tremendous variation in URCS variable costs for the same shipment across railroads," which implies that identical shipments could be deemed market dominant for one railroad and not market dominant for another.[43]

C. Examples demonstrate the flaws in R/VC as a measure of market power

In this section, we provide a series of examples that show that R/VC (and the 180 benchmark in particular) is not a reliable indicator of market power, including because it often labels routes with significant competition as subject to market power and because it does not even consistently fall in cases where competition has clearly increased. In particular, we first consider R/VC ratios associated with destinations that receive service from two Class I railroads, demonstrating that in a substantial portion of such cases, R/VC is above 180, indicating market power despite the presence of significant competition. Next, we use competition introduced as a result of the Conrail transaction to consider how reliably R/VC changes in response to changing competitive circumstances.

Table III.1 shows the proportion of ***jointly served*** STCC-destination combinations where one or both of the serving railroads have R/VCs above 180. To isolate truly

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[42] *Christensen Report* at 11-25.

[43] Wilson, Wesley W. and Frank A. Wolak, "Freight Rail Costing and Regulation: The Uniform Rail Costing System," Review of Industrial Organization, published online May 3, 2016 at Section 4.2.

competitive situations, we analyzed the R/VC associated with all non-intermodal shipments, summarized by STCC-destination pair, that met the following criteria: (1) the STCC-destination pair was served by more than one Class I railroad; (2) the second-highest volume carrier terminated at least 20 percent of the traffic for that commodity; and (3) the Carload Waybill Sample reported more than 6,000 total carloads for that STCC-destination pair across the years 2000-2014. Table III.1 reports the number and proportion of STCC-destination pairs where R/VCs for one or both of the railroads were above 180 for the top 750 STCC-destination combinations. The first line of Table III.1 shows that of the top 100 STCC-Destination pairs with dual service at the destination, 18 had R/VCs above 180 for both carriers and 19 had R/VCs above 180 for one of the carriers. Stated differently, 37 percent of the top 100 competitive STCC-Destination pairs have average R/VC above 180. Further, the table shows that 34 percent (252 of 750) of the 750 STCC/Destination combinations analyzed have average R/VC ratios above 180 despite being served by two Class I carriers.[44] This far from trivial number of exceptions makes clear that R/VC over 180 is not a reliable indicator of the absence of competition.

Table III.1: Jointly-Served Destinations with R/VC Above 180

		STCC Destination Pairs		
Number of STCC-Destination Pairs (1)	**Average Carloads**	**Both RRs > 180**	**One RR > 180**	**Percent > 180**
1-100	153,624	18	19	37%
101-250	28,454	18	34	35%
251-500	13,362	26	54	32%
501-750	7,358	25	58	33%
Total of Top 750		**87**	**165**	**34%**

Source: Carload Waybill Sample, 2000-2014

Notes: (1) STCC-Destination pairs with 2+ terminating RRs over 2000-2014 period; highest-volume terminating carrier up to 80%; second highest-volume terminating carrier at least 20%; 6000+ total carloads; and excludes intermodal and gateways (e.g., Chicago, St. Louis).

Analysis of locations that went from sole-served (by Conrail) to dual-served (by CSX and NS) after the Conrail transaction shows R/VC ratios do not consistently fall in

[44] This analysis considered all STCC/Destination combinations that were served by BNSF and UP or CSX and NS, where each carrier moved at least 20 percent of the volume and that had at least 6,000 carloads over the 2000-2014 time period.

response to newly increased competition, as they should if R/VC were a reliable indicator of market power.[45] As Table III.2 shows, in ***half*** (51 percent) of the route-commodity combinations that went from sole-served by Conrail to dual-access by both CSX and NS (at both ends of the move), R/VC ratios increased by five percent or more. More generally, there was no clear pattern of changes in R/VC following the shift to dual access, with many going up, many going down, and many staying the same. Further, the data show R/VC ratios can be quite volatile – more than half of the lanes exhibited increases or decreases of greater than 15 percent. Again, this is far from a trivial set of exceptions and thus makes clear that R/VC is not a reliable indicator of competition or market power.

Table III.2: Change in R/VC on Sole-to-Dual Route-Commodity Combinations

	Number of Lanes	Percent of Lanes	Average Percent Change	Percent of 2014 Traffic (tons)
Increase > 15%	164	35%	50%	28%
Increase 10-15%	35	8%	13%	16%
Increase 5-10%	35	8%	8%	10%
No Change	65	14%	0%	12%
Decrease 5-10%	34	7%	-7%	4%
Decrease 10-15%	42	9%	-12%	23%
Decrease > 15%	90	19%	-27%	7%

Source: Carload Waybill Sample, Centralized Station Master
Notes: Routes defined at 6-digit SPLC level; routes included if Centralized Station Master showed post-transaction service for both CSX and NS at both origin and destination. Top and bottom 5% of pre or post-transaction RVCs are excluded.

D. Implications for the subject commodities

In this case, the Board relies almost entirely on R/VC analysis to justify its proposal to revoke the exemptions on the subject commodities. As discussed above, R/VC ratios cannot serve this function. One effect of the flaws in R/VC described above is that R/VC

[45] In its decision discontinuing the formal oversight process for the Conrail Transaction, the STB notes that "Balanced rail competition has been brought to many points throughout the Eastern United States." See, STB Finance Docket No. 33388 (Sub-No. 91) CSK Corporation and CSX Transportation, Inc., Norfolk Southern Corporation and Norfolk Southern Railway Company – Control and Operating Leases/Agreements – Conrail Inc. and Consolidated Rail Corporation, General Oversight, Decision, October 20, 2004 at 10. In the same decision (at 10), the Board writes: "The evidence submitted in this fifth annual oversight round, like that submitted in the first four rounds of annual oversight, demonstrates that the conditions imposed are working as intended and that the transaction has not resulted in competitive or market power problems."

ratios are volatile. The volatility of R/VC ratios means that changes may have nothing to do with market structure and increases in R/VC, especially relatively small increases such as those cited by the Board (ranging from two percent to 15 percent), cannot support an inference of market power.

The Board has presented no other analysis or methodology that supports an inference of market power. Given the unreliable R/VC analysis, the Board has not demonstrated rail market power with respect to these commodities and therefore does not have an economic basis on which to revoke these exemptions. Hence, in terms of evaluating whether the Board's proposal in this case is sound, one could stop at this point: the Board has not presented reliable evidence of rail market power with respect to the subject commodities, and therefore the exemptions should remain. However, in the remainder of this statement, we go on to provide an affirmative discussion of other economic factors that should be considered and their implications for the commodities at issue.

IV. A WIDE RANGE OF COMPETITIVE OPTIONS NEEDS TO BE CONSIDERED IN ANY RELIABLE COMPETITIVE ASSESSMENT

A. Many forms of competition are relevant

It is a well-established principle in antitrust economics and policy that a proper examination of whether a specific market is subject to market power must consider all relevant sources of competition - that is, all relevant substitutes for the products in question.[46] For example, the Horizontal Merger Guidelines state:

> Market definition focuses solely on demand substitution factors, i.e., on customers' ability and willingness to substitute away from one product to another in response to a price increase or a corresponding non-price change such as a reduction in product quality or service…. Customers often confront a range of possible substitutes for the products of the merging firms. Some substitutes may be closer, and others more distant,

[46] U.S. Department of Justice and the Federal Trade Commission, "Horizontal Merger Guidelines," Issued: August 19, 2010 (hereinafter, "*Merger Guidelines*").

either geographically or in terms of product attributes and perceptions.[47]

With regard to this proceeding, the range of relevant substitutes that must be considered includes: intramodal competition from other railroads, intermodal competition from other modes of transportation, competition from substitute products, and competition from alternative geographies. If shippers are able to meet their needs from one (or a combination) of these alternatives, railroads must compete with those alternatives and thus they provide competitive constraints on railroads' pricing power with no need to turn to regulation. In addition, even if a particular shipper is truly unable to access ***any*** of these competitive alternatives, the fact that other shippers benefit from these types of competition provides an important source of competition. For instance, if a railroad tries to raise prices on Shipper A (a shipper with no other alternatives), and the higher rail rates make Shipper A's delivered price less attractive than the price offered by Shipper B (who can make use of one (or more) competing alternatives), then Shipper A will lose sales and the railroad will lose volumes just as if Shipper A could shift to a competitive alternative.

- ***Intramodal***: Shippers with access to more than one railroad on their route can threaten to switch to a competing carrier to extract the most favorable rates possible.
- ***Intermodal***: Competition from other modes of transportation constrains rail rates when shippers can shift their shipments from rail to trucks, water and/or pipelines in response to increases in rail rates.
- ***Product***: Shippers who are able to use substitute products to meet their needs can use the threat of shifting away from rail transport for a given product to rail transport for a different, substitute product, to negotiate with railroads for favorable rates on shipments of the first product. Railroads must set rates at levels that are competitive with these alternatives or risk losing the business. Take, for example, a paper producer who is able to use either recycled paper or wood pulp in their production process. If the paper producer is faced with unattractive rail rates for wood pulp and they can shift to recycled paper, railroads will need to set rates at a level that is competitive with the shipper's cost of obtaining the substitute product in order to win the business.
- ***Geographic***: Shippers who are able to send products to (or receive products from) alternative geographic areas can use these alternatives in negotiating with railroads for more favorable rates. Geographic competition is especially relevant in

[47] *Merger Guidelines* at Section 4.

> industries where production or distribution facilities are wide-spread. Geographic dispersion of distribution centers provides customers multiple conveniently located sources from which to purchase a given commodity and provides producers the ability to shift their production and distribution across locations. This geographical flexibility gives producers and customers the ability to avoid rail rate increases by choosing to ship products to, or receive products from, a distribution center at which there are several rail (or other transportation) alternatives.

It is not necessary to observe ***each*** of these competitive alternatives to conclude a market is competitive. Competition from ***any*** of these sources can be sufficient to subject shipments to competition. Moreover, the *possibility* of any of these sources of competition may constrain the ability of the railroad to raise prices.[48] The extent to which competitive alternatives provide sufficient discipline to protect shippers from putative railroad market power depends on market-specific characteristics and requires individual investigation of all forms of potential competition for each commodity. If one finds that, after considering all forms of competition, effective competition is lacking then there is a potential competitive concern. But, again, the Board has not conducted a reliable analysis of other forms of competition, so thus the Board cannot conclude that competition is lacking.

B. Examples and implications for subject commodities

As noted above, the ICC properly gave considerable weight to evidence of competition from a variety of these alternatives to support the initial finding that railroads did not have market power with respect to these commodities and that regulation was not required to protect shippers. The Board has not offered a similarly rigorous analysis of the competitive circumstances to support their proposal to revoke exemptions for the five subject commodities.

The Board does not appear to put any weight on product or geographic competition, and the information cited by the Board with regard to inter- and intramodal competition appears to rely on anecdotal assertions put forward by shippers or on assertions unsupported by independent or comprehensive analysis. For example, despite the fact that

[48] Baumol, William J and Robert Willig, "Contestability: Developments Since the Book," Oxford Economic Papers, New Series, Vol. 38, Supplement: Strategic Behavior and Industrial Competition (Nov., 1986), pp. 9-36 at 22.

the ICC noted significant product competition for coke, and significant geographic competition for both iron and steel scrap and cement, the NPRM contains no analysis of either product or geographic competition for these commodities. Further, the Board appears to dismiss intermodal competition for crushed stone on the basis of testimony from one shipper[49] and similarly dismisses intramodal competition for stone and steel based in large part on assertions from shippers.[50] The Board also repeatedly points to increases in average length-of-haul as a "possible indicator" that intermodal competition less effective, but offers no analysis supporting this assertion.[51] As noted, above, shipper complaints are of limited value in this context and must, at minimum, be corroborated with independent analysis before they can be used as meaningful economic evidence.

In evaluating market power today, a principled economic analysis requires the Board to conduct a more detailed analysis of the full range of competitive alternatives before concluding that competition is no longer sufficient to protect shippers from market power and that re-regulation is necessary. We consider each type of competition in detail, below. With respect to the subject commodities, we find that each commodity benefits from at least one type of competition.

- ***Crushed Stone***: Rail rates for crushed stone customers are constrained by at least intermodal and geographic competition. As the Board has acknowledged, a very small proportion of crushed stone production is moved by rail, indicating that there is necessarily competition from at least one other mode of transport. In addition, there is significant geographic dispersion of production and distribution centers, indicating potentially important geographic competition.
- ***Primary Iron and Steel***: Rail rates for iron and steel customers are constrained by at least intramodal, intermodal and geographic competition. Although the Board notes shipper assertions citing a lack of intramodal competition and worries that increases in the average length-of-haul are indicative of a lack of intermodal competition, data show a significant amount of steel is moved on routes with multiple rail options on both ends. Further, over half of all steel production is moved on modes other than rail. Steel is produced at over 100 facilities all across the US and there are significant imports of steel, offering customers numerous geographic options.

[49] NPRM at 5
[50] NPRM at 5-7.
[51] NPRM at 7-8.

- ***Steel Scrap and Waste***: Rail rates for scrap are constrained by intramodal, intermodal, geographic, and product competition. Citing increased length-of-haul and lack of rail competition, the Board noted concern that both intermodal and intramodal competition was diminished; however, significant volumes of steel scrap are shipped on rail lanes with intramodal competition on both ends. Further, close to 60 percent of steel scrap production moves on modes other than rail. In addition, scrap processing yards are located throughout the US, offering scrap customers numerous geographic options and direct reduced steel is emerging as a substitute for scrap, providing customers with the option of using alternative products as well.
- ***Coke from Coal***: The Board notes concern that shifts in steel production have diminished competitive alternatives for coke shippers, but evidence shows that rail rates for coke from coal are constrained by at least intermodal and product competition. Nearly two-thirds of coke is transported on modes other than rail. Further, some steel producers can use coke from petroleum as a substitute. In addition, competition from steel producers using technologies (*e.g.* mini-mills) that do not use coke may constrain the ability for a railroad to increase shipment prices to an integrated steel mill without causing that mill to lose sales to other producers and thus depressing its demand for rail movements.
- ***Hydraulic Cement***: Rail rates for hydraulic cement are constrained by at least intermodal and geographic competition, and product substitution is also possible. The Board points to shipper statements about consolidation in the cement industry and length of haul as indicators that cement shippers have limited competitive options. However, rail transports only about 25 percent of cement shipments, with trucks being the most common choice for shippers. Additionally, cement production and distribution centers are widely dispersed around the country. Finally, there are several products that can be substituted for cement, depending on the end use.

We now turn to a more detailed discussion of each type of competition, as it applies to the commodities in question.

1. Intramodal Competition

Certain customers receive products on routes served by multiple railroads. These shippers benefit from direct competition as the railroads will compete against one another to win business.

Table IV.1 shows the volumes of the subject commodities that move between origins and destinations that have multiple rail options on each end of the move for both the pre-exemption period and the last five years.[52] For several commodities, including steel, scrap, and coke[53], and cement, non-trivial volumes move on routes with rail competition at both ends, indicating important intramodal competition. And as we see in the following sections, for the two commodities with lower percentages of volume with multiple rail options (stone and cement), other forms of competition are quite prevalent. As one example, for both stone and cement, a very low percentage of shipments are by rail, indicating particularly important intermodal competition.

Notably, in its initial exemption decision, the ICC pointed to intramodal competition for iron and steel, scrap, coke, and cement.[54] Although some shippers argue that rail consolidation has diminished intramodal competition,[55] Table IV.1 shows the share of rail volume moving on routes with multiple options has remained largely consistent with the pre-exemption period. If conditions have not changed significantly from those judged to be "competitive" when the exemptions were granted, there is no basis to revoke the exemption now.

Table IV.1: Volume (in Tons) of Subject Commodities Moving by Rail on Routes with Multiple Railroads at Each End

	1990	1991	1992	1993	1994	2010	2011	2012	2013	2014
Crushed or Broken Stone or Rip Rap	4%	9%	4%	3%	6%	7%	7%	10%	9%	8%
Coke Produced from Coal	41%	44%	36%	34%	35%	29%	32%	7%	12%	33%
Primary Iron or Steel Products	45%	38%	41%	33%	39%	39%	42%	45%	39%	43%
Hydraulic Cement	15%	18%	13%	16%	23%	16%	18%	18%	21%	22%
Iron or Steel Scrap, Wastes or Tailings	32%	33%	29%	30%	29%	37%	35%	32%	35%	34%

Source: Carload Waybill Sample

Notes: Routes defined at 6-digit SPLC level; routes were included if Carload Waybill Sample reported multiple railroads serving the SPLC in a given year.

2. Intermodal Competition

Even if a particular shipper does not have access to multiple railroads, alternative

[52] For the purposes of this analysis, origins and destinations were defined as 6-digit SPLCs.

[53] The drop in coke volumes moving on routes with competitive options on both ends in 2012 and 2013 occurs because of variation in Waybill sampling. When SPLCs with multiple options were identified using the Centralized Station Master file (rather than the Waybill Sample), the volumes associated with routes with multiple rail options on both ends in 2012 and 2013 were consistent with volumes reported in Table IV.1.

[54] See, for example, Rail Gen. Exemption Auth. – Pet. Of AAR to Exempt Rail Transp. Of Selected Commodity Groups, 9 I.C.C.2d 969 (September 17, 1993) at 6, 7, and Rail General Exemption Authority – Exemption of Hydraulic Cement, EP 346 (Sub-No. 34) 10 ICC 2d 649 (July 26, 1995) at 2 and NPRM at 6.

[55] NPRM at 5, 9.

modes of transportation also compete with railroads. For customers with access to alternative modes of transportation, railroads must price at a level that is competitive with rates offered by other modes in order to win business.

Table IV.2 shows the proportion of subject commodity production moved by rail. We infer the proportion of production not moved by rail is moved by other modes, likely truck and/or water. The table shows that rail faces significant competition from other modes for all of the subject commodities. Indeed rail shipments make up a small percentage of total shipments for these commodities, comprising less than 10 percent of crushed stone transportation and less than a quarter of hydraulic cement movements, and no more than half of the transportation of any of the five commodities.

Further, the table shows that rail's share of movements from 2010 to 2014 is largely consistent with shares reported in the 1993 filings. These shares were widely cited by the ICC as indicative of competition in their initial decisions.[56] If conditions have not changed significantly from those judged to be "competitive" when the exemptions were granted, there is no basis to revoke the exemption now.

[56] See, for example, Rail Gen. Exemption Auth. – Pet. Of AAR to Exempt Rail Transp. Of Selected Commodity Groups, 9 I.C.C.2d 969 (September 17, 1993) and Rail General Exemption Authority – Exemption of Hydraulic Cement, EP 346 (Sub-No. 34) 10 ICC 2d 649 (July 26, 1995).

Table IV.2: Share of Subject Commodity Production Transported by Rail (in Tons)

STCC	Commodity	1975	1980	1985	1990	2010	2011	2012	2013	2014
14-2	Crushed or Broken Stone, Riprap	5%	5%	4%	5%	6%	6%	6%	6%	6%
29-914	Coke produced from Coal	36%	32%	65%	80%	33%	31%	37%	37%	34%
33-12	Primary Iron or Steel Products (1)	40%	39%	30%	38%	49%	47%	47%	46%	42%
32-4	Hydraulic Cement (2)	22%	16%	17%	19%	25%	24%	25%	25%	25%
40-211	Iron or Steel Scrap, Wastes, Tailings (3)	n/a	48%	43%	34%	37%	39%	42%	39%	n/a

Sources: Carload Waybill Sample, Verified Statement of Craig F. Rockey (Ex Parte No. 346, 1992), Verified Statement of Paul S. Posey (Ex Parte No. 346 (Sub-No. 35), 1994), United States Geological Survey Minerals Yearbook (2010-2014), United States Geological Survey Mineral Commodities Summaries (2010-2014), United States Energy Information Administration Quarterly Coal Reports (2010-2014)

Notes: Rail percent is calculated as expanded tons as reported in the Carload Waybill Sample divided by production and imports.

(1) Production of iron/steel products is estimated by steel mill products for 2010-2014; included blast furnace products, primary iron or steel products, and iron or steel castings for 1975-1990. (2) Includes portland cement and masonry cement; portland cement represents 97% hydraulic cement traveling by rail in the Carload Waybill Sample in 2014. (3) Included blast furnace product and steel shipping containers as ferrous recyclables 1975-1990; limited to ferrous scrap 2010-2014; data unavailable for 1975 and 2014.

For certain commodities (including stone and cement, mentioned above, as well as scrap steel), competition from other modes is also corroborated by other sources.

- The Mineral Commodity Yearbook reports that 72 percent of crushed stone produced in the US was transported by truck, seven percent by water and five percent by rail in 2014.[57] The remaining 16 percent was used at the production site.[58] The Commodity Flow survey reports that approximately 90 percent of gravel and crushed stone move by truck.[59]
- Cement also moves large volumes by truck: Truck accounts for approximately 77 percent of overall cement moves; rail 13 percent and the remainder moved by water.[60] Even when considering only moves from production plants to distribution terminals, truck and water account for just over 50 percent of the movements.[61]
- The Institute of Scrap Recycling Industries ("ISRI") notes that although "…shipping via trucks can be a high per-unit cost option [as compared to rail], trucks are a significant mode of domestic transport for scrap, especially for

[57] U.S. Department of the Interior, U.S. Geological Survey, "2014 Minerals Yearbook: Stone, Crushed [Advance Release], April 2016 (Hereinafter "2014 Minerals Yearbook (Crushed Stone)"). Similar numbers were reported for previous years. See Minerals Yearbook (Crushed Stone) for 2010-2013.
[58] 2014 Minerals Yearbook (Crushed Stone) at 71.4.
[59] Commodity Flow Survey, 2012 at Table 7 (p. 15).
[60] U.S. Department of the Interior, U.S. Geological Survey, "2013 Minerals Yearbook: Cement [Advance Release], December, 2015 (Hereinafter "2013 Minerals Yearbook (Cement))" at Table 10, p16.17.
[61] 2013 Minerals Yearbook (Cement) at Table 10, p16.17

intra-regional scrap flows."[62] ISRI also notes that "[b]arges and domestic waterborne shipments are a third major mode of transport for scrap."[63]

Taken together, the data on the availability of alternative rail options (Table IV.1) and alternative modes (Table IV.2) demonstrate that each commodity has access to competing transportation alternatives. Coke, iron and steel, and iron and steel scrap have a mix of both intra- and intermodal options while stone and cement have significant intermodal alternatives. These intra- and intermodal alternatives provide important discipline on rail rates both for those who can access an alternative provider and for those who cannot: If rail rates for shippers without alternatives increase to the point that their prices are no longer competitive with shippers who have alternatives, the shipper and the railroad will lose business.

3. Product Competition

We have shown that all commodities have alternative transportation alternatives, in the form of competing railroads, competing modes, or a mix of both. However, competitive discipline does not have to come in the form of transportation alternatives. For shippers who have the ability to turn to substitute products, railroads must set rates at levels that are competitive with these alternatives. Customers who can use substitute products, obtained from different suppliers, transported by alternative railroads or on alternative modes cannot reasonably be considered captive to a particular railroad. Further, as discussed above, even shippers for whom product substitution is not an option can benefit if other shippers can use alternative products.

- ***Coke****:* Coal coke is most typically used as an input in the steel production process by steel producers operating basic oxygen furnaces, also known as blast furnaces. Blast furnaces produce steel from iron oxides, carbon (coke) and limestone, but also use 25-35 percent scrap in the production process.[64] To the

[62] Institute of Scrap Recycling Industries, Inc., "The ISRI Scrap Yearbook 2014", April 25 2015, available at http://www.isri.org/docs/default-source/commodities/2014-scrap-yearbook.pdf?sfvrsn=2, site visited June 25, 2016.

[63] Institute of Scrap Recycling Industries, Inc., "The ISRI Scrap Yearbook 2014", April 25 2015, available at http://www.isri.org/docs/default-source/commodities/2014-scrap-yearbook.pdf?sfvrsn=2, site visited June 25, 2016.

[64] American Iron and Steel Institute, Steelworks, "How a Blast Furnace Works", available at http://www.steel.org/making-steel/how-its-made/processes/how-a-blast-furnace-works.aspx, site visited June 25, 2016.

extent steel production can increase reliance on scrap, either by increasing the proportion of scrap used in blast furnaces or by shifting to alternative production processes, such as electric arc furnaces, that do not rely on coke (because they use scrap steel exclusively[65]), rail rates are constrained by the threat that producers will switch to the non-coke alternative. The ICC cited exactly this type of product competition in its initial decision.[66] It is not necessary for the same steel plant or producer to be able to shift between alternatives to constrain rail rates in this manner. If there is downstream competition, that will protect end consumers ***and*** likely constrain the railroad's ability to increase prices to a given buyer. If a railroad's rate to transport the steel increases the delivered price of steel to a rail-served seller to a level that is not competitive with other sellers, the railroad's customer will lose sales and the railroad will lose business. Finally, coal coke is facing emerging competition from petroleum coke (petcoke) as a substitute for coal coke in blast furnaces as petcoke, can, in some cases, be injected directly into blast furnaces.[67]

- ***Hydraulic Cement*:** The Portland Cement Association ("PCA"), the cement industry trade group, regularly studies competitive materials to "assess future cement volume opportunities, or risks, posed by potential changes in the competitive environment among types of building material products."[68] As part of this assessment, PCA identifies asphalt, steel, and lumber as potential competitors.[69] To the extent that rail rates for cement rise, customers are likely to be able to find an alternative that meets their needs.

- ***Steel Scrap and Waste:*** Direct Reduced Iron (DRI) is increasingly seen as a substitute for steel scrap in electric arc furnaces,[70] with some analysts noting that "[f]urther DRI expansion…will begin to compete directly with the U.S. scrap market.[71] The DRI alternative is likely to constrain rail rates as customers

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[65] American Iron and Steel Institute, Steelworks, "How Steel is Made", available at http://www.steel.org/making-steel/how-its-made.aspx, site visited July 20, 2016.
[66] See Rail Gen. Exemption Auth. – Pet. Of AAR to Exempt Rail Transp. Of Selected Commodity Groups, 9 I.C.C.2d 969 (September 17, 1993), at 6.
[67] Andrews, Anthony and Richard Lattanzio, "Petroleum Coke: Industry and Environmental Issues," Congressional Research Service, October 29, 2013. Available at: http://www.nam.org/CRSreport/. See also, American Fuel and Petrochemical Manufacturers, "Petroleum Coke", 2016, available at http://education.afpm.org/refining/petroleum-coke/, site visited on June 25, 2016.
[68] Portland Cement Association, "More Reports" , available at http://www.cement.org/market-economics/more-reports, site visited on June 26, 2016.
[69] Portland Cement Association, "Competitive Materials Update: May 2012", available at http://www.cement.org/docs/default-source/market-economics-pdfs/more-reports/competitive-materials-update-may-2012.pdf?sfvrsn=2, site visited June 26, 2016.
[70] International Iron Metallics Association, "Direct Reduced Iron (DRI)", available at http://metallics.org.uk/dri/, site visited July 24, 2016. See also, International Iron Metallics Association, "The Role of Direct Reduced Iron in Steelmaking," available at http://metallics.org.uk/the-role-of-direct-reduced-iron-in-steelmaking/, site visited July 24, 2016.
[71] Gershuni, Shneur, "Direct Reduced Iron," prepared by UBS Securities, LLC. See, also, Grobler, F and R.C.A. Minnitt "The increasing role of direct reduced iron in global steelmaking,"

could turn to this alternative if rail rates rise to levels that make scrap economically unattractive.

4. Geographic Competition

Shippers who can take advantage of different locations to meet their needs benefit from geographic competition. As with customers who are able to shift to substitute products, customers who can obtain their products from different suppliers, located in different areas, with access to different transportation options cannot reasonably be considered captive to a particular railroad. Geographic competition is especially relevant in industries, such as cement and stone, for example, where distribution centers are prevalent. The primary function of distribution centers and other freight facilities is to efficiently move goods from origin to destination.[72] In order to efficiently facilitate these movements, access to transportation networks with modal choice is one of the primary factors in determining where distribution centers are located.[73] Distribution centers tend to be strategically located in areas with efficient access to multiple modes of transportation, providing producers options for transporting their product to customers and providing customers alternatives for transporting their purchases to their end use.[74]

- ***Crushed Stone***: The crushed stone industry is very geographically dispersed, with 1,430 production companies, 3,700 quarries, 82 underground mines, and 187 sales/distribution yards across all 50 states in 2015.[75] Hence, even if a given route lacks competition, stone producers have the ability to ship to, and stone buyers to receive production from, other locations.
- ***Iron and Steel***: Iron and steel is produced in one of two ways: by integrated steel mills, in a traditional blast furnace, which uses a combination of scrap and raw material, including coke, iron oxides and limestone to make steel; or from an independent mini-mill, in an electric arc furnace which almost exclusively uses scrap (recycled) steel to make new steel.[76] In 2015, steel was produced in

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[72] National Cooperative Freight Research Program, "Freight Facility Location Selection: A Guide for Public Officials," Transportation Research Board, 2011 at 39.
[73] National Cooperative Freight Research Program, "Freight Facility Location Selection: A Guide for Public Officials," Transportation Research Board, 2011 at 39.
[74] National Cooperative Freight Research Program, "Freight Facility Location Selection: A Guide for Public Officials," Transportation Research Board, 2011 at 40-43.
[75] U.S. Geological Survey, "Minerals Commodities Summaries (Stone (crushed)), January 2016.
[76] American Iron and Steel Institute, Steelworks, "How a Blast Furnace Works", available at http://www.steel.org/making-steel/how-its-made/processes/how-a-blast-furnace-works.aspx, site visited June

traditional blast furnaces by four companies at 11 locations in the United States and by 58 companies operating 110 electric arc furnaces scattered widely across the United States.[77] In addition, steel imports have risen in each year from 2013 to 2015,[78] providing customers with the additional option of shipping imported steel from ports, which are generally served by multiple railroads and alternative modes of transportation. Again, these factors means that steel inputs (such as coke) can be shipped to many different locations and steel products can be shipped from many different locations, providing an important constraint on the ability for a railroad to raise prices based on market power over one particular route.

- ***Iron and Steel Scrap***: Steel scrap, also known as ferrous scrap, is generally gathered, sorted, processed, and prepared for sale at scrapyards and scrap metal processing plants. ISRI notes: "[w]hile scrapyards have often been located near major manufacturing centers, scrap recycling facilities today are located all across the United States."[79] Hence, geographic competition is likely significant here, with a given railroad unlikely to be able sustain a price increase based on market power over one particular route.
- ***Hydraulic Cement:*** Cement was produced at 99 plants across 34 states and imported from Canada, Korea, China and Greece.[80] The Portland Cement Association also reports 362 distribution terminals in the United States.[81] Hence, geographic competition is likely rampant here, with a given railroad unlikely to be able sustain a price increase based on market power over one particular route.

V. CONCLUSION

We find that the Board's analysis does not present clear evidence of changed economic circumstances that supports an inference of market power for the commodities in question. The R/VC analysis cited by the Board is an unreliable indicator of market power and the Board's proposal presented no comprehensive investigation of alternate sources of competition. Indeed, the Board's increased reliance on R/VC as a tool for identifying

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25, 2016. See, also, American Iron and Steel Institute, Steelworks, "How Steel is Made", available at http://www.steel.org/making-steel/how-its-made.aspx, site visited July 20, 2016.

[77] U.S. Geological Survey, "Minerals Commodity Summaries (Iron and Steel)", January 2016, at 84.

[78] U.S. Geological Survey, "Minerals Commodity Summaries (Iron and Steel)", January 2016, at 85.

[79] Institute of Scrap Recycling Industries, Inc., "The ISRI Scrap Yearbook 2014", April 25 2015, available at http://www.isri.org/docs/default-source/commodities/2014-scrap-yearbook.pdf?sfvrsn=2, at 13, site visited June 25, 2016.

[80] U.S. Geological Survey, "Minerals Commodities Summaries (Cement)," January 2016 at 44.

[81] Portland Cement Association, "United States Cement Industry", 2016, available at http://www.cement.org/docs/default-source/ga-pdfs/cement-industry-by-state-2015/usa.pdf?sfvrsn=2, site visited on June 22, 2016.

market power has caused the Board to move away from the sound economic principles that guided the ICC in their analysis granting exemptions. From an economic perspective, it is essential that the Board's method for evaluating market power return to principles that properly consider all factors relevant to establishing competitive rates.

A proper analysis of competition – which is necessary to reach a conclusion of market power – considers all relevant sources of competitive discipline. In this case, that includes intramodal competition with other railroads, intermodal competition with other non-rail transportation options, competition with substitute products, and competition between different geographic locations. The Board's reliance on R/VC as a screen does not properly account for these alternatives. Our analysis of competitive alternatives demonstrates that railroads face multiple forms of competition for each of the subject commodities. In sum, our analysis argues against a conclusion that shippers of the subject commodities need re-regulation to protect them from purported rail market power.

VERIFICATION

I declare under penalty of perjury that the foregoing is true and correct. I further certify that I am qualified and authorized to sponsor and file this testimony.

Executed on July 26, 2016

Mark a. Il

Mark Israel

VERIFICATION

I declare under penalty of perjury that the foregoing is true and correct. I further certify that I am qualified and authorized to sponsor and file this testimony.

Executed on July 26, 2016

Jonathan Orszag

EXHIBIT A:

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SUMMARY OF PROFESSIONAL EXPERIENCE

- Served as an expert for both the Federal Government and private parties in cases involving industries including fixed and mobile telecommunications, cable television, broadband internet service, other high technology industries, airlines, railroads, shipping, financial markets, credit cards, beverages, consumer retail, and many others.
- Testified in Federal Court and appeared in front of government agencies including DOJ, FTC, and FCC, and state agencies on behalf of numerous clients.
- Submitted expert reports in Federal Court, as well affidavits, declarations, and white papers to agencies including DOJ, FTC, FCC, DOT, and state agencies.
- Written numerous academic articles on topics including competition economics, merger policy, telecommunications, airlines, insurance markets, and labor markets. Research published in leading scholarly and applied journals including The American Economic Review, The Rand Journal of Economics, The Review of Industrial Organization, Antitrust Source, and the Global Competition Review, and presented to business, government, and academic audiences around the world.

AREAS OF EXPERTISE

- Antitrust and competition economics; industrial organization economics
- Applied econometrics
- Economic and econometric analysis of horizontal and vertical mergers
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EDUCATION

- Ph.D., Economics, STANFORD UNIVERSITY, June 2001.
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- B.A., Economics, ILLINOIS WESLEYAN UNIVERSITY, Summa Cum Laude, May 1991.

EMPLOYMENT HISTORY

Compass Lexecon: *Senior Managing Director*, January 2016 – Present.

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Kellogg School of Management, Northwestern University: *Assistant Professor of Management and Strategy*, 2000 – 2006; *Associate Professor of Management and Strategy*, 2007 – 2008.

State Farm Insurance: *Research Administrator*, 1992 – 1995.

RECENT PROFESSIONAL RECOGNITIONS

American Antitrust Institute 2015 Antitrust Enforcement Awards, *Outstanding Antitrust Litigation Achievement in Economics* Finalist.

Global Competition Review Who's Who Legal: Competition 2016, leading Economist.

Global Arbitration Review's 2016 International Who's Who of Commercial Arbitration, leading Expert Witness.

LIVE TESTIMONIAL EXPERIENCE

Testimony in Commercial Arbitration on Issues Related to Mobile Wireless Competition; New York, NY; April 12, 2016.

Testimony as Economic Expert on behalf of Regal Entertainment Group, In the Matter of iPic – Gold Class Entertainment, LLC, et al., v. Regal Entertainment Group, AMC Entertainment Holdings, Inc., et al., In the District Court of Harris County, Texas, 234th Judicial District, No. 2015-68745. Deposition: January 12, 2016. Live Trial Testimony: January 21, 2016.

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- Comcast/Time Warner, January 2015
- AT&T/T-Mobile, July 2011
- Comcast/NBCUniversal, August 2010

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Appearance as Economic Testifying Expert in front of Department of Justice, Federal Trade Commission, Federal Communications Commission, and State Regulatory Agencies in many additional transactions, including: Danaher/NetScout, AT&T/Leap Wireless, T-Mobile/MetroPCS, American Airlines/US Airways, SpectrumCo/Cox/Verizon Wireless, oneworld antitrust immunity application, PepsiCo/bottlers, Houghton Mifflin/Harcourt, Chicago Mercantile Exchange/Chicago Board of Trade.

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Declaration of Mark A. Israel, "An Economic Analysis of Competitive Effects and Consumer Benefits from the Proposed Acquisition of Leap Wireless by AT&T," Federal Communications Commission, WT Docket No. 13-193, August 1, 2013.

Supplemental Reply Declaration of Michael L. Katz, Philip A. Haile, Mark A. Israel, and Andres V. Lerner, "Comments on Appropriate Spectrum Aggregation Policy with Application to the Upcoming 600 MHz Auction," Federal Communications Commission, WT Docket No. 12-269, June 13, 2013.

Reply Declaration of Michael L. Katz, Philip A. Haile, Mark A. Israel, and Andres V. Lerner, "Comment on the Submission of the U.S. Department of Justice Regarding Auction Participation Restrictions," Federal Communications Commission, WT Docket No. 12-269, June 13, 2013.

Reply Declaration of Michael L. Katz, Philip A. Haile, Mark A. Israel, and Andres V. Lerner, "Spectrum Aggregation Policy, Spectrum-Holdings-Based Bidding Credits, and Unlicensed Spectrum," Federal Communications Commission, GN Docket No. 12-268, March 12, 2013.

Declaration of Igal Hendel and Mark A. Israel, "Econometric Principles That Should Guide the Commission's Analysis of Competition for Special Access Service," Federal Communications Commission, WC Docket No. 05-25, February 11, 2013.

Reply Declaration of Mark A. Israel and Michael L. Katz, "Economic Analysis of Public Policy Regarding Mobile Spectrum Holdings," Federal Communications Commission, WT Docket No. 12-269, January 7, 2013.

Declaration of Mark A. Israel and Michael L. Katz, "Economic Analysis of Public Policy Regarding Mobile Spectrum Holdings," Federal Communications Commission, WT Docket No. 12-269, November 28, 2012.

Declaration of Mark Israel, "An Economic Assessment of the Prohibition on Exclusive Contracts for Satellite-Delivered, Cable-Affiliated Networks," Federal Communications Commission, MB Docket Nos. 12-68, 07-18, & 05-192, September 6, 2012.

Expert Report of Mark Israel, "Implications of the Verizon Wireless & SpectrumCo/Cox Commercial Agreements for Backhaul and Wi-Fi Services Competition," Federal Communications Commission, WT Docket No. 12-4, August 1, 2012.

Expert Report of Mark A. Israel, Michael L. Katz, and Allan L. Shampine, "Promoting Interoperability in the 700 MHz Commercial Spectrum," Federal Communications Commission, WT Docket No. 12-69, July 16, 2012.

Affidavits of Dr. Mark A. Israel in Re: Bloomberg L.P. V. Comcast Cable Communications, LLC, Federal Communications Commission, MB Docket No. 11-104, June 21, 2012 (Declaration), June 8, 2012 (Declaration), September 27, 2011 (Supplemental Declaration), July 27, 2011 (Declaration).

Expert Report of Robert Willig, Mark Israel, Bryan Keating, and Jonathan Orszag, "Response to Supplementary Comments of Hubert Horan," Docket DOT-OST-2009-1055, October 22, 2010.

Expert Report of Robert Willig, Mark Israel, Bryan Keating, and Jonathan Orszag, "Measuring Consumer Benefits from Antitrust Immunity for Delta Air Lines and Virgin Blue Carriers," Docket DOT-OST-2009-1055, October 13, 2010.

Expert Report of Mark Israel and Michael L. Katz, "Economic Analysis of the Proposed Comcast-NBCU-GE Transaction," Federal Communications Commission, MB Docket No. 10-56, July 20, 2010.

Expert Report of Mark Israel and Michael L. Katz, "The Comcast/NBCU Transaction and Online Video Distribution," Federal Communications Commission, MB Docket No. 10-56, May 4, 2010.

Expert Report of Mark Israel and Michael L. Katz, "Application of the Commission Staff Model of Vertical Foreclosure to the Proposed Comcast-NBCU Transaction," Federal Communications Commission, MB Docket No. 10-56, February 26, 2010.

Expert Report of Robert Willig, Mark Israel, and Bryan Keating, "Competitive Effects of Airline Antitrust Immunity: Response of Robert Willig, Mark Israel, and Bryan Keating" in Docket DOT-OST-2008-0252, January 11, 2010.

Affidavit of Dr. Mark A. Israel on Class Certification in Re: Puerto Rican Cabotage Antitrust Litigation, in the United States District Court for the District of Puerto Rico, MDL Docket No. 3:08-md-1960 (DRD), December 10, 2009.

Expert Report of Robert Willig, Mark Israel, and Bryan Keating, "Competitive Effects of Airline Antitrust Immunity" in Docket DOT-OST-2008-0252, September 8, 2009.

Expert Report and Supplemental Expert Report of Dennis W. Carlton and Mark Israel in Re: Toys "R" Us-Delaware, Inc., and Geoffrey Inc. v. Chase Bank USA N.A. in American Arbitration Association New York, New York, Commercial Arbitrations No. 13-148-02432-08, February 27, 2009 (Expert Report), March 20, 2009 (Supplemental Expert Report).

Expert Reports of James Levinsohn and Mark Israel in Re: 2006 NPM Adjustment Proceeding pursuant to Master Settlement Agreement, October 6, 2008 (Expert Report), January 16, 2009 (Expert Report), March 10, 2009 (Expert Report).

EXPERT WORK IN REVIEW OF MERGERS/TRANSACTIONS

Successful Acquisition of PR Newswire by GTCR. 2016. Lead economic expert for GTCR. Made presentations to DOJ showing lack of competitive harm from the transaction, based on detailed analysis of win/loss data, including calculations showing no possible upward pricing pressure (UPP) concerns regardless of the level of margins.

Successful Acquisition of Schurz Communications' Broadcast Stations by Gray Television. 2015. Lead economic expert for Gray. Made presentations to DOJ demonstrating output expanding effects of proposed transaction in light of the scale economies in television production and advertising and the small size of the DMAs affected by the transaction.

Successful Acquisition of the Communications Business of Danaher Corporation by NetScout Systems. 2015. Lead economic expert for NetScout. Made presentations to DOJ describing proper economic framework for analysis of competition and potential merger harms, and demonstrated that the presence of multiple viable competitors and numerous other credible threats to be used by powerful buyers in a dynamic industry made theories of anti-competitive harm from the merger implausible.

Successful Acquisition of Windmill Distribution Co. by Manhattan Beer Distributors. 2015. Lead economic expert for Manhattan Beer Distributors. Submitted White Paper to DOJ demonstrating, based on margin data, that the merger would be highly unlikely to lead to anti-competitive effects. Transaction was granted early termination from the Hart Scott Rodino process by the DOJ.

Proposed Acquisition of Time Warner Cable by Comcast Corporation. 2014-2015. Served as lead economic expert on broadband issues on behalf of Comcast Corporation. Submitted multiple Declarations and made multiple presentations to DOJ and FCC, explaining lack of horizontal, bargaining, or vertical/foreclosure concerns with regard to broadband competition as a result of the transaction.

Successful acquisition of Leap Wireless by AT&T. 2014. Lead economic expert for AT&T. Submitted multiple Declarations to FCC and made presentation to DOJ, demonstrating the transaction would generate substantial consumer benefits, while generating at most minimal upward pricing pressure in a properly defined mobile wireless services market and no issues related to spectrum concentration or other competitive concerns.

Successful merger of American Airline and US Airways. 2013. Lead consulting expert, managing Compass Lexecon team of over 25 economists supporting multiple experts. Made multiple presentations to DOJ, worked on expert reports in litigation, and assisted counsel with the analysis leading to settlement of litigation, permitting transaction to close.

Successful merger of T-Mobile USA and MetroPCS. 2013. Lead economic expert for T-Mobile USA. Conducted economic analyses of competitive effects of the transaction, as well as consumer benefits from reduced costs and increased network quality. Presented analyses to both DOJ and FCC.

FTC Investigation of Acquisition of Dollar Thrifty Automotive Group by Hertz, 2012. Served as a lead economic expert for FTC and prepared to serve as FTC's testifying expert against the merger, prior to case settlement. Conducted empirical analyses based on previous rental car mergers demonstrating likely price increases from the transaction.

Decision by Federal Communications Commission not to extend the ban on exclusive contracts for satellite-delivered, cable-affiliated networks. 2012. Lead economic expert for National Cable and Telecommunications Association. Submitted economic analysis demonstrating that the ban on exclusive distribution of satellite-delivered, cable affiliated networks is no longer warranted given increased marketplace competition. FCC made decision to allow the ban to sunset.

Successful sale of wireless spectrum by SpectrumCo and Cox ("Cable Companies") to Verizon Wireless and successful completion of related commercial agreements. 2012. On behalf of the Cable Companies, performed economic analyses demonstrating lack of competitive harm from the transaction on markets for backhaul and Wi-Fi services. Presented analyses to FCC.

Successful acquisition by LIN Media of broadcast television stations from NVTV. 2012. Lead economic expert for LIN Media. Prepared economic analysis demonstrating lack of competitive concern over potential issues related to Shared Service and Joint Sale Arrangements.

Proposed acquisition of T-Mobile USA by AT&T. 2011. Served as one of the lead economists, initially for T-Mobile (along with Michael Katz) and ultimately for both parties (along with Michael Katz and Dennis Carlton). Made multiple presentations to DOJ and FCC. Appeared in FCC Workshop, ex parte meeting.

S*uccessful application for antitrust immunity by Delta and Virgin Blue*. 2010. Together with Robert Willig, Bryan Keating, and Jon Orszag, prepared economic analyses demonstrating substantial net consumer benefits from antitrust immunity. Submitted results in expert reports to Department of Transportation.

Successful joint venture between Comcast and NBC Universal (and ultimate full acquisition of NBC Universal by Comcast). 2010. Served as one of the lead economists (along with Michael Katz) on behalf of the merging parties. Wrote multiple reports submitted to FCC (with Michael Katz) demonstrating lack of significant competitive concerns from the transaction. Made multiple presentations to DOJ and FCC. Appeared in FCC Workshop of economists, ex parte meeting.

Successful application for antitrust immunity for oneworld alliance and associated joint venture of American Airlines, British Airways, and Iberia Airlines. 2009-2010. Together with Robert Willig and Bryan Keating, prepared economic analyses demonstrating substantial net consumer benefits associated with antitrust immunity for the joint venture. Submitted results in expert reports to Department of Transportation.

Successful acquisition by PepsiCo of bottlers, PBG and PAS. 2009. Performed econometric and simulation analyses demonstrating pro-competitive effect of merger on PepsiCo's own brands, other brands distributed by PBG and PAS, and overall marketplace. Presented results to FTC (together with Dennis Carlton).

Successful merger of Delta Airlines and Northwest Airlines. 2008. In support of Dennis Carlton, developed empirical and theoretical analyses to demonstrate merger's pro-competitive nature. Work focused on (ultimately settled) private litigation opposing the merger.

Successful acquisition of Harcourt Education by Houghton Mifflin. 2007. Along with Daniel Rubinfeld and Frederick Flyer, developed econometric analyses demonstrating lack of competitive harm from proposed merger. Presented results to DOJ.

Successful acquisition of Chicago Board of Trade by Chicago Mercantile Exchange. 2007. Along with Robert Willig and Hal Sider, developed and presented multiple empirical analyses demonstrating lack of competitive harm from merger. Submitted multiple white papers and made multiple presentations to DOJ.

SELECTED OTHER EXPERT/CONSULTING WORK

Led team supporting Dennis Carlton's testimony in Toshiba/Hannstar TFT-LCD Antitrust litigation vs. Plaintiff Best Buy, 2013.

Led team supporting Dennis Carlton's testimony in Toshiba's TFT-LCD Class Action Antitrust litigation. Named Litigation Matter of the Year for 2012 by *Global Competition Review*, 2012.

As economic expert for US Airways, developed econometric analysis of air traffic at major US airports, presented to Philadelphia Airport management team, 2011.

Prepared analysis of the competitive impact of low-cost-carrier competition in Washington, DC and New York airports. Filed with DOT, 2011.

On behalf of major pharmaceutical firm, developed econometric model to forecast pharmaceutical expenditures, 2009.

Developed econometric model to measure of the importance of network effects in credit cards in the context of measuring damages incurred by a major credit card issuer, 2007-2008.

SELECTED RECENT PRESENTATIONS

American Bar Association Section of Antitrust Law, "Economic Issues Raised In The Comcast – Time Warner Cable Merger," Panelist, February 2016.

Fordham Competition Law Institute, 42nd Annual Conference on International Antitrust Law and Policy, Panel: Antitrust in a Mobile World, Panelist, October 2015.

American Bar Association Section of Antitrust Law, "Merger Practice Workshop," Faculty Member, October 2015.

Searle Center Conference on Antitrust Economics and Competition Policy, Panel on Recent Transactions in the Telecom Industry, Panelist, September 2015.

National Bureau of Economic Research, Summer Institute 2015, Industrial Organization Meetings, "Panel Discussion of the Comcast-Time Warner Merger," Panelist, July 2015.

Federal Communications Bar Association, "How the Antitrust Agencies and the FCC are Likely to Analyze Vertical Mergers," Panelist, November 2014.

The Coca Cola Company Global Antitrust Forum, "Round Table Discussion on Use of Economics and Economists," Panel Chair, November 2014.

Compass Lexecon Competition Policy Forum, Lake Como Italy, "Consolidation of the Telecoms Industry in the EU and the US," Panelist, October 2014.

The IATA Legal Symposium 2014, Aviation Law: Upfront and Center, "Merger Analysis – A sudden shift in approach by DOJ in the American Airlines and US Airways merger," Panelist, February 2014.

Georgetown Law 7th Annual Global Antitrust Enforcement Symposium, "Merger Enforcement and Policy," Panelist, September 2013.

American Bar Association Section of Antitrust Law, "Airline Mergers: First Class Results or Middle-Seat Misery?" Panelist, May 2013.

American Bar Association Section of Antitrust Law, "Go Low or Go Home! Monopsony a Problem?" Panelist, March 2012.

Federal Communications Bar Association Transactional Committee CLE Seminar, "The FCC's Approach to Analyzing Vertical Mergers," Panelist, October 2011.

The Technology Policy Institute Aspen Forum, "Watching the Future: The Economic Implications of Online Video," Panelist, August 2011.

American Bar Association Forum on Air & Space Law, 2011 Update Conference, "Antitrust Issues: What's on the Horizon for the Industry," Panelist, February 2011.

American Bar Association Section of Antitrust Law, "Antitrust in the Airline Industry," Panelist, September 2010.

PUBLICATIONS

"Antitrust in a Mobile World," (with Yonatan Even, Jonathan M. Jacobson, Scott Martin, and Dr. Helen Weeds), Chapter 17 of *International Antitrust Law & Policy: Fordham Competition Law 2015*, Edited by James Keyte, Juris Publishing, Inc., 2016.

"Buyer Power in Merger Review," (with Dennis W. Carlton and Mary Coleman), Chapter 22 of *The Oxford Handbook of International Antitrust Economics*, Volume 1, Roger D. Blair and D. Daniel Sokol, eds, Oxford University Press, 2015.

"The Evolution of Internet Interconnection from Hierarchy to 'Mesh': Implications for Government Regulation," (with Stanley M. Besen), *Information Economics and Policy*, December 2013.

"Airline Network Effects and Consumer Welfare," (with Bryan Keating, Dan Rubinfeld, and Robert Willig), *Review of Network Economics*, November 2013.

"The Delta-Northwest Merger: Consumer Benefits from Airline Network Effects (2008)," (with Bryan Keating, Daniel L. Rubinfeld, and Robert D. Willig), *The Antitrust Revolution*, Sixth Edition, Edited by John E. Kwoka, Jr. and Lawrence J. White, Oxford University Press, New York, July 2013.

"Proper Treatment of Buyer Power in Merger Review," (with Dennis W. Carlton), *Review of Industrial Organization*, July 2011.

"Response to Gopal Das Varma's Market Definition, Upward Pricing Pressure, and the Role of the Courts: A Response to Carlton and Israel," (with Dennis W. Carlton), *The Antitrust Source*, December 2010.

"Will the New Guidelines Clarify or Obscure Antitrust Policy?" (with Dennis W. Carlton), *The Antitrust Source,* October 2010.

"Should Competition Policy Prohibit Price Discrimination?" (with Dennis W. Carlton), *Global Competition Review*, 2009.

"The Empirical Effects of Collegiate Athletics: An Update Based on 2004-2007 Data," (with Jonathan Orszag), Paper commissioned by National Collegiate Athletic Association, available *at http://www.epi.soe.vt.edu/perspectives/policy_news/pdf/NCAASpending.pdf*, February 2009.

"Services as Experience Goods: An Empirical Examination of Consumer Learning in Automobile Insurance," *The American Economic Review*, December 2005.

"Tenure Dependence in Consumer-Firm Relationships: An Empirical Analysis of Consumer Departures from Automobile Insurance Firms," *The Rand Journal of Economics*, Spring 2005.

"The Impact of Youth Characteristics and Experiences on Transitions Out of Poverty," (with Michael Seeborg), *The Journal of Socio-Economics*, 1998.

"Racial Differences in Adult Labor Force Transition Trends," (with Michael Seeborg), *The Journal of Economics*, 1994.

FORTHCOMING AND UNDER-REVIEW PUBLICATIONS

"The Economics of Cartel Cases and Use of Experts," (with Gustavo Bamberger and Dennis W. Carlton), forthcoming in *Manual on Cartel Enforcement*, November 2015.

Update to ABA Treatise, Proving Antitrust Damages: Legal and Economic Issues, Chapter 6: "Econometrics and Regression Analysis," (with Chris Cavanagh and Bryan Keating), July 2015.

GRANTS AND HONORS

Searle Fund for Policy Research Grant, 2004-2006, for "An Empirical Examination of Asymmetric Information in Insurance Markets."

Kellogg School of Management Chairs' Core Course Teaching Award, 2003 & 2005.

Bradley Dissertation Fellowship, Stanford University, 1999-2000.

Stanford University, Outstanding Second Year Paper Prize, 1997.

SELECTED ACADEMIC SEMINARS

Yale University
University of Arizona
Washington University, St. Louis
University of Pennsylvania
University of Toronto
UCLA
University of Wisconsin-Madison
Massachusetts Institute of Technology
Harvard University
University of Chicago
Columbia University
University of Texas
Carnegie Mellon University
University of California, Irvine
University of California, San Diego

REFEREE FOR ACADEMIC JOURNALS

American Economic Review
The Journal of Industrial Economics
The Rand Journal of Economics
Journal of the European Economic Association
The Review of Economic Studies
The Review of Economics and Statistics
Journal of Risk and Insurance

EXHIBIT B:

Orszag CV

CURRICULUM VITAE

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OTHER CONTACT INFORMATION:
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jorszag@compasslexecon.com

PROFESSIONAL EXPERIENCE:

- **Senior Managing Director**, Compass Lexecon (previously Competition Policy Associates, Inc. ("COMPASS") and before that, Sebago Associates, Inc.), March 2000-Present. Manage economic consulting firm specializing in antitrust, economic policy, and litigation matters. Member of the firm's Executive Committee. Conduct economic and financial analysis on a wide range of complex issues in policy and regulatory for corporations and public-sector entities. Serve as expert witness in proceedings before U.S. and international courts and administrative agencies and the European Court of First Instance on competition policy issues, including industry structure, vertical relationships, and intellectual property rights.
- **Assistant to the Secretary and Director of the Office of Policy and Strategic Planning,** U.S. Department of Commerce (Washington, D.C.), March 1999-March 2000. Served as the Secretary of Commerce's chief policy adviser. Responsible for coordinating the development and implementation of policy initiatives within the Department. Worked on a wide range of issues, from implementing the steel loan guarantee program to telecommunications and e-commerce issues. Represented the Secretary of Commerce in meetings with other government officials and outside organizations, and testified before Congress on behalf of the Department on budget and Native American economic development issues.
- **Economic Policy Advisor**, National Economic Council, The White House (Washington, D.C.), August 1997-March 1999; Assistant Director, January 1996-November 1996. Coordinated policy processes on a wide range of issues, from Social Security reform to job training reform, unemployment insurance reform, homeownership and low-income housing issues, the minimum wage, and Individual Development Accounts. Responsible for helping to coordinate the Administration's daily economic message and to promote (and defend) President Clinton's economic record.

- **Economics Teacher,** Phillips Exeter Academy Summer School (Exeter, New Hampshire), June 1997-August 1997. Taught introductory economics at Phillips Exeter Academy Summer School.

- **Economic Consultant,** James Carville (Washington, D.C.), August 1995-January 1996. Helped James Carville, President Clinton's 1992 campaign strategist, research and write his *New York Times* #1 best-selling book, *We're Right, They're Wrong: A Handbook for Spirited Progressives*.

- **Special Assistant to the Chief Economist**, U.S. Department of Labor, (Washington, D.C.), August 1994-August 1995. Served as an economic aide to the Chief Economist (Alan B. Krueger) and the Secretary of Labor (Robert B. Reich).

Volunteer Positions

- **Director of Policy Preparations for Vice Presidential Debate,** Gore-Lieberman Presidential Campaign, September 2000-October 2000. Oversaw policy preparations for Democratic Vice Presidential candidate before his debate with the Republican Vice Presidential candidate.

- **Weekly Commentator,** *Wall Street Journal Online*, September 2004-November 2004. Commented on economic issues during the 2004 presidential campaign. Topics of weekly commentary included jobs, health care, energy, trade, taxes, tort reform, appointments, and fiscal policy.

EDUCATION:

- Oxford University, M.Sc. in Economic and Social History, 1997
- Princeton University, A.B. *summa cum laude* in Economics, 1996
- Phillips Exeter Academy, graduate with High Honors, 1991

HONORS, PROFESSIONAL ASSOCIATIONS, AND APPOINTMENTS:

- Phi Beta Kappa, inducted June 1996
- Marshall Scholar, 1996
- *USA Today* All-USA College Academic Team, 1996
- Corporation for Enterprise Development Leadership Award for “Forging Innovative Public Policies to Expand Economic Opportunity in America,” 1999
- *Who’s Who in America*, 2001-Present; Also, *Who’s Who in the World*; *Who’s Who in Science and Engineering*; *Who’s Who in Finance and Business*; and *Who’s Who of Emerging Leaders*
- California Workforce Investment Board, 2000-2003
- California Governor’s Technology Advisory Group, 2000-2003
- Adjunct Lecturer, University of Southern California (Los Angeles, CA), January 2002-June 2002.

- *Global Competition Review*'s "40 under 40: The World's 40 Brightest Young Antitrust Lawyers and Economists," 2004
- *Global Competition Review*'s "Best Young Competition Economists," 2006
- *The International Who's Who of Competition Economists*, 2007-Present
- LawDay Leading Competition Economics Experts, 2009-Present.
- Expert Guides, Best of the Best USA, 2011-Present.
- Fellow, University of Southern California's Center for Communication Law & Policy, 2007-2015.
- FTI Consulting Inc., Founders Award, 2008.
- Senior Fellow, Center for American Progress, 2009-2016.
- Board of Directors, Sebago Associates, Inc., 2000-2007; Competition Policy Associates, Inc., 2003-2006; The First Tee of Washington, DC, 2005-2011; Ibrix, Inc. (Sold to Hewlett-Packard), 2006-2007; JMP Securities, Inc. (NYSE: JMP), 2011-Present; Tiger Woods Foundation, Board of Governors, 2012-Present; Children's Golf Foundation, 2013-Present; Friends of the Global Fight Against AIDS, Tuberculosis, and Malaria, 2013-Present.
- Clinton Global Initiative, Member, 2008-Present; Grassroot Soccer, Ambassadors Council, 2010-Present; The First Tee, Trustee, 2013-Present.
- Member of the American Economic Association, the Econometric Society, the American Finance Association, and the United States Golf Association.

REPORTS, PAPERS, AND NOTES:

- "State Involvement in a Market Economy: Principles to Guide Interventions and a Discussion about Network Industries," in *Antitrust in Emerging and Developing Countries,* edited by Eleanor Fox, Harry First, Nicolas Charbit, and Elisa Ramundo, *Concurrences Review,* 2016.
- "Tax Reform in The Bahamas: An Evaluation of Proposed Options," with David Kamin, Commisioned by the Commonwealth of The Bahamas, May 27, 2014.
- "The Impact of Federal Revenues from Limiting Participation in the FCC 600 MHz Spectrum Auction," with Philip Haile and Maya Meidan, Commissioned by AT&T, October 30, 2013.
- "The Definition of Small Business in the Marketplace Fairness Act of 2013," Commissioned by eBay, Inc., October 8, 2013.
- "The Benefits of Patent Settlements: New Survey Evidence on Factors Affecting Generic Drug Investment," with Bret Dickey, Commissioned by the Generic Pharmceutical Association, July 23, 2013.
- "The Liftoff of Consumer Benefits from the Broadband Revolution," with Mark Dutz and Robert D. Willig, *Review of Network Economics,* Volume 11, Issue 4, Article 2, 2012.
- "Antitrust Guidelines for Private Purchasers Engagedin Value Purchasing of Health Care," with Tim Muris and Bilal Sayyed, Commissioned by Buying Value, July 2012.
- "The Economic Benefits of Pharmacy Benefit Managers," with Kevin Green, Commissioned by Express Scripts and Medco, December 5, 2011.

- "An Analysis of the Benefits of Allowing Satellite Broadband Providers to Participate Directly in the Proposed CAF Reverse Auctions," with Bryan Keating, Commissioned by ViaSat, Inc., April 18, 2011.
- "A Preliminary Economic Analysis of the Budgetary Effects of the Proposed Restrictions on 'Reverse Payment' Settlements," with Bret Dickey and Robert D. Willig, August 10, 2010.
- "An Economic Assessment of Patent Settlements in the Pharmaceutical Industry," with Bret Dickey and Laura Tyson, Volume 10, Issue 2, *Annals of Health Law*, Winter 2010.
- "An Economic Analysis of Consumer Harm from the Current Retransmission Consent Regime," with Michael Katz and Theresa Sullivan, Commissioned by the National Cable & Telecommunications Association, DIRECTV, and DISH Network, November 12, 2009.
- "Intellectual Property and Innovation: New Evidence on the Relationship Between Patent Protection, Technology Transfer, and Innovation in Developing Countries," with Mark Dutz and Antara Dutta, October 2009.
- "Intellectual Property and Innovation: A Literature Review of the Value of Patent Protection for Developing Countries," with Mark Dutz and Antara Dutta, October 2009.
- "An Economic Perspective on the Antitrust Case Against Intel," with Robert D. Willig and Gilad Levin, October 2009.
- "The Substantial Consumer Benefits of Broadband Connectivity for U.S. Households," with Mark Dutz and Robert D. Willig, July 2009.
- "An Economic Assessment of the Homeowners' Defense Act of 2009," with Doug Fontaine, July 2009.
- "A Preliminary Economic Analysis of FTC Chairman Leibowitz's June 23rd Speech," with Robert D. Willig, June 24, 2009.
- "Assessment of Microsoft's Behaviour in the Browser Market," with Assaf Eilat, Gilad Levin, Andrea Lofaro, and Jan Peter van der Veer, Submitted to the Commission of the European Communities, COMP/C-3/39.530, May 27, 2009.
- "An Economic Perspective on the Microsoft Internet Explorer Tying Case," with Assaf Eilat, Gilad Levin, Andrea Lofaro, and Jan Peter van der Veer, Submitted to the Commission of the European Communities, COMP/C-3/39.530, April 24, 2009.
- "The Empirical Effects of Collegiate Athletics: An Update Based on 2004-2007 Data," with Mark Israel, February 2009.
- "An Econometric Analysis of the Matching Between Football Student Athletes and Colleges," with Yair Eilat, Bryan Keating, and Robert D. Willig, January 2009.
- "An Economic Assessment of Regulating Credit Card Fees and Interest Rates," with Susan H. Manning, October 2007.
- "An Assessment of the Competitive Effects of the SKY-Prime Merger: Lessons from the Recent News Corp.-DIRECTV Merger," with Cristian Santesteban, Submitted to New Zealand Commerce Commission, January 23, 2006.
- "Closing the College Savings Gap," with Peter R. Orszag and Jason Bordoff, November 2005.
- "Putting in Place An Effective Media Player and Media Server Remedy," with Joseph E. Stiglitz, Submitted to the Korean Fair Trade Commission, October 10, 2005.

- "An Economic Analysis of Microsoft's Tying of the Windows Media Player to the Windows Operating System and Its Impact on Consumers, Competition, and Innovation," with Joseph E. Stiglitz, Submitted to the Korean Fair Trade Commission, September 12, 2005.
- "Economic Analyses of Microsoft's Abusive Tie and Its Impact on Consumers, Competition, and Innovation," with Joseph E. Stiglitz and Sangin Park, Submitted to the Korean Fair Trade Commission, September 12, 2005.
- "The Empirical Effects of Division II Intercollegiate Athletics," with Peter R. Orszag, June 2005.
- "An Economic Analysis of Microsoft's Abusive Tie and Its Impact on Consumers, Competition, and Innovation," with Joseph E. Stiglitz and Jason Furman, Submitted to the European Court of First Instance, Case T-201/04 R, May 12, 2005.
- "The Physical Capital Stock Used in College Athletics," with Peter R. Orszag, April 2005.
- "The Empirical Effects of Collegiate Athletic Spending: An Update," with Peter R. Orszag, April 2005.
- "Putting in Place An Effective Media Player Remedy," with Joseph E. Stiglitz, Submitted to the Commission of the European Communities, April 27, 2005.
- "The Empirical Effects of Collegiate Athletic Spending: An Interim Report," with Robert E. Litan and Peter R. Orszag, the National Collegiate Athletic Association and Sebago Associates, Inc., August 2003 (reprinted in *The Business of Sports*, edited by Scott Rosner and Kenneth Shropshire (Jones and Bartlett Publishes, 2004)).
- "Learning and Earning: Working in College," with Peter R. Orszag and Diane M. Whitmore, *Journal of Student Employment*, Volume IX, Number 1, June 2003.
- "The Impact of Asbestos Liabilities on Workers in Bankrupt Firms," with Joseph E. Stiglitz and Peter R. Orszag, *Journal of Bankruptcy Law and Practice*, Volume 12, Issue No. 1, February 2003.
- "The Process of Economic Policy-Making During the Clinton Administration," with Peter R. Orszag and Laura D. Tyson, in *American Economic Policy in the 1990s*, edited by Jeffrey Frankel and Peter R. Orszag (Cambridge, Massachusetts: MIT Press, 2002).
- "The Implications of the New Fannie Mae and Freddie Mac Risk-Based Capital Standard," with Joseph E. Stiglitz and Peter R. Orszag, *Fannie Mae Papers*, Volume I, Issue 2, March 2002 (reprinted in *Housing Matters: Issues in American Housing Policy*).
- "Hispanics and the Current Economic Downturn: Will the Receding Tide Sink Hispanics?" with Alan B. Krueger, Pew Hispanic Center, January 2002.
- "Aging in America: A Policy Perspective," with Jonathan Gruber and Peter R. Orszag, The Pew Charitable Trusts and Sebago Associates, Inc., January 2002.
- "An Economic Analysis of Spectrum Allocation and Advanced Wireless Services," with Martin N. Baily, Peter R. Orszag, and Robert D. Willig, Cellular Telecommunications and Internet Association and Sebago Associates, Inc., October 2001.
- "A New Look at Incentive Effects and Golf Tournaments," in *The Economics of Sports*, edited by Andrew Zimbalist (London: Edward Elgar Publishing, 2001). Original version in *Economics Letters*, 46, March 1994, p. 77-88.

- “Learning and Earning: Working in College,” with Peter R. Orszag and Diane M. Whitmore, UPromise, Inc. and Sebago Associates, Inc., August 2001.
- “The Impact of Potential Movie and Television Industry Strikes on the Los Angeles Economy,” with Ross C. DeVol, Joel Kotkin, Peter R. Orszag, Robert F. Wescott, and Perry Wong, The Milken Institute and Sebago Associates, Inc., April 19, 2001.
- “Would Raising IRA Contribution Limits Bolster Retirement Security for Lower- and Middle-Income Families?” with Peter R. Orszag, Center on Budget and Policy Priorities, April 2, 2001.
- “Computers in Schools: Domestic and International Perspectives,” California Technology, Trade, and Commerce Agency and Sebago Associates, Inc., March 2001.
- “The Impact of Paying for College on Family Finances,” with Laura D. Tyson, Joseph E. Stiglitz, and Peter R. Orszag, UPromise, Inc. and Sebago Associates, Inc., November 2000.
- “A Simple Analysis of Discarded Votes by Precinct in Palm Beach,” with Peter R. Orszag, Sebago Associates, Inc., November 10, 2000.
- “Analysis of Votes for Buchanan by Precinct within Palm Beach and Broward Counties,” with Peter R. Orszag, Sebago Associates, Inc., November 9, 2000.
- “A Statistical Analysis of the Palm Beach Vote,” with Peter R. Orszag, Sebago Associates, Inc., November 8, 2000.
- “The Role of Government in a Digital Age,” with Joseph E. Stiglitz and Peter R. Orszag, Computer and Communications Industry Association and Sebago Associates, Inc., October 2000.
- “Quantifying the Benefits of More Stringent Aircraft Noise Regulations,” with Peter R. Orszag, Northwest Airlines and Sebago Associates, Inc., October 2000.
- “All That Glitters Is Not Gold: The Feldstein-Liebman Analysis of Reforming Social Security with Individual Accounts,” with Peter R. Orszag, Center on Budget and Policy Priorities, April 26, 2000.
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BEFORE THE
SURFACE TRANSPORTATION BOARD

REVIEW OF COMMODITY, BOXCAR, AND TOFC/COFC EXEMPTIONS

Docket No. EP 704 (Sub-No. 1)

VERIFIED STATEMENT OF

Michael R. Baranowski
and
Benton V. Fisher

July 26, 2016

I. Introduction

A. Statement Overview

We are Michael R. Baranowski and Benton V. Fisher, Senior Managing Directors at FTI Consulting's Network Industries Strategies practice with offices at 1101 K Street NW, Washington DC. Details of our background and experience are set forth in Exhibits 1 and 2 to this statement, respectively. We have been asked by the Association of American Railroads ("AAR") to submit this verified statement ("VS") with the AAR's Comments in the Surface Transportation Board's ("STB" or "Board") Ex Parte 704 (Sub-No. 1) *Review of Commodity, Boxcar, and TOFC/COFC Exemptions* proceeding ("EP 704").

In a Notice of Proposed Rulemaking served March 23, 2016 in this proceeding ("2016 NPRM"), the Board proposed to revoke the exemptions for three groups of commodities.[1] For each of these commodities, the Board's predecessor agency – the Interstate Commerce Commission ("ICC") – conducted examinations in the late 1980s and early 1990s and concluded that sufficient competition existed to exempt them from regulation.[2] In its 2016 NPRM, the Board reversed course, and after two-plus decades, concluded that the exemptions are no longer warranted. Specifically, the Board performed rudimentary calculations using data from its 1992 and 2013 confidential Carload Waybill Sample ("CWS") records for shipments of these exempt commodities to determine: (1) the average revenue-to-variable cost ("R/VC") ratios for

[1] The Board identifies three groups of commodities for revocation: (1) crushed or broken stone or rip rap; (2) hydraulic cement; and (3) coke produced from coal, primary iron or steel products, and iron or steel scrap, wastes or tailings. (2016 NPRM at 1.) While each of the first two groups is represented by one commodity code – STCC 14-2 and 32-4, respectively – the third group comprises three different STCCs, 29-914, 33-12, and 40-211. (2016 NPRM at 10.) As a result of the use of five different STCCs, in this VS we refer to the shipments the Board seeks to revoke their exemption as including five commodities, or the "NPRM commodities."

[2] *See* 2016 NPRM at 4-5, 6-7, 9.

shipments that the Board considers "potentially captive;"[3] and (2) the relative proportion of traffic with R/VC ratios greater than the 180% jurisdictional threshold. The Board then compared the results to determine the level of change between 1992 and 2013 for each of the NPRM commodities and found what it describes as "possible indicators of increased railroad market power sufficient to warrant regulatory oversight."[4] We have been asked by counsel for the AAR to review the analyses conducted by the Board and evaluate its observed changes. As we discuss more fully below, based on our review we conclude that a significant proportion of the changes observed by the Board are a function of the relative growth in intermodal traffic between 1992 and 2013 and the systematic over-assignment of costs to intermodal shipments by the Board's Uniform Rail Costing System ("URCS"). The combination of these factors and the effects of other changes that have occurred since 1992 produce an increasing overstatement of R/VC ratios for non-intermodal shipments, including the NPRM commodities. The distortions created by these industry-wide dynamics preclude any meaningful comparison of R/VC ratios from across the last two decades. As a result, it is our view that the Board's conclusions of potential market power derived from its observations of R/VC-related trends over the 1992 to 2013 time frame for the five commodities at issue in this proceeding fail to consider the systematic overstatement of URCS-based revenue-to-variable cost levels produced by the over-assignment of costs to intermodal shipments.

[3] To be clear, the Board classifies as "potentially captive" shipments with an R/VC ratio above 180%, without consideration of the competitive circumstances of those shipments. In the 2016 NPRM, the Board did not indicate that it performed an analysis of the number of railroads serving the origins or destinations of the shipments, nor that it specifically examined the availability of other transportation modes or the presence of product or geographic competition.

[4] 2016 NPRM at 10. The Board noted modest increases in the average length of haul over more than two decades for three of the NPRM commodities. We do not address the Board's length-of-haul comparisons or conclusions in this VS other than to note that in URCS, average variable costs per ton-mile tend to decline as length of haul increases.

B. Witness Background

We have each spent more than 25 years involved in various aspects of transportation consulting, including economic studies of costs and revenues, traffic and operating analyses, and work with costing and financial systems. We have each testified before the Board in dozens of proceedings involving the regulation of railroad transportation, and have participated in virtually all rate-reasonableness cases and Ex Parte proceedings regarding the evaluation of the rates and costs for individual movements, traffic groups, and entire networks. Much of our work requires a detailed understanding of the costing approaches and models that are used by the Board for a range of regulatory purposes.

In particular, we have extensive experience analyzing the Board's variable-cost estimates and examining the system by which they are generated, the Uniform Rail Costing System, or URCS. As indicated above, in this proceeding, the Board relies heavily on the revenue and cost information included in the CWS records. In those records, the variable costs reflect the Board's calculations of URCS system-average costs. Those variable costs serve as the denominator of the calculation of the R/VC ratios (*i.e.*, they are the "VC"), and thus are at the heart of both of the measures on which the Board relied.

II. Summary of Findings

R/VC ratios from the early 1990s cannot be meaningfully compared to today's R/VC ratios. Dramatic changes in railroad traffic mix and operating practices have taken place since the Board exempted from regulation the commodities at issue in this proceeding. During this time, the Board's URCS model, used to develop the variable costs that form the basis of the Board's proposed revocations, has remained largely static.

The CWS indicates that US carload volumes[5] increased by 8% between 1992 and 2013, the two years from which the Board calculated R/VC ratios for comparison. Over the same period, intermodal volumes increased by 134%; in particular, shipments of intermodal containers *nearly quadrupled*, from 3.6 million to 13.5 million.[6] While the Board's URCS model has been tweaked to capture some of the burgeoning efficiencies of intermodal shipments, it is not sufficiently refined to account properly for the major cost shifts attributable to the explosive growth in intermodal volumes, the proliferation of dedicated trainloads of intermodal containers, and the evolution of the industry's intermodal service. This combination of dynamic and unbalanced growth and static URCS system-average formulae distort system-average cost assignments to the NPRM commodities in a manner that makes it impossible to attribute the observed changes in R/VC ratios over two decades to changes in railroad market power.

The Board itself has acknowledged repeatedly that the current URCS model is in dire need of modernization. Indeed its Ex Parte No. 431 *Review of the General Purpose Costing System* proceeding is currently active; Board action is scheduled for later this summer.[7] It is

[5] For this VS, our use of the term "carload" refers to all non-intermodal shipments, or any freight shipments that are not moving in containers or trailers on intermodal flatcars.

[6] WP "CWS Volume Summaries_HC.xlsx."

[7] *See Quarterly Report on Pending STB Regulatory Proceedings*,

possible that the Board's Ex Parte 431 review will result in needed updates that better align the URCS formulae with the changes that have occurred in the industry. Regardless, it is our view that system-average URCS is unsuitable for attributing the changes in R/VC-related measures for the NPRM commodities to any particular cause – invalidating use of the observed changes to draw conclusions about changes in railroad market power. If the Board is determined to use R/VC ratios as a measure of market power, it should at the very least undertake a more robust analysis of the variable costs attributable to the NPRM commodities to eliminate any distortions within URCS introduced by industry dynamics.

We outline in the following section several areas for which the system-average assumptions in URCS likely distort the cost allocations, and show that a few straightforward, high-level adjustments to the URCS cost allocations could explain the Board's observations. Because intermodal shipments have experienced disproportionate growth, much of our effort focuses on quantifying the effects of potential refinements to the URCS costing assumptions for intermodal shipments and the residual effects on carload traffic, including the NPRM commodities. We also consider the effects of three other changes that have occurred over the 1992 to 2013 time frame that influence any variable-cost comparisons. At a high level, we have determined that between 45 and over 100 percent of the observed change in R/VC ratio relied upon by the Board could be attributed to the failure of URCS to keep pace with industry-wide changes. Figure FTI-1 below reports for each NPRM commodity the percentage of the Board's observed change that is explained by such distortions.

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https://www.stb.dot.gov/stb/docs/Reauthorization/Quarterly%20Reports/Report%20on%20Pending%20STB%20Regulatory%20Proceedings%202nd%20Quarter%207-1-2016.pdf

Figure FTI-1
Average R/VC>180%, 2013 NPRM Commodities[8]

NPRM STCC	STB 2016 NPRM	% Increase from 1992	Refined Estimate	% Increase from 1992	% of Board-Observed Increase Explained by Refinements
14-2	2.55	10%	2.40	3%	66%
29-914	2.48	10%	2.34	4%	60%
32-4	2.40	15%	2.26	8%	45%
33-12	2.37	8%	2.22	1%	84%
40-211	2.30	2%	2.20	N/A	>100%

In the remainder of this statement we describe generally the observations and assumptions that we made in our efforts to flesh out the potential URCS-related distortions.

III. R/VC Measures Based on URCS Variable Costs Are Skewed by Broad Simplifications Within URCS

A. URCS Background

URCS is the Board's general purpose costing system. Most of the inputs to URCS are based on the railroads' R-1 Annual Reports and other annual tallies of operating and financial statistics that are reported in aggregate for each railroad's entire system. URCS relies upon a series of assumptions and formulas to generate system-average costs by functional areas or cost drivers (*e.g.*, costs that vary by weight, distance or other relevant service units) across the system, without regional or locational specificity. URCS then applies these costs to individual shipments based on nine specific input parameters (*e.g.*, the lading weight, distance traveled, and type of freight car), and applies generic assumptions about other operating characteristics like transit times, yard dwell, route characteristics, and other resources that would be required – also at a system-wide level. While the URCS cost estimates will reflect differences across shipments to a certain extent – *e.g.*, the unit-train costs for shipments originated in large trainload quantities

[8] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Cover."

versus the costs for shipments of one or two cars – URCS is insensitive to many of the characteristics that also affect that individual shipment's costs, such as the level of service that is provided, the terrain, the line-segment densities, and the speed, just to name a few. Thus, the costs that URCS allocates to individual shipments are in many respects influenced by the system-wide conditions that are independent of the specific operating parameters and cost characteristics of a given shipment.[9]

When variable costs are mis-allocated, any calculation of R/VC ratios will correspondingly be distorted. For example, comparing a rate of $20 per ton to a variable cost of $10 per ton produces an R/VC ratio of 200% – above the Board's jurisdictional threshold. If for some reason the variable costs were mis-allocated, and a more refined cost estimate would be $12 per ton, then the actual R/VC ratio is 167% – outside the Board's jurisdiction. Clearly the reliability and relative continuity of variable-cost calculations are of paramount importance when comparing R/VC ratios, as the Board has done in this proceeding. It is even more critical to confirm the reliability of cost estimates, and their consistency over time, when the variable-cost calculations span two decades.

The accuracy of variable cost calculations is particularly critical because the URCS costing model is a "closed system." That is, all of a railroad's variable costs are assigned to all of its shipments, no other costs are assigned, and the same costs are not assigned to multiple

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[9] The Board addressed this limitation and the tradeoffs that are made to estimate costs in its October 1, 1997 decision in *Review of the General Purpose Costing System*, Ex Parte No. 431 (Sub-No. 2):

"Our general purpose costing system is designed to develop, in a reasonably simple and inexpensive way, reliable average cost estimates that can be used as benchmarks for a variety of regulatory purposes. The estimates are based on system-average cost and operating statistics for class I railroads and "best available" studies of railroad operations. In many cases, however, costing assumptions are based on the "best guesses" made many years ago as to what constitutes the norm for various types of rail operations." Decision at 2 (footnote omitted).

shipments. In such a case, if certain segments of traffic are inherently more efficient and costs are developed in such an aggregated manner that efficiencies are not discernible by source, then there is no way to ensure that the segments of traffic that generated those efficiencies will be credited accordingly when system-wide costs are redistributed. All other things equal, when URCS-based R/VC ratios are calculated for a group of shipments that is more efficient than the system average, URCS assigns the calculated system-average cost, effectively over-assigning variable costs. These higher variable costs will in turn produce understated R/VC ratios. Conversely, when R/VC ratios are calculated for the other group of shipments that is less efficient than average, URCS again assigns the calculated system-average cost, effectively under-assigning variable costs. For this group R/VC ratios will be overstated.

As it relates to this particular proceeding, it is our view that the variable costs that URCS assigns to the NPRM commodities are too low. In growing their intermodal franchises, the railroads have achieved certain operational efficiencies, as described below. Due to URCS's calculation of system-average costs, however, these efficiencies are not being attributed to intermodal shipments. As a result, the variable costs of intermodal shipments are overstated, and correspondingly, the variable costs for carload shipments – including those for the NPRM commodities – are understated. As all of the shipments for which the Board proposes to revoke their exemption are carload shipments, the R/VC ratios that the Board observed for shipments of the NPRM commodities are overstated.

B. Challenges in Costing Intermodal Shipments

Intermodal containers and trailers are loaded on railroad flatcars that move in freight trains in a fashion that is generally similar to the transportation of other commodities that move by rail. However, there are many key differences that make intermodal operations more efficient than other railroad traffic that URCS does not recognize or attribute to intermodal shipments. Intermodal service by definition involves coordination between railroads and trucking entities to move containers and trailers between customer locations and railroad facilities where the containers and trailers are lifted on and off railroad cars for transit by train. The railroads generally do not serve freight customer locations, but rather coordinate – or rely upon third-party operators at intermodal terminals to coordinate – the truck portion of the haul.[10] Because they compete directly with long-haul trucking operations, the rail portion of an intermodal shipment is highly time-sensitive. For a shipment to move economically by rail, the railroads must meet, if not exceed, the level of service provided by trucking companies – otherwise the containers and trailers would simply stay on the trucks. The loading and unloading activities at the endpoints of the railroad portion – which are typically not the shipments' ultimate origin or destination – and the requirements of operating over the railroad present unique features that differentiate intermodal shipments from most other railroad shipments.

The challenges of maintaining a general purpose costing system that could account effectively for the diverse cost footprints of intermodal and carload service have been in the Board's sights – and those of its predecessor, the ICC – since the inception of URCS. In the original decision adopting URCS, the ICC indicated that as both the industry and the costing system evolved, it would be prudent to re-visit the URCS methodology periodically, and review the applicability of the costing system's assumptions and approaches.[11] In fact, on multiple

[10] *See*, *e.g.*, *Review of the General Purpose Costing System*, Ex Parte No. 431 (Sub.-No. 2) (served December 12, 1997) at 3 ("Because of the unique nature of intermodal operations, which move rail cars between intermodal yards and not to and from a shipper's facility . . .").

[11] *Adoption of the Uniform Railroad Costing System*, Ex Parte 431 (Sub-No. 1), 5 I.C.C. 2d 894, at 899 ("We reaffirm our commitment to continuing review and refinement of URCS through scheduled periodic analyses . . .").

occasions in the past two decades, the Board's limited looks into URCS have addressed the costing of intermodal shipments.

The Board performed its first URCS review in 1997. In that phase of the Ex Parte 431 proceeding, the Board adopted five modifications to its URCS costing methodology – three of which applied to intermodal shipments.[12] In 2003, the Board again adjusted the costing of intermodal shipments.[13] And when the Board proposed another review of URCS in 2009, "Improve the costing of trailer or container on flat car (TOFC/COFC) traffic" was one of the items for which the Board specifically sought input.[14] While efforts to improve the costing of intermodal shipments appear to be appropriate refinements, the URCS modifications that have been made thus far are largely a function of intuition and not based on any quantitative analyses.

The challenges of accounting for the efficiencies associated with intermodal traffic have grown as intermodal traffic has grown relative to carload traffic and become even more efficient. There have been significant improvements in the manner in which railroads handle the transportation of intermodal shipments over the period since the URCS model was adopted in 1989 as the agency's general purpose costing system. In the early 1990s, trailers still comprised

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[12] *Review of the General Purpose Costing System*, Ex Parte No. 431 (Sub.-No. 2). In decisions served October 1, 1997 and December 12, 1997, the Board first recognized the greater efficiencies of intermodal shipments by reducing their allocation of switching costs. As described below, in incorporating the modifications, the Board's URCS program commits a technical error that fails to assign all of the railroads' switching costs, resulting in an understatement of switching costs for all shipments, intermodal and carload.

[13] *See*, *e.g.*, *Analysis of Competition, Capacity, and Service Quality*, Laurits R. Christensen Associates (November 2009) at 11-25 to 11-26, and Figure 11-2, included as WP "Christensen Intermodal Excerpt.pdf." The Revised Final Report shows that the average R/VC ratio increased by more than 50%, from approximately 90% in 2002 to 138% in 2003, stating that "The jump in the average R/VC for intermodal shipments is apparently due to a measurement change in 2003."

[14] *Review of the General Purpose Costing System*, Ex Parte No. 431 (Sub.-No. 3) (served April 6, 2009) at 2.

nearly one-half of intermodal shipments,[15] and double-stack containers were limited to a small subset of routes. Since that time, advancements in freight cars – articulated spine cars and well-car equipment – and increased height clearances that opened up thousands of route miles greatly expanded the scope and the efficiency of intermodal service.[16] Further, the large railroad mergers also facilitated the viability of intermodal transportation by rail, providing more longer-haul options with fewer interchanges, and more streamlined access to different gateways, to get shipments across the country more efficiently. This resulted in expanded and more efficient intermodal offerings, as railroads were able to reduce transit times and move more intermodal containers and trailers on concentrated corridors at faster speeds.[17] Indeed, the growth of intermodal traffic greatly outpaced the volume increases that the railroads were able to achieve in carload volumes. Figure FTI-2 below compares the change in intermodal and carload volumes over the 1992 to 2013 period evaluated by the Board, showing that the rate of growth in intermodal shipments was *more than 10 times* carload growth.

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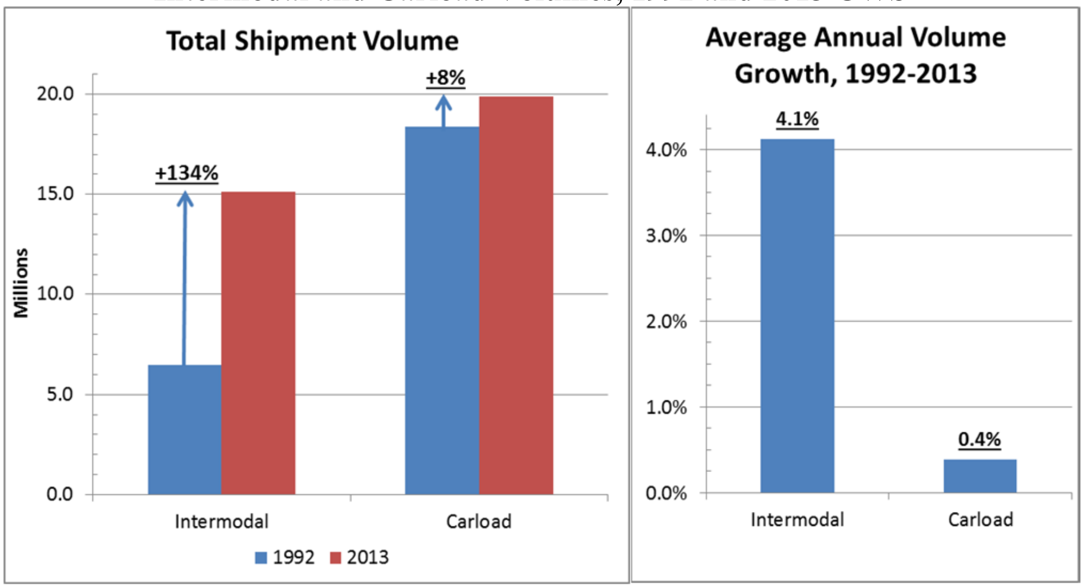
[15] The CWS indicates that trailers accounted for the majority of intermodal shipments through 1990, and in 1992 accounted for 43% of the total. WP "CWS Volume Summaries_HC.xlsx," worksheet "IM_Splits."

[16] For example, the article "Intermodal Equipment: Flatcars and Well Cars; Containers and Trailers" from the May 1, 2006 issue of Trains Magazine highlighted a significant change in the industry's intermodal service that occurred after 1992: "Over the past 10 years, most railroads began operating dedicated intermodal trains using mostly articulated equipment." http://trn.trains.com/railroads/abcs-of-railroading/2006/05/intermodal-equipment *See* also *Rail Intermodal Keeps America Moving*, Association of American Railroads (May 2016). https://www.aar.org/BackgroundPapers/Rail%20Intermodal.pdf

[17] For example, BNSF's 2001 Annual Report to Shareholders stated "For Consumer Products [BNSF's business group that includes intermodal shipments], BNSF launched several new services in 2001, including coast-to-coast premium intermodal and double-stack services with CSX and Norfolk Southern, a 48-hour service offering between Chicago and Los Angeles." WP "BNSF 2001 Annual Report Excerpt.pdf."

Figure FTI-2
Intermodal and Carload Volumes, 1992 and 2013 CWS[18]



The above figure shows that railroad intermodal volumes now rival carload volumes, accounting for nearly 45% of total shipments. As a result, intermodal shipments now have a much greater effect on the development of system-wide average costs in URCS.

And therein lies the problem. URCS is insufficiently granular to properly allocate the efficiency gains associated with intermodal traffic solely to intermodal traffic. As explained in detail in the rest of this section, URCS development and redistribution of system-average costs under-assigns efficiency gains to intermodal traffic, and thus over-assigns variable costs to intermodal shipments. And because the URCS costing model is a "closed system," the over-assignment of costs to intermodal traffic produces an under-assignment of costs to carload traffic, including the NPRM commodities.[19] In other words, the variable costs of the NPRM

[18] WP "CWS Volume Summaries_HC.xlsx."

[19] In fact, evidence of the overstatement in variable costs for intermodal shipments in the 2013 CWS is revealed by the proportion of traffic with very low R/VC ratios. Although less than 10% of carload shipments have R/VC ratios below 1.00, the Board's URCS model assigns variable costs that are higher than the shipment's revenue for 37% of intermodal shipments – more than one out of every three, or 5.6 million. WP "CWS Volume Summaries_HC.xlsx," worksheet

commodities fail to account fully for the actual costs associated with providing the service – because URCS assigns some of the costs appropriately applicable to these shipments to intermodal shipments. The resulting R/VC ratios for the NPRM commodities are overstated.

The effects of any biases or distortions in the costing methodology would be less of an issue if the growth experienced by the railroads for intermodal shipments since 1992 were generally in line with increases in carload volumes. However, as shown in Figure FTI-2 above, it is not. As such, URCS's assumptions and approaches related to intermodal shipments have a considerable impact on the costs assigned to carload shipments. In the following section, we identify five specific areas in which we believe that URCS's lack of granularity in the development of system-average unit costs over-assigns variable costs to intermodal shipments, and thereby results in an under-assignment of costs to carload shipments, including the NPRM commodities.

C. Sources of Cost Overstatements for Intermodal Shipments

Notwithstanding the tweaks that have been made to certain URCS assumptions used to cost intermodal shipments, there are other efficiencies in the railroads' intermodal service that are unrecognized by URCS. Properly capturing these efficiencies would produce lower intermodal costs – as well as a more accurate estimate of the costs of carload shipments. In this statement, we focus on URCS assumptions that affect five specific cost categories, and present the impact of illustrative refinements to their URCS cost allocations: (1) roadway maintenance and ownership costs; (2) train & engine crew costs; (3) road locomotive ownership costs; (4) switching costs; and (5) intermodal facility overhead costs. These cost categories account for

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"RVC_LT100." It is improbable that rational companies would price one-third of their business for a major product line below variable cost. The more reasonable explanation is that intermodal costs are lower than estimated by URCS.

$4.7 billion in 2013 intermodal variable costs, nearly 40% of the total variable costs that are assigned to intermodal shipments.[20]

i. Roadway Maintenance and Ownership Costs: By their nature intermodal shipments are concentrated on relatively higher-density rail corridors. This is a function of a variety of factors. First, the vast majority of intermodal shipments are concentrated between major metropolitan areas (*e.g.*, Los Angeles or New York), ports of entry/exit to/from the United States, or gateways to interchange with other railroads (*e.g.*, Chicago). As such, the routes for most intermodal shipments are the mainlines that cross the railroad's system, and not the gathering and distribution network required to serve carload volumes. This is confirmed by review of the CWS records for 2013. For intermodal shipments, more than half of the volume is delivered to one of 25 destinations; by contrast, the top 25 carload destinations account for only 22% of total carload volume.[21] Second, while many routes have been cleared for double-stack containers, clearance limitations remain, dictating that intermodal shipments use only a subset of the line-segments and routes available to carload shippers. Finally, the disproportionate growth of intermodal volumes vis-à-vis carload volumes since 1992 indicates a proportional increase in the density of the routes used by intermodal shipments.

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[20] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "IM_Categories."

[21] WP "CWS Volume Summaries_HC.xlsx," worksheet "Top25_Dest." Such mainline concentration of intermodal shipments is also demonstrated by publicly available information of the individual railroad's line-segment densities. For example, Union Pacific's 2015 Investor Fact Book states that "intermodal utilizes just over half of the route miles of the Union Pacific network," and includes an Intermodal Lane Density Map that shows the concentration on its transcontinental Central Corridor and Sunset Route to operate between the US's western ports and Midwestern gateways. UP 2015 Fact Book at 29 http://www.up.com/cs/groups/public/@uprr/@investor/documents/investordocuments/pdf_up_invest_2015_factbook.pdf.

The URCS model assigns roadway maintenance and ownership costs for running tracks on the basis of gross ton-miles.[22] Specifically, every gross ton-mile of each shipment is assigned the same cost, regardless of the route that is traversed. For line-segments with considerably higher density – *i.e.*, the routes that intermodal shipments are more likely to use, as explained above – the actual variable cost per ton-mile is lower, due to the relative economies of scale that are not accounted for when the overall system-average cost is applied. As such, URCS's allocation of system-average maintenance of way and road ownership costs based on the system-average density fails to account for economies of density over the intermodal routes and overstates the variable costs for intermodal shipments.

ii. Train & Engine Crew Costs: The highly time-sensitive nature of intermodal shipments necessitates that railroads provide more expedited service than is required for most carload shipments. In general, intermodal trains are given higher priority for movement over the railroad than other freight trains. One aspect of intermodal operations that railroads employ to ensure they meet their service commitments is to operate longer distances between crew changes. Given their faster running speeds and infrequent stops to pick-up or set-out shipments en route, intermodal trains frequently operate further with a single crew than a train transporting carload shipments.

The URCS model assigns train & engine crew expenses on the basis of train-miles, regardless of the train type or speed.[23] As a result, an intermodal train that travels 1,000 miles will be assigned the same total train crew costs as a merchandise train traversing the same distance – even though the merchandise train frequently requires one or two more crews to travel the same distance. Even in those instances when intermodal and merchandise trains require the

[22] See URCS worktable D1, Parts 1 and 2 (pages 255-266).

[23] See URCS worktable D3, Lines 167 and 168 (pages 276-282).

same number of crews, the intermodal trains' faster operating speeds result in a relatively lower incidence of their crews' working overtime or reaching the hours-of-service limit and having to be relieved by a second crew, which also results in lower costs for the intermodal shipments. In summary, URCS's assignment of train & engine crew costs on a per train-mile basis across the system fails to account for the higher average train speeds achieved by high priority intermodal trains and overstates the variable costs for intermodal trains.

iii. Road Locomotive Ownership Costs: The intermodal trains' faster running speeds and infrequent stops similarly presents the situation where locomotives move across the network more quickly on intermodal trains, and thus spend less time in intermodal service than they would on other trains to go the same distance. The URCS model, however, assigns ownership costs for road locomotives solely on the basis of miles, across train types and distance, regardless of speed.[24] By failing to consider the relatively lower amount of time that locomotives spend powering intermodal trains to travel the same distance as other trains, URCS overstates the variable costs of locomotives in intermodal service.

iv. Switching Costs: As described above, many of the modifications that the Board has made when re-visiting the URCS assumptions have been associated with the assignment of switching costs to intermodal shipments.[25] While those changes have resulted in lower intermodal switching costs, URCS likely continues to overstate the actual costs that are incurred for these shipments. In the current URCS, an intermodal flat car is assumed to require 25% of the system-average switching costs for a carload shipment at origin or destination (also referred to as industry switching), and 50% of the system-average switching costs for a carload

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[24] See URCS worktable D3, Part 2 (pages 285-287).

[25] *See*, *e.g.*, *Review of the General Purpose Costing System*, Ex Parte No. 431 (Sub.-No. 2) (served October 1, 1997).

shipment at interchange.[26] Most switching of intermodal containers is performed to assemble and disassemble trains at the railroads' intermodal facilities or terminals – not at industries or customer locations that require local trains or extensive yard movements typical of carload shipments. And most intermodal trains "run through" at interchange without classification activity; to the extent any switching is performed, it is more likely to be block-swaps of longer cuts of multiple flatcars, not handling individual cars as is assumed for carload shipments. As a result, URCS's adjustments used for industry and interchange switching of intermodal shipments produce cost estimates that typically exceed the actual costs that railroads incur.

v. Intermodal Facility Overhead Costs: As described above, most railroad intermodal shipments are loaded and unloaded from flatcars at intermodal terminals. In order to estimate the costs for these activities, URCS uses each railroad's "Specialized Services" expenses, which are reported in Schedule 417 of the R-1 report. These costs include the operating expenses associated with intermodal terminals, including the payments made to 3rd party contractors at facilities that railroads either do not own or outsource certain of the functions that are performed. URCS further increases these terminal expenses by an overhead factor to account for the railroads' General & Administrative ("G&A") expenses.[27] Specifically, in calculating the overhead factor, URCS spreads the G&A costs across all operating expenses, including the Schedule 417 expenses for intermodal terminals.[28] The railroads' intermodal terminal expenses have increased with volumes, and have also increased as railroads have

[26] In its 1997 decisions in Ex Parte 431, the Board adopted the use of the trainload volume adjustments from Ex Parte No. 270 (Sub-No. 4) for calculating the industry and interchange switching costs for intermodal shipments.

[27] Most G&A costs are reported to the "General & Administrative" accounts in rows #601-619 of Schedule 410 of the R-1 report.

[28] See URCS worktable D8, Parts 4 and 6 (pages 415-417).

outsourced more functions at terminals and in many cases, outsourced entire terminals. For example, in the 1992 URCS, 2.6% of all G&A expenses were allocated to intermodal terminals; by 2013 that allocation had more than doubled, to 6.0%.[29] As a result, disproportionately more of the railroads' overhead expenses are assigned to intermodal terminals – more than $260 million in 2013[30] – despite the fact that railroads have relatively less administrative responsibility, as they are making payments to third parties to manage most of the services being provided, if not to provide the facilities, too. By allocating a greater proportion of G&A costs to terminal expense totals that continue to increase, URCS is overstating the costs assigned to intermodal shipments, and thereby understating the proper share of G&A costs that should be associated with carload shipments.

D. Impact of Overstated Variable Costs

Sections III.B and III.C above identify the biases and distortion inherent in URCS's assignment of system-average costs to intermodal shipments. By overstating the costs of intermodal shipments, URCS is understating the costs of carload shipments, as a result of URCS's "closed system" allocation of all costs once. This understatement combined with the explosive growth in intermodal shipment volumes since 1992 undermines the Board's conclusion in this proceeding that its observed changes in R/VC-based metrics for 1992 to 2013 for the NPRM commodities are the result of increased market power for the railroads. To demonstrate the potential impact of URCS's lack of granularity on the Board's calculated R/VC trends, we quantified the effects of making a number of assumed high-level adjustments to the URCS variable-cost estimates to reflect the different operating and cost profiles of intermodal shipments. Because the effects of URCS's lack of granularity are exacerbated in this context by

[29] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Ref_IM_Term_OH."

[30] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Ref_IM_Term_OH."

the explosive growth in intermodal container volumes relative to carload shipments between 1992 and 2013, we limited our quantification of the overstatement to the difference between the 1992 container levels and 2013's, *i.e.*, the incremental container shipments that are driving the difference between the 1992 and 2013 R/VC ratios that the Board observed.[31] The adjustments we have made to account for the issues raised above are:

1. Adjust the roadway maintenance and ownership costs assigned to intermodal shipments to reflect an average density on the intermodal corridors that is three times the system average;

2. Adjust the train and engine crew costs assigned to intermodal shipments to assume intermodal transit times that are 33% shorter than the system average;[32]

3. Adjust time based locomotive costs assigned to intermodal shipments to assume intermodal transit times that are 33% shorter than the system average;

4. Change the switching-cost allocation to intermodal shipments to assume blocks of 10 intermodal flatcars per event; and

5. Eliminate the URCS allocation of G&A overhead costs to the operating costs for intermodal terminals.

Figure FTI-3 below summarizes the impact of the overstatement of costs to the incremental intermodal shipments. The 2013 CWS identifies $12.34 billion in variable costs for intermodal shipments; we determined that the five sources of mis-assignment identified above account for $1.64 billion of that total.[33] Refining the costing approach to properly assign that $1.64 billion where it belongs would increase the 2013 variable costs for carload shipments by

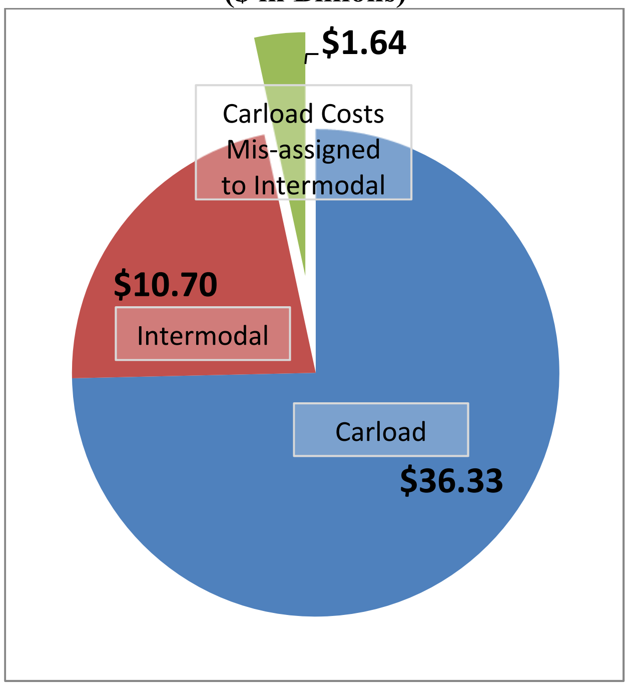
[31] Industry-wide growth from 1992 to 2013 of 10.0 million intermodal containers represents 66% of 2013's total intermodal shipment volume of 15.1 million. WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Calc."

[32] To be clear, this does not require the running speeds of intermodal trains always to be 50% faster, but accounts for the faster operating speeds and the facts that intermodal trains make fewer stops and stop for shorter duration, as described above.

[33] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Results."

5%.[34] Doing so would also result in reaching different conclusions about the changes in R/VC ratios since 1992.

Figure FTI-3
Mis-Assignment of 2013 Variable Costs to Incremental Intermodal Shipments[35]
($ in Billions)



E. Other Factors Contributing to Shifts in Variable Costs from 1992 to 2013

In addition to the assignment issues of variable costs to intermodal shipments, we identified three other changes that have occurred over the 1992 through 2013 time frame that affect the Board's R/VC-based comparisons. These changes serve to suppress the variable-cost estimates for 2013 as compared to 1992, for all shipments. As these items each indicate that the

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[34] The 2013 CWS identifies $36.33 billion in variable costs for carload shipments. $1.64 billion / $36.33 billion = .05. Figure FTI-1 in the prior section indicates that the Board-observed increases in R/VC ratios from 1992 were 10% or less for four of the NPRM commodities. This confirms that refinements to the variable-cost estimates that produce a 5% increase would offset at least one-half of the observed changes in R/VC.

[35] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Results."

2013 variable costs for shipments of the NPRM commodities are lower than they would be had they been consistently reported or treated by URCS, they help explain the source of the changes in the R/VC ratios for the NPRM commodities since 1992 that the Board calculated.

i. Error in URCS's Calculation of Switching Costs

In addition to the conceptual shortcomings of the costing assumptions applied to intermodal service, the URCS costing program fails to properly implement one of the Board's post-1992 changes. As described above, in 1997, the Board took a step towards recognizing the greater efficiency of intermodal shipments by reducing their allocation of switching costs.[36] One of the changes was to significantly increase the interval between Intertrain and Intratrain switch events ("I&I" switching) for intermodal flatcars, from 200 miles to 4,163 miles. Although the URCS costing program calculates this interval correctly in the Phase III costing model that assigns costs to individual shipments, the system-average cost per switch that it assigns is understated, because the upstream calculation in Phase II of the costing model is based on 200 miles, not 4,163.[37] As a result, there is an under-assignment of total switching costs. We explained this inconsistency in a joint verified statement we sponsored that was submitted with the AAR's Opening Comments in the Board's Ex Parte 431 proceeding in 2013.[38]

As this error was not introduced until 1997 and serves to understate the 2013 variable costs of all shipments, it is responsible for a portion of the higher 2013 R/VC ratios for the NPRM commodities observed by the Board. In order to control for the impact of this error, we

[36] *Review of the General Purpose Costing System*, Ex Parte No. 431 (Sub.-No. 2) (served December 12, 1997) at 2.

[37] URCS worktable B6, Part 2A, Line 211 (page 167-169).

[38] *See* June 20, 2013 Joint Verified Statement of Michael R. Baranowski and Benton V. Fisher at 20 and Exhibit FTI-5, submitted as Appendix A to the AAR's Comments in Ex Parte No. 431 (Sub-No. 4). In that Exhibit, we determined that the program's error served to understate all of UP's switch engine minute factors – for industry, interchange, and I&I switching – by 5%.

determined the impact of both calculating and then assigning costs for I&I switching on the same, consistent basis, by individual Class I railroad. In total, we calculated that 2013 variable costs for all carload shipments would be $152 million higher.[39]

ii. Elimination of "No Payment" Car-Miles

Since 1992, railroads stopped reporting car-miles to a separate "No Payment" category in Schedule 755 of the R-1 report, and now include them in the total that is used to calculate the costs per mile applied by the URCS costing program. As the shift has resulted in higher mileage totals and lower costs per mile (as the mileage denominator has increased), the URCS variable costs that are assigned to shipments are relatively lower in 2013 than they would be if the practice of reporting no-payment miles were still followed, as it was in 1992. In 1992, most railroads reported considerable quantities to no-payment car-miles, which included, for example, coal shipments to power plants for which the utility customers provide the freight-car equipment. As those were instances where the railroads did not reimburse the car owners (the utilities), they were classified as no-payment car-miles in the Schedule 755.[40] As a result, those car-mile amounts were not included in the private-car mile totals, which are used by URCS to calculate the private-car costs per mile.[41] In 2013, review of the railroads' Schedule 755 figures indicates that the railroads no longer report no payment car-miles, and include them with the private car-mile totals. As a result of increasing the denominator by effectively including amounts that had been excluded in the 1990s, the URCS costs per mile that are assigned to private-car shipments are much lower. It is notable that this change can result in lower URCS costs per mile that are assigned to shipments without any actual reduction in the railroads' total reported costs.

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[39] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Results."

[40] *See* WP "1992 Schedule 755 Instructions.pdf."

[41] URCS worktable D6, Part 18 (page 369-370).

As this change occurred between 1992 and 2013 and serves to reduce the 2013 variable costs of all shipments, it is also responsible for a portion of the higher 2013 R/VC ratios for the NPRM commodities observed by the Board. In order to control for the impact of this change, we determined the relationship between no-payment miles and private-car miles as reported in 1992 – 28% no payment / 72% private car – and the relationship as reported in 2013 – 0% no payment / 100% private car.[42] This indicates that the private-car costs allocated by URCS would be 39% higher overall, if 1992's reporting practice remained.[43] When we perform the calculations by individual railroad, we determine that 2013 variable costs for all carload shipments would be $289 million higher.[44]

iii. Shift of Roadway Expenditures from Operating Expense to Capital

Another factor that confounds any attempt to compare R/VC ratios from 1992 and 2013 is a change in industry maintenance-of-way practices that occurred over the last twenty years. Improvements in the quality of track materials and the shrinking of available windows on high-density rail corridors to perform maintenance have contributed to a shift in practices that results in substantially more of the railroads' maintenance-of-way expenditures being classified as capital expenditures. This shift produces relatively lower URCS variable costs because of the different variability assumptions within URCS for roadway operating expenses – which URCS treats as 60-70% variable – vs. depreciation and return on investment costs – which URCS treats as 50% variable. In 1992, less than one-half (48%) of roadway maintenance expenditures were

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[42] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Ref_NoPay_CarMiles."

[43] 1 / 72% private-car miles from 1992 produces a relative mileage factor of 1.39, which is 39% higher than 2013's factor of 1.00, based on 100% private-car miles.

[44] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Results." We note the recent trend of decreasing car-hire payments in total, and confirm that our calculated impact is based solely on applying the mix of mileage reportings from 1992 to the 2013 costs allocated by URCS.

capitalized; by 2013, fully two-thirds (67%) were capitalized.[45] The Board acknowledged this very shift in two coal rate-case decisions in the 2003-2004 period involving BNSF, Public Service of Colorado/Xcel Energy and Texas Municipal Power Agency.[46]

As this change occurred between 1992 and 2013 and serves to reduce the 2013 variable costs of all shipments, it is also responsible for a portion of the higher 2013 R/VC ratios for the NPRM commodities observed by the Board. In order to control for this change, we calculated the impact of replacing the 2013 mix of expenditures – 33% expensed / 67% capitalized – with the relationship that was in place in 1992 – 48% expensed / 52% capitalized – and applying the 2013 variabilities to re-calculate the variable costs.[47] When we perform the calculations by individual railroad, we determine that 2013 variable costs for all carload shipments would be $292 million higher.[48]

iv. Summary of Impact of Other Changes

In total, the above three changes explain that 2013 variable costs for carload shipments would have been $733 million higher if the error in the calculation of I&I costs were corrected

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[45] *See* AAR Analysis of Class I Railroads, summarized in WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Ref_RoadMix."

[46] *See Public Service of Colorado/Xcel Energy v. BNSF Railway*, STB Docket No. 42057 (served June 8, 2004) at 135; *Texas Municipal Power Agency v. BNSF Railway*, STB Docket No. 42056 (served March 24, 2003) at 55-56. This post-1992 shift confirmed by the Board is in addition to a change in the accounting system that occurred before 1992.

[47] By illustration, we determined that the share of total maintenance-of-way expenditures that was expensed decreased by 19% from 1992 to 2013, falling from 52% to 33%. If the maintenance-of-way expenses would have been treated as 65% variable, but when capitalized will be treated as only 50% variable, then for the same total roadway costs the resulting variable portion will be 3% lower overall. (0.19 x 0.15 = 0.03)

[48] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Results." We perform a top-down calculation for illustrative purposes that shows the impact of applying a past year's OE / capital mix to the recent year's spending totals, and have not conducted a detailed analysis of annual expenditure patterns.

and if the shifts in the railroads' car-mile and maintenance-of-way accounting practices had not occurred. This represents a 2% increase to the total variable costs of carload shipments.

F. Overall Results

Finally, we provide an estimate of the impact of accounting for all of the costing issues identified in this section, and confirm that much of the Board's observed increases in R/VC ratios could be attributed to changes in the Board's costing approaches and the railroads' reporting practices, rather than claimed abuses of market power. We identified $1.64 billion of variable costs for carload shipments that are assigned to intermodal shipments due to URCS's lack of granularity (Sections III.C and III.D above), and another $733 million driven by three other changes that occurred since 1992 and affect the calculation of variable costs for carload shipments. If the variable costs for carload shipments had been $2.37 billion higher when the Board performed its comparisons, the results would have been different. If the costs of the shipments of the NPRM commodities were 7% higher,[49] the Board would have calculated lower R/VC ratios for 2013 and identified a smaller proportion of shipments above the 180% jurisdictional threshold.

We calculated the impact on the variable costs resulting from the illustrative refinements that we proposed. For each cost item, we determined the magnitude of the variable costs to be redistributed – in the case of the intermodal cost items – or the variable costs to be added – in the case of the three other post-1992 changes – and the corresponding service units (gross ton-miles, train-miles, etc.). We then determined the number of the corresponding service units for the NPRM commodities, separately for shipments with R/VC ratios above 180% and below 180%. For example, in order to calculate the impact of refining the cost allocation for train & engine

[49] 7% represents the overall impact of a $2.37 billion increase to total carload variable costs of $36.33 billion.

crews, we calculated the total variable costs for train & engine crews that URCS assigns to intermodal shipments for each railroad, determined the portion to be redistributed to carload shipments, and re-assigned those amounts to the NPRM commodities (and other carload shipments) based on the relative train-miles. Details are included in our workpapers.[50]

In summary, we repeat here the results presented in Figure FTI-1 above. For the most part, the vast majority of the Board's observed R/VC increases to 2013 could be accounted for by the generalized approach and limited flexibility of the URCS system-average costing methodology, and URCS's inability to properly address the explosive growth in intermodal traffic, to allocate variable costs properly between intermodal and carload shipments, to assign all switching costs, and to control for other changes that have occurred since 1992.

Figure FTI-1 (repeated)
Average R/VC>180%, 2013 NPRM Commodities[51]

NPRM STCC	STB 2016 NPRM	% Increase from 1992	Refined Estimate	% Increase from 1992	% of Board-Observed Increase Explained by Refinements
14-2	2.55	10%	2.40	3%	66%
29-914	2.48	10%	2.34	4%	60%
32-4	2.40	15%	2.26	8%	45%
33-12	2.37	8%	2.22	1%	84%
40-211	2.30	2%	2.20	N/A	>100%

[50] *See*, *e.g.*, WP "2013 URCS Variable Cost Refinements_HC.xlsx."

[51] WP "2013 URCS Variable Cost Refinements_HC.xlsx," worksheet "Cover."

VERIFICATION

I declare under penalty of perjury that the foregoing is true and correct. I further certify that I am qualified and authorized to sponsor and file this testimony.

Executed on July 26, 2016

Michael R. Baranowski

Michael R. Baranowski

VERIFICATION

I declare under penalty of perjury that the foregoing is true and correct. I further certify that I am qualified and authorized to sponsor and file this testimony.

Executed on July 26, 2016

Benton V. Fisher

Benton V. Fisher

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EDUCATION

B.S. in Accounting, Fairfield University

Supplemental Finance Studies, Kean College

Mike Baranowski heads FTI's Network Industries Strategies practice and provides strategic, financial and economic consulting services to the telecommunications and railroad and pipeline transportation industries. He has special expertise in analyzing and developing complex costing and cash flow models, conducting detailed operations analysis, and transportation engineering. Much of his work involves providing oral and written expert testimony before courts, arbitration panels and regulatory bodies.

He is a recognized expert in railroad regulatory economics and has assisted FTI's railroad clients in a broad range of litigation and regulatory engagements involving pricing of services, contract disputes, damage calculations and analyses of the specific effects of pending or proposed changes in policy or regulation.

Some of Mr. Baranowski's representative experience includes:

- Development of strategic litigation approach for large railroad rate proceedings based on the theory of Constrained Market Pricing and the Stand-Alone cost test. Theory assumes the existence of a hypothetical, efficient competitor and involves detailed analysis of railroad operations, expenses, captial expenditures and revenues.
- Development of a suite of modeling tools to assess the regulatory risk of railroad rates for a mix of commodities based on key cost drivers and forecasts.
- Design and development of modeling tools designed to simulate the cost of competitive entry into local telecommunications markets and directing the efforts of a nationwide team of testifying experts presenting the cost model results in multiple proceedings across the country.
- Detailed analysis, critique and restatement of complex cost models developed for the railroad, telecommunications, pipeline and trucking industries.
- Designing modeling tools for use in calculating the costs of competitive entry into railroad, telecommunications and pipeline markets.
- Conducting detailed analyses of railroad operations and developing the associated capital requirements and operating expenses attributable to specific movements and the incremental capital and operating expense requirements attributable to major changes in anticipated traffic levels.

Mr. Baranowski holds a B.S. in Accounting from Fairfield University in Fairfield, Connecticut and has pursued supplemental finance studies at Kean College in Union, New Jersey.

SELECT RAILROAD TESTIMONY

Surface Transportation Board

May 1, 2006	Docket No. Ex Parte 657 (Sub-No. 1) Major Issues in Rail Rate Cases, Verified Statement Supporting Comments of BNSF Railway Company
May 31, 2006	Ex Parte 657 (Sub-No. 1) Major Issues in Rail Rate Cases; Verified Statement Supporting Reply Comments of BNSF Railway Company
June 15, 2006	Docket No. 42088 Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company, Reply Supplemental Evidence of BNSF Railway Company
June 15, 2006	Docket No. 41191 (Sub 1) AEP Texas North Company v. BNSF Railway Company, Reply Supplemental Evidence of BNSF Railway Company
June 30, 2006	Docket No. Ex Parte 657 (Sub-No. 1) Major Issues in Rail Rate Cases; Verified Statement Supporting Rebuttal Comments of BNSF Railway Company
February 4, 2008	Docket No. 42099 E.I. DuPont De Nemours and Company v. CSX Transportation, Inc., Opening Evidence of CSX Transportation, Inc.
February 4, 2008	Docket No. 42100 E.I. DuPont De Nemours and Company v. CSX Transportation, Inc., Opening Evidence of CSX Transportation, Inc.
February 4, 2008	Docket No. 42101 E.I. DuPont De Nemours and Company v. CSX Transportation, Inc., Opening Evidence of CSX Transportation, Inc.
May 1, 2008	Docket No. Ex Parte 679 Petition of the AAR to Institute a Rulemaking Proceeding to Adopt a Replacement Cost Methodology to Determine Railroad Revenue Adequacy, Verified Statement of Michael R. Baranowski
July 14, 2008	Docket No. 42088 Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company, Third Supplemental Reply Evidence of BNSF Railway Company
July 14, 2008	Docket No. AB-515 (Sub-No. 2) Central Oregon & Pacific Railroad, Inc. -- Abandonment and Discontinuance of Service -- in Coos, Douglas, and Lane Counties, Oregon (Coos Bay Rail Line)
August 8, 2008	Docket No. 41191 (Sub-No. 1) AEP Texas North Company v. BNSF Railway Company, Fourth Supplemental Evidence of BNSF Railway Company
August 11, 2008	Docket No. 42104 Entergy Arkansas, Inc. and Entergy Services, Inc. v Union Pacific Railroad Company and Missouri & Northern Arkansas Railroad Company, Inc.; Finance Docket No. 32187 Missouri & Northern Arkansas Railroad Company, Inc. – Lease, Acquisition and Operations Exemption – Missouri Pacific Railroad Company and Burlington Northern Railroad Company, Reply Evidence and Argument of Union Pacific
September 5, 2008	Docket No. 41191 (Sub-No. 1) AEP Texas North Company v. BNSF Railway Company, Fourth Supplemental Reply Evidence of BNSF Railway Company
September 12, 2008	Docket No. AB-515 (Sub-No. 2) Central Oregon & Pacific Railroad, Inc. -- Abandonment and Discontinuance of Service -- in Coos, Douglas, and Lane Counties, Oregon (Coos Bay Rail Line); Rebuttal to Protests
August 24, 2009	Docket No. 42114 US Magnesium, L.L.C. v. Union Pacific Railroad Company, Opening Evidence of Union Pacific Railroad Company

October 22, 2009	Docket No. 42114 US Magnesium, L.L.C. v. Union Pacific Railroad Company, Rebuttal Evidence of Union Pacific Railroad Company
January 19, 2010	Docket No. 42110 Seminole Electric Cooperative, Inc. v. CSX Transportation, Inc., Reply Evidence of CSX Transportation, Inc.
May 7, 2010	Docket No. 42113 Arizona Electric Power Cooperative, Inc. v. BNSF Railway Company and Union Pacific Railroad Company, Joint Reply Evidence of BNSF Railway Company and Union Pacific Railroad Company
November 22, 2010	Docket No. 42088 Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company, BNSF Comments on Remand, Joint Verified Statement of Michael R. Baranowski and Benton V. Fisher
January 6, 2011	Docket No. 42056 Texas Municipal Power Agency v. BNSF Railway Company, BNSF Reply to TMPA Petition for Enforcement of Decision, Joint Verified Statement of Michael R. Baranowski and Benton V. Fisher
October 28, 2011	Docket No. FD 35506 Western Coal Traffic League - Petition for Declaratory Order, Opening Evidence of BNSF Railway Company, Joint Verified Statement of Michael R. Baranowski and Benton V. Fisher
November 10, 2011	Docket No. 42127 Intermountain Power Agency v. Union Pacific Railroad Company, Reply Evidence of Union Pacific Railroad Company
November 28, 2011	Docket No. FD 35506 Western Coal Traffic League - Petition for Declaratory Order, Reply Evidence of BNSF Railway Company, Joint Reply Verified Statement of Michael R. Baranowski and Benton V. Fisher
May 10, 2012	Docket No. 42056 Texas Municipal Power Agency v. BNSF Railway Company, BNSF Reply to TMPA Petition to Reopen and Modify Rate Prescription, Joint Verified Statement of Michael R. Baranowski and Benton V. Fisher
November 30, 2012	Docket No. 42125 E.I. DuPont De Nemours & Company v. Norfolk Southern Railway Company, Reply Evidence of Norfolk Southern Railway Company
December 7, 2012	Docket No. Ex Parte 715, Rate Regulation Reforms, Reply Comments of the Association of American Railroads, Verified Statement of Michael R. Baranowski
January 7, 2013	Docket No. 42130 SunBelt Chlor Alkali Partnership v. Norfolk Southern Railway Company, Reply Evidence of Norfolk Southern Railway Company
March 1, 2013	Ex Parte No. 711 Petition for Rulemaking to Adopt Revised Competitive Switching Rules, Opening Comments of the Association of American Railroads, Verified Statement of Michael R. Baranowski and Richard W. Brown
April 12, 2013	Docket No. 42136 Intermountain Power Agency v. Union Pacific Railroad Company, Reply Evidence of Union Pacific Railroad Company
April 30, 2013	Ex Parte No. 711 Petition for Rulemaking to Adopt Revised Competitive Switching Rules, Reply Comments of the Association of American Railroads, Verified Statement of Michael R. Baranowski and Richard W. Brown
June 20, 2013	Ex Parte No. 431 (Sub-No. 4) Review of the General Purpose Costing System, Comments of the Association of American Railroads, Joint Verified Statement of Michael R. Baranowski and Benton V. Fisher

September 5, 2013	Ex Parte No. 431 (Sub-No. 4) Review of the General Purpose Costing System, Reply Comments of the Association of American Railroads, Joint Verified Statement of Michael R. Baranowski and Benton V. Fisher
July 21, 2014	Docket No. 42121 Total Petrochemicals & Refining USA, Inc. v. CSX Transportation, Inc., Reply Evidence of CSX Transportation, Inc.
September 5, 2014	Ex Parte No. 722 Railroad Revenue Adequacy, Opening Comments of Norfolk Southern Railway Company, Verified Statement of Michael R. Baranowski
November 4, 2014	Ex Parte No. 722 Railroad Revenue Adequacy, Reply Comments of Norfolk Southern Railway Company, Verified Statement of Michael R. Baranowski
September 4, 2015	Docket No. FD 35743 Application of the National Railroad Passenger Corporation Under 49 U.S.C. § 24308(a) - Canadian National Railway Company, Opening Evidence of Illinois Central Railroad Company and Grand Trunk Western Railroad, Joint Verified Statement of Michael Baranowski and Benton Fisher
October 7, 2015	Docket No. 42121 Total Petrochemicals & Refining USA, Inc. v. CSX Transportation, Inc., Supplemental and Compliance Evidence of CSX Transportation, Inc.
October 23, 2015	Docket No. FD 33760 (Sub-No. 46) BNSF Railway Company - Terminal Trackage Rights -- Kansas City Southern Railway Company and Union Pacific Railroad Company, BNSF Rebuttal Statement, Verified Statement of Michael R. Baranowski
November 20, 2015	Docket No. 42121 Total Petrochemicals & Refining USA, Inc. v. CSX Transportation, Inc., Reply to Supplemental and Compliance Evidence
March 7, 2016	Docket No. 42142 Consumers Energy Company v. CSX Transportation, Inc., Reply Evidence of CSX Transportation, Inc.
July 18, 2016	Docket No. FD 35842 New England Central Railroad, Inc. -- Trackage Rights Order – Pan Am Southern LLC, Pan Am Southern Reply Evidence, Verified Statement of Michael R. Baranowski

US District Court for Northern District of Oklahoma

January 2, 2007	Case No. 06-CV-33 TCK-SAJ, Grand River Dam Authority v. BNSF Railway Company; Report of Michael R. Baranowski
February 2, 2007	Case No. 06-CV-33 TCK-SAJ, Grand River Dam Authority v. BNSF Railway Company; Reply Report of Michael R. Baranowski

Circuit Court of Pulaski County, Arkansas

August 17, 2007	Case No. CV 2006-2711, Union Pacific Railroad v. Entergy Arkansas, Inc. and Entergy Services, Inc., Expert Witness Report of Michael R. Baranowski
December 14, 2007	Case No. CV 2006-2711, Union Pacific Railroad v. Entergy Arkansas, Inc. and Entergy Services, Inc., Reply Expert Witness Report of Michael R. Baranowski

U.S. District Court for the Eastern District of Wisconsin

February 15, 2008	Case No. 06-C-0515, Wisconsin Electric Power Company v. Union Pacific Railroad Company, Expert Reply Report of Michael R. Baranowski

Arbitrations and Mediations

March 7, 2005	Arbitration Case #181 Y 00490 04 BNSF Railway Company and J.B. Hunt Transport, Inc., Expert Report on behalf of BNSF Railway Company
March 28, 2005	Arbitration Case #181 Y 00490 04 BNSF Railway Company and J.B. Hunt Transport, Inc., Rebuttal Expert Report on behalf of BNSF Railway Company
April 12, 2005	Arbitration Case #181 Y 00490 04 BNSF Railway Company and J.B. Hunt Transport, Inc., Supplemental Expert Report on behalf of BNSF Railway Company
April 19, 2005	Arbitration Case #181 Y 00490 04 BNSF Railway Company and J.B. Hunt Transport, Inc., Supplemental Rebuttal Expert Report on behalf of BNSF Railway Company
April/May 2005	Arbitration Case #181 Y 00490 04 BNSF Railway Company and J.B. Hunt Transport, Inc., Hearings before Arbitration Panel
February 20, 2007	In the Matter of the Arbitration between the Detroit Edison Company, et al, and BNSF Railway Company, Expert Report of Michael R. Baranowski on behalf of BNSF Railway Company
March 19, 2007	In the Matter of the Arbitration between the Detroit Edison Company, et al, and BNSF Railway Company, Supplemental Expert Report of Michael R. Baranowski on behalf of BNSF Railway Company
February 12, 2009	In the Matter of the Arbitration between Wisconsin Public Service Corporation and Union Pacific Railroad Company, Rebuttal Expert Report of Michael R. Baranowski on behalf of Union Pacific Railroad Company
October 16, 2009	In the Matter of Arbitration Between Norfolk Southern Railway Company and Drummond Coal Sales, Inc., Expert Report of Michael R. Baranowski on behalf of Norfolk Southern Railway Company
July 25, 2011	American Arbitration Association Case No. 58 147 Y 0031809, BNSF Railway Company and Kansas City Southern Railway Company, Expert Report of Michael R. Baranowski on behalf of BNSF Railway Company
April 25, 2013	JAMS REF #1340009009, Union Pacific Railroad vs. Canadian Pacific and Dakota, Minnesota & Eastern Railroad Arbitration, Expert Report of Michael R. Baranowski on behalf of Union Pacific Railroad Company
September 6, 2013	IN JAMS ARBITRATION, Case No. 1220044715, Union Pacific Railroad Company v. BNSF Railway Company, Expert Report of Michael R. Baranowski
October 25, 2013	IN JAMS ARBITRATION, Case No. 1220044715, Union Pacific Railroad Company v. BNSF Railway Company, Expert Reply Report of Michael R. Baranowski
January 1, 2014	IN JAMS ARBITRATION, Case No. 1220044715, Union Pacific Railroad Company v. BNSF Railway Company, BNSF Post-Argument Submission, Affidavit of Michael R. Baranowski

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EDUCATION

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Benton V. Fisher is a Senior Managing Director of FTI's Economic Consulting group, located in Washington, D.C. Mr. Fisher has more than 20 years of experience in providing financial, economic and analytical consulting services to corporate clients dealing with transportation, telecommunications, and postal subjects.

North America's largest railroads have retained FTI both to assist them in making strategic and tactical decisions and to provide expert testimony in litigation. FTI's ability to present a thorough understanding of myriad competitive and regulatory factors has given its clients the tools to implement and advance their business. Mr. Fisher has worked extensively to develop these clients' applications for mergers and acquisitions and expert testimony justifying the reasonableness of their rates before the Surface Transportation Board. In addition to analyzing extensive financial and operating data, Mr. Fisher has worked closely with people within many departments at the railroad as well as outside counsel to ensure that the railroads' presentations are accurate and defensible. Additionally, Mr. Fisher reviews the expert testimony of the railroads' opponents in these proceedings, and advises counsel on the course of action to respond.

AT&T and MCI retained FTI to advance its efforts to implement the Telecommunications Act of 1996 in local exchange markets. Mr. Fisher was primarily responsible for reviewing the incumbent local exchange carriers' (ILEC) cost studies, which significantly impacted the ability of FTI's clients to access local markets. Mr. Fisher analyzed the sensitivity of multiple economic components and incorporated this information into various models being relied upon by the parties and regulators to determine the pricing of services. Mr. Fisher was also responsible for preparing testimony that critiqued alternative presentations.

Mr. Fisher assisted in reviewing the U.S. Postal Service's evidence and preparing expert testimony on behalf of interveners in Postal Rate and Fee Changes cases. He has also been retained by a large international consulting firm to provide statistical and econometric support in their preparation of a long-range implementation plan for improving telecommunications infrastructure in a European country.

Mr. Fisher has sponsored expert testimony in rate reasonableness proceedings before the Surface Transportation Board and in contract disputes in Federal Court and arbitration proceedings.

Mr. Fisher holds a B.S. in Engineering and Management Systems from Princeton University.

TESTIMONY

Surface Transportation Board

January 15, 1999	Docket No. 42022 FMC Corporation and FMC Wyoming Corporation v. Union Pacific Railroad Company, Opening Verified Statement of Christopher D. Kent and Benton V. Fisher
March 31, 1999	Docket No. 42022 FMC Corporation and FMC Wyoming Corporation v. Union Pacific Railroad Company, Reply Verified Statement of Christopher D. Kent and Benton V. Fisher
April 30, 1999	Docket No. 42022 FMC Corporation and FMC Wyoming Corporation v. Union Pacific Railroad Company, Rebuttal Verified Statement of Christopher D. Kent and Benton V. Fisher
July 15, 1999	Docket No. 42038 Minnesota Power, Inc. v. Duluth, Missabe and Iron Range Railway Company, Opening Verified Statement of Christopher D. Kent and Benton V. Fisher
August 30, 1999	Docket No. 42038 Minnesota Power, Inc. v. Duluth, Missabe and Iron Range Railway Company, Reply Verified Statement of Christopher D. Kent and Benton V. Fisher
September 28, 1999	Docket No. 42038 Minnesota Power, Inc. v. Duluth, Missabe and Iron Range Railway Company, Rebuttal Verified Statement of Christopher D. Kent and Benton V. Fisher
June 15, 2000	Docket No. 42051 Wisconsin Power and Light Company v. Union Pacific Railroad Company, Opening Verified Statement of Christopher D. Kent and Benton V. Fisher
August 14, 2000	Docket No. 42051 Wisconsin Power and Light Company v. Union Pacific Railroad Company, Reply Verified Statement of Christopher D. Kent and Benton V. Fisher
September 28, 2000	Docket No. 42051 Wisconsin Power and Light Company v. Union Pacific Railroad Company, Rebuttal Verified Statement of Christopher D. Kent and Benton V. Fisher
December 14, 2000	Docket No. 42054 PPL Montana, LLC v. The Burlington Northern Santa Fe Railway Company, Opening Verified Statement of Christopher D. Kent and Benton V. Fisher
March 13, 2001	Docket No. 42054 PPL Montana, LLC v. The Burlington Northern Santa Fe Railway Company, Reply Verified Statement of Christopher D. Kent and Benton V. Fisher
May 7, 2001	Docket No. 42054 PPL Montana, LLC v. The Burlington Northern Santa Fe Railway Company, Rebuttal Verified Statement of Christopher D. Kent and Benton V. Fisher
October 15, 2001	Docket No. 42056 Texas Municipal Power Agency v. The Burlington Northern Santa Fe Railway Company, Opening Verified Statement of Benton V. Fisher
January 15, 2002	Docket No. 42056 Texas Municipal Power Agency v. The Burlington Northern Santa Fe Railway Company, Reply Verified Statement of Benton V. Fisher
February 25, 2002	Docket No. 42056 Texas Municipal Power Agency v. The Burlington Northern Santa Fe Railway Company, Rebuttal Verified Statement of Benton V. Fisher
May 24, 2002	Docket No. 42069 Duke Energy Corporation v. Norfolk Southern Railway Company, Opening Evidence and Argument of Norfolk Southern Railway Company

June 10, 2002	Docket No. 42072 Carolina Power & Light Company v. Norfolk Southern Railway Company, Opening Evidence and Argument of Norfolk Southern Railway Company
July 19, 2002	Docket No. 42059 Northern States Power Company Minnesota v. Union Pacific Railroad Company, Union Pacific's Opening Evidence
September 30, 2002	Docket No. 42069 Duke Energy Corporation v. Norfolk Southern Railway Company, Reply Evidence and Argument of Norfolk Southern Railway Company
October 4, 2002	Northern States Power Company Minnesota v. Union Pacific Railroad Company, Union Pacific's Reply Evidence
October 11, 2002	Docket No. 42072 Carolina Power & Light Company v. Norfolk Southern Railway Company, Reply Evidence and Argument of Norfolk Southern Railway Company
November 1, 2002	Docket No. 42059 Northern States Power Company Minnesota v. Union Pacific Railroad Company, Union Pacific's Rebuttal Evidence
November 19, 2002	Docket No. 42069 Duke Energy Corporation v. Norfolk Southern Railway Company, Rebuttal Evidence and Argument of Norfolk Southern Railway Company
November 27, 2002	Docket No. 42072 Carolina Power & Light Company v. Norfolk Southern Railway Company, Rebuttal Evidence and Argument of Norfolk Southern Railway Company
January 10, 2003	Docket No. 42057 Public Service Company of Colorado D/B/A Xcel Energy v. The Burlington Northern and Santa Fe Railway Company, Opening Evidence and Argument of The Burlington Northern and Santa Fe Railway Company
February 7, 2003	Docket No. 42058 Arizona Electric Power Cooperative, Inc. v. The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad, Opening Evidence of The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad
April 4, 2003	Docket No. 42057 Public Service Company of Colorado D/B/A Xcel Energy v. The Burlington Northern and Santa Fe Railway Company, Reply Evidence and Argument of The Burlington Northern and Santa Fe Railway Company
May 19, 2003	Docket No. 42057 Public Service Company of Colorado D/B/A Xcel Energy v. The Burlington Northern and Santa Fe Railway Company, Rebuttal Evidence and Argument of The Burlington Northern and Santa Fe Railway Company
May 27, 2003	Docket No. 42058 Arizona Electric Power Cooperative, Inc. v. The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad, Joint Variable Cost Reply Evidence of The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad
May 27, 2003	Docket No. 42058 Arizona Electric Power Cooperative, Inc. v. The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad, Reply Evidence of The Burlington Northern and Santa Fe Railway Company
June 13, 2003	Docket No. 42071 Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company, Opening Evidence of The Burlington Northern and Santa Fe Railway Company

July 3, 2003	Docket No. 42058 Arizona Electric Power Cooperative, Inc. v. The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad, Joint Variable Cost Rebuttal Evidence of The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad
October 8, 2003	Docket No. 42071 Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company, Reply Evidence of The Burlington Northern and Santa Fe Railway Company
October 24, 2003	Docket No. 42069 Duke Energy Corporation v. Norfolk Southern Railway Company Supplemental Evidence of Norfolk Southern Railway Company
October 31, 2003	Docket No. 42069 Duke Energy Corporation v. Norfolk Southern Railway Company, Reply of Norfolk Southern Railway Company to Duke Energy Company's Supplemental Evidence
November 24, 2003	Docket No. 42072 Carolina Power & Light Company v. Norfolk Southern Railway Company, Supplemental Evidence of Norfolk Southern Railway Company
December 2, 2003	Docket No. 42072 Carolina Power & Light Company v. Norfolk Southern Railway Company, Reply of Norfolk Southern Railway Company to Carolina Power & Light Company's Supplemental Evidence
January 26, 2004	Docket No. 42058 Arizona Electric Power Cooperative, Inc. v. The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad Company, Joint Supplemental Reply Evidence and Argument of The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad Company
March 1, 2004	Docket No. 41191 (Sub-No. 1) AEP Texas North Company v. The Burlington Northern and Santa Fe Railway Company, Opening Evidence and Argument of The Burlington Northern and Santa Fe Railway Company
March 22, 2004	Docket No. 42071 Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company, Supplemental Reply Evidence of The Burlington Northern and Santa Fe Railway Company
April 29, 2004	Docket No. 42071 Otter Tail Power Company v. The Burlington Northern and Santa Fe Railway Company, Rebuttal Evidence of The Burlington Northern and Santa Fe Railway Company
May 24, 2004	Docket No. 41191 (Sub-No. 1) AEP Texas North Company v. The Burlington Northern and Santa Fe Railway Company, Reply Evidence of The Burlington Northern and Santa Fe Railway Company
July 27, 2004	Docket No. 41191 (Sub-No. 1) AEP Texas North Company v. The Burlington Northern and Santa Fe Railway Company, Rebuttal Evidence of The Burlington Northern and Santa Fe Railway Company
March 1, 2005	Docket No. 42071 Otter Tail Power Company v. BNSF Railway Company, Supplemental Evidence of BNSF Railway Company
April 4, 2005	Docket No. 42071 Otter Tail Power Company v BNSF Railway Company, Reply of BNSF Railway Company to Supplemental Evidence
April 19, 2005	Docket No. 42088 Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company, Opening Evidence of BNSF Railway Company

July 20, 2005	Docket No. 42088 Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company, Reply Evidence of BNSF Railway Company
September 30, 2005	Docket No. 42088 Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company, Rebuttal Evidence of BNSF Railway Company
October 20, 2005	Docket No. 42088 Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company, Surrebuttal Evidence of BNSF Railway Company
June 15, 2006	Docket No. 42088 Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company, Reply Supplemental Evidence of BNSF Railway Company
June 15, 2006	Docket No. 41191 (Sub-No. 1) AEP Texas North Company v. BNSF Railway Company, Reply Supplemental Evidence of BNSF Railway Company
March 19, 2007	Docket No. 41191 (Sub-No. 1) AEP Texas North Company v. BNSF Railway Company, Reply Third Supplemental Evidence of BNSF Railway Company
March 26, 2007	Docket No. 42088 Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v. BNSF Railway Company, Reply Second Supplemental Evidence of BNSF Railway Company
July 30, 2007	Docket No. 42095 Kansas City Power & Light v. Union Pacific Railroad Company, Union Pacific's Opening Evidence
August 20, 2007	Docket No. 42095 Kansas City Power & Light v. Union Pacific Railroad Company, Union Pacific's Reply Evidence
February 4, 2008	Docket No. 42099 E.I. DuPont De Nemours and Company v. CSX Transportation, Inc., Opening Evidence of CSXT
February 4, 2008	Docket No. 42100 E.I. DuPont De Nemours and Company v. CSX Transportation, Inc., Opening Evidence of CSXT
February 4, 2008	Docket No. 42101 E.I. DuPont De Nemours and Company v. CSX Transportation, Inc., Opening Evidence of CSXT
March 5, 2008	Docket No. 42099 E.I. DuPont De Nemours and Company v. CSX Transportation, Inc., Reply Evidence of CSXT
March 5, 2008	Docket No. 42100 E.I. DuPont De Nemours and Company v. CSX Transportation, Inc., Reply Evidence of CSXT
March 5, 2008	Docket No. 42101 E.I. DuPont De Nemours and Company v. CSX Transportation, Inc., Reply Evidence of CSXT
April 4, 2008	Docket No. 42099 E.I. DuPont De Nemours and Company v. CSX Transportation, Inc., Rebuttal Evidence of CSXT
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