

BEFORE THE SURFACE TRANSPORTATION BOARD

STB Ex Parte No. 761
HEARING ON REVENUE ADEQUACY
STB Ex Parte No. 722
RAILROAD REVENUE ADEQUACY

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**COMMENTS OF
THE ASSOCIATION OF AMERICAN RAILROADS**

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I. SUMMARY

The Board's focus on improving its rate reasonableness procedures is commendable, and the Association of American Railroads ("AAR") supports efforts to enhance the Board's existing tools for detecting market dominance and assessing the reasonableness of rates within its jurisdiction. AAR has proposed a number of improvements to the Three-Benchmark test, and it would support further efforts by the Board to improve its SAC and Simplified SAC tools and explore ways to promote alternative dispute resolution.

But the evidence is overwhelming that rate regulation predicated on "revenue adequacy" is not the answer to any problem. In the first place, such regulation is inconsistent with the economic reality that virtually every U.S. industry earns returns in excess of its cost of capital. To use a railroad's achievement of this common level of profitability as grounds for triggering massive economic consequences is utterly unjustified as a matter of economic policy and inconsistent with the Board's governing statute. While AAR appreciates the good faith efforts of the Rate Reform Task Force (herein "Task Force" or "RRTF") to develop a suite of regulatory reform ideas, its recommendation to use revenue adequacy as a means of system-wide rate of return regulation flies in the face of the Board's own studies of its rate reasonableness options,¹ ignores the strong critiques of this use of revenue adequacy by independent observers like the Transportation Research Board,² and fails to engage at all with the detailed

¹ INTERVISTAS, SURFACE TRANSPORTATION BOARD, AN EXAMINATION OF THE STB'S APPROACH TO FREIGHT RAIL RATE REGULATION AND OPTIONS FOR SIMPLIFICATION, PROJECT FY 14-SB-157 (Sept. 14, 2016) ("InterVISTAS Report") (noting the SAC test "has stood the test of time as a maximum rate reasonableness methodology").

² NATIONAL ACADEMIES OF SCIENCES, ENGINEERING & MEDICINE, TRANSPORTATION RESEARCH BOARD, MODERNIZING FREIGHT RAIL REGULATION, at 28, 100, 101, 125 (2015) ("MFRR Report") (dismissing the idea of a revenue adequacy constraint as "anachronistic," "misguided," "lack[ing] an economic foundation," and "at odds with the deregulatory thrust of the Staggers Rail Act reforms").

evidence that AAR and several of its member railroads submitted in prior proceedings (most recently Ex Parte 722). It is fair to say that no federal agency is contemplating such a massive step backwards into discredited 1970s-era rate-of-return regulation.

AAR recognizes that the Board has been lobbied by certain shipper interests to develop a revenue adequacy rate mechanism as a one-size-fits-all alternative to the Board's existing SAC, Simplified SAC, and Three Benchmark methodologies. But capitulating to this idea is misguided for multiple reasons.

First, the attainment of revenue adequacy is not a signal of market failure that justifies STB intervention. Revenue adequacy results from many pro-competitive reasons and thus does not mean that railroads are acting improperly or abusing market power. In fact, revenue adequacy is a sign of good health—it results from innovation, wise investments, and increased productivity—all the results of market forces in competitive environments. This truth is confirmed by the fact that other well-functioning industries routinely earn accounting returns on investment higher than their cost of capital. Indeed, almost all U.S. industries earn accounting returns above the cost of capital. So the supposed “problem” evidenced by a railroad's revenue adequacy that some say justifies a regulatory crackdown actually occurs across the board in every industry. Revenue adequacy, thus, is a widespread, normal, and expected outcome in the economy—not a sign of market power abuse that warrants regulatory action. As Professor Kalt has previously observed, there is “no way in which one can look at accounting rates of return and infer anything about relative economic profitability or, a fortiori, about the presence or absence of monopoly profits.”³

³ Opening Comments of The Association of American Railroads, EP 722, Verified Statement of Joseph P. Kalt, at 36 (filed Sep. 5, 2014) (“The infirmities of using accounting profitability and rates of return to infer market power or above-competitive returns, particularly for capital industries like railroading with long-lived equipment, are well known.”)

Second, the STB has no authority to regulate system-wide earnings, either directly or indirectly. Earnings regulation is a discredited utility-style approach to regulation that Congress deliberately abandoned with the Staggers Act. The STB must as well. “Congress deliberately chose to move away from a public utility model of regulation for the railroad industry.”⁴ Rather, “in enacting the Staggers Act, Congress concluded that unnecessarily burdensome and rigid utility-style regulation have prevented the railroads from responding to changing market conditions, as other businesses could, and taking actions that could help them to recover their costs and earn adequate revenues. The Staggers Act was intended to loosen this tight regulatory grip....”⁵ Any form of revenue adequacy constraint is effectively rate of return regulation that Congress has not authorized.⁶

Third, the agency’s measurement of revenue adequacy is laden with measurement errors. The Board’s current annual determinations do not measure return on investment against the current value of assets, which is the real metric that investors in competitive markets consider. And the Board’s annual findings are further distorted because it removes accumulated deferred taxes from the investment base.

Fourth, rate freezes like those proposed in the Task Force’s “Rate Increase Constraint” have a dreadful track record. In the 1970s, our nation experimented with price freezes, with poor results. Artificial restrictions on prices distort the marketplace,

⁴ *Western Coal Traffic League – Petition for Declaratory Order*, STB Docket No. FD 35506, 15-17 (served July 25, 2013). See also *Groome & Associates, Inc. v. Greenville Cty. Economic Develop. Corp.*, STB Docket No. 42087, at 12 (served July 27, 2005) (“Congress directed [in the Staggers Act] that railroads be treated more like ordinary businesses than like public utilities.”).

⁵ *Study of Interstate Commerce Commission Regulatory Responsibilities Pursuant to Section 201(a) of the Trucking Industry Regulatory Reform Act of 1994*, 1994 MCC LEXIS 104, *275-76 (1994).

⁶ *Ark. Power & Light Co. – Petition to Institute Rulemaking Proceeding – Implementation of Long-Cannon Amendment to the Staggers Rail Act*, Docket No. 38754, 365 I.C.C. 983, 989 (1982) (“The Commission does not regulate the overall rate of return for railroads.”); see Verified Statement of Joseph P. Kalt (“Kalt V.S.”) ¶¶ 14, 87-89, 102.

creating shortages and preventing ordinary market signals from functioning. The results were predictable: long lines, the inability of markets to adjust prices to meter demand, shortages in some geographic areas and surpluses in others, a reduction in innovation and investments, and thankfully the eventual abandonment of this intrusive interference with markets. As the Nobel Prize-winning economist Milton Friedman bluntly put it: “We economists don’t know much, but we do know how to create a shortage. If you want to create a shortage of tomatoes, for example, just pass a law that retailers can’t sell tomatoes for more than two cents per pound. Instantly you’ll have a tomato shortage.”⁷ Having lived through this failed experiment, Congress in 1980 *expressly* told the ICC that it could *not* impose system-wide rate freezes on a carrier who attained revenue adequacy by expressly authorizing revenue adequate railroads to raise rates beyond inflation without any presumption of unlawfulness. *See* 49 U.S.C. § 10707a (1982). Given the context of the statutory scheme and its legislative history, a carrier’s reward for achieving the goal of revenue adequacy cannot be a system-wide rate freeze.

Fifth, the Board does not have the statutory authority to revoke long-haul protections bestowed on the railroad industry for a century, whether or not a carrier is revenue adequate. The purpose of the Bottleneck Rule is not to help railroads achieve revenue adequacy but to maximize railroad efficiency by ensuring that a railroad—a business firm operating a network—can choose its own routes and rates absent abuse of market power.⁸ Thus, it makes no sense that this protection would be taken away merely because a railroad becomes revenue adequate. A revenue adequate railroad still needs to optimize its network. Indeed, removing bottleneck protections would result in operational chaos, congestion, market distortions, and other ills we know result from system-wide rate of return regulation. In any event, the Bottleneck Rule is “mandated

⁷ “Controls blamed for U.S. energy woes,” Los Angeles Times, Feb. 13, 1977.

⁸ 49 U.S.C. §§ 10701(c), 10705(a)(2).

by the law.”⁹ As the Board recognized, the Bottleneck Rule is based on “statutory provisions [that] protect[] each railroad’s right to determine, at the outset, which reasonable through routes it will use to respond to requests for service.”¹⁰ Any attempt to reverse or suspend this rule for revenue-adequate railroads would be unlawful.

Finally, there is no way to tie a metric of system-wide financial health to the reasonableness of an individual rate. It is impossible. The reasonableness of a particular rate rests, at its foundation, on the services and facilities the railroad uses to serve that customer. What a carrier earns on competitive traffic a thousand miles away is irrelevant. As the D.C. Circuit correctly observed, a test of “system-wide revenue need” provides “no guidance” on the rates a customer should be charged for the particular facilities and services it uses.¹¹ Seeking to design a new tool to regulate individual rates based on the system-wide revenue needs of a carrier should be abandoned.

AAR’s comments are supported by the written testimony of Professor Joseph P. Kalt of Harvard University’s Kennedy School of Government, who analyzes whether the revenue adequacy-related ideas from the Task Force are consistent with principles of sound economics and proper public policy. Professor Kalt explains that any proposal that bases regulatory action on a system-wide measure of “revenue adequacy” is a move away from the basic economic principles in the Staggers framework.¹² A system-wide “revenue adequacy” constraint is inherently a blunt tool that cannot tell the difference between “revenue adequacy” that is the result of successful and efficient pro-competitive behavior and “revenue adequacy” that may be the result of market power over certain portions of a carrier’s operations. Identifying rates that are unreasonably

⁹ *Central Power & Light Co. v. S. Pac. Transp. Co.*, STB Docket No. 41242, 1 S.T.B. 1059, 1073 n.21 (served Dec. 31, 1996) (“*Bottleneck I*”) (“Our decision is, in our view, mandated by the law.”).

¹⁰ *Bottleneck I*, at 1065.

¹¹ *BNSF Ry. Co. v. Surface Transp. Bd.*, 453 F.3d 473, 481 (D.C. Cir. 2006).

¹² Kalt V.S. ¶¶ 126-38.

high as the result of market power invariably requires consideration of the particular markets and traffic at issue, in the way that the Board's existing SAC and Simplified SAC methodologies are designed to do. A return to old-style regulation in which generalized rate constraints are applied to limit earnings to an "adequate" level would distort incentives and lead to reduced efficiency, higher costs, and deteriorated service quality.¹³ Professor Kalt urges the Board to abandon this concept and instead to consider smart simplification of its existing procedures to develop rate reasonableness measures that are both accessible to all shippers and grounded in sound economics.¹⁴

Section II of these Comments summarize the core reasons why the Board should abandon the revenue adequacy constraint once and for all. Improved financial health is not evidence of any specific exercise of market power that could justify regulatory intervention in any particular case. Indeed, all well-functioning U.S. industries regularly earn accounting returns on investment in excess of their cost of capital. And Congress plainly did not give the Board authority to regulate system-wide railroad revenues or turn the clock back to discredited utility-style rate-of-return regulation.

Section III addresses the suggested definition of long-term revenue adequacy. The proposed time period is arbitrary and unsupported by substantial evidence. Moreover, measurement errors in the annual revenue adequacy determinations, such as the use of book value and the treatment of deferred taxes, make the Board's measure of revenue adequacy arbitrary, a poor lens for determining long-term revenue adequacy, and an even worse tool for regulating railroad rates or routes.

Section IV discusses the concept of a Rate Increase Constraint ("RIC") and explains why it would be both unlawful and terrible public policy. Nothing in the statutory scheme authorizes the Board to move away from an individual case-by-case

¹³ *Id.* at ¶ 14.

¹⁴ *Id.* at ¶¶ 139-47.

analysis of rate reasonableness to system-wide rate freezes that would slowly drive railroad rates (and earnings) down to revenue inadequacy. Indeed, RIC would carry all the negative consequences of rate freezes, would create multiple cross-subsidies, and would perversely create incentives for inefficiencies. RIC also features extraordinary regulatory lag that could leave system-wide rate constraints in place years after railroads become revenue *inadequate*.

Section V shows that the idea of reversing the Bottleneck Rule for revenue adequate railroads is unlawful. A bottleneck carrier's right to its long haul is not a policy choice by the Board that it has the discretion to reverse. It is a statutory command that the Board may not override unless it meets specific statutory criteria – none of which are satisfied by a mere showing of system-wide revenue adequacy. Moreover, allowing shippers free rein to override railroads' route-setting prerogative would create severe operational disruptions and would adversely affect rail infrastructure investment.

Section VI concludes by emphasizing that the Board has other paths forward to address its concerns about its current rate procedures. The Board can improve access to rate relief in small shipper and small value cases by further streamlining its Three Benchmark approach, and it could consider additional streamlining of the SAC and Simplified SAC approach to create an improved methodology for larger cases.

II. THE STB SHOULD ABANDON THE REVENUE ADEQUACY CONSTRAINT.

To inform its decision-making, the Board should “identify the problem that it intends to address (including, where applicable, the failures of private markets or public institutions that warrant new agency action) as well as assess the significance of that problem.”¹⁵ If there is a problem to be solved through regulation, it should identify

¹⁵ Exec. Order No. 12866, 58 Fed. Reg. 51735 §§ 1(b)(1) and 6(a)(3)(B)(i) (Sep. 30, 1993).

a range of *lawful* solutions with a Regulatory Impact Analysis (RIA).¹⁶ Only if the agency identifies a problem Congress intended to be solved through lawful regulation should the agency turn to the benefits and costs of alternatives.

A thorough RIA would conclude that the agency should discard its revenue adequacy constraint. First and foremost, earning revenues beyond revenue adequacy is not a “problem” to be solved through federal regulations. Second, regulating the earnings of a company is an antiquated and discredited type of regulation with crippling flaws that has driven governments worldwide to abandon this kind of oppressive government control. Third, Congress plainly did not grant the Board authority to impose this fallen form of regulation on the freight rail industry. The so-called Revenue Adequacy Constraint – announced by the ICC in 1985, only to lie dormant for the next three decades and never applied to the railroad industry – is unnecessary, unlawful, and ill-advised. It should be discarded.

A. Earning over revenue adequacy is a fulfillment of Congress’s purpose, not a problem to be solved.

The recent improving financial health of some of the major railroads is not a cause for regulatory concern for three reasons. First, revenue adequacy, even rightly measured, does not indicate any specific exercise of market power. Second, the financial health of the rail sector is not a cause for concern but an encouraging development as it represents fulfillment of the Congressional goal of restoring the financial wellbeing of railroads. Other well-functioning competitive industries *routinely* earn accounting measures of ROIs above the cost of capital. The same opportunity is necessary for a sustainable national freight railroad industry, which must compete for capital with other unregulated companies in the national economy.

¹⁶ *Id.* at § 6(a)(3)(C)(iii).; U.S. OFFICE OF MGMT. & BUDGET, CIRCULAR A-4, REGULATORY ANALYSIS (2003), available at https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/.

Third, there is no evidence or reason to suspect that the improving financial health of the industry has resulted from the inappropriate exercise of market power, as shown by the STB's own independent study of the freight rail industry. Improved financial performance in the rail sector has been driven by the pro-competitive forces unleashed by the Staggers Act that have allowed railroads to pursue and achieve innovation and efficiencies.

1. Revenue adequacy, even rightly measured, does not demonstrate any specific exercise of market power.

Even if one assumes that the Board had well calibrated tools to accurately identify when a railroad became revenue adequate (which, as Section III explains, it does not), there is no basis for the Board to assume that achievement of system-wide revenue adequacy is due to any particular exercise of market power. As Professor Kalt explains, “[e]ven if a railroad is found to be revenue ‘over-adequate’ – that is, earning revenues for a period of time greater than a long-term, replacement cost revenue adequacy calculation of adequate revenues – it does not necessarily follow that the railroad is exercising market power and has been charging above-competitive rates.”¹⁷

One reason that returns over the cost of capital do not equate to above-competitive rates is that firms in competitive markets are strongly incentivized to – and are often able to – out-earn their cost of capital through investment and productivity improvements. As Professor Kalt explains, in competitive markets, “[f]irms seek to achieve economic returns that not just equal but exceed their cost of capital,” as “the prospect of successfully out-earning one’s cost of capital drives innovation and investment.”¹⁸ For this reason, “[i]t is sound economic policy to maintain incentives for

¹⁷ Kalt V.S. ¶ 55.

¹⁸ *Id.* ¶¶ 60-61.

railroads to try to earn returns *in excess of* their cost of capital.”¹⁹ In other words, the prospect of earning returns higher than the cost of capital drives innovation and productivity improvements that the Board should be encouraging. That is pro-competitive and a development to be celebrated and encouraged.

2. Improved financial health from innovation, efficiencies, and the growth of competitive markets is not a market failure.

A crippling flaw in treating revenue adequacy as a problem to cure with aggressive federal regulation is illustrated by focusing on the causes of the improved financial performance of railroads in recent years. The facts are overwhelmingly clear that improving railroad financial health (including revenue adequacy as currently measured by the Board) is not a cause for concern because it is due to pro-competitive reasons. In other words, the improved financial health of the railroad industry is a win-win situation – railroads, shippers, and the public all benefit when railroads are free to set rates and determine traffic routing in response to market forces.

Preliminarily, it is important to realize that the vast majority of rail traffic is subject to effective competition and therefore not subject to regulation.²⁰ This undermines any unsupported claim from trade groups that revenue adequacy is so problematic that firm-wide earnings regulation is needed. When such a large portion of rail traffic is competitive, there is no need for any regulation at all with regard to such traffic, regardless of railroad revenue adequacy. And for the small slice of traffic that lacks effective competition, the Board already has the tools it needs (and that Congress endorsed) to protect those shippers from any abuse of market power.

¹⁹ *Id.* ¶ 61 (emphasis added).

²⁰ More than 67% of the carloads reported in the Board’s 2017 Expanded Commodity Revenue Stratification Report had a revenue-to-variable cost ratio below 180% and were therefore excluded from Board rate regulation because the statute conclusively presumes that such traffic is competitive. STB, 2017 Expanded Commodity Revenue Stratification Report, *available at* <https://prod.stb.gov/reports-data/economic-data/commodity-revenue-stratification-reports/>.

Professor Kalt explains that “[i]mprovements in ROI that move a carrier into ‘revenue adequate’ territory may be driven by these types of positive net present value, pro-competitive investments and behavior -- cost reductions, productivity improvements, and innovation to serve existing markets better or expand to new markets.”²¹ So,

[r]ather than an indication of anticompetitive conduct, a movement into a state of even properly-measured ‘revenue adequacy’ may represent the signal to expand capacity in the face of competition. In the case of an innovation in operations that lowers costs (and raises income), the reduced costs act as a signal to attract additional business that previously was met by competitors or that was not previously viable at the higher cost levels. The presence of positive net present value investment opportunities—for example, to debottleneck or expand terminals or loading facilities—represent signals for procompetitive expansion of capacity or improvements in service. Indeed, absent the opportunity and expectation to earn above the COC on these investments, such pro-competitive actions and investments would not be undertaken.²²

Indeed, “on average, sound financial management implies that the expected return on investment will *exceed* the cost of capital, even for firms without market power.”²³

Likewise, Professor Kalt has previously explained that the improved financial performance of railroads in recent years is attributable in large measure to efforts by the railroads to improve the profitability of competitive traffic, not to exploitation of potentially market dominant traffic.²⁴ Dr. Kalt’s analysis shows that over the period 2008-2012, an increasing share of railroad contribution in excess of variable cost was earned on traffic that is conclusively presumed to be competitive—*i.e.*, traffic with an R/VC ratio less than 180%. An increased contribution share from competitive traffic is

²¹ Kalt V.S. ¶ 75.

²² *Id.* ¶ 76.

²³ *Id.* ¶ 73.

²⁴ Opening Comments of The Association of American Railroads, EP 722, Verified Statement of Joseph P. Kalt, at 36-37 (filed Sep. 5, 2014).

inconsistent with the notion that railroads have achieved improved financial results by pricing potentially market dominant traffic at excessive levels.

Professor Kalt noted that any concern that the improved financial health of railroads might “increase[] the risk that shippers could be forced to pay unreasonably high rates” is “unfounded” based on “evidence from extensive, rigorous research.”²⁵ Professor Kalt explained that “[t]he increasing dynamism of U.S. industry – with greater capital mobility, easier logistics of sourcing, greater integration into the global economy, etc. – has increased the forces of geographic and product competition for many types of traffic.”²⁶ Relatedly, intermodal competition in the railroad industry “has been effective and growing, with rail and trucks competing vigorously for traffic,” and “[r]ailroad intermodal traffic volumes have quadrupled since the Staggers Act, and now represent the Class I railroads’ single largest traffic group.”²⁷

With regard to railroad rates in this new era of increasingly revenue adequate railroads, Professor Kalt explained that “[b]y the early to mid-2000s, productivity gains peaked and plateaued (as they had to at some point) and average rail rates showed upward movement for the first time in two decades. It is common in the media and political arenas (albeit, not among scholars) to hear claims that the latter, at least, has been the result of reduced rail-to-rail competition putatively attributable to ... [various] rationalizations that have taken place under the Staggers Act. ... [Yet,] numerous academic studies of the rail industry have concluded that competition in the rail industry has not been eroded ... in the post-Staggers Act era. By implication, this means that improved railroad financial performance has not been achieved by exercising a greater level of railroad market power.”²⁸ Professor Macher joins Professor Kalt in

²⁵ *Id.* at 16-17.

²⁶ *Id.* at 18.

²⁷ *Id.* at 17 (footnote omitted).

²⁸ *Id.* at 18-20 (footnote omitted).

making the point that the “foundation of such a policy [using revenue adequacy to constrain rates] also errs in presuming that the source of returns in excess of adequate levels is differential pricing of dominant routes, when, in fact, ... such profits may arise from a variety of sources. This prospect creates the potential for regulation to substantially misalign incentives in the industry.”²⁹

The extensive and independent study by the Christensen Associates commissioned by the STB (“Christensen Report”) showed that the improved financial health of the rail industry was due to pro-competitive behavior, not problematic abuse of market power.³⁰ In particular, the Christensen Report debunked the notion that any further regulation is necessary to offset the increased earnings of railroads, as no problematic abuse was detected to correlate with increased earnings. In fact, the economic recovery of the rail industry under the policies set forth in the Staggers Act was actually accompanied by a multi-decade *decline* in the inflation-adjusted rates that shippers pay for rail service.³¹

Moreover, the upward movement in rail rates in the years immediately following the recent recession were not abuses of market power but, rather, the logical response to market conditions, including significant growth in demand, higher operating expenses, a slowing in the pace of productivity gains in the rail industry, and changes in the trucking market (*e.g.*, driver shortages, higher fuel prices, highway congestion).³²

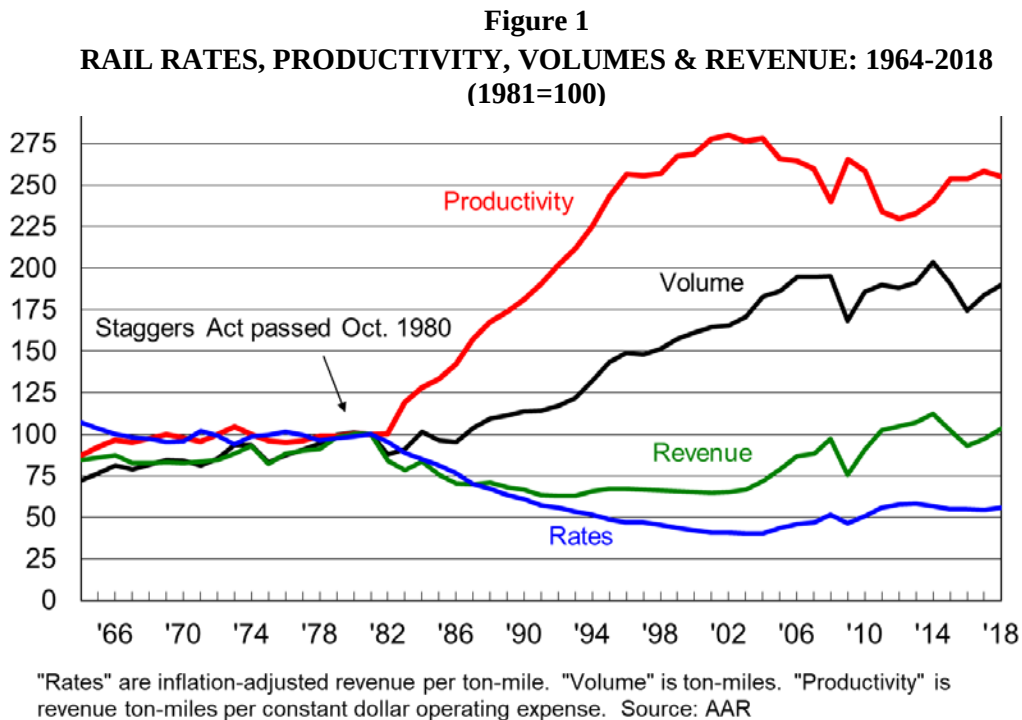
²⁹ Macher, et al., *Revenue Adequacy: The Good, the Bad and the Ugly*, 41 Transp. L.J. 85, 123 (2014).

³⁰ See Laurits R. Christensen Associates, Inc., *A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals that Might Enhance Competition, Executive Summary of Revised Final Report* (2009) (“2009 Christensen Report”); Laurits R. Christensen Associates, Inc., *A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals that Might Enhance Competition, Final Report* (2010) (“2010 Christensen Report”). The 2009 Christensen Report and the 2010 Christensen Report are referred to collectively herein as the “Christensen Report.”

³¹ See 2010 Christensen Report at 3-25-26.

³² *Id.*

Professor Kalt likewise notes that “[i]t is difficult to find other examples of regulatory success that rival that of the Staggers Act and its implementation by the ICC and the Board,” and much of the improvement in railroad financial health “has been passed through to shippers in the form of lower rates for transportation and a high-quality, more efficient, and cost-effective network,”³³ as shown in Figure 1.



Professor Kalt explains that the performance reflected in Figure 1 does not, as some worry, “signal[] a diminution of competition that is borne by shippers,” but rather, “numerous academic studies of the rail industry have concluded that competition in the rail industry has not been eroded” and “improved railroad financial performance has not been achieved by exercising a greater level of railroad market power.”³⁴

Similarly, the Christensen Associates concluded that both railroads and their customers benefitted from the deregulatory policies of the Staggers Act: “[F]ollowing the passage of The Staggers Act, the railroad industry experienced dramatic reductions

³³ Kalt V.S. ¶ 26 (footnote omitted).

³⁴ *Id.* ¶¶ 27-28.

in costs and increased productivity, which yielded higher returns for carriers and lower inflation-adjusted rates for shippers.”³⁵ Even more powerful, the Christensen Associates concluded that “[t]he recent increases in revenue per ton-mile appear to be 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.”³⁶ This report commissioned by the STB is the most recent empirical study of the industry and provides no support for concluding that “revenue adequacy” is a problem to be solved by federal regulation.

3. Well-functioning U.S. industries routinely earn accounting measures of ROI well above the cost of capital.

Not only do the facts indicate that revenue adequacy in the railroad industry is not a problem to fix, this same conclusion can be reached by comparing the performance of the freight rail industry against other well-functioning industries. In sum, virtually all companies in America earn accounting measures of ROI substantially above the cost of capital, over a sustained period of time.

The evidence from other industries is overwhelming. Professor Kalt explains that “firms earning returns on investment in excess of the cost of capital for extended periods is a common and expected occurrence even in industries that are highly competitive.”³⁷ In fact, “[r]ecent research confirms that levels of ‘revenue adequacy’ and ‘revenue over-adequacy’, as measured by ROI/COC, are not unusual at all in the economy,” and “the ratio of ROI to COC typically can be well over one in industries widely and properly regarded as competitive.”³⁸ As shown in Figure 2 below, the

³⁵ 2009 Christensen Report at ES-1.

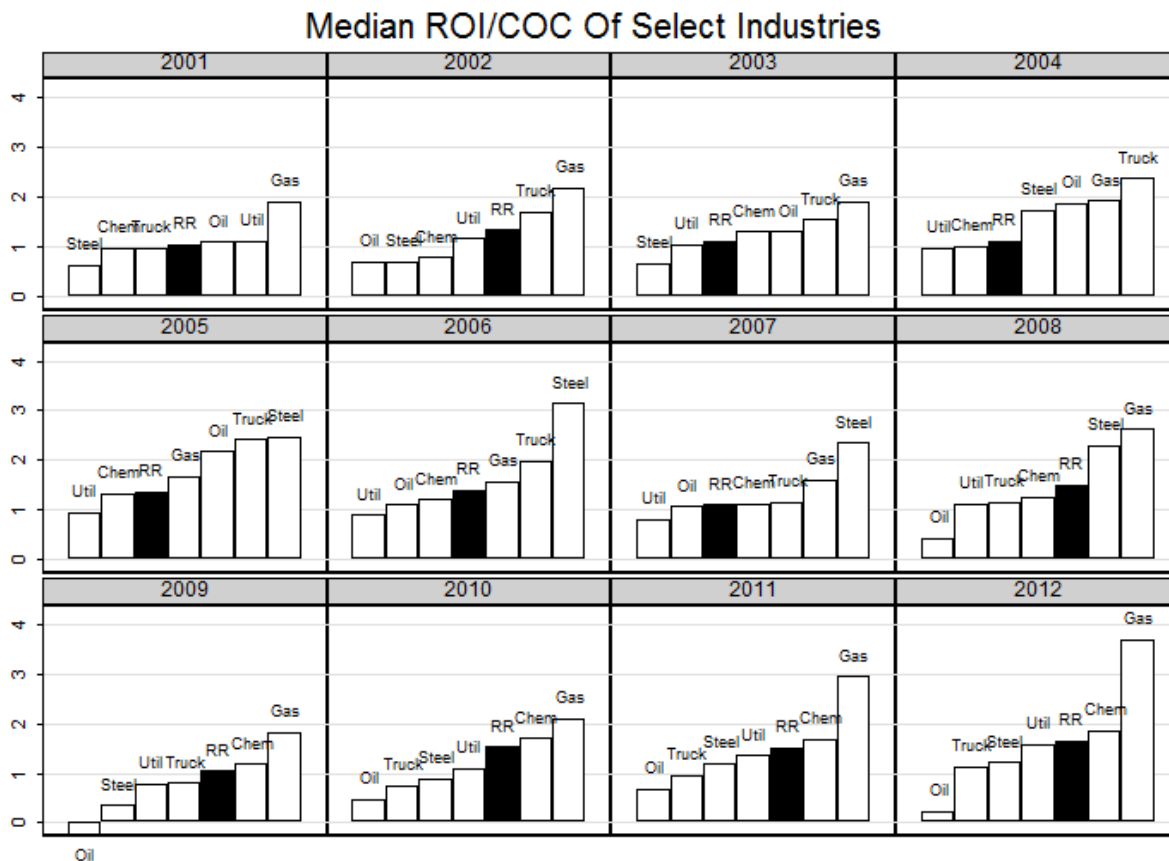
³⁶ 2009 Christensen Report at ES-38; see also 2010 Christensen Report at 4-13, 5-20, 6-3, 6-17.

³⁷ Kalt V.S. ¶ 74.

³⁸ *Id.* ¶ 78.

railroad industry's performance has been wholly consistent with other comparable industries – not in any way inappropriate or suggesting abuses of market power.³⁹

Figure 2



Source: Macher, *et al.*, 41 Transp. L.J. at Figure 3.

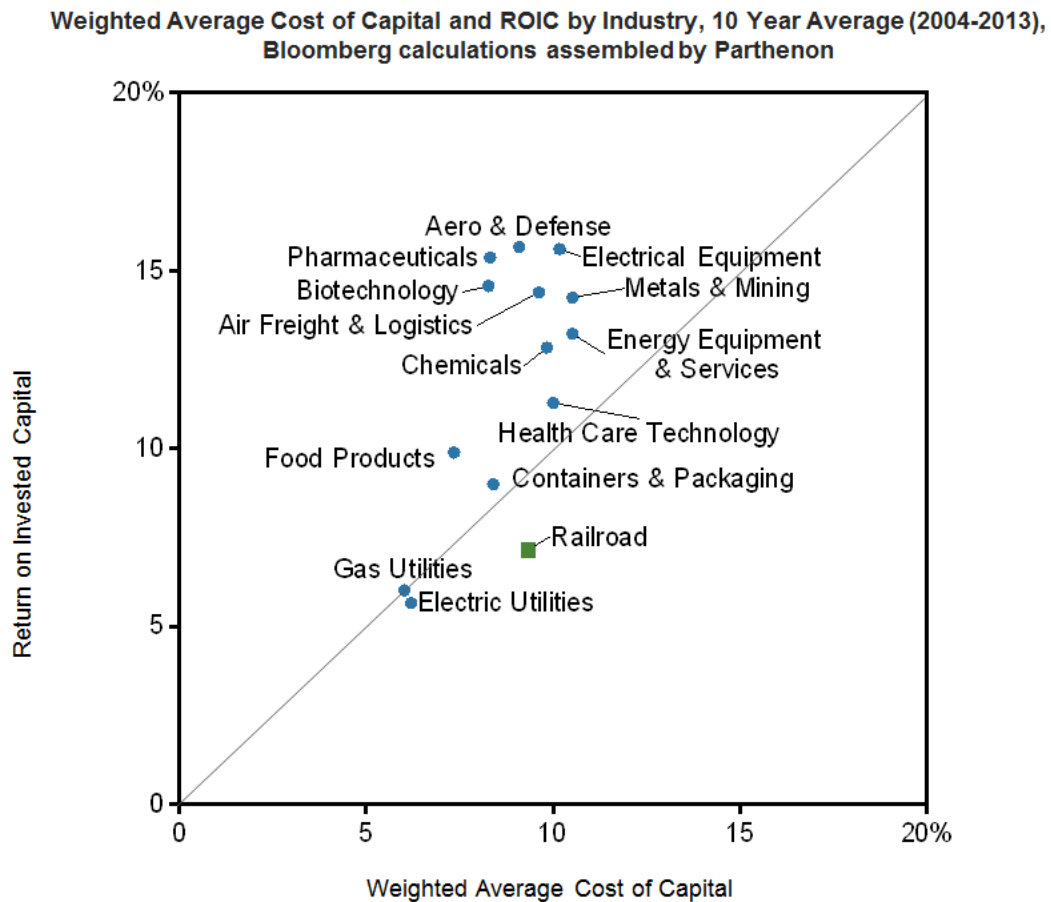
Professor Kalt explains that various research confirms that “[f]irms operating in highly competitive segments of the economy can realize revenue adequacy metrics above and below unity.”⁴⁰ For example, Figure 3 below shows research “based on longer-term (10-year) averages, [found that] industry-weighted ROIs were greater than weighted-average COCs for industries with comparable COC rates.”⁴¹

³⁹ *Id.* ¶ 79.

⁴⁰ *Id.* ¶ 83 (quoting Macher *et al.*, 41 Transp. L.J. at 110).

⁴¹ *Id.* ¶ 84 (footnote omitted).

Figure 3



Similarly, a McKinsey study of the performance of 3,000 non-financial companies over the period 2007-2011 found similar results. The firms in the top two quintiles all had $ROI > COC$, and the firms in the top quintile substantially so. The majority of the firms in the middle range clustered around revenue adequacy ($ROI = COC$), both above and below.⁴² The authors also observed that “Low turns are the hallmark of the bottom

⁴² Chris Bradley, Angus Dawson & Sven Smit, “The strategic yardstick you can’t afford to ignore,” MCKINSEY QUARTERLY, Oct. 2013 (herein “McKinsey Study”), available at <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-strategic-yardstick-you-cant-afford-to-ignore>. The McKinsey Study looks at firms and industry based on a measure of “Economic Profit.” Economic Profit equals ROI minus COC

quintile, which includes capital-intensive industries, such as airlines, electric utilities, and railroads.”⁴³ Increased returns over the cost of capital create a virtuous cycle of increased investment. The authors observed that top-quintile companies (earning returns substantially above the ROIC) attract “a disproportionate share of investment” and invested “2.6 times more fresh capital than bottom-quintile businesses did over the subsequent decade.”⁴⁴

Professor Kalt concludes: “If revenue adequacy is based on ROI being greater or equal to COC (even measured over longer time horizons), revenue adequacy is a widespread, normal and expected outcome in the economy. Revenue adequacy and over-adequacy based on long-term comparisons of ROI to COC do not indicate exercises of above-competitive rail rates resulting from exercises of market power.”⁴⁵

The reasons so many American industries earn an accounting return substantially above the cost of capital are numerous. For one, CEOs and CFOs typically invest in a portfolio of projects at any given time. When deciding whether to invest in particular projects, they will use “hurdle rates” somewhat above the firm’s cost of capital to gauge whether an investment is worth the risk. Senior management does not approve investments unless they are expected to generate a return at least as high as the hurdle rate. The approved investments, therefore, will have expected returns above the firm’s cost of capital and often significantly above the cost of capital. As a result, if the risk and return assessments underlying the investment decisions are accurate – and successful firms strive to make rational decisions based on the most accurate assessments possible – the portfolio of approved projects will produce overall firm

times capital invested. Thus, a firm with zero Economic Profit would have ROI equal to COC. Positive Economic Profit is equivalent to being revenue over-adequate. Kalt V.S. ¶ 88.

⁴³ McKinsey Study at 3. By “asset turn,” the authors are describing the capacity to extract revenue from a given quantity of capital assets.

⁴⁴ *Id.* at 5.

⁴⁵ Kalt V.S. ¶ 87.

returns that substantially exceed the firm's cost of capital. Such returns above the cost of capital are exactly what Dr. Brinner observes in the real world.⁴⁶

Professor Kalt echoed Dr. Brinner: "Competitive markets are dynamic, and successful competitive firms often earn above long-run equilibrium rate of returns. Firms seek to achieve economic returns that not just equal but exceed their cost of capital. As technology changes and markets shift, firms that are particularly adept at taking advantage of these changes reap economic returns in excess of their capital costs. "Firms that are particularly adept at staying ahead of the curve ... can sustain rates of return in excess of their costs of capital. . . ." ⁴⁷ In fact, in competitive markets, "the prospect of successfully out-earning one's cost of capital drives innovation and investment. As in other industries, competitive revenue adequacy is necessary to provide incentives for railroads to invest in efficient capacity expansion and system replenishment, to pursue cost saving innovations, and to respond to the opportunities presented by emerging market developments. It is sound economic policy to maintain incentives for railroads to try to earn returns in excess of their cost of capital." ⁴⁸

A second reason firms earn returns substantially over their cost of capital flows from the use of *accounting* measurements of ROI. "The infirmities of using accounting profitability and rates of return to infer market power or above-competitive returns, particularly for capital industries like railroading with long-lived equipment, are well known. As starkly summarized by the classic treatment of the issue, 'there is no way in which one can look at accounting rates of return and infer anything about relative economic profitability or, a fortiori, about the presence or absence of monopoly

⁴⁶ See Opening Comments of The Association of American Railroads, EP 722, Verified Statement of Roger Brinner, Exhibit 2 (filed Sep. 5, 2014).

⁴⁷ Opening Comments of The Association of American Railroads, EP 722, Verified Statement of Joseph P. Kalt, at 33 (filed Sep. 5, 2014).

⁴⁸ *Id.* at 33-34.

profits.”⁴⁹ Notable economists caution against the use of accounting rather than economic measures of financial health. “If book depreciation and economic depreciation are different (they are rarely the same), then the book profitability measures will be wrong; that is, they will not measure true profitability.”⁵⁰ And “[p]rice regulation based on such misguided conclusions would likely make it more difficult for railroads to attract and retain capital investment on account of not being able to realize economically required rates of return.”⁵¹

In sum, the Board should not view revenue adequacy as a problem that needs to be corrected. Virtually all American companies in well-functioning markets earn an accounting return above the cost of capital. There is no basis to treat the freight rail industry differently in this regard than its unregulated competitors and unregulated customers.

B. Congress plainly did not grant the STB authority to constrain firm-wide earnings.

Nothing in the Board’s governing statute gives it the authority to impose an earnings constraint on the freight rail industry. Statutory authority to regulate rates is limited to the reasonableness of individual rates on individual movements. The only statutory references to firm-wide earnings relate to the Board’s duty to promote firm-wide financial health, defined in detail and referenced in short hand as revenue adequacy. “Congress ... does not alter the fundamental details of a regulatory scheme in vague terms or ancillary provisions – it does not, one might say, hide elephants in mouseholes.” *Whitman v. Am. Trucking Assoc.*, 531 U.S. 457, 468 (2001).

⁴⁹ *Id.* at 32 (footnote omitted).

⁵⁰ RICHARD BREALEY, STEWART MYERS & FRANKLIN ALLEN, *PRINCIPLES OF CORPORATE FINANCE* 317 (8th ed. 2005).

⁵¹ Opening Comments of Opening Comments of Norfolk Southern Railway Company, EP 722, Verified Statement of Bradford Cornell, at 18 (filed Sep. 5, 2014).

Earnings regulation is a controlling form of regulatory intervention that Congress would not have hidden in vague terms. If Congress wanted the ICC and STB to treat revenue adequacy as a problem to be solved by earnings regulations, it would have said so. Here, Congress made clear revenue adequacy was its overarching goal, to save the industry from excessive federal regulation. Congress did not first direct the ICC to promote revenue adequacy only expecting, once achieved, for the ICC to transform the goal into a problem and adopt regulations to curtail the very outcome Congress directed the agency to foster.

1. Regulating based on firm-wide earnings is an antiquated and discredited form of regulation.

It is essentially undisputed that “old-style” earnings regulation – meaning any constraint based on system-wide earnings – is a form of regulation that is now discredited and rejected. As Professor Kalt explains that in their economic essence, the Task Force’s idea to use measures of firm-wide rates of return in excess of a firm’s cost of capital to trigger limitations on rates and overall revenues “entail a regulatory framework commonly referred to as ‘old-style’ rate-of-return regulation.”⁵² But this kind of regulation is “old-style” because “it has been largely abandoned in at least developed countries because of its many distortions and inefficiencies.”⁵³

Professor Sappington explained how rate of return regulations like a system-wide revenue adequacy constraint are antiquated and have been rejected worldwide by regulators because “regulators are well aware of the many drawbacks to stringent earnings regulation” and have “recognized [that] ... stringent earnings regulation has the potential to seriously impede industry performance.”⁵⁴ This is because, “a policy

⁵² Kalt V.S. ¶ 14.

⁵³ *Id.* See also Kalt V.S. ¶¶ 126-138.

⁵⁴ Opening Comments of Norfolk Southern Railway Company, EP 722, Verified Statement of David Sappington, at 7, 10 (filed Sep. 5, 2014).

that limits a supplier to normal earnings – regardless of its performance – provides the supplier with little or no incentive to excel in the marketplace. In particular, stringent earnings regulation provides no incentive for the regulated firm to engage in the challenging, costly processes of discovering more efficient means of operation and identifying and fulfilling the needs and desires of consumers.”⁵⁵ The “trend away from stringent earnings regulation in many industries reflects an important principle that is relevant in all industries, including the U.S. freight railroad industry. The principle is that all parties – suppliers and customers alike – can gain when the prospect of *extra-normal* earnings is employed to motivate regulated suppliers to deliver exceptional performance in the marketplace.”⁵⁶ “Indeed, the prospect of extra-normal earnings is precisely what drives producers in competitive markets to innovate and serve the best interests of consumers.”⁵⁷

Professor Macher said it most directly: “were regulators to utilize the revenue adequacy provisions of the Staggers Act to constrain rates with the purpose of limiting railroads’ profitability to be only equal to the industry cost of capital, profound economic incongruities and problems would arise.”⁵⁸ One of those problems would be legal, described as “a knife-edge turning point between the clear Congressional mandate for regulators to ‘assist’ carriers in achieving adequate revenue levels and a regulatory policy to ensure that railroads are unable to earn anything more than exactly this level,” which “appears to be directly contrary to the aim of the Staggers Act...”⁵⁹ From an economic perspective, “such a policy ignores the economic reality that the vast majority of rail traffic faces competition with other railroads, other transportation

⁵⁵ *Id.* at 4.

⁵⁶ *Id.* at 3 (emphasis added).

⁵⁷ *Id.* at 4.

⁵⁸ Macher *et al.*, 41 Transp. L.J. at 122.

⁵⁹ *Id.* at 122-23.

service alternatives, and other geographic and product alternatives.”⁶⁰ Macher continues:

[M]arket-based allocation drives firms to reduce costs, innovate, and more generally, better serve the U.S. economy. Firms do not undertake these activities for altruistic reasons but for the pursuit of economic profits in excess of the firm’s cost of capital. Regulatory policies that restrict firms to only earn the industry cost of capital effectively eliminate profit motives that drive innovative, cost-reducing and value-enhancing activities.⁶¹

Professor Macher explains that using revenue adequacy as a constraint on railroad earnings or rates “creates the potential for regulation to substantially misalign incentives in the industry” – in other words, “creates perverse incentives” in which railroads would “avoid ... efficiency enhancements” and “slow-roll[]” innovations, to the detriment of society.⁶² Finally, Professor Macher explains that “such a policy is neither targeted nor free of regulatory costs. That is, the regulatory tool of profit-based regulation applies a ‘dull axe’ of firm-wide profit-triggered regulation to a far more specific issue of residual market power abuses on specific shipments. Apart from the perverse incentives created by such a policy, this profit-based regulation has proven to be sufficiently costly in a variety of industries to warrant substantial movement away from this tool over the past quarter century.”⁶³

2. The STB has no authority to impose a utility-style constraint on system-wide revenues.

Given the known flaws with old-style earnings regulation, “Congress deliberately chose to move away from a public utility model of regulation for the

⁶⁰ *Id.* at 123.

⁶¹ *Id.*

⁶² *Id.* at 123-24.

⁶³ *Id.* at 123-24 (emphasis added).

railroad industry”⁶⁴—including with regard to the concept of revenue adequacy. From the 4R Act⁶⁵ to the Staggers Act⁶⁶ to ICCTA,⁶⁷ the concept of revenue adequacy consistently has been a *goal* of railroad financial health Congress has expressly charged the agency to actively support.⁶⁸ Nowhere in the statutory scheme—either explicitly or implicitly—does Congress suggest or contemplate any type of regulatory action that would cap railroad revenues or rates once railroads become long-term revenue adequate. The statutory scheme does authorize the Board to regulate railroad rates and routes in well-defined circumstances—when there is an abuse of market power. This makes sense in light of the overarching policy goals Congress articulated in the Staggers Act of maximizing competition and minimizing regulation except in instances of market failure.⁶⁹

Indeed, the rate reasonableness provisions of the statute do not state that the Board may declare a rate to be unreasonable based on the amount of revenue that a railroad earns on a firm-wide basis. To the contrary, the statute expressly requires that, in order for the Board to prescribe an alternative rate, the Board must make a finding as

⁶⁴ *Western Coal Traffic League – Petition for Declaratory Order*, STB Docket No. FD 35506, 15-17 (served July 25, 2013).

⁶⁵ Railroad Revitalization and Regulatory Reform Act of 1976, Pub. L. No. 94-210, 90 Stat. 31 (1976) (“4R Act”).

⁶⁶ Staggers Rail Act of 1980, Pub. L. No. 96-448, 94 Stat. 1895 (1980) (“Staggers Act”).

⁶⁷ ICC Termination Act of 1995, Pub. L. No. 104-88, 109 Stat. 803 (1995) (“ICCTA”).

⁶⁸ See 49 U.S.C. § 15(a)(4) (1976) (4R Act directing the Commission to “make an adequate and continuing effort to assist ... carriers in attaining” adequate revenues); H.R. Rep. No. 96-1430, at 80 (1980), as reprinted in 1980 U.S.C.C.A.N. 4110, 4111 (regarding the Staggers Act, stating that its purposes was “freedom from unnecessary regulation” and to provide “the opportunity for railroads to obtain adequate earnings to restore, maintain and improve their physical facilities while achieving the financial stability of the national rail system” (emphasis added)); see also 49 U.S.C. § 10704(a)(2), (4) (1982).

⁶⁹ 49 U.S.C. 10101(1) (“[I]t 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[,] ... [and] to minimize the need for Federal regulatory control over the rail transportation system...”).

to an *individual* rate and situation, requiring a fact-specific inquiry to determine if the particular challenged rate is unreasonable.⁷⁰ The statute likewise requires a “full hearing,” and only after conducting the hearing is the Board authorized to take regulatory action.⁷¹ The notion that a rate could be deemed unreasonable based on the carrier’s overall financial condition without any consideration of the specifics of the challenged rate itself is contrary to the entire scheme of rate regulation set up under the statute.

The rate regulation regime and the competitive access rules set up by Congress are limited by statute to *individual* instances of market power abuse (or anticompetitive conduct). For example, the maximum rate scheme of Staggers and ICCTA requires the Board to focus both its market dominance and rate reasonableness inquiries on the specific “transportation to which a rate applies.”⁷² Section 10701(d)(1) requires the Board to make a finding of market dominance with regard to “the transportation to which a *particular rate* applies” and sets forth factors that are specific to traffic particular to the rate at issue.⁷³ Likewise, section 10707(a) defines “market dominance” as “an absence of effective competition from other rail carriers or modes of transportation for the transportation to which *a rate* applies,” and describes a rate reasonableness challenge as a challenge to “*a rate* for transportation by a rail carrier providing transportation subject to the jurisdiction of the Board.”⁷⁴

Accordingly, the statutory scheme of rate regulation administered by the Board is a far cry from traditional utility-style rate of return regulation. Indeed, it has long been recognized that railroads could not survive under traditional rate of return

⁷⁰ See 49 U.S.C. § 10704.

⁷¹ *Id.*

⁷² 49 U.S.C. §§ 10701(d)(1), 10707(a).

⁷³ 49 U.S.C. § 10701(d)(1) (emphasis added).

⁷⁴ 49 U.S.C. § 10707(a) (emphasis added).

regulation, where the overall revenues earned by a firm are regulated to ensure a reasonable level of profits on the regulated business. Even before the Staggers Act, the ICC did not apply public-utility style rate of return regulation to assess the reasonableness of rates. As the Third Circuit noted in addressing shippers' challenges to the ICC's adoption of CMP in *Coal Rates Guidelines*, prior to the 4R and Staggers Acts, "[r]ailroad rate regulation was not like traditional public utility rate regulation because of the ICC's inability to guarantee that the carrier obtained business." *Consolidated Rail Corp. v. United States*, 812 F.2d 1444, 1453 (3d Cir. 1987); see *Bessemer & Lake Erie v. ICC*, 691 F.2d 1104, 1113-14 (3d Cir. 1982) ("Railroad regulation by the ICC[] is not ... classic public utility regulation. For the most part railroads operate in a competitive environment. It is true that under the 4R and Staggers Acts they are subject to regulation of rates for market dominant traffic. They are not, however, assured of a compensable rate of return even on the investment required to serve that traffic.").

Nowhere does the statute authorize the Board to take any kind of active role in limiting railroad earnings or rates absent a rate reasonableness challenge (or under the competitive access rules with regard to routes). In fact, Congress contemplated only a single substantive consequence for attaining revenue adequacy. In the Staggers Act, Congress included a provision that set forth three "zones" of rate flexibility, which the ICC could not suspend or investigate on its own initiative. See 49 U.S.C. § 10707a. The first zone was for inflationary increases and was available to all carriers. The second zone was a further 6% increase over inflation until 1984, again available to all carriers. The third zone was 4% increase over inflation after 1984, but only for revenue inadequate carriers.

Importantly, the statute made it clear that rate increases exceeding the amounts authorized by the three zones of rate flexibility could not be presumed unreasonable. See 49 U.S.C. § 10707a(g) (1982). Congress therefore plainly contemplated that revenue adequate carriers would be allowed to become more revenue adequate, when it

authorized those carriers to raise rates 6% above inflation. It did not outlaw earning returns above the revenue adequacy threshold; rather, Congress subjected those rate increases to individual rate reasonableness challenges brought by shippers under the agency's prevailing rate reasonableness standards. (The zones of rate flexibility were removed by Congress in ICCTA as superfluous in light of the removal of STB authority to suspend or investigate rates on its own initiative.) The only consequence in the Staggers Act for attaining revenue adequacy was thus the inability to take advantage of the third zone of rate flexibility. The absence of any other regulatory consequences tied to attaining revenue adequacy is powerful evidence that Congress intended no such additional consequences.

In sum, evidence of congressional commitment to a market-based framework is pervasive in the statutory provisions. For example, the national rail policy expressed in the statute repeatedly emphasizes the importance of allowing market forces to function without pervasive regulatory intervention: “[C]ompetition and the demand for services” are to govern rates “to the maximum extent possible.” 49 U.S.C. § 10101(1). The regulatory regime is required to “minimize the need for Federal regulatory control over the rail transportation system.” *Id.* § 10101(2). Regulating system-wide earnings in any fashion is the polar opposite of “minimizing” Federal regulatory control; there is no kind of regulatory control more controlling and stifling than traditional utility-style earnings constraints.

3. The legislative history of Staggers and 4R Act confirms that Congress did not envision any constraint on system-wide revenues.

The idea of twisting the revenue adequacy goal into a constraint on railroad earnings is unsupported not only by the statutory text but also the history of the Staggers Act (and the 4R Act before it). The statutory goal of revenue adequacy first appeared in the 4R Act, which was a response to the financial erosion of the railroad

industry and widespread concern that the railroad industry would not survive without a fundamental change to the regulatory scheme. The 4R Act was essentially deregulatory and allowed railroads to act more as competitive firms with greater commercial freedom to act in response to market forces. *See* 49 U.S.C. § 15a(4) (1976). As Congress explained:

It is the purpose of the Congress in this Act to provide the means to rehabilitate and maintain the physical facilities, improve the operations and structure, and restore the financial stability of the railways system of the United States, and to promote the revitalization of such railway system, so that this mode of transportation will remain viable in the private sector of the economy and will be able to provide energy-efficient, ecologically compatible transportation services with greater efficiency, effectiveness, and economy....⁷⁵

The revenue adequacy provisions in the 4R Act were central to Congress's objective to promote the financial health of the railroad industry. The 4R Act specified that a revenue adequate railroad would be one with revenues sufficient to "(a) provide a flow of net income plus depreciation adequate to support prudent capital outlays, assure the repayment of a reasonable level of debt, permit the raising of needed equity capital, and cover the effects of inflation, and (b) ensure retention and attraction of capital in amounts adequate to provide a sound transportation system in the United States."⁷⁶ Moreover, the 4R Act directed the agency to "make an adequate and *continuing* effort to assist ... carriers in attaining [revenue adequacy]."⁷⁷

Four years later, unhappy that the ICC was not doing enough to promote revenue adequacy, Congress went further to reinforce its deregulatory stance with

⁷⁵ 45 U.S.C. § 801(a) (1976).

⁷⁶ 49 C.F.R. § 15(a)(4) (1976).

⁷⁷ 49 C.F.R. § 15(a)(4) (1976) (emphasis added).

regard to the railroad industry and enacted the Staggers Act.⁷⁸ In the Staggers Act, Congress reiterated the ideal and goal of long-term revenue adequacy, expressing that its purpose was “freedom from unnecessary regulation” and “the opportunity for railroads to obtain adequate earnings to restore, maintain and improve their physical facilities while achieving the financial stability of the national rail system.”⁷⁹ Nowhere in the Staggers Act is there any authorization for the Board to begin regulating railroad rates, earnings, or routes based on achievement of firm-wide revenue adequacy.

The underlying through-line in the 4R Act, Staggers Act, and ICCTA was to replace regulation with market forces so that freight railroads would be free to adapt and respond to market conditions using competitive market practices. Congress correctly anticipated that embracing sound regulation that relied on normal market forces would give freight railroads a reasonable opportunity to become financially sound.⁸⁰ Along with the carefully crafted provisions allowing for rate reasonableness challenges and competitive access rules, shippers would be, at the same time, adequately protected from any instances of abuse of market power.

4. Agency and federal court precedent confirm that Congress did not intend the agency to regulate system-wide revenues.

Plentiful agency and judicial precedent supports the proposition that Congress never intended the agency to treat revenue adequacy as a problem needing a regulatory solution, but, rather, revenue adequacy is the *minimum* level of financial soundness for

⁷⁸ See H.R. Rep. No. 96-1035, at 54 (1980), *as reprinted in* 1980 U.S.C.C.A.N. 3978, 3999 (“[p]revious admonitions by the Congress that the Commission assist carriers in earning adequate revenue levels . . . have not achieved their goals.”).

⁷⁹ H.R. Rep. No. 96-1430, at 80 (1980), *as reprinted in* 1980 U.S.C.C.A.N. 4110, 4111; *see* 49 U.S.C. § 10704(a)(2), (4) (1982).

⁸⁰ See Opening Comments of The Association of American Railroads, EP 722, Verified Statement of Emil H. Frankel, at 5-6 (filed Sep. 5, 2014); Opening Comments of The Association of American Railroads, EP 722, Verified Statement of Joseph P. Kalt, at 3, 6-16 (filed Sep. 5, 2014).

the railroad industry. For example, in 1979, the ICC explained that its study of railroad revenue adequacy “was designed to compute a *minimum* adequate revenue level for the Nation’s class I railroads; the methodology ... is not necessarily appropriate for the determination of the maximum fair revenue issues involved in individual rate proceedings.”⁸¹ Likewise, in 1981, when the ICC adopted the current standard for its annual revenue adequacy measurement, the ICC properly concluded that earning a rate of return equal to its cost of capital was “the *minimum* necessary to attract and maintain capital in the railroad, or any other, industry If a firm is unable to earn the cost of capital, investors will be unwilling to supply capital to it.”⁸²

The Third Circuit similarly made it clear that the revenue adequacy provisions in the statute were not intended as a limitation on revenues. *Bessemer*, 691 F.2d at 1110-12. The Third Circuit explained that earning an ROI equal to the cost of capital is “widely agreed to be the minimum necessary to attract and maintain capital in the railroad, or any other, industry.” *Id.* at 1110. Moreover, the Third Circuit accepted the ICC’s view that the revenue adequacy provisions in the statute are “addressed to the *opportunity* to attain revenue levels which would reverse the long decline in the railroad industry. The

⁸¹ Ex Parte No. 353, *Adequacy of Railroad Revenue – 1978 Determination*, 362 I.C.C. 199, 201 (1979) (emphasis in original); see also *Standards for Railroad Revenue Adequacy*, 364 I.C.C. 803, 810 (1981) (“The *minimum* rate of return that will allow railroads to obtain investment funds is the cost of capital.”) (emphasis added) (“*Standards I*”); *Railroad Revenue Adequacy – 1988 Determination*, 6 I.C.C.2d 933, 940 (1990) (“[W]e use the current cost of capital standard, which represents the *minimum* return necessary to attract and maintain capital in the railroad, or any other, industry.”) (emphasis added); *Procedures to Calculate Interest Rates*, 9 I.C.C.2d 528, 532-33 (1993) (“[A]ny industry, including the railroad industry, must earn a rate of return *at least* equal to its own cost of capital in order to remain viable over the long run.”) (emphasis added); see also Ex Parte No. 347 (Sub-No. 1), *Coal Rate Guidelines, Nationwide – Notice of Proposed Rulemaking*, slip op. at 7 (served Feb. 8, 1983) (“[R]ailroads can obtain funds for investment only by offering rates of return comparable to other investment opportunities. Investments earning less than the cost of capital will not be able to retain existing funding or obtain new funding, because investors could invest available funds elsewhere at a higher rate of return.”)

⁸² *Standards I*, 364 I.C.C. at 809 (emphasis added).

specific objectives listed in section 205 [the revenue adequacy definition] *should not in [the ICC's] view be read as limitations on revenue . . .*" *Id.* at 1112 (emphasis in original).⁸³

And more recently, the D.C. Circuit confirmed that system-wide revenue needs provide "no guidance" as to the reasonableness of a particular rate. *BNSF Ry. Co. v. Surface Transp. Bd.*, 453 F.3d 473, 481 (D.C. Cir 2006).⁸⁴ For the appeal of the *Xcel* decision, the Board argued that system-wide revenue adequacy metrics were irrelevant to the reasonableness of a particular rate. The D.C. Circuit agreed:

As the Board points out, the RSAM figure merely provides a test of "system-wide revenue need" and therefore "provides no guidance on the rates *Xcel* should be charged for the particular facilities and services *Xcel* uses." In contrast, the Board has "consistently affirmed that CMP, with its SAC constraint, is the preferred and most accurate procedure available for determining the reasonableness of rates in markets where the rail carrier enjoys market dominance."⁸⁵

If revenue inadequacy cannot protect a carrier against a SAC determination of unreasonableness, a railroad should not be punished if the rate is lawful under that SAC test, but the carrier is revenue adequate on a system-wide basis.

In a similar vein, this agency has recognized that "Congress directed [in the Staggers Act] that railroads be treated more like ordinary businesses than like public utilities." *Groome & Associates, Inc. v. Greenville Cty. Economic Develop. Corp.*, STB Docket No. 42087, at 12 (served July 27, 2005). It follows that a public utility style of rate of return regulation is not appropriate for the railroad industry.⁸⁶ Indeed, shortly after the

⁸³ The court further noted that the shippers "ignore[] the distinction in the statute between revenue adequacy proceedings and rate reasonableness proceedings." *Bessemer*, 691 F.2d at 1113.

⁸⁴ This was the appeal of *Pub. Serv. Co. of Col. d/b/a Xcel Energy v. BNSF*, STB Docket No. 42057 (STB served June 8, 2004), *modified on reconsideration*, *Pub. Serv. Co. of Col. d/b/a Xcel Energy v. BNSF*, STB Docket No. 42057 (STB served Jan. 19, 2005) ("*Xcel*").

⁸⁵ *BNSF Ry. Co. v. Surface Transp. Bd.*, 453 F.3d 473, 481 (2006) (citation omitted).

⁸⁶ See, e.g., *Study of Interstate Commerce Commission Regulatory Responsibilities Pursuant to Section 201(a) of the Trucking Industry Regulatory Reform Act of 1994*, 1994 MCC LEXIS 104, *275-76 (1994)

Staggers Act was passed, the ICC correctly explained that “[t]he Commission does not regulate the overall rate of return for railroads. Carriers retain the benefits derived from increased efficiency and market share.” *Ark. Power & Light Co. – Petition to Institute Rulemaking Proceeding – Implementation of Long-Cannon Amendment to the Staggers Rail Act*, Docket No. 38754, 365 I.C.C. 983, 989 (1982) (emphasis added).

C. The STB should reject the “Revenue Adequacy Constraint” in *Coal Rate Guidelines* because it violates the statute, sound economics, and agency precedent.

With the passage of the Staggers Act, therefore, three facts were clear: (1) the ICC was not to regulate the overall rate of return for railroads; (2) earning returns on investment equal to the industry cost of capital was the *minimum* goal for railroad revenue levels;⁸⁷ and (3) Congress had deliberately moved away from a burdensome public utility model of regulation for the railroad industry. Yet in 1985, the ICC announced the creation of the revenue adequacy constraint with the unsupported proclamation that the “revenue adequacy standard represents a reasonable level of profitability for a healthy carrier. It fairly rewards the rail company’s investors and assures shippers that the carrier will be able to meet their service needs for the long term. Carriers do not need greater revenues than this standard permits, and we believe that, in a regulated setting, they are not entitled to any higher revenues. Therefore, the logical first constraint on a carrier’s pricing is that its rates not be designed to earn

(“In enacting the Staggers Act, Congress concluded that unnecessarily burdensome and rigid utility-style regulation have prevented the railroads from responding to changing market conditions, as other businesses could, and taking actions that could help them to recover their costs and earn adequate revenues. The Staggers Act was intended to loosen this tight regulatory grip....”).

⁸⁷ Professor Kalt explains that at the time the ICC defined “revenue adequacy” as earning a return on investment (“ROI”) at least equal to the industry cost of capital (“COC”), “there was very little rigorous economic analysis of whether such a measure was a robust and meaningful basis for guiding policymakers’ regulatory decisions and frameworks” due to the “state of the rail industry at the time this metric was developed.” Kalt V.S. ¶¶ 36-37.

greater revenues than needed to achieve and maintain this ‘revenue adequacy’ level.” *Coal Rate Guidelines, Nationwide*, 1 I.C.C.2d 520, 535 (1985). This declaration by the ICC came out of the blue and was untethered from the statute, prior precedent,⁸⁸ sound economic concepts, or the support of commentators, including shippers and the U.S. Department of Transportation.

Indeed, the surprising statement cannot be squared with the ICC’s Notice of Proposed Rulemaking (NPRM) in that very proceeding. The NPRM reflected the view that attainment of revenue adequacy could be the occasion for heightened scrutiny of rail rates challenged by shippers, but that revenue adequacy was not a rate reasonableness standard.⁸⁹ In others words the ICC was simply proposing to look carefully at *individual rates* if it observed accounting ROIs substantially above the cost of capital over a long period of time. Specifically, the ICC explained that “[o]ur regulatory task is to determine the reasonableness of only those rates which are set in an essentially non-competitive market environment. We must develop a means to assure that the rate assessed on this traffic properly reflects the high demand for the service, but is not set at an unreasonably high or ‘monopoly’ level.”⁹⁰ The ICC therefore expressed a concern over individual rates charged by revenue adequate railroads only if it witnessed a consistent pattern of returns “substantially” in excess of a carrier’s revenue needs.⁹¹

⁸⁸ See, e.g., Ex Parte No. 347 (Sub-No. 1), *Coal Rate Guidelines, Nationwide – Notice of Proposed Rulemaking*, slip op. at 16 (served Feb. 8, 1983) (“[W]here a consistent pattern of returns substantially in excess of [a] carrier’s revenue needs has been established, we would, *upon complaint*, consider the reasonableness of rates on *captive* coal traffic and prescribe lower rates in *appropriate circumstances*.” (emphasis added)); *id.* at 15 (“[O]nce revenue adequacy is achieved, we must scrutinize the rates more closely ... [H]owever, this does not mean that further rate increases on captive coal traffic would be unreasonable *per se* once a carrier attains revenue adequacy.”).

⁸⁹ *Id.* slip op. at 14-15.

⁹⁰ *Id.*, slip op. at 9 (note omitted).

⁹¹ *Id.*, slip op. at 16 (“[W]here a consistent pattern of returns substantially in excess of a carrier’s revenue needs has been established, we would, upon complaint, consider the reasonableness of rates on captive coal traffic and prescribe lower rates in appropriate circumstances.”).

Indeed, the parties that commented in *Coal Rate Guidelines* generally supported the view expressed in the NPRM that revenue adequacy was not intended to be a firm-wide constraint on revenues but rather should be used only as a basis for taking a harder look at the reasonableness of a particular rate. Notably, the Department of Transportation (“DOT”) submitted extensive comments on the ICC’s proposed rule. On the issue of the role of revenue adequacy, DOT agreed with the idea of applying closer scrutiny to rates after the ICC determines a railroad is earning adequate revenues, but it expressly stated that it did “not advocate limiting railroads to the revenue adequacy level, by requiring rate reductions or new rates that hold total earnings at the level established as the minimum required to sustain operations.”⁹² DOT explained that such an inflexible approach “would require regulatory intervention beyond that envisioned or even authorized by the Staggers Act.”⁹³

In other words, the NPRM in 1983 set forth sound legal and economic ideas that were contradicted in the final revenue adequacy constraint described in *Coal Rate Guidelines*. There is no reason for the Board to now implement such a faulty, contradictory, unsupported concept that has never been applied to the rail industry.

* * *

In sum, the STB should reject the misguided notion that system-wide revenue adequacy is a problem that demands a regulatory solution. A firm-wide constraint on revenues is not consistent with the statute, precedent, or sound regulatory policy. The diminished investment and distorted commercial actions caused by earnings regulation will lead unavoidably to a gradual reduction in the scope and robustness of the rail network over time and a decline in the quality of rail service. Indeed, the 2015 report, *Modernizing Freight Rail Regulation (MFRR)*, published by the TRB, dismissed the idea

⁹² Comments of the United States Department of Transportation, I.C.C. Ex Parte No. 347 (Sub-No. 1), *Coal Rate Guidelines, Nationwide*, at 32 (filed July 29, 1983).

⁹³ *Id.* at 34 (emphasis added).

of a revenue adequacy constraint as “anachronistic,” “misguided,” “lack[ing] an economic foundation,” and “at odds with the deregulatory thrust of the Staggers Rail Act reforms.”⁹⁴

The AAR agrees. Congress plainly did not intend for the ICC to twist the stated goal of the Staggers Act—to transform a failing industry into one that is revenue adequate—into an unauthorized directive to treat the attainment of that goal as a green light for heavy-handed earnings constraints. As the TRB put it, such regulation “has never been used to regulate railroads and would be at odds with the Staggers Rail Act, a central policy of which is to minimize the need for federal regulatory control.”⁹⁵ The STB should end the misperception created by the ICC that the agency can or would adopt regulations to curtail firm-wide earnings, and should forsake the concept of a “Revenue Adequacy Constraint” as ill-advised and unauthorized.

III. THE SUGGESTED DEFINITION OF LONG-TERM REVENUE ADEQUACY IS ARBITRARY AND DISTORTED BY MEASUREMENT ERRORS.

A. The definition of long-term revenue adequacy is arbitrary.

The Task Force suggests a possible definition of long-term revenue adequacy for the purpose of “rate relief ... under the revenue adequacy constraint announced in *Coal Rate Guidelines*.”⁹⁶ The Task Force acknowledged that the one-year snapshot used for the Board’s annual revenue adequacy determination is not sufficient to determine long-term revenue adequacy.⁹⁷ Instead, the Task Force suggests that “the Board measure long-term revenue adequacy over the length of an entire business cycle,” which it specifically defines as “the shortest period of time, not less than five years, that includes

⁹⁴ MFRR Report at 28, 100, 101, 125.

⁹⁵ *Id.*

⁹⁶ RRTF Report at 33.

⁹⁷ *Id.*

both a year in which a recession began and a year that follows a year in which a recession began.”⁹⁸

The Task Force’s suggestion, while on the right track in recognizing that financial health must be looked at over an appropriate time period, is inherently arbitrary and is not based on sound economic principles.⁹⁹ Specifically, the time period is an unexplained departure from *Major Issues*, where the Board found that a 10-year period was needed to cover a business cycle.¹⁰⁰

“Given fluctuations in demand and the long-life of rail assets,” explains Professor Kalt, the Task Force’s suggestion “is likely to be too short to reflect the economic circumstances relevant to the decisions to continue to invest capital or withdraw capital from the industry” because “the five-year period is likely to lead to jumps in measured revenue adequacy that are not reflective of the current, or forward-looking condition of the rail industry.”¹⁰¹ Professor Kalt instead recommends a *minimum* of ten years, inclusive of a full recession, in conjunction with a replacement-cost standard for asset valuation, discussed more in the next section.¹⁰²

Moreover, the appropriate time period for determining long-term revenue adequacy should be tailored to fit the purpose for which the Board is using the finding. Professor Kalt explains that “some flexibility is required for interpreting and applying the results of any long-term revenue adequacy calculation. Depending on the purpose to which the revenue adequacy measure is to be put, a demonstration that the current and near-term economic circumstances have changed substantially from that indicated

⁹⁸ *Id.*

⁹⁹ Kalt V.S. ¶¶ 48-54.

¹⁰⁰ *Major Issues in Rail Rate Cases*, STB Ex Parte No. 657 (Sub-No. 1), at 62-66 (served Oct. 30, 2006) (“*Major Issues*”).

¹⁰¹ Kalt V.S. ¶ 53.

¹⁰² *Id.*

by the long-term measure may be required.”¹⁰³ For example, if used solely to monitor the health of the industry, as the statute prescribes, the Board could rely on a fixed 10-year period, which should be sufficient to cover an average business cycle. However, if the Board had the authority to use the long-term revenue adequacy determination as a basis for rate regulation, which it does not, a fixed 10-year period, much less the potentially short time period suggested by the Task Force, would be insufficient.

Here the agency need not determine what longer time period would be appropriate for purposes of rate regulation. Professor Kalt explains that it is “clear that blunt accounting-based ROI measures, even if measured over the long-term, do not provide regulators with sufficient information to determine whether improvements are being driven by purely accounting conventions, by pro-competitive behavior (that is desirable and requires no regulatory intervention), or by exercise of market power somewhere in a carrier’s system (which could warrant a regulatory response).”¹⁰⁴ In other words, even a long-term revenue adequate measurement will not provide a basis for the targeted rate regulation appropriate for the railroad industry.

¹⁰³ *Id.* ¶ 54 (“For example, sudden large and sustained shifts in demand, due to, for example, recession, changes in coal or crude-by-rail or other competitive forces due to technological change – such as widespread adoption of autonomous trucking, could make the long-term revenue adequacy a misleading measure of current and near-term conditions. Then, too, vacillations in the interest rate policies of the Federal Reserve can directly affect the cost of capital in the revenue adequacy calculation, and indirectly – albeit, powerfully – affect macroeconomic movements in the economy. To the extent the revenue adequacy measure serves as a trigger for more intrusive regulation, rather than a gauge of the financial status of the industry, then I recommend that the applicability of a finding of long-term revenue adequacy be rebuttable based on substantial changes in conditions relative to the calculation period.”).

¹⁰⁴ *Id.* ¶ 77.

B. The Board's method of calculating revenue adequacy results in a distorted and inaccurate picture of railroad revenue adequacy.

If the STB is going to make data-driven decisions, then the data supporting those decisions must be as accurate as possible. Here, the Board's method of calculating revenue adequacy is laden with measurement errors that result in a distorted and inaccurate picture of railroad revenue adequacy. The data problems are twofold: the use of book values and the treatment of deferred taxes.

The Board currently calculates railroad ROI for purposes of determining revenue adequacy by using the book value of railroad assets, rather than replacement value. This is despite the fact that both the ICC and the Board have repeatedly acknowledged that the preferred way to value the assets of a firm for purposes of assessing the adequacy of the firm's revenues is the replacement cost of the assets.¹⁰⁵ As Professor Kalt has explained, *accounting* rates of return are not probative of whether a railroad is actually earning an *economic* rate of return that exceeds its cost of capital, much less any kind of anticompetitive conduct or exercise of market power as a source of returns in excess of the cost of capital.¹⁰⁶ Especially with the kind of durable and long-lived capital found in the rail industry, non-economic accounting measures of depreciated original book costs readily yield economically nonsensical conclusions as to the adequacy of

¹⁰⁵ *Standards I*, 364 I.C.C. at 820 ("While we perceive some difficulty in implementing a replacement cost valuation method, we believe that it is conceptually the best method available."); *Standards for Railroad Revenue Adequacy*, 3 I.C.C.2d 261, 277 (1986) ("*Standards II*") ("While current cost accounting [*i.e.*, current replacement cost of assets] is theoretically preferable to original cost valuation, it cannot be practically implemented in a manner that we can be confident would produce accurate and reliable results.").

¹⁰⁶ Opening Comments of The Association of American Railroads, EP 722, Verified Statement of Joseph P. Kalt, at 4, 30-31 (filed Sep. 5, 2014); see F. Fisher & J. McGowan, *On the Misuses of Accounting Rates of Return to Infer Monopoly Profits*, 73 AM. ECON. REVIEW 82, 90 (1983) ("[T]here is no way in which one can look at accounting rates of return and infer anything about relative economic profitability or, a fortiori, about the presence or absence of monopoly profits"); Kalt V.S. ¶ 39 ("It is important to note that even properly conceived measures of revenue adequacy do not provide sufficient evidence on which to base a finding of anticompetitive conduct or the exercise of market power.").

revenues and returns. For example, using book value overstates railroad ROIs (and thus revenue adequacy).¹⁰⁷ Professor Kalt has also explained that the Board's difficulty in using current replacement cost as a measure "cannot justify the use of economically incoherent rates of return on depreciated historical book value to determine whether a railroad is realizing 'excess revenues.'"¹⁰⁸

Another problematic measurement error relates to the Board's treatment of deferred taxes. The ICC's treatment of deferred taxes has swayed back and forth.¹⁰⁹ The Commission eventually settled on the so-called "Utility Method," where accumulated deferred taxes are excluded from the investment base.¹¹⁰ Even though the D.C. Circuit, reviewing the ICC's decision, believed that the Utility Method created a powerful disincentive for investment in the railroad industry, it felt compelled to reject the railroads' challenge due to the deferential scope of its review.¹¹¹

Excluding deferred taxes from the investment base makes no economic sense. Because deferred taxes are a source of funds that railroads use to invest in its assets, *i.e.*, a source of capital that may be reinvested, it makes sense to treat deferred taxes as any other source of capital rather than remove it from the investment base. A group of

¹⁰⁷ Opening Comments of The Association of American Railroads, EP 722, Verified Statement Roger Brinner, at 14-26 (filed Sep. 5, 2014). As Dr. Brinner explains, book value is based on the historic cost of assets carried on a firm's books as opposed to the current cost of assets.

¹⁰⁸ Opening Comments of The Association of American Railroads, EP 722, Verified Statement of Joseph P. Kalt, at 31 (filed Sep. 5, 2014); *see also* Kalt V.S. ¶¶ 34-47

¹⁰⁹ *See Standards & Procedures for the Establishment of Adequate Railroad Revenue Levels*, 358 I.C.C. 844, 890 (1978) (excluding deferred taxes); *Standards I*, 364 I.C.C. at 813-14 (not excluding deferred taxes); *Standards II*, 3 I.C.C.2d at 269 (excluding deferred taxes).

¹¹⁰ *See Standards II*, at 271.

¹¹¹ *Consolidated Rail Corp. v. United States*, 855 F.2d 78 (D.C. Cir. 1988); *see id.* at 90 ("Given the competition between the railroads and unregulated firms for capital, the railroads are substantially disadvantaged by being deprived of the opportunity to earn a return on the funds in comparison to the unregulated firms, and therefore the incentive to all investors, including the railroads, is to invest in the unregulated firms where the advantage of the 'double benefit' is retained.").

leading economists urged the ICC back in 1985 to take this very stance and measure revenue adequacy as “a rate of return equal to the current cost of capital on the replacement value of all rail assets that are required to meet the demands for railroad service, *regardless of the source of funds used in investing in those assets.*”¹¹² The appropriate standard does not therefore depend on the source of the funds used to make investments. Whether the source is debt financing, equity financing, returns from existing traffic, or tax benefits bestowed by Congress, the standard (according to some of the world’s most prominent economists) should be the same: a rate of return equal to the current cost of capital on the replacement value of all rail assets required to meet the demand for railroad service.

Professor Kalt concurs. He explains that the Board’s current practice “in effect assumes that investors expect no return on assets ‘financed’ by deferred taxes. But such an assumption provides no incentive to the investors to keep those assets deployed in the rail industry. They have the incentive to, and would be better off, re-deploying that capital in industries where they could earn their cost of capital. It is therefore rational that investors do expect to earn a return on deferred taxes and such expectations are reflected in the market-based determinations of the cost of equity used by the STB. Therefore, the STB’s exclusion of deferred taxes overstates the attractiveness of railroad industry investments.”¹¹³

Moreover, the Board’s treatment of deferred taxes creates worrisome practical problems. As the Board experienced in 2017, changes to corporate taxes rates can produce ridiculous measurements of financial health. If the Board had not wisely acted, its 2017 figures would have suggested a one-year phantom surge in railroad profitability, as the net operating incomes would be inflated to reflect the change in

¹¹² Opening Comments of Norfolk Southern Railway Company, EP 722, Attachment A (Economists’ Statement in Support of Staggers Act (Feb. 25, 1985) (emphasis added).

¹¹³ Kalt V.S. ¶ 68.

accumulated deferred taxes. This is unlikely to be the last time the Board will have to manually adjust its ROI calculation. While the corporate tax rate was stable for years, one can anticipate the rate changing in future administrations, leaving the Board's revenue adequacy measurement at the mercy of changes in future corporate tax rates. The agency's manual adjustment of the ROI calculation went largely unchallenged and unnoticed *this time*. It will not be so easy next time, if the ROI calculations are tied to meaningful changes in rate regulation.

These measurement errors should be addressed by the Board. However, even if the Board fixes these measurement errors, revenue adequacy cannot be used as a basis to impose a rate freeze or earnings cap on the freight rail industry.

IV. THE CONCEPT OF A "RATE INCREASE CONSTRAINT" IS UNLAWFUL AND FLAWED.

The Task Force proposes a "rate increase constraint (RIC) applicable to carriers that are long-term revenue adequate."¹¹⁴ Under RIC, "[f]or shippers whose rates exceed the RIC, carriers would be forbidden from raising non-contract, non-exempt rates by more than the rate of inflation (as measured by RCAF-U)."¹¹⁵ The RIC "threshold level would vary based on the category of transportation ..., and would rise and fall each year as the carrier's revenue above the long-term revenue adequacy threshold rises or falls."¹¹⁶ The first step in identifying the RIC is to determine the "average annual real surplus," that "would then be allocated to a defined set of commodity-service characteristic combinations based on that category's share of total revenues with R/VCs exceeding 180%."¹¹⁷ Finally, after "allocating the average annual real surplus among the

¹¹⁴ RRTF Report at 36.

¹¹⁵ *Id.*

¹¹⁶ *Id.* at 36-37.

¹¹⁷ *Id.* at 37.

various categories,” a “process similar to the Maximum Markup Methodology” would be applied, “reducing each category’s R/VC ratio until ... the surplus assigned to that category” is exhausted.¹¹⁸ “The resulting figures, calculated for each category, would be the RIC level.”¹¹⁹ The Task Force concluded that this “constraint would only be enforced: (a) on complaint, (b) if the railroad is found to be market dominant, and (c) if the issue movement is non-exempt and non-contract.”¹²⁰

A. The RIC concept is unlawful.

The governing statute does not permit the Board to impose rate freezes based on system-wide earnings. The Board must make a fact-specific finding that the *individual* rate at issue is unreasonable. This is not only the law — it makes sense, because “the source of returns in excess of adequate levels ... may arise from a variety of sources,” not only “differential pricing of dominant routes.”¹²¹

Furthermore, the requirement in the statute that rates must be challenged individually is a specific implementation of Congress’s intent that shippers be protected from actual, proven abuses of market power, while railroads are otherwise free to set rates in response to market forces.¹²² In contrast, RIC presumes rates to be unlawful and subject to STB-prescribed constraints without looking at the particular characteristics of the movement in question, including facilities used to handle the issue traffic. It fails to address the many reasons a railroad may be charging a certain rate to a certain customer for a certain shipment — all of which is taken together and considered in a rate

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.* (footnote omitted).

¹²¹ Macher *et al.*, 41 Transp. L.J., at 123.

¹²² See 49 U.S.C. §§ 10701(c), 10704, 10705(a)(2), 10707.

reasonableness case. The RIC does away with all of this in favor of an imprecise blunt stick that has no correlation to any problematic activity by railroads.

Perhaps most compelling, as previously noted, Congress expressly addressed rate increases in the Staggers Act. Congress created a specific “zone” of rate flexibility to permit carrier to raise rates to cover inflation. *But rate increases outside these zones by revenue adequate carriers could not be presumed unreasonable. See 49 U.S.C. § 10707a(g) (1982).* Congress created this provision “as a procedural mechanism for carriers to change rates without undue regulatory interference. The Conferees believe that the best regulator is the marketplace, and the forces of competition will restrain railroad rates more effectively than federal regulation.” H.R. REPORT NO. 96-1430, at 93 (1980) (Conf. Rep.) Accordingly, Congress was emphatic that the ICC could not infer a rate was unreasonable simply because it exceeded an inflationary increase, even for revenue adequate carriers. *Id.* at 94 (“The Conference substitute states unequivocally that a rate increase beyond the zone establishes no presumption of market dominance or reasonableness.”).

While the zones of rate flexibility were removed in ICCTA, there is no evidence Congress intended to permit the STB to create zones of rate freezes prohibited under the Staggers Act. Congress explained that “obsolete or unnecessary ICC regulatory functions would be repealed,” and ICCTA “significantly reduces regulation of surface transportation industries in this country.” S. REP. NO. 104-176, at 1-2 (1995). Congress therefore sorted “through the panoply of laws currently administered by the ICC and repeal[ed] or modernize[d] those that ha[d] become outdated.” *Id.* at 2. With regard to the zone of rate flexibility, it was removed “because it has outlived its usefulness.” *Id.* at 32. Overall, ICCTA “continue[d] the deregulation theme of the past 15 years by providing further regulatory reductions in the surface transportation industries” and “preserve[d] the careful balance put in place by the 4R Act and the Staggers Act that led to a dramatic revitalization of the rail industry....” *Id.* at 5, 6.

The RIC concept would resurrect the first zone of rate flexibility from Staggers, but with an unlawful twist. It would permit a carrier to raise its rate to cover inflation, subject to a shipper challenge under other rate reasonableness methodologies. So too did Congress in 1980. *See* 49 U.S.C. § 10707a(b). RIC would then go further. It would prohibit any increase above that inflationary level for any rate that exceeded the RIC threshold. But Congress's prior directive not to presume unlawful rate increases by revenue adequate carriers is an insurmountable obstacle to the RIC concept.

Finally, the ICC well understood the evils of rate freezes, having lived through the failed national experiment. It observed that to achieve revenue adequacy, "maximum rates on market dominant traffic, in general, should be permitted to increase to the extent necessary for a carrier to achieve revenue adequacy. . . . [H]owever, this does not mean that further rate increases on captive coal traffic would be unreasonable *per se* once a carrier attains revenue adequacy."¹²³ "Such an approach," the ICC explained, "would be economically unsound, as it would create disincentives to optimal marketing pricing."¹²⁴ Moreover, "[a] rigidly applied revenue adequacy constraint would have many practical problems."¹²⁵ RIC would resurrect precisely the kind of rate freeze the ICC concluded would be "economically unsound," would create "disincentives to optimal market pricing," and would raise "many practical problems."

B. Rate freezes are poor public policy that would result in a myriad of negative consequences.

The negative consequences that would result from the RIC abound. First, the RIC would bring with it all of the traditional problems associated with a rate freeze, including distorting market signals by preventing timely price adjustments based upon

¹²³ Ex Parte No. 347 (Sub-No. 1), *Coal Rate Guidelines, Nationwide—Notice of Proposed Rulemaking*, slip op. at 15 (served Feb. 8, 1983).

¹²⁴ *Id.*, slip op. at 19.

¹²⁵ *Id.*

consumer demand. Shortages would result since the rail industry would be prevented from anticipating changing market demands. Professor Kalt points out that the effects of RIC would include, among others, “disincentives to engage in cost-minimizing behavior,” “[p]erverse incentives for pricing ‘competitive’ traffic,” and “[i]ncentives to reduce quality of service or to focus investments or activities for service on those traffic segments that are not constrained by RIC.”¹²⁶

Prices are vital to the efficient allocation of resources toward the satisfaction of consumers’ needs. As Professor Kalt explains, “[t]hey are the critical signals which impact choices of product and service offerings and which determine the nature and level of capital investment and ownership structures.”¹²⁷ Rising prices are the market’s way of signaling unsatisfied demand and inducing additional investment in a given sector. RIC will “prevent prices from adjusting beyond a government-set price and therefore send distorted signals to the market, hiding the unmet demand and failing to induce investment that would benefit consumers.”¹²⁸

For proof of these bedrock economic principles, the Board can examine the natural gas and gasoline price control policies of the 1970s and post-war rent control in New York City for the distortive and destructive effects of price regulation that fails to mimic competitive outcomes. As Professor Kalt reminds us, “[g]asoline lines and shortages of natural gas in periods of peak demand (i.e., the dead of winter) were the direct products of Nixon-era and subsequent price controls that purportedly were intended to protect consumers by trying to override the workings of competitive market supply and demand. The associated political disasters they created ultimately forced

¹²⁶ Kalt V.S. ¶ 103.

¹²⁷ *Id.* ¶ 93.

¹²⁸ *Id.*

their abandonment.”¹²⁹ There is no need for the STB to recreate those economic and political disasters.

Second, the RIC would violate the agency’s longstanding policy that it will not create unfair cross-subsidies by regulatory action (*i.e.*, a customer should pay for the facilities it uses and not shift those costs to another customer).¹³⁰ A cross-subsidy is particularly likely for movements on lower density portions of revenue adequate railroads. Shippers benefiting from such moves should be contributing to the joint fixed costs of the assets they utilize. Yet the RIC would unfairly constrain such shippers’ rates at inflation-based increases, pushing the cost of such movements to other shippers that should not have to bear those costs.

The cross-subsidies will result not only due to the particularities of density, but also from distorting inter-temporal effects. The RIC in 2020 would be a function of revenues earned on traffic from years earlier. An increase in chemical rates today may be found unlawful based on the level of revenue from coal traffic from a decade ago. As a result, the rate freezes will create cross-subsidies across time.

For example, a railroad that was revenue adequate in all of the years except for the current year could have a rate freeze applied in a year when the railroad is not in fact revenue adequate. In this way, at the very time at which a railroad needs additional revenues to cover its costs, it could be subject to a rate freeze because in prior years it experienced a surplus. That outcome would make no sense.

Third, the RIC will result in perverse incentives that will inspire inefficiencies and bloat. For example, if a railroad knows it is subject to a rate freeze on a large amount of traffic on a particular route, the incentive to invest or make improvements to

¹²⁹ *Id.* ¶ 94.

¹³⁰ See *Otter Tail Power Co. v. BNSF Railway Co.*, STB Docket No. NOR 42071 (served Jan. 27, 2006), *aff’d*, 484 F.3d 959 (8th Cir. 2007); *PPL Montana, LLC v. Burlington Northern & Santa Fe Railway*, 6 S.T.B. 286 (2003), *aff’d*, 437 F.3d 1240 (D.C. Cir. 2006).

that route will be low because the railroad will have no ability to recoup those costs from the very shippers who use those services. Further, if a railroad is getting close to revenue adequacy, it then has incentives to build-up its asset base with inefficient, rather than innovative, assets. This is contrary to the public good. Professor Kalt explains how RIC will distort service and investment decisions.¹³¹

Fourth, it is likely that shippers will demand that the RIC be applied to tariff rates coming off expired contracts. If the RIC were applied to limit tariff rates coming off contracts, such a policy would powerfully deter both railroads and shippers from entering into contracts.¹³²

Each one of the foregoing consequences is inimical to the intent of Congress. The RIC is an intrusive regulatory stick that would unnecessarily limit railroad earnings where no actual problem of market power abuse has been shown to exist.¹³³ This is directly contrary to Congress's intent that the Board maximize the freedom of railroads to respond to market forces and minimize regulatory interference except when necessary to protect shippers from individual instances of market power abuse.¹³⁴

¹³¹ Kalt V.S. ¶¶ 131-132.

¹³² The Board has recognized that contract rates often differ from tariff rates as a result of market conditions. *E.I. du Pont de Nemours & Co. v. Norfolk Southern Ry. Co.*, STB Docket No. NOR 42125, at 57 n.3 (served Mar. 24, 2014) ("In my view, it is difficult to treat contract rates and tariff rates as apples-to-apples comparisons because contract rates are often lower for a variety of reasons, including volume commitments.") (Chairman Elliott, concurring); *see also U.S. Magnesium, L.L.C. v. Union Pac. R.R. Co.*, STB Docket No. 42114, at 18 (served Jan. 28, 2010) ("UP observed, and the Board agrees, that contract rates can in some instances be lower than tariff rates for a number of reasons (for instance, shippers in certain settings could negotiate indemnity or volume assurances with the carrier in exchange for a better rate).").

¹³³ Any system-wide rate cap or rate freeze triggered by earnings that might be proposed in this proceeding will likewise come with these harmful effects.

¹³⁴ 49 U.S.C. § 10101.

C. Other practical problems with the RIC concept.

1. Regulatory lag.

The RIC will introduce extraordinary regulatory lag in the calculation of the rate freeze and would compromise railroads' right and ability to set prices in response to market forces. The Board's annual cost of capital and revenue adequacy findings occur 10 months after the close of the year. The calculation of the RIC caps for 2020, for example, would not be published *until nearly the end of 2021*. No railroad would have any idea where the rate constraint was for a given commodity in 2020, when it must publish its tariff rates and serve its customers; it would only find out a year and a half later if its pricing violated the RIC constraint. If it guessed too low, it could never seek reimbursement without violating the prohibition against retroactive ratemaking; and if it guessed too high it may be subject to rate reparations from the agency. And even if we assume the RIC will eventually relax if a railroad plunges back into revenue inadequacy, the calculated effects of relaxation would not be revealed until many months after the railroad has lapsed into revenue inadequacy, thereby forcing the railroad to endure an extended period of sub-compensatory revenues.

2. The RIC will tie rate freezes to earnings from unregulated traffic.

The majority of freight rail traffic is unregulated, either because it is exempt, under contract, or moves at rates below 180% of variable cost. National policy should encourage the growth of those unregulated markets. It is manifestly in the national interest for the American freight rail system to increase its market share over other transportation modes, divert goods from the highway to a safer and more environmentally friendly mode of transportation, and generally to innovate and take risks to expand those highly competitive businesses.

The RIC concept will rebuke those entrepreneurial efforts. As the railroad industry improves its service offering and expands these unregulated markets, it is

rewarded with expanded rate freezes on other lines of business. Incentives matter. Binding together the scope of rate freezes to unregulated markets will discourage innovation at the precise moment in history when the agency should be encouraging the industry to improve further its service to these unregulated sectors as other traditional industries decline. No other unregulated American business is burdened by this kind of asymmetric regulation, and Congress plainly instructed the agency to keep its hands out of these unregulated transportation markets. The RIC concept cannot be reconciled with that congressional mandate.

3. The RIC will artificially encourage customers to shift traffic and will likely be transformed into a firm rate cap.

The RIC was designed to avoid the known financial consequences of old-school utility-style earnings regulation. The Task Force attempts to assure the public that while “there is some possibility [the RIC] could be viewed as a rate cap, with attendant consequences, no money would be rebated to shippers, and shippers currently paying beyond the level identified would not have their rates reduced.”¹³⁵ Regrettably, the Task Force is likely too optimistic.

First, AAR anticipates that certain stakeholders will advocate that the RIC apply as a cap for new business/movements. If so, the “rate freezes” in RIC will quickly become hard “rate caps.” Every railroad loses a substantial portion of its business every year, for a host of reasons, and continually has to work hard to replace that business. However, for new business, the RIC may be transformed into a firm rate cap, with rates for new customers constrained at RIC levels and the “limit on rate increases” applying to only *existing* customers.

Second, RIC will encourage customers to shift traffic to different lanes governed by a rate cap. Many customers have geographic options for the transportation of their

¹³⁵ RRTF Report at 36.

goods and services. RIC would distort the marketplace, creating artificial benefits to shippers for certain (new or existing) lanes where RIC is a perpetual rate cap, versus those existing lanes where RIC simply limits future rate increases. With that artificial distortion of the marketplace, it is inevitable that some customers will shift business away from lanes where RIC only limits rate increases to those where RIC is a firm cap.

Third, the asymmetry of RIC will systematically drive down the rate structure of a carrier over time and curtail system-wide revenues. Market forces ebb and flow. When market forces push transportation rates lower, the railroads will respond accordingly. But when market forces would result in larger rate increases than permitted by RIC, the railroads will be unable to fully respond. This asymmetry will result in below market rates and transform the rate freeze into a rate cap over time.

The RIC concept that the Task Force designed to avoid the crippling features of strict earnings regulation will likely evolve into the precise form of utility-style earnings regulation that Congress forbade. The question is simply how quickly the RIC will march a railroad to its ruin.

4. The RIC may not “relax” if a carrier becomes less revenue adequate, as claimed by the Task Force.

The staff report also holds forth the promise that RIC is a “robust,” responsive remedy: “[A]s they prove effective (as a railroad is moved closer to the break-even point), they automatically loosen. . . . By contrast, should the constraints prove too weak, and a railroad continues to earn rising profits even though it is long-term revenue adequate, the constraints tighten further.”¹³⁶ Again, the Task Force may be overly optimistic. It is plainly the case that if the RIC drives a railroad into revenue inadequacy, which could take many years, the RIC will lift automatically. But what happens to the RIC in the interim? Contrary to all logic, if the RIC collapses earnings

¹³⁶ RRTF Report at 36.

towards revenue inadequacy, the RIC constraint may tighten, not loosen. This result is counterintuitive, but it flows from two facts. First, the RIC would use the average surplus over time to calculate the RIC in a given year. Second, as the Board's Maximum Markup Methodology would be used to determine the RIC, lower R/VC ratios will ensure lower RIC caps.

Consider the following hypothetical, where a railroad (that has been found to be long-term revenue adequate) has a traffic group containing five movements with R/VC ratios > 180%, each with a variable cost of \$1,000. The RIC cap is calculated at 235% to exhaust the assumed "average surplus" of \$300. Then, in year 12, assume that due to competitive market forces, the railroad lowers all its rates by 4%, moving it closer to the so-called "break even point." The Task Force predicts the RIC will relax. The opposite occurs. Because (1) the impact of the lower revenues in year 12 is diluted, as the surplus is a function of a multi-year analysis, and (2) there has been a downward shift in the entire rate distribution, so the RIC falls from 235% to 226% – even to eliminate a surplus that is lower than the prior year's.

Table 1 – RIC Illustration

	Year 11 R/VC	Year 11 RIC	Year 12 R/VC	Year 12 RIC
Move #1	250%	235%	240%	226%
Move #2	245%	235%	235%	226%
Move #3	240%	235%	230%	226%
Move #4	235%	235%	225%	226%
Move #5	230%	235%	220%	226%

Indeed, under the RIC, a railroad could become bankrupt in year 12, and the RIC would still automatically impose a rate freeze on the distressed carrier.

V. THE BOARD MAY NOT REVERSE THE BOTTLENECK RULE FOR REVENUE ADEQUATE RAILROADS OR OTHERWISE.

The Task Force also recommends that the Board “[s]uspend the bottleneck protections for rates of revenue adequate carriers,”¹³⁷ by “reversing the Bottleneck decisions as to revenue-adequate carriers.”¹³⁸ A “bottleneck” occurs when more than one railroad could be involved in a specific move, but either the origin or destination is exclusively served by one railroad. The portion of the move that is served by only one railroad is called the “bottleneck.” According to the Task Force, shippers should be permitted to compel a revenue adequate railroad to quote a bottleneck segment rate to/from a shipper-designated “feasible interchange point with a second carrier” and then challenge the reasonableness of that segment-specific rate.¹³⁹ The purpose of overriding the Bottleneck Rule is to reduce rates on movements that involve a bottleneck segment through the artificial creation of so-called “competition” over non-bottleneck segments of through movements and the intervention of the Board in reasonableness challenges to those forced rates for bottleneck segments.

The Board’s governing statute and controlling Supreme Court precedent prohibit the Board from giving shippers such control over railroad rate- and route-setting. The Board recognized these legal constraints when it adopted the Bottleneck Rule. The substance of and rationale for the Bottleneck Rule were set out in the Board’s rulings in two related decisions referred to as *Bottleneck I* and *Bottleneck II*.¹⁴⁰ In the *Bottleneck* cases, the Board consolidated three cases in which shippers sought to force a rail carrier to quote a “local” rate for a bottleneck segment of a through movement so

¹³⁷ RRTF Report at 13.

¹³⁸ *Id.* at 41.

¹³⁹ RRTF Report at 13.

¹⁴⁰ *Central Power & Light Co. v. S. Pac. Transp. Co.*, STB Docket No. 41242, 1 S.T.B. 1059 (served Dec. 31, 1996) (“*Bottleneck I*”); *Central Power & Light Co. v. S. Pac. Transp. Co.*, STB Dockets No. 41242, 41295, 2 S.T.B. 235 (served Apr. 30, 1997) (“*Bottleneck II*”).

that the reasonableness of just the bottleneck rate, as opposed to the through rate established by the carrier, could be challenged. The Board concluded it did not have the authority to require railroads to quote such bottleneck rates.

First, the Board recognized that a carrier's rate-setting prerogative is guaranteed by statute, 49 U.S.C. §10701(c).¹⁴¹ Second, the Board concluded that a carrier has the statutory power and discretion to determine which interchange (and therefore which through route) it will use in responding to a request for service.¹⁴² Third, the Board concluded that a new through route, and therefore a new interchange, can be prescribed only to address particular competitive harms, and not simply to create new routes on demand.¹⁴³ Finally, the Board reaffirmed the principle of *Great Northern Railway v. Sullivan*, 294 U.S. 458 (1935) ("*Great Northern*") that "shippers must challenge the reasonableness of the entire rate from origin to destination, and may not challenge the bottleneck segment separately."¹⁴⁴

The Task Force mistakenly claims that the Bottleneck Rule is based on policy judgments that the Board could reverse in the interest of "promot[ing] competition."¹⁴⁵ This is wrong. As the Board itself recognized, the Bottleneck Rule is grounded on the Board's governing statute and binding Supreme Court precedent: "Our decision is, in our view, mandated by the law."¹⁴⁶ The Board expressly concluded that "giving shippers the rate control that they sought would not withstand legal scrutiny, as it would defeat a railroad's right to determine, at the outset, the rates that it will use to

¹⁴¹ *Bottleneck I*, 1 S.T.B. at 1064.

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Bottleneck II*, 2 S.T.B. at 238.

¹⁴⁵ RRTF Report at 40.

¹⁴⁶ *Bottleneck I*, 1 S.T.B. at 1073 n.21.

respond to requests for through service.”¹⁴⁷ As the Board recognized, the Bottleneck Rule is based on “statutory provisions [that] protect[] each railroad’s right to determine, at the outset, which reasonable through routes it will use to respond to requests for service.”¹⁴⁸

Any attempt to reverse or suspend the Bottleneck Rule as the Task Force recommends would be unlawful. Reversal of the Bottleneck Rule could only occur by an act of Congress. Accordingly, any subsequent consideration of the proposed “Bottleneck Changes” in this proceeding would be a waste of the Board’s resources.

A. Binding Supreme Court precedent establishes that the agency may not entertain a challenge to the rate for a segment of a through movement.

The Task Force’s objective in advocating suspension of the Bottleneck Rule for revenue adequate railroads is to enable shippers to pursue lower rates through rate reasonableness challenges brought against currently non-existent local rates on segments of through routes. This objective was unlawful and hence unachievable well before the Board articulated its Bottleneck Rule in the late 1990s. The Supreme Court has held consistently for nearly a century that shippers are entitled to challenge only the level of a through rate, not the level of rates for segments of a through movement. In 1925, the Supreme Court rejected the argument of a rail carrier participating in a multi-carrier movement that the level of individual rate factors should be addressed by the agency separately from the level of the through rate. *See Louisville & Nashville R.R. Co. v. Sloss-Sheffield Steel & Iron Co.*, 269 U.S. 217 (1925) (“*Sloss-Sheffield*”). The Court concluded that the proper challenge was to the entire rate from origin to destination. As the Court explained:

¹⁴⁷ *Bottleneck II*, 2 S.T.B. at 237.

¹⁴⁸ *Bottleneck I*, at 1065.

The shipper's only interest is that the joint rate be reasonable as a whole. It may be unreasonable although each of the factors of which it is constructed is reasonable. It may be reasonable although some of the factors, or of the divisions of the participants, were unreasonable.

Id. at 234.

Ten years later, the Supreme Court affirmed the *Sloss-Sheffield* holding in *Great Northern*. *Great Northern* involved combination rates (the sum of two proportional rates) on shipments of lignite from Canada to points in the United States. The shipments moved on a through bill of lading issued by Canadian Pacific from Alberta to the international boundary and from there over Great Northern to points in North Dakota. In a rate challenge brought by shippers, the ICC found that Great Northern's proportional rates were unreasonable, but made no finding as to the reasonableness of the combination through rates.

The Court reversed the ICC, finding its approach to be inconsistent with the Interstate Commerce Act and with *Sloss-Sheffield*:

[T]he Great Northern proportional [rate] cannot be applied save as it is a part of the through rate. There was a single charge which, though based on the combination rate, was precisely the same in amount as if the rate had been jointly made. As shown by our decision in [*Sloss-Sheffield*,] the division among connecting carriers of charges based on joint rates -those involved in that case were constructed out of existing proportionals - is of no concern of the shipper. The proportionals here involved are but parts of a through rate and cannot be distinguished from divisions of a joint rate. The shipper's only interest is that the charge shall be reasonable as a whole.

Great Northern, 294 U.S. at 463 (citations omitted).

Since *Sloss-Sheffield* and *Great Northern*, through the enactment of Staggers and ICCTA, the Supreme Court, federal courts of appeals, the ICC, and the Board have repeatedly affirmed the rule that shippers must challenge the rate for the entire through movement, and may not challenge rate factors for individual segments of a through movement. This principle is "long standing," *Canada Packers, Ltd. v. Atchison, T & S.F.*

Ry. Co., 385 U.S. 182, 183 (1966), and a “venerable principle of railroad rate regulation,” *Union Pac. R.R. Co. v. STB*, 202 F.3d 337, 339 (D.C. Cir. 2000). It has repeatedly been followed by the ICC and the Board.¹⁴⁹

The Board and the courts have recognized a limited exception to this rule in cases involving transportation contracts. *See, e.g., Union Pac. R.R. Co. v. STB*, 202 F.3d 337, 344 (D.C. Cir. 2000). When a shipper has a contract for a portion of the through movement, it may limit a rate reasonableness challenge to the rates for the non-contract portion of the movement. This limited exception is based on an explicit statutory provision, 49 U.S.C. § 10709(c)(1), which excludes contract rates from the Board’s jurisdiction.¹⁵⁰ By contrast, there is nothing in the governing statute that allows an override of the *Great Northern* rule in the case of revenue adequate carriers.

¹⁴⁹ *See, e.g., MidAmerican Energy Co. v. STB*, 169 F.3d 1099, 1106 (8th Cir. 1999) (*Great Northern* held “that a shipper may not recover damages based upon the carrier’s portion of a rate if the carrier chooses to offer only a joint rate with another carrier, unless the entire joint rate is unreasonable”); *W. Res., Inc. v. STB*, 109 F.3d 782, 789 (D.C. Cir. 1997) (“Shippers ..., if charged under a joint or proportional rate, must challenge the rate for the entire through movement; they cannot challenge individual segments”); *United States v. ICC*, 198 F.2d 958, 974 (D.C. Cir. 1952) (“[*Great Northern*] held that the shipper could not complain of the division of the charges among the participating carriers, and ... remarked that ‘The shipper’s only interest is that the charge shall be reasonable as a whole’”); *Ariz. Elec. Power Coop., Inc. v. Burlington N & Santa Fe Ry.*, STB Docket No. 42058, Decision (served Mar. 15, 2005) (“*AEPCO v. BNSF*”), available at 2005 WL 638319, at *8 & n.18 (“Both Supreme Court and agency precedent require that, whether examining joint rates or proportional rates, we must address the reasonableness of the through rate as a whole, rather than the reasonableness of the component parts of the through rate....”).

¹⁵⁰ *See, e.g., Union Pac. R.R. Co. v. STB*, 202 F.3d 337, 344 (D.C. Cir. 2000) (noting that the Board’s exception for contract traffic in the *Bottleneck* decisions was “born ... of the Board’s separate statutory obligation to protect a bottleneck railroad’s ‘long haul’ where it can provide origin-to-destination service, see 49 U.S.C. § 10705(a)(2)” (emphasis added)); *id.* (“The Board offers a lengthy and well-reasoned explanation of the intersection of the conflicting mandates of its contractual and long-haul provisions, .. and we think it resolved the tension between these mandates in a reasonable fashion.”).

B. A bottleneck carrier has a statutory right to its long haul where it can provide origin-to-destination service.

The Task Force idea would allow shippers to force railroads with bottleneck segments to short-haul themselves via new, unwanted interchanges with other railroads. This approach would violate another long-standing statutory right of carriers on which the Bottleneck Rule is based, namely a railroad's right to its long haul. The Board itself acknowledged in the *Bottleneck* decisions that the protections of a carrier's long haul have been in place since at least the early 1900s, long before Congress had anything to say on the subject of revenue adequacy:

The routing protections provided to rail carriers by section 10705 are longstanding and, as we explained, confer on each railroad the initial discretion to choose the routes it will use to respond to requests for service. ... In particular, the right of a rail carrier not to be short-hauled, 49 U.S.C. 10705(a)(2), originated in the Mann-Elkins Act of 1910, Pub. L. No. 218, 36 Stat. 539, 552 (1910), and protects a railroad, at the outset, from ... 'hav[ing] to carry over its lines traffic originating on, or destined to, another line when the entire carriage could as well have taken place on its own line.' *Chicago, M., S.P. & P. R.R. v. United States*, 366 U.S. 745, 750-51 (1961).

Bottleneck II at 241.

The statutory protection of a railroad's long haul, set out in the current statute at 49 U.S.C. § 10705(a)(2), is based on multiple U.S. Supreme Court opinions that have acknowledged for over a century a carrier's rate- and route-setting prerogative. For example, the Supreme Court explained in the early 1900s that if a "reasonable and satisfactory through route already existed," as chosen by the carrier, "the Commission had no power" to establish a through route or joint rate. *ICC v. N. Pac. Ry. Co.*, 216 U.S. 538, 544 (1910). Indeed, the Court emphasized that "[i]t cannot be said that there is no such route [merely] because the public would prefer two. The condition in the statute is

not to be trifled away. Except in case of a need such as the statute implies, the injustice [of the agency imposing through routes] ... is not permitted by law." *Id.* at 545.¹⁵¹

A little over a decade later, the Supreme Court explicitly recognized the right of a carrier to its long haul, with no mention of financial health or revenue adequacy as an exception to this right: "The act does not give the Commission authority to establish all the through routes it may deem necessary or desirable in the public interest. The general language of paragraph (3) is limited by paragraph (4). The latter lays down the rule that, subject to specified exceptions, a carrier may not be compelled to participate in a through route which does not include substantially its entire line lying between the termini of the route. The purpose is to protect the long haul routes of carriers." *United States v. Mo. Pac. R.R. Co.*, 278 U.S. 269, 276-77 (1929).¹⁵²

Into the mid-1900s, the Supreme Court continued to recognize in the applicable statute an explicit and continuing limitation on the agency's power to short haul a carrier (again, without regard to revenue adequacy): "This authority [to prescribe a through route] is restricted against short hauling ... by § 15(4) which provides that the

¹⁵¹ See also *S. Pac. Co. v. ICC*, 219 U.S. 433, 452 (1911) (recognizing railroads' "authority to fix just and reasonable rates"); *id.* at 443 (Commission has no authority to "set aside a just and reasonable rate lawfully fixed by a railroad whenever the Commission deemed that it would be equitable to shippers..." and to do so would be an "abnormal and extraordinary power ... which, if ... obtained, would open a vast field for the exercise of discretion, to the destruction of rights of private property in railroads, and would in effect assert public ownership without any of the responsibilities which ownership would imply."); *United States v. Ill. Cent. R.R. Co.*, 263 U.S. 515, 522 (1924) ("[a] carrier is entitled to initiate rates and, in this connection, to adopt such policy of rate-making as to it seems wise." (citing *ICC v. Chi. Great W. Ry.*, 209 U.S. 108, 118-19 (1908); *S. Pac. Co. v. ICC*, 219 U.S. 433 (1911); *ICC v. Louisville & Nashville R.R. Co.*, 227 U.S. 88, 92 (1913))).

¹⁵² See also *R.R. Co. v. United States*, 323 U.S. 588, 590-91 (1945) ("The Commission's authority to grant relief [regarding through routes] is bottomed on s 15(3) and (4) of the Interstate Commerce Act, as amended. The subsection first mentioned authorizes the Commission, when it deems it to be 'necessary or desirable in the public interest' to establish through routes and joint rates. The succeeding subsection is a limitation on the Commission's power, derived in part from earlier enactments, prohibiting the Commission from requiring a line-haul carrier to short-haul itself as a participant in a prescribed through route.").

Commission 'shall not * * * require any carrier by railroad * * * to embrace in such route substantially less than the entire length of its railroad and of any intermediate railroad operated in conjunction and under a common management or control therewith, which lies between the termini of such proposed through route." *Chicago, Milwaukee, St. Paul & Pac. R. Co. v. United States*, 366 U.S. 745, 749-50 (1961). And even into the 2000s, federal courts have explained the now obvious point that, regardless of a carrier's revenue adequacy, the Board is subject to a "separate statutory obligation to protect a bottleneck railroad's 'long haul' where it can provide origin-to-destination service, *see* 49 U.S.C. § 10705(a)(2)...." *Union Pac. R.R. Co. v. STB*, 202 F.3d 337, 344 (D.C. Cir. 2000).

C. The Staggers Act sought to reinforce railroads' rate- and route-setting prerogative.

Railroads' long-haul rights, as well as *Great Northern*, precede the Staggers Act. The rate- and route-setting prerogative embodied in this prior precedent was fully consistent with Congress's intent in the Staggers Act to allow market forces to govern railroads' commercial decisions to the maximum extent possible. In fact, one of Congress's objectives in the Staggers Act was to give railroads even greater control over rate- and route-setting decisions so that market forces rather than regulatory mandates would govern railroad commercial decisions.

One of the first major agency actions after the Staggers Act was the elimination of the so-called DT&I conditions that required merging railroads to keep open existing junctions and gateways and to allow shippers to route traffic over routes and gateways of their choice. The ICC determined that the DT&I conditions were incompatible with Congress' intent that markets, not regulation, should govern railroads' commercial decisions: "[The Staggers Act] has emphasized the need for rail carriers to have

flexibility to make individual ratemaking and routing choices.”¹⁵³ The ICC concluded that the DT&I conditions “prevent[ed] market forces from efficiently allocating railroad resources.”¹⁵⁴

Shortly after eliminating the DT&I conditions, the ICC adopted the current competitive access rules.¹⁵⁵ Under those rules, the ICC and now the Board will override a railroad’s routing decisions only to address situations where a carrier abuses its market power by extracting unreasonable terms or by rendering inadequate service. The competitive access rules were upheld in *Baltimore Gas & Electric Co. v. United States*, 817 F.2d 108, 110 (D.C. Cir. 1987) (“*Baltimore Gas & Electric*”). The restrictions in the competitive access rules on regulatory override of railroad routing decisions were again upheld in the subsequent *Midtec* case, where the ICC reiterated that overriding a railroad’s routing prerogative through a grant of terminal access or reciprocal switching simply to satisfy “a desire for the service of a second carrier” was not consistent with the statute.¹⁵⁶ On appeal, shippers again argued that terminal access and reciprocal switching “were intended by the Congress to increase interrail competition in order ‘to offset the very substantial rate advantages given the railroads’ under other provisions of the Staggers Act.” *Midtec*, 857 F.2d at 1505. The court emphatically rejected this reading of the statute:

If the Commission were authorized ... to prescribe reciprocal switching or terminal trackage whenever such an order could enhance competition between rail carriers, it could radically restructure the railroad industry. *We have not found even the slightest indication that Congress intended the*

¹⁵³ *Traffic Protective Conditions*, 366 I.C.C. 112, 119 (1982) (“*Conditions*”), *aff’d in relevant part sub nom.*, *Detroit, T. & I R.R. Co. v. United States*, 725 F.2d 47 (6th Cir. 1984) (reversing portion of the decision making revocation of the conditions retroactive).

¹⁵⁴ *Id.* at 130.

¹⁵⁵ See *Intramodal Rail Competition*, 1 I.C.C. 2d 822 (1985).

¹⁵⁶ See *Midtec Paper Corp. v. Chicago & N. W. Transp. Co.*, 3 I.C.C. 2d 171, 174 (1986), *affirmed sub nom.*, *Midtec Paper Corp. v. United States*, 857 F.2d 1487 (D.C. Cir. 1988) (“*Midtec*”).

Commission in this way to conform the industry more closely to a model of perfect competition.

Id. at 1507 (emphasis added). As the court observed, “competition policy is not a matter of regulators handicapping would-be competitors in order to create an evenly matched contest.” *Id.* at 1503.

In the *Bottleneck* decisions, the Board confirmed the ICC’s and the courts’ reading of Congress’ intent in *Staggers* regarding forced routing through regulatory fiat. As the Board stated, “Congress chose not to provide for the open routing that shippers seek here. To the contrary ... Congress retained and strengthened the specific statutory provisions allowing carriers to select their routes and to protect their long hauls.” *Bottleneck I*, at 1067.

D. The statute does not give the Board the broad authority to over-ride railroads’ rate- and route-setting prerogative as contemplated by the Task Force.

While providing no vehicle for open routing, the governing statute does provide limited tools that the Board can use to override a railroad’s rate- and route-setting prerogatives. Specifically, § 11102(a) provides limited authority to order terminal access; § 11102(c) provides limited authority to order reciprocal switching; and § 10705(a) provides limited authority to prescribe a through route, including, under defined criteria, a route that requires a rail carrier to short-haul itself. These statutory tools cannot be used to override railroads’ rate- and route-setting prerogatives on movements involving bottleneck segments simply because a carrier is revenue adequate. They are available only to address particular competitive failures. The statute does not give the Board anything remotely akin to a competitive access revenue adequacy remedy or tool.

1. The Board's prescriptive authority is subject to the competitive access rules which are addressed to particular abuses of market power.

As explained previously, the ICC adopted the current competitive access rules, 49 C.F.R. § 1144.2, shortly after the Staggers Act. Those rules provide that the Board may order reciprocal switching or prescribe a through route only to address situations where a carrier abuses its market power by extracting unreasonable terms or by rendering inadequate service. As economists have already explained in EP 722, merely being “revenue adequate” as defined by the Board does not correlate at all with any kind of anticompetitive conduct or service inadequacy.¹⁵⁷ As Professor Kalt explains, “[t]he Task Force bottleneck proposal does not attempt to focus on shippers and traffic that are the subject of the exercise of market power” and “the effects of this proposal promise to be economically rather arbitrary.”¹⁵⁸

Under the competitive access rules, the Board can override a railroad's routing prerogative only to address a particular competitive harm. As the ICC stated in its *Midtec* decision, “we think it correct to view the Staggers changes as directed to situations where some competitive failure occurs.”¹⁵⁹ In its brief to the D.C. Circuit in the *Midtec* case, the ICC explained that the “central philosophy of the Staggers Act” is that “regulation should be reserved for situations where it is needed to protect against abuses”¹⁶⁰ and regulatory “intrusion into carrier operations and pricing practices in the

¹⁵⁷ See, e.g., Opening Comments of The Association of American Railroads, EP 722, Verified Statement of Joseph P. Kalt, at 29-30 (filed Sep. 5, 2014); Opening Comments of The Association of American Railroads, EP 722, Verified Statement of Roger Brinner, at 18,26 (filed Sep. 5, 2014); see also Macher, *et al.*, 41 Transp. L.J. at 123-24.

¹⁵⁸ Kalt V.S. ¶ 105.

¹⁵⁹ *Midtec Paper Corp. v. Chicago & Nw. Transp. Co.*, 3 I.C.C.2d 171, 174 (1986) (“*Midtec II*”), *aff'd*, *Midtec Paper Corp. v. United States*, 857 F.2d 1487 (D.C. Cir. 1988).

¹⁶⁰ Joint Brief for Respondents Interstate Commerce Commission and United States of America, *Midtec Paper Corp. v. ICC*, Docket No. 87-1032, at 25 (D.C. Cir., filed Mar. 14, 1988) (“ICC *Midtec* Brief”).

absence of some real or threatened abuse simply cannot be squared with a fair reading of the rail transportation policy.”¹⁶¹

2. The circumstances under which a railroad can be ordered to short-haul itself have nothing to do with revenue adequacy.

Section 10705(a) sets forth specific circumstances under which a carrier may be required to short-haul itself: (1) when required under sections 10741 [*i.e.*, no unreasonable discrimination], 10742 [*i.e.*, regarding interchange obligations], or 11102 [*i.e.*, regarding the use of terminal facilities]; (2) when the long haul results in an “unreasonably long” route “when compared with a practicable alternative through route that could be established”; or (3) when “the Board decides that the proposed through route is needed to provide adequate, *and* more efficient or economic, transportation.”¹⁶² None of these circumstances has anything to do with revenue adequacy. It would be patently inconsistent with the language of the statute to require a railroad to abandon its route-setting prerogative and short-haul itself simply because it has earned revenues on a firm-wide basis sufficient to meet the Board’s current revenue adequacy standard.

The Board has summarized the criteria in section 10705(a) as follows: “As a general matter, a railroad has a right to rationalize its system and to provide service over its most efficient routes,” though “the Board may exercise its authority under section 10705 to order a carrier to open another route if a party demonstrates that the bottleneck railroad has exploited its market power by (1) providing inadequate service over its lines or (2) foreclosing more efficient service over another carrier’s line.”¹⁶³ In other words, what is required by § 10705(a) is an individual showing that an individual

¹⁶¹ *Id.* at 18 n.12.

¹⁶² 49 U.S.C. § 10705(a) (emphasis added).

¹⁶³ *Entergy Ark., Inc. v. Union Pac. R.R. Co.*, STB Docket No. 42104, at 7 (STB served June 26, 2009).

carrier exploited its market power by inadequate service or by insisting on such an unreasonable through route that a shipper may use a more efficient route – a showing that is fact-sensitive and has nothing to do with merely being revenue adequate.¹⁶⁴

The language in section 10705(a)(2)(C) regarding the need to provide “adequate, and more efficient or economic transportation” also has nothing to do with revenue adequacy. The inquiry into the adequacy and efficiency or economics of a particular movement “is necessarily fact-specific.”¹⁶⁵ “[T]o establish that a foreclosed route is ‘more efficient’ under 10705” would require the Board to “consider all relevant factors,” which would include “those listed in 49 CFR 1144.2(a)(1)....”¹⁶⁶

Moreover, the legislative history of section 10705(a) confirms that the language regarding adequate and efficient or economic transportation does not relate to revenue adequacy, but rather, regards a fact-specific analysis of a particular route and takes into account the railroad’s need for operating efficiency and economy (not just shippers’ desires for a more favorable rate).¹⁶⁷ The federal district court analyzing the legislative history of section 10705(a) explained:

Under the construction which we give to clause (b), even if the shipper is able to prove that the proposed new route would give him more efficient or more economic transportation—better (as for example quicker) or cheaper service — since, by the express language of paragraph (3) of Section 15, the Commission may never establish a through route unless ‘deemed by it to be necessary or desirable in the public interest,’ we have no doubt but that this language, fairly interpreted, must be taken to include also considerations of railroad operating efficiency and economy, which, in a given case, may control over considerations in the shipper’s favor.¹⁶⁸

¹⁶⁴ See *id.* at 8.

¹⁶⁵ *Id.*

¹⁶⁶ *Id.*

¹⁶⁷ See, e.g., *Pa. R. Co. v. United States*, 54 F. Supp. 381, 387-90 (D. Md. 1944) (discussing legislative history of meaning of section 15(4), now 10705(a)(2)(C)).

¹⁶⁸ *Id.* at 390.

3. The public interest standard underlying the Board's prescriptive authority limits Board action to remedy particular harms.

The STB's prescriptive authority under the other access-related statutory provisions — § 11101(a) (terminal access) and § 11101(c) (reciprocal switching) — must be exercised in the “public interest.”¹⁶⁹ But the agency has long understood the “public interest” in such regulatory intervention to be triggered by a compelling need for intervention, not a mere desire to advance a regulatory objective. As the ICC explained, the “public interest” means “more than a mere desire on the part of shippers or other interested parties for something that would be convenient or desirable for them.” *Jamestown, N.Y., Chamber of Commerce v. Jamestown, Westfield & N.W.R.R. Co.*, 195 I.C.C. 289, 292 (1933). “[S]ome actual necessity or some compelling reason must first be shown before we can find such action in the public interest.” *Id.* Where the original rail carrier is providing good freight rail service, the “desirability, but not the necessity, of the additional operation of a joint terminal freight station” is not sufficient to show that the public interest requires such joint terminal access. *Id.*

The ICC followed *Jamestown* in the decades that followed and continued to require “a complainant seeking terminal trackage rights to demonstrate ‘some actual necessity or compelling reason’ for such relief.” *Midtec Paper Co.*, 857 F.2d at 1502; *see also Cent. States Enters., Inc. v. ICC*, 780 F.2d 664, 677-78 (7th Cir. 1985) (citing “pre-Staggers Act cases” that are “joint use cases that describe the public interest standard in terms” similar to the “compelling need” test articulated in *Jamestown*). The achievement of revenue adequacy clearly does not satisfy the “actual necessity” or “compelling reason” standard for a Board over-ride of a railroad's route-setting prerogative.

¹⁶⁹ 49 U.S.C. § 10705(a)(1).

4. The Eighth Circuit’s decision in *MidAmerican* upheld the Bottleneck Rule and did not suggest that the Board had authority to expand access remedies.

The Eighth Circuit upheld the Bottleneck Rule in *MidAmerican Energy Co. v. STB*, 169 F.3d 1099 (8th Cir. 1999) (“*MidAmerican*”). But the Task Force suggests that since the Eighth Circuit found the Bottleneck Rule to be based on a “permissible” reading of the statute, a different reading of the statute reaching a very different conclusion—*i.e.*, that the Board can override railroad rate- and route-setting prerogative without any showing of competitive harm—might also be “permissible.”¹⁷⁰ The statutory language and its consistent application do not permit such a loose interpretation of *MidAmerican*.

In fact, the Eighth Circuit never suggested that a different reading of the statutory provisions on railroads’ rate- and route-setting prerogatives would be “permissible.” To the contrary, the decision acknowledged the statutory foundation for the Bottleneck Rule, including 49 U.S.C. § 10701(c) (railroad discretion as to how to satisfy its duty to provide rates and services) and 49 U.S.C. § 10705(a) (protecting a railroad’s long haul). *MidAmerican* 169 F.3d at 1106. The decision further recognized that “nothing in the Act requires carriers to establish routes over all possible interchanges,” *Id.* (citing *Routing Restrictions*, 296 I.C.C. at 774), and that the “Board may order a carrier to provide service over a shorter haul than it wishes only if the Board first makes specific findings under the Act.” *Id.* And in upholding the Bottleneck Rule, the Eighth Circuit did not question the view of Chairman Morgan, who explained that “[t]he Board has not provided for ‘open access,’ but existing law does not permit that sort of remedy. The law directs the Board to promote competition, but not to governmentally force it simply upon demand” *Bottleneck II* at 249 (Chairman Morgan, commenting).

¹⁷⁰ See RRTF Report at 40.

E. Allowing shippers to over-ride railroads' route-setting prerogative would create serious operational disruptions.

The Board does not have the legal authority under the existing statute to reverse the Bottleneck Rule and allow expanded access to the lines of revenue adequate railroads. Even if the Board had such authority, it would be extraordinarily unwise to exercise it in the manner contemplated by the Task Force.

Professor Kalt explains, “[p]ermitting shippers to specify interchange locations harkens back to the pre-Staggers era of open routings.”¹⁷¹ The inefficiency in terms of managing a rail network is obvious. “The elimination of forced open routings, and railroads’ ability to manage their rail networks efficiently was one of the major factors leading to the initial explosion in productivity and rate reductions following the passage of the Staggers Act.”¹⁷² With the incentives created by the proposed bottleneck changes, “the shipper need not consider the effect of the potential routing on the cost of operating the rail network, the impact of the routing on service levels and frequency available to other shippers, or the ability of the railroad to deploy and operate its capital efficiently.”¹⁷³

Professor Kalt also notes that, “[u]nder reasonable assumptions regarding the demand for rail services, it only takes a small increase in costs to offset the efficiency benefits of even a significant reduction in the price mark-up. As such, although the Task Force proposal would transfer revenue from certain railroads to bottleneck shippers, the induced cost increases arising from these changes may well exceed any efficiency gain from the price reductions.”¹⁷⁴ Indeed, “[f]orced access ... would not constitute

¹⁷¹ Kalt V.S. ¶ 106.

¹⁷² *Id.*

¹⁷³ *Id.* ¶ 107.

¹⁷⁴ *Id.* ¶ 109 (footnote omitted).

implementation of a policy of mimicking competition. Competitive market forces would not generate a system of open access railroads. . . .”¹⁷⁵

It has been “well-documented” that “running a railroad requires *business judgment* on matters ranging from who will make investment in shared facilities, to which cars and trains need to get through a congested yard or network segment most quickly, to who will pay for quality improvements on a shared network.”¹⁷⁶ The experience outside the U.S. where regulators have tried to employ various forms of forced, shipper directed, access is that rail access regimes have been plagued by conflicts between the myopic interests of individual users and the shared interest in overall network efficiency.¹⁷⁷

AAR and its members also presented extensive testimony in EP 711 and EP 711 (Sub-No.1) explaining the importance of a railroad’s rate and route-setting prerogative to a well-functioning rail network. AAR’s witness William Rennie explained in EP 711 that much of the dramatic improvement in rail service since Staggers is directly attributable to the reduction of interchanges and switching that resulted from giving railroads greater control over routing decisions.¹⁷⁸ As he explained, rail productivity has increased dramatically as railroads have been able to move more traffic over a network of high-density lines with fewer inputs and work events per shipment. A key feature of that rationalization process was the elimination of unnecessary interchanges with other railroads and the accompanying reduction in switching and car handling activity.¹⁷⁹

¹⁷⁵ *Id.* ¶ 110.

¹⁷⁶ *Id.* ¶ 111.

¹⁷⁷ *Id.* ¶ 116.

¹⁷⁸ See Opening Comments of the Association of American Railroads, EP 711, Verified Statement of William J. Rennie, at 6-23 (filed March 1, 2013) (“Rennie 711 Op. V.S.”).

¹⁷⁹ *Id.* See also, Opening Comments of the Association of American Railroads, EP 711 (Sub-No. 1), Verified Statement of William J. Rennie, at 6-7 (filed Oct. 26, 2016).

AAR's members also described the benefits of giving railroads increased control over routing decisions and the increased use of single-line service. CSX described its extensive use of "run through" trains in interline movements and its ability, through control of routing, to improve the efficiency of yard operations.¹⁸⁰ Union Pacific explained that it achieved broad single-line efficiencies by systematically eliminating interchanges, developing train plans and car blocking plans so traffic could bypass yards, and removing or downsizing yards that were no longer needed.¹⁸¹

AAR and its members also described the adverse consequences of giving shippers greater control over the routing of traffic. The basic problem is that individual shippers, if given control over routing, have the incentive to advance their own parochial interests, not the interests of the network as a whole or the interests of network efficiency. Therefore, allowing shippers to control how railroads provide the requested transportation service inevitably would introduce inefficiencies and potentially serious service breakdowns across the network.

The comments of AAR and its members were in the context of a proposed change to the Board's approach to prescribed reciprocal switching under § 11101(c). But the potential scope of the Task Force's idea is more extensive than the reciprocal switching proposals that were the subject of EP 711 and EP 711 (Sub-No. 1). Reversing the Bottleneck Rule would potentially allow shippers to demand new routes and interchanges whenever a bottleneck exists. This type of control could have disastrous consequences.

Mr. Rennicke explained in his testimony in EP 711 that giving shippers the ability to mandate an otherwise unnecessary interchange would undermine all of the factors that allowed railroads to achieve improvements in rail transportation service

¹⁸⁰ Opening Comments of CSX Transportation, Inc., EP 711, at 27-33 (filed March 1, 2013).

¹⁸¹ Opening Comments and Evidence of Union Pacific Railroad Company, EP 711 (Sub-No. 1), at 10-18 (filed Oct. 26, 2016).

over the past three decades.¹⁸² He described in detail what must occur to implement new switching activity and the broad range of circumstances under which a new interchange might be required.¹⁸³ As Mr. Rennicke explained, a simple and straightforward handoff of traffic between two railroads in or near urban areas, where most reciprocal switching takes place, is rare. Each new interchange scenario would raise challenges, complications, and costs unique to the specific circumstances at issue. The additional time necessary to perform an interchange would create delays that can lead to congestion in areas where traffic density is high. The new switches would consume capacity in yards, creating further risk of congestion. Mr. Rennicke provided several examples demonstrating how mandated switching at the request of a shipper would degrade yard efficiency. The loss of control over routing decisions would severely impact railroads' ability to manage their yard operations efficiently.

AAR's members also submitted extensive testimony on the adverse operating impacts of allowing shippers to dictate how traffic moves. CSXT's Chief Operating Officer, Cindy Sanborn, explained that involuntary switching would require increased car handlings, disrupt network planning, and reduce predictability of traffic.¹⁸⁴ Norfolk Southern explained that through increased car handling, involuntary switching would decrease shipment velocity and reduce line-haul miles per day.¹⁸⁵ Norfolk Southern's Assistant Vice President, Transportation Network, Jeffrey Sliger, explained how giving shippers the ability to demand new traffic patterns and new interchanges would undermine service planning efforts.¹⁸⁶

¹⁸² Rennicke, 711 Op. V.S. at 40-41.

¹⁸³ *Id.* at 41-90.

¹⁸⁴ Opening Comments of CSX Transportation, Inc., EP 711 (Sub-No. 1), Verified Statement of Cindy M. Sanborn, at 8-17 (filed 26, 2016).

¹⁸⁵ Comments of Norfolk Southern Railway Company, EP 711, at 71-79 (filed March 1, 2013).

¹⁸⁶ Opening Comments of Norfolk Southern Railway Company, EP 711 (Sub-No. 1), Verified Statement of Jeffrey H. Sliger, at 2-6 (filed Oct. 26, 2016).

Kansas City Southern's Assistant Vice President, International Network Planning, Gregory Walling, explained how a forced switching regime requiring railroads to short-haul themselves "would undo decades of railroad industry operational and infrastructure modifications that were accomplished to make interline rail operations more efficient and less capital intensive."¹⁸⁷ He illustrated the operational concerns with an example of involuntary switching at Sallisaw, Oklahoma.¹⁸⁸ Union Pacific's Executive Vice President – Operations, Lance Fritz, explained that involuntary switching "would make [their] entire network less efficient because traffic would be diverted from the most efficient routes, reducing densities on those routes and thus unraveling the efficiencies that Union Pacific has built over decades."¹⁸⁹

F. Reversal of the Bottleneck Rule would adversely affect rail infrastructure investment.

As the Board is well aware, rail infrastructure is funded through private investment by individual railroads. The rail network requires vast amounts of capital each year to maintain and replace track and facilities and to improve and expand the network. Reversal of the Bottleneck Rule would adversely affect railroads' spending on rail infrastructure in two basic ways.

First, it would reduce the revenues that are available to railroads to make infrastructure investments. The purpose and effect of reversing the Bottleneck Rule are to reduce revenues earned by railroads deemed to be revenue adequate by allowing shippers to force railroads to quote segment rates and then to challenge the segment

¹⁸⁷ Opening Comments and Evidence of the Kansas City Southern Railway Company, EP 711, Verified Statement of Gregory Walling, at 53 (filed March 1, 2013).

¹⁸⁸ *Id.* at 54-60.

¹⁸⁹ Opening Comments and Evidence of Union Pacific Railroad Company, EP 711, Verified Statement of Lance M. Fritz, at 24 (filed Mar. 1, 2013).

rates in rate reasonableness proceedings. Shippers clearly expect that such use of the Board's rate reasonableness methodologies would result in significant rate reductions. The revenues available to invest in rail infrastructure would be further reduced by the added costs imposed by new and unnecessary interchanges and reduced efficiency. Less operating revenue would inevitably result in lower spending on infrastructure.

Infrastructure spending would also likely decline due to the uncertainties created by a change in regulation that would give shippers control over the routing of traffic. AAR's members explained in detail in EP 711 and EP 711 (Sub-No.1) how a loss of control over the routing of traffic would discourage infrastructure investment. CSX's Chairman and CEO, Michael Ward, explained that giving shippers control over switching decisions would create uncertainties about future volume and capacity needs at particular locations, undermining the planning and forecasting that must take place to justify particular investments.¹⁹⁰ Norfolk Southern's Vice President of Strategic Planning, John H. Friedman, explained that giving shippers the ability to control traffic routing through forced switching could "forc[e] NS to further downsize its network in order to compensate for the heightened regulatory risk and uncertainty related to the potential for changing traffic flows and traffic volumes."¹⁹¹ And Union Pacific's Vice President, Financial Planning and Analysis, Jon Panzer, explained how the uncertainty created by giving shippers the ability to mandate switching would affect the assessment of expected return from an investment that is critical to making investment decisions. He explained that forced switching would decrease the number of potential projects for

¹⁹⁰ Opening Comments of CSX Transportation, Inc., EP 711 (Sub-No. 1), Verified Statement of Michael J. Ward, at 10-15 (filed Oct. 26, 2016).

¹⁹¹ Opening Comments of Norfolk Southern Railway Company, EP 711 (Sub-No. 1), Verified Statement of John H. Friedman, at 10 (filed Oct. 26, 2016).

which the expected ROI justifies investment, and as a result, fewer projects would be funded.¹⁹²

The expectation of AAR's members that increased uncertainty caused by forced switching would lead to reduced infrastructure investment is supported by the academic literature on access regimes. Norfolk Southern's witness in EP 711 (Sub-No.1), Professor Grajek, predicted a "material reduction in long-term investment" if mandated switching were imposed on railroads.¹⁹³ His conclusions were supported by his extensive empirical research into the European Union's telecommunications industry, where he found enormous losses in net investment as a result of access regulations imposed on that industry. Union Pacific's witness, Professor Wright, similarly explained how the uncertainty created by the prospect of forced switching would raise costs and discourage investments, particularly in industries with large, sunk costs like the railroad industry.¹⁹⁴

G. Any change to the Bottleneck Rule would have to be made by Congress.

Any change in the Bottleneck Rule would therefore require Congressional action for three reason. First, as discussed above it is premised on long-standing Supreme Court precedent and current statutory provisions.

Second, railroads have relied on the agency's precedent, which limits shippers' ability to dictate traffic movements, in making extensive rail investments that have produced today's efficient rail network. The Conrail Transaction is a prominent

¹⁹² Opening Comments and Evidence of Union Pacific Railroad Company, EP 711 (Sub-No. 1), Verified Statement of Jon T. Panzer, at 7-10 (filed Oct. 26, 2016).

¹⁹³ Opening Statement of Norfolk Southern Railway Company, EP 711 (Sub-No. 1), Verified Statement of Michal Grajek, at 3 (filed Oct. 26, 2016).

¹⁹⁴ Opening Comments and Evidence of Union Pacific Railroad Company, EP 711 (Sub-No. 1), Verified Statement of Joshua D. Wright, at 25-26 (filed Oct. 26, 2016).

example of industry reliance upon these policies. As Norfolk Southern's former Chairman and CEO, David R. Goode, explained:

[T]he Conrail Transaction was fundamentally premised on Norfolk Southern's assumption that it would retain the continued ability to provide single-line service. Operating under this assumption, Norfolk Southern secured one of the largest debt financing arrangements, at the time, for the transaction and made substantial capital investments throughout its network, both with full confidence that the expense of such financing and investments would be recouped from the revenue growth as a result of the improved service product, expanded market access, increased operating efficiency, and enhanced competitiveness enabled by more single-line hauls.¹⁹⁵

Union Pacific similarly testified that its merger integration efforts over several years proceeded based on the assumption that the STB would protect a railroad's route- and rate-setting prerogative.¹⁹⁶ As Union Pacific explained, beginning in 1982, Union Pacific reconfigured six railroads to develop a rail network that maximizes single-line service and expedites customer shipments. Union Pacific would not have proceeded with the consolidations that created its current system had it been subject at the time to forced switching rules that would have undermined its ability to realize single-line efficiencies and provide single-line service. Any reversal of longstanding policy that "does not take account of legitimate reliance on prior interpretation[s]" is "arbitrary, capricious [or] an abuse of discretion." *Smiley v. Citibank (S.D.)*, 517 U.S. 735, 742 (1996) (internal citations omitted).

Third, Congress repeatedly has rejected proposed legislation that would have set aside the Bottleneck Rule. Over the past twenty years, at least 18 bills have been introduced in the House or Senate that would relax the competitive access standards

¹⁹⁵ Opening Comments of Norfolk Southern Railway Company, EP 711 (Sub-No. 1), Verified Statement of David R. Goode, at 20 (filed Oct. 26, 2016).

¹⁹⁶ Opening Comments and Evidence of Union Pacific Railroad Company, EP 711 (Sub-No. 1), at 14-18 (filed Oct. 26, 2016).

and make it easier for shippers to obtain an order to force reciprocal switching or terminal access.¹⁹⁷ Not one of those 18 bills passed either house of Congress. Nor did Congress direct the Board to change its long-standing competitive access rule when it reauthorized the agency.

¹⁹⁷ See, e.g., (1) Rail Shipper Fairness Act of 2015, S. 853, 114th Cong., § 3 (2015) (requiring rail carriers to quote rates between any interchange points of two or more carriers and requiring competitive switching in terminal areas or within 100 miles of an interchange unless infeasible or unsafe); (2) Surface Transportation Board Reauthorization Act of 2011, S. 158, 112th Cong., § 302 (2011) (overturning *Midtec*, establishing when STB should provide terminal access, and create a pricing mechanism); (3) Surface Transportation Board Reauthorization Act of 2009, S. 2889, 111th Cong., § 302 (2009) (same as S. 158); (4) Railroad Competition and Service Improvement Act of 2007, S. 953, 110th Cong., § 104 (2007) (requiring, rather than authorizing, STB to order reciprocal switching); (5) Railroad Competition and Service Improvement Act of 2007, H.R. 2125, 110th Cong., § 104 (2007) (same); (6) Railroad Competition Improvement and Reauthorization Act of 2005, H.R. 2047, 109th Cong., § 5 (reversing *Midtec* by prohibiting Board from requiring evidence of anticompetitive conduct as condition to ordering reciprocal switching); (7) Railroad Competition Act of 2006, S. 2921, 109th Cong., § 104 (2006) (reversing *Midtec* by amending statute to read “the Board shall not require evidence of anticompetitive conduct by a rail carrier from which access is sought” as condition to terminal access or reciprocal switching); (8) Railroad Competition Act of 2005, S. 919, 109th Cong., § 102 (2005) (prohibiting Board from requiring evidence of anticompetitive conduct as pre-condition to ordering terminal access or reciprocal switching); (9) Railroad Competition Act of 2003, H.R. 2924, 108th Cong., § 5 (2003) (abrogating *Midtec* by prohibiting Board from requiring evidence of anticompetitive conduct as pre-condition to ordering terminal access or reciprocal switching); (10) Railroad Competition Act of 2003, S. 919, 108th Cong., § 5 (2003) (same); (11) Surface Transportation Board Reform Act of 2003, H.R. 2192, 108th Cong., § 104 (2003) (overturning *Midtec*); (12) Railroad Competition Act of 2001, S. 1103, 107th Cong., § 103 (2001) (abrogating *Midtec* by providing that, in considering requests for reciprocal switching or terminal access, STB “may not require evidence of anticompetitive conduct by a rail carrier from whom access is sought”); (13) Surface Transportation Board Reform Act of 2001, H.R. 141, 107th Cong., § 104 (2001) (same); (14) Railroad Competition and Service Improvement Act of 1999, H.R. 2784, 106th Cong., § 7 (1999) (overturning *Midtec* by prohibiting STB from requiring evidence of anticompetitive conduct as condition to ordering terminal trackage rights or reciprocal switching); (15) Railroad Competition and Service Improvement Act of 1999, S. 621, 106th Cong., § 7 (1999) (same); (16) Surface Transportation Board Reauthorization Act of 1999, H.R. 3163, 106th Cong. § 6 (1999) (same); (17) Surface Transportation Board Reform Act of 1999, H.R. 3446, 106th Cong., § 104 (1999) (to same effect); and (18) Surface Transportation Board Modernization Act, H.R. 3398, 106th Cong., § 12 (1999) (overturning *Midtec* by changing the standards for terminal access and reciprocal switching and altering the procedure for Board action).

As the Supreme Court explained, “once an agency’s statutory construction has been ‘fully brought to the attention of the public and Congress,’ and the latter has not sought to alter that interpretation although it has amended the statute in other respects, then presumably the legislative intent has been correctly discerned.” *United States v. Rutherford*, 442 U.S. 544, 554, n.10 (1979); *see also United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 137 (1985) (congressional refusal to overrule agency construction of legislation is “evidence of the reasonableness of that construction, particularly where the administrative construction has been brought to Congress’ attention through legislation specifically designed to supplant it”); *Blau v. Lehman*, 368 U.S. 403, 413 (1962) (“Congress is the proper agency to change an interpretation of the Act unbroken since its passage, if the change is to be made.”).

VI. THE STB SHOULD IMPROVE EXISTING RATE REGULATION TOOLS.

As explained above, the removal of burdensome and overbearing regulatory constraints by Congress in the Staggers Act contributed significantly to improving the quality and efficiency of rail service and the financial health of the railroad industry. All industry stakeholders have benefited from these improvements, which have come about because market forces have been allowed to direct railroads’ commercial and financial decisions. There is no reason to believe that any abuse of market power caused the general turnaround in the rail industry over the last several decades, and there has been no overarching competitive failure that the Board must address through fundamental changes in regulatory standards.

Nevertheless, it is appropriate for the Board to look for ways to improve its regulatory standards and procedures. The economic principles that have governed rate regulation since Staggers remain valid and must continue to be followed.¹⁹⁸ However, the Board can improve the implementation of those economic principles to ensure that

¹⁹⁸ See *Kalt V.S.* ¶¶ 20-30, 111-13.

shippers will have access to rate relief if a railroad abuses its market power.¹⁹⁹ The Board has already begun investigating ways to improve its existing rate reasonableness tools, and the Board should continue focusing on these efforts while staying within the bounds of these sound economic principles.

A. The Board’s existing regulatory tools continue to be the proper framework for regulating rates.

In response to the improving financial health of the railroad industry, Congress called upon the Board in Section 15 of the Surface Transportation Board Reauthorization Act of 2015, Pub. L. No. 114-110, 129 Stat. 2228, to conduct a study of existing rate reasonableness methodologies and to investigate whether alternative methodologies are available that are “consistent with sound economic principles.” The Board commissioned InterVISTAS Consulting LLC to conduct the study, and InterVISTAS issued its report in September 2016.²⁰⁰

InterVISTAS concluded that the SAC test “has stood the test of time as a maximum rate reasonableness methodology,” although the Report recognized that the complexity of SAC procedures limited its practical availability in some cases.²⁰¹ However, the Report noted that in recognition of the complexity of the Full SAC methodology, the Board has developed two simplified alternatives to SAC – the Simplified SAC methodology and the Three-Benchmark methodology – and that “shippers can achieve similar results to Full SAC under these less-costly alternatives.”²⁰² Moreover, InterVISTAS explained that it had examined several

¹⁹⁹ *Id.* ¶¶ 126-34.

²⁰⁰ InterVISTAS, Surface Transportation Board, An Examination of the STB’s Approach to Freight Rail Rate Regulation and Options for Simplification, Project FY 14-SB-157 (Sept. 14, 2016) (“InterVISTAS Report”).

²⁰¹ InterVISTAS Report, Exec. Summary at xviii.

²⁰² *Id.*

alternative methodologies used in other countries and by other regulatory agencies and found that none of those approaches was a valid alternative to CMP and the basic procedures – SAC, S-SAC, and Three-Benchmark – developed to implement CMP.²⁰³

Similarly, Professor Kalt explains that “the foundational principles upon which current regulation rests – that competition should be relied on whenever possible and that regulation should mimic competitive outcomes as closely as possible – remain central to the continued success of the rail industry and must remain central to any policy decisions regarding revenue adequacy.”²⁰⁴ Professor Kalt also notes that SAC and its progeny properly embrace the three foundational regulatory principles that emerged from the objectives of Staggers: “(1) where competition is adequate, give railroads the flexibility to set their own rates, terms, conditions and service offerings so that they can better tailor their service to customers and the economy’s needs; (2) maintain regulatory constraints on rates paid by shippers, but *only* where it can be shown that a railroad is market dominant (i.e., not constrained by effective competition) through a qualitative finding as to the lack of effective competitive alternatives and a quantitative finding that the rate exceeds 180% of the railroad’s variable costs of service to a shipper; and (3) where a railroad’s rates for particular traffic were elevated above the 180% of variable cost threshold as the result of demonstrable market dominance, establish regulated rates which mimic the rates competition would set (if it could) via application of the principles of Constrained Market Pricing (CMP).”²⁰⁵

Professor Sappington concurs that the use of CMP principles in SAC and its progeny “approximat[e] the discipline competition would impose on railroads” and

²⁰³ *Id.* at 132.

²⁰⁴ Kalt V.S. ¶ 33.

²⁰⁵ *Id.* ¶ 23.

“appropriately restricts ... regulation to the prices railroads charge to shippers that are deemed to lack effective competition.”²⁰⁶

In short, various economic experts, including the Board’s own economic consultants, have confirmed the validity of the existing economic framework for regulating rail rates under the current statute and the need for any refinements to rate regulation standards to be made within that economic framework.

B. The Board can improve access to rate relief in small shipper and small value cases through further streamlining of the Three-Benchmark approach.

In 2007, the Board adopted the current Three-Benchmark methodology – under which the reasonableness of a challenged rate is determined by examining that rate in relation to three benchmark figures – as a simplified alternative to SAC and S-SAC that nevertheless retained a foundation in CMP. *Simplified Standards for Rail Rate Cases*, EP 646 (Sub-No. 1) (STB served Sept. 5, 2007). The InterVISTAS Report examined the Three Benchmark methodology and concluded that each of the three elements of the methodology is linked to the economic principles underlying CMP and thus preserves the need to permit Ramsey-based pricing while protecting shippers from unreasonably high rates. *See* InterVISTAS Report at 47 -51. InterVISTAS expressed concern that additional simplification of the Three-Benchmark methodology, as well as the Simplified SAC approach, “risks moving the approaches further away from bedrock CMP principles.” Report at xvii. However, the Board has continued to explore further simplification of the Three-Benchmark approach in Docket No. EP 665 (Sub-No. 1), and AAR believes that this exploration should continue.

Despite the concerns raised in AAR’s comments in Docket No. EP 665 (Sub-No. 2) regarding the specific proposals in the ANPRM, AAR believes there is substantial

²⁰⁶ Opening Comments of Norfolk Southern Railway Company, EP 722, Verified Statement of David Sappington, at 5 (filed Sept. 5, 2014).

merit in the concept of a procedure for very small cases based on the Three Benchmark methodology that would meet the Board's stated goal of ensuring that small shippers have access to the rate reasonableness process at an appropriate cost. As AAR noted in its October 21, 2019 letter to the Board members in Docket No. EP 755, the AAR's members are prepared to support a rate reasonableness process that incorporates a few basic principles:

- a comparison group approach improved by bright-line criteria;
 - streamlined case administration measures;
 - a reasonable, summary screening for market dominance similar to the Board's proposal in Market Dominance Streamlined Approach, Docket No. EP 756 (STB served Sept. 12, 2019), with the improvements offered by the AAR and individual members in that docket;
 - measures to address the current limitations of the waybill sampling approach; and
 - screening criteria that ensure small shippers have the use of this new, more accessible process.
- C. The Board should also consider further streamlining of the SAC and Simplified-SAC methodology.**

The Board should also focus on further refining the SAC and Simplified-SAC methodologies for larger cases. For example, the recommendation of the Task Force to use streamlined evidence on road property investment in S-SAC is conceptually on the right path by exploring simplifications to an economically sound methodology.

Professor Kalt also suggests some additional measures that could be considered for further refinement of the SAC methodology.²⁰⁷ In particular, Professor Kalt recommends standardizing certain "decisions on recurring issues that arise in most or all cases, but don't depend on the specific SARR, and could be applied going forward to

²⁰⁷ Kalt V.S. ¶¶ 139-47.

future case,” such as treatment of equity flotation and real estate acquisition costs, choice of inflation indices, treatment of taxes and bonus depreciation, and calculation issues related to DCF (*e.g.*, amortization of debt, terminal value, etc.).²⁰⁸ Second, “various categories of costs ... could be standardized, subject to rebuttable presumptions depending on the specific details of a case,” such as G&A costs, construction costs, and ancillary facilities.²⁰⁹ Third, “the use of third-party experts (paid by the parties ...) on areas outside the STB’s expertise (*e.g.* real estate valuation) could provide guidance to the Board” and limit the proceeding before the Board in various ways.²¹⁰ Fourth, the “establishment of rules and standards for the determination of traffic groups and cross-over traffic could limit the extent of the disputes over the SARR.”²¹¹ Fifth, technical conferences could also assist in resolving disputes in a more efficient manner.

Simplified SAC is another tool the Board could effectively improve. Simplified-SAC relies on the same CMP principles as Full-SAC, except for the efficiency dimension of CMP as discussed below. It also shares many elements of the Full-SAC process, although in a far simplified approach. Like Full SAC, the Simplified SAC methodology seeks to simulate rates that would exist in a contestable market, *i.e.*, a market in which the potential entry of a new rail carrier would keep rates at competitive levels. It is based on the principle that a railroad should have the freedom to set rates based on market conditions and perceived demand for service while ensuring that a challenged rate is not so high as to subsidize other traffic. The Simplified SAC methodology therefore ensures that the rates charged by a rail carrier to a group of shippers that share facilities cover the full cost of those facilities. But it protects shippers with high

²⁰⁸ *Id.* ¶ 143.

²⁰⁹ *Id.* ¶ 144.

²¹⁰ *Id.* ¶ 145.

²¹¹ *Id.* ¶ 146.

demand for rail transportation from being forced to pay rates that cover the cost of other shippers' facilities. In this way, the Simplified SAC methodology addresses potential abuse of market power by ensuring that high demand shippers pay no more than necessary to cover the full cost of the service they receive. Through the internal cross-subsidy test developed in *PPL Montana, LLC v. Burlington Northern & Santa Fe Railway*, NOR 42054 (STB served Aug. 20, 2002) and *Otter Tail Power Co. v. BNSF Ry.*, NOR 42058, slip op. at 11-13 (STB served Jan. 27, 2006), the Simplified SAC test also prevents rates from being prescribed at levels that will require other shippers to cover the cost of the complaining shipper's service.

The Simplified SAC methodology accomplishes these important economic objectives through procedures that are much simpler and more straightforward than those required in a Full SAC analysis. Complainants do not need to design a hypothetical stand-alone railroad from scratch, which is a leading cause of the complexity of Full SAC analyses. This feature of Full SAC is intended to detect and remove inefficiencies in the defendant railroad's operations, but since Staggers, railroads have been able to streamline their networks and operations so that this feature is not as important as it was when the SAC test was developed. In fact, much of the complexity of Full SAC analyses is due to the complainants' frequent attempts to use this design feature of Full SAC to posit unrealistic and infeasible rail systems. Instead, Simplified-SAC assumes that the existing rail carrier has already sought to optimize the efficiency of its network and operations, and the Simplified SAC analysis therefore uses the existing facilities and operations to represent the design and operations of the hypothetical entrant. This aspect of Simplified SAC substantially reduces the cost and time to litigate a case as compared to Full-SAC. It eliminates the need for a complex operating plan and expert testimony and modeling on the feasibility of alternative operating plans.

There has not been a completed Simplified SAC analysis since the Board adopted the methodology, although the InterVISTAS Report noted that at least five cases were identified for potential use of the methodology but settled before the Board applied Simplified-SAC.²¹² The lack of any completed Simplified-SAC analysis does not indicate that the methodology is flawed or inappropriate. Indeed, because the methodology is relatively straightforward, it is much easier to predict the results of a Simplified-SAC analysis than the results of a Full SAC analysis. Predictable standards promote private sector resolution of rate disputes before they reach the Board. The Board should pursue refinement of the existing approaches with a focus on small cases and not abandon the economic principles that have guided regulation since Staggers.

VII. CONCLUSION

AAR appreciates the opportunity to comment on the revenue adequacy constraint and some of the ideas described in the Task Force report. However, revenue adequacy is not a problem in need of a regulatory solution. Recent improvements in financial health are attributable to efficiency, innovation, and growth of competitive markets like intermodal traffic. Indeed, most U.S. industries routinely earn an accounting return substantially above the cost of capital. There is no reason to deny the freight railroad industry the same financial opportunities as its unregulated competitors or customers.

In any event, Congress gave the agency no authority to impose an earnings constraint, revoke bottleneck protections and long-haul rights, or resurrect Nixon-era price freezes simply because a carrier has achieved revenue adequacy, however defined. Congress plainly did not intend the prize for carrier innovation, improved

²¹² See InterVISTAS Report at 57 (citing *William Olefins v. GTC* (NOR 42098); *BP Amoco v. Norfolk Southern* (NOR 42093); *Shell Chemical v. Norfolk Southern* (NOR 41670); *U.S. Magnesium v. Union Pacific* (NOR 42115); and *U.S. Magnesium v. Union Pacific* (NOR 42116)).

efficiency, and creation of new competitive markets to be a return to overbearing federal regulatory control.

Respectfully submitted,

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November 26, 2019

BEFORE THE
SURFACE TRANSPORTATION BOARD

HEARING ON RAILROAD REVENUE ADEQUACY

Docket No. EP 722

**WRITTEN TESTIMONY OF
JOSEPH P. KALT, PH.D.
NOVEMBER 26, 2019**

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I. INTRODUCTION

A. WITNESS INTRODUCTION

1. My name is Joseph P. Kalt. I am the Ford Foundation Professor (Emeritus) of International Political Economy at the John F. Kennedy School of Government at Harvard University. The Kennedy School of Government is Harvard's graduate school for public policy and public administration. I joined the faculty at Harvard in 1978, serving first as an Instructor, then as an Assistant Professor and Associate Professor of Economics in the Department of Economics. I joined the faculty of the Kennedy School of Government as a Professor of Public Policy with tenure in 1986. At the Kennedy School, my teaching responsibilities have included economics for public policy, the economics of regulation and antitrust, natural resource and environmental policy, and economic development.

2. During 2005-2009, I served as a visiting professor at the University of Arizona's Eller College of Management. Since 2008, I have been a visiting professor at the University of Arizona's Rogers College of Law. My teaching at the University of Arizona has included the economics of regulation and antitrust, as well as economic development policy.

3. I am also a senior economist with Compass Lexecon, an economics consulting firm specializing in the analysis of competition, among other areas of economics. I hold B.A., M.A., and Ph.D. degrees in economics.

4. Throughout my career, I have engaged in extensive research, teaching, and consulting on the economics of regulated markets, as well as on competition economics and policy more generally. In addition to my university teaching, I have taught on such topics in programs for working journalists, state legislators, federal administrative law judges, and business and non-profit sector leaders. Over the last 30 years, I have testified on numerous occasions before state, federal, and international courts, tribunals and commissions, as well as before the U.S. Senate and the U.S. House of Representatives, regarding the economics and policy of competition and regulated industries.

5. With regard to the railroad sector, I have provided expert testimony before the Surface Transportation Board ("STB" or "the Board") and various other federal and international tribunals on a wide range of matters, including major rail mergers, rate making and rate regulation

exemptions, competitive access policy, and a number of antitrust matters. I have also been invited on multiple occasions to provide education on the basic economics of the railroad sector and its regulation to STB members, congressional staff, and federal administrative law judges.

6. My curriculum vita is attached as Appendix A and lists my prior testimony as an expert, my publications, and my other professional activities.

B. BACKGROUND

7. In January 2018, the Surface Transportation Board created the Rate Reform Task Force (“RRTF” or “the Task Force”) and tasked it with “recommend[ing] improvements to the existing rate review processes and...propos[ing] new rate review methodologies that are more attuned to the realities of the current transportation world.”¹ The Task Force submitted a report in April 2019. That report commented on multiple topics related to railroad regulation and included recommendations related to modifying the definition and application of “revenue adequacy.” In this proceeding, the Board is focused specifically on analyzing and evaluating the Task Force’s recommendations related to revenue adequacy and has asked for comment on those recommendations in the following areas:²

- **Definition of Revenue Adequacy:** The Task Force recommends that the Board create a new measure of *long-term* revenue adequacy that compares the average return on investment (“ROI”) of an individual carrier over an entire business cycle to the rail industry average cost of capital (“COC”) over that same business cycle.³
- **Rate Increase Constraint:** The Task Force recommends “considering a rate increase constraint for long-term revenue-adequate carriers, which would identify a point beyond which further application of differential pricing would be unwarranted.”⁴

¹ Rate Reform Task Force, “Report to the Surface Transportation Board,” April 25, 2019 (hereinafter “Rate Reform Report”) at p. 1.

² Surface Transportation Board, “Notice.” Docket No. EP 761 (Hearing on Revenue Adequacy) and Docket No. EP 722 (Railroad Revenue Adequacy), decided September 12, 2019 (hereinafter “STB Notice”) at pp. 2-3.

³ The RRTF proposes to define an entire business cycle as “the shortest period of time, not less than five years, that includes both a year in which a recession began and a year that follows a year in which a recession began” using the National Bureau of Economic Research official designation of recession dates to identify study periods. (Rate Reform Report at p. 33.)

⁴ STB Notice at pp. 2-3.

- **Bottleneck Changes:** The RRTF suggests eliminating so-called bottleneck protections for carriers found to be long-term revenue adequate.⁵
- **Simplified Stand-Alone Cost (“Simplified-SAC”) Changes:** The RRTF proposes reinstating the simplified Road Property Investment (“RPI”) analysis – i.e., using cost averages and formulas from prior SAC cases to calculate RPI – in Simplified-SAC cases for long-term revenue adequate carriers.⁶

C. ASSIGNMENT AND STATEMENT OVERVIEW

8. I have been asked by the Association of American Railroads to analyze the foregoing proposals put forth by the Board and the Task Force, and to assess whether those proposals are consistent with principles of sound economics and proper public policy. I have also been asked to provide my own recommendations for developing an economically sound measure of “revenue adequacy” and to assess whether (and how) such an economically sound measure of revenue adequacy should be incorporated into the regulatory process.

9. The remainder of this report is organized as follows. In Section II, I present a summary of my main conclusions. In Section III, I review the principles of sound regulation that have formed the foundation of successful rail regulation and that must remain central to the analysis of the recommendations being evaluated in this proceeding. In Section IV, I discuss economically sound measures of revenue adequacy and analyze the definition of long-term revenue adequacy under consideration by the Board. In Section V, I evaluate the economics of the proposed measure of long-run revenue adequacy and explain its shortcomings. In Section VI, I address why the Rate Increase Constraint and bottleneck proposals of the Task Force are inappropriate regulatory responses to long-term revenue adequacy. Section VII analyzes the economic implications of the Task Force recommendations. Finally, in Section VIII, I offer alternative recommendations aimed at improving the ability of the Board to ferret out otherwise unaddressed pockets of market power resulting in above-competitive pricing that may exist in the rail network and to regulate effectively maximum rates in such circumstances.

⁵ A “bottleneck” occurs when more than one railroad could be involved in a specific move, but either the origin or destination is exclusively served by one railroad. The portion of the move that is served by only one railroad is called the “bottleneck.” Currently, carriers cannot be forced to route traffic over the non-bottleneck portion of the move unless a shipper obtains a contract for the non-bottleneck portion of the move. For a more detailed description see Rate Reform Report at pp. 39-41.

⁶ STB Notice at pp. 2-3.

II. SUMMARY OF CONCLUSIONS

10. Based on my analysis of the proposals put forth by the Board and the Rate Reform Task Force, as well as my experience studying the economic impacts of regulation, generally, and of regulation in the rail industry, specifically, I find that the recommendations related to defining “long-term revenue adequacy” are not based on sound economic principles and calculations. The proposed measures of revenue adequacy are simply not capable of detecting actual over-adequate economic returns – i.e., returns that are truly in excess of a railroad’s actual cost of capital – and are not capable of attributing any such putative excess returns to above-competitive pricing as a result of exercises of market power by a subject railroad. I find further that the Task Force’s proposals to utilize putative determinations of returns in excess of revenue adequacy to trigger broad-based tightening of regulatory constraints on a railroad’s rates, revenues, and earnings would constitute a misguided return to “old-style” rate-of-return regulation that is now discredited for its long history of distorting investment, operations, service quality, and pricing – all to the detriment of the public’s interest in a dynamic and efficient transportation system and national economy.

11. Although it is necessary and prudent to review policy periodically, the continued success of the rail industry depends critically on continuing to develop policies that are grounded in sound economic principles. The economic justification for regulating prices (rates) in an industry such as railroading is found in basic principles which demonstrate that the exercise of market power – elevating prices above the levels that competition would set if competitive forces were potent enough to do so – is contrary to the public interest in a healthy and efficient economy. Straightforwardly, these principles mean that competition should be allowed to work where it is viable; and where competition is otherwise thwarted by exercises of market power that sets rates above-competitive levels, remedial rate regulation should seek to mimic competitive outcomes to the maximum extent possible. Proper evaluation of the recommendations highlighted by the Board for consideration in this proceeding must occur within this context.

12. The central principle of “mimic competition” is deeply embedded in the Board’s post-Staggers Act regulatory framework of Constrained Market Pricing (CMP) and its Stand-Alone Cost (SAC) test of rate reasonableness for traffic where railroads have been shown to possess market power (dominance). Indeed, this framework is at the heart of the remarkable success of

federal rail policy in restoring railroads over the last 40 years to being valuable and critical components of the nation's transportation system. But because railroad networks inherently rest on long-lived capital facilities that, once put in place, are effectively "sunk" and incapable of readily fleeing the industry if and when economic or policy conditions turn uneconomic, they are sitting ducks for opportunistic machinations of policy by self-interested parties who see advantage in turning regulation in their private favor even at the expense of the long-run health of a carrier's network and the many others who depend on that network: Individual users of the network can privately benefit from uneconomic and distortive rate policies without, themselves, bearing the costs in the short- or long-run of deviating from the "mimic competition" principle. Accordingly, sound rail regulation properly concerns itself with promoting market-grounded rate regulation standards and ensuring that policy focuses on sustaining adequate revenues for carriers.

13. The Task Force's proposals at issue in this proceeding do not treat "revenue adequacy" as a policy admonition aimed at protecting against opportunistic threats to the economic health and sustainability of long-lived investments in the nation's railroad networks. Instead, the subject proposals would treat "revenue adequacy" as a *trigger* for imposing broad-based restrictions on a putatively revenue-adequate railroad's rates. The Task Force proposes multiple means of doing this, including using "revenue adequacy" to trigger the direct capping of rates and the indirect erosion of rates via structural changes (in particular, the elimination of so-called "bottleneck" protections). The Task Force also recommends changes to the Board's current Simplified-SAC methodology, apparently as a means to make it less expensive for shippers to obtain rate relief.

14. The use of putative findings of returns in excess of revenue adequacy (what we can call revenue "over-adequacy") as triggers for tighter regulation of railroad rates would be grossly unsound policy. This conclusion follows directly from several compelling considerations:

- First, the proposed revenue adequacy "trigger" rests on accounting measurement with known and egregious flaws. The measure of revenue adequacy endorsed by the Task Force would be based on the accounting rate of return of a railroad (based on the value of its depreciated book (accounting) capital investment) relative to its market cost of capital. There is no serious disagreement among scholars in the field that the proffered accounting rates of return are not capable of providing useful information on a firm's actual returns in the marketplace or on whether a firm's revenues are sufficient to yield investors actual economic returns that are at least equal to those investors' costs of committing capital to the firm. Accounting rates of return based on historical, depreciated book values of investment are inherently distorted by such factors as

differences between accounting depreciation and actual economic depreciation and useful lives of capital assets, as well as changes in economic conditions that readily affect the market value of capital assets over their lives.

- Second, the putative regulations would be triggered by normal and healthy events. Quantitative research finds that returns in excess of revenue adequacy (“over-adequacy”) on an accounting basis are, in fact, the norm across industry after industry. Competitive markets are dynamic, and successful competitive firms often earn above long-run equilibrium rates of return, and firms rationally seek to achieve economic returns that are not just equal to, but exceed, their cost of capital. As technology changes and markets shift, firms that are particularly adept at taking advantage of these changes reap economic returns in excess of their capital costs. Such returns can be sustained over time by firms that are particularly adept at staying ahead of the curve when it comes to anticipating technology, shifts in traffic mix, changing shipper needs, and the like. In fact, this prospect is arguably the central driver of investment. The implication for us here is that, as a general matter, a finding that an industry – such as railroading – is revenue “over-adequate” on an accounting basis provides no indication of the relative health of that industry in terms of its ability to compete for the capital of investors who can commit their capital to other sectors. Nor does such a finding provide reliable information regarding the presence, location, or strength of any above-competitive pricing on a carrier’s system.
- Third, the proposed measure of economic value upon which determinations of purported revenue adequacy would be based is not the true economic value of a railroad’s assets – i.e., the actual value upon which investors must expect to earn at least the cost of capital if a firm is to be properly judged as revenue adequate. There is no serious disagreement among scholars of the field that economically coherent measurement of revenue adequacy (i.e., assessment of whether a firm’s revenues are sufficient to yield investors actual economic returns that are at least equal to those investors’ costs of committing capital to the firm) must be based on the *replacement cost* (current market value) of the capital assets that investors have committed to the firm. In fact, this economic reality is implicitly recognized and embedded in the Board’s SAC tests, which are designed to determine what level of revenue is adequate in the case of specific traffic on sub-sections of a carrier’s system.
- Fourth, measures of overall railroad revenue adequacy, even if made more reliable, are not capable of detecting an abuse of market power that has raised rates above competitive levels. This is a key point. Whether revenue adequacy is measured coherently or incoherently, measures of returns in excess of revenue adequacy are fundamentally incapable of attributing “excess” revenues and returns to the problem that sound regulation should address – i.e., a railroad’s exercise of market power so as to raise rates above competitive levels somewhere on its system. Under both true economic “over-

adequacy” and flawed accounting “over-adequacy,” the exercise of otherwise unchecked market power (and associated above-competitive rates) somewhere on a railroad’s system is but one among many possible sources of putatively excess returns. These possible sources range from artifacts of accounting rules, to vacillations in economic conditions relevant to a carrier’s performance, to the success of carrier-specific investments or operational innovations. Moreover, pockets of market power are inherently the product of attributes of specific service to specific customers for specific carriage. Accordingly, under policy guided by the “mimic competition” principle, there is no substitute for analyzing the reasonableness of a challenged rate at that level of specificity.

- The Task Force’s proposals *presume* that revenue “over-adequacy” (according to the accounting measure of “adequacy”) is the product of the exercise of market power that has raised rates and revenues above competitive (i.e., reasonable) levels . Thus, the Task Force sees returns in excess of revenue adequacy as properly triggering additional restraints on a carriers’ rate-setting freedom. Not only is the Task Force’s underlying presumption wholly unjustified for the reasons summarized above, but the resulting proposals for rate restraint beyond those imposed by the Board’s CMP-SAC framework portend a step backward to older, discredited regulatory strategies.
- Fifth, the Task Force is resurrecting an “old-style” and discredited approach to regulation. In their economic essence, the Task Force’s proposals (i.e., using measures of overall firm-wide revenues and concomitant firm-wide rates of return in excess of a firm’s cost of capital to trigger limitations on rates and overall revenues) entail a regulatory framework commonly referred to as “old-style” rate-of-return regulation. Such regulation is “old-style” in the sense that it has been largely abandoned in at least developed countries because of its many distortions and inefficiencies. In particular:
 - Using putative findings of revenue adequacy to trigger tightened constraints on a firm’s revenues and pricing freedom stifles innovation. This is because cost-reducing and/or quality-improving efforts that might otherwise raise revenues are rewarded with rate constraints. For similar reasons, pricing in even competitive markets can be distorted when price increases in those markets, driven by competitive market forces, push a railroad toward or past measured revenue adequacy. Under such conditions, carriers would have incentives to hold *competitive prices* at artificially low and below-competitive levels, and the proposed ‘Rate Increase Constraint’ (“RIC”) will have thereby produced cross-subsidization of shippers in such markets. In addition, directly limiting a firm’s pricing freedom so as to push revenues and the associated rate of return toward the regulator’s measure of “adequate” (as under the Task Force’s proposed RIC) gives firms distorted incentives to “pad” or “gold-plate” their capital asset base, since

increasing capital intensity and raising the asset base raises the level of allowable rates and revenues and reverses or avoids a determination of revenue adequacy.

- o Structural changes (such as the Task Force’s proposed elimination of bottleneck protection for putatively revenue adequate carriers) aimed at taking revenues away from a revenue “over-adequate” railroad portend disruption and inefficiencies across the rail network. The Task Force’s bottleneck recommendation would give shippers the power to direct interchanges at bottlenecks on affected railroads’ systems. As documented experience around the world has demonstrated, because a shipper rationally concerns itself with its specific traffic and transport needs rather than with conditions across a carrier’s entire network, this produces operational and even investment distortions on complicated, non-linear networks subject to capacity constraints and congestion – i.e., on railroads like the U.S carriers.
- o The Task Force’s proposal to employ determinations of returns in excess of revenue adequacy as triggers for simplifications to the Board’s SAC tests is on a better path, but the agency must tread carefully. Tying any meaningful change in regulation to an individual carrier’s “revenue adequacy” would inevitably create incentives for carriers to avoid such “triggering” by making investment, operational, and/or pricing decisions of the distorted and inefficient forms described above.
- o This is not to say that the Board should not be continuously looking for ways to improve its ability to ferret out pockets of unchecked market power and concomitant above-competitive pricing and streamline its rate regulation processes. What is needed is *smart simplification* which focuses on those goals, rather than on pulling back the overall revenues of supposedly revenue “over-adequate” railroads simply because they are putatively revenue “over-adequate” and *not* because the regulatory process has actually detected pockets of market power being exercised and elevating prices above competitive levels somewhere in a carrier’s system. In Section VIII below, I present recommendations for smart simplification.

III. PRINCIPLES OF SOUND REGULATION

A. DESIGNING ECONOMICALLY RATIONAL RAIL REGULATION

15. The fundamental economic rationale for regulating rates and services in the railroad industry (really, in any industry) is the prospect of a rail carrier exercising market power and elevating rates above competitive levels.⁷ Such concerns arise because railroading is **generally** subject to both barriers to entry arising because railroading is a *network* industry characterized by substantial economies of scope and scale, as well as extremely long-lived capital assets with large

⁷ 49 U.S.C. § 10101.

fixed, common (i.e., shared across traffic) and sunk costs. The former can make it inefficient for multiple systems to serve certain locations, and the latter limits the ability of new entrant railroads to contest for certain traffic carried by an incumbent. Yet, *specific* rail service (i.e., particular routes, commodities, and/or shippers) is often subject to very potent competition from other railroads, other modes of freight transportation, or alternative geographic sourcing and location decisions available to shippers across wide swaths of their systems.

16. The combination of these two factors – the large fixed and common sunk costs across the network with long-lived capital in conjunction with varying competition across routes, commodities and shippers – makes designing economically rational rail regulation a challenge. Sound regulatory policy must recognize – and balance – both of these fundamental economic characteristics of the industry. Because all parts of a network are ultimately interconnected with all other parts of the network – and because different users of the network find themselves in highly diverse competitive and other market circumstances – it is challenging to structure economically coherent and sustainable regulation that allows competition to work where possible, but that also protects shippers against the exercise of market power and concomitant above-competitive rates where such protection is called for.

17. When policy makers leaned too heavily on system-wide, top-down rate regulation – rules that made it impossible for railroads to meet individual shipper demands, negotiate rates through private contracts with their shippers, or compete on price and service quality with other modes of transportation – the results were predictable.⁸ Rate bureaus established rates that reflected “average markups” over the railroads’ variable costs of service and those rates were applied to all shippers that used a specific traffic lane or shipped a specific commodity. However, rates based on these types of averages fail to account for the fact that shippers value services in very different ways and, therefore, are willing to pay very different rates. The result is that bureau-established rates were very attractive to some shippers and very unattractive to others. Shippers whose regulated rates were much less attractive than the rates offered by competing transportation

⁸ See, for example, Meyer, John R. and Alexander L. Morton, “A Better Way to Run the Railroads,” *Harvard Business Review*, LII (July-August 1974); Moore, Thomas G., “Freight Transportation Regulation: Surface Freight and the Interstate Commerce Commission,” American Enterprise Institute, Washington, D.C. (1972); Meyer, John R., Merton J. Peck, John Stenason, and Charles Zwick, “The Economics of Competition in the Transportation Industries,” Harvard University Press, Cambridge, MA (1959); Friedlander, Ann F. and Richard H. Spady, “Freight Transport Regulation,” MIT Press, Cambridge, MA (1980).

alternatives abandoned the railroads. Rail volumes began to shift toward the high-cost traffic that obtained a relatively good deal under the pre-Staggers rates (i.e., rates below the true cost of providing service). Left with a shrinking traffic base of largely bulky or high-cost shipments generating revenues significantly below total costs, railroads could not generate revenue adequate to cover operating costs and finance necessary long-term capital investments.

18. With much of the railroads' traffic subject to competition from other railroads, other modes of transportation, or other competitive forces (e.g., geographic and product competition), successful regulatory policy *requires* allowing railroads to price dynamically in response to changes in competitive factors. In this environment, broad-scale, top-down price regulation inevitably impedes efficient investment, operations and pricing applicable to large numbers of customers.

19. The important lesson from past railroad experience is that rate regulation must be targeted. Regulation that uses blunt instruments to impose rate constraints across wide swaths of traffic without first considering whether that traffic is subject to competitive constraints will introduce distortions that will, over the long run, contribute to the deterioration of the industry. Such policies are undoubtedly contrary to the overall public's interest in a healthy national economy.

B. ECONOMICALLY SOUND REGULATION IS THE KEY TO SUSTAINING A STABLE RAIL INDUSTRY

20. The response to the deteriorating and increasingly inoperable national rail network was the Staggers Rail Act of 1980. The overriding objective of the Staggers Act was to establish an economically rational regulatory framework that would help restore the industry to sustainable health, encourage system rationalization, and spur increased and sustainable investment while providing regulatory oversight for shippers who *truly* were subject to abuses of market power.

21. To achieve these objectives, Staggers and the regulatory framework which emerged from Staggers embraced three foundational regulatory principles: (1) where competition is adequate, give railroads the flexibility to set their own rates, terms, conditions and service offerings so that they can better tailor their service to customers and the economy's needs; (2) maintain regulatory constraints on rates paid by shippers, but *only* where it can be shown that a railroad is market dominant (i.e., not constrained by effective competition) through a qualitative finding as to the lack of effective competitive alternatives and a quantitative finding that the rate exceeds 180% of

the railroad's variable costs of service to a shipper; and (3) where a railroad's rates for particular traffic were elevated above the 180% of variable cost threshold as the result of demonstrable market dominance, establish regulated rates which mimic the rates competition would set (if it could) via application of the principles of Constrained Market Pricing.

22. To understand the first foundational principle of Staggers, it is necessary to understand what competition in the rail industry looks like. Given the investment necessary to lay track all the way to a shipper's doorstep (which can include the cost of acquiring land, investing in track, switches, sidings, and the like), it has always been the case that specific locales have rarely been *directly* connected to multiple railroads. Nonetheless, rail rates for many shippers are constrained to various – often determinative – degrees by one or more of the following features of the markets in which rail service is provided:

- Direct competition by one or more other railroads operating in the vicinity of the shipper;
- Potential competition offered by competing rail build-in (or build-out) option(s);
- Access to a competing rail carrier via a transload option;
- A shipper's ability to shift its purchases or production from (or to) a range of geographic regions that provide different rail transportation options (referred to as “geographic competition”);
- A shipper's ability to use substitute products with different rail transportation alternatives (often referred to as “product competition”); and
- Intermodal competition from other modes of transportation (i.e., trucks, barges or pipelines).

23. If a shipper has no access to *any* of these forms of competition, the Staggers Act recognized that constraints on pricing freedom were warranted to protect these truly “captive” shippers. However, in designing a regulatory system that would offer this protection, the Staggers Act also recognized that the economics of a network industry operating with high and shared fixed costs across markets of diverse competitive conditions require that railroads engage in *differential* pricing. Traffic subject to competition can be driven toward incremental cost which provides little or no contribution to the large shared and common costs of maintaining the rail network. That is, with competition faced by railroads for certain traffic unavoidably limiting the contributions which such traffic can make to recovery of the very high fixed costs of the shared network, other traffic

necessarily must provide greater contribution – in accord with the higher value that shippers place on rail service.

24. Differential pricing under the Staggers Act embodies recognition of the differential ability and willingness of disparate traffic to contribute to paying for the overall network. At the same time, however, differential pricing has not been unconstrained. Under the Staggers regime, the Board (and its predecessor, the Interstate Commerce Commission) implemented protections against abuses of market power. Through policies of Constrained Market Pricing, rates have been capped according to a very explicit criterion of “mimic competition.” Specifically, on non-exempt traffic where rates exceed 180% of variable costs and a complaining shipper demonstrates that the serving railroad is market dominant (i.e., not subject to workable competition), maximum rates are set under the principles of a competitive, “contestable” market.

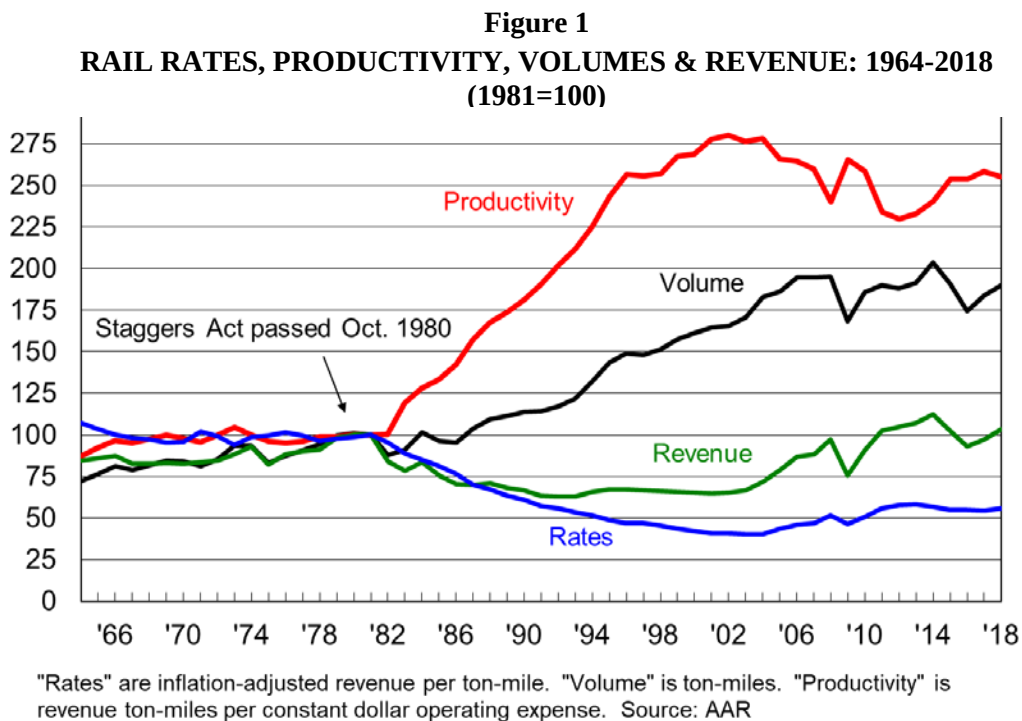
25. The principles of CMP recognize that, *if* entry and exit were unimpeded in the rail sector, prospective entrants would continually discipline an incumbent carrier by offering shippers rates down to the level of the entrants’ costs (including coverage of the cost of capital in the form of returns to investors commensurate with what investors could realize in alternative endeavors of comparable risk). That is, *if* the subject traffic were contestable, the incumbent would not be able to realize rates and concomitant revenues in excess of the costs of an efficient stand-alone railroad competing for the subject traffic. This stand-alone cost – “SAC” – test ensures that when rates are regulated by the Board, those rates mimic competitive market prices and that shippers neither pay for (cross-subsidize) portions of the network they do not use nor receive cross-subsidies from revenues in excess of variable costs contributed by unrelated shippers elsewhere on the incumbent’s overall network.

C. THE SUCCESS OF STAGGERS

26. It is difficult to find other examples of regulatory success that rival that of the Staggers Act and its implementation by the ICC and the Board.⁹ Railroads have generated striking improvement

⁹ For a summary, see Macher, Jeffrey T, John W. Mayo and Lee F Pinkowitz, “Revenue Adequacy: The Good, the Bad, and the Ugly,” *Transportation Law Journal*, vol. 41 no. 2, 85-127 (2014) (hereinafter “Macher *et al.*”) at §I. See, also, United States Senate, “Interstate Commerce Commission Sunset Act of 1995, report of the Committee on Commerce, Science, and Transportation,” Washington, DC, 104-176 (1995) at p. 3 (“The Staggers Act is considered the most successful rail transportation legislation ever produced, resulting in restoration of financial health to the rail industry.”).

across a range of performance metrics, including dramatically lower costs, improved productivity, and increases in private capital spending and investment. Much of the improvement has been passed through to shippers in the form of lower rates for transportation and a high-quality, more efficient, and cost-effective network.¹⁰ This can be seen in Figure 1, which shows the changes in several measures of industry performance following passage of the Staggers Act.



27. Some have worried that the performance reflected in Figure 1 indicates that the pendulum has swung too far: that while the consolidations and rationalizations have allowed railroads to improve performance dramatically, perhaps that improvement also signals a diminution of competition that is borne by shippers and that warrants changes in the regulatory approach to the industry.

28. While this is an important question, numerous academic studies of the rail industry have concluded that competition in the rail industry has not been eroded. By implication, this means

¹⁰ Bitzan, John D., and Theodore E. Keeler, "The Evolution of U.S. Rail Freight Pricing in the Post-Deregulation Era: Revenues Versus Marginal Costs for Five Commodity Types," *Transportation*, vol. 41 no. 2 (2014) (hereinafter "Bitzan and Keeler"). See also Mayo, John W. and David E. M. Sappington, "Regulation in a 'Deregulated' Industry: Railroads in the Post-Staggers Era," *Review of Industrial Organization* vol. 49, 203-227 (2016) (hereinafter "Mayo and Sappington").

that improved railroad financial performance has not been achieved by exercising a greater level of railroad market power.¹¹ A comprehensive study concluded that, relative to a benchmark of pre-Staggers era ownership structures and policies:

“[The] takeover waves have led to efficiency gains by decreasing the marginal costs, and this was translated into lower prices and an increase in the consumer surplus. Finally, the takeovers have led to a reallocation of assets from the less efficient firms to the most efficient firms, which improved the quality of the freight services provided.”¹²

29. In other words, the Staggers framework’s focus on relying on competition where possible, and mimicking competitive outcomes where regulation is necessary, is directly related to the improved industry performance that we see in Figure 1. That framework has not resulted in an overall increase in the exercise of market power by railroads. However, the Board has increasingly expressed concern about the cost to shippers of access to regulatory protections at a time of improved service and solid financial performance by the nation’s railroads. In particular, the Board’s current interest in how the revenue adequacy standard should be interpreted and what role revenue adequacy should play – if any – in regulating rail rates, raises issues that are complex from both an economic and a policy perspective.

D. THE ROLE OF REVENUE ADEQUACY

30. The concept of ‘adequate revenue’ was first incorporated into statute in the 1976 Railroad Revitalization and Regulatory Reform Act (“4R Act”). That law required that rail regulators develop “reasonable standards and procedures for the establishment of revenue levels

¹¹ See, for example, Laurits R. Christensen Associates, Inc., "Analysis of Competition, Capacity, and Service Quality," Final Report vol. 2 (November 2008); Laurits R. Christensen Associates, Inc., "Analysis of Competition, Capacity, and Service Quality," Revised Final Report vol. 2 (November 2009). See also, Pittman, Russell, "Railway Mergers and Railway Alliances: Competition Issues and Lessons for Other Network Industries," *Competition and Regulation in Network Industries* vol. 10, 259-278 (2009); Coublucq, Daniel, "Demand Estimation with Selection Bias: A Dynamic Game Approach with an Application to the U.S. Railroad Industry," Düsseldorf Institute for Competition Economics Discussion Paper, no. 94 (2013) (hereinafter "Coublucq"); Ivaldi, Marc and Gerard McCullough, "Railroad Pricing and Revenue-to-Cost Margins in the Post-Staggers Era," *Railroad Economics* vol. 20, 153–78 (2007); Ivaldi, Marc and Gerard McCullough, "Welfare Tradeoffs in U.S. Rail Mergers," Toulouse School of Economics Working Paper, 10-196 (September 2010).

¹² Coublucq at p. 1. Note that this does not mean that it would be reasonable to expect perpetually declining costs and rates in the Staggers era. As noted in Sections II.B and II.C above, productivity improvements naturally must (and did) plateau, and costs and rates could not (and did not) decline forever.

adequate...to cover total operating expenses, including depreciation and obsolescence, plus a fair, reasonable, and economic profit or return (or both) on capital employed in the business.”¹³ The concept remained in ensuing legislation and remains a central tenet of rail regulation, with the Board directed to:

“[M]aintain and revise as necessary standards and procedures for establishing revenue levels for rail carriers providing transportation subject to its jurisdiction under this part that are adequate, under honest, economical, and efficient management, for the infrastructure and investment needed to meet the present and future demand for rail services and to cover total operating expenses, including depreciation and obsolescence, plus a reasonable and economic profit or return (or both) on capital employed in the business.”¹⁴

31. It is notable that none of the legislation that references ‘adequate revenues’ specifically defines the term. Nor does any legislation identify any specific regulatory actions that should follow a finding of revenue adequacy. Indeed, there is no indication that the concept of ‘adequate revenues’ was intended as any type of ceiling on rail rates or that it was intended to be used as a trigger for constraining railroad earnings. Nevertheless, to carry out their mandate, the ICC determined that individual railroads that earned a return on investment (“ROI”) equal to or greater than the cost of capital (“COC”) for the rail industry as a whole would be considered to be earning ‘adequate revenue’ as specified in statute.¹⁵

32. Given the state of the rail industry at the time this metric was developed, there was very little rigorous economic analysis of whether such a measure was a robust and meaningful basis for guiding policymakers’ regulatory decisions and frameworks. However, as some carriers have increasingly been found to be “revenue adequate” based on the annual ROI standard, carriers, shippers and regulators have become more focused on the regulatory implications of achieving “revenue adequacy”. Those questions are at the heart of the RRTF’s recommendations related to revenue adequacy.

33. We turn to examining these issues now, but note here that the foundational principles upon which current regulation rests—that competition should be relied on whenever possible and that

¹³ See Macher *et al.*, referencing the Railroad Revitalization and Regulatory Reform Act § 205, 90 Stat. 41 at p. 92.

¹⁴ 49 U.S.C. § 10704 (a)(2).

¹⁵ See, Macher *et al.* at p. 97.

regulation should mimic competitive outcomes as closely as possible when actual competition is absent due to substantial barriers to entry—remain central to the continued success of the rail industry and must remain central to any policy decisions regarding revenue adequacy. This means that if the concept of revenue adequacy is going to be used to determine specific regulatory action it must be defined and calculated based on sound economic principles. Further, any policy measures stemming from a finding of revenue adequacy must be designed in a way that impose regulation only in instances where it can be demonstrated that rates have been elevated to above-competitive levels by the exercise of market power.

IV. ECONOMICALLY SOUND MEASUREMENT OF ADEQUATE REVENUES

A. APPROPRIATE MEASUREMENT OF REVENUE ADEQUACY

34. Revenue adequacy can be understood in terms of competitive market principles. Under competition, adequate revenues would encompass costs of efficient operations, return on the current value of invested capital, and the cost of replacing capital consumed in providing services. It is important to note that even properly conceived measures of revenue adequacy do not provide sufficient evidence on which to base a finding of above-competitive pricing resulting from the exercise of market power. While one source of true revenue “over-adequacy” (i.e., real economic returns in excess of the real economic cost of capital) can be the exercise of market power, the exercise of market power is but one of numerous potential sources of revenue “over-adequacy”. Consequently, the most that a finding of revenue “over-adequacy” can justify is the need for further, competent and targeted investigation of the sources of such a finding.

35. The basic tools for isolating the exercise of market power which results in above-competitive rates as an actual source of revenue “over-adequacy” are already in the Board’s toolbox. Sound policy should not use revenue “over-adequacy” to trigger, blind to the realities of competitive conditions across affected traffic, rate constraints intended to prevent the exercise of market power. Sound policy should focus on improving the Board’s tools for ferreting out market power that may be raising rates above competitive levels, but that have thus far gone undetected and unchallenged

36. The economic principles of competitive markets that so deeply – and appropriately – inform the Board’s regulatory framework point directly to using a *replacement cost* standard when

assessing revenue adequacy. Such a standard recognizes that under competitive market conditions a revenue adequate railroad would earn a rate of return that reflects the *current* value of the railroad's productive assets, and that current productive value under competitive conditions is the replacement cost of those assets. Indeed, in the initial proceedings that established the revenue adequacy method, the ICC recognized that valuing railroad assets at replacement cost was both economically rational and consistent with the competitive market standard that current rail rate regulation is built around.¹⁶

37. Measures of revenue adequacy that are based on calculated rates of return earned on the depreciated book (i.e., accounting) value of assets are grossly inconsistent with sound “mimic competition” regulation. Setting aside the well-known problems of the nominal measurement of capital and depreciation with long-lived assets in the presence of even modest inflation that are highlighted in basic economics and business textbooks,¹⁷ a benchmark based on earnings relative to the return on depreciated historical (original cost) book value bears no relationship to competitive market outcomes.¹⁸ Alternatively stated, the successful entrant in a contestable market would have to cover all of its operating and capital costs, and those costs would be the current costs of providing all of the system's services. These include *the cost of keeping capital in the industry rather than selling that capital and redeploying the resulting value in alternative investments elsewhere in the economy*. The older, original costs that the incumbent bore at some point in the past are simply irrelevant to pricing in the marketplace.¹⁹

38. Although the assets of an incumbent railroad have a depreciated book value and fewer years of useful life than the assets of a newly-built railroad, the rates an existing railroad can charge

¹⁶ See Verified Statement of Joseph P. Kalt and John C. Klick filed in support of “Petition of the Association of American Railroads to Institute a Rulemaking Proceeding to Adopt A Replacement Cost Methodology to Determine Railroad Revenue Adequacy,” before the Surface Transportation Board, filed May 1, 2008 (hereinafter “Kalt/Klick Replacement Cost VS”) at pp. 2-3 (original cite omitted).

¹⁷ See, for example, Granof, Michael H., Philip W. Bell, and Bruce R. Neumann, *Accounting for Managers and Investors*, 2nd ed., Prentice-Hall, 1993 (hereinafter “Granof, *et al.*”) at pp. 361-363.

¹⁸ The biases and inaccuracies of “judging profitability by accounting measures” are clear and pervasive. These biases do not wash out in the long run. As a result, the comparison of net ROI (based on book values) to the cost of capital is an unreliable measure of economic profitability even in the long-run. These “textbook problems fundamentally stem from the use of historical cost and book depreciation and the concomitant failure to account for the current value (i.e., replacement cost) of long-lived assets.” See, for example, Brealey, Richard A., Stewart C. Myers, and Franklin Allen, *Principles of Corporate Finance*, 11th ed., New York: McGraw-Hill/Irwin, 2011 (hereinafter “Brealey *et al.*”) at pp. 307-312.

¹⁹ Granof, *et al.* at pp. 361-365.

(and thus the revenue an existing railroad can generate) in a competitive market are dictated by the rates that are necessary to support the purchase of new rail assets. If rates fall below the level necessary to support new investment, the replacement of existing assets is discouraged and supply will fall. In a competitive market, rates will increase to the level at which investment in new assets will be encouraged, and competitive rates will settle at the level at which new supply can just cover its costs, and existing suppliers will capture these rates as well. If rates are not allowed to increase to levels that support the cost of new investment (i.e., to levels that support the cost of replacing assets) capacity is not replaced and the industry will fall into disrepair – a cycle the rail industry is all too familiar with.

39. The prices of services generated by older, depreciated assets and sold in competitive markets are not set by competitive forces at a level which yields a rate of return on the depreciated value of historical assets that is commensurate with the cost of capital. Instead, competitive markets set the prices of services produced from older assets in competition with comparable services supplied to the market by the newer assets the market calls forth in order to bring overall supply and demand into balance.

40. An analogy is helpful here.²⁰ Consider the owner of an older apartment building in a healthy, competitive market of thousands of competitor apartment buildings that must continue to add apartment capacity and/or replace capacity in order to keep up with demand. Suppose the older apartment building is fully depreciated according to standard accounting practices; and, for simplicity, assume the owner has no variable costs when she rents out a building. Under a depreciated book value measure of revenue adequacy, if the owner of the older apartment realizes rents of any amount that exceed *zero*, she realizes an infinite rate of return on her investment (she putatively has no capital invested any more) and is grossly revenue *over-adequate*. But clearly, competitive market forces do not push her rents to zero: The market sets her rents at the level commensurate with the level of rents needed to attract and keep enough supply in the market to meet the overall market demand.

41. Nor does the apartment owner have zero capital in the industry: The value of her building – i.e., the capital she has at stake in the industry – is the discounted value of the (competitive) rents

²⁰ See, also, Reply Verified Statement of Roger Brinner, PhD, Docket No. EP722, November 4, 2014 at pp. 5-6.

the market will yield her over the remaining life of her building. This is the value of the capital she has invested in the industry. The owner bears the cost – economists say “opportunity cost” – of keeping and renting out her apartment building instead of selling it for the discounted value of expected rental revenues over its remaining life (i.e., its current market value) and redeploying the value of the building in the form of investment in some other sector of the economy.

42. An economically rational owner of such an apartment building would sell and get out of the apartment rental business if she cannot earn a rate of return on the current market value (the replacement cost) of her building that is commensurate with the return she could realize by investing that value in other sectors of the economy with comparable risk. This rate of return is the owner’s cost of capital. The revenues generated for the apartment building when the owner can charge competitive market rents will be just *adequate* to cover this cost of capital. This is because competitive market apartment rents settle at the level which allows the market to keep existing and newly entering investors – all of whom face the opportunity cost of putting their investments in other sectors of the economy with comparable risk – in the apartment business so as to have enough supply available in the market to satisfy consumers’ overall demand for rental units.

43. Applied to the rail freight industry and presuming that policy seeks a definition of “revenue adequacy” that is consistent with the public’s interest in regulation which promotes the health and efficiency of the nation’s economy, these basic economics tell us that the concept of “revenue adequacy” must be understood with reference to the overriding public interest in competitive market outcomes. That is, with sound regulation guided by the standard of enabling competitive market outcomes through regulatory freedom where competition is potent and mimicking competitive outcomes where it is not, it follows that the revenues which would be generated by competitive market outcomes across a railroad’s network are the competitive market’s determination of adequate revenues for a firm whose performance satisfies the public’s interest in a healthy national economy. Competitively determined revenues provide the firm with the incentive to chase business it can efficiently serve, and the cash flow that justifies investments in that pursuit.

44. Sustained revenues in excess of the competitive standard would be subject to limitation via the entry and pricing of rivals in a competitive setting. Conversely, inadequate revenues would be

elevated by competitive markets as rising demand in a generally growing economy pull them upward to the point at which new entrants would begin to appear and constrain them. In short, adequate revenues from the perspective of the public interest are the revenues a railroad would earn in equilibrium over the long term if it were compelled by competition to charge no more and no less than competitive rates on all of its movements.

45. The implication for revenue adequacy under a rail regulatory regime founded on the public interest principle that railroads should be able to charge rates consistent with competition is that the value of older, existing assets is derivable from the net present value of their remaining years generating competitive rates. Although existing, older assets have fewer years of useful life left, they generate the same annual revenues (when properly maintained) as do new assets in each year they are in service. Therefore, we can calculate the annual revenues an existing railroad would need to earn in any given year by asking what prices a competitive market would set. As the very underpinnings of the Board's SAC methodology teach, a competitive rail market would be free of any barriers to entry, and it would set prices at the level just sufficient to cover the costs of entrants plus a competitive rate of return on those entrants' capital (i.e., their cost of capital). This – the Board's SAC test – is a replacement cost standard.²¹ That is, competitive rail markets, if they could operate as such, would set rail rates at the level needed to just cover the cost of replacing an incumbent's service with a service by a new, stand-alone railroad.

46. This, of course, is familiar territory for the Board: *Adequate* overall revenues for a railroad in a regulatory framework which sets prices through unregulated market forces where competition is potent and mimics competitive prices where competition is not potent are the revenues that would, at a minimum, cover the costs (including the cost of capital) of a System-Wide Stand-Alone Railroad – a SW-SARR – which could efficiently reproduce the service of an actual railroad were the industry subject to free entry by competitors. As recent economic research puts it:

“[I]t is significant to note that the stand-alone cost test can validly be applied to the traffic of large groups of shippers that could, in concept, approach the totality of a carrier's operations, or its operations within one of its regions. Such a test would compare the shippers' total expenditures for their services, which are essentially the

²¹ Mayo, John W. and Robert D. Willig, “Economic Foundations of 21st Century Freight Rail Rate Regulation,” Macher, Jeffrey T. and John W. Mayo, eds., *U.S. Freight Rail Economics: Are We on the Right Track?*, Routledge, New York (2019), accessed at VitalSource Bookshelf, Chapter 2 (hereinafter “Mayo and Willig”) at p. 50.

total revenues of the carrier, to the total costs of an efficient hypothetical entrant providing those services. This is a test of the profitability of that entrant, and not a test of the profitability of the actual carrier based on its expended costs and booked capital stock. Here, the notion of a regulatory constraint based on “revenue adequacy” is properly interpreted as whether actual prices generate more than adequate revenues to cover the stand-alone costs of the analyzed services, no matter how extensive they are.”²²

47. I have previously set out a framework for implementation of a system-wide SAC test of revenue adequacy, grounded in the “mimic competition” framework;²³ and others have demonstrated that quite reasonable simplifying assumptions of the character already reflected in the Board’s Simplified-SAC methodology make such a test procedurally feasible.²⁴ Here, however, let us consider the implications for rate regulation of even a properly conceived and implemented standard of “revenue adequacy”. At least two dimensions of this issue warrant particular consideration. The first concerns the time period over which revenue adequacy should be considered, and the second concerns whether a finding of even properly measured revenue “over-adequacy” would provide a reliable guide for regulation aimed at ferreting out and limiting the exercise of market power that raises rates above the CMP “mimic” competition standard.

B. “REVENUE ADEQUACY” IS A LONG-RUN CONCEPT, AND ITS RELEVANCE IS FORWARD-LOOKING

48. From the perspective of sustaining the health of an industry whose long-lived and sunk capital make it a potential target for self-interested parties seeking to use regulation for their private benefit, revenue adequacy must be employed as a fundamentally long-term and forward-looking concept. Revenues adequate to support “the infrastructure and investment needed to meet the present and future demand” inherently reflect the amount and timing of expected revenues over the life of the investments. At a minimum, in competitive markets these revenues must reflect the costs of replacing the capital services currently being provided. From the perspective of the

²² Mayo and Willig at p. 50.

²³ Verified Statement of Joseph P. Kalt, Docket No. 722, September 5, 2014 (hereinafter “Kalt VS”) and Reply Verified Statement of Joseph P. Kalt, Docket No. 722, November 4, 2014. See, also, Kalt/Klick Replacement Cost VS.

²⁴ Verified Statement of Michael R. Baranowski, *Petition of the Association of American Railroads to Institute a Rulemaking to Adopt a Replacement Cost Methodology to Determine Railroad Revenue Adequacy*, Surface Transportation Board, May 1, 2008.

investor considering committing the resources needed to sustain and/or expand the capital required to provide rail service, the stream of expected current *and future* returns must equal or exceed the value of the current capital that would be committed.

49. The period of commitment of capital in the rail industry is especially long and significant.²⁵ Railroads are among the most capital intensive of industries. And the capital used by railroads is among the most long-lived among various industrial and transportation sectors with which railroads compete for capital.²⁶ As such, from an investor's perspective, the issue of revenue adequacy depends on the aggregate level and pattern of revenue earned over the life of the assets.

50. While under competition firms expect when investing to be at least revenue adequate in aggregate over the life of their investments, in any given year revenues can readily deviate from adequate levels as a result of shorter-term changes in demand, macroeconomic conditions, and competitive forces. With the need to sink capital for long periods in the rail industry, however, the investor can accept some periods of revenue below adequate levels if revenue above adequate levels can be expected to be earned in other periods. As such, a single-year snapshot of whether a railroad is revenue adequate, even under the appropriate replacement cost standard, can provide a misleading view into the financial well-being of a railroad.

51. An economically coherent measure of revenue adequacy for railroads requires revenue information currently available, and thus the determination of revenue adequacy of a railroad is inherently backward-looking with respect to the actual performance and revenues earned by the railroad. The Task Force and the Board are properly focused on the importance of measuring revenue adequacy over the course of (at least) an entire business cycle. It would not be proper to conclude that a single year in which net operating income exceeded the annual SAC revenue requirement is itself indicative of actual revenue "over-adequacy" since the long lives of rail equipment mean that revenue adequacy is inherently a long-term notion. Much less would a single

²⁵ Verified Statement of Roger Brinner, Docket No. 722, September 5, 2014 (hereinafter "Brinner VS") at pp. 18-20.

²⁶ For use in calculating gross domestic product and the national income accounts, the Bureau of Economic Analysis uses economic lifetimes of 28 years for railroad equipment, 38 years for replacement track, and 54 years for other railroad structures. No other industrial industry or activity has longer-lived structures, and only electrical transmission and distribution has longer-lived equipment. *BEA Depreciation Estimates, Service Lives, and Declining Balance Rates*. U.S. Department of Commerce, Bureau of Economic Analysis, at https://apps.bea.gov/scb/account_articles/national/0597niw/tablea.htm.

year of putative “over-adequacy” indicate supra-competitive pricing that should trigger more regulatory intervention.

52. While a full business cycle captures some of the temporal variation in demand for rail services, other significant changes need not follow the business cycle. For example, swings in demand for coal transportation or crude-by-rail can have significant effects on rail revenue and profitability that may be unrelated to the business cycle. More significantly, rail assets tend to be very long-lived, so a business cycle will typically capture only a small portion of the returns over the life of these investments.

53. Given fluctuations in demand and the long-life of rail assets, the Task Force’s recommendation of “the shortest period of time, not less than five years, that includes both a year in which a recession began and a year that follows a year in which a recession began” is likely to be too short to reflect the economic circumstances relevant to the decisions to continue to invest or withdraw capital from the industry. It is important to be sure to include the “bust” portions of boom-and-bust swings in rail freight demand, as the Task Force recommendations do, but the five-year period is likely to lead to jumps in measured revenue adequacy that are not reflective of the current or forward-looking condition of the rail industry. As such, a minimum of ten years would be consistent with the Board’s ten-year Discounted Cash Flow (DCF) analysis in Stand-Alone Cost analyses. With inclusion of a full recession and recovery cycle in revenue adequacy calculations, such calculations would appropriately approximate a long-term concept of revenue adequacy. This recommendation reflects a tradeoff between the long lives of rail assets and the need to use more current information in evaluating the economic circumstances of the rail industry. In conjunction with a replacement-cost standard, this period is likely to provide a reliable and stable measure of the long-term revenue adequacy of the rail industry.

54. In addition, some flexibility is required for interpreting and applying the results of any long-term revenue adequacy calculation. Depending on the purpose to which the revenue adequacy measure is to be put, a demonstration that the current and near-term economic circumstances have changed substantially from those indicated by the long-term measure may be required. For example, sudden large and sustained shifts in demand, due to, for example, recession, changes in coal or crude-by-rail or other competitive forces due to technological change—such as widespread adoption of autonomous trucking, could make the long-term revenue

adequacy a misleading measure of current and near-term conditions. Then, too, vacillations in the interest rate policies of the Federal Reserve can directly affect the cost of capital in the revenue adequacy calculation, and indirectly – albeit, powerfully – affect macroeconomic movements in the economy. To the extent the revenue adequacy measure serves as a trigger for more intrusive regulation, rather than a gauge of the financial status of the industry, then I recommend that the applicability of a finding of long-term revenue adequacy be rebuttable based on substantial changes in conditions relative to the calculation period.

C. MEASURED “REVENUE ADEQUACY” DOES NOT DEMONSTRATE THAT ANY SPECIFIC RATES HAVE BEEN ELEVATED ABOVE COMPETITIVE LEVELS BY THE EXERCISE OF MARKET POWER

55. There are important limitations on the conclusions that can be drawn from a practical implementation of an appropriately designed measure of revenue adequacy. Even if a railroad is found to be revenue “over-adequate” – that is, earning revenues for a period of time greater than a long-term, replacement-cost revenue adequacy calculation of adequate revenues – it does not necessarily follow that the railroad is exercising market power and has been charging above-competitive rates.

56. A finding that a railroad is earning an “excessive” rate of return (relative to its current cost of capital) is not a demonstration that the firm is thereby earning supra-competitive profits through the any exercises of market power that have resulted in supra-competitive rates. When revenue adequacy is measured based upon depreciated accounting costs, this principle is clear from the example above of the older apartment building in an otherwise competitive apartment rental market. The nearly fully depreciated apartment building would show “excess returns” on its depreciated original book cost of capital regardless of whether the rents charged (over some range) were at, above, or below the competitive market’s rental rates.

57. The infirmities of using accounting profitability and rates of return to infer that market power has raised prices and resulted in above-competitive returns, particularly for capital industries like railroading with long-lived equipment, are well-known. As starkly summarized by the classic treatment of the issue, “there is no way in which one can look at accounting rates of

return and infer anything about relative economic profitability or, a fortiori, about the presence or absence of monopoly profits.”²⁷

58. Even if revenue adequacy were properly measured, a finding that rates of return were in “excess” of an incumbent firm’s cost of capital on a system-wide basis would not necessarily indicate an abuse of market power. The appropriate revenue adequacy benchmark mimics what are long-run equilibrium competitive returns and revenues. With even a sound replacement cost measure of revenue adequacy, the practicalities of measurement would entail time horizons differing from the useful economic lives of key railroad assets, as well as *ex post* assessment.

59. Even with relatively stable competitive market conditions, one would expect to see returns at certain points in time that would be above or below the long-run equilibrium, because of fluctuations in demand and cost conditions around the long-run equilibrium. Thus, observed returns for a railroad in excess of the long-run equilibrium competitive level for some period, even if properly measured, would not be a demonstration that the railroad is in fact earning supra-competitive returns on its investments, much less that the returns it has been earning have been elevated by abuses of market power which have resulted in above-competitive rates. The ICC recognized that attempting to limit returns so as not to exceed the competitive benchmark return would, in fact, deprive railroads of the ability to realize a competitive return on its investments. This type of rate “cap” would preclude railroads from obtaining overall adequate long-term revenues as the railroads would bear the burden of shortfalls around long-run returns without the compensatory upside benefits.²⁸

60. Competitive markets are dynamic, and successful competitive firms often earn above long-run equilibrium rates of return. Firms seek to achieve economic returns that do not just equal but exceed their cost of capital. As technology changes and markets shift, firms that are particularly adept at taking advantage of these changes reap economic returns in excess of their capital costs. Firms that are particularly adept at staying ahead of the curve when it comes to anticipating

²⁷ Fisher, Franklin M., and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," *American Economic Review*, vol. 73 no. 1, 82-97 (1983) (hereinafter “Fisher and McGowan”) at p. 90.

²⁸ Standards for Railroad Revenue Adequacy, Ex Parte No. 393, 364 I.C.C. 803, March 26, 1981. See also, Verified Statement of David Sappington, Docket No. 722, September 5, 2014 (hereinafter “Sappington VS”).

technology, shifts in traffic mix, changing shipper needs, etc., can sustain rates of return in excess of their costs of capital and ahead of the returns and revenue required by a static SW-SARR.

61. In competitive markets, the prospect of successfully out-earning one's cost of capital drives innovation and investment. As in other industries, competitive revenue adequacy is necessary to provide incentives for railroads to invest in efficient capacity expansion and system replenishment, to pursue cost-saving innovations, and to respond to the opportunities presented by emerging market developments. Moreover, in real-world competitive markets, an incumbent firm which is particularly efficient in its operations, its ability to anticipate customer needs, and/or its implementation of technologic innovations will have its overall revenues constrained and set by such competition. Even so, such firms will nevertheless realize what economics refers to as "efficiency rents," which leave it with rates of return on its capital investment at particular times (including periods during which revenue adequacy might be measured) which exceed its cost of capital. It is sound economic policy to maintain incentives for railroads to try to earn returns in excess of their cost of capital. Accordingly, "revenue adequacy" is appropriately a long-term and forward-looking concept.

62. As I discuss in more detail below in addressing the Task Force recommendations, calculations based on accounting costs and ROI-to-COC comparisons, rather than replacement/stand-alone cost principles, will frequently find business enterprises earning above-adequate revenues in the absence of an exercise of market power. As we have seen, accounting-based measures are fundamentally inappropriate and unreliable methods for identifying either true revenue adequacy in a mimic-competition regulatory regime or the exercise of market power in pricing. Moreover, as I have noted, in practice, firms with advantages in cost, technology, brand reputation, and management can sustain above-normal accounting profits for extended periods of time that reflect this firm-specific advantages and efficiencies.

63. More fundamentally, in a capital-intensive, multi-product network industry like rail, where most of the diverse traffic served is subject to effective competition, the issue of the existence and extent of specific prices inconsistent with the CMP competitive benchmark does not require that the railroad overall be revenue over-adequate. The imposition of regulatory pricing restrictions based on a finding of revenue adequacy – without any further investigation as to the sources of the revenue adequacy and without any demonstration that the actual exercise of market power has

raised rates above competitive levels for specific traffic – would be unjustified and inconsistent with sound policy. However, because market power is one potential source of above-competitive pricing and underlying revenue over-adequacy, if a railroad turned out to be truly revenue over-adequate under an economically coherent, long-run, replacement cost measure of revenue adequacy, it would be important for shippers and regulators to have viable tools available to investigate the source of such “over-adequacy.” Indeed, even if a carrier were not revenue adequate, such tools would be important to have. I offer recommendations for some such tools in Section VIII, but in the following two sections I turn to the analyzing the specific proposals identified by the Board.

V. THE PROPOSED LONG-RUN REVENUE ADEQUACY METRIC IS NOT BASED ON SOUND ECONOMIC PRINCIPLES AND IS NOT A RELIABLE INDICATOR OF MARKET POWER THAT HAS RAISED RATES ABOVE COMPETITIVE LEVELS

64. The Board seeks comment on the Task Force proposal to assess long-term revenue adequacy by comparing the average ROI (calculated based on depreciated book accounting costs) of an individual carrier over an entire business cycle to the rail industry average COC over that same business cycle.²⁹ Per the Task Force recommendation, carriers whose long-term ROI exceed the industry long-term COC over the historical period would be deemed revenue adequate. A finding of long-term revenue adequacy would then be interpreted by the Board as evidence of above-competitive rates resulting from the exercise of market power by a carrier and as an indicator that regulatory intervention is warranted.

65. This proposal is fundamentally flawed for several important reasons. In this section, I focus on identifying the flaws in the proposed calculation and demonstrate that the ROI approach – based as it is on accounting, rather than true economic, costs – is an unreliable method for identifying above-competitive pricing resulting from market power and associated anticompetitive practices. In the next section, I address the proposed regulatory interventions that the Board is considering.

²⁹ The RRTF proposes to define an entire business cycle as “the shortest period of time, not less than five years, that includes both a year in which a recession began and a year that follows a year in which a recession began” using the National Bureau of Economic Research official designation of recession dates to identify study periods. (Rate Reform Report at p. 33.)

A. A REVENUE ADEQUACY MEASURE BASED ON ACCOUNTING RETURNS ON INVESTMENT CANNOT RELIABLY IDENTIFY REVENUE ADEQUACY

66. In light of the economics discussed above in connection with the example of a fully depreciated apartment building that still has actual economic value, it hardly requires reiteration that revenue adequacy measures based on accounting returns on investment cannot reliably identify actual revenue adequacy. Defining and measuring revenue adequacy based on quantification of accounting measures of the depreciated, historical book value of assets are conceptually misguided and, ultimately, contrary to the public's interest in competitive market outcomes and regulation which yields or mimics those outcomes.

67. In practice, there are at least two major problems with use of accounting values to infer economic returns. First, the depreciated book value of the assets based on historical investment costs likely grossly understates the current competitive market value or replacement cost of these assets. Historical book accounting does not adjust for the effect of inflation on the value of long-lived capital goods. And railroad assets are especially long-lived. The price of rail equipment, parts, and construction twenty, thirty (or more) years ago can be a fraction of the current competitive market value. For example, while the remaining life of a 25-year-old railcar will be less than a new one, the competitive value the market places on the use of that railcar is influenced by the current cost of providing additional, new railcar capacity. The effect of asset price inflation is not reflected in the measure of assets on which returns are calculated. This has been shown to have a very large impact on estimated rates of return in the rail industry.³⁰

68. Second, under the Board's current annual determination of "revenue adequacy", the size of a railroad's asset base on which returns are required is reduced by the accounting measure of deferred taxes. Deferred taxes represent the accumulated difference in taxes calculated under tax versus book accounting rules. For railroads, this difference arises primarily from differences between book and tax depreciation and the amounts are large: the asset base "financed" by deferred taxes in 2018 exceeded \$41 billion, or more than a quarter the investment base used by the Board in determining revenue adequacy.³¹ To the extent railroads continue to invest at the

³⁰ Brinner VS at pp. 18-20.

³¹ Surface Transportation Board, Docket No. EP 552 (Sub-No. 23) Railroad Revenue Adequacy—2018 Determination, decided September 4, 2019.

same level, this cumulative difference is effectively deferred long term. Current practice in effect assumes that investors expect no return on assets “financed” by deferred taxes. But such an assumption provides no incentive to the investors to keep those assets deployed in the rail industry. They have the incentive to, and would be better off, re-deploying that capital in industries where they could earn their cost of capital. It is therefore rational that investors expect to earn a return on deferred taxes, and such expectations are reflected in the market-based determinations of the cost of equity used by the STB. Therefore, the STB’s exclusion of deferred taxes overstates the attractiveness of railroad industry investments.

69. Under the economically appropriate replacement cost/system-wide standalone cost approach, the appropriate concept for economic depreciation is the change in the net present value of the future earnings stream from the asset. As I previously showed, a replacement cost revenue adequacy evaluation can be done by comparing a modified net railway operating income (“NROI”) to the required revenue under replacement cost or by comparing the rate of return based on the modified NROI to the capital costs.³² Similarly, NROI can be modified by accounting for the economic depreciation associated with the asset as well as the associated change in net present value associated with the tax shields provided by the asset. Consistent with the use of economic depreciation based on change in the net present value of the asset associated with replacement cost, actual cash flows for taxes, rather than the “book” taxes and elimination of the reduction in net investment by deferred taxes provides a more economically consistent measure of NROI.

B. A REVENUE ADEQUACY MEASURE BASED ON ACCOUNTING RETURNS ON INVESTMENT AND COST OF CAPITAL CANNOT DEMONSTRATE NON-COMPETITIVE PRICING

70. The exercise of market power and concomitant above-competitive rates somewhere in a railroad’s system is hardly the only reason why accounting-based measures of revenue adequacy can imply real economic returns in excess of the real economic cost of capital (i.e., “over-adequacy”). Thus, revenue adequacy calculated on the RRTF’s proposed measures cannot identify above-competitive rail rates and fail to provide any coherent rationale for using findings of putative revenue “over-adequacy” as triggers for rate constraints of the type being considered by the Board. The ROI component of the proposed revenue adequacy metric can readily deviate substantially

³² Kalt/Klick Replacement Cost VS at pp. 22-23.

and persistently from economically meaningful measures of economic income; and, as discussed above, can do so for any number of reasons.

71. Accounting ROI is calculated as the NROI divided by net book investment—net railroad assets less deferred taxes. Both of these measures utilize information on historical book values and accounting measures of taxes, rather than economic measures arising from replacement costs. Net investment is calculated based on net depreciated historical book value (an accounting measure equal to original historical cost less accumulated depreciation on that historical cost) rather than the current replacement cost of a railroad’s productive assets (an economic measure). Net investment also excludes deferred taxes, an accounting device to reconcile actual taxes with ‘book’ taxes.³³ Similarly, NROI generally uses straight-line depreciation based on historical cost and associated book tax deductions. Neither the NROI or net investment is consistent with economically appropriate measures of income and investment based on replacement costs.

72. Much like in our apartment house example above, under the ROI method, it is possible to generate extremely high rates of return in situations where a railroad’s assets are substantially or fully depreciated. Any positive income on an asset base that is nearly or fully depreciated will generate the appearance of very high rates of return, unrelated to the competitive conditions in the industry. It bears repeating, that “there is no way in which one can look at accounting rates of return and infer anything about relative economic profitability or, a fortiori, about the presence or absence of monopoly profits.”³⁴

C. SOUND INVESTMENT POLICY IN COMPETITIVE MARKETS IMPLIES THAT THE AVERAGE INVESTMENT HAS AN ROI GREATER THAN THE COC

73. In general, the optimal investment rule for firms is to invest in projects that have a positive expected net present value – the expected cash flow, discounted at the appropriate risk-adjusted rate, is greater than zero. “Given that the goal of financial management is to increase share value, our discussion in this section leads us to the *net present value rule*: An investment should be

³³ In general, the primary component of deferred taxes –the accumulated difference between taxes actually paid and taxes assumed to be paid under book accounting treatment – arises from differences between depreciation schedules used for calculating actual taxes and for accounting purposes.

³⁴ Fisher and McGowan at p. 90.

accepted if the net present value is positive and rejected if it is negative.”³⁵ This investment rule demonstrates that value is created by investing in projects in which the return exceeds, not merely equals, the cost of capital. Equivalently, the expected economic return on investment is greater than the cost of capital. Indeed, failing to invest in positive net present value projects – ROI greater than COC – implies that no value has been created from investment activity. Thus, on average, sound financial management implies that the expected return on investment will *exceed* the cost of capital, even for firms without market power.

74. Investors and managers seek out positive net present value investments in order to create value and exploit inframarginal investment opportunities.³⁶ This occurs in competitive industries as companies take advantage of firm-specific competitive advantages arising from the position in the market and firm capabilities. In long-run equilibrium, competition tends to drive down such positive returns in excess of COC. However, industries are rarely in long-run equilibrium and a combination of firm strategy and comparative advantages, along with changing market circumstances provide opportunities for positive net present value ($ROI > COC$) investments. For example, the rapid development of new oil fields and limited pipeline capacity provide opportunities for railroads to utilize their existing strategic advantages (in terms of the existing rail transportation network) and ongoing investment in capacity to serve new markets. Similarly, some firms are able to identify and maintain strategies and comparative advantages relative to their competitors that provide for ongoing positive investment returns.³⁷ As shown below, firms earning returns on investment in excess of the cost of capital for extended periods is a common and expected occurrence even in industries that are highly competitive.

75. Improvements in ROI that move a carrier into “revenue adequate” territory may be driven by these types of positive net present value, pro-competitive investments and behavior -- cost reductions, productivity improvements, and innovation to serve existing markets better or expand to new markets. For example, a change in operations that reduces the cost of providing rail service

³⁵ Ross, Stephen A, Randolph W. Westerfield and Bradford D. Jordan, *Essentials of Corporate Finance*, 5th ed., McGraw-Hill Irwin, 2007 at p. 228.

³⁶ Brealey *et al.* at Chapter 11.

³⁷ Brealey *et al.* at Chapter 11.

on competitive traffic that is not matched by competitors will provide additional income that raises ROI, possibly to a level that would now make the railroad “revenue adequate”.

76. Rather than an indication of anticompetitive conduct, a movement into a state of even properly-measured “revenue adequacy” may represent the signal to expand capacity in the face of competition. In the case of an innovation in operations that lowers costs (and raises income), the reduced costs act as a signal to attract additional business that previously was met by competitors or that was not previously viable at the higher cost levels. The presence of positive net present value investment opportunities—for example, to debottleneck or expand terminals or loading facilities—represents signals for pro-competitive expansion of capacity or improvements in service. Indeed, absent the opportunity and expectation to earn above the COC on these investments, such pro-competitive actions and investments would not be undertaken.

77. These issues make it clear that blunt accounting-based ROI measures, even if measured over the long-term, do not provide regulators with sufficient information to determine whether improvements are being driven by purely accounting conventions, by pro-competitive behavior (which is desirable and requires no regulatory intervention), or by above-competitive rail rates resulting from exercises of market power somewhere in a carrier’s system (which could warrant a regulatory response).

D. EARNING RETURNS ON INVESTMENT THAT EXCEED COST OF CAPITAL IS A NORMAL AND EXPECTED OUTCOME IN COMPETITIVE INDUSTRIES

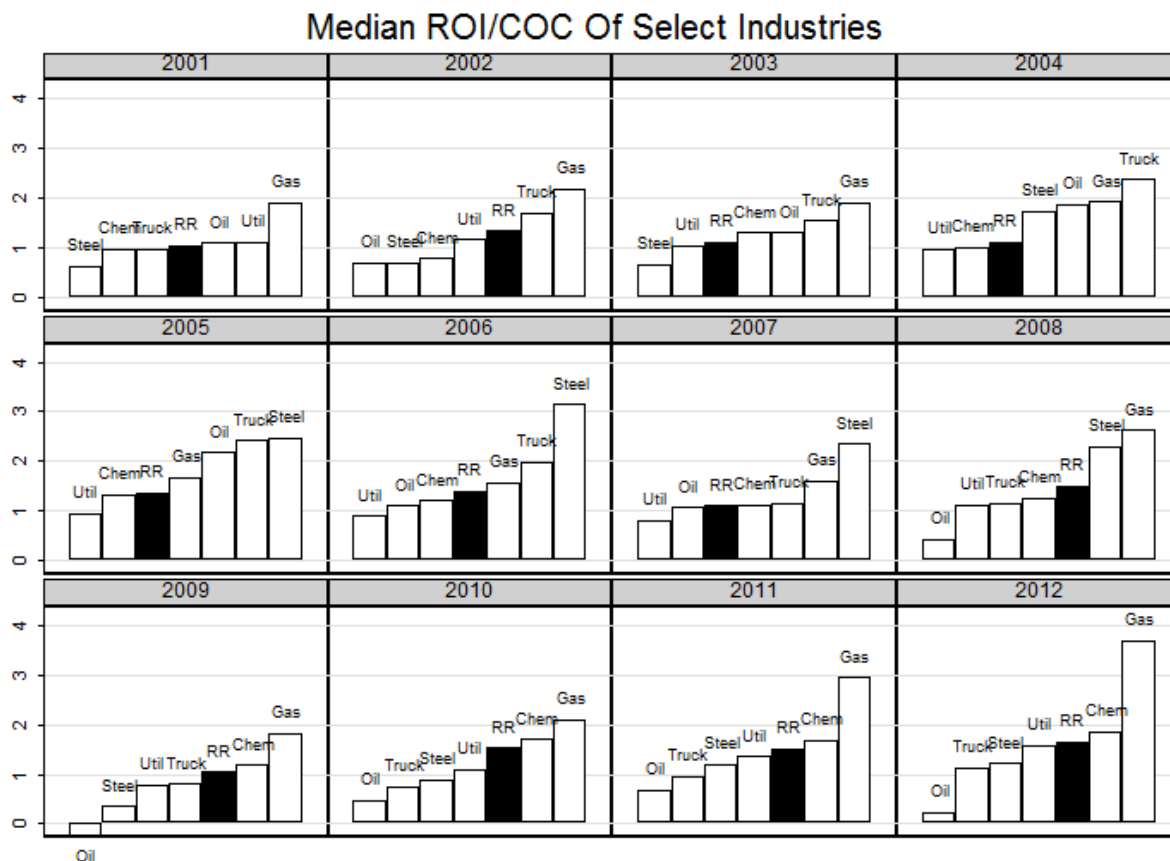
78. Recent research confirms that levels of “revenue adequacy” and “revenue over-adequacy,” as measured by ROI/COC, are not unusual at all in the economy. Indeed, the ratio of ROI to COC typically can be well over one in industries widely and properly regarded as competitive. Such results are consistent with the analysis above on the economics of investment and capital allocation.

79. For example, Macher, *et al.* compare annual Class I railroad ROI/COC ratios to the ROI/COC ratios of a group of “comparable” industries (as defined by the General Accounting Office).³⁸ Their results, reproduced in Figure 2 below, show that the railroad industry’s

³⁸ The GAO conducted a study of railroad revenues and alternative methods to measure railroad revenue adequacy in 1986. As part of that study, the GAO identified a group of “comparable” industries that included: trucking, electrical utilities, natural gas, pipelines, steel, industrial chemicals and synthetics, and oil and gas.

performance has been wholly consistent with other comparable industries. The authors find that “while generally improving over 2001-2012, rail industry revenue adequacy ratios are otherwise indistinguishable relative to the comparison set.”³⁹

Figure 2



Source: Macher, *et al.* at Figure 3.

80. Macher, *et al.* also compare railroad revenue adequacy measures (ROI/COC ratios) to a wider set of 1,720 industrial, publicly-traded, non-financial firms in the U.S. The authors report findings that are relevant here:

- Across all firms in their study, median revenue adequacy measures (i.e., ROI/COC) are greater than 1, indicating that “median firms across industries routinely and typically realize “revenue adequacy;”⁴⁰

³⁹ Macher *et al.* at p. 108.

⁴⁰ Macher *et al.* at p. 109.

- They also find that “realized revenue adequacy values across Class I railroads...fall well within the 25th-75th percentile range every year against the comparison set...and are in no sense outliers.”⁴¹
- Finally, they conclude that “if the revenue adequacy of the rail industry is put into the larger perspective of revenue adequacy relative to the broader set of firms operating in the U.S. economy over the past dozen years, there is little to distinguish its performance.”⁴²

81. From this, Macher *et al.* conclude that “the analysis provides no support for the proposition that rail industry’s revenue adequacy realizations are unusual or excessive.”⁴³ This analysis also rejects the view that “revenue adequacy” (based on ROI/COC ratios) demonstrates the exercise of market power or above-competitive pricing.

82. In another analysis, Macher, *et al.* compare Class I revenue adequacy measures to the same measures for “specific well-known firms operating in four different and highly competitive markets: Coca-Cola..., Ford..., Johnson & Johnson..., and Walmart.”⁴⁴ The analysis demonstrates that the ROI/COC ratios for Coca-Cola and Johnson & Johnson are “significantly above unity” and are “extremely high” relative to the “revenue adequacy” standard (i.e., ROI/COC = 1) and to measures of railroad ROI/COC.⁴⁵ Yet these extremely high measures of revenue adequacy “are of no immediate public policy concern.”⁴⁶

83. In the same analysis, Macher, *et al.* found that Walmart was “revenue adequate” for all twelve years they examined, with ratios that ranged from 1.07-1.66.⁴⁷ At the same time, Ford fluctuated above and below the threshold, with “adequate” revenue in some years and “inadequate”

⁴¹ Macher *et al.* at p. 109.

⁴² Macher *et al.* at p. 109.

⁴³ Macher *et al.* at p. 109.

⁴⁴ Macher *et al.* at p. 110.

⁴⁵ Macher *et al.* at p. 110.

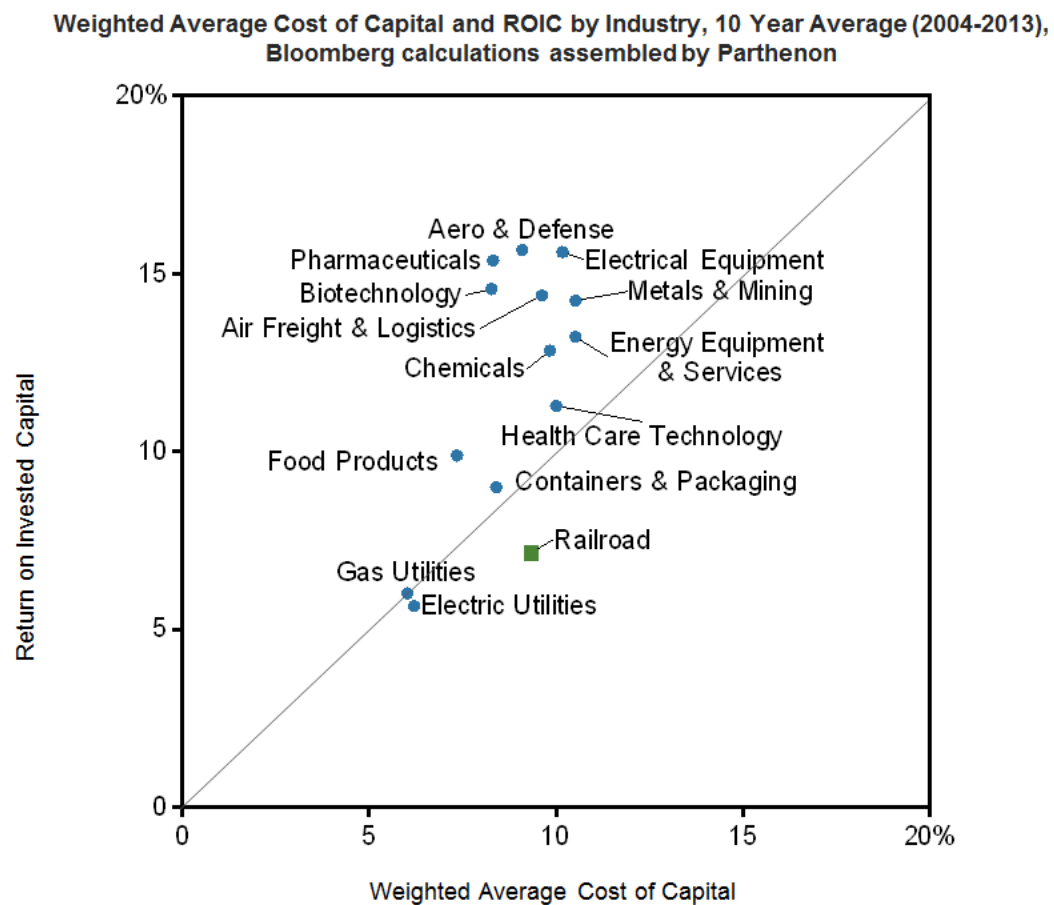
⁴⁶ Macher *et al.* at p. 110.

⁴⁷ Clearly a long-term measure of revenue adequacy (based on ROI and COC) would show that Walmart is highly revenue adequate.

revenues in others. As summarized by the authors, “[F]irms operating in highly competitive segments of the economy can realize revenue adequacy metrics above and below unity.”⁴⁸

84. Previous research confirms these results. For example, in previous reports on revenue adequacy, using somewhat different data and methods, and based on longer-term (10-year) averages, the industry weighted-average ROIs were greater than weighted-average COCs for industries with comparable COC rates.⁴⁹ (See Figure 3.)

Figure 3



Note: Bloomberg calculations are a total annual invested capital weighted average of S&P 500 companies within the industry during 2014
Source: Parthenon using Bloomberg data

Source: Brinner VS at Exhibit 2.

⁴⁸ Macher *et al.* at p. 110.

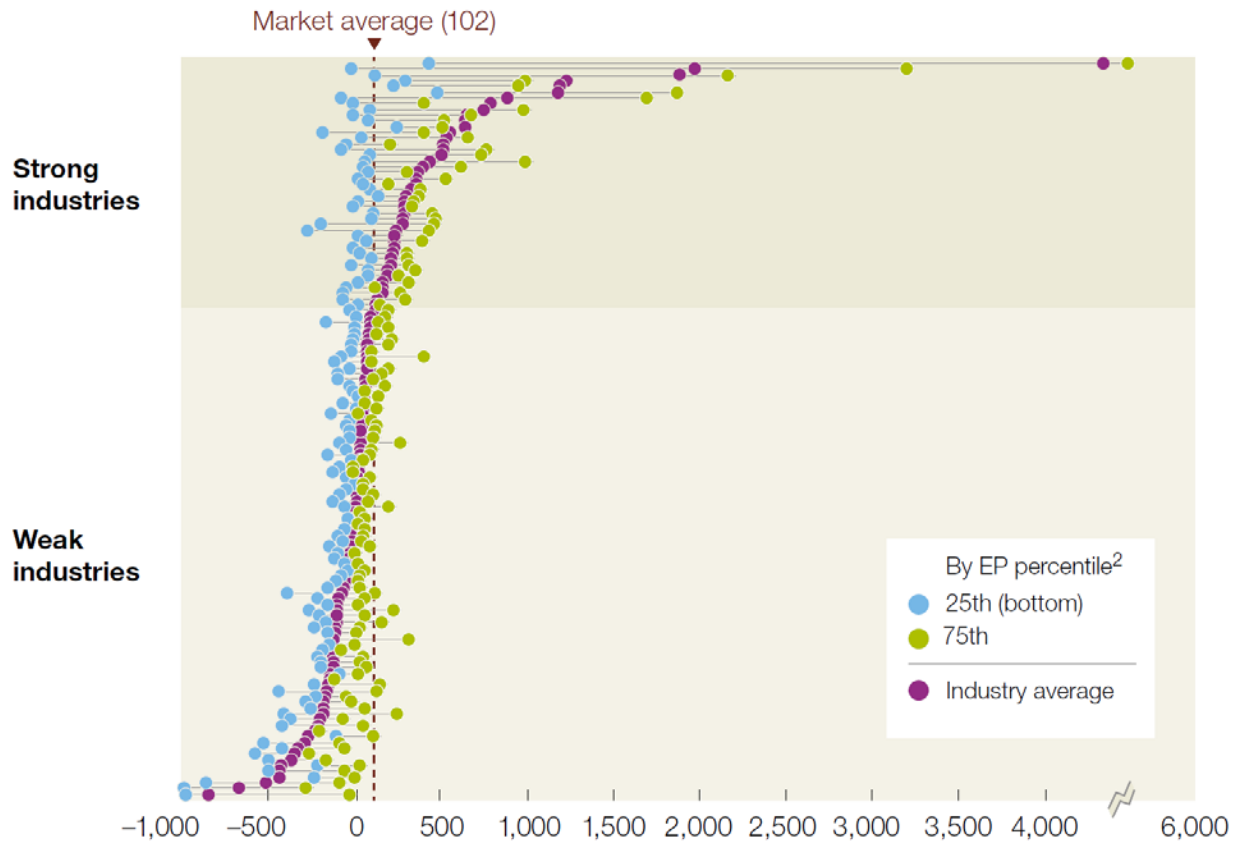
⁴⁹ See Brinner VS at p. 13.

85. Using a complementary methodology, a McKinsey study looking at the performance of 3,000 non-financial companies over the period 2007-2011 found similar results.⁵⁰ The firms in the top two quintiles all had $ROI > COC$, and the firms in the top quintile substantially so. As shown in Figure 4, the distribution of firms' profitability is fundamentally "bell-shaped" around putative revenue "adequacy" ($ROI = COC$) with large numbers of industries and individual firms spread over the range. (See Figure 4.) Indeed, the "market average" in this study finds the average company across many industries typically to be more than "revenue adequate" over the five-year period.

⁵⁰ Bradley, Chris, Angus Dawson, and Sven Smit, "The strategic yardstick you can't afford to ignore," *McKinsey Quarterly* (October 2013) (hereinafter "Bradley *et al.*"). This study looks at firms and industry based on a measure of "Economic Profit." Economic Profit equals ROI minus COC times capital invested. Brealey *et al.* at p. 306. Thus, a firm with zero Economic Profit would have ROI equal to COC . Positive Economic Profit is equivalent to being revenue over-adequate.

Figure 4
Distribution of Company Profit with Industry

Companies' average economic profit (EP), 2007–11, $n = 2,888$,¹ \$ million



Bottom 5 industries (no. of companies)

Electric utilities (102)
 Airlines (45)
 Multi-utilities³ (42)
 Independent power producers and
 energy traders (30)
 Railroads (26)

Top 5 industries (no. of companies)

Diversified metals and mining (46)
 Wireless telecom services (45)
 Pharmaceuticals (40)
 Integrated oil and gas (39)
 Communications equipment (18)

Source: Bradley *et al.* at Figure 7.

Note: Economic Profit equal zero corresponds to ROI equal COC.

86. While the high-performing firms tended to regress toward the average over longer periods (up to 14 years in the study), these differences persisted. Overall, the authors find that, on average, industry explained 40% of the differences in outcomes versus 60% for individual company

effects.⁵¹ Moreover, increased returns over the cost of capital also creates a virtuous cycle of increased investment. The authors observe that top-quintile companies (earning returns substantially above the ROIC) attract “a disproportionate share of investment” and invested “2.6 times more fresh capital than bottom-quintile businesses did over the subsequent decade.”⁵² In short, this approach confirms that long-term revenue adequacy and over-adequacy are widespread in the economy and not indicative of the exercise of market power.

87. The evidence is overwhelming. If revenue adequacy is based on ROI being greater or equal to COC (even measured over longer time horizons), revenue adequacy is a widespread, normal and expected outcome in the economy. Revenue adequacy and over-adequacy based on long-term comparisons of ROI to COC do not indicate the existence of above-competitive rail rates resulting from exercises of market power.

VI. USING REVENUE ADEQUACY AS A TRIGGER FOR GENERALIZED RATE CONSTRAINTS IS INCONSISTENT WITH SOUND “MIMIC COMPETITION” REGULATORY POLICY

88. Beyond questions of the proper use and interpretation of measures of revenue adequacy, the Board also seeks comments on several policy recommendations that the Task Force included in their report. These include the recommendations that: (a) long-term revenue adequate railroads be subjected to a Rate Increase Constraint, (b) bottleneck protections be suspended for long-term revenue adequate railroads; and (c) simplifications to the Simplified-SAC process be reinstated for long-term revenue adequate railroads.

89. While it is important to consider the regulatory implications of a finding of revenue adequacy, it is essential that those actions remain consistent with economic principles underlying sound price regulation of multi-product firms operating in an industry with extensive competition over so much of their systems, but potentially with pockets of market power in that system. The proposals by the Task Force that are currently under consideration by the Board do not meet this standard. Indeed, they are directly contrary to the findings of prior economic research, which concludes that:

⁵¹ Bradley *et al.* at p. 10.

⁵² Bradley *et al.* at p. 5.

“If the STB were to explicitly allow the revenue adequacy concept to evolve from a primarily information-producing role into an active and ongoing regulatory constraint, it would represent a significant expansion of rail industry regulation. However, the linking of regulatory constraints to observed accounting profit measures, such as those captured in the revenue adequacy metric, lacks economic foundations.”⁵³

90. At their core, the various recommendations would all place constraints on overall railroad rates, revenues and earnings without undertaking the necessary steps to investigate whether purported “over-adequacy” is the result of above-competitive pricing resulting from otherwise unchecked exercises of market power somewhere in a carrier’s system. Nor would such constraints be limited to such instances. As a result, the recommendations portend downward pressure on otherwise competitive rates and distortions to investment and operating efficiency. Wholesale restricting, capping or otherwise limiting rates that have not been found to be above-competitive levels under CMP principles on the basis of a railroad’s overall revenue “over-adequacy” would represent a return to distortive, old-style earnings regulation that was so long applied unproductively to franchise public utilities. This is economically inconsistent with Congress’ prescriptions that: “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”;⁵⁴ and that unless a carrier’s rate is determined to be the product of market dominance, the carrier “may establish any rate for transportation or other service provided by the rail carrier.”⁵⁵

A. BASIC ECONOMICS

91. Basic economics tell us why price regulation that does not mimic competition has disastrous consequences for both producers and consumers:

“[W]hen government adopts a price control...[it] forces all, or a large percentage, of transactions to take place at that price instead of the equilibrium price set through the interaction between supply and demand. Since supply and demand shift constantly in response to tastes and costs, but the government price will change only after a lengthy

⁵³ Macher *et al.* at p. 121.

⁵⁴ 49 U.S.C. § 10101.

⁵⁵ 49 U.S.C. § 10701(c). See further discussion in Sappington VS at pp. 5-7.

political process, the government price will effectively never be an equilibrium price. This means that the government price will be either too high or too low.⁵⁶

92. Noble Prize-winning economist Milton Friedman put it more bluntly:

“We economists don't know much, but we do know how to create a shortage. If you want to create a shortage of tomatoes, for example, just pass a law that retailers can't sell tomatoes for more than two cents per pound. Instantly you'll have a tomato shortage. It's the same with oil or gas.”⁵⁷

93. Prices are vital to the efficient allocation of resources toward the satisfaction of consumers' needs. They are the critical signals which impact choices of product and service offerings and which determine the nature and level of capital investment and ownership structures. *Price regulation that fails to mimic competitive pricing distorts these signals and, in turn, distorts firms' decisions about how to structure service offerings and where to direct their capital resources.* Rising prices are the market's way of signaling unsatisfied demand and inducing additional investment in a given sector. Price caps prevent prices from adjusting beyond a government-set price and therefore send distorted signals to the market, hiding the unmet demand and failing to induce investment that would benefit consumers.⁵⁸ In the real world of politics and regulation, such price regulation also tends to discourage price reductions that would otherwise be dictated from time to time by market conditions because the bluntness of regulation often means roadblocks to restoring prices to higher levels when market conditions dictate.

94. Beyond economic principles, we need not look too far back in our own actual regulatory history—only to, say, the natural gas and gasoline price control policies of the 1970s and post-war rent control in New York City—to see the distortive and destructive effects of price regulation that fails to mimic competitive outcomes. Gasoline lines and shortages of natural gas in periods of peak demand (i.e., the dead of winter) were the direct products of Nixon-era and subsequent price controls that purportedly were intended to protect consumers by trying to override the workings of

⁵⁶ Scott Morton, Fiona M., “The Problem of Price Controls,” *Regulation* vol. 24, no. 1 (2001).

⁵⁷ “Controls blamed for U.S. energy woes,” *Los Angeles Times*, February 13, 1977.

⁵⁸ Scott Morton, Fiona M., “The Problem of Price Controls,” *Regulation*, vol. 24, no. 1 (2001).

competitive market supply and demand.⁵⁹ The associated political disasters they created ultimately forced their abandonment. In the case of rent controls, trying to regulate thousands of competitors contributed hugely to the creation of slums and haves and have-nots, as controls drove investment out of the rent-controlled areas and channeled the vast bulk of investment into competitive, but unregulated, sectors of the marketplace.⁶⁰ And then, of course, there is the history of rate bureau-imposed rail price controls in the pre-Staggers era. The disasters created for shippers, ultimate consumers and railroads, alike, by that experience need not be recounted further here.⁶¹

95. In short, adoption of a regime of maximum rate and/or revenue caps that moves away from identifying and regulating rates only when rates on specific traffic are demonstrated to be in excess of “mimic competition” CMP levels threatens the public interest. While the long lives of railroad assets might disguise the deleterious effects and permit reasonable service for a time (just as rent controls on long-lived residential capital do not immediately show up as deteriorating quality), the long-run interests of the public in an efficient freight transportation sector and a healthy national economy can only be harmed.

B. A FINDING OF FIRM-WIDE REVENUE ADEQUACY DOES NOT IDENTIFY *WHERE*, OR EVEN *THAT*, MARKET POWER HAS RAISED RATES ABOVE COMPETITIVE LEVELS

96. As discussed at length above, market power being exercised by a railroad somewhere within its network is but one possible reason a carrier might be found to be revenue “over-adequate” on an overall firm-wide basis. This holds whether “adequacy” is measured on an accounting book value basis or on an economically sound replacement cost basis. But even if market power were one cause for measured revenue “over-adequacy” of a particular railroad, a determination of firm-wide “over-adequacy” would provide no basis for determining what particular rates for what particular shippers on what particular traffic exceed competitive (i.e., CMP) levels.

⁵⁹ See Kalt, Joseph P., *The Economics and Politics of Oil Price Regulation: Federal Policy in the Post-Embargo Era*, MIT Press, Cambridge, MA (1981); MacAvoy, Paul W., *The Natural Gas Market: Sixty Years of Regulation and Deregulation*, Yale University Press, New Haven (2000).

⁶⁰ Jenkins, Blair, "Rent Control: Do Economists Agree?" *Econ Journal Watch*, vol. 6 no. 1, 73-112 (2009).

⁶¹ See Kalt VS at pp. 8-10 for a summary.

97. Railroads are very capital intensive with long-lived sunk capital and large shared and common costs. They serve a myriad of routes and commodities that are often subject to competition from a variety of different sources. As a result, differential pricing is absolutely necessary: prices above raw incremental costs for some material amount of traffic are necessary to cover the network's shared and common costs and retain and attract capital. These economic factors are unchanged by whether the railroad as a whole is revenue adequate or not. As a result, a railroad need not be revenue adequate in order to exercise market power and thereby raise rates to specific customers for their shipments on specific routes on which it is dominant. Indeed, the Board has found on multiple occasions that the exercise of market power has resulted in above-competitive rates on certain traffic for railroads that were not revenue adequate.⁶²

98. Even if it were the case that revenue over-adequacy implied that there was somewhere an exercise of market power causing rates to be above competitive, CMP levels, the inability of firm-level revenue adequacy to identify which traffic is affected renders it insufficient for triggering automatic changes in pricing or regulatory treatment within a system in which policy properly allows, “to the maximum extent possible, competition and the demand for services to establish reasonable rates for transportation by rail”; that requires a demonstration of market dominance; that adheres to CMP “mimic competition” principles for assessing the reasonableness of carrier-established rates; and that otherwise permits a carrier to “establish any rate for transportation or other service provided by the rail carrier.”⁶³

99. Given the nature of rail economics, economically sound policy dictates that it remains necessary that price regulation or adjustment only be applied where it has been demonstrated (1) that there has been an exercise of market power with respect to specific traffic and (2) that the rates are in excess of the appropriate “mimic competition” benchmark. As explained below, the type of broadly targeted and bluntly applied regulatory triggers and responses tied to a finding of purported overall, long-term revenue adequacy proposed by the Task Force do not reflect sound policy and would result in deleterious outcomes for shippers and the future of rail service.

⁶² See “Rail Rate Cases at the STB,” February 26, 2019, accessed at https://www.stb.gov/stb/industry/Rate_Cases.htm.

⁶³ 49 U.S.C. § 10101 and 49 U.S.C. § 10701(c).

C. RRTF PROPOSALS: USING REVENUE ADEQUACY TO 'TRIGGER DIRECT, FIRM-WIDE RATE, REVENUE, AND EARNINGS CONSTRAINTS

100. The Task Force goes beyond concern over the effectiveness of the Board's current regulatory tools and policies as checks on and remedies for market dominance. It entertains the imposition of a Rate Increase Constraint (RIC) potentially applicable to all non-exempt, non-contract traffic of a revenue over-adequate railroad. This effectively imposes: 1) a price cap on new rates for traffic categories with average revenue to variable cost ratio (R/VC) greater than 180% based on the amount of the railroad's "net surplus" and the revenue obtained above the 180% R/VC threshold; and 2) increases in prices for existing shipments in the above-180% R/VC range would be limited to inflation. The proposed RIC would be enforced upon complaint and a perfunctory and formulaic, albeit putatively rebuttable, finding of market dominance.⁶⁴

101. The RIC rate caps would result in arbitrary rates across traffic groups, within traffic groups, and across time. The choice of "traffic groups" is arbitrary—whether commodities are grouped together (or split), whether the mileage splits are established at 500-mile increments, etc. The RRTF acknowledges that they "might need to add additional categories, particularly with respect to specific commodities, to ensure an appropriate amount of precision."⁶⁵

102. In addition, as the examples provided by the Task Force show, the RIC would effectively turn the 180% R/VC level established in the Staggers Act into a real (i.e., inflation-adjusted) rate cap for a wide variety of traffic. For the traffic categories selected and reported by the Task Force for the two western railroads, seven of the sixteen categories listed across the two railroads have rates capped at 180% of R/VC.⁶⁶

103. In short, the RIC has the characteristics of a binding, real (i.e., inflation-adjusted), cost-based rate cap. Moreover, and importantly in terms of its implications for incentives and efficiency in the rail industry, the RIC would employ rate-of-return measured *revenue adequacy* as the trigger for greater limitations on railroad rates, revenues and earnings. This embodies the essence of now-discredited "old-style" rate-of-return regulation with the attendant inefficiencies and distortions of

⁶⁴ Rate Reform Report at p. 53.

⁶⁵ Rate Reform Report at p. 37, fn. 38.

⁶⁶ Rate Reform Report at p. 38.

such regulation. As I discuss in greater detail in Section VII below, these undesirable effects include:

- Long-recognized disincentives to engage in cost-minimizing behavior that are generated by RIC-type tying of constraints of prices, revenues and/or earnings to measures of overall revenue adequacy.⁶⁷
- Perverse incentives for pricing “competitive” traffic.
- Incentives to reduce quality of service or to focus investments or activities for service on those traffic segments that are not constrained by RIC.
- Disincentives for efficient use of capital.
- Incentives for wasteful capital investment or under-investment.

D. RRTF PROPOSALS: USING REVENUE ADEQUACY TO TRIGGER INDIRECT, STRUCTURAL RATE, REVENUE, AND EARNINGS CONSTRAINTS

104. The Board also seeks comment on the Task Force recommendation that calls for eliminating bottleneck protections. The recommendation would require revenue adequate railroads, at shippers’ requests, to quote rates to interchange locations specified by shippers. These rates for the separate segments of the shipment would be subject to protest by shippers and ratemaking proceedings. Absent the existing bottleneck protections under the Task Force proposal, it appears that potential interline shippers would be free to select a junction location for their traffic, and railroads would be required to provide separate rates between origin-to-junction and junction-to-destination segments. The shipper would be free to choose a junction such that the rate on one segment would be set by direct intramodal competition between carriers. On the other bottleneck segment, the shipper could challenge the bottleneck rate and obtain a rate on that segment consistent with SAC or Simplified-SAC rate for the bottleneck segment only. This would permit shippers to obtain a reduction in the total rate for the movement from origin to destination even when the previous through rate had been consistent with market pricing principles.

105. The Task Force’s bottleneck proposal does not attempt to focus on shippers and traffic that are the subject of the exercise of market power by the railroad which is resulting in unregulated

⁶⁷ See, for example, Averch, Harvey and Leland Johnson, “Behavior of the Firm Under Regulatory Constraint,” *American Economic Review*, vol. 52 no. 5, 1052-1069 (1962); Wellisz, Stanislaw H., “Regulation of Natural Gas Pipeline Companies: An Economic Analysis,” *Journal of Political Economy*, vol. 71 no. 1, 30-43 (1963); and Baumol, William J and Alvin K. Klevorick, “Input Choices and Rate-of-Return Regulation: An Overview of the Discussion,” *Bell Journal of Economics and Management Science*, 162-190 (Autumn 1970).

rates which are inconsistent with competitive market principles. As a result, the effects of this proposal promise to be economically rather arbitrary. The advantage to a favored shipper of this proposal is that it could seek to apply the Board's maximum rate-setting process to a segment of the total movement in order to obtain rate reductions for the cost of the full move, where the application of the maximum rate-setting process on the whole move would not likely have found the existing rate to be excessive. The effect is to reduce the portion of the common costs borne by this favored shipper in excess of incremental costs, even though absent the change in the bottleneck provision, the share of common costs borne are consistent with CMP principles. The result is cross-subsidization. That is, rates elsewhere in the system that contribute to revenue "over-adequacy" end up reducing other rates below the level that competition would set.

106. Permitting shippers to specify interchange locations harkens back to the pre-Staggers era of open routings. In the pre-Staggers era, railroads maintained "open routings" in which there could be dozens or more alternative routings (and interchanges) from origin to destination, with corresponding similar rates across them.⁶⁸ Shippers could effectively select among these routings. The inefficiency in terms of managing a rail network is obvious. The elimination of forced open routings, and railroads' ability to manage their rail networks efficiently was one of the major factors leading to the initial explosion in productivity and rate reductions following the passage of the Staggers Act.

107. The proposal now imposes shippers' choices on railroads' efforts to manage efficiently a complex transportation network. Under the proposal, each bottleneck shipper would have the incentive to select a junction over which it believed it could obtain the most favorable resulting combined rate based on the characteristics of the bottleneck segment for purposes of the STB's rate reasonableness tests and on the potential rate available on the competitive segment. With these incentives, the shipper need not consider the effect of the potential routing on the cost of operating the rail network, the impact of the routing on service levels and frequency available to other shippers, or the ability of the railroad to deploy and operate its capital efficiently.

108. For example, the shipper could have the incentive to select a high-density bottleneck route, as the additional traffic sharing the common assets may reduce the rate that could be charged under

⁶⁸ See, for example, *Baltimore Gas & Electric Co. v. United States*, 817 F.2d 108, 110 (D.C. Cir. 1987).

the SAC or Simplified-SAC. Additional traffic over that route, however, may increase congestion, worsen service quality to other shippers, and reduce other revenue available to the railroad as service quality declines. Beyond the deleterious effects and distortions of regulation intended to reduce railroad revenue in response to being found revenue adequate, this proposal directly implicates the efficiency of operating the rail network.

109. Under reasonable assumptions regarding the demand for rail services, it only takes a small increase in costs to offset the efficiency benefits of even a significant reduction in the price mark-up.⁶⁹ As such, although the Task Force proposal would transfer revenue from certain railroads to bottleneck shippers, the induced cost increases arising from these changes may well exceed any efficiency gain from the price reductions.

110. In fact, the railroad industry has proven to be especially poorly suited to so-called “access regulation”. At the core of the problem is that there are economic reasons why business firms exist and not everything can be coordinated through arm’s-length markets. Forced access, for example, would not constitute implementation of a policy of mimicking competition. Competitive market forces would not generate a system of open access railroads, and no SARR in a contestable market would be expected to enter as a non-integrated facilities company merely charging independent rolling stock carriage companies for the use of the SARR’s infrastructure.

111. For reasons that have been well-documented, running a railroad requires *business judgment* on matters ranging from who will make investment in shared facilities, to which cars and trains need to get through a congested yard or network segment most quickly, to who will pay for quality improvements on a shared network.⁷⁰ While it might seem that promoting competition could be achieved by forcing the structural dis-integration of rail firms and the networks they operate, the “mimic competition” principle points in the opposite direction. Competitive forces operating on the challenges of coordinating operations across myriad, non-fungible traffic movements and the needs for investment in long-lived and shared capital efficiently push the integration of infrastructure and rolling stock activities into a common integrated railroad firm, rather than

⁶⁹ Gómez-Ibáñez, José A., “Open Access to Infrastructure Networks: The Experience of Railroads,” *Review of Industrial Organization*, vol.49, 311–345 (2016) at pp. 314-316.

⁷⁰ Verified Statement of William J Rennie, STB Ex Parte 711, March 1, 2013 (hereinafter “Rennie VS”).

leaving those challenges and needs to a mélange of transactions among arm’s-length parties with readily conflicting interests.⁷¹

112. The Task Force’s proposal would transfer significant control of key operating decisions from railroad decisionmakers concerned with the operation of their overall networks to shippers concerned with their specific traffic. The Task Force proposes changes to the Board’s long-standing bottleneck policies in order to impose price and revenue constraints on purportedly now “robust[ly]”⁷² revenue adequate railroads. Specifically, in the words of the Task Force, “*shippers* could be allowed to direct their [e.g., through] carrier to deliver their cars to a feasible interchange point with a second carrier...”⁷³

113. Such a transfer of decision-making away from the owners and operators of a network to the *users* of that network is a recipe for gross inefficiency: The former have direct financial incentives to concern themselves with the network-wide effects of individual investment and operating decisions. These include decisions as to whether or not to engage in interchange on otherwise through traffic that might have adverse ripple effects on operations and investment needs elsewhere across the system. In the language of economics, the owners and operators of a network can and do internalize disruptive “network externalities” (i.e., spillover affects when operations and/or investment at one part of the system affect operations and/or investment elsewhere on the system).

114. Carriers, shippers and the Board are well familiar with such “ripple” effects, as when news headlines describe the episodes when “Container Congestion [at ports] Ripples to US Interior”.⁷⁴ Particularly on highly non-linear and complicated multi-node “web” networks with non-fungible shipments and constrained capacity, such events may not be 100% preventable, but owner-

⁷¹ See, for example, Candell, Amy B. and Joseph P. Kalt, “Open Access for Railroads? Implications for a Non-Hub Congestible Network Industry,” Advanced Workshop in Regulation and Competition, Center for Research in Regulated Industries (May 2000); Gómez-Ibáñez, José A. and Dines De Rus (eds.), *Competition in the Railway Industry: A Comparative International Analysis*, Edward Elgar Publishing, Inc, Northampton, MA. (2006) (hereinafter “Gómez-Ibáñez and De Rus”); Gómez-Ibáñez, José A., “Open Access to Infrastructure Networks: The Experience of Railroads,” *Review of Industrial Organization*, vol.49, 311–345 (2016) at pp. 314-316.

⁷² Rate Reform Report at p. 41.

⁷³ Rate Reform Report at p. 13.

⁷⁴ Ashe, Ari, *JOC.com*, January 18, 2019, accessed November 21, 2019 at https://www.joc.com/rail-intermodal/class-i-railroads/union-pacific-railroad/container-congestion-ripples-us-interior_20190118.html.

operators of the network have strong incentives and are in the best position to minimize their occurrence and the costs and disruption they create.

115. A user of rail service, on the other hand, has neither the forceful incentives or business tools that the carrier has for taking into account the effects that, as the Task Force would have it, would arise under its proposal to have shippers “direct their carrier to deliver their cars to a feasible interchange point with a second carrier”⁷⁵ on the Class I “web” railroads which are notably subject to congestion and over which one user’s shipments are not fungible with the shipments of myriad other user’s. The Task Force’s proposal would affirmatively invite individual shippers to impose network externalities on other shippers. Economically, this would be a form of cross-subsidization – i.e., imposing costs on other shippers using the network in order to enable a particular shipper to benefit from lower rates.

116. Indeed, the experience outside the U.S. where regulators have tried to employ various forms of forced, shipper-directed, or open access is that rail access regimes have been plagued by conflicts between the understandably myopic specific-transaction-level interests of individual users, on the one hand, and the shared interests of all shippers in overall network efficiency. The consequences in Australia, Europe and North America have been very costly when rail networks are – as in the U.S. – characterized by or susceptible to such factors as carrier/user interfaces which are technically complex,⁷⁶ the network is subject to capacity constraints and congestion, and access users are heterogeneous.⁷⁷ In such contexts, access regimes have ended up manifesting themselves in not only operational inefficiencies that are spread as externalities across network users, but also congestion and underinvestment in needed infrastructure as both rationally self-interested carriers and shippers have incentives to hold out and hope that other carriers or shippers will bear the risk and cost of needed system improvements.⁷⁸

⁷⁵ Rate Reform Report at p. 13.

⁷⁶ As in the case of the highly non-linear networks of US carriers. See Rennie VS.

⁷⁷ Gómez-Ibáñez, José A., “Open Access to Infrastructure Networks: The Experience of Railroads,” *Review of Industrial Organization*, vol.49, 311–345 (2016) at pp. 314-316.

⁷⁸ Gómez-Ibáñez and De Rus and Gómez-Ibáñez, José A., “Open Access to Infrastructure Networks: The Experience of Railroads,” *Review of Industrial Organization*, vol.49, 311–345 (2016) at pp. 314-316.

E. MODIFICATIONS TO SIMPLIFIED-SAC

117. In addition to its access and RIC proposals, the Task Force also calls for modifications to Full SAC and Simplified-SAC. In the case of Simplified-SAC, this includes the use of a standardized Road Property Investment (RPI) in rate cases brought against a long-term revenue adequate carrier.

118. As I discuss in more detail in Section VIII below, streamlining and standardizing the regulatory process to reduce the cost and time required to adjudicate rates is a laudable goal, particularly for a railroad that is found to be long-term revenue adequate under a proper standard. Any such simplifications would need to ensure that simplifications minimize the need to make arbitrary stand-alone allocations of costs that would give shippers opportunity for unjustified rate relief based on errors and arbitrary deviations from competition-mimicking decisions.

119. Given that the Board has previously rejected the proposed simplification to RPI for large rate cases because of concerns about the rolling-average RPI simplification and its ability to identify costs accurately, simply re-instating the RPI simplification is not without risk. Regardless, it may be a useful approach to streamline the process that may be able to identify maximum rates under appropriate competitive principles without bias. What is needed is *smart simplification*. I turn to this in Section VIII below.

VII. ECONOMIC IMPLICATIONS OF THE TASK FORCE RECOMMENDATIONS

A. ISSUES OF TIMING AND REGULATORY LAG

120. The Task Force's proposals imply substantial changes and potential instability in rates, even for potentially benefitted shippers. For example, under RIC, annual updating of the historical review period and calculation of "net surplus" and changes in the distribution of traffic across groups would change the relevant rate caps for shippers, perhaps substantially. These discontinuities would likely be exacerbated as the proposed "look back" period jumps in response to business cycle changes. (For example, the RRTF reports that over 2007 to 2008 the "Average Return on Investment" jumped by an average of 1.40 percentage points and almost 2 percentage points or more for three of the seven railroads examined.)⁷⁹

⁷⁹ Rate Reform Report at p. 35.

121. The adoption of a regulatory regime that applies non-market or arbitrary principles for ratemaking in one regime (“revenue adequacy”) and market-based principles otherwise, will result in unstable and arbitrary outcomes. If a revenue-adequate railroad falls back into revenue inadequacy, does this invalidate rates that have been determined under RIC or the bottleneck changes? If not, then what is the economic benefit of a revenue-inadequate railroad’s rates being set at levels inconsistent with the market principles applicable to railroad economics?

122. The directional effect of the Task Force proposals is to eliminate revenue above the level of purported long-term rate adequacy. To the extent that the bottleneck provision and the proposed RIC -result in even more substantial rate reductions, this could serve to drive rates below annual (and eventually long-term) revenue adequacy. It would appear that if a railroad were to swing between being long-term revenue adequate and being revenue inadequate, then the proposed additional regulatory measures would no longer apply. In that case, the rate caps under RIC would apparently no longer apply, as would bottleneck rates created while the carrier was revenue inadequate; it is unclear whether rates established under the RIC that would not be found unreasonable under Full SAC would remain in place. If this were not the case, then the proposals would be imposing limitations on revenue-inadequate railroads inconsistent with market principles and the policies of the Staggers Act.

123. In the same vein, the RIC rate freeze⁸⁰ (subject to inflation) would create a distortionary distinction between “new” and “existing” traffic. The proposal appears to limit rates on “new” traffic to the proposed threshold ratios of rates to URCS variable costs based on broad and arbitrary categorizations. This distinction inevitably provides perverse incentives for inefficient and unproductive economic decisions, not just by railroads but by shippers as well. For example, a large buyer of grain that sources grain from a variety of elevators would have the incentive to choose among them, not on the basis of prices determined in the marketplace, but as a result of arbitrary regulatory fiat. The grain buyer could decide, based on existing rates and thresholds imposed on various arbitrary categories (e.g., wheat moving less than 500 miles, moving between 500 and 1000 miles, etc.) to quit shipping from its existing supplying elevators and to source grain from elevators that it had previously not been using. By doing so, the purchaser may be able to generate “new” traffic subject to more attractive, albeit arbitrary, rate caps. This type of strategic

⁸⁰ Economically, limiting rates to changes in inflation *freezes* rates in real, inflation-adjusted dollar terms.

decision-making by purchasers in response to regulator-imposed rate caps is an unproductive diversion of resources that would harm existing suppliers and the economy.

124. The need to conduct reviews of revenue adequacy based on actual data means that such reviews must inherently be backward-looking. The inherent regulatory lag in the process implies that the proposals will frequently be out of step with the conditions facing the rail industry. As a result, the RIC rate freeze on real (i.e., inflation-adjusted) rates⁸¹ and the proposed triggering of bottleneck access would invariably impose arbitrary rate reductions and freezes at times when the railroads are struggling to earn adequate returns. For example, if the RIC schema and/or bottleneck proposal had been in place during the Great Recession of 2008-09 because a railroad had been declared to be “revenue adequate” in the period leading up to the Great Recession, the resulting RIC rate caps and revenue erosion in 2009 for a railroad such as Norfolk Southern (NS) would have been focused on returning NS’s “net surplus” to shippers right at a time when NS was, even absent the Task Force’s revenue-reducing provisions in effect, in severe “net deficit” under the ROI-COC revenue adequacy measure.

125. The foregoing is not isolated to situations such as the Great Recession. Regulatory lag is endemic to the use of revenue adequacy as a trigger for rate constraints of any form. The annual revenue adequacy determination is released in the fall of the following year (e.g., released in fall of 2019 covering calendar year 2018). The most recent annual revenue adequacy finding (released in September 2019 covering calendar year 2018) found that neither BNSF nor NS were revenue adequate in 2018 (under the current book accounting measure). Yet, the Task Force proposal’s revenue-reducing rate caps and bottleneck provisions would have been applicable to those two railroads during 2018 (based on a determination of long-term revenue adequacy in the fall of 2017 using 2016 as the final year of the test period).⁸² The Task Force’s proposals would have the effect of suppressing rail revenue broadly and arbitrarily and driving these two railroads further into revenue inadequacy. The broad-based changes in rate regulation proposed by the Task Force would necessarily result in regulatory lags and rigidity that would be markedly inappropriate for an industry like railroads, where most of traffic is subject to dynamic competitive forces and

⁸¹ See fn.80 above.

⁸² Rate Reform Report at Table 4.

railroads must adjust in real-time to changes in those forces if they are to stay viable as transportation options for the nation's economy.

B. THE TASK FORCE RECOMMENDATIONS ARE A BACKWARD STEP TOWARD DISCREDITED “OLD-STYLE” UTILITY REGULATION

126. The RRTF proposals employ a finding of putative firm-wide revenue adequacy to trigger tighter constraints on a rail carrier's rates, revenues and earnings. As such, the proposals represent recommendations for a return to a discredited form of utility-style ratemaking based on accounting rates of return. Specifically, the Task Force proposals represent a form of rate-of-return or earnings regulation: The proposals are intended to limit or reduce rates and revenues as long as the rail carrier is at or above the ROI/COC “revenue adequacy” threshold with little or no focus on whether specific rates are inconsistent with competitive market principles.

127. The old-style regulatory approach embraced by the Task Force has been most commonly applied in situations in which the enterprise has been granted a government franchise monopoly as a public utility — a situation not at all applicable to the railroad industry. The documented problems of such regulation have been summarized in independent research:

“The advent of competition in areas previously reserved for the franchised [public utility] monopoly has made the administration of rate-of-return regulation more contentious than ever....Briefly, rate-of-return regulation gives the firm incentives to misreport cost allocations, choose an inefficient technology (in some cases), undertake cost-reducing innovation in an inefficient way, underproduce in a noncore market, price below marginal cost in a competitive market which happens to be included in the set of core markets regulated by an aggregate rate-of-return constraint, and view diversification decisions inefficiently.”⁸³

128. The pejorative tenor of economists' labeling revenue adequacy regulation—which triggers the tightening of regulatory constraints based on firm-wide measures of rate of return—as “old-style” is intentional on the profession's part. Experience with such regulation has wholly discredited it. It is particularly ill-suited to the U.S. rail industry, in which carriers are not protected from competition by grants of exclusive public utility franchises and such huge portions of their business face potent competition.

⁸³ Braeutigam, Ronald R., & Panzar, John C, “Diversification Incentives Under ‘Price-Based’ and ‘Cost-Based’ Regulation,” *RAND Journal of Economics*, vol. 20 no. 3, 373-391 . (1989) at p. 390.

129. The sources of the debilitating consequences of old-style rate-of-return regulation are well-known. The drawbacks of earnings regulation include: “(1) limited incentives for innovation and cost reduction; (2) over-capitalization; (3) high costs of regulation; (4) excessive risks imposed on customers; (5) cost shifting; (6) inappropriate levels of diversification and innovation; (7) inefficient choice of operating technology; and (8) insufficient pricing flexibility in the presence of competitive pressures.”⁸⁴ These drawbacks pervade the Task Force proposals as these proposals trigger regulation to limit or reduce revenues and rates based on whether aggregate accounting returns exceed some threshold.

130. The Task Force recommendations portend the introduction and magnification of these problems in the rail sector. The RRTF proposals would use putative “revenue adequacy” as indicated by a railroad’s measured rate-of-return to trigger constraints on railroads’ rates and revenues. As a consequence, pro-competitive actions railroads could take to reduce costs or improve service on the vast portion of its services that are subject to competition would result in government-imposed limitations in rates and revenues – thereby directly distorting and discouraging such actions.

131. For example, under the RIC, in cases of traffic with $R/VC < 180\%$ or other non-market dominant traffic, rate increases taken in order to match changes by competitors would result in increased “net surplus” for a railroad and lower RIC caps. As such, this would reduce the incentive to price in line with competition. Such disincentives for competitive pricing would further discourage outlays and efforts to expand or improve service for this traffic in response to changing market conditions. In so doing, the RIC proposal portends distortion of one of the key elements undergirding the Staggers framework’s remarkable success in restoring railroads’ capacities to contribute to the modern, dynamic economy of the nation – i.e., their ability to respond to ever-changing conditions in markets where their very survival depends on their responses to competitive forces.

132. Similarly, using revenue adequacy to trigger tighter rate constraints would create incentives to reduce quality of service or to focus investments or activities for service on those traffic

⁸⁴ Mayo and Sappington at p. 215, citing Sappington, David E. M., “Price Regulation,” in M. E. Cave, S. K. Majumdar, & I. Vogelsang (eds.), *Handbook of Telecommunications Economics*, Elsevier, Amsterdam, vol. I, 225–293 (2002). See, also, fn. 67 above.

segments that are not constrained by regulation in order to pay for the cost of the additional value created. For example, a RIC-constrained railroad would have little incentive to engage in value-creating investments or activities that would improve service — that is, investments or activities that increase shippers’ willingness to pay for the improved service in excess of the cost of making those improvements. As a result, the RIC cap could prevent the railroad from obtaining incremental revenue sufficient to sustain these value-creating investments or other activities that would benefit shippers.

133. Investment decisions, too, would be distorted by the Task Force’s proposals. Capital investments expand “net investment” (i.e., the capital base) upon which ROI is calculated and, under the Task Force’s proposals, would thereby serve to reduce the likelihood of a railroad being found to be “revenue adequate”. The result would be well-understood distortion of incentives. Specifically, at any given level of operations, incentives would be artificially tilted toward excessive capital-intensity, where instead, making operational changes or using less capital-intensive technologies that would be less costly and more efficient. The result is known in regulatory economics and practice as a bias toward “gold-plating” of capital investments.

134. As innumerable public utility commissions learned under old-style regulation in which rate constraints were triggered by the regulators’ measures of revenue adequacy, “gold-plating” of investments under earnings-based regulation is wasteful and all-too-common.⁸⁵ The problem has typically pushed regulators into adopting additional layers of regulation to ensure that regulated firms’ investments are “prudent” and/or “used and useful”. In so doing, the distortions to incentives engendered by old-style regulation pull regulators to move ever more deeply into the role of central planners who find it necessary to constrain the ability of the firms they regulate to make those firms’ own adaptive investment and operational decisions.

135. No such regulatory trajectory, policies and proceedings are required when competition can be relied on to set rates, and in the case of the rail industry, pockets of market power are subject to market-based principles of the type developed and employed by the Board for railroad ratemaking under the Staggers regime (e.g., CMP and SAC principles). Indeed, the well-documented success of modern market-based regulation is not confined to the railroad industry. Numerous studies have

⁸⁵ See, for example, Doyle, Chris, “Regulating Firms with Monopoly Power” in Sugden, Roger, ed., *Industrial Economic Regulation: A Framework and Exploration*, Routledge, London (1993) at p. 118.

shown that moving from earnings-based, rate-of-return regulation, which has traditionally been applied in electric utilities, telecommunications, energy, railroads (before Staggers) and other industries, has led to reductions in costs, improvements in service, and greater innovation and flexibility in pricing, product and services.⁸⁶ Re-creating the link between accounting costs and future revenue for railroads reflected in the Task Force proposals is a move backward in time and in the wrong policy direction.

136. Finally, depending on the frequency and severity of impositions of rate constraints that would be triggered under the Task Force's proposals, adoption of those proposals could well end up putting the industry in a position not unlike the pre-Staggers world by making capital investment simply uneconomic. This would occur if the loosening effect of increasing one's capital base (e.g., through "gold-plating") is not sufficient to keep expected rates of return to levels over the life of investments which at least cover their costs of capital. Under those circumstances, investment would be uneconomic, and particularly so if system-expanding investments to attract new business or into new technologies are relatively riskier than the average operations of a railroad.⁸⁷ Under such circumstances, the RRTF schemas would create potentially strong incentives for overall under-investment and thereby hold back the efficiency and aggregate size of rail operations.

137. This prospect is raised by the fact that the proposed revenue limitations triggered by accounting earnings are asymmetric in that they would serve to suppress returns when the rail industry accounting performance is good but provide no mechanism for recovering foregone revenues when times are bad. In essence, the RRTF proposals would have the effect of taking the "tops" off of earnings cycles, but leave carriers fully exposed to the "troughs" in earnings.

⁸⁶ See, for example, fn. 9 above; Sappington VS (and citations therein); Sappington, David E. M. and Dennis L. Weisman, "Price cap regulation: what have we learned from 25 years of experience in the telecommunications industry?," *Journal of Regulatory Economics* vol. 38, 227-257 (2010); Paul Joskow, "Regulation of Natural Monopoly," *Handbook of Law and Economics*, Polinsky, A.M. and S. Shavell, eds., Elsevier (2007) at Chapter 16; and Paul L. Joskow, "Incentive Regulation in Theory and Practice: Electricity Distribution and Transmission Networks," *Economic Regulation and Its Reform: What Have We Learned?*, Rose, Nancy L., ed., University of Chicago Press (2014).

⁸⁷ That is, if the project-specific risks result in the cost of capital of system-expanding investments to attract new business or into new technologies which are higher than the firm-wide cost of capital (representing a firm-wide averaging of risks) employed in a triggering revenue adequacy test.

138. Most rail service is not subject to rate regulation by the Board and those rates are subject to competitive forces. There is no mechanism in the marketplace, existing regulation, or the RRTF proposals that *ensures* that railroads will remain revenue adequate over the life of the investment. Indeed, it is unlikely in light of the long post-Staggers experience with railroads' exposure to market forces that any such mechanism is possible. But what can be said is that the Task Force's proposals create the real prospect of biasing long-term returns toward revenue *inadequacy*. Such a bias toward inadequate returns would be a powerful deterrent in sustaining the large on-going investments required for an efficient and progressive railroad industry.

VIII. RECOMMENDATIONS FOR IMPROVEMENTS TO THE SYSTEM

139. As an initial matter, were a railroad found to be truly revenue over-adequate under proper application of a replacement-cost test, it is not unreasonable for the Board to be concerned about the sources of that over-adequacy. If such over-recovery were shown to be caused by exercises of market power that have resulted in above-competitive rates somewhere in carrier's system, it is logical that the Board would be concerned as to why its existing tools have been insufficient to ferret out and remedy instances of market dominance and concomitant above-competitive pricing that may contribute to coherently-calculated revenue over-adequacy. But sound policy is properly concerned with the efficiency and effectiveness of the Board's regulatory processes and practices for regulating market dominance that results in above-competitive rates and revenues, regardless of whether or not a carrier is revenue adequate. We consider a number of improvements in this regard below.

140. Rather than using putative determinations of revenue adequacy to replace the economic principles reified in the SAC process with arbitrary and distortive price restraints (such as the RIC approach), sound policy should continuously seek to respond to instances of market power with policies that are consistent with the principles of limiting rail rates to competitive levels, and doing so with efficient and effective practices and procedures. In practice, we believe this means establishing an effective regulatory process that can be accessed realistically by all shippers. This includes improving the effectiveness of the Board's SAC framework by making SAC proceedings quicker and less expensive and introducing smart simplification and aggressive streamlining to the SAC and Simplified-SAC processes.

141. The Board has long recognized the importance of establishing rules and standards in SAC proceedings that improve the efficiency of the regulatory process. Over the years, the Board has established various rules that successfully eliminated many areas of dispute typically seen in SAC cases. Continuing this work to simplify and streamline proceedings involving revenue-adequate railroads will address the Board's concerns with respect to providing access to all shippers and will allow the Board to maintain regulation that is consistent with the fundamental economic characteristics of the industry.

142. A variety of changes and decisions related to development of SAC rates could streamline and reduce costs without significantly diminishing their accuracy or consistency with market principles. The process could be streamlined if the number of disputed issues could be reduced, so attention is focused on matters of economic significance to the case at issue.

143. Certain changes could take the form of once-and-for all decisions on recurring issues that arise in most or all cases, but don't depend on the specific SARR, and could be applied going forward to future cases. Examples of such topics include:

- Treatment of equity flotation costs
- Treatment of real estate acquisition costs
- Choice of inflation indices
- Treatment of taxes and bonus depreciation.
- Calculation issues related to the DCF, e.g., amortization of debt, terminal value, etc.

144. There are also various categories of costs that could be standardized, subject to rebuttable presumptions depending on the specific details of a case. Establishing these types of guidelines will mitigate the need for parties to present extensive evidence and re-litigate recurring issues. Examples of elements that may benefit from some level of smart simplification through standardization include:

- G&A costs
- Various construction costs, such as ties, earthworks, ballast, rail, etc.
- Ancillary facilities

145. Further, the use of third-party experts (paid by the parties and to whom the relevant evidence is provided) on areas outside the STB's expertise (e.g. real estate valuation) could provide guidance to the Board. One benefit of this approach is that it would allow the Board to establish

common parameters for all parties to work with in developing the SARR, thus limiting the volume of evidence presented by the parties before the Board and limiting the range of decisions the Board must issue.

146. A major source of disputes results from the choice of traffic groups, cross-over traffic, and operating plans. The establishment of rules and standards for the determination of traffic groups and cross-over traffic could limit the extent of the disputes over the SARR. Based on the traffic groups, established standards for operating plans could eliminate the need for separate Railroad Traffic Controller demonstrations. To the extent disputes remain, the use of technical conferences can be used and requiring the two sides can be required to each provide results based on the same specified assumptions, so that areas of dispute and their effect on rates can be isolated.

147. It is a useful and important exercise for the Board to consider how to improve the regulatory process. But care must be taken to avoid throwing the baby out with the bath water. The core principles of relying on competition to the maximum extent possible, and using regulation to mimic competitive market results in those instances where competition is demonstrably thwarted by exercises of market power, are as sound now as they were in 1980, and they have produced a long record of success in enabling railroads to play important roles in supporting the nation's economy.

I declare under penalty of perjury that the foregoing is true and correct.



Joseph P. Kalt
November 26, 2019

APPENDIX A

CURRICULUM VITA

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PROFESSIONAL POSITIONS

JOHN F. KENNEDY SCHOOL OF GOVERNMENT, HARVARD UNIVERSITY CAMBRIDGE, MA

Ford Foundation Professor of International Political Economy, 1992-2012; emeritus 2012-present

Areas of specialization include Industrial Organization, Economics of Antitrust and Regulation, Natural Resource Economics, Public Choice and Political Economy, Economic Development, Microeconomic Theory

Co-Director, The Harvard Project on American Indian Economic Development, 1987-present

Faculty Chair, Harvard University Native American Program, 2000-2006

Chair, Economics and Quantitative Methods Cluster, 1995-2000

Professor of Political Economy, 1986-1992

Faculty Chair and Academic Dean for Research, 1992-1994

Chairman, Environment and Natural Resources Program, Center for Science and International Affairs, 1990-1994

Chairman of Degree Programs, 1990-1992

Chairman of Ph.D. Programs, 1989-1990

Assistant Director for Natural Resources, Energy and Environmental Policy Center, 1985-1990

Co-Director, Harvard Study on the Future of Natural Gas Policy (with Frank C. Schuller), Energy and Environmental Policy Center, 1984-1986

DEPARTMENT OF ECONOMICS, HARVARD UNIVERSITY, CAMBRIDGE, MA

Associate Professor of Economics, 1983-1986

Assistant Professor of Economics, 1980-1983

Instructor in Economics, 1978-1980

THE UNIVERSITY OF ARIZONA, TUCSON, AZ

Visiting Professor, Rogers College of Law, 2008-2013; *Faculty Affiliate*, 2013-present

Visiting Professor, Eller College of Management, 2005-2010

Visiting Professor, School of Government and Public Policy, 2009-2012

Faculty Chair for Nation Building Programs, Native Nations Institute for Leadership, Management, and Policy, Udall Center for Studies in Public Policy, 2005-present

Visiting Professor, American Indian Studies Department, 2005-2006; *Faculty Affiliate*, 2013-present

COMPASS LEXECON

Senior Economist, 2003-present (and since 1983 with predecessor enterprises)

PRESIDENT'S COUNCIL OF ECONOMIC ADVISERS, WASHINGTON DC

Junior Staff Economist, 1974-1975

EDUCATION

University of California, Los Angeles, Ph.D. in Economics, 1980; M.A. in Economics, 1977
Doctoral Dissertation: *Federal Control of Petroleum Prices: A Case Study of the Theory of Regulation*

Stanford University, Stanford, CA, B.A. in Economics (Honors), 1973

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“Windfall Profits Tax Will Reap Bonanza—But For Whom?” (with Peter Navarro), *The Miami Herald*, December 23, 1979, editorial page.

SELECTED PRESENTATIONS

Keynote Address upon the Inauguration of Dr. Mark A. Zupan, Fourteenth President of Alfred University, October 22, 2016.

“Indigenous Self-Government: The Political Economy of the Only Policy That Has Ever Worked,” Ministry of Business, Innovation and Employment, Government of New Zealand, Wellington, NZ, April 18, 2013.

“American Indian Self-Government: The Political Economy of a Policy That’s Worked,” Dean’s Distinguished Speakers Series, University of Auckland (NZ) Business School, April 16, 2013.

Keynote Address: “Harvesting Creosote to Build Houses: Is Arizona’s Economic Model Sustainable?” 96th Arizona Town Hall, Tucson, AZ, April 26, 2010.

Keynote Address: “Resurgence and Renaissance in Indian America,” Native American Business Association Annual Convention, Mississippi Choctaw Nation, April 29, 2008.

“Standard Oil to Today: Antitrust Enforcement in the Oil Industry,” American Bar Association, 56th Antitrust Law Spring Meeting, Washington, D.C., March 27, 2008.

Keynote Address: “Nation Building: Lessons from Indian Country,” National Native American Economic Policy Statement, Phoenix, AZ, May 15, 2007.

Keynote Address: “A Conversation on the State of the Native Nations: A Gathering of Leaders,” Res 2007, Las Vegas, NV, March 14, 2007.

“Foundations of Nation Building: The Roles of Culture, Institutions, & Leadership Among Contemporary American Indian Nations,” a lecture to faculty, staff and students, Marine Corps University, Quantico, VA, March 12, 2007.

Keynote Address: “The Universal Challenge of Nation Building,” First Annual Great Lakes Tribal Economic Development Symposium, Traverse City, MI, October 25-26, 2006.

Transcript of Keynote Address, “Setting the Agenda: What Will Drive Energy’s Future?” *Congressional Quarterly Forum*, “The Politics of Oil: U.S. Imperatives, Foreign Consequences,” Washington, D.C., September 13, 2005.

“The Role of the Tribal Courts and Economic Development,” Bureau of Indian Affairs, *Tribal Courts in the 21st Century*, Billings, MT, August 16, 2005.

“Linking Tribal Sovereignty to Economic Self-Determination in Indian Country,” *The Tribal Leaders Forum*, “Sovereignty in Crisis,” Las Vegas, NV, May 27, 2005.

“Competition and Regulation in the North American Electricity Industry: Can These Two Seemingly Opposed Forces Coexist?” (with Charles Augustine and Joseph Cavicchi), 24th Annual North American Conference, USAEE/IAEE, Energy, Environment, and Economics in a New Era, Washington, DC, July 8-10, 2004.

“The State of U.S. Railroads and the Challenges Ahead,” briefing of Capitol Hill staff, Association of American Railroads, April 17, 2003.

“The State of the Railroad Industry and the Challenges Ahead,” briefing of Roger Nober, Chairman, US Surface Transportation Board, Association of American Railroads, January 28, 2003.

“The Wealth of American Indian Nations: Culture and Institutions,” Federal Reserve Bank of Boston, December 11, 2002.

“The Roots of California’s Energy Crisis: Law, Policy, Politics, and Economics,” Regulation Seminar, Center for Business and Government, Kennedy School, Harvard University, November 7, 2002.

“Public Policy Foundations of Nation Building in Indian Country,” National Symposium on Legal Foundations of American Indian Self-Governance,” Mashantucket Pequot Nation, February 9, 2001.

“Twenty-Five Years of Self-Determination: Lessons from the Harvard Project on American Indian Economic Development,” Udall Center for Studies in Public Policy, University of Arizona, November 13-14, 1999.

Proceedings of the Fourth Annual DOE-NARUC Natural Gas Conference, Orlando, FL, February 1995.

Keynote Address, “Sovereignty and American Indian Economic Development,” Arizona Town Hall, Grand Canyon, AZ, October 1994.

“Is the Movement Toward a Less-Regulated, More Competitive LDC Sector Inexorable?, (Re)Inventing State/Federal Partnerships: Policies for Optimal Gas Use,” U.S. Department of Energy and The National Association of Regulatory Utility Commissioners Annual Conference, Nashville, TN, February 1994.

“Cultural Evolution and Constitutional Public Choice: Institutional Diversity and Economic Performance on American Indian Reservations,” Festschrift in Honor of Armen A. Alchian, Western Economic Association, Vancouver, BC, July 1994.

“Precedent and Legal Argument in U.S. Trade Policy: Do they Matter to the Political Economy of the Lumber Dispute?” National Bureau of Economic Research, Conference on Political Economy of Trade Protection, February, September 1994.

“The Redesign of Rate Structures and Capacity Auctioning in the Natural Gas Pipeline Industry,” Natural Gas Supply Association, Houston, TX, March 1988.

“Property Rights and American Indian Economic Development,” Pacific Research Institute Conference, Alexandria, VA, May 1987.

“The Development of Private Property Markets in Wilderness Recreation: An Assessment of the Policy of Self-Determination by American Indians,” Political Economy Research Center Conference, Big Sky, MT, December 4-7, 1985.

“Lessons from the U.S, Experience with Energy Price Regulation,” International Association of Energy Economists Delegation to the People’s Republic of China, Beijing and Shanghai, PRC, June 1985.

“The Impact of Domestic Regulation on the International Competitiveness of American Industry,” Harvard/NEC Conference on International Competition, Ft. Lauderdale, FL, March 7-9, 1985.

“The Welfare and Competitive Effects of Natural Gas Pricing,” American Economic Association Annual Meetings, December 1984.

“The Ideological Behavior of Legislators,” Stanford University Conference on the Political Economy of Public Policy, March 1984.

“Principal-Agent Slack in the Theory of Bureaucratic Behavior,” Columbia University Center for Law and Economic Studies, 1984.

“The Political Power of the Underground Coal Industry,” FTC Conference on the Strategic Use of Regulation, March 1984.

“Decontrolling Natural Gas Prices: The Intertemporal Implications of Theory,” International Association of Energy Economists Annual Meetings, Houston, TX, November 1981.

“The Role of Government and the Marketplace in the Production and Distribution of Energy,” Brown University Symposium on Energy and Economics, March 1981.

“A Political Pressure Theory of Oil Pricing,” Conference on New Strategies for Managing U.S. Oil Shortages, Yale University, November 1980.

“The Politics of Energy,” Eastern Economic Association Annual Meetings, 1977.

WORKSHOPS PRESENTED

University of Auckland; Ministry of Business, Innovation and Employment, Government of New Zealand; Federal Reserve Bank of Boston; University of Indiana; University of Montana; Oglala Lakota College; University of New Mexico; Columbia University Law School; Department of Economics and John F. Kennedy School of Government, Harvard University; MIT; University of Chicago; Duke University; University of Rochester; Yale University; Virginia Polytechnic Institute; U.S. Federal Trade Commission; University of Texas; University of Arizona; Federal Reserve Bank of Dallas; U.S. Department of Justice; Rice University; Washington University; University of Michigan; University of Saskatchewan; Montana State University; UCLA; University of Maryland; National Bureau of Economic Research; University of Southern California.

TEACHING

Markets and Market Failure with Cases (Harvard Kennedy School of Government, graduate); Native Americans in the 21st Century: Nation Building I & II (Harvard, University-wide, graduate and undergraduate); Competition, Strategy, and Regulation (Harvard Kennedy School of Government, graduate); Introduction to Nation Building/The Law, Policy, and Economics of Contemporary Tribal Economic Development (University of Arizona, Rogers College of Law and Eller College of Management, graduate); Intergovernmental Relations (University of Arizona, Rogers College of Law); Introduction to Environment and Natural Resource Policy (Harvard Kennedy School of Government, graduate); Seminar in Positive Political Economy (Harvard Kennedy School of Government, graduate); Intermediate Microeconomics for Public Policy (Harvard Kennedy School of Government, graduate); Natural Resources and Public Lands Policy (Harvard Kennedy School of Government, graduate); Economics of Regulation and Antitrust (Harvard Department of Economics, graduate); Economics of Regulation (Harvard Department of Economics, undergraduate); Introduction to Energy and Environmental Policy (Harvard Kennedy School of Government, graduate); Graduate Seminar in Industrial Organization and Regulation (Harvard Department of Economics, graduate); Intermediate Microeconomics (Harvard Department of Economics, undergraduate); Principles of Economics (Harvard Department of Economics, undergraduate); Seminar in Energy and Environmental Policy (Harvard Kennedy School of Government, graduate)

OTHER PROFESSIONAL ACTIVITIES

Board of Directors, Fort Apache Heritage Foundation, 2000-present (Chair, 2010-present)

President's Council of Economic Advisors, Navajo Nation, 2016-present

National Advisory Board, National Institute for Civil Discourse, 2016-present (Working Board, 2011-2015)

Advisory Board, Community Development Enterprise, Chickasaw Nation, 2014-present

Board of Directors, Sonoran Institute, 2008-present (Vice-Chair, 2014-2016)

Investment Committee, Women's Foundation of Southern Arizona, 2015-present

Honorary Advisory Board, Centro Artistico y Cultural de Huachinera, Sonora, Mexico, 2009-present

National Advisory Board, Big Sky Institute, Montana State University, 2007-2011

Board of Trustees, The Communications Institute, 2003-2014

Mediator (with Keith G. Allred), Nez Perce Tribe and the North Central Idaho Jurisdictional Alliance, MOU signed December 2002

Mediator, *In the Matter of the White Mountain Apache Tribe v. United States Fish and Wildlife Service*, re: endangered species management authority, May-December, 1994

Steering Committee, National Park Service, 75th Anniversary Symposium, 1991-1993

Board of Trustees, Foundation for American Communications, 1989-2003

Editorial Board, *Economic Inquiry*, 1988-2002

Advisory Committee, Oak Ridge National Laboratory, Energy Division, 1987-1989

Commissioner, President's Aviation Safety Commission, 1987-1988

Principal Lecturer in the Program of Economics for Journalists, Foundation for American Communications, teaching economic principles to working journalists in the broadcast and print media, 1979-2000

Lecturer in the Economics Institute for Federal Administrative Law Judges, University of Miami School of Law, 1983-1991

Research Fellow, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, 1981-1987

Editorial Board, MIT Press Series on *Regulation of Economic Activity*, 1984-1992

Research Advisory Committee, American Enterprise Institute, 1979-1985

Editor, *Quarterly Journal of Economics*, 1979-1984

Referee for *American Economic Review*, *Bell Journal of Economics*, *Economic Inquiry*, *Journal of Political Economy*, *Review of Economics and Statistics*, *Science Magazine*, *Journal of Policy Analysis and Management*, *Social Choice and Welfare*, *Quarterly Journal of Economics*, MIT Press, North-Holland Press, Harvard University Press, *American Indian Culture and Research Journal*

SELECTED HONORS AND AWARDS

Honorary Doctorate, Alfred University, October 2016

Distinguished Visiting Professor, University of Auckland Business School, April 2013

Public Sector Leadership Award, National Congress of American Indians, Washington, DC, March 1, 2010

First American Public Policy Award, First American Leadership Awards 2005, “Realizing the Vision: Healthy Communities, Businesses, and Economies,” National Center for American Indian Enterprise Development, Phoenix, AZ, June 9, 2005

Allyn Young Prize for Excellence in the Teaching of the Principles of Economics, Harvard University, 1978-1979 and 1979-1980

Chancellor’s Intern Fellowship in Economics, September 1973 to July 1978, one of two awarded in 1973, University of California, Los Angeles

Smith-Richardson Dissertation Fellowship in Political Economy, Foundation for Research in Economics and Education, June 1977 to September 1977, UCLA

Summer Research Fellowship, UCLA Foundation, June 1976 to September 1976

Dissertation Fellowship, Hoover Institution, Stanford University, September 1977 to June 1978

Research funding sources have included: Archibald Bush Foundation; Annie E. Casey Foundation; Nathan Cummings Foundation; Department of Indian Affairs and Northern Development (Canada); National Indian Gaming Association; The National Science Foundation; USAID (IRIS Foundation); Pew Charitable Trust; Christian A. Johnson Family Endeavor Foundation; The Ford Foundation; The Kellogg Foundation; Harvard Program on the Environment; The Northwest Area Foundation; the U.S. Department of Energy; the Research Center for Managerial Economics and Public Policy, UCLA Graduate School of Management; the MIT Energy Laboratory; Harvard’s Energy and Environmental Policy Center; the Political Economy Research Center; the Center for Economic Policy Research, Stanford University; the Federal Trade Commission; Resources for the Future; and The Rockefeller Foundation.

Four years of undergraduate academic scholarships, 1969-1973; graduated with University Distinction and Departmental Honors, Stanford University.

EXPERT TESTIMONY

Tau Power B.V. and Altai Power LLp

ICC Case No. 23431/MHM Between Tau Power B.V. and Altai Power LLP vs. The Republic of Kazakhstan, On Behalf of Claimants, Expert Report (with Stephen Makowka), March 4, 2019, Second Expert Report (with Stephen Makowka), June 3, 2019.

Sanum Investments Limited and Lao Holdings, N.V.

In an Arbitration Under the Rules of the Singapore International Arbitration Centre. SIAC Arbitration No. 414 of 2017 (ARB414/17/QW). Between Sanum Investments Limited and Lao Holdings N.V., Claimants and San Marco Capital Partners, LLC, Kelly Gass, and The Government of the Lao People's Democratic Republic, Respondents. Expert Report of Joseph P. Kalt and Eric Henson, March 29, 2019.

Lao Holdings N.V. and Sanum Investments Limited

ICSID Case No. ARB(AF)/16/2 Between Lao Holdings N.V., Claimant and Lao People's Democratic Republic, Respondent, and ICSID Case No. ADHOC/17/1 Between Sanum Investments Limited, Claimant and Lao People's Democratic Republic, Respondent, Witness Statement (with Eric C. Henson), September 1, 2017; Second Expert Witness Statement, November 28, 2018.

Tulalip Tribes and The Consolidated Borough of Quil Ceda Village

United States District Court Western District Court, Western District of Washington at Seattle, The Tulalip Tribes and The Consolidated Borough of Quil Ceda Village, Plaintiffs, and The United States of America, Plaintiff Intervenor, v. The State of Washington, Washington State Governor Jay Inslee, Washington State Department of Revenue Director, Vikki Smith, Snohomish County, Snohomish County Treasurer Kirke Sievers, and Snohomish County Assessor Linda Hjelle, Defendants, Expert Report, April 17, 2017; Rebuttal Expert Report, May 30, 2017; Deposition, July 14, 2017; Oral Testimony, May 17, 2018; Rebuttal Testimony, May 23, 2018.

Spring Creek Coal LLC

ONRR Case No. 12.00736.001, Value of Spring Creek Coal for Payment of Federal Royalty January 1, 2008 to December 31, 2011, Expert Report (with Eric C. Henson), April 7, 2017.

Lao Holdings N.V. and Sanum Investments Limited

ICSID Case No. ARB(AF)/12/6 Between Lao Holdings N.V., Claimant and the Government of The Lao People's Democratic Republic, Respondent, and PCA Case No. 2013-13 Between Sanum Investments Limited, Claimant and the Government of The Lao People's Democratic Republic, Respondent, Witness Statement, March 15, 2017.

Government of British Columbia and the Government of Canada

An Analysis of Certain Economic Issues Relating to Petitioner's Claims About the Operation of Stumpage and Log Markets in British Columbia, Expert Witness Statement, March 13, 2017; Expert Witness Report, April 6, 2017.

Government of Canada

Economic Analysis of Remuneration for Canadian Crown Timber: Are In-Jurisdiction Benchmarks Distorted by Crown Stumpage?, Expert Witness Statement, March 10, 2017.

Lao Holding N.V., Sanum Investments Limited

SIAC Case No. ARB/143/14/MV Between the Government of The Lao People's Democratic Republic, Claimant and Lao Holdings N.V., Sanum Investments Limited, Respondents, Witness Statement, October 14, 2016; Supplemental Witness Statement, December 2, 2016.

ONEOK, Inc., et al.

United States District Court for the District of Nevada, In Re Western States Wholesale Natural Gas Antitrust Litigation, MDL No. 1566, Expert Report, September 12, 2016; Rebuttal Declaration, November 3, 2016; Deposition, February 21, 2017.

Trans Bay Cable LLC

Before the Federal Energy Regulatory Commission, Docket No. ER16-2632-000, Prepared Direct Testimony, September 20, 2016.

Total Gas & Power North America, Inc.

Answer in Opposition to Order to Show Cause and Notice of Proposed Penalty, Total Gas & Power North America, Inc., Total S. A., Total Gas & Power, Ltd., Aaron Hall, and Therese Tran f/k/a Nguyen, FERC Docket No. IN12-17-000, Affidavit, July 12, 2016.

NextEra Energy Resources, LLC

Petition for Approval of Gas Infrastructure Contracts with Algonquin Gas Transmission Co. for the Access Northeast Project, Commonwealth of Massachusetts, Department of Public Utilities, DPU 16-05, Surrebuttal Testimony (with A. Joseph Cavicchi), July 18, 2016.

Petition for Approval of Gas Infrastructure Contracts with Algonquin Gas Transmission Co. for the Access Northeast Project, Commonwealth of Massachusetts, Department of Public Utilities, DPU 15-181, Direct Testimony, June 13, 2016 (with A. Joseph Cavicchi); Surrebuttal Testimony (with A. Joseph Cavicchi), July 12, 2016.

SolarCity Corporation

United States District Court for the District of Arizona between: SolarCity Corporation, Plaintiff, versus Salt River Project Agricultural Improvement and Power District, Defendant; Civil No. 2:15-cv-00374-DLR, Expert Report, June 1, 2016; Rebuttal Report, August 1, 2016; Deposition August 30, 2016.

Sanum Investments Limited

Sanum Investments Limited, Claimant, v. ST Group Co., Ltd., Sithat Xaysoulivong, S.T. Vegas Co., Ltd., S.T. Vegas Enterprise Ltd, Xaya Construction Co., Ltd. and Xaysana Xaysoulivong, Respondents, Singapore International Arbitration Center, Witness Statement (with Steven R. Peterson and Eric C. Henson), April 20, 2016; Oral Testimony, June 16-17, 2016.

Southern Company and AGL Resources Inc.

Before the New Jersey Board of Public Utilities, In the Matter of the Merger of the Southern Company and AGL Resources Inc., BPU Docket No. GM15101196, Rebuttal Testimony, April 8, 2016.

Citizen Potawatomi Nation

American Arbitration Association, Commercial Arbitration, AAA Case No. 01-15-0003-3452 between: Citizen Potawatomi Nation, A federally recognized Indian Tribe, Claimant, v. The State of Oklahoma, Respondent, Expert Report, January 15, 2016; Oral Testimony, February 16, 2016.

Global Gaming Philippines LLC and GGAM Netherlands B.V.

In the Matter of an Arbitration under the Rules of the United Nations Commission on International Trade Law (2010) between: Global Gaming Philippines, LLC and GGAM Netherlands B.V. (Claimants), versus Bloomberry Resorts and Hotels Inc., and Sureste Properties, Inc., (Respondents), Expert Report, June 15, 2015; Supplemental Export Report, May 15, 2017; Oral Testimony, May 29, 2018.

American International Group, Inc., Claimants and AIG Capital Corporation

International Chamber of Commerce, In the Matter of an Arbitration under the Rules of Arbitration, ICC Case No. 20025/RD (c.20026/RD), between (1) American International Group, Inc. and AIG Capital Corporation, Claimants, and (2) Huaxia Life Insurance Co., Ltd., and Jumbo Acquisition Limited, Respondents, Expert Report, February 6, 2015; Oral Testimony, March 30, 2015.

PJM Power Providers Group and the Electric Power Supply Association

Before the Public Utilities Commission of Ohio, In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company for Authority to Provide for a Standard Service Offer Pursuant to R.C. 4928.143 in the Form of an Electric Security Plan, Case No. 14-1297-EL-SSO, Expert Report, December 22, 2014; Deposition, February 2, 2015; Supplemental Testimony, May 11, 2015; Deposition, July 30, 2015; Oral Testimony, October 14, 2015; Second Supplemental Testimony, December 30, 2015; Deposition, January 16, 2016; Rehearing Testimony, June 22, 2016; Oral Testimony, July 15, 2016.

Gunnison Energy Corporation, SG Interests I, Ltd., and SG Interests VII, Ltd.

In the United States District Court for the District of Colorado, Buccaneer Energy (USA) Inc., Plaintiff, v. Gunnison Energy Corporation, SG Interests I, Ltd., and SG Interests VII, Ltd., Defendants, Expert Report, December 22, 2014.

American Association of Railroads

Before the Surface Transportation Board, In re Railroad Revenue Adequacy Docket No. EP 722, Verified Statement, September 5, 2014; Reply Statement, November 4, 2014; Oral Testimony, July 22, 2015.

Future Foam, Inc.

In the United States District Court for the Northern District of Ohio, Western Division, MDL No. 2196, In re: Polyurethane Foam Antitrust Litigation, Expert Report, May 15, 2014; Deposition, June 9-10, 2014.

Burlington Resources Oil & Gas Company

In the State of New Mexico, County of Santa Fe, First Judicial District Court, Docket No. D-0101-CV-2003-02309, Phillis Ideal, Jose E. and Clara Gomez Living Trust, and J. Fidel Candelaria v. Burlington Resources Oil & Gas Company, Successor in Interest to Burlington Resource Oil and Gas Company, Expert Report, March 5, 2014; Deposition, March 11, 2014; Affidavit, March 31, 2014.

TTX Company

Before the Surface Transportation Board, In re Finance Docket No. 27590 (Sub-No. 4), Application for Approval of Pooling Of Car Service with Respect to Flatcars, Verified Statement of Joseph P. Kalt, January 16, 2014.

Apple Inc.

In the United States District Court for the Southern District of New York, Docket No. 11-md-02293 (DLC) ECF Case, In Re: Electronic Books Antitrust Litigation v. Apple Inc., Declaration, November 15, 2013; Deposition, December 4, 2013; Sur-Reply Declaration, January 21, 2014.

Lao Holdings, N.V.

Lao Holdings, N.V., Claimant, v. The Government of the Lao People's Democratic Republic, Respondent, ICSID Case No. ARB/(AF)12/6, Witness Statement, July 22, 2013; Witness Statement, October 1, 2013; Rebuttal Witness Statement, May 9, 2014.

Tri-State Generation and Transmission Association, Inc.

Before the Public Utility Commission of the State of Colorado, Docket No. 13F-0145E, La Plata Electric Association, Inc., et al. v. Tri-State Generation and Transmission Association, Inc., Witness Statement, July 5, 2013; Oral Testimony, August 1, 2013.

United Parcel Service Company

In the United States District Court for the Central District of California, Western Division, AFMS, LLC v. United Parcel Service Company and FedEx Corporation, Expert Report, February 8, 2013.

BNSF Railway Company, CSX Transportation, Inc., Norfolk Southern Railway Company, and Union Pacific Railroad Company

United States District Court for the District of Columbia, In Re: Rail Freight Fuel Surcharge Antitrust Litigation, MDL No. 1869, All Direct Purchaser Cases, Expert Report, January 22, 2013; Deposition, May 28, 2013; Declaration, March 31, 2014; Deposition, May 7, 2014; Sur-Reply Declaration, July 21, 2014; Deposition, August 8, 2014; Oral Testimony, September 29, 2016.

Equilon Enterprises, LLC, Motiva Enterprises LLC, Shell Oil Company, Shell Oil Products Company LLC, and Shell Trading (US) Company

In the United States District Court for the Southern District of New York, Case No. 08 Civ. 00312 (SAS), New Jersey Department of Environmental Protection, et al., Plaintiffs, against Atlantic Richfield Company, et al., Defendants, Expert Report, November 15, 2012; Deposition, May 14, 2013.

The Hershey Company

In the United States District Court for the Middle District of Pennsylvania, In Re: Chocolate Confectionary Antitrust Litigation: MDL Docket No. 1935 (Civil Action No. 1:08-MDL-1935), Expert Report, August 3, 2012; Deposition, August 20, 2012; Declaration, November 5, 2012; Expert Report, May 31, 2013; Deposition, June 20, 2013; Supplemental Expert Report, September 16, 2013.

Atlantic Richfield Company

In the United District Court for the Western District of Pennsylvania, Classes of Plaintiffs v. Babcock & Wilcox Power Generation Group, Inc., et al., Defendants, Civil Action No. 2:10-cv-00368-RCM, et al., Deposition, May 4, 2012; Expert Report, February 28, 2013; Deposition, June 12, 2013; Expert Report, February 9, 2015 (filed February 26, 2015).

Perenco Ecuador Ltd.

International Centre for Settlement of Investment Disputes: In The Arbitration Under The Convention on The Settlement of Investment Disputes Between States and Nationals of Other States and The Treaty Between The Republic of France and The Republic of Ecuador Concerning The Encouragement and Reciprocal Protection of Investment; Perenco Ecuador Limited, Claimant v. The Republic of Ecuador, Respondent, ICSID Case No. ARB/08/6, Statement, April 12, 2012; Supplemental Statement, November 7, 2012; Oral Testimony, November 15, 2012; Expert Report, December 19, 2014; Fourth Expert Report, July 24, 2015; Oral Testimony, November 13, 2015.

Electronic Arts, Inc.

In the United States District Court for the Northern District of California, Geoffrey Pecover and Andrew Owens, on behalf of themselves and all others similarly situated, Plaintiffs, v. Electronic Arts Inc., a Delaware Corporation, Defendant: Case No. 08-cv-02820 CW, Expert Report, March 8, 2012; Reply Report, April 12, 2012.

The PPL Companies, The Calpine Companies, Exelon Generation Company, NAEA Ocean Peaking Power, and The PSEG Companies

In the United States District Court for the District of New Jersey. PPL EnergyPlus et al., Plaintiffs, v. Lee A. Solomon et al., Defendants. Case 2:11-cv-00745-PGS-ES, Declaration, February 6, 2012.

MPS Merchant Services, Inc. (F/K/A Aquila Power Corporation) and Illinova Energy Partners, Inc.

Before the Federal Energy Regulatory Commission. Exh. No. MI-1, San Diego Gas & Electric Company, Complainant v. Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator Corporation and the California Power Exchange, Respondents, Docket No. EL00-95-248, Prepared Direct Testimony, October 25, 2011; Oral Testimony, July 10, 2012.

Motiva Enterprises LLC, Shell Oil Company, and TMR Company

In the State of New Hampshire Superior Court, Case No. 03-C-550, State of New Hampshire, Plaintiff, against Hess Corporation et al., Defendants, Expert Report, October 17, 2011; Deposition, December 6, 2011.

BP Exploration (America) Inc.

In the Superior Court for the State of Alaska at Anchorage, The State of Alaska, Plaintiff, v. BP Exploration (Alaska) Inc., a Delaware Corporation, Defendant, IN Case No. 3AN-09-6181 CI, Expert Report (with W. David Montgomery), September 30, 2011; Deposition, January 18, 2012; Supplemental Expert Report, March 15, 2012; Oral Testimony, June 13, 2012.

Mobil Oil Corporation

In the Twenty-Sixth Judicial District, District Court, Stevens County, Kansas, Willie Jean Farrar, et al. Plaintiffs, vs. Mobil Oil Corporation, Defendant, Affidavit, September 14, 2011; Expert Report, March 23, 2012; Affidavit, June 1, 2012.

In the United States District Court, for the District of Kansas, Jimmie Hershey, on behalf of himself and all others similarly situated, Plaintiffs, v. ExxonMobil Oil Corporation, Defendant, Affidavit, June 1, 2012.

Intercontinental Terminals Company, LLC

In the District Court, Harris County, Texas, 133rd District; Cause No. 2010-66657; Port Terminal Railroad Association, Plaintiff, vs. Intercontinental Terminals Company, LLC, Vopak North American, Inc., and Vopak Terminal Deer Park, Inc., Defendants, vs. Mitsui & Col. USA, Inc., Third-Party Defendant; Expert Report, September 2, 2011.

Motiva Enterprises, LLC

In the Circuit Court of the Eleventh Judicial Circuit in and for Miami-Dade County, Florida, Bay Point Oil Corp., et al, Plaintiffs, vs. Motiva Enterprises, LLC, Defendant, Case No. 03-03572, and Hollywood Hills Service Center, Inc., et al, Plaintiffs, vs. Motiva Enterprises, LLC, Defendant, Case No. 04-13857 CA (30), Declaration, July 15, 2011; Affidavit, May 25, 2012.

Kaiser-Francis Oil Company

In the United States District Court for the Western District of Oklahoma, J.C. Hill, et al., Plaintiffs, v. Kaiser-Francis Oil Company, Defendant, Case No. CIV-09-07-R, Affidavit, June 7, 2011; Expert Report, December 2, 2011; Supplemental Expert Report, August 13, 2012; Affidavit, October 19, 2012; Affidavit, November 7, 2012.

Progress Energy and Duke Energy

Before the Public Service Commission of South Carolina, Docket No. 2011-158-E, In the Matter of Application of Duke Energy Corporation and Progress Energy, Inc. to Engage in a Business Combination Transaction, Direct Testimony, September 14, 2011; Rebuttal Testimony, November 30, 2011; Oral Testimony, December 12, 2011.

North Carolina Utilities Commission, Docket Nos. E-2, Sub 998 and E-7 Sub 986, In the Matter of Application of Duke Energy Corporation and Progress Energy, Inc. to Engage in a Business Combination Transaction and Address Regulatory Conditions and Codes of Conduct, Testimony, May 20, 2011; Rebuttal Testimony, September 15, 2011; Oral Testimony, September 21, 2011.

Before the Public Service Commission of South Carolina, In the Matter of Application of Duke Energy Carolinas to Engage in a Business Combination Transaction, Docket No. 2011-158-E., Rebuttal Testimony, December 8, 2011.

United States Soccer Federation Inc. and Major League Soccer LLC

In the United States District Court, Northern District of Illinois Eastern Division, Champions World LLC, Plaintiff, v. United States Soccer Federation Inc. and Major League Soccer LLC, Defendants, Case No. 06-CV-5724, Expert Report, May 13, 2011; Deposition, September 22-23, 2011.

The AES Corporation, Tau Power B.V.

At the International Centre for Settlement of Investment Disputes, Case No ARB/10/16, The AES Corporation, Tau Power B.V. and The Republic of Kazakhstan, Expert Report of Joseph P. Kalt and Howard N. Rosen (FTI Consulting Inc.), April 28, 2011; Rebuttal Expert Report of Joseph P. Kalt and Howard N. Rosen (FTI Consulting Inc.), March 30, 2012; Supplemental Expert Report of Joseph P. Kalt, August 6, 2012; Oral Testimony, September 14, 2012; Expert Report of Joseph P. Kalt and Howard N. Rosen (FTI Consulting Inc.), November 2, 2012; Oral Testimony, February 6-7, 2013.

Dairy Farmers of America, Inc. and Dairy Marketing Services, LLC

In the US District Court for the District of Vermont, Alice H. Allen and Laurence E. Allen d/b/a/ Al-Lens Farm et al, Plaintiffs, v. Dairy Farmers of America Inc., Dairy Marketing Services, LLC, and Dean Foods Company, Defendants, Docket No. 5:09-cv-00230-cr, Expert Report, April 5, 2011; Declaration, April 12, 2011; Deposition, May 6, 2011; Reply Report, July 6, 2011; Expert Report, December 16, 2011; Deposition, February 14, 2012; Expert Report, May 11, 2012; Reply Report, July 26, 2013.

Devon Energy Corporation, BP America Production, and Conoco Phillips Co.

In the First Judicial District Court, State of New Mexico, County of Santa Fe, Phillis Ideal and Collins Partners, Ltd., a Texas Limited Partnership, Plaintiffs, v. BP America Production Company, Defendant, Case No.: D-0101-CV-2003-02310, Affidavit, June 27, 2011; Expert Report, October 22, 2012; Deposition, August 28, 2014; Affidavit, November 14, 2014.

In the First Judicial District Court, State of New Mexico, County of Santa Fe, F. Ferrell Davis, Plaintiff, v. Devon Energy Corporation, et al., Defendants, No. D-0101-CV-200301590, Affidavit, March 30, 2011; Affidavit, June 26, 2011; Expert Report, July 6, 2012; Deposition, August 6, 2012; Affidavit, October 22, 2012.

In the First Judicial District Court, State of New Mexico, County of Santa Fe, Smith Family, LLC, Plaintiff, v. ConocoPhillips Company, Defendant, No. D-0101-CV-200302311, Affidavit, May 18, 2012; Affidavit, August 24, 2012.

ICM Assurance Ltd. and Nexen Inc.

In the Matter of the Arbitration Pursuant to the UK Arbitration Act 1996 Between ICM Assurance Ltd. And Nexen Inc., Claimants, v. Oil Insurance Limited, Respondent, Expert Report, December 17, 2010.

Atlantic Richfield Company

In the US District Court for the Eastern District of Wisconsin, Glenn Burton, Jr., v. American Cyanamid Co., et al. Case No. 07-CV-0303; Ravon Owens v. ABC Insurance, et al. Case No. 07-CV-441; and Cesar Sifuentes v. American Cyanamid Company et al., Case No. 10-CV-0075, Deposition of Joseph P. Kalt, December 20, 2016; Deposition, June 8, 2017.

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