BEFORE THE
SURFACE TRANSPORTATION BOARD

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Docket No. EP 722

RAILROAD REVENUE ADEQUACY

REPLY COMMENTS OF
UNION PACIFIC RAILROAD COMPANY

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Union Pacific Railroad Company submits these reply comments to address the opening comments filed in this proceeding.[1] We focus in particular on the comments filed by "shipper parties."[2]

In our opening comments, we showed that regulation based on competitive market principles unleashed and continues to support tremendous investment and innovation in the U.S. rail industry. We showed that rail competition is strong and that Union Pacific is responding to market signals by growing our network and increasing the value of the transportation services we provide. We explained that the opportunity to earn market-based returns is increasingly critical to our ability to attract and retain the capital needed to make the investments our customers are demanding. We also explained why adopting any rate constraint designed to place artificial limits on railroad returns would reduce our ability to invest and innovate. Such profit regulation would harm shippers and the national economy.

[1] Union Pacific also endorses the reply comments filed by the Association of American Railroads in this proceeding and in STB Docket No. EP 664 (Sub-No. 2).

[2] *See* Opening Comments of Alliance for Rail Competition, et al. ("ARC Comments"); Opening Comments of Arkansas Electric Cooperative Corp. ("AECC Comments"); Comments Submitted by Concerned Shipper Associations ("CSA Comments"); Comments Submitted by Olin Corp. ("Olin Comments"); and Joint Opening Comments of The Western Coal Traffic League, et al. ("Allied Shippers Comments").

We supported our opening comments with detailed factual evidence on the competitive and investment challenges facing each of Union Pacific's six major business groups.[3] We also provided expert economic analysis identifying flaws in the Board's annual revenue adequacy determinations, as well as the harms inherent in constraining rates based on the concept that railroad returns should be limited to some amount deemed "adequate."[4]

In contrast, the shipper parties offer little by way of factual support for their positions and less by way of sound economic analysis. They rely on the Board's backward-looking measure of revenue adequacy to argue that railroads are earning adequate revenue now or soon will be. They incorrectly argue that railroad returns on investment above the rail industry cost of capital reflect "supracompetitive" pricing and "excess" earnings. And, they propose "remedies"—primarily refunds and rate freezes—that they would impose without any showing that a shipper's rates actually exceed competitive levels.

Part I below shows that the shipper parties disregard clear flaws in the Board's revenue adequacy methodology and present no viable alternative methodologies. Part II shows that shipper parties' refund and rate freeze proposals are contrary to sound economics and public policy. The shipper parties provide no grounds for attributing current railroad returns to rates set above competitive levels, and their refund and rate freeze proposals would reduce and distort investment and prevent railroads from attracting and retaining the capital needed to sustain and grow their operations, at the very time shippers are urging greater investment to expand rail capacity.

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[3] *See* Opening Comments of Union Pacific Railroad ("Union Pacific Comments"), Verified Statement of Eric L. Butler ("Butler VS").

[4] *See* Union Pacific Comments, Verified Statements of Kevin M. Murphy ("Murphy VS") and RamWillner ("Willner VS").

Union Pacific's reply comments are supported by additional testimony from Kevin M. Murphy, the George J. Stigler Distinguished Service Professor of Economics in the Booth School of Business and the Department of Economics at The University of Chicago. Professor Murphy explains why neither the Board's current revenue adequacy methodology nor the additional metrics suggested by shipper parties provide useful information about whether railroads are revenue adequate in any economically meaningful way—that is, whether they can attract and retain the capital needed to maintain and grow their networks in the long term. He also explains why there is no economic justification for shipper parties' refund or rate freeze proposals, which would reduce and distort railroad incentives to invest and innovate.

I. The Shipper Parties Fail To Show That Railroads Are Revenue Adequate.

The shipper parties assert—incorrectly—that all Class I railroads are revenue adequate now or soon will be.[5] They are wrong for two reasons: they rely on (i) the Board's admittedly flawed annual revenue adequacy determinations, and (ii) Wall Street metrics that focus on short-term changes in financial condition. Neither the Board's annual determinations nor the Wall Street metrics address the economically relevant measure of revenue adequacy—that is, whether railroads earn a competitive return on the current value of their assets over the long term. Only by earning such returns can railroads make the investments necessary to provide a transportation system capable of meeting future and changing customer demand for rail service.

[5] *See* Allied Shippers Comments at 2 ("By any reasonable . . . measure of financial health, U.S. Class I railroads today are earning adequate revenues as defined in the applicable statute . . . ."); AECC Comments at 2 ("After three and a half decades, revenue adequacy has been achieved, and exceeded."); ARC Comments at 13 ("Today, however, with revenue adequacy achieved or imminent for all major railroads . . . ."); CSA Comments at 6 ("Thus, it is time for the Board to address how it will implement the revenue adequacy constraint as the nation's rail carriers have achieved returns equal to or exceeding their cost of capital.").

A. The Board's current revenue adequacy methodology greatly overstates railroad returns on investment.

The key flaw in the Board's current methodology is well known. This agency long ago acknowledged that the annual determinations are flawed because they use historical rather than current asset costs to calculate railroad return on investment.[6] As Professor Murphy confirms in his reply statement: "As a matter of economics, evaluating whether a carrier is earning a return on investment sufficient to allow it to invest and meet demands for service in the long term requires the use of forward-looking investment costs—the amount of capital that the railroad would need in order to replace and expand its assets and replicate an efficient railroad."[7]

Yet, rather than address this flaw, the shipper parties are silent on the point. Why? Perhaps because they understand that no railroad would be found revenue adequate using an economically meaningful measure—a measure that considers the railroad's current investment costs. On opening, Professor Murphy demonstrated that when current costs are used, Union Pacific's returns are substantially below the railroad industry's cost of capital.[8]

The ICC, and the Board more recently, have expressed concern that current cost accounting cannot be practically implemented as part of the agency's revenue adequacy

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[6] *See Association of American Railroads – Petition Regarding Methodology for Determining Railroad Revenue Adequacy*, EP 679, slip op. at 2 (STB served Oct. 24, 2008); *Standards for Railroad Revenue Adequacy ("Standards II")*, 3 I.C.C.2d 261, 277 (1986) (acknowledging that "current cost accounting is theoretically preferable to original cost valuation"); *Standards for Railroad Revenue Adequacy* ("*Standards I*"), 364 I.C.C. 803, 818 (1981) (explaining that "the replacement cost method is preferable because it comes closer to the competitive result").

[7] Murphy RVS at 2-3. On opening, Dr. Willner discussed a second significant flaw in the Board's rate of return calculations—they also make return on investment appear artificially high by excluding the value of deferred income taxes from the investment base. *See* Willner VS at 5; *see also* Opening Comments of the Association of American Railroads, Verified Statement of Roger Brinner ("Brinner VS") at 14-18 (explaining that the Board's treatment of deferred taxes inflates its measured rate of return on investment).

[8] *See* Murphy VS at 20-22; *see also* Brinner VS at 18-26 (discussing the effects on railroad returns of applying current cost accounting).

determinations.[9] However, if the Board cannot properly measure revenue adequacy, then revenue adequacy should not be used as a basis for constraining rates.

Using a flawed measure of revenue adequacy to justify rate constraints would be particularly ill-advised because the Board already has a rate test that incorporates both revenue adequacy concepts *and* current asset costs: the stand-alone cost test. As the Board has stated, "[t]he very purpose of the SAC test is to determine what [a railroad] needs to charge to earn 'adequate' revenues on the portion of its system that is included in the system of the [stand-alone railroad]."[10]

B. The alternative metrics that shipper parties propose do not address railroads' ability to attract and retain capital over the long term.

The shipper parties' reliance on various Wall Street metrics as a supplemental or substitute revenue adequacy determination is another error. As Professor Murphy explains, these Wall Street metrics do not address the key question—whether returns are adequate to attract and retain the capital needed to replace and expand railroad assets over the long term.[11]

The ICC long ago also recognized that Wall Street's concerns can be very different from the Board's:

> [O]ur purposes and perspective are different from those of security analysts. Our concerns center on the long-term viability and capability of the railroads to provide essential rail service. By contrast, security analysts are interested not only in long-term viability but also in potential profits for the short-term. Indeed, sometimes the potential to make a short-term profit may far

[9] *See Association of American Railroads – Petition* at 5-7; *Standards II*, 3 I.C.C.2d at 277.

[10] *Pub. Serv. Co. of Colo. d/b/a Xcel Energy v. The Burlington N. & Santa Fe Ry.*, NOR 42057, slip op. at 6 (STB served Jan. 19, 2005).

[11] *See* Murphy RVS at 7-8.

> outweigh their interest in the long-term health and earnings capacity of the railroad.[12]

The Allied Shippers propose that the Board incorporate a variety of financial indicators into its annual revenue adequacy determination, but that proposal would not improve the current methodology.[13] On the contrary, the Allied Shippers' proposal is designed to artificially bolster claims that railroads are revenue adequate. Indeed, at the same time that the Allied Shippers make their proposal, they urge the Board "to reject *any* proposed changes to its revenue adequacy model that would have the effect of making a railroad appear to be farther from revenue adequate status than the current methodology shows."[14]

The ICC pointedly rejected a multi-indicator approach incorporating the same financial indicators the Allied Shippers now propose when it adopted the cost of capital as its revenue adequacy standard:

> We want to make sure these views are stated as clearly as possible because we believe they are very important. . . . [The proposed indicators] were and are inappropriate as indicators of long-term revenue adequacy and are especially inappropriate as measures to limit rail pricing flexibility . . . ."[15]

The ICC rejected a multi-indicator approach again several years later and reaffirmed the current cost of capital standard as "the most appropriate method for the determination of railroad revenue adequacy":

> [W]e continue to believe that our ROI/cost of capital standard is the most appropriate method for the determination of railroad revenue adequacy. . . . [T]he use of a return on investment equal to the cost of capital is an accepted and widely utilized measure of a

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[12] *Standards II*, 3 I.C.C.2d at 267-68.

[13] *See* Allied Shippers Comments at 20-22.

[14] *Id.* at 20 (emphasis in original).

[15] *Standards I*, 364 I.C.C. at 808.

> firm's ability to attract and retain capital over the long term. . . . If a firm does not earn its cost of capital, sooner or later investors will become discouraged and put their dollars in other investments which can earn their required rates of return. Regulation, therefore, must afford the railroads the opportunity to earn their cost of capital.[16]

The Allied Shippers offer no reason for the Board to revisit these prior decisions. They fail to address any of the issues that led to rejection of a multi-indicator approach. They offer no response to the "substantial concerns regarding the practical implementation of a multi-indicator standard."[17] In addition, in arguing for a "funds flow" analysis, they never rebut the conclusion that such an analysis implicitly—and inaccurately—assumes "either that the railroad is already earning an adequate return on the existing investment base or that it can liquidate quickly those portions of its investment base that are not earning an adequate return."[18] As Professor Murphy explains, a funds flow analysis provides only a short-term and incremental evaluation of a railroad's ability to raise capital, rather than an evaluation of its ability "to attract the capital necessary to fully replace and expand its assets efficiently over the long term."[19]

In short, neither Wall Street metrics nor the Allied Shippers' proposed metrics allow the Board to determine whether railroads are meeting the standard Congress set out in the statute—that is, earning revenue levels sufficient to "attract and retain capital in amounts adequate to provide a sound transportation system in the United States." 49 U.S.C. § 10704(a)(2)(B).

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[16] *Standards II*, 3 I.C.C.2d at 267.

[17] *Id.* at 266.

[18] *Standards I*, 364 I.C.C. at 809 n.4.

[19] Murphy RVS at 7.

II. The Shipper Parties' Proposed New Rate Constraints Would Prevent Market Demand From Driving Investment Decisions.

The Board should continue to allow competitive market principles to guide its economic regulation of railroads. The shipper parties argue that the Board should impose artificial limits on rates when a railroad's revenues reach an "adequate" level. But even if the Board were to modify its revenue adequacy methodology to incorporate current asset costs (and deferred taxes), a railroad's achievement in earning a particular level of revenue would not be a proper basis for constraining rates.

A. The Board should allow competitive market principles to continue to guide railroad regulation.

The Board's rate regulation is based on sound economic principles that are embedded in the governing statute. The Board has no authority to regulate a rate unless the railroad has market dominance—in other words, unless the shipper lacks effective competition for the transportation to which the rate applies. *See* 49 U.S.C. §§ 10701(d)(1); 10707. If there is market dominance, the Board addresses the separate question whether the rate is "reasonable." *Id.* § 10701(d)(1).

The Board has an established, economically sound, statutorily based, judicially approved standard for determining rate reasonableness. It asks whether a rate exceeds "the rate that would prevail in a competitive market."[20] The Board's use of competitive market principles to establish reasonable levels for regulated rates plainly conforms to and advances the statutory directive "to allow, to the maximum extent possible, competition and the demand for services to establish reasonable rates for transportation by rail." 49 U.S.C. § 10101(1).

[20] *Simplified Standards for Rail Rate Cases*, EP 646 (Sub-No. 1), slip op. at 13 (STB served Sept. 5, 2007).

The shipper parties present no principled reason for the Board to abandon the use of competitive market principles in regulating rates. They promote, but cannot support, the false notion that a railroad cannot earn returns above the industry cost of capital unless its rates exceed competitive levels.[21] They propose imposing refunds or rate freezes regardless of whether challenged rates would prevail in a competitive market. They also fail to identify a principled, alternative basis for determining whether a specific challenged rate is "reasonable"—they merely propose mechanisms for reducing rates.

Under most shipper parties' proposals, a shipper would be entitled to a remedy merely upon a showing of market dominance.[22] However, by statute, the Board may not presume rates unreasonable based upon a finding of market dominance. 49 U.S.C. § 10707(c) ("[A] finding of market dominance does not establish a presumption that the proposed rate exceeds a reasonable maximum."). Any such presumption would be particularly inappropriate because the Board's market dominance analysis excludes any consideration of product and geographic competition, and thus it ignores sources of competition that effectively constrain railroads' pricing.[23] Moreover, the Board expressly relied on the additional scrutiny that rates would receive under a

[21] Professor Murphy explained on opening that firms operating in competitive markets frequently earn returns exceeding their cost of capital by pursuing procompetitive strategies that benefit their customers and society. *See* Murphy VS at 27-28; *see also* Brinner VS at 12-13 & Ex. 2 (showing that firms in competitive markets often earn more than their cost of capital); *id.* at 26-30 (explaining why many firms earn more than their cost of capital).

[22] AECC would not even require proof of market dominance. It would provide relief whenever a shipper has paid rates above the 180 percent revenue-to-variable cost jurisdictional threshold. *See* AECC Comments at 23.

[23] *See* Murphy RVS at 11 n.24.

separate rate reasonableness analysis to justify adopting its highly simplified "limit price" test for market dominance.[24]

The shipper parties complain about "exceedingly high, and rapidly increasing, rail rates."[25] But merely claiming rates are high does not make it so. Our opening evidence showed that railroad competition is strong and that rates remain historically low.[26] We showed that Union Pacific's improved earnings are the result of our procompetitive investments and service innovations, not the abuse of market power.[27] And, our investments of billions of dollars annually to expand capacity and improve service for shippers are wholly inconsistent with any suggestion that we are abusing market power.

The shipper parties also complain about the cost and complexity of the SAC test and the simplified methodologies based on SAC principles. However, these complaints do not constitute a principled argument for refunds or rate freezes based on "revenue adequacy." As Professor Murphy observes, "[s]hippers conflate perceived costs and difficulties of implementing the SAC test (and simplified versions of the SAC test) with the merit, if any, of using revenue adequacy as a basis for constraining rates."[28]

In fact, the only economist testifying for a shipper party does not endorse any of the shipper parties' "remedial" proposals. While he says the Board should abandon the SAC test, he

[24] *See Total Petrochemicals & Refining USA, Inc. v. CSX Transp., Inc.*, NOR 42121, slip op. at 25 (STB served May 31, 2013) (updated Aug. 19, 2013) (explaining that the RSAM metric in the limit price approach "is not a perfect indicator of the absence or presence of market power," but it was "sufficiently accurate for our purposes" because, if the Board finds market dominance, it proceeds "to investigate the reasonableness" of the rate).

[25] CSA Comments at 3.

[26] *See* Butler VS at 19-57.

[27] *See* Union Pacific Comments at 7-39 & Murphy VS at 34-45.

[28] Murphy RVS at 18.

also concedes that, for the railroad "pricing problem," there is "no [other] economic model in the literature that points to a theoretical solution."[29] Indeed, writing in a scholarly journal, the same economist described the SAC test as "a key element of a program of rate regulation that, perhaps for the first time, was fully embedded in the logic of economic analysis" and said the test was "good for society."[30]

The Board's SAC, Simplified SAC, and Three Benchmark tests provide shippers with valid complaints the means to obtain rate relief. Like shippers, railroads benefit from low-cost, timely resolution of complaints. We support continued efforts to reduce the cost and complexity of rate cases, but any changes must be consistent with the competitive market principles that are grounded in the statute and sound economics.

B. The shippers parties' refund and rate freeze proposals would reduce and distort railroad investment.

In pursuit of their short-term objective to reduce rates, the shipper parties propose two drastic "remedies" supposedly based on revenue adequacy concepts. AECC, ARC, and CSA propose that rail carriers deemed revenue adequate should be required to refund their "excess" revenues.[31] ARC and CSA also propose freezing the rates charged by revenue adequate rail carriers, as do the Allied Shippers.[32] These proposals should be rejected.

A rate constraint designed to limit railroad returns to an amount deemed "adequate" would undermine incentives to invest and innovate. As Professor Murphy explained on opening:

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29 CSA Comments, Verified Statement of Gerald R. Faulhaber ("Faulhaber VS") at 12.

30 Gerald R. Faulhaber & William J. Baumol, *Economists as Innovators: Practical Products of Theoretical Research*, 26 Journal of Economic Literature 577, 596 (1988).

31 *See* AECC Comments at 22-24; ARC Comments at 23-24, 26-27; CSA Comments at 12.

32 *See* Allied Shippers Comments at 26; ARC Comments at 20-21; CSA Comments at 13. Olin proposes capping rates at a particular revenue-to-variable cost level, but it does not specify that level. *See* Olin Comments at 7-9.

"Economic efficiency depends on encouraging railroads to strive to earn more than their cost of capital without concern that the Board will force them to lower rates to give the resulting benefits to shippers . . . ."[33] He warned that "[i]f, contrary to sound economic policy, the Board uses a finding of revenue adequacy or another profitability measure as a reason to lower rates, it would induce inefficient investment decisions and harm railroads and shippers."[34] In his reply statement, Professor Murphy explains that the shipper parties' specific refund and rate freeze proposals would give rise to the same harms.

1. The refund proposals are incomplete and unsound.

Although none of the refund proponents develops its proposal fully, they all reveal enough to confirm that the proposals depart from competitive market principles—that is, they would result in refunds to shippers regardless of whether their rates exceed competitive levels. For example:

- AECC offers a formula for distributing "excess" railroad earnings to all shippers with revenue-to-variable cost ("R/VC") ratios above 180 percent.[35] But AECC ignores that an R/VC ratio above 180 percent does not establish market dominance or that a rate is unreasonable. 49 U.S.C. § 10707(d)(2). Both must be proved.

- CSA confines its proposal to market dominant traffic, but it ignores the difference between proving market dominance and proving a rate is unreasonable. It also offers no proposal for allocating supposedly "excess" earnings to shippers that prove market dominance, asserting only that "[t]here may be many means of fairly calculating reparations in such a circumstance."[36]

- ARC's proposal is the least complete of all, but appears to contemplate somehow eliminating "excess" earnings using the Board's RSAM and $R/VC_{>180}$ benchmarks.[37]

[33] Murphy VS at 6.

[34] *Id.* at 25.

[35] *See* AECC Comments at 22-23.

[36] *See* CSA Comments at 12.

[37] *See* ARC Comments at 23-26.

As Professor Murphy explains, the refund proposals all are economically misguided and would prevent railroads from ever earning returns on their investments sufficient to attract and retain the capital needed to maintain and grow their operations.

First, railroads would be doomed to perpetual revenue inadequacy. Unlike utilities, railroads are not monopolies, and their revenues and rates of return are not guaranteed by their regulator. The Board has no authority to regulate rates that railroads receive on large portions of their traffic or to order shippers subject to regulation to pay increased rates when a railroad is not covering its costs.[38] Railroads cannot earn competitive rates of return on average over the long term if they must absorb losses in periods when returns fall below competitive levels, but refund "excess" revenues when their investments result in above-average returns.[39]

Second, railroads would have reduced incentives to make the inherently risky investments that are needed to accommodate traffic growth. If a railroad knows it must refund a portion of the gains from successful investments, its expected returns from each investment will be lower and fewer investments will be made. Instead, money will flow away from the railroad industry towards investments that promise better returns, and rail shippers will have access to less capacity to move their products.[40]

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[38] *See, e.g.*, *CSX Corp. et al. – Control – Conrail Inc. et al.*, 3 S.T.B. 196, 262 (1998) (explaining that "very few rail shippers are captive shippers whose rates ever require regulatory intervention"); *see also Bessemer & Lake Erie R.R. v. ICC*, 691 F.2d 1104, 1113-14 (3d Cir. 1982) ("Railroad regulation by the ICC, is not, however, 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.").

[39] *See* Murphy RVS at 14; *see also* Murphy VS at 32-33.

[40] *See* Murphy RVS at 14.

Third, both investment and operating decisions of railroads would be skewed due to the disincentives created by the refund proposals. All else remaining equal, a railroad with earnings near, at, or above the revenue adequate level "would have no incentive to reduce costs," because doing so would just produce "supracompetitive" profits that would be disbursed to shippers.[41] A railroad that could accommodate new traffic or provide better service by either increasing capital investment or increasing operating spending would have to consider not only the direct costs and benefits of such increases, but also the potential for the action (or the cumulative effect of several such actions) to lead to an order to refund "excess" earnings.[42] A railroad might decide not to pursue an opportunity, or it might pursue an opportunity using an inefficient mix of capital and operating resources, because of the "tax" imposed by a profit regulation regime. "The consequence is a loss of efficiency to society because resources are misallocated."[43]

Professor Murphy and other railroad witnesses are not the only critics of using rate-of-return concepts to regulate rates. While CSA argues for refunding "excess" earnings calculated using the Board's revenue adequacy determinations and then limiting future rates to levels "no higher than the level used to determine reparations,"[44] its own expert witness does not endorse that proposal.[45] Rather, CSA's expert observes that since the idea of limiting railroad returns to adequate levels was raised in *Coal Rate Guidelines*, use of rate-of-return regulation has sharply declined more generally. He calls the Board's revenue adequacy determination a "relic of

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[41] *Id.* at 13.

[42] *See id.*

[43] *Id.* at 14.

[44] CSA Comments at 12.

[45] Faulhaber VS at 12 ("This paper does not presume to suggest a solution to this problem.").

regulatory calculations not seen since rate-base rate-of-return calculations virtually abandoned in this country (except at the STB) for well over twenty years."[46]

2. The rate freeze proposals penalize procompetitive conduct.

Freezing rates without regard to whether they exceed competitive levels is no more economically justified than the shipper parties' refund proposals and would result in similar harm. The implementation of a rate freeze regime would doom railroads to capital inadequacy just as surely as a refund regime.

Shipper parties attempt to justify rate freeze proposals by pointing to the ICC's statement in *Coal Rate Guidelines* that "captive shippers should not be required to continue to pay differentially higher rates than other shippers when some or all of that differential is no longer necessary to ensure a financially sound carrier capable of meeting its current and future service needs."[47]

However, as Professor Murphy explains, the quoted language reflects misguided reliance on traditional rate-of-return concepts—concepts that are outdated and do not fit the rail industry (as described in the preceding section).[48] As an economic matter, there is no reason to constrain rail rates unless they exceed the levels that would prevail in a competitive market. Railroads should be *rewarded*, not penalized, when they take procompetitive steps to increase returns.

The shipper parties that advocate rate freezes also ignore a critical aspect of the *Coal Rate Guidelines* decision. The ICC never said that rates should be *frozen* at current levels when a railroad achieves revenue adequacy. Rather, it said that rates should not be "*differentially*

[46] *Id.* at 3.

[47] *Coal Rate Guidelines, Nationwide*, 1 I.C.C.2d 520, 535-36 (1985).

[48] *See* Murphy RVS at 15 n.33.

higher" than rates paid by other shippers (presumably those with effective competition for their traffic). None of the shipper parties proposes any way to determine whether the rates they would freeze are "differentially higher." And, as Professor Murphy shows, there is no easy way to get to an answer.[49]

Even if the Board were to calculate revenue adequacy using current asset costs and correctly assess market dominance, the rate freeze proposals still would not constitute sound economic policy. As Professor Murphy explains, rate freezes would produce the same types of investment disincentives and resource misallocations as rate refunds. Railroads would make fewer investments overall, because their opportunity to earn competitive returns on any investment would be reduced. In addition, in deciding where to make investments, railroad incentives would be distorted by the ability to increase rates on some traffic, but not on other traffic.[50] A rate freeze regime would also hurt shippers that might look to railroads to provide lower rates to help them grow their business. As Professor Murphy observes, the Allied Shippers' proposal to freeze rates at levels in expiring contracts[51] would "eliminate incentives for railroads to negotiate low contract rates for shipments where they might be found to be market dominant, because they effectively would be locked into that low rate even after the contract expires."[52]

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The shipper parties' proposals unavoidably would reduce railroad investment. AECC argues that the Board should not be concerned about underinvestment because the harms—the

[49] *See id.* at 16-17.

[50] *See id.* at 18.

[51] *See* Allied Shippers Comments at 31.

[52] Murphy RVS at 17.

"stagnation of technology and degradation of physical plant conditions"—would "take time to materialize."[53] The Board, of course, should be troubled by the prospect of placing the railroad industry back on the pre-Staggers Act path toward deterioration, but it also should be concerned with the immediate consequence of these proposals: railroads cannot continue investing at the current high levels to accommodate growth and service demands without the opportunity to obtain market-based returns. As we explained on opening, if our returns are artificially limited, shareholders will justifiably demand that we invest less in our network and return more cash to them in the form of dividend payments and share repurchases.[54] A few shippers may believe that their needs can be fulfilled by a deteriorating rail system, but most shippers are telling us—and telling the Board in recent proceedings—that they are counting on railroads to continue investing to help meet the growing and changing demands for rail transportation.

III. Conclusion

Regulation based on competitive market principles has served the public well. The Staggers Act and this agency's implementation of competitive market principles revitalized the rail industry by encouraging investment and innovation, which have produced productivity gains, volume growth, and rate reductions. The Board should not abandon these principles now. Union Pacific is not revenue adequate. We are not yet earning returns adequate to attract and retain the capital we need in the long term. The Board's revenue adequacy methodology does not measure our long-term financial viability. The shipper parties incorrectly rely upon the Board's annual revenue adequacy determinations and selected Wall Street metrics as a pretext for uneconomic refund and rate freeze proposals.

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[53] AECC Comments at 16.

[54] *See* Union Pacific Comments at 55-56 & Willner VS at 9-10.

Even if Union Pacific or other railroads actually were revenue adequate in any economically meaningful way, the shipper parties' proposals still would not make sense. The proposals are designed to serve only a few parties' narrow interests by diverting revenue that railroads earn from serving all of their customers to a subset of shippers, without requiring any proof that those shippers' rates are unreasonable. They would reduce rates below competitive levels and inevitably result in misallocation of resources and reduced rail investment. In a time of strong and growing demand for rail service, the shipper parties' proposals are not just poor economics, they are bad public policy.

The Board should affirm that its regulatory policies will continue to allow railroads the opportunity to earn competitive market returns, and that it will continue to rely on competitive market principles to regulate rates.

Respectfully submitted,

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November 4, 2014

MURPHY

BEFORE THE
SURFACE TRANSPORTATION BOARD

RAILROAD REVENUE ADEQUACY

Docket No. EP 722

REPLY VERIFIED STATEMENT OF

PROFESSOR KEVIN M. MURPHY

NOVEMBER 4, 2014

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I. Introduction

My name is Kevin M. Murphy. I previously filed a Verified Statement in this proceeding ("Murphy Statement").[1]

I have been asked by Union Pacific Railroad Company ("UP") to review the comments filed in this proceeding by the shipper parties[2] and to provide my opinion on whether any of those comments cause me to revise my original opinions. The primary opinions I offered in the Murphy Statement are:

- A measure of revenue adequacy could serve an informational role in helping the Board monitor the railroad industry's progress towards meeting Congress's objective of fostering railroads that can attract and retain the capital needed to maintain and grow their networks and operations in the long term, but it should not be used as a standard for evaluating the reasonableness of railroad rates;
- UP is not yet revenue adequate in an economically meaningful way; it is not earning a competitive return on the replacement or current cost of its assets;
- The need for UP to earn a competitive return is more critical today than it might have been in the past in ensuring that UP can raise adequate capital and has incentives to invest efficiently;
- Adopting broad-based regulation to constrain rates based on a finding of revenue adequacy would harm competition and shippers; and
- Improvements in UP's profitability in recent years reflect increased, not reduced, competition and benefits for shippers.

None of the shipper parties' comments causes me to change any of my opinions.[3] Shipper parties submitting comments generally opine that:

- Railroads are now or soon will be revenue adequate;

[1] Opening Comments of Union Pacific Railroad Company, Verified Statement of Professor Kevin M. Murphy, STB Docket No. EP 722 (Sept. 5, 2014).

[2] Opening Comments of Alliance for Rail Competition, et al. ("ARC Comments"); Opening Comments of Arkansas Electric Cooperative Corp. ("AECC Comments"); Comments Submitted by Concerned Shipper Associations ("CSA Comments"); Comments Submitted by Olin Corp. ("Olin Comments"); and Joint Opening Comments of The Western Coal Traffic League, et al. ("Allied Shippers Comments").

[3] I do not address all the recommendations and other comments made by the shippers. The fact that I do not comment on some of their claims does not mean that I agree with their positions.

- The Board should not change its calculation of revenue adequacy in any way that would result in railroads appearing further from achieving revenue adequacy;
- The Board should adopt other financial measures, such as a funds flow analysis, as part of its revenue adequacy determination;
- A finding of revenue adequacy should trigger new constraints on rates and earnings; and
- The Board's stand-alone cost ("SAC") test is unworkable and inefficient.

As I explain in this reply statement, none of the positions taken by shipper parties is consistent with sound economics. Therefore, the Board should reject the shipper parties' positions.

The rest of my report is organized as follows: In Part II, I summarize the major opinions I offered in the Murphy Statement and note where the shipper parties disagree with my opinions. In Part III, I explain that the shipper parties' comments on and recommendations for changes in the Board's methodology for determining revenue adequacy are unjustified. In Part IV, I explain why both railroads and shippers would be harmed if the Board adopted shipper parties' recommendations for restricting the rates that railroads deemed revenue adequate can negotiate with shippers by imposing rate caps (or limits on rate increases) or forcing railroads to refund supposed "excess" earnings. I also explain why the shipper parties' claims that revenue adequacy should be incorporated into rate regulation as a way of rectifying perceived problems with the Board's SAC methodology for evaluating shippers' rate complaints are not justified by economics. In Part V, I conclude that the Board should recognize that railroads must achieve revenue adequacy (measured properly) to attract and retain the capital needed to maintain and grow their networks, but that, even if revenue adequacy is achieved, it should not influence how the Board evaluates and adjusts rates charged to individual shippers.

II. Summary of Opinions Offered in My Original Verified Statement

Based on my analysis of a variety of railroad industry data and generally accepted economic principles, I reached the following opinions, which I explained in detail in the Murphy Statement:

First, UP is not revenue adequate in an economically meaningful sense today.[4] The proper measure of revenue adequacy for evaluating UP's ability to replace and grow its network over the long term is its return on the replacement or current cost of assets. As a matter of economics,

[4] Murphy Statement, Part II.

evaluating whether a carrier is earning a return on investment sufficient to allow it to invest and meet demands for service in the long term requires the use of forward-looking investment costs—the amount of capital that the railroad would need in order to replace and expand its assets and replicate an efficient railroad. Measured properly, UP's earnings are not sufficient today to attract the capital necessary to replace its assets and grow to meet ongoing and increasing demand for its services. My opinion that return on current asset cost is the proper economic way to evaluate UP's ability to finance its operations in the long run is unchanged by shipper parties' proposals to further reduce the net investment base used in the Board's revenue adequacy measure,[5] or to replace or supplement the Board's revenue adequacy measure with a variety of financial ratios or other financial measures.

Second, a railroad's overall financial condition, even if measured by return on current asset costs, provides no information about whether rates on particular shipments are noncompetitive.[6] Congress directed that, to the maximum extent possible, railroads should be free to set rates based on competition and the demand for their services, with rates subject to potential regulatory review only if the railroad is "market dominant"—that is, if it faces no effective competition.[7] The Board implemented this directive by regulating rates for traffic over which railroads are found to have market dominance only if those rates are found to exceed a simulated competitive level developed through application of the Board's SAC test.[8] Constraints that would restrict railroad pricing or reduce rates below competitive levels irrespective of whether the rates at issue exceed the competitive level would endanger the ability of the railroads to replace and grow their network over the long term. The railroads' improved financial condition since 1980 is evidence of the benefits created by allowing them the flexibility to freely set rates to shippers unless an individualized inquiry indicates that their rates exceed the competitive level. The shipper parties' complaints about the Board's application of the SAC test do not change my opinion that a finding that the railroad as a whole is revenue adequate provides no information about whether an individual rate for a particular

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[5] *See* CSA Comments, pp. 14-15.

[6] Murphy Statement, pp. 25-28.

[7] *See* 49 U.S.C. §§ 10101(1), 10701(d)(1).

[8] Any price that passes the SAC test is at or below a hypothetical long-run competitive market price in a contestable market where a competing railroad is free to enter (i.e., faces neither entry nor exit costs) by building a railroad network to serve the challenged traffic as well as other traffic that it would be efficient to serve (assuming the other traffic is served at current rates). Rates at or below the SAC level would not induce entry by a competing railroad since such a railroad could not cover its costs even if prices did not fall post entry. Thus, any price consistent with the SAC constraint together with the constraints imposed by alternative modes of shipping (such as truck) is a competitive price.

shipment is unreasonable—whether the railroad is market dominant for that shipment and whether the challenged rate is noncompetitive.

Third, the types of rate constraints that the shipper parties want to impose on railroads deemed revenue adequate are far from benign additions to the Board's current framework for regulating rates. Rather, such broad-based constraints would interfere with incentives for efficient investment and harm not only the railroad industry but the shippers that are shortsightedly making these proposals. The shipper parties' specific proposals, which I discuss in Part IV, below, do not affect my opinion in this regard.

III. The Shipper Parties' Proposed Changes to the Board's Methodology for Calculating Revenue Adequacy Are Economically Unsound

Shipper parties claim that the Board's current methodology excessively elevates the bar for determining whether railroads have achieved revenue adequacy.[9] That bar instead is much too low. The shipper parties' proposals, including proposals to supplement or replace a comparison of a railroad's return on investment ("ROI") to the industry cost of capital ("COC") with a variety of short-term financial metrics, would continue or worsen the current misleading impression from recent revenue adequacy determinations that the rate of return for certain railroads is sufficient to allow those railroads to raise the capital needed to replace and grow their networks over the long term.

The Allied Shippers, in particular, focus on their preferred results without regard for a proper economic evaluation of whether railroads are earning a competitive return. They advise the Board to "reject *any* proposed changes to its revenue adequacy model that would have the effect of making a railroad appear to be farther from revenue adequate status than the current methodology shows,"[10]

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[9] According to CSA, "the Board's current methodology for determining revenue adequacy has set the bar exceedingly high for far too long" (CSA Comments, pp. 14-15 (citing attached exhibits)). According to the Allied Shippers, "the Board's first order of business in this proceeding should be to reject *any* proposed changes to its revenue adequacy model that would have the effect of making a railroad appear to be farther from revenue adequate status than the current methodology shows. Whether a modification is suggested with respect to a component of the current test *(e.g.,* calculation of COC, measurement of a railroad's investment base, etc.) or a new or additional criterion, if the effect is to make the railroads look less healthy financially it can be assumed that the proponent is result-oriented away from revenue adequacy, and the change should not be adopted" (Allied Shippers Comments, p. 20). AECC claims that the Board overestimates the cost-of-capital calculation against which it measures the railroad's rate of return for purposes of determining whether the railroad is revenue adequate (*see* AECC Comments, p. 14 ("From a public interest perspective, it is essential that the Board take steps to remedy the defects of its current cost-of-capital methodology in order to ensure its conformity with statutory requirements and abundant alternative evidence, and its soundness in a revenue-adequate environment")).

[10] Allied Shippers Comments, p. 20.

and to use instead a revenue adequacy metric that confirms that railroads are strongly revenue adequate. However, an economically meaningful revenue adequacy metric should accurately assess the underlying attribute at issue—here, the railroads' ability to attract capital and make efficient investments in the long term—and should not be chosen simply to support shipper parties' goal of lowering their rates.

A. The Shipper Parties Do Not Acknowledge that an Economically Appropriate Measure of Revenue Adequacy Must Use Forward-Looking Replacement or Current Costs

From an economic perspective, the Board's methodology for determining whether a railroad is revenue adequate is critically flawed because it uses the book value (or historical cost) of railroad assets, rather than forward-looking costs of assets that the railroad must replace and expand in order to maintain and grow its network and operations in the long term. As a consequence, the Board greatly overstates railroads' progress towards achieving revenue adequacy.

In the Murphy Statement, I explained that, by eliminating excess and inefficient assets, railroads largely have taken advantage of opportunities to increase productivity and reduce costs. In the future, railroads will have to invest relatively more (per track mile operated, for example) to support their operations and asset base. By focusing on the costs of past investments, rather than current costs, the Board's revenue adequacy measure has become an increasingly misleading measure of the railroads' ability to maintain and grow their networks in the long run.[11]

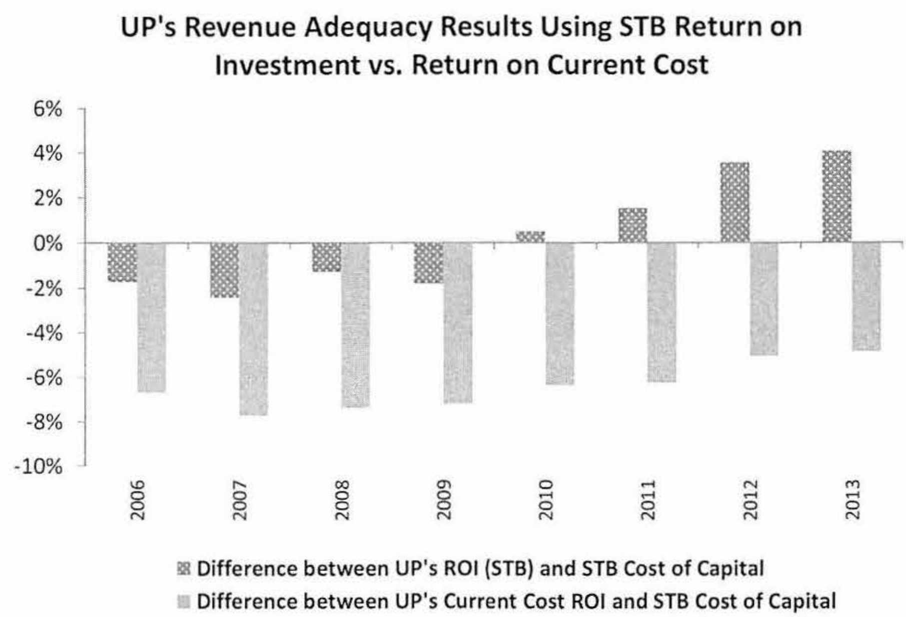
Proposals made by certain shipper parties would exacerbate problems with the Board's revenue adequacy methodology. For example, CSA endorses a proposal by the late Professor Alfred E. Kahn (and Professor Jerome E. Hass) to use historical (original) asset costs in the denominator of the ROI calculation, and to disallow updated asset valuations by the market through a railroad merger or acquisition, as I understand is permitted under STB rules. Professor Kahn justified his proposal by stating that use of historical asset costs is the accepted rule "[w]henever and wherever the net book value of a company's stock or assets has served as the basis for determining its permissible return for regulatory purposes."[12] Professor Kahn's proposal implies a misconception that a regulator sets the

[11] *See Standards for Railroad Revenue Adequacy* ("*Standards II*"), 3 I.C.C.2d 261, 277 (1986) (acknowledging that "current cost accounting is theoretically preferable to original cost valuation"); *Standards for Railroad Revenue Adequacy* ("*Standards I*"), 364 I.C.C. 803, 818 (1981) (explaining that "the replacement cost method is preferable because it comes closer to the competitive result").

[12] CSA Comments, Exhibit B (Kahn, p. 3).

railroads' rates to guarantee a return on the railroads' asset base. This has never been the case, and it could not be the case, because most railroad traffic is subject to competition.[13]

Railroads will be revenue adequate in an economic sense only if they earn at least their cost of capital on the *replacement cost*, not the book value or original cost, of assets that they would choose to replace, because that is what is necessary to obtain capital in the private marketplace, which is where they must compete for capital. As I showed in Figure KMM-12 in the Murphy Statement (reproduced below), UP is not revenue adequate in an economic sense. Adopting Professor Kahn's proposals would lead the Board even further from making a proper economic evaluation of the railroads' ability to replace their networks and expand to serve new demand.



Source: STB (cost of capital and UP ROI) and UP (estimated current cost ROI).

[13] *See Bessemer & Lake Erie R.R. v. ICC*, 691 F.2d 1104, 1113-14 (3d Cir. 1982) ("Railroad regulation by the ICC, is not, however, 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.").

B. Alternative Financial Measures of Revenue Adequacy Proposed by the Shipper Parties Are Not Informative About the Railroads' Long-Term Financial Condition

Certain shipper parties endorse the use of a "multiple indicators" revenue adequacy methodology that relies on various "Wall Street" metrics and a funds flow analysis.[14] In 1981, the ICC considered and properly rejected use of funds flow and other financial ratios and metrics in favor of the current "ROI=COC" measure of revenue adequacy,[15] a decision that it reaffirmed in 1986.[16] From an economic perspective, the ICC was correct. These other financial metrics are not informative about railroads' ability to attract the necessary capital to replace and expand their networks in the future, which should be the focus of the Board's revenue adequacy determination.

For example, a funds flow analysis asks whether the railroad was able to raise capital to fund *specific projects* in a given year (generally, the immediate past year), and not in the future. Thus, it provides a short-term and incremental evaluation of the railroad's ability to raise capital. A railroad's ability to raise capital and make investments in the past year, or over the short term, does not demonstrate that it is revenue adequate in the economic sense that it will be able to attract the capital necessary to fully replace and expand its assets efficiently over the long term.

The Allied Shippers unintentionally demonstrate that conclusions drawn from funds flow and other components of a "multiple indicators" analysis of revenue adequacy can be highly misleading. They state that "[i]n its first application of the multiple indicators model for revenue adequacy, the ICC found that as of 1977, 11 out of the then 31 Class I railroads earned adequate revenues."[17] The Allied Shippers also note that "[t]he immediate effect of the ICC's switch to the ROI=COC single

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[14] For example, the Allied Shippers recommend that the Board "should change its current, narrow test for revenue adequacy by adding other metrics of financial health to the return-on-investment standard" (Allied Shippers Comments, p. 2). In particular, the Allied Shippers recommend that "the Board should restore the use of funds flow analysis as a check on the results of the ROI=COC test" (Allied Shippers Comments, p. 20).

[15] *Standards I.* The ICC noted that "[f]unds-flow analysis and other minimum standards of revenue adequacy as described in Ex Parte No. 353 were and are appropriate as indicators only of the short-term viability of railroads. They were and are inappropriate as indicators of long-term revenue adequacy" (p. 808). It explained further that if it adopted such "minimum or short-term standard for use here, we would likely in the next few years find ourselves denying a railroad the pricing flexibility necessary to obtain long-term revenue adequacy simply because that railroad was making some progress toward achieving that goal. In short, we would be assigning the railroads the Sisphyean [sic] task of working toward revenue adequacy, and every time it came close robbing it of the very means it had used to get there" (p. 808).

[16] *Standards II.*

[17] Allied Shippers Comments, p. 8.

indicator methodology in *Ex Parte No. 393* [in 1981] was a dramatic increase in the level of revenues that a carrier was shown to need to earn in order to be deemed revenue adequate, with the predictable result that as of the early 1980s, not one of the Class I railroads that previously had been found to be revenue adequate achieved that designation under the new definition."[18] Given the dire financial condition of the railroad industry that motivated deregulation in this period, including deterioration of their infrastructure due to lack of investment,[19] it is far more likely that railroads had not achieved revenue adequacy when the ICC abandoned the multiple indicators approach than that the multiple indicators analysis ever was informative about the railroads' financial condition.

Other "Wall Street" metrics, such as increases in stock prices, earnings per share, and dividends, do not measure a railroad's ability to attract the necessary capital to replace and expand its network in the long term. The fact that railroads are making profits, and thus have cash that they could use to replace their assets, does not mean that they will have an incentive to make all the investments that would be required to replace and grow their networks over the long term if their earnings are constrained by regulation in the way that the shipper parties propose. A firm with cash to invest (i.e., a firm that is making money) will have an incentive to make a particular investment only if it is expected to be more profitable than alternative investments. It will not make an investment that is less profitable than other potential investments (or that generates less value than returning cash to shareholders through dividends and buybacks, and thus allowing shareholders to make better use of that cash) simply because it can "afford" to do so.[20]

IV. The Shipper Parties' Proposals for Earnings and Rate Limitations Would Reduce Efficiency and Competition and Harm Shippers

The shipper parties propose two ways of expanding rate regulation if the Board determines that a railroad, or the railroad industry as a whole, is revenue adequate: (1) capping railroad earnings

[18] Allied Shippers Comments, p. 9.

[19] Association of American Railroads, "The Impact of the Staggers Rail Act of 1980," May 2014, p. 2 ("Railroads lacked the funds to properly maintain their tracks. By 1976, more than 47,000 miles of track had to be operated at reduced speeds because of unsafe conditions. Deferred maintenance—maintenance that needed to be done but railroads could not afford—was in the billions of dollars. The term "standing derailment"—when stationary railcars simply fell off poorly maintained track—was often heard").

[20] The ICC recognized this in its 1981 decision on revenue adequacy standards: "Railroad management has little incentive to reinvest funds generated by ratepayers in continued rail uses if greater returns are available elsewhere. Railroads are private companies whose stockholders would not permit such reinvestment. Thus, even retained earnings will not be invested in the company if they cannot earn a rate of return equal to the cost of capital" (*Standards I*, 364 I.C.C. 803, p. 810).

and refunding "excess" earnings to shippers, and (2) capping or freezing rates or limiting rate increases. These proposals would impose additional regulatory restrictions on the ability of a railroad deemed revenue adequate to set rates in response to changes in demand and competition, and to benefit from increased efficiency, innovation, and investment. Neither type of expanded regulation would require that a shipper demonstrate that its rates are noncompetitive as a condition for obtaining reductions in past or future rates. As I explained in the Murphy Statement, if revenue adequacy is used as a cudgel to lower or hold down rates or earnings without regard to whether individual rates are at or above competitive levels, then railroads will have distorted and diminished incentives to invest and to expand and improve service, which ultimately will harm shippers.[21]

In the remainder of this section, I address the shipper parties' regulatory proposals in more detail. First, I explain why the shipper parties' regulatory proposals are inconsistent with Congress's acknowledgement, embodied in the Staggers Act, that the majority of freight traffic is subject to competition and that regulation should be used to protect shippers only where they can demonstrate that their rates are not competitive. Second, I explain how the types of additional regulations that shipper parties propose would affect railroads' pricing, investment, and operating incentives in ways that would make railroads less competitive and harm their customers and consumers.

A. Shipper Parties' Proposals Are Inconsistent with the Competitive Market in Which Railroads Must Compete

The Staggers Act and the regulatory regime adopted by the agencies for the Act's implementation are based on the bedrock principle that most rail freight is subject to competition[22] and thus properly is "regulated" only by the private market—by a railroad's incentive to provide pricing, terms, and investments to better compete against the alternative rail and non-rail freight options available to shippers and consumers and to achieve success by doing so. This means that a measure of a railroad's overall profitability, including the return on its investment base, will reflect the railroad's success in competing against other railroads and other modes of transport. Successful economies rely on private markets rather than regulation because the prospect of earning profits creates the most effective motivation for firms to anticipate and satisfy consumer demand. While, in theory, a railroad might be able to increase its returns through anticompetitive pricing, there can be

[21] *See* Murphy Statement, Parts III.B and III.C.

[22] About 80 percent of UP's traffic is not potentially subject to regulation (Murphy Statement, p. 26).

no presumption that a railroad earning higher returns has market power and is exercising any more market power than is a railroad earning lower returns. Over time, a railroad can increase its returns, and even earn returns that exceed its cost of capital, by becoming more efficient, doing a better job of satisfying its customers, or investing (or fortuitously being located) in areas where there is demand growth—none of which reflects market power or noncompetitive conduct. Rather, higher returns (even returns that exceed the cost of capital for extended periods) are consistent with increased competitiveness, better shipper service, and increased efficiency.

Because a competitive firm's rate of return can increase and even exceed its cost of capital for many reasons unrelated to pricing above the competitive level, all the shipper parties' proposals for regulating rates and profits of revenue adequate railroads are economically unsound. None are supported by evidence that recent improvements in railroad returns relative to the cost of capital resulted from noncompetitive pricing generally. None would require that a shipper demonstrate in the future that the increased return (relative to the cost of capital) resulted from anticompetitive pricing of its shipments. And none would limit proposed "relief" granted as the consequence of a finding of revenue adequacy only to those shipments that are priced above the competitive level. Rather, all the shipper parties' proposals simply would take money from railroads (either money they already earned or money that they would earn in the future) and give it to some group of shippers, without attempting to determine whether any shipper recipient has paid noncompetitive rates.

That is regulation at its worst and, as I explain below, it would create all the adverse incentives that result when regulation is not motivated to the greatest extent possible by competitive market principles. The history of the railroad industry before deregulation overwhelmingly demonstrates the economic harm—to railroads, shippers, and the economy as a whole—created when railroad rates and services are broadly regulated and railroads are not motivated by profit-maximizing incentives to invest in the most profitable way, to organize their operations to minimize costs, and to set prices to win business from competitors (and not be forced to serve customers at rates that are not remunerative).

Most of the shipper parties' proposals would regulate rates or profits based only on a finding that a railroad was revenue adequate and was "market dominant" over the traffic at issue. (AECC would not even require a showing of market dominance.[23]) But this is not sufficient to assure that regulation will be limited only to traffic moving under noncompetitive rates. Establishing market dominance is a necessary, but not sufficient, condition for the Board to regulate rates today. Requiring shippers to demonstrate market dominance would not prevent shippers whose rates are competitive from wrongly receiving rate reductions or payments from railroads under the shipper parties' proposals; there can be no presumption that traffic for which a railroad is (or is found to be) market dominant is being charged rates inconsistent with competition.[24]

Shipper parties propose that, if a railroad is deemed revenue adequate, shippers need not demonstrate that their rates are above the competitive level (as they must in order to obtain rate relief today), but instead are entitled to "refunds" or rate reductions[25] regardless of whether their rates are unreasonable. But there is no economic justification for providing refunds or regulating rates on traffic for which a railroad can be shown (using the Board's current methodology) to be "market dominant," but for which economic evaluation (using SAC or a simplified methodology) would show the rate is competitive. In effect, shippers propose that the Board's current process for evaluating the reasonableness of rates in response to a shipper complaint should be abandoned in favor of an almost

[23] Unlike other shipper parties, AECC proposes that a shipper would be entitled to a refund even if the carrier is not "market dominant" for that shipper's business and the shipments are not even potentially subject to rate regulation. Under its proposal to distribute the supposed "supracompetitive" profits, any shipment with a revenue to variable cost ("RVC") ratio above 180, including exempt shipments that are presumptively competitive and outside the mandate of the Board's regulatory jurisdiction, would not only contribute to a calculation of whether a railroad is (according to the shipper parties) earning "supracompetitive" profits, but also would be entitled to receive a refund of the supposed "supracompetitive" profits. *See* AECC Comments, p. 22.

[24] Shipper parties that propose eliminating the SAC (or Simplified SAC) component of the rate reasonableness evaluation ignore the fact that the Board's market dominance evaluation does not take account of important competitive constraints on railroads, and thus can lead to the erroneous conclusion that traffic that faces effective competition does not. Currently, the Board does not allow railroads to challenge a shipper's claim that there is no "effective competition" with economic evidence of product or geographic competition (*see Market Dominance Determinations—Product and Geographic Competition*, 5 S.T.B 492 (2001)), even though economics shows that such competition can be just as effective as direct competition from another railroad or another transportation mode to handle those shipments. Rail transportation is an input into a delivered product, and economics shows that input prices are constrained by consumers' ability to substitute among delivered products, even if the purchaser of rail transportation cannot substitute directly. This was demonstrated empirically in a study of railroad rates for PRB coal, which found that source competition (the ability of a utility to obtain coal from non-PRB sources) lowers rail rates from the PRB by 24 percent (*see* Clifford Winston, Scott M. Dennis and Vikram Maheshri, "Duopoly Equilibrium Over Time in the Railroad Industry," May 2011 (Working Paper), p. 32).

[25] I use the term "rate reduction" to refer not only to reductions in nominal (or cost-adjusted) rates, but also reductions relative to the level that would result from competition. Thus, a shipper's rate is "reduced" as a matter of economics even if that rate increases, but it does not increase by as much as it would have without regulation.

conclusive presumption of unreasonableness when the railroad is deemed market dominant.[26] Such a change in policy would expand rate and/or earnings regulation and all its inefficiencies by regulating rates on shipments where the railroad is constrained by competition and/or the rates are not above the competitive level.

In the Murphy Statement, I provided evidence that UP's improved earnings cannot be taken as evidence of "supracompetitive profits" or pricing above the competitive level on market dominant traffic. As I showed in Figure KMM-18 in that Statement, exempt shipments (presumptively subject to effective competition) have contributed more to UP's progress toward revenue adequacy than have non-exempt (and potentially market dominant) shipments.[27] This is not what I would expect to find if the magnitude of the markup over variable cost for railroad traffic were a good indication of market power, and improved earnings indicated that a railroad was earning "supracompetitive" profits and pricing above the competitive level on market dominant traffic. The evidence indicates that the earnings improvement that is leading shippers to assert that railroads are revenue adequate is not a result of "supracompetitive" profits on market dominant traffic, as shipper parties claim, but rather the result of strong competition by railroads to serve shippers with competitive alternatives.

B. Shipper Parties' Proposals for Additional Regulation of Railroads Deemed Revenue Adequate Would Harm Competition

The history of the railroad industry before deregulation demonstrates the economic harm—to railroads, shippers, and the economy as a whole—when railroads are not motivated by profit-maximizing incentives to invest in the most profitable way, to organize their operations to minimize costs, and to set prices to win business from competitors (and not have to serve customers at unremunerative rates). Through a variety of proposed regulations on railroads that are deemed revenue adequate, shipper parties now propose to undo the gains achieved by freeing the majority of railroads' traffic from regulatory interference.

[26] Allied Shippers Comments, p. 30 ("Upon complaint by a shipper against a rate increase imposed by a railroad, the Board should inquire whether (1) the identified issue traffic is subject to market dominance under 49 U.S.C. § 10707; and (2) the defendant railroad was revenue adequate (on the basis described *supra*) prior to the challenged increase. If the shipper succeeds in demonstrating both, then subject only to the limited exceptions described *infra*, the challenged rate increase would be judged unreasonable and unlawful. If it already had been put in effect pending the determination, the carrier would be directed to restore rates to the pre-increase level and pay reparations in the principal amount of the additional revenues already collected" (footnote omitted)).

[27] Murphy Statement, pp. 43-44.

1. Proposals to Limit Railroads' Earnings and Rate of Return

Some shipper parties, including ARC, AECC, and CSA, propose to limit railroads' returns. They mischaracterize earnings in excess of the minimum amount required to satisfy the Board's existing measure of revenue adequacy as "excess" (ARC and CSA) or "supracompetitive" (AECC),[28] and propose regulating railroads to prevent them (and their investors) from benefiting from procompetitive investments and operations. Such regulation would harm competition and eliminate incentives for efficiency, innovation, and investment.[29] Such a policy would seem preposterous if proposed to apply to other private companies such as Microsoft, Apple, or Pfizer, or to rail shippers such as Walmart, DuPont, or ConAgra—and it would be no less preposterous to apply it to railroads.

Proposals to confiscate a railroad's "excess" earnings without any required showing that those earnings resulted from anticompetitive conduct would deter railroads from engaging in the types of procompetitive conduct—becoming and remaining efficient and seeking a competitive advantage in the marketplace—that firms pursue in order to increase their profits. In particular, it would have the following adverse incentive effects:

- All else equal, if a railroad is near, at or above the calculated "revenue adequate" level, it would have no incentive to reduce costs, because doing so would (in AECC's terminology) result in "supracompetitive" profits and lead to widespread regulatory rate suppression and earnings limitation that would disburse those profits to shippers;
- It creates incentives for railroads to skew their investments and operations to avoid being deemed revenue adequate, in particular, to make investments that increase their rate base, but do not produce high returns, when rates are constrained by revenue adequacy, but to underinvest in those types of investments when rates are not constrained by revenue adequacy. Changes in both directions will tend to be

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[28] ARC asserts that "[r]ate reductions, and not just limits on future rate increases, should be available, to the extent of excess revenues based on differential pricing of a captive shipper's traffic, and to the extent that revenue adequate railroads will remain revenue adequate" (ARC Comments, p. 24). AECC proposes that a revenue adequate railroad should be required to "refund" any "excess" or "supracompetitive" earnings over the amount necessary to be found "revenue adequate" to shippers with RVC ratios over 180. It proposes that the Board should calculate "the percentage by which contribution above the jurisdictional threshold would need to be reduced to eliminate the supracompetitive portion of rail earnings" and provide "a (hopefully) simple administrative process whereby shippers could document their cumulative rate payments above the jurisdictional threshold (e.g., by running URCS on their rail traffic movements) and obtain a Board order for the return of the percentage of those payments described above" (AECC Comments, p. 22). CSA says that "excess" profits should be distributed to shippers with market dominant traffic (CSA Comments, p. 9).

[29] Murphy Statement, p. 33.

inefficient, and they reflect the type of distortions that afflict traditional rate-of-return regulation. The consequence is a loss of efficiency to society because resources are misallocated;

- It reduces the incentive for a railroad to make the inherently risky investments needed to accommodate traffic growth, which have the potential of generating a correspondingly high rate of return. Railroads would not be able to realize the upside from such investments, but would be forced to absorb the downside, so the expected return would be lower than the cost of capital;
- If a railroad's capacity is limited, there would be a disincentive to invest in additional capacity to serve the high revenue to variable cost ("RVC") traffic, because doing so would be "taxed" by the amount that the railroad must pay to shippers if it earns "supracompetitive" profits. The result would be that shippers that value rail service more and are willing to pay more (perhaps because of the additional profit they gain by using rail rather than an alternative mode) will receive less service than they desire, while those that value rail service less (perhaps because other modes are a good substitute for rail) will be better served by rail.

In a competitive environment, like that in which railroads operate, UP can obtain a competitive rate of return *on average* only if it has the ability to earn about its cost of capital for periods of time. It cannot earn the competitive rate of return necessary to compete for capital if it must endure periods where its rate of return falls below the competitive level, yet it is denied the prospect of earning a return above its cost of capital at other times. The shipper parties' proposals to deny railroads returns they earn from engaging in procompetitive conduct eliminate the railroads' incentives to engage in such procompetitive conduct to the detriment of shippers and consumers.

2. Proposals to Cap or Freeze Rates

Shipper parties also propose capping or freezing rate increases for railroads deemed to be revenue adequate.[30] Doing so would strip such railroads of their flexibility to adjust rates in response to competitive market forces, such as changes in demand and the value they provide to shippers and shippers' willingness to pay. Again, shipper parties propose that these restrictions on railroads'

[30] Allied Shippers Comments, p. 2 (a "revenue adequate shipper should be prohibited from imposing any rate increases on traffic of a captive shipper beyond cost inflation"); CSA Comments, p 13 ("a rail carrier ... should not be able to increase existing rail rates on market dominant traffic in excess of increases in its cost of operations").

ability to price to the market should apply whether or not the affected rates are above competitive levels. In order to be entitled to caps on rates or rate changes, a shipper would have to demonstrate only that a carrier found to be "revenue adequate" is "market dominant over the movements at issue,"[31] not that its rate is above the competitive level. Such policies would harm competition.

As I explained in the Murphy Statement, "competition" in the railroad industry does not lead to pricing at marginal (or variable) cost because railroads must be able to set rates above variable costs in order to cover joint and common costs and operate without government subsidies.[32] The economic principle underlying the *Coal Rate Guidelines* is that competition will lead to *differential* pricing based on shipper demand (and willingness to pay), which then permits the railroads to recover fixed and common costs of the network.[33] A railroad can serve shippers for which competition forces rates to or very close to variable cost because it recovers its fixed and common costs from shippers for which the competitive rate is above variable cost. Even if a shipper is truly "captive," the only way to determine whether its rates are "differentially higher" in the sense that they exceed the competitive level is by performing an individualized analysis using the SAC test (or a simplified methodology).

Eliminating all "differential" pricing would prevent the railroads from covering their fixed and common costs. Thus, an operational definition of the rate differentials that shippers want to eliminate when a carrier is deemed revenue adequate must be those that are "too large" because they exceed the differentials that a competitive market would permit. But those are precisely the differentials that shippers currently can challenge if the railroad is market dominant and that the Board evaluates using the SAC test (or simplified versions of the SAC test). Identifying these supposed "improper" differentials thus requires the same kind of analysis that shipper parties want to avoid (and that shippers are entitled to use today to demonstrate that their rates are unreasonable).

[31] According to CSA, this "will require an individualized determination as to the presence or absence of effective competition," and then "captive shippers should be able to achieve rate reductions that would reduce or eliminate their differentially higher rates" (CSA Comments, pp. 9, 11) including "a rollback of []rates and reparations" if the shipper can demonstrate that the carrier increased rates by more than the RCAF-A (CSA Comments, p. 12). *See also* Allied Shippers Comments, p. 30.

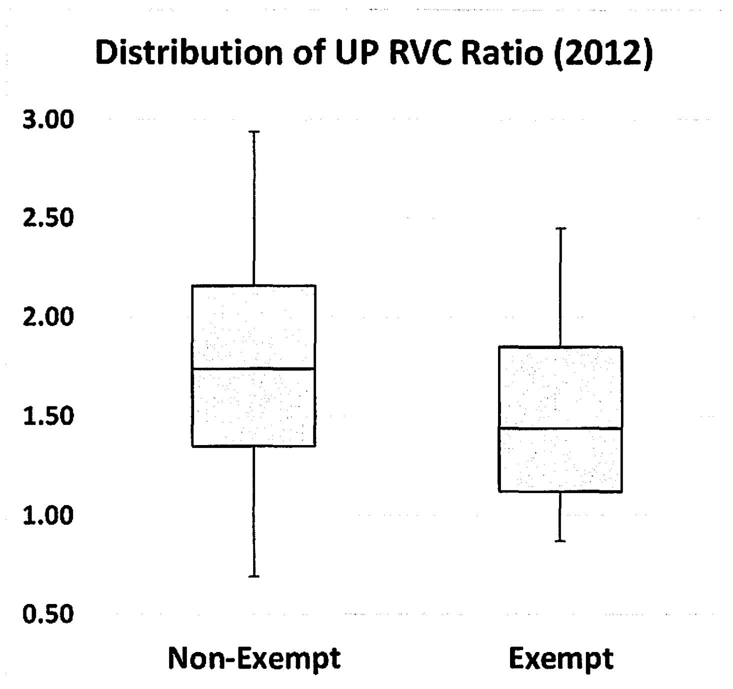
[32] Murphy Statement, p. 29.

[33] *Coal Rate Guidelines, Nationwide*, 1 I.C.C.2d 520, (1985). Shipper parties point to the ICC's statement there that "captive shippers should not be required to continue to pay differentially higher rates than other shippers when some or all of that differential is no longer necessary to ensure a financially sound carrier capable of meeting its current and future service needs" as the rationale for their rate regulation proposals (pp. 535-36). The quoted language reflects misguided reliance on traditional rate-of-return concepts—concepts that are both outdated and do not fit the railroad industry.

One cannot assume that the rate charged to a "captive" shipper is "differentially higher" (in the sense that the differential is noncompetitive) simply because the shipper is "captive;" indeed, in past proceedings, the Board has found after performing a SAC evaluation that challenged rates are not unreasonable or noncompetitive, even though the Board previously concluded that the railroad was "market dominant" over those shipments or railroads did not challenge the shipper's market dominance claim.[34]

Shippers might claim that RVC ratios can be used as a shortcut to identify rates charged by railroads found to be market dominant that have too large a differential, and thus should be subject to additional rate regulation when a carrier is deemed to be revenue adequate. However, the tremendous amount of variation in RVC ratios on exempt (and presumed competitive) traffic demonstrates that high RVC ratios are not inconsistent with competitive pricing under the Board's standards. For example, as shown in the figure below, in 2012, the 10th percentile RVC ratio was 0.87 (less than one) for exempt (and presumed competitive) shipments, while the 90th percentile RVC ratio was 2.45. Thus, 10 percent of rates that are presumed to be competitive were above 245 percent of variable cost. One cannot simply assume that, at some level of RVC ratio, rates are "differentially high" in the economic sense that they exceed the competitive level. The type of rate regulation that shipper parties propose would force many rates below the competitive or reasonable level by preventing railroads from responding to changes in competition and demand for railroad service that would cause those rates to rise in a competitive market.

[34] For example, in a dispute over coal rates, BNSF did not challenge AEP's claim of market dominance ("BNSF does not dispute AEP Texas' claim that there are no effective competitive alternatives for transporting coal between PRB mines and Oklaunion." (STB Decision Docket No. 41191 (Sub-No. 1), *AEP Texas North Company v. BNSF Railway Company*, decided September 7, 2007, p. 6)). In its final decision on AEP's rate challenge in 2009, the STB found that BNSF's rate was reasonable (STB Decision Docket No. 41191 (Sub-No. 1), *AEP Texas North Company v. BNSF Railway Company*, decided May 15, 2009, p. 1). In STB Decision NOR 42125, *E.I. DuPont DeNemours and Company v. Norfolk Southern Railway Company*, decided March 21, 2014, the STB found that Norfolk Southern had market dominance on most of the challenged shipments, yet it concluded that "the rates NS charges for the issue traffic have not been shown to be unreasonable" (pp. 30, 55).



Source: UP.

Note: The line inside the shaded box shows the median rate across all UP non-exempt or exempt traffic (weighted by the number of carloads). The bottom of the box shows the 25th percentile rate, while the top of the box shows the 75th percentile rate. The bottom of each vertical line shows the 10th percentile rate and the top shows the 90th percentile rate.

In addition, the Allied Shippers' proposal to limit rate increases on "market dominant" traffic served under contract by a revenue adequate carrier to changes in a cost index when that contract expires would have an anticompetitive impact. Even if the contract rate at issue had an RVC ratio of 182, while the SAC for that shipment was 282, the railroad would not be allowed to increase the rate. This proposal not only would force rates set by contract to remain far below the level that the Board has indicated is reasonable, but it would eliminate incentives for railroads to negotiate low contract rates for shipments where they might be found to be market dominant, because they effectively would be locked into that low rate even after the contract expires.

Shipper parties that propose to freeze rates or limit rate increases when a carrier is revenue adequate appear to view the resulting harm to economic efficiency as justified in exchange for the benefit they expect to obtain from rate regulation that would force a reduction in other rates that might be found to be unreasonable if the shipper had challenged the rate using the SAC (or a simplified methodology) test but which the shipper chose not to pursue (perhaps because it viewed the cost and risk of doing so to be too high).[35] However, shipper parties offer no economic support for their position that pricing individual shipments at a competitive level is less critical when a railroad is more profitable than when it is less profitable, and for allowing widespread regulatory interference in the operation of the marketplace when railroads are more profitable, even though that interference would not be tolerated when a railroad is not revenue adequate because it creates the type of harm to shippers and consumers that existed before deregulation.

Allocative efficiency requires that individual prices are set competitively, and not that prices generate some overall level of return in total. When capacity is limited, it is efficient to allocate that capacity based on willingness to pay, because this reflects the value that the customer obtains from using the scarce capacity. Rate freezes prevent market signals from allocating scare capacity to where it is more valuable (e.g., to shippers with time critical needs or with more limited competitive options). When rates are not free to increase in response to demand, then signals to railroads that there is demand for additional capacity are absent.

C. The Board Should Reject Shipper Parties' Proposals to Use a Revenue Adequacy Calculation as a Short-Cut in Place of a Proper Economic Analysis of Whether Some Rates Are Unreasonable

The Board should separate any evaluation of shipper parties' complaints about the SAC test (or approved simplified methodologies) from evaluation of the role, if any, of revenue adequacy in oversight and regulation of freight rates. Many of the shipper parties criticize the Board's current process for evaluating shipper claims that specific rates are unreasonable.[36] Shippers conflate perceived costs and difficulties of implementing the SAC test (and simplified versions of the SAC test) with the merit, if any, of using revenue adequacy as a basis for constraining rates. However, the two issues are independent.

Today, a shipper can obtain rate reductions if it can demonstrate that the railroad is market dominant over that shipper's traffic (i.e., that there is no "effective competition" for its business) and that, under the SAC test (or simplified methodology), its rates exceed the maximum reasonable or

[35] According to ARC, "Many shippers with no effective competitive alternative will never file a rate case. They cannot afford to establish market dominance, or cannot show market dominance because of the appearance (though not the reality) of effective competition" (ARC Comments p. 31). However, ARC provides no support for this claim, and it does not address the fact that the Board often finds that rates challenged by shippers are reasonable.

[36] *See* CSA Comments p. 6-7; ARC Comments p. 3-4; Olin Comments p. 7.

competitive level. Evaluation of whether the rate charged by a "market dominant" carrier is "unreasonable" takes into account only factors relevant for understanding whether a challenged rate exceeds the rate that would apply if the specific business at issue were contestable. The principle that rates at or below the SAC level are not unreasonable is well established, and use of this economic framework by the Board since passage of the Staggers Act and adoption of the *Coal Rate Guidelines* in 1985 has played an important role in allowing the railroads to achieve tremendous productivity gains and to emerge from an extended period during which many were on the verge of or entered bankruptcy.

Any application of revenue adequacy in the Board's oversight of rates should be justified on its own merits, and not as a way to compensate for claimed weaknesses in other Board methods for analyzing shipper complaints about rates. Broadly constraining rates charged by revenue adequate railroads is not a solution to theoretical or practical issues with the Board's use of the SAC test (or simplified methodology) to evaluate whether rates are reasonable.

V. Conclusion

The shipper parties' proposals for rate-of-return and rate regulation on railroads deemed to be revenue adequate are unsupported by economics. Such regulatory restrictions would prevent UP and other railroads from earning a competitive return and deter them from operating and investing efficiently. The result would be harm to competition and shippers. The Board's current methodology for determining revenue adequacy is flawed, but even if it better reflected railroads' ability to maintain and grow their networks in the long run, it is not in the interest of competition for the Board to impose additional rate regulations on railroads when they are revenue adequate than when they are not.

VERIFICATION

I, Kevin M. Murphy, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this Reply Verified Statement.

Executed on November 4, 2014.

Kevin M. Murphy

Kevin M. Murphy