

**BEFORE THE
SURFACE TRANSPORTATION BOARD

EX PARTE 766**

ENTERED
Office of Proceedings
October 13, 2020
Part of
Public Record

**JOINT PETITION FOR RULEMAKING
TO MODERNIZE ANNUAL REVENUE ADEQUACY DETERMINATIONS**

PETITIONERS' RESPONSE TO REPLIES

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October 13, 2020

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Exhibit 1: Supplemental Verified Statement of Kevin M. Murphy and Mark E. Zmijewski

The Petition for Rulemaking identified a new approach for the Board to measure revenue adequacy that would respond to long-established concerns about measurement error in the analysis and give the Board valuable information about how railroad performance compares to that of other companies in the marketplace. The Petition would largely preserve the structure of the Board's current measurement, but would add information about how railroads compare to their competitors in the capital markets. As explained in the Petition, the revised approach is consistent with Congress's command that the Board accurately measure the financial performance of Class I railroads and addresses recognized measurement errors in the current approach in an easily administrable way.

Three replies were filed in response to the Petition. One "unreservedly supports" a proceeding to explore this new approach.¹ The other two comments, which oppose the Petition, were filed by the Western Coal Traffic League and a coalition of advocacy groups labeling themselves the "Joint Shippers" (collectively, "Opponents").² These opposing comments did not contest Petitioners' statutory arguments that the Board is required to annually measure railroad financial performance and ensure that railroads earn "a reasonable and economic profit or return (or both) on capital employed in the business." 49 U.S.C. § 10704(a)(2). Nor did they argue that the Board's current approach produces an accurate measurement, instead preferring to resurrect years-old filings alleging that the current approach is too conservative. And they did not meaningfully dispute the basic conclusion presented by Professors Murphy and Zmijewski ("the professors"),

¹ See Reply of CSX Transportation, Inc., Ex Parte 766 (filed Sept. 21, 2020) ("CSXT Reply"), at 1.

² Reply of Joint Shippers, Ex Parte 766 (filed Sept. 21, 2020) ("Joint Shippers Reply"); Reply of the Western Coal Traffic League in Opposition to Petition, Ex Parte 766 (filed Sept. 21, 2020) ("WCTL Reply").

which is that an evenhanded application of the Board's revenue adequacy methodology to non-railroads in the S&P 500 shows that railroads are not earning unusually high economic rates of return.

Instead, Opponents attack the messengers, claiming that the Petition's approach should be rejected because it is being proposed by railroads that have an interest in how the Board calculates revenue adequacy. Yet Opponents all but admit that their own objective is to use annual determinations as fuel to pursue a revenue adequacy constraint, either through the rate caps advocated by WCTL or the rate-of-return regulation in the American Chemistry Council's ("ACC") econometric "rate benchmarking" approach.³ And they equally do not disguise their lack of interest in improving the accuracy of the Board's annual assessments if those improvements would not result in annual determinations that comport with their desired result.

These results-oriented positions are particularly ironic for ACC and its fellow Joint Shippers. The Joint Shippers demand that a flawed Board-measured railroad accounting-based rate of return,⁴ equal to or above a market-based cost of capital,

³ See WCTL Reply at 5; Joint Shipper Reply at 13–14.

⁴ While Opponents and Petitioners both use the terms "return," "return on investment," and "ROI" to describe the numerator of the Board's current revenue adequacy measure—see WCTL Reply at 8; Joint Shippers Reply at 2—it is important to clarify that a "return on investment," or "ROI" is a measure of *economic* profit or return, not accounting-based rate of return. Because accounting-based rates of return do not equal economic rates of return, the current STB methodology is not informative about "ROI." Thus, even if revenue adequacy were defined as the point at which "ROI" equals the cost of capital (which Petitioners maintain is not correct in light of the language in 49 U.S.C. § 10704(a)(2) requiring an additional economic profit or return (or both)), the STB's methodology is not measuring the "ROI" metric at all, and thus is not informative about whether railroads' *economic* return is equal to or greater than their cost of capital. By contrast, the benchmarking methodology provides useful information to assess—given the lack of ability of accounting-based rates of return to measure economic rates of return—how railroads' accounting-based rates of return compare to those of

be an automatic trigger for wealth transfers under the ACC rate benchmarking approach—even though ACC members have an average return over their cost of capital well above that of the rail industry.⁵ Compared to the AAR members, with a median ROIC less COC of -0.8%, the ACC members achieved a median ROIC less COC of 15%.⁶ Yet the Joint Shipper coalition wants the Board to ignore that data and continue using an inaccurate metric developed four decades ago as a basis to transfer wealth from railroads to chemical companies.

Section I addresses arguments that the current measurement should not be changed. Tellingly, the shippers do not defend the current approach on the merits, but instead attack it as being too “conservative” and allegedly underestimating railroads’ revenue adequacy. But the recycled arguments Opponents make have long been discredited and do not negate the need for the Board to open a proceeding to explore ways to modernize and improve upon its current test.

Section II addresses Opponents’ few technical complaints. While Opponents argue that the S&P 500 does not provide an accurate benchmark for railroads, in fact the S&P 500 is a well-recognized proxy for the broader market and accurately reflects the diverse investment options with which railroads must compete for capital. Moreover, data from narrower groups like S&P Industrials or major rail customers produces results that are in line with the full S&P 500 comparison group. Section III responds to WCTL’s arguments and misunderstandings regarding the deferred taxes portion of the Petition.

other capital market participants, which is a valid economic method for gaining insight into a firm’s level of economic returns. See Exhibit 1, Supplemental Verified Statement of Kevin M. Murphy and Mark E. Zmijewski (“Supplemental V.S.”) ¶ 8 (citing Sections III and IV of the initial Verified Statement).

⁵ Supplemental V.S. ¶ 6, Figure 1.

⁶ *Id.* at Figure 1. Note, the median is the median of the average ROIC less COC over the 2006–2019 period.

Section IV concludes by addressing Opponents' complaints that the Petition's approach should be rejected because it is being proposed by railroads allegedly seeking a "results-oriented" way to avoid a revenue adequacy constraint.⁷ Opponents' accusations ring hollow because, while the Petition addresses years of criticism about the recognized flaws in the Board's approach, Opponents urge the Board to continue using its outdated and inaccurate measure of revenue adequacy—not on the basis of law, data, or expert economic opinion—but because that would enable them to make use of the similarly outdated and economically invalid revenue adequacy constraint. The Board should adopt an approach to revenue adequacy determinations that provides robust data and is most consistent with Congress' intent in § 10704(a)(2), regardless of whether stakeholders prefer a less accurate approach that wrongly suggests that railroads are earning outsized returns.

I. OPPONENTS' FAILURE TO DEFEND THE CURRENT MEASURE SPEAKS VOLUMES.

As explained in the Petition, the Board has a clear statutory duty to measure and monitor railroads' progress toward revenue adequacy and their ability to compete for capital. *See* Pet. at 8–12, 25–29. The Board's current measure does not do that accurately, and it should be improved regardless of whether the Board attaches consequences to revenue adequacy. *See id.* at 2, n.4 (“[R]egardless of what action it takes on the revenue adequacy constraint, the Board surely cannot make any rational and non-arbitrary decisions in this area without a more accurate measure of railroads' actual financial health.”).

Opponents do not point to any economic literature that undermines the analysis and conclusions in Petitioners' thorough expert report. Nor do Opponents

⁷ *See* WCTL Reply at 2.

challenge Petitioners' data.⁸ Critically, Opponents do not explain how the current measure is consistent with Congress's instruction that railroads be permitted to earn "a reasonable and *economic* profit or return (or both) on capital employed in the business." 49 U.S.C. § 10704(a)(2) (emphasis added). Instead, Opponents' rationale is that, merely because the Board has used its current approach to revenue adequacy for decades, it should continue using a methodology with well-established flaws despite being presented with new evidence indicating such methodologies do not comply with the Board's statutory duties.

A. Opponents Have Effectively Conceded that the Term "Economic Profit" Cannot Mean "Zero Profit."

The Board's measure of revenue adequacy must not only account for the ability to cover costs and attract capital, but must also permit an additional "reasonable and economic profit or return (or both) on capital employed in the business." 49 U.S.C. § 10704(a)(2); Pet. at 9–12. In other words, the term "reasonable and economic profit" in § 10704(a)(2) cannot mean an economic rate of return—much less an accounting-based rate of return—equal to the cost of capital (*i.e.*, zero profit). Thus, defining revenue adequacy as the Board currently does—as an accounting-based rate of return equal to or above the cost of capital—is contrary to section 10704(a)(2)'s plain language.

WCTL complains that Petitioners have not pointed to legislative history in support of their position that "economic profit" cannot mean "zero profit."⁹ But Petitioners do not need any legislative history to support the plain language of the statute's text. The term "economic profit" must mean something, and it cannot mean "zero profit" (or a nominal profit based on accounting-based rates of return),

⁸ See Pet. at 4–6; *id.*, Verified Statement of Professor Kevin M. Murphy & Professor Mark E. Zmijewski ("Verified Statement") ¶¶ 30–38.

⁹ See WCTL Reply at 10.

or the term “economic” would be superfluous. As the U.S. Supreme Court has explained, “one of the most basic interpretive canons” is that a “statute should be construed so that effect is given to all its provisions, so that no part will be inoperative or superfluous, void, or insignificant.”¹⁰ Opponents can produce no alternative explanation of this language and instead insist on a revenue adequacy approach that would simply ignore it.

B. Opponents’ Argument that Congress Ratified the Board’s Current Concept of Revenue Adequacy Is Flawed and Unsupported.

Rather than defend the accuracy of the Board’s current concept of revenue adequacy, WCTL asserts that Congress has legislatively ratified it.¹¹ WCTL is mistaken. Mere re-adoption of a statute does not ratify all existing agency interpretation. Rather, a necessary requirement for legislative ratification is evidence that Congress was aware of, and expressly approved, the particular agency action or interpretation.¹² WCTL does not even attempt to show this required

¹⁰ *Corley v. United States*, 556 U.S. 303, 314 (2009) (internal quotation marks omitted).

¹¹ WCTL Reply at 9–10.

¹² See Supplemental Comments of the Association of American Railroads, *Hearing on Revenue Adequacy*, Ex Parte 761 (filed Feb. 13, 2020), at 9 n.23 (“there is no legal basis for concluding that the revenue adequacy constraint has been ratified or otherwise approved by Congress. This is because there is no indication at all that Congress was aware of the obscure and never applied “revenue adequacy constraint” created in *Coal Rate Guidelines* when it reenacted the relevant legislation, much less “evidence of express approval[,]” as required. *Beverly Enters., Inc. v. Herman*, 119 F. Supp. 2d 1, 9 (D.D.C. 2000) (emphasis added); see *id.* (“[I]n order to construe congressional reenactment of a statute as an adoption of an agency interpretation thereunder, there must be a showing that Congress was aware of, and expressly approved of, the prior agency position. See *General Am. Transp. Corp. v. I.C.C.*, 872 F.2d 1048, 1053 (D.C.Cir.1989) ... [A]ssuming Congress was even aware of the [agency’s] construction, there is simply no evidence of express approval. ... [And] ‘[i]t is at best treacherous to find in congressional silence alone the adoption of a controlling rule of law....’” (quoting *Girouard v. United States*, 328 U.S. 61, 69 (1946)); *Isaacs v. Bowen*, 865 F.2d 468, 473 (2d Cir. 1989) (“[T]he

criterion.¹³ And WCTL’s reliance on the outdated opinions of the Railroad Accounting Principles Board (“RAPB”), an entity that has not existed for decades, shows WCTL is clinging to the past at the expense of a more accurate future. On the merits, and in the year 2020, the flaws of the current measure used by the Board are clear.

C. Opponents’ Claim that the Current Measure of Revenue Adequacy Is “Conservatively High” Is Unsupported.

In lieu of a defense of the Board’s current approach, Joint Shippers claim that the current revenue adequacy measure is “conservatively high.”¹⁴ This assertion is not based on the accuracy of the Board’s measure, but on “financial market data” that shippers argue indicate that railroads are able to “attract[] capital.”¹⁵ Joint Shippers do not support this assertion with any recent expert testimony or analysis; instead, they rehash old filings and reports dating from 2001, 2005, and 2013.

These arguments have been repeatedly discredited over the years. As Professor Joseph P. Kalt¹⁶ explained in Ex Parte 722: “The suggestion that revenue adequacy should be divorced from long-run rates of return relative to the cost of capital is *ad hoc* and without coherent economic foundation. Ultimately, revenue adequacy depends on the long-term relationship between the cost of capital and

doctrine applies when Congress indicates not only an awareness of the administrative view, but also takes an affirmative step to ratify it.”).

¹³ In contrast, there is significant legislative history indicating that Congress expressly approved and ratified other Board policies, namely the *Midtec* standard for competitive access. *See, e.g.*, Opening Comments of Norfolk Southern Railway Co., Ex Parte 711 (Sub-No. 1) (filed Oct. 26, 2016), at 39–45.

¹⁴ Joint Shippers Reply at 4; *see id.* at 4–8.

¹⁵ *Id.* at 4, 7.

¹⁶ Professor Kalt is the Ford Foundation Professor (Emeritus) of International Political Economy at the John F. Kennedy School of Government at Harvard University.

rates of return. ... Claims of ‘revenue adequacy’ based on other criteria, such as a rising stock price or the willingness of the capital market to fund incremental investments, is unfounded.”¹⁷ Professor Kalt’s explanation is consistent with the Board’s duty under section 10704, which explicitly ties railroad revenue adequacy to not only the ability to recover costs and attract capital, but also “a reasonable and economic profit or return (or both) on capital employed in the business.” 49 U.S.C. § 10704(a)(2).

Opponents argue that financial metrics like stock performance indicate revenue adequacy, relying largely on 2001 testimony from Dr. Harvey Levine.¹⁸ But Professor Kalt has explained the fallacy in Dr. Levine’s ideas:

“The litany of financial metrics Dr. Levine asserts should be used ... in determining revenue adequacy suffer from ... shortcomings. His proffered metrics are just a handful of a long list of financial ratios that ... do not ... provide a basis for determining overall revenue adequacy, ... [as they] bear no direct connection to the relevant comparison of capital costs to rates of return ... [and] provide no indication of revenue adequacy—i.e., that revenues overall are at least sufficient to cover the costs, including the risk-adjusted cost of capital, that would be incurred by an efficient entrant in a contestable market pricing at competitive levels.”¹⁹

Similarly, arguments that railroads’ ability to raise capital proves railroads are revenue adequate have been debunked repeatedly. As Professor Kalt explained in Ex Parte 722:

Obtaining the *minimum* capital to remain ‘viable’ or merely avoiding bankruptcy is not the competitive standard by which capital markets operate. In an industry with large sunk costs (as in the railroad industry), revenues only need to be able to cover going-forward variable costs to keep a firm viable. But no competitive capital market free of *de facto* expropriation of sunk costs would commit capital to a firm seeking

¹⁷ Reply Comments of the Association of American Railroads, *Railroad Revenue Adequacy*, Ex Parte 722 (filed Nov. 4, 2014), Reply Verified Statement of Joseph P. Kalt (“Kalt Reply Verified Statement”), at 11.

¹⁸ Joint Shipper Reply at 4–6.

¹⁹ Kalt Reply Verified Statement, Ex Parte 722 (filed Nov. 4, 2014), at 12–13.

to enter and compete in a market if, once the firm made sunk investments, its revenues would be allowed to cover no more than going-forward costs. Under a standard of “mimic competition,” revenue is required to provide compensatory returns to investors in a system-wide stand-alone railroad *over the life of their investments*. In well-functioning competitive markets, it is that prospect that calls forth the investments that are needed to optimally serve the demands of shippers and the ultimate consumers they serve.”²⁰

Thus, the Board’s current concept of revenue adequacy is inconsistent with modern economic standards. By contrast, a comparative approach to determining revenue adequacy, as proposed by Petitioners, would align the Board’s concept of revenue adequacy with economic principles and would provide the Board with an informative tool for assessing how railroads are performing financially compared to their peers in capital markets and thus whether railroads are earning excessive economic profits.

The reality is that decades have passed since the ICC determined that revenue adequacy should be defined as an accounting-based rate of return equal to the cost of capital. That determination does not accord with the modern accepted understanding of economic principles as they relate to revenue adequacy and good regulatory policy.²¹ The Board’s methodologies should reflect the fact that the concept of revenue adequacy as “ROI=COC,”²² even for regulated entities, is no longer economically valid.

²⁰ Kalt Reply Verified Statement, Ex Parte 722 (filed Nov. 4, 2014), at 10 (emphasis in original); *accord* Pet., Verified Statement ¶¶ 22–24.

²¹ See, e.g., Supplemental V.S. ¶¶ 8–11, 15–23.

²² WCTL Reply at 9.

II. OPPONENTS' TECHNICAL CRITICISMS OF THE PETITION LACK MERIT.

A. The S&P 500 Is a Valid Metric for Determining Railroad Revenue Adequacy.

Opponents critique the use of the S&P 500 as a benchmarking group against which to compare railroad earnings. In particular, Opponents argue that this use of the S&P 500 is “a new tack” for avoiding the revenue adequacy constraint because it compares railroad earnings to an “elite group” of companies that “by definition are among the most profitable in the country.”²³

First, using the S&P 500 as a benchmark for understanding railroad earnings is not a radical idea. Professors Murphy and Zmijewski explain that “[b]enchmarking methodologies are widely used in many fields and for many purposes” as “a standard (or reference point) by which to evaluate financial performance.”²⁴ Thus, the “proposed benchmarking methodology is not innovative or new” but, rather, is “a standard and well-accepted methodology for analyzing a company’s financial performance.”²⁵

Second, contrary to WCTL’s assertions, the companies included in the S&P 500 are not required to be “the most profitable [companies] in the country.”²⁶ Rather, “the criteria for a company to be included in the S&P 500 ... focus primarily on market capitalization and liquidity.”²⁷ In simple terms, the S&P 500 is made up of companies with the largest market capitalization within industry sectors. For this reason, the S&P 500 is an informative benchmark because it includes large-cap companies—including the four U.S. publicly traded railroads subject to the STB’s

²³ Joint Shippers Reply at 9;

²⁴ Pet., Verified Statement ¶¶ 52–53.

²⁵ *Id.* ¶ 54.

²⁶ WCTL Reply at 12.

²⁷ Supplemental V.S. ¶ 3.

revenue adequacy determinations and the companies with which railroads primarily compete for capital.²⁸ Far from being an “elite” and irrelevant group of companies,²⁹ the S&P 500 is a “broad market index made up of stocks of 500 large to medium-sized U.S. companies” and in fact is the metric used by the federal government in its Thrift Savings Plan Common Stock Index Investment Fund (C Fund) for federal employees.³⁰

WCTL similarly complains that the makeup of the S&P 500 comparison groups proposed by Petitioners is not appropriate because the companies included “have different capital structures than railroads” and many “are not capital intensive, and do not have a focus on returns on invested capital as a primary measure of financial health.”³¹ WCTL’s concerns are unfounded because, as Professors Murphy and Zmijewski explain, “to the extent there are differences in ‘risk profiles’ between the benchmarking group companies and the railroads, the cost-of-capital adjustment in the STB metric (ROIC minus COC) and the adjusted STB metric (Adjusted ROIC minus COC) takes those differences into account.”³² In other words, the differences among the S&P 500 members do not undermine the economic validity of the comparison.³³ In any event, the professors provided two alternative S&P 500 comparison groups—the Industrials Sector group and the

²⁸ Supplemental V.S. ¶ 4.

²⁹ See WCTL Reply at 12.

³⁰ *C Fund*, Thrift Savings Plan, <https://www.tsp.gov/funds-individual/c-fund/> (last accessed Oct. 13, 2020).

³¹ WCTL Reply at 12.

³² Supplemental V.S. ¶ 7.

³³ See Pet., Verified Statement ¶ 63 (stating that “[a]ll three alternative benchmarking groups include a broad selection of companies that compete with railroads to raise capital” and thus are relevant and meaningful comparison sources); Supplemental V.S. ¶¶ 3–4.

Customers group.³⁴ If the Board wishes to limit the comparison to the Industrials group—the group in which railroads are classified—the data show that the results would be similar to that of the main S&P 500 group.³⁵ Likewise, the professors’ analysis using a group of major rail customers produced similar results.³⁶

The S&P 500 is an economically valid benchmarking group for understanding railroads’ financial performance, as it consists of peers with which railroads primarily compete for capital.³⁷ And the fact that the data the professors used are consistent across different benchmarking groups is a strong indication of the integrity of their analysis and conclusions.

The Board could explore in a rulemaking what might be the most appropriate comparison groups for it to consider. But vague assertions that the S&P 500 may not be the right comparison group provide insufficient reason to cut off this promising approach without a proceeding.

B. The Flow-Through Approach to Deferred Taxes Will Result in a More Accurate Picture of Railroad Financial Health.

As explained in the Petition, the flow-through approach to deferred taxes has been supported by leading economists again and again since the 1980s to the present day. *See* Pet. at 39–40. Opponents provide no evidence to undermine this longstanding support from experts. Likewise, Opponents do not rebut the opinion of Professors Murphy and Zmijewski that the flow-through approach is the more accurate, and more economically sound, way to calculate railroad cost of capital for the purposes of determining revenue adequacy. *Id.* at 39. Neither do Opponents deny that the flow-through approach is simpler, with multiple practical benefits.

³⁴ *See* Verified Statement ¶ 62 and Tables 2 and 3; Supplemental V.S. ¶¶ 4–5.

³⁵ *See* Verified Statement at Table 2.

³⁶ *See id.* at Table 3.

³⁷ Supplemental V.S. ¶¶ 3–5, 7.

Id. at 40, 46–49. And finally, Opponents do not rebut the fact that the flow-through approach mitigates and often eliminates absurd outcomes that result in regulatory distortions that infect the Board’s regulatory tools. *Id.* at 42.

Instead, the opposition is primarily based on misunderstandings of the proposal. First, WCTL claims that the flow-through approach “ignores the reality that railroads uniformly pay taxes below the corporate tax rate, and those tax savings provide a substantial benefit.”³⁸ WCTL Reply at 15. But this is irrelevant to the question at hand. Because the flow-through approach reflects the movement of real income, whatever amount the railroad *does* pay in taxes will be reflected when the taxes are paid. Nothing about the flow-through approach would pretend that railroads pay taxes that they do not. Tax payments would be deducted in the rate of return measurement (just as they are now). The only difference is that accumulated deferred taxes would no longer be deducted from the investment base.

Second, WCTL admits that changes in the corporate tax rate would alter the value of accumulated deferred tax liabilities, but claims that “[t]ax rates change only rarely.” WCTL Reply at 16. This claim is objectively false. Since the 1980s through 2019, major tax legislation has been enacted *almost every year*.³⁹ Moreover, the corporate tax rate in the United States, while remaining steady in the 2000s until the 2017 Tax Cuts and Jobs Act, has changed 27 times since the 1920s.⁴⁰ And significant tax policy changes have been proposed in the current

³⁸ Essentially no company (including WCTL’s members), or person, pays their statutory tax rate. Yet, that does not keep economists and accountants from using the flow-through method in measuring economic profit. *See* Pet. at 39 (citing Verified Statement ¶¶ 57–58).

³⁹ *See* Laws & Proposals, Tax Policy Center, <https://www.taxpolicycenter.org/laws-proposals/major-enacted-tax-legislation-2000-2009> (last accessed Oct. 13, 2020).

⁴⁰ United States Federal Corporate Tax Rate, Trading Economics, <https://tradingeconomics.com/united-states/corporate-tax-rate> (last accessed Oct. 13, 2020).

presidential campaign (including a potential rollback of some of the tax cuts in the 2017 Tax Cuts and Jobs Act). There is a significant benefit in the Board adopting an approach to deferred taxes that will not require future manual adjustments if (and when) tax policy changes.

Finally, WCTL claims that because deferred taxes are “interest-free loan[s],”⁴¹ they should not be ignored in the revenue adequacy calculation, as they provide a benefit to railroads.⁴² The flow-through approach does not “ignore” the benefits of deferred tax liabilities but, rather, shifts the time at which such liabilities (and benefits) are recognized to when they show up in the company’s cash flow. *See* Pet. at 43. In other words, the flow-through approach reflects the movement of “real income,” which is precisely what determines the financial health of a company in the real world. *See* Pet. at 46. There is nothing “distortion[ary]” or “inaccura[te]” about that. WCTL Reply at 17; *see* Pet., Verified Statement ¶¶ 57–58.

III. OPPONENTS’ RESULTS-ORIENTED ARGUMENTS FAIL TO REBUT THE PETITION.

Opponents’ remaining comments focus less on the merits of the Petition than on the fact that railroads are proposing it. Opponents suggest that the Petition should be rejected because it proposes an approach that allegedly is a “reversal” of railroads’ past position and that is “results-oriented” because railroads have an interest in the ultimate results of the annual revenue adequacy determination. But the Petition is designed to solve longstanding problems that the rail industry has regularly brought to the Board’s attention. And cries of “railroad self-interest” ring

⁴¹ Petitioners have already addressed this flawed concept in the Petition and will not repeat its points herein. *See* Pet. at 46–47. For the same reasons set forth in the Petition, WCTL’s reliance on the RAPB’s opinion in this regard from three decades ago is not persuasive. *See* WCTL Reply at 19.

⁴² *See* WCTL Reply at 15–17, 19.

hollow from these shipper commenters, who make clear that their primary goal is to weaponize the annual findings for use in a revenue adequacy constraint, not to ensure that the annual determinations accord with the intent of § 10704(a)(2).

A. The Petition Addresses Longstanding Issues with the Revenue Adequacy Calculations and the Concerns of Independent Experts.

WCTL alleges that the proposals in the Petition represent a reversal from the industry's prior position and suggests that the Board should be suspicious of a newly proposed approach. But the "reversal" WCTL cites refers to positions taken by railroads in 1981.⁴³ The idea that the Board is precluded from considering ways to improve a methodology developed a generation ago is ludicrous. And WCTL's "reversal" allegations are definitively disproven by its self-contradictory statements that railroads "consistently defended this test" while "repeatedly press[ing] for changes in the method."⁴⁴

While the precise proposal in the Petition has been developed recently, the problems the Petition is designed to address are longstanding and well-known. For many years, the rail industry has argued, and the Board itself has acknowledged, that using book values instead of replacement costs in the annual revenue adequacy determinations results in significant inaccuracies.⁴⁵ The Board has not disagreed that replacement costs are more accurate, but rather has held that calculating them is too complicated.⁴⁶ Similarly, the logical economic argument that railroads must

⁴³ See WCTL Reply at 3 (arguing that railroads "advocated strongly" for *Standards for Railroad Revenue Adequacy*, 364 I.C.C. 803 (1981)).

⁴⁴ *Id.*

⁴⁵ See Pet. at 13, 15 & n.29; see also Petition for Rulemaking, *Association of American Railroads—Pet. Regarding Methodology for Determining Railroad Revenue Adequacy*, Ex Parte 679 (filed May 1, 2008); CSXT Reply at 4.

⁴⁶ *Standards I*, 364 I.C.C. at 820; *Standards II*, 3 I.C.C.2d at 277.

have some ability to earn returns above their cost of capital is one that railroads have made for years.⁴⁷

Petitioners have designed an approach that mitigates these longstanding and very real problems. The only arguably new aspect of Petitioners' proposal is the proposal to enhance annual revenue adequacy determinations by adding a comparison to S&P 500 data. But even that builds off an approach that was presented to the Board in December 2019 and in recommendations in the 2015 Modernizing Freight Rail Regulation report by the Transportation Research Board.⁴⁸ TRB recommended that the Board "obtain a richer set of information" to determine "whether a railroad's profits are consistently outside a reasonable band of profitability that characterizes many other industries over a business cycle."⁴⁹

The proposed approach builds on TRB's recommendation in a way that retains the fundamental structure of the Board's annual revenue adequacy determinations. Comparing railroad performance to that of other companies is valuable information, and the Board would benefit from considering it in the annual analysis.

B. Opposition to the Petition Is Results-Oriented.

In the same vein, Opponents suggest that the proposed approach is "results-oriented," because comparing railroads' accounting-based rate of return net of cost of capital to those of the S&P 500 comparison groups shows that currently Class I

⁴⁷ See, e.g., Opening Comments of Norfolk Southern Railway Company, *Railroad Revenue Adequacy*, Ex Parte 722 (filed Sept. 5, 2014), Verified Statement of Bradford Cornell.

⁴⁸ See Pet. at 4, n.6.

⁴⁹ Transportation Research Board, National Academies of Sciences, Engineering, and Medicine, *Special Report 318: Modernizing Freight Rail Regulation*, 8, 154–56, 202, 214–15 (2015), available at <https://doi.org/10.17226/21759>.

railroads are all under the median.⁵⁰ According to Opponents, the Petition is questionable simply because adopting it would benefit railroads. But Opponents elsewhere admit that they themselves are self-interested, admitting they want annual revenue adequacy results that will allow them to invoke a revenue adequacy constraint. In particular, Joint Shippers hope to use the ACC benchmarking approach, but they fear the approach would be less friendly to their members if the annual revenue adequacy determinations were based on *economic* profit.⁵¹

There is of course nothing surprising or untoward about stakeholders having an interest in the results of Board proceedings. Every stakeholder that appears before the Board has an interest in the result. An argument that the Board should not act on proposals in which the proponents have an interest is an argument for the Board to not do anything at all. The Board's decision here, as always, should be determined by the goals of the statute, sound regulatory policy, and the merits of the positions before it, not the identity of the proponents.

Petitioners' proposal to modernize revenue adequacy determinations would serve the Board's interests of accuracy, economic integrity, and good governance. Indeed, the proposals solve or neutralize the significant measurement errors in the Board's current methodology and provide an objective, data-driven tool that will enable the Board to interpret railroads' financial health using tools of modern economics and good regulatory policy. In contrast, despite the overwhelming evidence that it is not producing accurate assessments of railroad financial performance, Opponents do not want the Board to even open a proceeding to consider whether it should update a standard developed four decades ago. The Board's § 10704(a) duty to accurately measure the health of the rail industry does

⁵⁰ WCTL Reply at 2; *see* Joint Shippers Reply at 3.

⁵¹ Joint Shippers Reply at 13–14.

not depend on whether railroads or shippers “win,” and the Board should not forego this opportunity to materially improve its revenue adequacy measurements simply because a subset of shippers would like to use a less-accurate measurement to force rate reductions.

CONCLUSION

For the above reasons, and those set forth in the Petition, Petitioners respectfully petition the Board to initiate a rulemaking to adopt the proposals for modernizing the way it measures and determines railroad revenue adequacy, as proposed by Petitioners.

Respectfully submitted,

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October 13, 2020

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

**JOINT PETITION FOR RULEMAKING
TO MODERNIZE ANNUAL REVENUE ADEQUACY DETERMINATIONS**

SUPPLEMENTAL VERIFIED STATEMENT OF

PROFESSOR KEVIN M. MURPHY

PROFESSOR MARK E. ZMIJEWSKI

OCTOBER 13, 2020

I. INTRODUCTION

1. On September 1, 2020, we submitted a verified statement (“Murphy & Zmijewski V.S.”)¹ as part of a Joint Petition for Rulemaking to Modernize Annual Revenue Adequacy Determinations filed by Canadian National, Norfolk Southern, and Union Pacific (“Joint Petition”)² before the Surface Transportation Board (“STB”). In the Murphy & Zmijewski V.S., we explained: (a) economic principles for evaluating the financial performance of the railroad industry and we proposed a benchmarking methodology consistent with those principles; (b) why the benchmarking methodology provides a more informative assessment of the railroads’ financial performance than the Revenue Adequacy Determination methodology currently employed by the STB; and (c) the results from implementing the benchmarking methodology using two financial performance metrics³ and three benchmarking groups.⁴

2. On September 21, 2020, The American Chemistry Council, Corn Refiners Association, American Fuel & Petrochemical Manufacturers, The National Industrial Transportation League, The Chlorine Institute, and The Fertilizer Institute submitted a reply in opposition to the Joint Petition (“Joint Shippers Reply”).⁵ Also on September 21, 2020, the Western Coal Traffic

¹ Verified Statement of Professor Kevin M. Murphy and Professor Mark E. Zmijewski Before the Surface Transportation Board, September 1, 2020 (“Murphy & Zmijewski V.S.”). All capitalized terms in the Murphy & Zmijewski V.S. retain their meaning in this supplemental verified statement.

² Joint Petition for Rulemaking to Modernize Annual Revenue Adequacy Determinations, Before the Surface Transportation Board, Ex Parte No. 766, September 1, 2020.

³ We used the STB’s definition of ROIC minus COC and an alternative measure of ROIC with the STB’s definition of COC, which we refer to as Adjusted ROIC minus COC. (See Murphy & Zmijewski V.S., Section IV.)

⁴ The three benchmarking groups are the S&P 500 (excluding railroads, financial institutions, and real estate companies), the S&P 500 Industrials Sector (excluding railroads), and Railroad Customers in the S&P 500. We exclude financial institutions and real estate companies from the broadest group because these companies have substantially different capital structures and business operations. (See Murphy & Zmijewski V.S., ¶63.) We note that our conclusions are unchanged if we use a benchmarking group of the S&P 500 including financial institutions and real estate companies. (See Murphy & Zmijewski V.S., footnote 59.)

⁵ Joint Petition for Rulemaking to Modernize Annual Revenue Adequacy Determinations, Before the Surface Transportation Board, Reply of Joint Shippers, Ex Parte No. 766, September 21, 2020.

League submitted a reply in opposition to the Joint Petition (“WCTL Reply”).⁶ In this supplemental verified statement, we respond to certain critiques that relate to the Murphy & Zmijewski V.S. made in the Joint Shippers Reply and WCTL Reply. Our choice to not address other critiques of our submission or the Joint Petition should not be interpreted to mean that we agree with those critiques.

II. S&P 500 COMPANIES CONSTITUTE A REASONABLE BENCHMARKING GROUP

3. The WCTL Reply asserts that the railroads propose to “arbitrarily compare their returns on investment with those of companies that by definition are among the most profitable in the country (which is how they end up on the S&P 500 list in the first place). This obviously biases the outcome of the comparison in the railroads’ favor, as the ‘target’ return is drawn from a high-return sample of U.S. firms.”⁷ This critique is unwarranted. First, it is factually incorrect because the criteria for a company to be included in the S&P 500 are not based on selecting the most currently profitable or historically profitable companies. Rather, those criteria focus primarily on market capitalization and liquidity, and not on high or highest profitability currently or historically.⁸

4. We did not select the S&P 500 arbitrarily for purposes of benchmarking the railroads’ financial performance. Rather, we chose those companies because (a) the S&P 500 is the widely-accepted index that measures market performance of equities of the large-cap segment of

⁶ Joint Petition for Rulemaking to Modernize Annual Revenue Adequacy Determinations, Before the Surface Transportation Board, Reply of Western Coal Traffic League in Opposition to Petition, Ex Parte No. 766, September 21, 2020 (“WCTL Reply”).

⁷ WCTL Reply, p. 12.

⁸ S&P U.S. Indices Methodology, August 2020. Last accessed on October 7, 2020 at <https://www.spglobal.com/spdji/en/documents/methodologies/methodology-sp-us-indices.pdf>

the U.S. equities market, a segment that also includes the four U.S. publicly traded railroads subject to the STB's Revenue Adequacy Determinations⁹ and (b) these are the companies with which the railroads primarily compete for capital.¹⁰ Comparing the railroads' financial performance to other firms with whom the railroads compete for capital is a reasonable proxy for whether railroads are earning sufficient returns to attract the capital needed to invest and maintain their systems in the long-run.

5. Notably, the WCTL Reply does not propose or analyze an alternative benchmarking group, or suggest criteria for selecting an allegedly more informative benchmarking group. To check that our conclusions are robust to the choice of benchmarking group, we analyzed two smaller benchmarking groups selected for their comparability to the railroads – (i) S&P 500 Industrials Sector (the sector under which the railroads are classified) and (ii) S&P 500 Railroad Customers – in addition to the entirety of the S&P 500 companies (excluding financial institutions and real estate companies) (“S&P 500 benchmarking group”). Conclusions from comparisons with these alternative benchmarking groups are the same as the conclusions from comparison with the S&P 500 benchmarking group.

6. Analysis similar to that presented in the Murphy & Zmijewski V.S. but applied to the members of the American Chemistry Council (“ACC”) that are included in the S&P 500 was presented by Professor Joseph Kalt at the Hearing on Railroad Revenue Adequacy on December 12, 2019. He reached the same conclusion as we did in our statement.¹¹ The analysis by

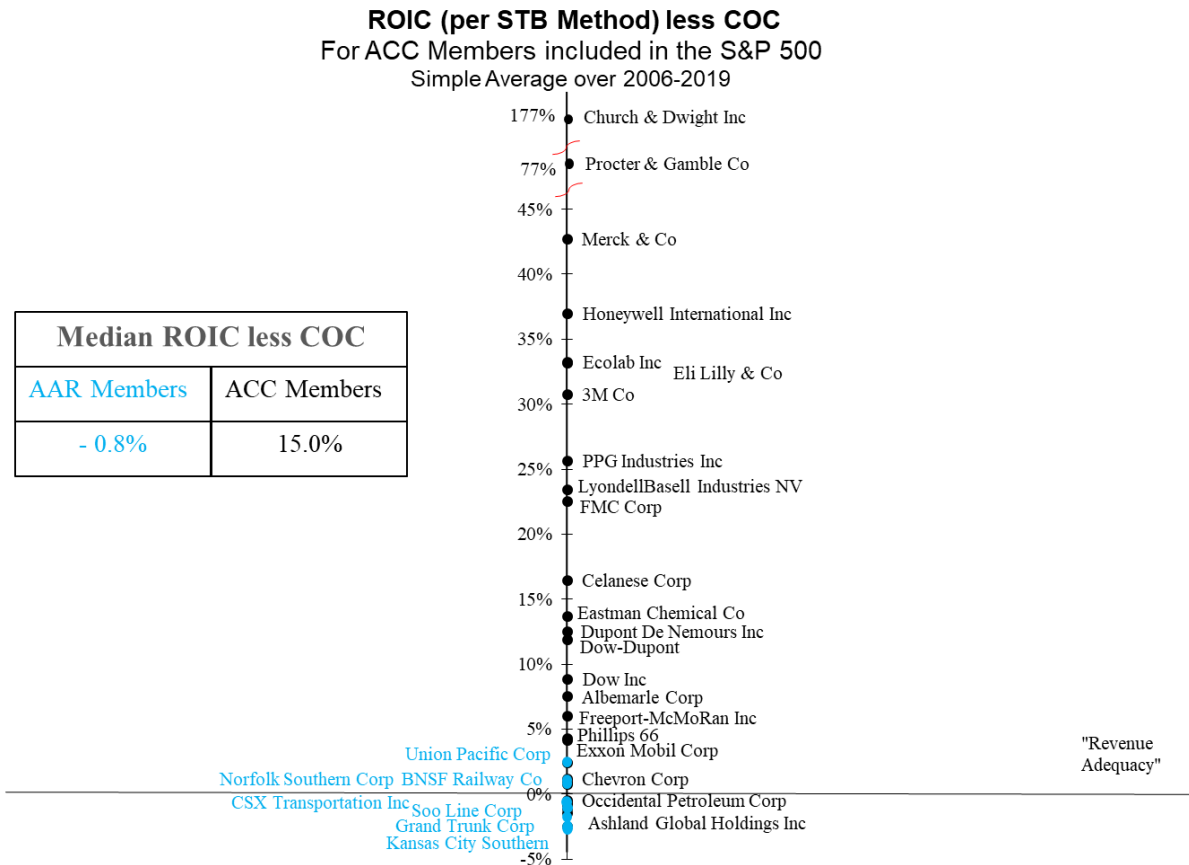
⁹ See Murphy & Zmijewski V.S., footnote 59.

¹⁰ See Murphy & Zmijewski V.S., ¶32. In addition, the S&P 500 Index includes many of the large customers of the railroads; see Murphy & Zmijewski V.S., Appendix A, ¶A-1 and Exhibit A1.

¹¹ Hearing on Railroad Revenue Adequacy, Surface Transportation Board, Docket No. EP 761 & 722, Presentation on Behalf of Association of American Railroads, December 12, 2019 (“AAR Presentation”).

Professor Kalt compared the ACC members' and railroads' return on investment net of their cost of capital ("ROIC minus COC") from 2006 through 2018, and found that the ACC members performed substantially better than the railroads.¹² We extend their analysis through 2019 in Figure 1, below, and reach the same conclusion.

Figure 1



Source: Murphy & Zmijewski V.S.

Note: Simple average of annual values. For companies with data with less than full coverage, the average is taken over the years available.

¹² AAR Presentation, Slide 20.

III. THE STB'S CURRENT METHODOLOGY FOR EVALUATING REVENUE ADEQUACY IS NOT INFORMATIVE ABOUT WHETHER THE RAILROAD INDUSTRY IS EARNING AN ECONOMIC RETURN GREATER THAN ITS COST OF CAPITAL

7. The Joint Shippers Reply claims that there is “no rational basis to conclude that Congress wanted the rail industry to earn more than its cost-of-capital to the same degree as the median S&P 500 firm, which likely has a different risk profile.”¹³ The Joint Shippers Reply ignores the fact that the market-based cost of capital used in the STB’s financial performance metric is a risk-based measure. Thus, to the extent there are differences in “risk profiles” between the benchmarking group companies and the railroads, the cost-of-capital adjustment in the STB metric (ROIC minus COC) and the adjusted STB metric (Adjusted ROIC minus COC) takes those differences into account.¹⁴

8. In the *Murphy & Zmijewski V.S.*, we first explained why the STB’s Revenue Adequacy Determination methodology does not evaluate how economic earnings of the railroad industry compare to its cost of capital.¹⁵ We then proposed, and empirically implemented, the benchmarking methodology that provides a more informative way to make that assessment.¹⁶ We demonstrate that, based on that methodology, the financial performance of the railroad industry is well below the median of the three S&P 500-based comparison groups. Thus, the STB’s current Revenue Adequacy Determination methodology is not informative about whether

¹³ Joint Shippers Reply, p. 11.

¹⁴ Cost of capital differences between the railroads and the three benchmarking group are small when compared to the differences in financial performance. For example, the average cost of capital of the seven railroads over the 2006 – 2019 period is 10.7% and the average cost of capital for the S&P 500 Companies (excluding railroads, financial institutions, and real estate companies), S&P 500 Industrials Sector (excluding railroads), and S&P 500 Railroad Customers benchmarking groups are, 9.8%, 10.4%, and 9.3%, respectively. These averages are not reported in the *Murphy & Zmijewski V.S.*, they can be calculated from backup data provided to the STB.

¹⁵ *Murphy & Zmijewski V.S.*, Section III.

¹⁶ *Murphy & Zmijewski V.S.*, Section IV.

the railroad industry is earning an economic rate of return consistent with competitive firms with which the railroads compete for capital.

IV. RAILROADS' ABILITY TO RAISE CAPITAL IS NOT EVIDENCE THAT THEIR ECONOMIC RETURNS ON TOTAL INVESTED CAPITAL EXCEED THEIR COST OF CAPITAL

9. The Joint Shippers Reply asserts that “the rail industry has had ample access to capital for decades, even when most Class I railroads were not earning their cost-of-capital by the Board’s conservatively high measure. Notably, the Joint Petitioners do not claim otherwise. Nevertheless, the implication of the Joint Petition is that the rail industry is in jeopardy of being unable to raise capital even at current revenue levels.”¹⁷ First, the assertion that “the rail industry has had ample access to capital for decades, even when most Class I railroads were not earning their cost-of-capital”¹⁸ is based on the STB’s current methodology and the resulting financial performance metric (accounting-based ROIC minus COC). As we explained in the *Murphy & Zmijewski V.S.*, the STB’s current methodology and the resulting financial performance metric is neither conservative nor informative about whether the railroads’ economic returns are greater than their cost of capital.

10. Second, we did not conclude that “the rail industry is in jeopardy of being unable to raise capital even at current revenue levels.”¹⁹ In order to compete for capital, the railroads’ risk-adjusted expected returns must be comparable to that of companies with which the railroads compete for capital. Otherwise, investors will invest elsewhere.²⁰ Given that some railroad

¹⁷ Joint Shippers Reply, p. 11.

¹⁸ Joint Shippers Reply, p. 11.

¹⁹ Joint Shippers Reply, p. 11.

²⁰ See *Murphy & Zmijewski V.S.*, ¶ 25.

investments will prove to be unprofitable, economic efficiency requires that railroads, like firms in competitive industries, are free to seek above average returns without concern about having their rates regulated and depressed if they are successful.²¹ The proper economic rationale for measuring revenue adequacy is to determine whether the railroads can raise the capital necessary for their financial health and growth in the long term.²² Economic efficiency requires that railroads can seek a rate of return greater than their cost of capital; if they cannot, then investors will seek other investment opportunities with greater potential for upside (risk-adjusted expected returns).

11. Lastly, as we explain in Section VI below, railroads' ability to raise capital for specific projects is not informative about whether the railroads are earning an economic return sufficient to attract the capital needed to invest and maintain their systems in the long-run. That is why comparing the railroads' financial performance to that of other firms with which the railroads compete for capital is a reasonable method for understanding whether railroads are earning sufficient returns to attract the capital needed to invest and maintain their systems in the long-run.

²¹ We do not claim that railroads should be free of all regulation. As we explained in the *Murphy & Zmijewski V.S.*, ¶ 84, noncompetitive rates charged to individual captive shippers on particular shipments should be evaluated using other STB tools for rate evaluation.

²² See *Murphy & Zmijewski V.S.*, ¶ 25.

V. TREATMENT OF DEFERRED TAXES HAS NO EFFECT ON THE CONCLUSIONS FROM THE PROPOSED BENCHMARKING METHODOLOGY

12. The WCTL Reply argues that there is no need to change the treatment of deferred tax liabilities.²³ However, contrary to WCTL's claims, treatment of deferred taxes in our proposed benchmarking methodology is neither arbitrary nor result oriented.

13. As we discuss in the *Murphy & Zmijewski V.S.*, well-regarded economic studies published over decades have shown that limitations and inaccuracies of accounting-based rates of return make them uninformative for evaluating economic rates of return.²⁴ Our proposed adjustments for deferred taxes – one to the STB ROIC numerator and the other to the STB ROIC denominator – are intended to mitigate these inaccuracies and align accounting-based rates of return more closely to the basic economic principles underpinning economic rates of return. The adjustment to the STB ROIC numerator is made to eliminate the effect of deferred income taxes in the Provision of Income Taxes and thus align the company's operating income with the economic concept used in measuring a company's economic profit.²⁵ The adjustment to the STB ROIC denominator is made to eliminate the effect of Deferred Tax Liabilities in the calculation of the Net Investment Base, an adjustment consistent with the basic concept of economic depreciation.²⁶

14. Our fundamental conclusions do not depend on whether the STB adopts our recommended changes in the treatment of deferred taxes, however. For example, the average

²³ WCTL Reply, pp. 14-21.

²⁴ *Murphy & Zmijewski V.S.*, ¶11.

²⁵ *Murphy & Zmijewski V.S.*, ¶57.

²⁶ *Murphy & Zmijewski V.S.*, ¶58. IRS rules for depreciation (and other items resulting in deferred tax liabilities) are not intended, and do not purport, to be better estimates of economic depreciation and other types of expenses.

2006-2019 rank of the STB's ROIC minus COC for the railroad industry relative to the S&P 500 benchmarking group (without the deferred tax adjustment) is the 14th percentile,²⁷ and it is the same 14th percentile if we use the Adjusted ROIC (that reflects the deferred tax adjustments) instead.²⁸ Our conclusions similarly are unaffected for individual railroads²⁹ and the choice of the benchmarking sample (i.e. S&P 500 Industrials and S&P 500 Railroad Customers).³⁰

VI. EXAMPLE ILLUSTRATING ERRORS IN THE WCTL AND JOINT SHIPPERS REPLIES DISCUSSED ABOVE

15. In this section, we present an example using a simplified economic model for a railroad to illustrate three basic well-known economic principles:

- Observing a railroad making incremental investments that have expected economic returns greater than its cost of capital is not informative about whether the railroad's expected economic return on its *total* invested capital exceeds its cost of capital;
- Observing investors' actual returns from investing in railroads (which range from being very large to very negative) is not informative about whether the railroad's expected economic return on its total invested capital exceeds its cost of capital;

²⁷ Murphy & Zmijewski V.S., Table 1.

²⁸ Murphy & Zmijewski V.S., Table 4.

²⁹ Murphy & Zmijewski V.S., Tables 1 and 4. BNSF Railway, CSX Corporation, and Grand Trunk Corporation ranked, on average, at the 15th, 12th, and 10th percentiles in terms of their relative performance using either ROIC or Adjusted ROIC. The Kansas City Southern's and Soo Line Corporation's relative performance is higher under the Adjusted ROIC metric (11th and 14th percentiles) and lower under the ROIC metric (9th and 13th percentiles), respectively. The opposite is true for the Norfolk Southern Corporation and Union Pacific; their relative performance is higher under the ROIC metric (15th and 20th percentiles) and lower under the Adjusted ROIC metric (13th and 19th percentiles), respectively.

³⁰ Murphy & Zmijewski V.S., Tables 2 and 5 (S&P 500 Industrials) and Tables 3 and 6 (S&P 500 Railroad Customers).

- Observing a railroad making distributions to its investors (such as paying dividends or buying back shares) is not informative about whether the railroad's expected economic return on its total invested capital exceeds its cost of capital.

a. Initial Investment and Initial Expected Financial Performance

16. Assume a railroad makes an initial investment to build its railroad, and that the railroad expects to earn an economic return on that investment equal to the railroad's cost of capital.

Specifically, assume that, at the beginning of Year 1, the railroad invests \$500 million to build its (only) railroad, which has a risk-adjusted cost of capital of 10%, and is expected to generate annual cash flows of \$50 million to investors.³¹ As long as the annual expected economic return on the railroad's total invested capital continues to equal its cost of capital of 10% ($\$50 / \500), the railroad will replace its long-lived assets at the end of their useful lives and the value of the railroad will remain at \$500 million ($\$50 / 0.10$).

17. The \$50 million annual expected cash flow already includes a deduction for all investments that have an expected economic return at least equal to the cost of capital.

Therefore, the railroad will distribute \$50 million annually to its investors.³² If it did not, but instead used the \$50 million for additional investments with an expected economic return below the cost of capital, the value of the railroad will decline until the expected economic return on the investment based on the railroad's suboptimal investment behavior is equal to the cost of capital,

³¹ Cash flows are those generated from the business operations, net of any required investment to maintain productive capacity as well as other investment opportunities that have an expected economic return of at least the cost of capital (often called free cash flows). To simplify the example, we assume cash flows to continue in perpetuity with no specific price level or general price level changes. We also assume all railroad assets and investments have the same cost of capital, which does not change in the example.

³² A basic economic principle in corporate finance is that, ignoring income taxes and other transaction costs and assuming all else equal, a company should reinvest internally generated capital if it has investment opportunities with an expected economic return at least equal to the cost of capital and distribute any additional internally generated capital to its investors (for example, pay dividends or repurchase stock).

imposing a loss on investors. By distributing the \$50 million cash flow to investors, their expected return equals the cost of capital, but it is not informative about whether the railroad's expected economic return on its total invested capital is greater than its cost of capital.

b. Decline in Expected Financial Performance

18. To illustrate the effect of declining financial performance, we assume that, after one year of operation (as of the beginning of Year 2), the railroad's expected financial performance declines such that its expected economic return is less than the railroad's cost of capital. Specifically, by the beginning of Year 2, the railroad's expected annual cash flows decline from \$50 million to \$30 million. Given this decline, the railroad's expected economic return on total invested capital declines from 10% to 6% ($\$30 / \500), and the value of the railroad falls from \$500 million to \$300 million ($\$30 / 0.10$) or by 40%. The railroad will not replace its long-lived assets at the end of their useful lives now that the expected economic return on its total invested capital is less than its cost of capital.³³

19. Investors who owned the railroad before the decline in expected financial performance incurred a loss of \$200 million (\$500 million – \$300 million) or 40%. The actual (observed) return to the investors of -40% is not informative about whether the railroad's expected economic return on its total invested capital exceeds its cost of capital, because the investors' actual return is based on the *changes* in the railroad's expected financial performance and not the *level* of its expected financial performance.

³³ Naturally, because the railroad will no longer replace its long-lived assets at the end of their useful lives, the value of the railroad would fall below \$300 million and the railroad's expected economic return would fall below 6%, depending on the useful economic lives of the long-lived assets. We ignore this additional effect throughout this example to simplify the calculations and discussion, which has no effect on the conclusions provided by the example.

20. Because market prices adjust, new investors who purchased the railroad from the old investors for \$300 million expect to earn a 10% return on their investment ($\$30 / \300), which is equal to the cost of capital, even though the railroad's expected economic return is only 6% ($\$30 / \500) on its initial investment. Again, even though the railroad's expected economic return on its total invested capital is less than its cost of capital, investors still expect the railroad to distribute its annual cash flow of \$30 million. Making distributions of \$30 million annually is required so that the expected return to investors is equal to the cost of capital, but again it is not informative about whether the railroad's expected economic return on its total invested capital is greater than its cost of capital.

c. Partial Recovery Expected Financial Performance

21. To illustrate the effect of a partial recovery of the railroad's financial performance, we assume that, by the beginning of Year 3, the railroad improved its operations (for example, eliminate certain bottlenecks) by making an incremental investment that allowed the railroad to partially recover from the decline in its expected performance that occurred in Year 2. Specifically, as of the beginning of Year 3, as the result of the incremental investment, the railroad now expects to generate annual cash flows of \$40 million (net of the incremental investment) instead of \$30 million each year. The railroad's expected economic return on its total invested capital increases from 6% to 8% ($\$40 / \500), and the value of the railroad increases from \$300 million to \$400 million ($\$40 / 0.10$).

22. The railroad would only make such an incremental investment if the expected economic return on the incremental investment is at least equal the cost of capital. This incremental investment that improved the railroad's operations increased its expected cash flows and value by 33% ($\$40/\$30 - 1$ and $\$400 / \$300 - 1$, respectively), substantially more than the railroad's

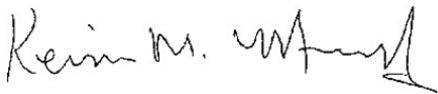
cost of capital of 10%. Thus, observing that the railroad made the incremental investment is evidence that the expected economic return on that investment exceeds the railroad's cost of capital, but tells us nothing about whether the railroad's expected economic return on its total invested capital is greater than its cost of capital. While the incremental investment improved the railroad's expected economic return on its total invested capital from 6% to 8%, its expected economic return on its total invested capital remains below its cost of capital of 10%.

23. The partial recovery case illustrates the same points illustrated in the Decline in Financial Performance case. First, even though the railroad's operations partially recovered, the railroad will not replace its long-lived assets at the end of their useful lives because the railroad's expected economic return on its total invested capital is less than its cost of capital. Second, even though the value of the railroad increased in Year 3 relative to Year 2 by 33%, the actual (observed) return to the investors of 33% is not informative about whether the railroad's expected economic return on its total invested capital is greater than its cost of capital.³⁴ Third, if the railroad does not make the expected distribution (\$40 in our example) but invests in suboptimal investments, investors will incur a loss and the value of the railroad will decline until the expected economic return on the investment based on the railroad's suboptimal investment behavior is equal to the cost of capital.

³⁴ Another example of an incremental investment is replacing the railroad's long-lived asset that was destroyed early in its economic life so that the railroad can maintain its productive capacity. For example, assume a section of the railroad (tracks, bridges, etc.) was destroyed by an unexpected event (storm, earthquake, etc.) very early in its economic life, and that this section of the railroad was required for any part of the railroad to operate. Assume that if the railroad does not replace that section, the railroad's expected economic return on its total invested capital decreases to 0% because it will no longer operate, but if the railroad replaces that section, the railroad's expected economic return on its total invested capital would continue at 6%, decreased by the cost of the investment which we are assuming is relatively small. Naturally, the railroad will replace that section to continue to operate. But, again, making that incremental investment is not informative about the railroad's expected economic return on its total invested capital or whether the railroad's expected economic return on its total invested capital is greater than its cost of capital.

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 Verified Statement.

A handwritten signature in black ink that reads "Kevin M. Murphy". The signature is written in a cursive style with a large, stylized 'K' and 'M'.

Kevin M. Murphy

I, Mark E. Zmijewski, declare under penalty of perjury that the foregoing is true and correct. Further, I certify that I am qualified and authorized to file this Verified Statement.

A handwritten signature in black ink that reads "Mark E. Zmijewski". The signature is written in a cursive style with a large, stylized 'M' and 'Z'.

Mark E. Zmijewski