



**TABLE OF CONTENTS**

**PAGE**

I.	Introduction.....	1
II.	The Limit Price Methodology Is Supported By The Lerner Index.....	3
	A. Fixed Costs And Scale Economies Do Not Automatically Eliminate The Usefulness Of The Lerner Index .....	3
	B. Other Studies Have Applied The Lerner Index To The Railroad Industry.....	5
	C. The LPM Uses Appropriate Market Based Rates.....	5
III.	Alternative Rate Versus The Railroad’s Overall Revenue Requirements .....	8
IV.	RSAM Is An Appropriate Benchmark Rate Level .....	11
V.	The Limit Price Methodology Is Used To Make A Preliminary Determination .....	15
VI.	High Limit Price R/VC Ratios Signal The Lack Of Effective Competition.....	16
VII.	The LPM Test Has No Bearing On A Railroad’s Ability To Attain Revenue Adequacy .....	18
VIII.	URCS Average Variable Costs Are A Reasonable Proxy For True Marginal Costs.....	20

## I. INTRODUCTION

I am Thomas D. Crowley, an economist and the President of L. E. Peabody & Associates, Inc., an economic consulting firm that specializes in solving economic, transportation, marketing, financial, accounting and fuel supply problems. I am the same Thomas D. Crowley who filed opening market dominance evidence in this proceeding on behalf of Total Petrochemicals & Refining USA, Inc. (“TPI”) on May 5, 2011. My qualifications and experiences are included in Part IV of that opening market dominance evidence.

CSXT filed a Petition for Reconsideration in Response to the Surface Transportation Board’s (“STB” or “Board”) Market Dominance Decision served May 31, 2013 in STB Docket No. NOR 42121 (“*Market Dominance Decision*”). CSXT contends that the Board’s newly adopted qualitative model (based on the STB’s “Limit Price” construct) for preliminarily determining the existence of market dominance is both flawed and applied improperly. CSXT’s position is supported by the Verified Statements (“VS”) of economists Dr. Robert Willig (“Willig”) and Doctors Kelly Eakin and Mark Meitzen (“Eakin/Meitzen”). The VS submitted on behalf of CSXT included several arguments that were raised by the same parties in response to the STB’s proposal to implement the same methodology in the M&G<sup>1</sup> rate reasonableness proceeding. However, the VS filed in the instant case are expanded and include a new argument related to the extent to which the Lerner Index supports the Board’s use of its Limit Price Methodology (“LPM”) as a means to determine market dominance.

Below, I discuss the arguments presented by CSXT and its experts under the following topical headings:

### II. The Limit Price Methodology Is Supported By The Lerner Index

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<sup>1</sup> STB Docket No. NOR 42123, *M&G Polymers USA, LLC v. CSX Transportation, Inc.*

- III. Alternative Rate Versus The Railroad's Overall Revenue Requirements
- IV. RSAM Is An Appropriate Benchmark Rate Level
- V. The Limit Price Methodology Is Used To Make A Preliminary Determination
- VI. High Limit Price R/VC Ratios Signal The Lack Of Effective Competition
- VII. The LPM Test Has No Bearing On A Railroad's Ability To Attain Revenue Adequacy
- VIII. URCS Average Variable Costs Are A Reasonable Proxy For True Marginal Costs

## **II. THE LIMIT PRICE METHODOLOGY IS SUPPORTED BY THE LERNER INDEX**

The Board stated in its *Market Dominance Decision* that its LPM "... generally comports with accepted economic representations of market power such as the Lerner Index..."<sup>2</sup> Willig and Eakin/Meitzen disagree with the Board's position that LPM generally comports with the Lerner Index, and instead argue that the Lerner Index is not a reliable indicator of market dominance for policy purposes, particularly in high-fixed-cost industries with notable economies of scale.<sup>3</sup> They further claim that the Lerner Index is merely one of many measures that can be used to measure the exercise of market power, but it is unreliable for determining market dominance because it is incapable of discerning other relevant forces such as the need to price above marginal costs to recover fixed cost and efficient use of scale economies. I believe Willig and Eakin/Meitzen overstate the issues, as I discuss below.

### **A. FIXED COSTS AND SCALE ECONOMIES DO NOT AUTOMATICALLY ELIMINATE THE USEFULNESS OF THE LERNER INDEX**

Both Willig and Eakin/Meitzen cite to the same journal article noted by the Board in its *Market Dominance Decision* as support for their claims that the Lerner Index is not an appropriate metric to use in determining market dominance in railroad rate cases. According to Willig and Eakin/Meitzen, the Lerner Index cannot be used to measure market power in the railroad industry because the Elzinga and Mills's article cited by the STB, *The Lerner Index of Monopoly Power: Origins and Uses*,<sup>4</sup> ("Elzinga/Mills") states that the Lerner Index has limited applicability for industries with high fixed costs and economies of scale.<sup>5</sup>

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<sup>2</sup> See *Market Dominance Decision* at page 5, note 72.

<sup>3</sup> See Willig VS at pages 13 to 15 and Eakin/Meitzen VS at pages 3 to 4.

<sup>4</sup> See Kenneth G. Elzinga & David E. Mills, *The Lerner Index of Monopoly Power: Origins and Uses*, 101(3) *Am. Econ. Rev.* 558, 560 (2011)

<sup>5</sup> See Willig VS at pages 14 to 15 and Eakin/Meitzen VS at page 3.

While Willig and Eakin/Meitzen are correct that Elzinga/Mills make this initial statement, both Willig and Eakin/Meitzen disregard the authors' caveat that this limitation may not apply in certain situations present in the railroad industry. As noted by Elzinga/Mills:

“Endogenous scale economies and fixed costs that merely erect barriers to entry must be excluded from this generalization.”<sup>6</sup>

In other words, the generalization that departures of price and marginal costs are equally attributable to the absence or infeasibility of arrangements to secure subsidies from buyers to bridge the gap between average cost and marginal cost may not be truly applicable in today's railroad industry because of the universally acknowledged entry barriers to the industry.

Moreover, the Board and its predecessor, the Interstate Commerce Commission (“ICC”), have long noted that the railroad industry is characterized by barriers to entry brought about by high fixed costs. As noted by the ICC in *Coal Rate Guidelines*:<sup>7</sup>

“Common sense \*\*\* indicates that the railroad industry is not contestable: entry entails a long and tedious process of buying up parcels of land, generally requiring powers of eminent domain (which, in turn, requires some government intervention). Engineering and building a railroad line also require considerable time and expenses. So entry into the industry is anything but easy.”<sup>8</sup>

There is little doubt that the railroads leverage these barriers to entry in order to extract monopoly rents from certain shippers. Given these barriers to entry present in the US freight railroad industry, the Elzinga/Mills caveat is clearly applicable in this instance.

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<sup>6</sup> See Kenneth G. Elzinga and David E. Mills, *The Lerner Index of Monopoly Power: Origins and Uses*, *American Economic Review: Papers and Proceedings*, 2011, 101:3, 558 to 564, note 6.

<sup>7</sup> See STB Ex Parte 347 (Sub-No.1), *Coal Rate Guidelines, Nationwide*, 1 ICC 2d 521 (“*Coal Rate Guidelines*”).

<sup>8</sup> See *Coal Rate Guidelines* at page 529.

## **B. OTHER STUDIES HAVE APPLIED THE LERNER INDEX TO THE RAILROAD INDUSTRY**

Notwithstanding Willig's and Eakin/Meitzen's assertion that the Lerner Index should not be used in evaluating market dominance in the railroad industry, other economists have used the Lerner Index, and derivatives thereof, to examine railroad industry market dominance. In his paper *Legislated Market Dominance In Railroad Markets*, Dr. Wesley W. Wilson ties the Lerner Index directly to a railroad's market dominance, in this case the Burlington Northern Railroad in the McCarty Farms case.<sup>9</sup>

In a different study, Ivaldi and McCullough looked at the structure of rail rates that have evolved in the years since the Staggers Rail Act. Their paper did this by defining a set of Lerner indices across commodity groups identified by car types.<sup>10</sup> Similarly, Kunce, Hamilton and Gerking examined the efficiency of low-sulfur coal markets in a three-sector model of mines, railroads, and utilities by deriving Lerner indices for individual mine-utility pairs along individual railroad routes using data on freight revenues and costs.<sup>11</sup>

## **C. THE LPM USES APPROPRIATE MARKET BASED RATES**

Willig and Eakin/Meitzen state that the STB's LPM does not comport with the Lerner Index because the Board's approach eschews reliance on true market prices and instead substitutes the estimated price for alternative transportation.<sup>12</sup> As discussed in Sections III and IV below, this is not a shortcoming because the LPM test is not meant to determine the

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<sup>9</sup> See Wesley W. Wilson, "Legislated Market Dominance in Railroad Markets," *Research in Transportation Economics*, Volume 4, 1996, pages 49 to 67. Wilson's paper is most revealing because it relied upon ICC determined railroad variable costs in its analysis.

<sup>10</sup> See Marc Ivaldi and Gerard J. McCullough, "Railroad Pricing and Revenue-to-Cost Margins in the Post-Staggers Era," *Research in Transportation Economics*, 2007, vol. 20, issue 1, pages 153-178.

<sup>11</sup> See Mitch Kunce, Steve Hamilton and Shelby Gerking, "Marketable Permits, Low-Sulfur Coal, and the Behavior of Railroads" *American Journal of Agricultural Economics*, 2008, 90(4), pages 933 to 950.

<sup>12</sup> See Willig VS at page 13 and Eakin/Meitzen VS at page 6.

reasonableness of the challenged rate, but rather to determine whether alternatives exist that place pricing pressure on the railroad's rate setting exercise.

Willig also states the Board's LPM approach differs from the Lerner Index because comparing limit price R/VC to RSAM is not the same as the Lerner Index's approach of comparing market prices to marginal cost.<sup>13</sup> Specifically, Willig states that because the Lerner Index compares market prices to the marginal costs of a given movement, comparing the limit price R/VC to the RSAM ratio is inappropriate.

Willig's position is confused, and his criticism, that "comparing" a single movement's limit price R/VC to the RSAM creates a disconnect between the Board's test and the Lerner Index is misplaced. The Board's LPM test does depend upon a comparison of an individual movement's characteristics to averages across all potentially captive shippers, but only after developing the limit price R/VC ratio. In other words, only the first step in the LPM analysis, the calculation of the limit price R/VC, is relatable to the Lerner Index. The calculation of the movement-specific limit price R/VC ratio takes into consideration only an estimated market price for an alternate transportation option and a marginal cost surrogate for the specific studied movement, similar to how the Lerner Index compares a movement's price to its marginal cost. In other words, it is the movement-specific limit price R/VC that is analogous to the Lerner Index, not the entire LPM analytical framework.

It is only after a movement-specific ratio is developed that it is compared to the RSAM. The comparison of an index to a defined benchmark provides context relative to the specific question being asked. The STB chose to use RSAM as its benchmark because it represents the average markup over variable costs required on potentially captive traffic to enable a railroad to

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<sup>13</sup> See Willig VS at page 13.

earn a return on investment equal to the current cost of capital. Therefore, the RSAM comparison sheds light on where the studied movement would fall in the railroad's overall contribution spectrum if it were priced at the limit price rate level, or, the extent to which the railroad would be able to impose differential pricing.

In addition, Willig claims that RSAM is driven in part by the measurement of fixed and common costs, not marginal costs, and, therefore, the LPM approach must be disregarded. Willig fails to make the distinction that the fixed and common cost elements of the RSAM calculation only directly impact the revenue component of the RSAM ratio, which is used in the numerator, and not the cost portion of the RSAM, which is in the denominator. As the STB explains in *Simplified Standards*,<sup>14</sup> the RSAM benchmark is calculated by adding the carrier's revenue shortfall (or subtracting the overage) shown in the STB's annual revenue adequacy determination, adjusted for taxes, to the numerator of the R/VC>180 benchmark. The variable cost portion of the calculation, which is used as a surrogate for marginal costs is not directly impacted by the fixed and common cost adjustment.

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<sup>14</sup> See STB Ex Parte Ex Parte No. 689 (Sub No. 4), *Simplified Standards for Rail Rate Cases – 2012 RSAM and R/VC>180 Calculations*, served February 11, 2013 (“*Simplified Standards*”).

### III. ALTERNATIVE RATE VERSUS THE RAILROAD'S OVERALL REVENUE REQUIREMENTS

CSXT and its witnesses claim that the STB's test improperly evaluates the relationship between the alternative ("competitive") rate and the defendant railroad's overall revenue requirements. They posit that the Board instead should evaluate the relationship between the challenged rate and the competitive rate.

The Board has explained why the comparison CSXT advocates is meaningless and cannot be used to determine market dominance.<sup>15</sup> Under the framework CSXT proposes, the railroad would be free to price up to (and above) a patently absurd alternative, and make the perverse claim that the railroad does not possess market dominance over any move with a challenged rate exceeding the patently absurd alternative rate.

Eakin/Meitzen claim that the RSAM figure, "does not incorporate any information about the competitive dynamics of any particular market," and that, "information contained in RSAM... is void of any demand content."<sup>16</sup> They opine that "specific market information that is available—namely, the price charged by the railroad," does, "directly reflect information about demand," and consequently should be considered in the Board's test. Similarly, Willig states that, "[g]iven expected variations in demand for the railroad's services ... some traffic will need to move at rates above the RSAM percentage, and some will only be able to move at rates below RSAM."<sup>17</sup>

CSXT's experts' focus on demand as it relates to pricing reveals a fundamental misunderstanding of the purpose of the Board's LPM test. They completely ignore the most basic economic principle that, when there is a sole supplier (i.e., a monopoly market), the

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<sup>15</sup> See, e.g., STB's *Market Dominance Decision* served May 31, 2013, p. 3.

<sup>16</sup> See Eakin/Meitzen VS in *M&G*, pp. 5-6.

<sup>17</sup> Willig VS., pp. 5-6.

monopolist may set high rates where sufficiently high demand is present. The Board's test does not evaluate the rate set by the railroad, or the demand characteristics that may place limits on the rates even a monopolist could charge. Rather, it evaluates the rate the railroad could set before losing traffic to an alternative transportation provider assuming there is adequate demand to support the limit price rate level.

To be clear, the Board's test purposely and correctly ignores the demand associated with the movement being studied. By assuming sufficient demand exists, the Board is able to correctly focus on determining whether any alternative supply options exist. The level of demand is irrelevant to the market dominance inquiry. Whether a monopolist moves one unit per year or one million units per day, it is still a monopolist, regardless of the rates it charges.

Furthermore, even if it were appropriate to consider the demand characteristics of the studied movements, CSXT's experts completely ignore all other factors, besides demand, that affect pricing in general, and monopoly pricing in particular. The price charged by a railroad in a monopoly market does not by itself identify the extent to which the railroad holds monopoly power. This is because, in a monopoly market, the supplier may grant concessions on price in order to dictate other service terms. Both low and high prices are possible in monopoly markets, and they are possible at all demand levels.

“A true monopoly supplier has no fear of new entrants increasing the aggregate supply of transport services and has the freedom *either* to set the price *or* to stipulate the level of service he is prepared to offer. The effective constraint on the monopolist is the countervailing power of demand which prevents the joint determination of both output and price.”<sup>18</sup>

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<sup>18</sup> See Button, Kenneth J., *Transport Economics: 2<sup>nd</sup> Edition*, Edward Elgar Publishing, Inc., Northampton, MA, 1993, p. 123, emphasis in original.

Although demand influences the price charged by a monopolist supplier, it is not the sole determining factor. Therefore, a monopoly market price does not *by itself* provide any demand context. Eakin/Meitzen's claim that the price charged by the railroad identifies the level of demand is a gross oversimplification of a very complex railroad pricing exercise, and their claims that railroad price should be considered in the Board's LPM test is misplaced.

The purpose of the Board's test is to determine whether the alternative rate is one that could compete effectively with the defendant railroad given the railroad's cost structure and overall revenue requirements. There is no doubt that the railroad exercises market power over a significant portion of its traffic base. The RSAM calculation is a measure of the extent to which that market power must be exerted on average for the railroad to achieve revenue adequacy.<sup>19</sup> The RSAM ratio is calculated based on a subset of the railroad's traffic that excludes all traffic moving at rate levels for which there is a presumption that the railroad does not possess market dominance.<sup>20</sup>

If the alternative rate is relatively low compared to RSAM, the railroad has relatively less flexibility to dictate its terms (i.e., price and/or level of service offered). By definition, the less flexibility the railroad has to dictate its terms due to competitive pressures, the less market power it holds. Conversely, the higher the alternative rate is relative to RSAM, the greater the flexibility the railroad has to dictate its terms in the absence of competitive pressures, and the more market power it holds.

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<sup>19</sup> Based on the STB's definition of revenue adequacy.

<sup>20</sup> Movements where the R/VC ratio is below 180%.

#### **IV. RSAM IS AN APPROPRIATE BENCHMARK RATE LEVEL**

Willig opines that an LP R/VC exceeding RSAM is not a valid indicator that competitive alternatives do not exist. To support his position, he states that, “R/VC ratios that are above RSAM... are just a mathematical necessity for a sustainable rail carrier.”<sup>21</sup> This statement mixes two distinct concepts and misses the Board’s point. First, the Board’s test does not consider the movement R/VC ratio, nor does the Board ever state that it believes movement R/VC ratios exceeding RSAM are unnecessary. On the contrary, the Board acknowledges that differential pricing is necessary for a healthy railroad industry. However, differential pricing can only occur where the railroad holds pricing power. As noted by economist William B. Tye “... a high R/VC is not a sufficient condition for an unreasonable rate, ... but this assertion does not gainsay the fact that such high ratios in the rail industry are a necessary condition for market dominance.”<sup>22</sup>

RSAM represents the average rate level required to achieve revenue adequacy when differential pricing is employed on all moves over which the railroad is presumed to possess some level of market dominance. The LPM test attempts to answer the question of whether (and the extent to which) the railroad holds pricing power sufficient to permit it to implement differential pricing in specific lanes. If the alternate transportation option price were matched by the incumbent railroad (assuming there was sufficient demand to support pricing at that level), and the resulting rate were to exceed RSAM, then it can logically be presumed that the studied lane affords the railroad an opportunity to exert market power and impose substantial differential pricing. In other words, the railroad can logically be presumed to hold market dominance, even if other market forces (such as demand) hold the actual rail rate below the limit price level.

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<sup>21</sup> See Willig VS, p. 5.

<sup>22</sup> See William B. Tye, “Revenue/Variable Cost Ratios and Market Dominance Proceedings,” *Transportation Journal*, Volume 24, No. 2, 1984, pages 15-30 (“Tye”), at page 23.

The quantitative market dominance analysis is identical to the first step of the RSAM calculation: A determination of which movements move under rates with R/VC ratios below 180%. Therefore, both the quantitative market dominance test and the first step of the RSAM calculation divide all of the railroad's traffic into two strata at the same demarcation point. In both analyses, the railroad is presumed not to possess market dominance over movements with R/VC ratios below 180%. In the RSAM analytical framework, all movements with R/VC ratios at or above 180% are considered potentially captive traffic, but no further analysis is conducted to determine which of the potentially captive traffic is actually captive (i.e., traffic that is market dominant). In the LPM analytical framework, all movements with R/VC ratios at or above 180% are further evaluated to determine whether the railroad possesses market dominance over them.

The Board's LPM, which compares the LP R/VC to the RSAM benchmark, results in grouping all of the railroad's movements into three strata: (1) movements over which the railroad is presumed not to possess market dominance (excluded from the RSAM calculation), (2) movements over which the railroad potentially possesses market dominance (included in the RSAM calculation) with alternate options that move at rate levels that imply R/VC ratios below the average markup required to achieve revenue adequacy, and (3) movements over which the railroad potentially possesses market dominance (included in the RSAM calculation) with alternate options that move at rate levels that imply R/VC ratios above the average markup required to achieve revenue adequacy.

When the three strata of movements described above are plotted on a horizontal axis, the Board's model is shown to be reasoned and logical. Figure 1 below shows the stratification.

**Figure 1**  
**STB's Market Dominance Strata**

<i>Strata:</i>	1	2	3
		<i>R/VC=180</i>	<i>LP R/VC=RSAM</i>
<i>Test:</i>	Quantitative	LPM	LPM
<i>Presumption:</i>	No MD	No MD	MD
<i>Subject to Validation/</i>			
<i>Further Analysis:</i>	No	Yes	Yes

*Note: MD = Market Dominance*

The preliminary finding based on the comparison of the LP R/VC to the RSAM benchmark is simply a determination of whether a railroad rate that matches the alternate rate would imply a mark-up that is higher than the average mark-up that would be required to be applied on traffic over which the railroad has the ability to price differentially in order to achieve revenue adequacy. If so, the logical but still rebuttable conclusion is that the railroad is likely to possess market dominance over the strata 3 moves. Conversely, the logical but still rebuttable conclusion is that the railroad is not likely to possess market dominance over the strata 2 moves. Furthermore, the Board's framework logically concludes that the railroad is far more likely to possess market dominance over strata 3 moves that plot on the right side of the strata 3 group than strata 2 moves that plot on the left side of the strata 2 group in the figure above.

RSAM is a measure of the average price point at which all potentially captive traffic moving over a railroad system would collectively provide sufficient revenue for the railroad to achieve regulatory revenue adequacy. As a rational business, the railroad is logically presumed to strive for revenue adequacy.

For specific lanes in which potentially captive traffic moves, if alternate transportation options exist and move under rates that, if matched by the railroad, would result in railroad

pricing below the RSAM level, one can logically conclude that the railroad's market power is constrained by the alternative. Conversely, in specific lanes where alternate transportation options exist and move under rates that, if matched by the railroad, would result in railroad pricing above the RSAM level, one can logically conclude that the movement is a target for differential pricing aimed at recovering some of the revenues that are "lost" on the traffic moving in competitive lanes. For these lanes, the STB logically reaches the preliminary conclusion that the railroad possesses market dominance over the move, even if other market forces restrict it from imposing rates at the limit price level.

**V. THE LIMIT PRICE METHODOLOGY IS USED TO  
MAKE A PRELIMINARY DETERMINATION**

Eakin/Meitzen opine that, “[T]he Board’s use of the limit price approach is particularly troubling because its application of the test in this case suggests that it is being used as a *de facto* determination of market dominance.”<sup>23</sup> Eakin/Meitzen claim that the Lerner Index does not *by itself* definitively indicate the presence of market dominance, citing Elzinga/Mills, in support of their argument that the Lerner Index cannot be relied upon as the sole measure of monopoly power within a market, and that the Board’s use of the Lerner Index represents a fundamental and impermissible shift in qualitative market dominance determinations.<sup>24</sup> But the Board’s methodology accounts for the fact that there is no sole measure of monopoly power. The STB’s Decision expressly affirmed that its LPM test is not the sole determinant of market dominance. As the Board described in its *Market Dominance Decision*, the comparison of the limit price R/VC ratio to the RSAM ratio is only the initial step in the process.<sup>25</sup> After making the initial comparison, the STB then considers other relevant factors. Simply stated, the Board’s LPM is not a “one and done” test.

As shown in Figure 1 above and confirmed by the Board, the LPM results do not serve as the sole and the final determining factor regarding whether the railroad possesses market dominance over an individual movement. Although they criticize the Board’s process, it is conceptually sound. Eakin/Meitzen simply do not like the *results* of the Board’s process in this case.

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<sup>23</sup> See Eakin/Meitzen VS at, page 9.

<sup>24</sup> See Eakin/ Meitzen VS at page 4.

<sup>25</sup> See *Market Dominance Decision* at page 4.

## VI. HIGH LIMIT PRICE R/VC RATIOS SIGNAL THE LACK OF EFFECTIVE COMPETITION

Willig opines that:

“[A] ‘limit price R/VC ratio’ that *seems* very high only has reliable implications for market dominance judgments if the revenues that would be generated by prices near the limit price were significantly above economic costs. The level of the ‘limit price R/VC ratio’ itself offers no insight regarding the presence or absence of market power because the amount of fixed and common costs may well far exceed the variable or marginal costs incurred by the traffic.”<sup>26</sup>

There are two problems with Willig’s argument. First, the railroad industry is characterized by substantial scale economies. Even with high total fixed costs, the fixed cost allocable to individual units is relatively small in comparison to the variable cost attributable to a unit of traffic. Second, the scenario described by Willig, although theoretically possible, is simply not common in the real world in *any* industry.

“[G]iven the absence of competition and the degree of freedom enjoyed by the monopolist, it is almost certain that a profit-maximizing price will result in charges above marginal and average cost (the only exception being the most unlikely situation of a perfectly elastic *market* demand curve).”<sup>27</sup>

Willig’s irrelevant hypothetical examples are red herrings. In addition, the argument completely ignores the concept of sunk costs. The argument that fixed or common costs may exceed variable costs in high fixed cost industries is another red herring and largely irrelevant to the US freight rail industry. Although the rail industry is land and infrastructure intensive, the network and operations are mature and the fixed costs are not as high as Willig implies.<sup>28</sup> This

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<sup>26</sup> See Willig VS at page 7.

<sup>27</sup> See Button, Kenneth J., *Transport Economics: 2<sup>nd</sup> Edition*, Edward Elgar Publishing, Inc., Northampton, MA, 1993, p. 123, emphasis in original.

<sup>28</sup> This fact was also noted by Tye “With substantial barriers to entry, allegedly substantial economies of scope and substantial sunk costs in the rail industry, a rail carrier facing no competition from incumbents and charging prices substantially in excess of marginal costs would presumably qualify as a prime candidate to be considered for regulatory oversight.” See Tye at 22.

fact has been repeatedly demonstrated through the application of the STB's ATC methodology to allocate revenues on cross-over movements in maximum rate reasonableness cases. The ATC methodology identifies the variable costs (based on URCS) and the fixed cost component (based on the incumbent's fixed costs and densities) attributable to every cross over movement segment, and allocates revenues based on a ratio of the total (variable and fixed) costs attributable to each movement segment. The variable cost component of total costs dwarfs the fixed cost component in all instances.

## **VII. THE LPM TEST HAS NO BEARING ON A RAILROAD'S ABILITY TO ATTAIN REVENUE ADEQUACY**

Willig and Eakin/Meitzen assert that, because RSAM is the average mark-up required for the railroads to achieve revenue adequacy, using it to identify the point at which market dominance exists ignores differential pricing principles and conflicts with the goal of achieving long-term revenue adequacy. I disagree with their conclusions.

First, Willig includes the following statements:

“Under the proposed ‘limit price R/VC ratio’ test, a railroad would only be able to avoid a finding of market dominance in a world where *all* of a carrier’s potentially ‘captive’ traffic had ‘limit price R/VC ratio’ levels at or below RSAM.

It is well recognized by the Board that in order to have any hope of attaining revenue adequacy... railroads must be able to price some traffic at R/VC levels above RSAM to make up for traffic that must be priced at R/VC levels below RSAM.”<sup>29</sup>

Both of these statements are factually correct, but they are unrelated. The first sentence deals with the Board’s LPM test, which, as discussed above, is meant to evaluate the available alternate transportation option rates in the context of the defendant carrier’s revenue needs and cost structure. It does not consider the challenged rate or the R/VC associated with the challenged rate. A limit price R/VC can be either substantially greater than, or substantially less than, the challenged rate R/VC. The second sentence introduces the movement R/VC out of context. The LPM test is blind to movement R/VC, so it makes no judgment as to whether the movement is helping or hurting the railroad in its quest to achieve revenue adequacy.

After sufficiently confusing the two unrelated concepts of the LP R/VC and the movement R/VC, Willig concludes:

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<sup>29</sup> See Willig VS, pp. 9-10.

“A carrier that is unable to price *any* traffic at R/VC levels above RSAM because of the threat of market dominance findings and maximum rate regulation would never be able to fully recover its costs and would never be able to attain revenue adequacy.”<sup>30</sup>

This argument is faulty at its core, because, as discussed above, the carrier’s rate level (and R/VC) has no bearing on the LPM test findings. Stated differently, the “threat of market dominance findings” is the same for a given movement regardless of the rate level set by the carrier.

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<sup>30</sup> *Id.*, p. 10.

### **VIII. URCS AVERAGE VARIABLE COSTS ARE A REASONABLE PROXY FOR TRUE MARGINAL COSTS**

Willig and Eakin/Meitzen claim that the measure of variable costs used in the limit price methodology is not a reliable indicator of marginal costs used in the Lerner Index.<sup>31</sup> This is simply a smoke screen as it is common practice in economic studies to use readily available variable costs as a surrogate for marginal costs. For example, in their paper *Tobin's q Ratio and Industrial Organization*, Lindenberg and Ross assume average variable costs equal marginal costs:

“Lerner indices can be constructed using firm-specific data alone. Because we lack adequate marginal cost data, we assume that average variable cost equals marginal cost.”<sup>32</sup>

Similarly, Wilson also makes the same simplifying assumption:

“Implicit in this analysis is the assumption that the variable cost measurement used in these proceedings was a reasonable approximation of marginal cost.” Given this assumption, the percent markdown from the monopoly price can be calculated.”<sup>33</sup>

This wide and accepted use of variable costs as a surrogate for marginal costs within the railroad industry is reiterated by Dr. William B. Tye:

“‘Variable cost’ in the rail industry generally refers to average variable costs as computed by the Interstate Commerce Commission’s Rail Form A methodology. It is conceptually equivalent to ‘average variable costs’ in economic theory, albeit adjusted for the multiservice enterprise by use of disaggregated output measures applied to variability percentages measured for the various cost accounts by regression analysis. Variable cost is often used as a proxy for marginal cost in the rail industry...”<sup>34</sup>

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<sup>31</sup> See Willig at page 14 and Eakin/Meitzen at page 6.

<sup>32</sup> See Eric B. Lindenberg and Stephen A. Ross, “Tobin’s q Ratio and Industrial Organization,” *Journal of Business*, Volume 54, No. 1, 1981, pages 1-32, at page 27.

<sup>33</sup> See Wilson at page 59. Wilson’s paper is most revealing because it relied upon ICC determined railroad variable costs in its analysis.

<sup>34</sup> See Tye at page 15.

The ICC/STB has replaced Rail Form A with the Uniform Railroad Costing System (“URCS”) as its methodology for calculating a movement’s variable costs. This formula change does not alter the fact that variable costs are routinely used by economists as a proxy for marginal cost.

