

SERVICE DATE – JANUARY 29, 2018

SURFACE TRANSPORTATION BOARD

DECISION

Docket No. EP 290 (Sub-No. 4)

RAILROAD COST RECOVERY PROCEDURES—PRODUCTIVITY ADJUSTMENT

Digest:¹ Each year the Board calculates the change, if any, in the rail industry's productivity, i.e, how efficiently railroads move freight. Here, the Board adopts a final productivity adjustment for the change in the railroad productivity for the 2011-2015 averaging period using a "linking factor" that enables the 2015 productivity adjustment to be compared to prior years' productivity adjustments.

Decided: January 25, 2018

The Board adopts as final its calculation of the productivity adjustment for the year 2015, as proposed in its September 29, 2017 decision. See R.R. Cost Recovery Procedures—Productivity Adjustment (September Decision), EP 290 (Sub-No. 4), slip op. at 4 (STB served Sept. 29, 2017). The productivity change for 2015, based on changes in input and output levels from 2014, is 0.939, which is a decrease of 7.8% from the rate of productivity growth in 2014 relative to 2013 (1.018). Incorporating the 2015 value with the values from the 2011-2014 period produces a geometric average productivity growth of 0.994 for the five-year period 2011-2015, or -0.6% per year. There was a decrease of 2.0% in the geometric mean from last year's value.

BACKGROUND

The background of the Board's calculation of the 2015 productivity change is set forth fully in the Board's September Decision. The Board summarizes the relevant background here.

On February 14, 2017, the Board tentatively adopted 1.020 (2.0% per year) as the measure of average (geometric mean) change in railroad productivity for the 2011-2015 (five-year) period. R.R. Cost Recovery Procedures—Productivity Adjustment, EP 290 (Sub-No. 4), slip op. at 1 (STB served Feb. 14, 2017), corrected (February Decision), EP 290 (Sub-No. 4) (STB served Feb. 24, 2017).² As the Board explained in the February Decision, the

¹ The digest constitutes no part of the decision of the Board but has been prepared for the convenience of the reader. It may not be cited to or relied upon as precedent. Policy Statement on Plain Language Digests in Decisions, EP 696 (STB served Sept. 2, 2010).

² Citations to the February Decision refer to the February 24, 2017 corrected decision.

annual productivity calculation is typically routine and non-controversial, but the 2015 productivity adjustment was tentative due to a change in the method used by Railinc Corporation, the government's contractor,³ to measure distances for rail movements in the Board's annual Waybill Sample. Id. at 2-3. The Board proposed a productivity adjustment "linking factor" to account for the difference in the distance methodologies in 2011-2014 and 2015, and to avoid unfairly skewing the 2015 productivity adjustment. Id.

The Board subsequently received a corrected dataset from Railinc and proposed a revised tentative productivity adjustment based on a modified linking factor. September Decision, EP 290 (Sub-No. 4), slip op. at 3-4. The modified linking factor was based on a simple linear regression that estimated what the aggregate 2015 revenue ton-miles reported in the Waybill Sample would have been using the prior miling methodology. The Board held a technical workshop on October 17, 2017, to explain the linking factor described in the September Decision and answer technical questions. The Board invited public comment on the proposed productivity adjustment and the linking factor. See id. at 5. The Board received opening comments from Western Coal Traffic League (WCTL) and the Association of American Railroads (AAR) on November 13, 2017. No reply comments were filed.

DISCUSSION AND CONCLUSIONS

After considering the comments submitted by parties in response to the September Decision, the Board will adopt as final the tentative productivity figures proposed in the September Decision.

AAR supports the productivity adjustment calculations tentatively adopted in the September Decision and urges they be adopted as final. (AAR Comment 1, Nov. 13, 2017.) AAR contends that the revised productivity change in the September Decision is much more consistent with other indicators of productivity than the increase found in the February Decision. (Id. at 5.) Specifically, AAR notes that the value of the output index used in the Board's productivity calculations is generally correlated with the change in revenue ton miles reported to the Board by the Class I railroads in the Annual Report Form R-1, while the values moved in opposite directions in the Board's February Decision. (Id. at 6.)

WCTL argues that the tentative calculations from the September Decision should not be adopted without further analysis. (WCTL Comment 4, Nov. 13, 2017.) WCTL asserts that the Board has failed to explain why waybill mileages could not have been determined using the same methodology for both 2014 and 2015. (Id. at 1-2.) WCTL also contends that the Board's proposed linking factor "does not purport to measure the correct thing," because the Board chose to develop the linking factor by estimating the methodology-based change in ton-miles in the aggregate rather than on a more granular basis—i.e., through the use of the 189 categories of output. (Id. at 2-3.)

³ The Federal Railroad Administration, with the Board acting in an advisory capacity, awarded a contract in 2015 to Railinc Corporation (Railinc), under which Railinc would measure rail movement distances using a new methodology.

None of WCTL's arguments persuade the Board that the productivity calculations in the September Decision should not be adopted as final. WCTL's suggestion that the linking factor should have been developed by comparing Waybill Samples miled using the same methodology for both 2014 and 2015 is not feasible. As explained in the February Decision, the Board does not have data showing what the distances would have been for movements in the 2015 Waybill Sample if the distances had been measured using the prior approach for calculating waybill mileage. February Decision, slip op. at 2. Likewise, the Board does not possess a 2014 Waybill Sample miled using the approach reflected in the 2015 Waybill Sample. Thus, the data cannot be "reanalyzed using the same [miling] methodology for both years," as WCTL suggests (WCTL Comment 2, Nov. 13, 2017.)

WCTL also expresses concern with the Board's approach, suggesting that another regression methodology might have been used. (WCTL Comment 2-3, Nov. 13, 2017). As the Board explained in the February Decision and the September Decision, the Board found it necessary to develop a linking factor that would "prevent [such] changes in the miling methodology, rather than underlying changes in productivity, from inflating or deflating aggregate revenue ton-miles." September Decision, slip op. at 3. In explaining the linking factor approach in the September Decision, the Board indicated that revenue ton-miles are a key input into the Board's productivity calculation. The September Decision proposed a statistical technique, a simple linear regression, to estimate the ton-mile figure that would have been produced for 2015 under the miling methodology used through 2014. See id. at 3-4. This modeling choice isolates (and corrects for) the effects of the change in miling methodology, based on a long-standing and stable relationship between the ton-miles reported in the Waybill Sample and the ton-miles derived from the R-1 reports.⁴ See September Decision, slip op. at 9-10.

WCTL's apparent preference for a different methodology is based on its concern that the Board has made an assumption that "the change in total ton-miles based on its [ordinary least squares] regression will be fully and equally applicable to the change in *each of* the 189 individual cells of the matrix." (WCTL Comment 2-3, Nov. 13, 2017 (emphasis added).) WCTL appears to be suggesting that the Board should have run a separate regression for each of the 189 cells of the productivity matrix. However, sufficient disaggregated data does not exist to implement such an approach. In particular, the R-1 data—which is used as input for the Board's regression—is not submitted in a format that permits the Board to disaggregate ton-miles into the 189 cells of the productivity matrix. Moreover, WCTL has not pointed to any reason to believe that the aggregate regression approach used by the Board is unreliable. Given the absence of any indication that there is a feasible approach that would have produced an estimate that was materially more accurate, the Board will not revisit its modeling choice.⁵

⁴ AAR agrees that the Board's output index and R-1 revenue ton-miles are usually correlated, and that the revised output value in the September Decision is more in line with R-1 data. (AAR Comment 6, Nov. 13, 2017.)

⁵ WCTL also cites Railroad Cost Recovery Procedures, 364 I.C.C. 841 (1981), aff'd sub nom. Western Coal Traffic League v. United States, 677 F.2d 915, 927-28 (D.C. Cir. 1982), for
(continued . . .)

Accordingly, after considering the comments submitted by parties in regards to the linking factor described in the September Decision, the Board will adopt as final the tentative calculations proposed in the September Decision.

It is ordered:

1. The productivity adjustment tentatively proposed in the September Decision is adopted as final.

2. This decision is effective on its service date.

By the Board, Board Members Begeman and Miller.

(. . . continued)

the proposition that “changes in total ton-miles are not a suitable proxy for measuring output or productivity.” (WCTL Comment 3, Nov. 13, 2017.) WCTL’s observation is not relevant because the Board is not calculating productivity based on changes in ton-miles. Rather, the Board is developing a linking factor to account for the impact of a change in the miling methodology on ton-miles.

APPENDIX

The following is a description of the methodology currently used to calculate the RCAF productivity adjustment.⁶ The annual rate of productivity change is calculated by dividing an output index by an input index.

The input index uses constant dollar-adjusted expenses. The inputs in this index—freight expenses, fixed charges, and contingent interest—are stated on a constant dollar basis using the most recent year available as the base, and updating the base by the Series Rail Cost Recovery (RCR) Index published by the Association of American Railroads. Freight expenses, fixed charges, and contingent interest were obtained from railroad Annual Report (Form R-1) data. The 2015 Total Expense Constant Dollars for each of the six years was calculated by dividing a given year's RCR index value into the RCR index values for 2015 (493.3) and then multiplying that ratio by the Total Expense Unadjusted. The calculation of the input indices and values used are shown in Table A.

The 2015 output index was developed from the costed Waybill Sample, a commonly used data source. Prior to the application of the linking factor, the output index was 0.953. After multiplying the output index by the linking factor of 0.9579, the adjusted output index becomes 0.913. The costed Waybill Sample excludes movements lacking sufficient information for the application of unit costs.

Using the costed Waybill Sample as a base, each movement is assigned to one of the 189 segments or categories used to develop the output index. Segmentation is based on three mileage blocks, seven car types, three weight brackets, and three shipment sizes. The output index is a composite of the year-to-year change in ton-miles for each of the 189 segments weighted by each segment's base-year share of total revenues.

The change in productivity is calculated by dividing the output index by the input index. The multi-year average for the period 2011-2015 is calculated by taking a geometric mean, which was found to be 0.994 (-0.6% per year). The input index, the output index, the annual productivity change, and the calculation of the 2011-2015 average are shown in Table B.

⁶ The development and application of the productivity adjustment is explained in Railroad Cost Recovery Procedures—Productivity Adjustment, 5 I.C.C.2d 434 (1989).

Table A
Calculation of Input Indices
2010-2015

Year	Total Expense Unadjusted (000s) (1)	RCR Indices 2010-2015 (2)	Total Expense Constant Dollars (3)	Input Index Column (3) 2011/2010 etc. (4)
2010	43,763,629	465.1	46,417,111	
2011	50,243,494	513.7	48,248,230	1.039
2012	51,464,512	526.8	48,191,807	0.999
2013	52,366,102	526.3	49,082,649	1.018
2014	54,753,917	531.0	50,866,492	1.036
2015	49,465,744	493.3	49,465,744	0.972

Table B
Comparison of Output, Input, and Productivity
2011-2015

Year	Output Index (1)	Input Index (2)	Productivity Change ⁷ Col (1)/Col (2) (3)
2011	1.041	1.039	1.001
2012	1.007	0.999	1.008
2013	1.022	1.018	1.003
2014	1.055	1.036	1.018
2015	0.913	0.972	0.939
Productivity Change Five-Year Moving Avg.			0.994

⁷ The values shown in Column 3 are taken from the spreadsheet used to calculate productivity and, due to rounding, may not equal numbers calculated using the rounded numbers shown in Columns 1 and 2.

The five-year (2011-2015) productivity trend calculated using a geometric average is 0.994, or -0.6%. Note that there are changes in some of the individual numbers in Table A and Table B compared with corresponding years in an earlier decision. R.R. Cost Recovery Procedures—Productivity Adjustment, EP 290 (Sub-No. 4) (STB served Mar. 4, 2014). These changes represent the revisions to the R-1 submitted by the railroads which were first incorporated into our 2008-2012 productivity study. None of the changes are large enough to affect the five-year moving geometric average calculated in previous decisions.