

SERVICE DATE – SEPTEMBER 10, 2026

SURFACE TRANSPORTATION BOARD

DECISION

Docket No. EP 558 (Sub-No. 29)

RAILROAD COST OF CAPITAL—2025

Digest:¹ The Board finds that the cost of capital for the railroad industry, which is calculated each year, was 9.79% for 2025. This figure represents the Board's Office of Economics' estimate of the average rate of return needed to persuade investors to provide capital to the freight rail industry.

Decided: September 10, 2026

One of the Board's regulatory responsibilities is to determine annually the railroad industry's cost of capital.² This determination is one component used in evaluating the adequacy of a railroad's revenue each year pursuant to 49 U.S.C. § 10704(a)(2) and (3). Standards for R.R. Revenue Adequacy, 364 I.C.C. 803 (1981), modified, 3 I.C.C.2d 261 (1986), aff'd sub nom. Consol. Rail Corp. v. United States, 855 F.2d 78 (3d Cir. 1988). The cost-of-capital finding may also be used in other regulatory proceedings, including (but not limited to) those involving the prescription of maximum reasonable rate levels, the proposed abandonment of rail lines, and the setting of compensation for use of another carrier's lines.

This proceeding was instituted by decision served on March 20, 2026, to update the railroad industry's cost of capital for 2025. In that decision, the Board solicited comments from interested parties on the following issues: (1) the railroads' 2025 current cost of debt capital, (2) the railroads' 2025 current cost of preferred equity capital (if any), (3) the railroads' 2025 cost of common equity capital, and (4) the 2025 capital structure mix of the railroad industry on a market value basis.

On June 17, 2026, the Board received revised comments³ from the Association of American Railroads (AAR) providing the information used to calculate the annual cost-of-capital determination, as established in Use of a Multi-Stage Discounted Cash Flow Model in

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. See Pol'y Statement on Plain Language Digs. in Decisions, EP 696 (STB served Sept. 2, 2010).

² The railroad cost of capital determined here is an aggregate measure. It is not intended to measure the desirability of any individual capital investment project.

³ AAR initially submitted comments and calculations on May 22, 2026. However, by a decision served June 10, 2026, AAR was directed to file a revised version, including workpapers. See R.R. Cost of Cap.—2025, EP 558 (Sub-No. 2), slip op. at 2 (STB served June 10, 2026).

Determining the Railroad Industry's Cost of Capital, EP 664 (Sub-No. 1) (STB served Jan. 28, 2009). AAR states that, based on its calculations, the overall railroad industry cost of capital for 2025 should be 9.79%. (AAR Revised Comments 2.)

Western Coal Traffic League (WCTL) replied to AAR's submission on July 7, 2026, stating that its review of AAR's filing and associated workpapers did not reveal any significant mathematical errors. (WCTL Reply 2.) Nevertheless, WCTL argues that the cost of capital is substantially overstated due to a miscalculation of the cost of equity component. (*Id.*) According to WCTL, the cost of equity "error" stems from alleged flaws in the Multi-Stage Discounted Cash Flow model (MSDCF) and the implementation of the Capital Asset Pricing Model (CAPM). (*Id.* at 2.) Accordingly, as in previous years, WCTL recommends the Board rely only on CAPM (though modified, as discussed below) to calculate the cost of equity. (*Id.* at 7.)

AAR responded to WCTL's reply on July 27, 2026, asserting that it followed the Board's instructions to use the methodology from Railroad Cost of Capital—2024, EP 558 (Sub-No. 28) (STB served July 21, 2025). (AAR Rebuttal 1.) AAR notes that WCTL acknowledges that AAR's filing and associated workpapers had no significant mathematical errors. (*Id.*) AAR asserts that WCTL's arguments are improper collateral attacks on the Board's cost-of-capital methodology, (*id.* at 2-3), and that WCTL attempts to "backdoor its reply as a petition for rulemaking," (*id.* at 3). Accordingly, AAR argues that the Board should deny WCTL's request to change the methodology. (*Id.* at 4.)

DISCUSSION AND CONCLUSIONS

WCTL's Reply

According to WCTL, the Board's established cost-of-capital methodology is "inaccurate and overstated" due to flaws in the Board's underlying MSDCF and CAPM methodologies. (WCTL Reply 2.) In support of its assertion, WCTL argues that AAR's costs of equity calculation (and therefore its capital calculation) "deviate sharply" from other respected benchmarks. (*Id.* at 4; *see also id.* at 5-7 (comparing AAR's cost-of-capital and cost-of-equity figures to those of other financial institutions and entities).)⁴ WCTL also argues that the MSDCF improperly uses a carrier's earnings per share (EPS) as the basis for growth rates in the first two stages of the MSDCF. (*Id.* at 3.) WCTL claims that EPS figures overstate growth rates because they include the impact of stock repurchases (i.e., buybacks), which are not reflective of actual growth.⁵ (*Id.* at 8.)

⁴ In particular, WCTL highlights the weighted average cost-of-capital values calculated by Morgan Stanley (WCTL Reply 5) and notes that one rail carrier reported an 8% "required return" in its 2025 10-K report, (*id.* at 7).

⁵ WCTL argues that the Board should not rely on a methodology that "consistently exceeds what investors and the railroads themselves use to determine whether to invest in the railroads, to purchase another railroad, and to compensate their executive management." (*Id.* at 4.)

As in years prior, WCTL presents an alternative cost-of-capital figure based only on CAPM to calculate the cost of equity. (*Id.* at 7.) In its CAPM calculation, WCTL applies a different market-risk premium⁶ than the one used by AAR. (Compare AAR Opening 5 (providing a market risk premium of 7.37%), with WCTL Reply 7, Table 1 (providing a market risk premium of 5.00%).) WCTL’s alternative cost of capital figure comes to 7.87%. (WCTL Reply 7, Table 1.) WCTL argues that the deviation between the cost-of-capital values derived under the Board’s methodology and the alternative values WCTL presents “is more than sufficient to support a Board-initiated reexamination of its deficient methodology” (*id.* at 11).

As the Board has previously directed, challenges to the Board’s cost-of-capital methodology should be addressed in Docket No. EP 664 (via a petition for rulemaking) and not in the annual cost-of-capital proceeding. See R.R. Cost of Cap.—2024, EP 558 (Sub-No. 28), slip op. at 3 (STB served July 21, 2025); Methodology to Be Employed in Determining the R.R. Industry’s Cost of Cap. (Cost-of-Capital Methodology), EP 664, slip op. at 18 (STB served Jan. 17, 2008) (“[R]equests to [change our methodology] must be brought (*in the form of a petition for rulemaking*) in a 664 proceeding, not in the annual 558 proceedings, in which we calculate the cost of capital for a particular year.”) (emphasis added), corrected, (STB served Jan. 18, 2008); see also WCTL v. STB, No. 23-1272, slip op. at 1 (D.C. Cir. Feb. 21, 2024) (affirming the Board’s use of the two-docket system). As WCTL appears to concede, (see WCTL Reply 2), its arguments are challenges to the Board’s methodology. Accordingly, they are not properly before the Board in this annual proceeding and are not being considered at this time.

The Board will accept AAR’s submission, which complies with the Board’s established methodology.

2025 Cost-of-Capital Determination

AAR calculated the cost of capital for a “composite railroad” based on criteria developed in Railroad Cost of Capital—1984, 1 I.C.C.2d 989 (1985), and modified in Revisions to the Cost-of-Capital Composite Railroad Criteria, EP 664 (Sub-No. 3) (STB served Oct. 25, 2017).⁷ According to AAR, the following three railroad holding companies meet these criteria: CSX Corporation (CSX), Norfolk Southern Corporation (NSC), and Union Pacific Corporation (UPC). (AAR Opening 3.)

As discussed below, the Board’s Office of Economics (OE) has examined the procedures used by AAR to calculate the following components for the railroad industry’s 2025 cost of capital: (1) cost of debt capital, (2) cost of common equity capital, (3) cost of preferred equity

⁶ WCTL states that it relied on a market-risk premium figure adopted by Kroll Duff & Phelps. (WCTL Reply 7.)

⁷ The composite railroad includes those Class I carriers that (1) are listed on either the New York Stock Exchange (NYSE) or Nasdaq Stock Market (NASDAQ), (2) paid dividends throughout the year, (3) had rail assets greater than 50% of their total assets, and (4) had a debt rating of at least BBB (Standard & Poor’s) and Baa (Moody’s).

capital, (4) capital structure, and (5) composite after-tax cost of capital. Based on that review, the Board estimates that the 2025 railroad cost of capital was 9.79%.

DEBT CAPITAL

AAR developed its 2025 current cost of debt using bond price data from Bloomberg Professional (Bloomberg), a subscription service used since Railroad Cost of Capital—2011, EP 558 (Sub-No. 15) (STB served Sept. 13, 2012). AAR's cost-of-debt figure is based on the market-value yields of the major forms of long-term debt instruments for the railroad holding companies used in the composite. These debt instruments include (1) bonds, notes, and debentures (bonds); (2) equipment trust certificates (ETCs); and (3) conditional sales agreements (CSAs). The yields of these debt instruments are weighted based on their market values.

Cost of Bonds, Notes, and Debentures (Bonds)

AAR used data from Bloomberg for the current cost of bonds, based on monthly prices and yields during 2025, for all issues (a total of 130) that were publicly traded during the year. (AAR Revised Comments, V.S. Ghayad 8-9.) To develop the current (in 2025) market value of bonds, AAR used these traded bonds and additional bonds that were outstanding but not publicly traded during 2025. Following the procedure in effect since 1988, AAR based the market value on monthly prices for all traded bonds and the face or par value (\$1,000) for all bonds not traded during the year. AAR computed the total market value of all outstanding bonds to be \$56.9 billion (\$56.08 billion traded and \$0.84 billion non-traded). (*Id.*, V.S. Ghayad 10.) Based on the yields for the traded bonds, AAR calculated the weighted average 2025 yield for all bonds to be 5.179%. (*Id.*, V.S. Ghayad 11.) OE examined AAR's bond price and yield data and determined that AAR's computations are correct. The calculations and data for all bonds are shown in **Tables 1 and 2** of the Appendix.

Cost of ETCs

ETCs are not actively traded on secondary markets. Therefore, their costs must be estimated by comparing them to the yields of other debt securities that are actively traded. Following the practice in previous cost-of-capital proceedings, AAR used government securities with maturities similar to these ETCs as surrogates for developing yields. (*Id.*, V.S. Ghayad 13.) After calculating the 2025 yields for these government securities, AAR added basis points⁸ to these yields to compensate for the additional risks associated with the ETCs. (*Id.*)

There were four ETCs outstanding during 2025 for UPC. (*Id.*, V.S. Ghayad 15, Table 5.) Using the yield spreads, AAR calculated the weighted average cost of ETCs to be 4.588%⁹ and their market value to be \$692.14 million for 2025. (*Id.*; see also id., V.S. Ghayad, App. C.)

⁸ A basis point equals 1/100th of a percentage point.

⁹ This percentage is lower than the 2024 figure of 5.069%. See R.R. Cost of Cap.—2024, EP 558 (Sub-No. 28), slip op. at 5.

OE has examined AAR's ETCs calculations and, based on that review, the Board accepts the cost and market value of the ETCs using AAR's data. **Table 3** in the Appendix shows a summary of the ETC computations.

Cost of CSAs

CSAs normally represent no more than a small fraction (less than 1%) of total railroad debt. This year, no CSAs were used to calculate the 2025 cost of debt because no CSAs are outstanding.¹⁰ (*Id.*, V.S. Ghayad 16.)

Capitalized Leases and Miscellaneous Debt

As in previous cost-of-capital determinations, AAR excluded the cost of capitalized leases and miscellaneous debt in its computation of the overall current cost of debt because these costs are not directly observable in the open market. (*Id.*, V.S. Ghayad 17.) Also, in keeping with past practice, AAR included the book value of capitalized leases and miscellaneous debt in the overall market value of debt, which is used to determine the railroads' capital structure mix. AAR calculated the book value (assumed market value) for the capitalized leases and miscellaneous debt to be (\$1,024.5) million for 2025.¹¹ (*Id.*, V.S. Ghayad 17-18.) OE has examined AAR's calculations for the market value for capitalized leases and miscellaneous debt, and, based on that review, the Board accepts the market value using AAR's data. **Table 5** in the Appendix shows the calculations for capitalized leases and miscellaneous debt to be (\$1,024.5) million.

Total Market Value of Debt

AAR calculated the total market value for all debt during 2025 to be \$56.59 billion. (*Id.*, V.S. Ghayad 18-19.) OE has examined AAR's calculations and, based on that review, the Board accepts the total market value for all debt using AAR's data. **Table 6** in the Appendix shows a breakdown of the market value of debt.

Flotation Costs of Debt

AAR calculated flotation costs for bonds, notes, and debentures by first calculating a yield on a new issue that included flotation costs, and then deducting a yield that did not include flotation costs. (*Id.*, V.S. Ghayad 19-21.) The difference between the two yields is the flotation costs expressed in percentage points. For 2025, five new issues were reported, with flotation costs of 0.093%. (*Id.*, V.S. Ghayad 21.) AAR calculated the 2025 flotation costs for bonds using publicly available data from electronic filings with the Securities and Exchange Commission (SEC). (*Id.*, V.S. Ghayad 20-21.) For the calculation of ETC flotation costs, AAR

¹⁰ No CSAs have been modeled since 2010, and none have been outstanding since 2014. (AAR Revised Comments, V.S. Ghayad 16.)

¹¹ This figure consists of \$122.5 million of capitalized leases and (\$1,147.0) million of miscellaneous debt. (AAR Revised Comments, V.S. Ghayad, App. D; see also *id.*, V.S. Ghayad 17-18.) **Table 5** in the Appendix shows these figures.

used a historical SEC study composed of railroad ETC data for the years 1951, 1952, and 1955. (*Id.*, V.S. Ghayad 21-22 (citing SEC, Cost of Flotation of Corp. Sec. 1951-1955 (1957)).) AAR asserts that, in that study, the SEC determined that ETC flotation costs average 0.89% of gross proceeds. (AAR Revised Comments, V.S. Ghayad 22.) Using 0.89% for ETCs, and assuming that coupons are paid twice per year and that the duration for new ETCs is 15 years, yields flotation costs of 0.083%. (*Id.*, V.S. Ghayad 22-23.)

To compute the overall effect of the flotation cost on debt, the market value weight of the outstanding debt is multiplied by the respective flotation cost. The weight for each type of debt is based on market values for debt, excluding all other debt,¹² for which a current cost of debt has not been determined.¹³ AAR calculated that the flotation costs of debt increase the cost of debt by 0.093 percentage points. (*Id.*, V.S. Ghayad 23.)

OE has reviewed AAR's calculations concerning flotation costs and has determined that AAR's computation is correct. Based on OE's analysis, the Board finds that the cost factors developed for the various components of debt are reasonable. **Table 7** in the Appendix shows these calculations.

Overall Current Cost of Debt

AAR concluded that the railroads' weighted cost of debt for 2025 was 5.26%.¹⁴ (AAR Revised Comments, V.S. Ghayad 24.) OE has verified that the percentage put forth by AAR is correct. **Table 8** in the Appendix shows the overall current cost of debt.

COMMON EQUITY CAPITAL

The cost of common equity capital is estimated by calculating the simple average of estimates produced by the CAPM and the Morningstar/Ibbotson MSDCF methodologies.

CAPM

Under CAPM, the cost of equity is equal to $RF + \beta \times RP$, where RF is the risk-free rate, RP is the market-risk premium, and β (or beta) is the measure of systematic, non-diversifiable risk. In order to calculate the RF, the railroads were asked to provide the average yield to maturity in 2025 for a 20-year U.S. Treasury Bond. Similarly, the railroads were asked to

¹² All other debt represents capitalized leases, miscellaneous debt, non-modeled ETCs, and non-modeled CSAs. There were no non-modeled ETCs or non-modeled CSAs in 2024. (AAR Revised Comments, V.S. Ghayad 17-18.)

¹³ Current costs can be determined for three of the four debt categories—bonds, ETCs, and CSAs. Usually, the weighted average cost of debt is based upon these three (of the four) debt categories, but in this instance, only bonds and ETCs are present. (AAR Revised Comments, V.S. Ghayad 19.)

¹⁴ This percentage is higher than the 2024 figure of 5.24%. See R.R. Cost of Cap.—2024, EP 558 (Sub-No. 28), slip op. at 6.

provide an estimate for the RP based on returns experienced by the S&P 500 since 1926. Finally, the railroads were asked to calculate beta using a portfolio of weekly, merger-adjusted railroad stock returns for the prior five years in the following equation:

$$R - SRRF = \alpha + \beta (RM - SRRF) + \varepsilon, \text{ where}$$

α	=	constant term;
R	=	merger-adjusted stock returns for the portfolio of railroads that meet the screening criteria set forth in <u>Railroad Cost of Capital—1984</u> , 1 I.C.C.2d at 1003-04;
$SRRF$	=	the short-run risk-free rate, which we will proxy using the 3-month U.S. Treasury bond rate;
RM	=	return on the S&P 500; and
ε	=	random error term.

RF – The Risk-Free Rate

To establish the risk-free rate, AAR relies on the Federal Reserve website to retrieve the average yield to maturity for a 20-year U.S. Treasury Bond. Using the average yield to maturity in 2025 for a 20-year U.S. Treasury Bond, consistent with Railroad Cost of Capital—2006, EP 558 (Sub-No. 10) (STB served Apr. 15, 2008), AAR calculated the 2025 risk-free rate to be 4.78%. (AAR Revised Comments, V.S. Ghayad 30.) OE has examined AAR's data and the data from the Federal Reserve's website and has determined that AAR's computation is correct.

RP – The Market-Risk Premium

Using the approach from Cost-of-Capital Methodology, EP 664, slip op. at 7-9, AAR submitted data reflecting a market-risk premium of 7.37%. (AAR Revised Comments, V.S. Ghayad 32.) The Ibbotson SBBI Classic Yearbook, published by Morningstar, which was previously used as the source of the market-risk premium for 2013 and 2014, has been discontinued. AAR replaced the former source with the Duff & Phelps' Valuation Handbook—U.S. Guide to Cost of Capital, as the source of the market-risk premium for 2015 and 2016. However, in 2018, Duff & Phelps discontinued the publication of that book in hardcover form and replaced it with an online tool called the Cost of Capital Navigator. According to AAR, the Cost of Capital Navigator uses the same method as that used by Ibbotson and provides the same data reflecting the market-risk premium. (AAR Opening, V.S. Ghayad 30-32.)

OE has verified that use of the 1926 base year, as used by the Cost of Capital Navigator, is a reasonable method of calculating the market-risk premium, (see id., V.S. Ghayad, App. H), and has also determined that AAR's computation of the market-risk premium is correct.

Calculating Beta

Pursuant to Cost-of-Capital Methodology, EP 664, slip op. at 11, parties are required to calculate CAPM's beta using a portfolio of weekly, merger-adjusted stock returns for the prior five years in the following equation: $R - SRRF = \alpha + \beta (RM - SRRF) + \varepsilon$. Applying the

modified approach for assigning the new shares outstanding,¹⁵ as described in Railroad Cost of Capital—2010, EP 558 (Sub-No. 14), slip op. at 6 (STB served Oct. 3, 2011), AAR’s calculations estimate that the value of beta is 0.7971.¹⁶ (AAR Revised Comments, V.S. Ghayad 37.)

Based on OE’s verification and calculation of the value of beta, the Board accepts AAR’s calculated estimate that the value of beta is 0.7971.

Cost of Common Equity Capital using CAPM

Using the modified approach for assigning the new shares outstanding, the Board calculates the cost of equity as $RF + (\beta \times RP)$, or $4.78\% + (0.7971 \times 7.37\%)$, which equals 10.65%. **Tables 9 and 10** in the Appendix show the calculations of the cost of common equity using CAPM. (See also id., V.S. Ghayad 37-38.)

To calculate the 2025 market value of common equity for each railroad, AAR calculated each railroad’s weekly market value using data on shares outstanding from railroad 10-Q and 10-K reports filed with the SEC, multiplied by stock prices at the close of each week in 2025. (Id., V.S. Ghayad 25-26.) AAR calculated the combined 52-week average market value of the railroads to be \$260.4 billion. (Id., V.S. Ghayad 26; see also id., V.S. Ghayad, App. G.) OE has examined the data and determined that AAR’s calculation is correct. See *Calculating Beta supra* p. 8.

MSDCF

The cost of equity in a discounted cash flow model is the discount rate that equates a firm’s market value to the present value of the stream of cash flows that could affect investors. These cash flows are not presumed to be paid out to investors; instead, it is assumed that investors will ultimately benefit from these cash flows through higher regular dividends, special dividends, stock buybacks, or stock price appreciation. Incorporation of these cash flows and the expected growth of earnings are the essential elements of the Morningstar/Ibbotson MSDCF model.

¹⁵ For the purposes of determining the number of shares outstanding, new shares outstanding are assigned to the first Friday on or after the effective date listed in the carriers’ 10-Q and 10-K reports. (AAR Revised Comments, V.S. Ghayad 35 n.31.)

¹⁶ Bloomberg equity prices adjusted for dividends and splits were used in place of Yahoo Finance’s adjusted prices in the calculation of the carrier-specific returns, which are needed to calculate an industry beta. AAR states that due to “prior data-quality concerns involving dividend-adjusted historical price series, Bloomberg stock price data were used for the 2025 CAPM beta regression.” (AAR Revised Comments, V.S. Ghayad 33.) AAR uses the SAS General Linear Model procedure to compute regression data. (Id., V.S. Ghayad 36; see also id., V.S. Ghayad, App. I.) The Board replicated this model using Excel’s linear regression model, arriving at equivalent results.

Cash Flow

The Morningstar/Ibbotson MSDCF model defines cash flows (CF) for the first two stages as income before extraordinary items (IBEI), minus capital expenditures (CAPEX), plus depreciation (DEP) and deferred taxes (DT), or

$$CF = IBEI - CAPEX + DEP + DT.$$

As noted above, the third-stage cash flow is based on two assumptions: depreciation equals capital expenditures, and deferred taxes are zero. That is, cash flow in the third stage of the model is based only on IBEI.

To obtain an average cash-flow-to-sales ratio, AAR divided the total cash flow in the 2021-2025 periods by the total sales over the same periods. (AAR Revised Comments, V.S. Ghayad 40-41.) To obtain the 2025 average cash flow, the cash-flow-to-sales ratio is multiplied by the sales revenue from 2025. (*Id.*, V.S. Ghayad 41.) The 2025 average cash flow figure is then used as the starting point of the Morningstar/Ibbotson MSDCF model. (*Id.*) The initial value of IBEI is determined through the same averaging process for the cash flows in stages one and two. (*Id.*, V.S. Ghayad, App. J.) According to AAR, the data inputs in the cash flow formula were retrieved from the railroads' 2021-2025 10-K filings. (*Id.*, V.S. Ghayad 40-41.)

Growth Rates

Growth of earnings is also calculated in three stages. These three growth-rate stages are what make the Morningstar/Ibbotson model a "multi-stage" model. In the first stage (years one through five), the firm's annual earnings growth rate is assumed to be the median value of the qualifying railroad's three- to five-year growth estimates, as determined by railroad industry analysts and published by the I/B/E/S. In the second stage (years six through 10), the growth rate is the average of all growth rates in stage one. In the third stage (years 11 and onwards), the growth rate is the long-run nominal growth rate of the U.S. economy. This long-run nominal growth rate is estimated by using the historical growth in real Gross Domestic Product (GDP) plus the long-run expected inflation rate.

AAR calculated the first- and second-stage growth rates according to the I/B/E/S data, which was retrieved from Refinitiv. (*Id.*, V.S. Ghayad 43-44.) The third-stage growth rate of 5.57% was calculated by using the sum of the figures for long-run expected growth in real

output, 3.17%,¹⁷ and long-run expected inflation, 2.40%. (*Id.*, V.S. Ghayad 46-48.)¹⁸ OE has reviewed the evidence provided by AAR and determined that the growth rates are correct and consistent with the Board's approved methodology. Accordingly, they will be used in the Board's determination of the cost of equity for 2025.

Market Values for MSDCF

The final inputs to the Morningstar/Ibbotson MSDCF model are the stock market values for the equity of each railroad. To calculate these values, AAR used stock prices from Yahoo Finance for January 2, 2026, and shares outstanding from the 2025 Q3 10-Q reports filed with the SEC. (AAR Opening, V.S. Ghayad 49.)

OE has reviewed AAR's evidence and found it to be accurate. Based on that review, the Board finds that the market values used in the 2025 estimate of the cost of equity using the Morningstar/Ibbotson MSDCF are correct. *See Calculating Beta supra* p. 8.

Cost of Common Equity Capital Using MSDCF

AAR estimates an MSDCF cost of equity of 10.88%. (AAR Revised Comments, V.S. Ghayad 51.) Based on the verified inputs discussed above, the Board adopts 10.88% as the MSDCF cost of equity. This estimate will be averaged with the cost of equity derived from the CAPM approach. **Table 11** shows the MSDCF inputs and the cost-of-equity calculation.

¹⁷ The real GDP growth rate is a compound growth rate calculated from the Bureau of Economic Analysis (BEA) data beginning in 1929. BEA rebased the real GDP from 2005 dollars to 2009 dollars. Beginning in 2024, BEA began using 2017 dollars. (AAR Revised Comments, V.S. Ghayad, App. M.) AAR calculated the growth rate using GDP in 2017 dollars. (*Id.*, V.S. Ghayad 46.)

¹⁸ According to AAR, until the 2013 cost-of-capital determination, the long-run nominal growth rate used was provided by Morningstar/Ibbotson in its Ibbotson SBBI Valuation Yearbook. (AAR Revised Comments, V.S. Ghayad 45-46.) AAR states that this publication has been discontinued. However, for several years, another valuation reference book, the Ibbotson SBBI Classic Yearbook, was expanded to contain many of the statistics found in the Valuation Yearbook. (*Id.*) Using data from the Ibbotson SBBI Classic Yearbook, the Federal Reserve, and the BEA, AAR states that it replicated the Ibbotson calculations for real growth rates and long-term inflation for the 2013 and 2014 cost-of-capital determinations. (*Id.*) Beginning with the 2015 cost-of-capital determination, AAR states the SBBI long-term government yields, an input into the long-run nominal growth rate, were no longer available because Morningstar discontinued publication of the Ibbotson SBBI Classic Yearbook. (AAR Revised Comments, V.S. Ghayad 47.) To replace the SBBI long-term government yields, AAR uses the 20-year U.S. Treasury Bond yields, which it contends are very close to the SBBI long-term government yields used by Ibbotson. (*Id.*) AAR states that this methodology was accepted in the 2015 through 2024 cost-of-capital determinations and so has been used again for 2025. (*Id.*; *see also id.*, V.S. Ghayad, App. M (providing calculations for the stage three growth rate).) OE has reviewed AAR's approach and finds it to be reasonable.

Cost of Common Equity

Based on the evidence provided and the recalculated MSDCF, the Board concludes that the railroad cost of equity in 2025 was 10.77%. This figure is based on an estimate of the cost of equity using a CAPM of 10.65% and an MSDCF estimate of 10.88%. (*Id.*, V.S. Ghayad 52, Table 17.) **Table 12** shows the costs of common equity for each model and the average of the two models.

PREFERRED EQUITY

Preferred equity has some of the characteristics of both debt and equity. Essentially, preferred stock issues are like common stocks in that they have no maturity dates and represent ownership in the company (usually with no voting rights attached). They are similar to debt in that they usually have fixed dividend payments (akin to interest payments).

AAR states that there is no preferred stock in this year's calculation; therefore, AAR computed the market value of preferred equity during 2025 to be \$0. (*Id.*, V.S. Ghayad 52.)

OE has determined that AAR's computations are correct. Based on that review, **Table 13** shows the calculations of the cost of preferred equity.

CAPITAL STRUCTURE MIX

The Board will apply the same inputs used in the market value for the CAPM model to the capital structure.

OE has determined that the average market values of debt, common equity, and preferred equity are \$56.585 billion, \$260.420 billion, and \$0, respectively. The percentage share of debt increased from 17.26% in 2024 to 17.85% in 2025. The percentage share of common equity decreased from 82.74% in 2024 to 82.15% in 2025. Based on that review, **Table 14** in the Appendix shows the calculations of the average market value of common equity and relative weights for each railroad. **Table 15** in the Appendix shows the 2025 capital structure mix.

COMPOSITE COST OF CAPITAL

Based on the evidence furnished in the record and the MSDCF, the 2025 composite after-tax cost of capital for the railroad industry, as set forth in **Table 16** in the Appendix, was 9.79%. The procedure used to develop the composite cost of capital is consistent with the Statement of Principle established by the Railroad Accounting Principles Board: "Cost of capital shall be a weighted average computed using proportions of debt and equity as determined by their market values and current market rates." R.R. Accounting Principles Bd., *Final Report*, Vol. 1 (1987). The 2025 cost of capital was 0.89 percentage points lower than the 2024 cost of capital (10.68%). See *R.R. Cost of Cap.—2024*, EP 558 (Sub-No. 28), slip op. at 11.

CONCLUSIONS

The Board finds that for 2025:

1. The cost of railroad long-term debt was 5.26%.
2. The cost of common equity was 10.77%.
3. The cost of preferred equity was 0%.
4. The capital structure mix of the railroads was 17.85% long-term debt, 82.15% common equity, and 0% preferred equity.
5. The composite railroad industry cost of capital was 9.79%.

It is ordered:

1. This decision is effective October 10, 2026.
2. This proceeding is discontinued.

By the Board, Board Members Fuchs, Hedlund, Kloster, and Schultz.

APPENDIX

Table 1
2025 Traded & Non-traded Bonds

Railroad	Traded vs. Non-traded	Number	Market Value (\$000)	% Market Value to All Bonds
CSX	Traded ¹	33	\$16,342,844	97.37%
	Non-traded	2	441,679	2.63%
	Total	35	16,784,523	100.00%
NSC	Traded	37	14,801,720	97.37%
	Non-traded	1	400,000	2.63%
	Total	38	15,201,720	100.00%
UPC	Traded ²	60	24,931,325	100.00%
	Non-traded	0	0	0.00%
	Total	60	24,931,325	100.00%
Composite	Traded	130	56,075,889	98.52%
	Non-traded	3	841,679	1.48%
	Total	133	\$56,917,568	100.00%
¹ Includes 1 bond issued during 2025, prorated based on the date of issue. ² Includes 2 bonds issued during 2025, prorated based on the date of issue.				

Table 2
2025 Bonds, Notes, & Debentures

Railroad	Number of Traded Issues	Market Value Traded Issues (\$000)	Current Cost	Weighted Cost
CSX	33	\$16,342,844	5.141%	1.498%
NSC	37	\$14,801,720	5.281%	1.394%
UPC	60	\$24,931,325	5.142%	2.286%
Composite	130	\$56,075,889		5.179%

Table 3
2025 Equipment Trust Certificates

Railroad	Number of Issues	Market Value (\$000)	Yield %	Weighted Yield (\$000)
CSX	0	\$0	0.00%	\$0
NSC	0	0	0.00%	0
UPC	4	692,136	4.588%	31,756
Composite	4	\$692,136	4.588%	\$31,756

Table 4
2025 Conditional Sales Agreements

Railroad	Number of Issues	Market Value (\$000)	Current Cost	Weighted Cost
Composite	0	\$0		0.00%

Table 5
2025 Capitalized Leases & Miscellaneous Debt

Railroad	Capitalized Leases (\$000)	Miscellaneous Debt¹ (\$000)	Total Other Debt (\$000)
CSX	\$6,823	(\$270,026)	(\$263,203)
NSC	11,116	(876,148)	(865,032)
UPC	104,551	(786)	103,765
Composite	\$122,490	(\$1,146,960)	(\$1,024,470)

¹ Miscellaneous debt includes unamortized debt discount.

Table 6
2025 Market Value of Debt

Type of Debt	Market Value of Debt (\$000)	Percentage of Total Market Value (Excluding Other Debt)
Bonds, Notes, & Debentures	\$56,917,568	98.80%
ETCs	692,136	1.20%
CSAs	0	0.00%
Subtotal	57,609,705	100.00%
Capitalized Leases/Miscellaneous Debt	(\$1,024,470)	NA
Total Market Value of Debt	\$56,585,235	NA

Table 7
2025 Flotation Cost for Debt

Type of Debt	Market Weight (Excludes Other Debt)	Flotation Cost	Weighted Average Flotation Cost
Bonds, Notes, & Debentures	98.799%	0.093%	0.092%
ETCs	1.201%	0.083%	0.001%
CSAs	0.000%	0.000%	0.000%
Total	100.000%		0.093%

Table 8
2025 Current Cost of Debt

Type of Debt	Percentage of Total Market Value (Excludes Other Debt)	Debt Cost	Weighted Debt Cost (Excludes Other Debt)
Bonds, Notes, & Debentures	98.799%	5.179%	5.116%
ETCs	1.201%	4.588%	0.055%
CSAs	0.000%	0.000%	0.000%
Subtotal	100.000%		5.171%
Flotation Cost			0.093%
Weighted Cost of Debt			5.264%

Table 9
2025 Summary Output

Regression Statistics					
Multiple R	0.618631				
R Square	0.382704				
Adjusted R Square	0.380321				
Standard Error	0.022761				
Observations	261				
ANOVA					
	Df	SS	MS	F	Significance F
Regression	1	0.083185	0.083185	160.572008	5.88E-29
Residual	259	0.134176	0.000518		
Total	260	0.217361			
	Coefficients	Standard Error	t Stat	P-value	
Intercept	-0.000815	0.001414	-0.576557	0.564740	
X-Variable	0.797057	0.062901	12.671701	5.88E-29	

Table 10
2025 CAPM Cost of Common Equity

Risk-Free Rate (RF)	4.78%	
RF+(Beta x Market Risk Premium)	4.78% + (0.7971 x 7.37%)	10.65%
Cost of Equity		10.65%

Table 11
2025 Cost of Equity Using STB's MSDCF
(\$ in millions)

Railroad	CSX		NSC		UPC	
Initial Cash Flow	\$2,951		\$2,096		\$5,908	
Input for Terminal C.F.	\$3,574		\$2,744		\$6,926	
Stage One Growth	6.30%		6.33%		7.30%	
Stage Two Growth	6.64%		6.64%		6.64%	
Stage Three Growth*	5.57%		5.57%		5.57%	
Year	Value on 12/31 of Each Year	Present Value	Value on 12/31 of Each Year	Present Value	Value on 12/31 of Each Year	Present Value
1	\$3,137	\$2,822	\$2,229	\$2,026	\$6,339	\$5,702
2	3,334	2,699	2,370	1,958	6,802	5,504
3	3,544	2,582	2,520	1,892	7,298	5,313
4	3,767	2,470	2,679	1,829	7,831	5,129
5	4,005	2,362	2,849	1,768	8,403	4,951
6	4,271	2,267	3,038	1,713	8,960	4,749
7	4,554	2,175	3,240	1,661	9,555	4,556
8	4,857	2,087	3,455	1,610	10,190	4,371
9	5,179	2,003	3,684	1,561	10,867	4,193
10	5,523	1,922	3,929	1,513	11,588	4,023
Terminal	\$126,902	\$44,151	\$122,200	\$47,053	\$256,572	\$89,067
Sum of Present Value	\$67,540		\$64,583		\$137,560	
Market Value	\$67,540		\$64,583		\$137,560	
COE	11.14%		10.01%		11.16%	
Weighted COE	2.79%		2.40%		5.69%	
Industry COE	10.88%					

Table 12
2025 Cost of Common Equity Capital

Model	
Capital Asset Pricing Model	10.65%
Multi-Stage Discounted Cash Flow	10.88%
Cost of Common Equity	10.77%

Table 13
2025 Cost & Market Value of Preferred Stock

Railroad	Dividend	Value Per Share	Div. Yield %	Shares (000)	Market Value (\$000)	Market Weight	Weighted Yield
CSX	\$0.00	\$0.00	0.00%	0	\$0	0.00%	0.00%
NSC	0.00	0.00	0.00%	0	0	0.00%	0.00%
UPC	0.00	0.00	0.00%	0	0	0.00%	0.00%
Composite					\$0	0.00%	0.00%

Table 14
2025 Average Market Value for Common Equity

Railroad	Average Market (\$000)	Average Market Weight
CSX	\$62,673,705	24.06%
NSC	59,466,913	22.84%
UPC	138,279,308	53.10%
COMPOSITE	\$260,419,925	100.00%

Table 15
2025 Capital Structure Mix

Railroad	Type of Capital	Market Value (\$000)	Weight
CSX	Debt	\$16,521,321	20.86%
	Equity	62,673,705	79.14%
	P. Equity	0	0.00%
NSC	Debt	14,336,688	19.43%
	Equity	59,466,913	80.57%
	P. Equity	0	0.00%
UPC	Debt	25,727,226	15.69%
	Equity	138,279,308	84.31%
	P. Equity	0	0.00%
Composite Weight	Debt	56,585,235	17.85%
	Equity	260,419,925	82.15%
	P. Equity	0	0.00%
Total		\$317,005,160	100.00%

Table 16
2025 Cost-of-Capital Computation

Type of Capital	Cost	Weight	Weighted Average
Long-Term Debt	5.26%	17.85%	0.94%
Common Equity	10.77%	82.15%	8.85%
Preferred Equity	0.00%	0.00%	0.00%
Composite Cost of Capital		100.00%	9.79%