

SURFACE TRANSPORTATION BOARD

DECISION

Docket No. EP 664 (Sub-No. 4)

REVISIONS TO THE BOARD'S METHODOLOGY FOR DETERMINING THE RAILROAD
INDUSTRY'S COST OF CAPITAL

Digest:¹ The Board is withdrawing its proposal to incorporate a third model in its methodology for calculating the cost-of-equity component of the railroad industry's cost of capital.

Decided: June 23, 2020

On September 30, 2019, as corrected October 11, 2019, the Board issued a notice of proposed rulemaking seeking public comment on its proposal to change its existing methodology for determining the railroad industry's cost of capital. Revisions to the Board's Methodology for Determining the R.R. Indus.'s Cost of Capital (NPRM), EP 664 (Sub-No. 4) (STB served Sept. 30, 2019), corrected (STB served Oct. 11, 2019).² Specifically, the Board proposed incorporating an additional model, referred to as the "Step Multi-Stage Discounted Cash Flow Model" (Step MSDCF), to complement its use of Morningstar/Ibbotson Multi-Stage Discounted Cash Flow Model (Morningstar/Ibbotson MSDCF) and Capital Asset Pricing Model (CAPM) in determining the cost-of-equity component of the cost of capital. Based upon the comments and replies received in response to the NPRM, the Board will withdraw its proposal and discontinue this proceeding.

BACKGROUND

Each year, the Board determines the railroad industry's cost of capital and then uses this figure in a variety of regulatory proceedings, including the annual determination of railroad revenue adequacy, rate reasonableness cases, feeder line applications, rail line abandonments,

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 Policy Statement on Plain Language Digests in Decisions, EP 696 (STB served Sept. 2, 2010).

² References to the NPRM in this decision refer to the corrected decision. The NPRM was published in the Federal Register on October 18, 2019 (84 Fed. Reg. 55,897). On November 22, 2019, the Board served a clarifying decision with a revised Appendix A detailing the algebraic formula for its proposal.

trackage rights cases, and rail merger reviews. The annual cost-of-capital figure is also used as an input in the Uniform Railroad Costing System, the Board's general purpose costing system.

The Board calculates the cost of capital as the weighted average of the cost of debt and the cost of equity. See Methodology to be Employed in Determining the R.R. Indus.'s Cost of Capital, EP 664, slip op. at 3 (STB served Jan. 17, 2008). While the cost of debt is observable and readily available, the cost of equity (the expected return that equity investors require) can only be estimated.³ Id. Thus, estimating the cost of equity requires relying on appropriate finance models. Id.

In 2009, the Board began to calculate the cost of equity based on a simple average of the estimates produced by CAPM and Morningstar/Ibbotson MSDCF. See Use of a Multi-Stage Discounted Cash Flow Model in Determining the R.R. Indus.'s Cost of Capital, EP 664 (Sub-No. 1), slip op. at 15 (STB served Jan. 28, 2009). Since that time, the Board has consistently found that the simple average of CAPM and Morningstar/Ibbotson MSDCF has produced a reasonable estimate of the cost of equity used to gauge the financial health of the railroad industry. See, e.g., R.R. Cost of Capital—2018, EP 558 (Sub-No. 22) (STB served Sept. 30, 2019); R.R. Cost of Capital—2017, EP 558 (Sub-No. 21) (STB served Dec. 6, 2018).

Under CAPM, the cost of equity is equal to $RF + \beta \times RP$, where RF is the risk-free rate of interest,⁴ RP is the market-risk premium,⁵ and β (or beta) is the measure of systematic, non-diversifiable risk. Under CAPM, the Board calculates the risk-free rate based on the average yield to maturity for a 20-year U.S. Treasury Bond. The estimate for the market-risk premium is based on returns experienced by the S&P 500 since 1926. Lastly, the industry beta is calculated by using a portfolio of weekly, merger-adjusted railroad stock returns for the previous five years.

Under Morningstar/Ibbotson MSDCF, the cost of equity is the discount rate that equates a firm's market value to the present value of the expected stream of cash flows. Morningstar/Ibbotson MSDCF calculates growth of earnings in three stages. In the first stage (years one through five), the qualifying railroad's⁶ annual earnings growth rate is assumed to be the median value of its three- to five-year growth rate estimates, as determined by railroad

³ The Board must make "an adequate and continuing effort to assist . . . carriers in attaining revenue levels," which should, among other objectives, "permit the raising of needed equity capital." 49 U.S.C. § 10704(a)(2).

⁴ The risk-free rate of interest is an exogenously determined interest rate at which investors may borrow or lend without fear of default.

⁵ The market-risk premium is the predicted additional return from investing in the market (in this case, the S&P 500) instead of risk-free investments over the long term. It is calculated by subtracting the risk-free rate from that market return.

⁶ The Board determines the railroad industry's cost of capital for a "composite railroad," which is based on data from Class I carriers that meet certain criteria developed in Railroad Cost of Capital—1984, 1 I.C.C.2d 989 (1985), as modified by Revisions to the Cost-of-Capital Composite Railroad Criteria, EP 664 (Sub-No. 3) (STB served Oct. 25, 2017).

industry analysts and published by the Institutional Brokers Estimate System.⁷ In the second stage (years six through 10), the growth rate is the simple average of all of the qualifying railroads' median three- to five-year growth rate estimates 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 plus the long-run expected inflation rate.

Most recently, in September 2019, the Board used the simple average of CAPM and Morningstar/Ibbotson MSDCF to calculate the cost of capital in Railroad Cost of Capital—2018, Docket No. EP 558 (Sub-No. 22). In that proceeding, comments and supporting data from the Association of American Railroads (AAR) showed a large increase in growth rates⁸ and the cost of capital over the prior year's figures.⁹ See generally AAR Comments, Apr. 22, 2019, R.R. Cost of Capital—2018, EP 558 (Sub-No. 22). According to AAR, lower tax rates and rail operating changes, including precision scheduled railroading, among other factors, contributed to analysts' higher growth expectations in 2018. See *id.* at V.S. Gray 45-46. In Railroad Cost of Capital—2018, EP 558 (Sub-No. 22), slip op. at 3, the Board explained that the validity of its existing methodology was not undermined simply because the cost of capital turned out to be higher than expected. However, the high cost of capital combined with the major operating changes within the rail industry did prompt the Board to explore whether its methodology could be improved with an additional model to capture different information. In particular, the Board considered changes related to growth rates in the second stage or middle horizon (years six through 10) of Morningstar/Ibbotson MSDCF, leading to the NPRM in this docket.

As proposed in the NPRM, Step MSDCF would calculate growth of earnings in three stages. The first and third stages would be identical to those of Morningstar/Ibbotson MSDCF. Unlike Morningstar/Ibbotson MSDCF, however, the growth rate of the second stage (years six through 10) would be a gradual transition between the first and third stages. The transition would begin at year six and step down or up in equal increments each year towards the terminal growth rate (or third stage). See NPRM, EP 664 (Sub-No. 4), slip op. at 5, 10-11. Furthermore, the NPRM proposed to calculate the cost of capital pursuant to the weighted average of the three models, with CAPM weighted at 50%, Morningstar/Ibbotson MSDCF weighted at 25%, and Step MSDCF weighted at 25%. *Id.* at 3.

In response to the NPRM, the Board received comments and replies from AAR and Western Coal Traffic League (WCTL), as well as comments from Roger J. Grabowski,

⁷ This data can be retrieved from Refinitiv (formerly Thomson ONE Investment Management). See R.R. Cost of Capital—2018, EP 558 (Sub-No. 22), slip op. at 10.

⁸ For example, the second stage growth rate estimate produced by Morningstar/Ibbotson MSDCF produced a value of 19.88%, as compared with the second stage growth rate value of 13.55% reflected in the 2017 cost of capital. Compare R.R. Cost of Capital—2018, EP 558 (Sub-No. 22), slip op. at 17, with R.R. Cost of Capital—2017, EP 558 (Sub-No. 21), slip op. at 18.

⁹ The 2018 cost of capital (12.22%) was 2.18 percentage points higher than the 2017 cost of capital (10.04%).

Managing Director of Duff & Phelps. AAR's primary argument is that incorporation of Step MSDCF is unwarranted because the 2018 cost-of-capital figure was a "data anomaly" caused by an unusual combination of market factors that affected the inputs used in Morningstar/Ibbotson MSDCF. (AAR Comments 1-2.) According to AAR, Step MSDCF would neither remedy what caused the 2018 anomaly in the first place nor prevent future anomalies of the same kind. (Id. at 3.) AAR also identifies problems in Step MSDCF that it argues would need to be corrected before the Board could adopt it. (Id. at 23-25.) As an alternative to Step MSDCF, AAR encourages the Board to move the observation date (the date upon which the data for the cost of capital is drawn) from the last Friday in December to the last Friday in January to prevent a future anomaly "should that rare event reoccur." (Id. at 3.) WCTL also opposes the Board's Step MSDCF proposal, although for different reasons. WCTL states that Step MSDCF represents, at best, a modest improvement to the Board's cost-of-capital methodology and argues instead that both Step MSDCF and Morningstar/Ibbotson MSDCF should be eliminated from the Board's cost-of-capital methodology completely. (WCTL Comments 2, 19-20.) According to WCTL, the Board should reconfigure its cost-of-capital methodology to rely on CAPM alone, with some additional modifications. (Id. at 5-8.) Dr. Grabowski suggests that the third-stage growth rate of MSDCF may be incorrectly estimating the railroads' cost of equity and proposes a modification to it. (Grabowski Comments 1, 4.)

DISCUSSION

Although the Board found that its current cost-of-capital methodology remained reasonable, the Board proposed including Step MSDCF in its cost-of-equity calculation in an attempt to improve its methodology in light of the 2018 cost of capital and recent operating changes within the rail industry. However, the comments in response to the NPRM indicate that adding Step MSDCF may not be a necessary change to the Board's cost-of-capital methodology at this time. AAR persuasively argues that the 2018 cost-of-capital figure was an anomaly caused by a mismatch between declining stock prices and lagging growth rate estimates in December, that the Board's approach does not effectively address the anomaly, and that Step MSDCF has technical issues. (See AAR Comments 8-13, 20-22, V.S. Villadsen 5-15.) Although WCTL criticizes aspects of AAR's analysis, (WCTL Reply 3-5), it does not dispute AAR's demonstration of the cause of the anomaly. AAR and WCTL agree that adding Step MSDCF to the Board's cost-of-capital methodology would provide little to no meaningful benefit. (See AAR Comments 29; WCTL Reply 2.) Given this record, the Board will withdraw its proposal to add Step MSDCF to its cost-of-equity calculation.

The Board will not pursue AAR's suggestion that, in lieu of the proposal, the Board permanently move the observation date for stock price and growth rate inputs from the end of December to the end of the following January. (See AAR Comments 26.) The events that occurred in 2018 are by AAR's own account "unusual," (AAR Comments 3), and using a January date raises other issues, such as whether a January data point includes information not

available at the end of the prior year. See Railroad Cost of Capital—2008, EP 558 (Sub-No. 12), slip op. at 9 (STB served Sept. 25, 2009).¹⁰

The Board also declines to adopt WCTL’s alternative proposals. The Board has explicitly rejected some, such as WCTL’s requests to either move to a CAPM-only approach or to change the Morningstar/Ibbotson MSDCF regarding cashflows and growth rates, (WCTL Comments 2), in prior decisions.¹¹ WCTL’s other suggestion, that Morningstar/Ibbotson MSDCF’s “variability” is a reason to abandon it, (WCTL Comments 16-17), has been implicitly rejected in the Board’s decisions finding that Morningstar/Ibbotson MSDCF and CAPM each have their own strengths and weaknesses that, when averaged together, lead to a more robust result.¹² And all of WCTL’s arguments, including that the Board should address the generally accepted accounting principles treatment of operating leases as debt for purposes of the cost of capital, (WCTL Comments 29-30),¹³ go beyond the scope of this proceeding exploring whether the Board’s methodology could be improved with an additional model to capture different information, addressing the types of results that occurred in 2018.¹⁴

CONCLUSION

For the reasons discussed above, the Board will withdraw its proposal to incorporate Step MSDCF into its methodology for determining the railroad industry’s cost of capital and discontinue this proceeding.

¹⁰ As WCTL points out, in Railroad Cost of Capital—2008, EP 558 (Sub-No. 12), slip op. at 10, the Board rejected AAR’s similar proposal to use March 31, 2009 data, in favor of WCTL’s data that was drawn from the end of the year. (WCTL Reply 5.)

¹¹ Pet. of the W. Coal Traffic League to Inst. a Rulemaking Proceeding to Abolish the Use of the Multi Stage Discounted Cash Flow Model in Determining the R.R. Indus.’s Cost of Equity Capital, EP 664 (Sub-No. 2), slip op. at 1-2 (STB served Sept. 28, 2018); Pet. of the W. Coal Traffic League, EP 664 (Sub-No. 2), slip op. at 2 (STB served Aug. 14, 2017); Pet. of the W. Coal Traffic League, EP 664 (Sub-No. 2), slip op. at 2, 5, 9, 11-13 (STB served Apr. 28, 2017); Pet. of the W. Coal Traffic League, EP 664 (Sub-No. 2), slip op. at 11, 14, 17-18, 20 (STB served Oct. 31, 2016); Use of a Multi-Stage Discounted Cash Flow Model, EP 664 (Sub-No. 1), slip op. at 12-13.

¹² See Pet. of the W. Coal Traffic League, EP 664 (Sub-No. 2), slip op. at 11 (STB served Oct. 31, 2016).

¹³ WCTL raised this argument previously in Railroad Cost of Capital—2015, EP 558 (Sub-No. 19), slip op. at 4-5 (STB served Aug. 5, 2016), and the Board declined to adopt it.

¹⁴ Dr. Grabowski’s suggestion that the third-stage growth rate of Morningstar/Ibbotson MSDCF may incorrectly estimate the railroads’ cost of equity, and his proposed new approach to estimating the long-run nominal growth rate, (Grabowski Comments 1, 4), is similarly beyond the scope of the question raised in this proceeding.

It is ordered:

1. The Board's proposal to modify its existing cost-of-capital methodology by incorporating Step MSDCF is withdrawn. This proceeding is discontinued.
2. Notice of the Board's action will be published in the Federal Register.
3. This decision is effective on the date of service.

By the Board, Board Members Begeman, Fuchs, and Oberman. Board Member Oberman commented with a separate expression.

BOARD MEMBER OBERMAN, commenting:

While I concur in the Board's decision for the reasons stated therein, I write separately to emphasize my conviction that the Board should continue to closely scrutinize the extent to which equity markets are incentivizing railroads to reduce operating ratios and whether and how such efforts might result in changes to the Board's cost-of-capital figure.

It must be emphasized that the annual cost-of-capital determination directly impacts important aspects of the Board's oversight duties. For example, the Board uses its cost-of-capital determination in a variety of regulatory proceedings, including railroad revenue adequacy determinations, feeder-line applications, rail line abandonments, trackage rights cases, and rail merger reviews. The annual cost-of-capital figure is also an input into the Uniform Railroad Costing System and therefore has a direct bearing on rate reasonableness cases.

Equity markets' incentivizing railroads to lower operating ratios could translate into increases in the cost-of-capital figure. My concern is that, as a result, a railroad might be found to be revenue inadequate even when, in reality, it is financially healthy. Likewise, a higher cost-of-capital figure can affect whether a particular commodity shipment is above or below the 180% R/VC threshold and is therefore eligible for rate review by the Board.

Separately and in addition to the above matters, the need for continued scrutiny arises from my increasing concern that there is a point beyond which the demands of equity markets for a return of capital may impact the ability of the railroads to meet their common carrier obligations and may deprive the network of the capital it requires to support the needs of the public and the national defense.

Finally, given that the United States and the entire world are presently facing health and economic crises, and that these crises have adversely affected the railroad industry along with the other parts of the economy, I recognize that my above stated concerns are not as immediate as they might otherwise be. Nevertheless, as the economy recovers and the railroad industry regains its full strength, the concerns outlined above may well reoccur and warrant the continued scrutiny I have urged.