

41209  
EB

SERVICE DATE – OCTOBER 29, 2010

This decision will be printed in the bound volumes of  
the STB printed reports at a later date.

SURFACE TRANSPORTATION BOARD

CORRECTED DECISION\*

Docket No. EP 558 (Sub-No. 13)

RAILROAD COST OF CAPITAL—2009

Digest:<sup>1</sup> The agency finds that the cost of capital for the railroad industry in 2009 was 10.43%. This figure represents the Board's estimate of the average rate of return needed to persuade investors to provide capital to the freight rail industry. The cost-of-capital figure, which is calculated each year, is an essential component of many of the agency's core regulatory responsibilities.

Decided: October 28, 2010

BY THE BOARD:

One of the Board's regulatory responsibilities is to determine annually the railroad industry's cost of capital.<sup>2</sup> 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 decision corrects the decision served on September 30, 2010. In that decision, footnote 4 incorrectly stated that Western Coal Traffic League, in its comments, suggested that the Board consider expanding the cost-of-capital composite group. Footnote 4 herein is corrected to accurately reflect the comments that are the subject of that footnote. The September 30, 2010 decision remains unchanged in all other respects.

<sup>1</sup> 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).

<sup>2</sup> 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.

This proceeding was instituted in Railroad Cost of Capital—2009, EP 558 (Sub-No. 13) (STB served Mar. 30, 2010), to update the railroad industry's cost of capital for 2009. In that decision, the Board solicited comments from interested persons on the following issues: (1) the railroads' 2009 current cost of debt capital; (2) the railroads' 2009 current cost of preferred equity capital (if any); (3) the railroads' 2009 cost of common equity capital; (4) how the change in BNSF Railway Company's (BNSF's) share prices from November 2009 through December 2009, following the announcement of BNSF's acquisition by Berkshire Hathaway Inc., should be considered in calculating the 2009 cost of common equity capital; and (5) the 2009 capital structure mix of the railroad industry on a market value basis.

We have received comments from the Association of American Railroads (AAR) that contain the information that is used in making the annual cost-of-capital determination as established in Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital, EP 664 (Sub-No. 1) (STB served Jan. 28, 2009). Kansas City Southern Railway Company (KCSR) and BNSF submitted opening comments in response to the Board's March 30 decision in this proceeding. Both KCSR and BNSF agree that the price of BNSF's shares should be considered in the calculation of the 2009 cost of common equity capital. Similarly, Western Coal Traffic League (WCTL), National Grain and Feed Association (NGFA),<sup>3</sup> and PPL Montana, LLC/PPL Energyplus, LLC agree with the inclusion of BNSF in the 2009 cost-of-capital determination.<sup>4</sup> WCTL also raises various issues concerning AAR's filing, including allegations such as AAR's failure to use 2005-2008 restated financial data, AAR's selection of growth rates, and AAR's failure to provide electronic workpapers for its calculations. These issues will be addressed below.

### *2009 Cost-of-Capital Determination*

Consistent with previous cost-of-capital proceedings, AAR calculated the cost of capital for a "composite railroad" based on criteria developed in the Railroad Cost of Capital—1984, 1 I.C.C. 2d 989 (1985).<sup>5</sup> The following 4 railroad holding companies meet these criteria:

---

<sup>3</sup> Although NGFA agrees that the price of BNSF's shares should be included in the 2009 cost-of-capital determination, it generally suggests that the Board adjust the market value to account for the Berkshire Hathaway/BNSF transaction. However, NGFA did not provide, nor does the Board have on record, a specific proposal to calculate BNSF's market value. Therefore, we will not address this issue here.

<sup>4</sup> A few parties provided additional comments on issues not raised in the Board's March 30 decision. For example, KCSR and NGFA assert that the Board should consider expanding the composite group for future cost-of-capital determinations. As part of this decision, however, we will not consider matters unrelated to the 2009 cost-of-capital determination.

<sup>5</sup> The composite railroad includes those Class I carriers that: (1) are listed on either the New York or American Stock Exchange; (2) paid dividends throughout the year; (3) had rail assets greater than 50% of its total assets; and (4) had a debt rating of at least BBB (Standard & Poor's) and BAA (Moody's).

Burlington Northern Santa Fe Corporation, CSX Corporation, Norfolk Southern Corporation, and Union Pacific Corporation.<sup>6</sup>

As discussed below, we have examined the procedures used by AAR to calculate for 2009 the railroad industry's: (1) cost-of-debt capital; (2) cost of common equity capital; (3) cost of preferred equity capital;<sup>7</sup> (4) capital structure; and (5) composite after-tax cost of capital. We estimate that the 2009 railroad cost of capital was 10.43%.

## DEBT CAPITAL

AAR developed its 2009 current cost of debt using bond price data from Standard & Poor's Corporation *Bond Guide* and a Standard & Poor's database for those bonds not publicly traded. 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 contained in Standard & Poor's *Bond Guide* for the current cost of bonds, based on monthly prices and yields during 2009, for all issues (a total of 61) that were publicly traded during the year. To develop the current (in 2009) market value of bonds, AAR used these traded bonds and 58 additional bonds that were outstanding but not publicly traded during 2009. Continuing 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 \$29.548 billion (\$17.577 billion traded, and \$11.971 billion non-traded). Based on the yields for the traded bonds, AAR calculated the weighted average 2009 yield for all bonds to be 5.669%. We have examined AAR's bond price and yield data and have determined that AAR's computations are correct. Our calculations and data for all bonds are shown in **Tables 1** and **2** of the Appendix.

### *Cost of Equipment Trust Certificates (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. After calculating the

---

<sup>6</sup> These are the same companies used in Railroad Cost of Capital—2008, EP 558 (Sub-No. 12) (STB served Sept. 25, 2009).

<sup>7</sup> There was no preferred stock outstanding in the year 2009.

2009 yields for these government securities, AAR added basis points<sup>8</sup> to these yields to compensate for the additional risks associated with the ETCs.

In 2009, one new ETC was issued by BNSF with an interest rate spread 80 basis points above government bonds with similar maturities. Because it is a current measure of the costs of ETCs, the 80 basis point spread is used here as the appropriate interest rate spread above government bonds. There were 20 ETCs issued prior to 2009 that were outstanding during the year. Using the yield spreads, AAR calculated the weighted average cost of ETCs to be 3.551%<sup>9</sup> and their market value to be \$708.1 million for 2009.<sup>10</sup>

In its comments, WCTL expressed concern that AAR misstated the value of BNSF's ETCs. On rebuttal, AAR responded that the ETC values BNSF used in its tables, for the calculation of the cost of debt and the weighted cost of capital, are correct. However, AAR admitted that Appendix C, submitted in its opening comments, was out-of-date. AAR submitted a corrected version of Appendix C in its rebuttal. After reviewing AAR's corrected appendix, we conclude that it is accurate and consistent with AAR's debt calculation. A summary of the ETC computations is shown in **Table 3** in the Appendix to this decision.

#### *Cost of Conditional Sales Agreements (CSAs)*

CSAs represent a small fraction (less than 1%) of total railroad debt, and only 2 CSAs (issued by CSX) were outstanding in 2009. The cost of CSAs can be estimated by adding an additional factor to the yield spread between government bonds and ETCs. AAR used the yield spread between CSAs and ETCs for 1997 (the last year when a new CSA was issued) of 32 basis points to develop the year 2009 yield spread between CSAs and government bonds. These 32 basis points are added to the 80 basis point spread between government bonds and ETCs. As a result, AAR estimates that 112 basis points must be added to the yield of government bonds with comparable maturities to develop the cost of CSAs. Using this yield spread, AAR calculated the weighted average cost of CSAs for 2009 to be 2.730%. AAR calculated the market value for all modeled CSAs to be \$43.3 million. We have examined the cost and market value of the CSAs using AAR's data, and agree with AAR's calculations. **Table 4** in the Appendix shows the market value of all modeled CSAs to be \$43.3 million.

---

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

<sup>9</sup> This is lower than the 2008 figure of 4.432%.

<sup>10</sup> AAR approximated the market values of ETCs using the same procedures used in previous cost-of-capital determinations. During review of the ETC calculation, the Board noticed that the sum of the ETC market value for all 4 railroads was inaccurate. We have adjusted AAR's ETC calculation by \$2,000 to account for this error. This change has no effect on the overall cost of debt. The alteration is noted in all tables where ETCs are applicable.

*Capitalized Leases and Miscellaneous Debt*

As in previous cost-of-capital determinations, AAR excluded the cost of capitalized leases and of miscellaneous debt in its computation of the overall current cost of debt because these costs are not directly observable in the open market. Also, in keeping with past practice, AAR included the book value of leases and commercial paper in the overall market value of debt, which is used to determine the railroads' capital structure mix. AAR calculated that the market value for the capitalized leases and miscellaneous debt was \$3.919 billion for 2009.<sup>11</sup> We have examined the market value for capitalized leases and miscellaneous debt using AAR's data, and we agree with AAR's calculations. **Table 5** in the Appendix shows the calculations for capitalized leases and miscellaneous debt to be \$3.919 billion.

*Total Market Value of Debt*

AAR calculated that the total market value for all debt during 2009 was \$34.218 billion. We have examined AAR's data and have determined that AAR's calculation is correct. **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 calculating a yield based on the price to investors and a yield that also included flotation costs. The difference between the two yields is the flotation costs expressed in percentage points. For 2009, 5 new issues were reported in 4 filings. A simple average of the 5 flotation costs is 0.103%. AAR calculated the 2009 flotation costs for bonds using publicly available data from electronic filings with the SEC. For the calculation of ETC flotation costs, AAR used a historical SEC study composed of railroad ETC data for the years 1951, 1952, and 1955. SEC, Cost of Flotation of Corporate Securities 1951-1955 (1957). In that study, AAR asserts that the SEC determined ETC flotation costs to average 0.89% of gross proceeds. *Id.* Neither recent nor historical data is publicly available for CSAs. Consequently, the ETC figure was applied. Using 0.89% for both ETCs and CSAs results in flotation costs of 0.078% and 0.073%, respectively.

To compute the overall effect of the flotation cost on debt, the market value weight of the debt outstanding 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. All other debt is excluded from the weight calculation, because a current cost of debt for that debt has not been determined. AAR calculated that flotation costs for debt equal 0.102%. We have reviewed AAR's calculations concerning flotation costs and find that the cost factors developed for the various components of debt are reasonable.<sup>12</sup> **Table 7** in the Appendix shows these calculations.

---

<sup>11</sup> This consists of \$3.689 billion of capitalized leases and \$230.3 million of miscellaneous debt. Non-modeled ETCs and non-modeled CSAs, as defined by AAR, are included in the miscellaneous debt category.

<sup>12</sup> AAR calculated the 2009 flotation costs for bonds using publicly available data from electronic filings with the SEC.

*Overall Current Cost of Debt*

AAR concluded that the railroads' cost of debt for 2009 was 5.72%.<sup>13</sup> We have 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**

We estimate the cost of common equity capital by calculating the simple average of estimates produced by a Capital Asset Pricing Model (CAPM) and the Morningstar/Ibbotson Multi-Stage Discounted Cash Flow Model (MSDCF).

*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  $\beta$  (or beta) is the measure of systematic, non-diversifiable risk. In order to calculate  $RF$ , we asked the railroads to provide the average yield to maturity in 2009 for a 20-year U.S. Treasury Bond. Similarly, the railroads were asked to provide an estimate for  $RP$  based on returns experienced by the S&P 500 since 1926. Finally, we instructed the railroads to calculate beta using a portfolio of weekly, merger-adjusted railroad stock returns for the prior 5 years in the following equation:

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

$\alpha$  = constant term;

$R$  = merger-adjusted stock returns for the portfolio of railroads that meet the screening criteria set forth in Railroad Cost of Capital – 1984, 1 I.C.C. 2d 989 (1985);

$SRRF$  = 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

$\varepsilon$  = random error term.

*RF – The Risk Free Rate*


---

<sup>13</sup> This is slightly lower than the 2008 cost of debt (6.57%). As explained above, our measurement of the railroads' cost of debt entails the calculation of a weighted average of the current yields of the various debt instruments issued by the four railroads in our sample.

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 2009 for a 20-year U.S. Treasury Bond, consistent with Cost of Capital Methodology—2006, EP 558 (Sub-No. 10) (STB served Apr. 15, 2008), AAR calculated the 2009 risk free rate to be 4.11%. We have examined AAR's data and the data from the Federal Reserve's website, and have determined that AAR's computation is correct.

#### *RP – The Market-Risk Premium*

Using the approach settled upon in the Cost of Capital Methodology, AAR submitted data reflecting a market risk premium of 6.67%. We have examined the underlying data here and agree that the market risk premium is 6.67%.

#### *Calculating Beta*

The Cost of Capital Methodology requires parties to calculate CAPM's beta using a portfolio of weekly, merger-adjusted stock returns for the prior 5 years in the following equation:  $R - SRRF = \alpha + \beta(RM - SRRF) + \epsilon$ . AAR calculations suggest that the value of beta is 1.0915.<sup>14</sup> AAR and WCTL agree that the Board's methodology of converting annual Treasury Bill (T-Bill) rates to weekly rates should be adjusted to account for compounding. Because both parties have proposed this modification, and accounting for compounding would create a more accurate result, we will modify our previously used method of dividing T-Bill rates by 52 weeks, and convert to a compounding method. We will use the formula provided by AAR in its 2009 workpapers to convert the annual T-Bill rates to weekly T-Bill rates.<sup>15</sup> Application of this new formula in the beta calculation produces a beta estimate of 1.0915.

#### *Cost of Common Equity Capital using CAPM*

Having modified the methodology for the calculation of weekly T-Bill rates, we calculate the cost of equity as  $RF + \beta \times RP$ , or  $4.11\% + (1.0915 \times 6.67\%)$ , which equals 11.39%. **Tables 9 and 10** in the Appendix show the calculations of the cost of common equity using CAPM.

AAR calculated the 2009 market value of common equity for each railroad by calculating weekly market values for each railroad using data on shares outstanding from railroad 10-Q and 10-K reports multiplied by stock prices at the close of each week in 2009. AAR calculated the 52-week average market value as \$83.350 billion. We have reviewed AAR's calculations and have determined that its market value calculation is correct.

---

<sup>14</sup> AAR uses the SAS General Linear Model procedure to compute regression data. The Board uses a standard Excel regression method.

<sup>15</sup> See AAR Workpapers at app. I.

*Multi-Stage Discounted Cash Flow*

The cost of equity in a DCF 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, as well as the expected growth of earnings, are the essential elements of the Morningstar/Ibbotson MSDCF model.

*Cash Flow*

The Morningstar/Ibbotson MSDCF model defines cash flows (CF), for the first 2 stages, as income before extraordinary items (IBEI), minus capital expenditures (CAPEX), plus depreciation (DEP) and deferred taxes (DT), or

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

The third-stage cash flow is based on 2 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 2005-2009 periods by the total sales over the same period. To obtain the 2009 average cash flow, the cash-flow-to-sales ratio is multiplied by the sales revenue from 2009. The 2009 average cash flow figure is then used as the starting point of the Morningstar/Ibbotson MSDCF model. The initial value of IBEI is determined through the same averaging process for the cash flows in stages 1 and 2. According to AAR, the data inputs in the cash flow formula were retrieved from the railroads' 2005-2009 10-K filings with the SEC.

WCTL contests AAR's use of 2005-2008 financial data taken from originally filed 10-K statements. WCTL specifically requests that the Board use 2005-2008 data that has been restated in subsequently filed 10-K statements, and made publicly available. According to WCTL, finance theory holds that, at any particular time, a firm's stock price incorporates all historic price information, as well as all current publicly available information. Therefore, WCTL contends that it would be contrary to finance theory to use original financial forecasts where current pricing information is available. Further, WCTL states that using original financial statements and current stock prices would create an inconsistency in the method used to calculate the cost of equity.

AAR disagrees with WCTL's argument regarding the use of restated financial data, arguing that cash flow is that which is perceived by the investor each year for 5 years. AAR explains that the MSDCF methodology does not look backward in time to see how past cash flows may have changed due to, for example, accounting changes that restate past results. AAR

concludes that investor expectations are based on the current financial condition of a company and its forward prospects.<sup>16</sup>

We disagree with AAR and conclude that restated and publicly available financial data should be used in the calculation of the cost of equity under the MSDCF model. As a general rule, investors use the most accurate and current data available when making investment decisions. In fact, because the Board's MSDCF model exhibits transparency by using only publicly available data, we have no reason to believe an investor would use non-restated data alone. We also agree with WCTL that the current stock price, which we use to calculate market values, incorporates historic price information as well as current publicly available information. For these reasons, we believe that the Board's annual determinations should use the most accurate and current data available at that time.

We have reviewed AAR's and WCTL's cash flow inputs, and have determined that WCTL's inputs have been calculated with the most accurate and current data available. Therefore, we will use the restated 2005-2008 data that has been submitted by WCTL.<sup>17</sup>

#### *Growth Rates*

Growth of earnings is also calculated in 3 stages. These 3 growth-rate stages are what make the Morningstar/Ibbotson model a "multi-stage" model. In the first stage (years 1-5), the firm's annual earnings growth rate is assumed to be the median value of the qualifying railroad's 3- to 5-year growth estimates, as determined by railroad industry analysts, and published by Institutional Brokers Estimate System (IBES). In the second stage (years 6-10), the growth rate is the average of all growth rates in stage 1. 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 GDP and the long-run expected inflation rate.

AAR calculated the first and second-stage growth rates according to the IBES data, which was retrieved from Thomson One Investment Management. The third-stage growth rate

---

<sup>16</sup> AAR commented on the difficulty of using revised numbers for capital expenditures due to the recent separation of expenditures from acquisition of equipment in the 10-K reports. For example, BNSF's original 2008 10-K statement displayed a capital expenditure line with a specific value. However, the 2009 10-K report displayed a revised capital expenditure for 2008 divided into two lines, one containing capital expenditures (excluding equipment), and the other containing acquisition of equipment. For the purpose of the Board's MSDCF methodology, capital expenditures must include the funds used by a company to acquire or upgrade physical assets, such as property, industrial buildings, and equipment.

<sup>17</sup> Although we have determined, in this proceeding, that restated financial data will be used, the Board will not restate past cost-of-capital determinations.

of 5.8% was calculated by using the sum of the long-run expected growth in real output (3.3%) and the long-run expected inflation (2.6%).<sup>18</sup>

In its comments, WCTL asserts that AAR improperly used growth rate estimates from January 4, 2010, 4 days after the close of 2009. WCTL also asserts that AAR erred by deviating from the Board's stated preference for relying upon commercially accepted, neutral growth rate data models, not data models created for litigation. WCTL contends that AAR's deviation circumvented the quality control standards imputed into the median value calculations developed by Thomson One Investment Management Service.

On rebuttal, AAR states that source documents used for the IBES growth rates were downloaded on January 4, 2010, the first business day on which a complete set of 2009 data was available. However, AAR asserts that all growth rates were reviewed in 2009, not 2010. AAR also states that WCTL manipulated growth rate results by omitting 2 elevated rates in the median calculation. AAR opines that the proper way to calculate the median growth rate is by using data provided by Thomson ONE Analytics, a product of Thomson One Investment Management Service, which unlike Thomson ONE Banker<sup>19</sup> provides all available growth rates. According to AAR, the Thomson ONE Banker product excludes certain rates due to a lack of consent from the individual analyst who projected the growth rate. AAR asserts that the Board should not exclude certain median values of growth rates based upon how an analyst developed the rate. Further, AAR concludes that WCTL provided no reasonable justification to exclude certain growth rates.

After reviewing the evidence provided by AAR, we have no reason to conclude that the growth rates have been influenced by 2010 data. Workpapers provided by AAR indicate that data was downloaded in 2010, but reviewed by the analysts in 2009. Further, we also disagree with WCTL that AAR deviated from a commercially accepted growth rate model. AAR used Thomson ONE Analytics, a commercially accepted growth rate product. The fact that AAR used additional growth rates from Thomson ONE Analytics in no way invalidates the estimates gathered. In fact, we conclude that utilizing these growth rates makes for a more accurate median value.

After reviewing comments submitted by AAR and WCTL, we agree that the growth rates provided by AAR are correct and should be used in the determination of the cost of equity for 2009.

---

<sup>18</sup> Because of numerical rounding, the Morningstar/Ibbotson model states that the sum of these 2 rates is 5.8% instead of 5.9%.

<sup>19</sup> WCTL uses the Thompson ONE Banker product for the calculation of IBES growth rates.

*Market Values for MSDCF*

The final inputs to the Morningstar/Ibbotson MSDCF model are the stock market values for the equity of each railroad. According to AAR, it used stock prices from Yahoo Finance for December 31, 2009, and shares outstanding from the 2009 Q3 10-Q reports filed with the SEC.

We have reviewed AAR's evidence and agree that the market values used in the 2009 estimate of the cost of equity using the Morningstar/Ibbotson MSDCF are correct.

*Cost of Common Equity Capital using MSDCF*

AAR estimates a MSDCF cost of equity of 13.46%. However, WCTL calculates that its own MSDCF estimate for the 2009 cost of equity is 13.04%. This variance is attributable to the following: (1) original versus restated 10-K financial statements; (2) whether AAR's growth rates have been influenced by 2010 data; and (3) the median value of each railroad's growth estimate. As discussed above, we conclude that AAR has correctly provided growth rates for all 3 stages of the MSDCF model. We also conclude that WCTL is correct in using revised 10-K financial statements for the calculation of initial and terminal cash flow. Accordingly, we calculate the MSDCF as 13.34%, and we will average this estimate with the cost of equity derived from the CAPM approach. **Table 11** shows the MSDCF inputs and the cost of equity calculation.

*Cost of common equity*

Based on the evidence provided, we conclude that the railroad cost of equity in 2009 is 12.37%. This figure is based on an estimate of the cost of equity using CAPM of 11.39% and a MSDCF estimate of 13.34%. **Table 12** shows both costs of common equity for each model, and the average of the 2 models.

*Electronic Workpapers*

In its Reply, WCTL raises an issue concerning the production and use of AAR's workpapers. WCTL asserts that it sought to obtain from AAR electronic workpapers to assist in its review of AAR's cost-of-capital calculations. WCTL states that AAR provided a scanned hardcopy of its workpapers, a computer-generated (electronically searchable) .pdf of the workpapers, and a variety of Excel spreadsheets. However, WCTL states that AAR provided no Excel spreadsheets for certain items, including the cost-of-debt and the MSDCF calculations. In response, AAR asserts that all of its submissions to the Board were also made available to other participants, including workpapers. Further, AAR states that its workpapers included 2 electronic spreadsheets used for the CAPM beta calculation. AAR also states that certain spreadsheets would be of little or no value to the Board or other participants. It should be noted that WCTL did not file a motion to compel or otherwise bring this issue to the Board's attention prior to filing its Reply, nor does it ask the Board to order the production of additional information or data in this proceeding. Rather, WCTL appears to be requesting that the Board provide guidance on this issue for future cost-of-capital proceedings.

In this instance, we concur with WCTL that calculation of the cost of capital is a necessary function in the determination of railroad revenue adequacy, and it is reasonable to require AAR to submit sufficient data and information necessary to verify its calculations. Therefore, in subsequent cost-of-capital proceedings, AAR is directed to submit to the Board and parties of record, data and information sufficient to allow replication of its calculations.

### **PREFERRED EQUITY**

Preferred equity has some of the characteristics of both debt and equity. Essentially, preferred 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).

There were no preferred stock issues outstanding at the end of 2009.

### **CAPITAL STRUCTURE MIX**

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

We have determined that the average market values of debt and common equity are \$34.218 billion and \$83.350 billion, respectively. The percentage share of debt increased, from 21.54% in 2008 to 29.10% in 2009. The percentage share of common equity decreased, from 78.46% in 2008 to 70.90% in 2009. **Table 13** in the Appendix shows the calculations of the average market value of common equity and relative weights for each railroad. **Table 14** in the Appendix shows the 2009 capital structure mix.

### **COMPOSITE COST OF CAPITAL**

Based on the evidence furnished in the record, and our adjustments to the calculations discussed above, we conclude that the 2009 composite after-tax cost of capital for the railroad industry, as set forth in **Table 15** in the Appendix, was 10.43%. 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 2009 cost of capital was 1.32 percentage points lower than the 2008 cost of capital (11.75%).

### **CONCLUSIONS**

We find that for 2009:

1. The current cost of railroad long-term debt was 5.72%.
2. The cost of common equity was 12.37%.

3. The capital structure mix of the railroads was 29.10% long-term debt and 70.90% common equity.

4. The composite railroad industry cost of capital was 10.43%.

*Environmental and Energy Considerations*

We conclude that this action will not significantly affect either the quality of the human environment or the conservation of energy resources.

It is ordered:

1. This decision is effective on October 30, 2010.

2. This proceeding is discontinued.

By the Board, Chairman Elliott, Vice Chairman Mulvey, and Commissioner Nottingham.

## APPENDIX

**Table 1**  
**2009 Traded & Non-traded Bonds**

<b>Railroad</b>	<b>Traded vs. Untraded</b>	<b>Number</b>	<b>Market Value (\$ in 000)</b>	<b>% Market Value to All Bonds</b>
BNSF	Traded	25	\$5,736,076	72.46 %
	Non-traded <sup>1</sup>	12	2,179,741	27.54 %
	Total		7,915,817	
CSX	Traded	10	3,121,230	40.76 %
	Non-traded <sup>2</sup>	21	4,536,554	59.24 %
	Total		7,657,784	
NSC	Traded	11	4,582,692	68.55 %
	Non-traded <sup>3</sup>	9	2,102,861	31.45 %
	Total		6,685,553	
UPC	Traded	15	4,136,773	56.76 %
	Non-traded <sup>4</sup>	16	3,151,579	43.24 %
	Total		7,288,352	
<b>Composite</b>	Traded	61	\$17,576,771	59.49 %
	Non-traded	58	11,970,735	40.51 %
	Total	119	29,547,506	
<sup>1</sup> Includes 1 bond issued during 2009, prorated based on date of issue. <sup>2</sup> Includes 1 bond issued during 2009, prorated based on date of issue. <sup>3</sup> Includes 1 bonds issued during 2009, prorated based on date of issue. <sup>4</sup> Includes 2 bonds issued during 2009, prorated based on date of issue.				

**Table 2**  
**2009 Bonds, Notes, & Debentures**

<b>Railroad</b>	<b>Number of Traded Issues</b>	<b>Market Value Traded Issues (\$000)</b>	<b>Current Cost</b>	<b>Weighted Cost</b>
BNSF	25	5,736,076	5.575 %	1.82 %
CSX	10	3,121,230	5.971 %	1.06 %
NSC	11	4,582,692	6.164 %	1.61 %
UPC	15	4,136,773	5.023 %	1.18 %
<b>Composite</b>		<b>\$17,576,771</b>		<b>5.669 %</b>

**Table 3**  
**2009 Equipment Trust Certificates**

<b>Railroad</b>	<b>No. of Issues</b>	<b>Market Value (\$000)</b>	<b>Yield %</b>	<b>Weighted \$ Yield (\$000)</b>
BNSF	7	\$ 236,659	3.816 %	\$ 9,032
CSX	6	158,149	3.056 %	4,834
NSC	3	97,756	2.944 %	2,878
UPC	5	215,499	3.898 %	8,400
<b>Composite</b>	<b>21</b>	<b>\$ 708,063</b>	<b>3.551%</b>	<b>\$ 25,143</b>

**Table 4**  
**2009 Conditional Sales Agreements**

<b>Railroad</b>	<b>Number of Issues</b>	<b>Market Value (\$000)</b>	<b>Current Cost</b>	<b>Weighted Cost</b>
CSX	2	\$ 43,349	2.730 %	2.730 %
<b>Composite</b>		<b>\$ 43,349</b>		<b>2.730 %</b>

**Table 5**  
**2009 Capitalized Leases & Miscellaneous Debt**

<b>Railroad</b>	<b>Capitalized Leases (\$000)</b>	<b>Miscellaneous Debt<sup>1</sup> (\$000)</b>	<b>Total Other Debt (\$000)</b>
BNSF	\$1,565,435	\$(11,353)	\$1,554,082
CSX	21,601	56,861	78,462
NSC	47,201	77,508	124,709
UPC	2,054,486	21,433	2,075,919
<b>Composite</b>	<b>\$3,688,723</b>	<b>\$144,449</b>	<b>\$3,919,014<sup>2</sup></b>

<sup>1</sup> Miscellaneous debt includes unamortized debt discount.  
<sup>2</sup> This figure includes \$85,842 of non modeled ETCs and CSAs.

**Table 6**  
**2009 Market Value of Debt**

<b>Type of Debt</b>	<b>Market Value of Debt (\$000)</b>	<b>Percentage of Total Market Value (Excluding Other Debt)</b>
Bonds, Notes, & Debentures	\$29,547,506	97.52 %
ETCs	708,063	2.34 %
CSAs	43,349	0.14 %
Subtotal	\$30,298,918	100 %
Capitalized Leases/Miscellaneous Debt	3,919,014	NA
<b>Total Market Value of Debt</b>	<b>\$34,217,932</b>	<b>NA</b>

**Table 7**  
**2009 Flotation Cost for Debt**

<b>Type of Debt</b>	<b>Market Weight (Excludes Other Debt)</b>	<b>Flotation Cost</b>	<b>Weighted Average Flotation Cost</b>
Bonds, Notes, & Debentures	97.52 %	0.103 %	0.100 %
ETCs	2.34 %	0.078 %	0.002 %
CSAs	0.14 %	0.073 %	0.0001 %
<b>Total</b>	<b>100 %</b>		<b>0.102 %</b>

**Table 8**  
**2009 Cost of debt**

<b>Type of Debt</b>	<b>Percentage of Total Market Value (Excludes Other Debt)</b>	<b>Debt Cost</b>	<b>Weighted Debt Cost (Excluding Other Debt)</b>
Bonds, Notes, & Debentures	97.52 %	5.669 %	5.528 %
ETCs	2.34 %	3.551 %	0.083 %
CSAs	0.14 %	2.730 %	0.004 %
Subtotal	100 %		5.615 %
Flotation Cost			0.102 %
<b>Weighted Average Cost of Debt</b>			<b>5.72 %</b>

**Table 9**  
**2009 Summary Output**

<b>Regression Statistics</b>					
Multiple R	0.706016				
R-Square	0.498458				
Adjusted-R Square	0.496522				
Standard Error	0.031849				
Observations	261				
<b>ANOVA</b>					
	df	SS	MS	F	Significance F
Regression	1	0.261097	0.261097	257.4074	1.08192E-40
Residual	259	0.262712	0.001014		
Total	260	0.523809			
	Coefficients	Standard Error	T Stat	P-Value	
Intercept	0.003767	0.001972	1.910649	0.057154	
X-Variable	1.091453	0.068029	16.04392	1.08192E-40	

**Table 10**  
**2009 CAPM Cost of Common Equity**

Risk-Free Rate (RF)	4.11%	
RF+(Beta x Market Risk Premium)	4.11% +( 1.0915 x 6.67%)	11.39 %
<b>Cost of Equity</b>		<b>11.39 %</b>

**Table 11**  
**2009 MS-DCF Railroad Cost of Equity**

Railroad	BNSF		CSX		NSC		UNP	
Initial CF	\$ 897		\$ 693		\$ 933		\$ 980	
Input for terminal CF	\$ 1680		\$ 1099		\$ 1209		\$ 1591	
Stage 1 Growth Rate	12.00 %		11.60 %		12.00 %		13.10 %	
Stage 2 Growth Rate	12.18 %		12.18 %		12.18 %		12.18 %	
Stage 3 Growth Rate	5.80 %		5.80%		5.80 %		5.80 %	
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	Value on 12/31 of each year	Present Value
1	\$ 1,005	\$ 892	\$ 773	\$ 681	\$ 1,045	\$ 910	\$ 1,108	\$ 981
2	1,125	887	863	668	1,170	887	1,254	981
3	1,260	882	963	656	1,311	866	1,418	982
4	1,411	877	1,075	645	1,468	844	1,604	983
5	1,581	873	1,200	633	1,644	823	1,814	983
6	1,773	869	1,346	625	1,845	804	2,034	976
7	1,989	866	1,510	617	2,069	786	2,282	969
8	2,232	862	1,694	609	2,321	768	2,560	961
9	2,503	859	1,900	601	2,604	750	2,872	954
10	2,808	856	2,131	594	2,921	732	3,222	947
Terminal	\$ 81,577	\$ 24,851	\$ 45,627	\$ 12,706	\$ 44,324	\$ 11,114	\$ 76,615	\$ 22,523
ΣPV	\$ 33,574		\$ 19,035		\$ 19,285		\$ 32,241	
Market Value	\$ 33,574		\$ 19,035		\$ 19,285		\$ 32,241	
COE	12.62 %		13.64 %		14.84 %		13.02 %	
Weighted COE	4.07 %		2.49 %		2.75 %		4.03 %	
<b>COE</b>	<b>13.34 %</b>							

**Table 12**  
**2009 Cost of Common Equity Capital**

Model	
Capital Asset pricing model	11.39 %
Multi-Stage Discounted Cash Flow	13.34 %
<b>Cost of Common Equity</b>	<b>12.37 %</b>

**Table 13**  
**2009 Average market Value**

<b>Railroad</b>	<b>Average Market Value (\$000)</b>	<b>Average Market Weight</b>
BNSF	\$26,171,545,067	31.40 %
CSX	14,690,076,842	17.62 %
NSC	15,517,706,470	18.62 %
UPC	26,970,547,417	32.36 %
<b>COMPOSITE</b>	<b>\$83,349,875,796</b>	<b>100.00 %</b>

**Table 14**  
**2009 Capital Structure Mix**

<b>Railroad</b>	<b>Type of Capital</b>	<b>Market Value (\$000)</b>	<b>Weight</b>
BNSF	Debt	\$9,734,443,000	27.11 %
	Equity	26,171,545,067	72.89 %
CSX	Debt	7,995,701,000	35.25 %
	Equity	14,690,076,842	64.75 %
NSC	Debt	6,908,018,000	30.80 %
	Equity	15,517,706,470	69.20 %
UPC	Debt	9,579,770,000	26.21 %
	Equity	26,970,547,417	73.79 %
Composite Weight	Debt	34,217,932,000	29.10 %
	Equity	83,349,875,796	70.90 %
	Total	117,567,807,796	100.00 %

**Table 15**  
**2009 Cost-of-Capital Computation**

<b>Type of Capital</b>	<b>Cost</b>	<b>Weight</b>	<b>Weighted Average</b>
Long-Term Debt	5.72 %	29.10 %	1.66 %
Common Equity	12.37 %	70.90 %	8.77 %
<b>Composite Cost of Capital</b>		<b>100.00 %</b>	<b>10.43 %</b>