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SURFACE TRANSPORTATION BOARD

DECISION

STB Ex Parte No. 558 (Sub-No. 12)

RAILROAD COST OF CAPITAL — 2008

Decided: September 24, 2009

Upon review of the evidence tendered in this proceeding, the Board finds that, in 2008, the railroad industry had an after-tax cost of capital of 11.75%, based on: (1) a current cost of debt of 6.57%; (2) a current cost of common equity of 13.17%; and (3) a capital structure mix of 21.54% debt and 78.46% common equity.

**BY THE BOARD:**

One of the Board's regulatory responsibilities is to determine annually the railroad industry's cost of capital.<sup>1</sup> This determination is one component used in evaluating the adequacy of individual railroads' revenues each year pursuant to 49 U.S.C. 10704 (a)(2) and (3). See Standards for Railroad Revenue Adequacy, 364 I.C.C. 803 (1981), modified, 3 I.C.C.2d 261 (1986), aff'd sub nom. Consolidated 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 in Railroad Cost of Capital – 2008, STB Ex Parte No. 558 (Sub- No. 12) (STB served Mar. 6, 2009) to update the railroad industry's cost of capital for 2008. 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 established in Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital, STB Ex Parte No. 664 (Sub-No.1) (STB served Jan. 28, 2009) (Cost of Capital MSDCF/CAPM). Western Coal Traffic League (WCTL) and Arkansas Electric Cooperative Corporation (AECC) replied to AAR's submission. Both WCTL and AECC assert that AAR has made errors in its calculation, and that application of the rules adopted in Cost of Capital MSDCF/CAPM would produce flawed results here.

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<sup>1</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.

*Challenges to the Board's Methodology*

We have established a procedural framework whereby in the Ex Parte No. 558 sub-numbered proceedings (558 proceedings) to determine the annual cost-of-capital figure, we are limited to applying the cost-of-capital methodology in place at the time, as determined in the Ex Parte No. 664 proceeding (664 proceeding). See Methodology To Be Employed In Determining The Railroad Industry's Cost Of Capital, STB Ex Parte 664, slip op. at 18 (STB served Jan. 17, 2008) (Cost of Capital CAPM). Proposed changes to the cost-of-capital model will be entertained only in the 664 proceeding. This allows the Board to complete its annual cost-of-capital determination in a timely manner and to provide all stakeholders with a meaningful opportunity to comment on any proposed methodological changes. *Id.* at 18.

Notwithstanding that framework, WCTL and AECC have mounted a broad-based collateral attack on our cost-of-capital methodology in this 558 proceeding. Most of their evidence and argument relate to the claim that we should change our cost-of-capital methodology just adopted in Cost of Capital MSDCF/CAPM, particularly the decision to utilize the Morningstar/Ibbotson multistage discounted cashflow model (MSDCF) as part of our estimate.

We will not consider here the arguments presented by WCTL or AECC challenging our cost-of-capital methodology.<sup>2</sup> It is settled administrative law that an agency need not, and as a matter of sound procedure should not, permit parties to relitigate generic rules in individual proceedings that apply those rules. See New Jersey Dept. of Environ. Protection v. NRC, 561 F.3d 132 (3d Cir. 2009) (state agency's attempt to relitigate generic environmental findings in an individual NRC proceeding amounted to a collateral attack on the NRC's licensing renewal regulations); Massachusetts v. NRC, 522 F.3d 115, 129-130 (1st Cir. 2008) (NRC reasonably refused to allow a state to intervene in an individual licensing proceeding to relitigate issues decided in a separate generic proceeding); Tribune Co. v. FCC, 133 F.3d 61, 68 (D.C. Cir. 1998) ("An agency need not – indeed should not – entertain a challenge to a regulation, adopted pursuant to notice and comment, in an adjudication or licensing proceeding"). Under our rules, WCTL and AECC must raise any challenges to our cost-of-capital methodology in a petition for a rulemaking. See Cost of Capital CAPM at 18 ("While in the past we have entertained challenges to the agency's model in the 558 proceedings, we will no longer do so. As such, future requests to [change our methodology] must be brought (in the form of a petition for rulemaking) in a 664 proceeding, not in the annual 558 proceeding, in which we calculate the cost of capital for a particular year.").

The Board has concluded that the Morningstar/Ibbotson model "meets our criteria for a suitable multi-staged DCF model, that it "is a commercially accepted model, developed by disinterested, respected third parties, created for use by the financial community in evaluating publicly traded companies and in making real-world investment decisions." Cost of Capital MSDCF/CAPM at 4. A petitioning party would need to show why the Board should reopen this decision.

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<sup>2</sup> We do, however, consider the technical corrections raised by the parties that are related specifically to the application of the CAPM and MSDCF methodology.

### *2008 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>3</sup> The following four railroad holding companies meet these criteria: Burlington Northern Santa Fe Corporation (BNSF), CSX Corporation (CSX), Norfolk Southern Corporation (NSC), and Union Pacific Corporation (UPC).<sup>4</sup>

As discussed below, we have examined the procedures used by AAR to calculate for 2008: (1) the railroad industry’s cost-of-debt capital; (2) its cost of common equity capital; (3) its cost of preferred equity capital;<sup>5</sup> (4) its capital structure; and (5) the composite after-tax cost of capital. We estimate that the 2008 railroad cost of capital was 11.75%.

### **DEBT CAPITAL**

AAR developed its 2008 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 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 sample railroad holding companies listed above. 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 2008, for all issues (a total of 61) that were publicly traded during the year. To develop the current (in 2008) market value of bonds, AAR used these traded bonds and 55 additional bonds that were outstanding but not traded during 2008. 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 \$25.619 billion (\$16.6 billion traded, and \$9.0 billion non-traded). Based on the yields for the traded bonds, AAR calculated the weighted average 2008 yield for all bonds to be 6.525%. 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.

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<sup>3</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).

<sup>4</sup> These are the same companies used in Railroad Cost of Capital – 2007, STB Ex Parte No. 558 (Sub-No. 11) (STB served Sept. 26, 2008) (Cost of Capital 2007).

<sup>5</sup> There was no preferred stock outstanding in the year 2008.

*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 2008 yields for these government securities, AAR added basis points<sup>6</sup> to these yields to compensate for the additional risks associated with the ETCs.

No new ETCs were issued during 2008. There were 21 ETCs issued prior to 2008 that were outstanding during the year. AAR calculated that the yield spread for ETCs was 125 basis points higher than the yield for government bonds.<sup>7</sup> Using the yield spreads, AAR calculated the weighted average cost of ETCs to be 4.432%<sup>8</sup> and their market value to be \$766.7 million for 2008.<sup>9</sup>

We have examined the cost and market value of the ETCs using AAR's data, and we agree with AAR's calculation. A summary of our ETC computations is shown in **Table 3** in the Appendix.

*Cost of Conditional Sales Agreements (CSAs)*

CSAs represent a small fraction (less than 1%) of total railroad debt, and only two CSAs (issued by CSX) were outstanding in 2008. 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 2008 yield spread between CSAs and government bonds. These 32 basis points are added to the 125 basis point spread between government bonds and ETC. As a result, AAR estimates that 157 basis points must be added to yields 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 2008 to be 4.212%. AAR calculated the market value for all modeled CSAs to be \$54.4 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 \$54.4 million.

*Capitalized Leases and Miscellaneous Debt*

As in previous cost-of-capital determinations, AAR excluded the costs of capitalized leases and miscellaneous debt in its computation of the overall current cost of debt because these

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<sup>6</sup> A basis point equals 1/100th of a percentage point.

<sup>7</sup> This is the same spread used in 2007.

<sup>8</sup> This is lower than the 2007 figure of 5.85%.

<sup>9</sup> AAR approximated the market values of ETCs using the same procedures used in previous cost-of-capital determinations.

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 \$3.365 billion for 2008.<sup>10</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 \$3.365 billion.

#### *Total Market Value of Debt*

AAR calculated that the total market value for all debt during 2008 was \$29.806 billion. **Table 6** in the Appendix shows a breakdown of the market value of debt.

#### *Flotation Costs of Debt*

In Railroad Cost of Capital – 2007, STB Ex Parte 558 (Sub-No.11) (STB served Sept. 24, 2008) (Cost of Capital 2007), the Board stated that it “would welcome better and more transparent calculation of flotation costs in future proceedings.” AAR now has calculated the flotation costs for bonds using data available from electronic filings with the Securities and Exchange Commission (SEC). 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 2008, seven new issues were reported in six filings. Information for an eighth new offering was provided directly from the railroad. A simple average of the eight flotation costs is 0.110%. The SEC conducted a study of flotation costs using railroad ETC data for the years 1951, 1952, and 1955. In that study, the SEC determined that ETC flotation costs averaged 0.89% of gross proceeds. For CSA's, neither recent nor historical data are publically available, so the ETC figure was used. Using the 0.89% for both the ETC and CSA's results in flotation costs for ETCs of 0.082% and 0.081% for CSAs.

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 weights for each type of debt are based on market values for debt, excluding all other debt. All other debt is excluded from the weight calculation, since a current cost of debt for that category has not been determined.<sup>11</sup> AAR calculated that flotation costs for debt equaled 0.109%. 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.

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<sup>10</sup> This consists of \$2.672 billion of capitalized leases and \$0.693 billion of miscellaneous debt.

<sup>11</sup> See AAR Comments at 21.

<sup>12</sup> AAR's flotation cost factors are based on data developed by Salomon Brothers for ETCs and studies by the Securities and Exchange Commission concerning flotation costs for issuances of new bonds. The estimated flotation cost for CSAs is the same as that used in prior years.

*Overall Current Cost of Debt*

AAR concluded that the railroads' cost of debt for 2008 was 6.57%.<sup>13</sup> We did not receive any protests regarding the cost of debt, and 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 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 2008 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 parties 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*

To establish the risk-free rate, AAR relies on the Federal Reserve web site to retrieve the average yield to maturity for a 20-year U.S. Treasury Bond. Using the average yield to maturity

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<sup>13</sup> This is slightly higher than the 2007 cost of debt (6.15%). 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.

in 2008 for a 20-year U.S. Treasury Bond, consistent with Cost of Capital Methodology – 2006, STB Ex Parte No. 558 (Sub-No. 10) (STB served Apr. 15, 2008), AAR calculated the 2009 risk free rate to be 4.36%. We have examined AAR's data and the Federal Reserve web site data, 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 and WCTL agree that the market risk premium is 6.47%.<sup>14</sup> We have examined the underlying data here and agree that the market risk premium is 6.47%.

#### *Calculating Beta*

The Cost of Capital Methodology requires parties to calculate the CAPM's beta using a portfolio of weekly, merger-adjusted stock returns for the prior 5 years in the following equation:  $R - SRRF = \alpha + \beta(RM - SRRF) + \varepsilon$ . AAR calculations suggest that the value of beta is 0.9344.<sup>15</sup>

However, we have examined the record and have determined that the parties did not include the correct time periods in the regression analysis. Although AAR stated that Week 1 in the regression data set is the week beginning Monday, January 5, 2004, AAR actually omitted the January 5 data set in its regression calculation. Both AAR and WCTL actually used the week beginning January 12, 2004 instead, presumably on the grounds that 5 years of 52 weeks each results in 260 observations. Yet this results in throwing away the otherwise valid observation of January 5, 2004. To avoid future confusion, we clarify the trading year to be used in the 5-year regression: the first trading week will be the first week in that year that contains 3 or more trading days.<sup>16</sup> This corresponds with the time period used for the market value calculation in the overall cost of equity determination.

The parties also calculated the weekly T-Bill rate differently than in Cost of Capital 2007. Both AAR and WCTL applied a compound interest equation, which produces a slightly different weekly T-Bill Rate. Consistent with our past practice, we will calculate the weekly T-Bill rate by dividing the rate by 52, the total number of weeks in a year. Applying the correct data set and weekly T-Bill rate to the beta calculation produces a beta estimate of 0.9317.

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<sup>14</sup> See AAR Comments, Gray V.S. at 27; WCTL Reply, Crowley & Fapp V.S. at 6.

<sup>15</sup> In its opening comments, AAR originally produced a beta of 0.9338. WCTL argued that AAR had overstated the number of UP's outstanding shares and submitted a beta calculation of 0.9344. In its rebuttal comments, AAR agreed that it had overstated the number of outstanding UP shares, and revised its beta to 0.9344.

<sup>16</sup> Note that by thus defining the first week in the new trading year, we also implicitly define the last week in the previous trading. Thus, the week of January 5, 2009 is the first week in the 2009 trading year and the week of December 29, 2008 is the final week in the 2008 trading year, even though two of the four trading days took place in calendar year 2009.

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

Having made small changes to AAR's submission with respect to the portfolio, including UP's revised outstanding shares, and the recalculated beta, we calculate the cost of equity as  $RF + \beta \times RP$ , or  $4.36\% + (0.9317 \times 6.47\%)$ , which equals 10.39%. **Tables 9 and 10** in the Appendix show the calculations of the Cost of Common equity using CAPM.

AAR calculated the 2008 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 2008. AAR calculated the 53-week average market capitalization of the composite railroad to be \$108.575 billion. We agree that week 1, which began on December 31, 2007 is properly included because it has three of its four trading days in 2008. Week 53 is also correctly included because it has three of its four trading days in 2008. The market value and regression analysis should follow the same logic, by including all weeks with at least three trading days in the yearly analysis period. We have reviewed AAR's calculations and have determined that its market value is correct.<sup>17</sup>

### *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. The incorporation of these cash flows and the expected growth of earnings are the essential aspects of the multi-stage DCF (MSDCF). In accordance with Cost of Capital MSDCF/CAPM, the model to be used in the Cost of Capital proceeding is the Morningstar/Ibbotson MSDCF model.

### *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

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

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 income before extraordinary items (IBEI).

AAR calculated the average cash flows for 2008 by dividing the total cash flow over the 2004-2008 periods by the total sales over the same period to obtain an average cash flow to sales ratio. This cash flow to sales ratio is then multiplied by sales revenue in 2008 to obtain the 2008

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<sup>17</sup> The 53-week average market capitalization is based on AAR's revised Appendix H, which was provided in its rebuttal.

average cash flow, which 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 railroad's annual 10-K filing with the Securities and Exchange Commission. We have reviewed AAR's cash flow inputs and accept them.

### *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 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 stage three (years 11 and onwards), the growth rate is the long-run nominal growth rate of the average 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 Thomas One for Investment Management. The third-stage growth rate of 3.9% was calculated by using the sum of the long-run expected growth in real output (3.3%) and the long-run expected inflation (0.6%).

WCTL concurs with AAR's calculation of the third-stage growth rate. However, WCTL argues that AAR erred by using the IBES growth rates as of March 31, 2009 when determining the first-and second-stage growth rates. WCTL states that the data used in the 2008 cost of capital should consist of information developed in 2008 only. In response to AAR's March 31, 2009 estimates, WCTL provided a cost-of-equity calculation incorporating the median IBES growth estimates available at year end 2008.

After analyzing the evidence provided by AAR, we assume that the growth estimates included information not available as of December 31, 2008. For example, the estimate from BB&T Capital Markets shows that growth estimates had changed from January 2009 to February 2009.<sup>18</sup> It is clear that some form of new information influenced these estimates and thus led to a change. Nor was this the only estimate that changed in the first 3 months of 2009. While AAR claims that its March 31, 2009 estimates are more accurate and that they do not reflect 2009 data, AAR has not explained why its estimates changed in 2009 and it has not contested the accuracy of WCTL's December 2008 estimate. To remove any doubt about the inclusion of 2009 data, we will use WCTL's December 2008 growth estimate as the best evidence of record.

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<sup>18</sup> See AAR Workpapers at Part 3.

*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, the data it provided is from Thomas Financial following the Morningstar/Ibbotson practice of using stock market values that reflect the release of year-end financial statements.

WCTL contends that AAR's market values are incorrect because they are based on shares outstanding and stock prices as of March 31, 2009, which are outside of the 2008 data set. WCTL also claims that the use of 2009 data goes against finance theory. 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, including projections of future value that can impact the firm.<sup>19</sup> Therefore, WCTL uses stock prices as of December 31, 2008 and outstanding shares up to the third quarter of 2008<sup>20</sup> to calculate market value.

We agree with WCTL that 2009 data should not be included in the 2008 cost of capital. Further, WCTL has provided a clear and transparent calculation of the market values used in its cost-of-equity calculation. AAR, however, has not. Rather than demonstrating the exact outstanding shares and stock prices used, AAR informs the Board of the source only. If AAR did use stock prices and outstanding shares as of December 31, 2008, it was not clear from its filed comments or rebuttal.

For these reasons, we find that WCTL's market values are the most appropriate input for the 2008 estimate of the cost of equity using the Morningstar/Ibbotson MSDCF.

*Cost of Common Equity Capital using MSDCF*

WCTL reports that its MSDCF estimate of the 2008 cost of equity (without adjustment for deferred tax liability) is 15.95%. AAR estimates a MSDCF cost of equity of 16.29%. The difference is attributable to the dispute over whether to use growth rates and market values as of December 2008 or March 2009. As discussed above, we conclude the 2008 estimate should not incorporate data from 2009. We accordingly adopt the 15.95% estimate, and will average this estimate together 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, AAR calculates the cost of common equity to be 13.35%, while WCTL calculates a figure of 12.70%. We conclude, however, that the best estimate of the railroad cost-of-equity in 2008 is 13.17%, based on an estimate of the cost of equity using CAPM of 10.39% and a MSDCF estimate of 15.95%. **Table 12** shows both costs of common equity for each model, and the average of the two.

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<sup>19</sup> See WCTL Reply, Crowley & Fapp V.S. at 9.

<sup>20</sup> WCTL's outstanding shares evidence is consistent with both parties' treatment of the issue for CAPM in this proceeding.

## PREFERRED EQUITY

Preferred equity has some of the characteristics of debt and some of the characteristics of 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 like debt in that they usually have fixed dividend payments (akin to interest payments).

There were no preferred stock issues outstanding at the end of 2008.

## 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 market value of bonds and common equity for 2008 was \$108.575 billion. The percentage share of common equity increased, from 76.32% in 2007 to 78.46% in 2008. The percentage share of debt increased, from 20.68% in 2007 to 21.54% in 2008. **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 2008 capital structure mix.

## COMPOSITE COST OF CAPITAL

Based on the evidence furnished in the record, and our adjustments to that evidence discussed above, we conclude that the 2008 composite after-tax cost of capital for the railroad industry, as set forth in **Table 15** in the Appendix, was 11.75%. 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.”<sup>21</sup> The 2008 cost of capital was 0.42 percentage points higher than the 2007 cost-of-capital (11.33%).

## CONCLUSIONS

We find that for 2008:

1. The current cost of railroad long-term debt was 6.57%.
2. The cost of common equity was 13.17%.
3. The capital structure mix of the railroads was 21.54% long-term debt and 78.46% common equity.
4. The composite railroad industry cost of capital was 11.75%.

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<sup>21</sup> Railroad Accounting Principles Board *Final Report*, Vol. 1 (1987).

*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.

*Regulatory Flexibility Analysis*

Pursuant to 5 U.S.C. 605(b), we conclude that our action in this proceeding will not have a significant economic impact on a substantial number of small entities. The purpose and effect of the action are merely to compute the annual railroad industry cost of capital. No new reporting or other regulatory requirements are imposed, directly or indirectly, on small entities.

It is ordered:

1. This decision is effective on October 25, 2009.
2. This proceeding is discontinued.

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

Anne K. Quinlan  
Acting Secretary

**APPENDIX****Table 1  
2008 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	\$5,443,073	76.68%
	Non-traded <sup>1</sup>	12	1,655,590	23.32%
	Total		7,098,663	
CSX	Traded	10	2,962,925	45.46%
	Non-traded <sup>2</sup>	21	3,555,225	54.54%
	Total		6,785,450	
NSC	Traded	12	4,728,427	80.69%
	Non-traded <sup>3</sup>	6	1,131,644	19.31%
	Total		5,860,071	
UPC	Traded	14	3,454,638	56.24%
	Non-traded <sup>4</sup>	16	2,687,816	43.76%
	Total		6,142,454	
<b>Composite</b>	Traded	61	\$16,589,063	64.75%
	Non-traded	55	9,030,275	35.25%
	Total	116	25,619,338	
<sup>1</sup> Includes 2 bonds issued during 2008, prorated based on date of issue				
<sup>2</sup> Includes 3 bonds issued during 2008, prorated based on date of issue.				
<sup>3</sup> Includes 1 bonds issued during 2008, prorated based on date of issue.				
<sup>4</sup> Includes 2 bonds issued during 2008, prorated based on date of issue.				

**Table 2**  
**2008 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	5,443,073	6.41%	2.10%
CSX	10	2,962,925	6.99%	1.25%
NSC	12	4,728,427	6.57%	1.87%
UPC	14	3,454,638	6.24%	1.30%
<b>Composite</b>		<b>\$16,589,063</b>		<b>6.52%</b>

**Table 3**  
**2008 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	6	\$227,997	4.37%	\$9,960
CSX	7	192,631	4.20%	8,100
NSC	3	112,996	4.20%	4,741
UPC	5	233,118	4.80%	11,180
<b>Composite</b>	<b>21</b>	<b>\$766,742</b>	<b>4.43%</b>	<b>\$33,981</b>

**Table 4**  
**2008 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	\$54,389	4.21%	4.21%
<b>Composite</b>		<b>\$54,389</b>		<b>4.21%</b>

**Table 5**  
**2008 Capitalized Leases & Miscellaneous Debt**

<b>Railroad</b>	<b>Capitalized Leases (\$000)</b>	<b>Miscellaneous Debt <sup>3</sup> (\$000)</b>	<b>Total Other Debt (\$000)</b>
BNSF	\$1,271,364	\$171,750	\$1,443,114
CSX	34,908	144,626	179,534
NSC	96,955	176,980	273,935
UPC <sup>1</sup>	1,269,111	199,635	1,468,746
<b>Composite</b>	<b>\$2,672,338</b>	<b>\$692,991</b>	<b>\$3,365,329</b>

**Table 6**  
**2008 Market Value of Debt**

<b>Type of Debt</b>	<b>Market Value of Debt (\$000)</b>	<b>Percentage of Total Market Value (Excluding Miscellaneous Debt)</b>
Bonds, Notes, & Debentures	\$25,619,338	96.89%
ETCs	766,742	2.90%
CSAs	54,389	0.21%
Subtotal	\$26,440,469	100%
Capitalized Leases/Miscellaneous Debt	3,365,329	NA
<b>Total Market Value of Debt</b>	<b>\$29,805,798</b>	<b>NA</b>

**Table 7**  
**2008 Flotation Cost for Debt**

<b>Type of Debt</b>	<b>Market Weight (Excludes Miscellaneous Debt)</b>	<b>Flotation Cost</b>	<b>Weighted Average Flotation Cost</b>
Bonds, Notes, & Debentures	96.89%	.110%	.107%
ETCs	2.90%	.082%	.002%
CSAs	.21%	.081%	.0002%
<b>Total</b>	<b>100.00%</b>		<b>.109%</b>

**Table 8**  
**2008 Cost of debt**

<b>Type of Debt</b>	<b>Percentage of Total Market Value (Excludes Miscellaneous Debt)</b>	<b>Debt Cost</b>	<b>Weighted Debt Cost (Excluding Miscellaneous Debt)</b>
Bonds, Notes, & Debentures	96.89%	6.52%	6.32%
ETCs	2.90%	4.43%	.13%
CSAs	.21%	4.21%	.01%
Subtotal			6.46%
Flotation Cost			.109%
<b>Weighted Average Cost of Debt</b>			<b>6.57%</b>

**Table 9**  
**2008 Summary Output**

<b>Regression Statistics</b>					
Multiple R	0.648241804				
R-Square	0.420217437				
Adjusted-R Square	0.417978894				
Standard Error	0.027702778				
Observations	261				
<b>ANOVA</b>					
	df	SS	MS	F	Significance F
Regression	1	0.144063958	0.144063958	187.7191953	1.6738E-32
Residual	259	0.198767979	0.000767444		
Total	260	0.342831937			
<b>Coefficients</b>					
	Coefficients	Standard Error	T Stat	P-Value	
Intercept	0.003731956	0.00171592	2.174901151	0.030542538	
X-Variable	0.931747861	0.068005504	13.70106548	1.6738E-32	

**Table 10**  
**2008 CAPM Cost of Common Equity**

Risk-Free Rate (RF)	4.36%	
RF+(Beta x Market Risk Premium)	4.36% + (.9317 x 6.47%)	10.39%
<b>Cost of Equity</b>		<b>10.39%</b>

**Table 11**  
**2008 MS-DCF Railroad Cost of Equity**

Railroad	BNSF		CSX		NSC		UNP	
Initial CF	\$1,439		\$688		\$1,212		\$924	
Input for terminal CF	\$2,020		\$1,194		\$1,614		\$1,765	
Stage 1 Growth Rate	12.00%		15.00%		10.00%		17.45%	
Stage 2 Growth Rate	13.61%		13.61%		13.61%		13.61%	
Stage 3 Growth Rate	3.90%		3.90%	3.90%	3.90%	3.90%	3.90%	3.90%
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	\$1,612	\$1,396	\$791	\$676	\$1,333	\$1,144	\$1,085	\$939
2	1,805	1,354	910	665	1,467	1,081	1,275	955
3	2,022	1,314	1,046	653	1,613	1,021	1,497	971
4	2,264	1,274	1,203	642	1,774	964	1,758	987
5	2,536	1,236	1,384	631	1,952	910	2,065	1,004
6	2,881	1,216	1,572	613	2,218	888	2,346	987
7	3,273	1,197	1,786	595	2,519	866	2,665	971
8	3,719	1,178	2,029	578	2,862	844	3,028	954
9	4,225	1,159	2,305	561	3,252	823	3,440	939
10	4,800	1,140	2,619	545	3,694	803	3,909	923
Terminal	\$60,577	\$14,392	\$36,047	\$7,498	\$40,608	\$8,827	\$66,724	\$15,757
ΣPV	\$26,856		\$13,657		\$18,170		\$25,387	
Market Value	\$26,856		\$13,657		\$18,170		\$25,387	
COE	15.46%		17.00%		16.49%		15.53%	
Weighted COE	4.94%		2.76%		3.56%		4.69%	
<b>COE</b>	<b>15.95%</b>							

**Table 12**  
**2008 Cost of Common Equity Capital**

Model	
Capital Asset pricing model	10.39%
Multi-Stage Discounted Cash Flow	15.95%
<b>Cost of Common Equity</b>	<b>13.17%</b>

**Table 13**  
**2008 Average market Value**

<b>Railroad</b>	<b>Average Market Value (\$000)</b>	<b>Average Market Weight</b>
BNSF	\$31,628,853	29.13%
CSX	21,278,596	19.60%
NSC	21,719,760	20.00%
UPC	33,947,827	31.27%
<b>COMPOSITE</b>	<b>\$108,575,036</b>	<b>100.00%</b>

**Table 14**  
**2008 Capital Structure Mix**

<b>Railroad</b>	<b>Type of Capital</b>	<b>Market Value (\$000)</b>	<b>Weight</b>
BNSF	Debt	\$8,769,774	21.71%
	Equity	31,628,853	78.29%
CSX	Debt	6,944,704	24.61%
	Equity	21,278,596	75.39%
NSC	Debt	6,247,002	22.34%
	Equity	21,719,760	77.66%
UPC	Debt	7,844,318	18.77%
	Equity	33,947,827	81.23%
Composite Weight	Debt	29,805,798	21.54%
	Equity	108,575,036	78.46%
	Total	138,380,834	100.0%

**Table 15**  
**2008 Cost-of-Capital Computation**

<b>Type of Capital</b>	<b>Cost</b>	<b>Weight</b>	<b>Weighted Average</b>
Long-Term Debt	6.57%	21.54%	1.42%
Common Equity	13.17%	78.46%	10.33%
<b>Composite Cost of Capital</b>		<b>100.00%</b>	<b>11.75%</b>