



**ASSOCIATION OF
AMERICAN RAILROADS**

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April 29, 2011

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Public Record**

**Honorable Cynthia T. Brown
Chief, Section of Administration
Surface Transportation Board
395 E St., S.W.
Washington, DC 20423**

Re: STB Ex Parte No. 558 (Sub-No.14), Railroad Cost of Capital—2010

Dear Ms. Brown:

Pursuant to the Decision served by the Board on February 22, 2011, attached please find the Comments of the Association of American Railroads (AAR) in the above proceeding. Also attached are the AAR's underlying workpapers which will be made available upon request to other participants in the proceeding.

A copy of the same on a disk, in MS Word and PDF format, will be hand-delivered for the Board's convenience. The disk will also include workpapers and spreadsheets.

Respectfully submitted,

**Louis P. Warchot
Counsel for the Association of
American Railroads**

Enclosures

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

RAILROAD COST OF
CAPITAL — 2010

)
)
) EX PARTE NO. 558 (Sub- No. 14)
)

**COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS
AND ITS MEMBER RAILROADS**

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April 29, 2011

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Verified Statements

Tab	Witness*	Subject
1	John T. Gray	The railroads' market value capital structure, overall cost of capital, cost of common and preferred equity, and cost of all types of debt.

*Verified statements are referenced in these comments by witness name – viz., V.S. Gray at _____

SURFACE TRANSPORTATION BOARD

RAILROAD COST OF)
CAPITAL — 2010) EX PARTE NO. 558 (Sub- No. 14)
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**COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS
AND ITS MEMBER RAILROADS**

By order served February 22, 2011, the Board instituted this proceeding to determine the railroad industry’s cost of capital for the year 2010. That determination, as the Board noted, will enable it to make the statutorily required (49 U.S.C. 10701 (d)(2), 10704(a)(2)) annual individual railroad revenue adequacy determination for 2010. The Board noted further that the cost of capital determination may also be used in various other STB railroad proceedings. See Ex Parte No. 558 (Sub-No. 14), *Railroad Cost of Capital – 2010* (Served February 22, 2011) (Slip Op. at 1).

The railroads, through the Association of American Railroads (AAR), are submitting herewith their calculation of (1) the railroads’ 2010 cost of common equity capital; (2) the railroads’ 2010 current cost of preferred equity capital; (3) the railroads’ current 2010 cost of debt capital and (4) the 2010 capital structure mix of the railroad industry on a market value basis.

The AAR's calculations are discussed in the attached verified statement of John T. Gray, Senior Vice President, Policy and Economics of the Association of American Railroads. Mr.

Gray's statement establishes the following:

1. The 2010 cost of debt capital is 4.61 percent (VS. Gray at pp. 2, 26).
2. There is no preferred equity capital for 2010 (VS. Gray at pp. 2, 47).
3. The 2010 cost of common equity capital is 12.99 percent (VS. Gray at pp. 2, 46).
4. The capital structure of the railroad industry is 23.37 percent debt, 0.00 percent preferred equity, and 76.63 percent common equity. (VS. Gray at pp. 2, 47).

From these data Mr. Gray concludes that the overall railroad industry cost of capital for 2010 is 11.03 percent (V. S. Gray at pp. 2, 48).

I. Introduction

The sole purpose of this proceeding is to determine the railroad industry's cost of capital for 2010. The cost of capital will be computed using the current cost of debt and equity and market value weights. See Ex Parte No. 393 (Sub-No. 1), *Standards for Railroad Revenue Adequacy*, 3 I.C.C. 2d 261 (1986), *aff'd sub. nom., Consolidated Rail Corporation v. United States*, 855 F.2d 78 (3rd Cir. 1988).

II. The Cost of Common Equity Capital

In its February 22, 2011 order instituting this proceeding, the Board directed that the cost of capital components be calculated "using the methodology followed in Railroad Cost of Capital –2009." See Ex Parte No. 558 (Sub-No. 14), *Railroad Cost of Capital – 2010* (Served February 22, 2011) (Slip Op. at 2). In Railroad Cost of Capital –2009, the Board calculated the

cost of equity component in its annual cost of capital proceeding using a simple average of the estimates produced by the Capital Asset Pricing Model (CAPM) adopted in STB Ex Parte No. 664, *Methodology to be Employed in Determining the Railroad Industry's Cost of Capital* (served January 17, 2008) and the Morningstar/Ibbotson Multi-Stage Discounted Cash Flow Model (MSDCF) adopted in STB Ex Parte No. 664 (Sub-No. 1), *Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital*, (STB served Jan. 28, 2009).¹ See Ex Parte No. 558 (Sub-No. 13), *Railroad Cost of Capital – 2009* (served October 29, 2010) (Slip Op. at 6-11).² Mr. Gray used a simple average of the CAPM and Morningstar/Ibbotson MSDCF models adopted by the Board in his calculation of the cost of common equity in this proceeding.

A. The CAPM Methodology

Under the CAPM methodology as applicable to the annual cost of capital proceeding, the cost of common equity is calculated by determining the return an investor would receive on a risk-free investment and by adding to the risk-free return a premium associated with the risk of

¹ The Morningstar/Ibbotson MSDCF model adopted by the Board in Ex Parte No. 664 (Sub-No.1) is a modified version that includes only the railroads that pass the screening criteria set forth in *Railroad Cost of Capital—1984*, 1 I.C.C. 2d 989 (1985), for inclusion in the sample of railroads used for the annual cost of capital determination.. See Ex Parte No. 664 (Sub-No. 1), *Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital*, (STB served Jan. 28, 2009) (Slip. Op. at 4).

² In its January 28, 2009 decision in Ex Parte No. 664 (Sub-No. 1), *Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital*, the Board determined that using a simple average of CAPM and the commercially accepted Morningstar/Ibbotson multi-stage DCF model to calculate the cost of equity will yield a more precise determination than relying on CAPM alone. As noted by the Board, “[T]here is no single simple or correct way to estimate the cost of equity for the railroad industry, and countless reasonable options are available. Both the CAPM and the multi-stage DCF models we propose to use have their own strengths and weaknesses, and both take different paths to estimate the same illusory figure. By using an average of the results produced by both models, we harness the strengths of both models while minimizing their respective weaknesses. The result should be a stable yet precise estimate of the cost of equity that we can use in future regulatory proceedings and to gauge the financial health of the railroad industry.” (Slip Op. at 15)

railroad stocks. The premium is calculated by multiplying the market risk premium of the stock market as a whole by a factor, known as Beta, that represents the non-diversifiable risk of holding railroad stocks. In formulaic terms, the CAPM can be expressed as:

$$K = RF + (MRP \times \text{Beta})$$

Where K = the firm's cost of equity,
RF = the risk-free rate,
MRP = the market's risk premium, and
Beta = coefficient of systematic, non-diversifiable risk of the stock.

Mr. Gray's attached Verified Statement explains how the AAR calculated the cost of equity using the CAPM methodology. The risk-free rate and the market risk premium were retrieved directly from the Federal Reserve Board and Ibbotson Equity Risk Premium sources approved by the Board in the 2009 cost of capital proceeding. Ex Parte No. 558 (Sub-No. 13), *Railroad Cost of Capital – 2009* (Slip Op. at 7). The calculation for Beta was made using the S&P 500 Price Return Index and the same methodology approved by the Board in the 2009 cost of capital proceeding. See Ex Parte No. 558 (Sub-No. 13), *Railroad Cost of Capital – 2009* (Slip Op. at 7); V.S. Gray at pp. 29-31.³

The values determined by Mr. Gray for the elements of the CAPM methodology were 4.03 percent for the risk-free rate, 6.72 percent for the market risk premium, and 1.1619 for the future market risk of the railroad stocks ("Beta").

³In Ex Parte No. 558 (Sub-No. 12), *Railroad Cost of Capital – 2008* (Slip Op. at 7), the Board clarified that for purposes of determining the trading year to be used in the 5-year regression analysis underlying the Beta calculation, "the first trading week will be the first week in that year that contains 3 or more trading days." The AAR's regression analysis underlying its Beta calculation is based on the Board's clarifying definition of trading year. For purposes of the Beta calculation, the Board, in its Ex Parte No. 558 (Sub-No. 13) decision (Slip Op. at 7), modified its previously used methodology for converting annual Treasury Bill (T-Bill) rates to weekly rates (i.e., by dividing T-Bill rates by 52 weeks) by converting to a more accurate compounding method as urged by both the AAR and the Western Coal Traffic League ("WCTL") in that proceeding. See V.S. Gray at p. 35.

Based on a three-railroad composite (determined using established procedures)⁴ and the procedures used by the STB in the last cost of capital proceeding, Mr. Gray estimates that under the CAPM methodology the cost of common equity capital for 2010 is 11.84 percent. V.S. Gray at p. 37.

B. The Morningstar/Ibbotson MSDCF Methodology

The Morningstar/ Ibbotson MSDCF methodology, as summarized by the Board in its Ex Parte No. 664 (Sub-No. 1) decision (served January 28, 2009), calculates the cost of common equity capital as follows:

“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 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 we are adopting here.

“The Morningstar/Ibbotson 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

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

An average cash flow figure is used as the starting point of the analysis under the Morningstar/Ibbotson model. To find the average cash flow, the model uses the 5-year period leading up to the year being analyzed, and the total cash flows for that time period are divided by total sales, which determine the 5-year cash-flow-to-sales ratio. The ratio is then multiplied by the total sales for the year being analyzed to obtain the average cash flow estimate for that year. For the third (and final) stage of the Morningstar/Ibbotson multistage DCF model stage, Morningstar/Ibbotson uses two additional assumptions: that there is no depreciation or deferred taxes. Therefore, in the third stage, cash flows are based solely on income before extraordinary

⁴In its February 22, 2010 decision, the Board noted that the railroad industry’s cost of capital is determined on the basis of data for a sample of railroads. Ex Parte No. 558 (Sub-No. 14), *Railroad Cost of Capital – 2010* (Slip Op. at 2). The criteria for determining whether a railroad will be included in the sample base, as in previous cost of capital proceedings, are set forth in *Railroad Cost of Capital—1984*, 1 I.C.C. 2d 989 (1985). *Id.* The Board correctly opined in its February 22, 2011 decision that “[d]ue to the acquisition of BNSF Railway Company (BNSF) by Berkshire Hathaway, Inc., in the beginning of 2010, it is our expectation that BNSF will not be included in the 2010 sample base because BNSF does not meet the [established] criteria.” *Id.* The current data sample is accordingly based on a three-railroad composite that is representative of the industry. See V.S. Gray at p. 5.

items.

“Growth of earnings is also calculated in three stages. 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.”

Ex Parte No. 664 (Sub-No. 1) decision (served January 28, 2009) (Slip. Op. at 5-6).

The cost of common equity capital using the Morningstar/Ibbotson MSDCF model adopted by the Board is also calculated and explained in the attached Verified Statement of Mr. Gray. Consistent with the methodology approved by the Board in Ex Parte No. 558 (Sub-No. 12), *Railroad Cost of Capital – 2008* (Slip Op. at 9-10), Mr. Gray’s calculations used only IBES growth estimates available as of December 31, 2010, and stock market values were based on shares outstanding and stock prices as of December 31, 2009. V.S. Gray at pp. 41-43.⁵

Mr. Gray calculates the cost of common equity capital for 2010 using the Morningstar/Ibbotson MSDCF model as 14.13 percent. V.S. Gray at p. 45.

C. Conclusion as to the Cost of Common Equity Capital

Under the Board’s methodology, the cost of common equity capital is the simple average of the results using the CAPM and Morningstar/Ibbotson MSDCF models. The simple average produces a cost of common equity capital of 12.99 percent. V.S. Gray at p. 46.

⁵ Consistent with the methodology approved by the Board in Ex Parte No. 558 (Sub-No. 13), *Railroad Cost of Capital – 2009* (Slip Op. at 8-9), Mr. Gray’s calculations used data inputs in the cash flow formula as retrieved from the railroads’ 2006 - 2010 10-K filings with the SEC (and used restated data where set forth in any subsequently filed 10-K filings with the SEC). See V.S. Gray at pp.38, 41.

III. The Cost of Preferred Equity Capital

Preferred stock is a hybrid security which has some characteristics of debt and some characteristics of equity. Its cost depends on its specific features. The methodology used by the Board in the last sixteen proceedings applies the following criteria:

- (a) Where the preferred is not convertible into common stock, and where the corporation is not required to redeem the preferred at specific times, the cost of preferred equity is equal to its current dividend yield.
- (b) Where the preferred is not convertible but is subject to mandatory redemption providing holders of the instrument with a premium, the cost is equal to the current dividend yield, plus the present value of the premium.
- (c) Where the preferred is convertible at the option of the holder, and the market values of the preferred and common indicate that conversion is likely to occur or that the conversion right controls the price of the preferred, the preferred has the same cost as common equity.

Because the three-railroad composite had no preferred stock outstanding at the end of 2010, there is no 2010 cost of preferred equity capital. V.S. Gray at p. 47.

IV. The Cost of Debt

The cost of debt includes costs for three categories (bonds, equipment trust certificates, conditional sales agreements) of debt instruments, plus flotation costs. To determine the cost of debt for bonds, Mr. Gray has computed the average current bond yield for all 33 of the publicly traded bonds (during 2010) of the sample railroads that comprise the composite railroad. This methodology is identical to that used in the last 20 cost of capital proceedings. See Parte No. 558 (Sub-No. 13), *Railroad Cost of Capital – 2009* (Slip Op. at 3). Under this approach, the

bond yield is effectively based on a sample representing 52 percent of the total market value of the bonds issued by the railroads in the sample. As the Board has recognized, equipment trust certificates (ETCs) and conditional sales agreements (CSAs) are not actively traded in secondary markets. Their costs were therefore estimated by comparing them to the yields on Treasury securities that are actively traded.⁶ This is the same methodology used by the Board in the last 23 proceedings. The composite current cost of debt is the market-weighted average cost of bonds, ETCs, and CSAs, plus a small floatation cost.⁷ Using the Board's established methodology, the railroads' 2010 cost of new debt is 4.61 percent. V.S. Gray at p. 27.

V. The 2010 Capital Structure of the Railroad Industry and the Overall Cost of Capital

Pursuant to the Board's February 22, 2011 decision, the market values of debt, preferred equity, and common equity were compiled to compute the 2010 capital structure of the railroad industry.

The railroads' market value capital structure on a market value basis is 23.37 percent debt, 76.63 percent common equity capital, and 0.00 percent preferred equity capital. V.S. Gray at p. 48. Based upon this capital structure, the overall 2010 cost of capital is 11.03 percent. V.S. Gray at p. 48.

⁶ V.S. Gray at pp. 11,16.

⁷In this proceeding, the AAR calculated bond flotation costs by using data reported by the sample railroads to the Securities and Exchange Commission (SEC) regarding four new debt offerings in 2010. This is the same methodology approved by the Board in Ex Parte No. 558 (Sub-No. 13), *Railroad Cost of Capital –2009* (Slip Op. at 5). V.S. Gray at pp. 21-22.

Conclusion

The Board should determine that the railroads' cost of capital for 2010 is 11.03 percent.

Respectfully submitted,



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April 29, 2011

CERTIFICATE OF SERVICE

I hereby certify that on this 29th day of April, 2011, I served by first class mail, postage prepaid, a copy of the forgoing on the following:

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BEFORE THE
SURFACE TRANSPORTATION BOARD

EX PARTE NO. 558 (Sub-No. 14)

RAILROAD COST OF CAPITAL — 2010

VERIFIED STATEMENT

OF

JOHN T. GRAY

SENIOR VICE PRESIDENT — POLICY AND ECONOMICS

ASSOCIATION OF AMERICAN RAILROADS

April 29, 2011

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Verified Statement
of
John T. Gray

I. Introduction

My name is John T. Gray. I am Senior Vice President – Policy and Economics of the Association of American Railroads (AAR), with offices at 425 Third Street, SW, Suite 1000, Washington, DC 20024. The AAR is the trade association of the Nation’s major railroads, as well as the railroads of Canada and Mexico. The AAR’s United States railroad members, which include all of the Class I railroads, account for about 95 percent of our Nation’s total railroad freight operating revenue.

When appropriate, the AAR represents the railroad industry before government bodies, including economic regulatory proceedings before the Surface Transportation Board (“STB” or “Board”). In particular, the AAR has participated in all of the STB proceedings addressing revenue adequacy standards and the annual cost of capital determinations.

Aside from other responsibilities, I have conducted or directed a wide range of analyses and projects addressing regulatory, legislative and internal issues relevant to railroads. Furthermore, I have testified before federal regulatory agencies, and have been an expert witness for a railroad. A summary of my qualifications and experience appears at the end of this statement.

In this submission, I am responding to the Board’s decision of February 18, 2011 (served February 22), instituting a proceeding to determine the railroad industry’s 2010 cost of capital — Ex Parte No. 558 (Sub-No. 14), *Railroad Cost of Capital — 2010* ("Ex Parte 558 Decision"). In my statement, I calculate the cost of debt for the railroad industry using

the procedures accepted in previous STB proceedings. I also calculate the cost of common equity using a simple average of the estimates produced using the following methods: (1) the Capital Asset Pricing Model used by the Board in Ex Parte No. 558 (Sub-No. 13); and (2) the STB's version of the Morningstar/Ibbotson Multi-Stage Discounted Cash Flow Model as used by the Board in Ex Parte No. 558 (Sub-No. 13). Finally, I calculate the market value capital structure and the overall cost of capital using the procedures accepted in previous Cost of Capital proceedings. This statement presents the details for calculating the necessary components for the overall cost of capital calculation: the market value capital structure, the cost of debt, the cost of common equity capital using the Capital Asset Pricing Model and the Multi-Stage Discounted Cash Flow Model, and the cost of preferred equity capital.

I conclude that the 2010 cost of capital for the railroad industry is 11.03 percent. This estimate is based on a current cost of debt of 4.61 percent, a cost of common equity capital of 12.99 percent; and market value weights for debt and common equity of 23.37 percent and 76.63 percent, respectively. Because there were no preferred stock issues outstanding in 2010, the cost of preferred equity capital has not been calculated, and the market value weight for preferred equity capital is zero.

II. Determining the Cost of Capital

A. Defining the Cost of Capital

The cost of capital for a firm is the minimum rate of return on investment that the providers of capital require as a condition for making an investment in the firm. In essence, it is the threshold rate of return on investment that makes investment in the firm attractive.

The cost of capital necessarily incorporates long-term investor expectations for a company's performance. Investment funds flow to companies where the expected returns, over the investors' investment horizons, are thought to at least equal the expected returns available from other investment opportunities, giving consideration to the relative (or commensurate) risk of investment. Similarly within a company, limited capital resources flow to projects where the expected returns are expected to be highest, giving consideration to the relative (or commensurate) risk of investment. Methods used to estimate the cost of capital therefore attempt to measure investor expectations. For some types of capital, such as traded bonds, investor expectations can be readily observed. For other types of capital, such as common equity, modeling is necessary.

B. The Composite Railroad Approach

The STB has adopted a composite railroad approach to computing an industry-wide cost of capital. This approach relies upon data from a sample of railroads meeting criteria established by the Board in Ex Parte No. 458, *Railroad Cost of Capital — 1984*, 1 I.C.C. 2d 989, 1003–1004 (1985).

C. Selection of Railroads for Analysis

Under the criteria established by the Board for individual firm inclusion in the composite railroad sample, a company must meet certain criteria. (Ex Parte 558 Sub-No. 14 Decision) Those criteria are:

- The company is a Class I line-haul railroad.
- If the Class I railroad is controlled by another company, the controlling company is primarily a railroad company (at least 50 percent of its total assets are devoted to railroad operations), and it is not already included in the study frame.
- The company's bonds are rated at least BBB by Standard & Poor's and Baa by Moody's.

- The company's stock is listed on either the New York or the American Stock Exchange.
- The company has paid dividends throughout the year (2010).

Table 1 (below) lists the AAR's evaluation of railroad companies that may meet the STB's criteria.

Table No. 1
Evaluation of Class I Railroads
Under Surface Transportation Board Selection Criteria
2010

Class I Railroad	Parent	Stock Symbol	Listed NYSE/ASE	Dividends Throughout 2010	Rail Assets	
					Account For At Least 50% of Parent	Adequate Debt Rating
BNSF	Berkshire Hathaway	BRK.A	Yes	No	No	Yes
CSX	CSX Corporation	CSX	Yes	Yes	Yes	Yes
CNGT*	Canadian National Railway Co.	CNI	Yes	---	Non-U.S. company	---
KCS	Kansas City Southern	KSU	Yes	No	Yes	No
NS	Norfolk Southern Corporation	NSC	Yes	Yes	Yes	Yes
SOO*	Canadian Pacific Railway Limited	CP	Yes	---	Non-U.S. company	---
UP	Union Pacific Corporation	UNP	Yes	Yes	Yes	Yes

* CNGT is Grand Trunk Corporation, and consists of almost all of the U.S. railroad operations of Canadian National Railway (a.k.a. CN). SOO is Soo Line Corporation, and consists of the U.S. operations of Canadian Pacific (CP). Following STB precedent, CN and Canadian Pacific were not included in the sample because both CN and Canadian Pacific are Canadian corporations – and the cost of capital proceeding is concerned with determining costs for U.S. railroads under STB jurisdiction.

This year there are three railroad corporations or holding companies in the sample meeting the Board's criteria: CSX Corporation, Norfolk Southern Corporation, and Union Pacific Corporation. These railroad companies are three of the four companies included in the 2009 sample. Burlington Northern Santa Fe Corporation, a long-time contributor to the composite railroad, was purchased by Berkshire Hathaway in early 2010, and no longer

meets the Board's criteria.¹ Berkshire Hathaway does not pay dividends. In addition, railroad assets are less than 50 percent of Berkshire Hathaway's total assets.²

Consistent with past proceedings, the two Canadian-owned railroads have been excluded from the sample.³ Kansas City Southern did not meet the Board's criteria because of its lack of dividends on common stock, and its debt rating.

Table 2 contains revenue and asset figures from Annual Report Form R-1, which each Class I railroad submitted to the STB at the end of March 2011 for the year 2010. This table shows that, based on data for 2010, the three-firm composite accounts for 62.7 percent of the operating revenues and 54.2 percent of the assets of all Class I railroads. While these percentages have been around 90 in recent years, they were typically 75 percent in the early 1990s.⁴ I believe results from using the three-firm composite will not be vastly different from the results using the four-firm composite, and the four firms have represented the U.S. freight railroad industry well.⁵

¹ As information, Berkshire Hathaway has two classes of stock: Class A (BRK.A) and Class B (BRK.B). Class B stock has rights of 1/1,500th of a Class A share, but voting rights are only 1/10,000th of a Class A share.

² Railroad, Utilities, and Energy assets (BNSF would be a subset of this) account for 30.5 percent of total assets in 2010 – per page 61 of the Berkshire Hathaway Inc. 10-K report.

³ See STB Ex Parte No. 558, decided July 2, 1997, page 2, and verified statement of Craig F. Rockey on behalf of the Association of American Railroads in Ex Parte No. 558, submitted March 19, 1997, Table 1 on page 6. Accounting methods, differences in the treatment of taxes, and currency conversion could also be issues if foreign companies were added to the composite railroad. The railroad parents (CN and Canadian Pacific) are still more Canadian than USA. Comparing operating revenues for 2009 as reported in the AAR's *Railroad Facts* book, 2010 edition: CNGT was 29.6 percent of CN, and SOO was 18.3 percent of CP.

⁴ For example, in the AAR's Ex Parte No. 491 filing, submitted February 15, 1991, 7 of the 14 Class I railroads that submitted an Annual Report Form R-1 met the criteria to be included in the composite railroad, and they accounted for 75 percent of the operating revenue for all Class I railroads.

⁵ For 2009 (latest year available with total industry data), Class I railroads accounted for 93 percent of the entire freight railroad industry's freight revenue.

Table No. 2
Relative Size of the Railroad Composite Sample
Year 2010

Railroad	Revenue (\$000)	Assets (\$000)	Pct of Total Class I RR	
			Revenue	Assets
CSX	10,181,605	25,626,071	17.4 %	13.9 %
NS	9,516,435	33,450,552	16.3	18.1
UP	16,934,844	40,961,175	29.0	22.2
Total	\$36,632,884	\$100,037,798	62.7	54.2
Total Class I	\$58,405,915	\$184,708,995	100.0 %	100.0 %

A quick review of the STB’s Table 2 in its past four Cost of Capital decisions shows that BNSF’s cost of debt for bonds (bonds account for the bulk of debt instruments) is neither the highest nor lowest number. However, debt is only one part of the cost of capital calculation – the two models for estimating the cost equity, and capital structure, must also be considered. Our research has shown that the railroad cost of capital does not change much when BNSF is removed from the group of four railroads used in recent determinations. Table 2a is a summary of our research.

Table No. 2a
Cost of Capital
with and without BNSF

Year	Four RRs	Three RRs
2006	11.58 %	11.48 %
2007	12.15	12.18
2008	11.75	12.04
2009	10.43	10.63

Our investigation started with calculations that replicate the STB calculation each year for 2006 through 2009. Next, we took the spreadsheets that replicated the STB’s beta and MSDCF, and removed the BNSF data. The new cost of equity results, the impact of removing BNSF debt, and recalculated flotation costs were input into the spreadsheets that

replicated the STB decision. We calculated a cost of equity using the MSDCF model for 2006 and 2007 – the years where the cost of equity was determined using the CAPM only. Thus, Table 2a compares the STB Cost of Capital decisions to what the Board would have decided if BNSF had been excluded from the group of railroads used in the calculations. Lines labeled 2006 and 2007 have an MSDCF added to the STB’s decision and the three-railroad calculation.

The four-railroad cost of capital calculations are not significantly different from the three-railroad cost of capital calculations that exclude BNSF. The minimum difference is 0.03 percentage points in 2007, while the maximum difference is 0.29 percentage points in 2008. Note that the differences are both positive and negative. Based on all of the years since the STB revamped its cost of equity estimation technique, I have concluded that cost of capital estimations for a three-railroad group are likely to not be substantially different from a four-railroad group. Therefore, the three-firm composite should represent the railroad industry as well as the four-firm composite that was used in recent years.

D. Types of Railroad Capital

The total capital of a firm may include various forms of debt and two types of equity; common stock and preferred stock. Each of these three sources of capital has different expected rates of return (reflecting different levels of perceived risk), and the overall cost of capital is calculated as the weighted average of the costs of common equity, preferred equity, and debt based on their market values. Different approaches are used to estimate the costs of each of the types of capital. In this statement, 98.2 percent of the cost of debt is calculated using bonds and similar instruments (including notes and debentures). The remaining 1.8

percent – in the form of Equipment Trust Certificates and Conditional Sales Agreements – is calculated with a long-used model that utilizes market-determined yields for government debt, and the historical relationship between government debt and the type of railroad debt modeled. The estimate of the cost of common equity is a simple average of the results from two estimation methods. One method is calculated using the Capital Asset Pricing Model (CAPM) following the methodology prescribed by the Board in the 2009 Cost of Capital decision. The other method is calculated using the Multi-Stage Discounted Cash Flow model methodology prescribed by the Board in the 2009 Cost of Capital Decision.⁶ The cost of preferred equity capital has not been calculated, since none of the representative companies had preferred stock outstanding at the end of 2010. Calculations for all three types of capital are based on data through 2010.⁷ The industry’s overall cost of capital is computed as a weighted average of the two costs — debt and common equity — based upon the market value for each type of capital.

III. Debt Capital in 2010

The current cost of debt is determined from the current market-determined yields on all debt outstanding. This approach is necessary, and in past Board Cost of Capital decisions has been accepted as appropriate, because of the reasons listed below.⁸

⁶ Both methods have minor changes from their 2008 versions based on the Board’s 2009 Cost of Capital decision. For the CAPM, the methodology for converting an annual Treasury Bill rate to weekly rate has been improved to provide greater accuracy. For the MSDCF, revised prior-year data are utilized.

⁷ The growth rates and market values used in the Multi-Stage Discounted Cash Flow are as of December 31, 2010.

⁸ See Ex Parte Nos. 415, 436, 452, 458, 464, 466, 473, 478, 486, 491, 506, 513, 518, 523, 523 (Sub-No. 1), 588, and 588 (Sub-No. 1) through (Sub-No. 13).

- (1) There is a lack of sufficient new issues from which to develop a representative current cost.
- (2) The stated rate of interest/dividend payment to the investor is not always the same as the cost to the railroad. For example, when securities are issued, the exact total amount paid by investors is seldom received by the firm. Administrative fees, such as compensation paid to investment bankers, reduce the proceeds to the firm. The effect of this is to increase the cost of the securities to the firm.
- (3) The maturity mix and the type of security (equipment trust certificates, conditional sales agreements, long-term debt) of new security issues may be different from the average of existing securities. Because of the effect that length of maturity and type of security has on its current cost, the use of only new issues would not accurately measure the current cost.
- (4) The quantity and quality of existing debt has an impact on the yield of new issues.

A. Bonds, Notes and Debentures

Yields and market values of the sample railroads' bonds, notes and debentures are obtained from bond prices and yields from Standard & Poor's *Bond XpressFeed* data base.⁹ As in previous Cost of Capital determinations, the calculations are based on *all* of the sample railroads' bonds, notes, and debentures for which trading data are available during the year. There is no practical way to obtain yields and prices for bonds which are privately held. The

⁹ Standard & Poor's (S&P) *Bond XpressFeed* provides financial and statistical data on approximately 6,200 corporate bonds, and is essentially an electronic version of the Standard & Poor's *Bond Guide*.

bonds that were publicly traded in 2010 represent 52 percent of the market value of all outstanding bonds that were issued by the sample railroads.¹⁰

1. Market Value of Bonds, Notes, and Debentures

The average market value for traded bonds, notes, and debentures is calculated using the methodology employed in previous Cost of Capital proceedings. For each of 33 traded bonds in 2010, an average price is calculated based on the simple average of monthly prices. The prices represent what the investor is willing to pay for the bond given its coupon rate and maturity date. The market value is the average market price (stated as a price per hundred dollars of principal) times the amount of debt outstanding as of December 31, 2010.¹¹ Where market prices are not available (i.e., for instruments that did not merit listing in S&P's XpressFeed), the "face value" of the bond is assumed to be the price investors would pay. This assumption may slightly overstate the market value of some issues and understate the value of others, depending upon the relationship of the instruments' coupon rate and the current market rate. However, this possible variation is not likely to significantly affect the overall estimate of the cost of debt capital, since the differences are likely to be both small and offsetting, and since 49 percent of the book value of bonds is priced at market. Table 3 summarizes the results of the market value calculations for 2010. The market value for bonds, notes, and debentures that traded is \$11.4 billion, a decrease of 3.6 percent from the 2009 number if BNSF is excluded. The non-traded value is 6.3 percent higher than its value in 2009 without BNSF.

¹⁰ The bonds not included are those that are either too small, have no data available, or do not trade often enough to merit inclusion in the *Bond XpressFeed* database.

¹¹ Securities that were newly issued during the year were prorated by the ratio of the number of months outstanding (rounded to the nearest half month) to the twelve-month year, as done in past proceedings.

Table No. 3
Bonds, Notes and Debentures
Average Market Value

Railroad Co.	Traded Value (\$000)	Non-Traded Value (\$000)	Total Value (\$000)	Weight Based on Traded
CSX	\$2,880,819	\$4,720,533	\$7,601,352	25.23 %
NSC	4,729,539	2,389,014	7,118,553	41.43
UNP	3,806,376	3,293,542	7,099,918	33.34
Total	\$11,416,734	\$10,403,089	\$21,819,823	100.00 %
Prior Year	\$17,576,771	\$11,970,735	\$29,547,506	
Change	-35.0%	-13.1%	-26.2%	
Same Consist	\$11,840,695	\$9,790,994	\$21,631,689	
Change	-3.6%	6.3%	0.9%	

Appendix A lists details for each of the 33 bonds, notes, and debentures belonging to the composite railroad that traded in 2010 – and those instruments are summarized for each sample railroad in the front of the Appendix. Book values for non-traded debt are also listed.

2. Current Cost of Bonds, Notes, and Debentures

Table 4 summarizes the yield or cost of each railroad’s debt (bonds, notes, and debentures), which, when weighted by the market value of the traded debt (as shown in Table 3), determines the sample composite cost of bonds, notes and debentures. The weighted average is 4.565 percent, which is 1.104 percentage points below last year’s figure.

Table No. 4
Bonds, Notes and Debentures
Weighted Current Cost

Railroad Co.	Weight	Current Cost
CSX	25.23 %	4.506 %
NSC	41.43	5.259
UNP	33.34	3.747
Total	100.00 %	4.565 %

As noted earlier, the current cost for bonds, notes, and debentures is based on traded instruments issued by the sample railroads. Appendix A contains the average yield for each of the 33 traded securities as found in Standard & Poor's *Bond XpressFeed* database. The average yield for each security is a simple average of the twelve month-end yields found in *Bond XpressFeed*. The traded portion of Appendix A summarizes the yield or cost of each railroad's debt, which, when weighted by the market value of the traded debt, determines the sample composite cost of bonds, notes and debentures of 4.565 percent. The weights used in Table 4, as derived from the calculations in Table 3, are also based on the traded portion of bonds, notes and debentures listed in Appendix A.

B. Equipment Trust Certificates

Equipment Trust Certificates (ETCs) are debt obligations that are secured by the particular equipment which is acquired with the instrument's proceeds. In the event of default, creditors may repossess and resell or lease the equipment to pay off the debt obligations. Because ETCs are not actively traded in secondary markets, it is necessary to determine their cost by examining the return on other debt securities that are actively traded.

An ETC is generally serially issued. As such, each year during its life an equal amount (typically 1/15th) of the original amount must be retired. Consequently, an ETC may be thought of as a series of individual, annually-retiring bonds. In fact, when ETCs are issued, each of the maturities is sold independently from the others. A serially issued debt instrument provides an investor with the ability to purchase only the maturities that interest him. To correctly compute the composite yield on a serially issued bond, the internal rate of return on the bond's principal and interest payments must be calculated.

To compare ETCs to other debt instruments, the yields to maturity (as detailed in Appendix B) for government bills, notes, and bonds having the same range of maturities as current ETCs were obtained from Federal Reserve data. The yield curve for these government securities (also in Appendix B) shows the relationship between the current costs, or yields to maturity, and maturity dates for government bonds (which, unlike ETCs, are actively traded in secondary markets).

These yield data have been adjusted by the Federal Reserve Board to reflect constant maturities, such that the data accurately reflect the 2010 relationships between yields and maturities. After determining the yields to maturity for government bonds of maturities similar to those of an ETC, those yields are adjusted to reflect the risk associated with the ETCs as compared to government bonds. In Cost of Capital filings prior to Ex Parte No. 486, *Railroad Cost of Capital — 1989*, yield spreads between government bonds and ETCs were based on the publication *Analytical Record of Yields and Yield Spreads* prepared by the Bond Market Research Department of Salomon Brothers, Inc. However, Salomon Brothers has not compiled yields and yield spreads for ETCs since 1988. Accordingly, identical to the methodology approved by the Board for application in Ex Parte No. 486 and subsequent proceedings, yields and yield spreads used in this proceeding are based on new issues of ETCs by the sample railroads as compiled by the AAR.¹² (Identical to the methodology used in Ex Parte 486 and prior proceedings, the Salomon Brothers compilation of yields and yield

¹²The only difference between the two methodologies is the specificity of the data base regarding the new issues. Salomon Brothers, Inc. included all new issues of ETCs (i.e., airlines, railroads, etc.) in computing yield spreads between government bonds and ETCs, while the AAR had included only new issues of ETCs by the sample railroads in computing yield spreads between government bonds and ETCs. Use of new issues of ETCs by the sample railroads is necessarily representative of the cost of ETCs because it is all-inclusive and reflects the actual cost of new ETC issuance. In today's economic environment, ETCs for non-railroads could distort the spread.

spreads on comparable industrial instruments were used as a proxy for ETCs of the same rating¹³ where there were no new ETC issues of a particular rating.)

In recent years prior to 2007, no new ETCs were issued by the sample railroads. An alternative method of estimating yield spreads between government bonds and ETCs was therefore necessary for Cost of Capital determinations for the years 2001 through 2006. For this period, the AAR relied on historical yield spreads to determine the current cost of ETCs. Consequently, the yield spread between ETCs and government bonds was an average of the spreads (government vs. BBB ETCs) used in the 1998 through 2000 Cost of Capital proceedings. That spread was 114 basis points. In 2007, however, a new ETC was issued, and its interest rate spread above government bonds was 125 basis points. There were no new ETCs issued in 2008, so the 2007 premium was used. However, in 2009, a new ETC was issued, and its interest rate spread above government bonds was 80 basis points. Because the 2009 ETC is the most current measure of the relationship between ETCs and government securities, its 80 basis point spread is used herein as the interest rate spread above government bonds. Table 5 lists thirteen years of interest rate spreads. The 2009-10 spread is closest to the spreads from 1998 and 1999.

¹³ETCs are rated by Standard & Poor's, a firm which specializes in analyzing and evaluating securities, according to the likelihood of a default by the railroad responsible to pay interest and to redeem the face value. The highest available rating, AAA, indicates the least risk of default. All other things being equal, investors will pay a higher price (or accept a lower yield) for a higher rated security than for a lower rated security.

Table No. 5
History of Premiums for
Equipment Trust Certificates (ETC)

Data	Proceeding	Basis Points
1998	Ex Parte No. 558 (Sub-No. 2)	84
1999	Ex Parte No. 558 (Sub-No. 3)	87
2000	Ex Parte No. 558 (Sub-No. 4)	171
2001	Ex Parte No. 558 (Sub-No. 5)	114
2002	Ex Parte No. 558 (Sub-No. 6)	114
2003	Ex Parte No. 558 (Sub-No. 7)	114
2004	Ex Parte No. 558 (Sub-No. 8)	114
2005	Ex Parte No. 558 (Sub-No. 9)	114
2006	Ex Parte No. 558 (Sub-No. 10)	114
2007	Ex Parte No. 558 (Sub-No. 11)	125
2008	Ex Parte No. 558 (Sub-No. 12)	125
2009	Ex Parte No. 558 (Sub-No. 13)	80
2010	Proposed for EP 558 (Sub-No. 14)	80

The methodology used to determine the cost of ETC debt is the same as the method employed and approved in previous proceedings. Risk-adjusted yields provide the basis to value each ETC. Using formulae suggested by *Standard Security Calculation Methods*, the market value of each maturity comprising an ETC is determined.¹⁴ In effect, these formulae

¹⁴The formulae used to value these bonds are standards of the security industry. They are:

For bonds with less than six months to maturity:

$$DP = \left[\frac{100 + C/2}{1 + DY/360} \right] - \left[C/2 \frac{(180 - D)}{180} \right]$$

For bonds with six months or longer to maturity:

make it possible to determine the price investors would pay in 2010 for the contractual interest payments and price appreciation for holding the instrument. It is the most accurate way to compute the current cost of ETCs to the firm for the defined period. Computing the internal rate of return of the ETC prices and their associated cash flow streams establish the current cost for ETCs. The weighted-average cost for all modeled Equipment Trust Certificates is shown in Table 6.

Table No. 6
Summary of Equipment Trust Certificates Modeled for 2010
(\$000)

Railroad	Amount Outstanding			Yield	Current Market Value	Current Interest Amount	No. ETC
	Beg.	Ending	Average				
CSX	\$119,300	\$97,300	\$108,300	2.594%	\$122,978	\$3,190	5
NS	79,550	62,800	71,175	2.381%	79,249	1,887	3
UP	157,973	144,982	151,478	4.067%	172,401	7,011	3
Total	\$356,823	\$305,082	\$330,953	3.227%	\$374,628	\$12,087	11

Weighing each railroad's yield, by its current market value for modeled ETCs, results in a current cost of 3.227 percent. The average rate is slightly lower than the 3.551 percent estimated for 2009. This is not surprising because the yield curve for government securities

$$DP = \left[\frac{100}{(1 + Y/2)_{EXP}(N - 1 + D/180)} \right] + \left[\sum_{k=1}^N \frac{C/2}{(1 + Y/2)_{EXP}(K - 1 + D/180)} \right] - \left[C/2 \frac{(180 - D)}{180} \right]$$

- Where:
- DP = Dollar price of the bond
 - C = Coupon rate as a percent per year
 - D = Number of days from settlement date to coupon date
 - Y = Yield to maturity as a decimal per year
 - EXP = Raise the term on the left to the power indicated by the term on the right
 - N = Whole number of coupons payable plus 13
 - K = Compute for K, values 1 to N and sum the results

is slightly lower in 2010 than 2009 (see Appendix B), especially for shorter-term rates. Both years were calculated using the same interest rate spread in the model. A summary of each railroad's modeled ETCs can be found in Appendix C, which includes a market value and a current yield. In addition, Appendix C also lists ETCs that were not modeled. ETCs can fail to be modeled for two reasons: (1) the ETC instrument does not have all of the characteristics typical of an ETC; or (2) the ETC has a floating rate (instead of fixed) making its rate for a particular future year uncertain. The market value of all modeled ETCs is \$374.6 million. Based on the assumption that the market value of non-modeled ETCs is the same as its book value, the market value of non-modeled ETCs is \$15.0 million. The non-modeled ETC "market value" is listed in the Miscellaneous Debt category to comply with the Board's previous decisions.

C. Conditional Sales Agreements

Conditional Sales Agreements (CSAs) are another form of railroad financing that is treated by investors as debt securities, because their interest obligations are essentially the same as interest obligations on ETCs. Like ETCs, CSAs are not generally traded in secondary markets. Accordingly, as in prior proceedings, their current cost has been determined from current yields on government bonds in a similar manner to ETCs.

In Cost of Capital proceedings prior to Ex Parte No. 486, *Railroad Cost of Capital — 1989*, yield spreads for CSAs were estimated using the yield on new issues of CSAs and the Salomon Brothers, Inc. publication *Analytical Record of Yield and Yield Spreads* to determine the yields and yield spreads between government bonds, ETCs, and CSAs of similar rating.

However in 2010, as in 1989–1996 and 1998–2009, there were no issues of CSAs by the sample railroads. Therefore, an alternative method of estimating yield spreads was required using historical yield spread data to determine the current cost of CSAs. Similarly, historical yield spread data are used in this proceeding to determine the current cost of CSAs. Specifically, the yield spread for CSAs in 2010 is based upon the yield-spread relationship between ETCs and CSAs issued in 1997, which was used in the 1997–2009 Cost of Capital proceedings. This approach, which has been used and approved in prior proceedings, is the most practical and accurate method available for determining the cost of CSAs.

In 1997, a new CSA was issued—the first since 1987. The yield spread of the new CSA over ETCs in 1997 was 32 basis points. Adding this yield spread to the current ETC yield spread over government bonds of 80 basis points provides a 2010 CSA yield spread of 112 basis points over government bonds. Using this methodology, the current cost of Conditional Sales Agreements and their market value is shown in Table 7. Although the table is shown in thousands, interest rate calculations are based on the full interest amount [\$647,122] and full market value [\$30,835,593].

Table No. 7
Summary of Conditional Sales Agreements Modeled for 2010
(\$000)

Railroad	Amount Outstanding			Yield	Current Market Value	Current Interest Amount	No. CSA
	Beg.	Ending	Average				
CSX	\$34,111	\$22,740	\$28,426	2.099%	30,836	647	2
NS	0	0	0	--	0	0	0
UP	0	0	0	--	0	0	0
Total	\$34,111	\$22,740	\$28,426	2.099%	\$30,836	\$647	2

Weighing each railroad’s yield (only one railroad currently has CSAs), by its current market value for modeled CSAs, results in a current cost of 2.099 percent. Similar to ETCs,

the yields reflected in the model are slightly lower because of the lower yield curve for government securities and the lower yield spread. In addition, only two CSAs are modeled – and both have maturities that are even closer to the “bottom” of the yield curve than last year. A summary of each railroad’s (only one railroad still has this type of debt instrument) modeled CSAs can be found in Appendix D, which includes a market value and a current yield. In addition, Appendix D lists CSAs that were not modeled. Like an ETC, CSAs can fail to be modeled for two reasons: (1) the CSA instrument does not have all of the characteristics typical of a CSA; or (2) the CSA has a floating rate (instead of fixed), making its rate for a particular future year uncertain. The market value of all modeled CSAs is \$30.8 million. Based on the assumption that the market value of non-modeled CSAs is the same as its book value, the market value of non-modeled CSAs is \$24.0 million. The non-modeled CSA market value has been listed with the Miscellaneous Debt category to comply with the Board’s earlier decisions.

D. All Other Debt

Capital leases and miscellaneous debt such as commercial paper, demand deposits, and other instruments with relatively small amounts outstanding are listed as All Other Debt. To comply with past decisions of the Board, non-modeled Equipment Trust Certificates and Conditional Sales Agreements have been listed in this category. Capital Leases account for 91 percent of the All Other Debt category.

Capital leases are contracts between two parties and as such take many forms.¹⁵ Since capital leases are not traded in the marketplace, their current cost is not directly observable. The lack of complete information with respect to leases necessitates that many

¹⁵ See generally 49 C.F.R. 1201, 2–20 for definitions.

assumptions be made to estimate their current cost and their values. For market value purposes, capital leases are included at book value. Given the large number of these leases and the significant differences among their terms, this is the only practical option available. Because the cost of capital calculation assigns this debt a cost based on traded or modeled securities (bonds, notes, debentures, ETCs and CSAs) that typically have a lower cost, the cost used for capital leases will be somewhat understated.

Miscellaneous debt, such as commercial paper, demand deposits, and various instruments with extremely small amounts outstanding are also excluded from the current cost computations. Non-modeled Equipment Trust Certificates and non-modeled Conditional Sales Agreements are also included in the Miscellaneous Debt category. The book value (assumed market value) of capital leases, miscellaneous debt, non-modeled ETCs, and non-modeled CSAs is \$2,146.0 million; as a percent of the total market value of debt of the composite railroad, it is 8.8 percent. (More detail on Miscellaneous Debt can be found in the Debt Reconciliation portion of my work papers.) This treatment of All Other Debt is the same approach used in the previous cost of capital proceeding.

E. Market Value of Debt

Table 8 summarizes the total market value for each debt category. The total market value for traded and non-traded debt is \$24,371.3 million. Bonds, Notes, and Debentures (Bonds) account for almost 90 percent of the total market value. Approximately 52 percent of the Bonds' market value is determined by the results of trading throughout the year, while the remaining portion is based upon the book value of non-traded bonds.

Table No. 8
Market Value of Debt (\$000)

Type of Debt	Market Value	Percent of	
		Total	Subtotal
Bonds, Notes & Debentures	\$21,819,823	89.53 %	98.18 %
Equipment Trust Certificates	374,628	1.54	1.69
Conditional Sales Agreements	30,836	0.13	0.14
Subtotal	22,225,287	91.19	100.00 %
All Other Debt*	2,146,031	8.81	
Total	\$24,371,318	100.00 %	

* Non-modeled ETCs and non-modeled CSAs are included in All Other Debt.

Current costs can be determined for three of the four debt categories — Bonds, Equipment Trust Certificates, and Conditional Sales Agreements. Therefore, the weighted average cost of debt is based upon these three (of the four) debt categories (see subtotal column). The total market value of debt, used to determine the weight for debt in the overall cost of capital calculation, includes all four categories. The market value of debt, including traded and non-traded debt, is described in more detail in Appendix E.

F. Flotation Costs for Debt Capital

The cost of issuing new debt generally has two portions. First, when new debt is issued by a negotiated offering or a competitive bid, the issuing firm pays a fee to the investment banking firm or firms handling the offer. These fees cover the banker's administrative costs in handling the sale and profits. Second, the issuer incurs expenses such as legal, accounting, and printing. Those types of expenses are quantified in the Securities and Exchange Commission's Form 424(b)(5), as are the investment banker's fee and other details of new debt offerings. Flotation costs generally vary by type of security. For ETCs and CSAs, the fees are extremely small, but costs increase as the administrative burden and underwriting risk increase (i.e., in order of increasing cost — ETCs and CSAs, bonds and

notes, convertible bonds, and preferred stock and common stock). As discussed below, flotation costs directly reduce the gross proceeds available to the issuing firm.

An example helps to illustrate how flotation costs permanently increase the cost of debt capital to the railroad. If a railroad sells a 10-year bond with an annual coupon of 15 percent and investors are willing to pay \$98 for each \$100 in face value, the effective yield on the bond is 15.40 percent. Because the investment banker requires compensation (flotation costs) for his work, the railroad does not receive the full \$98 from the investors. In addition, the railroad will have its own internal costs such as legal and accounting. If flotation costs reduce the net proceeds to say \$96, the effective cost to the railroad over the life of the bond is 15.82 percent. Therefore, flotation costs have increased the cost of debt from 15.40 to 15.82, or by 42 basis points. Proper accounting treatment requires the \$4 per \$100 ($\$100 - \96) to be amortized on a straight line basis over the life of the bond. In addition, the Uniform System of Accounts requires the annual amortization to be charged directly to Account No. 548, Amortization of Discount on Funded Debt, a fixed charge item. This results in fixed charges for the year totaling \$15.40 (\$15.00 coupon payment + amortization of \$0.20 discount + \$0.20 flotation costs). It is important to note that these flotation costs are not recovered through operating costs but are fixed charges each year during the life of the bond. Also, it is evident that in order to reflect the total current cost of debt, flotation costs must be included.

Any firm requires the opportunity to cover flotation costs before it will have an incentive to make future capital expenditures. Before creditors will lend their funds, they must be assured that the railroad will have the opportunity to earn returns sufficient to cover all costs.

In STB Ex Parte No. 558 (Sub-No.11), the Board stated that it “would welcome a better and more transparent calculation of flotation costs in future proceedings.” Therefore, in Ex Parte No. 558 (Sub-No. 12), I calculated 2008 flotation costs for bonds using publicly available data from electronic filings with the Securities and Exchange Commission (SEC), and this method was found reasonable by the Board.¹⁶ The filing types are “Prospectus Rule 424(b)(2)” and “Prospectus Rule 424(b)(5)”. In addition to standard bond information such as coupon and maturity date, these filings also provide the price to investors, underwriter’s fee, and railroad expenses excluding the underwriter’s fee. Using the same method I used in the submissions for 2008 and 2009, I have calculated 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 cost expressed in percentage points. For 2010, four new issues were reported in three (one filing reported two new issues) filings.¹⁷ A simple average of the four flotation costs is 0.072 points, somewhat lower than the 0.103 percentage points calculated for 2009. Page 1 of Appendix F contains a table with input data and calculations. Pages 2 and 3 of the same appendix contain, as an example, the pages from the SEC filing that were used as a source for one of the bonds. The source filings for all of the new bond issues have been included in my work papers. I believe the four new railroad debt issues provide the best information to determine flotation costs for 2010, and I have therefore used 0.072 percentage points for the flotation costs for bonds.

¹⁶ The SEC’s EDGAR (Electronic Data Gathering, Analysis, and Retrieval) system is available on the internet at the following address: <http://www.sec.gov/edgar.shtml>.

¹⁷ Debt exchanges were not used.

The Securities and Exchange Commission (SEC) conducted a study of flotation costs using railroad ETC data for the years 1951, 1952 and 1955.¹⁸ In that study, the SEC determined that ETC flotation costs averaged 0.89 percent of gross proceeds. For CSAs, neither recent nor historical data are publicly available, so the ETC figure is used.

Table 9 below calculates flotation costs for ETCs and CSAs using the flotation percent of gross proceeds discussed above. Current average yields on railroad ETCs and CSAs are assumed to be equal to the yield resulting from the price to investors for a new issue. Coupons are assumed to be paid twice per year. The duration for new ETCs and CSAs is assumed to be 15 years. Given the input data, effective yields can be calculated, and the difference between the yields excluding flotation costs and the yields including flotation costs are the flotation costs measured in percentage points. The results are flotation costs for ETCs of 0.075 percentage points. The figure for CSAs is somewhat lower, at 0.069 percentage points. This methodology is unchanged in AAR submissions since 2008.¹⁹ It is the same method for calculating flotation costs was used by the Board in its 2007, 2008, and 2009 Cost of Capital decisions.

¹⁸ *Cost of Flotation of Corporate Securities 1951-1955*, Securities and Exchange Commission, June 1957.

¹⁹ See Table No. 8 in Verified Statement of John T. Gray, Association of American Railroads, Ex Parte No. 558 (Sub-No. 12) for the first time this method was used by the AAR.

Table No. 9
Flotation Costs for
Equipment Trust Certificates and
Conditional Sales Agreements

Given	ETC	CSA
Flotation Costs as Pct of Gross Proceeds	0.890%	0.890%
Avg. Railroad Yields (Tables 6 & 7)	3.227%	2.099%
Duration of New Instrument (Years)	15	15
Calculated		
Price After Flotation Costs	\$99.11	\$99.11
Effective Yield Including Flotation Costs	3.302%	2.168%
Difference Between Yields With and Without Flotation Costs =		
Flotation Cost as Percentage Points	0.075%	0.069%

The 2010 ETC figure is slightly lower than the 0.078 percentage points found reasonable for 2009. In the case of CSAs, I believe the flotation cost of 0.069 percentage points is too low. The methodology assumes that the current average yield is equal to the yield to investors for a new issue, and that the duration of the new issue is 15 years. However, the 2.099 percent average yield found is for a total of two CSAs that mature in 2012 – much less than a 15 year maturity. It should also be noted that, using this methodology, the gap between the flotation costs for ETCs and CSAs has been increasing since the Board’s 2007 Cost of Capital decision. Because the effect of CSA flotation costs on the overall cost of capital computation is negligible, however, I am using the 0.069 percentage point flotation cost for CSAs in my cost of debt calculation.²⁰ However, the Board may want to consider using the figure calculated for ETCs for both ETCs and CSAs.

²⁰ Because the market weight for CSA’s is so low, the total flotation cost for debt will be the same using 0.069 or 0.075 percentage points for CSAs. In addition, CSAs may cease to matter for next year’s Cost of Capital determination, if no new CSAs are issued.

To compute the overall effect of 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), as found in the Percent of Subtotal column in Table 8. All Other Debt is excluded from the weight calculation, since a current cost of debt for that category has not been determined. As shown in Table 10, flotation costs increase the cost of debt by 0.072 percentage points. This result is lower lower than the Board's 0.102 percent points calculated in its 2009 Cost of Capital decision.

**Table No. 10
Flotation Costs For Debt**

Type of Debt	Market Weight	Flotation Cost
Bonds, Notes & Debentures	98.18%	0.072%
Equipment Trust Certificates	1.69%	0.075%
Conditional Sales Agreements	0.14%	0.069%
Total	100.01%	0.072%

G. Conclusion as to the Cost of Debt Capital

To determine the overall composite current cost of debt, the current cost of each of three categories of debt (Bonds, ETCs and CSAs) is multiplied by its market value proportion. Market values are properly used in this connection, because they represent the amounts on which the current cost must be paid. Table 11 shows the results of this calculation.

Table No. 11
Composite Current Cost Of Debt

Type of Debt	Market Weight	Current Cost
Bonds, Notes & Debentures	98.18%	4.565%
Equipment Trust Certificates	1.69%	3.227%
Conditional Sales Agreements	0.14%	2.099%
Subtotal	100.01%	4.539%
Flotation Costs		0.072%
Weighted Cost of Debt		4.611%
Weighted Cost of Debt (Rounded)		4.61%

The current weighted cost of debt before flotation costs is 4.539 percent. The addition of flotation costs results in a rounded cost of debt of 4.61 percent. This cost of debt is the lowest cost of debt ever – much lower than the previous-record low of 5.00 percent for 2003.²¹ Additional details for the 2010 calculation of the overall cost of debt are provided in Appendix G.

IV. Common Equity Capital In 2010

A. The Market Value of Common Equity Capital

The market value of common equity is based on stock prices and shares outstanding for 2010. Table 12 below summarizes the market value calculation. The Weight column, which is not used directly in our calculation, is provided as additional information.

²¹ The AAR's *Railroad Facts* book conveniently lists all cost of debt decided by the Board, and its predecessor, since 1978, on page 19 of the 2010 edition.

Table No. 12
Average Market Value
For Common Equity in 2010

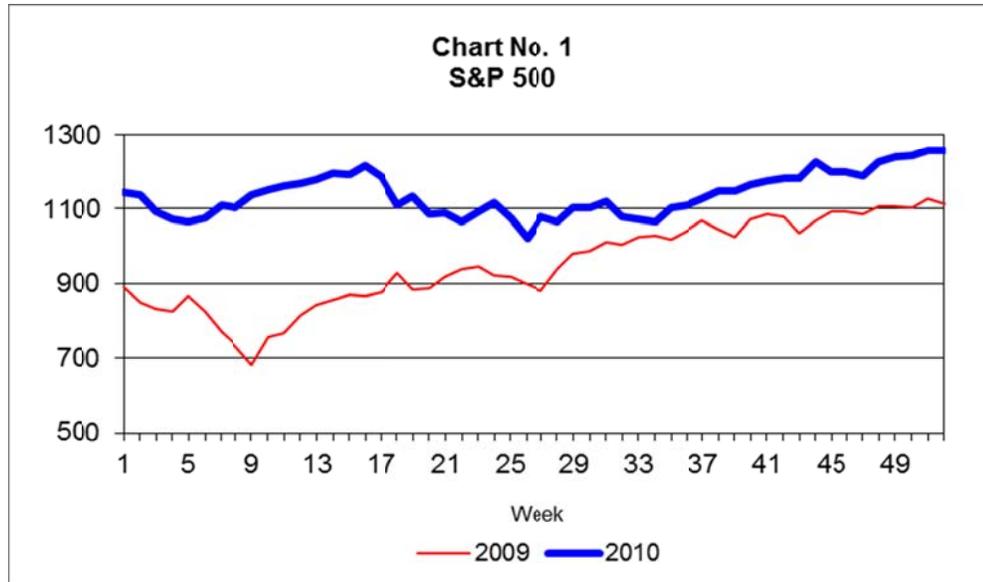
Railroad Co.	Value (\$000)	Weight %
CSX	20,653,512.5	25.84
NSC	20,893,603.7	26.14
UNP	38,385,277.8	48.02
Total	\$79,932,394.0	100.00 %
Prior Year	\$83,349,875.8	
Prior Year*	\$57,178,330.7	
Change	-4.1%	
Change*	39.8%	

* = prior year excluding BNI

Details of the calculation are presented in Appendix H. Calculations for 2010 included 52 weeks. Week 1 began on Monday January 4, and is the first week after 2009's week 52 (which began Monday December 28) used in last year's calculation. Weekly market values were calculated for each railroad using shares outstanding data from railroad 10-Q and 10-K reports multiplied by stock prices at the close of each week in 2010.²²

The 52-week average market capitalization of the composite railroad (the three railroads that comprise the composite sample), listed on page 4 of Appendix H, is \$79,932.4 million. Weekly numbers for all weeks of 2010 were above similar figures (using the same three railroads) for 2009 – always by double-digit percentages. The stock market in general, as represented by the Standard & Poor's 500, also showed considerable improvement for 2010 compared to 2009 (see Chart 1).

²²The 10-Q and 10-K reports are filed with the U.S. Securities and Exchange Commission (SEC), and are available from railroad web sites or the SEC web site.



B. The Capital Asset Pricing Model (CAPM)

The cost of equity is a measure of investor expectations, including the opportunity cost of investing in a share of a firm’s stock; i.e., the expected rate of return that investors require on the market value (purchase price) of the stock in light of alternative investment opportunities of comparable risk. Because investor expectations are not directly observable, analysts have developed methods of inferring the cost of equity from available financial data. There are several methods available to estimate the cost of equity. Two of these methods, the Capital Asset Pricing Model (CAPM) and a Multi-Stage Discounted Cash Flow Model (MSDCF) are used in this statement to compute an estimate for the cost of equity — in accordance with STB Ex Parte No. 558 (Sub No. 14). The CAPM is discussed herein, and the MSDCF is discussed in the next section.

The theory underlying the CAPM is that an investor seeks a risk-free return plus a premium that is dependent upon risk. In formulaic terms, the cost of equity as estimated by the CAPM may be expressed as:

$$K = RF + \text{Beta (MRP)}$$

Where K = the firm's cost of equity,

RF = the risk-free rate,

MRP = the market's risk premium, and

Beta = the coefficient of systematic, non-diversifiable risk of the stock.

Therefore, each firm's cost of equity depends on the non-diversifiable risk of its common stock, represented in the model as beta. The risk-free rate (RF) is typically represented by the rate of a U.S. Government (Treasury) instrument. The market risk premium (MRP) is the expected future difference between returns for the overall stock market and risk-free returns. That expected difference is typically estimated using historical differences. Beta is the coefficient of systematic, non-diversifiable risk of the stock, which depends on its volatility and its correlation with the overall stock market. The beta for the overall stock market is 1.0. Firms with higher risk will have a beta above 1.0, while firms with lower risk will have a beta below 1.0. As with the market risk premium, betas are also typically estimated using historical relationships. The methodology used for the CAPM calculation — including details for using certain inputs — follows the methodology prescribed and clarified by the STB in the 2009 Cost of Capital decision.²³

²³ Ex Parte No. 558 (Sub-No. 13), Railroad Cost of Capital – 2009, served September 30, 2010.

1. Risk-Free Rate (RF)

In all three decisions regarding the CAPM, the Board has specified a risk-free rate based on an average yield to maturity for a 20-year U.S. Treasury Bond. The average yield-to-maturities for U.S. Treasury Bonds are available from the Federal Reserve web site, and I have again utilized this resource to retrieve data for 2010.²⁴ A copy of the “download” from the Federal Reserve web site is included in my work papers. Table 13 (below) lists a 15-year history of this bond.

Table No. 13
20-Year U.S. Treasury Bonds 1996 - 2010

Year	Average Annual Rate
1996	6.83 %
1997	6.69
1998	5.72
1999	6.20
2000	6.23
2001	5.63
2002	5.43
2003	4.96
2004	5.04
2005	4.64
2006	5.00
2007	4.91
2008	4.36
2009	4.11
2010	4.03

Source: Federal Reserve

²⁴ Federal Reserve’s web site is <http://www.federalreserve.gov/releases/H15/data.htm>. Select Treasury Constant Maturities, Nominal, 20-year, Annual.

As can be seen in Table 13, 2010's 4.03 percent average rate for 20-Year U.S. Treasury Bonds is the lowest figure in the fifteen-year period. Furthermore, based on the observation of interest rates listed in the Economic Report of the President, many long-term interest rates are near their lowest level since the 1960s.²⁵

Using the average yield to maturity in 2010 for a 20-year U.S. Treasury Bond, as directed in STB Ex Parte No. 558 (Sub No. 14), the CAPM's risk-free rate is 4.03 percent.

2. Market Risk Premium (MRP)

In previous decisions, the STB has required that the market risk premium (a.k.a. equity risk premium) calculation begin with year 1926, which is a standard approach. The Standard & Poor's 500 Index is to be used as the representative of the market — also a standard approach. The STB's decision also stated that the “data are also available from a variety of commercial vendors, including Ibbotson.”

Since the Ibbotson Equity Risk Premium is well regarded and widely accepted, the 2010 market risk premium from the *Ibbotson SBBI 2011 Valuation Yearbook* published by Morningstar is used.²⁶ This is the same source used in the 2006 through 2009 decisions. Table 5-1 on page 54 of the 2011 *Ibbotson SBBI* lists the Long-Horizon Equity Risk Premium that is based on the Standard & Poor's 500. The number is 6.72 percent, which I will use as the rate for the CAPM's market risk premium.

²⁵ *Economic Report of the President 2011*, TABLE B-73.—*Bond yields and interest rates, 1933–2010*.

²⁶ Ibbotson Associates is a wholly-owned subsidiary of Morningstar, Inc. “SBBI” stands for “Stocks, Bonds, Bills, and Inflation.”

3. Beta

The STB Ex Parte No. 664 decision requires parties to calculate the CAPM's beta using a portfolio of weekly, merger-adjusted stock returns for the prior five years in the following equation:

$$R - SRRF = \text{Alpha} + \text{Beta} (RM - SRRF) + E$$

Where:

- R = merger-adjusted stock returns for the portfolio of railroads;²⁷
- SSRF = short-run risk-free rate represented by 3-mo. U.S. Treasury Bills;
- Alpha = constant term;
- Beta = coefficient of systematic, non-diversifiable risk;
- RM = return for the market, represented by the S&P 500; and
- E = random error term.

In its Railroad Cost of Capital – 2006 decision, the STB clarified its beta calculation methodology. The STB noted that “[t]he proper way to arrive at the weekly portfolio change is to calculate the weekly stock percentage change for each firm, weighted by that firm’s share of the industry as a whole.” The STB also determined that the Standard & Poor’s 500 Price Index, which is publicly available, should be used as a proxy for the Standard & Poor’s 500 Total Return Index, unless the Total Return Index is made available to the public.

Using the STB instructions, the value for beta can be solved for using a linear regression. The railroad portfolio return less the short-term risk free rate is the dependent variable, while the market return less the risk free rate is the independent variable. The regression’s random error term is unknown, the intercept is the Alpha, and the coefficient for the explanatory variable is the beta.

²⁷ Railroads must meet the screening criteria set forth in *Railroad Cost of Capital – 1984*.

The raw regression data set used in the AAR calculation is derived from publicly available data from web sites on the internet (for further information, see the work papers). As instructed, I have used weekly stock price data for the prior five years. The raw data consists of weekly observations from the last week of 2005 (Week 0) through the last week of 2010 (Week 261). The data set label variables identify the first day of trading during the week (typically Monday), but the close prices were for the last day of trading during the week (typically Friday). Week 1 in the regression data set is the week beginning Tuesday, January 3, 2006. The last week, Week 261, began on Monday, December 27, 2010. Week 0 began on Tuesday December 27, 2005, and it is *not* directly used in our regression for beta. The purpose of having a Week 0 is to be able to calculate the return for Week 1. This enables a Week 1 return to be included in the regression data set as clarified by the Board on page 7 of its 2008 cost of capital decision.²⁸

Three categories of data are necessary for the raw regression data set. First, weekly stock prices for CSX, NSC, and UNP are downloaded from a web site.^{29,30} The price data were downloaded during the first week of 2011, and are included in my work papers. Stock prices adjusted for dividends and splits are used as the regression's dependent variable, while prices that are only adjusted for splits are used for weighting.³¹ (I have adjusted shares

²⁸ Ex Parte No. 558 (Sub-No. 12), served September 25, 2009.

²⁹ CSX Corporation has a stock symbol of CSX, Norfolk Southern Corporation is NSC, and Union Pacific Corporation is UNP.

³⁰ The Yahoo! Finance web site was used. Go to <http://finance.yahoo.com/q/hp?s=CSX> to start with the first railroad (CSX). Select weekly data and a date range.

³¹ The dividend-adjusted values may differ for a given week if the data are downloaded at different times during the year, especially if dividends have been paid during the interim time. For example using the week beginning December 27, 2010: CSX close price is always \$64.61, but the adjusted close was 64.61 for a January 3, 2011 download – and it was \$64.38 on a April 15, 2011 download. The difference appears to affect the fourth digit after the decimal for beta calculations. Perhaps the Board should consider rounding the beta to three digits after the decimal instead of four.

outstanding and stock prices for splits for easier comparison to the dividend-adjusted prices. However, original shares outstanding used with original prices will achieve the same results when used for weighting purposes.) The price index values for Standard & Poor's 500 Price Index were also downloaded from the same web site. The second category of data is shares outstanding. Stock shares outstanding, and an effective date, were gathered from each railroad's 10-Q and 10-K reports. The shares outstanding data were adjusted for stock splits, if necessary. For each railroad, a shares outstanding value is assigned to each week based upon the latest available 10-Q or 10-K submissions by that railroad to the Securities and Exchange Commission.³² The final category of raw data is the rate for 3-Month U.S. Treasury Bills. These securities are also known as 13-Week Treasury Bills or 90-Day Treasury Bills. The Treasury Bill rates are acquired from the Federal Reserve web site, and the "download" is included in my work papers.

SAS statistical software is used to run the regression analysis to calculate beta, and to prepare the regression data set from the raw data.³³ Prior to running the regression, the weekly stock percentage change for each railroad is calculated and weighted by that railroad's share of the industry as a whole to create a composite railroad return.³⁴ Weekly

³²The STB's methodology for assigning shares outstanding was used, although it has a minor flaw. The STB methodology takes the shares and effective date from the 10-Q (or 10-K) report, and assigns the new shares outstanding to the *first full week* after the effective date. It would be better to assign the new shares outstanding to the first Friday on, or after, the effective date – since Friday's stock price is used. An example of the problem using CSX 10-Q data follows. From the second quarter 10-Q: 379,647,450 shares outstanding effective June 25, 2010. From the third quarter: 374,184,621 shares outstanding effective September 24, 2010. Using the STB method, the first full week after September 24 begins on Monday, September 27, and ends on Friday, October 1. This means that the prior week, which uses the stock price for *September 24*, does not use the shares outstanding effective September 24! The Board, based on page 8 of their Ex Parte 558 (Sub-No. 12) decision served September 25, 2009, prefers the first full week method (possibly for consistency), but may want to make a minor improvement to the shares outstanding methodology.

³³ SAS Institute Inc., Cary, NC.

³⁴ Since the weight needs to be the weight at the beginning of the week instead of the end of the week, data from the end of the previous period are used to represent the beginning of the current period.

returns are also calculated for the Standard & Poor's 500 Price Index (the proxy for the market as a whole). Each week's three-month Treasury Bill rate, which is the measure employed for the short-run risk-free rate, is restated from an annual to a weekly rate to make it comparable to the weekly returns. The method used to convert to a weekly rate accounts for compounding. The weekly Treasury Bill rates are then deducted from the composite railroad portfolio returns and market returns as was done in the four previous cost of capital submissions. The resulting regression data set has 261 observations (weeks 1 through 261), since week 0 of the raw data set was used only to calculate a return for week 1.

The SAS General Linear Model procedure is used to calculate the regressions, with composite railroad returns less the short-run risk-free rate as the dependent variable and the market returns less the short-run risk-free rate as the independent variable. As a check against our beta calculations, a spreadsheet has also been utilized to calculate the beta, and the results matched the SAS calculations. As specified by the STB decisions, the regression includes an intercept. Appendix I contains a summary of the regression using SAS. The spreadsheet version is included in my work papers. The regression resulted in a beta estimate of 1.1619.

The 2010 beta is higher than the 2009 estimate, which was 1.0915. Betas above 1.0 are not surprising, especially without the distortion of data from the Tech Stock Bubble. The 1.1619 calculated for 2010 is still below some of the individual betas calculated by the Board (using more years and a different proxy for the market) in its work papers for Ex Parte No.

664. For example, STB work papers show betas for 1993 of 1.3650 for CSX, 1.1721 for NSC, and 1.1884 for UNP.³⁵

We have evaluated our beta calculation by (1) comparing it to previous years and expectations, and (2) comparing the results of two independent calculations using data sets created independently. The resulting value of 1.1619 for beta, as calculated in our regression, is used as an input to the Capital Asset Pricing Model.

4. Cost of Equity Using the CAPM

A review of the Capital Asset Pricing Model (CAPM) is as follows:

$$K = RF + \text{Beta (MRP)}$$

Where K = the cost of equity for the portfolio of railroads,

RF = the risk-free rate,

MRP = the market's risk premium, and

Beta = coefficient of systematic, non-diversifiable risk.

Our CAPM used the methodology clarified by the STB in Ex Parte No. 558 (Sub-No. 13). Table 14 is a summary of our CAPM cost of common equity calculation, which resulted in an average 2010 cost of equity estimate for the composite railroad of 11.84 percent.

³⁵ See betas calculated by the STB, as found in the work paper titled "Beta regression output.txt" for Notice of Proposed Rulemaking in Ex Parte No. 664, served August 14, 2007. While the methodology used in the original STB calculations used some non-standard practices, the trends in the results are useful.

Table No. 14
Cost of of Common Equity
Using STB's Capital Asset Pricing Model

Inputs to Model

Risk-Free Rate	4.03 %	From Table No. 13
Market Risk Premium	6.72 %	From SBBI, p.54
Beta	1.1619	From Appendix I

Calculation

Risk-Free Rate	4.03 %	Given
Plus: Beta Adjusted Risk Premium	7.81 %	Beta x Mkt. Risk Prem.
CAPM Cost of Equity	11.84 %	Risk-Free Rate + Prem.

C. The Multi-Stage Discounted Cash Flow Model

As stated earlier, there are several methods available to estimate the cost of equity.

The Multi-Stage Discounted Cash Flow Model (MSDCF) is another model available. Using this model, the cost of equity is the discount rate that equates a firm's market value to the present value of the expected stream of free cash flow that is potentially available for distribution to equity investors. The multiple stage portion of the model accounts for the assumption that the firm will not experience a constant growth rate throughout its life. The STB, in Ex Parte No. 664 (Sub No. 1), adopted the Morningstar/Ibbotson MSDCF model to use for estimating the cost of common equity capital.³⁶ This model assumes that not all investor cash flows have to be in the form of dividends. Instead, investors benefit from regular dividends, special dividends, stock buybacks, or stock price appreciation. Major inputs to the model include cash flows, expected growth rates, and market values. An

³⁶ The Morningstar/Ibbotson MSDCF model adopted by the Board in Ex Parte No. 664 (Sub-No.1) is a modified version that includes only the railroads that pass the screening criteria set forth in Railroad Cost of Capital – 1984, 1 I.C.C. 2d 989 (1985), for inclusion in the sample of railroads used for the annual cost of capital determination. See Ex Parte No. 664 (Sub-No.1), *Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital*, served January 28, 2009.

equation for this model can be found in my Appendix J. A firm's present value as determined by the market is therefore equal to the sum of the present value of three sets of cash flows. This is the same formula that appeared in the Appendix to the Board's decision in Ex Parte No. 664 (Sub-No.1) served August 11, 2008, and it is the same formula found in the AAR's submissions for the 2008 and 2009 cost of capital.

1. Cash Flows

The Morningstar/Ibbotson MSDCF model uses an initial cash flow and a terminal cash flow input as inputs. The initial cash flow is defined as income before extraordinary items minus capital expenditures plus depreciation plus deferred taxes. Income before extraordinary items (IBEI) is derived by deducting extraordinary items from net income. Thus, the model's formula for cash flows is as follows:

$$CF = (NI - EI) - CAPEX + DEP + DT$$

Where CF = cash flow,

NI = net income,

EI = extraordinary items,

CAPEX = capital expenditures,

DEP = depreciation, and

DT = deferred taxes.

The Morningstar/Ibbotson MSDCF model utilizes five-year moving averages for each railroad. The years used in this case are 2006 through 2010. Data are copied from the Consolidated Cash Flow and Income Statement of railroad's annual 10-K report, and any changes to prior years have been incorporated. The 10-K reports, which are filed with the Securities and Exchange Commission, are usually available each year around February. In addition to the data points listed above, sales (a.k.a. revenue) is used as part of a smoothing

(or averaging) process. Table 15 illustrates the Morningstar/Ibbotson process to calculate an average cash flow. Revenue, Net Income, and Extraordinary Items are sourced from the Income Statement. Depreciation, Deferred Taxes, and Capital Expenditures are sourced from the Statement of Cash Flows.

Table No. 15
Example Cash Flow Calculations for NSC in 2010
(\$ in millions)

	2006	2007	2008	2009	2010	Total
Net Income	\$1,481	\$1,464	\$1,716	\$1,034	\$1,496	\$7,191
Less Extraord. Items	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Inc. Bef. Extraord. Items (+)	\$1,481	\$1,464	\$1,716	\$1,034	\$1,496	\$7,191
Capital Expenditures (-)	\$1,178	\$1,341	\$1,558	\$1,299	\$1,470	\$6,846
Depreciation (+)	750	786	815	845	826	4,022
Deferred Taxes (+)	<u>-8</u>	<u>125</u>	<u>290</u>	<u>338</u>	<u>312</u>	<u>1,057</u>
Cash Flow	\$1,045	\$1,034	\$1,263	\$918	\$1,164	\$5,424
Revenue (a.k.a. "Sales")	\$9,407	\$9,432	\$10,661	\$7,969	\$9,516	\$46,985
Ratio of Cash Flow to Sales (Smoothed Ibbotson-style) =	(\$5,424 / \$46,985) =					0.11544
Initial Cash Flow in 2010 (Smoothed Ibbotson-style) =	(0.11544 x \$9,516) =					\$1,098.54
Ratio of IBEI to Sales (Smoothed Ibbotson-style) =	(\$7,191 / \$46,985) =					0.15305
Terminal Cash Flow input (Smoothed Ibbotson-style) =	(0.15305 x \$9,516) =					\$1,456.41

After the financial data are collected, they are combined (Total column in the example) into a five-year cash flow for the purpose of averaging or smoothing. The average cash flow for 2010, which is the initial cash flow in the model, is calculated by multiplying revenue for 2010 times the five-year average ratio of cash flow to revenue. In our example here, the model's input for the initial cash flow is \$1,098.54 million. The ratio of cash flow to sales is calculated by dividing the five year total cash flow by the five year total revenue.

The model's terminal cash flow value is based on the assumptions that in the third stage of the model, depreciation equals capital expenditures, and deferred taxes are zero. Therefore, the depreciation and capital expenditures from the initial cash flow formula

cancel each other, and deferred taxes are eliminated because they are zero. The remaining part of the equation for the model's terminal cash flow is income before extraordinary items (IBEI), which we calculate by subtracting extraordinary items from new income. In our Table 15 example, the model's input for the terminal cash flow is \$1,456.41 million. The model's terminal cash flow input is calculated by multiplying revenue for 2010 times the five-year average ratio of income before extraordinary items to revenue. The ratio of income before extraordinary items to sales is calculated by dividing the five year income before extraordinary items by the five year total revenue.

All cash flow calculations have been calculated using the same procedure used by the AAR for the previous cost of capital determination, with the exception that adjusted or revised numbers have been utilized – as directed by the Board in Ex Parte 558 (Sub-No. 13), served September 30, 2010. Appendix K contains the three railroad cash flow calculations for 2010. The pages from the 2010 10-K reports that were used as data sources for cash flows are included in my work papers. Data for prior years (2006-2009) used in this year's calculation are unchanged from Appendix AB of the AAR's Rebuttal Statement submitted July 15, 2010 (which contained any revisions to prior years found in the 2009 10-K, and was used by the Board to arrive at the 13.34 percent MSDCF cost of equity for 2009) – unless revised data were found in the 2010 10-K statements.

2. Growth Rates

The first stage of the Morningstar/Ibbotson MSDCF model applies to a period that is one to five years in the future. The current year (2010) is considered to be year 0. In each year of the first stage, a firm's annual earnings growth rate is assumed to be the median value of the firm's three- to five-year growth estimates that are made by railroad industry analysts

after the release of the year-end financial statements. However, in Ex Parte No. 558 (Sub No. 12), the STB clarified their interpretation of the Morningstar/Ibbotson MSDCF model by specifying use of data in effect on December 31 of the current year as the date for growth rates, stock prices, and stock shares outstanding.³⁷ Clearly, the Board's interpretation does not anticipate the use of growth estimates based on the release of year-end financial statements. Therefore, we have utilized growth rate projections that were in effect at the end of 2010.

For many years, analyst growth rate estimates were collected, and distributed, by the Institutional Brokers Estimate System (a.k.a. IBES or I/B/E/S). In recent years, the IBES growth rates have been distributed by Thomson Financial through its Thomson ONE Investment Management service. Although the term "IBES" is rarely used by Thomson, many users of the data still refer to these growth rates as "IBES" growth rates. Thomson Financial also distributes medians of the IBES growth rate estimates on a historical basis through its Thomson ONE Banker service. The median estimates provided through the Thomson ONE Banker service do not always reflect the full set of growth rate estimates. Therefore, I have utilized all estimates available from the Thomson ONE Investment Management service, and determined medians based on that data. These growth rates are described in the Thomson Financial Glossary as the expected annual increase in operating earnings over a company's next full business cycle. A worktable and the source data are included in Appendix L. Table 16 below lists the median growth rate estimates.

³⁷ STB Ex Parte No. 558 (Sub-No. 12), Railroad Cost of Capital – 2008, served September 25, 2009.

Table No. 16
2010 Thomson Median Growth Rate Estimates

Company	Stock Symbol	Growth Rate
CSX Corporation	CSX	11.50 %
Norfolk Southern Corporation	NSC	12.00
Union Pacific Corporation	UNP	15.00
Average		12.83

Thus, the median growth rate estimates have been retrieved using the same procedure and source used by the AAR last year. Each individual railroad’s median growth rate is used in the first stage of the Morningstar/Ibbotson MSDCF model.

The second stage of the Morningstar/Ibbotson MSDCF model applies to a period six to ten years in the future. In this stage, the cash flows at the end of year five are assumed to grow at the simple (not weighted) average of the individual firm medians used in the first stage. In Table 16, the average of the median growth rates is 12.83 percent. This is the growth rate that will be used for all railroads in the second stage of the Morningstar/Ibbotson MSDCF model.

The third stage of the MSDCF model begins 11 years in the future and continues in perpetuity. Starting in year 11, the firm’s growth rate is assumed to be the long-run nominal growth rate of the aggregate U.S. economy. For 2010, the long-run nominal growth rate used by Morningstar/Ibbotson is 5.8 percent, which is the sum of the long-run expected growth in real output (3.3 percent) and long-run expected inflation (2.6 percent).³⁸ The

³⁸ *Ibbotson SBBI, 2011 Valuation Yearbook, Market Results for Stocks, Bonds, Bills, and Inflation 1926-2010*, Morningstar Inc., page 51. The Ibbotson long-term estimate of nominal growth is 2.6 percent plus 3.3 percent equals 5.8 percent – where the 5.8 percent (instead of 5.9 percent) is caused by rounding.

Morningstar/Ibbotson long-run growth rate was used and accepted in last year's filing, and I am using it here. It is unchanged from its value for 2009.

3. Market Values

The final inputs to the Morningstar/Ibbotson MSDCF model are the stock market values for the equity of each railroad. The market values serve two purposes. First, a firm's market value is a necessary part of the MSDCF model. As stated earlier, each railroad's cost of equity in the MSDCF model is determined by solving for the discount rate that equates a firm's *market value* to the present value of the expected stream of free cash flow that is potentially available for distribution to equity investors. The second need for market values is to determine weights for combining the model's cost of equity for each individual railroad into the composite railroad mandated by the Board. Thus, Table 17 below calculates the market value for each railroad, and it uses the market values to calculate weights.

Table No. 17
Equity Market Value on December 31, 2010

Company	Stock Price	Shares Outstanding	Market Value (\$mil)	Weight
CSX	\$64.61	374,184,621	24,176.1	26.080 %
NSC	\$62.82	363,372,120	22,827.0	24.625
UNP	\$92.66	493,148,723	45,695.2	49.295
Total		1,230,705,464	\$92,698.3	100.000 %

As directed by the Board, I have used stock prices (from Yahoo Finance) for December 31, 2010, and shares outstanding from the 2010 Q3 10-Q reports (the latest information available prior to December 31) filed with the Securities and Exchange Commission. Market value is simply each firm's stock price multiplied by its shares outstanding, and weights are based on the market values. Appendix M contains the stock

price pages as retrieved from Yahoo Finance, and it also contains the 10-Q pages used for shares outstanding.

4. Cost of Equity Using the MSDCF Model

The equation found in Appendix J provides the mathematical formula that is used to generate the three-stage DCF cost of equity estimates for each railroad. The left side of this equation is the market value of the firm in year 0. The right side of the equation is the discounted value of the cash flows from the three stages of the firm's expected future growth. Essentially, this equation is solved for each firm by simply testing discount rates (cost of equity) in an effort to find one that causes the sum of the present values of the cash flows for the three stages to be equal to the market value at year 0. An iterative process can be used to narrow down the possible solutions to the ultimate answer, or Microsoft Excel's Solver function can be used to automate the process.³⁹

Applying the methods described above, I have calculated a cost of equity for each of the three railroads specified using a spreadsheet like the one utilized in the 2009 filing. Using an initial cash flow, an input for calculating the terminal cash flow, growth rates for each of the three stages, and a market value effective December 31, I have solved for the discount rate (cost of equity) that causes the sum of the present values of cash flows for each stage to equal the firm's market value. My spreadsheet is displayed in Appendix N. Table 18 below shows the MSDCF estimate for each of the three railroads. In the same table, I have also calculated an MSDCF cost of common equity (using weights from Table 17 and the individual railroad cost of equities) for the composite railroad, which is the current cost

³⁹ A commonly used Excel user's manual describes the Solver function as follows: "Solver is an Excel add-in that goes several steps further than goal seeking. It uses the same basic trial-and-error approach (known to scientific types as an iterative approach), but it's dramatically more intelligent than goal seeking." See Matthew McDonald, *Excel: The Missing Manual*, O'Reilly Media, 2005, p. 519.

of equity for this model. Thus, the MSDCF produces a cost of equity of 14.13 percent for 2010, which is above the 13.34 percent found by the Board for this model in the 2009 determination – but below the 15.95 percent decided for 2008.

Table No. 18
Cost of Equity Using STB's Ibbotson MSDCF

<u>Company</u>	<u>Weight</u>	<u>Cost of Equity</u>	<u>Weighted Calculation</u>
CSX	26.08%	13.97 %	3.64
NSC	24.63%	15.05	3.71
UNP	49.29%	13.76	6.78
Total	100.00%		
Weighted Current Cost of Equity			14.13 %

D. Conclusion as to the Cost of Common Equity Capital

In the STB’s Ex Parte No. 558 (Sub-No. 14) decision served February 22, 2011, the Board specified that it will use a “methodology followed in *Railroad Cost of Capital – 2009*”, which means that a simple average of the estimates produced by the CAPM adopted in STB Ex Parte No. 664 and the Morningstar/Ibbotson Multi-Stage DCF Model specified in STB Ex Parte 664 (Sub No. 1) should be used. Table 19 contains the cost of equity estimated by each model, and a simple average of the estimates. The cost of common equity for 2010 is 12.99 percent, which is above the 12.37 percent decided for 2009, and below the 13.17 percent decided for 2008.

Table No. 19
Cost of of Common Equity Capital

<i>Model</i>		
Capital Asset Pricing Model	11.84 %	From Table No. 14
Multi-Stage Discounted Cash Flow	14.13	From Table No. 18
Cost of Common Equity	12.99 %	Average

V. Preferred Equity Capital in 2010

Like 2003 through 2009, no preferred stock issues were outstanding at the end of 2010 for the railroad companies comprising the railroad composite sample. Therefore, no cost for preferred equity capital has been calculated, and the market value for preferred equity capital is zero.

VI. The Overall Cost of Capital In 2010

A. Determination of Market Value Weights

As shown in Tables 8 and 12, the average market value of debt and common equity are \$24,471.3 million and \$79,932.4 million, respectively. More market value detail is provided in Appendix E and Appendix H. As mentioned in Section V, Preferred Equity Capital in 2010, the sample railroad companies had no preferred stock issues outstanding at the end of 2010. Therefore, preferred equity capital is given no weight in the overall cost of capital, and no cost is calculated. The figure for the market value of debt includes market values of bonds, notes, debentures, equipment trust certificates, and conditional sales agreements. Other debt and capitalized leases are included at their book value, because market values are difficult to determine (in some instances book values correspond to market

values) and because these other instruments are a minimal portion of all railroad debt. Based on these calculations, the 2010 market value weights for debt and common equity are 23.37 percent and 76.63 percent, respectively. Table 20 contains the weights computation and a comparison to the previous year.

Table No. 20
Capital Structure and Weights

	Source Table	2010		2009	
		Market Value (mil)	Capital Structure Weight	Market Value (mil)	Capital Structure Weight
Debt	8	\$24,371.3	23.37 %	\$34,217.9	29.10 %
Common Equity	12	79,932.4	76.63	83,349.9	70.90
Preferred Equity	(Text)	0.0	0.00	0.0	0.00
Total		\$104,303.7	100.00 %	\$117,567.8	100.00 %

These figures show a decrease in the weight for debt, caused in large part by a recovery in railroad stocks (and stock prices in general). The 2010 capital structure is not much different from the structure found by the Interstate Commerce Commission for 1994 and the Surface Transportation Board for 2006.

B. The Overall Cost of Capital

Multiplying the cost of debt, the cost of common equity capital, and the cost of preferred equity capital, by their respective market value proportions, results in a 2010 overall cost of capital of 11.03 percent, as shown in Table 21. This is higher than the 10.43 percent cost of capital decided for 2009, but lower than the cost of capital found for 2008 and 2007 – which were 11.75 and 11.33 percent, respectively.

Table No. 21
Weighted Current Cost of Capital for 2010

	Source Table	Capital Structure Weight	Current Cost
Debt	11	23.37 %	4.61 %
Common Equity	19	76.63	12.99
Preferred Equity	(Text)	0.00	n/a
Total		100.00 %	
Weighted Current Cost of Capital			11.03 %

VII. Qualifications of John T. Gray

My name is John T. Gray. I am Senior Vice President — Policy and Economics for the Association of American Railroads (AAR), with offices located at 425 Third Street SW, Suite 1000, Washington, D.C. 20024. Among other responsibilities, my duties include the collection, analysis, and presentation of economic data related to railroads and their economic environment. One of my principal duties is conducting and supervising economic, financial, statistical and cost studies dealing with various aspects of the rail industry.

Prior to joining the AAR, I worked for Union Pacific Railroad where my most recent position was as Executive Director, responsible for the commercial relationship with other transportation carriers and ports, and for strategic policy analysis on issues involving regulatory proposals, legislation and potential litigation. I have also held marketing, planning, and operating positions with other railroads including the Southern Pacific, the Burlington Northern and the Alaska Railroad. I began my railroad career at Atchison, Topeka, and Santa Fe in their cost analysis organization. Additionally, I have also worked for ARCO Alaska.

At Southern Pacific, I was responsible for network planning, analysis, and management, as well as the company's cost analysis organization. I provided testimony on behalf of Southern Pacific regarding the economic impact to the company of the proposed combination of the Chicago and North Western Transportation Company with Union Pacific Railroad. Later, I provided extensive testimony on the economic position of Southern Pacific during the STB's review of the merger application for Union Pacific and Southern Pacific.

I hold both a Bachelors and Masters degree in Civil Engineering from Tulane University and did post-graduate work in mathematical modeling of transportation networks and rail cost systems at Northwestern University. I have also served on the faculty at the University of Alaska, where my work included network modeling and research concerning the interrelationship of transportation and economic development.

VERIFICATION

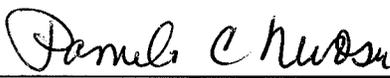
WASHINGTON, D.C.)
) SS.

I, John T. Gray, being duly sworn, state that I have read the foregoing statement, that I know its contents, and that those contents are true as stated.



JOHN T. GRAY

Subscribed and sworn to before me this 29th day of April 2011.



Notary Public

My Commission expires:

**Pamela C. Nwosu
Notary Public, District of Columbia
My Commission Expires 2/14/2012**

Appendix A
Bonds, Notes and Debentures

Summaries

CSX Corporation	A-1
Norfolk Southern Corporation	A-4
Union Pacific Corporation	A-7

Individual Bonds, Notes, and Debentures

CSX Corporation	A-10
Norfolk Southern Corporation	A-19
Union Pacific Corporation	A-29

CSX Corporation
December 31, 2010

Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding (\$000)		Average Price	Market Value	Average Yield	Interest Cost		
						Year-End	Used		(\$ 000)		(\$ 000)		
Traded													
1	Note		CSX Corp.	1	126408GB3	6.300%	03/15/12	\$400,000	\$400,000	107.406	\$429,626	1.700%	\$7,304
2	Note		CSX Corp.	2	126408GF4	5.300%	02/15/14	\$200,000	\$200,000	109.817	\$219,634	2.380%	\$5,227
3	Note		CSX Corp.	3	126408GJ6	5.600%	05/01/17	\$300,000	\$300,000	109.909	\$329,728	3.910%	\$12,892
4	Debenture		CSX Corp.	4	126408AQ6	8.100%	09/15/22	\$69,081	\$69,081	126.772	\$87,575	5.120%	\$4,484
5	Debenture		CSX Corp.	5	126408AM5	8.625%	05/15/22	\$81,517	\$81,517	127.551	\$103,975	5.440%	\$5,656
6	Med Term Notes		CSX Corp.	6	12641LBU6	6.800%	12/01/28	\$200,000	\$200,000	113.014	\$226,029	5.660%	\$12,793
7	Med Term Notes		CSX Corp.	7	126408GH0	6.000%	10/01/36	\$400,000	\$400,000	105.361	\$421,443	5.610%	\$23,643
8	Note		CSX Corp.	8	126408GK3	6.150%	05/01/37	\$700,000	\$700,000	107.443	\$752,104	5.620%	\$42,268
9	Note		CSXT - Conrail	9	209864AT4	9.750%	06/15/20	\$227,171	\$227,171	136.771	\$310,705	5.000%	\$15,535
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
Total								\$2,577,769	\$2,577,769		\$2,880,819	4.506%	\$129,802

CSX Corporation
December 31, 2010

Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding (\$000)		Average Price	Market Value (\$ 000)	Average Yield	Interest Cost (\$ 000)
						Year-End	Used				
Not Traded											
1	Notes			5.500%	08/01/13	300,000	300,000	100.000	300,000		
2	Notes			5.750%	03/15/13	400,000	400,000	100.000	400,000		
3				6.250%	04/01/15	600,000	600,000	100.000	600,000		
4	Debentures			7.900%	05/01/17	312,596	312,596	100.000	312,596		
5	Notes			6.250%	03/15/18	600,000	600,000	100.000	600,000		
6	Notes			7.375%	02/01/19	500,000	500,000	100.000	500,000		
7				3.700%	10/30/20	500,000	104,167	100.000	104,167		
8	Med Term Notes			9.870%	02/12/21	10,000	10,000	100.000	10,000		
9	Debentures			7.250%	05/01/27	83,312	83,312	100.000	83,312		
10	Debentures			7.950%	05/01/27	64,266	64,266	100.000	64,266		
11	Med Term Notes			4.400%	10/25/35	73,304	73,304	100.000	73,304		
12				7.450%	04/01/38	79,226	79,226	100.000	79,226		
13				6.220%	04/30/40	660,000	660,000	100.000	660,000		
14				5.500%	04/15/41	300,000	62,500	100.000	62,500		
15	Convertible			2.091%	10/30/21	10,103	10,103	100.000	10,103		
16	Conrail 50 yr		209864AU1	7.875%	05/15/43	99,989	99,989	100.000	99,989		
17	Conrail Tax Note			4.520%	03/31/35	23,100	23,100	100.000	23,100		
18	Pen Port			6.000%	12/15/12	17,100	17,100	100.000	17,100		
19	Secu Equip Note			8.375%	10/15/14	322,962	322,962	100.000	322,962		
20	Secu Equip Note			6.251%	01/15/23	336,119	336,119	100.000	336,119		
21	Midland Term			Variable	05/26/13	31,000	31,000	100.000	31,000		
22	TORCO			6.450%	12/15/21	29,700	29,700	100.000	29,700		
23	NCT Note			0.000%	N/A	1,089	1,089	100.000	1,089		
24											
25											
26											
27											
28											
29											
30											
Total						\$5,353,866	\$4,720,533		\$4,720,533		

CSX Corporation
December 31, 2010

Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding (\$000)		Average Price	Market Value (\$ 000)	Average Yield	Interest Cost (\$ 000)
						Year-End	Used				
Matures in 2011											
1	Note		CSX Corp.	126408AP8	6.750%	03/15/11	500,000				
2	Med Term Notes		CSX Corp.		9.780%	02/14/11	7,500				
3											
4											
5											
6											
7											
8											
9											
10											
Total							\$507,500				

Grand Totals

Total Traded and Not Traded \$7,931,635 \$7,298,302 \$7,601,352

Grand Total (for reconciliation to carrier data only) **\$8,439,135**

From CSX:

Corporate Notes	\$7,340,802
Convertible Debt	10,103
CSXT Notes	367,360
Secured Equipment Notes	659,081
Other Notes	61,789
Total	\$8,439,135

Norfolk Southern Corporation
December 31, 2010

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding (\$000)		Average Price	Market Value	Average Yield	Interest Cost
							Year-End	Used		(\$ 000)		(\$ 000)
	Traded											
1	Debenture	Conrail	10	209864AT4	9.750%	06/15/20	\$313,741	\$313,741	136.771	\$429,107	5.000%	21,455
2	Med. Term Note	Series A NSC	11	655844AA6	9.000%	03/01/21	\$83,372	\$83,372	127.803	\$106,552	5.540%	5,903
3	Med. Term Note	Senior	12	655844AQ1	7.250%	02/15/31	\$500,008	\$500,008	121.607	\$608,046	5.480%	33,321
4	Med. Term Note	Senior 2105	13	655844AV0	6.000%	03/15/05	\$300,000	\$300,000	93.899	\$281,696	6.410%	18,057
5	Med. Term Note	Senior	14	655844AX6	5.640%	05/17/29	\$350,000	\$350,000	104.331	\$365,158	5.280%	19,280
6	Med. Term Note	Senior	15	655844AW8	5.590%	05/17/25	\$366,620	\$366,620	105.194	\$385,663	5.090%	19,630
7	Conrail Note	CR NSC 2017	16	655844AE8	7.700%	05/15/17	\$550,000	\$550,000	123.326	\$678,294	3.780%	25,640
8	Conrail Note	CR NSC 2027	17	655844AJ7	7.800%	05/15/27	\$440,000	\$440,000	127.149	\$559,455	5.340%	29,875
9	Conrail Note	CR NSC 2037	18	655844AF5	7.050%	05/01/37	\$716,600	\$716,600	121.793	\$872,770	5.490%	47,915
10	Conrail Note	CR NSC 2097	19	655844AK4	7.900%	05/15/97	\$350,000	\$350,000	126.514	\$442,798	6.240%	27,631
11												
12												
13												
14												
15												
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18												
19												
20												
21												
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24												
25												
26												
27												
28												
29												
30												
Total							\$3,970,341	\$3,970,341		\$4,729,539	5.259%	\$248,707

Norfolk Southern Corporation
December 31, 2010

Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding (\$000)		Average Price	Market Value (\$ 000)	Average Yield	Interest Cost (\$ 000)
						Year-End	Used				
Not Traded											
1	Debenture		209864AU1	7.875%	05/15/43	138,085	138,085	100.000	138,085		
2	Other Bond			5.300%	08/15/13	27,200	27,200	100.000	27,200		
3	Other Bond			0.000%	04/09/12	24,037	24,037	100.000	24,037		
4	Note			5.750%	04/01/18	600,000	600,000	100.000	600,000		
5	Note			5.750%	01/15/16	500,000	500,000	100.000	500,000		
6	Note			5.900%	06/15/19	500,000	500,000	100.000	500,000		
7	Med. Term Note			6.000%	03/15/05	250,000	83,333	100.000	83,333		
8	Conrail Note			5.257%	09/17/14	431,456	431,456	100.000	431,456		
9	Other Bond			8.250%	10/01/19	75,734	75,734	100.000	75,734		
10	Other Bond				10/01/19	9,169	9,169	100.000	9,169		
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
Total						\$2,555,681	\$2,389,014		\$2,389,014		

Norfolk Southern Corporation
December 31, 2010

Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding (\$000)		Average Price	Market Value (\$ 000)	Average Yield	Interest Cost (\$ 000)
						Year-End	Used				
Matures in 2011											
1	Med. Term Note Senior	13	655844AP3	6.750%	02/15/11	300,000					
2											
3											
4											
5											
6											
7											
8											
9											
10											
Total						\$300,000					

Grand Totals

Total Traded and Not Traded	\$6,526,022	\$6,359,355	\$7,118,553
Grand Total (for reconciliation to carrier data only)	\$6,826,022		

From NS:

Grand Total NSR+Corp.				\$7,040,467
Less ETC				62,800
Less Leases (Capital + Yen) and Conrail Pass Thru	2377	34815	14453	51,645
Less Interest Rate swaps - Derivative Adj.				0
Less Other Debt: A/R Securitization [This is the LT portion.]				<u>100,000</u>
Bonds, Notes and Debentures				\$6,826,022

Union Pacific Corporation
December 31, 2010

Type	Description	No. CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding (\$000)		Average Price	Market Value (\$ 000)	Average Yield	Interest Cost (\$ 000)
					Year-End	Used				
Not Traded										
1	Debentures	UP Corp.	5.375%	06/01/33	198,480	198,480	100.000	198,480		
2	Notes	UP Corp. (New 8/2/2010) Prorate 5/12	4.000%	02/01/21	497,700	207,375	100.000	207,375		
3	Notes	UP Corp.	5.125%	02/15/14	349,943	349,943	100.000	349,943		
4	Notes	UP Corp.	5.700%	08/15/18	748,010	748,010	100.000	748,010		
5	Notes	UP Corp.	5.750%	11/15/17	499,732	499,732	100.000	499,732		
6	Notes	UP Corp.	5.780%	07/15/40	279,873	279,873	100.000	279,873		
7	Notes	UP Corp.	6.125%	02/15/20	398,628	398,628	100.000	398,628		
8	Notes	UP Corp.	7.875%	01/15/19	373,521	373,521	100.000	373,521		
9	Tax Exempt	UP Corp.	Variable	2010 - 2026	139,890	139,890	100.000	139,890		
10	Med. Term Notes:	Series B	9.2-9.3%	2005 - 2020	7,408	7,408	100.000	7,408		
11	Med. Term Notes:	Series C	9.5-10.0%	2005 - 2020	24,123	24,123	100.000	24,123		
12	Debt Security	KFW Loan UPRR	7.310%	12/15/12	27,857	27,857	100.000	27,857		
13	RR Tax Exempt	Albany County UPRR	4.400%	12/01/15	8,000	8,000	100.000	8,000		
14	Debentures	MP C&E UPRR (CEI52054)	5.000%	01/01/54	1,641	1,641	100.000	1,641		
15	Debt Security	Illinois DOT SPCSL	3.000%	12/31/19	13,345	13,345	100.000	13,345		
16	Debt Security	Illinois DOT UPRR	3.000%	03/14/18	1,176	1,176	100.000	1,176		
17	Debt Security	ITCF 1999 UPRR	5.750%	11/01/14	14,540	14,540	100.000	14,540		
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
Total					\$3,583,867	\$3,293,542		\$3,293,542		

Union Pacific Corporation
December 31, 2010

Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding (\$000)		Average Price	Market Value (\$ 000)	Average Yield	Interest Cost (\$ 000)
						Year-End	Used				
Matures in 2011											
1	Med. Term Notes Series D			9.17-9.4%	2005 - 2011	10,000					
2											
3											
4											
5											
6											
7											
8											
9											
10											
Total						\$10,000					

Grand Totals

Total Traded and Not Traded	\$7,049,279	\$6,758,954	\$7,099,918
Grand Total (for reconciliation to carrier data only)	\$7,059,279		

From UP:

Debentures, Notes, Tax exempt, Floating, and Commercial Paper	6,938,838
Removal of Floating Rate Loan and Commercial Paper	-100,000
Misc Debt Securities (KFW, Albany County, MP, IL DOT....)	\$239,361
Removal of MP Debt Discount, Receivable Drawdown, and SP Purch. Acct. Debt Premium	<u>-18,920</u>
Total	\$7,059,279

CSX Corporation		
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1	Type:	Note
	Description:	CSX Corp.
	CUSIP:	126408GB3
	Coupon Rate:	6.300%
	Maturity Date:	3/15/12
	Amount Outstanding (\$ 000)	\$400,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	108.680	2.09 %
February	108.398	2.09
March	108.067	2.06
April	107.976	1.94
May	107.504	2.02
June	107.325	1.91
July	107.111	1.83
August	107.016	1.66
September	107.208	1.29
October	106.805	1.29
November	106.685	1.07
December	106.102	1.18
Average	107.406	1.70 %

Source: Standard & Poor's XpressFeed – Bond Package

CSX Corporation		
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2	Type:	Note
	Description:	CSX Corp.
	CUSIP:	126408GF4
	Coupon Rate:	5.300%
	Maturity Date:	2/15/14
	Amount Outstanding (\$ 000)	\$200,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	107.450	3.31 %
February	108.519	3.00
March	108.017	3.08
April	108.844	2.82
May	109.082	2.71
June	110.169	2.35
July	111.021	2.05
August	111.460	1.86
September	111.497	1.77
October	111.801	1.60
November	111.200	1.69
December	108.741	2.37
Average	109.817	2.38 %

Source: Standard & Poor's XpressFeed – Bond Package

CSX Corporation		
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3	Type:	Note
	Description:	CSX Corp.
	CUSIP:	126408GJ6
	Coupon Rate:	5.600%
	Maturity Date:	5/1/17
	Amount Outstanding (\$ 000)	\$300,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	106.300	4.57 %
February	106.770	4.48
March	105.580	4.66
April	107.452	4.35
May	108.294	4.20
June	109.956	3.92
July	110.837	3.76
August	113.883	3.26
September	114.315	3.17
October	114.561	3.11
November	111.510	3.57
December	109.455	3.89
Average	109.909	3.91 %

Source: Standard & Poor's XpressFeed – Bond Package

CSX Corporation		
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4	Type:	Debenture
	Description:	CSX Corp.
	CUSIP:	126408AQ6
	Coupon Rate:	8.100%
	Maturity Date:	9/15/22
	Amount Outstanding (\$ 000)	\$69,081
	Months Outstanding	12.0

End of Month	Price	Yield
January	123.830	5.46 %
February	123.527	5.48
March	121.576	5.66
April	123.701	5.44
May	124.824	5.32
June	127.821	5.02
July	128.117	4.98
August	132.505	4.56
September	131.668	4.62
October	130.327	4.73
November	129.005	4.84
December	124.357	5.28
Average	126.772	5.12 %

Source: Standard & Poor's XpressFeed – Bond Package

CSX Corporation		
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5	Type:	Debenture
	Description:	CSX Corp.
	CUSIP:	126408AM5
	Coupon Rate:	8.625%
	Maturity Date:	5/15/22
	Amount Outstanding (\$ 000)	\$81,517
	Months Outstanding	12.0

End of Month	Price	Yield
January	124.760	5.78 %
February	124.445	5.80
March	122.549	5.98
April	124.613	5.76
May	125.693	5.64
June	128.575	5.34
July	128.846	5.30
August	133.073	4.88
September	132.258	4.94
October	130.962	5.05
November	129.673	5.16
December	125.159	5.60
Average	127.551	5.44 %

Source: Standard & Poor's XpressFeed – Bond Package

CSX Corporation		
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6	Type:	Med Term Notes
	Description:	CSX Corp.
	CUSIP:	12641LBU6
	Coupon Rate:	6.800%
	Maturity Date:	12/1/28
	Amount Outstanding (\$ 000)	\$200,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	109.530	5.95 %
February	108.210	6.06
March	106.683	6.19
April	109.471	5.95
May	110.889	5.83
June	113.418	5.62
July	113.382	5.62
August	119.490	5.14
September	120.766	5.04
October	115.772	5.42
November	115.357	5.45
December	113.205	5.62
Average	113.014	5.66 %

Source: Standard & Poor's XpressFeed – Bond Package

CSX Corporation		
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7	Type:	Med Term Notes
	Description:	CSX Corp.
	CUSIP:	126408GH0
	Coupon Rate:	6.000%
	Maturity Date:	10/1/36
	Amount Outstanding (\$ 000)	\$400,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	101.860	5.86 %
February	100.391	5.96
March	99.343	6.05
April	102.406	5.82
May	103.638	5.73
June	107.182	5.48
July	107.904	5.43
August	113.841	5.04
September	111.485	5.19
October	106.425	5.53
November	105.701	5.58
December	104.152	5.69
Average	105.361	5.61 %

Source: Standard & Poor's XpressFeed – Bond Package

CSX Corporation		
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8	Type:	Note
	Description:	CSX Corp.
	CUSIP:	126408GK3
	Coupon Rate:	6.150%
	Maturity Date:	5/1/37
	Amount Outstanding (\$ 000)	\$700,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	103.210	5.91 %
February	102.668	5.95
March	100.786	6.08
April	104.464	5.82
May	105.721	5.73
June	109.349	5.48
July	110.085	5.43
August	115.525	5.08
September	113.752	5.19
October	108.569	5.53
November	107.676	5.59
December	107.516	5.60
Average	107.443	5.62 %

Source: Standard & Poor's XpressFeed – Bond Package

CSX Corporation		
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9	Type:	Note
	Description:	CSXT - Conrail
	CUSIP:	209864AT4
	Coupon Rate:	9.750%
	Maturity Date:	6/15/20
	Amount Outstanding (\$ 000)	\$227,171
	Months Outstanding	12.0

End of Month	Price	Yield
January	132.200	5.61 %
February	133.562	5.44
March	131.122	5.68
April	132.515	5.51
May	134.534	5.27
June	137.584	4.92
July	138.936	4.76
August	142.851	4.33
September	142.165	4.37
October	140.955	4.46
November	139.904	4.54
December	134.927	5.05
Average	136.771	5.00 %

Source: Standard & Poor's XpressFeed – Bond Package

Norfolk Southern Corporation		
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10	Type:	Debenture
	Description:	Conrail
	CUSIP:	209864AT4
	Coupon Rate:	9.750%
	Maturity Date:	6/15/20
	Amount Outstanding (\$ 000)	\$313,741
	Months Outstanding	12.0

End of Month	Price	Yield
January	132.200	5.61 %
February	133.562	5.44
March	131.122	5.68
April	132.515	5.51
May	134.534	5.27
June	137.584	4.92
July	138.936	4.76
August	142.851	4.33
September	142.165	4.37
October	140.955	4.46
November	139.904	4.54
December	134.927	5.05
Average	136.771	5.00 %

Source: Standard & Poor's XpressFeed – Bond Package

Norfolk Southern Corporation		
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11	Type:	Med. Term Note
	Description:	Series A NSC
	CUSIP:	655844AA6
	Coupon Rate:	9.000%
	Maturity Date:	3/1/21
	Amount Outstanding (\$ 000)	\$83,372
	Months Outstanding	12.0

End of Month	Price	Yield
January	117.510	6.73 %
February	117.438	6.73
March	115.320	6.97
April	116.659	6.80
May	117.505	6.68
June	134.630	4.81
July	134.846	4.76
August	138.691	4.36
September	138.331	4.37
October	137.202	4.46
November	135.194	4.64
December	130.304	5.13
Average	127.803	5.54 %

Source: Standard & Poor's XpressFeed – Bond Package

Norfolk Southern Corporation		
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12	Type:	Med. Term Note
	Description:	Senior
	CUSIP:	655844AQ1
	Coupon Rate:	7.250%
	Maturity Date:	2/15/31
	Amount Outstanding (\$ 000)	\$500,008
	Months Outstanding	12.0

End of Month	Price	Yield
January	120.370	5.59 %
February	117.859	5.77
March	116.216	5.88
April	119.436	5.64
May	119.684	5.62
June	122.878	5.39
July	123.707	5.33
August	127.931	5.04
September	125.643	5.19
October	123.289	5.35
November	122.541	5.40
December	119.734	5.60
Average	121.607	5.48 %

Source: Standard & Poor's XpressFeed – Bond Package

Norfolk Southern Corporation		
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13	Type:	Med. Term Note
	Description:	Senior 2105
	CUSIP:	655844AV0
	Coupon Rate:	6.000%
	Maturity Date:	3/15/05
	Amount Outstanding (\$ 000)	\$300,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	89.430	6.71 %
February	88.383	6.78
March	85.975	6.98
April	88.376	6.79
May	89.161	6.73
June	95.392	6.28
July	94.346	6.35
August	105.235	5.69
September	101.002	5.94
October	99.991	6.00
November	96.463	6.21
December	93.030	6.44
Average	93.899	6.41 %

Source: Standard & Poor's XpressFeed – Bond Package

Norfolk Southern Corporation		
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14	Type:	Med. Term Note
	Description:	Senior
	CUSIP:	655844AX6
	Coupon Rate:	5.640%
	Maturity Date:	5/17/29
	Amount Outstanding (\$ 000)	\$350,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	99.800	5.66 %
February	99.591	5.67
March	98.812	5.74
April	101.863	5.48
May	101.987	5.47
June	105.365	5.19
July	105.970	5.14
August	111.207	4.73
September	109.867	4.83
October	105.928	5.14
November	107.026	5.05
December	104.553	5.25
Average	104.331	5.28 %

Source: Standard & Poor's XpressFeed – Bond Package

Norfolk Southern Corporation		
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15	Type:	Med. Term Note
	Description:	Senior
	CUSIP:	655844AW8
	Coupon Rate:	5.590%
	Maturity Date:	5/17/25
	Amount Outstanding (\$ 000)	\$366,620
	Months Outstanding	12.0

End of Month	Price	Yield
January	100.490	5.54 %
February	100.505	5.53
March	98.050	5.78
April	101.441	5.44
May	103.391	5.25
June	107.134	4.90
July	108.112	4.81
August	111.234	4.53
September	110.754	4.57
October	109.729	4.66
November	108.173	4.79
December	103.316	5.25
Average	105.194	5.09 %

Source: Standard & Poor's XpressFeed – Bond Package

Norfolk Southern Corporation		
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16	Type:	Conrail Note
	Description:	CR NSC 2017
	CUSIP:	655844AE8
	Coupon Rate:	7.700%
	Maturity Date:	5/15/17
	Amount Outstanding (\$ 000)	\$550,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	119.760	4.49 %
February	120.098	4.41
March	118.833	4.57
April	120.392	4.31
May	121.766	4.07
June	124.362	3.65
July	125.605	3.43
August	127.690	3.09
September	127.805	3.03
October	126.639	3.16
November	124.824	3.38
December	122.140	3.75
Average	123.326	3.78 %

Source: Standard & Poor's XpressFeed – Bond Package

Norfolk Southern Corporation		
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17	Type:	Conrail Note
	Description:	CR NSC 2027
	CUSIP:	655844AJ7
	Coupon Rate:	7.800%
	Maturity Date:	5/15/27
	Amount Outstanding (\$ 000)	\$440,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	124.020	5.61 %
February	122.942	5.69
March	120.528	5.88
April	122.815	5.69
May	123.472	5.63
June	128.713	5.21
July	128.431	5.23
August	135.193	4.72
September	133.615	4.83
October	129.287	5.14
November	127.823	5.25
December	128.947	5.15
Average	127.149	5.34 %

Source: Standard & Poor's XpressFeed – Bond Package

Norfolk Southern Corporation		
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18	Type:	Conrial Note
	Description:	CR NSC 2037
	CUSIP:	655844AF5
	Coupon Rate:	7.050%
	Maturity Date:	5/1/37
	Amount Outstanding (\$ 000)	\$716,600
	Months Outstanding	12.0

End of Month	Price	Yield
January	118.730	5.69 %
February	116.827	5.81
March	115.792	5.87
April	119.758	5.61
May	117.193	5.78
June	123.490	5.38
July	123.573	5.37
August	130.268	4.98
September	128.583	5.07
October	123.980	5.34
November	123.823	5.35
December	119.502	5.62
Average	121.793	5.49 %

Source: Standard & Poor's XpressFeed – Bond Package

Norfolk Southern Corporation		
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19	Type:	Conrail Note
	Description:	CR NSC 2097
	CUSIP:	655844AK4
	Coupon Rate:	7.900%
	Maturity Date:	5/15/97
	Amount Outstanding (\$ 000)	\$350,000
	Months Outstanding	12.0

End of Month	Price	Yield
January	121.250	6.51 %
February	123.710	6.37
March	119.979	6.57
April	123.528	6.38
May	124.687	6.33
June	131.037	6.02
July	129.543	6.09
August	137.104	5.74
September	133.892	5.88
October	127.277	6.19
November	125.272	6.30
December	120.886	6.53
Average	126.514	6.24 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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20	Type:	Debentures
	Description:	UP Corp.
	CUSIP:	907818CX4
	Coupon Rate:	6.150%
	Maturity Date:	5/1/37
	Amount Outstanding (\$ 000)	\$248,956
	Months Outstanding	12.0

End of Month	Price	Yield
January	106.750	5.66 %
February	105.030	5.78
March	103.354	5.89
April	107.171	5.63
May	105.610	5.73
June	112.006	5.30
July	112.493	5.27
August	119.835	4.82
September	116.029	5.04
October	111.640	5.32
November	110.145	5.42
December	108.975	5.50
Average	109.920	5.45 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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21	Type:	Debentures
	Description:	UP Corp.
	CUSIP:	907818CU0
	Coupon Rate:	6.250%
	Maturity Date:	5/1/34
	Amount Outstanding (\$ 000)	\$246,465
	Months Outstanding	12.0

End of Month	Price	Yield
January	105.100	5.85 %
February	104.801	5.87
March	102.931	6.01
April	107.007	5.71
May	107.232	5.69
June	114.165	5.20
July	111.902	5.35
August	118.465	4.92
September	114.278	5.19
October	111.312	5.39
November	111.965	5.34
December	108.395	5.60
Average	109.796	5.51 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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22	Type:	Debentures
	Description:	UP Corp.
	CUSIP:	907818CF3
	Coupon Rate:	6.625%
	Maturity Date:	2/1/29
	Amount Outstanding (\$ 000)	\$594,611
	Months Outstanding	12.0

End of Month	Price	Yield
January	109.060	5.83 %
February	108.165	5.90
March	109.065	5.82
April	109.013	5.82
May	112.267	5.55
June	116.152	5.25
July	116.084	5.25
August	120.934	4.88
September	120.018	4.95
October	118.064	5.09
November	116.675	5.19
December	113.428	5.44
Average	114.077	5.41 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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23	Type:	Debentures
	Description:	UP Corp.
	CUSIP:	907818AZ1
	Coupon Rate:	7.000%
	Maturity Date:	2/1/16
	Amount Outstanding (\$ 000)	\$249,553
	Months Outstanding	12.0

End of Month	Price	Yield
January	113.210	4.46 %
February	115.585	4.01
March	115.912	3.92
April	115.832	3.89
May	116.542	3.73
June	118.410	3.35
July	120.430	2.95
August	121.854	2.64
September	122.037	2.55
October	122.446	2.42
November	119.834	2.84
December	117.770	3.18
Average	118.322	3.33 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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24	Type:	Debentures
	Description:	UP Corp.
	CUSIP:	907818BY3
	Coupon Rate:	7.125%
	Maturity Date:	2/1/28
	Amount Outstanding (\$ 000)	\$247,675
	Months Outstanding	12.0

End of Month	Price	Yield
January	114.310	5.83 %
February	113.402	5.90
March	111.092	6.09
April	113.262	5.90
May	114.637	5.79
June	118.373	5.48
July	117.426	5.55
August	125.349	4.93
September	123.234	5.09
October	119.160	5.40
November	117.831	5.50
December	114.733	5.75
Average	116.901	5.60 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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25	Type:	Notes
	Description:	UP Corp.
	CUSIP:	907818CV8
	Coupon Rate:	4.875%
	Maturity Date:	1/15/15
	Amount Outstanding (\$ 000)	\$249,768
	Months Outstanding	12.0

End of Month	Price	Yield
January	106.660	3.40 %
February	106.637	3.38
March	105.515	3.60
April	106.173	3.44
May	106.730	3.29
June	108.789	2.80
July	109.688	2.56
August	110.950	2.23
September	111.072	2.15
October	111.337	2.05
November	109.824	2.36
December	107.535	2.88
Average	108.409	2.85 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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26	Type:	Notes
	Description:	UP Corp.
	CUSIP:	907818CT3
	Coupon Rate:	5.375%
	Maturity Date:	5/1/14
	Amount Outstanding (\$ 000)	\$249,729
	Months Outstanding	12.0

End of Month	Price	Yield
January	107.680	3.42 %
February	108.631	3.15
March	107.770	3.32
April	108.279	3.15
May	108.925	2.94
June	110.205	2.56
July	111.096	2.27
August	112.171	1.92
September	112.404	1.78
October	112.874	1.58
November	111.810	1.79
December	109.456	2.40
Average	110.108	2.52 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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27	Type:	Notes
	Description:	UP Corp.
	CUSIP:	907818CY2
	Coupon Rate:	5.450%
	Maturity Date:	1/31/13
	Amount Outstanding (\$ 000)	\$499,675
	Months Outstanding	12.0

End of Month	Price	Yield
January	108.330	2.55 %
February	108.428	2.45
March	108.362	2.37
April	108.967	2.08
May	108.684	2.09
June	109.348	1.73
July	109.664	1.50
August	109.544	1.41
September	109.312	1.38
October	109.265	1.26
November	108.622	1.40
December	108.016	1.52
Average	108.879	1.81 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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28	Type:	Notes
	Description:	UP Corp.
	CUSIP:	907818CW6
	Coupon Rate:	5.650%
	Maturity Date:	5/1/17
	Amount Outstanding (\$ 000)	\$249,427
	Months Outstanding	12.0

End of Month	Price	Yield
January	107.120	4.49 %
February	107.516	4.41
March	106.934	4.49
April	108.189	4.28
May	109.488	4.06
June	111.433	3.73
July	112.334	3.57
August	116.150	2.96
September	115.164	3.08
October	115.424	3.02
November	113.840	3.24
December	110.420	3.78
Average	111.168	3.76 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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29	Type:	Notes
	Description:	UP Corp.
	CUSIP:	907818CN6
	Coupon Rate:	6.125%
	Maturity Date:	1/15/12
	Amount Outstanding (\$ 000)	\$298,350
	Months Outstanding	12.0

End of Month	Price	Yield
January	109.130	1.38 %
February	108.810	1.37
March	108.110	1.51
April	107.954	1.39
May	107.516	1.44
June	107.397	1.26
July	107.051	1.23
August	106.594	1.26
September	106.141	1.31
October	105.735	1.33
November	105.777	0.94
December	105.234	1.04
Average	107.121	1.29 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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30	Type:	Notes
	Description:	UP Corp.
	CUSIP:	907818CP1
	Coupon Rate:	6.500%
	Maturity Date:	4/15/12
	Amount Outstanding (\$ 000)	\$177,321
	Months Outstanding	12.0

End of Month	Price	Yield
January	109.700	1.97 %
February	109.391	1.98
March	109.183	1.88
April	109.105	1.74
May	108.771	1.73
June	108.696	1.55
July	108.494	1.44
August	108.212	1.36
September	107.908	1.30
October	107.584	1.24
November	106.923	1.39
December	106.782	1.18
Average	108.396	1.56 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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31	Type:	Mort. Bond
	Description:	UPRR -- MP
	CUSIP:	606198LF4
	Coupon Rate:	4.750%
	Maturity Date:	1/1/20
	Amount Outstanding (\$ 000)	\$29,905
	Months Outstanding	12.0

End of Month	Price	Yield
January	93.120	5.67 %
February	92.750	5.72
March	93.900	5.57
April	89.100	6.27
May	85.000	6.92
June	92.100	5.85
July	92.000	5.87
August	99.000	4.88
September	99.000	4.88
October	99.300	4.84
November	99.300	4.85
December	100.000	4.75
Average	94.548	5.51 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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32	Type:	Mort. Bond
	Description:	UPRR -- MP
	CUSIP:	606198LG2
	Coupon Rate:	4.750%
	Maturity Date:	1/1/30
	Amount Outstanding (\$ 000)	\$27,952
	Months Outstanding	12.0

End of Month	Price	Yield
January	88.250	5.75 %
February	85.000	6.06
March	80.000	6.57
April	84.150	6.15
May	80.000	6.58
June	86.600	5.92
July	80.000	6.59
August	90.000	5.60
September	90.250	5.58
October	91.000	5.52
November	91.000	5.52
December	92.750	5.36
Average	86.583	5.93 %

Source: Standard & Poor's XpressFeed – Bond Package

Union Pacific Corporation		
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33	Type:	Inc. Debenture
	Description:	UPRR -- MP
	CUSIP:	606198LH0
	Coupon Rate:	5.000%
	Maturity Date:	1/1/45
	Amount Outstanding (\$ 000)	\$96,025
	Months Outstanding	12.0

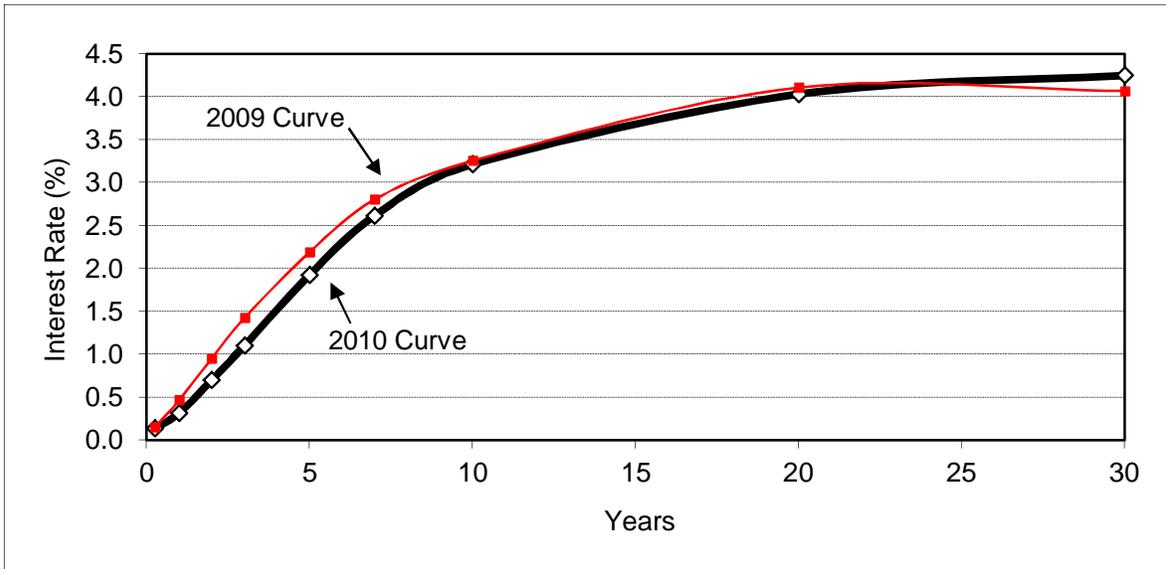
End of Month	Price	Yield
January	74.020	7.00 %
February	66.500	7.81
March	60.000	8.65
April	69.250	7.50
May	65.000	8.00
June	71.000	7.32
July	71.250	7.29
August	72.500	7.16
September	72.590	7.15
October	74.000	7.01
November	73.250	7.09
December	76.000	6.82
Average	70.447	7.40 %

Source: Standard & Poor's XpressFeed – Bond Package

Interest Rates on Selected Government Instruments

Yield in Percent Per Annum, Constant Maturity Rates for 2010

	3 Mo.	1 Yr	2 Yr	3 Yr	5 Yr	7 Yr	10 Yr	20 Yr	30 Yr
January	0.06	0.35	0.93	1.49	2.48	3.21	3.73	4.50	4.60
February	0.11	0.35	0.86	1.40	2.36	3.12	3.69	4.48	4.62
March	0.15	0.40	0.96	1.51	2.43	3.16	3.73	4.49	4.64
April	0.16	0.45	1.06	1.64	2.58	3.28	3.85	4.53	4.69
May	0.16	0.37	0.83	1.32	2.18	2.86	3.42	4.11	4.29
June	0.12	0.32	0.72	1.17	2.00	2.66	3.20	3.95	4.13
July	0.16	0.29	0.62	0.98	1.76	2.43	3.01	3.80	3.99
August	0.16	0.26	0.52	0.78	1.47	2.10	2.70	3.52	3.80
September	0.15	0.26	0.48	0.74	1.41	2.05	2.65	3.47	3.77
October	0.13	0.23	0.38	0.57	1.18	1.85	2.54	3.52	3.87
November	0.14	0.25	0.45	0.67	1.35	2.02	2.76	3.82	4.19
December	0.14	0.29	0.62	0.99	1.93	2.66	3.29	4.17	4.42
Average	0.14	0.32	0.70	1.11	1.93	2.62	3.21	4.03	4.25



Source: Federal Reserve statistical release H.15, Treasury Constant Maturities, Nominal

Equipment Trust Certificates for CSX

Modeled ETCs

ETC ID	Maturity	Balance For 2010 (\$000)			Current Valuation		Current	
		Beg.	Ending	Avg O/S	Interest Rate	Valuation Factor	Market Value	Interest
1. ETC CSX Series B 236	2/15/14	\$25,000	\$20,000	\$22,500	2.450%	1.09705	\$24,684	\$605
2. ETC CSX Series B 237	4/15/14	20,000	16,000	18,000	2.449%	1.11410	20,054	491
3. ETC CSX Series B 238	6/15/14	18,500	14,800	16,650	2.447%	1.13556	18,907	463
4. ETC CSX Series B 239	4/1/15	30,600	25,500	28,050	2.748%	1.17219	32,880	904
5. ETC CSX Series B 240	5/15/15	25,200	21,000	23,100	2.750%	1.14517	26,453	728
6.				--			--	--
7.				--			--	--
8.				--			--	--
9.				--			--	--
10.				--			--	--
11.				--			--	--
12.				--			--	--
13.				--			--	--
14.				--			--	--
15.				--			--	--
Total		\$119,300	\$97,300	\$108,300	2.594%		\$122,978	\$3,190

Note:
This list contains ETCs that can be used in the AAR's model to determine market value. Some debt instruments labeled as ETCs do not have all of the characteristics typical of an ETC, and therefore cannot be modeled. For example, ETCs with variable rates cannot be modeled.

Non-Modeled ETCs

ETC ID	Maturity	Balance For 2010 (\$000)	
		Beg.	Ending
1. ETC CSX Series A 235	06/15/13	20,000	15,000
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
Total		\$20,000	\$15,000

Equipment Trust Certificates for CSX (continued)

Entire ETC Current – Not Used for Cost or Market Value

ETC ID	Maturity	<u>Balance 2010 (\$000)</u>	
		Beg.	Ending
1. ETC CSX Series A 231	3/15/11	\$7,600	\$3,800
2. ETC CSX Series A 234	06/01/11	8,000	4,000
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
Total		\$15,600	\$7,800

Grand Totals (for reconciliation to carrier data)

	<u>Balance For 2010 (\$000)</u>	
	Beg.	Ending
Total Modeled	\$119,300	\$97,300
Total Non-Modeled	20,000	15,000
Sub Total	139,300	112,300
Total All Current	15,600	7,800
Grand Total	\$154,900	\$120,100
From CSX:		
Total ETCs		\$120,100
Difference		\$0

Equipment Trust Certificates for NS

Modeled ETCs

ETC ID	Maturity	Balance For 2010 (\$000)			Current Valuation		Current	
		Beg.	Ending	Avg O/S	Interest Rate	Valuation Factor	Market Value	Interest
1. NSR Series H	7/15/13	\$16,800	\$12,600	\$14,700	2.114%	1.08200	\$15,905	\$336
2. NSR Series I	4/1/14	31,500	25,200	28,350	2.449%	1.10490	31,324	767
3. NSR Series J	7/1/14	31,250	25,000	28,125	2.447%	1.13848	32,020	784
4.				--			--	--
5.				--			--	--
6.				--			--	--
7.				--			--	--
8.				--			--	--
9.				--			--	--
10.				--			--	--
11.				--			--	--
12.				--			--	--
13.				--			--	--
14.				--			--	--
15.				--			--	--
Total		\$79,550	\$62,800	\$71,175	2.381%		\$79,249	\$1,887

Note:
 This list contains ETCs that can be used in the AAR's model to determine market value. Some debt instruments labeled as ETCs do not have all of the characteristics typical of an ETC, and therefore cannot be modeled. For example, ETCs with variable rates cannot be modeled.

Non-Modeled ETCs

ETC ID	Maturity	Balance For 2010 (\$000)	
		Beg.	Ending
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
Total		\$0	\$0

Equipment Trust Certificates for NS (continued)

Entire ETC Current – Not Used for Cost or Market Value

ETC ID	Maturity	Balance 2010 (\$000)	
		Beg.	Ending
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
Total		\$0	\$0

Grand Totals (for reconciliation to carrier data)

	Balance For 2010 (\$000)	
	Beg.	Ending
Total Modeled	\$79,550	\$62,800
Total Non-Modeled	0	0
Sub Total	79,550	62,800
Total All Current	0	0
Grand Total	\$79,550	\$62,800
From NS:		
Total ETCs		\$62,800
Difference		\$0

Equipment Trust Certificates for UP

Modeled ETCs

ETC ID	Maturity	Balance For 2010 (\$000)			Current Valuation		Current	
		Beg.	Ending	Avg O/S	Interest Rate	Valuation Factor	Market Value	Interest
1. ETC UPC Series C	2/1/12	\$12,450	\$8,300	\$10,375	1.775%	1.12215	\$11,642	\$207
2. ETC UPC Series I	2/23/19	58,701	53,857	56,279	3.632%	1.14974	64,707	2,350
3. ETC UPC Series J	1/2/2031	86,822	82,825	84,823	4.637%	1.13238	96,052	4,454
4.				--			--	--
5.				--			--	--
6.				--			--	--
7.				--			--	--
8.				--			--	--
9.				--			--	--
10.				--			--	--
11.				--			--	--
12.				--			--	--
13.				--			--	--
14.				--			--	--
15.				--			--	--
Total		\$157,973	\$144,982	\$151,478	4.067%		\$172,401	\$7,011

Note:
 This list contains ETCs that can be used in the AAR's model to determine market value. Some debt instruments labeled as ETCs do not have all of the characteristics typical of an ETC, and therefore cannot be modeled. For example, ETCs with variable rates cannot be modeled.

Non-Modeled ETCs

ETC ID	Maturity	Balance For 2010 (\$000)	
		Beg.	Ending
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
Total		\$0	\$0

Equipment Trust Certificates for UP (continued)

Entire ETC Current – Not Used for Cost or Market Value

ETC ID	Maturity	Balance 2010 (\$000)	
		Beg.	Ending
1. ETC UPC Series G	6/15/11	\$10,870	\$5,435
2. ETC UPC Series H	12/1/11	9,400	4,700
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
Total		\$20,270	\$10,135

Grand Totals (for reconciliation to carrier data)

	Balance For 2010 (\$000)	
	Beg.	Ending
Total Modeled	\$157,973	\$144,982
Total Non-Modeled	0	0
Sub Total	157,973	144,982
Total All Current	20,270	10,135
Grand Total	\$178,243	\$155,117
From UP:		
Total ETCs		\$155,117
Difference		\$0

Conditional Sales Agreements for CSX

Modeled CSAs

CSA ID	Maturity	Balance For 2010 (\$000)			Current Valuation		Current	
		Beg.	Ending	Avg O/S	Interest Rate	Valuation Factor	Market Value	Interest
1. CSX 422	10/22/12	\$15,354	\$10,236	\$12,795	2.098%	1.08842	13,926	292
2. CSX 423	4/16/2012	18,757	12,504	15,631	2.099%	1.08181	16,909	355
3.				--			--	--
4.				--			--	--
5.				--			--	--
6.				--			--	--
7.				--			--	--
8.				--			--	--
9.				--			--	--
10.				--			--	--
Total		\$34,111	\$22,740	\$28,426	2.099%		\$30,836	\$647

Note:
This list contains CSAs that can be used in the AAR's model to determine market value. Some debt instruments labeled as CSAs do not have all of the characteristics typical of a CSA, and therefore cannot be modeled. For example, CSAs with variable rates cannot be modeled.

Non-Modeled CSAs

ETC ID	Maturity	Balance For 2010 (\$000)	
		Beg.	Ending
1. CSA 424	09/15/14	\$29,957	\$23,966 (uses a floating interest rate)
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total		\$29,957	\$23,966

	Balance For 2010 (\$000)	
	Beg.	Ending
Current CSAs Not Used	0	0
<hr/>		
Grand Total All CSAs	\$64,068	\$46,706

From CSX:

Total CSAs	\$46,706
Difference from Grand Total	\$0

Conditional Sales Agreements for NS

Modeled CSAs

CSA ID	Maturity	Balance For 2010 (\$000)			Current Valuation		Current	
		Beg.	Ending	Avg O/S	Interest Rate	Valuation Factor	Market Value	Interest
1.				--			--	--
2.				--			--	--
3.				--			--	--
4.				--			--	--
5.				--			--	--
6.				--			--	--
7.				--			--	--
8.				--			--	--
9.				--			--	--
10.				--			--	--
Total		\$0	\$0	\$0	--		\$0	\$0

Note:
This list contains CSAs that can be used in the AAR's model to determine market value. Some debt instruments labeled as CSAs do not have all of the characteristics typical of a CSA, and therefore cannot be modeled. For example, CSAs with variable rates cannot be modeled.

Non-Modeled CSAs

ETC ID	Maturity	Balance For 2010 (\$000)	
		Beg.	Ending
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total		\$0	\$0

	Balance For 2010 (\$000)	
	Beg.	Ending
Current CSAs Not Used	0	0
Grand Total All CSAs	\$0	\$0

Conditional Sales Agreements for UP

Modeled CSAs

CSA ID	Maturity	Balance For 2010 (\$000)			Current Valuation		Current	
		Beg.	Ending	Avg O/S	Interest Rate	Valuation Factor	Market Value	Interest
1.				--			--	--
2.				--			--	--
3.				--			--	--
4.				--			--	--
5.				--			--	--
6.				--			--	--
7.				--			--	--
8.				--			--	--
9.				--			--	--
10.				--			--	--
Total		\$0	\$0	\$0	--		\$0	\$0

Note:
This list contains CSAs that can be used in the AAR's model to determine market value. Some debt instruments labeled as CSAs do not have all of the characteristics typical of a CSA, and therefore cannot be modeled. For example, CSAs with variable rates cannot be modeled.

Non-Modeled CSAs

ETC ID	Maturity	Balance For 2010 (\$000)	
		Beg.	Ending
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
Total		\$0	\$0

	Balance For 2010 (\$000)	
	Beg.	Ending
Current CSAs Not Used	0	0
Grand Total All CSAs	\$0	\$0

2010 Market Value of Debt (\$000)

Type of Debt	Market Value			Percent of	
	Traded or Modeled	Non-Traded or Non-Modeled	Total	Subtotal	Total
Bonds, Notes & Debentures	\$11,416,734	\$10,403,089	\$21,819,823	98.18%	89.53%
Equipment Trust Certificates	374,628		374,628	1.69%	1.54%
Conditional Sales Agreements	30,836		30,836	0.14%	0.13%
Sub Total	\$11,822,198	\$10,403,089	\$22,225,287	100.01%	91.19%
All Other — Capital Leases		\$1,945,730	\$1,945,730	90.67%	7.98%
All Other — Misc. Debt		161,335	161,335	7.52%	0.66%
All Other — Non-Modeled ETC		15,000	15,000	0.70%	0.06%
All Other — Non-Modeled CSA		23,966	23,966	1.12%	0.10%
Sub Total			\$2,146,031	100.00%	8.81%
Total Market Value			\$24,371,318		100.00%

General Notes:

Bonds, Notes, and Debentures from Appendix A. Securities that did not trade were assigned a market value equal to their book value. The traded portion accounts for 52.32 percent of the total market value for this category.

Equipment Trust Certificates from Appendix C.

Conditional Sales Agreements from Appendix D.

Some ETCs and CSAs could not be modeled because they did not have all of the typical characteristics necessary for the model. Those that could not be modeled were assigned a market value equal to their book value, and moved to the All Other category.

Capital Leases and Miscellaneous Debt listed in work papers.

The capital leases and miscellaneous debt portion of the All Other debt category was assigned a market value equal to its book value, and totals to \$2,107,065 thousand. The non-modeled ETCs and CSAs were also assigned a market value equal to their book value, and totaled to \$38,966 thousand. The All Other category totals to \$2,146,031 thousand, or 8.8 percent of total debt.

2010 Flotation Costs for Bonds

	NSC Sr Notes Issued 3/15/10	UNP Notes Issued 8/2/10	CSX Notes Issued 10/21/10	CSX Notes Issued 10/21/10
<i>From 424(b)(5)</i>				
Face Amount	\$250,000,000	\$500,000,000	\$500,000,000	\$300,000,000
Coupon Rate	6.000%	4.000%	3.700%	5.500%
Maturity Date	3/15/2105	3/1/2021	10/30/2020	4/15/2041
Frequency of Coupon Payment	2	2	2	2
Settlement Date	3/15/2010	8/2/2010	10/21/2010	10/21/2010
Price To Investors	100.833	99.525	99.949	98.951
Proceeds from Sale (before expenses)	\$252,082,500	\$497,625,000	\$499,745,000	\$296,853,000
Underwriter Fee as Pct of Gross Proceeds	1.000%	0.650%	0.650%	0.875%
Underwriter's Fee	\$2,500,000	\$3,250,000	\$3,250,000	\$2,625,000
Railroad Expenses Excluding Fee	\$200,000	\$100,000	\$156,250	\$93,750
Page in 424(b)(5) for Expenses	S-21	S-7	S-21	S-21
 <i>Calculated</i>				
Yield Based on Price to Investors	5.950%	4.055%	3.706%	5.572%
Issue Price Per \$100 Less Flotation	\$99.75	\$98.86	\$99.27	\$98.04
Yield on New Issue Including Flotation	6.015%	4.134%	3.788%	5.635%
 Flotation Costs (Difference in Pct Pts)	0.065%	0.079%	0.082%	0.063%
 Average Flotation Cost (Pct. Points)	<u>0.072%</u>			

Source: SEC 424(b)(5) or 424(b)(2) filings.

Example of Source for Bond Flotation Costs

424B5 1 d424b5.htm PROSPECTUS SUPPLEMENT

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Filed pursuant to Rule 424(b)(5)
A filing fee of \$35,650, calculated in accordance with Rule 457(r),
has been previously transmitted to the SEC in connection with the
securities offered from the registration statement
(Reg. No. 333-164342) by means of this prospectus supplement

Prospectus Supplement
(To Prospectus Dated February 10, 2010)

\$500,000,000

 **Union Pacific Corporation**

4.00% Notes due 2021

We will pay interest on the notes each February 1 and August 1, commencing February 1, 2011. The notes will mature on February 1, 2021.

We may redeem some or all of the notes at any time and from time to time at the redemption price described in this prospectus supplement. There is no sinking fund for the notes. See "Description of the Notes" for a description of the terms of the notes.

	Price to Public (1)	Underwriting Discount	Proceeds to the Company
Per Note	99.525%	0.650%	98.875%
Total	\$ 497,625,000	\$3,250,000	\$494,375,000

(1) Plus accrued interest, if any, from August 2, 2010.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Delivery of the notes, in book-entry form only through The Depository Trust Company, will be made on or about August 2, 2010.

Joint Book-Running Managers

BofA Merrill Lynch	J.P. Morgan	Morgan Stanley
	<i>Senior Co-Managers</i>	
BNP PARIBAS		Citi
	<i>Co-Managers</i>	
Mitsubishi UFJ Securities	RBS	SunTrust Robinson Humphrey
US Bancorp		Wells Fargo Securities

The date of this prospectus supplement is July 28, 2010.

Example of Source for Bond Flotation Costs

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UNDERWRITING

Under the terms and subject to the conditions contained in an underwriting agreement dated July 28, 2010, we have agreed to sell to the underwriters named below the following respective principal amounts of the notes:

Underwriter	Principal Amount of the Notes
Banc of America Securities LLC	\$ 135,000,000
J.P. Morgan Securities Inc.	135,000,000
Morgan Stanley & Co. Incorporated	135,000,000
BNP Paribas Securities Corp.	22,500,000
Citigroup Global Markets Inc.	22,500,000
Mitsubishi UFJ Securities (USA), Inc.	10,000,000
RBS Securities Inc.	10,000,000
SunTrust Robinson Humphrey, Inc.	10,000,000
U.S. Bancorp Investments, Inc.	10,000,000
Wells Fargo Securities, LLC	10,000,000
Total	\$ 500,000,000

The underwriting agreement provides that the underwriters are obligated to purchase all of the notes if any are purchased.

The underwriters propose to offer the notes at the public offering price on the cover page of this prospectus supplement and to selling group members at that price less a selling concession of 0.400% of the principal amount per note. The underwriters and selling group members may allow a discount of 0.250% of the principal amount per note on sales to other broker/dealers. After the initial public offering the representatives may change the public offering price and concession and discount to broker/dealers.

The following table shows the underwriting discounts and commissions that we are to pay to the underwriters in connection with this offering (expressed as a percentage of the principal amount of the notes):

Per Note	Paid by <u>Union Pacific</u> 0.650%
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We estimate that our out of pocket expenses for this offering will be approximately \$100,000.

The notes are a new issue of securities with no established trading market. We do not intend to apply for the notes to be listed on any securities exchange or to arrange for the notes to be quoted on any quotation system. One or more of the underwriters intend to make a secondary market for the notes. However, they are not obligated to do so and may discontinue making a secondary market for the notes at any time without notice. No assurance can be given as to how liquid the trading market for the notes will be.

We have agreed to indemnify the several underwriters against liabilities under the Securities Act of 1933, as amended, or contribute to payments which the underwriters may be required to make in that respect.

In connection with the offering, the underwriters may engage in stabilizing transactions, syndicate covering transactions and penalty bids in accordance with Regulation M under the Exchange Act.

- Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum.

2010 Current Cost of Debt

Type of Debt	Reference	Appendix E Weight	Current Cost	Weighted Cost
Type of Instrument				
Bonds, Notes & Debentures	App. A & Table 4	98.18%	4.565%	4.481%
Equipment Trust Certificates	App. C & Table 6	1.69%	3.227%	0.055%
Conditional Sales Agreements	App. D & Table 7	0.14%	2.099%	0.003%
Total Without Floatation Costs		100.01%		4.539%
Floatation Costs				
Bonds, Notes & Debentures	App. F & Table 10	98.18%	0.072%	0.071%
Equipment Trust Certificates	Tables 9 and 10	1.69%	0.075%	0.001%
Conditional Sales Agreements	Tables 9 and 10	0.14%	0.069%	0.000%
Total Floatation Costs		100.01%		0.072%
Weighted Cost of Debt				4.611%
Weighted Cost of Debt (rounded)				4.61%

Market Value for Common Equity

CSX Stock Data from Yahoo Finance 1-3-2011

<http://finance.yahoo.com/q/hp?a=11&b=20&c=2005&d=00&e=3&f=2011&g=w&s=csx>

Beg. of Wk.	End of Wk				Volume	Shares Outstanding	Capitalization (\$000)
Date	Open	High	Low	Close			
1/4/2010	48.99	52.83	48.27	52.38	3750900	392,558,925	20,562,236
1/11/2010	52.60	52.68	49.50	50.04	3253900	392,558,925	19,643,649
1/19/2010	50.36	50.72	43.97	44.12	9769800	392,558,925	17,319,700
1/25/2010	44.70	46.08	42.58	42.86	5861900	392,558,925	16,825,076
2/1/2010	43.84	45.28	42.05	42.92	5457300	392,558,925	16,848,629
2/8/2010	42.99	45.45	42.41	44.90	5585500	390,035,435	17,512,591
2/16/2010	45.50	47.13	45.08	46.77	3829700	390,035,435	18,241,957
2/22/2010	47.03	47.82	46.28	47.46	3916400	390,035,435	18,511,082
3/1/2010	47.75	49.06	47.43	48.97	3276700	390,035,435	19,100,035
3/8/2010	49.15	51.16	48.81	50.98	3385900	390,035,435	19,884,006
3/15/2010	50.82	52.46	50.62	51.51	2978300	390,035,435	20,090,725
3/22/2010	51.04	52.33	50.50	50.99	2682100	390,035,435	19,887,907
3/29/2010	51.41	52.25	50.60	52.20	3157900	389,225,965	20,317,595
4/5/2010	52.58	53.47	51.52	52.96	2925200	389,225,965	20,613,407
4/12/2010	53.06	55.67	52.33	54.44	4863800	389,225,965	21,189,462
4/19/2010	54.21	56.89	53.70	56.82	3939600	389,225,965	22,115,819
4/26/2010	56.96	57.91	55.16	56.05	4081100	389,225,965	21,816,115
5/3/2010	56.50	62.00	48.38	52.67	6002800	389,225,965	20,500,532
5/10/2010	54.60	57.04	54.38	55.03	3188600	389,225,965	21,419,105
5/17/2010	55.08	55.75	48.27	51.09	4890700	389,225,965	19,885,555
5/24/2010	50.76	52.97	48.31	52.25	3782800	389,225,965	20,337,057
6/1/2010	52.23	54.00	49.77	50.02	4400300	389,225,965	19,469,083
6/7/2010	50.12	52.23	48.00	52.15	4482500	389,225,965	20,298,134
6/14/2010	52.96	55.12	51.73	54.95	3516600	389,225,965	21,387,967
6/21/2010	55.61	56.64	51.30	52.25	3951100	389,225,965	20,337,057
6/28/2010	52.50	52.95	47.46	47.70	5000400	379,647,450	18,109,183
7/6/2010	48.79	52.12	47.00	51.76	6644700	379,647,450	19,650,552
7/12/2010	51.90	53.90	49.61	50.12	8854900	379,647,450	19,027,930
7/19/2010	50.47	52.99	49.00	52.65	4629600	379,647,450	19,988,438
7/26/2010	52.76	54.34	51.58	52.72	3855400	379,647,450	20,015,014
8/2/2010	53.77	54.64	52.62	53.40	2572900	379,647,450	20,273,174
8/9/2010	53.59	54.00	49.71	50.39	3195100	379,647,450	19,130,435
8/16/2010	50.06	51.99	49.10	49.79	2554400	379,647,450	18,902,647
8/23/2010	49.76	50.07	46.51	49.79	4097200	379,647,450	18,902,647
8/30/2010	49.52	54.30	48.68	53.67	3559800	379,647,450	20,375,679
9/7/2010	53.42	55.22	53.11	54.72	3490100	379,647,450	20,774,308
9/13/2010	55.44	55.80	54.32	54.90	2988700	379,647,450	20,842,645
9/20/2010	55.11	56.80	54.21	56.14	2852500	379,647,450	21,313,408
9/27/2010	56.05	56.30	54.53	55.16	2438600	374,184,621	20,640,024
10/4/2010	54.90	57.77	53.95	57.49	2725100	374,184,621	21,511,874
10/11/2010	57.81	60.64	56.86	59.54	5795100	374,184,621	22,278,952
10/18/2010	59.05	61.23	58.50	61.18	3188000	374,184,621	22,892,615
10/25/2010	61.65	62.14	59.58	61.45	3792300	374,184,621	22,993,645
11/1/2010	61.61	64.50	61.18	61.80	11997600	374,184,621	23,124,610
11/8/2010	61.63	62.48	60.09	60.85	4402900	374,184,621	22,769,134
11/15/2010	61.49	62.50	59.96	62.44	3862800	374,184,621	23,364,088
11/22/2010	62.04	62.50	60.02	61.67	2943000	374,184,621	23,075,966
11/29/2010	61.39	64.47	60.60	64.41	3637000	374,184,621	24,101,231
12/6/2010	64.49	64.80	62.93	64.10	2436100	374,184,621	23,985,234
12/13/2010	64.39	64.39	62.91	63.66	2919500	374,184,621	23,820,593
12/20/2010	63.83	64.38	63.13	63.68	1899600	374,184,621	23,828,077
12/27/2010	63.64	64.80	63.51	64.61	1309700	374,184,621	24,176,068

Note: Capitalization calculated using close of week price multiplied by the number of shares outstanding.

Market Value for Common Equity

NSC Stock Data from Yahoo Finance 1-3-2011

<http://finance.yahoo.com/q/hp?s=NSC&a=11&b=20&c=2005&d=00&e=3&f=2011&g=w>

Beg. of Wk.	End of Wk				Volume	Shares Outstanding	Capitalization (\$000)
Date	Open	High	Low	Close			
1/4/2010	52.83	54.76	52.04	54.36	2401600	367,893,915	19,998,713
1/11/2010	54.73	54.73	52.31	52.78	2179800	367,893,915	19,417,441
1/19/2010	52.90	53.15	49.55	49.65	2833700	367,893,915	18,265,933
1/25/2010	50.20	50.67	46.98	47.06	2928600	367,893,915	17,313,088
2/1/2010	47.28	49.54	46.18	47.10	2564900	369,655,129	17,410,757
2/8/2010	47.01	48.92	46.25	48.48	2669400	369,655,129	17,920,881
2/16/2010	48.77	51.30	48.40	51.01	2687400	369,655,129	18,856,108
2/22/2010	51.24	51.74	50.09	51.43	2104100	369,655,129	19,011,363
3/1/2010	52.57	53.15	52.00	52.97	2291100	369,655,129	19,580,632
3/8/2010	53.11	54.79	52.56	54.45	1867800	369,655,129	20,127,722
3/15/2010	54.35	56.17	53.99	55.33	2117500	369,655,129	20,453,018
3/22/2010	55.03	55.82	54.14	54.83	2676700	369,655,129	20,268,191
3/29/2010	55.17	57.00	54.96	56.99	2413900	369,655,129	21,066,646
4/5/2010	57.16	58.62	56.58	57.91	3161100	370,055,972	21,429,941
4/12/2010	57.88	60.77	57.53	59.47	2856800	370,055,972	22,007,229
4/19/2010	59.31	60.90	58.64	60.88	2188100	370,055,972	22,529,008
4/26/2010	60.92	61.27	58.12	59.33	3441600	370,055,972	21,955,421
5/3/2010	59.78	61.59	51.93	55.22	3803900	370,055,972	20,434,491
5/10/2010	58.57	60.92	57.23	58.29	2549800	370,055,972	21,570,563
5/17/2010	58.31	58.88	52.07	54.81	3121800	370,055,972	20,282,768
5/24/2010	54.58	57.05	52.50	56.46	2656800	370,055,972	20,893,360
6/1/2010	55.96	57.41	53.09	53.40	4209200	370,055,972	19,760,989
6/7/2010	53.51	56.91	52.00	56.80	3021200	370,055,972	21,019,179
6/14/2010	57.40	59.10	56.11	59.09	3402600	370,055,972	21,866,607
6/21/2010	59.93	60.84	55.89	56.68	3264900	370,055,972	20,974,772
6/28/2010	57.01	57.29	50.76	50.91	4569200	370,055,972	18,839,550
7/6/2010	51.57	53.92	50.03	53.81	6933100	368,615,496	19,835,200
7/12/2010	53.73	56.12	53.14	53.36	4721200	368,615,496	19,669,323
7/19/2010	53.69	56.65	51.71	56.46	4041800	368,615,496	20,812,031
7/26/2010	56.75	57.87	54.34	56.27	3899000	368,615,496	20,741,994
8/2/2010	57.33	58.00	56.12	57.06	2376800	368,615,496	21,033,200
8/9/2010	57.45	58.00	54.00	54.68	2283500	368,615,496	20,155,895
8/16/2010	54.26	56.32	53.35	54.44	2377500	368,615,496	20,067,428
8/23/2010	54.81	54.81	51.53	54.55	2892900	368,615,496	20,107,975
8/30/2010	54.46	58.62	53.07	57.91	2643600	368,615,496	21,346,523
9/7/2010	57.62	59.03	57.18	58.85	2398300	368,615,496	21,693,022
9/13/2010	59.54	59.64	58.06	58.45	2354400	368,615,496	21,545,576
9/20/2010	58.65	60.00	57.81	59.88	2607700	368,615,496	22,072,696
9/27/2010	59.95	60.80	58.40	59.02	2969800	368,615,496	21,755,687
10/4/2010	58.91	60.67	57.91	60.53	3072400	363,372,120	21,994,914
10/11/2010	60.50	62.71	59.06	61.51	3000700	363,372,120	22,351,019
10/18/2010	61.70	62.26	59.91	62.10	1925800	363,372,120	22,565,409
10/25/2010	62.48	63.18	59.51	61.49	2993500	363,372,120	22,343,752
11/1/2010	61.92	63.64	61.45	62.31	2864300	363,372,120	22,641,717
11/8/2010	62.14	62.70	60.56	60.96	1891400	363,372,120	22,151,164
11/15/2010	61.27	62.30	59.60	61.38	2373100	363,372,120	22,303,781
11/22/2010	61.09	61.31	59.20	60.84	1850400	363,372,120	22,107,560
11/29/2010	60.40	63.00	59.92	62.88	2427300	363,372,120	22,848,839
12/6/2010	62.75	63.67	61.86	62.69	1791700	363,372,120	22,779,798
12/13/2010	63.05	63.06	61.90	62.67	2088700	363,372,120	22,772,531
12/20/2010	62.91	62.96	62.06	62.44	1404400	363,372,120	22,688,955
12/27/2010	62.15	63.13	62.14	62.82	1086600	363,372,120	22,827,037

Note: Capitalization calculated using close of week price multiplied by the number of shares outstanding.

Market Value for Common Equity

UNP Stock Data from Yahoo Finance 1-3-2011

<http://finance.yahoo.com/q/hp?a=11&b=20&c=2005&d=00&e=3&f=2011&g=w&s=UNP>

Beg. of Wk.	End of Wk				Volume	Shares Outstanding	Capitalization (\$000)
Date	Open	High	Low	Close			
1/4/2010	64.58	68.35	64.47	68.04	3072600	504,549,218	34,329,529
1/11/2010	68.50	68.66	65.09	65.57	3495000	504,549,218	33,083,292
1/19/2010	65.72	67.48	61.92	63.85	6475700	504,549,218	32,215,468
1/25/2010	64.58	64.72	60.41	60.50	4266900	504,549,218	30,525,228
2/1/2010	60.83	63.89	60.75	62.10	3439700	505,286,368	31,378,283
2/8/2010	62.18	63.85	60.64	63.41	3540000	505,286,368	32,040,209
2/16/2010	64.00	66.75	63.48	66.57	3556100	505,286,368	33,636,914
2/22/2010	66.60	68.57	65.47	67.37	4789500	505,286,368	34,041,143
3/1/2010	67.74	69.32	66.93	69.13	3591900	505,286,368	34,930,447
3/8/2010	69.31	73.06	69.06	73.00	4941900	505,286,368	36,885,905
3/15/2010	72.80	74.35	72.25	73.24	4243700	505,286,368	37,007,174
3/22/2010	72.83	74.27	72.08	72.66	3302300	505,286,368	36,714,107
3/29/2010	72.99	74.25	72.54	73.65	2736100	505,286,368	37,214,341
4/5/2010	73.77	75.98	72.27	75.75	3668700	505,286,368	38,275,442
4/12/2010	75.81	77.60	74.39	75.95	3716300	505,286,368	38,376,500
4/19/2010	75.75	78.03	74.75	77.10	4106900	506,122,839	39,022,071
4/26/2010	77.04	78.61	75.50	75.66	4280400	506,122,839	38,293,254
5/3/2010	75.90	77.56	67.61	71.07	4420400	506,122,839	35,970,150
5/10/2010	73.20	77.03	73.20	74.18	3754400	506,122,839	37,544,192
5/17/2010	74.56	75.06	65.99	69.75	5412200	506,122,839	35,302,068
5/24/2010	69.42	72.13	67.17	71.43	4898800	506,122,839	36,152,354
6/1/2010	70.56	74.16	69.00	69.33	5771500	506,122,839	35,089,496
6/7/2010	69.94	73.68	67.98	73.55	3965500	506,122,839	37,225,335
6/14/2010	74.30	76.52	72.59	76.37	4019600	506,122,839	38,652,601
6/21/2010	77.26	78.35	71.71	72.72	4552700	506,122,839	36,805,253
6/28/2010	73.10	73.62	67.83	68.37	4453700	506,122,839	34,603,619
7/6/2010	69.96	72.11	66.91	71.71	4745900	506,122,839	36,294,069
7/12/2010	71.27	74.10	68.46	68.81	4296900	506,122,839	34,826,313
7/19/2010	69.19	74.33	66.84	73.90	4979000	497,565,160	36,770,065
7/26/2010	74.56	76.49	72.81	74.67	3716800	497,565,160	37,153,190
8/2/2010	75.81	77.79	74.82	77.04	2636800	497,565,160	38,332,420
8/9/2010	77.59	78.23	72.51	73.45	2568200	497,565,160	36,546,161
8/16/2010	72.23	76.44	72.23	74.26	2723900	497,565,160	36,949,189
8/23/2010	74.54	74.89	70.34	73.69	3814200	497,565,160	36,665,577
8/30/2010	73.60	79.61	71.69	78.80	2677100	497,565,160	39,208,135
9/7/2010	78.16	80.00	78.00	78.73	2694400	497,565,160	39,173,305
9/13/2010	79.64	80.17	78.45	79.96	3077800	497,565,160	39,785,310
9/20/2010	80.19	82.32	78.78	82.10	2823700	497,565,160	40,850,100
9/27/2010	82.23	83.08	80.36	81.03	2798600	497,565,160	40,317,705
10/4/2010	80.86	85.23	79.32	84.86	2467700	497,565,160	42,223,379
10/11/2010	85.23	87.32	82.76	85.21	3419400	497,565,160	42,397,527
10/18/2010	85.58	86.38	81.84	86.31	3488500	493,148,723	42,563,666
10/25/2010	87.09	88.06	84.38	87.68	2893900	493,148,723	43,239,280
11/1/2010	88.66	92.71	88.35	91.22	3497200	493,148,723	44,985,027
11/8/2010	90.91	92.29	89.60	90.29	2680400	493,148,723	44,526,398
11/15/2010	91.34	92.42	89.29	91.82	2864800	493,148,723	45,280,916
11/22/2010	91.60	91.81	88.32	90.10	2784900	493,148,723	44,432,700
11/29/2010	89.50	94.73	88.48	94.55	2808200	493,148,723	46,627,212
12/6/2010	94.50	95.78	91.52	92.64	2886500	493,148,723	45,685,298
12/13/2010	92.75	93.23	90.52	91.18	3262600	493,148,723	44,965,301
12/20/2010	91.25	92.44	90.46	91.71	1583600	493,148,723	45,226,669
12/27/2010	91.46	92.93	91.25	92.66	1040100	493,148,723	45,695,161

Note: Capitalization calculated using close of week price multiplied by the number of shares outstanding.

Market Value for Common Equity

Total Market Value for CSX, NSC, and UNP combined

Based on close price on last trading day of week and shares outstanding from 10-K and 10-Q.

Trading Days For Week		Capitalization
Beginning	End	(\$000)
1. Monday, January 04, 2010	Friday, January 08, 2010	\$74,890,479
2. Monday, January 11, 2010	Friday, January 15, 2010	\$72,144,382
3. Tuesday, January 19, 2010	Friday, January 22, 2010	\$67,801,100
4. Monday, January 25, 2010	Friday, January 29, 2010	\$64,663,391
5. Monday, February 01, 2010	Friday, February 05, 2010	\$65,637,669
6. Monday, February 08, 2010	Friday, February 12, 2010	\$67,473,680
7. Tuesday, February 16, 2010	Friday, February 19, 2010	\$70,734,979
8. Monday, February 22, 2010	Friday, February 26, 2010	\$71,563,588
9. Monday, March 01, 2010	Friday, March 05, 2010	\$73,611,114
10. Monday, March 08, 2010	Friday, March 12, 2010	\$76,897,633
11. Monday, March 15, 2010	Friday, March 19, 2010	\$77,550,917
12. Monday, March 22, 2010	Friday, March 26, 2010	\$76,870,205
13. Monday, March 29, 2010	Thursday, April 01, 2010	\$78,598,582
14. Monday, April 05, 2010	Friday, April 09, 2010	\$80,318,791
15. Monday, April 12, 2010	Friday, April 16, 2010	\$81,573,190
16. Monday, April 19, 2010	Friday, April 23, 2010	\$83,666,898
17. Monday, April 26, 2010	Friday, April 30, 2010	\$82,064,790
18. Monday, May 03, 2010	Friday, May 07, 2010	\$76,905,173
19. Monday, May 10, 2010	Friday, May 14, 2010	\$80,533,860
20. Monday, May 17, 2010	Friday, May 21, 2010	\$75,470,390
21. Monday, May 24, 2010	Friday, May 28, 2010	\$77,382,771
22. Tuesday, June 01, 2010	Friday, June 04, 2010	\$74,319,568
23. Monday, June 07, 2010	Friday, June 11, 2010	\$78,542,648
24. Monday, June 14, 2010	Friday, June 18, 2010	\$81,907,175
25. Monday, June 21, 2010	Friday, June 25, 2010	\$78,117,082
26. Monday, June 28, 2010	Friday, July 02, 2010	\$71,552,351
27. Tuesday, July 06, 2010	Friday, July 09, 2010	\$75,779,821
28. Monday, July 12, 2010	Friday, July 16, 2010	\$73,523,566
29. Monday, July 19, 2010	Friday, July 23, 2010	\$77,570,534
30. Monday, July 26, 2010	Friday, July 30, 2010	\$77,910,198
31. Monday, August 02, 2010	Friday, August 06, 2010	\$79,638,794
32. Monday, August 09, 2010	Friday, August 13, 2010	\$75,832,491
33. Monday, August 16, 2010	Friday, August 20, 2010	\$75,919,263
34. Monday, August 23, 2010	Friday, August 27, 2010	\$75,676,198
35. Monday, August 30, 2010	Friday, September 03, 2010	\$80,930,337
36. Tuesday, September 07, 2010	Friday, September 10, 2010	\$81,640,635
37. Monday, September 13, 2010	Friday, September 17, 2010	\$82,173,531
38. Monday, September 20, 2010	Friday, September 24, 2010	\$84,236,203
39. Monday, September 27, 2010	Friday, October 01, 2010	\$82,713,415
40. Monday, October 04, 2010	Friday, October 08, 2010	\$85,730,168
41. Monday, October 11, 2010	Friday, October 15, 2010	\$87,027,499
42. Monday, October 18, 2010	Friday, October 22, 2010	\$88,021,690
43. Monday, October 25, 2010	Friday, October 29, 2010	\$88,576,677
44. Monday, November 01, 2010	Friday, November 05, 2010	\$90,751,353
45. Monday, November 08, 2010	Friday, November 12, 2010	\$89,446,697
46. Monday, November 15, 2010	Friday, November 19, 2010	\$90,948,784
47. Monday, November 22, 2010	Friday, November 26, 2010	\$89,616,225
48. Monday, November 29, 2010	Friday, December 03, 2010	\$93,577,282
49. Monday, December 06, 2010	Friday, December 10, 2010	\$92,450,330
50. Monday, December 13, 2010	Friday, December 17, 2010	\$91,558,424
51. Monday, December 20, 2010	Thursday, December 23, 2010	\$91,743,701
52. Monday, December 27, 2010	Friday, December 31, 2010	\$92,698,266
Average		\$79,932,394

AAR Regression for 2010 Beta
 STB-Style 5-Year Beta using SP 500 Price Index, Weighted RR Returns, 90-Day T-Bill as RF
 Compounded T-Bill Rate
 14:24 Tuesday, January 4, 2011 56

The GLM Procedure

Dependent Variable: ZRR

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	0.32362005	0.32362005	325.44	<.0001
Error	259	0.25755211	0.00099441		
Corrected Total	260	0.58117216			

R-Square 0.556840
 Coeff Var 833.6395
 Root MSE 0.031534
 ZRR Mean 0.003783

Source	DF	Type I SS	Mean Square	F Value	Pr > F
ZSP5	1	0.32362005	0.32362005	325.44	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
ZSP5	1	0.32362005	0.32362005	325.44	<.0001

The GLM Procedure

Dependent Variable: ZRR

Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	0.003688817	0.00195193	1.89	0.0599
ZSP5	1.161877640	0.06440586	18.04	<.0001

Cost of Common Equity using the Multi-Stage Discounted Cash Flow Model

The cost of equity for each firm (r_i) in the Surface Transportation Board's interpretation of the Morningstar/Ibbotson three-stage DCF model is the solution to the following equation:¹

$$MV_{i0} = \sum_{t=1}^5 \frac{CF_{i0}(1+g_{i1})^t}{(1+r_i)^t} + \sum_{t=6}^{10} \frac{CF_{i5}(1+g_{i2})}{(1+r_i)^t} + \frac{IBEI_{i10}(1+g_{i3})}{(1+r_i)^{10} (r_i - g_{i3})},$$

where

MV_{i0} = market value of equity for firm i in year 0 (i.e., the year for which the cost of equity is being estimated);

CF_{it} = average cash flow for firm i at the end of year t ;

g_{ij} = earnings growth rate for firm i in stage j ($j = 1, 2, \text{ or } 3$);

r_i = the cost of equity for firm i ; and

$IBEI_{i10} = IBEI_0(1+g_1)^5(1+g_2)^5$.

Note that $IBEI_0$ is determined by the same process as CF_0 (See Table 15 in text).

¹ *Cost of Capital Yearbook*, 2008, Morningstar, Inc., p. 24.

Cash Flow Calculation

CSX, Corp.	1	2	3	4	5	Total
	2006	2007	2008	2009	2010	
(\$ in millions)						
Revenue	9,566	10,030	11,255	9,041	10,636	50,528
Net Income	1,310	1,336	1,355	1,143	1,563	6,707
Extraordinary Items	0	100	-130	15	0	-15
Depreciation	867	890	914	903	947	4,521
Deferred Taxes	42	272	428	430	474	1,646
Capital Expenditures	1,639	1,773	1,719	1,427	1,825	8,383
Cash Flow	580	625	1,108	1,034	1,159	4,506
Cash Flow / Revenue	0.06063	0.06231	0.09845	0.11437	0.10897	0.08918
NIBEI / Revenue	0.13694	0.12323	0.13194	0.12476	0.14695	0.13304
Ibbotson Smoothed Cash Flow = \$10,636 x 0.08918 =						\$948.50
Ibbotson Smoothed Net Income BEI = \$10,636 x 0.13304 =						\$1,414.96

Cash Flow Calculation

Norfolk Southern	1	2	3	4	5	Total
	2006	2007	2008	2009	2010	
(\$ in millions)						
Revenue	9,407	9,432	10,661	7,969	9,516	46,985
Net Income	1,481	1,464	1,716	1,034	1,496	7,191
Extraordinary Items	0	0	0	0	0	0
Depreciation	750	786	815	845	826	4,022
Deferred Taxes	-8	125	290	338	312	1,057
Capital Expenditures	1,178	1,341	1,558	1,299	1,470	6,846
Cash Flow	1,045	1,034	1,263	918	1,164	5,424
Cash Flow / Revenue	0.11109	0.10963	0.11847	0.11520	0.12232	0.11544
NIBEI / Revenue	0.15744	0.15522	0.16096	0.12975	0.15721	0.15305
Ibbotson Smoothed Cash Flow = \$9,516 x 0.11544 =						\$1,098.54
Ibbotson Smoothed Net Income BEI = \$9,516 x 0.15305 =						\$1,456.41

Cash Flow Calculation

Union Pacific Corp.	1	2	3	4	5	Total
	2006	2007	2008	2009	2010	
(\$ in millions)						
Revenue	15,578	16,283	17,970	14,143	16,965	80,939
Net Income	1,606	1,855	2,335	1,890	2,780	10,466
Extraordinary Items	0	0	0	0	0	0
Depreciation	1,237	1,321	1,366	1,427	1,487	6,838
Deferred Taxes	235	332	545	718	672	2,502
Capital Expenditures	2,242	2,496	2,754	2,354	2,482	12,328
Cash Flow	836	1,012	1,492	1,681	2,457	7,478
Cash Flow / Revenue	0.05367	0.06215	0.08303	0.11886	0.14483	0.09239
NIBEI / Revenue	0.10309	0.11392	0.12994	0.13364	0.16387	0.12931
Ibbotson Smoothed Cash Flow = \$16,965 x 0.09239 =						\$1,567.41
Ibbotson Smoothed Net Income BEI = \$16,965 x 0.12931 =						\$2,193.70

2010 Median Growth Rates for MSDCF

Company	Analyst Growth Rates from IBES December 31						Median
	Rate 1	Rate 2	Rate 3	Rate 4	Rate 5	Rate 6	
CSX	7.9	15.0	2.5	10.0	17.3	13.0	11.50
NSC	0.7	15.0	2.5	12.0	15.2	12.0	12.00
UNP	29.1	10.0	2.5	15.0	18.5	15.0	15.00

Simple Average of Medians = 12.83 percent.

2010 Median Growth Rates for MSDCF NSC

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NORFOLK SOUTHERN CORP - NSC (Share Basis: Diluted/Currency: USD) / UNITED STATES OF AMERICA

Detail Estimates - Period Summary

Measure: Period:

NORFOLK SOUTHERN CORPORATION (USD - All units in millions except for per share data)

EPS

Important Notices

NA

Estimate Summary

Real Time:	ESTs	Mean	Hi	Low
6	12.70	19.50	2.50	2.50
5	11.34	15.20	2.50	2.50
6	12.70	19.50	2.50	2.50

* Only selected brokers below are included in the filtered mean

Guidance

Current	Previous	Issuance Date	Guidance	Est. At: Annc
0.70	0.60	03/2010Q	06/2010Q	09/2010Q
15.00	NA	06/2010Q	09/2010Q	12/2009A
2.50	NA	07/2010Q	09/2010Q	12/2009A
12.00	NA	08/2010Q	09/2010Q	12/2009A
15.20	15.30	09/2010Q	09/2010Q	12/2009A
12.00	12.00	11/28	4.85	8.65
				-1.11

Surprise Summary

Reported	Surprise Mean	Surprise (%)
0.82	0.75	1.04
0.84	0.67	0.99
-2.66	11.28	4.85
		8.65
		-1.11

Estimate Detail

Broker*	Current	Date	Estor	Date	Resistor
<input type="checkbox"/> BERT CAPITAL MARKETS	0.70	Sep 24, 10	0.60	Jul 28, 10	Sep 24, 10
<input checked="" type="checkbox"/> BOFAMERRILL LYNCH	15.00	Sep 13, 02	NA	NA	Dec 07, 10
<input checked="" type="checkbox"/> MACQUARIE RESEARCH	2.50	Jul 01, 10	NA	NA	Oct 29, 10
<input checked="" type="checkbox"/> MORGAN KEEGAN & COMPANY, INC.	12.00	May 18, 07	NA	NA	Oct 29, 10
<input checked="" type="checkbox"/> MORNINGSTAR, INC.	15.20	Oct 29, 10	15.30	Sep 24, 10	Oct 29, 10
<input checked="" type="checkbox"/> WELLS FARGO SECURITIES, LLC	12.00	Dec 17, 09	NA	NA	Oct 29, 10
<input type="checkbox"/> BMO CAPITAL MARKETS-CANADA					

PERMISSION DENIED

Permission Denied (Contributors in gray are excluded from the Mean calculation)

2010 Median Growth Rates for MSDCF UNP

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Portfolio:

Security > Estimates > Detail - Single Period

UNION PACIFIC CORP - UNP (Share Basis: Diluted/Currency: USD) / UNITED STATES OF AMERICA

Detail Estimates - Period Summary

Measure: Period:

UNION PACIFIC CORPORATION (USD - All units in millions except for per share data)

EPS

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Important Notices

NA

Estimate Summary

Real Time:	Ests:	Mean	Hi	Low
	7	15.49	29.10	2.50
Filtered/Preliminary Mean**:	6	15.02	29.10	2.50
30 Day Avg Mean:	7	15.66	29.10	2.50

** Only selected brokers below are included in the filtered mean

Guidance

Current	Previous	Issuance Date	Guidance	Est/A1 Annc
		NA	NA	NA
		NA	NA	NA

Surprise Summary

Reported	Surprise Mean	Surprise (%)	Est/A1 Annc
1.08	1.01	1.40	09/2010Q
1.04	0.94	1.21	12/2009A
4.10	6.90	15.90	06/2010Q
		3.81	12/2009A
		1.56	09/2010Q
		1.50	12/2009A
		3.56	09/2010Q
		1.11	12/2009A

Create filtered mean from the last days [View Analyst Coverage](#)

Estimate Detail

** Filter	Broker*	Analyst	Current	Date	Estor	Review
<input checked="" type="checkbox"/>	BEST CAPITAL MARKETS	MIPS, J	29.10	Nov 09, 10	26.00	Nov 09, 10
<input checked="" type="checkbox"/>	EDFAMERRILL WYCH	HOEXTER, K	10.00	Sep 13, 02	15.00	Oct 15, 01
<input checked="" type="checkbox"/>	MICHAEL BAKER CORP	FLOWERS, S	2.50	Oct 22, 10	2.00	Jul 05, 10
<input checked="" type="checkbox"/>	MORGAN MEEGAN & COMPANY, INC.	HATFIELD, A	15.00	May 18, 07	NA	Dec 22, 10
<input checked="" type="checkbox"/>	MORNINGSTAR, INC.	SCHROEDER, K	18.50	Dec 09, 10	19.70	Dec 09, 10
<input checked="" type="checkbox"/>	WELLS FARGO SECURITIES, LLC	GALLO, A	15.00	Dec 17, 09	NA	Nov 06, 10
<input type="checkbox"/>	BMO CAPITAL MARKETS-CANADA					

* Permission Denied (Contributors in row are excluded from the Mean calculation)

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Mon, Jan 10, 2011, 2:42pm EST - US Markets close in 1 hr and 17 mins

CSX Corp. (CSX)

At 2:27PM EST: **68.00** ↑ 0.21 (0.32%)



CSX



Historical Prices

Get Historical Prices for: GO

Set Date Range

Start Date: Dec 2 2010 Eg. Jan 1, 2010
End Date: Jan 1 2011

- Daily
- Weekly
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Prices

Date	Open	High	Low	Close	Volume	Adj Close*
Dec 31, 2010	64.29	64.80	64.10	64.61	1,268,300	64.61
Dec 30, 2010	64.45	64.74	64.16	64.46	1,331,800	64.46
Dec 29, 2010	64.37	64.53	64.24	64.36	1,708,800	64.36
Dec 28, 2010	64.32	64.38	63.95	64.32	1,010,000	64.32
Dec 27, 2010	63.64	64.37	63.51	64.21	1,229,700	64.21
Dec 23, 2010	63.87	64.23	63.47	63.68	1,413,100	63.68
Dec 22, 2010	63.94	64.38	63.75	63.98	1,469,400	63.98
Dec 21, 2010	63.55	64.25	63.36	63.99	2,008,500	63.99
Dec 20, 2010	63.83	64.03	63.13	63.28	2,707,600	63.28
Dec 17, 2010	64.00	64.06	63.01	63.66	4,009,400	63.66
Dec 16, 2010	63.28	63.99	62.91	63.95	2,640,500	63.95
Dec 15, 2010	63.49	64.25	63.03	63.08	2,535,000	63.08
Dec 14, 2010	64.13	64.21	63.27	63.62	2,882,300	63.62
Dec 13, 2010	64.39	64.39	63.60	63.78	2,530,500	63.78
Dec 10, 2010	63.48	64.18	63.44	64.10	2,191,600	64.10
Dec 9, 2010	63.74	64.15	63.46	63.91	1,611,000	63.91
Dec 8, 2010	64.15	64.22	62.93	63.11	3,262,500	63.11
Dec 7, 2010	64.55	64.80	63.92	64.11	2,907,600	64.11
Dec 6, 2010	64.49	64.49	63.95	64.00	2,207,800	64.00
Dec 3, 2010	63.56	64.47	63.56	64.41	2,447,100	64.41
Dec 2, 2010	62.94	64.34	62.94	64.03	3,587,400	64.03

* Close price adjusted for dividends and splits.

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Dow ↓ 0.37% Nasdaq ↑ 0.04%

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GET QUOTES Finance Search Mon, Jan 10, 2011, 2:43pm EST - US Markets close in 1 hr and 16 mins

Norfolk Southern Corp. (NSC) At 2:27PM EST: **65.77** ↑ 0.73 (1.12%)

NSC

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Prices	Date	Open	High	Low	Close	Volume	Adj Close*
Dec 31, 2010	62.62	63.01	62.60	62.82	1,132,300	62.82	
Dec 30, 2010	62.77	63.03	62.51	62.74	1,178,200	62.74	
Dec 29, 2010	62.81	63.13	62.72	62.74	1,156,700	62.74	
Dec 28, 2010	62.88	62.95	62.38	62.71	1,024,100	62.71	
Dec 27, 2010	62.15	62.91	62.14	62.78	942,100	62.78	
Dec 23, 2010	62.86	62.96	62.23	62.44	1,337,300	62.44	
Dec 22, 2010	62.77	62.96	62.29	62.67	1,208,400	62.67	
Dec 21, 2010	62.42	62.82	62.35	62.65	1,497,000	62.65	
Dec 20, 2010	62.91	62.93	62.06	62.29	1,575,200	62.29	
Dec 17, 2010	62.85	62.93	62.16	62.67	2,652,700	62.67	
Dec 16, 2010	62.58	63.05	61.90	62.99	1,512,900	62.99	
Dec 15, 2010	62.12	62.97	62.12	62.52	2,040,900	62.52	
Dec 14, 2010	62.51	63.03	62.12	62.36	2,231,700	62.36	
Dec 13, 2010	63.05	63.06	62.23	62.24	2,005,500	62.24	
Dec 10, 2010	62.81	62.87	62.38	62.69	1,434,100	62.69	
Dec 9, 2010	62.43	62.99	62.22	62.49	1,436,900	62.49	
Dec 8, 2010	62.91	63.03	61.86	62.06	2,400,400	62.06	
Dec 7, 2010	63.40	63.67	62.69	62.83	2,469,200	62.83	
Dec 6, 2010	62.75	62.97	62.30	62.71	1,218,000	62.71	
Dec 3, 2010	62.34	63.00	62.30	62.88	1,398,100	62.88	
Dec 2, 2010	61.54	62.89	61.54	62.49	2,843,200	62.49	

* Close price adjusted for dividends and splits.

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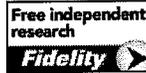
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GET QUOTES Finance Search Mon, Jan 10, 2011, 2:40pm EST - US Markets close in 1 hr and 19 mins

Union Pacific Corporation (UNP) At 2:25PM EST: **97.90** \uparrow 2.72 (2.86%)



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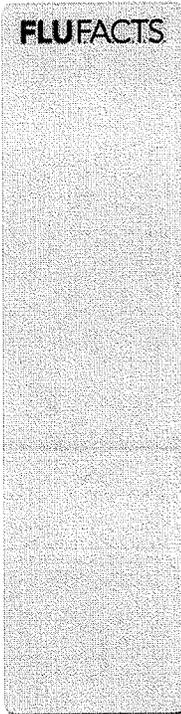
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Start Date: Dec 2 2010 Eg. Jan 1, 2010 Daily

End Date: Jan 1 2011 Weekly

Monthly

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Prices						
Date	Open	High	Low	Close	Volume	Adj Close*
Dec 31, 2010	92.00	92.93	91.94	92.66	1,269,400	92.66
Dec 30, 2010	92.25	92.39	91.73	92.06	875,500	92.06
Dec 29, 2010	92.16	92.53	91.64	92.15	1,125,700	92.15
Dec 28, 2010	91.98	92.22	91.25	91.91	1,041,900	91.91
Dec 27, 2010	91.46	92.34	91.28	92.01	888,100	92.01
Dec 23, 2010	92.05	92.24	91.32	91.71	966,500	91.71
Dec 22, 2010	92.06	92.27	91.47	92.09	1,277,200	92.09
Dec 21, 2010	91.18	92.44	91.04	92.06	1,943,200	92.06
Dec 20, 2010	91.25	91.58	90.46	90.90	2,147,500	90.90
Dec 17, 2010	91.96	92.32	90.71	91.18	4,862,700	91.18
Dec 16, 2010	91.52	92.52	90.52	92.29	3,408,400	92.29
Dec 15, 2010	91.30	92.92	91.23	91.44	2,854,000	91.44
Dec 14, 2010	92.54	93.09	90.93	91.57	2,744,700	91.57
Dec 13, 2010	92.75	93.23	91.93	92.18	2,443,400	92.18
Dec 10, 2010	93.37	93.44	91.52	92.64	2,643,400	92.64
Dec 9, 2010	93.43	93.60	92.33	92.80	2,409,300	92.80
Dec 8, 2010	94.45	94.47	92.27	92.47	3,068,500	92.47
Dec 7, 2010	95.14	95.78	94.04	94.13	4,070,800	94.13
Dec 6, 2010	94.50	94.74	94.00	94.42	2,240,900	94.42
Dec 3, 2010	93.09	94.73	93.09	94.55	2,186,500	94.55
Dec 2, 2010	91.54	94.08	91.54	93.66	2,559,200	93.66

* Close price adjusted for dividends and splits.

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-Q

(X) QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 24, 2010

OR

() TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number 1-8022

CSX CORPORATION

(Exact name of registrant as specified in its charter)

Virginia

62-1051971

(State or other jurisdiction of incorporation or organization)

(I.R.S. Employer Identification No.)

500 Water Street, 15th Floor, Jacksonville, FL

32202

(904) 359-3200

(Address of principal executive offices)

(Zip Code)

(Telephone number, including area code)

No Change

(Former name, former address and former fiscal year, if changed since last report.)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes (X) No ()

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes (X) No ()

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (check one)

Large Accelerated Filer (X)

Accelerated Filer ()

Non-accelerated Filer ()

Smaller Reporting Company ()

Indicate by a check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes () No (X)

There were 374,184,621 shares of common stock outstanding on September 24, 2010 (the latest practicable date that is closest to the filing date).

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549**

FORM 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended **SEPTEMBER 30, 2010**

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____

Commission file number 1-8339



NORFOLK SOUTHERN CORPORATION
(Exact name of registrant as specified in its charter)

Virginia
(State or other jurisdiction of incorporation)

52-1188014
(IRS Employer Identification No.)

Three Commercial Place
Norfolk, Virginia
(Address of principal executive offices)

23510-2191
(Zip Code)

(757) 629-2680
(Registrant's telephone number, including area code)

No Change
(Former name, former address and former fiscal year, if changed since last report.)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.
Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).
Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.
Large accelerated filer Accelerated filer
Non-accelerated filer (Do not check if smaller reporting company) Smaller reporting company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Class
Common Stock (\$1.00 par value per share)

Outstanding at September 30, 2010
363,372,120 (excluding 20,361,354 shares held by the registrant's consolidated subsidiaries)

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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 10-Q

(Mark One)

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 2010

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission File Number 1-6075

UNION PACIFIC CORPORATION

(Exact name of registrant as specified in its charter)

UTAH
(State or other jurisdiction of
incorporation or organization)

13-2626465
(I.R.S. Employer
Identification No.)

1400 DOUGLAS STREET, OMAHA, NEBRASKA
(Address of principal executive offices)

68179
(Zip Code)

(402) 544-5000
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act).

Yes No

As of October 15, 2010, there were 493,148,723 shares of the Registrant's Common Stock outstanding.

2010 Cost of Equity Using STB's MSDCF

Company Year	CSX 2010		NSC 2010		UNP 2010		
<i>Inputs</i>							
Initial Cash Flow	\$948.50		\$1,098.54		\$1,567.41		
Input for Terminal C.F.	\$1,414.96		\$1,456.41		\$2,193.70		
Stage One Growth	11.50%		12.00%		15.00%		
Stage Two Growth	12.83%		12.83%		12.83%		
Stage Three Growth	5.80%		5.80%		5.80%		
	Year	Val. 12/31	Pres Val.	Val. 12/31	Pres Val.	Val. 12/31	Pres Val.
	1	\$1,058	\$928	\$1,230	\$1,069	\$1,803	\$1,584
	2	1,179	908	1,378	1,041	2,073	1,602
	3	1,315	888	1,543	1,014	2,384	1,619
	4	1,466	869	1,729	987	2,741	1,637
	5	1,635	850	1,936	961	3,153	1,654
	6	1,844	841	2,184	942	3,557	1,641
	7	2,081	833	2,465	924	4,014	1,628
	8	2,348	825	2,781	906	4,529	1,614
	9	2,649	816	3,138	889	5,110	1,601
	10	2,990	808	3,541	872	5,766	1,588
	Terminal	57,731	15,609	53,711	13,223	107,212	29,527
Sum of Pres. Values			\$24,176.07		\$22,827.04		\$45,695.16
Market Value (input)			\$24,176.07		\$22,827.04		\$45,695.16
Cost of Equity		13.97%		15.05%		13.76%	
Prev. Yr. Cost of Equity		13.64%		14.84%		13.02%	