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April 20, 2016

Ms. Cynthia T. Brown
Chief, Section of Administration
Office of Proceedings
Surface Transportation Board
395 E Street, S.W.
Washington, DC 20423

Re: STB Docket No. EP 558 (Sub-No. 19), *Railroad Cost of Capital—2015*

Dear Ms. Brown:

Pursuant to the corrected decision served by the Board on March 10, 2016 in the above captioned proceeding, please find the attached Comments of the Association of American Railroads (AAR).

A copy of the same on a compact disc, in MS Word and PDF format, will be hand-delivered for the Board's convenience. The disc will also include AAR's underlying workpapers and spreadsheets, which will be made available upon request to other participants in the proceeding.

Respectfully submitted,

Timothy J. Strafford
Counsel for the Association of
American Railroads

BEFORE THE
SURFACE TRANSPORTATION BOARD

RAILROAD COST OF CAPITAL — 2015	)	EX PARTE NO. 558 (Sub- No. 19)

COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS AND ITS MEMBER RAILROADS

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April 20, 2016

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Verified Statements

Witness*	Subject
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 _____

BEFORE THE
SURFACE TRANSPORTATION BOARD

RAILROAD COST OF CAPITAL — 2015	)	STB Docket No. EP 558 (Sub-No. 19)

COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS AND ITS MEMBER RAILROADS

By order served on March 2, 2016, and corrected on March 10, 2016, the Surface Transportation Board (Board) instituted this proceeding to determine the railroad industry's cost of capital for the year 2015. The Board noted that this determination will enable it to make the statutorily required annual individual railroad revenue adequacy determination for 2015. 49 U.S.C. § 10701(d)(2), § 10704(a)(2). The Board noted further that the cost of capital determination may also be used in various other STB railroad proceedings. *See Railroad Cost of Capital – 2015*, EP 558 (Sub-No. 19) (STB served March 10, 2016).

The railroads, through the Association of American Railroads (AAR), are submitting their calculation of: (1) the railroads' 2015 cost of common equity capital; (2) the railroads' 2015 current cost of preferred equity capital; (3) the railroads' current 2015 cost of debt capital; and (4) the 2015 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 AAR. Mr. Gray's statement establishes the following:

1. The 2015 cost of common equity capital is 10.96 percent.

3. The 2015 cost of preferred equity capital is 3.68 percent.

3. The 2015 cost of debt capital is 3.55 percent.

4. The capital structure of the railroad industry is 18.16 percent debt, 0.00 percent preferred equity,[1] and 81.84 percent common equity.

From these data Mr. Gray concludes that the overall railroad industry cost of capital for 2015 is 9.61 percent.[2]

I. Introduction

The sole purpose of this proceeding is to determine the railroad industry's cost of capital for 2015. The cost of capital will be computed using the current cost of debt and equity and market value weights. *See 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). The Board 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's predecessor, the Interstate Commerce Commission, in Ex Parte No. 458, *Railroad Cost of Capital — 1984*, 1 I.C.C. 2d 989, 1003–1004 (1985). Those criteria are: (1) the company is a Class I line-haul railroad; (2) 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; (3) the company's bonds are rated at least BBB by Standard & Poor's and Baa by Moody's; (4) the

[1] The weight for preferred equity is small enough that it rounds to 0.00.

[2] Gray V.S. at 2, 51.

company's stock is listed on either the New York or the American Stock Exchange[3]; and (5) the company has paid dividends throughout the year (2015).

This year there are four railroad corporations or holding companies in the sample meeting the Board's criteria: CSX Corporation, Kansas City Southern, Norfolk Southern Corporation, and Union Pacific Corporation. These railroad companies are the same four companies included in the 2014 sample.

II. The Cost of Common Equity Capital

In its March 2, 2016, order instituting this proceeding, the Board directed that the cost of capital components be calculated "using the methodology followed in Railroad Cost of Capital – 2014." *See Railroad Cost of Capital – 2015,* EP 558 (Sub-No. 19), slip op. at 3 (STB served March 2, 2016). In *Railroad Cost of Capital –2014*, 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 *Methodology to be Employed in Determining the Railroad Industry's Cost of Capital*, EP 664 (STB served Jan. 17, 2008) and the Morningstar/Ibbotson Multi-Stage Discounted Cash Flow Model (MSDCF) adopted in *Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital,* EP 664 (Sub-No. 1) (STB served Jan. 28, 2009).[4] See *Railroad Cost of Capital – 2014,*

[3] The Board noted that "[f]or purposes of the 2015 cost-of-capital determination, the Board will waive its requirement that a company's stock must be listed on either the NYSE or the AMEX. . . . ." *See Railroad Cost of Capital,* EP 558 (Sub-No. 19), slip op. at 2 (STB served March 2, 2016).

[4] The Morningstar/Ibbotson MSDCF model adopted by the Board 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 Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital*, EP 664 (Sub-No. 1), slip op. at 4 (STB served Jan. 28, 2009).

EP 558 (Sub-No. 18), slip op. at 9-14 (STB served August 7, 2015).[5] 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 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 x 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 was retrieved directly from the Federal Reserve Board website as approved by the Board in earlier proceedings, including the 2014 cost of capital proceeding. *Railroad Cost of Capital – 2014*, EP 558 (Sub-No. 18), slip op. at 9. Since the 2006 cost of capital determination, the well-regarded and widely-accepted Ibbotson Equity Risk Premium has been used for the market risk premium, as found in the *Ibbotson SBBI*

[5] 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 yields a more precise determination than relying on CAPM alone. As noted by the Board, "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." *Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital*, EP 664 (Sub-No. 1), slip op. at 15 (STB served Jan. 28, 2009).

Valuation Yearbook published by Morningstar.[6] Though that publication was discontinued after the 2013 edition, much of the same data could be found in the *Ibbotson SBBI Classic Yearbook.* Beginning in 2016, Morningstar stopped publishing its *Ibbotson SBBI Classic Yearbook*. The AAR utilized the Duff & Phelps *2016 Valuation Handbook – Guide to Cost of Capital* as a source for the Ibbotson Equity Risk Premium (a.k.a. market risk premium), and this figure is calculated using the same sources and methodology as Ibbotson.[7] Gray V.S. at 29. The calculation for beta was made using the S&P 500 Price Index and the same methodology approved by the Board in the 2014 cost of capital proceeding. Gray V.S. at 30-34.

The values determined by Mr. Gray for the elements of the CAPM methodology were 2.55 percent for the risk-free rate, 6.90 percent for the market risk premium, and 1.2167 for beta.

Based on a four-railroad composite (determined using the Board's procedures established in *Railroad Cost of Capital – 1984*, 1 I.C.C.2d 989 (1985) and modified by the Board in the decision served in this proceeding on March 2, 2015) 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 2015 is 10.95 percent. Gray V.S. at 35.

B. The Morningstar/Ibbotson MSDCF Methodology

The Morningstar/ Ibbotson MSDCF methodology, as adopted by the Board, 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;

[6] Ibbotson Associates is a wholly-owned subsidiary of Morningstar, Inc. "SBBI" stands for "Stocks, Bonds, Bills, and Inflation.

[7] Duff and Phelps notes that this premium is "Calculated as the average annual return of the S&P 500 total return index minus the average annual return of the SBBI long-term (20-year) government bond income return series over the 1926-2015 time period. The long-horizon historical equity risk premium was previously published on the "back page" of the Morningstar/Ibbotson *SBBI Valuation Yearbook* (discontinued)."

> 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 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 simple average of all growth rates in stage 1. In stage three (years 11 and onwards), the growth rate is the average long-run nominal growth rate of the U.S. economy. This long-run nominal growth rate is estimated by using the historical growth in real GDP and the long-run expected inflation rate.

Use of a Multi-Stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital, EP 664 (Sub-No. 1), slip. op. at 5-6 (STB served Jan. 28, 2009).

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 *Railroad Cost of Capital – 2008*, EP 558 (Sub-No. 12), slip op. at 9-10 (served Sep. 25, 2009), Mr. Gray's calculations used only IBES growth estimates available as of December 31, 2015, and stock market values were

based on shares outstanding and stock prices as of the last trading day of the last full week for 2015 – December 31, 2015 (Thursday). Gray V.S. at 40.[8]

Mr. Gray calculates the cost of common equity capital for 2015, using the STB's version of the Morningstar/Ibbotson MSDCF model, as 10.97 percent. Gray V.S. at 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 10.96 percent. Gray V.S. at 46.

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 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.

[8] Consistent with the methodology approved by the Board in *Railroad Cost of Capital – 2014*, EP 558 (Sub-No. 18), slip op. at 12-14, Mr. Gray's calculations used data inputs in the cash flow formula as retrieved from the railroads' 2011 - 2015 10-K filings with the SEC (and used restated data where set forth in any subsequently filed 10-K filings with the SEC). *See* Gray V.S. at 39.

(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.

For the first time since 2002, one railroad in the composite had preferred stock outstanding at the end of 2013. This continues for 2014 and 2015, and the estimated cost of preferred equity is 3.68 percent for 2015. Gray V.S. at 50.

IV. The Cost of Debt

The cost of debt can include costs for three categories (bonds, equipment trust certificates, conditional sales agreements) of debt instruments, plus flotation costs.[9] To determine the cost of debt for bonds, Mr. Gray has computed the average current bond yield for 99 bonds from the sample railroads for which data were available during 2015. This methodology is identical to that used in the last 25 cost of capital proceedings. *Railroad Cost of Capital – 2014*, EP 558 (Sub-No. 18), slip op. at 5. Under this approach, the bond yield is based on a sample representing 98 percent of the book value of the bonds issued by the railroads in the sample.[10] 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.[11] This is the same methodology used by the Board in the last 27 proceedings. The composite current cost of debt is the market-weighted average cost of bonds, ETCs, and CSAs (if there were any),

[9] The term "bonds" is used to describe bonds, notes, debentures, and other similar types of debt.

[10] Bond data were retrieved from a Bloomberg database. Gray V.S. at 8.

[11] Gray V.S. at 11, 16. No CSAs were modeled because none are outstanding.

plus a small flotation cost.[12] Using the Board's established methodology, the railroads' 2015 cost of new debt is 3.55 percent. Gray V.S. at 23.

V. The 2015 Capital Structure of the Railroad Industry and the Overall Cost of Capital

Pursuant to the Board's March 2, 2016 decision, the market values of debt, preferred equity, and common equity were compiled to compute the 2015 capital structure of the railroad industry. The railroads' market value capital structure on a market value basis is 18.16 percent debt, 81.84 percent common equity capital, and 0.00 percent preferred equity capital. Gray V.S. at 51. Based upon this capital structure, the overall 2015 cost of capital is 9.61 percent. Gray V.S. at 52.

Conclusion

The Board should determine that the railroads' cost of capital for 2015 is 9.61 percent.

Respectfully submitted,

Kathryn D. Kirmayer
Timothy J. Strafford
Association of American Railroads
425 Third Street, S.W., Suite 1000
Washington, DC 20024

April 20, 2016

[12] In this proceeding, the AAR calculated bond flotation costs by using data reported by the sample railroads to the Securities and Exchange Commission (SEC) regarding new debt offerings in 2015. This is the same methodology approved by the Board in *Railroad Cost of Capital –2014,* EP 558 (Sub-No. 18), slip op. at 7. Gray V.S. at 18-22.

CERTIFICATE OF SERVICE

I hereby certify that on this 20th day of April, 2016, I served by first class mail, postage prepaid, a copy of the forgoing on the following:

Robert D. Rosenberg
Slover & Loftus
1224 Seventeenth St, NW
Washington, DC 20036-3003

Shudtz, Peter J.
CSX Corporation
1331 Pennsylvania Avenue, NW, Suite 560
Washington, DC 20004

Kathleen M. Birch

BEFORE THE

SURFACE TRANSPORTATION BOARD

EX PARTE NO. 558 (Sub-No. 19)

RAILROAD COST OF CAPITAL — 2015

VERIFIED STATEMENT

OF

JOHN T. GRAY

SENIOR VICE PRESIDENT — POLICY AND ECONOMICS

ASSOCIATION OF AMERICAN RAILROADS

April 20, 2016

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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 plus about 150 additional Class II and III freight railroads, account for approximately 97 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 March 1, 2016 (served March 2 and corrected March 10), instituting a proceeding to determine the railroad

industry's 2015 cost of capital — Ex Parte No. 558 (Sub-No. 19), *Railroad Cost of Capital — 2015* ("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. 18); 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. 18). In addition, I calculate a cost of preferred equity using the dividend yield method, as used in Ex Parte No. 558 (Sub-No. 18). 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 2015 cost of capital for the railroad industry is 9.61 percent. This estimate is based on a current cost of debt of 3.55 percent, a cost of common equity capital of 10.96 percent; a cost of preferred equity of 3.68 percent; and market value weights for debt, common equity, and preferred equity of 18.16 percent, 81.84 percent, and 0.00 percent, respectively.

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 anticipated to be highest, giving consideration to the relative (or commensurate) risk, uncertainty and timing 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's predecessor, the Interstate Commerce Commission, 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. 19 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 has paid dividends throughout the year (2015).

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
2015

Class I Railroad	Parent	Stock Symbol	Dividends Throughout 2015	Rail Assets Account For At Least 50% of Parent	Adequate Debt Rating
BNSF	Berkshire Hathaway	BRK.A	No	No	Yes
CSX	CSX Corporation	CSX	Yes	Yes	Yes
CNGT*	Canadian National Railway Co.	CNI	---	Non-U.S. company ---	
KCS	Kansas City Southern	KSU	Yes	Yes	Yes
NS	Norfolk Southern Corporation	NSC	Yes	Yes	Yes
CPSL*	Canadian Pacific Railway Ltd.	CP	---	Non-U.S. company ---	
UP	Union Pacific Corporation	UNP	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). CPSL 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.

Note: the NYSE/AMEX requirement was waived by the Board in its decision served March 2, 2016.

This year there are four railroad corporations or holding companies in the sample meeting the Board's criteria: CSX Corporation, Kansas City Southern, Norfolk Southern Corporation, and Union Pacific Corporation. These are the same railroad companies included in the 2014 sample. Consistent with past proceedings, the two Canadian-owned railroads have been excluded from the sample.[1] Berkshire Hathaway, owner of BNSF Railway Company, did not pay dividends throughout 2015, and the railroad is less than 50% of the company's assets.[2] Based on data from Annual Report Form R-1 for 2015, the four-firm composite accounts for 63 percent of the operating revenues and 61 percent of the assets of all Class I railroads.

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 of the particular debt or equity instrument), and the overall cost of capital is calculated as the market value weighted average of the costs of common equity, preferred equity, and debt. Different approaches are used to estimate the costs of each of the types of capital. In this statement, 97 percent of the cost of debt is calculated using bonds and similar instruments (including notes and debentures). The

[1] 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 2014 as reported in the AAR's *Railroad Facts* book, 2015 edition: CNGT was 32 percent of CN, and SOO was 29 percent of Canadian Pacific.

[2] The rail operations of BNSF Railway Company are the principal operating subsidiary of Burlington Northern Santa Fe, LLC – which is a subsidiary of Berkshire Hathaway, Inc. In 2015, BNSF's assets were almost 15 percent of Berkshire Hathaway. Among the many other subsidiaries of Berkshire Hathaway are GEICO, Fruit of the Loom, Helzberg Diamonds and Dairy Queen. The company also owns numerous automobile dealerships, real estate companies, and newspapers.

remaining 3 percent – in the form of Equipment Trust Certificates – is calculated with a long-used model that permits comparison of market-determined yields for government debt, and the historical relationship between government debt and the type of railroad debt modeled.[3] No Conditional Sales Agreements were used to calculate the 2015 cost of debt because they have all been retired. 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 backward looking Capital Asset Pricing Model (CAPM) following the methodology prescribed by the Board in the 2014 Cost of Capital decision. The other method is calculated using the forward looking Multi-Stage Discounted Cash Flow model methodology prescribed by the Board in the 2014 Cost of Capital Decision. The cost of preferred equity capital has been calculated using a simple dividend yield method, as used in the 2014 Cost of Capital Decision. Calculations for all three types of capital are based on data through 2015. The industry's overall cost of capital is computed as a weighted average of the three costs — debt, common equity, and preferred equity — based upon the market value for each type of capital.

III. Debt Capital in 2015

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.[4]

[3] There are currently four Equipment Trust Certificates modeled.

[4] 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. 18).

(1) There is a lack of sufficient new issues from which to develop a representative, and statistically reliable, 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 total amount paid by investors is seldom received by the railroad. Administrative fees, such as compensation paid to investment bankers, reduce the proceeds to the railroad. The effect of this is to increase the cost of the securities to the railroad.

(3) The maturity mix and the type of instrument (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

As in previous Cost of Capital determinations, calculations relating to the bond market value use market data for the composite railroad whenever possible, and calculations for the cost of bond debt rely entirely on market data.[5] Multiple sources for market data are available, and each source has its own criteria for including a financial instrument in its database. However, no market data will be available in any database for bonds that do not trade.[6] For 2015, yields and prices of the sample railroads' bonds, notes

[5] The terms "bonds" and "bonds, notes, and debentures" are used interchangeably herein.

[6] In some cases, a comparable bond method could be used, where yields for traded bonds could be used for non-traded bonds with similar qualities (maturity date and type of instrument), enabling the calculation of a

and debentures were obtained from Bloomberg.[7] This source is the same data source used since the 2011 cost of capital determination. We were able to find data for 99 unique CUSIPs (bond identifiers).[8] The 99 bonds represent 98 percent of the book value of all railroad bonds belonging to the composite railroad.[9] The bonds not included are those that are either not in Bloomberg's database, or were in the database but did not trade.

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 99 traded CUSIPs in 2015, 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, 2015.[10] Where market prices are not available (i.e., for instruments that did not trade or were not found in the Bloomberg database), 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

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probable market price. Another approach would be to construct a yield curve for a railroad. We have not recommended these approaches because the supply of bonds with market data is adequate.

[7] Bloomberg's product is called Bloomberg Professional, and it is available as a subscription service. http://www.bloomberg.com/professional/

[8] A CUSIP number is a 9-character identification code used to identify a security. CUSIP is an abbreviation for Committee on Uniform Securities Identification Procedures.

[9] In seven cases, similar series of bonds has been assigned two CUSIPs because a privately-placed portion trades *among* qualified institutional buyers instead of *through an exchange*. This can happen in a bond exchange offer where not all of the "old" bonds have been redeemed for the new version.

[10] 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.

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, most importantly, since 98 percent of the book value of bonds is priced at market. Table 2 summarizes the results of the market value calculations for 2015. The market value for bonds, notes, and debentures that traded is $32.14 billion, which is 98 percent of the total market value of $32.69 billion.[11]

Table No. 2
Bonds, Notes and Debentures
Average Market Value

Railroad Co.	Traded Value ($000)	Non-Traded Value ($000)	Total Value ($000)	Weight Based on Traded
CSX	$10,885,400	$254,338	$11,139,738	33.87 %
KSU	$286,722	$205,159	491,881	0.89
NSC	$10,242,632	$84,903	10,327,535	31.87
UNP	$10,726,281	$8,486	10,734,767	33.37
Total	$32,141,035	$552,886	$32,693,921	100.00 %
Prior Year	$30,554,894	$597,273	$31,152,167	
Change	5.2%	-7.4%	4.9%	

Total market value for bonds is up 4.9 percent from the previous year. Among the causes of this increase are new debt offerings outpacing retirements, as year-end book values of bonds are higher for all four railroads. The *traded value* for KSU is much lower than last year because of new debt that has been prorated.

Appendix A lists details for each of 99 unique CUSIPs for bonds, notes, and debentures belonging to the composite railroad – and having trading data available for 2015 in the Bloomberg database. As footnoted earlier, there are a few cases where a similar

[11] Market value and book value for traded bonds both rounded to 98 percent.

series of bonds has been assigned two CUSIPs because a privately-placed portion trades among qualified institutional buyers instead of through an exchange, as allowed under the Securities and Exchange Commission's Rule 144A. There is one case where a portion of a single series of bonds was issued in June 2015, and the remaining portion was issued in October 2015. This series of notes has been split into two pieces with the same CUSIP, identified in Appendix A as "75a" and "75b", to make it easier to follow the Surface Transportation Board's procedure of prorating new debt. All 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 3 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 3.508 percent, which is very close to 2014's figure of 3.509 percent.

Table No. 3
Bonds, Notes and Debentures
Weighted Current Cost

Railroad Co.	Weight	Current Cost
CSX	33.87 %	3.594 %
KSU	0.89	4.116
NSC	31.87	3.665
UNP	33.37	3.253
Total	100.00 %	3.508 %

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 99 unique CUSIP securities that traded according to Bloomberg's database.

The average yield for each security is a simple average of the twelve month-end yields. 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 3.508 percent. The weights used in Table 34, as derived from the calculations in Table 2, 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. This type of security has declined in popularity. In the 1990 cost of capital determination, ETCs accounted for 17.7 percent of the market value for the sum of bonds, ETCs, and conditional sales agreements.[12] For 2015, this percentage is 2.6 percent. Because entire 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 those maturities of

[12] See verified statement of David F. Miller on behalf of the Association of American Railroads in Ex Parte No. 491, submitted February 15, 1991, Appendix I.

particular interest. 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 2015 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. This adjustment is the risk premium for railroad ETCs, which is the spread between ETCs and government securities.

In 2007, 2009, and 2014, a railroad issued new ETCs with interest rate spreads above government bonds of 125, 80, and 76 basis points, respectively. In 2015, another new ETC was issued by a railroad, and its interest rate spread was calculated to be 44 basis points – much lower than the spread calculated for 2014 or other years listed in Table 4 below.[13]

[13] The 44 basis point spread was calculated using the same method as that used for 2014, and calculations are included in my work papers submitted in 2016.

Table No. 4
History of Premiums for
Equipment Trust Certificates (ETC)

Data Year	Proceeding	Basis Points
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	Ex Parte No. 558 (Sub-No. 14)	80
2011	Ex Parte No. 558 (Sub-No. 15)	80
2012	Ex Parte No. 558 (Sub-No. 16)	80
2013	Ex Parte No. 558 (Sub-No. 17)	80
2014	Ex Parte No. 558 (Sub-No. 18)	76
2015	Proposed for EP 558 (Sub-No. 19)	44

Although we are concerned that this premium is unusually low, we have used the 44 basis point spread herein as the interest rate spread (the risk premium) above government bonds. 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. In effect, these formulae make it possible to determine the price investors would pay in 2015 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 (now 4) is shown in Table 5.[14]

Table No. 5
Summary of Equipment Trust Certificates Modeled for 2015
($000)

Railroad	Amount Outstanding Beg.	Amount Outstanding Ending	Amount Outstanding Average	Yield	Current Market Value	Current Interest Amount	No. ETC
CSX	$0	$0	$0	--	$0	$0	0
KCS	0	0	0	--	0	0	0
NS	0	0	0	--	0	0	0
UP	995,963	955,754	975,859	2.535%	869,998	22,051	4
Total	$995,963	$955,754	$975,859	2.535%	$869,998	$22,051	4

[14]The 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:

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

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

Weighing each railroad's yield by its current market value for modeled ETCs results in a current cost of 2.535 percent. The average rate is lower than the 3.244 percent found for 2014. This is logical, since most of the yield curve for government securities is lower in 2015 than 2014 (see Appendix B), and the premium used in the model is 32 basis points lower.

A summary of each railroad's modeled ETCs can be found in Appendix C, which includes a market value and a current yield. (Union Pacific is the only railroad using ETCs currently.) The large difference in yields for the first ETC compared to the other three (Appendix C, page 7) is caused by the big difference in their maturity dates – they have different places on an upward sloping yield curve. Appendix C also lists ETCs that were not modeled (and those current, which are not used). 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 $870.0 million. Following STB procedure, the new ETC has been prorated by the ratio of the number of months outstanding (rounded to the nearest half month) to the twelve-month year. There were no non-modeled ETCs this year.

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 can be determined from current yields on government bonds in a similar manner to ETCs, using a

1997 relationship between CSAs and ETCs to determine the yield spread over government bonds. However, no CSAs were outstanding in 2015 – so none were modeled and none were added to Miscellaneous Debt. There is no appendix for CSAs.

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 would have been listed in this category had there been any this year. Capital leases account for most 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 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. The book value (assumed market value) of capital leases and

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

miscellaneous debt is $1,081.6 million; as a percent of the total market value of debt of the composite railroad, it is 3.1 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.[16]

E. Market Value of Debt

Table 6 summarizes the total market value for each debt category. The total market value for traded and non-traded debt is $34,645.5 million. Bonds, Notes, and Debentures (Bonds) account for 94 percent of the total market value. As can be computed from Appendix D, 98 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. 6
Market Value of Debt ($000)

Type of Debt	Market Value	Percent of Total	Percent of Subtotal
Bonds, Notes & Debentures	$32,693,921	94.37 %	97.41 %
Equipment Trust Certificates	869,998	2.51	2.59
Conditional Sales Agreements	0	0.00	0.00
Subtotal	33,563,919	96.88	100.00 %
All Other Debt*	1,081,621	3.12	
Total	$34,645,540	100.00 %	

* If any ETCs or CSAs are not modeled, they 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 had there been any.

[16] Non-modeled ETCs and/or CSAs would also have been included in the All Other category if there had been any.

Therefore, in 2015, 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 D.

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) or 424(b)(2), 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.

Using the same methodology used since 2008, I calculated 2015 flotation costs for bonds using publicly available data from electronic filings with the Securities and Exchange Commission (SEC).[17] 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

[17] 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 .

railroad expenses excluding the underwriter's fee. 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 2015, 13 new issues were reported in eight filings, with some filings reporting multiple issues. A simple average of the 13 flotation costs is 0.071 points, which is slightly lower than the figure used by the Board for 2014. Page 1 of Appendix E 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 filings. The source filings for all of the new bond issues have been included in my work papers. I believe the 13 new railroad debt issues, which were issued by four different railroads, provide the best information to determine flotation costs for 2015, and I have therefore used 0.071 percentage points for the flotation costs for bonds.

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.

I have calculated flotation costs for ETCs using the same methodology used in the previous Cost of Capital decision, although it has some flaws. See my testimony for 2012 for a discussion of the incorrect assumption used with the current method. Because ETCs are such a small portion of total debt, this flawed method for estimating flotation costs for ETCs does not affect the cost of debt, so I have not expended resources with an alternative method. Table 7 below calculates flotation costs for ETCs using the flotation percent of

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

gross proceeds discussed above. No flotation costs have been calculated for CSAs, as none have been modeled.

Table No. 7
Flotation Costs for
Equipment Trust Certificates

Given	**ETC**
Flotation Costs as Pct of Gross Proceeds	0.890%
Avg. Railroad Yields (Table 5)	2.535%
Assumed Duration of New Instrument (Yrs)	15
Calculated	
Price After Flotation Costs	$99.11
Effective Yield Including Flotation Costs	2.607%
Difference Between Yields With and Without Floatation Costs =	
Flotation Cost as Percentage Points	**0.072%**

In this calculation, current average yields on railroad ETCs are assumed to be equal to the yield resulting from the price to investors for a new issue (a flawed assumption because the current yields and new issues are on different places in the yield curve). Coupons are assumed to be paid twice per year. The duration for new ETCs 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 0.072 percentage points – lower than the 0.076 used for 2014, and close to the 0.073 used for 2013.

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 6. 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 8, flotation costs increase the cost of debt by 0.071 percentage points.

Table No. 8
Flotation Costs For Debt

Type of Debt	Market Weight	Flotation Cost
Bonds, Notes & Debentures	97.41%	0.071%
Equipment Trust Certificates	2.59%	0.072%
Conditional Sales Agreements	0.00%	not calculated
Total	100.00%	0.071%

This flotation cost for 2015 is lower than the Board's 0.075 percentage points calculated in its 2014 Cost of Capital decision, and close to the 0.072 percentage points used in the decision for 2010. Since bonds have a market weight of over 97 percent, flotation costs for total debt rounds to the same number as the flotation costs for bonds.

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 9 shows the results of this calculation.

Table No. 9
Composite Current Cost Of Debt

Type of Debt	Market Weight	Current Cost
Bonds, Notes & Debentures	97.41%	3.508%
Equipment Trust Certificates	2.59%	2.535%
Conditional Sales Agreements	0.00%	--
Subtotal	100.00%	3.482%
Flotation Costs		0.071%
Weighted Cost of Debt		3.553%
Weighted Cost of Debt (Rounded)		**3.55%**

The current weighted cost of debt before flotation costs is 3.482 percent. The addition of flotation costs results in a rounded cost of debt of 3.55 percent. This cost of debt is the second-lowest calculation ever, higher than the 2012 record low of 3.29 percent and slightly below the 3.58 percent calculated for 2014.[19] A summary for the 2015 calculation of the overall cost of debt is provided in Appendix F.

IV. Common Equity Capital In 2015

A. The Market Value of Common Equity Capital

The market value of common equity is based on stock prices and shares outstanding for 2015. Table 10 below summarizes the market value calculation. The Weight column, which is not used directly in our calculation, is provided as additional information.

[19] The AAR's *Railroad Facts* book lists the cost of debt decided by the Board, and its predecessor. The 2013 edition contains, on page 19, data from 1978 through 2012. The 2015 edition contains, on page 20, data from 1990 through 2014.

Table No. 10
Average Market Value
For Common Equity in 2015

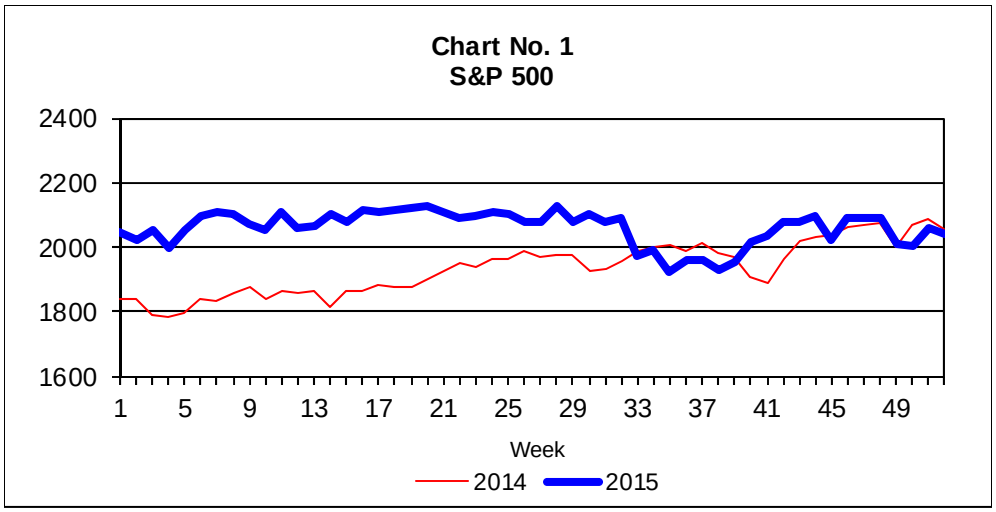
Railroad Co.	Value ($000)	Weight %
CSX	30,953,397.3	19.83
KSU	10,703,708.4	6.86
NSC	28,072,533.6	17.98
UNP	86,381,744.2	55.33
Total	$156,111,383.5	100.00 %
Prior Year	$166,408,812.3	
Change	-6.2%	

Details of the calculation are presented in Appendix G. 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 2015.[20] Calculations for 2015 included 52 weeks. Week 1 began on Monday January 5, 2015, and is the first week after 2014's week 52 used in last year's calculation.[21] The week beginning Monday December 28, 2015, qualifies as the final week for 2015. Thus, 2015 is a 52-week year for the purpose of calculating the market value of common equity (and for the regression data set used by this year's Capital Asset Pricing Model).

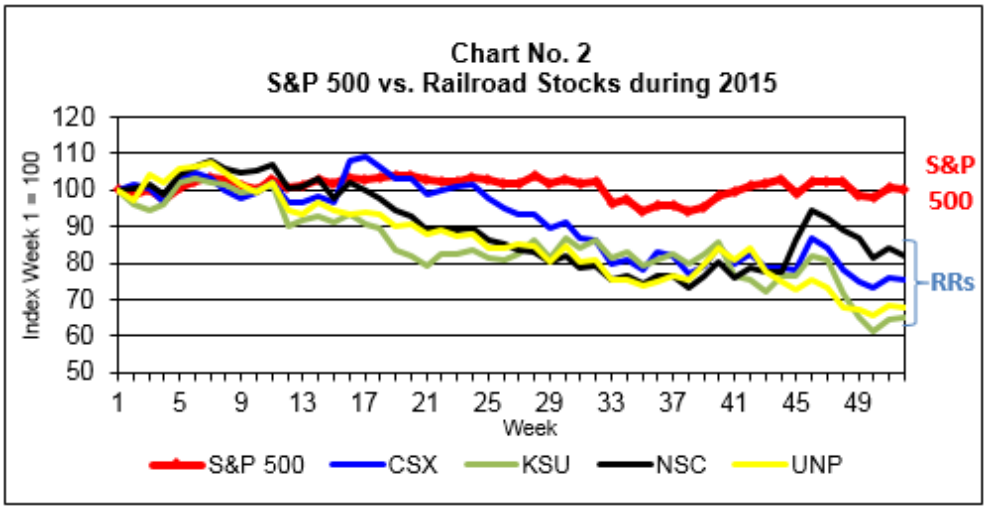
The 52-week average market capitalization of the composite railroad (the four railroads that comprise the composite sample), listed on page 5 of Appendix G, is $156.1 billion. This is a 6.2 percent decrease from last year's average.

[20] The 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.

[21] Week 52 for 2014 started Monday December 29, and is not considered by the Board as part of 2015 because it did not have 3 days of trading in 2015.



As shown in Chart 1, the stock market in general, as represented by the Standard & Poor's 500, finished the year slightly lower than it had been a year earlier, although it was higher than the previous year for 41 of 52 weeks.



In the case of the railroad stocks, prices were higher than the previous year for most of first half of 2015, but then dropped significantly in the last half of the year. Chart 2 compares stock performance solely for 2015. The railroads dropped 20 to 35 percent from the beginning of the year to its end, while the Standard & Poor's 500 index was almost the same.

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. 18). 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. Since all of the principal elements of the CAPM (the risk-free rate, the market risk premium, and the beta) are estimated using historical data and relationships computed from that data, the CAPM is essentially a backward look at how equity markets have regarded a particular firm or group of firms. 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 above the risk-free rate depends on the market risk premium adjusted for the non-diversifiable risk of its common stock, with the adjustment factor 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 used by the STB in the 2014 Cost of Capital decision.[22]

1. Risk-Free Rate (RF)

In all 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 2015.[23] A copy of the "download" from the Federal Reserve web site is included in my work papers. Table 11 (next page) lists a 10-year history of this bond. As the table shows, the average rate for 20-Year U.S.

[22] Ex Parte No. 558 (Sub-No. 18), Railroad Cost of Capital – 2014, served August 7, 2015.

[23] Federal Reserve's web site is http://www.federalreserve.gov/releases/H15/data.htm. Select Treasury Constant Maturities, Nominal, 20-year, Annual.

Treasury Bonds in 2015 is a decrease from the previous year. Appendix H lists all of the annual 20-Year U.S. Treasury Bond rates available since 1980, and the 20-year rate for 2015 is only 0.01 percentage points higher than the lowest rate during that period.[24]

Table No. 11
20-Year U.S. Treasury Bonds 2006 - 2015

Year	Average Annual Rate
2006	5.00 %
2007	4.91
2008	4.36
2009	4.11
2010	4.03
2011	3.62
2012	2.54
2013	3.12
2014	3.07
2015	2.55

Source: Federal Reserve

Using the average yield to maturity in 2015 for a 20-year U.S. Treasury Bond, as directed in STB Ex Parte No. 558 (Sub No. 19), the CAPM's risk-free rate is 2.55 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

[24] The Federal Reserve Board has two series for 20-Year Treasury Bonds. The first data set is from 1962 through 1986. The second set has data from 1993 to current. Rates from the two data sets are listed in my work papers.

standard approach. The STB's decision also stated that the "data are also available from a variety of commercial vendors, including Ibbotson."

In the 2006 through 2012 Cost of Capital determinations, the well-regarded and widely-accepted Ibbotson Equity Risk Premium was used. The premium was listed in the *Ibbotson SBBI Valuation Yearbook* published by Morningstar.[25] This premium is the long-horizon equity risk premium, using the S&P 500 and data beginning with 1926. Although Morningstar discontinued its *Ibbotson SBBI Valuation Yearbook,* it published the same long-horizon equity risk premium in the *Ibbotson SBBI Classic Yearbook.* This source was used for 2013 and 2014 equity risk premiums.

In 2016, Morningstar decided to discontinue its *Ibbotson SBBI Classic Yearbook.* The valuation and financial advisory firm Duff & Phelps maintains many of the same series formerly published by Ibbotson. Those that order the Duff & Phelps *2016 Valuation Handbook-Guide to Cost of Capital* receive a special preview document that includes a page the lists the long-horizon expected equity risk premium.[26] The first equity risk premium listed by Duff & Phelps is the "Long-horizon expected equity risk premium (historical)", which is calculated using "large company stock total returns minus long-term government bond income returns", beginning 1926. This premium is calculated using the same method as that used by Ibbotson to calculate the market risk premiums used in

[25] Ibbotson Associates is a wholly-owned subsidiary of Morningstar, Inc. "SBBI" stands for "Stocks, Bonds, Bills, and Inflation.

[26] The Duff & Phelps *2016 Valuation Handbook – Guide to Cost of Capital* is published by John Wiley & Sons. The pre-order preview is a 37-page PDF. The equity risk premium is on the 18th page of the PDF (which is not numbered). The Handbook, which was not shipped until April 6 (and matches the preview), lists the premium on page 14 of chapter 5. Footnote 5-16 in the Handbook says "The long-horizon historical equity risk premium was previously published on the "back page" of the Morningstar/Ibbotson SBBI Valuation Yearbook (discontinued)."

previous cost of capital determinations. For 2015, this premium is 6.90 percent. This is a small decrease from the 7.00 percent figure used by the Board for 2014. (Appendix H shows Equity Risk Premiums since 1980.) Thus, I used 6.90 percent as the rate for the CAPM's market risk premium.

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:

$$R - SRRF = Alpha + beta\ (RM - SRRF) + E$$

Where:

R	=	merger-adjusted stock returns for the portfolio of railroads;[27]
SRRF	=	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.

[27] Railroads must meet the screening criteria set forth in *Railroad Cost of Capital – 1984* and modified currently by the Board.

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.

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 2010 (Week 0) through the last week of 2015 (Week 261). Each week in the data set is identified by the first trading day of the week (typically Monday), but the prices are actually for the last day of trading in the week (typically Friday).[28] Week 1 in the regression data set is the week beginning Monday, January 3, 2011.[29] The last week of 2015, Week 261, began on Monday, December 28. This week had no days of trading in 2016 (Friday, January 1, is a holiday) – meaning that it did not meet the Board's "3 or more trading days" criterion to qualify as week 1 for 2016. Week 0 began in 2010 on Monday December 27, 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 and to have a weight for the beginning (instead of the end) of Week 1. This

[28] In some cases, stock did not trade on Monday. For example, trading during Week 192 began Tuesday, September 2, 2014, because Monday, September 1, 2014 was the Labor Day holiday. There are also cases where the last trading day of the week was not Friday because of a holiday.

[29] Following the Board's clarification in Ex Parte No. 558 (Sub-No. 12), the week beginning January 3, 2011, is the first week in the relevant year that contains 3 or more trading days.

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.[30]

Three categories of data are necessary for the raw regression data set. First, weekly stock prices for CSX, KSU, NSC, and UNP are downloaded from a web site.[31] The price data were downloaded during the second week of 2016, and are included in my work papers.[32] 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.[33] (I have adjusted shares 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.[34]

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[30] Ex Parte No. 558 (Sub-No. 12), served September 25, 2009.

[31] CSX Corporation has a stock symbol of CSX, Kansas City Southern is KSU, Norfolk Southern Corporation is NSC, and Union Pacific Corporation is UNP.

[32] 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.

[33] 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. The difference typically affects the fourth digit after the decimal of the beta calculations.

[34] Shares outstanding are updated using the first Friday on (provided the stock traded that day), or after, the effective date listed in the 10-Q and 10-K reports – since Friday's (or the end of the week) stock price is used.

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 was used to prepare the regression data set from the raw data.[35] The weekly stock percentage change for each railroad was calculated and weighted by that railroad's share of the industry as a whole to create a composite railroad return.[36] Weekly 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 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 weighted return for week 1.

The SAS General Linear Model procedure was used to calculate the regression, 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

[35] SAS Institute Inc., Cary, NC.

[36] 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.

beta using a linear regression, and the results matched the SAS calculation. As specified by the STB decisions, the regression includes an intercept. Appendix I contains a summary of the regression using SAS. The beta is the estimate of the parameter shown on the second page. The entire SAS printout and a spreadsheet version are included in my work papers. The regression resulted in a beta estimate of 1.216663947, which rounds to 1.2167.

The 2015 beta is lower, but not dramatically different, than the beta for 2014 (1.2503). Like the 2014 beta, the 2015 beta is between the 2012 and 2013 estimates, which were 1.1543 and 1.3499, respectively. This is the seventh consecutive year that the railroad beta has been above 1.0. Clearly, the equity market regards railroad stocks as consistently more volatile, and of higher risk, than the market in general. In the real investment world, this risk is a reflection of the declining traffic railroads are facing in coal markets, and the volatility of energy-related markets. The equity market regards these risks as a systemic part of railroad investment.

Additional checks were performed on our beta calculation. A new spreadsheet data set was created using data downloaded in early April. Changes in download date can cause different adjusted values in the regression data set, often affecting the beta calculation at the third to seventh digit after the decimal. The beta calculated in this second spreadsheet was 1.216663991, which also rounds to 1.2167. This is extremely close to our calculation using data retrieved in January.

We have evaluated our beta calculation by (1) comparing it to previous years and expectations, and (2) comparing the results of two data sets created at different times. The resulting value of 1.2167 for beta, as calculated in our initial regression, is used as an input to the Capital Asset Pricing Model.

4. Cost of Common Equity Using the CAPM

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

K = RF + 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 used by the STB in the previous cost of capital determination, Ex Parte No. 558 (Sub-No. 18). Table 12 is a summary of our CAPM cost of common equity calculation, which resulted in an average 2015 cost of equity estimate for the composite railroad of 10.95 percent.

Table No. 12
Cost of of Common Equity
Using STB's Capital Asset Pricing Model

Inputs to Model		
Risk-Free Rate	2.55 %	From Table No. 13
Market Risk Premium	6.90 %	From D&P, Table 10
Beta	1.2167	From Appendix I
Calculation		
Risk-Free Rate	2.55 %	Given
Plus: Beta Adjusted Risk Premium	8.40 %	Beta x Mkt. Risk Prem.
CAPM Cost of Equity	10.95 %	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. These features make the MSDCF forward looking in that it relies on the expectations of the equities markets as to the firm's future performance. Thus, its theoretical basis contrasts dramatically with the *historic* view of the CAPM, and brings investor perceptions of the *future* into the process of estimating a firm's cost of equity.

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.[37] This model assumes that investor cash flows do not all 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 equation for this model can be found in 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 through 2014 cost of capital.

1. Cash Flows

The Morningstar/Ibbotson MSDCF model uses an initial cash flow and a terminal cash flow as inputs. The initial cash flow is defined as income before extraordinary items minus capital expenditures plus depreciation plus deferred taxes. Income before

[37] 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.

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 2011 through 2015. Data are copied from the Consolidated Cash Flow and Income Statement of each 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 13 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. 13
Example Cash Flow Calculations for CSX in 2015
($ in millions)

	2011	2012	2013	2014	2015	Total
Net Income	$1,854	$1,863	$1,864	$1,927	$1,968	$9,476
Less Extraord. Items	0	0	0	0	0	0
Inc. Bef. Extraord. Items (+)	$1,854	$1,863	$1,864	$1,927	$1,968	$9,476
Capital Expenditures (-)	$2,297	$2,341	$2,313	$2,449	$2,562	$11,962
Depreciation (+)	976	1,059	1,104	1,151	1,208	5,498
Deferred Taxes (+)	609	592	300	298	456	2,255
Cash Flow	$1,142	$1,173	$955	$927	$1,070	$5,267
Revenue (a.k.a. "Sales")	$11,795	$11,763	$12,026	$12,669	$11,811	$60,064

Ratio of Cash Flow to Sales (Smoothed Ibbotson-style) = ($5,267 / $60,064) =	0.08769
Initial Cash Flow in 2015 (Smoothed Ibbotson-style) = (0.08769 x $11,811) =	**$1,035.70**
Ratio of IBEI to Sales (Smoothed Ibbotson-style) = ($9,476 / $60,064) =	0.15777
Terminal Cash Flow input (Smoothed Ibbotson-style) = (0.15777 x $11,811) =	**$1,863.36**

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 2015, which is the initial cash flow in the model, is calculated by multiplying revenue for 2015 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 $1,035.70 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 13 example, the model's input for the terminal cash flow is $1,863.36 million. The model's terminal cash flow input is calculated by multiplying revenue for 2015 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 herein have been calculated using the same procedure used by the AAR for the previous cost of capital determination. Appendix K contains the four railroad cash flow calculations for 2015. The pages from the 2015 10-K reports that were used as data sources for cash flows are included in my work papers. Data for prior years (2011-2014) used in this year's calculation are unchanged from last year's submission – unless revised data were found in the 2015 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 (2015) 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 at the end of the current year as the date for growth rates, stock prices, and stock shares outstanding.[38] (Clearly, the Board's interpretation does not anticipate the use of growth estimates based on the release of audited year-end financial statements.) In Ex Parte No. 558 (Sub No. 16), the

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

STB made another clarification in their interpretation of the Morningstar/Ibbotson MSDCF model by specifying the *last full week of the year* as the point from which stock prices should be used. Therefore, we have utilized growth rate projections that were in effect at the end of 2015, and stock prices as of December 31, 2015 – the prices at the end of the last full week for 2015.[39] Each growth rate projection was reviewed by the brokerage firm's analyst during 2015, and the stock prices (like the data used in the CAPM) were retrieved from Yahoo! Finance.

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 14 below lists the median growth rate estimates.

[39] Thursday, December 31, 2015 was the last trading day for the week. Friday, January 1, 2016 was a holiday.

Table No. 14
2015 Thomson Median Growth Rate Estimates

Company	Stock Symbol	Growth Rate
CSX Corporation	CSX	6.20 %
Kansas City Southern	KSU	8.45
Norfolk Southern Corporation	NSC	0.80
Union Pacific Corporation	UNP	6.50
Simple Average		5.49

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. This is *not a transition stage* where the growth rate should be smoothed between the first and third stages. Morningstar's model assumes "that over a middle horizon, growth of any particular company will lie more in line with the industry as a whole".[40] In other words, other companies "catch" their industry growth leaders, or the leaders fall back to the rate of the slower growth railroads. Therefore, 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. Any attempt to change the second stage to a transition stage is corrupting the intent of the model.

In Table 14, the average of the median growth rates is 5.49 percent, a huge drop from the 12.68 percent rate used for the previous year. This is most likely due to uncertainties surrounding longer-term rail movements of coal and other energy-related

[40] *Ibbotson SBBI 2013 Valuation Yearbook*, page 51.

products that emerged in 2015. For all railroads in the Morningstar/Ibbotson MSDCF model, a second stage growth rate of 5.49 percent is used .[41]

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. Until the 2013 Cost of Capital determination, the long-run nominal growth rate was supplied by Morningstar/Ibbotson in its *Ibbotson SBBI Valuation Yearbook.* In September 2013, customers subscribing to the *Ibbotson SBBI Valuation Yearbook* were notified that the publication was being discontinued, but the *Ibbotson® SBBI® Classic Yearbook* (Classic Yearbook) would be expanded to contain many of the statistics found in the Valuation Yearbook.

Using data from the Ibbotson, the Federal Reserve, and the Bureau of Economic Analysis, I have replicated the 2009 through 2012 Ibbotson calculations for real growth rates and long-term inflation – which are combined to be used as the long term growth rate for Stage 3 of the MSDCF. In the 2014 (and 2013) Cost of Capital determination, this methodology was accepted for the Stage 3 growth rate.

For 2015, I have used a similar methodology, although the SBBI long-term government yields are no longer available since Morningstar no longer publishes its *Ibbotson SBBI Classic Yearbook.* Appendix M contains my calculations for the Stage 3 growth rate for 2013 through 2015. In lieu of the SBBI number used for part of the calculation (that is no longer available), I have used 20-Year U.S. Treasury Bond yields at the end of the year (see page 5 of Appendix M), which are very close to the numbers used

[41] The model used an average rounded to 2 digits after the decimal.

by Ibbotson.[42] The Stage 3 rate for 2015 is 4.84 percent (as shown on page 1 of Appendix M), which is slightly lower than the 4.98 used for 2014. This rate is also lower than any Stage 3 rate used by the Board except the rate for 2008 (as shown on page 6 of Appendix M), which had an exceptionally low inflation rate expectation. The long-term expected inflation rate (1.60 percent) used in the current calculation of the Stage 3 rate is lower than the range of expected inflation forecasts (1.8 to 2.6 percent) listed on page 18 of chapter 3 in the Duff & Phelps *2016 Valuation Handbook-Guide to Cost of Capital,* but it follows the procedure used in the past.

3. Market Values

The final inputs to the Morningstar/Ibbotson MSDCF model are the stock market values for the common 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.

Market values are also used 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 15 below calculates the market value for each railroad, and it uses the market values to calculate weights. Prices and shares outstanding are for common stock. Although weights are shown at three digits after the decimal, they have been left at full float for calculation purposes – and so they will total to exactly 100 percent.

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[42] See Appendix M, page 5, columns (b) and (c) for a comparison of Long-Term Government Yields from the SBBI compared to 20-Year Treasury Bonds at the end of the year.

Table No. 15
Equity Market Value on December 31, 2015

Company	Stock Price	Shares Outstanding	Market Value ($mil)	Weight
CSX	$25.95	974,944,791	25,299.8	20.160 %
KSU	$74.67	109,136,453	8,149.2	6.494
NSC	$84.59	298,569,765	25,256.0	20.125
UNP	$78.20	854,120,634	66,792.2	53.222
Total		2,236,771,643	$125,497.3	100.000 %

As directed by the Board, I have used stock prices (from Yahoo Finance) for December 31, 2015, the last trading day of the week that qualifies as the last week of 2015 for cost of capital purposes. For 2015, the last trading day of the week is the same day as the last trading day of the calendar year. I have also used the shares outstanding for that day from the 2015 Q3 10-Q reports (the latest information available prior to December 31, 2015) 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 N 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 Common 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.[43]

Applying the methods described above, I have calculated a cost of common equity for each of the four railroads specified using a spreadsheet like the one utilized in the 2014 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, 2015, 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. The spreadsheet used for the calculations is displayed in Appendix O.

The resulting costs of common equity for each railroad, using the Board's MSDCF, are shown in Table 16. In the same table, I have also calculated an MSDCF cost of common equity (using weights from Table 15 and the individual railroad cost of equities) for the composite railroad, which is the current cost of equity for this model.

Table No. 16
Cost of Equity Using STB's Ibbotson MSDCF

Company	Weight	Cost of Equity	Weighted Calculation
CSX	20.160%	11.51 %	2.32
KSU	6.494%	9.34	0.61
NSC	20.125%	9.86	1.98
UNP	53.222%	11.38	6.06
Total	100.000%		
Weighted Current Cost of Equity			**10.97 %**

[43] 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.

Thus, the MSDCF produces a cost of common equity of 10.97 percent for 2015 – a drop from the 12.30 percent used by the Board for 2014. This is the lowest cost of common equity calculated since it began being used by the Board for 2008.

D. Conclusion as to the Cost of Common Equity Capital

In the STB's Ex Parte No. 558 (Sub-No. 19) decision served March 2, 2016, the Board specified that comments "should focus … using the methodology followed in *Railroad Cost of Capital – 2014"*, 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 17 contains the cost of common equity estimated by each model, and a simple average of the estimates.

Table No. 17
Cost of of Common Equity Capital

Model		
Capital Asset Pricing Model	10.95 %	From Table No. 13
Multi-Stage Discounted Cash Flow	10.97	From Table No. 17
Cost of Common Equity	10.96 %	Average

The cost of common equity for 2015 is 10.96 percent, which is below the 12.06 percent decided for 2014 – and the lowest ever calculated for a railroad cost of capital proceeding. It should also be noted that the cost of equity estimate produced by the Capital Asset Pricing Model is very close to the estimate produced by the Multi-Stage Discounted Cash Flow model.

V. Preferred Equity Capital in 2015

There were no preferred stock shares outstanding for the composite railroad sample from 2002 through 2012. Beginning 2013, one of the railroad companies comprising the railroad composite sample had preferred stock outstanding. This continues in 2015, although the market value of the preferred stock remains very small.

A. Overview of Preferred Stock

Preferred stock is a hybrid security which has some characteristics of debt and some characteristics of equity. The general characteristics of preferred stock are as follows:

1. It is an equity security similar to common stock in that it represents ownership in the corporation.
2. It has dividend preference over common stock in that it has prior claim on the corporation's earnings before dividends are paid to holders of common stock.
3. It is a security which typically has a stated rate of return or fixed dividend. (If the stock has a par value, it will state the annual dividend payments in terms of percentage of par value -- for example, a 6 percent preferred. No-par value preferred stock has a dividend stated in a dollar amount, for example, a $6 preferred.)
4. It is a security that pays dividends only if they are declared by the board of directors. (If there are no earnings, the dividends may be paid out of earned surplus. In any event, dividends must be declared by the board.)
5. It has prior claim over assets at dissolution. If the corporation is liquidated, the holders of preferred stock, like bondholders, have a prior claim on assets over common stock shareholders. Therefore, preferred stock is also referred to as a senior security.
6. Ownership privileges are limited. (Preferred stock usually carries no voting right. In most instances, it does not participate in earnings above a set amount. The preemptive right to buy new securities is limited.)
7. It generally has no maturity date or maturity value. (The exception is sinking fund preferred issues which effectively must be retired at some future date.)

There are numerous types of preferred stock. The chief distinction among different types of preferred stock is the method and amount of dividend payment to the investor. In addition, there are specific privileges related to each type. Major types of preferred stock are listed below.

1. *Cumulative* - Occasionally, a board will decide not to pay dividends. If the stock is cumulative, unpaid dividends accumulate and the total accumulated (in arrears) must be paid to the holder of cumulative preferred stock before any dividends can be paid to the common stockholders. Most preferred stocks are cumulative.
2. *Noncumulative* - When business is such that the corporation's board of directors decides not to pay dividends, holders of noncumulative preferred stock lose their dividends. These dividends cannot be claimed in the future.
3. *Participating* - Owners of participating preferred stock receive – in addition to their fixed dividend – a share in the earnings remaining after all senior securities have been paid. If any additional dividend is declared, it is generally declared along with the common stock dividend. Participating preferred stock may also be cumulative, noncumulative or convertible.
4. *Redeemable* - Preferred stock is usually callable immediately. This means that the issuer can retire the stock at any time, if the company has the necessary cash. In some instances, as with so-called sinking fund preferred, the issuer is required to redeem the stock over a specified period of time. Generally, when redemption occurs, the firm must pay a premium price to the holder of the instrument.
5. *Auction Market* - This stock represents a new variety of variable-rate preferred stock. This security is generally appropriate for corporations with "temporary" idle corporate funds. The dividends, payable every seven weeks in the case of most issues, are determined by bids from current holders and potential buyers. The Auction Market Preferred shares are redeemable at the issuer's option, in whole or in part, on or near the interest payment date.
6. *Convertible* - A preferred stock is convertible if the holder has the privilege of converting the preferred stock into common stock at specified prices. This is an advantage to the holder if the market price of common stock increases. Often the convertible preferred will sell at a premium (above conversion parity) because of the conversion feature, especially as the selling price of common issues increase. Dividends of convertible preferred stock can also be cumulative or noncumulative.

B. The Market Value of Preferred Equity Capital

The market value of preferred equity is based on stock prices and shares outstanding for 2015. Kansas City Southern is the only railroad included in the composite railroad sample that has preferred stock. Table 18 below summarizes the market value calculation. The Weight column, which is not used directly in our calculation, is provided as additional information (which would be more useful if more than one railroad had preferred stock). Calculations are shown in Appendix P.

Table No. 18
Average Market Value
For Preferred Equity in 2015

Railroad Co.	Value ($000)	Weight %
CSX	$0.0	0.00
KSU	6,588.2	100.00
NSC	0.0	0.00
UNP	0.0	0.00
Total	$6,588.2	100.00 %
Prior Year	$6,555.2	

C. The Cost of Preferred Equity Capital

The cost of preferred equity depends, in large part, on its specific features. Three methods for determining the cost of preferred equity capital are listed below.

1. *The Dividend Yield Method* is used when the preferred stock is not convertible and there is no specific requirement to redeem the preferred. It is also used to cost preferred issues retired or redeemed during the year. The current cost in this instance is computed by dividing the stated dividend by the current market price. This method was used for all preferred stock in the 2002 cost of capital proceeding. This was also the method used for Kansas City Southern preferred stock in 1999, which was the last time Kansas City Southern was part of the composite railroad until 2013.
2. The *Internal Rate of Return Method* is used for preferred stocks which are not convertible but are subject to a mandatory redemption schedule providing a premium over the stated/par value. The current cost is equal to rate of return which equates the current price with the present value of dividends plus the redemption price.
3. The *Common Equity Method* is used when the preferred stock is convertible at the option of the holder, and the market values of the preferred and common stock indicate that conversion is likely to occur or the conversion right is influencing the price of the preferred stock. In this case, the preferred equity has the same cost as common equity.

The preferred stock that is part of the composite railroad belongs to Kansas City Southern. This stock is not convertible, and is non-cumulative. Therefore, I have used the Dividend Yield Method to estimate the cost of preferred equity. This is the same method used in the previous two years. The formula for the Dividend Yield Method is simply the annual dividends divided by the average price for the year. In this year's case, the cost of preferred equity is 3.68 percent, which is very close to the 3.69 percent calculated for 2014. Appendix P provides more detail for this calculation, and the table below summarizes my findings.

Table No. 19
Cost of Preferred Equity Capital

Company	Weight	Cost of Equity	Weighted Calculation
CSX	0.00%	-- %	0.00
KSU	100.00%	3.68	3.68
NSC	0.00%	--	0.00
UNP	0.00%	--	0.00
Total	100.00%		
Weighted Current Cost of Equity			**3.68 %**

VI. The Overall Cost of Capital In 2015

A. Determination of Market Value Weights

With more detail shown in Tables 6, 10, and 18, the average market value of debt, common equity, and preferred equity are $34.6 billion, $156.1 billion, and $6.6 million, respectively. More market value detail are provided in Appendixes D, G, and P. The figure for the market value of debt includes market values of bonds, notes, debentures, equipment trust certificates, and conditional sales agreements (if there had been any).

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 the market value calculations, the capital structure for 2015 has weights for debt, common equity, and preferred equity of 18.16 percent, 81.84 percent, and 0.00 percent, respectively. Table 20 contains the weights computation and a comparison to the previous year. Note that the weight for preferred equity again rounds to zero.

Table No. 20
Capital Structure and Weights

		2015		2014	
	Source Table	Market Value (mil)	Capital Structure Weight	Market Value (mil)	Capital Structure Weight
Debt	6	$34,645.5	18.16 %	$33,271.1	16.66 %
Common Equity	10	156,111.4	81.84	166,408.8	83.34
Preferred Equity	18	6.6	0.00	6.6	0.00
Total		$190,763.5	100.00 %	$199,686.5	100.00 %

The market value for debt and preferred stock increased from 2014 to 2015, while common equity decreased in value (see Chart 2). Weights shifted closer to their 2013 values. Debt increased 1.5 percentage points from 2014, while common equity dropped by that amount.

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 2015 overall cost of capital of 9.61 percent, as shown in Table 21. This is the lowest cost of capital calculated since 2003.

Table No. 21
Weighted Current Cost of Capital for 2015

	Source Table	Capital Structure Weight	Current Cost
Debt	11	18.16 %	3.55 %
Common Equity	18	81.84	10.96
Preferred Equity	20	0.00	3.68
Total		100.000 %	
Weighted Current Cost of Capital			**9.61 %**

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 20th day of April 2016.

Notary Public

My Commission expires:

Pamela C Nwosu
Notary Public, District of Columbia
My Commission Expires 2/14/2017

Appendix A
Bonds, Notes and Debentures

Summaries

CSX Corporation	**A-1**
Kansas City Southern	**A-4**
Norfolk Southern Corporation	**A-7**
Union Pacific Corporation	**A-10**

Individual Bonds, Notes, and Debentures

CSX Corporation	**A-13**
Kansas City Southern	**A-41**
Norfolk Southern Corporation	**A-51**
Union Pacific Corporation	**A-76**

CSX Corporation
12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Traded						
1	Debentures	CSX Corp.	1	126408BL6	7.900%	5/1/2017	$312,596	$312,596	111.440	$348,358	1.420%	$4,947
2	Notes	CSX Corp.	2	126408GJ6	5.600%	5/1/2017	$300,000	$300,000	107.460	$322,379	1.310%	$4,223
3	Notes	CSX Corp.	3	126408GM9	6.250%	3/15/2018	$600,000	$600,000	111.795	$670,773	1.710%	$11,470
4	Notes	CSX Corp.	4	126408GQ0	7.375%	2/1/2019	$500,000	$500,000	117.857	$589,287	2.120%	$12,493
5	Notes	CSX Corp.	5	126408GT4	3.700%	10/30/2020	$500,000	$500,000	105.994	$529,972	2.490%	$13,196
6	Notes	CSX Corp.	6	12641LBD4	9.870%	2/12/2021	$10,000	$10,000	131.430	$13,143	3.600%	$473
7	Notes	CSX Corp.	7	126408GV9	4.250%	6/1/2021	$350,000	$350,000	108.345	$379,206	2.720%	$10,314
8	Debentures	CSX Corp.	8	126408AQ6	8.100%	9/15/2022	$69,081	$69,081	129.495	$89,456	3.400%	$3,042
9	Debentures	CSX Corp.	9	126408AM5	8.625%	5/15/2022	$81,517	$81,517	128.930	$105,100	3.800%	$3,994
10	Notes	CSX Corp.	10	126408GZ0	3.700%	11/1/2023	$500,000	$500,000	104.841	$524,203	3.040%	$15,936
11	Notes	CSX Corp.	11	126408HB2	3.400%	8/1/2024	$550,000	$550,000	101.793	$559,861	3.180%	$17,804
12	Debentures	CSX Corp. (New)	12	126408HD8	3.350%	11/1/2025	$600,000	**$125,000**	98.750	$123,438	3.500%	$4,320
13	Debentures	CSX Corp.	13	126408BP7	7.250%	5/1/2027	$83,312	$83,312	123.188	$102,631	4.650%	$4,772
14	Debentures	CSX Corp.	14	126408BM4	7.950%	5/1/2027	$64,266	$64,266	133.922	$86,066	4.270%	$3,675
15	Notes	CSX Corp.	15	12641LBU6	6.800%	12/1/2028	$200,000	$200,000	129.064	$258,128	3.990%	$10,299
16	Notes	CSX Corp.	16	126408GH0	6.000%	10/1/2036	$400,000	$400,000	120.609	$482,437	4.500%	$21,710
17	Notes	CSX Corp.	17	126408GK3	6.150%	5/1/2037	$700,000	$700,000	123.816	$866,710	4.450%	$38,569
18	Notes	CSX Corp.	18	126408GP2	7.450%	4/1/2038	$79,226	$79,226	141.593	$112,178	4.510%	$5,059
19	Notes	CSX Corp.	19	126408GS6	6.220%	4/30/2040	$660,000	$660,000	125.243	$826,605	4.530%	$37,445
20	Notes	CSX Corp.	20	126408GU1	5.500%	4/15/2041	$550,000	$550,000	115.873	$637,302	4.470%	$28,487
21	Notes	CSX Corp.	21	126408GW7	4.750%	5/30/2042	$600,000	$600,000	105.479	$632,875	4.420%	$27,973
22	Notes	CSX Corp.	22	126408GX5	4.400%	3/1/2043	$300,000	$300,000	100.511	$301,533	4.380%	$13,207
23	Notes	CSX Corp.	23	126408GY3	4.100%	3/15/2044	$800,000	$800,000	96.200	$769,601	4.350%	$33,478
24	Notes	CSX Corp. (New)	24	126408HC0	3.950%	5/1/2050	$600,000	**$425,000**	88.473	$376,012	4.630%	$17,409
25	Notes	CSX Corp.	25	126408HA4	4.500%	8/1/2054	$450,000	$450,000	99.015	$445,566	4.580%	$20,407
26	Notes	CSXT - Conrail	26	126410LK3	9.750%	6/15/2020	$227,171	$227,171	131.112	$297,848	2.930%	$8,727
27	Notes	CSXT - Conrail	27	126410LL1	7.875%	5/15/2043	$99,989	$99,989	141.427	$141,412	5.090%	$7,198
28	Sec'd Eq Notes	CSXT	28	126410LM9	6.251%	1/15/2023	$250,568	$250,568	117.062	$293,320	3.610%	$10,589
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Total							**$10,437,726**	**$9,787,726**		**$10,885,400**	**3.594%**	**$391,216**

CSX Corporation
12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
					Trading Data Not Available or Did Not Trade							
1	Notes	CSX Corp.			2.890%	10/22/2044	73,304	73,304	100.000	$73,304		
2	Conrail Tax Note	CSXT			2.890%	10/22/2044	151,334	151,334	100.000	$151,334		
3	TORCO	Other			6.450%	12/15/2021	29,700	29,700	100.000	$29,700		
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Total							**$254,338**	**$254,338**		**$254,338**		

CSX Corporation
12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Matures in 2016						
1	Convertible	CSX Corp. (Callable Oct 2016)		126408GA5	Changes	10/30/2021	914					
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10												
Total							**$914**					

This convertible debt has a maturity date of 10/30/2021, but is callable during 2016. According to CSX, the accounting guidance says that when debt becomes callable, it should be classified as current on the balance sheet. Once the call date passes, whatever principal amount is left will get reclassed back to long-term until the balance officially becomes current again.

Grand Totals			
Total Traded and Trading Data Not Available	**$10,692,064**	**$10,042,064**	**$11,139,738**
Grand Total (for reconciliation to carrier data only)	**$10,692,978**		

From CSX:

Corporate Notes	$9,933,302
Convertible Debt	914
CSXT Notes	478,494
Secured Equipment Notes	250,568
Other Notes	29,700
Total	**$10,692,978**

Kansas City Southern Corporation

12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Traded						
1	Sr Note	KCSR	29	485188AN6	4.300%	5/15/2043	$12,429	$12,429	97.639	$12,136	4.470%	$542
2	Sr Note	KCSR	30	485188AM8	3.850%	11/15/2023	$4,957	$4,957	101.502	$5,031	3.650%	$184
3	Sr Note	KCSR (New)	31	485188AP1	4.950%	8/15/2045	$23,312	**$10,685**	100.116	$10,697	4.940%	$528
4	Sr Note 144A	KCS (New)	32	485170AJ3	4.300%	5/15/2043	$437,551	**$54,694**	89.809	$49,120	4.990%	$2,451
5	Sr Note 144A	KCS (New)	33	485170AK0	3.850%	11/15/2023	$195,043	**$24,380**	100.411	$24,481	3.790%	$928
6	Sr Note 144A	KCS (New)	34	485170AL8	4.950%	8/15/2045	$476,665	**$59,583**	98.753	$58,840	5.030%	$2,960
7	Sr Note 144A	KCS (New)	35	485170AN4	2.350%	5/15/2020	$239,542	**$29,943**	96.890	$29,012	3.120%	$905
8	Sr Note 144A	KCS (New)	36	485170AP9	3.000%	5/15/2023	$439,123	**$54,890**	94.977	$52,133	3.790%	$1,976
9	Sr Note	KCSM	37	485161AQ6	2.350%	5/15/2020	$35,398	$35,398	98.065	$34,713	2.780%	$965
10	Sr Note	KCSM	38	485161AS2	3.000%	5/15/2023	$10,877	$10,877	97.082	$10,560	3.440%	$363
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Total							**$1,874,897**	**$297,836**		**$286,722**	**4.116%**	**$11,802**

Kansas City Southern Corporation

12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
	Trading Data Not Available or Did Not Trade											
1	RRIF Loan	KCSR			2.960%	2/24/2037	48,789	48,789	100.000	$48,789		
2	IDOT-GWE	KCSR			3.000%	2/19/2018	181	181	100.000	$181		
3	FRA RRIF	TexMex			4.290%	7/13/2030	36,058	36,058	100.000	$36,058		
4	Bank of NY Note	KCS		485170AF1	7.000%	12/15/2025	$221	221	100.000	$221		
5	EDC Loan	KCSM			5.737%	2/28/2023	34,556	34,556	100.000	$34,556		
6	DVB Loan	KCSM			6.195%	9/29/2023	26,970	26,970	100.000	$26,970		
7	GE Loan	KCSM			9.310%	12/15/2020	58,384	58,384	100.000	$58,384		
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Total							**$205,159**	**$205,159**		**$205,159**		

Kansas City Southern Corporation

12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Matures in 2016						
1	Senior Note (float)	KCS			0.930%	10/28/2016	244,820					
2	Senior Note (float)	KCSM			0.930%	10/28/2016	5,180					
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Total							**$250,000**					

Grand Totals			
Total Traded and Trading Data Not Available	**$2,080,056**	**$502,995**	**$491,881**
Grand Total (for reconciliation to carrier data only)	**$2,330,056**		
	Difference of 1 assumed to be rounding		

From KSU:

KCSR	$89,667
TexMex	36,058
KCS	2,032,965
KCSM	171,365
Total	**$2,330,055**

Norfolk Southern Corporation
12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Traded						
1	Debenture	Southern Railway	39	655855FA7	9.750%	6/15/2020	$313,741	$313,741	130.973	$410,916	2.950%	$12,122
2	Debenture	Conrail	40	655855FB5	7.875%	5/15/2043	$138,085	$138,085	143.699	$198,426	4.960%	$9,842
3	Notes	Series A NSC	41	655844AA6	9.000%	3/1/2021	$83,372	$83,372	127.788	$106,540	3.510%	$3,740
4	Notes	Senior	42	655844AQ1	7.250%	2/15/2031	$316,316	$316,316	131.421	$415,705	4.460%	$18,540
5	Notes	Senior	43	655844AZ1	5.750%	4/1/2018	$595,925	$595,925	110.871	$660,708	1.630%	$10,770
6	Notes	Senior 144A	44	655844AY4	5.750%	4/1/2018	$4,075	$4,075	110.649	$4,509	1.710%	$77
7	Notes	Senior	45	655844BC1	5.900%	6/15/2019	$500,000	$500,000	113.819	$569,095	2.200%	$12,520
8	Notes	Senior	46	655844BG2	3.250%	12/1/2021	$500,000	$500,000	102.573	$512,866	2.820%	$14,463
9	Notes	Senior	47	655844BJ6	3.000%	4/1/2022	$600,000	$600,000	100.664	$603,984	2.900%	$17,516
10	Notes	Senior	48	655844BL1	2.903%	2/15/2023	$596,450	$596,450	98.577	$587,963	3.130%	$18,403
11	Notes	Senior 144A	49	655844BK3	2.903%	2/15/2023	$3,550	$3,550	98.899	$3,511	3.080%	$108
12	Notes	Senior	50	655844BD9	6.000%	5/23/2111	$504,492	$504,492	118.508	$597,862	5.090%	$30,431
13	Notes	Senior 2105	51	655844AV0	6.000%	3/15/2105	$550,000	$550,000	120.270	$661,487	5.010%	$33,140
14	Notes	Senior	52	655844AX6	5.640%	5/17/2029	$210,316	$210,316	116.494	$245,005	4.080%	$9,996
15	Notes	Senior	53	655844AW8	5.590%	5/17/2025	$251,172	$251,172	116.955	$293,757	3.540%	$10,399
16	Notes	Senior	54	655844BH0	4.837%	10/1/2041	$595,504	$595,504	106.373	$633,456	4.440%	$28,125
17	Notes	Senior	55	655844BM9	3.950%	10/1/2042	$600,000	$600,000	93.548	$561,290	4.380%	$24,584
18	Notes	Senior	56	655844BN7	4.800%	8/15/2043	$500,000	$500,000	106.297	$531,483	4.430%	$23,545
19	Notes	Senior	57	655844BP2	3.850%	1/15/2024	$400,000	$400,000	104.747	$418,988	3.220%	$13,491
20	Notes	Senior (New)	58	655844BQ0	4.450%	6/15/2045	$500,000	**$291,667**	96.859	$282,507	4.650%	$13,137
21	Notes	Senior (New)	59	655844BR8	4.650%	1/15/2046	$600,000	**$100,000**	97.617	$97,617	4.800%	$4,686
22	Conrail Notes	CR NSC 2017	60	655844AE8	7.700%	5/15/2017	$550,000	$550,000	111.316	$612,238	1.410%	$8,633
23	Conrail Notes	CR NSC 2027	61	655844AJ7	7.800%	5/15/2027	$368,199	$368,199	135.885	$500,326	3.970%	$19,863
24	Conrail Notes	CR NSC 2037	62	655844AF5	7.050%	5/1/2037	$256,690	$256,690	135.112	$346,819	4.530%	$15,711
25	Conrail Notes	CR NSC 2097	63	655844AK4	7.900%	5/15/2097	$273,317	$273,317	141.073	$385,576	5.590%	$21,554
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Total							**$9,811,204**	**$9,102,871**		**$10,242,632**	**3.665%**	**$375,396**

Norfolk Southern Corporation
12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
Trading Data Not Available or Did Not Trade												
1	Other Bond	NSC Poca Dev Timber Bond			8.250%	10/1/2019	75,734	75,734	100.000	$75,734		
2	Other Bond	NSC Poca Dev Timber Zero Coupon			0.000%	10/1/2019	9,169	9,169	100.000	$9,169		
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Total							**$84,903**	**$84,903**		**$84,903**		

Norfolk Southern Corporation
12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Matures in 2016						
1	Notes	Senior		655844BB3	5.750%	01/15/16	499,850					
2	Notes	Senior 144A		655844BA5	5.750%	01/15/16	150					
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10												
Total							**$500,000**					

	Grand Totals			
Total Traded and Trading Data Not Available	**$9,896,107**	**$9,187,774**		**$10,327,535**
Grand Total (for reconciliation to carrier data only)	**$10,396,107**			

From NSC:

Income Debentures	$451,826
Medium Term Notes & Conrail Notes	9,859,378
Other Debt (Poca Dev)	84,903
Total	**$10,396,107**

Union Pacific Corporation

12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Traded						
1	Debentures	UP Corp.	64	907818CS5	5.375%	6/1/2033	$197,331	$197,331	115.367	$227,656	4.160%	$9,470
2	Debentures	UP Corp.	65	907818CX4	6.150%	5/1/2037	$111,093	$111,093	127.571	$141,722	4.240%	$6,009
3	Debentures	UP Corp.	66	907818CU0	6.250%	5/1/2034	$226,364	$226,364	126.179	$285,624	4.240%	$12,110
4	Debentures	UP Corp.	67	907818CF3	6.625%	2/1/2029	$417,341	$417,341	134.755	$562,387	3.420%	$19,234
5	Debentures	UP Corp.	68	907818BY3	7.125%	2/1/2028	$174,685	$174,685	130.516	$227,991	4.000%	$9,120
6	Notes	UP Corp. (New)	69	907818EA2	1.800%	2/1/2020	$248,114	**$227,438**	99.406	$226,088	1.950%	$4,409
7	Notes	UP Corp.	70	907818DW5	2.250%	2/15/2019	$298,407	$298,407	101.768	$303,684	1.750%	$5,314
8	Notes	UP Corp. (New)	71	907818EE4	2.250%	6/19/2020	$397,192	**$215,146**	100.806	$216,880	2.070%	$4,489
9	Notes	UP Corp.	72	907818DN5	2.750%	4/15/2023	$321,688	$321,688	99.800	$321,043	2.790%	$8,957
10	Notes	UP Corp.	73	907818DM7	2.950%	1/15/2023	$298,311	$298,311	101.161	$301,776	2.790%	$8,420
11	Notes	UP Corp.	74	907818DY1	3.250%	1/15/2025	$346,692	$346,692	102.556	$355,552	2.950%	$10,489
12	Notes Issued 6/19	UP Corp. (New)	75a	907818ED6	3.250%	8/15/2025	$299,168	**$162,049**	100.764	$163,288	3.160%	$5,160
13	Notes Issued 10/29	UP Corp. (New)	75b	907818ED6	3.250%	8/15/2025	$199,445	**$33,241**	102.009	$33,909	3.010%	$1,021
14	Notes	UP Corp. (New)	76	907818EB0	3.375%	2/1/2035	$444,369	**$407,338**	94.291	$384,085	3.800%	$14,595
15	Notes	UP Corp.	77	907818DR6	3.646%	2/15/2024	$360,954	$360,954	105.585	$381,112	2.910%	$11,090
16	Notes	UP Corp.	78	907818DV7	3.750%	3/15/2024	$394,934	$394,934	106.446	$420,389	2.910%	$12,233
17	Notes	UP Corp. (New)	79	907818EC8	3.875%	2/1/2055	$443,697	**$406,722**	92.308	$375,438	4.290%	$16,106
18	Notes	UP Corp.	80	907818DG0	4.000%	2/1/2021	$496,757	$496,757	109.056	$541,743	2.260%	$12,243
19	Notes	UP Corp. (New)	81	907818EF1	4.050%	11/15/2045	$493,153	**$82,192**	97.739	$80,334	4.180%	$3,358
20	Notes	UP Corp.	82	907818DZ8	4.150%	1/15/2045	$341,491	$341,491	101.649	$347,121	4.060%	$14,093
21	Notes	UP Corp.	83	907818DK1	4.163%	7/15/2022	$637,511	$637,511	109.654	$699,058	2.650%	$18,525
22	Notes	UP Corp.	84	907818DP0	4.250%	4/15/2043	$317,663	$317,663	102.590	$325,890	4.100%	$13,361
23	Notes	UP Corp.	85	907818DL9	4.300%	6/15/2042	$296,931	$296,931	103.237	$306,541	4.110%	$12,599
24	Notes	UP Corp. (New)	86	907818EG9	4.375%	11/15/2065	$380,563	**$63,427**	95.006	$60,259	4.640%	$2,796
25	Notes	UP Corp.	87	907818DJ4	4.750%	9/15/2041	$486,398	$486,398	110.342	$536,700	4.110%	$22,058
26	Notes	UP Corp.	88	907818DU9	4.750%	12/15/2043	$495,183	$495,183	110.449	$546,925	4.130%	$22,588
27	Notes	UP Corp.	89	907818DT2	4.821%	2/1/2044	$467,969	$467,969	112.110	$524,641	4.110%	$21,563
28	Notes	UP Corp.	90	907818DX3	4.850%	6/15/2044	$295,304	$295,304	112.849	$333,247	4.100%	$13,663
29	Notes	UP Corp.	91	907818CW6	5.650%	5/1/2017	$193,555	$193,555	107.409	$207,895	1.450%	$3,014
30	Notes	UP Corp.	92	907818DA3	5.700%	8/15/2018	$368,110	$368,110	111.777	$411,462	1.760%	$7,242
31	Notes	UP Corp.	93	907818CZ9	5.750%	11/15/2017	$251,518	$251,518	110.311	$277,451	1.250%	$3,468
32	Notes	UP Corp.	94	907818DF2	5.780%	7/15/2040	$65,399	$65,399	117.928	$77,123	4.570%	$3,525
33	Notes	UP Corp.	95	907818DD7	6.125%	2/15/2020	$161,692	$161,692	114.879	$185,750	2.660%	$4,941
34	Notes	UP Corp.	96	907818DB1	7.875%	1/15/2019	$157,991	$157,991	119.154	$188,253	2.180%	$4,104
35	Mort. Bond	UPRR-MP	97	606198LF4	4.750%	1/1/2020	$29,905	$29,905	100.656	$30,101	4.590%	$1,382
36	Mort. Bond	UPRR-MP	98	606198LG2	4.750%	1/1/2030	$27,381	$27,381	97.488	$26,693	5.000%	$1,335
37	Debentures	UPRR-MP	99	606198LH0	5.000%	1/1/2045	$96,025	$96,025	94.216	$90,471	5.400%	$4,885
38												
39												
40												
Total							**$11,240,284**	**$9,932,136**		**$10,726,281**	**3.253%**	**$348,971**

Union Pacific Corporation
12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
					Trading Data Not Available or Did Not Trade							
1	Debentures	MP C&EI UPRR		167123AP3	5.000%	1/1/2054	1,641	1,641	100.000	$1,641		
2	Debt Security	Illinois DOT SPCSL			3.000%	12/31/2019	6,371	6,371	100.000	$6,371		
3	Debt Security	Illinois DOT UPRR			3.000%	3/14/2018	474	474	100.000	$474		
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Total							**$8,486**	**$8,486**		**$8,486**		

Union Pacific Corporation
12/31/2015

	Type	Description	No.	CUSIP	Coupon Rate	Maturity Date	Amt. Outstanding ($000) Year-End	Amt. Outstanding ($000) Used	Average Price	Market Value ($ 000)	Average Yield	Interest Cost ($ 000)
						Matures in 2016						
1	Debentures	UP Corp.		907818AZ1	7.000%	02/01/16	203,499					
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9												
10												
Total							**$203,499**					

Grand Totals			
Total Traded and Trading Data Not Available	**$11,248,770**	**$9,940,622**	**$10,734,767**
Grand Total (for reconciliation to carrier data only)	**$11,452,269**		
Difference of 1 assumed to be rounding			

From UNP:

Corporate Debentures, Notes, and Floating Rate Loans	$11,513,364
Removal of Floating Rate Loans & Commercial Paper	-222,893
RR Misc Debt Securities (Albany County, MP, IL DOT….)	469,539
Removal of MP Debt Discount, and SP Purch. Acct. Debt Premium	92,258
Removal of Sale of Receivables	-400,000
Total	**$11,452,268**

CSX Corporation

1	**Type:**	Debentures
	Description:	CSX Corp.
	CUSIP:	126408BL6
	Coupon Rate:	7.900%
	Maturity Date:	5/1/2017
	Amount Outstanding ($ 000)	$312,596
	Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	114.546	1.29 %
February	113.369	1.63
March	113.245	1.43
April	113.090	1.26
May	112.644	1.20
June	111.433	1.55
July	111.123	1.40
August	110.395	1.55
September	110.169	1.34
October	110.187	1.23
November	108.898	1.50
December	108.184	1.69
Average	111.440	1.42 %

Source: Bloomberg

CSX Corporation

2

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GJ6
Coupon Rate:	5.600%
Maturity Date:	5/1/2017
Amount Outstanding ($ 000)	$300,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	109.220	1.41 %
February	109.096	1.38
March	Not Traded	-
April	108.752	1.14
May	108.466	1.11
June	107.843	1.23
July	107.535	1.21
August	107.179	1.23
September	106.794	1.30
October	106.286	1.33
November	105.595	1.57
December	105.292	1.53
Average	107.460	1.31 %

Source: Bloomberg

CSX Corporation

3

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GM9
Coupon Rate:	6.250%
Maturity Date:	3/15/2018
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	114.286	1.53 %
February	113.462	1.68
March	113.544	1.52
April	113.442	1.45
May	113.133	1.42
June	111.948	1.71
July	111.547	1.71
August	111.030	1.79
September	110.934	1.67
October	109.470	2.12
November	109.952	1.79
December	108.797	2.12
Average	111.795	1.71 %

Source: Bloomberg

CSX Corporation

4

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GQ0
Coupon Rate:	7.375%
Maturity Date:	2/1/2019
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	121.518	1.77 %
February	120.125	2.00
March	120.350	1.85
April	119.690	1.89
May	118.466	2.11
June	117.500	2.25
July	117.229	2.22
August	116.276	2.38
September	116.741	2.13
October	116.316	2.14
November	115.551	2.25
December	114.526	2.44
Average	117.857	2.12 %

Source: Bloomberg

CSX Corporation

5

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GT4
Coupon Rate:	3.700%
Maturity Date:	10/30/2020
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	107.549	2.29 %
February	106.686	2.43
March	107.744	2.21
April	106.683	2.39
May	106.804	2.35
June	105.433	2.60
July	104.949	2.68
August	105.076	2.64
September	105.562	2.53
October	104.531	2.72
November	105.486	2.51
December	105.430	2.50
Average	105.994	2.49 %

Source: Bloomberg

CSX Corporation

6

Type:	Notes
Description:	CSX Corp.
CUSIP:	12641LBD4
Coupon Rate:	9.870%
Maturity Date:	2/12/2021
Amount Outstanding ($ 000)	$10,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	135.848	3.27 %
February	133.974	3.49
March	134.190	3.38
April	133.398	3.44
May	132.616	3.50
June	130.718	3.74
July	130.691	3.68
August	129.741	3.77
September	130.393	3.58
October	129.807	3.61
November	128.587	3.76
December	127.199	3.93
Average	131.430	3.60 %

Source: Bloomberg

CSX Corporation

7

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GV9
Coupon Rate:	4.250%
Maturity Date:	6/1/2021
Amount Outstanding ($ 000)	$350,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	110.398	2.47 %
February	109.949	2.52
March	110.857	2.34
April	109.531	2.55
May	108.988	2.63
June	107.534	2.86
July	107.979	2.76
August	107.155	2.89
September	106.865	2.93
October	108.276	2.65
November	106.830	2.90
December	105.774	3.09
Average	108.345	2.72 %

Source: Bloomberg

CSX Corporation

8

Type:	Debentures
Description:	CSX Corp.
CUSIP:	126408AQ6
Coupon Rate:	8.100%
Maturity Date:	9/15/2022
Amount Outstanding ($ 000)	$69,081
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	130.080	3.59 %
February	Not Traded	-
March	131.962	3.26
April	Not Traded	-
May	Not Traded	-
June	130.936	3.25
July	Not Traded	-
August	129.679	3.33
September	Not Traded	-
October	128.428	3.43
November	126.979	3.59
December	128.400	3.35
Average	129.495	3.40 %

Source: Bloomberg

CSX Corporation

9

Type:	Debentures
Description:	CSX Corp.
CUSIP:	126408AM5
Coupon Rate:	8.625%
Maturity Date:	5/15/2022
Amount Outstanding ($ 000)	$81,517
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	135.212	3.18 %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	129.386	3.70
August	Not Traded	-
September	129.215	3.66
October	Not Traded	-
November	Not Traded	-
December	121.908	4.64
Average	128.930	3.80 %

Source: Bloomberg

CSX Corporation

10

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GZ0
Coupon Rate:	3.700%
Maturity Date:	11/1/2023
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	108.266	2.64 %
February	106.859	2.80
March	107.493	2.71
April	108.090	2.63
May	104.322	3.11
June	103.185	3.26
July	103.193	3.26
August	102.295	3.38
September	102.910	3.29
October	104.091	3.12
November	103.415	3.21
December	103.969	3.12
Average	104.841	3.04 %

Source: Bloomberg

CSX Corporation

11

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HB2
Coupon Rate:	3.400%
Maturity Date:	8/1/2024
Amount Outstanding ($ 000)	$550,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	105.459	2.74 %
February	103.434	2.98
March	105.020	2.78
April	103.419	2.97
May	102.000	3.15
June	100.388	3.35
July	100.560	3.33
August	99.967	3.40
September	101.151	3.25
October	99.083	3.52
November	100.781	3.30
December	100.253	3.37
Average	101.793	3.18 %

Source: Bloomberg

CSX Corporation

12

Type:	Debentures
Description:	CSX Corp. (New)
CUSIP:	126408HD8
Coupon Rate:	3.350%
Maturity Date:	11/1/2025
Amount Outstanding ($ 000)	$600,000
Months Outstanding	2.5

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	100.015	3.35
November	98.584	3.52
December	97.651	3.64
Average	98.750	3.50 %

Source: Bloomberg

CSX Corporation

13

Type:	Debentures
Description:	CSX Corp.
CUSIP:	126408BP7
Coupon Rate:	7.250%
Maturity Date:	5/1/2027
Amount Outstanding ($ 000)	$83,312
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	123.224	4.69
June	122.800	4.71
July	122.799	4.70
August	Not Traded	-
September	Not Traded	-
October	126.293	4.33
November	Not Traded	-
December	120.825	4.84
Average	123.188	4.65 %

Source: Bloomberg

CSX Corporation

14

Type:	Debentures
Description:	CSX Corp.
CUSIP:	126408BM4
Coupon Rate:	7.950%
Maturity Date:	5/1/2027
Amount Outstanding ($ 000)	$64,266
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	143.916	3.51 %
February	136.478	4.11
March	137.067	4.04
April	135.607	4.15
May	133.473	4.32
June	130.601	4.57
July	131.733	4.45
August	131.681	4.44
September	132.688	4.33
October	132.559	4.33
November	131.158	4.44
December	130.103	4.52
Average	133.922	4.27 %

Source: Bloomberg

CSX Corporation

15

Type:	Notes
Description:	CSX Corp.
CUSIP:	12641LBU6
Coupon Rate:	6.800%
Maturity Date:	12/1/2028
Amount Outstanding ($ 000)	$200,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	137.718	3.37 %
February	134.070	3.63
March	133.276	3.68
April	131.773	3.79
May	128.280	4.06
June	125.321	4.30
July	125.710	4.25
August	125.550	4.26
September	127.012	4.12
October	128.232	4.01
November	126.664	4.13
December	125.159	4.25
Average	129.064	3.99 %

Source: Bloomberg

CSX Corporation

16

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GH0
Coupon Rate:	6.000%
Maturity Date:	10/1/2036
Amount Outstanding ($ 000)	$400,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	132.714	3.78 %
February	127.891	4.05
March	127.053	4.10
April	Not Traded	-
May	122.879	4.34
June	116.226	4.78
July	117.083	4.72
August	117.831	4.66
September	117.076	4.71
October	116.992	4.71
November	114.610	4.88
December	116.348	4.75
Average	120.609	4.50 %

Source: Bloomberg

CSX Corporation

17

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GK3
Coupon Rate:	6.150%
Maturity Date:	5/1/2037
Amount Outstanding ($ 000)	$700,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	135.702	3.77 %
February	131.874	3.97
March	131.528	3.99
April	130.011	4.07
May	125.110	4.36
June	118.570	4.77
July	120.919	4.62
August	118.792	4.75
September	118.360	4.78
October	118.993	4.73
November	119.163	4.72
December	116.767	4.88
Average	123.816	4.45 %

Source: Bloomberg

CSX Corporation

18

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GP2
Coupon Rate:	7.450%
Maturity Date:	4/1/2038
Amount Outstanding ($ 000)	$79,226
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	153.183	3.93 %
February	145.133	4.34
March	146.130	4.28
April	143.157	4.43
May	140.334	4.58
June	136.211	4.81
July	139.768	4.60
August	139.545	4.61
September	140.456	4.56
October	139.281	4.62
November	138.244	4.67
December	137.672	4.70
Average	141.593	4.51 %

Source: Bloomberg

CSX Corporation

19

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GS6
Coupon Rate:	6.220%
Maturity Date:	4/30/2040
Amount Outstanding ($ 000)	$660,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	136.881	3.91 %
February	132.866	4.11
March	135.216	3.99
April	129.081	4.31
May	126.323	4.46
June	122.551	4.68
July	121.466	4.74
August	120.213	4.81
September	120.772	4.78
October	120.716	4.78
November	119.266	4.86
December	117.568	4.97
Average	125.243	4.53 %

Source: Bloomberg

CSX Corporation

20

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GU1
Coupon Rate:	5.500%
Maturity Date:	4/15/2041
Amount Outstanding ($ 000)	$550,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	128.172	3.79 %
February	122.448	4.09
March	125.117	3.95
April	120.165	4.21
May	115.551	4.48
June	109.591	4.84
July	113.418	4.60
August	109.207	4.87
September	110.179	4.80
October	113.339	4.61
November	113.448	4.60
December	109.842	4.82
Average	115.873	4.47 %

Source: Bloomberg

$300,000
250,000
$550,000

same CUSIP

CSX Corporation

21

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GW7
Coupon Rate:	4.750%
Maturity Date:	5/30/2042
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	116.705	3.77 %
February	113.405	3.94
March	114.280	3.89
April	112.505	3.99
May	105.491	4.40
June	101.187	4.67
July	99.903	4.76
August	100.547	4.71
September	99.574	4.78
October	100.713	4.70
November	100.790	4.70
December	100.649	4.71
Average	105.479	4.42 %

Source: Bloomberg

CSX Corporation

22

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GX5
Coupon Rate:	4.400%
Maturity Date:	3/1/2043
Amount Outstanding ($ 000)	$300,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	108.936	3.88 %
February	108.051	3.92
March	108.634	3.89
April	104.729	4.11
May	101.124	4.33
June	94.577	4.75
July	96.451	4.63
August	95.500	4.69
September	97.326	4.57
October	97.570	4.56
November	95.963	4.66
December	97.269	4.58
Average	100.511	4.38 %

Source: Bloomberg

CSX Corporation

23

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408GY3
Coupon Rate:	4.100%
Maturity Date:	3/15/2044
Amount Outstanding ($ 000)	$800,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	107.279	3.69 %
February	103.810	3.88
March	104.794	3.83
April	99.392	4.14
May	95.865	4.35
June	92.342	4.58
July	91.250	4.66
August	91.342	4.65
September	91.561	4.64
October	93.092	4.54
November	92.740	4.56
December	90.935	4.68
Average	96.200	4.35 %

Source: Bloomberg

CSX Corporation

24

Type:	Notes
Description:	CSX Corp. (New)
CUSIP:	126408HC0
Coupon Rate:	3.950%
Maturity Date:	5/1/2050
Amount Outstanding ($ 000)	$600,000
Months Outstanding	8.5

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	95.594	4.19
May	92.307	4.38
June	87.555	4.68
July	88.456	4.62
August	86.143	4.77
September	86.387	4.76
October	87.595	4.68
November	87.204	4.70
December	85.019	4.85
Average	88.473	4.63 %

Source: Bloomberg

CSX Corporation

25

Type:	Notes
Description:	CSX Corp.
CUSIP:	126408HA4
Coupon Rate:	4.500%
Maturity Date:	8/1/2054
Amount Outstanding ($ 000)	$450,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	111.338	3.93 %
February	109.211	4.03
March	109.850	4.00
April	104.430	4.27
May	98.508	4.58
June	95.540	4.75
July	96.342	4.71
August	95.427	4.76
September	92.750	4.92
October	93.870	4.85
November	91.284	5.01
December	89.627	5.12
Average	99.015	4.58 %

Source: Bloomberg

CSX Corporation

26

Type:	Notes
Description:	CSXT - Conrail
CUSIP:	126410LK3
Coupon Rate:	9.750%
Maturity Date:	6/15/2020
Amount Outstanding ($ 000)	$227,171
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	136.732	2.41 %
February	131.000	3.31
March	134.756	2.58
April	132.771	2.82
May	130.984	3.07
June	131.043	2.97
July	131.504	2.79
August	130.532	2.95
September	129.644	2.96
October	129.057	2.98
November	129.570	2.81
December	125.750	3.49
Average	131.112	2.93 %

Source: Bloomberg

CSX Corporation

27

Type:	Notes
Description:	CSXT - Conrail
CUSIP:	126410LL1
Coupon Rate:	7.875%
Maturity Date:	5/15/2043
Amount Outstanding ($ 000)	$99,989
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	156.025	4.40 %
February	150.030	4.67
March	149.719	4.68
April	142.470	5.03
May	142.057	5.05
June	136.895	5.32
July	137.971	5.26
August	135.648	5.38
September	134.254	5.46
October	141.524	5.06
November	141.366	5.07
December	129.167	5.75
Average	141.427	5.09 %

Source: Bloomberg

CSX Corporation

28

Type:	Sec'd Eq Notes
Description:	CSXT
CUSIP:	126410LM9
Coupon Rate:	6.251%
Maturity Date:	1/15/2023
Amount Outstanding ($ 000)	$250,568
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	118.500	3.51
April	119.000	3.43
May	119.165	3.38
June	115.500	3.87
July	Not Traded	-
August	Not Traded	-
September	115.000	3.87
October	116.620	3.61
November	116.210	3.65
December	116.500	3.59
Average	117.062	3.61 %

Source: Bloomberg

Kansas City Southern Corp.

29

Type:	Sr Note
Description:	KCSR
CUSIP:	485188AN6
Coupon Rate:	4.300%
Maturity Date:	5/15/2043
Amount Outstanding ($ 000)	$12,429
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	109.510	3.75 %
February	104.103	4.05
March	104.952	4.01
April	103.214	4.11
May	98.366	4.40
June	95.144	4.61
July	94.417	4.66
August	Not Traded	-
September	93.283	4.74
October	90.701	4.92
November	90.168	4.96
December	90.168	4.96
Average	97.639	4.47 %

Source: Bloomberg

Note: This is the exchange-traded portion of these notes. The Rule 144-A portion of notes similar to these has a different CUSIP, and is shown on a different page as bond number 32.

Kansas City Southern Corp.

30

Type:	Sr Note
Description:	KCSR
CUSIP:	485188AM8
Coupon Rate:	3.850%
Maturity Date:	11/15/2023
Amount Outstanding ($ 000)	$4,957
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	102.289	3.54 %
February	Not Traded	-
March	102.571	3.50
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	101.714	3.61
October	Not Traded	-
November	99.435	3.93
December	Not Traded	-
Average	101.502	3.65 %

Source: Bloomberg

Note: This is the exchange-traded portion of these notes. The Rule 144-A portion of notes similar to these has a different CUSIP, and is shown on a different page as bond number 33.

Kansas City Southern Corp.

31

Type:	Sr Note
Description:	KCSR (New)
CUSIP:	485188AP1
Coupon Rate:	4.950%
Maturity Date:	8/15/2045
Amount Outstanding ($ 000)	$23,312
Months Outstanding	5.5

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	102.622	4.78
August	101.223	4.87
September	101.390	4.86
October	100.716	4.90
November	95.964	5.22
December	98.780	5.03
Average	100.116	4.94 %

Source: Bloomberg

Note: This portion was announced 7/22/2015.

Note: This is the exchange-traded portion of these notes. The Rule 144-A portion of notes similar to these has a different CUSIP, and is shown on a different page as bond number 34.

Kansas City Southern Corp.

32

Type:	Sr Note 144A
Description:	KCS (New)
CUSIP:	485170AJ3
Coupon Rate:	4.300%
Maturity Date:	5/15/2043
Amount Outstanding ($ 000)	$437,551
Months Outstanding	1.5

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	Not Traded	-
November	Not Traded	-
December	89.809	4.99
Average	89.809	4.99 %

Source: Bloomberg

Note: This is the Rule 144-A portion of these notes, which trades among qualified institutional buyers and has its own CUSIP. The exchange-traded portion of notes similar to these is identified on a different page as bond number 29.

Kansas City Southern Corp.

33

Type:	Sr Note 144A
Description:	KCS (New)
CUSIP:	485170AK0
Coupon Rate:	3.850%
Maturity Date:	11/15/2023
Amount Outstanding ($ 000)	$195,043
Months Outstanding	1.5

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	Not Traded	-
November	Not Traded	-
December	100.411	3.79
Average	100.411	3.79 %

Source: Bloomberg

Note: This is the Rule 144-A portion of these notes, which trades among qualified institutional buyers and has its own CUSIP. The exchange-traded portion of notes similar to these is identified on a different page as bond number 30.

Kansas City Southern Corp.

34

Type:	Sr Note 144A
Description:	KCS (New)
CUSIP:	485170AL8
Coupon Rate:	4.950%
Maturity Date:	8/15/2045
Amount Outstanding ($ 000)	$476,665
Months Outstanding	1.5

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	Not Traded	-
November	Not Traded	-
December	98.753	5.03
Average	98.753	5.03 %

Source: Bloomberg

Note: This is the Rule 144-A portion of these notes, which trades among qualified institutional buyers and has its own CUSIP. The exchange-traded portion of notes similar to these is identified on a different page as bond number 31.

Kansas City Southern Corp.

35

Type:	Sr Note 144A
Description:	KCS (New)
CUSIP:	485170AN4
Coupon Rate:	2.350%
Maturity Date:	5/15/2020
Amount Outstanding ($ 000)	$239,542
Months Outstanding	1.5

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	Not Traded	-
November	Not Traded	-
December	96.890	3.12
Average	96.890	3.12 %

Source: Bloomberg

Note: This is the Rule 144-A portion of these notes, which trades among qualified institutional buyers and has its own CUSIP. The exchange-traded portion of notes similar to these is identified on a different page as bond number 37.

Kansas City Southern Corp.

36

Type:	Sr Note 144A
Description:	KCS (New)
CUSIP:	485170AP9
Coupon Rate:	3.000%
Maturity Date:	5/15/2023
Amount Outstanding ($ 000)	$439,123
Months Outstanding	1.5

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	Not Traded	-
November	Not Traded	-
December	94.977	3.79
Average	94.977	3.79 %

Source: Bloomberg

Note: This is the Rule 144-A portion of these notes, which trades among qualified institutional buyers and has its own CUSIP. The exchange-traded portion of notes similar to these is identified on a different page as bond number 38.

Kansas City Southern Corp.

37

Type:	Sr Note
Description:	KCSM
CUSIP:	485161AQ6
Coupon Rate:	2.350%
Maturity Date:	5/15/2020
Amount Outstanding ($ 000)	$35,398
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	98.910	2.57 %
February	97.603	2.85
March	98.050	2.76
April	98.000	2.78
May	98.369	2.70
June	97.611	2.88
July	98.082	2.78
August	98.106	2.78
September	96.946	3.07
October	100.000	2.35
November	97.712	2.90
December	97.395	2.99
Average	98.065	2.78 %

Source: Bloomberg

Note: This is the exchange-traded portion of these notes. The Rule 144-A portion of notes similar to these has a different CUSIP, and is shown on a different page as bond number 35.

Kansas City Southern Corp.

38

Type:	Sr Note
Description:	KCSM
CUSIP:	485161AS2
Coupon Rate:	3.000%
Maturity Date:	5/15/2023
Amount Outstanding ($ 000)	$10,877
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	100.811	2.89 %
February	98.942	3.15
March	98.794	3.17
April	99.341	3.09
May	97.401	3.38
June	96.261	3.55
July	96.653	3.49
August	96.084	3.59
September	95.926	3.62
October	95.131	3.75
November	94.634	3.83
December	95.008	3.78
Average	97.082	3.44 %

Source: Bloomberg

Note: This is the exchange-traded portion of these notes. The Rule 144-A portion of notes similar to these has a different CUSIP, and is shown on a different page as bond number 36.

Norfolk Southern Corp.

39

Type:	Debenture
Description:	Southern Railway
CUSIP:	655855FA7
Coupon Rate:	9.750%
Maturity Date:	6/15/2020
Amount Outstanding ($ 000)	$313,741
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	134.834	2.74 %
February	134.150	2.78
March	131.508	3.14
April	134.894	2.45
May	131.961	2.90
June	131.474	2.95
July	130.070	3.05
August	130.202	2.97
September	129.179	3.04
October	126.522	3.48
November	128.881	2.90
December	128.001	2.98
Average	130.973	2.95 %

Source: Bloomberg

Norfolk Southern Corp.

40

Type:	Debenture
Description:	Conrail
CUSIP:	655855FB5
Coupon Rate:	7.875%
Maturity Date:	5/15/2043
Amount Outstanding ($ 000)	$138,085
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	152.500	4.55
March	Not Traded	-
April	Not Traded	-
May	140.712	5.12
June	144.647	4.92
July	145.111	4.89
August	Not Traded	-
September	142.228	5.03
October	144.445	4.91
November	139.815	5.15
December	140.130	5.13
Average	143.699	4.96 %

Source: Bloomberg

Norfolk Southern Corp.

41

Type:	Notes
Description:	Series A NSC
CUSIP:	655844AA6
Coupon Rate:	9.000%
Maturity Date:	3/1/2021
Amount Outstanding ($ 000)	$83,372
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	131.899	3.18 %
February	129.938	3.43
March	130.332	3.30
April	129.703	3.34
May	129.032	3.39
June	127.265	3.62
July	127.081	3.59
August	126.485	3.64
September	126.554	3.56
October	126.013	3.59
November	125.062	3.70
December	124.097	3.80
Average	127.788	3.51 %

Source: Bloomberg

Norfolk Southern Corp.

42

Type:	Notes
Description:	Senior
CUSIP:	655844AQ1
Coupon Rate:	7.250%
Maturity Date:	2/15/2031
Amount Outstanding ($ 000)	$316,316
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	141.527	3.78 %
February	138.605	3.97
March	136.935	4.08
April	139.074	3.91
May	131.417	4.45
June	127.526	4.74
July	131.027	4.46
August	129.484	4.57
September	126.165	4.82
October	126.284	4.80
November	121.758	5.17
December	127.247	4.71
Average	131.421	4.46 %

Source: Bloomberg

Norfolk Southern Corp.

43

Type:	Notes
Description:	Senior
CUSIP:	655844AZ1
Coupon Rate:	5.750%
Maturity Date:	4/1/2018
Amount Outstanding ($ 000)	$595,925
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	113.040	1.51 %
February	113.044	1.40
March	112.490	1.46
April	112.095	1.48
May	111.460	1.59
June	110.700	1.73
July	110.181	1.81
August	110.739	1.49
September	109.987	1.64
October	109.717	1.62
November	108.744	1.90
December	108.254	1.98
Average	110.871	1.63 %

Source: Bloomberg

Note: This is the exchange-traded portion of these notes. The Rule 144-A notes similar to these have a different CUSIP, and are shown on the next page.

Norfolk Southern Corp.

44

Type:	Notes
Description:	Senior 144A
CUSIP:	655844AY4
Coupon Rate:	5.750%
Maturity Date:	4/1/2018
Amount Outstanding ($ 000)	$4,075
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	113.130	1.48 %
February	112.269	1.64
March	112.406	1.49
April	112.020	1.51
May	111.375	1.62
June	110.625	1.76
July	110.342	1.75
August	109.843	1.82
September	109.741	1.73
October	109.273	1.80
November	108.666	1.92
December	108.101	2.03
Average	110.649	1.71 %

Source: Bloomberg

Note: These are Rule 144-A notes, which trade among qualified institutional buyers and have their own CUSIP. The exchange-traded notes similar to these are on the proceeding page.

Norfolk Southern Corp.

45

Type:	Notes
Description:	Senior
CUSIP:	655844BC1
Coupon Rate:	5.900%
Maturity Date:	6/15/2019
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	116.632	1.91 %
February	115.840	2.02
March	115.211	2.10
April	114.627	2.16
May	114.000	2.26
June	113.940	2.19
July	113.737	2.17
August	112.188	2.50
September	113.463	2.09
October	113.118	2.11
November	111.500	2.48
December	111.571	2.38
Average	113.819	2.20 %

Source: Bloomberg

Norfolk Southern Corp.

46

Type:	Notes
Description:	Senior
CUSIP:	655844BG2
Coupon Rate:	3.250%
Maturity Date:	12/1/2021
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	106.905	2.16 %
February	104.151	2.58
March	103.881	2.61
April	104.493	2.50
May	103.475	2.66
June	102.141	2.88
July	101.640	2.96
August	100.984	3.08
September	101.713	2.94
October	101.537	2.97
November	99.943	3.26
December	100.015	3.25
Average	102.573	2.82 %

Source: Bloomberg

Norfolk Southern Corp.

47

Type:	Notes
Description:	Senior
CUSIP:	655844BJ6
Coupon Rate:	3.000%
Maturity Date:	4/1/2022
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	103.186	2.51 %
February	101.790	2.72
March	102.571	2.60
April	102.919	2.54
May	101.700	2.73
June	99.151	3.14
July	99.411	3.10
August	99.484	3.09
September	99.637	3.06
October	99.185	3.14
November	99.119	3.15
December	99.815	3.03
Average	100.664	2.90 %

Source: Bloomberg

Norfolk Southern Corp.

48

Type:	Notes
Description:	Senior
CUSIP:	655844BL1
Coupon Rate:	2.903%
Maturity Date:	2/15/2023
Amount Outstanding ($ 000)	$596,450
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	101.883	2.64 %
February	100.420	2.84
March	101.243	2.73
April	100.268	2.86
May	99.211	3.02
June	96.642	3.41
July	97.637	3.26
August	97.298	3.32
September	96.422	3.46
October	97.636	3.27
November	97.083	3.36
December	97.181	3.35
Average	98.577	3.13 %

Source: Bloomberg

Note: This is the exchange-traded portion of these notes. The Rule 144-A notes similar to these have a different CUSIP, and are shown on the next page.

Norfolk Southern Corp.

49

Type:	Notes
Description:	Senior 144A
CUSIP:	655844BK3
Coupon Rate:	2.903%
Maturity Date:	2/15/2023
Amount Outstanding ($ 000)	$3,550
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	102.560	2.55 %
February	100.773	2.79
March	101.125	2.74
April	100.480	2.83
May	99.088	3.04
June	97.088	3.34
July	97.984	3.21
August	97.275	3.32
September	97.964	3.22
October	98.089	3.20
November	97.596	3.28
December	96.766	3.42
Average	98.899	3.08 %

Source: Bloomberg

Note: These are Rule 144-A notes, which trade among qualified institutional buyers and have their own CUSIP. The exchange-traded notes similar to these are on the proceeding page.

Norfolk Southern Corp.

50

Type:	Notes
Description:	Senior
CUSIP:	655844BD9
Coupon Rate:	6.000%
Maturity Date:	5/23/2111
Amount Outstanding ($ 000)	$504,492
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	140.868	4.24 %
February	129.247	4.63
March	127.814	4.68
April	124.200	4.82
May	118.468	5.06
June	113.542	5.28
July	113.791	5.27
August	112.917	5.31
September	113.195	5.30
October	112.484	5.33
November	107.869	5.56
December	107.698	5.57
Average	118.508	5.09 %

Source: Bloomberg

$404,492
100,000
$504,492

same CUSIP

Norfolk Southern Corp.

51

Type:	Notes
Description:	Senior 2105
CUSIP:	655844AV0
Coupon Rate:	6.000%
Maturity Date:	3/15/2105
Amount Outstanding ($ 000)	$550,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	141.658	4.21 %
February	128.192	4.66
March	129.897	4.60
April	121.183	4.94
May	115.830	5.17
June	111.457	5.38
July	115.420	5.19
August	Not Traded	-
September	107.950	5.56
October	110.846	5.41
November	Not Traded	-
December	Not Traded	-
Average	120.270	5.01 %

Source: Bloomberg

$300,000
250,000
$550,000

same CUSIP

Norfolk Southern Corp.

52

Type:	Notes
Description:	Senior
CUSIP:	655844AX6
Coupon Rate:	5.640%
Maturity Date:	5/17/2029
Amount Outstanding ($ 000)	$210,316
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	120.750	3.75 %
February	119.721	3.83
March	123.952	3.48
April	116.951	4.05
May	117.063	4.03
June	114.044	4.29
July	115.869	4.12
August	117.239	3.99
September	114.900	4.19
October	116.855	4.01
November	108.326	4.79
December	112.255	4.42
Average	116.494	4.08 %

Source: Bloomberg

Norfolk Southern Corp.

53

Type:	Notes
Description:	Senior
CUSIP:	655844AW8
Coupon Rate:	5.590%
Maturity Date:	5/17/2025
Amount Outstanding ($ 000)	$251,172
Months Outstanding	12.0

End of Month in 20	Price	Yield
January	120.305	3.25 %
February	120.325	3.24
March	120.201	3.23
April	119.062	3.34
May	117.265	3.52
June	114.712	3.79
July	114.119	3.84
August	117.048	3.50
September	113.045	3.95
October	116.363	3.55
November	115.212	3.67
December	115.799	3.59
Average	116.955	3.54 %

Source: Bloomberg

Norfolk Southern Corp.

54

Type:	Notes
Description:	Senior
CUSIP:	655844BH0
Coupon Rate:	4.837%
Maturity Date:	10/1/2041
Amount Outstanding ($ 000)	$595,504
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	119.678	3.67 %
February	114.818	3.93
March	115.008	3.92
April	111.281	4.13
May	106.204	4.44
June	102.504	4.67
July	102.014	4.70
August	101.650	4.73
September	101.216	4.76
October	103.503	4.60
November	99.613	4.86
December	98.988	4.91
Average	106.373	4.44 %

Source: Bloomberg

$595,502
2
$595,504

same CUSIP

Norfolk Southern Corp.

55

Type:	Notes
Description:	Senior
CUSIP:	655844BM9
Coupon Rate:	3.950%
Maturity Date:	10/1/2042
Amount Outstanding ($ 000)	$600,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	107.003	3.55 %
February	100.346	3.93
March	102.068	3.83
April	97.461	4.11
May	94.354	4.30
June	90.102	4.59
July	90.000	4.60
August	87.326	4.79
September	89.384	4.64
October	90.738	4.55
November	87.165	4.81
December	86.632	4.85
Average	93.548	4.38 %

Source: Bloomberg

Norfolk Southern Corp.

56

Type:	Notes
Description:	Senior
CUSIP:	655844BN7
Coupon Rate:	4.800%
Maturity Date:	8/15/2043
Amount Outstanding ($ 000)	$500,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	121.011	3.61 %
February	114.434	3.95
March	115.634	3.89
April	112.202	4.07
May	106.478	4.40
June	102.267	4.65
July	101.798	4.68
August	100.929	4.74
September	102.508	4.64
October	101.987	4.67
November	98.635	4.89
December	97.676	4.96
Average	106.297	4.43 %

Source: Bloomberg

Norfolk Southern Corp.

57

Type:	Notes
Description:	Senior
CUSIP:	655844BP2
Coupon Rate:	3.850%
Maturity Date:	1/15/2024
Amount Outstanding ($ 000)	$400,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	109.276	2.68 %
February	107.521	2.88
March	107.898	2.83
April	105.960	3.06
May	105.558	3.11
June	103.226	3.41
July	102.276	3.54
August	101.797	3.60
September	102.871	3.45
October	104.717	3.19
November	103.282	3.38
December	102.581	3.48
Average	104.747	3.22 %

Source: Bloomberg

Norfolk Southern Corp.

58

Type:	Notes
Description:	Senior (New)
CUSIP:	655844BQ0
Coupon Rate:	4.450%
Maturity Date:	6/15/2045
Amount Outstanding ($ 000)	$500,000
Months Outstanding	7.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	100.014	4.45
June	96.575	4.66
July	98.016	4.57
August	96.441	4.67
September	97.103	4.63
October	97.062	4.63
November	94.352	4.81
December	95.312	4.75
Average	96.859	4.65 %

Source: Bloomberg

Note: Announced 5/28/2015.

Norfolk Southern Corp.

59

Type:	Notes
Description:	Senior (New)
CUSIP:	655844BR8
Coupon Rate:	4.650%
Maturity Date:	1/15/2046
Amount Outstanding ($ 000)	$600,000
Months Outstanding	2.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	99.856	4.66
November	97.047	4.84
December	95.947	4.91
Average	97.617	4.80 %

Source: Bloomberg

Note: Announced 10/29/2015.

Norfolk Southern Corp.

60

Type:	Conrail Notes
Description:	CR NSC 2017
CUSIP:	655844AE8
Coupon Rate:	7.700%
Maturity Date:	5/15/2017
Amount Outstanding ($ 000)	$550,000
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	114.576	1.22 %
February	114.004	1.22
March	113.283	1.29
April	112.903	1.24
May	112.297	1.29
June	111.243	1.54
July	110.727	1.59
August	110.336	1.53
September	109.939	1.44
October	109.526	1.39
November	108.650	1.64
December	108.308	1.50
Average	111.316	1.41 %

Source: Bloomberg

Norfolk Southern Corp.

61

Type:	Conrail Notes
Description:	CR NSC 2027
CUSIP:	655844AJ7
Coupon Rate:	7.800%
Maturity Date:	5/15/2027
Amount Outstanding ($ 000)	$368,199
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	140.556	3.67 %
February	139.740	3.73
March	136.663	3.96
April	138.173	3.81
May	136.832	3.92
June	133.763	4.17
July	135.864	3.96
August	135.077	4.01
September	133.576	4.14
October	133.573	4.11
November	134.232	4.04
December	132.568	4.17
Average	135.885	3.97 %

Source: Bloomberg

Norfolk Southern Corp.

62

Type:	Conrail Notes
Description:	CR NSC 2037
CUSIP:	655844AF5
Coupon Rate:	7.050%
Maturity Date:	5/1/2037
Amount Outstanding ($ 000)	$256,690
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	146.208	3.92 %
February	142.399	4.12
March	138.950	4.30
April	142.597	4.10
May	133.529	4.61
June	127.560	4.97
July	132.612	4.65
August	131.471	4.72
September	128.299	4.91
October	Not Traded	-
November	127.496	4.95
December	Not Traded	-
Average	135.112	4.53 %

Source: Bloomberg

Norfolk Southern Corp.

63

Type:	Conrail Notes
Description:	CR NSC 2097
CUSIP:	655844AK4
Coupon Rate:	7.900%
Maturity Date:	5/15/2097
Amount Outstanding ($ 000)	$273,317
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	143.877	5.47
August	Not Traded	-
September	Not Traded	-
October	Not Traded	-
November	138.269	5.70
December	Not Traded	-
Average	141.073	5.59 %

Source: Bloomberg

Union Pacific Corp.

64

Type:	Debentures
Description:	UP Corp.
CUSIP:	907818CS5
Coupon Rate:	5.375%
Maturity Date:	6/1/2033
Amount Outstanding ($ 000)	$197,331
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	122.072	3.71 %
February	117.742	4.00
March	Not Traded	-
April	119.271	3.88
May	116.808	4.05
June	111.960	4.41
July	112.716	4.34
August	Not Traded	-
September	111.513	4.43
October	116.276	4.07
November	Not Traded	-
December	109.949	4.54
Average	115.367	4.16 %

Source: Bloomberg

Union Pacific Corp.

65

Type:	Debentures
Description:	UP Corp.
CUSIP:	907818CX4
Coupon Rate:	6.150%
Maturity Date:	5/1/2037
Amount Outstanding ($ 000)	$111,093
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	139.193	3.58 %
February	Not Traded	-
March	132.386	3.94
April	Not Traded	-
May	118.406	4.79
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	120.299	4.65
November	Not Traded	-
December	Not Traded	-
Average	127.571	4.24 %

Source: Bloomberg

Union Pacific Corp.

66

Type:	Debentures
Description:	UP Corp.
CUSIP:	907818CU0
Coupon Rate:	6.250%
Maturity Date:	5/1/2034
Amount Outstanding ($ 000)	$226,364
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	132.855	3.83 %
February	132.980	3.81
March	133.937	3.75
April	131.363	3.90
May	121.875	4.52
June	119.996	4.65
July	124.897	4.30
August	Not Traded	-
September	Not Traded	-
October	119.030	4.70
November	121.709	4.51
December	123.147	4.40
Average	126.179	4.24 %

Source: Bloomberg

Union Pacific Corp.

67

Type:	Debentures
Description:	UP Corp.
CUSIP:	907818CF3
Coupon Rate:	6.625%
Maturity Date:	2/1/2029
Amount Outstanding ($ 000)	$417,341
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	141.504	2.98 %
February	137.583	3.25
March	136.948	3.28
April	140.158	3.04
May	136.322	3.30
June	Not Traded	-
July	132.000	3.61
August	135.285	3.35
September	Not Traded	-
October	130.166	3.73
November	128.195	3.87
December	129.387	3.76
Average	134.755	3.42 %

Source: Bloomberg

Union Pacific Corp.

68

Type:	Debentures
Description:	UP Corp.
CUSIP:	907818BY3
Coupon Rate:	7.125%
Maturity Date:	2/1/2028
Amount Outstanding ($ 000)	$174,685
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	136.072	3.59
April	Not Traded	-
May	Not Traded	-
June	126.859	4.33
July	130.785	3.99
August	Not Traded	-
September	129.658	4.05
October	127.050	4.27
November	Not Traded	-
December	132.669	3.75
Average	130.516	4.00 %

Source: Bloomberg

Union Pacific Corp.

69

Type:	Notes
Description:	UP Corp. (New)
CUSIP:	907818EA2
Coupon Rate:	1.800%
Maturity Date:	2/1/2020
Amount Outstanding ($ 000)	$248,114
Months Outstanding	11.0

End of Month in 2015	Price	Yield
January	100.922	1.61 %
February	99.575	1.89
March	100.431	1.71
April	100.055	1.79
May	99.977	1.81
June	98.402	2.17
July	98.607	2.13
August	98.942	2.05
September	99.379	1.95
October	99.383	1.95
November	98.847	2.09
December	98.356	2.22
Average	99.406	1.95 %

Source: Bloomberg

Announcement Date = 1/26/2015.

Union Pacific Corp.

70

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DW5
Coupon Rate:	2.250%
Maturity Date:	2/15/2019
Amount Outstanding ($ 000)	$298,407
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	102.883	1.51 %
February	102.584	1.57
March	102.649	1.54
April	102.033	1.69
May	101.695	1.78
June	101.520	1.81
July	101.362	1.85
August	101.064	1.93
September	101.644	1.74
October	101.205	1.87
November	101.417	1.79
December	101.163	1.86
Average	101.768	1.75 %

Source: Bloomberg

Union Pacific Corp.

71

Type:	Notes
Description:	UP Corp. (New)
CUSIP:	907818EE4
Coupon Rate:	2.250%
Maturity Date:	6/19/2020
Amount Outstanding ($ 000)	$397,192
Months Outstanding	6.5

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	100.502	2.14
July	100.440	2.15
August	100.765	2.08
September	101.821	1.84
October	101.206	1.98
November	100.483	2.14
December	100.426	2.15
Average	100.806	2.07 %

Source: Bloomberg

Announcement Date = 6/16/2015.

Union Pacific Corp.

72

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DN5
Coupon Rate:	2.750%
Maturity Date:	4/15/2023
Amount Outstanding ($ 000)	$321,688
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	102.244	2.45 %
February	101.535	2.54
March	102.234	2.44
April	101.097	2.60
May	99.636	2.80
June	97.074	3.18
July	99.865	2.77
August	98.150	3.02
September	98.889	2.92
October	99.000	2.90
November	98.922	2.91
December	98.949	2.91
Average	99.800	2.79 %

Source: Bloomberg

Union Pacific Corp.

73

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DM7
Coupon Rate:	2.950%
Maturity Date:	1/15/2023
Amount Outstanding ($ 000)	$298,311
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	103.242	2.50 %
February	102.674	2.57
March	103.549	2.45
April	102.693	2.56
May	101.808	2.69
June	99.226	3.07
July	98.936	3.11
August	98.726	3.15
September	100.625	2.85
October	100.809	2.83
November	100.888	2.81
December	100.761	2.83
Average	101.161	2.79 %

Source: Bloomberg

Union Pacific Corp.

74

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DY1
Coupon Rate:	3.250%
Maturity Date:	1/15/2025
Amount Outstanding ($ 000)	$346,692
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	107.307	2.42 %
February	104.811	2.69
March	104.434	2.73
April	103.839	2.80
May	102.530	2.95
June	99.569	3.30
July	99.870	3.27
August	99.494	3.31
September	100.598	3.18
October	103.070	2.87
November	102.081	2.99
December	103.063	2.86
Average	102.556	2.95 %

Source: Bloomberg

Union Pacific Corp.

75a

Type:	Notes Issued 6/19
Description:	UP Corp. (New)
CUSIP:	907818ED6
Coupon Rate:	3.250%
Maturity Date:	8/15/2025
Amount Outstanding ($ 000)	$299,168
Months Outstanding	6.5

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	99.091	3.36
July	100.313	3.21
August	98.976	3.37
September	100.942	3.14
October	101.671	3.05
November	102.049	3.00
December	102.307	2.97
Average	100.764	3.16 %

Source: Bloomberg

The series of notes identified with CUSIP 907818ED6 was issued twice during 2015. The first portion was valued at $300 million. It is shown on this page and identified as "75a". It was announced on June 16, 2015 – and issued on June 19, 2015.

The second portion of these notes, valued at $200 million, was issued on October 29, 2015. This portion is shown on the following page, and identified as "75b".

Splitting this series of notes makes it easier to follow the Surface Transportation Board's cost of capital procedure where newly-issued securities are prorated by the ratio of the number of months outstanding to the twelve-month year.

From the Rule 424(b)(5) filing:

The 2025 notes offered hereby form a part of the series of our currently outstanding 3.250% notes due 2025 and have the same terms as the existing notes of this series issued by us on June 19, 2015 (the "existing 2025 notes"). The 2025 notes will have the same CUSIP number as the existing 2025 notes and will trade interchangeably with the existing 2025 notes immediately upon settlement. The 2025 notes offered hereby and the existing 2025 notes previously issued by us will constitute a single series under the indenture for all purposes. Upon issuance of the 2025 notes, the aggregate principal amount outstanding of our 3.250% notes due 2025 will be $500 million.

Union Pacific Corp.

75b

Type:	Notes Issued 10/29
Description:	UP Corp. (New)
CUSIP:	907818ED6
Coupon Rate:	3.250%
Maturity Date:	8/15/2025
Amount Outstanding ($ 000)	$199,445
Months Outstanding	2.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	101.671	3.05
November	102.049	3.00
December	102.307	2.97
Average	102.009	3.01 %

Source: Bloomberg

The series of notes identified with CUSIP 907818ED6 was issued twice during 2015. The first portion was valued at $300 million. It is shown on the previous page and identified as "75a". It was announced on June 16, 2015 – and issued on June 19, 2015.

The second portion of these notes, valued at $200 million, was issued on October 29, 2015. This portion is shown on this page, and identified as "75b".

Splitting this series of notes makes it easier to follow the Surface Transportation Board's cost of capital procedure where newly issued securities are prorated by the ratio of the number of months outstanding to the twelve-month year.

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Union Pacific Corp.

76

Type:	Notes
Description:	UP Corp. (New)
CUSIP:	907818EB0
Coupon Rate:	3.375%
Maturity Date:	2/1/2035
Amount Outstanding ($ 000)	$444,369
Months Outstanding	11.0

End of Month in 2015	Price	Yield
January	102.816	3.18 %
February	99.223	3.43
March	98.276	3.50
April	94.785	3.75
May	94.161	3.80
June	89.670	4.15
July	90.607	4.08
August	92.062	3.97
September	90.805	4.07
October	94.878	3.75
November	93.485	3.86
December	90.728	4.08
Average	94.291	3.80 %

Source: Bloomberg

Announcement Date = 1/26/2015.

Union Pacific Corp.

77

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DR6
Coupon Rate:	3.646%
Maturity Date:	2/15/2024
Amount Outstanding ($ 000)	$360,954
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	110.074	2.40 %
February	107.655	2.68
March	108.430	2.58
April	107.005	2.74
May	105.587	2.91
June	102.624	3.29
July	104.769	3.01
August	102.404	3.32
September	104.493	3.03
October	105.002	2.96
November	104.186	3.07
December	104.786	2.98
Average	105.585	2.91 %

Source: Bloomberg

Union Pacific Corp.

78

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DV7
Coupon Rate:	3.750%
Maturity Date:	3/15/2024
Amount Outstanding ($ 000)	$394,934
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	111.181	2.38 %
February	108.784	2.65
March	109.167	2.60
April	107.759	2.76
May	107.278	2.81
June	102.850	3.37
July	103.281	3.31
August	104.015	3.21
September	105.400	3.02
October	105.861	2.95
November	105.728	2.97
December	106.042	2.92
Average	106.446	2.91 %

Source: Bloomberg

Union Pacific Corp.

79

Type:	Notes
Description:	UP Corp. (New)
CUSIP:	907818EC8
Coupon Rate:	3.875%
Maturity Date:	2/1/2055
Amount Outstanding ($ 000)	$443,697
Months Outstanding	11.0

End of Month in 2015	Price	Yield
January	103.384	3.71 %
February	98.477	3.95
March	98.774	3.94
April	94.186	4.18
May	92.566	4.27
June	87.630	4.55
July	89.215	4.46
August	88.629	4.49
September	89.006	4.47
October	88.763	4.49
November	88.337	4.51
December	88.731	4.49
Average	92.308	4.29 %

Source: Bloomberg

Announcement Date = 1/26/2015.

Union Pacific Corp.

80

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DG0
Coupon Rate:	4.000%
Maturity Date:	2/1/2021
Amount Outstanding ($ 000)	$496,757
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	111.958	1.88 %
February	110.331	2.13
March	110.142	2.14
April	109.736	2.19
May	109.550	2.20
June	107.900	2.47
July	107.544	2.52
August	109.150	2.20
September	108.493	2.30
October	109.607	2.06
November	107.514	2.44
December	106.747	2.57
Average	109.056	2.26 %

Source: Bloomberg

Union Pacific Corp.

81

Type:	Notes
Description:	UP Corp. (New)
CUSIP:	907818EF1
Coupon Rate:	4.050%
Maturity Date:	11/15/2045
Amount Outstanding ($ 000)	$493,153
Months Outstanding	2.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	98.476	4.14
November	97.470	4.20
December	97.271	4.21
Average	97.739	4.18 %

Source: Bloomberg

Announcement Date = 10/26/2015.

Union Pacific Corp.

82

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DZ8
Coupon Rate:	4.150%
Maturity Date:	1/15/2045
Amount Outstanding ($ 000)	$341,491
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	112.469	3.48 %
February	107.284	3.74
March	108.848	3.66
April	103.161	3.97
May	99.658	4.17
June	95.299	4.44
July	97.716	4.29
August	97.328	4.31
September	99.424	4.18
October	100.632	4.11
November	98.285	4.25
December	99.680	4.17
Average	101.649	4.06 %

Source: Bloomberg

Union Pacific Corp.

83

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DK1
Coupon Rate:	4.163%
Maturity Date:	7/15/2022
Amount Outstanding ($ 000)	$637,511
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	113.334	2.21 %
February	112.390	2.32
March	112.235	2.33
April	111.343	2.43
May	110.080	2.60
June	107.536	2.97
July	107.548	2.95
August	106.475	3.11
September	107.536	2.93
October	109.410	2.62
November	109.031	2.67
December	108.933	2.66
Average	109.654	2.65 %

Source: Bloomberg

Union Pacific Corp.

84

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DP0
Coupon Rate:	4.250%
Maturity Date:	4/15/2043
Amount Outstanding ($ 000)	$317,663
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	113.830	3.48 %
February	107.350	3.82
March	107.233	3.83
April	104.997	3.95
May	99.543	4.28
June	96.714	4.46
July	99.414	4.29
August	97.831	4.39
September	98.814	4.32
October	104.467	3.98
November	100.220	4.24
December	100.665	4.21
Average	102.590	4.10 %

Source: Bloomberg

Union Pacific Corp.

85

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DL9
Coupon Rate:	4.300%
Maturity Date:	6/15/2042
Amount Outstanding ($ 000)	$296,931
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	111.252	3.65 %
February	108.493	3.80
March	109.835	3.72
April	108.396	3.80
May	101.670	4.20
June	97.800	4.44
July	99.711	4.32
August	100.120	4.29
September	101.049	4.23
October	102.394	4.15
November	100.545	4.27
December	97.573	4.46
Average	103.237	4.11 %

Source: Bloomberg

Union Pacific Corp.

86

Type:	Notes
Description:	UP Corp. (New)
CUSIP:	907818EG9
Coupon Rate:	4.375%
Maturity Date:	11/15/2065
Amount Outstanding ($ 000)	$380,563
Months Outstanding	2.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	Not Traded	-
June	Not Traded	-
July	Not Traded	-
August	Not Traded	-
September	Not Traded	-
October	95.702	4.60
November	94.916	4.64
December	94.399	4.67
Average	95.006	4.64 %

Source: Bloomberg

Announcement Date = 10/26/2015.

Union Pacific Corp.

87

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DJ4
Coupon Rate:	4.750%
Maturity Date:	9/15/2041
Amount Outstanding ($ 000)	$486,398
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	119.151	3.62 %
February	116.749	3.75
March	116.988	3.73
April	111.719	4.02
May	108.772	4.20
June	105.047	4.42
July	106.075	4.36
August	106.321	4.34
September	106.837	4.31
October	110.738	4.07
November	107.438	4.27
December	108.266	4.22
Average	110.342	4.11 %

Source: Bloomberg

Union Pacific Corp.

88

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DU9
Coupon Rate:	4.750%
Maturity Date:	12/15/2043
Amount Outstanding ($ 000)	$495,183
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	120.737	3.59 %
February	117.069	3.77
March	116.501	3.80
April	113.670	3.95
May	106.494	4.35
June	104.835	4.45
July	106.857	4.33
August	105.840	4.39
September	106.223	4.36
October	110.135	4.14
November	108.255	4.24
December	108.774	4.21
Average	110.449	4.13 %

Source: Bloomberg

Union Pacific Corp.

89

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DT2
Coupon Rate:	4.821%
Maturity Date:	2/1/2044
Amount Outstanding ($ 000)	$467,969
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	123.429	3.52 %
February	118.675	3.76
March	118.348	3.77
April	115.469	3.92
May	110.848	4.17
June	104.938	4.51
July	109.382	4.25
August	107.363	4.37
September	107.773	4.34
October	110.639	4.18
November	108.735	4.28
December	109.724	4.23
Average	112.110	4.11 %

Source: Bloomberg

Union Pacific Corp.

90

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DX3
Coupon Rate:	4.850%
Maturity Date:	6/15/2044
Amount Outstanding ($ 000)	$295,304
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	123.939	3.53 %
February	118.157	3.82
March	118.556	3.79
April	115.208	3.97
May	112.416	4.11
June	107.468	4.39
July	109.742	4.26
August	107.151	4.41
September	110.096	4.24
October	113.434	4.05
November	109.462	4.27
December	108.558	4.33
Average	112.849	4.10 %

Source: Bloomberg

Union Pacific Corp.

91

Type:	Notes
Description:	UP Corp.
CUSIP:	907818CW6
Coupon Rate:	5.650%
Maturity Date:	5/1/2017
Amount Outstanding ($ 000)	$193,555
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	108.878	1.60 %
February	109.652	1.23
March	108.000	1.73
April	109.045	1.05
May	106.845	1.98
June	108.013	1.18
July	107.497	1.29
August	106.811	1.48
September	106.863	1.25
October	106.490	1.29
November	106.201	1.20
December	104.607	2.09
Average	107.409	1.45 %

Source: Bloomberg

Union Pacific Corp.

92

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DA3
Coupon Rate:	5.700%
Maturity Date:	8/15/2018
Amount Outstanding ($ 000)	$368,110
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	113.589	1.72 %
February	113.556	1.64
March	113.536	1.56
April	112.981	1.62
May	112.287	1.74
June	111.341	1.92
July	111.751	1.71
August	110.721	1.95
September	111.250	1.66
October	111.356	1.51
November	110.200	1.81
December	108.756	2.23
Average	111.777	1.76 %

Source: Bloomberg

Union Pacific Corp.

93

Type:	Notes
Description:	UP Corp.
CUSIP:	907818CZ9
Coupon Rate:	5.750%
Maturity Date:	11/15/2017
Amount Outstanding ($ 000)	$251,518
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	112.122	1.30 %
February	111.950	1.24
March	111.875	1.12
April	111.569	1.10
May	111.093	1.15
June	110.370	1.32
July	109.660	1.43
August	109.601	1.32
September	109.527	1.18
October	109.024	1.24
November	108.514	1.33
December	108.421	1.24
Average	110.311	1.25 %

Source: Bloomberg

Union Pacific Corp.

94

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DF2
Coupon Rate:	5.780%
Maturity Date:	7/15/2040
Amount Outstanding ($ 000)	$65,399
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	Not Traded	- %
February	Not Traded	-
March	Not Traded	-
April	Not Traded	-
May	120.605	4.41
June	114.493	4.78
July	116.975	4.63
August	119.222	4.49
September	116.364	4.66
October	121.650	4.34
November	119.091	4.49
December	115.020	4.74
Average	117.928	4.57 %

Source: Bloomberg

Union Pacific Corp.

95

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DD7
Coupon Rate:	6.125%
Maturity Date:	2/15/2020
Amount Outstanding ($ 000)	$161,692
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	119.115	2.13 %
February	114.897	2.88
March	112.030	3.42
April	117.829	2.20
May	116.179	2.47
June	114.682	2.74
July	114.688	2.69
August	115.171	2.51
September	113.395	2.84
October	113.553	2.75
November	113.114	2.80
December	113.891	2.54
Average	114.879	2.66 %

Source: Bloomberg

Union Pacific Corp.

96

Type:	Notes
Description:	UP Corp.
CUSIP:	907818DB1
Coupon Rate:	7.875%
Maturity Date:	1/15/2019
Amount Outstanding ($ 000)	$157,991
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	122.291	1.99 %
February	121.953	1.95
March	122.444	1.71
April	121.615	1.80
May	120.980	1.85
June	119.819	2.06
July	116.791	2.75
August	116.000	2.86
September	117.237	2.39
October	118.368	1.93
November	117.260	2.15
December	115.094	2.67
Average	119.154	2.18 %

Source: Bloomberg

Union Pacific Corp.

97

Type:	Mort. Bond
Description:	UPRR-MP
CUSIP:	606198LF4
Coupon Rate:	4.750%
Maturity Date:	1/1/2020
Amount Outstanding ($ 000)	$29,905
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	101.100	4.50 %
February	99.175	4.95
March	102.000	4.28
April	100.750	4.57
May	Not Traded	-
June	100.350	4.66
July	100.500	4.62
August	100.250	4.68
September	104.039	3.70
October	99.800	4.80
November	100.250	4.68
December	99.003	5.03
Average	100.656	4.59 %

Source: Bloomberg

Union Pacific Corp.

98

Type:	Mort. Bond
Description:	UPRR-MP
CUSIP:	606198LG2
Coupon Rate:	4.750%
Maturity Date:	1/1/2030
Amount Outstanding ($ 000)	$27,381
Months Outstanding	12.0

End of Month in 2015	Price	Yield
January	90.600	5.70 %
February	99.250	4.82
March	98.250	4.92
April	98.200	4.93
May	101.000	4.65
June	90.100	5.78
July	97.050	5.04
August	99.000	4.85
September	97.000	5.05
October	99.900	4.76
November	101.500	4.60
December	98.000	4.95
Average	97.488	5.00 %

Source: Bloomberg

Union Pacific Corp.

99

Type:	Debentures
Description:	UPRR-MP
CUSIP:	606198LH0
Coupon Rate:	5.000%
Maturity Date:	1/1/2045
Amount Outstanding ($ 000)	$96,025
Months Outstanding	12.0

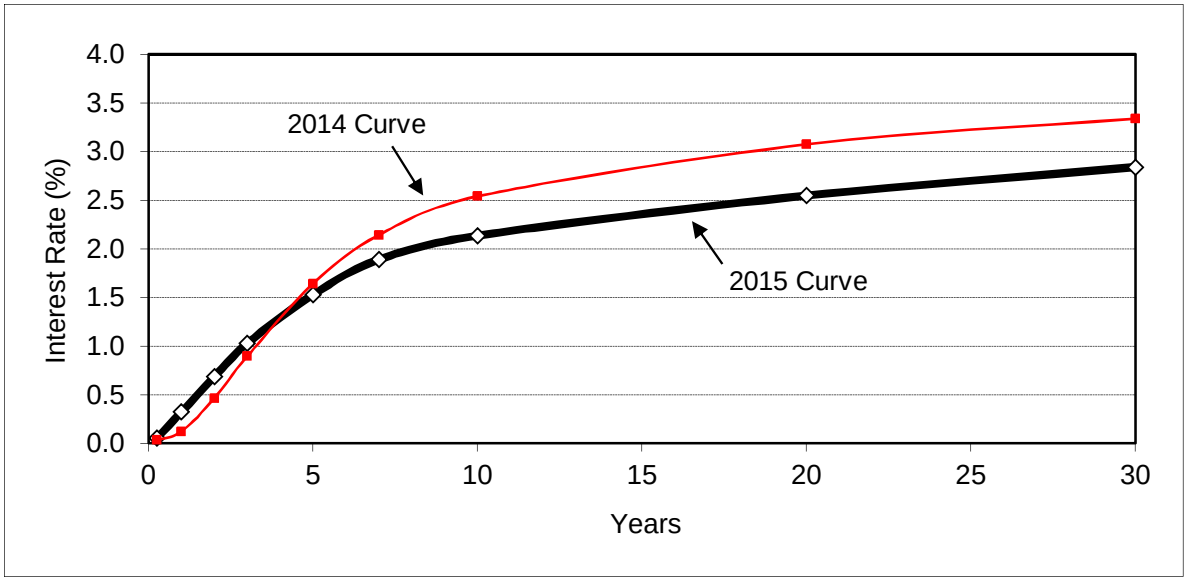
End of Month in 2015	Price	Yield
January	93.000	5.48 %
February	97.000	5.20
March	96.500	5.24
April	96.498	5.24
May	96.500	5.23
June	91.543	5.59
July	95.000	5.34
August	94.000	5.41
September	94.000	5.41
October	95.000	5.34
November	93.000	5.49
December	88.553	5.83
Average	94.216	5.40 %

Source: Bloomberg

Interest Rates on Selected Government Instruments

Yield in Percent Per Annum, Constant Maturity Rates for 2015

	3 Mo.	1 Yr	2 Yr	3 Yr	5 Yr	7 Yr	10 Yr	20 Yr	30 Yr
January	0.03	0.20	0.55	0.90	1.37	1.67	1.88	2.20	2.46
February	0.02	0.22	0.62	0.99	1.47	1.79	1.98	2.34	2.57
March	0.03	0.25	0.64	1.02	1.52	1.84	2.04	2.41	2.63
April	0.02	0.23	0.54	0.87	1.35	1.69	1.94	2.33	2.59
May	0.02	0.24	0.61	0.98	1.54	1.93	2.20	2.69	2.96
June	0.02	0.28	0.69	1.07	1.68	2.10	2.36	2.85	3.11
July	0.03	0.30	0.67	1.03	1.63	2.04	2.32	2.77	3.07
August	0.07	0.38	0.70	1.03	1.54	1.91	2.17	2.55	2.86
September	0.02	0.37	0.71	1.01	1.49	1.88	2.17	2.62	2.95
October	0.02	0.26	0.64	0.93	1.39	1.76	2.07	2.50	2.89
November	0.13	0.48	0.88	1.20	1.67	2.02	2.26	2.69	3.03
December	0.23	0.65	0.98	1.28	1.70	2.04	2.24	2.61	2.97
Average	**0.05**	**0.32**	**0.69**	**1.03**	**1.53**	**1.89**	**2.14**	**2.55**	**2.84**



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

Equipment Trust Certificates for CSX

Modeled ETCs

	ETC ID	Maturity	Balance For 2015 ($000) Beg.	Ending	Avg O/S	Current Valuation Interest Rate	Valuation Factor	Current Market Value	Interest
1.	[None]				--			--	--
2.					--			--	--
3.					--			--	--
4.					--			--	--
5.					--			--	--
6.					--			--	--
7.					--			--	--
8.					--			--	--
9.					--			--	--
10.					--			--	--
11.					--			--	--
12.					--			--	--
13.					--			--	--
14.					--			--	--
15.					--			--	--
	Total		$0	$0	$0	--		**$0**	$0

Non-Modeled ETCs

	ETC ID	Maturity	Balance For 2015 ($000) Beg.	Ending
1.	[None]			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
	Total		$0	$0

Equipment Trust Certificates for CSX (continued)

Entire ETC Current – Not Used for Cost or Market Value

	ETC ID	Maturity	Balance 2015 ($000) Beg.	Ending
1.	[None]			
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 2015 ($000) Beg.	Ending
Total Modeled	$0	$0
Total Non-Modeled	0	0
Sub Total	0	0
Total All Current	0	0
Grand Total	$0	$0
From CSX:		
Total ETCs		$0
Difference		$0

Equipment Trust Certificates for KCS

Modeled ETCs

	ETC ID	Maturity	Balance For 2015 ($000) Beg.	Ending	Avg O/S	Current Valuation Interest Rate	Valuation Factor	Current Market Value	Interest
1.	[None]				--			--	--
2.					--			--	--
3.					--			--	--
4.					--			--	--
5.					--			--	--
6.					--			--	--
7.					--			--	--
8.					--			--	--
9.					--			--	--
10.					--			--	--
11.					--			--	--
12.					--			--	--
13.					--			--	--
14.					--			--	--
15.					--			--	--
	Total		$0	$0	$0	--		**$0**	$0

Non-Modeled ETCs

	ETC ID	Maturity	Balance For 2015 ($000) Beg.	Ending
1.	[None]			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
	Total		$0	$0

Equipment Trust Certificates for KCS (continued)

Entire ETC Current – Not Used for Cost or Market Value

	ETC ID	Maturity	Balance 2015 ($000) Beg.	Ending
1.	[None]			
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 2015 ($000) Beg.	Ending
Total Modeled	$0	$0
Total Non-Modeled	0	0
Sub Total	0	0
Total All Current	0	0
Grand Total	$0	$0

From KCS:

Total ETCs	$0
Difference	$0

Equipment Trust Certificates for NS

Modeled ETCs

	ETC ID	Maturity	Balance For 2015 ($000) Beg.	Ending	Avg O/S	Current Valuation Interest Rate	Valuation Factor	Current Market Value	Interest
1.	[None]				--			--	--
2.					--			--	--
3.					--			--	--
4.					--			--	--
5.					--			--	--
6.					--			--	--
7.					--			--	--
8.					--			--	--
9.					--			--	--
10.					--			--	--
11.					--			--	--
12.					--			--	--
13.					--			--	--
14.					--			--	--
15.					--			--	--
	Total		$0	$0	$0	--		**$0**	$0

Non-Modeled ETCs

	ETC ID	Maturity	Balance For 2015 ($000) Beg.	Ending
1.	[None]			
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 2015 ($000) Beg.	Ending
1.	[None]			
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 2015 ($000) Beg.	Ending
Total Modeled	$0	$0
Total Non-Modeled	0	0
Sub Total	0	0
Total All Current	0	0
Grand Total	$0	$0
From NS:		
Total ETCs		$0
Difference		$0

Equipment Trust Certificates for UP

Modeled ETCs

	ETC ID	Maturity	Balance For 2015 ($000) Beg.	Ending	Avg O/S	Current Valuation Interest Rate	Valuation Factor	Current Market Value	Interest
1.	ETC UPC Series I	2/23/2019	30,208	20,614	25,411	1.790%	1.14221	29,025	520
2.	ETC UPC Series J	1/2/2031	66,748	59,925	63,337	2.720%	1.26715	80,257	2,183
3.	ETC UPC Series A	5/14/2026	500,288	479,569	489,929	2.528%	1.04173	510,374	12,901
4.	ETC UPC Series 2015 A	5/12/2027	398,719	395,646	397,183	2.575%	1.00847	250,342	6,447
5.					--			--	--
6.					--			--	--
7.					--			--	--
8.								--	--
9.								--	--
10.								--	--
11.								--	--
12.								--	--
13.								--	--
14.								--	--
15.					--			--	--
	Total		$995,963	$955,754	$975,859	**2.535%**		**$869,998**	$22,051

New ETC issued 5/12/2015 market value has been pro-rated at (7.5 months / 12 months) times market value of $400,546. Beginning balance column contains $398,719 thousand that was not outstanding until May 12.

Non-Modeled ETCs

	ETC ID	Maturity	Balance For 2015 ($000) Beg.	Ending
1.	[None]			
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 2015 ($000) Beg.	Balance 2015 ($000) Ending
1.	[None]			
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 2015 ($000) Ending
Total Modeled	$955,754
Total Non-Modeled	0
Sub Total	955,754
Total All Current	0
Grand Total	$955,754
From UP:	
Total ETCs	$955,754
Difference	$0

2015 Market Value of Debt ($000)

Type of Debt	Market Value: Traded or Modeled	Market Value: Non-Traded or Non-Modeled	Market Value: Total	Percent of: Subtotal	Percent of: Total
Bonds, Notes & Debentures	$32,141,035	$552,886	$32,693,921	97.41%	94.37%
Equipment Trust Certificates	869,998		869,998	2.59%	2.51%
Conditional Sales Agreements	0		0	0.00%	0.00%
Sub Total	$33,011,033	$552,886	$33,563,919	100.00%	96.88%
All Other — Capital Leases		$1,283,724	$1,283,724	118.69%	3.71%
All Other — Misc. Debt		-202,102	-202,102	-18.69%	-0.58%
All Other — Non-Modeled ETC		0	0	0.00%	0.00%
All Other — Non-Modeled CSA		0	0	0.00%	0.00%
Sub Total			$1,081,621	100.00%	3.12%
Total Market Value			**$34,645,540**		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 98.31 percent of the total market value for this category.

Equipment Trust Certificates from Appendix C.

All Conditional Sales Agreements have been retired.

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 $1,081,621 thousand. The non-modeled ETCs and CSAs are typically also assigned a market value equal to their book value, but there were none for this year. The All Other category totals to $1,081,621 thousand, or 3.1 percent of total debt.

If negative numbers appear in Miscellaneous Debt, they typically are related to debt premiums and discounts.

2015 Flotation Costs for Bonds

	CSX Notes	CSX Notes	KSU Notes	NSC Notes	NSC Notes	UNP Notes	UNP Notes	UNP Notes	UNP Notes	UNP Notes	UNP Notes	UNP Notes	UNP Notes
From 424(b)	**4/17/2015**	**10/15/2015**	**7/23/2015**	**6/1/2015**	**10/29/2015**	**1/26/2015**	**1/26/2015**	**1/26/2015**	**6/17/2015**	**6/17/2015**	**10/26/2015**	**10/26/2015**	**10/26/2015**
Face Amount	$600,000,000	$600,000,000	$500,000,000	$500,000,000	$600,000,000	$250,000,000	$450,000,000	$450,000,000	$400,000,000	$300,000,000	$500,000,000	$400,000,000	$200,000,000
Coupon Rate	3.950%	3.350%	4.950%	4.450%	4.650%	1.800%	3.375%	3.875%	2.250%	3.250%	4.050%	4.375%	3.250%
Maturity Date	5/1/2050	11/1/2025	8/15/2045	6/15/2045	1/15/2046	2/1/2020	2/1/2035	2/1/2055	6/19/2020	8/15/2025	11/15/2045	11/15/2065	8/15/2025
Frequency of Coupon Payment	2	2	2	2	2	2	2	2	2	2	2	2	2
Interest Accrual Date	4/21/2015	10/20/2015	7/27/2015	6/2/2015	11/3/2015	1/29/2015	1/29/2015	1/29/2015	6/19/2015	6/19/2015	10/29/2015	10/29/2015	6/19/2015
Price To Investors	99.098	99.763	99.733	99.768	99.327	99.786	99.697	99.576	99.920	99.378	99.533	96.043	101.956
Proceeds from Sale (before expenses)	$594,588,000	$598,578,000	$498,665,000	$498,840,000	$595,962,000	$249,465,000	$448,636,500	$448,092,000	$399,680,000	$298,134,000	$497,665,000	$384,172,000	$203,912,000
Underwriter Fee as % of Gross Proceeds	0.875%	0.650%	0.875%	0.875%	0.875%	0.600%	0.875%	0.875%	0.600%	0.650%	0.875%	0.875%	0.650%
Underwriter's Fee	$5,250,000	$3,900,000	$4,375,000	$4,375,000	$5,250,000	$1,500,000	$3,937,500	$3,937,500	$2,400,000	$1,950,000	$4,375,000	$3,500,000	$1,300,000
Railroad Expenses Excluding Fee	$300,000	$300,000	$500,000.00	$200,000.00	$200,000.00	$16,304.35	$29,347.83	$29,347.83	$42,857.14	$32,142.86	$34,090.91	$27,272.73	$13,636.36
Page in 424(b) for Expenses	S-21	S-21	S-32	S-17	S-16	S-14	S-14	S-14	S-9	S-9	S-10	S-10	S-10
Calculated													
Yield Based on Price to Investors	3.998%	3.378%	4.967%	4.464%	4.691%	1.845%	3.396%	3.896%	2.267%	3.322%	4.077%	4.577%	3.025%
Issue Price Per $100 Less Flotation	$98.17	$99.06	$98.76	$98.85	$98.42	$99.18	$98.82	$98.69	$99.31	$98.72	$98.65	$95.16	$101.30
Yield on New Issue Including Flotation	4.048%	3.461%	5.030%	4.520%	4.749%	1.973%	3.458%	3.940%	2.397%	3.400%	4.129%	4.624%	3.100%
Flotation Costs (Diff. in Pct Pts)	**0.050%**	**0.083%**	**0.063%**	**0.056%**	**0.057%**	**0.128%**	**0.062%**	**0.044%**	**0.130%**	**0.078%**	**0.052%**	**0.047%**	**0.075%**
Avg. Flotation Cost (Pct. Points)	**0.071%**												
Previous Year's Average	0.075%												

Note: The UNP notes maturing in 2025 that were offered in October 2015 are part of the series issued during June 2015, and will have the same CUSIP number.

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

Example of Source for Bond Flotation Costs

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PROSPECTUS SUPPLEMENT
(To Prospectus Dated May 28, 2015)

$500,000,000

NORFOLK SOUTHERN

4.450% Senior Notes due 2045

We are offering $500 million aggregate principal amount of our 4.450% senior notes due 2045 (the "Notes"). The Notes will bear interest at a rate of 4.450% per year. We will pay interest on the Notes on June 15 and December 15 of each year, beginning on December 15, 2015. The Notes will mature on June 15, 2045. We may redeem the Notes prior to maturity, in whole or in part, as described in this prospectus supplement.

The Notes will be unsecured obligations and rank equally with our other unsecured senior indebtedness. The Notes will be issued only in registered form in denominations of $2,000 and integral multiples of $1,000 in excess thereof.

	Price to Public(1)	Underwriting Discount	Proceeds to us (before expenses)(1)
Per Note	99.768%	0.875%	98.893%
Total	$498,840,000	$4,375,000	$494,465,000

(1) Plus accrued interest, if any, from June 2, 2015.

The Securities and Exchange Commission and state securities regulators have not approved or disapproved 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.

The Notes will be ready for delivery in book-entry form through the facilities of The Depository Trust Company and its participants, including Euroclear Bank, S.A./N.V., and Clearstream Banking, *société anonyme*, on or about June 2, 2015.

Example of Source for Bond Flotation Costs

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UNDERWRITING

Under the terms and subject to the conditions contained in the underwriting agreement dated the date of this prospectus supplement, the underwriters named below, for whom J.P. Morgan Securities LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated and Morgan Stanley & Co. LLC are acting as representatives, have severally agreed to purchase, and we have agreed to sell to them, severally, the respective principal amount of the Notes set forth opposite their names below:

Underwriters	Principal Amount of Notes
J.P. Morgan Securities LLC.	$125,000,000
Merrill Lynch, Pierce, Fenner & Smith Incorporated	125,000,000
Morgan Stanley & Co. LLC.	125,000,000
PNC Capital Markets LLC	41,667,000
SMBC Nikko Securities America, Inc.	41,667,000
The Williams Capital Group, L.P.	41,666,000
Total	$500,000,000

The underwriting agreement provides that the obligations of the underwriters to pay for and accept delivery of the Notes offered hereby are subject to the approval of certain legal matters by their counsel and to certain other conditions. The underwriters are obligated to take and pay for all of the Notes if any Notes are taken. The offering of the Notes by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part.

The underwriters have advised us that they propose initially to offer the Notes to the public at the public offering price on the cover page of this prospectus supplement, and to dealers at that price less a concession not in excess of 0.500% of the principal amount of the Notes. The underwriters may allow, and the dealers may reallow, a discount not in excess of 0.250% of the principal amount of the Notes to other dealers. After the Notes are released to the public, the offering price and other selling terms may from time to time be varied by the underwriters.

The expenses of the offering payable by us, not including the underwriting discount, are estimated to be $200,000.

We have agreed to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments that the underwriters may be required to make in respect of those liabilities.

In order to facilitate the offering of these securities, the underwriters may engage in transactions that stabilize, maintain or otherwise affect the price of the Notes or any other notes the prices of which may be used to determine payments on the Notes. Specifically, the underwriters may sell more Notes than they are obligated to purchase in connection with the offering, creating a short position for their own accounts. A short sale is covered by purchasing the Notes in the open market. A short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the Notes in the open market after pricing that could adversely affect investors who purchase in the offering. As an additional means of facilitating the offering, the underwriters may bid for, and purchase, the Notes or any other notes in the open market to stabilize the price of the Notes or of any other notes. Finally, in any offering of the Notes through a syndicate of underwriters or dealer group, the underwriters acting on behalf of the underwriting syndicate or for themselves may impose a penalty bid, whereby the underwriters reclaim selling concessions allowed to an underwriter or a dealer for distributing the Notes in the offering, if the underwriters repurchase previously distributed Notes to cover syndicate short positions or to stabilize the price of the Notes. Any of these activities may raise or maintain the market price of the Notes above independent market levels or prevent or retard a decline in the market price of the Notes. The underwriters are not required to engage in these activities, and may end any of these activities at any time without notice.

2015 Current Cost of Debt

Type of Debt	Cost Reference	Appendix D Weight	Current Cost	Weighted Cost
Type of Instrument				
Bonds, Notes & Debentures	App. A & Table 3	97.41%	3.508%	3.417%
Equipment Trust Certificates	App. C & Table 5	2.59%	2.535%	0.066%
Conditional Sales Agreements	Railroad Data	0.00%	--	--
Total Without Floatation Costs		100.00%		3.482%
Floatation Costs				
Bonds, Notes & Debentures	App. F & Table 8	97.41%	0.071%	0.069%
Equipment Trust Certificates	Tables 7 and 8	2.59%	0.072%	0.002%
Conditional Sales Agreements	Table 8	0.00%	not calculated	--
Total Floatation Costs		100.00%		0.071%
Weighted Cost of Debt				3.553%
Weighted Cost of Debt (rounded)				**3.55%**

Market Value for Common Equity

CSX Data from Yahoo Finance 1-11-2016

http://finance.yahoo.com/q/hp?s=CSX&a=11&b=20&c=2010&d=00&e=11&f=2016&g=w

Beg. of Wk. Date	Open	High	Low	End of Wk Close	Volume	Shares Outstanding	Capitalization ($000)
1/5/2015	35.40	35.54	33.30	34.40	10164700	995,397,303	34,241,669
1/12/2015	34.18	34.93	33.01	34.86	10074800	995,397,303	34,699,551
1/19/2015	34.84	35.45	34.37	34.47	5664100	990,564,824	34,144,770
1/26/2015	34.45	35.00	33.25	33.30	6938100	990,564,824	32,985,808
2/2/2015	33.47	35.69	33.21	35.44	5996800	990,564,824	35,105,616
2/9/2015	35.29	36.95	35.16	36.08	5641100	990,564,824	35,739,581
2/16/2015	34.90	35.95	34.90	35.55	6597300	990,564,824	35,214,579
2/23/2015	35.60	35.81	34.14	34.31	6808800	990,564,824	33,986,280
3/2/2015	34.31	34.71	33.55	33.68	8359600	990,564,824	33,362,223
3/9/2015	33.58	34.31	33.43	34.13	6345800	990,564,824	33,807,978
3/16/2015	34.37	35.35	34.22	35.16	6603100	990,564,824	34,828,259
3/23/2015	34.99	35.00	32.71	33.20	8628600	987,981,408	32,800,984
3/30/2015	33.34	33.60	32.83	33.32	8916100	987,981,408	32,919,541
4/6/2015	32.98	34.08	32.98	33.75	6931400	987,981,408	33,344,373
4/13/2015	33.55	34.12	31.87	33.30	13595000	987,981,408	32,899,780
4/20/2015	33.34	37.24	33.11	37.12	20346700	987,981,408	36,673,869
4/27/2015	37.08	37.67	35.99	37.46	11865000	987,981,408	37,009,783
5/4/2015	37.46	37.64	35.03	36.68	12645800	987,981,408	36,239,158
5/11/2015	36.50	36.81	34.31	35.50	10012800	987,981,408	35,073,340
5/18/2015	35.35	36.04	35.12	35.47	6706700	987,981,408	35,043,702
5/25/2015	35.26	35.42	33.99	34.08	6301600	987,981,408	33,670,408
6/1/2015	34.23	34.56	33.85	34.43	6698000	987,981,408	34,016,200
6/8/2015	34.29	35.62	33.64	34.75	7217400	987,981,408	34,332,354
6/15/2015	34.55	35.67	34.42	34.99	6798300	987,981,408	34,569,471
6/22/2015	35.22	35.43	33.36	33.67	10462900	983,737,246	33,122,431
6/29/2015	33.34	33.63	32.40	32.68	9706100	983,737,246	32,148,533
7/6/2015	32.37	32.96	31.72	32.13	6856300	983,737,246	31,607,479
7/13/2015	32.35	33.10	31.85	32.18	10138800	983,737,246	31,656,665
7/20/2015	32.29	32.46	30.65	30.81	7572500	983,737,246	30,308,944
7/27/2015	30.61	31.62	30.40	31.28	6580400	983,737,246	30,771,302
8/3/2015	31.34	31.36	29.83	29.96	5699400	983,737,246	29,472,767
8/10/2015	30.17	30.43	28.73	29.62	7122000	983,737,246	29,138,298
8/17/2015	29.51	29.75	27.37	27.38	6756600	983,737,246	26,934,725
8/24/2015	24.74	27.86	24.47	27.80	13966300	983,737,246	27,347,894
8/31/2015	27.61	27.67	26.54	26.85	6719600	983,737,246	26,413,345
9/7/2015	27.45	28.66	27.38	28.50	9740300	983,737,246	28,036,512
9/14/2015	28.46	29.63	27.89	28.16	8909700	983,737,246	27,702,041
9/21/2015	28.30	28.52	26.02	26.52	9741400	974,944,791	25,855,536
9/28/2015	26.48	27.32	25.69	27.31	9919200	974,944,791	26,625,741
10/5/2015	27.48	29.67	27.36	29.08	6912400	974,944,791	28,351,395
10/12/2015	28.94	29.00	26.89	27.43	10876000	974,944,791	26,742,736
10/19/2015	27.30	28.58	27.05	28.37	7315400	974,944,791	27,659,185
10/26/2015	28.31	28.46	26.71	26.99	6596500	974,944,791	26,313,760
11/2/2015	26.99	27.77	26.85	27.07	5157600	974,944,791	26,391,755
11/9/2015	27.01	28.41	26.37	26.93	9900700	974,944,791	26,255,263
11/16/2015	26.89	30.53	26.63	29.89	11889900	974,944,791	29,141,099
11/23/2015	29.79	29.93	28.66	28.99	5166700	974,944,791	28,263,649
11/30/2015	28.95	29.06	26.21	26.86	10879300	974,944,791	26,187,018
12/7/2015	26.75	26.96	24.58	25.72	13178700	974,944,791	25,075,579
12/14/2015	25.64	26.83	25.00	25.20	10710800	974,944,791	24,568,610
12/21/2015	25.48	26.40	25.02	26.13	4840600	974,944,791	25,475,306
12/28/2015	26.15	26.42	25.50	25.95	4129700	974,944,791	25,299,818

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

Market Value for Common Equity

KSU Data from Yahoo Finance 1-7-2015

http://finance.yahoo.com/q/hp?a=11&b=20&c=2009&d=00&e=7&f=2015&g=w&s=ksu&ql=1

Beg. of Wk. Date	Open	High	Low	End of Wk Close	Volume	Shares Outstanding	Capitalization ($000)
1/5/2015	119.10	119.10	111.69	114.25	1067400	110,360,358	12,608,671
1/12/2015	113.68	114.71	107.90	109.98	921000	110,360,358	12,137,433
1/19/2015	110.00	114.77	107.53	107.79	2513900	110,411,095	11,901,212
1/26/2015	108.02	112.44	107.92	110.09	1402600	110,411,095	12,155,157
2/2/2015	110.35	117.37	110.18	116.52	829700	110,411,095	12,865,100
2/9/2015	115.72	119.40	114.64	118.12	549400	110,411,095	13,041,759
2/16/2015	117.49	119.78	115.50	116.61	662600	110,411,095	12,875,038
2/23/2015	117.53	120.63	115.81	115.84	757900	110,411,095	12,790,021
3/2/2015	115.92	117.21	113.30	113.73	614900	110,411,095	12,557,054
3/9/2015	113.54	115.84	112.01	114.43	734000	110,411,095	12,634,342
3/16/2015	115.23	116.80	113.05	115.69	620500	110,411,095	12,773,460
3/23/2015	111.70	111.70	102.00	102.96	1998400	110,411,095	11,367,926
3/30/2015	103.50	105.24	101.14	105.00	1014800	110,411,095	11,593,165
4/6/2015	104.51	106.94	104.28	106.33	926500	110,411,095	11,740,012
4/13/2015	106.04	106.91	102.12	104.49	1124600	110,544,998	11,550,847
4/20/2015	104.86	108.29	103.02	106.50	1215600	110,544,998	11,773,042
4/27/2015	106.60	107.13	101.92	103.70	1028000	110,544,998	11,463,516
5/4/2015	103.89	104.74	101.49	102.16	1011700	110,544,998	11,293,277
5/11/2015	102.00	102.85	92.63	95.27	2967600	110,544,998	10,531,622
5/18/2015	94.00	97.12	93.32	93.91	1634800	110,544,998	10,381,281
5/25/2015	94.12	95.11	90.14	90.50	2112400	110,544,998	10,004,322
6/1/2015	90.92	94.59	90.02	94.16	1848100	110,544,998	10,408,917
6/8/2015	93.69	95.88	92.75	94.15	1627400	110,544,998	10,407,812
6/15/2015	93.69	96.76	93.42	95.20	1108100	110,544,998	10,523,883
6/22/2015	96.04	96.71	92.10	92.95	1319200	110,544,998	10,275,157
6/29/2015	92.22	92.56	90.34	92.41	1100500	110,544,998	10,215,464
7/6/2015	91.61	94.82	90.92	94.51	1399600	110,544,998	10,447,608
7/13/2015	94.75	100.39	92.09	98.60	2545300	110,360,097	10,881,505
7/20/2015	98.72	99.11	92.40	93.00	1651300	110,360,097	10,263,489
7/27/2015	92.87	101.24	92.23	99.19	1656100	110,360,097	10,946,618
8/3/2015	99.35	99.66	95.65	96.00	1105900	110,360,097	10,594,569
8/10/2015	96.79	100.29	95.84	98.58	1117000	110,360,097	10,879,299
8/17/2015	98.23	99.99	92.62	92.79	1281500	110,360,097	10,240,314
8/24/2015	88.24	95.33	86.38	94.58	2333400	110,360,097	10,437,858
8/31/2015	93.83	94.12	89.32	90.34	1053900	110,360,097	9,969,931
9/7/2015	92.08	94.02	91.72	92.56	877200	110,360,097	10,214,930
9/14/2015	92.41	98.67	91.99	94.53	1386100	110,360,097	10,432,340
9/21/2015	95.00	96.52	89.65	91.03	1298400	110,360,097	10,046,080
9/28/2015	90.57	94.23	87.60	94.17	1561600	110,360,097	10,392,610
10/5/2015	94.50	100.40	94.39	97.95	1243900	109,136,453	10,689,915
10/12/2015	97.63	98.52	86.40	87.37	2788400	109,136,453	9,535,252
10/19/2015	86.75	89.25	84.32	86.13	3005900	109,136,453	9,399,922
10/26/2015	85.82	87.16	81.54	82.76	1873500	109,136,453	9,032,133
11/2/2015	82.77	90.44	82.47	87.65	2365500	109,136,453	9,565,810
11/9/2015	87.39	91.75	86.02	87.45	1718100	109,136,453	9,543,982
11/16/2015	87.35	94.77	86.01	93.53	1807400	109,136,453	10,207,532
11/23/2015	93.09	93.74	91.09	92.26	902800	109,136,453	10,068,929
11/30/2015	92.44	92.71	80.61	81.98	2468800	109,136,453	8,947,007
12/7/2015	81.57	81.96	74.00	74.63	2141400	109,136,453	8,144,853
12/14/2015	74.50	76.41	69.79	70.01	2739100	109,136,453	7,640,643
12/21/2015	70.69	74.34	69.70	73.77	1559100	109,136,453	8,050,996
12/28/2015	73.52	75.99	72.90	74.67	1336300	109,136,453	8,149,219

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

Market Value for Common Equity

NSC Data from Yahoo Finance 1-7-2015

http://finance.yahoo.com/q/hp?a=11&b=20&c=2009&d=00&e=7&f=2015&g=w&s=nsc&ql=1

Beg. of Wk. Date	Open	High	Low	End of Wk Close	Volume	Shares Outstanding	Capitalization ($000)
1/5/2015	108.71	108.89	102.01	103.17	3351000	309,441,867	31,925,117
1/12/2015	102.21	103.79	99.80	103.58	2918300	309,441,867	32,051,989
1/19/2015	104.00	106.55	102.60	104.78	1666100	309,441,867	32,423,319
1/26/2015	102.24	107.28	101.46	101.97	2267800	309,441,867	31,553,787
2/2/2015	102.20	108.49	102.09	107.79	2634200	307,411,965	33,135,936
2/9/2015	107.64	110.89	107.31	109.91	1634500	307,411,965	33,787,650
2/16/2015	109.40	112.05	109.24	111.73	1660700	307,411,965	34,347,140
2/23/2015	111.03	111.64	108.94	109.16	1890800	307,411,965	33,557,091
3/2/2015	109.61	110.25	107.49	108.21	2284800	307,411,965	33,265,048
3/9/2015	107.88	109.39	107.39	108.65	1774700	307,411,965	33,400,311
3/16/2015	108.86	111.76	108.80	110.43	1718800	307,411,965	33,947,503
3/23/2015	109.48	109.79	101.96	103.62	2670700	307,411,965	31,854,029
3/30/2015	104.00	104.79	102.08	104.15	1806900	304,849,454	31,750,071
4/6/2015	103.51	106.73	103.40	106.35	1942900	304,849,454	32,420,739
4/13/2015	105.78	106.24	97.81	100.65	3890300	304,849,454	30,683,098
4/20/2015	101.00	107.31	100.22	105.29	2501400	304,849,454	32,097,599
4/27/2015	105.52	105.62	100.55	103.21	2324200	304,849,454	31,463,512
5/4/2015	103.65	104.58	98.97	100.63	2260000	304,849,454	30,677,000
5/11/2015	100.35	101.31	96.04	97.56	2528400	304,849,454	29,741,112
5/18/2015	97.44	98.25	95.51	95.53	1797300	304,849,454	29,122,268
5/25/2015	95.56	95.95	91.85	92.00	1989800	304,849,454	28,046,150
6/1/2015	92.48	93.81	91.59	92.51	1740700	304,849,454	28,201,624
6/8/2015	92.27	92.84	89.73	91.70	1979300	304,849,454	27,954,694
6/15/2015	91.24	93.24	90.89	92.32	1557500	304,849,454	28,143,702
6/22/2015	92.67	93.30	88.51	88.87	2033900	304,849,454	27,091,972
6/29/2015	88.20	88.67	86.74	87.83	2166800	301,386,849	26,470,808
7/6/2015	87.23	88.21	85.17	86.35	1803200	301,386,849	26,024,754
7/13/2015	86.95	87.98	85.48	85.94	2253100	301,386,849	25,901,186
7/20/2015	86.17	86.97	82.60	82.96	1604400	301,386,849	25,003,053
7/27/2015	82.31	86.11	82.31	84.33	2164100	301,386,849	25,415,954
8/3/2015	84.27	84.53	80.88	81.11	3374800	301,386,849	24,445,488
8/10/2015	81.74	82.96	79.93	81.74	1740800	301,386,849	24,635,360
8/17/2015	81.48	82.48	77.98	77.98	2004800	301,386,849	23,502,147
8/24/2015	72.83	80.05	72.10	79.20	3092400	301,386,849	23,869,838
8/31/2015	78.79	78.83	75.36	76.53	2027200	301,386,849	23,065,135
9/7/2015	78.04	80.31	77.77	79.17	2863700	301,386,849	23,860,796
9/14/2015	79.17	82.30	78.54	78.95	2522500	301,386,849	23,794,491
9/21/2015	79.33	80.16	74.73	75.62	1881800	301,386,849	22,790,874
9/28/2015	75.04	79.05	74.36	79.01	1756500	298,569,765	23,589,998
10/5/2015	78.49	84.00	78.09	82.91	2007300	298,569,765	24,754,420
10/12/2015	82.26	82.37	77.60	78.36	1729800	298,569,765	23,395,927
10/19/2015	77.78	81.52	77.31	81.00	1380200	298,569,765	24,184,151
10/26/2015	80.98	82.43	77.20	80.03	2360500	298,569,765	23,894,538
11/2/2015	79.08	81.15	79.05	79.87	1710300	298,569,765	23,846,768
11/9/2015	79.65	90.96	78.47	88.96	4031900	298,569,765	26,560,766
11/16/2015	88.81	98.75	84.11	97.56	4694700	298,569,765	29,128,466
11/23/2015	97.40	98.14	94.14	95.38	1788100	298,569,765	28,477,583
11/30/2015	95.38	95.93	86.59	92.06	3133800	298,569,765	27,486,332
12/7/2015	93.79	94.35	85.44	89.44	3144300	298,569,765	26,704,080
12/14/2015	89.60	91.80	83.23	84.27	2312800	298,569,765	25,160,473
12/21/2015	85.10	87.33	83.69	86.78	907700	298,569,765	25,909,884
12/28/2015	86.57	86.98	84.09	84.59	851800	298,569,765	25,256,015

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

Market Value for Common Equity

UNP Data from Yahoo Finance 1-14-2014

http://finance.yahoo.com/q/hp?a=11&b=20&c=2008&d=00&e=14&f=2014&g=w&s=UNP%2C+&ql=1

Beg. of Wk. Date	Open	High	Low	End of Wk Close	Volume	Shares Outstanding	Capitalization ($000)
1/5/2015	118.31	118.31	111.66	114.98	4552900	889,099,281	102,228,638
1/12/2015	114.33	116.15	109.54	111.90	5833700	889,099,281	99,490,211
1/19/2015	112.53	122.19	112.15	120.09	5446100	889,099,281	106,771,929
1/26/2015	120.51	122.09	117.13	117.21	3973700	881,284,029	103,295,300
2/2/2015	118.13	123.32	116.70	121.81	3250700	881,284,029	107,349,206
2/9/2015	121.53	124.52	118.76	122.60	3829700	881,284,029	108,045,420
2/16/2015	121.96	123.82	120.44	123.66	2989100	881,284,029	108,979,587
2/23/2015	123.79	123.90	120.19	120.26	2968500	881,284,029	105,983,219
3/2/2015	120.26	121.00	116.09	116.45	3497500	881,284,029	102,625,523
3/9/2015	116.38	117.87	113.77	114.52	3973500	881,284,029	100,924,644
3/16/2015	115.50	118.66	115.04	117.45	3970900	881,284,029	103,506,807
3/23/2015	114.85	116.00	106.75	108.44	6667300	881,284,029	95,566,442
3/30/2015	109.00	110.39	106.38	107.13	5144300	881,284,029	94,411,955
4/6/2015	106.34	112.44	106.25	111.42	5419100	881,284,029	98,192,665
4/13/2015	111.05	111.58	104.16	108.42	5944500	875,590,576	94,931,528
4/20/2015	108.71	111.38	106.24	107.51	7360700	875,590,576	94,134,745
4/27/2015	107.33	108.22	105.69	107.71	5200400	875,590,576	94,309,860
5/4/2015	108.40	109.42	105.72	107.44	4488900	875,590,576	94,073,453
5/11/2015	107.22	108.00	100.90	103.83	7440200	875,590,576	90,912,571
5/18/2015	103.30	105.65	102.15	104.20	5328500	875,590,576	91,236,535
5/25/2015	103.55	104.18	99.87	100.91	6010800	875,590,576	88,355,849
6/1/2015	101.16	102.85	100.43	102.28	6397600	875,590,576	89,555,403
6/8/2015	102.13	102.20	99.31	100.50	5990100	875,590,576	87,996,853
6/15/2015	99.84	102.83	99.84	101.16	4303500	875,590,576	88,574,746
6/22/2015	101.67	102.74	96.66	96.77	5111400	875,590,576	84,730,897
6/29/2015	95.99	96.97	94.91	96.66	4782800	875,590,576	84,634,589
7/6/2015	96.39	98.15	95.41	97.82	4813200	875,590,576	85,650,270
7/13/2015	98.70	98.70	95.59	97.42	4869800	867,691,580	84,530,512
7/20/2015	97.58	99.71	91.23	92.61	7169500	867,691,580	80,356,918
7/27/2015	91.68	98.73	91.52	97.59	5592300	867,691,580	84,678,018
8/3/2015	97.56	97.69	92.41	92.50	4805000	867,691,580	80,261,471
8/10/2015	93.05	93.87	91.26	92.74	3587900	867,691,580	80,469,715
8/17/2015	92.46	93.09	86.41	86.45	5683000	867,691,580	75,011,934
8/24/2015	81.18	87.19	79.31	86.89	9641300	867,691,580	75,393,721
8/31/2015	86.90	87.08	83.00	84.78	5914200	867,691,580	73,562,891
9/7/2015	87.00	89.07	85.74	86.12	5631600	867,691,580	74,725,601
9/14/2015	86.52	91.16	85.53	87.78	5484600	867,691,580	76,165,966
9/21/2015	87.97	89.34	83.87	86.59	4758600	867,691,580	75,133,410
9/28/2015	85.68	91.93	84.85	91.90	5570200	867,691,580	79,740,858
10/5/2015	91.73	98.28	91.62	97.04	4384900	867,691,580	84,200,792
10/12/2015	96.76	97.00	92.55	92.94	4442600	854,120,634	79,381,973
10/19/2015	92.56	98.26	91.55	96.92	4714500	854,120,634	82,781,370
10/26/2015	96.62	97.19	89.14	89.35	6546800	854,120,634	76,315,677
11/2/2015	89.36	89.76	85.47	85.98	5658200	854,120,634	73,437,295
11/9/2015	85.73	89.10	83.15	83.78	5867200	854,120,634	71,558,226
11/16/2015	83.59	88.05	83.10	86.74	4962100	854,120,634	74,086,422
11/23/2015	86.86	87.48	84.27	84.50	3871600	854,120,634	72,173,194
11/30/2015	84.84	85.00	77.03	78.31	8329200	854,120,634	66,886,185
12/7/2015	78.15	78.62	74.78	77.28	7979600	854,120,634	66,006,442
12/14/2015	77.50	79.49	75.28	75.43	7185300	854,120,634	64,426,319
12/21/2015	75.99	79.13	75.02	78.80	4774500	854,120,634	67,304,709
12/28/2015	78.49	79.15	77.57	78.20	3708100	854,120,634	66,792,231

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

Market Value for Common Equity

Total Market Value for CSX, KSU, NSC, and UNP combined

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

	Days For Week		Capitalization
	Beginning	**End**	**($000)**
1.	Monday, January 05, 2015	Friday, January 09, 2015	$181,004,095
2.	Monday, January 12, 2015	Friday, January 16, 2015	$178,379,184
3.	Monday, January 19, 2015	Friday, January 23, 2015	$185,241,230
4.	Monday, January 26, 2015	Friday, January 30, 2015	$179,990,052
5.	Monday, February 02, 2015	Friday, February 06, 2015	$188,455,859
6.	Monday, February 09, 2015	Friday, February 13, 2015	$190,614,410
7.	Monday, February 16, 2015	Friday, February 20, 2015	$191,416,343
8.	Monday, February 23, 2015	Friday, February 27, 2015	$186,316,611
9.	Monday, March 02, 2015	Friday, March 06, 2015	$181,809,848
10.	Monday, March 09, 2015	Friday, March 13, 2015	$180,767,275
11.	Monday, March 16, 2015	Friday, March 20, 2015	$185,056,029
12.	Monday, March 23, 2015	Friday, March 27, 2015	$171,589,381
13.	Monday, March 30, 2015	Thursday, April 02, 2015	$170,674,732
14.	Monday, April 06, 2015	Friday, April 10, 2015	$175,697,788
15.	Monday, April 13, 2015	Friday, April 17, 2015	$170,065,253
16.	Monday, April 20, 2015	Friday, April 24, 2015	$174,679,255
17.	Monday, April 27, 2015	Friday, May 01, 2015	$174,246,670
18.	Monday, May 04, 2015	Friday, May 08, 2015	$172,282,888
19.	Monday, May 11, 2015	Friday, May 15, 2015	$166,258,645
20.	Monday, May 18, 2015	Friday, May 22, 2015	$165,783,786
21.	Monday, May 25, 2015	Friday, May 29, 2015	$160,076,729
22.	Monday, June 01, 2015	Friday, June 05, 2015	$162,182,144
23.	Monday, June 08, 2015	Friday, June 12, 2015	$160,691,713
24.	Monday, June 15, 2015	Friday, June 19, 2015	$161,811,803
25.	Monday, June 22, 2015	Friday, June 26, 2015	$155,220,458
26.	Monday, June 29, 2015	Thursday, July 02, 2015	$153,469,393
27.	Monday, July 06, 2015	Friday, July 10, 2015	$153,730,111
28.	Monday, July 13, 2015	Friday, July 17, 2015	$152,969,868
29.	Monday, July 20, 2015	Friday, July 24, 2015	$145,932,403
30.	Monday, July 27, 2015	Friday, July 31, 2015	$151,811,892
31.	Monday, August 03, 2015	Friday, August 07, 2015	$144,774,295
32.	Monday, August 10, 2015	Friday, August 14, 2015	$145,122,673
33.	Monday, August 17, 2015	Friday, August 21, 2015	$135,689,120
34.	Monday, August 24, 2015	Friday, August 28, 2015	$137,049,311
35.	Monday, August 31, 2015	Friday, September 04, 2015	$133,011,302
36.	Monday, September 07, 2015	Friday, September 11, 2015	$136,837,840
37.	Monday, September 14, 2015	Friday, September 18, 2015	$138,094,838
38.	Monday, September 21, 2015	Friday, September 25, 2015	$133,825,900
39.	Monday, September 28, 2015	Friday, October 02, 2015	$140,349,207
40.	Monday, October 05, 2015	Friday, October 09, 2015	$147,996,522
41.	Monday, October 12, 2015	Friday, October 16, 2015	$139,055,888
42.	Monday, October 19, 2015	Friday, October 23, 2015	$144,024,628
43.	Monday, October 26, 2015	Friday, October 30, 2015	$135,556,108
44.	Monday, November 02, 2015	Friday, November 06, 2015	$133,241,629
45.	Monday, November 09, 2015	Friday, November 13, 2015	$133,918,238
46.	Monday, November 16, 2015	Friday, November 20, 2015	$142,563,519
47.	Monday, November 23, 2015	Friday, November 27, 2015	$138,983,356
48.	Monday, November 30, 2015	Friday, December 04, 2015	$129,506,542
49.	Monday, December 07, 2015	Friday, December 11, 2015	$125,930,954
50.	Monday, December 14, 2015	Friday, December 18, 2015	$121,796,046
51.	Monday, December 21, 2015	Thursday, December 24, 2015	$126,740,895
52.	Monday, December 28, 2015	Thursday, December 31, 2015	$125,497,283
	Average		**$156,111,383.48**

Historical Risk Free Rates and Market Risk Premiums

The Surface Transportation Board (STB) has used a Capital Asset Pricing Model (CAPM) as part of its cost of capital determination since 2006. Two major components of the STB's CAPM are the Risk-Free Rate, which is based on 20-Year U.S. Government Bonds, and the Market Risk Premium (a.k.a. Equity Risk Premium), as calculated by Ibbotson Associates using data beginning in 1926. The table below lists the rates used by the STB (since 2006), the rate for the current year, and earlier rates that would have been used as part of the current STB specifications.

Year	Risk-Free Rate	Market Risk Premium
1980	11.36 %	7.60 %
1981	13.72	7.20
1982	12.92	7.20
1983	11.34	7.30
1984	12.49	7.10
1985	10.97	7.30
1986	7.84	7.40
1987	n.a.	7.20
1988	n.a.	7.20
1989	n.a.	7.50
1990	n.a.	7.20
1991	n.a.	7.40
1992	n.a.	7.30
1993	6.29	7.20
1994	7.49	7.00
1995	6.95	7.40
1996	6.83	7.50
1997	6.69	7.80
1998	5.72	8.00
1999	6.20	8.10
2000	6.23	7.80
2001	5.63	7.40
2002	5.43	7.00
2003	4.96	7.20
2004	5.04	7.20
2005	4.64	7.10
2006	5.00	7.13
2007	4.91	7.05
2008	4.36	6.47
2009	4.11	6.67
2010	4.03	6.72
2011	3.62	6.62
2012	2.54	6.70
2013	3.12	6.96
2014	3.07	7.00
2015	2.55	6.90

Sources: Federal Reserve Board for U.S. government 20-year bonds (Risk-Free Rate) and Morningstar's *Ibbotson SBBI Valuation Yearbook* Table A-1 for Market Risk Premiums through 2012. Morningstar's *Ibbotson SBBI Classic Yearbook* is the source for premiums beginning 2013. The Duff & Phelps *Valuation Handbook Guide to Cost of Capital* is the source for premiums beginning 2015. Values for 2006 through 2014 match decisions by the STB. The U.S. Government did not issue 20-Year bonds in 1987 through 1992.

AAR Regression for 2015 Beta

```
AAR Regression for 2015 Beta          16:04 Friday, February 12, 2016  64
STB-Style 5-Year Beta using SP 500 Price Index, Weighted RR Returns, 90-Day T-Bill as RF
                        CSX, NSC, and UNP

                        The GLM Procedure

Dependent Variable: ZRR

                                   Sum of
Source                      DF     Squares    Mean Square   F Value   Pr > F

Model                        1   0.15002785   0.15002785    382.36   <.0001

Error                      259   0.10162380   0.00039237

Corrected Total            260   0.25165165

                  R-Square     Coeff Var      Root MSE     ZRR Mean

                  0.596173     825.5627      0.019808     0.002399

Source                      DF     Type I SS     Mean Square   F Value   Pr > F

ZSP5                         1   0.15002785   0.15002785    382.36   <.0001

Source                      DF   Type III SS     Mean Square   F Value   Pr > F

ZSP5                         1   0.15002785   0.15002785    382.36   <.0001
```

AAR Regression for 2015 Beta

```
                                AAR Regression for 2015 Beta          16:04 Friday, February 12, 2016  65
     STB-Style 5-Year Beta using SP 500 Price Index, Weighted RR Returns, 90-Day T-Bill as RF
                                    CSX, KSU, NSC, and UNP

                                    The GLM Procedure

Dependent Variable: ZRR

                                                    Standard
                  Parameter          Estimate          Error    t Value    Pr > |t|

                  Intercept    -0.000089772    0.00123270      -0.07      0.9420
                  ZSP5          1.216663947    0.06222036      19.55      <.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]

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

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, or 3);

r_i = the cost of equity for firm *i*; and

$IBEI_{10} = IBEI_0(1+g_1)^5(1+g_2)^5$.

Note that $IBEI_0$ is determined by the same process as CF_0 (See Table 14 in text).

---

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

Cash Flow Calculation

CSX, Corp.	1	2	3	4	5	Total
	2011	2012	2013	2014	2015	
($ in millions)						
Revenue	11,795	11,763	12,026	12,669	11,811	60,064
Net Income	1,854	1,863	1,864	1,927	1,968	9,476
Extraordinary Items	0	0	0	0	0	0
Depreciation	976	1,059	1,104	1,151	1,208	5,498
Deferred Taxes	609	592	300	298	456	2,255
Capital Expenditures	2,297	2,341	2,313	2,449	2,562	11,962
Cash Flow	1,142	1,173	955	927	1,070	5,267
Cash Flow / Revenue	0.09682	0.09972	0.07941	0.07317	0.09059	0.08769
NIBEI / Revenue	0.15719	0.15838	0.15500	0.15210	0.16662	0.15777

Ibbotson Smoothed Cash Flow = $11,811 x 0.08769 = $1,035.70
Ibbotson Smoothed Net Income BEI = $11,811 x 0.15777 = $1,863.36

Cash Flow Calculation

Kansas City Southern	**1**	**2**	**3**	**4**	**5**	**Total**
	2011	**2012**	**2013**	**2014**	**2015**	
($ in millions)						
Revenue	2,098.3	2,238.6	2,369.3	2,577.1	2,418.8	11,702
Net Income	328.7	377.1	351.2	502.4	483.3	2,043
Extraordinary Items	0.0	0.0	0.0	0.0	0.0	0
Depreciation	186.2	198.8	223.3	258.1	284.6	1,151
Deferred Taxes	120.7	197.3	111.2	140.1	135.8	705
Capital Expenditures	518.3	567.4	838.2	997.0	849.6	3,771
Cash Flow	117	206	-153	-96	54	128
Cash Flow / Revenue	0.05590	0.09193	-0.06437	-0.03741	0.02237	0.01096
NIBEI / Revenue	0.15665	0.16845	0.14823	0.19495	0.19981	0.17456

Ibbotson Smoothed Cash Flow = $2,419 x 0.01096 = $26.52
Ibbotson Smoothed Net Income BEI = $2,419 x 0.17456 = $422.22

Note: Net Income is net available to common stockholders after preferred dividends and non-KCS portion of Meridian Speedway.

Capital Expenditures					
Core CapX	482.2	517.1	594.8	668.2	688.0
Special programs	12.8	22.9	211.8	302.1	144.2
Meridian Speedway	33.3	35.2	31.6	26.7	17.4
Meridian, Otr RR	-10.0	-7.8	0.0	0.0	0.0
Total CapX	518.3	567.4	838.2	997.0	849.6

Cash Flow Calculation

Norfolk Southern	1	2	3	4	5	Total
	2011	2012	2013	2014	2015	
($ in millions)						
Revenue	11,172	11,040	11,245	11,624	10,511	55,592
Net Income	1,916	1,749	1,910	2,000	1,556	9,131
Extraordinary Items	0	0	0	0		0
Depreciation	869	922	922	956	1,059	4,728
Deferred Taxes	527	366	262	294	320	1,769
Capital Expenditures	2,160	2,241	1,971	2,118	2,385	10,875
Cash Flow	1,152	796	1,123	1,132	550	4,753
Cash Flow / Revenue	0.10311	0.07210	0.09987	0.09738	0.05233	0.08550
NIBEI / Revenue	0.17150	0.15842	0.16985	0.17206	0.14804	0.16425

Ibbotson Smoothed Cash Flow = $10,511 x 0.08550 = $898.67
Ibbotson Smoothed Net Income BEI = $10,511 x 0.16425 = $1,726.43

Cash Flow Calculation

Union Pacific Corp.	1	2	3	4	5	Total
	2011	2012	2013	2014	2015	
($ in millions)						
Revenue	19,557	20,926	21,963	23,988	21,813	108,247
Net Income	3,292	3,943	4,388	5,180	4,772	21,575
Extraordinary Items	0	0	0	0	0	0
Depreciation	1,617	1,760	1,777	1,904	2,012	9,070
Deferred Taxes	986	887	723	895	765	4,256
Capital Expenditures	3,176	3,738	3,496	4,346	4,650	19,406
Cash Flow	2,719	2,852	3,392	3,633	2,899	15,495
Cash Flow / Revenue	0.13903	0.13629	0.15444	0.15145	0.13290	0.14314
NIBEI / Revenue	0.16833	0.18843	0.19979	0.21594	0.21877	0.19931

Ibbotson Smoothed Cash Flow = $21,813 x 0.14314 = $3,122.42
Ibbotson Smoothed Net Income BEI = $21,813 x 0.19931 = $4,347.61

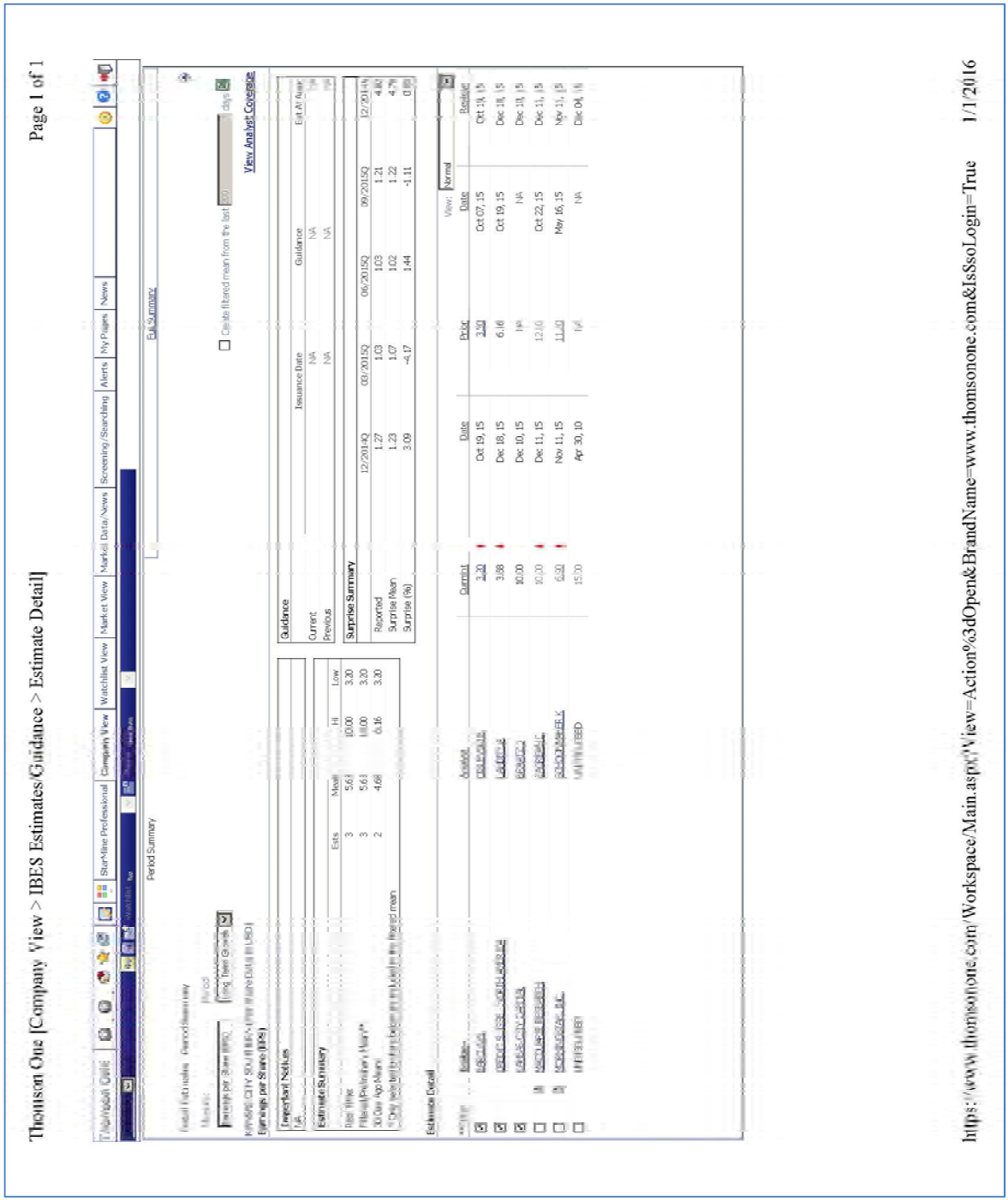
2015 Median Growth Rates for MSDCF

	Analyst Growth Rates from IBES December 31								
Company	**Rate 1**	**Rate 2**	**Rate 3**	**Rate 4**	**Rate 5**	**Rate 6**	**Rate 7**	**Rate 8**	**Median**
CSX	6.9	5.5	4.9	8.0	7.8	4.6	--	--	**6.20**
KSU	3.2	3.7	10.0	10.0	6.9	15.0	--	--	**8.45**
NSC	0.6	0.8	-0.5	5.0	6.6	--	--	--	**0.80**
UNP	5.8	6.1	5.2	8.0	6.9	11.0	--	--	**6.50**

Simple Average of Medians = 5.49 percent.

2015 Median Growth Rates for MSDCF
CSX

2015 Median Growth Rates for MSDCF
KSU



2015 Median Growth Rates for MSDCF
NSC

2015 Median Growth Rates for MSDCF
UNP

Stage 3 Growth Rate for MS-DCF
Summary

The Surface Transportation Board's Multi-Stage Discounted Cash Flow model for estimating the cost of common equity uses 3 stages of growth. The third stage is the long-run nominal growth rate of the U.S. economy, and it is estimated by adding the long-term expected growth in output (represented by the historical growth rate for U.S. Real Gross Domestic Product since 1929) to the long-run expected U.S. inflation rate.

Long Term Expected Growth in Output			3.24 %
Historical Growth Rate for Real GDP, 1929-2014		(page 2)	
Long Term Expected Inflation Rate			1.60
Rate for Long-Term U.S. Government Bonds	2.67	(page 5)	
Rate for 20-year U.S. Inflation-Indexed Bonds	1.07	(page 5)	
	1.60		
Stage 3 Growth Rate (real growth + inflation)			**4.84 %**

The purpose of this appendix is to replicate Morningstar's Stage 3 Growth Rate used by the Surface Transportation Board in its version of the Multi-Stage Discounted Cash Flow model used to estimate the cost of common equity for the railroad industry.

Morningstar's Ibbotson SBBI Valuation Yearbook has annually been used as a source for the Stage 3 growth rate of the Surface Transportation Board's Multi-Stage Discounted Cash Flow (MSDCF) model. On September 19, 2013, Morningstar customers were notified that the *SBBI Valuation Yearbook* was being discontinued, but much of the same data could be found in a different publication -- the *Ibbotson SBBI Classic Yearbook*.

Customer Service said **"We won't be publishing the long-term growth rate anymore, however it's pretty simple to calculate using data that will be in the Classic Yearbook and publicly available data."** They also said "Essentially, you would take the long-term government yield as of December (which would be included in the Classic Yearbook) and subtract the Treasury Real Yield for 20 year bonds (http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=realyield) as of the same date. This value is called the inflation estimate." "From there, you need the GDP growth rate, which you can calculate from the Current-dollar and "real" GDP link in this website: http://www.bea.gov/national/index.htm#gdp. Using the GDP in billions of chained 2005 dollars column, calculate an annual growth rate. One thing, however, is that we've always used GDP chained to 2005 dollars and it looks like they've since changed it to be chained to 2009 dollars. This may cause a slight change in the historical growth rates."

Beginning in 2016, Morningstar stopped publishing its Ibbotson SBBI Classic Yearbook. Calculations on page 5 of this appendix use 20-Year U.S. Treasury Bonds in lieu of the Ibbotson Long-Term Government Yields.

Stage 3 Growth Rate for MS-DCF
Long-Term Expected Growth in Output

AAR Replicates Morningstar

Year	(a) GDP in billions of chained 2005 dollars	(b) Years of Growth	(c) AAR Calc. Growth Rate	(d) SBBI Text Growth Rate
1929	976.1			
2009	12,757.9	80	3.27%	3.3%
2010	13,063.0	81	3.25%	3.3%
2011	13,299.1	82	3.24%	3.24%
2012	13,591.1	83	3.22%	3.22%

The Bureau of Economic Analysis rebased Real GDP from 2005 dollars to 2009 dollars, and may have revised recent year data. Therefore, GDP data in 2005 $ were not available for 2013.

(a) Real GDP in 2005 $ - 2009-2012 are from the Economic Report of the President 2013, Table B-11
1929 is from BEA table dated August 2011
(b) Year minus 1929 = number of years of growth from 1929 to year
(c) Compound growth rate from 1929 to year
(d) Ibbotson SBBI Valuation Yearbook, chapter 4. For 2012 data, 2013 edition, page 52.

AAR Calculates Growth Rate using GDP in 2009 dollars

Year	(e) GDP in billions of chained 2009 dollars	(f) Years of Growth	(g) AAR Calc. Growth Rate
1929	1,056.6		
2009	14,418.7	80	3.32%
2010	14,783.8	81	3.31%
2011	15,020.6	82	3.29%
2012	15,354.6	83	3.28%
2013	15,583.3	84	3.26%
2014	15,961.7	85	3.25%
2015	16,348.9	86	3.24%

(e) Real GDP in 2009 $ downloaded from BEA 3/11/2016.
(f) Year - 1929 = number of years of growth from 1929 to year
(g) Compound growth rate from 1929 to year

Stage 3 Growth Rate for MS-DCF
Data Sources for Real GDP in 2005 $

Table 2A. Real Gross Domestic Product—Continues

[Billions of chained (2005) dollars; quarterly estimates are seasonally adjusted at annual rates]

Year and quarter	Gross domestic product	Personal consumption expenditures	Gross private domestic investment	Exports and imports of goods and services: Exports	Exports and imports of goods and services: Imports	Government consumption expenditures and gross investment	Residual	Final sales of domestic product	Gross domestic purchases	Final sales to domestic purchasers	Gross national product	Percent change from preceding period: Gross domestic product	Final sales of domestic product	Gross domestic purchases	Final sales to domestic purchasers	Gross national product
1929	976.1	736.3	101.4	37.9	49.1	146.5	3.1	986.8	994.1	1,005.2	984.6					
1930	892.0	696.8	67.6	31.3	42.7	161.4	−22.4	919.2	911.1	939.2	900.0	−8.6	−6.8	−8.4	−6.6	−8.6
1931	834.2	674.9	42.5	26.1	37.2	168.2	−40.3	865.2	853.9	885.9	840.7	−6.5	−5.9	−6.3	−5.7	−6.6
1932	725.2	614.4	12.8	20.4	30.9	162.6	−54.1	766.6	743.9	786.5	730.5	−13.1	−11.4	−12.9	−11.2	−13.1
1933	715.8	600.8	18.9	20.5	32.2	157.2	−49.4	743.2	735.1	763.4	720.3	−1.3	−3.1	−1.2	−2.9	−1.4
1934	793.7	643.7	34.1	22.8	32.9	177.3	−51.3	814.0	812.7	833.7	797.7	10.9	9.5	10.6	9.2	10.7
1935	864.2	683.0	63.1	24.1	43.1	182.2	−45.1	864.5	892.2	892.7	868.9	8.9	6.2	9.8	7.1	8.9
1936	977.0	752.5	80.9	28.3	42.6	212.6	−51.7	978.9	1,006.1	1,008.1	981.1	13.1	13.2	12.8	12.9	12.9
1937	1,027.1	780.4	101.1	31.9	47.9	203.6	−42.0	1,019.8	1,052.9	1,045.5	1,032.5	5.1	4.2	4.7	3.7	5.2
1938	991.8	767.8	66.8	31.5	37.3	219.3	−56.3	1,005.2	1,007.3	1,021.0	997.4	−3.4	−1.4	−4.3	−2.3	−3.4
1939												8.1	7.4	8.1	7.4	8.1

Table B–2. Real gross domestic product, 1964–2012

[Billions of chained (2005) dollars, except as noted; quarterly data at seasonally adjusted annual rates]

Year or quarter	Gross domestic product	Personal consumption expenditures: Total	Personal consumption expenditures: Goods	Personal consumption expenditures: Services	Gross private domestic investment: Total	Gross private domestic investment: Fixed investment: Total	Gross private domestic investment: Fixed investment: Nonresidential: Total	Gross private domestic investment: Fixed investment: Nonresidential: Structures	Gross private domestic investment: Fixed investment: Nonresidential: Equipment and software
1964	3,389.4	2,107.5			382.1				
1965	3,607.0	2,240.8			435.7				
1966	3,842.1	2,367.9			474.1				
1967	3,939.2	2,438.8			452.4				
1968	4,129.9	2,579.6			478.7				
1969	4,258.2	2,676.2			506.6				
1970	4,266.3	2,738.9			473.4				
1971	4,409.5	2,843.3			527.3				
1972	4,643.8	3,018.1			589.8				
1973	4,912.8	3,167.7			658.9				
1974	4,885.7	3,141.4			610.3				
1975	4,875.4	3,212.6			502.2				
1976	5,136.9	3,391.5			603.7				
1977	5,373.1	3,534.3			694.9				
1978	5,672.8	3,690.1			778.7				
1979	5,850.1	3,777.8			803.5				
1980	5,834.0	3,764.5			715.2				
1981	5,982.1	3,821.6			779.6				
1982	5,865.9	3,874.9			670.3				
1983	6,130.9	4,096.4			732.8				
1984	6,571.5	4,313.6			948.7				
1985	6,843.4	4,538.3			939.8				
1986	7,080.5	4,722.4			933.5				
1987	7,307.0	4,868.0			962.2				
1988	7,607.4	5,064.3			984.9				
1989	7,879.2	5,207.5			1,024.4				
1990	8,027.1	5,313.7			989.9				
1991	8,008.3	5,321.7			909.4				
1992	8,280.0	5,503.2			983.1				
1993	8,516.2	5,698.6			1,070.9				
1994	8,863.1	5,916.2			1,216.4				
1995	9,086.0	6,076.2	1,896.0	4,208.5	1,254.3	1,231.2	787.9	342.0	489.4
1996	9,425.8	6,288.3	1,980.9	4,331.7	1,365.3	1,341.6	861.5	361.4	541.4
1997	9,845.9	6,520.4	2,075.3	4,465.3	1,535.2	1,465.4	965.5	387.9	615.9
1998	10,274.7	6,862.3	2,215.5	4,662.1	1,688.9	1,624.4	1,081.4	407.7	705.2
1999	10,770.7	7,237.6	2,392.0	4,853.1	1,837.6	1,775.5	1,194.3	408.2	805.0
2000	11,216.4	7,604.6	2,518.2	5,093.6	1,963.1	1,906.8	1,311.3	440.0	889.2
2001	11,337.5	7,810.3	2,597.3	5,219.1	1,825.2	1,870.7	1,274.8	433.3	860.6
2002	11,543.1	8,018.3	2,702.9	5,318.5	1,800.4	1,791.5	1,173.7	356.6	824.2
2003	11,836.4	8,244.5	2,827.2	5,418.2	1,870.1	1,854.7	1,189.6	343.0	850.0
2004	12,246.9	8,515.8	2,953.3	5,562.7	2,058.2	1,992.5	1,263.0	346.7	917.3
2005	12,623.0	8,803.5	3,076.7	5,726.8	2,172.3	2,122.3	1,347.3	351.8	995.6
2006	12,958.5	9,054.5	3,178.9	5,875.6	2,231.8	2,172.7	1,455.5	384.0	1,071.1
2007	13,206.4	9,262.9	3,273.5	5,990.2	2,159.5	2,130.6	1,550.0	438.2	1,106.8
2008	13,161.9	9,211.7	3,192.9	6,017.0	1,939.8	1,978.6	1,537.6	466.4	1,059.4
2009	12,757.9	9,032.6	3,098.2	5,930.6	1,458.1	1,602.2	1,259.8	368.1	885.2
2010	13,063.0	9,196.2	3,209.1	5,987.6	1,658.0	1,598.7	1,268.5	310.6	963.9
2011	13,299.1	9,428.8	3,331.0	6,101.5	1,744.0	1,704.5	1,378.2	319.2	1,070.0
2012 p	13,591.1	9,604.9	3,433.0	6,178.0	1,911.0	1,850.1	1,484.9	351.3	1,143.5

"Survey of Current Business", August 2011, U.S. Bureau of Economic Analysis

"Economic Report of the President", March 2013

Stage 3 Growth Rate for MS-DCF
Data Sources for Real GDP in 2009 $

Current-Dollar and "Real" Gross Domestic Product 3/25/16

Annual			Quarterly (Seasonally adjusted annual rates)		
	GDP in billions of current dollars	GDP in billions of chained 2009 dollars		GDP in billions of current dollars	GDP in billions of chained 2009 dollars
1929	104.6	1,056.6	1947q1	243.1	1,934.5
1930	92.2	966.7	1947q2	246.3	1,932.3
1931	77.4	904.8	1947q3	250.1	1,930.3
1932	59.5	788.2	1947q4	260.3	1,960.7
2002	10,977.5	12,908.8	1965q2	732.4	3,926.4
2003	11,510.7	13,271.1	1965q3	750.2	4,006.2
2004	12,274.9	13,773.5	1965q4	773.1	4,100.6
2005	13,093.7	14,234.2	1966q1	797.3	4,201.9
2006	13,855.9	14,613.8	1966q2	807.2	4,219.1
2007	14,477.6	14,873.7	1966q3	820.8	4,249.2
2008	14,718.6	14,830.4	1966q4	834.9	4,285.6
2009	14,418.7	14,418.7	1967q1	846.0	4,324.9
2010	14,964.4	14,783.8	1967q2	851.1	4,328.7
2011	15,517.9	15,020.6	1967q3	866.6	4,366.1
2012	16,155.3	15,354.6	1967q4	883.2	4,401.2
2013	16,663.2	15,583.3	1968q1	911.1	4,490.6
2014	17,348.1	15,961.7	1968q2	936.3	4,566.4
2015	17,947.0	16,348.9	1968q3	952.3	4,599.3

Download for Bureau of Economic Analysis web site. Middle years and some quarters omitted to enable data to fit on this page. Use the 2009 dollars column, circled values.

http://www.bea.gov/national/Index.htm

Stage 3 Growth Rate for MS-DCF
Long-Term Inflation Rate

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
	Long-Term Gov. Yields			Inflation Indexed		Long Term	
	From SBBI		T-Bonds	20-Yr T-Bonds		Inflation Rate	
Year	Text	Appendix	20-Yr	SBBI Text	Daily	SBBI Text	AAR Calc
2008	3.0 %	3.03 %	3.05 %	2.4 %	2.36 %	0.6 %	0.67 %
2009	4.6	4.58	4.58	2.0	2.03	2.6	2.55
2010	4.1	4.14	4.13	1.6	1.59	2.6	2.55
2011	2.48	2.48	2.57	0.53	0.53	1.95	1.95
2012	2.41	2.41	2.54	0.15	0.15	2.26	2.26
2013	n/a	3.67	3.72	n/a	1.36	n/a	2.31
2014	n/a	2.40	2.47	n/a	0.68	n/a	1.72
2015	n/a	n/a	2.67	n/a	1.07	n/a	**1.60**

n/a = no longer available

Sources:

(a) Ibbotson SBBI Valuation Yearbook, chapter 4. For 2012 data, 2013 edition, page 52.

(b) SBBI Appendix B, Table B-9 (Long-Term Government Bonds), December
Beginning in 2014, data from Ibbotson® SBBI® Classic Yearbook (Classic Yearbook).
2013 is from Table 2-2 of the Classic Yearbook, on page 42. The 2013 and 2014 numbers are also found in the Ibbotson SBBI Market Report with data as of December, in Table 3 on page 9.

(c) Treasury Constant Maturities, Nominal, 20-Year, Business Day, last day of year
http://www.federalreserve.gov/releases/H15/data.htm (See workpapers)

(d) Ibbotson SBBI Valuation Yearbook, chapter 4. For 2012 data, 2013 edition, page 52.

(e) Treasury Constant Maturities, Inflation Indexed, 20-Year, Business Day, last day of year
http://www.federalreserve.gov/releases/H15/data.htm (See workpapers)

(f) Ibbotson SBBI Valuation Yearbook, chapter 4. For 2012 data, 2013 edition, page 52.

(g) Column (b) less column (e) except for 2015, which is column (c) less column (e)

List of Stage 3 Growth Rates for MS-DCF

The Surface Transportation Board's Multi-Stage Discounted Cash Flow model for estimating the cost of common equity uses 3 stages of growth. The third stage is the long-run nominal growth rate of the U.S. economy, and it is estimated by adding the long-term expected real growth in output (represented by the historical growth rate for U.S. Real Gross Domestic Product since 1929) to the long-run expected U.S. inflation rate. Listed below are the rates used by the Board since it began using the MSDCF in the 2008 Cost of Capital determination, plus the numbers calculated for 2015.

	Long-Term Expected		Stage 3
	Real Growth	Inflation	Growth
Year	in Output	Rate	Rate
2008	3.3 %	0.6 %	3.90 %
2009	3.3	2.6	5.80
2010	3.3	2.6	5.80
2011	3.24	1.95	5.19
2012	3.22	2.26	5.48
2013	3.27	2.31	5.58
2014	3.26	1.72	4.98
2015	3.24 %	1.60 %	4.84 %

Notes:
The Stage 3 Growth Rate for years 2008 through 2012 are from the Ibbotson SBBI Valuation Yearbooks for those years. Ibbotson displayed on 1 digit after the decimal for years 2008 through 2010 for the long-term expected growth rate in output and inflation rate. Figures for 2009 and 2010 rounded to the same numbers.

Market Value Data for MSDCF
Stock Price for CSX - End of 2015

CSX Corp. (CSX) - NasdaqGS ○ **Watchlist**

23.02 ↑0.67 (3.02%) 11:15AM EST - Nasdaq Real Time Price

Historical Prices **Get Historical Prices**

Set Date Range

Start Date: Nov 3 1980 Eg. Jan 1, 2010

End Date: Jan 14 2016

◉ Daily
○ Weekly
○ Monthly
○ Dividends Only

Get Prices

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Prices

Date	Open	High	Low	Close	Volume	Adj Close*
Jan 13, 2016	23.52	23.91	21.75	22.35	21,982,800	22.35
Jan 12, 2016	23.58	24.14	23.21	23.70	11,894,500	23.70
Jan 11, 2016	23.38	23.79	23.18	23.52	11,067,600	23.52
Jan 8, 2016	23.80	23.85	23.44	23.48	9,672,100	23.48
Jan 7, 2016	23.82	24.30	23.59	23.62	9,836,600	23.62
Jan 6, 2016	25.07	25.22	24.17	24.37	8,385,100	24.37
Jan 5, 2016	25.80	25.99	25.21	25.53	5,216,300	25.53
Jan 4, 2016	25.37	25.80	25.08	25.79	9,561,200	25.79
Dec 31, 2015	25.50	26.14	25.50	25.95	4,742,200	25.95
Dec 30, 2015	26.12	26.21	25.86	25.90	4,584,000	25.90
Dec 29, 2015	26.08	26.42	26.02	26.38	4,107,800	26.38
Dec 28, 2015	26.15	26.23	25.85	25.94	3,084,800	25.94
Dec 24, 2015	26.15	26.40	26.07	26.13	1,594,100	26.13

Retreived January 14, 2016.
Link to web page: http://finance.yahoo.com/q/hp?s=CSX

Market Value Data for MSDCF
Stock Price for KSU - End of 2015

Kansas City Southern (KSU) - NYSE ○ **Watchlist**

68.24 ↓0.12 (0.18%) 11:16AM EST - Nasdaq Real Time Price

Historical Prices **Get Historical Prices**

Set Date Range

Start Date: Nov 5 1987 Eg. Jan 1, 2010

End Date: Jan 14 2016

◉ Daily
○ Weekly
○ Monthly
○ Dividends Only

Get Prices

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Prices

Date	Open	High	Low	Close	Volume	Adj Close*
Jan 13, 2016	71.49	71.62	67.74	68.36	1,512,400	68.36
Jan 12, 2016	70.30	71.43	69.52	71.27	1,185,100	71.27
Jan 11, 2016	70.01	70.54	68.66	69.77	1,635,300	69.77
Jan 8, 2016	69.44	70.41	68.81	69.73	1,274,400	69.73
Jan 7, 2016	69.48	70.44	69.03	69.17	2,585,100	69.17
Jan 6, 2016	73.18	74.00	70.39	70.58	2,787,300	70.58
Jan 5, 2016	74.03	74.36	73.18	73.98	1,616,100	73.98
Jan 4, 2016	73.18	74.58	72.87	73.72	2,812,300	73.72
Dec 31, 2015	73.57	75.99	73.53	74.67	1,329,700	74.67
Dec 30, 2015	73.93	74.90	73.35	74.27	1,108,200	74.27
Dec 29, 2015	73.41	74.86	73.30	74.41	1,366,700	74.41
Dec 29, 2015			0.33 Dividend			
Dec 28, 2015	73.52	74.04	72.90	73.54	1,540,700	73.21
Dec 24, 2015	73.68	74.34	73.27	73.77	715,400	73.44
Dec 23, 2015	72.30	74.19	72.01	73.88	1,733,200	73.55
Dec 22, 2015	70.60	72.38	70.18	71.89	1,610,300	71.57
Dec 21, 2015	70.69	71.00	69.70	70.13	2,177,600	69.82
Dec 18, 2015	71.39	71.57	69.79	70.01	5,897,900	69.70

Retreived January 14, 2016.
Link to web page: http://finance.yahoo.com/q/hp?s=KSU

Market Value Data for MSDCF
Stock Price for NSC - End of 2015

Norfolk Southern Corporation (NSC) - NYSE ○ **Watchlist**

72.82 ↑1.38 (1.93%) 11:17AM EST - Nasdaq Real Time Price

Historical Prices **Get Historical Prices**

Set Date Range

Start Date: Jun 2 1982 Eg. Jan 1, 2010

End Date: Jan 14 2016

◉ Daily
○ Weekly
○ Monthly
○ Dividends Only

Get Prices

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Prices

Date	Open	High	Low	Close	Volume	Adj Close*
Jan 13, 2016	76.16	76.49	70.09	71.44	1,980,300	71.44
Jan 12, 2016	76.54	77.35	73.60	75.93	1,862,200	75.93
Jan 11, 2016	78.02	78.34	75.00	75.97	1,524,400	75.97
Jan 8, 2016	78.30	79.00	77.55	77.79	1,417,600	77.79
Jan 7, 2016	78.06	78.83	77.55	78.00	1,899,200	78.00
Jan 6, 2016	81.22	81.70	79.01	79.48	1,341,000	79.48
Jan 5, 2016	81.76	82.56	81.40	82.27	1,042,500	82.27
Jan 4, 2016	83.64	83.66	80.90	81.81	2,554,500	81.81
Dec 31, 2015	84.16	85.18	84.09	84.59	918,600	84.59
Dec 30, 2015	85.50	85.57	84.78	84.86	843,300	84.86
Dec 29, 2015	85.86	86.31	85.50	85.56	829,300	85.56
Dec 28, 2015	86.57	86.98	85.49	85.59	816,300	85.59
Dec 24, 2015	86.90	87.33	86.17	86.78	434,000	86.78
Dec 23, 2015	86.68	87.11	86.00	86.85	848,400	86.85

Retreived January 14, 2016.
Link to web page: http://finance.yahoo.com/q/hp?s=NSC

Market Value Data for MSDCF
Stock Price for UNP - End of 2015

Union Pacific Corporation (UNP) - NYSE o **Watchlist**

75.48 ↑1.63 (2.21%) 11:16AM EST - NYSE Real Time Price

Historical Prices **Get Historical Prices**

Set Date Range

Start Date: Jan 2 1980 Eg. Jan 1, 2010
End Date: Jan 14 2016

- (•) Daily
- ( ) Weekly
- ( ) Monthly
- ( ) Dividends Only

Get Prices

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Prices

Date	Open	High	Low	Close	Volume	Adj Close*
Jan 13, 2016	76.20	76.84	73.21	73.85	8,595,900	73.85
Jan 12, 2016	75.51	76.46	74.38	76.27	6,985,600	76.27
Jan 11, 2016	74.36	75.05	73.63	74.81	7,759,500	74.81
Jan 8, 2016	73.56	74.38	73.20	73.86	7,505,200	73.86
Jan 7, 2016	73.39	74.19	72.42	73.08	8,966,400	73.08
Jan 6, 2016	76.75	77.19	74.24	74.83	8,114,600	74.83
Jan 5, 2016	79.01	79.34	77.30	78.21	6,117,300	78.21
Jan 4, 2016	76.87	79.04	76.13	78.97	6,890,200	78.97
Dec 31, 2015	77.73	79.15	77.57	78.20	3,685,000	78.20
Dec 30, 2015	78.66	78.78	78.16	78.51	3,685,500	78.51
Dec 29, 2015	78.60	79.05	78.11	78.97	3,503,600	78.97
Dec 28, 2015	78.49	78.73	77.94	78.34	3,958,400	78.34
Dec 24, 2015	78.79	79.10	78.50	78.80	2,327,500	78.80

Retreived January 14, 2016.
Link to web page: http://finance.yahoo.com/q/hp?s=UNP

Market Value Data for MSDCF
Shares Outstanding for CSX - End of 2015

10-Q 1 csx09252015 10-q.htm FORM 10-Q

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 25, 2015

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, 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. (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 974,944,791 shares of common stock outstanding on September 25, 2015 (the latest practicable date that is closest to the filing date).

Market Value Data for MSDCF
Shares Outstanding for KSU - End of 2015

10-Q 1 kcs10q09302015.htm 10-Q
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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-Q

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

For the quarterly period ended September 30, 2015

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 1-4717

KANSAS CITY SOUTHERN

(Exact name of registrant as specified in its charter)

Delaware		44-0663509
(State or other jurisdiction of incorporation or organization)		*(I.R.S. Employer Identification No.)*
427 West 12th Street, Kansas City, Missouri		64105
(Address of principal executive offices)		*(Zip Code)*

816.983.1303
(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 Z 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 Z 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. (Check one):

Large accelerated filer Z Accelerated filer " Non-accelerated filer " Smaller reporting company "
(Do not check if a 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 Z

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

Class	October 9, 2015
Common Stock, $0.01 per share par value	109,136,453 Shares

Market Value Data for MSDCF
Shares Outstanding for NSC - End of 2015

10-Q 1 nsc09301510-q.htm 10-Q

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 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 30, 2015**

( ) 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	**52-1188014**
(State or other jurisdiction of incorporation)	(IRS Employer Identification No.)
Three Commercial Place **Norfolk, Virginia**	**23510-2191**
(Address of principal executive offices)	(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 [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 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, 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 [X] 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 Exchange Act).
Yes [ ] No [X]

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

Class	Outstanding at September 30, 2015
Common Stock ($1.00 par value per share)	298,569,765 (excluding 20,320,777 shares held by the registrant's consolidated subsidiaries)

Market Value Data for MSDCF
Shares Outstanding for UNP - End of 2015

10-Q 1 unp-20150930x10q.htm 10-Q
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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, 2015

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	13-2626465
(State or other jurisdiction of incorporation or organization)	(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 16, 2015, there were 854,120,634 shares of the Registrant's Common Stock outstanding.

2015 Cost of Equity Using STB's MSDCF

Company	CSX		KSU		NSC		UNP	
Year	2015		2015		2015		2015	
Inputs								
Initial Cash Flow	$1,035.70		$26.52		$898.67		$3,122.42	
Input for Terminal C.F.	$1,863.36		$422.22		$1,726.43		$4,347.61	
Stage One Growth	6.200%		8.450%		0.800%		6.500%	
Stage Two Growth	5.490%		5.490%		5.490%		5.490%	
Stage Three Growth*	4.840%		4.840%		4.840%		4.840%	
Year	Val. 12/31	Pres Val.	Val. 12/31	Pres Val.	Val. 12/31	Pres Val.	Val. 12/31	Pres Val.
1	$1,100	$986	$29	$26	$906	$825	$3,325	$2,986
2	1,168	939	31	26	913	757	3,542	2,855
3	1,241	895	34	26	920	694	3,772	2,730
4	1,317	852	37	26	928	637	4,017	2,610
5	1,399	811	40	25	935	585	4,278	2,496
6	1,476	768	42	25	987	561	4,513	2,364
7	1,557	726	44	24	1,041	539	4,761	2,239
8	1,642	687	47	23	1,098	518	5,022	2,121
9	1,733	650	49	22	1,158	497	5,298	2,009
10	1,828	615	52	21	1,222	477	5,589	1,902
Terminal	51,656	17,371	19,298	7,905	49,063	19,167	124,786	42,480
Sum of Pres. Values		$25,299.82		$8,149.22		$25,256.02		$66,792.23
Market Value (input)		$25,299.82		$8,149.22		$25,256.02		$66,792.23
Cost of Equity	11.51%		9.34%		9.86%		11.38%	
Prev. Yr. Cost of Equity	12.43%		9.82%		13.16%		12.30%	

Preferred Stock

Cost of Preferred Equity Capital

Step 1: Calculate Average Stock Price and Annual Dividend

			Stock Price			
			High	**Low**	**Avg.**	**Dividend**
KSU	$25 par pref., 4%, noncumm.	Q1	$29.75	$27.02	$28.385	$0.25
		Q2	$28.90	$25.25	$27.075	$0.25
		Q3	$29.00	$25.25	$27.125	$0.25
		Q4	$27.10	$25.37	$26.235	$0.25
		Year			**$27.205**	**$1.00**

Step 2: Calculate Cost of Preferred Equity Capital Using Dividend Yield method

		Annual Dividend	Average Price	Yield
KSU	$25 par preferred, 4%, noncummulative	$1.00	$27.205	3.676%
Cost of Preferred Equity	→			**3.68%**
Previous Year Cost of Preferred Equity				3.69%

Market Value of Preferred Equity

		Outstanding Shares	Average Price	Market Value
KSU	$25 par preferred, 4%, noncummulative	242,170	$27.205	**$6,588,235**

Sources: Kansas City Southern Form 10-K for 2015, Part II Item 5 and Balance Sheet