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April 14, 2008

BY HAND

222077

The Honorable Anne K. Quinlan
Acting Secretary
Surface Transportation Board
395 E Street, SW
Washington, D C 20423-0001

Re. STB Ex Parte No. 664 (Sub-No 1), *Use of a Multi-Stage Discounted Cash Flow Methodology In Determining the Railroad Industry's Cost of Capital*

Dear Secretary Quinlan:

Enclosed are an original and ten copies of the comments of the Western Coal Traffic League ("WCTL") in the above-captioned proceeding. Also enclosed are three CDs containing the electronic workpapers of the WCTL's expert witnesses as well as copies of the text of the filing.

Please contact the undersigned if there are any questions relating to this matter.

Sincerely,

Robert D. Rosenberg

Robert D. Rosenberg
An Attorney for the Western Coal Traffic League

RDR/rlh
Enclosures

BEFORE THE
SURFACE TRANSPORTATION BOARD

222077

In the Matter of.	)	
USE OF A MULTI-STAGE DISCOUNTED CASH FLOW METHODOLOGY IN DETERMINING THE RAILROAD INDUSTRY'S COST OF CAPITAL	)	STB Ex Parte No. 664 (Sub-No. 1)

COMMENTS OF THE WESTERN COAL TRAFFIC LEAGUE

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Dated: April 14, 2008

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COMMENTS OF THE WESTERN COAL TRAFFIC LEAGUE

The Western Coal Traffic League ("WCTL" or "League")[1] hereby submits its comments regarding the Advance Notice of Proposed Rulemaking ("ANPR" or "Notice") that the Surface Transportation Board ("STB" or "Board") served in this proceeding on February 11, 2008

I. SUMMARY

As explained more fully below and in the accompanying Verified Statements of Thomas D. Crowley and Daniel L. Fapp of L.E. Peabody & Associates, Inc.

[1]WCTL is a voluntary association, whose regular membership consists entirely of utility shippers of coal mined west of the Mississippi River that is transported by rail. WCTL members presently ship and receive in excess of 140 million tons of coal by rail each year. WCTL's members are: Alliant Energy, Ameren Energy Fuels and Services, Arizona Electric Power Cooperative, Inc., Austin Energy (City of Austin, Texas), CLECO Corporation, CPS Energy, Kansas City Power & Light Company, Lower Colorado River Authority, MidAmerican Energy Company, Minnesota Power, Nebraska Public Power District, Omaha Public Power District, Texas Municipal Power Agency, Western Farmers Electric Cooperative, Western Fuels Association, Inc., Wisconsin Public Service Corporation, and Xcel Energy

("Crowley/Fapp VS," attached as Exhibit A) and Dr James E Hodder ("Hodder VS," attached as Exhibit B), calculating a cost of capital ("COC"), and specifically a cost of equity ("COE"), for the railroad industry using a multi-stage discounted cash flow ("MSDCF") model with a measure of cash flow broader than dividends is complicated by sharp year-to-year fluctuations or lumpiness in the underlying cash flows for the four railroads (BN, CSX, NS, and UP) that meet the Board's screening criteria

The fluctuations can be addressed by normalization or averaging that smooths out the annual fluctuations. Using a three-year averaging period and measuring cash flows under either a modified cash payout approach (that tracks dividends and stock buybacks less cash inflows from the exercise of stock options) or broader free cash flow to equity ("FCFE") approach, the MSDCF analysis yields COE values for the 2002-2006 period that are generally consistent with the results under a CAPM analysis.

In fact, the results under the MSDCF analysis are generally lower than those under the CAPM, sometimes by as much as 200 to 300 basis points. That the CAPM values are higher than the MSDCF values is generally to be expected in light of the Board's decision in Ex Parte No 664, *Methodology to be Employed in Determining the Railroad Industry's Cost of Capital* (STB served Jan 17, 2008), to implement CAPM using a historic market risk premium ("MRP"), rather than a significantly lower prospective MRP. The DCF methodology is inherently prospective in design in that it seeks to calculate future cash flows, and is unlikely to match the results of a CAPM

analysis that focuses on historical rather than prospective returns. This difference in perspective is an additional reason for the Board to revisit its treatment of the MRP. For example, the Board could consider use of a blend of the historic and prospective MRPs.

While the 2002-2006 MSDCF results thus provide further validation of the CAPM results, WCTL does not believe it would be worthwhile for the Board to receive and consider evidence concerning MSDCF calculations along with CAPM calculations as part of its annual railroad industry COC determinations at this time. Because of the underlying lumpiness and need for averaging, the MSDCF values are unlikely to be particularly stable For example, over the 2002-2006 period, the MSDCF values fluctuate considerably more than the CAPM values. Combining the MSDCF and CAPM values is thus more likely to reduce stability and precision than to increase them. Considering MSDCF along with CAPM will also require additional time and resources, which will contribute to delay, expense, and controversy, without necessarily contributing to greater accuracy. That said, it would make some sense for the Board to revisit the matter after a period of time such as five years, when it has more experience working with CAPM, or if the CAPM results should reveal sharp fluctuations that appear to have little linkage to changes in inflation or risk.

II. THE BOARD'S NOTICE AND WCTL'S PRIOR MSDCF SUBMISSIONS

The Board's Notice observes that the record in Ex Parte No. 664 addressed use of a discounted cash flow ("DCF") method to determine the cost of capital, but

indicates that some additional matters or aspects need to be addressed First, the model needs to be a MSDCF and not a single-stage DCF ("SSDCF") model Second, it needs to focus not merely on dividends, but instead incorporate a "broader measures of cash flow or shareholder returns " Third, the model needs to be limited to only those firms that passed the established screening criteria, *i.e* , the Morningstar/Ibbotson three-stage model is unsatisfactory as it includes other firms. Fourth, when used in combination with CAPM, it needs to "enhance the precision" of the COE estimate, *i e* , "result in a lower variance than reliance on the CAPM approach alone " In addition, the Notice invites comment on other criteria, including what it refers to as atypically large railroad capital investment, and on other features of an appropriate MSDCF model. Notice at 3-4

WCTL's instant filing addresses the matters noted in the Board's Notice. However, it is appropriate to note that WCTL's earlier filings were largely responsive to most of the concerns stated in the Board's Notice. First, WCTL's December 8, 2006 filing in Ex Parte No 664 presented, through Professor Hodder's VS, a MSDCF that included only the four railroads (BNSF, CSX, NS, and UP) that met the Board's screening criteria. Professor Hodder and Messrs. Crowley and Fapp elaborated upon and modified that model in their further filings in Ex Parte No. 664. While that MSDCF considered only dividends, dividends were the focus of the attention of the Board and the Association of American Railroads ("AAR") at that time. Moreover, only one carrier (BNSF) engaged in stock buybacks during the 2002-2005 period, although the other

railroads are now engaging in buybacks as well. Indeed, as explained *infra*, introducing a measure of cash flow that is broader than dividends presents certain complications

In addition, WCTL and its witnesses addressed in Ex Parte No. 664 the deficiencies of the Morningstar/Ibbotson 3-stage DCF model, including not only its inclusion of additional carriers, but also its unrealistic assumption that growth during the second five-year period would match industry average growth during the first five-year period when that growth was more than double the expected growth rate of the general economy.

Nonetheless, WCTL's experts have engaged in the analysis requested by the Board in its Notice.

III. IMPLEMENTING MSDCF WITH A BROADER CASH FLOW MEASURE

A. The Modified Payout and FCFE Approaches

In response to the Board's directive that the MSDCF not be confined to dividends, WCTL's witnesses have considered two alternative measures of cash flow The first is modified cash payout, and the second is free cash flow to equity ("FCFE") Crowley/Fapp VS at 6-7, 14-15; Hodder VS at 3-4, 6

Modified cash payout is a relatively narrow measure that considers dividends and stock buybacks (those being the distributions to stockholders) less dollars paid to exercise stock options (those being a cash flow, sometimes quite significant, from stockholders, typically rail management). Modified cash payout thus reflects distributions

that are made directly to (and from) common equity stockholders. Crowley/Fapp VS at 6-7; Hodder VS at 3-4.

In contrast, FCFE is a broader measure that reflects earnings, plus depreciation, amortization, deferred taxes, and net new debt, less change in capital expenditures and working capital In essence, the adjustments are designed to convert accounting earnings to actual cash flow Crowley/Fapp VS at 14-15.

In both instances, a yield (equivalent to the dividend yield under the Board's prior SSDCF methodology) is determined by from the relevant cash flows and then applied in the MSDCF model to estimate the COE, much as a dividend growth model determines the COE using dividends as the initial cash flow Crowley/Fapp VS at 6-7, 12-16.

B. Cash Flow Lumpiness and the Need for Averaging

Review of the inputs used in the modified payout and FCFE approaches reveals very sizeable fluctuations, or lumpiness, in the railroads' cash flows in recent years Crowley/Fapp VS at 7, 12, 14, 16; Hodder VS at 4-6.[2] For example, for BNSF (the only carrier that engaged in stock buybacks in recent years until 2006), the modified payout ratio in 2004 was 23.6%, but nearly quadrupled to 92.9% in 2005 The BNSF

[2] *See* the Crowley/Fapp electronic workpapers for the COE calculations. In particular, the the 2006 modified payout and FCFE calculations show the relevant ratios for each carrier for 2004-2006.

FCFE ratio also experienced a large change in those two years, growing from 20.6% in 2004 to 73 1% in 2005.

The UP data also reveals sharp fluctuations. From 2004 to 2005, the UP modified payout ratio went from 34.4% to 5 1% (essentially, a reduction to a seventh of the prior value). However, the UP FCFE experienced an even more abrupt change, going from 108.8% in 2004 to negative 21.8% in 2005.

The Eastern carriers also had sharp fluctuations as well as some negative values in those years For example, CSX's modified payout ratio was slightly negative (-0.4%) in 2005, but its FCFE ratio was negative 44.4% that year. NSC's modified payout ratio was -2.2% in 2004 and 0% in 2005, and its FCFE was negative 18.6% in 2005.

One the advantages of the dividend growth model that then emerges is that dividends are relatively stable, whereas broader measures of cash flow are not. Hodder VS at 6-7. Indeed, one of the common explanations for using buybacks rather than increasing dividends to distribute cash to stockholders is that significant stigma can attach to the subsequent reduction of a dividend, whereas stock buyback programs are usually limited in duration or amount, meaning that there is less or no expectation that they will continue indefinitely Crowley/Fapp VS at 5.

The variability or lumpiness in the MSDCF inputs, especially for recent years (2002-2006), can be addressed at least in part by using a multiple-year average to

normalize or smooth out the sharp year-to-year fluctuations. Crowley/Fapp VS at 7, 12, 16; Hodder VS at 5. A three-year averaging period serves to produce realistic results for the 2002-2006 period discussed *infra*.

C Other Aspects of MSDCF Implementation

WCTL's witnesses have continued using most elements of their prior MSDCF approach, including relying on the truncated I/B/E/S forecast to govern growth for the first five years of the model, and a ten-year transition or phase-in such that the terminal growth rate applies starting at year fifteen. Crowley/Fapp VS at 7-11, Hodder VS at 3 WCTL notes that a five-year phase-in would lower the MSDCF result where the growth rates for the firm are higher than that for the general economy.

For the terminal growth rate, WCTL has utilized the Blue Chip economic forecast figure of 5% for growth in gross domestic product Dr. Myers previously recommended this source, and it appears to be in line with other forecasts. Crowley VS at 10-11.[3]

[3]In its Notice of Proposed Rulemaking in Ex Parte No. 664, the Board proposed to use of the 4 6% GDP growth figure from the Social Security Administration ("SSA") as its terminal growth rate. The most recent (2008) SSA Trustee Report, available at http.//www ssa.gov/OACT/TR/TR08/trTOC.html, also indicates a long-term GDP growth rate of 4.6%. (Table VI F6 at p 184 projects, for the intermediate case, a 2007 GDP value of $13,841 billion and a 2085 GDP value of $465,848 billion, 33.65 times greater. $33.65^{1/78} = 1.0461$)

D. MSDCF Results

Crowley/Fapp Exhibit No. 3 depicts the results of the MSDCF analysis for the 2002-2006 period and compares those results to those under SSDCF and CAPM approaches as follows:

Table 1
Comparison of COE Results for 2002-2006 Under SSDCF, CAPM and MSDCF

Year	STB SSDCF COE	STB CAPM COE	MSDCF COE Modified Payout	MSDCF COE FCFE
2002	12 60%	10.05%	10.41%	11.64%
2003	12 70%	9.93%	7 84%	10.10%
2004	13 16%	10.38%	7.22%	8 87%
2005	15 18%	10 61%	8.81%	9 92%
2006	16.10%	11.08%	9.52%	9.84%
Source: Crowley/Fapp Exhibit No 3				

Several observations are in order. First, the SSDCF values are consistently higher than the other COE values, confirming the unsuitability of the SSDCF approach. Hodder VS at 7. Second, the CAPM values are uniformly higher than the modified payout values, typically by 150 to 300 basis points. Third, the FCFE values are higher than the modified payout values, albeit sometimes by only a modest amount, and in three of the five years, the FCFE values are lower than the CAPM values (by over 100 basis points in 2004 and 2006).

Also, the MSDCF values fluctuate more than the CAPM values. The range of the CAPM values over the 2002-2006 period is 115 basis points, a relatively modest amount In contrast, the range on the modified payout values is 319 basis points, nearly three times as much. The range on the FCFE values is 277 basis points, modestly less than that for the modified payout, but still more than double that for the CAPM.

IV. APPROPRIATE USE OF THE MSDCF METHOD

The 2002-2006 data provides considerable validation for the results of the CAPM results Moreover, the level of validation would be increased the CAPM were calculated using a prospective MRP or, at the very least, a blend of the historic and prospective MRPs, especially as a prospective MRP would more closely align with projected future cash flows.

However, the lumpiness in the underlying cash flows and the resulting need to resort to averaging present substantial drawbacks to regular use of the MSDCF in conjunction with the CAPM at this time In addition, the MSDCF values reveal greater fluctuation than the relatively stable CAPM values (during a period that railroad stocks have performed very favorably), indicating that inclusion of the MSDCF together with the CAPM values is unlikely to improve stability

Under these circumstances, there is little to be gained at this time by having the Board receive and consider MSDCF evidence along with CAPM calculations as part of its regular annual determinations of the railroad industry COC. Substantial effort

would be required to perform the MSDCF calculations, particularly as there is opportunity for disagreement as to such matters as how to define the scope of the relevant cash flows, how to construct the yield, the reliability of the initial growth forecasts, the length of the transition period, and the selection of the terminal growth value. Additionally, the lumpiness of the cash flows will likely engender disagreement over how to normalize the data, and, even after averaging or other normalization, the MSDCF values will not necessarily be particularly stable. There is no apparent basis for concluding that considering MSDCF along with CAPM values will result in greater precision or stability. Presenting MSDCF values will, however, consume time and resources of both the parties and the Board, and it will also contribute to regulatory uncertainty.

Accordingly, WCTL does not believe that it is appropriate at this time for the Board to consider MSDCF as well as CAPM evidence as part of its regular COC determinations in Ex Parte No. 558. However, it may make some sense for the Board to revisit the matter after a period of time, such as five years, when it will have accumulated more experience working with CAPM By the same token, it may be appropriate to revisit the matter before then if the CAPM results should exhibit less stability, especially if those fluctuations appear not to be linked to changes in underlying inflation, interest rates, or risk.

V. NO ADJUSTMENT IS WARRANTED FOR CLAIMS OF ATYPICALLY LARGE RAILROAD CAPITAL INVESTMENT

The Board's ANPR at 4 also expresses a willingness to consider other matters, and then notes that "parties [presumably the railroads] to STB Ex Parte No. 664 indicated that atypically large capital investment by the railroads could affect the results of a DCF analysis." The ANPR then specifically asks that parties "address this concern and show how a multi-stage DCF would account for such investments." *Id.*

The Board's statements appear rather cryptic. As best WCTL can discern, the concern seems to be that if the railroad industry were to have abnormally large capital needs, then some adjustment to the MSDCF model -- presumably one that gives an otherwise artificial increase to the COC -- might be an appropriate subject for consideration.

Based on the available evidence, WCTL sees no need for any such adjustment as the implicit premise is unfounded Crowley/Fapp VS at 17-18 To the contrary, the available evidence -- for example, the report prepared for the AAR by Cambridge Systematics, Inc (the "Cambridge Report"), and submitted by the AAR in Ex Parte No. 664[4] -- indicates that use of the growth rate for the general economy will

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[4]WCTL's comments should not be construed as any sort of endorsement of the Cambridge Report, especially its effort to model railroad capacity using methods and assumptions developed for highways. WCTL's use of the Cambridge Report is largely confined to its growth analysis for traffic and the general economy, much of which appears to have been developed by others.

actually be quite generous for the railroad industry. Furthermore, the recent experience indicates, as WCTL demonstrated in its Ex Parte No. 664 filings, that the railroads are more inclined to use additional cash flows to reward their stockholders than to increase their capital expenditures, especially as increasing their capital expenditures could make it more difficult for them to continue the rate increases that have been at their heart of their so-called renaissance.

The Cambridge Report does not depict any massive surge in railroad traffic. Instead, it states that "[t]he anticipated rates of growth for the U S. economy and freight transportation demand are about the same as those experienced over the last 30 years " *Id* at 2-5 The report does project an 88% increase in railroad tonnage, apparently over the 30-year period 2005-2035. *Id*[5] An 88% increase is hardly trivial, but over the thirty-year period that appears to be addressed, the underlying annual compound growth rate is approximately 2.1% ($1.88^{1/30} = 1.0212653$).

In contrast, the Cambridge Report, apparently relying on a separate analysis prepared by Global Insight, Inc , "forecasts that the U S. economy will grow at a compound annual rate of about 2.8 percent over the next 30 years." *Id.* at n.8.[6] The AAR's Cambridge Report thus indicates that railroad traffic is expected to grow at only about 75% of the growth rate of the general economy This relationship suggests that use

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[5]This increase is less than the 98% increase projected for trucks and highways. *Id.*

[6]The 2.8% figure appears to reflect real, and not nominal, GDP growth.

of the growth rate for the general economy will actually overstate growth in the railroad industry for MSDCF purposes.

Tonnage is not an ideal measure of output. In contrast, the Board's productivity adjustment for the rail cost adjustment factor measures output according to a 189-cell matrix.[7] The STB's most recent decision in Ex Parte No. 290 (Sub-No 4), *Railroad Cost Recovery Procedures--Productivity Adjustment* (STB served March 28, 2008), shows output index figures for the 2002-2006 period of 1.012, 10 39, 1.033, 1.021, and 1.018, respectively, which yield a compound annual growth rate (geometric average) of 2.46% (1.0246) Significantly, the growth in the output index actually trailed the rate of increase in real gross domestic product ("GDP") as measured by the Bureau of Economic Analysis, using chained 2000 dollars over that period. Specifically, http://www.bea.gov/ national/xls/gdpchg xls shows GDP growth for the 2002-2006 period at 1.6%, 2 5%, 3.6%, 3.1%, and 2.9%, which yields a compound annual growth rate (geometric average) of 2.74%, nearly 3 basis points (or 11%) more than the growth in Class I railroad output, during a period of high demand growth that was accompanied by significant capacity constraints in the trucking industry Again, nothing in the available evidence suggests that use of the growth rate for the general economy will understate growth in the railroad industry.

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[7]While the productivity calculation tracks the output of all Class I railroads, and not just the four that appear to qualify for inclusion in the Board's COC analysis, the four account for the vast bulk of the total Class I railroad traffic.

The growth in output has thus had a modest role in the railroads' improvement in earnings in recent years. Productivity has also grown at a modest rate (an average of 1.2% a year for the 2002-2006 period according to the Board's most recent RCAF decision). Accordingly, the most significant source of the railroads' past financial improvement, and what likely drives the current I/B/E/S projections for further growth earnings, is the railroads' imposition of higher rates on their traffic. Indeed, the 14 75% growth rate presented in the AAR's initial filing for the 2006 capital posits that railroad earnings will double in five years and quadruple in ten years. Given the moderate level of traffic growth projected and a continuation of productivity growth at current levels, only a massive increase in rates could generate earnings growth of that magnitude

As WCTL has previously explained, the railroads have devoted more of the increase in earnings and profits to increasing their dividends and stock buybacks (and even to reduce their long-term debt), rather than to increasing capital expenditures Indeed, in recent years, the railroads have reduced their capital expenditures expressed as a percentage of revenues *See, e g* , Submission of Edward M Wolfe, Senior Managing Director of Bear, Stearns & Co Inc., before the House Transportation & Infrastructure Committee, Forum on Freight Rail Finance, December 12, 2007 (excerpt attached as Exhibit D), showing capital expenditures by United States railroads averaged 17.7% of revenues over 1995-2006, but only 15.9% over 2001-2006. While capital expenditures may have increased in nominal dollar terms, that nominal increase reflects the impact of

inflation, and thus the comparison of capital expenditures to revenues is particularly telling since both the capital expenditures and revenues are subject to inflation.

The fact that relative capital expenditures have decreased in the face of growth in output and especially rate increases is particularly significant in at least two respects First, it represents a deviation from what the railroads' public representations that there is a close correlation between railroad capital spending and changes in revenues and net income *See* Crowley/Fapp VS at 17-18. Second, there is the very significant possibility that railroads have been limiting capital expenditures specifically in order to drive up rates. In other words, the railroads may well have found it profitable to limit their capital expenditures, and thus their capacity, forcing shippers to pay more for the limited capacity that is available. Under such conditions, the Board should not be rewarding the railroads with the benefit of a higher cost of capital for having engaged in the equivalent of economic withholding, *i e* , refusing to serve as a means of establishing higher prices

VI CONCLUSION

For the reasons stated above, the Board should not adopt a MSDCF estimate of the COE based on a measure of cash flows broader than dividends as part of its formal COE calculation at the present time. In any event, there is no basis for any adjustment to the COE estimate to reflect atypically large railroad investment, especially

when evidence demonstrates that the railroads have actually curtailed their capital expenditures relative to their increasing revenues in recent years.

Respectfully submitted,

WESTERN COAL TRAFFIC LEAGUE

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Dated: April 14, 2008

Its Attorneys

EXHIBIT A

Verified Statement of
Thomas D. Crowley and Daniel L. Fapp

I. INTRODUCTION

We are Thomas D Crowley and Daniel L Fapp We are economists and, respectively, the President and a Vice President of L E Peabody & Associates, Inc , an economic consulting firm that specializes in solving economic, transportation, marketing, financial, accounting and fuel supply problems Mr Crowley has spent most of his consulting career of over thirty-seven (37) years evaluating fuel supply issues and railroad operations, including railroad costs, prices, financing, capacity and equipment planning issues His assignments in these matters were commissioned by railroads, producers, shippers of different commodities, and government departments and agencies A copy of his credentials is included as Exhibit No 1 to this verified statement ("VS")

Mr Fapp has been with L E Peabody & Associates, Inc since 1997 During this time, he has worked on numerous projects dealing with railroad revenue, operational, economic and financial issues Prior to joining L E Peabody & Associates, Inc , Mr Fapp was employed by BHP Copper Inc in the role of Transportation Manager - Finance and Administration, where he also served as an officer and Treasurer of the three BHP Copper Inc subsidiary railroads, The San Manual Arizona Railroad, the Magma Arizona Railroad and the BHP Nevada Railroad A copy of his credentials is included as Exhibit No 2 to this VS

Our consulting assignments regularly involve working with and determining various facets of railroad financial issues, including cost of capital determinations In these assignments, we have calculated railroad capital structures, market values, cost of railroad debt, cost of preferred railroad equity and common railroad equity We are also well acquainted with and have used the commonly accepted models for determining a firm's cost of equity, including the Discounted Cash Flow Model

("DCF"), Capital Asset Pricing Model ("CAPM"), Fama-French Three Factor Model and Arbitrage Pricing Model

We have developed railroad industry average cost of capital and company specific cost of capital for use in litigation and for use in general business management. For several clients, we have both individually and together determined the Going Concern Value ("GCV") of privately held railroads. Developing the GCV under the Income Based Methodology requires developing company specific costs of debt and equity for use in discounting future company cash flows, as well as creating forecasts of expected cash flows to the firm and to holders of common equity from company financial statements. We have also developed cost of capital in order to capture the costs associated with shipper investment in railroad equipment and road property. Our findings regarding railroad cost of capital have been presented to U.S. District and State courts, the Interstate Commerce Commission, the Surface Transportation Board ("STB") and the Federal Railroad Administration.

We have been asked by Counsel for the Western Coal Traffic League ("WCTL") to provide comments on the use of Multi-Stage Discounted Cash Flow ("MSDCF") models to estimate the railroad industry's cost of equity in response to the Advance Notice of Proposed Rulemaking issued by the STB in Ex Parte No. 664 (Sub-No. 1), *Use Of A Multi-Stage Discounted Cash Flow Model In Determining The Railroad Industry's Cost Of Capital*, Served February 11, 2009 ("Ex Parte 664 (Sub-No. 1)"). Specifically, WCTL requested that we address the following issues noted by the STB: (1) the expansion of a dividend based MSDCF model to include broader measures of cashflow to shareholders, including stock repurchases, (2) the use of a MSDCF model that relies

upon a definition of cashflow beyond aggregate dividends and stock repurchases, and (3) the comparison of the railroad industry cost of equity from such broader MSDCF models to the railroad industry cost of equity as produced under the STB's Capital Asset Pricing Model ("CAPM") approach

We summarize our testimony below under the following topical headings

II MSDCF With Dividends And Stock Repurchases

III MSDCF Using Free Cash Flow To Equity

IV Comparison of MSDCF to CAPM Costs Of Equity

II. MSDCF WITH DIVIDENDS AND STOCK REPURCHASES

In *STB* Ex Parte No 664, *Methodology to be Employed in Determining the Railroad Industry's Cost of Capital*, served January 17, 2008 ("*Ex Parte 664*"), the STB changed the methodology it uses to calculate the railroad industry's cost of equity, concluding that the Single-Stage Discounted Cashflow Model ("SSDCF") approach it had previously relied upon to estimate railroad cost of equity had been supplanted by more modern, accurate methods.[1] Instead of the SSDCF model previously replied upon by the STB, *Ex Parte 664* adopted the CAPM approach as the methodology to be used to estimate the railroad industry cost of equity. The STB also initiated *Ex Parte 664 (Sub-No. 1)* to address other cost of capital issues, including a determination of whether or not it is necessary to develop a MSDCF cost of equity to complement the CAPM in developing the railroad industry's cost of equity.

In *Ex Parte 664 (Sub-No. 1)*, the STB asked parties to propose forms of MSDCF models that would compliment the CAPM approach for developing the cost of equity for the railroad industry. The STB directed that proposed MSDCF models meet two specific requirements.[2] First, proposed models must be able to accommodate different growth rates in railroad expected cashflows by using a MSDCF format. Second, the DCF models should not focus solely on dividend payment only, but should also factor in other methods used by companies to return cash to their shareholders, including stock repurchase programs.

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[1] See *Ex Parte 664* at 1.

[2] See *Ex Parte 664 (Sub-No. 1)* at 3. The STB also listed two additional criteria in its *Ex Parte 664 (Sub-No. 1)* decision. First, that the proposed model only be used on firms that pass the STB's current screening criteria for inclusion in railroad cost of capital determinations, and second, that the use of the MSDCF in conjunction with the CAPM approach, reduces variability in cost of equity calculations.

We have developed two MSDCF models which meet the STB's modeling criteria One relies upon discounting expected cash payments to common equity holders based upon current dividend and common stock repurchases The second uses expected future cash flows available for common equity holders Each MSDCF model is discussed below

A. INCORPORATION OF DIVIDENDS AND STOCK REPURCHASES

Companies attempt to maintain stability in their payment of dividends, as stigma often attaches to a publicly traded company that reduces or eliminates its dividends This stability is useful when constructing a MSDCF model However, many financial researchers have noted the decline in dividends paid by publicly traded companies over the last 20 years Fama and French reported that only 20 8 percent of firms paid dividends in 1999, compared with 66 5 percent that paid dividends in 1978 [3] The decline in dividends has been attributed to many different factors, including an increasing number of investors who do not want dividends, an increase in idiosyncratic risks, and/or a larger number of smaller firms that are uninterested in paying dividends [4] Not only have dividends declined but the difference between dividends paid and potential dividends has widened This difference creates a challenge for estimating a company's cost of equity using a dividend discount approach

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[3] See Fama, E F and French, K R "Disappearing Dividends Changing Firm Characteristics or Lower Propensity to Pay?" *Journal of Financial Economics* 60, pp 2-44, 60, 2001

[4] See, Damodaran, A "Valuation Approaches and Metrics A Survey of the Theory and Evidence, Stern School of Business, 2001 ("Damodaran")

To address this issue, financial researchers have expanded straight dividend discount models to include other forms of payment to stockholders, including stock repurchases, while also considering the inflow of cash to the firm related to common equity The most straight forward adjustment to the standard dividend discount model is to incorporate stock repurchases to the dividends paid by a firm to develop aggregate cash distributed to shareholders, and to net against this the cash received from exercising of stock options and from shares issued The netting of cash received from the exercising of stock options is a logical extension of the dividend discount model because it makes little sense to consider cash flows to stockholders without also considering the inflow of cash flows from stockholders

Because a firm stock's price is equal to the discounted value of future cashflows, it is necessary to create a mechanism to forecast the future cashflow steam One way to develop a forecast of future dividends and stock repurchases is to link these cashflows to forecasts of net income Net income, or earnings forecasts, are produced continuously by financial and investment analysts and can be readily adopted to estimate cost of equity

To develop a stream of expected future dividends and stock repurchases, annual aggregate net cashflow can be divided by the firm's net income (earnings) for the year to develop a modified payout ratio [5] The modified payout ratio can then be applied to forecasts of expected company earnings to develop a forecast of aggregate disbursements to shareholders for using a cost of equity "SDCF" model

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[5] A firm's payout ratio is usually defined as the ratio of dividends to earnings per share See Richard A Brealey, Stewart C Myers and Franklin Allen *Principles of Corporate Finance*, 8th Edition 2006 ("Brealey, Myers & Allen") at 66 Also see Damodaran at 20

While this approach is relatively direct, the resulting modified payout ratio for any particular year may be skewed. This is because stock repurchases, unlike dividends, are not levelized over time, which can lead to dramatically uneven cash flows. For example, CSX repurchased $103 million in common stock in 1998 and $42 million in 2000, but did not repurchase stock again until 2006 when it bought back $465 million in common equity.[6] To mitigate against these uneven cash disbursements, a better estimate of the modified payout ratio can be obtained by using an average payout ratio based upon several years of payout data.[7]

B. MULTIPLE GROWTH RATES

The major failing of the SSDCF model is its reliance upon a single growth rate to estimate cashflows into perpetuity.[8] Application of a growth rate that is too high will ultimately lead to a high cost of equity, while an unreasonably low growth rate will understate equity capital costs. The STB proposes to address the SSDCF model's failings through the use of a MSDCF, which can incorporate multiple rates of growth.

An inherent issue with the MSDCF approach is choosing which are the appropriate growth rates to include in the model. As we indicated in our Reply VS in the *Ex Parte 664*, there is no single

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[6] See CSXT 1998, 2000 and 2006 SEC Form 10-K.

[7] See Damodaran at 20 discussing the use of averages to smooth cashflows to shareholders when developing modified payout ratios.

[8] See *Ex Parte 664* at 4.

correct MSDCF model formation [9] This same sentiment was expressed by Dr Stewart C Myers in his writings on the application of MSDCF models

> Anyone who has reviewed and tried to absorb [the DCF model results] will be frustrated at the inexplicable scatter of the DCF cost of equity estimates It is tempting to look for some simple rule or message in these results Unfortunately, the scatter is the rules and is the message DCF is not one method but many, it is difficult (probably impossible) to say which growth rate measure or variable growth method is correct [10]

Without a single preferred approach for applying the variable growth factors, the challenge is developing a method which is open and transparent, uses generally reliable data inputs and provides a mechanism for applying reasonable future growth patterns We believe the approach we advocated in our Reply VS in the Ex Parte 664 proceedings for applying different growth rates meets these objectives We discuss each component of our approach below

1 **Initial Growth Stage**

The initial stage should reflect growth over a relatively short initial term, i e , one to five years A relatively short initial term consistent with this approach is used by Myers/Borucki[11] and Brealey, Myers & Allen [12] A key aspect though is matching the length of the initial term to the length of the

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[9] See Reply Verified Statement of Thomas D Crowley and Daniel L Fapp submitted on behalf of the WCTL in *Ex Parte 664*, October 29, 2007 ("Crowley/Fapp Reply VS")

[10] See "*Discounted Cash Flow Estimates of the Cost of Equity Capital - A Case Study*," Myers, Stewart C and Borucki, Lynda S *Financial Markets, Institutions & Instruments*, Volume 3, Number 3, 1994, 9-45, 27 ("Myers/Borucki")

[11] See Myers/Borucki at 21

[12] See Brealey, Myers & Allen at 70-71

forecast Using a three year forecast of earnings growth with a five year initial stage could lead to an mistatement in the cost of equity

There are several methods for estimating earnings growth during the initial phase Some analysts have relied upon historical average growth in net earnings as a proxy for future growth However, empirical studies have shown historical averages to be poor forecasters of future growth rates [13] A better approach is to utilize earnings forecasts produced by financial analysts Analysts forecasts of future earnings growth have been more reliable than using historic averages [14] However, forecasts are apt to be based in large part on recent past performance, and there is no certainty that forecasts will prove accurate

We propose to utilize the truncated consensus I/B/E/S earnings forecasts previously used by the STB to estimate railroad earnings growth under the SSDCF procedures The use of truncated consensus forecasts provides an open and transparent means for forecasting future earnings growth, and are produced by at least somewhat independent third parities [15]

2 **Transition Growth Stage**

As indicated above, there is no one strict formulation for a MSDCF, nor limit on the number of transition growth rates that may be applied [16] Logic dictates though that, at some point, growth will diverge towards the average rate of growth in the overall economy A growth rate that is significantly above that of the overall economy will cause the firm(s) or sector to overtake the entire

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[13] See Patterson, C S , "The Cost of Capital Theory and Estimation," Quorum Books, 1995 at 87 to 90 ("Patterson")

[14] See Patterson at 94

[15] As we have noted previously, there is significant evidence that financial analysts are subject to some pressures that can result in overstated forecasts See Mr Crowley's April 28, 206 Reply VS at 6 to 7 in STB *Ex Parte No 558 (Sub-No 9) Railroad Cost of Capital – 2005*

[16] See Brealey Myers & Allen at 71

economy, and if the growth rate is substantially below the general growth rate, the firm(s) or sector will disappear altogether Neither outcome is at all plausible for the railroad industry

We propose that the transition stage of growth would begin in year 6 of the MSDCF model, with growth moving from its short-term levels in the initial stage towards the estimated growth in the GDP in straight-line manner In other words, the difference in each railroad's short-term earnings growth rate and the expected growth rate in the GDP would be calculated, and the difference divided by the 10 years in the transition growth range to develop an annual growth adjustment factor Application of the growth adjustment factor to the prior year's growth estimate will lead to a linear change in transition period growth rates until the long-term growth rate is reached in year 15

Others have advocated or used similar approaches for developing transition phase growth rates Brealey, Myers & Allen suggested using such an approach, and provide an example in their book [17] Fuller and Hsia proposed a similar approach where, after an initial growth phase, growth is assumed to change linearly over a user specified number of years before leveling at a steady mean rate of growth [18]

3 Terminal Growth Stage

The final, or terminal, stage should reflect the long-term expected growth rate in the GDP As indicated by Morningstar, " even in a rapidly growing industry there will come a time when growth slows to be more in line with the overall economy "[19] This approach has also received support from Brealey, Myers & Allen [20]

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[17] See Brealey, Myers & Allen at 71

[18] See Fuller, R J , and C C Hsia, " A Simplified Common Stock Valuation Model," Financial Analysts Journal, 40(5), 1984 at 49 to 56, and Damodaran at 12

[19] See SBBI at 68

[20] See Brealey, Myers & Allen at 71

As for an estimate of the expected long-term GDP growth rate, we propose using the consensus forecast of the long-term nominal growth in the GDP as calculated by Blue Chip Economic Indicators ("Blue Chip"). The March 10, 2008 issue of Blue Chip places long-term GDP growth at 5.0 percent.

C. APPLICATION OF THE MODIFIED PAYOUT MODEL

Based upon the approaches and methodologies described above, we developed a MSDCF cost of equity for the railroad industry for the years 2002 to 2006 utilizing the modified payout method. Our approach utilized the following procedures.[21]

1. For each railroad company meeting the STB's cost of capital selection criteria[22], we extracted total cash outflows for dividends on common stock and stock repurchases, cash inflows from stock options exercised and issuance of new equity and annual net income from each company's consolidated statement of cashflows as reported in the company's SEC Form 10-K.

2. We calculated the modified payout ratio for each company by year by netting cash outflows from dividends and buybacks against cash inflows from the exercising of stock options and issuance of new equity and dividing the difference by the year's net income.

3. We normalized each company's modified payout ratios by calculating the simple average of the ratios over the three most recent years. For example, the normalized modified payout ratio applicable for 2006 was developed by averaging the ratios for 2004 to 2006.

4. We developed an estimate of next year's cash disbursements per share for each company by applying the normalized modified payout ratio to the most current year's reported net income. We then multiplied this product by one plus the truncated I/B/I/S forecast of

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[21] Consistent with the STB's request in its *Ex Parte 664 (Sub-No. 1)* decision, we have included with this VS the workpapers associated with our calculations.

[22] This includes the Burlington Northern Santa Fe Corporation ("BNSF"), CSX Corporation ("CSX"), Norfolk Southern Corporation ("NS") and Union Pacific Corporation ("UP").

earnings growth and divided the resultant product by the average number of common shares outstanding to develop an estimated cash to shareholder per share.

5 We developed a 15 year forecast of expected cash disbursements per share by utilizing the expected growth factors discussed above Specifically, for the initial 5 year growth stage, we applied truncated consensus I/B/L/S forecast applicable for each railroad For the 10 year transition phase, we adjusted the growth in a linear manner between the railroad's truncated I/B/E/S forecast and the long-term forecast of growth in the GDP The terminal growth stage was calculated using the long-term GDP forecast of 5 0 percent,

6 We developed the cost of equity for each railroad through an iterative process which equated discounted future cashflows to the railroad's average weekly closing stock price for the subject year, and

7 We developed a weighted cost of equity for the railroad industry by weighting each railroad's cost of equity based upon its equity market capitalization for the year

The results of our analysis are shown in Table 1 below

Table 1

Estimates of the Railroad Industry Cost of Equity
Using A Modified Payout Ratio MSDCF

	Year	Modified Payout MSDCF Railroad Industry Cost of Equity
	(1)	(2)
1	2002	10 41%
2	2003	7 84%
3	2004	7 22%
4	2005	8 81%
5	2006	9 52%

Sources Exhibit No 3

As Table 1 above indicates, the railroad industry cost of equity under the modified payout MSDCF approach ranges from 7 22 to 10 41 percent over the 2002 through 2006 time period

III. MSDCF USING FREE CASH FLOW TO EQUITY

Dividend discount models, and their progeny like the modified payout model we discussed above, rest on the premise that a stock's value is equal to the discounted value of future cash disbursements to shareholders Implicit in such models is the assumption that companies are paying out all cash available after taking into consideration cash required for current and future operations and repayment of debt In the long-run this maybe an accurate assumption However, in the short run, the amount of cash returned to shareholders maybe significantly different than the cash actually available after considering other cash requirements

Because of this difference between actual cash disbursements made to shareholders, and what are essentially potential cash disbursements to shareholders, analysts have developed valuation models using Free Cashflow To Equity ("FCFE") as a replacement for estimated cash distributed to shareholders in the form of dividends and stock repurchases We discuss the calculation of FCFE and our use of it in the calculation of railroad cost of equity below

A. CALCULATION OF FCFE

As described above, FCFE generally reflects the cash left over in the firm after reinvestment needs are meet and debt repaid This is specifically defined as

Net Income

+ Noncash charges (e g depreciation, amortization, deferred revenue and deferred taxes)

- Capital Expenditures

± Change in Working Capital

- Dividends on Preferred Stock (if any)

± Change in Long Term Debt

= FCFE[23]

When FCFE replaces dividends in an equity valuation, it is implicitly assumed that the FCFE will be paid out to stockholders There are two consequences to this assumption First, there will be no cash building-up in the firm, since the cash available after debt repayments and reinvestment is paid to shareholders each year Second, the expected growth in FCFE will come from growth in operating assets and not growth in income from increases in marketable securities [24]

B. INCORPORATION OF FCFE INTO THE MSDCF

To develop the cost of railroad equity using I CI L and a MSDCF model, we used the following methodology

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[23] See Pratt, Shannon P , *Cost of Capital Estimation and Applications*," 2002 at 16 ('Pratt') Also see Damodaran at 21

[24] See Damodaran at 21

1 For each railroad in the study group, we identified annual net income, non-cash charges, capital expenditures, new debt issuances and debt repayments from each company's consolidated statement of cashflows contained in their SEC Form 10-K.

2 For each railroad in the study group, we calculated the annual net change in non-cash working capital, net of debt from current asset and current liability information contained each company's consolidated balance sheet.

3 Using the data from the railroad's statement of cashflows and our calculation of net changes in working capital, we developed each railroad's FCFE.

4 We calculated the annual ratio of FCFE to net income for each railroad, and averaged these ratios over a three year period to develop a normalized FCFE to net income ratio.

5 We developed an estimate of next year's FCFE per share for each company by applying the normalized FCFE to net income ratio to the most current year's reported net income, multiplying this product by one plus the truncated I/B/E/S forecast of earnings growth and dividing the resultant product by the average number of common shares outstanding.

6 We developed a 15 year forecast of FCFE per share by utilizing the expected growth factors discussed above. Specifically, for the initial 5-year growth stage, we applied truncated consensus I/B/E/S forecast applicable for each railroad. For the 10-year transition phase, we adjusted the growth in a linear manner between the railroad's truncated I/B/E/S forecast and the long-term forecast of growth in the GDP. The terminal growth stage was calculated using the long-term GDP forecast of 5.0 percent.

7 The cost of equity for each railroad was developed through an iterative process which equated discounted future FCFE to the railroad's average weekly closing stock price for the subject year, and

8 We developed a weighted cost of equity for the railroad industry by weighting each railroad's cost of equity based upon its equity market capitalization for the year.

Table 2 below displays the results of our analysis.

Table 2

Estimates of the Railroad Industry
Cost of Equity Using A FCFE MSDCF

	Year	FCFE MSDCF Railroad Industry Cost of Equity
	(1)	(2)
1	2002	11 64%
2	2003	10 10%
3	2004	8 87%
4	2005	9 92%
5	2006	9 84%

Source Exhibit No 3

The Table 2 results show that the railroad industry cost of equity ranged from 8 87 percent to 11 64 percent over the 2002 through 2006 time period

If the STB chooses to utilize a FCFE approach in developing its MSDCF model calculations, it should rely upon the model described above All of the inputs to the model are readily available form public sources Additionally, the model does not rely upon proprietary information regarding future growth rates or expected future cash requirements for capital expansions and uses reasonable assumptions about future growth in expected FCFE

Some may argue that the above model does not take into consideration future railroad capital needs This argument is a red hearing As the railroads have previously stated , changes in railroad capital spending closely track changes in revenues, net income, and returns [25] In other words, as

[25] See for example, the written testimony submitted by UP on November 27, 2007 preceeding the Oral Hearing in *Ex Parte 664* at 3 "As our earnings have improved, Union Pacific has responded to the challenges of providing adequate infrastructure and has been investing for long-term growth " See also slide 34 to BNSF's November 14, 2006 presentation at the Citigroup Annual Transportation Conference, and slide 30 to BNSF's February 14 2008

revenues and net income have increased, so have the railroads' willingness to expend funds on capital projects By calculating a FCFF to net income ratio, and using that ratio to calculate future FCFE based on increases in net income, the MSDCF model implicitly accounts for increases in capital investment

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presentation at the BB&T Capital Markets Annual Transportation Conference available on BNSF's website

IV. COMPARISON OF MSDCF TO CAPM COSTS OF EQUITY

The two models we discuss above are reasonable examples of methodologies used to develop cost of equity using MSDCF approaches. To compare the results of these two models to the results of the CAPM cost of equity, we developed the cost of equity as outlined under the STB's *Ex Parte 664* procedures for the years 2002 to 2006.[26] Table 3 below compares the results of our analyses.

Table 3

Estimates of the Railroad Industry Cost of Equity

	Year (1)	STB CAPM Railroad Industry Cost of Equity (2)	Modified Payout MSDCF Railroad Industry Cost of Equity (3)	FCFF MSDCF Railroad Industry Cost of Equity (4)
1	2002	10.05%	10.41%	11.64%
2	2003	9.93%	7.84%	10.10%
3	2004	10.38%	7.22%	8.87%
4	2005	10.61%	8.81%	9.92%
5	2006	11.08%	9.52%	9.84%

Sources: Exhibit No. 3

As shown in Table 3 above, the two MSDCF models produce similar but not identical results to that of the CAPM cost of equity.

[26] The calculations for our 2002 to 2006 CAPM costs of equity are included in our workpapers accompanying this VS. In developing the CAPM cost of equity, we used the approach specified in our February 15, 2008 Reply VS in Ex Parte No. 558 (Sub-No. 10), *Railroad Cost of Capital – 2006*.

VERIFICATION

COMMONWEALTH OF VIRGINIA)
)
CITY OF ALEXANDRIA)

I, THOMAS D CROWLEY, verify under penalty of perjury that I have read the foregoing Verified Statement of Thomas D Crowley, that I know the contents thereof, and that the same are true and correct Further, I certify that I am qualified and authorized to file this statement

Thomas D Crowley

Sworn to and subscribed
before me this 14th day of April, 2008

Diane R Kavounis
Notary Public for the State of Virginia

My Commission expires November 30, 2012

VERIFICATION

COMMONWEALTH OF VIRGINIA)
)
CITY OF ALEXANDRIA)

I, DANIEL L. FAPP, verify under penalty of perjury that I have read the foregoing Verified Statement of Daniel L Fapp, that I know the contents thereof, and that the same are true and correct. Further, I certify that I am qualified and authorized to file this statement.

Daniel L. Fapp

Sworn to and subscribed
before me this day of April 14, 2008.

Notary Public for the State of Virginia

My Commission expires. November 30, 2012

LIST OF EXHIBITS

Exhibit No.	Description
(1)	(2)
1	Thomas D Crowley Statement Of Qualifications
2	Daniel L. Fapp Statement of Qualifications
3	Comparison of Railroad Costs of Equity

STATEMENT OF QUALIFICATIONS

My name is Thomas D Crowley I am an economist and President of the economic consulting firm of L E Peabody & Associates, Inc The firm's offices are located at 1501 Duke Street, Suite 200, Alexandria, Virginia 22314,, and 10445 N Oracle Road, Suite 151, Tucson, Arizona 85737

I am a graduate of the University of Maine from which I obtained a Bachelor of Science degree in Economics I have also taken graduate courses in transportation at George Washington University in Washington. D C I spent three years in the United States Army and since February 1971 have been employed by L E Peabody & Associates, Inc

I am a member of the American Economic Association, the Transportation Research Forum, and the American Railway Engineering and Maintenance-of-Way Association

The firm of L E Peabody & Associates, Inc specializes in analyzing matters related to the rail transportation of coal As a result of my extensive economic consulting practice since 1971 and my participating in maximum-rate, rail merger, service disputes and rule-making proceedings before various government and private governing bodies, I have become thoroughly familiar with the rail carriers that move coal over the major coal routes in the United States This familiarity extends to subjects of railroad service, costs and profitability, railroad capacity, railroad traffic prioritization and the structure and operation of the various contracts and tariffs that historically have governed the movement of coal by rail

STATEMENT OF QUALIFICATIONS

As an economic consultant, I have organized and directed economic studies and prepared reports for railroads, freight forwarders and other carriers, for shippers, for associations and for state governments and other public bodies dealing with transportation and related economic problems Examples of studies I have participated in include organizing and directing traffic, operational and cost analyses in connection with multiple car movements, unit train operations for coal and other commodities, freight forwarder facilities, TOFC/COFC rail facilities, divisions of through rail rates, operating commuter passenger service, and other studies dealing with markets and the transportation by different modes of various commodities from both eastern and western origins to various destinations in the United States The nature of these studies enabled me to become familiar with the operating practices and accounting procedures utilized by railroads in the normal course of business

Additionally, I have inspected and studied both railroad terminal and line-haul facilities used in handling various commodities, and in particular unit train coal movements from coal mine origins in the Powder River Basin and in Colorado to various utility destinations in the eastern, mid-western and western portions of the United States and from the Eastern coal fields to various destinations in the Mid-Atlantic, northeastern, southeastern and mid-western portions of the United States These operational reviews and studies were used as a basis for the determination of the traffic and operating characteristics for specific movements of coal and numerous other commodities handled by rail

STATEMENT OF QUALIFICATIONS

I have frequently been called upon to develop and coordinate economic and operational studies relative to the acquisition of coal and the rail transportation of coal on behalf of electric utility companies My responsibilities in these undertakings included the analyses of rail routes, rail operations and an assessment of the relative efficiency and costs of railroad operations over those routes I have also analyzed and made recommendations regarding the acquisition of railcars according to the specific needs of various coal shippers The results of these analyses have been employed in order to assist shippers in the development and negotiation of rail transportation contracts which optimize operational efficiency and cost effectiveness

Moreover, I have developed numerous variable cost calculations utilizing the various formulas employed by the Interstate Commerce Commission ("ICC") and the Surface Transportation Board ("STB") for the development of variable costs for common carriers, with particular emphasis on the basis and use of the Uniform Railroad Costing System ("URCS") and its predecessor, Rail Form A I have utilized URCS/Rail form A costing principles since the beginning of my career with L E Peabody & Associates Inc in 1971

I have frequently presented both oral and written testimony before the ICC, STB, Federal Energy Regulatory Commission, Railroad Accounting Principles Board, Postal Rate Commission and numerous state regulatory commissions, federal courts and state courts This testimony was generally related to the development of variable cost of service calculations, rail traffic and operating patterns, fuel supply economics, contract interpretations, economic principles

STATEMENT OF QUALIFICATIONS

concerning the maximum level of rates, implementation of maximum rate principles, and calculation of reparations or damages, including interest I presented testimony before the Congress of the United States, Committee on Transportation and Infrastructure on the status of rail competition in the western United States I have also presented expert testimony in a number of court and arbitration proceedings concerning the level of rates, rate adjustment procedures, service, capacity, costing, rail operating procedures and other economic components of specific contracts

Since the implementation of the *Staggers Rail Act of 1980*, which clarified that rail carriers could enter into transportation contracts with shippers, I have been actively involved in negotiating transportation contracts on behalf of coal shippers Specifically, I have advised utilities concerning coal transportation rates based on market conditions and carrier competition, movement specific service commitments, specific cost-based rate adjustment provisions, contract reopeners that recognize changes in productivity and cost-based ancillary charges I have also reviewed, analyzed and evaluated both UP's Circular 111 and BNSF 90068 rate levels and other terms and conditions on behalf of coal shippers

I have been actively engaged in negotiating coal supply contracts for various users throughout the United States In addition, I have analyzed the economic impact of buying out, brokering, and modifying existing coal supply agreements My coal supply assignments have encompassed

STATEMENT OF QUALIFICATIONS

analyzing alternative coals to determine the impact on the delivered price of operating and maintenance costs, unloading costs, shrinkage factor and by-product savings

I have developed different economic analyses regarding rail transportation matters for over sixty (60) electric utility companies located in all parts of the United States, and for major associations, including American Paper Institute, American Petroleum Institute, Chemical Manufacturers Association, Coal Exporters Association, Edison Electric Institute, Mail Order Association of America, National Coal Association, National Industrial Transportation League, North America Freight Car Association, the Fertilizer Institute and Western Coal Traffic League In addition, I have assisted numerous government agencies, major industries and major railroad companies in solving various transportation-related problems

In the two Western rail mergers that resulted in the creation of the present BNSF Railway Company and Union Pacific Railroad Company and in the acquisition of Conrail by Norfolk Southern Railway Company and CSX Transportation, Inc., I reviewed the railroads' applications including their supporting traffic, cost and operating data and provided detailed evidence supporting requests for conditions designed to maintain the competitive rail environment that existed before the proposed mergers and acquisition In these proceedings, I represented shipper interests, including plastic, chemical, coal, paper and steel shippers

STATEMENT OF QUALIFICATIONS

I have participated in various proceedings involved with the division of through rail rates For example, I participated in ICC Docket No 35585, *Akron, Canton & Youngstown Railroad Company, et al v Aberdeen and Rockfish Railroad Company, et al* which was a complaint filed by the northern and mid-western rail lines to change the primary north-south divisions I was personally involved in all traffic, operating and cost aspects of this proceeding on behalf of the northern and mid-western rail lines I was the lead witness on behalf of the Long Island Rail Road in ICC Docket No 36874, *Notice of Intent to File Division Complaint by the Long Island Rail Road Company*

STATEMENT OF QUALIFICATIONS

My name is Daniel L Fapp I am Vice President of the economic consulting firm of L E Peabody & Associates, Inc The firm's offices are located at 1501 Duke Street, Suite 200, Alexandria, VA 22314, and 10445 N Oracle Road, Suite 151, Tucson, AZ 85737

I received a Bachelor of Science degree in Business Administration with an option in Marketing (cum laude) from the California State University, Northridge in 1987, and a Master of Business Administration degree from the University of Arizona's Eller College of Management in 1993, specializing in finance and operations management I am also a member of Beta Gamma Sigma, the national honor society for collegiate schools of business

I have been employed by L E Peabody & Associates, Inc since December 1997 Prior to joining L E Peabody & Associates, Inc . I was employed by BHP Copper Inc in the role of Transportation Manager - Finance and Administration, and where I also served as an officer of the three BHP Copper Inc subsidiary railroads. The San Manual Arizona Railroad, the Magma Arizona Railroad (also known as the BHP Arizona Railroad) and the BHP Nevada Railroad I have also held operations management positions with Arizona Lithographers in Tucson, AZ and MCA-Universal Studios in Universal City, CA

While at BHP Copper Inc . I was responsible for all financial and administrative functions of the company's transportation group I also directed the BHP Copper Inc subsidiary railroads' cost and revenue accounting staff, and managed the San Manuel Arizona Railroad's and BHP Arizona Railroad's dispatchers and the railroad dispatching functions I served on the company's Commercial and Transportation Management Team and the company's Railroad Acquisition Team where I was responsible for evaluating the acquisition of new railroads, including developing financial and economic assessment models While with MCA-Universal Studios, I

STATEMENT OF QUALIFICATIONS

held several operations management positions, including Tour Operations Manager, where my duties included vehicle routing and scheduling, personnel scheduling, forecasting facilities utilization, and designing and performing queuing analyses

As part of my work for L E Peabody & Associates, Inc , I have performed and directed numerous projects and analyses undertaken on behalf of utility companies, short line railroads, bulk shippers, and industry and trade associations Examples of studies which I have participated in organizing and directing include, traffic, operational and cost analyses in connection with the rail movement of coal, metallic ores, pulp and paper products, and other commodities I have also analyzed multiple car movements, unit train operations, divisions of through rail rates and switching operations throughout the United States The nature of these studies enabled me to become familiar with the operating procedures utilized by railroads in the normal course of business

Since 1997, I have participated in the development of cost of service analyses for the movement of coal over the major eastern and western coal-hauling railroads I have conducted on-site studies of switching, detention and line-haul activities relating to the handling of coal I have also participated in and managed several projects assisting short-line railroads In these engagements, I assisted short-line railroads in their negotiations with connecting Class I carriers, performed railroad property and business evaluations, and worked on rail line abandonment projects

I have been frequently called upon to perform financial analyses and assessments of Class I, Class II and Class III railroad companies In addition, I have developed various financial models exploring alternative methods of transportation contracting and cost assessment.

STATEMENT OF QUALIFICATIONS

developed corporate profitability and cost studies, and evaluated capital expenditure requirements I have determined the Going Concern Value of privately held freight and passenger railroads, including developing company specific costs of debt and equity for use in discounting future company cash flows My consulting assignments regularly involve working with and determining various facets of railroad financial issues, including cost of capital determinations In these assignments, I have calculated railroad capital structures, market values, cost of railroad debt, cost of preferred railroad equity and common railroad equity I am also well acquainted with and have used the commonly accepted models for determining a firm's cost of equity, including the Discounted Cash Flow Model ("DCF"), Capital Asset Pricing Model ("CAPM"), Farma-French Three Factor Model and Arbitrage Pricing Model

In my tenure with L E Peabody & Associates, Inc , I have assisted in the development and presentation of traffic and revenue forecasts, operating expense forecasts, and discounted cash-flow models which were presented in numerous proceedings before the STB I presented evidence applying the STB's stand-alone cost procedures in Docket Number 42057, *Public Service Company of Colorado d/b/a Xcel Energy v The Burlington Northern and Santa Fe Railway Company*, and in Docket Number 42071, *Otter Tail Power Company v BNSF Railway Company* I have also presented evidence before the STB in Ex Parte No 661, *Rail Fuel Surcharges*, in Ex Parte No 558 (Sub-No 10), *Railroad Cost of Capital – 2006*, and Ex Parte No 664, *Methodology To Be Employed In Determining The Railroad Industry Cost Of Capital* In addition, my reports have been used as evidence before the Nevada State Tax Commission

Comparison of Railroad Costs of Equity - 2002 to 2006

	Year	STB Single-Stage DCF Cost of Equity 1/	STB CAPM Cost of Equity 2/	Modified Payout Method Cost of Equity 3/	Free Cash Flow To Equity Method Cost of Equity 4/
	(1)	(2)	(3)	(4)	(5)
1	2002	12 60%	10 05%	10 41%	11 64%
2	2003	12 70%	9 93%	7 84%	10 10%
3	2004	13 16%	10 38%	7 22%	8 87%
4	2005	15 18%	10 61%	8 81%	9 92%
5	2006	16 10%	11 08%	9 52%	9 84%

1/ 2002 to 2005 from STB Ex Parte No 558 decisions 2006 from the AAR's evidence in STB Ex Parte No 558 (Sub-No 10)

2/ Using the STB's CAPM method as outlined in our February 15, 2008 testimony in Ex Parte No 558 (Sub-No 10)

3/ Based on multi-stage DCF approach using dividends and stock repurchases net of cash received from options excersed

4/ Based on multi-stage DCF approach using free cash flow to equity

EXHIBIT B

Verified Statement of Dr. James E. Hodder

VERIFIED STATEMENT

OF

JAMES E. HODDER

My name is James E. Hodder I am the Charles and Laura Albright Professor of Finance at the University of Wisconsin-Madison and am currently also Chairman of the Finance Department My address is 3441 Crestwood Drive, Madison, Wisconsin 53705.

I have served on the faculty of the University of Wisconsin Business School since 1992 From 1978 to 1992, I served on the faculty of Stanford University, where I received my Ph D in Economics in 1979 At Wisconsin, I have taught a masters-level Corporate Finance course as well as corporate-oriented courses on Financial Policy and on Multinational Business Finance In addition, I have taught several courses on options and other derivative securities, at both introductory and advanced levels At Stanford, most of my teaching was in corporate finance with a particular focus on valuing manufacturing and technology investments Hence, I have been teaching corporate finance courses since 1978 – almost 30 years

A substantial portion of my research and publications has addressed the subjects of investment evaluation and discounting A key aspect of those subjects is the firm or project cost of capital, including appropriate risk and inflation adjustments. Another substantial portion of my research has addressed corporate capital structure I have previously submitted testimony to the Surface Transportation Board (Board) in two coal rate cases on behalf of Wisconsin Power & Light in its case against Union Pacific Railroad Company and on behalf of PPL Montana in its case against the Burlington Northern and Santa Fe Railway Company. In connection with Ex

Parte No. 664, Methodology to be Employed in Determining the Railroad Industry's Cost of Capital, I have provided testimony on several occasions to the Board on behalf of the Western Coal Traffic League (WCTL) Those occasions include a Verified Statement (December 2006), a Public Hearing (February 2007), a Verified Statement (September 2007), a Reply Verified Statement (October 2007), and a Public Hearing (December 2007) A copy of my detailed curriculum vitae is included herewith as Appendix A

In the current instance, I have been asked by Counsel for WCTL to provide comments in response to the Board's Advance Notice of Proposed Rulemaking (ANPR) in STB Ex Parte No 664 (Sub-No. 1) regarding Use of a Multi-stage Discounted Cash Flow Model in Determining the Railroad Industry's Cost of Capital I have also been asked to review and comment on the Verified Statement (VS) regarding that ANPR being submitted by Thomas D Crowley and Daniel L Fapp on behalf of WCTL

I view the analysis and comments contained in the Crowley and Fapp VS as appropriate and illuminating Indeed, I had several discussions with them as the models and calculations reported in that Verified Statement were being developed There are, however, some underlying issues and modeling choices that are important but may not be obvious from looking at their summary results In what follows, I attempt to highlight those issues

The Board is in the position of trying to determine a cost of equity (more generally, a cost of capital) in a situation where the various parties to the proceeding have differing and sometimes opposing perspectives regarding desirable outcomes This suggests that it is very important for the Board to use a procedure that is transparent and not easily manipulated by any of the parties This suggests using publically available information and argues for relatively

simple models. Since we are talking about an input for valuing long-term investments, it is also desirable that the estimated cost of equity be relatively stable through time

The basic approach in the Crowley and Fapp VS is a modification of the procedure used in their Reply VS from October 2007 in connection with Ex Parte No. 664. This is a three-stage model with a short-run growth rate for the first five years using the IBES truncated consensus earnings forecast The long-run growth rate begins in year 15 and continues indefinitely The long-run growth rate for each of the railroads is assumed to match the long-run nominal GDP growth forecast for the U S economy obtained from Blue Chip Economic Indicators (Blue Chip) In between the first and third (long-run) stages, they use a simple adjustment mechanism for the annual growth rate such that it converges over a ten year period to the long-run rate. In the current situation with a relatively high short-run rate, the growth rate during stage two declines annually by 10% of the difference between the short-run and long-run growth rates.

Two additional inputs are need to implement this model, an initial share price and an initial cash flow estimate. In prior years when the Board was using a single-stage DCF procedure, the standard approach was to calculate a monthly average of the firm's dividend yield for the year in question In the ANPR, the Board requested a procedure which uses a broader measure of cash flow to shareholders The Board mentioned in particular share buybacks (also called repurchases) in addition to dividends This suggests decoupling the cash flow estimate from the initial price The input for initial price used in the Crowley and Fapp VS is the weekly average of the firm's closing stock price for the year in question.

Obtaining an input for the initial cash flow to shareholders raises some issues Logically, such a cash flow estimate should reflect not only share buybacks but also share issuance by the

firm As pointed out in Professor Stewart Myers Reply VS (October 2007) in connection with Ex Parte No. 664.

> Corporations issue shares through various channels, for example to finance acquisitions, from exercise of stock options or from conversion of convertible debt Absence of formal public offerings does not mean that stock issues are zero

Hence, we need to also consider cash received by the firm from selling new shares or from the exercise of employee stock options The amounts of such cash inflows to the four major railroads have been very substantial in recent years – in several cases exceeding the firm's dividends during that year This suggests that we define the Net Payout to shareholders during a year as the amount paid out in dividends plus the cash used for share buybacks less the cash received from share sales or option exercises during that same year

When making such a calculation, one immediately notices that Net Payout has been quite volatile at all four of the large U S railroads over the last several years This is illustrated in Table 1 with data for CSX Corporation (CSX) [1]

Table 1
CSX Corporation
(Amounts are $ millions)

Year	2007	2006	2005	2004	2003
Net Income	1336	1310	1145	339	246
Dividends Paid	231	145	93	86	86
Stock Repurchases	2174	465	0	0	0
Option Exercises	153	319	98	12	0
Net Payout	2252	291	(5)	74	86

Data from CSX 10-K reports

[1] The other three railroads also have very volatile Net Payouts in recent years

In large part, the volatility of Net Payouts for all four railroads is due to the lumpiness of share buybacks, however, simply netting the cash inflows from option exercise etc against dividends paid creates considerable unevenness and even negative Net Payouts Using a negative number for the initial cash flow to shareholders is going to lead to a nonsensical cost of equity estimate. So some sort of smoothing mechanism is needed, and the Crowley-Fapp VS uses a three-year moving average procedure based on the ratio of Net Payout to Net Income.

Smoothing helps, but it is clear that decisions to repurchase shares can substantially affect the initial cash flow estimate and hence the firm's estimated cost of equity. Unless it represents a major recapitalization, the decision to repurchase shares (or pay dividends) should theoretically have only a very modest impact on a firm's cost of equity Consider the CAPM perspective, where a share buyback will not alter the risk-free rate or the market risk premium. A share buyback can alter beta via either decreasing the cash position of the firm or increasing its leverage However, if the buyback is a modest proportion of the total shares outstanding, the effect on beta will be quite small

So smoothing doesn't fully eliminate the problem of buybacks substantially altering the estimated cost of equity in the sort of relatively simple DCF model being contemplated The underlying issue is that DCF models (simple or complicated) are based conceptually on forecasts of future cash flows What is happening in the three-stage model employed in the Crowley-Fapp VS is that a historic average is used as a starting point to predict the future If the Net Payout declines substantially next year (for example), that is not consistent with this relatively simple model One could make forecasts of future payouts that were not based on historic averages, but that sort of approach takes us into the realm of subjectivity and potential manipulation

In Table 1, it is clear that the Net Payout for CSX jumped massively upward in 2007.[2] So when that year replaces 2004 in the three-year average, it will tend to push up the cost of equity estimate. We can note further that CSX had a Net Payout in 2007 that dramatically exceeded Net Income Clearly, that situation is not sustainable in the long run, however, forecasting how the Net Payout rate will return to more sustainable levels would again take us away from the relatively simple three-stage model and from using the publically-available IBES forecasts.

Given the above issues, Crowley and Fapp also explored using the same three-stage model but with the Initial Cash Flow to Shareholders estimate based on Free Cash Flow to Equity (FCFE) rather than Net Payout. Again there was substantial volatility over time, and they opted to use a three-year averaging mechanism analogous to that used with Net Payout. Smoothing helped, but the FCFE based estimates can also move up or down for reasons which have very little to do with a firm's cost of equity [3]

In summary, the relative simplicity of the three-stage model plus the use of historic information and publically available forecasts can lead to cost of equity estimates which are not accurate upon closer inspection Nevertheless, relative simplicity and avoiding proprietary forecasts appear critical for the Board's cost of capital estimation procedure Consequently, it seems we will need to make do with a model which can sometimes generate estimates that we can identify as too high or too low for reasons which are visible in the data. To a substantial extent, averaging across firms will tend to mitigate inaccuracies that are attributable to firm-

[2] Similar statements can also be made about the other major railroads

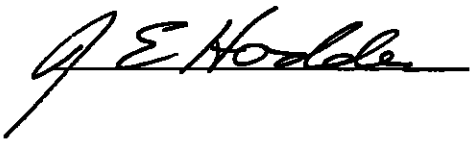
[3] For example, the CSX cost of equity estimated using the FCFE approach was 12 73% for 2005 but dropped to 5 39% for 2006 That precipitous drop was primarily due to the three-year average of FCFE to Net Income ratio dropping from 29 8% in 2005 to only 1 5% in 2006 The very low ratio for 2006 is due to a large negative ratio in 2005, which is in turn primarily due to a relatively large debt payment Theoretically, a leverage reduction should reduce beta and the cost of equity, but not this much The underlying difficulty in this situation is that a negative

specific anomalies Consequently, we will need to focus on identifying situations where the industry average is pushed up or down by some systematic effect that is not truly related to the industry's cost of equity. When using a multi-stage DCF approach as a cross-check on the CAPM estimate, an obvious warning flag that suggests closer analysis is when the two estimates are dramatically different. Looking at Exhibit 3 in the Crowley-Fapp VS, the model which appears dramatically inconsistent with the others is the old single-stage DCF procedure That suggests we have made considerable progress in identifying procedures which are more robust and reasonable, even if not completely perfect

FCTF, even with averaging, can lead to unreasonably small estimates in some years for the initial Cash Flow to Shareholders In turn, this leads to an unreasonable cost of equity estimate

VERIFICATION

I, James E Hodder, verify under penalty of perjury that the foregoing is true and correct Further, I certify that I am qualified and authorized to file this Verified Statement Executed on April 14, 2008



Appendix A: Curriculum Vitae

JAMES E. HODDER

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Areas of Specialization. Corporate Finance, Derivative Securities, International Finance, and Risk Management

Education

1967	B.S	Industrial Engineering, Stanford University
1968	M B A	Business Administration, University of Michigan
1976	M A	Economics, University of California (Berkeley)
1979	Ph D	Economics, Stanford University

Dissertation The Hedging of Exposure to Exchange-Rate Movements

Employment.

1968-69	Sylvania Electronic Systems Project Administrative Engineer
1969-73	U S. Navy Engineering Duty Officer
1974-76	Department of Economics, University of California (Berkeley) Research and Teaching Assistant
1976-78	Department of Economics, Stanford University. Teaching Assistant and Instructor
1978-92	Department of Industrial Engineering and Engineering Management, Stanford University Assistant Professor and Associate Professor, Associate Chairman 1987-1988, Ph.D Program Director 1987-1992
1992-	School of Business, University of Wisconsin - Madison Professor of Finance, Director of Quantitative Masters in Finance (QMF) Program 1995-2004, Department Chairman since 2004.

Visiting Appointments:

1986 Visiting Scholar, Department of Economics, Osaka University -- funded by a fellowship from the Japan Society for the Promotion of Science

1990-91 Visiting Associate Professor, School of Business, University of Wisconsin - Madison

Teaching. Advanced Derivatives
Corporate Finance
Fixed Income and Derivative Securities
Options and Financial Futures
Ph D. Seminar Interest Rate and Credit Risk Models
Ph D Seminar: Risk Management in Financial Institutions
Multinational Business Finance
Financial Policy
Doctoral Seminar in Financial Decisions
Engineering Economy
International Economics

Awards: Outstanding Teacher, Department of Industrial Engineering and Engineering Management, Stanford University, 1981-82 and 1986-87

Lawrence J. Larson Award for Excellence in Teaching, School of Business, University of Wisconsin-Madison, 1999

Wisconsin Idea Fellow, In recognition of extraordinary public service on behalf of the University of Wisconsin, 2004-2005

Publications:

"Foreign Investment from the Firm's Perspective," in D. Bonham-Yeaman, ed., Developing Global Corporate Strategies, Academy of International Business and European International Business Association Joint Conference, Barcelona, Spain, December, 1981

"Exposure to Exchange Rate Movements," Journal of International Economics, November, 1982

"Plant Location Modeling for the Multinational Firm," with J. V. Jucker, Proceedings of the Academy of International Business Conference on the Asia-Pacific Dimension of International Business, Honolulu, Hawaii, December, 1982

"Financial Market Approaches to Facility Location Under Uncertainty," Operations Research, November-December, 1984

"Pitfalls in Evaluating Risky Projects," with H E Riggs, Harvard Business Review, January-February, 1985 This article has also been reprinted in Managing Projects and Programs, Harvard Business School Press, 1989 and as Chapter 3 in Kim B Clark and Steven C. Wheelwright, eds , The Product Development Challenge, Harvard Business School Press, 1995.

"Pricing to Reduce Investment When Costs Follow an Experience Curve Constrained Dynamic Programming as well as Heuristic Rules," with Y. A Ilan, Proceedings of the American Institute for Decision Sciences Fourteenth Annual Meeting, Western Regional Conference, Monterey, California, March, 1985

"International Plant Location Under Price and Exchange Rate Uncertainty," with J V. Jucker, Engineering Costs and Production Economics, April, 1985.

"Some Aspects of Japanese Corporate Finance," with A E Tschoegl, Journal of Financial and Quantitative Analysis, June, 1985. This article is also reprinted as Chapter 3 in Edwin J. Elton and Martin J Gruber, eds , Japanese Capital Markets, Harper-Row, 1990.

"A Simple Plant Location Model for Quantity-Setting Firms Subject to Price Uncertainty," with J V Jucker, European Journal of Operational Research, July, 1985.

"Evaluation of Manufacturing Investments A Comparison of U S. and Japanese Practices," Financial Management, Spring, 1986 This article has also been reprinted in Stephen H. Archer and Halbert S Kerr, eds , Readings and Cases in Corporate Finance, McGraw-Hill, 1988

"Capital Cost Difference Between U S and Japan Shrinks" (in Japanese), Nihon Keizai Shimbun, August 30, 1986

"A Multifactor Model for International Facility Location and Financing Under Uncertainty," with M. C Dincer, Computers and Operations Research, 1986

"Declining Prices and Optimality When Costs Follow an Experience Curve," with Y. A Ilan, Managerial and Decision Economics, December, 1986

"Technology Transfer and Second Sourcing when Production Costs Follow an Experience Curve," with Y A Ilan, IEEE Transactions on Engineering Management, February, 1987

"Simple Solution Procedures for Nonlinear Programming Problems that are Derivative Decomposable," with R C Carlson and J V. Jucker, European Journal of Operational Research, July, 1987

"Corporate capital structure in the United States and Japan financial intermediation and implications of financial deregulation," in John B Shoven, ed., Government Policy Towards Industry in the USA and Japan, Cambridge University Press, 1988.

"On Dumping at Less than Marginal Cost," in Developments in Pacific-Asian Business Education and Research, Volume 2, Pacific Asian Management Institute, 1989.

"A Commentary on 'Japanese Capital Exports through Portfolio Investment in Foreign Securities,'" in Charles A E Goodhart and George Sutija, eds., Japanese Financial Growth, Macmillan (London), 1990

"Agency Problems and International Capital Structure," with L. W Senbet, in S Ghon Rhee and Rosita P. Chang, eds , Pacific Basin Capital Markets Research, Elsevier, 1990.

"Valuing Flexibility as a Complex Option," with A J Triantis, Journal of Finance, June, 1990

"International Capital Structure Equilibrium," with L. W Senbet, Journal of Finance, December, 1990

"Is the Cost of Capital Lower in Japan?", Journal of the Japanese and International Economies, March, 1991

"The Cost of Capital for Industrial Firms in the U.S. and Japan," in William T. Ziemba, Warren Bailey, and Yasushi Hamao, eds., Japanese Financial Market Research, Elsevier, 1991.

"Corporate Finance in Japan," with A. E Tschoegl, in Shinji Takagi, ed., Handbook of Japanese Capital Markets, Basil Blackwell, 1993

"Valuing Flexibility An Impulse Control Framework," with A J. Triantis, Annals of Operations Research, vol 45, 1993

"Cross-holdings: Estimation Issues, Biases and Distortions," with M Fedenia and A J Triantis, Review of Financial Studies, Spring, 1994

"Risk Management and Assessment," in Richard C Dorf, ed., Handbook of Technology Management, CRC Press, 1998

"Pricing Models with Transaction Fees," with T Zariphopoulou, in W M McEneaney, G Yin, and Q. Zhang, eds., Stochastic Analysis, Control, Optimization and Applications A Volume in Honor of W. H. Fleming, Birkhauser Boston, 1999

"Multinational Capital Structure and Financial Flexibility," with K Singh, Journal of International Money and Finance, vol 19, 2000

"Numerical Schemes for Variational Inequalities Arising in International Asset Pricing," with A. Tourin and T Zariphopoulou, Computational Economics, February, 2001

"Valuing Real Options: Can Risk Adjusted Discounting Be Made To Work?", with A. S Mello and G S Sick, Journal of Applied Corporate Finance, Summer, 2001

"Corporate Finance," in Allan Bird, ed., Encyclopedia of Japanese Business and Management, Routledge, 2002

"Debt/Equity Ratios," in Allan Bird, ed., Encyclopedia of Japanese Business and Management, Routledge, 2002

"Incentive Contracts and Hedge Fund Management," with J C. Jackwerth, Journal of Financial and Quantitative Analysis, December, 2007 (Lead Article)

Published Book Reviews:

"Review of The Economic Analysis of Industrial Projects by Lynn E. Bussey," James E Hodder and James V Jucker in The Engineering Economist, Winter, 1980

"Review of Investment Analysis and Management by Anthony J Curley and Robert M Bear," in The Engineering Economist, Spring, 1980.

Research in Progress

"Default Risk with Managerial Control," with T Zariphopoulou

"Managerial Responses to Incentives. Control of Firm Risk, Derivative Pricing Implications, and Outside Wealth Management," with J C Jackwerth

"Optimal Compensation Structure for Hedge Fund Managers," with J C Jackwerth

"Hedge Fund Performance. Attribution, Time Variation, and Persistence," with J. C Jackwerth and O. Kolokolova

"Credit Default Risk with Optimal Management Control," with J C. Jackwerth

"Recovering Delisting Returns of Hedge Funds," with J C. Jackwerth and O Kolokolova.

Presentations at Conferences and Public Lectures.

"A Plant-Location Model for the Multi-National Firm," with J V. Jucker, TIMS/ORSA Joint National Meeting, Washington, D C , May, 1980

"Exposure to Exchange Rate Movements," Annual Meeting of Western Finance Association, San Diego, California, June, 1980

"International Plant Location Under Price and Exchange Rate Uncertainty," with J V. Jucker, CORS/TIMS/ORSA Joint National Meeting, Toronto, Canada, May, 1981

"Hedging International Exposure· A Model with Flexible Exchange Rates and Expropriation Risk," Academy of International Business Annual Meeting, Montreal, Canada, October, 1981

"Foreign Investment from the Firm's Perspective," Academy of International Business and European International Business Association Joint Meeting, Barcelona, Spain, December, 1981.

"A Simple Approach to Solving a Family of Nonlinear Programming Problems," with R C Carlson and J V Jucker, TIMS/ORSA Joint National Meeting, Detroit, Michigan, April, 1982

"Evaluating Risky R&D Projects," with H E Riggs, TIMS/ORSA Joint National Meeting, San Diego, California, October, 1982.

"A Multifactor Model for International Facility Location Under Uncertainty," with M C Dincer, Academy of International Business Annual Meeting, Washington, D.C , October, 1982

"Hedging International Exposure Capital Structure Under Flexible Exchange Rates and Expropriation Risk," American Finance Association Annual Meeting, New York, December, 1982.

"Technology Transfer When Production Costs Follow an Experience Curve," with Y A Ilan, TIMS/ORSA Joint National Meeting, San Francisco, California, May, 1984

"Investment and Financial Decision Making in Japanese Firms: A Comparison with U S Practices," Academy of International Business Annual Meeting, Cleveland, Ohio, October, 1984

"Pricing to Reduce Investment When Costs Follow an Experience Curve: Constrained Dynamic Programming as well as Heuristic Rules," with Y. A. Ilan, Fourteenth Annual Meeting of the American Institute for Decision Sciences, Western Regional Conference, Monterey, California, March, 1985

"Corporate Capital Structure in the U S and Japan: Financial Intermediation and Implications of Financial Deregulation," Conference on Government Policy Towards Industry in the United States and Japan, Koret Conference Series, Center for Economic Policy Research, Stanford, California, May, 1985. This paper was also presented at the Academy of International Business Annual Meeting, New York, October, 1985

"International Capital Structure Equilibrium," with L W. Senbet, Allied Social Sciences Association Annual Meeting, New York, December, 1985

"Security Market and Capital Structure Issues in U S.-Japanese Economic Relations," Public Lecture at Osaka University, June, 1986

"International Capital Structure Equilibrium," with L W Senbet, presented at the 1987 Annual Meetings of the Western Finance Association (San Diego, June), the European Finance Association (Madrid, September), the Academy of International Business (Chicago, November), and the American Finance Association (Chicago, December).

"A Commentary on 'Japanese Capital Exports through Portfolio Investment in Foreign Securities,'" International Conference on Japanese Financial Growth, London, England, October, 1988

"Capital Structure and Cost of Capital in the U S and Japan," presented at the 1988 Annual Meeting of the Academy of International Business (San Diego, November) and the 1989 Annual Meeting of the Association of Japanese Business Studies (San Francisco, January) This paper was also presented at a symposium on Japanese Finance at the University of Michigan, January, 1989.

"On Dumping at Less than Marginal Cost," Second Annual International Symposium on Pacific-Asian Business, Honolulu, January, 1989.

"Agency Problems and International Capital Structure," with L. W. Senbet, First Annual Pacific-Basin Finance Conference, Taipei, Taiwan, March, 1989

"Japanese Corporate Financing Patterns," Applied Securities Analysis Conference, University of Wisconsin-Madison, September, 1989.

"Is the Cost of Capital Lower in Japan?" Presented at the 1990 Annual Meeting of the Academy of International Business (Toronto, October) and the 1990 TIMS/ORSA Joint National Meeting (Philadelphia, October)

"Global Manufacturing Planning Models and Practices," TIMS/ORSA Joint National Meeting, Philadelphia, October, 1990

"International Financial Structure and Competitiveness," 1991 International Conference on Economics and Management, Tokyo, Japan, March, 1991

"Cross-holding and Market Return Measures," with M Fedenia and A. J Triantis, presented at the 1991 Western Finance Association Annual Meeting (Jackson Lake Lodge, Wyoming, June), the 1991 TIMS/ORSA Joint National Meeting (Anaheim, November), and the Osaka University - Wharton Conference on Corporate Financial Policy and International Competition (Osaka, Japan, January, 1992)

"Multinationality and Capital Structure," with K. Singh, presented at TIMS/ORSA Joint National Meeting, Boston, April, 1994

"The Bubble Burst, Then Things Got Worse Perspectives on the Japanese Financial Crisis," with N. Buchan and K Ito, presentation at the World Affairs and Global Economy (WAGE) workshop, University of Wisconsin-Madison, April, 1998

"The Japanese Banking Crisis," presented at the U.S -Asian Pacific Relations in the 21st Century Conference, St. Norbert College, De Pere, Wisconsin, October, 1998.

"Default Risk with Managerial Control," with T. Zariphopoulou, presented at the Bachelier Finance Society Congress, Crete, June, 2002.

"Incentive Contracts and Hedge Fund Management," with J. Jackwerth, presented at the Conference on Delegated Portfolio Management jointly sponsored by the University of Oregon and the Journal of Financial Economics (Eugene, Oregon, September 2004) and at the 2005 Frontiers of Finance conference (Bonaire, Netherlands Antilles, January 2005).

"Employee Stock Options Much More Valuable Than You Thought," with J. C. Jackwerth, presented at the 15th Annual Derivative Securities and Risk Management Conference (Arlington, Virginia, April 2005), at the 2005 FMA European Conference (Siena, Italy, June), and at the 2006 Frontiers of Finance conference (Bonaire, Netherlands Antilles, January 2006)

Testimony

Wisconsin Power and Light Company vs Union Pacific Railroad Company, Surface Transportation Board, Verified Rebuttal Statement, September 2000

PPL Montana, LLC vs Burlington Northern and Santa Fe Railway Company, Surface Transportation Board, Verified Rebuttal Statement, April 2001

Xcel Energy vs United States Government, Expert Report (March), Rebuttal Report (May), Deposition (June), 2006

Surface Transportation Board, Methodology to be Employed in Determining the Railroad Industry's Cost of Capital, Verified Statement (December 2006), Public Hearing (February 2007), Verified Statement (September 2007), Reply Verified Statement (October 2007), Public Hearing (December 2007)

Deutsche Finance New Zealand vs New Zealand Commissioner of Inland Revenue, Witness Statement, October 2007

Professional Societies.

Academy of International Business
American Finance Association
Financial Management Association
Global Association of Risk Professionals
Professional Risk Managers' International Association
Society for Financial Studies
Western Finance Association

BEAR STEARNS

Equity Research

House Transportation & Infrastructure Committee: Forum on Freight Rail Finance

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Senior Managing Director
Airfreight & Surface Transportation Analyst
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December 12, 2007

EXHIBIT C

Submission of Edward M. Wolfe, Senior Managing Director of Bear, Stearns & Co. Inc., before the House Transportation & Infrastructure Committee, Forum on Freight Rail Finance, December 12, 2007 (excerpt)

BEAR STEARNS

Equity Research

House Transportation & Infrastructure Committee: Forum on Freight Rail Finance

Edward M. Wolfe
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Senior Managing Director
Airfreight & Surface Transportation Analyst
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December 12, 2007

Capex Trends by Company

Total Capital Spending ($ in Millions)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007E	2008E	5-Yr Avg	12-Yr Avg
BNI	$1 935	$2,714	$2,598	$2 767	$2,526	$1 762	$1,608	$1,505	$1,726	$1,990	$2,179	$2 614	$2,550	$2,550	$2,003	$2,160
CNI (US$)	404	400	$663	724	738	743	684	598	749	825	975	1,141	1 495	1 550	858	720
CP (US$)	511	395	620	738	567	385	359	357	493	519	731	698	831	890	559	531
CSX	972	1,220	943	1,115	1,256	859	879	1,036	1,059	1,030	1 136	1,639	1,700	1,600	1,180	1,095
NSC	939	957	960	956	912	731	746	695	720	1,041	1 025	1,178	1,405	1,455	932	905
UNP	1,903	2,076	2,101	2,110	2,158	2 315	2,196	2,359	2,071	2,402	2 869	2,742	3,100	3,100	2,489	2,275
Total (US$)	$6,664	$7,761	$7,885	$8,410	$8,157	$6,795	$6,472	$6,550	$6,818	$7,807	$8,914	$10,012	$11,081	$11,145	$8,020	$7,687
Canadian Rails	915	794	1,283	1,462	1 305	1 128	1,043	955	1,242	1,344	1 705	1,839	2,326	2 440	1,417	1,251
US Rails	5,749	6,967	6,602	6,948	6,852	5,667	5,429	5,595	5,576	6 463	7 209	8,173	8 755	8,705	6,603	6,436

% Change (Y-o-Y)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007E	2008E	5-Yr Avg	12-Yr Avg
BNI	-	40 3%	-4 3%	6 5%	-8 7%	-30 2%	-8 7%	-6 4%	14 7%	15 3%	9 5%	20 0%	-2 4%	0 0%	10 6%	4 3%
CNI	-	-1 1%	65 9%	9 2%	1 9%	0 7%	-8 0%	-12 6%	25 2%	10 2%	18 1%	17 1%	31 0%	3 7%	11 6%	11 5%
CP	-	-22 8%	57 1%	19 1%	-23 2%	-32 2%	-6 7%	-0 7%	38 4%	5 1%	40 9%	-4 5%	19 1%	7 1%	15 8%	6 4%
CSX	9 3%	25 4%	-22 7%	18 2%	12 6%	-31 6%	2 3%	17 9%	2 2%	-2 7%	10 3%	44 3%	3 7%	-5 9%	14 4%	7 1%
NSC	-6 9%	2 0%	0 3%	-0 4%	-4 6%	-19 8%	2 1%	-6 8%	3 6%	44 6%	-1 5%	14 9%	19 3%	3 6%	10 9%	2 3%
UNP	29 0%	9 1%	1 2%	0 4%	2 3%	7 3%	-5 1%	7 4%	-12 2%	16 0%	19 4%	-4 4%	13 1%	0 0%	5 2%	5 9%
Total (US$)	13 1%	16 5%	1 6%	6 7%	-3 0%	-16 7%	-4 8%	1 2%	4 1%	14 5%	14 2%	12 3%	10 7%	0 6%	9 3%	5 0%
Canadian Rails	-	-11 9%	61 5%	14 2%	-10 6%	-15 7%	-7 3%	-6 6%	31 8%	7 6%	29 5%	6 3%	25 1%	5 4%	13 7%	8 2%
US Rails	13 1%	21 2%	-5 2%	5 2%	-1 4%	-17 3%	-4 2%	3 1%	-0 3%	15 9%	11 5%	13 4%	7 1%	-0 6%	8 7%	4 6%

% of Revenue

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007E	2008E	5-Yr Avg	12-Yr Avg
BNI	23 7%	33 1%	30 9%	30 9%	27 5%	19 1%	17 5%	16 8%	18 3%	18 2%	16 8%	17 4%	16 3%	15 5%	17 5%	22 5%
CNI	10 7%	10 5%	17 5%	20 9%	20 9%	20 3%	18 7%	15 4%	17 7%	15 9%	15 8%	16 4%	20 0%	18 5%	16 2%	16 7%
CP	18 7%	14 5%	24 5%	31 5%	24 1%	15 6%	15 0%	15 3%	18 8%	17 3%	20 1%	17 3%	18 8%	18 2%	17 7%	19 4%
CSX	13 7%	17 1%	13 1%	15 6%	19 1%	11 9%	12 2%	14 4%	14 2%	12 8%	13 2%	17 1%	17 1%	15 2%	14 4%	14 5%
NSC	15 2%	15 3%	15 1%	15 3%	14 6%	11 9%	12 1%	11 1%	11 1%	14 2%	12 1%	12 5%	15 1%	14 9%	12 2%	13 4%
UNP	20 1%	20 5%	21 0%	22 3%	21 2%	21 4%	20 3%	21 1%	17 9%	19 7%	21 1%	17 6%	19 0%	18 0%	19 5%	20 4%
Total Class I's	17 0%	18 5%	20 4%	22 7%	21 2%	16 7%	16 0%	15 7%	16 4%	16 3%	16 5%	16 4%	17 7%	16 7%	16 3%	17 8%
Canadian Rails	14 7%	12 5%	21 0%	26 2%	22 5%	18 0%	16 9%	15 3%	18 2%	16 6%	18 0%	16 8%	19 4%	18 4%	17 0%	18 1%
US Rails	18 2%	21 5%	20 0%	21 0%	20 6%	16 1%	15 5%	15 9%	15 4%	16 2%	15 8%	16 2%	16 9%	15 9%	15 9%	17 7%

Note Includes off-balance sheet leases, 5 and 12 year averages through 2006
Source Company reports, Bear Stearns & Co estimates

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