STB Ex Parte 664-2 (Sub-No. 2)

ON BEHALF OF:

The Association of American Railroads

PRESENTED BY

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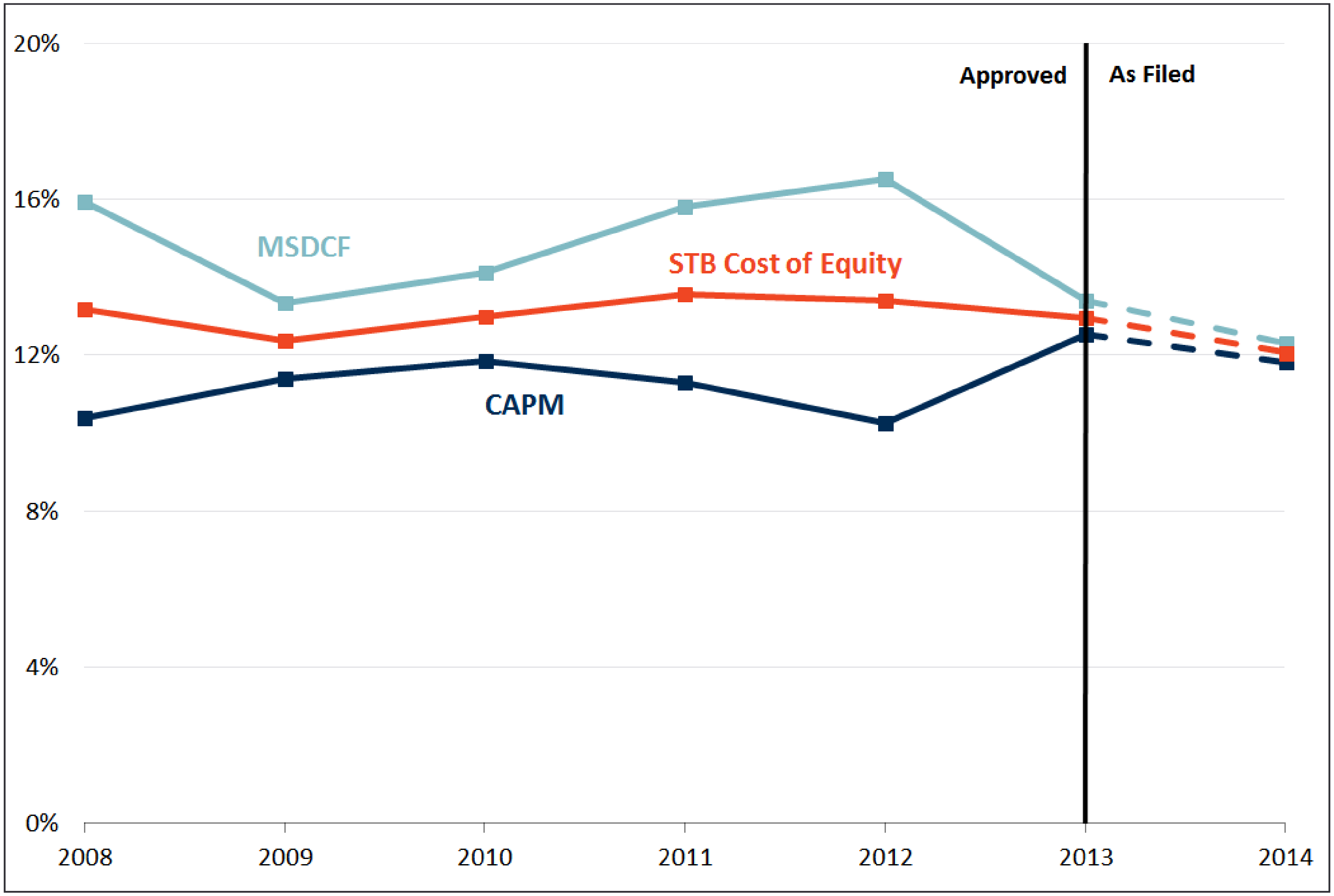
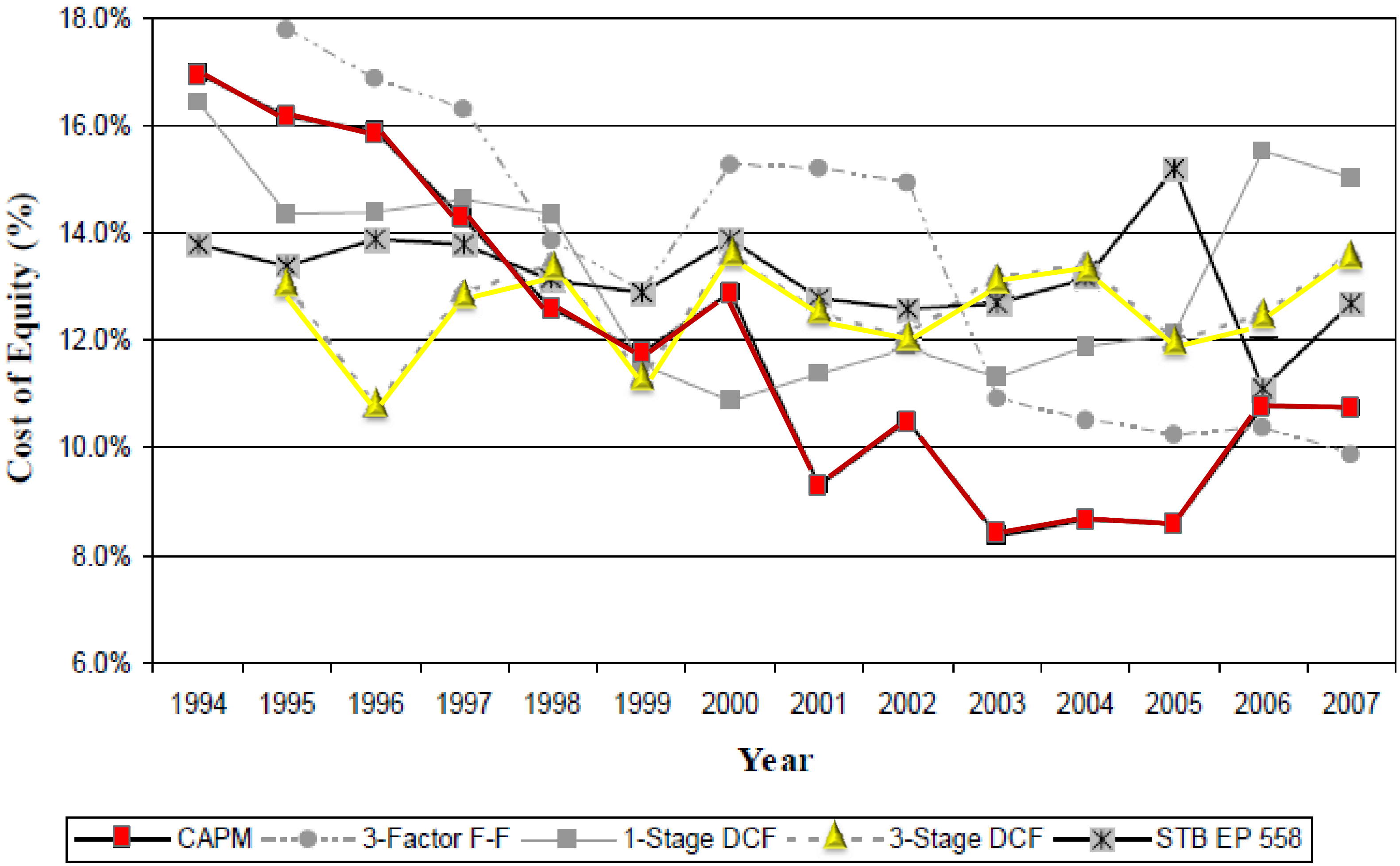
STB CAPM and MSDCF Model Results for 2008 – 2014



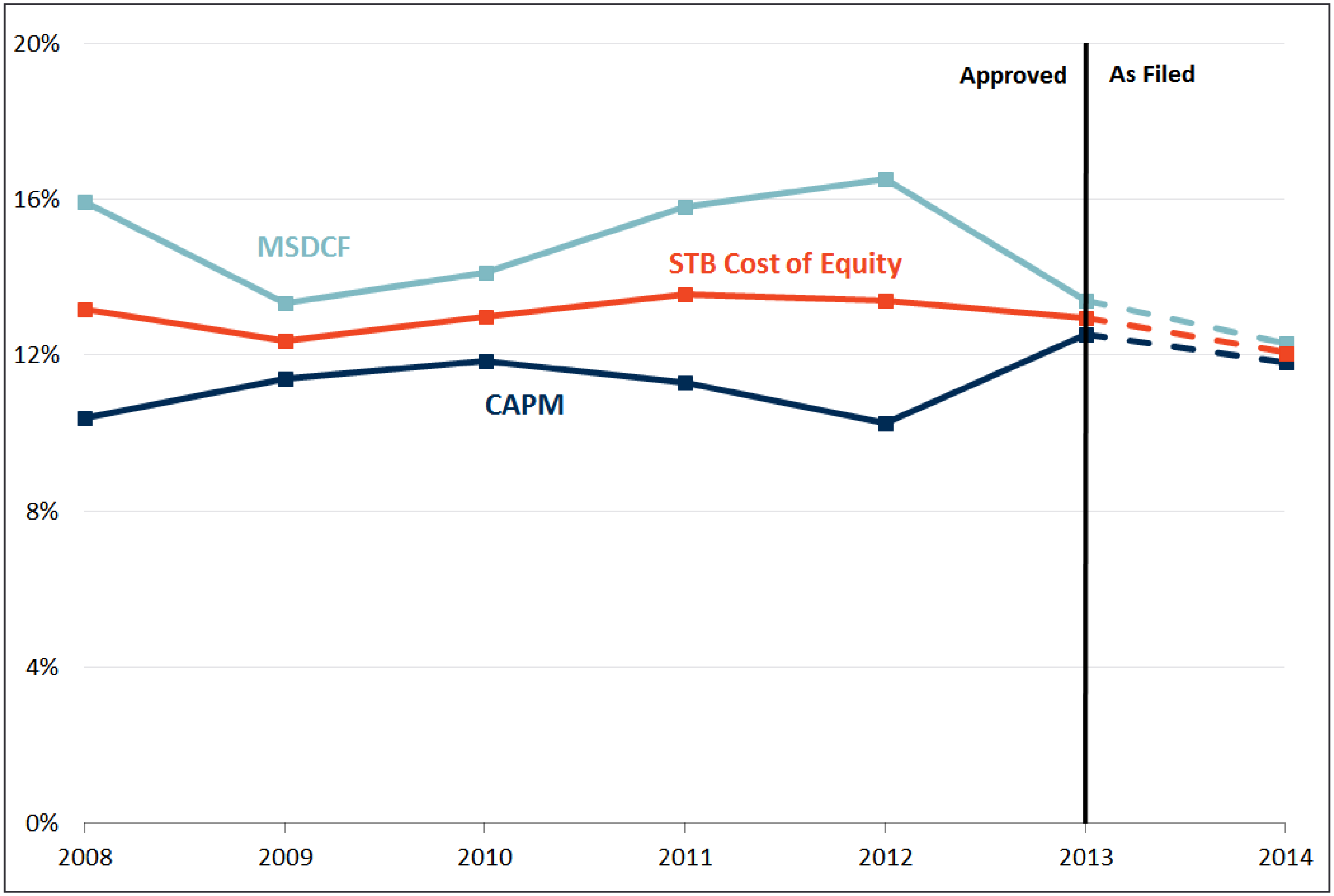
Sources: STB Cost of Capital Decisions 2008–13; AAR filing for 2014

Models Only Provide a Range of Estimates



Source: STB Docket No. 41191 (Sub No. 1) (May 15, 2009)

Using an Average is Reasonable



Sources: STB Cost of Capital Decisions 2008–13; AAR filing for 2014

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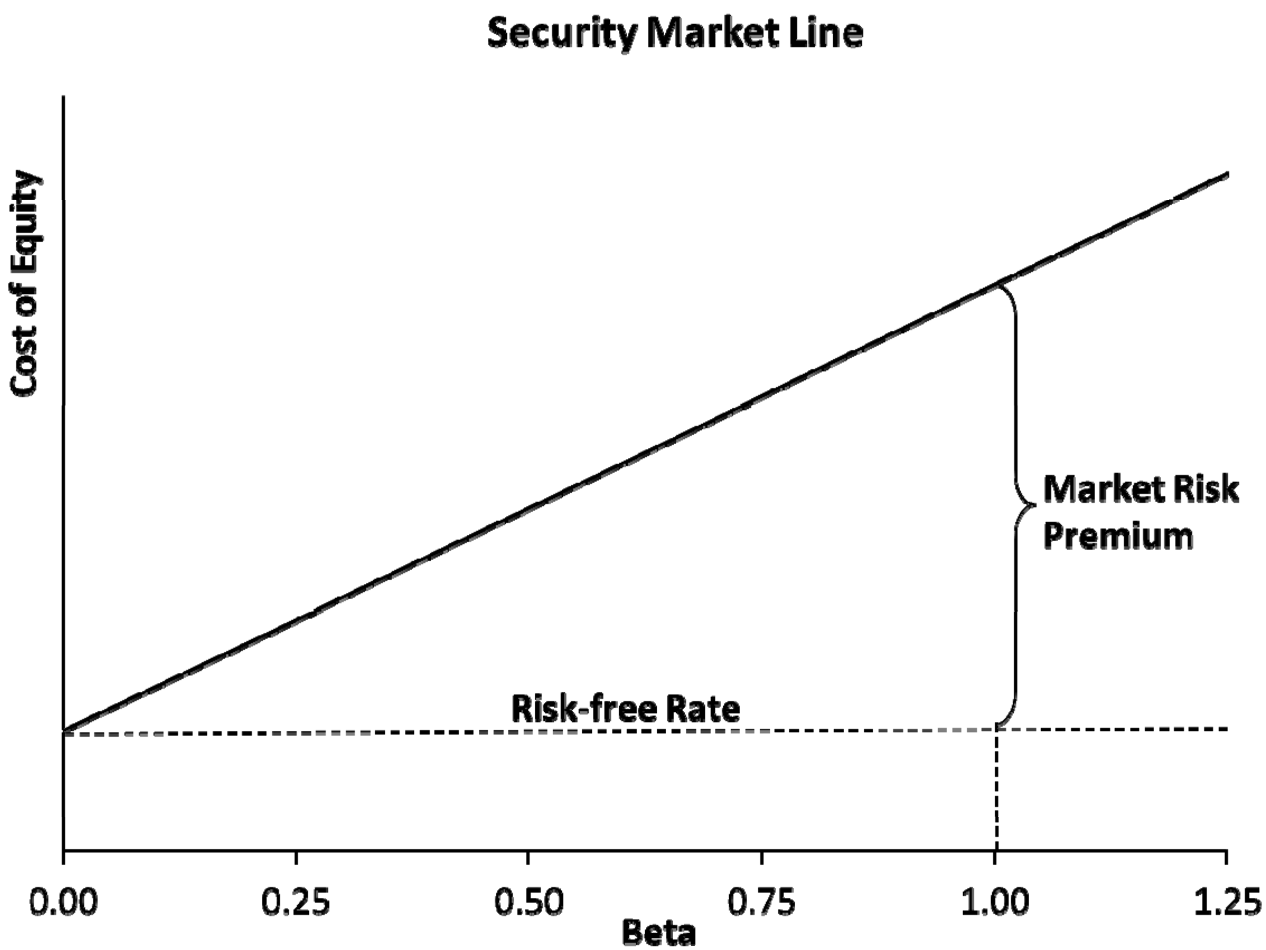
The CAPM Model for Estimating the Cost of Equity

Cost of Equity = Risk-free Rate + Beta × (Market Risk Premium)



The DCF Model for Estimating the Cost of Equity

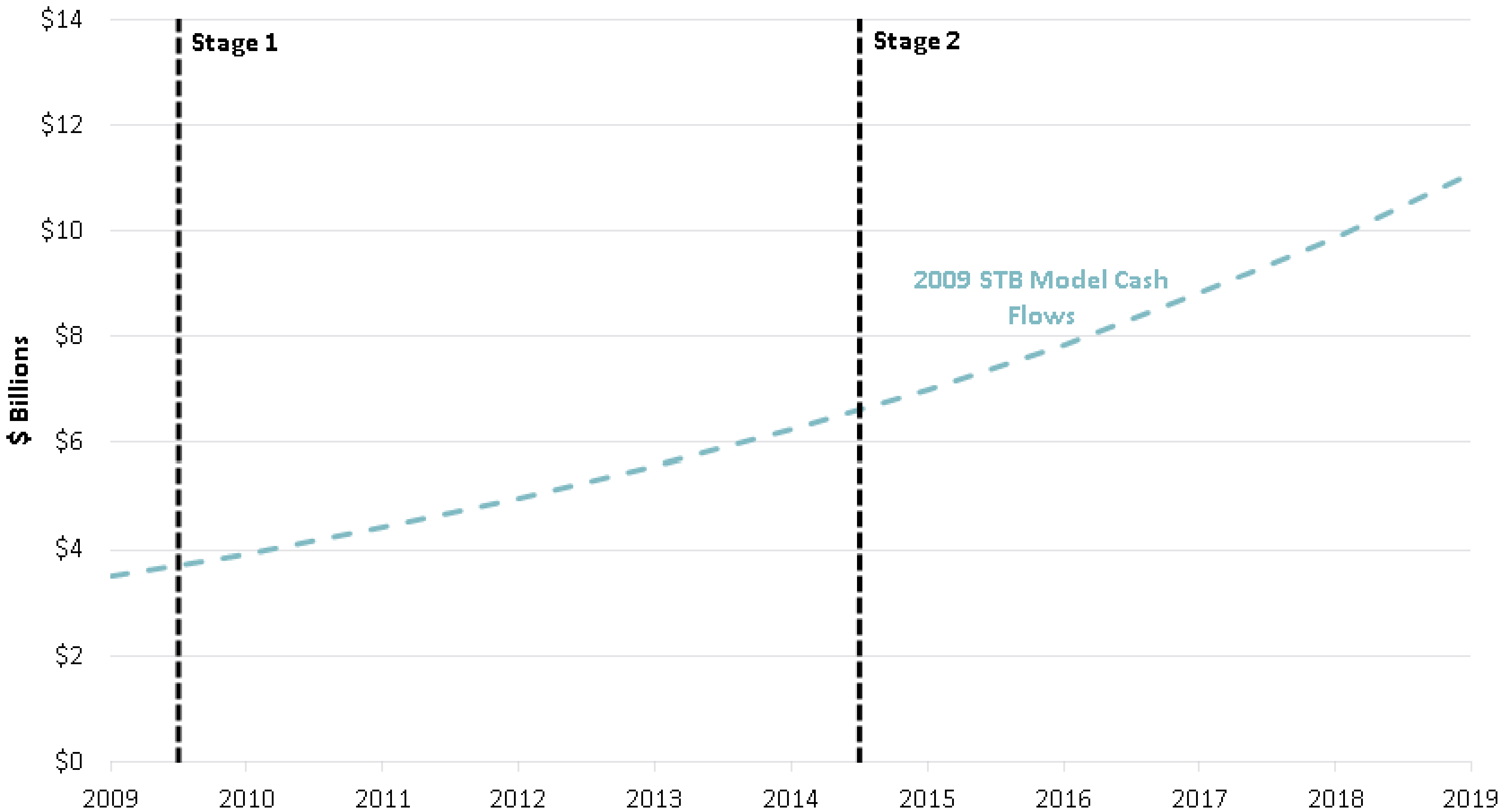
Basic formula for DCF valuation:

$$V_0 = \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \frac{C_3}{(1+r)^3} + \cdots$$

- C_t represents expected cash flow to shareholders in year t
- V_0 represents the current market value of the firm’s equity
- r is the opportunity cost of equity capital

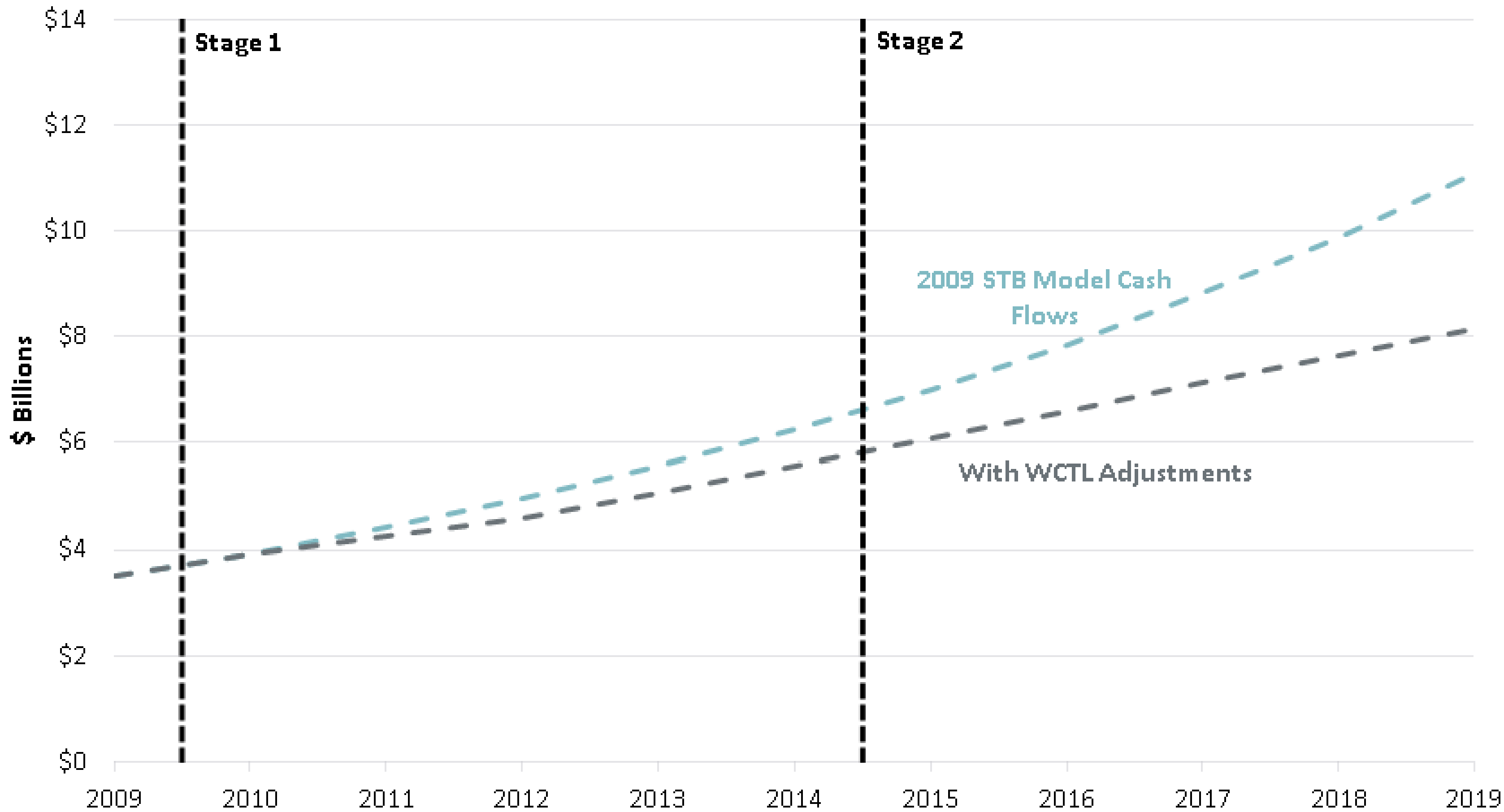
- The DCF is based on the basic finance principle that the value of a firm’s equity is the present value of the expected cash flows to its shareholders.
- Estimate cash flows and solve for the implied discount rate that makes this statement true.

WCTL Argues that the Board's MSDCF Overestimated Actual Cash Flows



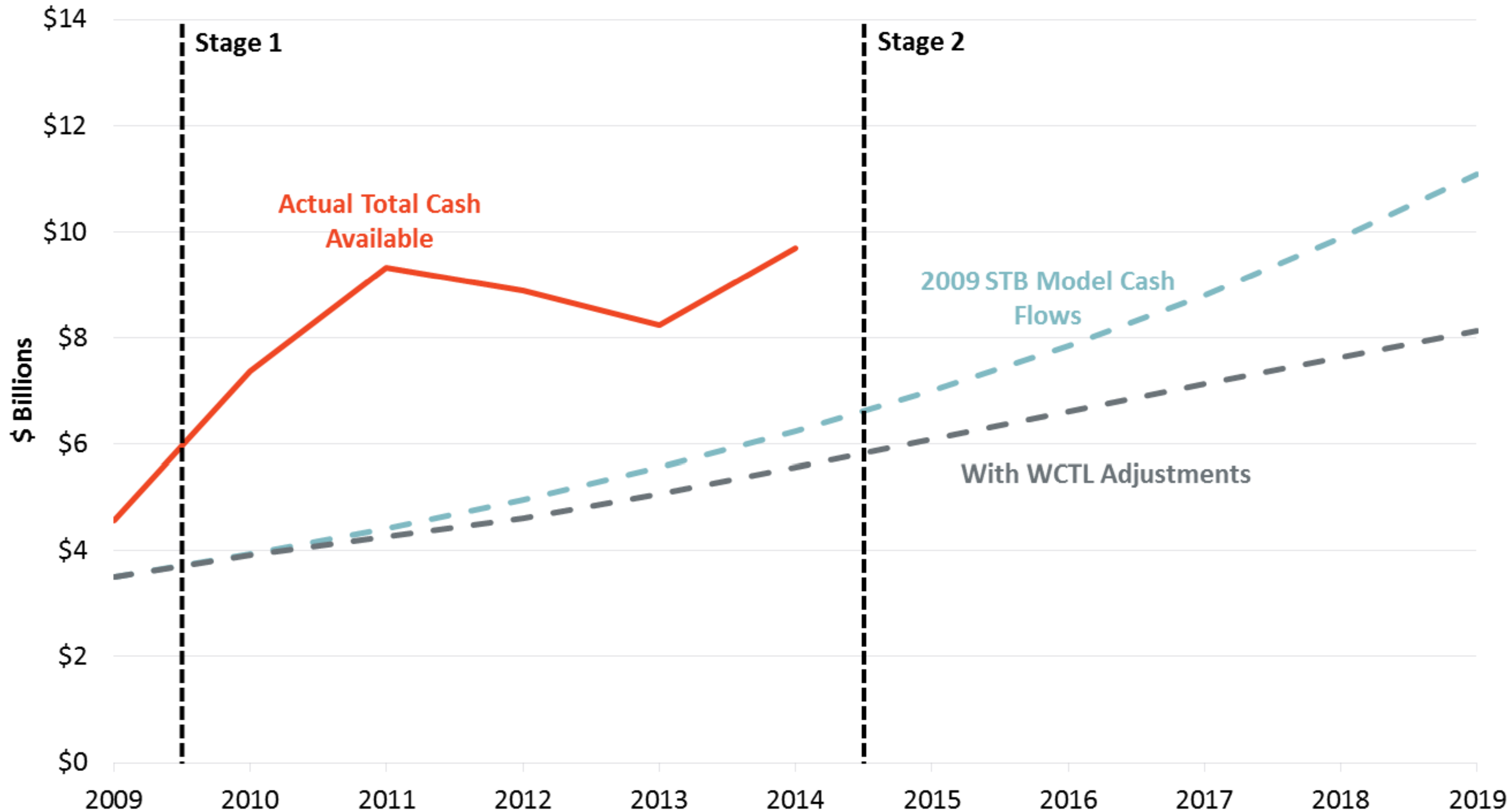
Sources: Dr. Villadsen's Workpapers and Railroad Financial Statements

WCTL's Adjustments Are Selective and Lack Internal Consistency



Sources: Dr. Villadsen's Workpapers and Railroad Financial Statements

Actually the STB MSDCF Has *Under*predicted Available Cash



Sources: Dr. Villadsen's Workpapers and Railroad Financial Statements

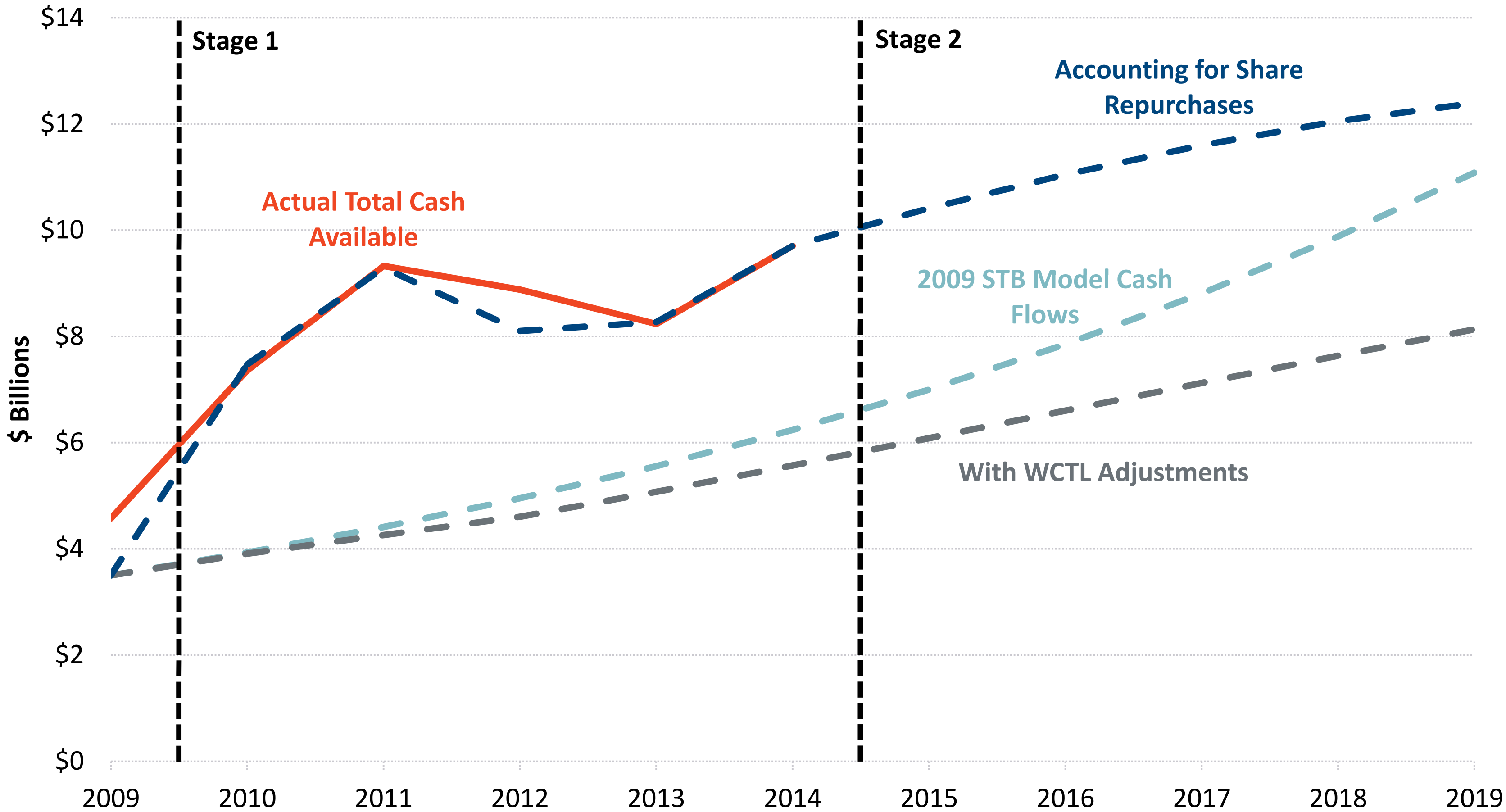
WCTL Criticisms of the MSDCF are Immaterial

	STB MSDCF	Smoothed Growth and Cash Flows	Share Repurchases	15 years to Steady State
2008	15.95%	15.16%	15.77%	16.61%
2009	13.34%	12.47%	13.19%	13.59%
2010	14.13%	13.60%	13.90%	14.35%
2011	15.83%	14.96%	15.10%	15.79%
2012	16.53%	15.77%	16.08%	16.71%
2013	13.40%	12.72%	12.72%	13.09%
Average	**14.9%**	**14.1%**	**14.5%**	**15.0%**

Source: Villadsen Verified Statement Table 5

The Board's MSDCF remains the superior model.

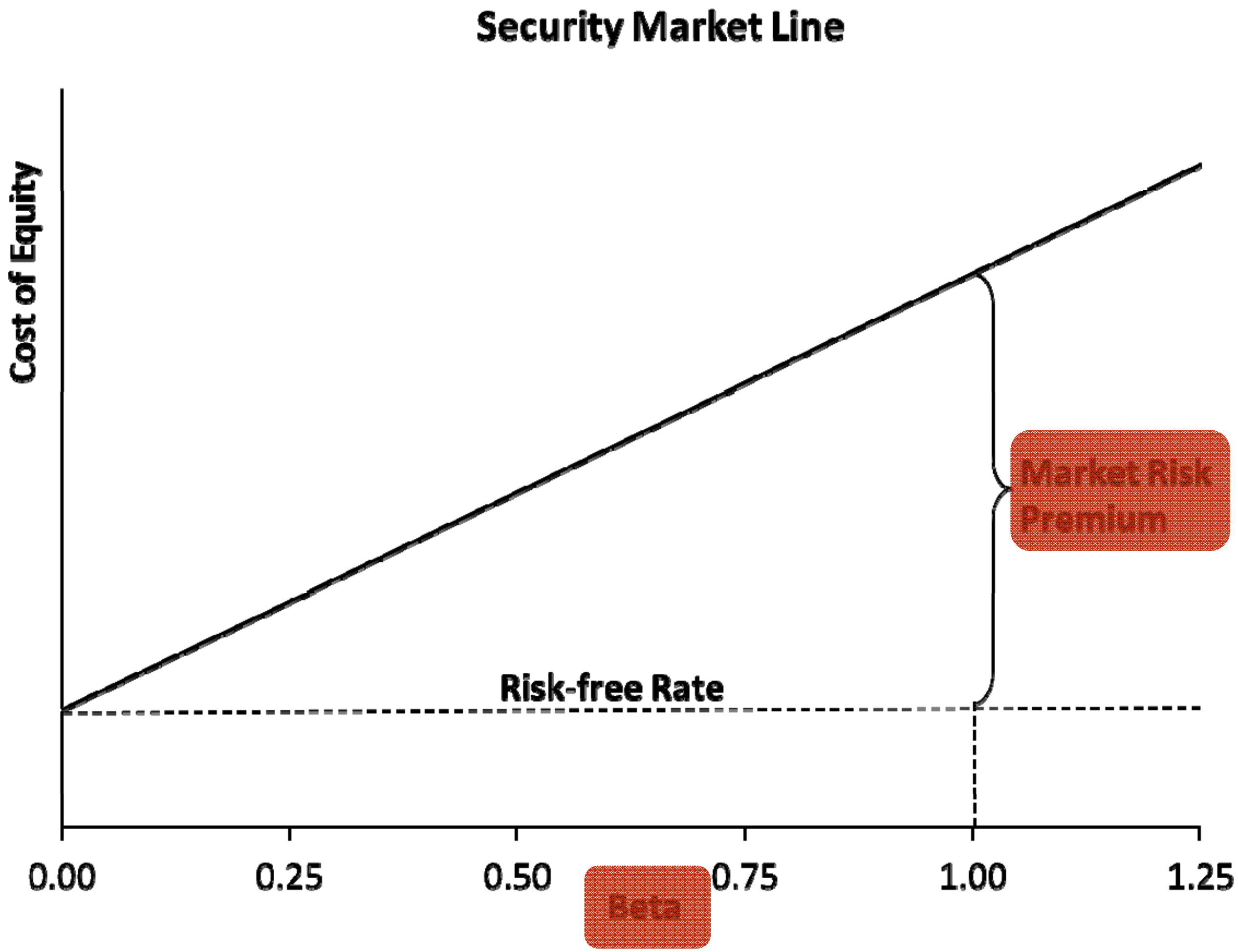
Dr. Villadsen's Analysis Does Not "Double Count" Cash Flows



Sources: Dr. Villadsen's Workpapers and Railroad Financial Statements

Estimating CAPM Inputs

Cost of Equity = Risk-free Rate + Beta × (Market Risk Premium)



The Board should maintain its straightforward approach to measuring beta for the railroads

1. A beta of 1 violates CAPM fundamentals.

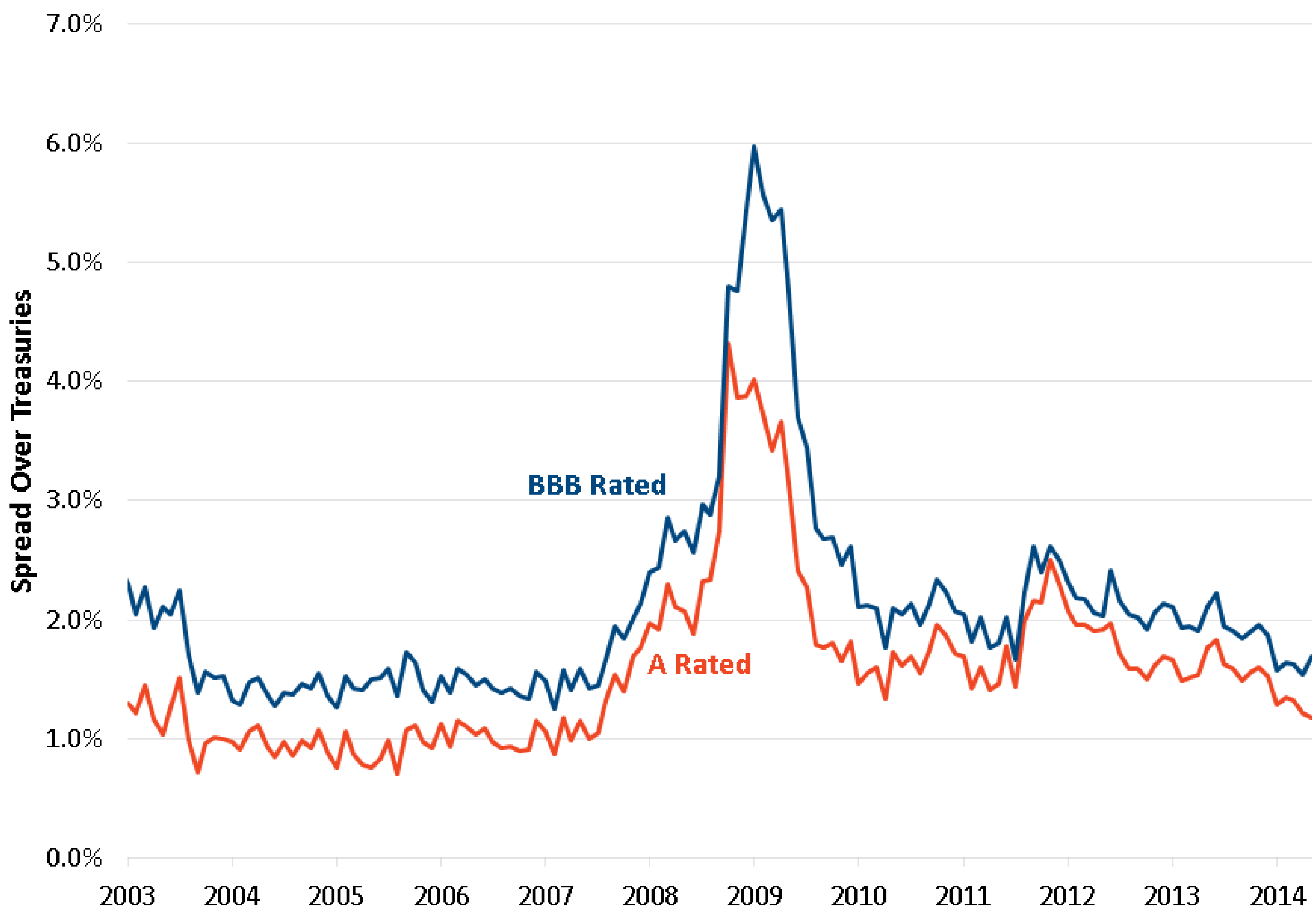
2. Betas do not need to be adjusted.

   - the Vasicek adjustment is theoretically preferable to the Blume adjustment

3. There is no need to expand the number of railroads.

4. The Board should not replace railroads with the S&P 500.

Following the Financial Crisis, Government Bond Yields May Not Be a Good Measure of Required Corporate Returns



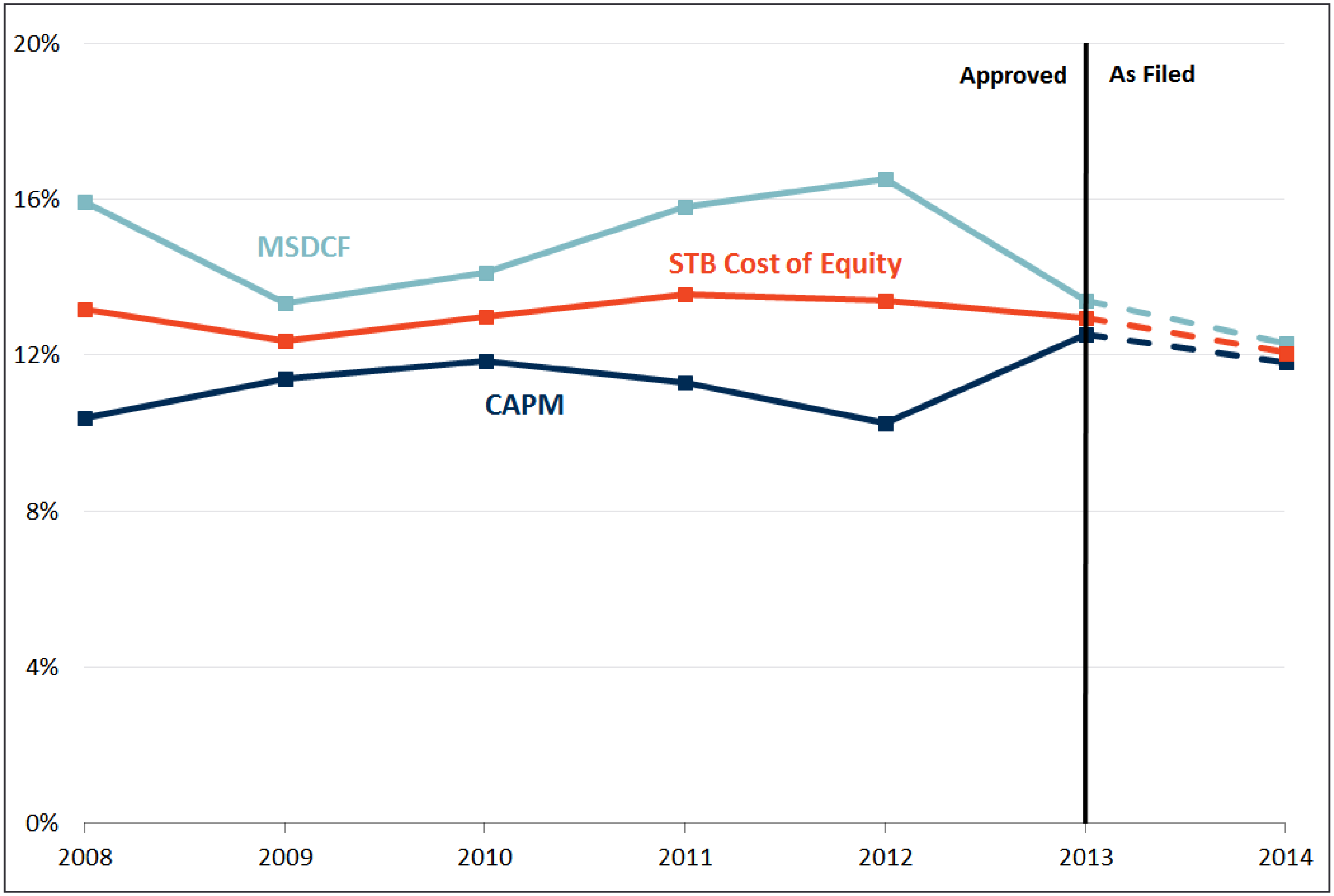
Source: Villadsen Verified Statement Figure 1

Forward-looking MRP Estimates have Exceeded Historical Averages

Year	Annual Forecasted MRP (Bloomberg)	Annual Historical MRP (Ibbotson)	Forecasted MRP (Value Line)
2008	7.83%	6.47%	
2009	8.55%	6.67%	
2010	8.03%	6.72%	
2011	7.97%	6.62%	
2012	8.86%	6.70%	12.52%
2013	7.72%	6.96%	9.97%
2014	*7.20%*	*7.00%*	*9.67%*
Average	*8.16%*	*6.73%*	*nmf*

Sources: Villadsen Verified Statement, Table 2; Ibbotson SBBI 2014; and Bloomberg, June 2015

The Board's CAPM May Have Been *Under*stating the Cost of Equity in the Recent Past



Sources: STB Cost of Capital Decisions 2008–13; AAR filing for 2014

"Use more than one model when you can. Because estimating the opportunity cost of capital is difficult, only a fool throws away useful information."

Professor Stewart Myers

Raymond Atkins
Sidley Austin, LLP

What do WCTL's own members say about using multiple models?

"[N]o individual model is more reliable than all others under all market conditions. Therefore, it is both prudent and appropriate to use multiple methodologies in order to mitigate the effects of assumptions and inputs associated with any single approach."

Kansas City Power & Light (January 2015)

Direct Testimony of Robert Hevert on behalf of KCP&L, January 2, 2015

"It is essential that the Commission employ a variety of techniques to measure the Company's cost of equity because of the limitations/infirmities that are inherent in each method."

Wisconsin Public Service Corporation (April 2015)

Direct testimony of Paul R. Moul for Wisconsin Public Service Corporation in application for Authority to Adjust Electric and Natural Gas Rates, 6690-UR-124, April 17, 2015

“Despite the theoretical appeal of, or preference for, using a particular method to estimate the cost of equity, no single approach can be regarded as wholly reliable.”

Entergy Arkansas, Inc. (April 2015)

Direct Testimony of Bruce H. Fairchild on behalf of Entergy Arkansas, Inc. before the Arkansas Public Service Commission, Docket No. 15-015-U, April 24 2015.

What do WCTL's own members say about the Market Risk Premium?

Year	WCTL Member	Recommended Market Risk Premium
2015	Kansas City Power & Light	10.47% – 10.58%
2015	Wisconsin Public Service	7.55% – 8.03%
2015	Entergy	9.10%
2014	MidAmerican Energy	7.0%
2014	Ameren	9.28% – 10.02%

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"[T]he Market Risk Premium in the current environment should not exceed 4.7%."

WCTL Opening Submission to STB (September 2014)

"As there are many different ways to estimate the cost of equity, the Board must take great care not to swing back-and-forth between parties' preferred methodologies based on the results of the different approaches."

Surface Transportation Board (2007)