Exhibit No.:	
Issue(s):	*Rate of Return and Capital Structure*
Witness:	*Christopher C. Walters*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Rebuttal Testimony*
Case No.:	*WR-2023-0006*
Date Testimony Prepared:	*June 29, 2023*

MISSOURI PUBLIC SERVICE COMMISSION

FINANCIAL AND BUSINESS ANALYSIS DIVISION

FINANCIAL ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY
Cost of Service

OF

CHRISTOPHER C. WALTERS

CONFLUENCE RIVERS UTILITY OPERATING COMPANY, INC.

CASE NO. WR-2023-0006

Jefferson City, Missouri
June 2023

TABLE OF CONTENTS OF

REBUTTAL TESTIMONY OF

CHRISTOPHER C. WALTERS

CONFLUENCE RIVERS UTILITY OPERATING COMPANY, INC.

CASE NO. WR-2023-0006

REBUTTAL TESTIMONY OF

CHRISTOPHER C. WALTERS

CONFLUENCE RIVERS UTILITY OPERATING COMPANY, INC.

CASE NO. WR-2023-0006

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Christopher C. Walters. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q. Are you the same Christopher C. Walters who previously filed testimony in this proceeding?

A. Yes. I filed direct testimony on May 26, 2023 on behalf of the Staff of the Missouri Public Service Commission ("Commission").

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to address my concerns with Mr. D'Ascendis' recommendations as it relates to a fair overall rate of return ("ROR") for Confluence. Specifically, I will address my concerns with his recommended return on equity ("ROE") of 11.35% and common equity ratio of 68.56%.

My silence with regard to any position taken by any party in this proceeding does not indicate my endorsement of that position.

II. RESPONSE TO MR. D'ASCENDIS

Q. Please summarize Mr. D'Ascendis' recommendations in this proceeding.

A. Mr. D'Ascendis is recommending that Confluence be authorized an overall ROR of 9.86%, which is based on a capital structure consisting of 31.44% long-term debt

at the Company's embedded debt cost of 6.60%, and 68.56% common equity at a cost rate of 11.35%.[1]

Mr. D'Ascendis developed the ROE recommendation of 11.35% with his models based on both current and projected interest rates. He estimates a market ROE in the range of 10.36% to 11.36% (projected) based on his model results – Discounted Cash Flow ("DCF"), Risk Premium ("RP"), and Capital Asset Pricing Model ("CAPM"), applied to a utility proxy group, and a non-price regulated proxy group. He then includes two ROE adjustments to his estimated market ROE for Confluence: (1) an upward adjustment of 100 basis points to account for business risk and (2) a downward adjustment of 51 basis points to account for financial risk. Collectively these two adjustments increase Mr. D'Ascendis' estimate by 49 basis points. With these adjustments, Mr. D'Ascendis recommends a ROE within the range of 10.85% to 11.85% with a point estimate return of 11.35%.[2]

Q. Is Mr. D'Ascendis' estimated ROE reasonable?

A. No. Mr. D'Ascendis' estimated market ROE of 11.35% for Confluence is significantly overstated for several reasons, which I will detail throughout the remainder of this testimony.

Q. Please describe Mr. D'Ascendis' methodologies used to support his estimate of the market cost of common equity.

A. Mr. D'Ascendis estimates a ROE for Confluence based on the DCF model, a RP model that he calls the Predictive Risk Premium Model™ ("PRPM"), a bond yield plus risk premium model, as well as the traditional and empirical forms of the CAPM.

[1] D'Ascendis Direct Testimony, page 3, Table 1.
[2] D'Ascendis Direct Testimony, pages 3-4 and Schedule DWD-1.

Mr. D'Ascendis applies these models to both a utility proxy group and a non-price regulated proxy group. The indicated range Mr. D'Ascendis estimated for his proxy group, before his company-specific risk adjustments, is 10.36% to 11.36%. This range is calculated as 50 basis points above and below the midpoint of his model results of 10.86%.[3] He then increases the indicated range by 51 basis points after accounting for company-specific risks, producing an adjusted range of 10.85% to 11.85%, with a midpoint estimate of 11.35%.[4]

Q. Please summarize Mr. D'Ascendis' results.

A. Mr. D'Ascendis' results are summarized in Table CCW-1 below.

continued on next page

[3] D'Ascendis Direct Testimony at page 4, Table 2. 10.86% = (9.73% + 12.00%) / 2.
[4] *Id.*

TABLE CCW-1

Summary of Mr. D'Ascendis'
Return on Equity Estimates

Market Models	Estimates (1)
DCF	9.73%
RP	11.84%
CAPM	12.00%
Non-Price Regulated Companies	11.97%
Indicated Return on Equity*	10.36%-11.36%
Business Risk Adjustment	1.00%
Financial Risk Adjustment	-0.51%
Total Adjustments	0.49%
Return on Equity Range	10.85%-11.85%
Recommended Return on Equity	11.35%

*Mr. D'Ascendis' indicated range is equal to 50 basis points above and below the midpoint of his four model results. The midpoint is (12.00% + 9.73%) / 2 = 10.86%.

For the reasons outlined below, reasonable adjustments to Mr. D'Ascendis' ROE estimates will show that my recommended ROE of 9.5% is more reasonable.

A. D'Ascendis Proposed Size Adjustment Adder

Q. Please describe the business risk adjustment proposed by Mr. D'Ascendis.

A. Mr. D'Ascendis proposes an ROE adder of 100 basis points to reflect his belief that Confluence has greater risk relative to that of his proxy group companies, due to its market capitalization size.[5]

Q. How did Mr. D'Ascendis estimate this 100 basis point size adder?

A. Mr. D'Ascendis approximates a market value for Confluence (Confluence is not publicly traded and does not have a market value), and compares this market size to the actual market capitalization size for his utility proxy group. Mr. D'Ascendis estimates that the utility proxy group market valuation is about 87.6x larger than his estimated market value for Confluence.[6]

He then compares the actual market capitalization size for the proxy group, and his estimated proxy value weight for Confluence, to the market capitalization size deciles published in Kroll's Cost of Capital Navigator.[7] The deciles based on the 2022 Kroll study are provided on his Schedule DWD-8, page 1.

He relies on Kroll's estimated CAPM return difference for companies that fall within market capitalization size deciles. Mr. D'Ascendis estimates that the proxy group market capitalization size puts it in the approximate 5th decile of returns as estimated by Kroll, and his estimated market capitalization for Confluence puts it in the 10th decile size return category. The difference between the 5th decile and the 10th decile indicates a ROE adder of around 3.91%, to reflect the difference in risk caused by market capitalization size. However, Mr. D'Ascendis recommends a ROE size adder for Confluence of 100 basis points.[8]

[5] D'Ascendis Direct Testimony, page 4 at Table 2; page 5 at lines 1-8; page 52 at lines 5-7.
[6] D'Ascendis Direct Testimony, Page 51, lines 15-17.
[7] The "deciles" are 10 defined ranges based on market capitalization, with the largest companies being the 1st decile and the smallest companies being the 10th decile.
[8] D'Ascendis Direct Testimony, page 52 at lines 5-7.

Q. Is Mr. D'Ascendis' proposed 100 basis point size ROE adder for Confluence reasonable?

A. No. There are several fundamental errors and flaws in Mr. D'Ascendis' quantitative estimate and logic. First and foremost, Confluence is not a publicly traded company. For this reason, Mr. D'Ascendis does not know what the market value capitalization is for Confluence. His approximation simply is not meaningful and cannot be used to make an accurate measurement of a ROE adder if one is so justified, which it is not.

Second, a ROE adder is not justified because Confluence is an operating company of a larger parent company, Central States Water Resources ("CSWR"), which has operations across 11 states, and is the provider of external capital to Confluence.

Finally, there is empirical evidence which concludes that, while size premiums are present in industrial companies, such a size premium is not present in utility companies, nor are they appropriate to include in valuing utilities.[9]

The size adjustment, as proposed by Mr. D'Ascendis, is not appropriate and should be denied.

B. D'Ascendis Proposed Financial Risk Adjustment

Q. Please describe Mr. D'Ascendis' financial risk adjustment.[10]

A. Mr. D'Ascendis estimated a financial risk adjustment in an attempt to account for the difference in financial risk between Confluence and the proxy group companies given Confluence's requested equity ratio of 68.56%. Based on the results of his two methods of estimation, Mr. D'Ascendis estimates a downward adjustment of 0.51% is appropriate.

[9] Wong, Annie, 1993, Utility stocks and the size effect: An empirical analysis, Journal of the Midwest Finance Association, 95-101
[10] See D'Ascendis Direct at page 4 and 52-56.

In his first method, Mr. D'Ascendis backs into a ROE for Confluence to produce the same pre-tax ROR of 11.42%, which is calculated assuming the midpoint ROE result of his proxy group of 10.86% and Confluence's cost of debt. He also assumes a capital structure based on the proxy company with the highest common equity ratio within his proxy group, which is American States Water Company. Mr. D'Ascendis observes American States Water Company had a long-term debt ratio of 37.56% and a common equity ratio of 62.44%. He then backs into an ROE of 10.34% based on Confluence proposed capital structure. The difference in ROEs is -0.53%.

In his second method, he applied the Hamada methodology which involves un-levering the Utility Proxy Groups' betas based on the Utility Proxy Group's least financially risky actual capital structure, then re-levering the beta using Confluence's recommended capital structure, and recalculating the Utility Proxy Group's CAPM. This results in a downward adjustment of -0.50%.

Q. Is Mr. D'Ascendis' financial risk adjustment appropriate, or sufficient, to account for the differences in financial risk.

A. No. Mr. D'Ascendis' analysis is severely flawed and significantly understates the difference in financial risk between the proxy companies and Confluence.

continued on next page

TABLE CCW-2

Corrected D'Ascendis Financial Risk Adjustment

Description	Weight	Cost	Weighted Cost	Pre-Tax ROR[3]
Average Capital Structure of Proxy Group[1]				
Debt	50.57%	6.60%	3.34%	3.34%
Common Equity	49.43%	**10.86%** [2]	5.37%	7.08%
Weighted Average Cost of Capital	100.00%		8.71%	10.42%
Confluence Rivers' Proposed Capital Structure				
Debt	31.44%	6.60%	2.08%	2.08%
Common Equity	68.56%	**9.23%** [4]	6.33%	8.34%
Weighted Average Cost of Capital	100.00%		8.40%	10.42%
Indicated ROE Adjustment		**-1.63%** [5]		

Notes:
[1]Average capital structure of Mr. D'Ascendis' proxy group from Schedule DWD-2.
[2]Midpoint ROE estimated by Mr. D'Ascendis, for illustrative purposes only.
[3]Assumes composite tax rate of 24.16% as shown on Schedule DWD-9.
[4]ROE required at Confluence Rivers' proposed capital structure to produce a pre-tax ROR of 10.42%.
[5]Difference between 9.23% and 10.86%.

In his first method that backs into an ROE to produce the same pre-tax ROR, Mr. D'Ascendis relied on the midpoint of his proxy group's ROE estimates of 10.86%, but assumed the capital structure of the company with the least amount of financial leverage, American States Water, which has an equity ratio of 62.44%.[11]

A more balanced approach would have assumed the average capital structure of his proxy group and then backing into an ROE for Confluence that produces the same pre-tax ROR. I demonstrate this in Table CCW-2 below.

The average equity ratio for the proxy group using his data is approximately 49.4%. Using the same assumptions as Mr. D'Ascendis, but reflecting a capital structure representative

[11] Schedule DWD-9.

of the 10.86% ROE he calculated for the proxy group, including a common equity ratio of 49.4% and a debt ratio of 50.6%, would produce a pre-tax ROR of 10.42%. The ROE needed to produce a pre-tax ROR of 10.42%, assuming Confluence's proposed capital structure, is 9.23%. This is a 163 basis point difference, or a downward adjustment of 1.63%. I note that this is not an acceptance of his 10.86% estimate for his proxy group, rather merely a demonstration that he significantly understates the difference in financial leverage between Confluence and the proxy group.

I maintain my recommendations including a 9.50% ROE at a common equity ratio of 50.0%. Notably, an equity ratio of 50.0% is nearly identical to, albeit slightly higher than, the average equity ratio Mr. D'Ascendis observed for his proxy group. This further solidifies my recommendations.

C. D'Ascendis DCF

Q. Please describe Mr. D'Ascendis' DCF analysis.

A. Mr. D'Ascendis performed his traditional constant growth DCF. He relied on analysts' earnings growth rate projections from *Value Line*, Zack's, and Yahoo! Finance. The average growth rate for his proxy group is 7.28%.[12] He used an annualized dividend and a 60-day average stock price for the period ending October 31, 2022 to calculate the proxy group's dividend yield. His DCF results are in the range of 5.08% to 14.28%. The mean and median results of his DCF analysis are both 9.28%. Mr. D'Ascendis then considers the average of his DCF mean and median excluding the 5.08% DCF result of Middlesex Water resulting in a revised average of 10.17%. The average of these two estimates is 9.73%.

[12] Schedule DWD-3.

Q. Do you have any comments concerning Mr. D'Ascendis' DCF return estimates?

A. Yes. I have two concerns with Mr. D'Ascendis' DCF analysis: (1) he considers the DCF results by removing a low-end outlier (5.08%) while leaving in a high-end outlier (14.28%) and (2) his proxy group's average DCF return is based on a growth rate of 7.28%, which is 82% higher than the consensus of economists' projected growth rate for the economy (4.00%). Notably, the average growth rate after excluding Middlesex Water, as Mr. D'Ascendis has done, is 8.01%, or more than 100% greater than the projected growth rate of the U.S. economy.

Mr. D'Ascendis biases his DCF results upward by removing only the low-end outlier when a DCF result of 14.28% is clearly a high-end outlier. The proper way to account for outliers is by measuring the median of all results, which Mr. D'Ascendis did. The median of his DCF results is 9.28%. Another method would be considering the truncated mean by removing the high and low-end outliers. The truncated mean, after removing the 5.08% and 14.28% results is 9.08%. The midpoint of the 9.28% and 9.08% results is 9.18%, which is consistent with the DCF results I recommended in my direct testimony.

In addition, Mr. D'Ascendis failed to consider the results of a multi-stage DCF analysis given the fact his proxy group's projected growth rate is 82% higher than the growth expected for the US economy. As I explained in detail in my direct testimony, no company, regulated or not, can grow at a rate in excess of the economy it operates in perpetuity. Given the DCF model assumes constant growth in perpetuity, a growth rate of 7.28%, let alone 8.01% (which excludes Middlesex Water), is an economic impossibility.

As a matter of principle, no company's earnings and/or dividends can grow faster than the economy in which it sells goods and services into perpetuity. In the long run, earnings

growth will be limited by several factors, including, but not limited to, competition and market saturation. An average growth rate of 7.28%, assumed to last in perpetuity, defies the economic and financial literature of which I am aware.

In addition to the texts cited in my direct testimony in support of the premise that gross domestic product ("GDP") is a long-term cap on growth, others have also acknowledged such a limitation. First, as detailed in the CFA Institute's curriculum:

> For earnings growth to exceed GDP growth, the ratio of corporate profits to GDP must trend upward over time. It should be clear that the share of profits in GDP cannot rise forever. At some point, stagnant labor income would make workers unwilling to work and would also undermine demand, making further profit growth unsustainable. ***Thus, in the long run, real earnings growth cannot exceed the growth rate of potential GDP.***[13] (Emphasis added.)

Additionally, Dr. Morin details in his book, ***New Regulatory Finance***, as follows:

> It is useful to remember that eventually all company growth rates, especially utility services growth rates, converge to a level consistent with the growth rate of the aggregate economy.
>
> * * *
>
> […] it is quite possible that a company's dividends can grow faster than the general economy for five years, ***but it is quite implausible for such growth to continue into perpetuity***.[14] (Emphasis added.)

D. D'Ascendis Risk Premium

Q. Please describe Mr. D'Ascendis' risk premium analysis.

A. Mr. D'Ascendis estimates a risk premium return of 11.84%. His estimate is the midpoint of his PRPM risk premium (12.20%) and an adjusted total market approach risk premium (11.48%).[15]

[13] CFA Program Curriculum, 2014 Level II Vol.1, "Ethical and Professional Standards, Quantitative Methods, and Economics" Reading 15 – Economic Growth and the Investment Decision, pages 608-609.
[14] Roger A. Morin, New Regulatory Finance, pages 308-309.
[15] Schedule DWD-4, page 1.

Q. Please describe Mr. D'Ascendis' PRPM™ risk premium study.

A. First, he derived an equity risk premium using the PRPM™. The PRPM™ model estimated a proxy group average equity risk premium of 10.25%. He then added his estimate of the risk-free rate of 3.96%. Mr. D'Ascendis then excluded the ROE estimates for American Water Works (19.87%) and Essential Utilities (16.29%). After excluding those outliers, his proxy group average equity risk premium was 8.32%, resulting in a proxy group mean ROE estimate of 12.28% and a median of 12.12%.[16] The average of the mean and median is 12.20%.

Q. Please describe Mr. D'Ascendis' adjusted total market risk premium study.

A. Mr. D'Ascendis' adjusted total market risk premium model is based on a projected utility bond yield of 5.74%, and an average equity risk premium of 5.74% resulting in an indicated ROE of 11.48%.

The projected 5.74% risk premium used by Mr. D'Ascendis is the result of two separate risk premium study results of 6.77% and 4.70%.

1. The first risk premium result of 6.77% was developed on Schedule DWD-4, page 8. This risk premium was based on six estimates of equity risk premiums: three based on the Ibbotson data, including an equity risk premium (6.13%), a regression risk premium (7.02%), and his PRPM methodology (9.79%); an equity risk premium estimated based on *Value Line* Summary and Index Data (11.16%); a S&P 500 DCF derived equity risk premium using *Value Line* data (11.17%); and a S&P 500 DCF derived equity risk premium using Bloomberg data (6.81%). The average of these six projected/current risk premium estimates of 8.68% was then adjusted by his proxy group average beta of 0.78, to produce a risk premium estimate of 6.77%.

[16] *Id*., page 2.

2. The next risk premium estimate of 4.70% is based on the average of five separate risk premium estimates:

1. A historical equity risk premium of the S&P Utility Index of 4.28%.
2. Regression-derived risk premium of 5.01 %.
3. A PRPM™-derived risk premium of 5.51%.
4. A forecasted equity risk premium of the total returns of the S&P Utility Index from *Value Line* of 4.75%.
5. A forecasted equity risk premium of the total returns of the S&P Utility Index of 4.75% from Bloomberg.

The average of these five risk premiums is 4.70%.

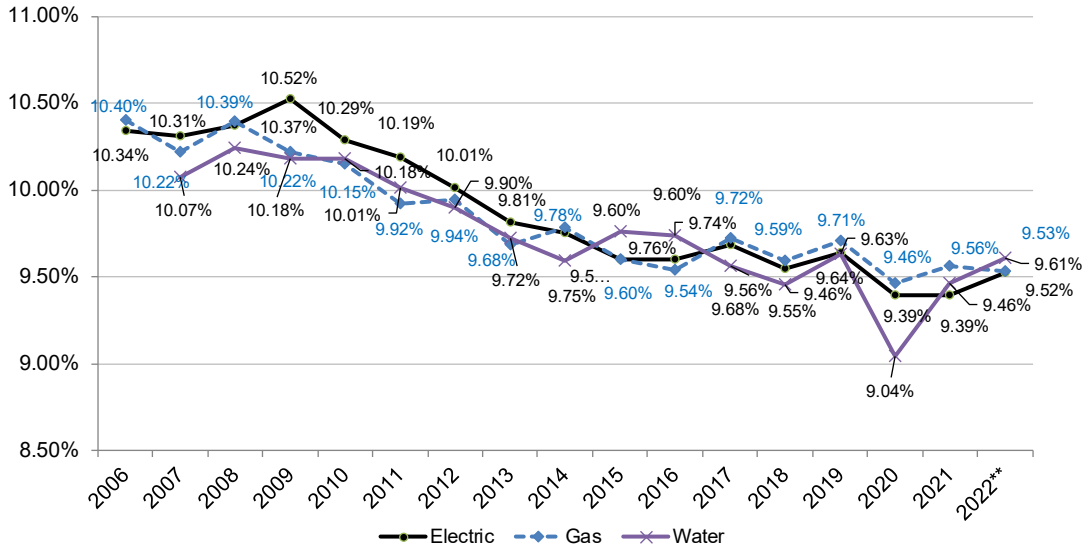
Q. Does Mr. D'Ascendis' risk premium analysis produce reasonable results?

A. No. As an initial matter, the unreasonableness of his PRPM™-derived risk premium study adjusted result (i.e. after he excludes two high-end outliers) of 12.28% is clear when comparing it to the average authorized ROEs for electric, gas, and water utilities. As shown below in Figure CCW-1, the highest average authorized ROE of the three major regulated utility industries since 2006 as tracked by Regulatory Research Associates, a division of S&P Global Market Intelligence, is 10.52% for electric utilities in 2008. Further, as shown in exhibit CCW-10, attached to my direct testimony, natural gas utilities have not had an average authorized ROE of 12.28% or higher since 1991, when long-term Treasury bond yields were 8.14% and A-rated utility bond yields were 9.36%.

A similar comparison can be made with his adjusted total market approach risk premium results of 11.48%. As shown on my exhibit CCW-10, attached to my direct testimony, natural gas utilities have not had an average authorized ROE of 11.48% or higher since 1998, when long-term Treasury bond yields were 5.58% and A-rated utility bond yields were 7.04%.

FIGURE CCW-1

Authorized Returns on Equity*
(Exclude Limited Issue Riders)



Source and Notes:
[1] *S&P Global Market Intelligence*, RRA Regulatory Focus, Major Rate Case Decisions -- January - December 2022, February 23, 2023 at page 3.
* Electric Returns exclude Limited Issue Riders.
* RRA excludes the 2017 Alaska ENSTAR decision from its calculations.
**Data represents January - December.

In addition, Mr. D'Ascendis' application of the PRPM model is based solely on trends in equity prices, volatility of those historical prices, and historical investor behavior. This is a form of technical analysis and violates the weak form of the Efficient Market Hypothesis ("EMH").

The EMH is a theory that suggests that financial markets are efficient and that asset prices reflect all available information at any given time. There are three forms of the EMH, which are summarized as follows:

1. Weak form: This form of the EMH suggests that current asset prices reflect all historical price and volume information. In other words, it implies that technical analysis cannot be used to predict future market

movements, as all information contained in past prices is already reflected in the current price.

2. Semi-strong form: This form of the EMH suggests that all publicly available information is already reflected in asset prices. This means that fundamental analysis cannot be used to gain an edge, as all publicly available information, such as financial statements and news reports, is already reflected in the asset price.

3. Strong form: This form of the EMH suggests that all information, both public and private, is already reflected in asset prices. This means that even insider information cannot be used to gain an edge, as it is already reflected in the asset price.

As explained above, the "weak" form asserts that investors cannot obtain additional information, or gain an advantage about a stock through the use of trends in historical market prices and data such as volatility. Observing trends in historical prices, historical volatility, and historical investor behavior are what define "technical analysis." The PRPM is rooted in "technical analysis" which violates the "weak" form of EMH.

As Mr. D'Ascendis has previously testified,[17] consistent with Eugene Fama's[18] findings, the "semi-strong" form of EMH is considered to be the most realistic. In other words, historical prices, historical volatility, and historical investor behavior are already priced in equity securities and cannot be used to predict future market movements. In order for the "semi-strong" form of EMH to hold true, the "weak" form must also hold true. As such, Mr. D'Ascendis' use of the PRPM model violates the weakest form of EMH.

For these reasons, I urge the Commission to reject Mr. D'Ascendis' risk premium analysis in its entirety.

[17] Case No. 20-00238-UT, Rebuttal Testimony of Dylan W. D'Ascendis at 127.
[18] Eugene Fama, Robert R. McCormick Distinguished Service Professor of Finance at University of Chicago Booth School of Business, received the Nobel Prize in Economic Sciences for his groundbreaking research on efficient markets. He shared the prize with Lars Peter Hansen and Robert J. Shiller.

Q. Do you have any other comments on Mr. D'Ascendis' risk premium analysis?

A. Yes. As part of estimating his projected risk-free rate of 3.96%, Mr. D'Ascendis relied, in part, on the average projected yield over the coming six quarters. The average yield projected over the six (6) quarter period at the time of his analysis was 4.00%. More recent projections of long-term Treasury yields over the next six quarters have declined from 4.00% to 3.78%.[19] Reflecting this updated data would reduce his risk premium results as well.

E. D'Ascendis CAPM

Q. How did Mr. D'Ascendis derive his CAPM return estimate for Confluence Rivers?

A. Mr. D'Ascendis developed his CAPM return estimate on his Schedule DWD-5. As shown on that schedule, he relied on a proxy group beta of 0.78, which was the average of the mean and median beta published by Bloomberg and *Value Line* for his proxy companies, a market risk premium of 9.98%, and a projected risk-free rate of 3.96% to produce a traditional CAPM return estimate of 11.71% and an Empicial CAPM ("ECAPM") return estimate of 12.27%.

Q. Do you have any issues with Mr. D'Ascendis' traditional CAPM study?

A. I disagree with several aspects of his methodology. First, his market risk premium of 9.98% is excessive and unreliable due to unsustainable growth rates he used to develop his market return. Second, as noted above, more recent projections of the risk-free rate are about 20 basis points lower than what was used in his analysis. Finally, his market risk premium estimates suffer from many of the same previously described flaws surrounding his equity risk premium estimates, such as his significant reliance on the PRPM methodology.

[19] Blue Chip Financial Forecasts, June 1, 2023 at 2.

Q. How did Mr. D'Ascendis develop his market risk premium of 9.98%?

A. Mr. D'Ascendis averages six market risk premium estimates to develop his recommended market risk premium of 9.98%.

- His first market risk premium estimate is based on historical Kroll data. With this methodology, he estimates a market risk premium of 7.35%.
- His second market risk premium is based on a regression analysis and produced a projected/current risk premium of 8.65%.
- His third market risk premium is based on the application of his PRPM™ method using historical Kroll data. This method produces a market risk premium of 10.89%.
- His fourth market risk premium is based on a *Value Line* 3-5 year projected market return of 16.40%, less his projected risk-free rate of 3.96%, to derive an expected market risk premium on the *Value Line* index of 12.44%.
- His fifth market risk premium is based on a *Value Line* projected return on the S&P 500 of 16.41%, which produced a market risk premium of 12.45 after his risk-free rate of 3.96% is subtracted.
- Finally, he uses Bloomberg growth rates to perform a DCF on the S&P 500. This method produces a return on the market of 12.02% from which he subtracts his projected risk-free rate of 3.96% to produce a market risk premium of 8.09%.
- The average of these six market risk premiums is 9.98%.[20]

Q. Please explain why Mr. D'Ascendis' expected market returns are unsustainable and, therefore, unreliable.

A. Mr. D'Ascendis' DCF-derived expected market returns based on *Value Line* data and Bloomberg data produce expected market returns of 16.40%, 16.41%, and 12.05%. The average of these estimates is 14.95%. As shown in Table CCW-3 below, the market rarely sustains returns of 14.95% or higher. For example, 75% of the time, the market fails to sustain a return of 14.95% over a rolling 10-year period since 1926. That figure becomes

[20] Schedule DWD-5, page 1.

nearly 90% when looking at rolling 20-year periods. Because the DCF model, on which Mr. D'Ascendis' expected market returns are based, assumes perpetuity, sustainability of the model must be assessed.

TABLE CCW-3

Observed Geometric Total Returns on the Market
Compared to Mr. D'Ascendis' DCF-Derived Expected Market Return of 14.95%

	Rolling Period Compound Returns				Total
	5-Year	10-Year	20-Year	50-Year	97-Year
Rolling periods observed	93	88	78	48	1
Rolling periods w/ returns less than 14.95%	64	66	70	48	1
Percent of periods less than 14.95%	68.8%	75.0%	89.7%	100.0%	100.0%

Q. Can Mr. D'Ascendis' CAPM analysis be revised to reflect a more reasonable market risk premium?

A. Yes. Relying on Mr. D'Ascendis' utility beta of 0.78, his historical market risk premium of 7.35% and an updated current and projected risk-risk free rate of 3.70%, produces a ROE of 9.43%.[21] Using the same parameters and my forward-looking market risk premium of 8.00% will produce a ROE of 9.94%.[22] The midpoint of these ROE estimates will produce a ROE no higher than 9.69% for Confluence Rivers.

F. D'Ascendis Empirical CAPM ("ECAPM")

Q. Please describe Mr. D'Ascendis' ECAPM analysis.

A. Mr. D'Ascendis applies the same beta, market risk premium and risk-free rate for his ECAPM. The ECAPM analysis modifies the traditional CAPM equation by including

[21] 3.70% + 0.78 x 7.35% = 9.43%.
[22] 3.70% + 0.79 x 8.00% = 9.94%.

a risk premium weighted by the utility beta, and the overall market beta of 1.0. The original ECAPM analysis was designed to use raw, or unadjusted, regression betas. In Mr. D'Ascendis' ECAPM analysis, he adds two weighted risk premiums to a risk-free rate: a 75% weighted risk premium based on a 0.78 utility beta, and a 25% weighted risk premium based on a beta equal to the overall market beta of 1.0. The theory of the ECAPM is that a beta of less than 1.0 will increase toward the market beta of 1.0 over time, which is necessary because the risk of securities will be increasing over time. The ECAPM formula employed by Mr. D'Ascendis is as follows:

$$R_i = R_f + [(.75) \times B_i \times (R_m - R_f)] + [(.25) \times B_m \times (R_m - R_f)] \text{ where:}$$

R_i = Required return for stock i
R_f = Risk-free rate
R_m = Expected return for the market portfolio
B_i = Beta coefficient for the stock (0.95)
B_m = Beta coefficient for the market (1.0)

Q. What issues do you take with Mr. D'Ascendis' ECAPM analysis?

A. The biggest issue I have with Mr. D'Ascendis' ECAPM analysis is his use of an adjusted beta as published by *Value Line*. The impact of Mr. D'Ascendis' ECAPM adjustment is to increase his beta estimate from 0.78 to 0.835.[23] The weighting adjustments applied in the ECAPM are mathematically the same as the adjustment to beta since the inputs are all multiplicative as shown in the formula above.

Mr. D'Ascendis' reliance on an adjusted *Value Line* beta in his ECAPM study is inconsistent with the academic research that I am aware of supporting the development of the ECAPM.[24] The *Value Line* adjusted betas are already adjusted for a stock's long-term tendency

[23] 75% x 0.78 + 25% x 1 = 0.835.
[24] See Black, Fischer, "Beta and Return," *The Journal of Portfolio Management,* Fall 1993, 8-18; and Black, Fischer, Michael C. Jensen and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," 1972.

to converge to 1.00. More importantly, the timing of that convergence is not known, and therefore a constant weighting is applied when adjusting raw betas using the Blume method, as done by *Value Line* and Bloomberg.[25] Thus, the end result of using the *Value Line* adjusted betas in the ECAPM is essentially an expected return line that has been flattened by two duplicative adjustments. In other words, the vertical intercept has been raised twice and the security market line has been flattened twice: once through the adjustments *Value Line* made to the raw beta, and again by weighting the risk-adjusted market risk premium as Mr. D'Ascendis has done.

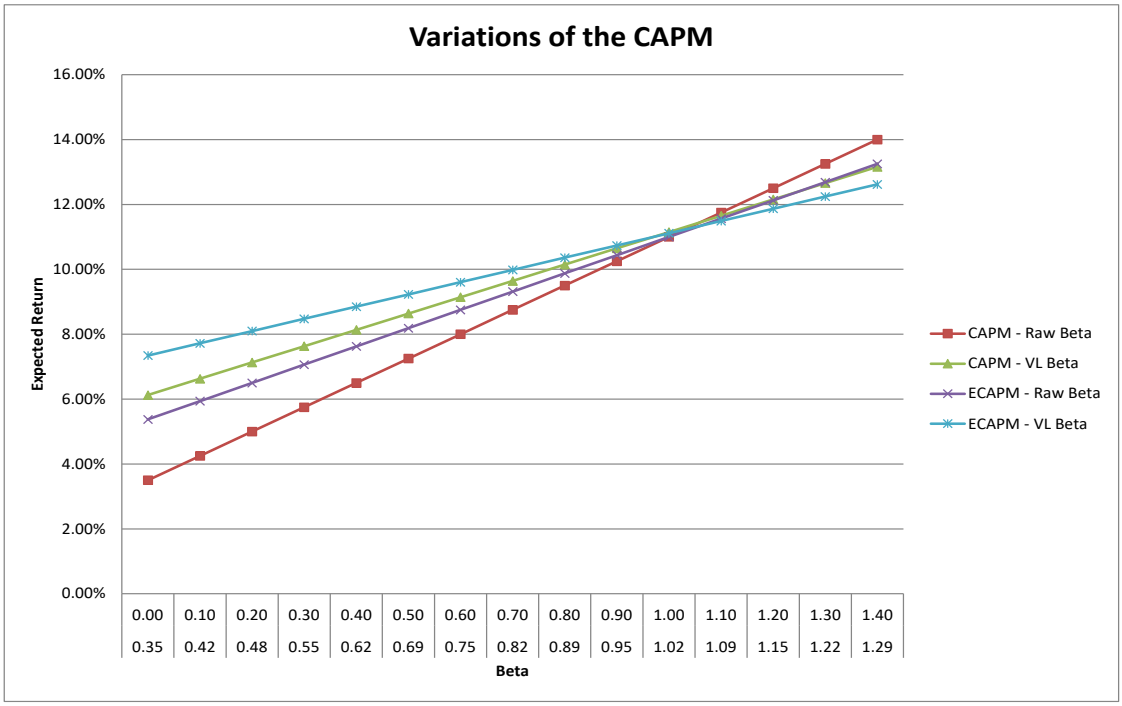
Moreover, Mr. D'Ascendis further increases the intercept and flattens the security market line by using projected long-term Treasury yields that are at odds with current market expectations and inconsistent with the Federal Reserve's projections and monetary policy.

The ECAPM will raise the intercept point of the security market line and flatten the slope. Again, this has the effect of increasing CAPM return estimates for companies with betas less than 1, and decreasing the CAPM return estimates for companies with betas greater than 1. I have modeled the expected return line resulting from the application of the various forms of the CAPM/ECAPM below in Figure CCW-5.

continued on next page

[25] The Blume adjustment is a method to recognize that the premise that all betas trend to 1 over time. The Bloomberg method of the Blume adjustment applies 2/3 and 1/3 weights to the raw beta and market beta, respectively, while *Value Line's* method applies 67% and 35% weights. Both methods are forms of the Blume adjustment. While the weights are slightly different between the Bloomberg and *Value Line* methods, they are similar and apply a constant weight without any regard to accuracy.

FIGURE CCW-2



Along the horizontal axis in Figure CCW-2 above, I have provided the raw unadjusted beta (top row) and the corresponding adjusted *Value Line* beta (bottom row). As shown in Figure CCW-2 above, the CAPM using a *Value Line* beta compared to the CAPM using an unadjusted beta shows that the *Value Line* beta raises the intercept point and flattens the slope of the security market line. As shown in the figure above, the two variations with the most similar slope are the CAPM with the *Value Line* beta, and the ECAPM with a raw beta. This evidence in Figure CCW-2 shows that the ECAPM adjustment has a very similar impact on the expected return line as a *Value Line* adjusted beta. Another observation that can be made from the figure above is the magnifying effect that the ECAPM using a *Value Line* adjusted beta has on raising the vertical intercept and flattening the slope relative to all other variations. There is simply no legitimate basis to use an adjusted beta within an ECAPM because it unjustifiably alters the security market line

and materially inflates a CAPM return for a company with a beta less than one (1). As such, Mr. D'Ascendis' use of an adjusted beta in the ECAPM should be rejected.

G. D'Ascendis Non-Regulated Company Analysis

Q. Please describe Mr. D'Ascendis' analysis and results based on his non-price regulated companies.

A. Mr. D'Ascendis' non-price regulated ROE estimate is based on the results from the same cost of equity methods described above using a proxy group of 27 non-price regulated companies that he chose based solely on whether they had betas within two standard deviations of the beta of his utility proxy group. The average result of his mean and median market-based studies on his non-price regulated companies using this methodology produced his estimated ROE of 11.97%.[26]

Q. Are the results Mr. D'Ascendis is using in the non-price regulated companies reasonable?

A. No. As I mentioned above, he applies the same flawed analyses to this group of non-price regulated companies as he did to his water utility proxy group. For example, the constant growth DCF analysis applied to his non-price regulated companies assumes a growth rate of 9.53% in perpetuity, including a growth rate as high as 19.25%. As the texts cited in my Direct testimony, and the additional texts cited above in this testimony, growth rates that are more than twice the projected growth of the economy of the United States are simply not a reasonable assumption as it cannot possibly happen for the period of time assumed in the constant growth DCF model: perpetuity.

Q. Does this conclude your rebuttal testimony?

A. Yes it does.

467492

[26] Schedule DWD-7, page 1.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Confluence Rivers Utility Operating Company, Inc.'s Request for Authority to Implement a General Rate Increase for Water Service and Sewer Service Provided in Missouri Service Areas	)))))	Case No. WR-2023-0006

AFFIDAVIT OF CHRISTOPHER C. WALTERS

STATE OF MISSOURI)
) ss.
COUNTY OF ST. LOUIS)

COMES NOW CHRISTOPHER C. WALTERS and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Christopher C. Walters*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

CHRISTOPHER C. WALTERS

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of St. Louis, State of Missouri, at my office in Chesterfield, on this 29th day of June 2023.

Notary Public

MARIA E. DECKER
Notary Public - Notary Seal
STATE OF MISSOURI
St. Louis City
My Commission Expires: May 5, 2025
Commission # 13706793