Exhibit:	
Issue(s):	*Rate of Return,* *True-Up Adjustments*
Witness:	*Seoung Joun Won, PhD*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Surrebuttal/True-Up Direct Testimony*
Case No.:	*GR-2024-0369*
Date Testimony Prepared:	*May 2, 2025*

MISSOURI PUBLIC SERVICE COMMISSION

FINANCIAL AND BUSINESS ANALYSIS DIVISION

AUDITING DEPARTMENT

SURREBUTTAL/TRUE-UP DIRECT TESTIMONY

OF

SEOUNG JOUN WON, PhD

UNION ELECTRIC COMPANY,
d/b/a Ameren Missouri

CASE NO. GR-2024-0369

Jefferson City, Missouri
May 2025

****** Denotes Confidential Information ******

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SEOUNG JOUN WON, PhD

UNION ELECTRIC COMPANY,
d/b/a Ameren Missouri

CASE NO. GR-2024-0369

Q. Please state your name and business address.

A. My name is Seoung Joun Won and my business address is P.O. Box 360, Jefferson City, Missouri 65102.

Q. Who is your employer and what is your present position?

A. I am employed by the Missouri Public Service Commission ("Commission") as a member of the Commission's Staff ("Staff") and my title is Regulatory Compliance Manager for the Financial Analysis Department, in the Financial and Business Analysis Division.

Q. Are you the same Seoung Joun Won who filed Direct Testimony on February 28, 2025 and Rebuttal Testimony on April 4, 2025, in this proceeding?

A. Yes, I am.

I. EXECUTIVE SUMMARY

Q. What is the purpose of your surrebuttal / true-up direct testimony?

A. The purpose of my surrebuttal testimony is to respond to the rebuttal testimonies of Ann E. Bulkley and David Murray. Ms. Bulkley sponsored return on equity ("ROE") testimony on behalf of Union Electric Company, d/b/a Ameren Missouri ("Ameren Missouri"), a subsidiary of Ameren Corporation ("Ameren Corp."). Mr. Murray sponsored ROE, cost of debt, capital structure and rate of return ("ROR") testimony on behalf of the Missouri Office of the Public Counsel ("OPC"). Within this testimony, Staff will address issues related to ROE, cost of debt, and capital structure, which pertain to a just and reasonable ROR to be applied to Ameren Missouri's natural gas utility rate base for ratemaking purposes in this proceeding.

The purpose of my true-up direct testimony is to present Staff's true-up recommendations for Ameren Missouri's natural gas service ("NGS") ratemaking capital structure and cost of debt in this proceeding. Staff's analyses and conclusions are supported by the data presented in Staff's surrebuttal / true-up direct schedules attached.

Q. What is the overview of your response to the testimonies of Ms. Bulkley?

A. Staff's surrebuttal will address the direct and rebuttal testimonies of Ms. Bulkley concerning her proposed ROE for Ameren Missouri's natural gas utility operations. In her direct testimony, Ms. Bulkley proposed an ROE of 10.25%, within a range of 10.25% to 11.25%.[1] In her rebuttal testimony, after updating her analysis based on market data through February 28, 2025, and without correcting her inaccurate methods, Ms. Bulkley maintained her proposed ROE to 10.25%, within a range of 10.25% to 11.25%.[2] Ms. Bulkley did not comment on ROR, capital structure, or cost of debt in her rebuttal testimony.

For the authorized ROE issue, in her rebuttal testimony, Ms. Bulkley made incorrect claims about Staff's estimation methodology based on misunderstandings and erroneous assumptions, and presented numerous self-contradictory statements. In this testimony, Staff will recount the reasons why Ms. Bulkley's unreasonable cost of equity ("COE") estimates are still incorrect. Although there are many issues with Ms. Bulkley's rebuttal testimony, Staff will only address major issues related to Ms. Bulkley's disagreement with Staff's COE estimation methods.

[1] Page 8, lines 11-14, Bulkley's Direct Testimony.
[2] Page 4, lines 8-12, Bulkley's Rebuttal Testimony.

Q. What is the overview of your response to the testimony of Mr. Murray?

A. Mr. Murray did not revise any of his recommendations in his rebuttal testimony. In his direct testimony, Mr. Murray recommended an ROE of 9.50% within a range of 9.00% to 9.50% and a ROR of 6.38% based on his recommended use of Ameren Corp.'s capital structure of 42.00% common equity, 0.60% preferred stock and 57.40% long-term debt and applying Ameren Missouri's cost of preferred stock of 4.18% and embedded cost of long-term debt of 4.12%.[3] Staff will respond to Mr. Murray's argument about Staff's recommended ROE and ratemaking capital structure.

Q. Please summarize the results of the ROR analysis based on Staff's true-up recommendations for Ameren Missouri's ratemaking capital structure and cost of debt in this proceeding.

A. Staff recommends that the Commission use an actual capital structure as of true-up period, December 31, 2024, of 51.96% common equity, 0.54% preferred stock and 47.50% long-term debt for the purposes of setting Ameren Missouri's ROR in this proceeding.[4] Consistent with Staff's capital structure recommendation and an ROE of 9.64% within the range of 9.39% to 9.89%, Staff also recommends that the Commission use Ameren Missouri's embedded cost of preferred stock of 4.18% and embedded cost of debt of 4.30% as of December 31, 2024,[5] resulting in the overall midpoint ROR of 7.07%, taken from the calculated range of 6.94% to 7.20%.[6]

[3] Page 2, lines 3-4, Page 37, lines 18-19, and Schedule DM-D-9, Murray's Direct Testimony.
[4] Staff's Data Request No. 0112.
[5] Staff's Data Request No. 0113.
[6] Schedule SJW-s16, Won's Surrebuttal / True-up Direct Testimony.

II. RESPONSE TO TESTIMONY OF AMEREN MISSOURI WITNESS

Q. Please summarize Ms. Bulkley's rebuttal testimony.

A. Ms. Bulkley updated her COE analyses based on market data through February 28, 2025, in her rebuttal testimony, but maintained a proposed ROE of 10.25% in her direct testimony.[7] In her updated analysis presented in her rebuttal testimony, Ms. Bulkley utilized the same estimation methods as in her direct testimony, including the Constant Growth form of the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), and the Bond Yield Risk Premium ("BYRP") analysis.[8] Additionally, Ms. Bulkley discusses the changes in capital market conditions since her direct testimony and their effect on the COE.[9] Ms. Bulkley also responded to direct testimonies regarding the ROE issues, including Mr. Murray and myself.

Q. What are Staff's key issues with Ms. Bulkley's rebuttal testimony?

A. Staff's key issues with Ms. Bulkley's rebuttal testimony are the following:

1. Ms. Bulkley misunderstood Staff's analytical method for recommending the authorized ROE in this proceeding and argued that Staff should not change its analytical approach used in past rate proceedings. For example, based on her misunderstanding of Staff's analysis, Ms. Bulkley proposed logical fallacies, such as the assertion that Staff must use the exact same methods and input values it used in The Empire District Electric Company's rate proceeding, Case No. ER-2019-0374 ("2019 Empire Case").[10] At the beginning of each rate proceeding, Staff conducts market and corporate analyses and selects the most appropriate method to recommend an authorized ROE based on the characteristics of the available input

[7] Page 4, lines 8-12, Bulkley's Rebuttal Testimony.
[8] Page 8, lines 29-31, and Page 10, Figure 2, Bulkley's Rebuttal Testimony.
[9] Page 18, lines 7-18, Bulkley's Rebuttal Testimony.
[10] Pages 43-44, Bulkley's Rebuttal Testimony.

data. Ms. Bulkley's arguments ignore the most basic principle of Staff's analysis: the use of a consistent methodology with the best methods available at the time;

2. Ms. Bulkley did not correctly apply basic financial concepts. For example, because of her erroneous assumption that the market-data-derived COE is similar to the authorized ROE, Ms. Bulkley mischaracterized the relationship between Staff's COE estimation and its authorized ROE recommendation.[11] An authorized ROE cannot be mechanically determined by any COE analyses, such as DCF or CAPM.[12] Instead, the results of such analyses are used, not relied upon exclusively, to recommend a just and reasonable authorized ROE within an appropriate comparable context.[13] Although Staff clarified the difference between COE and authorized ROE in its direct testimony,[14] Ms. Bulkley made many incorrect arguments based on her confusion of the two concepts. Due to her misunderstanding of this basic regulatory principle, Ms. Bulkley built a baseless argument against Staff's analysis;

3. Ms. Bulkley did not correctly characterize Staff's methodology, distorting the facts by mentioning only part of the truth rather than the whole truth, and without providing proper context. For example, referencing Paragraph 131 in *Entergy Arkansas, et al.*, Opinion No. 575, 175 FERC ¶ 61,136 (2021), Ms. Bulkley stated,

> Dr. Won's short-term growth rates in his two-step DCF analysis are an average of the projected EPS, DPS, and BVPS growth rates for each of the proxy group companies as published by *Value Line*, which is not the methodology used by the FERC. As stated in Opinion No. 575, the FERC has consistently relied solely on projected EPS growth rates as the short-term growth rate.[15]

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[11] Page 13, lines 10-15, Bulkley's Rebuttal Testimony.
[12] Page 28, *Amended Report and Order*, Case No. GR-2017-0215.
[13] The end-result principle: The validity of an order of the Federal Power Commission fixing rates under the Natural Gas Act is to be determined on judicial review by whether the impact or total effect of the order is just and reasonable, rather than by the method of computing the rate base. P. 320 U. S. 602. FPC v. Hope Nat. Gas Co., 320 U.S. 591 (1944).
[14] Page 3, Footnote No. 2, Won's Direct Testimony.
[15] Page 43, lines 12-16, and Footnote No. 72, Bulkley's Rebuttal Testimony.

The truth is that FERC neither mentioned projected EPS nor historical growth rates, DPS, or BVPS growth rates. More fundamentally, there is no reason Staff must follow the detailed procedure that FERC used in its analysis without proper justification, as Ms. Bulkley implied. Staff will provide the exact quote from Paragraph 131 of FERC's Opinion No. 575, along with a detailed explanation and context, later in this testimony; and,

4. Ms. Bulkley did not apply a consistent standard when criticizing Staff's analytical procedures in comparison to her own. In addition, Ms. Bulkley offered self-contradictory criticism and evidence. For example, Ms. Bulkley cited several statements from *Morningstar*'s publications, now published by *Kroll*, to argue that Staff's risk premium of 5.94% is too low for use in its CAPM analysis compared to her average risk premium of 7.85%.[16] Interestingly, *Kroll*'s most recent recommended current U.S. equity risk premium is 5.00%.[17] Due to Ms. Bulkley's double standards and self-contradictory statements in her testimony, Staff recommends that the Commission carefully consider her arguments.

Staff identified additional issues in Ms. Bulkley's rebuttal testimony. However, due to the numerous meritless arguments in Ms. Bulkley's rebuttal testimony, Staff cannot address everything in this testimony. Instead, Staff will explain some of the major problems in detail and clarify why Ms. Bulkley's assertions are unfounded in the sections below.

Q. What are the specific areas in which Staff is responding to Ameren Missouri's witnesses?

[16] Schedule SJW-d13, Won's Direct Testimony, and Schedule AEB-D2, Attachment 4, Bulkley's Direct Testimony.

[17] Kroll Lowers its Recommended U.S. Equity Risk Premium to 5.0%, Effective March 19, 2025. Retrieved April 8, 2025. https://www.kroll.com/en/insights/publications/cost-of-capital/recommended-us-equity-risk-premium-and-corresponding-risk-free-rates.

A. Staff is responding to the rebuttal testimony of Ms. Bulkley. The areas in which Staff addresses issues of Ms. Bulkley's rebuttal testimony include:

- Bulkley's Updated COE Analysis,
- Updated Capital Market Conditions,
- DCF and Growth Rates,
- CAPM and Market Risk Premium, and
- Staff's Bond Yield Plus Risk Premium ("BYPRP") vs BYRP.

Staff will discuss each in turn, below.

1. Bulkley's Updated COE Analysis

Q. In her rebuttal testimony, Ms. Bulkley stated, "Nothing in the direct testimonies of either Dr. Won or Mr. Murray has caused me to change my conclusions or recommendations."[18] Does this mean that the result of Ms. Bulkley's revised analysis in her rebuttal testimony is exactly the same as her original analysis in her direct testimony?

A. No. Ms. Bulkley changed the result of her COE analysis. She stated "I have updated the results of the constant growth DCF, CAPM, ECAPM and BYRP analyses based on market data through February 28, 2025, using the same methodologies as in my direct testimony except for one modification."[19]

Q. What modification did Ms. Bulkley make in her COE analysis?

A. In her direct testimony, Ms. Bulkley relied on projected earnings per share ("EPS") growth rates from Yahoo! Finance as one of the estimates of long-term growth in her

[18] Page 7, lines 5-6, Bulkley's Rebuttal Testimony.
[19] Page 8, lines 30-32, Bulkley's Rebuttal Testimony.

constant growth DCF model.[20] However, in her rebuttal testimony, Ms. Bulkley used the consensus projected 3- to 5-year EPS growth rates reported by S&P Capital IQ Pro, as Yahoo! Finance no longer provides them.[21]

Q. What did Ms. Bulkley change in her updated COE analysis?

A. Ms. Bulkley's COE estimation models and input variables estimation methods remained the same except for one source of projected EPS and the time period of the data values.[22] In her direct testimony, Ms. Bulkley used data as of August 31, 2024,[23] and her updated COE analysis is now based on data as of February 28, 2025.[24] Ms. Bulkley did not change her NGS utility proxy group from companies classified by Value Line Investment Survey ("Value Line") as Natural Gas Distribution Utilities, using six (6) screening criteria during the selection process.[25] The following is the list of Ms. Bulkley's NGS utility proxy group, associated ticker symbols, and Standard & Poor's ("S&P") issuer credit ratings:

Table 1. Natural Gas Utility Proxy Group and Ticker[26]

	Company	Ticker	S&P
1	Atmos Energy Corporation	ATO	A-
2	NiSource Inc.	NI	BBB+
3	Northwest Natural Gas Company	NWN	A
4	ONE Gas, Inc.	OGS	A-
5	Southwest Gas Corporation	SWX	BBB-
6	Spire, Inc.	SR	BBB+

[20] Pages 27-28, Bulkley's Direct Testimony.
[21] Page 9, lines 1-5, Bulkley's Rebuttal Testimony.
[22] Pages 8-9, Bulkley's Rebuttal Testimony.
[23] Page 26, line 11, Footnote No 19 (p. 31) and Schedule AEB-D2, Attachment 7, Bulkley's Direct Testimony.
[24] Page 6, lines 2-3, Bulkley's Rebuttal Testimony.
[25] Pages 21-22 and Schedule AEB-D2, Attachment 2, Bulkley's Direct Testimony.
[26] Figure 6 (p. 22) and Schedule AEB-D2, Attachment 2, Bulkley's Direct Testimony.

In her updated COE analysis, Ms. Bulkley indicated higher DCF, CAPM and BYPRP COE estimates compared to the COE estimates in her direct testimony. The summary of Ms. Bulkley's updated COE estimates are presented in Table 2:

Table 2. Bulkley's COE estimates Comparison[27]

	Direct As of August 31, 2024			Rebuttal As of February 28, 2025		
	Low	Average	High	Low	Average	High
DCF (Mean)	8.52%	10.10%	11.72%	9.39%	10.49%	11.56%
DCF (Median)	9.53%	10.12%	11.73%	9.47%	10.72%	11.72%
CAPM	10.11%	10.47%	11.10%	10.31%	10.74%	11.47%
ECAPM	10.60%	10.87%	11.34%	10.77%	11.09%	11.64%
BYRP	10.25%	10.30%	10.35%	10.34%	10.48%	10.58%

Because Ms. Bulkley did not change her estimation models and input parameters, Staff's concerns with her recommended COE remains the same as expressed in my rebuttal testimony. Staff will not repeat here all of its explanation of its concerns with Ms. Bulkley's estimation models and input data. For a detailed explanation of Staff's concerns with Ms. Bulkley's COE estimation models and input data, please see my rebuttal testimony.

Q. Please summarize Staff's concerns with Ms. Bulkley's COE estimation models and input data.

A. The list of flawed COE estimation procedures used by Ms. Bulkley, along with brief summaries, updated analysis results, and the page numbers of the associated explanations in my rebuttal testimony, is as follows:

[27] 1 Summary, Won's Surrebuttal Workpaper.

A. Overstated Proposed ROE (Pages 4-7, Won's Rebuttal Testimony)

Ms. Bulkley's recommended ROE of 10.25% is much higher than the average authorized ROE of 9.72% in NGS utility rate proceedings completed in 2024.[28] Ms. Bulkley's recommended ROE is based on overstated COE estimates that use upwardly-biased input variables such as projected growth rates for the DCF model, market return and market risk premium ("MRP") for the CAPM method, and inappropriate variables in the regression model for the BYRP analysis.

B. Inadequate Proxy Group Selection (Pages 7-10, Ibid)

Ms. Bulkley's COE estimates are unreasonably upwardly biased due to her unreasonable proxy group selection. In its direct testimony, Staff disagreed with Ms. Bulkley including NiSource Inc. ("NI"), reported dividend reductions in two consecutive years, 2015 and 2016, as well as a negative book value and dividend growth rates of -3.0% and -0.5%, respectively.[29] One of the necessary assumptions of the DCF model is that the company's dividends or cash flows increase at a constant rate forever.[30] Ms. Bulkley utilized the DCF model for COE estimation, but NI had financial records showing several instances of decreased revenue per share and dividend per share over the past ten years.[31] I explained in detail in my rebuttal testimony how a past decrease in dividends impacts the estimation of the COE in a proxy group using DCF and CAPM.[32] The response to Mr. Bulkley's rebuttal regarding the exclusion of NI from Staff's NGS proxy group is addressed later in this testimony.

[28] S&P Global Market Intelligence, Retrieved in April 2, 2025.
[29] Value Line Report, Published November 22, 2024.
[30] Koller, T., Goedhart, M., & Wessels, D. (2010). Valuation: measuring and managing the value of companies. John Wiley & Sons.
[31] Value Line Report, Published November 22, 2024.
[32] Pages 8-10, Won's Rebuttal Testimony.

C. Excessive Growth Rate for DCF (Pages 10-12, Ibid)

Ms. Bulkley used an excessively high growth rate for her DCF COE estimates. Ms. Bulkley exclusively used analysts' projected earnings growth rates, which she erroneously called long-term growth rates.[33] Ms. Bulkley's DCF COE estimates would be reasonable if she would use a combination of commonly-used growth rates of EPS, dividend per share ("DPS"), book value per share ("BVPS"), and gross domestic product ("GDP").[34] Analysts' projected growth rates are for periods of three to five years,[35] which is considered short-term given the infinite investment horizon assumed in the DCF. Analysts are of the consensus that long-term growth rates for utilities will eventually converge to the level of the long-term GDP growth rate.[36] Because of her overstated growth rates, Ms. Bulkley's DCF COE estimates are unreasonably upwardly biased.

D. Inflated Market Risk Premium in the CAPM (Pages 12-17, Ibid)

Ms. Bulkley's updated average CAPM COE estimates of 10.74% is overestimated.[37] Ms. Bulkley employed the CAPM and the ECAPM using an updated total market return of 12.15%,[38] resulting in three different MRP of 7.42%, 7.51% and 7.85%.[39] Ms. Bulkley's MRPs are much higher than the regular U.S. financial services industry's MRP estimates of around 4.00% to 7.00%.[40] When she calculated her MRP, Ms. Bulkley included companies not having dividend payment information.[41]

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33 Page 27, lines 16-20, Bulkley's Direct Testimony.
34 Howe, Keith M. and Eugene F. Rasmussen. Public Utility Economics and Finance, Prentice Hall, Inc., Englewood Cliffs, New Jersey, 1982.
35 Value Line, Value Line - Value Line University, retrieved in July 15, 2022.
36 Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, page 302.
37 Schedule AEB-R1, Attachment 1, Bulkley's Rebuttal Testimony.
38 Schedule AEB-R1, Attachment 5, Bulkley's Rebuttal Testimony.
39 Schedule AEB-R1, Attachment 3, Bulkley's Rebuttal Testimony.
40 Figure 2. "MRP and corresponding COE" (p. 16), Won's Rebuttal Testimony.
41 Schedule AEB-R1, Bulkley's Rebuttal Testimony.

E. Unreliable Empirical Capital Asset Pricing Model (Pages 17-18, Ibid)

Ms. Bulkley's updated average ECAPM COE estimates of 11.09% is unreliable.[42] Ms. Bulkley used Dr. Roger Morin's adjustment factor of 25% in the ECAPM analysis.[43] Dr. Morin's adjustment factor of 25% was estimated using data from 1926 to 1984 under the assumption that CAPM underestimated COE.[44] However, there is no evidence Dr. Morin's finding would be consistent with data after 1984. Furthermore, Dr. Morin also cited other studies that found that CAPM produced returns between –9.61% and 13.56%, meaning that the CAPM can actually overestimate COE in some instances.[45] Such variations in findings do not lend credibility to Ms. Bulkley's use of the ECAPM.

F. Inappropriate Bond Yield Risk Premium Analysis (Pages 18-22, Ibid)

Ms. Bulkley's updated BYRP ROE estimates range from 10.34% to 10.58% with an average of 10.48%.[46] Ms. Bulkley's BYRP using a regression analysis is different from the conventional BYRP.[47] Because Ms. Bulkley's BYRP relies on a single independent input value of 30-year treasury bonds yield,[48] it is unavoidable that her BYRP COE estimates are unreasonably excessive under the current Federal Reserve ("Fed") monetary policy increasing interest rates with unusual speed.[49] Staff recommends the Commission not consider Ms. Bulkley's BYRP COE estimate to determine a just and reasonable authorized ROE.

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[42] Schedule AEB-R1, Attachment 1, Bulkley's Rebuttal Testimony.
[43] Page 33, lines 5-8, and Footnote 23, Bulkley's Direct Testimony.
[44] Footnote No. 12 (p. 190), Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.
[45] Table 6-2 (p. 190), Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports.
[46] Schedule AEB-R1, Attachment 6, page 1, Bulkley's Rebuttal Testimony.
[47] Pages 18-19, Won's Rebuttal Testimony.
[48] Page 19, lines 10-18, Won's Rebuttal Testimony.
[49] Page 16, lines 1-9, and Table 1, Won's Direct Testimony.

G. Mischaracterization of Regulatory and Business Risks (Pages 27-30, Ibid)

Ms. Bulkley considered business risk and regulatory risk to determine where Ameren Missouri's required ROE falls within the range of her analytic results.[50] Ms. Bulkley insisted that the risk level for Ameren Missouri is greater than her peer group companies because of their capital expenditure requirements.[51] However, according to S&P, Missouri is classified in the category of "Very Credit Supportive," with a "Strong and Adequate" utility regulatory environment in jurisdictions among U.S. states and Canadian provinces.[52]

The credit ratings of Ameren Missouri are not lower than the average credit rating of any proxy group companies considered in these proceedings.[53] S&P has assigned the corporate credit ratings of Ameren Missouri as 'BBB+', and Moody's has assigned 'Baa2'.[54] It is a well-known fact that the corporate credit rating is determined by credit agencies' assessment of corporate risks, including financial, business and regulatory risk profiles.[55] As shown in Table 1, of the six NGS utility proxy group companies, three have a higher credit rating of 'A-' or 'A' compared to Ameren Missouri's 'BBB+' rating, two have the same credit rating as Ameren Missouri, and one has lower credit rating of 'BBB-'. Therefore, Ms. Bulkley's assertion that Staff did not consider the relative risk of Ameren Missouri compared to the companies in the proxy group is baseless.[56]

[50] Pages 39-58, Bulkley's Direct Testimony.
[51] Pages 45-50, Bulkley's Direct Testimony.
[52] S&P Global Ratings, North American Utilities Regulatory Jurisdictions Update: Connecticut And Mississippi Assessments Revised, Other Notable Developments, published February 19, 2025.
[53] Schedule SJW-d8, Won's Direct Testimony.
[54] S&P Rating Report.
[55] Page 15, Guide to Credit Rating Essentials - S&P Global, retrieved on July 17, 2022. https://www.spglobal.com/ratings/_division-assets/pdfs/guide_to_credit_rating_essentials_digital.pdf.
[56] Page 104, lines 19-20, Bulkley's Rebuttal Testimony.

2. Updated Capital Market Conditions

Q. Do you agree with Ms. Bulkley's assertion that you did not provide any support for your conclusion that Staff's DCF and CAPM results are overstated due to current capital market conditions?[57]

A. No, I do not.

Q. What support did you provide for your conclusion that Staff's DCF and CAPM results are overstated due to current capital market conditions?

A. In the market analysis section of my direct testimony, I provide a variety of evidence showing how the input values of the DCF and CAPM analyses under current market conditions overstated Staff's DCF and CAPM results.[58]

As an example of the overstated DCF COE estimation compared to the overall market COE, Staff provided evidence of a relatively higher dividend yield in its NGS utility proxy group due to underperforming natural gas local distribution companies in the stock market.[59] Using Figure 3 in my direct testimony, I explain that, as of December 31, 2024, the S&P 500, S&P 500 Utilities, and Staff's proxy group had total returns of 97.02%, 37.73%, and 29.06%, respectively, relative to the reference point on January 2, 2020.[60] Using Figure 4 in my direct testimony, I explained the inverse relationship between total return and dividend yield.[61] As shown in the constant-growth DCF formula in my direct testimony,[62]

[57] Page 13, lines 7-12, Bulkley's Rebuttal Testimony.
[58] Pages 8-22, Won's Direct Testimony.
[59] Pages 18-20, Won's Direct Testimony.
[60] Page 19, lines 5-7, Won's Direct Testimony.
[61] Page 19, lines 13-19, Won's Direct Testimony.
[62] Pages 42-43, Won's Direct Testimony.

$$k = (1 + 0.5g)D\,/\,P + g.$$

where k is investors' required return from the stock,
D is the current dividend,
P is the common stock price, and
g is the expected growth rate in dividends,

a high dividend yield (represented as D/P in the formula) produces a high DCF COE estimate (represented as k in the formula). Based on these aspects of current capital market conditions, I concluded in my direct testimony that Staff's DCF COE estimates are overstated compared to the overall market COE due to the relatively higher dividend yield of Staff's NGS utility proxy group.[63]

For the overstated CAPM COE estimation compared to the overall market COE, Staff provided evidence of a relatively higher 30-year Treasury bond yield compared to pre-COVID-19 levels in the bond market.[64] Using Figure 5 in my direct testimony, I explained how Fed monetary policy increased Fed fund rate impact 30-Year Treasury Bond yield.[65] As shown in the CAPM formula in my direct testimony,

$$k = R_f + \beta(R_m - R_f)$$

where, k is the expected return on equity for a security,
R_f is the risk-free rate,
R_m is the expected market return,
β is beta, and
$R_m - R_f$ is the market risk premium,

[63] Page 20, lines 9-11, Won's Direct Testimony.
[64] Figure 5, Won's Direct Testimony.
[65] Page 21, lines 3-10, Won's Direct Testimony.

a high 30-Year Treasury Bond yield (represented as R_f in the formula) produces a high CAPM COE estimate (represented as k in the formula).[66] In my direct testimony, I explained 30-year Treasury yields were 4.98% on January 14, 2025, which is 329 basis points higher when compared to 1.69% as of December 3, 2021.[67] Due to the high bond yields in the current capital market conditions, I concluded in my direct testimony that Staff's CAPM COE estimates are overstated compared to the pre-COVID-19 NGS utility COE estimates.[68]

Q. Why does Ms. Bulkley insist that Staff's conclusion is invalid?

A. According to Ms. Bulkley, Staff's position that the results of the DCF and CAPM are overstated under current capital market conditions is invalidated by the fact that Staff's recommended ROE (i.e., 9.64%) is actually greater than the result of Staff's DCF analysis (i.e., 8.68%) and the result of Staff's CAPM analysis (i.e., 9.51%).[69]

Q. What is your response to Ms. Bulkley's reasoning that your conclusion is invalidated?

A. This is a good example of how Ms. Bulkley does not understand Staff's methodology and misrepresents what the Staff actually did in its analysis. First, Ms. Bulkley does not understand why I conclude that Staff's DCF and CAPM are overstated as a result of the current market conditions. In the last Ameren Missouri rate proceeding, Case No. GR-2021-0241, Staff recommended an authorized ROE of 9.50% and reported the estimated range of its DCF and CAPM COE estimates as 6.10% to 8.73% and 6.14% to 8.64%, respectively.[70] However, as explained in my direct testimony, the current COE, as estimated

[66] Page 44 lines 14-22, Won's Direct Testimony.
[67] Page 17, lines 11-12, Won's Direct Testimony.
[68] Page 22, lines 11-19, Won's Direct Testimony.
[69] Page 13, lines 12-15, Bulkley's Rebuttal Testimony.
[70] Schedules SJW-d13, SJW-d14, and SJW-d16, Appendix 2, Staff Report (Cost of Service), GR-2021-0241.

by the DCF and CAPM methods (with ranges of 7.66% to 9.70% and 8.85% to 10.17%, respectively),[71] is overstated when considering utility bond market conditions.[72]

Table 3. Comparison of Staff COE Analysis Results

	COE Analysis on NGS utility					
	DCF			CAPM		
Case No.	Lower	Average	Upper	Lower	Average	Upper
GR-2021-0241	6.10%	7.42%	8.73%	6.14%	7.39%	8.64%
GR-2024-0369	7.66%	8.68%	9.70%	8.85%	9.51%	10.17%
Difference	1.56%	1.26%	0.97%	2.71%	2.12%	1.53%

As shown in Table 3, COE estimates in the current rate proceeding are higher compared to the last Ameren Missouri rate proceeding. Specifically, the average CAPM COE estimates increased by more than 212 basis points, which does not explain why the annual average authorized ROE has changed by only 18 basis points, remaining within a range of 9.56% to 9.74% since the 2021 Ameren Missouri rate proceeding.[73] In this context, Staff explained that the current DCF and CAPM COE estimates are 'overstated' and recommended a proper authorized ROE.[74]

Second, Ms. Bulkley's assertion that Staff's conclusion of its DCF and CAPM results being overstated is invalidated, because the recommended ROE of 9.64% is greater than Staff's COE estimates, is based on her incorrect belief that ROE and COE are interchangeable.[75] Staff reemphasizes that market COE and authorized ROE are different concepts, and market COE cannot directly determine a just and reasonable authorized ROE. The fact that Staff's recommended ROEs are greater than Staff's DCF and CAPM estimates in both the last and

[71] Schedule SJW-d15, Won's Direct Testimony.
[72] Pages 21-22, Won's Direct Testimony.
[73] S&P Capital IQ Pro: Regulatory Research Association, retrieved April 2, 2024.
[74] Page 22, lines 9-19, Won's Direct Testimony.
[75] Footnote No. 1 (p. 4), Bulkley's Direct Testimony, ER-2024-0319.

current Ameren Missouri rate proceedings is evidence that Ms. Bulkley's belief that ROE and COE are interchangeable is incorrect.

Q. Do you agree with Ms. Bulkley that changes in capital market conditions since Ameren Missouri's last rate proceeding continue to indicate an increase in the COE?[76]

A. No, I do not. When Ms. Bulkley filed her direct testimony on September 30, 2024, it seemed that changes in capital market conditions since Ameren Missouri's last rate proceeding in 2021 continued to indicate an increase in the COE. However, Staff found no evidence of changes in capital market conditions since the filing of Ameren Missouri's direct testimony in this proceeding to indicate an increase in the COE.

On the contrary, Staff found some evidence that changes in current capital market conditions may indicate a decrease in the COE. On September 18, 2024, the Fed voted to lower interest rates by a half-percentage point, opting for a bolder start in making its first reduction since 2020.[77] On November 7, 2024, and December 18, 2024, the FOMC decided to lower the target range for the federal funds rate by 0.25 percentage points on each occasion, resulting in a range of 4.25%–4.50%.[78] On March 19, 2025, the FOMC decided to maintain the target range for the federal funds rate at 4.25%–4.50%.[79] The Fed's median projections from December call for 0.50% of rate cuts in 2025.[80] In addition, recent high stock market volatility driven by

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[76] Page 18, lines 7-18, Bulkley's Rebuttal Testimony.
[77] Wall Street Journal, Fed Cuts Rates by Half Percentage Point, published September 18, 2024. https://www.wsj.com/economy/central-banking/fed-cuts-rates-by-half-percentage-point-03566d82?mod=article_inline.
[78] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published November 7, 2024, https://www.federalreserve.gov/monetarypolicy/files/monetary20241107a1.pdf.
Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published December 18, 2024, https://www.federalreserve.gov/monetarypolicy/files/monetary20241218a1.pdf.
[79] Federal Reserve issues Federal Open Market Committee (FOMC) Statement, published March 19, 2025. https://www.federalreserve.gov/newsevents/pressreleases/monetary20250319a.htm.
[80] USbank, Situation Analysis, Fed keeps interest rates steady, retains expectations of further easing in 2025, https://www.usbank.com/dam/en/documents/pdfs/wealth-management/situation-analysis-01-29-2025.pdf.

U.S. international trade policy could make local natural gas distribution utilities more attractive to risk-averse equity investors.

3. Proxy Group

Q. Do you agree with Ms. Bulkley that Staff' incorrectly excluded NiSource Inc. ("NI") by relying on its ten-year historical review of dividend?[81]

A. No, I do not. While Ms. Bulkley recognized the importance of requiring a company included in the proxy group to have not recently reduced its dividend,[82] she disagreed with the use of a ten-year period in the application of this dividend screen. She argued that a dividend cut that occurred ten years ago is unlikely to affect the results of COE models that rely on current market data.[83]

However, a past dividend cut, even one from ten years ago, remains significant for COE models for several reasons related to the structure of these models and investor behavior. First, there is a perception of risk. Dividend cuts often signal financial instability or adverse conditions. Even years later, this event can shape investors' perception of a company's risk profile. The COE models, such as the DCF model, incorporate risk and return expectations, making historical events that impact investor sentiment relevant.

Second, there are investor memory and long-term effects. Investors tend to consider a company's historical performance when evaluating its reliability and stability. A dividend cut, despite it being in the past, even after ten years, may still influence how current investors perceive the company's commitment to returning value to shareholders. If a dividend cut from ten years ago did not raise investor concerns, Value Line would not report it as one of the

[81] Page 35, lines 7-12, Bulkley's Rebuttal Testimony.
[82] Page 35, lines 13-21 and Page 35, lines 1-11, Bulkley's Rebuttal Testimony.
[83] Page 36, lines 16-18, Bulkley's Rebuttal Testimony.

historical financial indicators. This perception feeds into the risk premium embedded in the COE calculation.

Third, a dividend cut from ten years ago impacts Beta in CAPM-based COE models. Historical events like dividend cuts can influence a measure of its volatility compared to the market which is measure by Beta. For example, NI's Beta is currently 0.95, which is greater than the average Beta of 0.90, and it has historically been more volatile compared to the other companies in Ms. Bulkley's proxy group.[84] A dividend cut might lead to sustained changes in investor sentiment, which in turn affects the company's historical Beta and future cost of equity calculations.

Q. Do you agree with Ms. Bulkley's statement, "Dr. Won applies a different screen depending on whether the ROE is being estimated for either a natural gas, water or electric utility."?[85]

A. Yes. Staff revised the screening methods for the proxy group, applying consistent methodology and principles to select companies with commensurate risks. Furthermore, Staff continued developing the most appropriate screening criteria for the Staff's proxy group to estimate COE and recommend ROE based on the available data for each rate proceeding. A proxy group is directly used for estimating COE based on the current market conditions. Staff wants to reemphasize that market-based COEs cannot directly determine the authorized ROE; rather, they are used to assist in estimating a just and reasonable ROE under proper comparable conditions. If some people insist that estimated COEs in a certain time periods can determine an authorized ROE, they misunderstand the relationship between a

[84] Schedule AEB-R1, Attachment 3 and Attachment 4, Bulkley's Rebuttal Testimony.
[85] Page 38, lines 10-12, Bulkley's Rebuttal Testimony.

market-based COE and an authorized ROE determined by the Commission. In a later section, Staff will explain this relationship in more detail.

4. Discounted Cash Flow Model

Q. Do you agree with Ms. Bulkley that Staff's DCF COE estimate of 8.68% does not meet the *Hope* and *Bluefield* standards because it is 96 basis points lower than Staff's recommended ROE of 9.64%?[86]

A. No, I do not. Ms. Bulkley's argument is based on her false assumption that the DCF COE estimate should be similar to the authorized ROE. Staff reiterates that COE and authorized ROE are distinct financial concepts, and there is no reason the two values need to be the same. In my direct testimony, I clearly stated that COE and authorized ROE do not need to be the same because they represent different concepts.[87] However, Ms. Bulkley has used COE and ROE interchangeably on many occasions.[88] As Ms. Bulkley recognized, Staff presented a range of its DCF COE estimates from 9.39% to 9.89%.[89] Considering the fact that the authorized ROE of 9.64% falls within this range, Ms. Bulkley does not appear to agree there is a distinction between COE estimates and ROE estimates.

Staff's methodology is based on the following financial basics. First, a market COE and an authorized ROE are different concepts. Second, an authorized ROE cannot be directly calculated using a formula or some specific model. Third, a COE can be estimated using financial models and appropriate input values from market data for a given time period. However, based on her arguments in her testimonies, Ms. Bulkley seems to not fully understand

[86] Page 42, lines 1-9, Bulkley's Rebuttal Testimony.
[87] Page 6, lines 12-21, and Footnote No. 2 (p. 3), Won's Direct Testimony.
[88] Footnote No. 1 (p. 4), Bulkley's Direct Testimony, ER-2024-0319.
[89] Page 41, lines 16-17, Bulkley's Rebuttal Testimony.

or may actually disagree with Staff's fundamental postulation that a market COE and an authorized ROE are different concepts.

Q. Why is the assumption that the market-based COE estimate equals the authorized ROE incorrect?

A. The assumption that a market-based COE and a regulatory authorized ROE are equal is not supported by theoretical or recent empirical evidence. First of all, COE is defined as a stock market value-based concept.[90] In contrast, an authorized ROE is an accounting book value-based concept.[91] Therefore, a simple calculation of COE does not automatically produce a just and reasonable authorized ROE.

Q. Why is the market value-based concept of COE not the same as the book value-based concept of an authorized ROE?

A. COE is the return required by investors and an authorized ROE is the return set by a regulatory utility commission. Although Ms. Bulkley contends that COE and ROE are interchangeable, Staff's position is that they are not. Observed utility COEs have been, generally, significantly lower than ROEs in recent years.[92] Because observed COEs have been significantly lower lately, instead of directly recommending the estimated COEs, Staff had recommended the authorized ROE be compared to the change in COE from one period to the next period.

The easiest way to understand the difference between COE and authorized ROE is to consider how the two return measures are used in practice. When investors buy common equity stock of a company, they want to know the expected rate of return and compare it to

[90] Page 378, Chartered Financial Analyst ("CFA") Program Curriculum, 2020, Level I, Volume 4.
[91] Page 389, CFA Program Curriculum, 2020, Level I, Volume 4.
[92] Steve Huntoon, Nice Work If You Can Get It, Public Utility Fortnightly, August 2016 (http://energy-counsel.com/docs/Nice-Work-If-You-Can-Get-It-Fortnightly-August-2016.pdf).

their required rate of return from their investment. The COE can be thought of as the minimum expected rate of return that a company must offer its investors to induce the purchase of its shares in the primary market and to maintain its share price in the secondary market.[93] The important point here is that investors pay their money based on the market value of the common equity stock and not just based on the book value of the equity of a company. To calculate the expected minimum rate of return of common equity, investors estimate COE using the stock valuation of models such as the DCF or the CAPM.[94] Investors' expected return from their common stock can be easily calculated by multiplying the COE by the market value of a common stock.

In contrast, an authorized ROE has a very different financial context. The purpose of an authorized ROE is to calculate just and reasonable rates for utility companies. In utility rate proceedings, rates are decided by the revenue requirement determined by the Commission. The revenue requirement is calculated, in part, by multiplying its rate base by the allowed ROR. The allowed ROR is the weighted average cost of capital, which includes the authorized ROE and cost of debt. The rate base calculation is based on the book value of the utility's regulatory assets. The book value of equity is calculated by subtracting a company's total liabilities from its total assets. Clearly, the two concepts, COE and ROE, are different; therefore, there is no reason market COE estimates and recommended authorized ROEs should be the same.

Q. How do investors consider the Commission's authorized ROE differently from the market value COE?

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[93] Page 378, CFA Program Curriculum, 2020, Level I, Volume 4.
[94] Page 379, CFA Program Curriculum, 2020, Level I, Volume 4.

A. The book value of common equity is not as volatile as stock prices. Since COE is associated with the market value of common stock, which can have a volatile value, if the COE is directly used to set an authorized ROE value and to calculate the revenue requirement, an authorized ROE would be as volatile as the stock market. With an authorized ROE as volatile as the stock market, the overall revenue requirement would be just as volatile. Investors of utility common stock expect and require a reliable revenue stream based on just and reasonable utility rates. Investors know that utility rates higher or lower than just and reasonable amounts are unsustainable and are eventually harmful to both ratepayers and investors. Therefore, for ratemaking purposes, a reliable and stable earning multiplier associated with the rate base, based on utility book value, needs to be produced. To properly meet the expectations and requirements of investors when they choose to invest in or lend their money to a utility company, rather than in some other investment opportunity, just and reasonable rates are required.

Q. Does this mean that COE estimation procedures are useless in the ratemaking process?

A. No, it does not. COE estimates provide valuable equity financial market information including investors expected minimum rates of return based on the market value of stocks. Specifically, the comparison of COE estimates for two different rate proceedings provides important information to calculate and recommend a just and reasonable authorized ROE. In many rate proceedings, Staff found that the changes in the COE over time, such as between rate proceeding periods, provide essential information on whether to increase or decrease authorized ROE recommendations considering financial market changes. However, simply equating COE estimates with ROE recommendations is not appropriate.

Q. Why does a simple calculation of COE estimates not produce a just and reasonable authorized ROE?

A. In its Amended Report and Order in the Spire Missouri rate proceedings, Case Nos. GR-2017-0215 and GR-2017-0216, the Commission stated:

> To determine a return on equity, the Commission must consider the expectations and requirements of investors when they choose to invest their money in Spire Missouri rather than in some other investment opportunity. As a result, **the Commission cannot simply find a rate of return on equity that is unassailably scientifically, mathematically, or legally correct**. Such a "correct" rate does not exist. Instead, the Commission must use its judgment to establish a rate of return on equity attractive enough to investors to allow the utility to fairly compete for the investors' dollar in the capital market without permitting an excessive rate of return on equity that would drive up rates for Spire's ratepayers. [Emphasis added.][95]

As the Commission explained above, setting authorized ROEs is not a purely mathematical exercise where the results of COE estimation models are simply accepted from the results of a mathematical formula. If COE estimates determined by market value-based methods such as the DCF and the CAPM are simply quoted for the authorized ROE, the result would be neither just nor reasonable to investors or ratepayers. As explained earlier, the COE and the authorized ROE are developed in different financial contexts. Setting fair and reasonable ROEs involves judgment, which sometimes requires adjusting COE estimates to reflect what is deemed just and fair, considering other authorized ROEs with comparable risk.

More importantly, finding a just and reasonable authorized ROE in utility rate regulation is a long-term iterative procedure. After a utility rate proceeding, a set of new utility rates go into effect based on an authorized ROE determined by the Commission. Under the new rates, the utility company will soon have its performance results. If the new rates are

[95] Page 28, Amended Report and Order, Case No. GR-2017-0215.

overpriced, ratepayers will overpay and the company and its stock price will generally outperform. If the new rates are underpriced, the company will have a lower net income than the market expected. Because of the disappointing earnings report, investors would not be attracted to the company's stock and its stock price will underperform the total stock market. Therefore, a company may file its next rate proceeding sooner than originally expected based upon the performance results of the current set of rates.

Q. Do you agree with Ms. Bulkley that Staff failed to follow FERC's current methodology for calculating DCF COE estimates?[96]

A. No, I do not. Staff did not intend to follow the FERC methodology. Staff considers FERC's decisions, but FERC's decisions change very often, so Staff does not rely on the FERC methodology. Following Karl Popper's theory of falsification, there is no guarantee that FERC's specific procedure is perfectly correct, but, in many cases, FERC's decision to reject something is very useful information to consider in rate proceedings. It is important to note that Staff never utilizes any methods in its COE analysis that FERC has officially rejected, including the DCF growth rate choices. Staff used growth rates in its DCF model estimated by combining analysts' short-term estimated growth rates and long-term GDP growth rates at four-fifths and one-fifth weightings, respectively.[97] This is an approach that FERC used before it was changed in its May 2020 order.[98] Staff is not bound to change its approach simply because FERC's approach changed. Staff is under no obligation to follow FERC's methodology on this point. At the same time, there are no FERC orders against Staff's position regarding the growth rate of DCF analysis. More fundamentally, there is no reason to

[96] Pages 42, lines 12-17, Bulkley's Rebuttal Testimony.
[97] FERC Opinion 575.
[98] FERC Opinion 569-A.

consider Staff's DCF estimates unreliable simply because they are not consistent with FERC's specific two-step DCF method.

Q. Do you agree with Ms. Bulkley regarding FERC Opinion No. 575?

A. No, I do not. Ms. Bulkley made a misrepresentation regarding FERC's Opinion No. 575, Paragraph 131 in *Entergy Arkansas, et al*, 175 FERC ¶ 61,136 (2021).[99] Ms. Bulkley stated, "As stated in Opinion No. 575, the FERC has consistently relied solely on projected EPS growth rates as the short-term growth rate."[100] However, in Paragraph 131 of Opinion No. 575, FERC stated:

> 131. As the Commission stated in Opinion No. 569-A, short-term growth rate projections for electric utilities have declined and are now closer to the current GDP growth projection than those from the 1990s when the Commission adopted the two-step DCF using one-third weighting for GDP in the long-term growth rate for natural gas and oil pipelines that was subsequently adopted for public utilities. Additionally, the Commission noted that, when IBES growth projections are only marginally higher than GDP projections, investors are likely to view those rates as more sustainable than the substantially higher natural gas pipeline IBES growth projections when the Commission established its two-thirds/one-third weighting policy. Accordingly, we find it reasonable to give the IBES short-term growth projection 80% weighting and the long-term growth rate 20% weighting [Omitted Footnotes].[101]

In Opinion No. 575, Staff reviewed all documents and could not find any FERC comments regarding the exclusive use of the projected EPS growth rate for DCF analysis or the rejection of other growth rates, such as DPS or BVPS. In addition, Staff wants to clarify two points to prevent any confusion regarding Ms. Bulkley's statements. First, Staff did not use historical DPS and BVPS growth rates for its DCF COE estimation but only monitored them to

[99] Footnote No. 72 (p. 43), Bulkley's Rebuttal Testimony.
[100] Page 43, lines 15-16, Bulkley's Rebuttal Testimony.
[101] Paragraph 131, *Entergy Arkansas, et al.*, Opinion No. 575, 175 FERC ¶ 61,136 (2021).

ensure data consistency, using the average of projected EPS, DPS, and BVPS growth rates.[102] Second, Ms. Bulkley also relied on Value Line growth rates for her DCF analysis.[103]

Q. Do you agree with Ms. Bulkley that Staff should solely use the EPS analysts' projected growth rates and should not use the DPS or BVPS growth rate within its DCF calculations?[104]

A. No, I do not. The projected EPS, DPS, and BVPS are acceptable measures of a company's growth rate.[105] Analysts occasionally use these measures of growth rates in the DCF model. Staff has considered EPS growth rate for calculating the perpetual growth rate for the DCF model in past rate proceedings. At the same time, Staff has found numerous publications that support the use of projected DPS and BVPS growth rates in a DCF model. First, Howe and Rasmussen stated that the three most commonly-used financial indicators of growth are DPS, EPS, and BVPS.[106]

Second, when Mr. David C. Parcell introduced the DCF model in his Cost of Capital Manual, which is the training manual for the Society of Utility and Regulatory Financial Analysts ("SURFA"), he clearly, multiple times, indicated that the growth rate for DCF models is the "constant growth rate in DPS in the future."[107] FERC stated that, in determining the COE using the DCF methodology, FERC relies on a constant growth model based on the projected dividend growth rate.[108] I could cite additional publications, but the most important point is that using the DPS and BVPS growth rates in DCF is an acceptable method.

[102] Schedules SJW-d10 and SJW-d12, Won's Direct Testimony.
[103] Schedule AEB-3, Bulkley's Direct Testimony.
[104] Pages 44-46, Bulkley's Rebuttal Testimony.
[105] Page 139, The Cost of Capital – A Practitioner's Guide, David C. Parcell, 2020 Edition.
[106] Howe, Keith M. and Eugene F. Rasmussen. Public Utility Economics and Finance, Prentice Hall, Inc., Englewood Cliffs, New Jersey, 1982.
[107] Pages 130-134, The Cost of Capital – A Practitioner's Guide, David C. Parcell, 2020 Edition.
[108] Paragraph 21, FERC Opinion No. 531 (Docket No. EL11-66-001).

Q. Do you agree with Ms. Bulkley that Staff has previously relied solely on EPS growth rates in prior cases for the short-term growth rate?[109]

A. Yes. As Ms. Bulkley identified in the 2019 Empire District Electric ("Empire") rate proceeding, Staff witness Mr. Chari relied solely on historical and projected EPS growth rates as short-term growth rates in the DCF, and did not rely on either DPS or BVPS growth rates.[110] However, this is not the whole story of Mr. Chari's position on short-term growth rates in the DCF. In the 2021 Empire rate proceeding, Mr. Chari relied on EPS, DPS, and BVPS for estimating the growth rate in his DCF model.[111] Mr. Chari stated, "It is a common practice in financial analysis to average the averages of the three growth measures, EPS, DPS, and BVPS, to discern the appropriate growth rate for the DCF model."[112]

Q. Do you agree with Ms. Bulkley's statement, "Similarly, in the Ameren Missouri 2021 rate proceeding, Staff witness Mr. Chari relied solely on projected EPS growth rates from both Value Line and S&P Global Market Intelligence as short-term growth rates, and did not rely on DPS or BVPS growth rates."?[113]

A. No, I do not. Ms. Bulkley's statement is not true. In his surrebuttal testimony from the Ameren Missouri 2021 rate proceeding, Mr. Chari stated, "Staff reviewed historical earnings per share ("EPS"), historical dividend per share ("DPS"), historical book value per share ("BVPS"), analysts' projected EPS growth rates, as well as long-term GDP growth rates to arrive at an appropriate DCF growth rate to use in the DCF model."[114]

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[109] Page 43, lines 17-20, Bulkley's Rebuttal Testimony.
[110] Page 14, Staff Report, filed January 15, 2020, No. ER-2019-0374.
[111] Schedule PC-7-1, Staff Report, filed October 29, 2021, No. ER-2021-0312.
[112] Page 21, Staff Report, filed October 29, 2021, No. ER-2021-0312.
[113] Page 44, lines 1-5, Bulkley's Rebuttal Testimony.
[114] Page 7, lines 17-20, Chari's Surrebuttal Testimony, ER-2021-0240.

Q. Do you agree with Ms. Bulkley that there is significant academic research demonstrating that EPS growth rates are most relevant in stock price valuation?[115]

A. No, I do not. To justify her assertion, Ms. Bulkley referenced multiple articles in her Footnote Nos. 75 and 78. However, these articles do not support Ms. Bulkley's assertion that the EPS growth rate should be used "solely" within the DCF model. Interestingly, some of the referenced articles do not even include the key terms "earnings per share" or "EPS" (such as Robert S. Harris, 'Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return,' and Robert S. Harris and Felicia C. Marston, 'Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts'). The relevant actual citations and summaries for the articles are the following:

(1) Brigham and Houston,[116]

> Growth in dividends occurs primarily as a result of growth in earnings per share (EPS). Earnings growth, in turn, results from a number of factors, including (1) inflation, (2) the amount of earnings the company retains and invests, and (3) the rate of return the company earns on its equity (ROE);[117]

(2) Jing Liu,[118]

> "Forward earnings explained stock prices remarkably well" and were generally superior to other value drivers analyzed;[119]

[115] Page 45, lines 8-9, Bulkley's Rebuttal Testimony.
[116] Footnote No. 75, (p. 44) Bulkley's Rebuttal Testimony, Eugene F. Brigham and Joel F. Houston, Fundamentals of Financial Management, at 317 (Concise Fourth Edition, Thomson South-Western, 2004).
[117] Staff's Data Request Nos. 0522 and 0525, ER-2022-0129 and ER-2022-0130, respectively.
[118] Footnote No. 77 (p. 45), Bulkley's Rebuttal Testimony, Liu, Jing, et al., "Equity Valuation Using Multiples," Journal of Accounting Research, Vol. 40 No. 1, March 2002.
[119] Staff's Data Request Nos. 0533 and 0526, ER-2022-0129 and ER-2022-0130, respectively.

(3) C.A. Gleason,[120]

> Sell-side analysts with the most accurate stock price targets were those whom the researchers found to have more accurate earnings forecasts;[121] and

(4) Stanley Block,[122]

> The majority of the survey respondents ranked earnings as the most important variable in valuing a security.[123]

Staff completely agrees with all four referenced statements to the effect that EPS is important and useful information in various financial analyses. Staff also used EPS growth rate in Staff's DCF model.[124] However, there is no statement that only the EPS growth rate should be used, and that DPS or BVPS growth rates should not be used for the DCF model. Therefore, the articles Ms. Bulkley referenced do not support Ms. Bulkley's arguments.

Q. Do you agree with Ms. Bulkley that the annual dividends for each proxy company used by Staff to estimate the dividend yield in his DCF analysis are outdated because Staff relied on the 2023 annual dividends published by Value Line for each of the proxy group companies?[125]

A. No, I do not. When Staff prepared a COE analysis its direct testimony, Staff used a reference time period quarter four 2024.[126] Considering initial dividend in DCF model, the annual dividends in 2023 is appropriate dividend yield. When John B. Williams first developed the DCF concept, he expressed the equation:[127]

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[120] Footnote No. 77 (p. 45), Bulkley's Rebuttal Testimony, Gleason, C.A., et al., "Valuation Model Use and the Price Target Performance of Sell-Side Equity Analysts," Contemporary Accounting Research.
[121] Staff's Data Request Nos. 0533 and 0526, ER-2022-0129 and ER-2022-0130, respectively.
[122] Footnote No. 78 (p. 45), Bulkley's Rebuttal Testimony, Block, Stanley B., "A Study of Financial Analysts: Practice and Theory," Financial Analysts Journal (July/August 1999).
[123] Staff's Data Request Nos. 0533 and 0526, ER-2022-0129 and ER-2022-0130, respectively.
[124] Page 42, lines 2-5, Won's Direct Testimony.
[125] Page 43, lines 1-4, Bulkley's Rebuttal Testimony.
[126] Schedule SJW-d10, Won's Direct Testimony.
[127] Page 127, Equation (8.2), David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.

$$P = \frac{D_0(k+g)}{(k-g)}$$

where P is the current common stock price

D_0 is the dividend in the year just past,

k is investors' required return from the stock, and

g is the expected growth rate in dividends,

As shown in the equation, the dividend yield should be based on the most recent past year's dividend relative to the current stock price. Therefore, Staff's method of using fourth-quarter 2024 stock prices and the 2023 annual dividend yield is correct.

5. CAPM and Market Risk Premium

Q. Do you agree with Ms. Bulkley that Staff should use projected data forecasted by analysts instead of Staff's data based on historical data for purposes of the CAPM analysis?[128]

A. No, I do not. For example, in CAPM applications, current 30-year Treasury security yields are universally recognized as appropriate for use as the risk-free rate.[129] Dr. Morin stated the yield on very long-term government bonds, such as the yield on 30-year Treasury bonds, is the best measure of the risk-free rate for use in the CAPM.[130] Ms. Bulkley's insistence that the estimation of COE is inherently forward-looking seems tailored to support her position rather than grounded in established methodologies, which rely heavily on observable market data and historical inputs.[131]

[128] Pages 52-54, Bulkley's Rebuttal Testimony.
[129] Page 107, David C. Parcell, Cost of Capital Manual, Society of Utility and Regulatory Financial Analysts, 2010 Edition.
[130] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, page 151.
[131] Pages 52-54, Bulkley's Rebuttal Testimony.

This assertion reveals that Ms. Bulkley may not fully understand the characteristics of CAPM analysis. The major input variables of CAPM are a risk-free rate, Beta (risk measure), and the MRP. In Staff's CAPM analysis, these three variables represent the current market condition and should be used to produce a current market-required cost of equity. However, Ms. Bulkley used historical and forecasted 30-year Treasury Bond yields and current Value Line Beta as the risk measure in her direct testimony,[132] while insisting that forward-looking market returns and MRP should be used in establishing the ROE in this proceeding.[133] By doing so, Ms. Bulkley confessed she used inconsistent input variables in her CAPM COE estimation. In other words, relying on a forward-looking value for one input while using non-forward-looking values for other inputs is not appropriate because all input variables, such as the risk-free rate, Beta, and MRP, need to be consistent with the same market conditions.[134] Financial analysis using data from mismatched time periods could produce cherry-picked results.

Q. Do you agree with Ms. Bulkley that Staff's use of the historical MRP that is unrelated to the current risk-free rate does not correctly reflect the inverse relationship between interest rates and MRP?[135]

A. No, I do not. Ms. Bulkley's argument is based on flawed logic. Ms. Bulkley falsely assumed that because of the inverse relationship between interest rates and the MRP and her false calculated MRPs (7.42% - 7.85%),[136] the current MRP should be well above the

[132] Schedules AEB-D2, Attachment 4 and Attachment 5, Bulkley's Direct Testimony.
[133] Page 52, lines 4-6, Bulkley's Rebuttal Testimony.
[134] Even if a projected Beta and MRP are used, the problem is not resolved. First, to estimate projected Beta and MRP is not easy. Second, to use projected COE estimates for determining authorized ROE is a highly contested and methodologically debatable issue.
[135] Page 52, lines 7-9, Bulkley's Rebuttal Testimony.
[136] Page 54, lines 1-5, and Schedule AEB-R1, Attachment 3, Bulkley's Rebuttal Testimony.

long-term historical averages of 4.54% to 6.80% that Staff calculated.[137] This argument does not make sense because, if the inverse relationship between interest rates and the MRP is true, then the MRP should be lower due to the current interest rate hikes.

In addition, the MRP estimate of 4.54% to 6.80% is not only the result of Staff's calculations but is also supported by reliable sources, such as *Kroll* (formerly *Duff & Phelps*), Dr. Damodaran, a professor of Finance at the Stern School of Business at New York University, and many others.[138] A more fundamental problem is that Ms. Bulkley assumed the market-based COE and the authorized ROE are the same concepts and that these estimated values should be identical. Staff explained why this assumption is incorrect in Section 4 of this testimony.

Q. Do you agree with Ms. Bulkley that Staff inappropriately relied on the geometric mean to estimate a historical market return for the CAPM?[139]

A. No, I do not. The MRP, market risk premium, is the difference between the expected return on a market portfolio and the risk-free rate. There are many theoretical and empirical studies to support the use of geometric means to calculate MRP. A prominent MRP expert and the Kerschner Family chair professor of Finance at the Stern School of Business at New York University, Aswath Damodaran, stated that conventional wisdom argues for the use of the arithmetic average to calculate MRP, but, in reality, the argument for geometric average premiums is stronger.[140] Dr. Damodaran also stated that there are strong arguments

[137] Page 54, lines 4-5, Bulkley's Rebuttal Testimony; and Schedule SJW-d13, Won's Direct Testimony.
[138] Pages 15-17, Won's Rebuttal Testimony.
[139] Pages 62-63, Bulkley's Rebuttal Testimony.
[140] Damodaran, A. (1999). Estimating Equity Risk Premiums.

that can be made for the use of geometric average in both empirical studies and the asset pricing model theory.[141]

In addition, research sponsored by the Society of Actuaries' Pension Section Research Committee found that the geometric mean was superior to the arithmetic mean in predicting long-term returns for calculating equity risk premium ("ERP"), and the arithmetic mean produces forecasts much higher than actual returns over most time-periods.[142] Moreover, many other theoretical and empirical studies support the use of geometric means to calculate MRP.[143]

Q. Do you agree with Ms. Bulkley's insistence, using *Morningstar* (now published by *Kroll*), that your historical MRP in the CAPM is inappropriate?[144]

A. No, I do not. Ms. Bulkley did not properly understand *Morningstar* (*Kroll*)'s risk premium used in the CAPM. The evidence shows that Ms. Bulkley's risk premia (7.42% - 7.85%)[145] are more than 200 basis points higher than *Kroll*'s most recent recommended risk premium of 5.0% for 2025,[146] yet they fall within Staff's risk premium range (4.54%–6.80%).[147]

Q. What is Staff's method to calculate the MRP in the CAPM analysis?

A. Staff calculated MRP by subtracting the risk-free rate from the expected market return. For the risk-free rate, Staff used the average yield on 30-year U.S. Treasury bonds for the fourth quarter of 2024, which was 4.50%.[148] For the MRP estimate, Staff used an average

[141] Ibid.
[142] Modugno, V. (2012). Estimating Equity Risk Premiums.
[143] Sadler, R. (2017). Estimation of the Market Risk Premium: A review of weighting of arithmetic and geometric means, Report to the ERA on Gas Rate of Return Guidelines.
[144] Page 53, lines 16-21, and Page 59, lines 6-18, Bulkley's Rebuttal Testimony.
[145] Page 46, lines 9-11, and Schedule AEB-R1, Attachment 3, Bulkley's Rebuttal Testimony.
[146] Kroll Kroll Cost of Capital Recommendations and Potential Upcoming Changes – March 2025 Update. https://media-cdn.kroll.com/jssmedia/kroll-images/pdfs/kroll-cost-of-capital-recommendations-and-potential-upcoming-changes-march-2025.pdf?_ga=2.74719250.1461131228.1744397260-2023850473.1744397260.
[147] Page 46, lines 12-13, Bulkley's Rebuttal Testimony; and Schedule SJW-d13, Won's Direct Testimony.
[148] Schedule SJW-d13, Won's Direct Testimony.

of long-term geometric mean and arithmetic mean from two data sets: (1) the long-term historical return differences between large company stocks and long-term government bonds from 1926-2023,[149] and (2) the long-term historical return differences between S&P 500 and long-term government bonds from 1928-2023.[150]

Q. Why do you use the averaging of both arithmetic and geometric means when calculating the MRP in the CAPM analysis instead of just using geometric means?

A. Whether to use "arithmetic" or "geometric" mean returns when calculating the average return for calculating the MRP in the CAPM analysis is one of many on-going controversial research topics in financial analysis.[151] Many theoretical and empirical studies and financial reports presented MRP estimates using both arithmetic means and geometric means.[152] The geometric mean return is a multi-period rate of return so it should be used in the CAPM together with the yield on a long-term government security. In contrast, the arithmetic mean return is a single period rate of return and therefore it should be used in association with a short-term risk-free rate in the CAPM.[153]

For typical investment horizons, the proper compounding rate for forecasting returns is in between the arithmetic and geometric means.[154] Many financial analysts use a compromise of the two, a weighted average of arithmetic and geometric mean.[155] Therefore, Staff's method

[149] Duff & Phelps, the Stocks, Bonds, Bills, and Inflation (SBBI®) Monthly Dataset.
[150] Risk Premium, Damodaran Online, Stern School of Business, NYU.
[151] Sadler, R. (2017). Estimation of the Market Risk Premium: A review of weighting of arithmetic and geometric means, Report to the ERA on Gas Rate of Return Guidelines.
[152] Ibbotson, R. G. (2011). The equity risk premium. Rethinking the Equity Risk Premium, CFA Research Foundation Publications, 4, 18-26.
[153] Soenen, L., & Johnson, R. (2008). The equity market risk premium and the valuation of overseas investments. Journal of Applied Corporate Finance, 20(2), 113-121.
[154] Jacquier, E., Kane, A., & Marcus, A. J. (2003). Geometric or arithmetic mean: A reconsideration. Financial Analysts Journal, 59(6), 46-53.
[155] Blume, M. E. (1974). Unbiased estimators of long-run expected rates of return. Journal of the American Statistical Association, 69(347), 634-638.

to consider both arithmetic and geometric means when calculating the MRP in the CAPM analysis is a widely accepted approach in financial analysis.[156] Using both methods and determining the average of high and low bounds ensures a fair and reasonable result.

Q. Do you agree with Ms. Bulkley that there is evidence suggesting that the use of a historical MRP can produce counterintuitive results?[157]

A. No, I do not. Ms. Bulkley's example to show the historical MRP decreased even as market volatility significantly increased is a good evidence of her misunderstanding of CAPM.[158] Ms. Bulkley gave an example from 2008, when the annual equity risk premium was actually negative, implying a discount for equity holders relative to the cost of debt. This occurred because the perceived risk of equity was negative, suggesting a required equity return lower than the cost of debt during the height of the financial market collapse, when the overall market return for equities was -37%.[159] However, Ms. Bulkley's example of a negative annual risk premium in 2008 does not demonstrate any issue with Staff's use of a long-term average of historical market returns to calculate the MRP.

The CAPM is typically applied to estimate the required COE, which is a long-term concept.[160] Investors in stocks are generally concerned with long-run returns, not year-to-year fluctuations. Much of the empirical foundation of CAPM is built on studies of decades of market data, often 50+ years, such as those by *Ibbotson*, *Duff & Phelps*, or *Fama & French*.[161] These studies support using long-term historical averages for the MRP input. Practically,

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[156] Hammond, B., & Leibowitz, M. (2011). Rethinking the equity risk premium: An overview and some new ideas. Rethinking the Equity Risk Premium, 1-17.
[157] Pages 54-55, Bulkley's Rebuttal Testimony.
[158] Page 54, lines 9-11, and Figure 8 (p. 55), Bulkley's Rebuttal Testimony.
[159] Page 54, lines 13-18, Bulkley's Rebuttal Testimony.
[160] Morgan Stanly, Counterpoint Global Insights Cost of Capital, Published February 15, 2023. https://www.morganstanley.com/im/publication/insights/articles/article_costofcapital.pdf.
[161] Chen, Joseph. "CAPM over the Long Run: 1926–2001." Journal of Empirical Finance vol. 14, (January 01, 2007): 1-40.

Markets are volatile in the short term due to economic cycles, sentiment, policy changes, etc. Using a long-term period smooths out this volatility and provides a more stable, reliable estimate of the average return investors expect over time.

6. BYPRP vs BYRP

Q. Do you agree with Ms. Bulkley that Staff's BYPRP analysis is similar to the BYRP analysis that she conducted?[162]

A. No, I do not fully agree with Ms. Bulkley. Staff's BYPRP and Ms. Bulkley's BYRP are superficially similar, but there are fundamental differences. First, the definitions of 'Bond Yield' are not the same. In Staff's BYPRP analysis, the definition of bond yield refers specifically to public utility bond yields, ensuring that the yields used in the analysis reflect the financial conditions of the utility sector financial market.[163] In contrast, the definition of bond yield in Ms. Bulkley's BYRP refers to the 30-year Treasury bond yield, which is directly affected by government monetary policy.[164]

Second, the definitions of 'Risk Premium' differ. In Staff's BYPRP analysis, the risk premium is defined as the difference between the authorized ROE for electric utilities and the yield on public utility bonds, ensuring that the risk premium accurately measures the premium of utility equity risk relative to utility bonds.[165] On the other hand, Ms. Bulkley defined her risk premium as the difference between NGS utility authorized ROEs and the yield on 30-year Treasury bonds.[166] Because of this, her risk premium does not properly measure the NGS utility equity risk premium as defined by the Chartered Financial Analyst ("CFA").[167]

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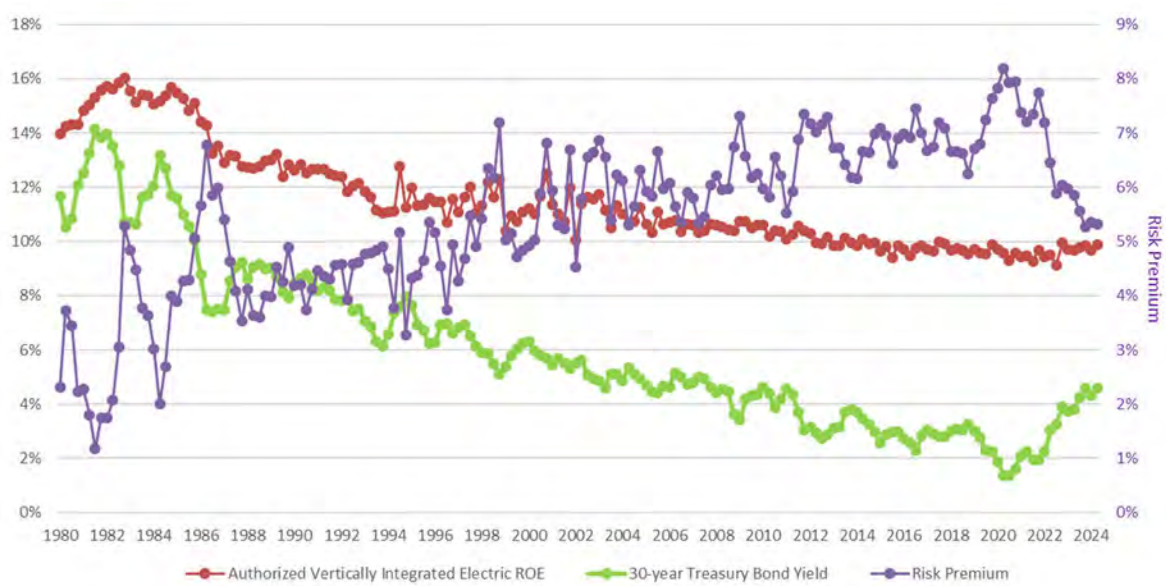
[162] Page 65, lines 12-15, Bulkley's Rebuttal Testimony.
[163] Page 46, lines 17-21, Won's Direct Testimony.
[164] Page 37, line 14, Bulkley's Direct Testimony.
[165] Page 46, lines 17-18, Won's Direct Testimony.
[166] Page 37, lines 10-11, Bulkley's Direct Testimony.
[167] Stowe, J. D., Robinson, T. R., Pinto, J. E., & McLeavey, D. W. (2002) Analysis of Equity Investment: Valuation. Association for Investment Management and Research.

Q. Do you agree with Ms. Bulkley's statement "Dr. Won only utilizes an 11-year period of data for the analysis when a significantly longer period of utility bond yield and authorized ROE data is available that incorporates a much broader set of market conditions than has been considered in Dr. Won's analysis and is more appropriate to be considered in setting the return on equity."?[168]

A. No, I do not. Staff found no evidence that the relationship between utility bond yields and authorized ROEs over a period longer than 11 years is statistically stable enough to be used for calculating a reliable risk premium through a regression model. Both Staff's BYPRP and Ms. Bulkley's BYRP utilized a regression analysis based on an inverse relationship between authorized ROE and bond yield. If the inverse relationship is consistent over time, the variation in authorized ROEs will be well explained by bond yields. However, the relationship between the two financial variables keeps changing and is inconsistent over time.

Figure 2. Ms. Bulkley's 44-Year Quarterly Average Data of 30-year Treasury Bond yields, Authorized Vertically Integrated Electric ROE, and Risk Premium.



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[168] Page 66, lines 6-10, Bulkley's Rebuttal Testimony.

Staff found that Ms. Bulkley's regression model, which used 44 years of data, from the 1980 through 2024, is inappropriate for her BYRP COE estimation. Because the relationship between authorized ROEs and 30-year Treasury bond yields has been inconsistent and statistically unstable over the past 44 years, Ms. Bulkley's BYRP, based on her regression analysis using this data, is not reliable.[169] As shown in Figure 2, there has not been a consistent relationship over the past 40 years among major variables such as 30-year Treasury bond yields, authorized vertically integrated electric ROEs, and risk premiums. Therefore, Ms. Bulkley's BYRP cannot reliably estimate an authorized ROE using her regression analysis.

In a regression analysis, the extent to which this variation is explained is measured by the R-squared value of the regression model. The R-squared value of Staff's BYPRP regression model, using 11 years of data, is 96.4%.[170] In contrast, in Ms. Bulkley's BYRP regression model, using 40 years of data, the R-squared value is only 85.3%.[171] These results indicate that the variation in authorized ROEs is 96% explained by bond yields using Staff's regression model, but only 85.3% explained by bond yields using Ms. Bulkley's model. In other words, Ms. Bulkley's 40-year data shows less consistency over time in the inverse relationship between authorized ROE and bond yield compared to Staff's 10-year data. Therefore, there is no evidence that Staff's BYPRP would be considered more appropriate if Staff used a period longer than 11 years.

Q. Do you agree with Ms. Bulkley's statement "Dr. Won has conducted a single regression of the risk premium and bond yield for both A-rated and Baa-rated utility bond

[169] Schedule AEB-R1, Attachment 6, Bulkley's Rebuttal Testimony.
[170] Schedule SJW-d14-2, Won's Direct Testimony.
[171] Schedule AEB-D2, Attachment 7, Bulkley's Direct Testimony.

yields, which he then uses to estimate a forward-looking market risk premium associated with both current A-rated and Baa-rated utility bond yields."?[172]

A. Yes. Staff utilized a single regression of the risk premium and bond yield for both A-rated and Baa-rated utility bond yields because the R-squared value (96.4%) of the combined regression model is higher compared to the R-squared values (96.0%-96.2%) of two separate regressions, while there are no material differences in BYPRP ROE estimates.[173]

7. Overall Bulkley's Rebuttal Testimony

Q. What is Staff's conclusion from reviewing Ms. Bulkley's rebuttal testimony regarding the appropriate authorized ROE and ratemaking capital structure for Ameren Missouri in this proceeding?

A. Based on Staff's review of Ms. Bulkley's rebuttal testimony, nothing has caused Staff to change its recommendations regarding the appropriate authorized ROE and ratemaking capital structure for Ameren Missouri in this proceeding.

Q. Do you agree with Ms. Bulkley that her recalculation of Staff's COE analysis results in 10.71%?[174]

A. No, I do not. In Figure 9 of her rebuttal testimony, Ms. Bulkley presented the results of the recalculation of Staff's COE and ROE analysis. Ms. Bulkley reported COE estimates of 10.29% and 11.60% from her recalculation of Staff's DCF and CAPM analysis and BYPRP ROE estimate of 10.22%, using her overstated input values.[175] As Staff already explained in this testimony, Ms. Bulkley's input values used for her recalculation of

[172] Page 66, lines 11-15, Bulkley's Rebuttal Testimony.
[173] Schedule SJW-s14-2, Won's Surrebuttal / True-up Direct Testimony.
[174] Page 68, lines 1-3, Bulkley's Rebuttal Testimony.
[175] Figure 9 (p. 68), Bulkley's Rebuttal Testimony.

Staff's COE analysis were produced based on her misunderstanding and misrepresentation of Staff's methodology, and therefore overstated. Staff updated its COE analysis using data of the first quarter 2025, 3-month ending March 31, 2025 and is presented in Table 4.

Table 4. COE and ROE Analysis (as of March 31, 2025)[176]

	Lower	Mean	Upper
DCF	7.86%	8.67%	9.49%
CAPM	9.19%	9.85%	10.52%
BYPRP	9.62%	9.63%	9.64%

Q. Do you have any evidence that Staff's recommended ROE of 9.64% is more reasonable than Ms. Bulkley's proposed ROE of 10.25% when compared with NGS utility companies of commensurate risk?

A. Yes. Recently authorized comparable ROEs ranged from 9.5% to 9.9%, with an average of 9.73% across all 6 NGS utility cases in the first quarter of 2025, and an average of 9.72% for the 44 NGS utility cases in 2024.[177] Of the 50 NGS rate case decisions regarding authorized ROEs, equity ratios, and rate bases in the U.S. in 2024 and the first quarter 2025, only two decisions on ROEs fall within Ms. Bulkley's proposed ROE range of 10.25% to 11.25%.[178] In contrast, 34 of the 50 authorized ROEs fall within Staff's recommended rage from 9.39% to 9.89%. Therefore, Staff's recommended ROE of 9.64% is more reasonable than Ms. Bulkley's proposed ROE of 10.25% when compared with NGS utility companies of commensurate risk.

Q. Does this conclude your response to the rebuttal testimony of Ms. Bulkley?

A. Yes, it does.

[176] Schedule SJW-s15, Won's Surrebuttal / True-up Direct Testimony.
[177] S&P Global Market Intelligence, Retrieved in January 2, 2024.
[178] Schedule SJW-s17, Won's Surrebuttal / True-up Direct Testimony.

III. RESPONSE TO TESTIMONY OF OPC WITNESS

Q. What are the specific areas in which Staff is responding to OPC's witness?

A. Staff is responding to the rebuttal testimony of Mr. Murray. The areas in which Staff addresses issues of Mr. Murray's rebuttal testimony include:

- Authorized ROE, and
- Ratemaking Capital Structure.

Staff will discuss each in turn, below.

1. Authorized ROE

Q. What ROE did Mr. Murray support for Ameren Missouri in this proceeding?

A. Mr. Murray recommended 9.50% based on a range of 9.00% to 9.50% in his direct testimony.[179] In his rebuttal testimony Mr. Murray continued to support setting Ameren Missouri's authorized ROE at 9.50%.[180]

Q. What is Mr. Murray's response to Staff's recommended ROE?

A. Mr. Murray disagrees with Staff's recommended ROE of 9.64%, and stated that the Commission should disregard any ROE above 9.63%.[181] However, Mr. Murray did not provide any specific evidence or reasoning why the Commission should disregard any ROE above 9.63%.

Q. What are Staff's concerns regarding Mr. Murray's response about an authorized ROE?

A. While Staff does not agree with all of Mr. Murray's responses to Staff's recommended ROE, it does not have any major concerns with his recommended ROE of 9.50%

[179] Page 36, lines 14-15, Murray's Direct Testimony.
[180] Page 29, lines 15-16, Murray's Rebuttal Testimony.
[181] Page 29, line 14, Murray's Rebuttal Testimony.

since it falls within Staff's recommended range of 9.39% to 9.89%.[182] As Staff reported, only seven authorized ROEs were less than 9.39% compared to 34 authorized ROEs in Staff's recommended range (9.39% to 9.89%) across all 50 NGS utility cases in 2024 and the first quarter of 2025.[183]

Q. Do you agree with Mr. Murray that it is logical to recommend an ROE range of 50 basis points considering the narrow range of only 10 basis points based on Dr. Won's regression analysis?[184]

A. No, I do not. A reasonable ROE range of 50 basis points is based on the most commonly accepted margin of error of 5% in the estimation process.[185] It is not related to my regression analysis.

Q. Do you agree with Mr. Murray that Staff's CAPM risk measure Beta of 0.89 is too high and that a lower historical Beta of 0.70 should be considered?[186]

A. No, I do not. In CAPM analysis, aligning the time periods of input parameters, such as Beta and the risk-free rate, is essential for producing reliable results. Arbitrarily selected input values with mismatched timing can lead to unreasonable COE estimates. While historical Beta is an important measure for evaluating a company's risk profile over time, it should not be used with the current risk-free rate. A ROR analyst should ensure that the timing of the risk-free rate, measured by the 30-year Treasury bond yield, is aligned with the timing of the risk factor, measured by Beta, in CAPM-based COE estimates.

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[182] Schedule SJW-d16, Won's Direct Testimony.
[183] S&P Global Market Intelligence, Retrieved in January 2, 2024.
[184] Page 29, lines 12-16, Murray's Rebuttal Testimony.
[185] Penn State University (STAT 500: Confidence Intervals), https://online.stat.psu.edu/stat500/book/export/html/474?utm_source=chatgpt.com.
[186] Pages 32-33, Murray's Rebuttal Testimony.

2. Ratemaking Capital Structure

Q. What capital structure did Mr. Murray support for Ameren Missouri in this proceeding?

A. In his direct testimony, Mr. Murray recommended a capital structure consisting of approximately 42% common equity, 0.60% preferred stock, and 57.40% long-term debt based on his analysis of Ameren Corp.'s consolidated capital structures as of March 31, 2024,[187] and he did not revise it in his rebuttal testimony.

Q. What is Mr. Murray's response to your original recommended capital structure in your direct testimony?

A. Mr. Murray disagreed with Staff's use of Ameren Missouri's standalone capital structure for the ratemaking procedure in this proceeding. In his rebuttal testimony, Mr. Murray stated as follows:[188]

> I fundamentally disagree with Dr. Won's and Mr. Sagel's conclusion that Ameren Missouri has an "independent" capital structure acting purely as a function of third-party transactions with competing interests. Ameren Corp maximizes shareholder wealth by investing in Ameren Missouri's utility system at a higher ROR than the cost of capital it realizes at Ameren Corp on a consolidated basis. While Ameren Corp is entitled to a fair and reasonable authorized ROE, the ratemaking common equity ratio to which it is applied should be consistent with the business risk.
>
> Ameren Corp has constantly targeted a 52% ratemaking common equity ratio for Ameren Missouri, both before and after the passage of Plant-in-Service-Accounting ("PISA"). However, since PISA took effect, Ameren Corp has consistently increased the amount of leverage in its consolidated capital structure. This leverage increase provides direct insight into Ameren Corp's managements' views of the true debt capacity of Ameren Missouri's low risk, regulated utility investments.

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[187] Page 37, lines 18-21, Murray's Direct Testimony.
[188] Page 5 (line 22) - Page 6 (line 8), Murray's Rebuttal Testimony.

However, the reasons Mr. Murray provided for using Ameren Corp.'s capital structure are based on his subjective perception. Many statements in the quoted sentences are either Mr. Murray's speculation or directly contradict information provided by Ameren Missouri. One of Mr. Murray's reasons is that "Ameren Corp maximizes shareholder wealth by investing in Ameren Missouri's utility system at a higher ROR than the cost of capital it realizes at Ameren Corp on a consolidated basis." If this statement were a valid reason to use a parent company's capital structure, then the ratemaking capital structure of any operating utility should use its parent company's capital structure, since any company works to maximize shareholder wealth.[189]

The other reason Mr. Murray presented is that "Ameren Corp's constant target of a 52% common equity ratio for Ameren Missouri." However, in response to Staff' data request regarding Ameren Missouri's target capital structure, Ameren Missouri stated:[190]

> Ameren Missouri has neither internally identified nor externally communicated a targeted capital structure. Rather, and as specified in Company witness Darryl Sagel's direct testimony, the Company specifically and continuously maintains the balance of debt and equity in its capital structure to minimize its overall cost of capital and, at the same time, maintain financial strength and stability. Maintaining financial strength and stability includes supporting strong credit metrics and securing investment grade ratings that will allow the Company to attract new capital at a reasonable cost and on reasonable terms and ensure that Ameren Missouri has access to the capital markets under varying economic conditions.

As presented in Mr. Murray's rebuttal testimony, Ameren Missouri's quarterly common equity ratios ranged from 48.55% to 52.08% during the period from 2019 through 2024.[191]

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[189] S.P. Kothari, Richard Frankel, and Luo Zuo, "Why Shareholder Wealth Maximization Despite Other Objectives".
[190] Staff's Data Request No. 0112, ER-2024-0319.
[191] Figure (p. 16), Ameren vs. Ameren Missouri Common Equity Ratios, Murray's Rebuttal Testimony.

In addition, Staff has found no evidence that Ameren Missouri provided any false information regarding its target capital structure.

Mr. Murray also stated that another reason to use Ameren Corp.'s capital structure is that, since PISA took effect, Ameren Corp. has consistently increased the amount of leverage in its consolidated capital structure.[192] While it is true that the spread between the equity ratios of Ameren Corp. and Ameren Missouri has increased in recent years, Staff cannot identify any theoretical articles or legal decisions that support the use of a parent company's consolidated capital structure for ratemaking purposes based on an increase in the delta between a parent company's and its subsidiary's common equity ratios.[193] Therefore, in regards to Mr. Murray statement, Staff found no fact-based arguments showing that Staff's recommended ratemaking structure is inappropriate for Ameren Missouri in this proceeding.

Q. Do you think Ameren Corp.'s consolidated capital structure should be used for Ameren Missouri's ratemaking capital structure because Ameren Missouri was able to elect PISA?[194]

A. No, I do not. While it is true that PISA improved Ameren Missouri's business and regulatory risk profile, and it has already been considered in Ameren Missouri's standalone credit rating, as Mr. Murray recognized,[195] the result of the credit rating change has been used for developing and recommending a just and reasonable authorized ROE.[196] Therefore, reducing risk due to PISA should not be a reason to use Ameren Corp.'s capital structure for ratemaking.

[192] Page 6, lines 5-6, Murray's Rebuttal Testimony.
[193] Staff Data Request No. 0301.
[194] Page 6, lines 3-8, Page 7, lines 1-20, and Page 17, lines 18-24, Murray's Rebuttal Testimony.
[195] Page 34, lines 1-4, Murray's Rebuttal Testimony, ER-2024-0319.
[196] Page 29, lines 4-7, Won's Direct Testimony.

Q. Why does Mr. Murray disagree with you that Ameren Missouri operates as an independent entity when considering its procurement of financing and the cost of that financing?[197]

A. In justifying the use of Ameren Corp.'s capital structure, Mr. Murray cited two reasons: (1) Ameren Services Company provides financing and capital management services for Ameren Corp's subsidiaries, including Ameren Missouri,[198] and (2) Ameren Missouri has been relying more heavily on long-term capital rather than short-term debt.[199]

Q. Do you agree with Mr. Murray that these two facts are proper reasons to believe Ameren Missouri does not operate as an independent entity when considering its procurement of financing and the cost of that financing?

A. No, I do not. First, it is common for a holding company to provide financing and capital management services for its subsidiaries, as these are standard financial procedures in the industry for cost savings.[200] Second, the allocation of long-term versus short-term debt financing depends on the company's strategy based on the matching principle and minimizing financing costs. If these regular financial activities are considered criteria for determining a subsidiary's financial independence, then there are no financially independent subsidiaries. Regarding debt financing, Staff's criterion for the financial independence of a subsidiary is clear: whether the long-term debt is issued independently by the subsidiary. Ameren Missouri issues its own long-term debt in the public bond market, not through Ameren Corp., ensuring its financial independence.[201]

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[197] Page 11, lines 22-25, Murray's Rebuttal Testimony.
[198] Page 11, lines 26-27, Murray's Rebuttal Testimony.
[199] Page 11 (line 28) – Page 12 (line 1), Murray's Rebuttal Testimony.
[200] Hu, KH., Hsu, MF., Chen, FH. et al. Identifying the key factors of subsidiary supervision and management using an innovative hybrid architecture in a big data environment. Financ Innov 7, 10 (2021). https://doi.org/10.1186/s40854-020-00219-9.
[201] S&P Capital IQ Pro.

Q. Do you agree with Mr. Murray that there exists evidence of double-leverage because two reasons (1) Ameren Corp. attempted to legitimize Ameren Missouri's per books common equity balance by claiming that equity infusions in Ameren Missouri were sourced from Ameren Corp.'s issuance of third-party common equity,[202] and (2) Ameren Corp. recently issued short-term debt to fund an equity contribution into Ameren Missouri.?[203]

A. No, I do not. According to the response to Staff's data request, it is clearly stated that "the capital that Ameren Missouri receives from Ameren Corporation is sourced exclusively from common equity raised by Ameren Corporation from third-party investors, not from holding company debt that has been issued."[204] Staff does not accept Mr. Murray's speculation about past events as evidence in the current rate proceeding. However, Staff will continue to monitor the capital structure changes of both Ameren Corp. and Ameren Missouri.

Q. What is Staff's concern with Mr. Murray's capital structure recommendation?

A. Mr. Murray's recommended capital structure was developed considering Ameren Corp.'s consolidated capital structure, instead of the Ameren Missouri's standalone capital structure. Staff did not find any critical reason not to use Ameren Missouri's standalone capital structure for the purpose of ratemaking.[205] More details regarding Staff's issues with Mr. Murray's capital structure recommendation were explained in my rebuttal testimony.[206]

Q. Do you agree with Mr. Murray's statement, "While Moody's considers Ameren Missouri's capital structure when assessing Ameren Missouri's financial risk profile, S&P clearly states that it assigns Ameren Missouri a credit rating based on Ameren Corp's group credit profile."?[207]

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202 Page 14, lines 12-15, Murray's Rebuttal Testimony.
203 Page 15, lines 2-3, Murray's Rebuttal Testimony.
204 Staff Data Request No. 0133.1.
205 Pages 30-35, Won's Direct Testimony.
206 Pages 36-41, Won's Rebuttal Testimony.
207 Page 17, lines 14-17, Murray's Rebuttal Testimony.

A. No, I do not. Mr. Murray described it as if S&P does not provide Ameren Missouri's standalone capital structure. However, that is not true. S&P clearly provides Ameren Missouri's Stand-Alone credit profile of ** [redacted] ** along with other issuer credit ratings of ** [redacted] ** and an anchor rating of 'a-', including business and financial risk profiles.[208] The copy of S&P rating report is presented in Table 5.

Table 5. S&P Ratings Published March 20, 2024[209]

** [redacted] **

While S&P considered Ameren Corp's group credit profile when estimating Ameren Missouri's issuer credit rating, it also provided a stand-alone credit profile for Ameren Missouri. If the fact that S&P considers Ameren Corp's credit profile when assessing Ameren Missouri's issuer credit rating is the reason Ameren Missouri is deemed financially dependent on Ameren Corp., then no financially independent utility subsidiaries would exist.

Q. Does this conclude your response to the rebuttal testimony of OPC's witness?

A. Yes, it does.

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[208] Rating Component Scores (p. 4), S&P RatingDirect, Union Electric Co. d/b/a Ameren Missouri, Published March 20, 2024.
[209] Mr. Murray provided similar information on page 9 of Schedule DM-R-1C, in his Rebuttal Testimony.

IV. TRUE-UP DIRECT TESTIMONY

Q. In which specific areas does Staff want to update its recommendations in the true-up direct testimony?

A. Staff wants to update its recommendations on the ratemaking capital structure and the cost of debt for calculating the allowed ROR of Ameren Missouri's natural gas utility service in this proceeding.

Q. Did you perform a capital structure analysis as of December 31, 2024, which is the end of the true-up period for this proceeding?

A. Yes, I did.

Q. What is the result of Staff's capital structure analysis for the true-up process?

A. As of December 31, 2024, the end of the true-up period, Ameren Missouri's consolidated capital structure consisted of 51.96% common equity, 0.54% preferred stock, and 47.50% long-term debt, Ameren Corp.'s consolidated capital structure consisted of 41.26% common equity, 0.44% preferred stock, and 58.29% long-term debt.[210]

Staff did not find any significant change in the financial relationship between Ameren Corp. and Ameren Missouri during the true-up period. Ameren Missouri is financially independent from Ameren Corp., and the overall financial relationship could be considered normal within the regular relationship between a parent company and its subsidiary.[211]

Q. Based on its true-up capital structure analysis, what is Staff's recommended ratemaking capital structure for Ameren Missouri in this proceeding?

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[210] Staff's Data Request No. 0112.
[211] Schedule SJW-s6, Won's Direct Testimony.

A. Staff recommends that the standalone capital structure of Ameren Missouri's regulated utility business unit which consists of 51.96% common equity, 0.54% preferred stock, and 47.50% long-term debt, as of December 31, 2024.[212]

Q. Did you calculate the costs of preferred stock and long-term debt as of December 31, 2024, which marks the end of the true-up period for this proceeding?

A. Yes, I did.

Q. What is the result of Staff's calculation of Ameren Missouri's cost of preferred stock and long-term debt for the true-up process?

A. The embedded costs of preferred stock and long-term debt for Ameren Missouri as of December 31, 2024, are 4.180% and 4.296%, respectively.[213]

Q. What is Staff's recommendation for the allowed ROR of Ameren Missouri in this proceeding based on the true-up results?

A. Staff's recommended ROE of 9.64% for Ameren Missouri, along with an embedded cost of preferred stock of 4.18% and an embedded cost of debt of 4.30% applied to a ratemaking capital structure of 51.96% common equity, 0.54% preferred stock, and 47.50% long-term debt, results in an allowed ROR of 7.07%.[214]

Q. Does this conclude your true-up direct testimony?

A. Yes, it does.

continued on next page

[212] Staff's Data Request No. 0112.
[213] Staff Data Request No. 0113.
[214] Schedule SJW-s16, Won' Surrebuttal / True-Up Direct Testimony.

V. SUMMARY AND CONCLUSIONS

Q. Please summarize the conclusions of your surrebuttal / true-up direct testimony.

A. Global financial market conditions, including the U.S. utility capital investment market, have changed rapidly, following the COVID-19 pandemic. In particular, recent international trade policy has increased the volatility of both equity and debt markets. Some ROR analysts have continued using familiar methods and data, even though these may no longer be appropriate. Moreover, some experts have raised concerns about changes in Staff's methods and data compared to past rate proceedings. Adhering to consistent principles and methodology, Staff has evaluated and refined its methods and data, utilizing the best available resources at each new rate proceeding to recommend a just and reasonable ratemaking cost of capital and capital structure.

Ms. Bulkley and Staff disagree on the appropriate ROE for Ameren Missouri. Although there have been many changes in the U.S. capital market since the filing of her direct testimony, Ms. Bulkley's proposed ROE of 10.25% remains unjust and unreasonable due to her reliance on inappropriate and flawed inputs in her COE analyses. Additionally, her assertion that the COE and the authorized ROE are equivalent contradicts basic financial logic and market evidence. Staff does not have significant concerns with Mr. Murray's recommended ROE of 9.50%, as it falls within Staff's recommended range of 9.39% to 9.89%.[215] After reviewing the rebuttal testimonies of Ms. Bulkley and Mr. Murray, Staff continues to recommend an authorized ROE of 9.64%.

Staff disagrees with Mr. Murray's proposed capital structure-consisting of approximately 42% common equity, 0.60% preferred stock, and 57.40% long-term debt-based

[215] Schedule SJW-d16, Won's Direct Testimony.

on his speculation that Ameren Corp. is targeting a higher-cost capital structure for Ameren Missouri.[216] According to its true-up analysis, Staff recommends a cost of preferred stock of 4.18%, a cost of long-term debt of 4.30%, and a ratemaking capital structure of 51.96% common equity, 0.54% preferred stock, and 47.50% long-term debt. Along with Staff's recommended ROE of 9.64%, these figures result in an allowed ROR of 7.07% for this proceeding.[217]

Q. Does this conclude your Surrebuttal / True-up Direct testimony?

A. Yes, it does.

[216] Page 33, lines 21-22, Murray's Rebuttal Testimony.
[217] Schedule SJW-s16, Won' Surrebuttal / True-Up Direct Testimony.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Natural Gas Service	)))	Case No. GR-2024-0369

AFFIDAVIT OF SEOUNG JOUN WON, PhD

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW SEOUNG JOUN WON, PhD and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Surrebuttal / True-Up Direct Testimony of Seoung Joun Won, PhD*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

SEOUNG JOUN WON, PhD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 28th day of April 2025.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2029
Commission Number: 12412070

Notary Public