Exhibit No.:	
Issue:	*Rate of Return*
Witness:	*Seoung Joun Won, PhD*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Surrebuttal/True-Up Direct Testimony*
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MISSOURI PUBLIC SERVICE COMMISSION

FINANCIAL AND BUSINESS ANALYSIS DIVISION

FINANCIAL ANALYSIS DEPARTMENT

SURREBUTTAL / TRUE-UP DIRECT TESTIMONY

OF

SEOUNG JOUN WON, PhD

UNION ELECTRIC COMPANY,
d/b/a AMEREN MISSOURI

CASE NO. ER-2022-0337

Jefferson City, Missouri
March 2023

TABLE OF CONTENTS OF

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CASE NO. ER-2022-0337

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 Commission 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 January 10, 2023 and Rebuttal Testimony on February 15, 2023, in this proceeding?

A. Yes, I am.

Q. What is the purpose of your surrebuttal and 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 Ameren Missouri Inc. ("Ameren Missouri" or the "Company"), a wholly-owned subsidiary of Ameren Corporation ("Ameren Corp." or the "parent Company"). Mr. Murray sponsored ROE and capital structure testimony on behalf of the Missouri Office of the Public Counsel ("OPC"). Within this testimony, Staff will address issues related to a just and reasonable Rate of Return ("ROR") to be applied to Ameren Missouri's electric utility rate base for ratemaking purposes in this proceeding. Staff's analyses and conclusions are supported by the data presented in Staff's surrebuttal workpapers.

The purpose of my true-up direct testimony is to update my recommended capital structure for Ameren Missouri as of December 31, 2022. In addition, I will provide an updated overall ROR recommendation resulting from the changes in the capital structure and the embedded costs of debt that have occurred through December 31, 2022.

I. EXECUTIVE SUMMARY

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

A. Staff's surrebuttal will focus on the rebuttal testimony of Ms. Bulkley regarding ROE related issues. Ms. Bulkley continued to propose an ROE of 10.20%.[1] In her rebuttal testimony, Ms. Bulkley has updated her cost of equity ("COE") analyses based on market data through December 31, 2022,[2] but she did not correct any of her invalid methods in her COE analyses. In addition, Ms. Bulkley made incorrect claims about Staff's estimation methodology based on her erroneous assumptions and misunderstandings of Staff's positions. In this testimony, Staff will recount the reasons why Ms. Bulkley's unreasonable 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.

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. Mr. Murray recommended an ROE of 9.25%,[3] and disagreed with Staff's recommendation to use

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[1] Page 3, line 19, Bulkley's Rebuttal Testimony.
[2] Page 2, lines 10-11, Bulkley's Rebuttal Testimony.
[3] Page 20, lines 5-6, Murray's Rebuttal Testimony.

Ameren Missouri's actual stand-alone capital structure for ratemaking in this proceeding.[4] Staff will respond to Mr. Murray's arguments about Staff's recommended ROE and capital structure.

II. RESPONSE TO TESTIMONY OF COMPANY WITNESS

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

A. Ms. Bulkley updated her COE analyses based on market data through December 31, 2022. Ms. Bulkley maintained her proposed ROE of 10.20%, using estimation methods such as 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 Plus Risk Premium ("BYPRP") analysis that are the same methods in her direct testimony.[5] Additionally, Ms. Bulkley addressed capital market conditions, the capital attraction and comparable return standards, and Company-specific risks.[6] Ms. Bulkley also responded to Staff and Mr. Murray's direct testimonies respectively regarding the ROE related issues.

Q. What are Staff's findings in Ms. Bulkley's rebuttal testimony regarding the appropriate authorized ROE for Ameren Missouri in this proceeding?

A. Staff found that most of Ms. Bulkley's response to Staff's direct testimony is unreasonable and baseless. Staff will explain this finding in more detail later in this testimony. In addition, Staff found Ms. Bulkley's proposed ROE of 10.20% is excessively higher than the current authorized ROE determinations in the U.S. In 2023 to date, the average fully litigated electric utility authorized ROE is 9.50% and the average vertically integrated electric utility

[4] Page 4, lines 19-24, Murray's Rebuttal Testimony.
[5] Page 13, Figure 2, Bulkley's Rebuttal Testimony.
[6] Page 2, lines 14-17, Bulkley's Rebuttal Testimony.

authorized ROE is 9.68%,[7] both of which are within Staff's reasonable range of 9.34% to 9.84%.[8] Staff found that all analysis results using updated capital market conditions, the capital attraction and comparable return standards, and Company-specific risks, indicate Ms. Bulkley's proposed ROE of 10.20% is too high compared to the appropriate authorized ROE for Ameren Missouri in this proceeding. While considering both Ms. Bulkley's rebuttal testimony and updated capital market conditions, Staff found no reason to change Staff's recommended authorized ROE of 9.59%.

Q. What are Staff's key issues with Ms. Bulkley's rebuttal testimony regarding her response to Staff's ROE recommendation in Won's direct testimony?

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

1. Ms. Bulkley does not correctly understand Staff's comparative COE analysis. Based on her misunderstanding of Staff's analysis, Ms. Bulkley proposed unreasonable recommendations such as that Staff must use the CAPM analysis for the comparison of COEs of different time-periods. As I explained in my direct testimony, in the CAPM method, debt market conditions directly affect the input values such as the risk-free rate of 30-year Treasury bond yields.[9] The CAPM analysis should be used cautiously because the 30-year Treasury yield has increased greater than 250 basis points in the past two years.[10] Ms. Bulkley's arguments ignore the most basic principles of 'Reasonableness' and 'Comparability' of the COE comparative analysis;

2. Ms. Bulkley did not properly use basic financial concepts. For example, because of her erroneous underlying assumption that the market-data-derived COE is equal to the authorized ROE, Ms. Bulkley mischaracterized the relationship between Staff's COE estimation

[7] 6 Authorized ROE, Won's Surrebuttal Workpaper, S&P Capital IQ Pro, RRA, Retrieved March 3, 2023.
[8] Schedule SJW-d16, Won's Direct Testimony.
[9] Page 15, lines 2-3, Won's Direct Testimony.
[10] Board of Governors of the Federal Reserve System, Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, https://fred.stlouisfed.org/data/GS30.txt.

and its authorized ROE recommendation.[11] Ms. Bulkley's false assumption caused her to propose her ROE directly from her estimated COEs. Ms. Bulkley made many incorrect arguments about Staff's analyses based on her confusion of the two concepts even though Staff has clarified the difference between COE and authorized ROE;[12] and,

3. Ms. Bulkley did not correctly understand the difference between "method" and "methodology." Although Staff used consistent methodology for the ROE recommendation, choosing proper and appropriate methods considering current capital market conditions and Company-specific risks, Ms. Bulkley insisted that Staff used different methodologies from past cases based on her misunderstanding of 'method' and 'methodology.'

Staff will explain in detail why Ms. Bulkley's assertions are unfounded in the sections below.

Q. What are the specific areas in which Staff is responding to Ms. Bulkley's rebuttal testimony?

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

- Comparable Return Standard,
- COE and Authorized ROE,
- Updated COE,
- Updated Capital Market Conditions,
- Proxy Group,
- Growth Rates and DCF Model,
- Market Risk Premium and CAPM, and
- Rule of Thumb Methodology.

Staff will discuss each in turn, below.

[11] Page 26, lines 16-19, Won's Direct Testimony.
[12] Page 3, Footnote No. 4, Won's Direct Testimony.

1. Comparable Return Standard

Q. Does Ms. Bulkley have a similar understanding of the "comparable return standard" used by Staff for setting an authorized ROE?

A. Yes. Ms. Bulkley has a similar understanding of the comparable return standard used by Staff for setting the authorized ROE that is based on the *Hope* and *Bluefield* decisions as explained in Won's direct testimony.[13] In her rebuttal testimony, Ms. Bulkley stated:

> The decisions of other regulatory commissions can provide a basic test of reasonableness and a benchmark that investors consider in comparing the authorized ROE in one jurisdiction to the returns available from other regulated utilities with comparable risk. The *Hope* and *Bluefield* decisions require that authorized ROEs must be comparable to other investments of commensurate risk.[14]

Q. Does Ms. Bulkley's proposed ROE meet the comparable return standard as she stated in her rebuttal testimony?

A. No, it does not. Ms. Bulkley proposed an ROE of 10.20%, which is 65 basis points higher than the average electric utility authorized ROE of 9.55% in 2022.[15] Standard & Poor's ("S&P") assigned Ameren Missouri a stand-alone credit rating of 'BBB+', which is the same credit quality of the median electric utility.[16] According to the comparable return standard of the *Hope* and *Bluefield* decisions, there is no reason Ameren Missouri should be awarded a significantly higher authorized ROE than the average electric utility authorized ROE if considering the credit assignment of major rating agencies.

[13] Pages 6-7, Won's Direct Testimony.
[14] Page 8, lines 3-7, Bulkley's Rebuttal Testimony.
[15] S&P Capital IQ Pro, Retrieved on January 3, 2023.
[16] S&P Global Ratings.

Q. Do you agree with Ms. Bulkley's statement, "[t]he most recent authorized ROEs were in the range of 9.80 to 10.00 percent"?[17]

A. No, I do not. In 2023 to date, excluding phase-in rate case decisions,[18] the most recent authorized ROEs for electric utilities are in the range of 9.35% to 9.90%.[19] Even when considering the most recent trend of authorized ROEs, Ms. Bulkley's proposed ROE of 10.20% is too high compared to the average fully litigated and vertically integrated electric utility authorized ROEs, which are 9.50% and 9.68% in 2023 to date.[20]

Q. Do you agree with Ms. Bulkley that Staff's recommendation is understating the COE for utilities and that Staff is not consistent with the comparable return standard?[21]

A. No, I do not. Staff's recommended authorized ROE is consistent with the comparable return standard established by the Courts in *Hope* and *Bluefield*.[22] According to her testimony, Ms. Bulkley recognized that Staff considers rising interest rates, a high inflationary market, and recently authorized ROEs for electric utilities in other jurisdictions across the U.S.[23] Even though she acknowledged these evidences, Ms. Bulkley stated:

> While Dr. Won and Mr. Murray each discuss prior authorized ROEs in their testimony, neither provide the necessary insight to draw meaningful conclusions about the forward-looking investor-required return. These witnesses have not considered the **necessary factors** to ensure that the authorized ROEs cited are for risk-comparable companies, nor have they considered the differences in the market conditions that existed when the return was authorized relative to current market conditions.[24] [Emphasis added.]

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[17] Page 9, lines 9-10, Bulkley's Rebuttal Testimony.
[18] S&P Capital IQ Pro defined the 'phase-in authorized ROE order' that "indicates that a rate change was authorized to be implemented upon issuance of a final order but in subsequent years or periods (implemented in steps, phased in)." In other words, the order does not provide for a one-time permanent (non-interim) rate change. Therefore, the phase-in authorized ROE is not directly comparable to general rate case authorized ROE decision of the Commission. Because of this reason, all authorized ROE calculation in this testimony excludes two phase-in authorized ROEs (9.35% and 10.35%) determined by Virginia State Corporate Commission in 2023.
[19] S&P Capital IQ Pro, RRA, Retrieved on March 3, 2023.
[20] 6 Authorized ROE, Won's Surrebuttal Workpaper.
[21] Page 12, lines 2-3, Bulkley's Rebuttal Testimony.
[22] Pages 6-8, Won's Direct Testimony.
[23] Page 6, line 17, and Pages 14-15, Bulkley's Rebuttal Testimony.
[24] Page 26, lines 6-11, Bulkley's Direct Testimony.

Ms. Bulkley's statements are not true. Staff considered the risk profile of the companies by using Regulatory Research Associates ("RRA") of S&P Capital IQ Pro.[25] First, Staff considered the credit ratings of electric utilities including Ameren Corp. and Ameren Missouri in Won's direct testimony.[26] Credit ratings are determined by the risk profile of the company. Second, Staff did not make a negative adjustment even though the current benchmark electric utility Empire District Electric Company ("Empire")'s credit rating of 'BBB' is lower than Ameren Missouri's credit rating of 'BBB+'.[27] If Staff properly considered the risk profiles of Ameren Missouri and Empire, the benchmark authorized ROE of the reference rate case should be lower than the 9.25% authorized in the Empire District Electric Company's rate case, Case No. ER-2019-0374, ("2019 Empire Case").[28] However, because Staff considered current financial and economic market conditions, Staff did not make a negative adjustment on Staff's recommended authorized ROE of 9.59% for Ameren Missouri.

Q. What are the 'necessary factors' Ms. Bulkley considered other than the comparable return standard of the *Hope* and *Bluefield* decisions in setting an authorized ROE?

A. Ms. Bulkley stated three other factors are to be considered in setting the ROE. In her rebuttal testimony, Ms. Bulkley stated,

> However, it is important to consider several factors that affect these regulatory decisions, specifically: (1) the market conditions at the time that the ROE was authorized; (2) any performance adjustments that were reflected in the authorized ROE (positive or negative) that are company specific; and (3) whether or not the ROE is established based on a regulatory construct that is consistent with the regulatory environment for the subject utility.[29]

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[25] RRA Regulatory Focus, S&P Capital IQ Pro, (https://www.capitaliq.spglobal.com/web/client?auth=inherit#news/feature?id=116.
[26] Pages 20-21, Won's Direct Testimony.
[27] S&P Global Rating Report.
[28] Page 38, *Amended Report and Order* issued July 23, 2020, in Case No. ER-2019-0374.
[29] Page 8, lines 8-13, Bulkley's Rebuttal Testimony.

As explained in Staff's previous testimonies in this proceeding, Staff considered these factors. Staff will explain again while comparing how Ms. Bulkley considered these necessary factors.

Q. Does Ms. Bulkley properly consider these factors to set her proposed ROE?

A. No, she does not. Ms. Bulkley used these factors to misguide and to set an inappropriate authorized ROE for ratemaking for Ameren Missouri in this proceeding. First, Ms. Bulkley abused the current special capital market conditions to overstate her proposed ROE. Fighting to reduce the high inflation rates, the Federal Reserve ("Fed") has increased interest rates with unusual speed. Because of the Fed's abnormally aggressive monetary policy, the market yield on U.S. Treasury securities at 30-year constant maturity increased 341 basis points from 0.99% on March 9, 2020 to 4.40% on October 24, 2022.[30] In this special market condition, the CAPM analysis should be cautiously used to estimate COE because risk premium models such as CAPM rely heavily on the risk free rate of government bond yields. It is obvious that CAPM COE estimates could easily overstate an authorized ROE. However, Ms. Bulkley ignored her reliable COE estimates using the DCF analysis and gave more weight to COE estimate results using risk premium models such as CAPM, ECAPM and BYPRP. According to her updated analysis, Ms. Bulkley's median DCF COE estimates, using average growth rates, have a range of 9.35% to 9.40%.[31] However, she discarded this relatively reliable result and proposed an ROE of 10.20%.

Second, Ms. Bulkley insisted that she considered Ameren Missouri's specific risks to set her proposed ROE.[32] Ms. Bulkley provided eight pages (pp. 65-73) of information in her direct

[30] FRED, St. Louis Fed, Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis, https://fred.stlouisfed.org/series/DGS30.
[31] Page 13, Figure 2, Bulkley's Rebuttal Testimony.
[32] Page 2, lines 14-17, Bulkley's Rebuttal Testimony.

testimony regarding how regulatory risks are assessed by credit rating agencies. However, there is no evidence how she properly considered Ameren Missouri's specific regulatory risks in her proposed ROE is 10.20% other than she alleged that Ameren Missouri faced significant regulatory risk compared to comparable electric utility companies. Furthermore, Ms. Bulkley falsely stated Staff believes that Ameren Missouri has less risk than other comparable vertically integrated electric utilities across the U.S.[33] However, Staff never stated Ameren Missouri has less or more risk than other comparable vertically integrated electric utilities across the U.S. in any of my testimonies in this proceeding. On the contrary, Staff clearly explained how Ameren Missouri's risk is comparable to electric utilities in the U.S. as follows:

> Ameren Missouri and Ameren Corp. each receive individual credit ratings as stand-alone entities. Both Ameren Missouri and Ameren Corp. are currently rated by Moody's and S&P and are both assigned corresponding ratings of 'Baa1' and 'BBB+' by each agency, respectively. Since the electric utilities have average bond ratings of 'Baa1' and 'BBB+' provided by Moody's and S&P, respectively, Ameren Missouri's authorized ROE should be set within a reasonable range compared to the average authorized ROE of electric utility companies in the U.S.[34] [Omitted Footnotes]

When a company's credit rating is determined, rating agencies consider overall risks faced by the company including business risk, financial risk, and regulatory risk. Ms. Bulkley recognized this fact and she even stated:

> Both S&P and Moody's consider the overall regulatory framework in establishing credit ratings. Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4) financial strength, liquidity, and key financial metrics. Of these criteria, regulatory framework, and the ability to recover costs and earn returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent weighting in the overall assessment of business and financial risk for regulated utilities.[35]

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[33] Page 9, lines 18-20, Bulkley's Rebuttal Testimony.

[34] Page 22, lines 4-10, Won's Direct Testimony.

[35] Page 66, lines 13-20, Bulkley's Direct Testimony.

In other words, assigning the same credit rating implies exposing to the same level of overall risk and expecting the same level of return from the same investment if everything else is equal.[36] Therefore, absent unusual circumstances, Ameren Missouri's authorized ROE should be set within a reasonable range compared to the average authorized ROE of electric utility companies in the U.S. Because Ms. Bulkley's proposed ROE of 10.20% is 65 basis points higher than the average authorized ROE of 9.55% for electric utilities in 2022, Ms. Bulkley did not properly consider Ameren Missouri's specific risks to set her proposed ROE. In contrast, the fact that Staff's recommended ROE of 9.59% is only four basis points higher than the average authorized ROE in 2022 is evidence Staff properly considered Ameren Missouri's specific risks to set its recommended ROE.

Third, Ms. Bulkley stated, "(3) whether or not the ROE is established based on a regulatory construct that is consistent with the regulatory environment for the subject utility."[37] The regulatory environment for Ameren Missouri is wholly considered in the assigned credit rating by assessing the regulatory risk of Ameren Missouri. Therefore, Ms. Bulkley did not properly consider it but Staff did as explained above in the second factor.

Q. Do you agree with Ms. Bulkley that the recent authorized ROEs for vertically-integrated electric utilities have ranged from approximately 9.90% to 10.75%?

A. No, I do not. Among 13 electric rate cases in 2023 to date, excluding two phase-in decisions, six rate cases providing the authorized ROEs are available having a range of 9.35% to 9.90% and are listed in Table 1:

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[36] CFA Program Level I, Portfolio Management and Wealth Planning, Portfolio Risk and Return: Part I.
[37] Page 6, lines 11-13, Bulkley's Rebuttal Testimony.

Table 1. Authorized ROE of Electric Rate Case in 2023[38]

State	Company	Case Type	Date	ROE (%)
MI	Consumers Energy Company	Vertically Integrated	1/19/2023	9.90
MN	Minnesota Power Enterprises, Inc.	Vertically Integrated	1/23/2023	9.65
WY	Cheyenne Light, Fuel and Power Company	Vertically Integrated	1/26/2023	9.75
SC	Duke Energy Progress, LLC	Vertically Integrated	2/9/2023	9.60
LA	Southwestern Electric Power Company	Vertically Integrated	2/17/2023	9.50
VA	Virginia Electric and Power Company	Limited-Issue Rider	2/27/2023	9.35

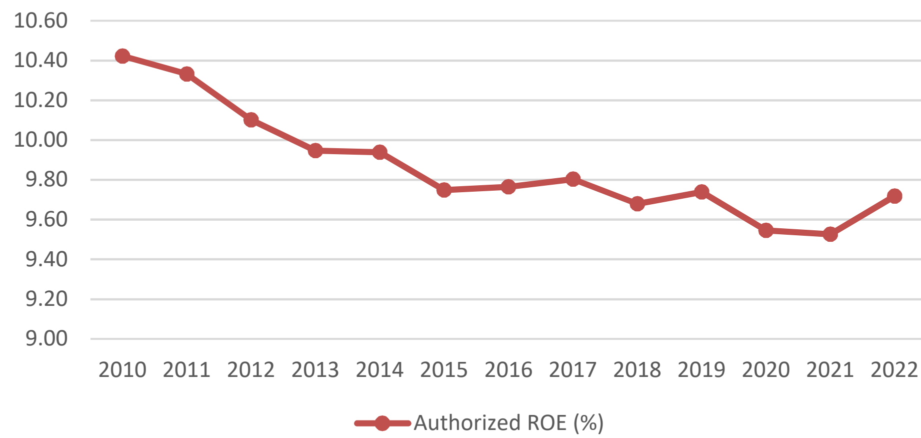
It is clear that Ms. Bulkley's proposed ROE of 10.20% is too high compared to authorized ROEs in recent electric rate cases. Most of these authorized ROEs are within Staff's reasonable range of 9.34% to 9.84% and are consistent with Staff's recommended ROE of 9.59% in this proceeding.

Q. Do you agree with Ms. Bulkley that she conducted a meaningful review of previously authorized ROEs?[39]

A. No, I do not. While authorized ROEs depend on economic and market conditions, there is clear downward trend in recent years for vertically integrated electric utility authorized ROEs. Figure 1 shows annual average authorized ROEs of vertically integrated electric utilities in the period between 2010 and 2022:[40]

[38] S&P Capital IQ Pro, RRA, Retrieved on March 3, 2023.
[39] Page 7, lines 3-17, Bulkley's Rebuttal Testimony.
[40] S&P Capital IQ. Data as of January 2, 2023.

Figure 1. Vertically-Integrated Authorized ROEs (2010-2022)[41]



As presented in Figure 1, the average authorized ROE in 2010 was 10.42% as compared to an average authorized ROE of 9.72% in 2022 for vertically-integrated electric utilities in the U.S. There is a clear downward trend in authorized ROEs for vertically-integrated electric utilities from 2010-2022. Therefore, Staff's recommended authorized ROE of 9.59% is more credible than Ms. Bulkley's 10.20% for a just and reasonable authorized ROE.

2. COE and Authorized ROE

Q. Do you agree with Ms. Bulkley that Staff does not actually rely on the results of either of its DCF analyses to support its recommendation for Ameren Missouri in this proceeding?[42]

A. No, I do not. Staff did not disregard its DCF COE estimation results when it recommended an authorized ROE of 9.59% within the range of 9.34% to 9.84%. On the contrary, Staff actively utilized its COE estimates to assess a just and reasonable authorized ROE using its comparative COE analysis. Interestingly, Ms. Bulkley actually disregarded the results of her own

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[41] 13 Authorized ROE, Won's Surrebuttal Workpaper.
[42] Page 27, lines 15-16, Bulkley's Rebuttal Testimony.

DCF COE estimates when she proposed an ROE of 10.20%. For example, Ms. Bulkley excluded her median DCF COE estimates of 9.35% to 9.42% using her average growth rate.[43] These COE estimated ranges are significantly lower than her proposed ROE of 10.20%.

Q. Why did Ms. Bulkley insist that Staff disregarded the results of its COE estimation when it recommended an authorized ROE?

A. According to Ms. Bulkley, Staff does not rely on DCF analyses to support its recommendation because Staff's DCF COE estimates (7.71% for Q4/2019 and 8.04% for Q3/2022) are significantly below its recommended ROE of 9.59%.[44] COE estimates have recently been much lower than authorized ROEs, and the COE is not the same as an authorized ROE.[45]

Ms. Bulkley recognized that Staff's authorized ROE recommendation is not simply based on the results of its COE models in a time period because Staff used the comparative analysis results of the DCF COE estimates that recalculated the 2019 Empire Case and the current rate case.[46] However, Ms. Bulkley stated:

> The comparative approach implemented by Dr. Won requires adjustments that are unnecessary if the cost of equity analyses are conducted on the subject company and are reasonably specified based on current and expected market conditions.[47]

This statement displays Ms. Bulkley's misunderstanding or confusion regarding Staff's comparative COE analysis. 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

[43] Schedule AEB-R1, Attachment 1, Bulkley's Rebuttal Testimony.
[44] Page 27, lines 16-19, Bulkley's Rebuttal Testimony.
[45] 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).
[46] Page 26, lines 4-13, Bulkley's Rebuttal Testimony.
[47] Page 26, lines 16-19, Bulkley's Rebuttal Testimony.

cannot be directly calculated using a formula or some specific model. Third, a COE can be estimated using financial models and proper input values for a given time period. Fourth, the change in investors' expected market returns can be estimated by a comparative COE analysis. Fifth, the change in authorized ROEs can be determined by the changes in the market participants' expected returns.

Staff used the results of its 2019 Q4 COE estimates using a proxy group of electric companies and compared those results to the 2022 Q3 COE estimates using the same proxy group of electric companies to discern a change in COE. Considering this change in COE, Ameren Missouri's unique risk profiles and capital market conditions, such as the Fed interest rate hike, Staff adjusted the Commission's authorized ROE from the 2019 Empire Case upward by 34 basis points from 9.25% to 9.59%. In other words, it is not the intent of Staff's current COE estimates to directly or mechanically calculate Staff's recommended authorized ROE of 9.59%.

Q. Did Ms. Bulkley, not Staff, disregard the results of her COE estimates when recommending an authorized ROE?

A. Yes, Ms. Bulkley estimated her recommended ROE directly from her DCF COE estimates but recommended a range of authorized ROE that excludes some of her COE estimates. For example, Ms. Bulkley excluded her DCF COE estimates of 9.35% to 9.42% using her average growth rate,[48] when her proposed ROE is 10.20%, in a range of 9.90% to 11.25%.[49] Ms. Bulkley assumed that COE and ROE are the same. If that is the case, then the recommended range of her proposed ROE should include all of her COE estimates. However, Ms. Bulkley clearly disregarded her relatively reliable DCF COE estimates.

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[48] Schedule AEB-R1, Attachment 1, Bulkley's Rebuttal Testimony.
[49] Page 8, lines 5-12, Bulkley's Direct Testimony.

In contrast, as explained in my Direct Testimony, Staff recognizes that market-based COE is different from authorized ROE.[50] COE is the return required by investors; authorized ROE is the return set by a regulatory utility commission. Staff's position is that COE is not the same as authorized ROE. It is well known that estimated COEs have been much lower than authorized ROEs in recent years.[51] Staff's recommended authorized ROE is a function of the relative change in COE between time periods. Therefore, Ms. Bulkley's claim that Staff does not rely on the results of its DCF COE estimates when recommending an authorized ROE is simply wrong.

Q. Why is Ms. Bulkley's assumption that the market-based COE estimate is equal to the authorized ROE wrong?

A. Ms. Bulkley's 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.[52] In contrast, an authorized ROE is an accounting book value-based concept.[53] Therefore, a simple calculation of COE does not produce a just and reasonable authorized ROE.

Q. Why is the market-based concept of COE not the same as the book-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 some experts contend that COE and ROE are synonymous, Staff's position is that they are not. Observed utility COEs have been, generally,

[50] Page 3, Footnote No. 4, Won's Direct Testimony.
[51] 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).
[52] Page 378, CFA Program Curriculum, 2020, Level I, Volume 4.
[53] Page 389, CFA Program Curriculum, 2020, Level I, Volume 4.

significantly lower than ROEs in recent years.[54] Because observed COEs have been significantly lower lately, instead of directly recommending the estimated COEs, Staff recommends the authorized ROE be based on 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 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.[55] 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.[56] Investors' expected returns 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 cases, rates are determined based upon the revenue requirement determined by the Commission. The revenue requirement is calculated by multiplying the company's 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.

[54] 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).
[55] Page 378, CFA Program Curriculum, 2020, Level I, Volume 4.
[56] Page 379, CFA Program Curriculum, 2020, Level I, Volume 4.

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?

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. Just and reasonable rates are required 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.

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 cases provides important information to calculate and recommend a just and reasonable authorized ROE. In many rate cases, Staff found that the changes in the COE over time, say between rate case 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 cases, 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.[57]

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. Setting fair and reasonable ROEs involves judgement, which means that in some cases the results of COE estimates are adjusted to account for what is considered just and fair. As explained earlier, the COE and the authorized ROE are developed in different financial contexts. 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.

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

More importantly, finding a just and reasonable authorized ROE in utility rate regulation is a long-term iterative procedure. After a utility rate case, a new set of 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 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, the company may file its next rate case sooner or later than originally expected based upon the performance results of the current set of rates.

3. Updated COE

Q. Did Ms. Bulkley update her COE analyses from her direct testimony?

A. Yes. Ms. Bulkley updated the results of her COE analyses using the same methodologies Staff addressed in Won's rebuttal testimony, but now reflecting market data through December 31, 2022.[58] Ms. Bulkley did not correct any of her erroneous methodologies and methods utilized in her COE analysis. Therefore, her COE analysis results are still biased and overstated from reasonable COE estimates.

Q. Did Ms. Bulkley change her recommended ROE based on her updated analysis using market data through December 31, 2022?

A. No, she did not. Ms. Bulkley insisted the updated results, reflecting market data through December 31, 2022, continue to support her proposed ROE of 10.20%.[59]

[58] Page 12, lines 6-8, Bulkley's Rebuttal Testimony.
[59] Page 13, lines 3-4, Bulkley's Rebuttal Testimony.

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 the time period of the data values for the proxy group.[60] Ms. Bulkley's updated COE analysis is now based on data through December 31, 2022, instead of the June 30, 2022 data used in her original COE analysis for her direct testimony.[61] Ms. Bulkley used 14 electric utility companies for her proxy group in her direct testimony and rebuttal testimony. Table 2 presents the list of Ms. Bulkley's electric utility proxy group, associated Ticker symbols, and credit ratings by S&P and Moody's:

Table 2. Bulkley Proxy Group and Credit Ratings[62]

	Company	Ticker	S&P	Moody's
1	ALLETE, Inc.	ALE	BBB	Baa1
2	Alliant Energy Corporation	LNT	A-	Baa2
3	American Electric Power Company, Inc.	AEP	A-	Baa2
4	Duke Energy Corporation	DUK	BBB+	Baa2
5	Entergy Corporation	ETR	BBB+	Baa2
6	Evergy, Inc.	EVRG	A-	Baa2
7	IDACORP, Inc.	IDA	BBB	Baa2
8	NextEra Energy, Inc.	NEE	A-	Baa1
9	NorthWestern Corporation	NWE	BBB	Baa2
10	OGE Energy Corporation	OGE	BBB+	Baa1
11	Otter Tail Corporation	OTTR	BBB	Baa2
12	Portland General Electric Company	POR	BBB+	A3
13	Southern Company	SO	BBB+	Baa2
14	Xcel Energy Inc.	XEL	A-	Baa1
	Ameren Corporation	AEE	BBB+	Baa1

The approximate 6-month time difference shows mixed directional changes in her COE estimates. In her updated COE analysis, Ms. Bulkley indicated lower DCF and CAPM COE

[60] Staff Data Request No. 0514, ER-2022-0129.
[61] Page 2, lines 10-11, Bulkley's Rebuttal Testimony.
[62] S&P and AEB-R2 Proxy Selection, Bulkley's Rebuttal Workpaper.

estimates and higher 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 3:

Table 3. Bulkley's COE estimates Comparison[63]

	Direct As of June 30, 2022			Rebuttal As of December 31, 2022		
	Low	Average	High	Low	Average	High
Constant Growth DCF	8.09%	9.31%	10.53%	7.90%	9.27%	10.55%
CAPM	10.47%	11.18%	11.73%	10.47%	11.02%	11.54%
ECAPM	11.09%	11.62%	12.03%	11.01%	11.42%	11.81%
Bond Yield Plus Risk Premium	10.03%	10.20%	10.29%	10.23%	10.29%	10.32%

Because Ms. Bulkley did not change her estimation models and input variables, Staff's concerns with her recommended COE remain the same as expressed in my rebuttal testimony. Staff will not repeat here the full 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 Ms. Bulkley's flawed COE estimation procedures, with brief summaries and updated analysis results, and the page numbers of the associated explanation in my rebuttal testimony, are as follows:

[63] 1 Summary, Won's Surrebuttal Workpaper.

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

Ms. Bulkley's recommended ROE of 10.20% is much higher than the average authorized ROE of 9.50% in fully litigated electric utility rate cases completed in 2023 to date.[64] Ms. Bulkley's proposed ROE is based on overstated COE estimates using upwardly-biased input variables such as projected growth rates for the DCF model and market risk premium ("MRP") for the CAPM method. In addition, Ms. Bulkley's proposed ROE, based on a regression model of the BYPRP analysis, is overstated because she ignored the downward trend of authorized ROE in her regression model.

B. Inadequate Proxy Group Selection (Pages 7-9, Ibid)

Ms. Bulkley's COE estimates are unreasonably upwardly biased due to her unreasonable proxy group selection. For example, Ms. Bulkley excluded Pinnacle West Capital Corporation ("PNW") from her electric utility proxy group because the stock price of PNW decreased temporarily.[65] In addition, Ms. Bulkley included some inappropriate companies in her proxy group such as ALLETE, Inc. ("ALL"), NextEra Energy, Inc. ("NEE"), and Otter Tail Corporation ("OTTR"). According to the Edison Electric Institute ("EEI"), ALL and NEE are not in the category of "regulated company" because less than 80% of their holding company assets are regulated.[66] OTTR has exposure to higher-risk nonutility plastics and manufacturing operations because 60% of its consolidated operating revenue is from non-electric business.[67] Ms. Bulkley's COE estimates are unreasonably upwardly biased due to her inclusion of these inappropriate proxy group selections.

[64] S&P Capital IQ Pro, RRA, Retrieved in March 3, 2023.
[65] Page 12, lines 1-15, Bulkley's Direct Testimony.
[66] Pages 29-30, 2021 Financial Review, EEI.
[67] Otter Trail Corp., S&P Global Ratings, published in September 17, 2021.

C. Excessive Growth Rate for DCF (Pages 9-11, 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 earnings growth rates.[68] Ms. Bulkley's DCF COE estimates would be reasonable if she would use a combination of commonly-used growth rates of earnings per share ("EPS"), dividend per share ("DPS"), book value per share ("BVPS") and GDP.[69] Analysts' projected growth rates are for periods of three to five years,[70] 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 gross domestic product ("GDP") growth rate.[71] Because of her overstated growth rates, Ms. Bulkley's DCF COE estimates are unreasonably upwardly biased. If Ms. Bulkley had used a more reasonable perpetual growth rate as her projected growth rate in the DCF model, her DCF COE estimate would be 8.74%.[72]

D. Inflated Market Risk Premium in the CAPM (Pages 11-17, Ibid)

Ms. Bulkley employed the CAPM and the ECAPM using Value Line Beta, Bloomberg Beta and Value Line Long-Term (2013-2022) Average Beta with three different updated risk-free rates of 3.71%, 3.88% and 3.90% and an updated total market return of 12.63%, resulting in three different MRP of 8.93%, 8.75% and 8.73%.[73] Ms. Bulkley's MRPs are much higher than the

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[68] Page 35, Bulkley's Direct Testimony.
[69] Howe, Keith M. and Eugene F. Rasmussen. Public Utility Economics and Finance, Prentice Hall, Inc., Englewood Cliffs, New Jersey, 1982.
[70] Value Line, Value Line - Value Line University, retrieved in July 15, 2022.
[71] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, page 302.
[72] 1 Summary, Won's Surrebuttal Workpaper.
[73] Schedule AEB-R1, Attachment 3, Bulkley's Rebuttal Testimony.

regular U.S. financial services industry's MRP estimates of around 4.00% to 7.00%.[74] When she calculated her MRP, Ms. Bulkley included companies not having dividend payment information.[75] With more reasonable assumptions, such as an MRP of 5.57% and a risk-free rate of 3.71%,[76] Ms. Bulkley's average CAPM COE estimate would be 8.34%.[77]

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

Ms. Bulkley's adjusted ECAPM COE estimate range of 11.01% to 11.80% is unreliable.[78] Ms. Bulkley used Dr. Roger Morin's adjustment factor of 25% in the ECAPM analysis.[79] Dr. Morin's adjustment factor of 25% was estimated using data from 1926 to 1984 under the assumption that CAPM underestimated COE.[80] 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.[81] Such variations in findings do not lend credibility to Ms. Bulkley's use of the ECAPM.

F. Inappropriate Bond Yield Plus Risk Premium Analysis (Pages 18-21, Ibid)

Ms. Bulkley's updated BYPRP ROE estimates range from 10.23% to 10.32% with a mean of 10.29%.[82] Ms. Bulkley's BYPRP using a regression analysis is different from the conventional

[74] Page 15, Figure 3, MRP and corresponding COE, Won's Rebuttal Testimony.
[75] Schedule AEB-R1, Attachment 5, Bulkley's Rebuttal Testimony.
[76] The assumption of the estimated MRP of 5.57% is the average of the seven MRP in 3 CAPM, Won's surrebuttal workpaper. The risk free rate of 3.71% is an average of 30-year Treasury bond at yields of 30 day Bloomberg Professional, as of December 31, 2022. See AEB-R1, Attachment 2, CAPM, Bulkley's Rebuttal Testimony.
[77] 3 CAPM, Won's Surrebuttal Workpaper.
[78] Schedule AEB-R1, Attachment 1, Bulkley's Rebuttal Testimony.
[79] 1 Summary, Won's Surrebuttal Workpaper.
[80] Page 17, Footnote No. 62. Won's Rebuttal Testimony.
[81] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, page 190.
[82] Schedule AEB-R1, Attachment 1, Bulkley's Rebuttal Testimony.

BYPRP.[83] Because Ms. Bulkley's BYPRP relies on a single independent input value of 30-year treasury bonds yield,[84] it is unavoidable that her BYPRP COE estimates are unreasonably excessive under the current Fed's monetary policy of increasing interest rates with unusual speed. Furthermore, if Ms. Bulkley considered the downward trend of the authorized ROE of electric utilities in the U.S., Ms. Bulkley's average BYPRP ROE estimate would be 9.38%.[85] As the Federal Energy Regulatory Commission ("FERC") discerned, the BYPRP is likely to provide a less accurate current COE estimate than the DCF or CAPM models because it relies on previous ROE determinations, which may not have been directly determined by a market-based method.[86] Staff recommends the Commission not consider Ms. Bulkley's BYPRP COE estimate to determine a just and reasonable authorized ROE.

G. Mischaracterization of Regulatory and Business Risks (Pages 22-24, 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.[87] Ms. Bulkley insisted that the risk level for Ameren Missouri is greater than her peer group companies because Ameren Missouri lacks a comprehensive forward-looking mechanism or set of mechanisms.[88] 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

[83] Pages 18-19, Won's Rebuttal Testimony.
[84] Page 18, lines 13-18, Won's Direct Testimony.
[85] 4 Risk Prem, Won's Surrebuttal Workpaper.
[86] Paragraph 342, FERC Opinion No. 569, 169 FERC ¶ 61,129.
[87] Page 4, lines 4-6, Bulkley's Direct Testimony.
[88] Page 65, lines 1-4, Bulkley's Direct Testimony.

provinces.[89] The credit ratings of Ameren Missouri are not lower than the average credit rating of any proxy group company considered in these proceedings.[90] S&P has assigned the corporate credit ratings of Ameren Missouri as 'BBB+'.[91] 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.[92] As shown by Moody's credit ratings in Table 2, of the 14 electric utility proxy group companies, only Portland General Electric Company ("POR") has a higher credit rating of "A3" than the credit rating of Ameren Missouri of 'Baa1'. Nine of the 14 companies have lower credit ratings such as 'Baa2'. Therefore, Ms. Bulkley's assertion that the risk level for Ameren Missouri is greater than that of her peer group companies is baseless.

4. Updated Capital Market Conditions

Q. Do you agree with Ms. Bulkley that Staff's recommended ROE of 9.59% is understated in this proceeding because Staff recommended an ROE of 9.73% in 2022 Missouri-American Water Company rate case, Case No. WR-2022-0303, ("2022 MAWC case")?

A. No, I do not. First, in her reasoning, Ms. Bulkley makes a false assumption that an electric utility company's authorized ROE should be greater than or equal to a water utility company. Ms. Bulkley did not provide any theoretical validness of her assumption. Ms. Bulkley stated,

> However, while Dr. Won and Mr. Jennings both use a comparative cost of equity approach, Dr. Won's ROE recommendation in the current proceeding of 9.59 percent for a vertically- integrated electric company is 14 basis points lower than Mr. Jennings's ROE recommendation for

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[89] S&P Global Ratings, Updated Views On North American Utility Regulatory Jurisdictions - June 2021, (https://www.spglobal.com/ratings/en/research/articles/210629-updated-views-on-north-american-utility-regulatory-jurisdictions-june-2021-11998892).

[90] Schedule SJW-d9, Won's Direct Testimony.

[91] S&P Global Rating Report.

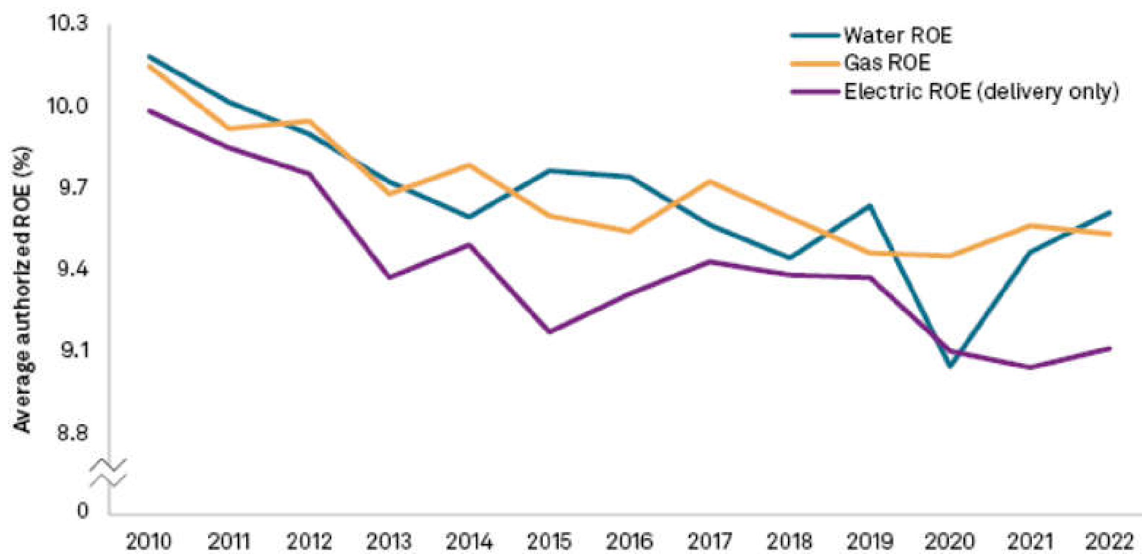
[92] Page 15, Guide to Credit Rating Essentials - S&P Global, retrieved on July 17, 2022. https://www.spglobal.com/ratings/_division-assets/pdfs/guide_to_credit_rating_essentials_digital.pdf.

> a water utility – which Mr. Jennings deems less risky than an electric or natural gas utility.[93]

However, in his testimonies in the 2022 MAWC case, Staff witness Randall T. Jennings did not state that an electric utility company's authorized ROE should be greater than or equal to a water utility company. Actually, there is no theoretical reason that an electric utility company's authorized ROE should necessarily be greater than or equal to a water utility company.

In addition, there is no reason the relationship between authorized ROEs of water and electric utilities should be fixed. Current data shows Ms. Bulkley's assumption is not true. In 2022, the average water utility authorized ROE of 9.61% was greater than the average electric utility authorized ROE of 9.55%.[94] As shown in Figure 2 published by S&P RRA, the average water utility authorized ROE has been greater than the average electric utility authorized ROE for the past 12 years except for 2020:

Figure 2. Average Electric, Gas, and Water Authorized ROEs[95]



As of Feb. 14, 2023.
Source: Regulatory Research Associates, a group within S&P Commodity Insights.
© 2023 S&P Global.

[93] Page 16, lines 2-6, Bulkley's Rebuttal Testimony.
[94] S&P Capital IQ Pro.
[95] RRA Regulatory Focus, Water ROEs trend higher on small dataset, Published February 15, 2023.

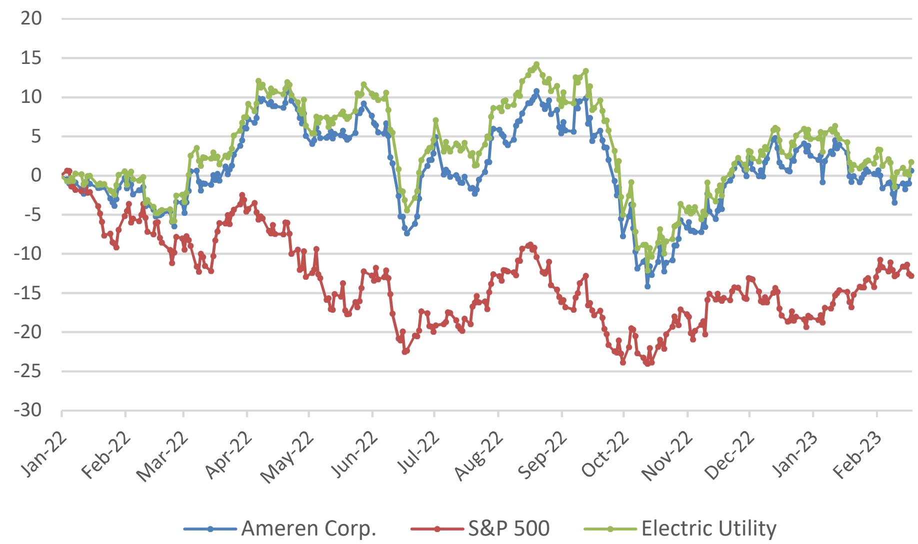
Second, Ms. Bulkley stated, "[i]t would be reasonable to expect that Mr. Jennings's ROE recommendation would be even higher than 9.73 percent had his analysis been done using even more current data through 3Q/2022."[96] To support her statement, Ms. Bulkley stated, "[t]he 3-month average yield on the 30-year Treasury bond increased from 3.04 percent to 3.26 percent from the end of 2Q/2022 (i.e., Mr. Jennings's analysis) to the end of 3Q/2022 (i.e., Dr. Won's analysis)."[97] In other words, Staff would recommend a higher ROE if Staff would use data from the latter months of 2022 because the government bond yield increased in 2022. The truth is that the average water utility ROE in the first half and second half of 2022 decreased from 9.73% to 9.50%.[98] Therefore, Ms. Bulkley's assertion that Staff's recommended ROE of 9.59% in this case is understated because it is lower than Staff's recommended ROE of 9.73% for 2022 MAWC case is baseless.

Q. Do you agree with Ms. Bulkley that the utility sector will most likely underperform over the near term because investors in utility stocks will expect a higher yield as interest rates remain elevated on the alternative investment of government bonds?[99]

A. No, I do not. As with her other unreasonable arguments, Ms. Bulkley attempts to oversimplify complex economic financial phenomena with her nearsighted and narrow vision to justify her overstated proposed ROE without any supporting theoretical and empirical evidence. As shown in Figure 3, in 2022 and 2023 to date, the electric utilities of Staff's proxy group and Ameren Corp. both out-performed the U.S. stock market:

[96] Page 16, lines 17-19, Bulkley's Rebuttal Testimony.
[97] Page 16, lines 13-16, Bulkley's Rebuttal Testimony.
[98] Won's Surrebuttal Workpaper.
[99] Page 17, lines 13-17, Bulkley's Rebuttal Testimony.

Figure 3. Total Return of Electric Utility, S&P 500 and Ameren Corp.



5. Proxy Group

Q. Do you agree with Ms. Bulkley that it is not reasonable to include Pinnacle West Capital Corporation ("PNW") in Staff's proxy group?

A. No, I do not.

Q. Why did Ms. Bulkley insist that including PNW in Staff's proxy group is unreasonable?

A. Ms. Bulkley insisted that there was an adverse market reaction and credit rating actions because of a negative rate case determination for Arizona Public Service ("APS"), PNW's electric utility operating subsidiary.[100] The Arizona Corporation Commission ("AZCC") reduced the authorized ROE for APS from 10.00% to 8.70% in 2021.[101] As evidence of the adverse market reaction and credit rating actions, Ms. Bulkley provided information about PNW's declining stock prices and negative credit ratings actions.[102]

[100] Page 28, lines 13-15, Bulkley's Rebuttal Testimony.

[101] Arizona Corporation Commission, *ALJ Recommended Opinion and Order*, August 2, 2021.

[102] Pages 28-31, Bulkley's Rebuttal Testimony.

Q. Do you agree with Ms. Bulkley that the information she provided is enough to prove that including PNW in Staff's proxy group is unreasonable?

A. No, I do not. The information Ms. Bulkley provided in her testimony is not proper evidence that PNW should be excluded from Staff's proxy group. The proper criterion of whether a company can be included in Staff's proxy group is whether the company is comparable to Ameren Missouri in terms of risks in context of the comparable return standard, not the reason PNW experienced adverse market conditions more than one year ago and some credit rating actions. The most important information is whether PNW is comparable with Ameren Missouri in terms of its risk.

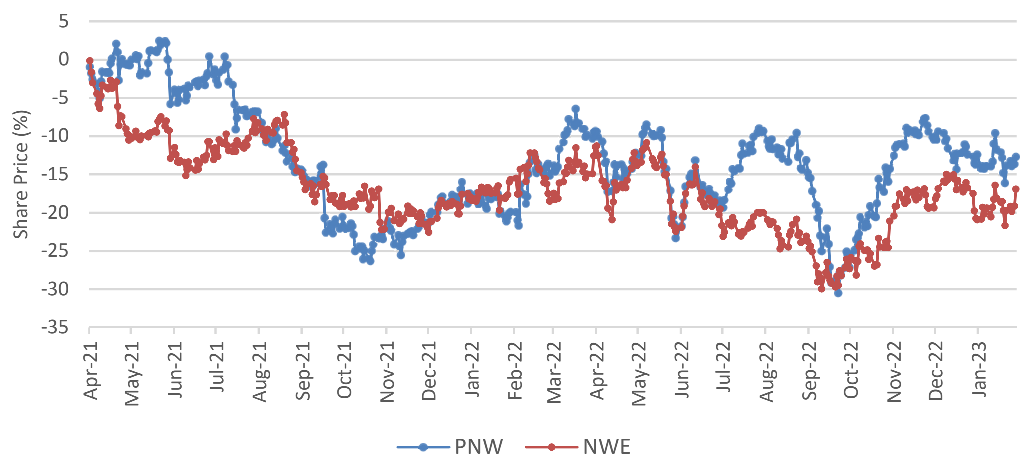
Ms. Bulkley provided some credit agencies' actions and comments in her rebuttal testimony.[103] However, it is clear PNW is comparable with Ameren Missouri in terms of risk because both PNW and Ameren Missouri are rated by Moody's and S&P and are both assigned corresponding ratings of 'Baa1' and 'BBB+' by each agency, respectively. Ms. Bulkley insisted that in 2021 AZCC reduced its authorized ROE for APS from 10.00% to 8.70% and as a result, PNW received negative rating actions from credit rating agencies.[104] Currently, APS's credit rating of 'A3', assigned by Moody's, is higher than Ameren Missouri's credit rating of 'Baa1'. Therefore, there is no reason PNW is not comparable to Ameren Missouri in terms of comparable risk standard.

Furthermore, Ms. Bulkley provided another reason, that PNW experienced an adverse market reaction of a falling stock price in 2021 after the negative rate case determination. The fact that PNW's stock price fell significantly is not a proper reason to exclude PNW from Staff's proxy

[103] Pages 29-31, Bulkley's Rebuttal Testimony.
[104] Page 28, lines 17-19, Bulkley's Rebuttal Testimony.

group. If the significant stock price decline is a proper reason, including NorthWestern Corporation ("NWE") in Ms. Bulkley's proxy group is unreasonable because NWE's stock price fell similarly in 2021.

Figure 4. PNW and NWE Share Price (%)



As shown in Figure 4, NWE's stock price was similar to or underperformed PNW's from April 2021 through February 2023. However, Ms. Bulkley included NWE in her proxy group. Therefore, Ms. Bulkley's reasons to exclude PNW from Staff's proxy group are not persuasive.

6. Growth Rates and DCF Model

Q. Do you agree with Ms. Bulkley that Staff should solely use the earnings per share ("EPS") growth rate and should not use the dividend per share ("DPS") or book value per share ("BVPS") growth rate within its DCF calculations?[105]

A. No, I do not. EPS, DPS, and BVPS are acceptable measures of growth rate.[106] 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 cases.

[105] Page 33, lines 14-15 and Pages 34-36, Bulkley's Rebuttal Testimony.

[106] Page 139, The Cost of Capital – A Practitioner's Guide, David C. Parcell, 2020 Edition.

At the same time, there are many publications that support the use of projected DPS and BVPS growth rates for use in a DCF model. First, Howe and Rasmussen stated that the three most commonly-used financial indicators of growth are DPS, EPS, and BVPS.[107] Second, when 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, he clearly indicated multiple times that the growth rate for DCF models is the "constant growth rate in DPS in the future."[108] The most important point is that using the DPS and BVPS growth rates in DCF is an acceptable method.

To justify her assertion, Ms. Bulkley referenced four articles in her Footnote Nos. 46 through 50. However, these articles do not support Ms. Bulkley's assertion that "solely" the EPS growth rate should be used within the DCF model. Some examples of the actual citations and summaries for the articles are the following:

(1) Brigham and Houston,[109]

> 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);[110]

(2) Stanley Block,[111]

> Investment analysts report predominant reliance on EPS growth projections. In a survey completed by 297 members of the Association for Investment Management and Research, the majority of respondents ranked earnings as the most important variable in valuing a security (more important than cash flow, dividends, or book value).;[112]

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[107] Howe, Keith M. and Eugene F. Rasmussen. Public Utility Economics and Finance, Prentice Hall, Inc., Englewood Cliffs, New Jersey, 1982.

[108] Pages 130-134, The Cost of Capital – A Practitioner's Guide, David C. Parcell, 2020 Edition.

[109] Footnote No. 46, Bulkley's Rebuttal Testimony,

[110] Eugene F. Brigham and Joel F. Houston, Fundamentals of Financial Management, at 317 (Concise Fourth Edition, Thomson South-Western, 2004).

[111] Footnote No. 50, Bulkley's Rebuttal Testimony.

[112] Block, Stanley B., "A Study of Financial Analysts: Practice and Theory," Financial Analysts Journal (July/August 1999).

(3) Jing Liu, et al,[113]

> "Forward earnings explained stock prices remarkably well" and were generally superior to other value drivers analyzed;[114] and

(4) C.A. Gleason, et al,[115]

> Sell-side analysts with the most accurate stock price targets were those whom the researchers found to have more accurate earnings forecasts.[116]

Staff completely agrees with Ms. Bulkley's 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.[117] 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. Any concerns on using DPS and BVPS cited by Ms. Bulkley does not match to Staff's DCF analysis. Therefore, the articles Ms. Bulkley referenced do not support Ms. Bulkley's arguments.

Q. Do you agree with Ms. Bulkley that Staff does not actually rely on any of Staff's analyses to support its recommendation?[118]

A. No, I do not. As I explained above, Staff relies on its DCF COE estimates to assess a just and reasonable authorized ROE using its comparative COE analysis. Staff used the results of its 2019 Q4 COE estimates and compared the results to the 2022 Q3 COE estimates to discern a change in COE. Considering Ameren Missouri's unique risk profile and capital market conditions, such as the Fed interest rate hike, Staff adjusted the Commission's authorized ROE from the 2019 Empire Case upward by 34 basis points from 9.25% to 9.59%.

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[113] Footnote No. 49, Bulkley's Rebuttal Testimony. Liu, Jing, et al., "Equity Valuation Using Multiples," Journal of Accounting Research, Vol. 40 No. 1, March 2002.
[114] Staff's Data Request Nos. 0533 and 0526, ER-2022-0129 and ER-2022-0130, respectively.
[115] Footnote No. 49, 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.
[116] Staff's Data Request Nos. 0533 and 0526, ER-2022-0129 and ER-2022-0130, respectively.
[117] Page 30, lines 19-21, Won's Direct Testimony.
[118] Page 33, lines 17-18, Bulkley's Rebuttal Testimony.

Q. Do you agree with Ms. Bulkley that Staff did not follow FERC's current methodology to calculate DCF COE estimates?[119]

A. Yes, I agree. Staff did not intend to follow the FERC methodology. Staff considers FERC's decisions, but FERC's decisions are changed 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 cases. Staff used growth rates in its DCF model estimated by combining analysts' short-term estimated growth rates and long-term GDP growth rates at two-thirds and one-third weightings, respectively. This is an approach that FERC used before it was changed in its May 2020 order.[120] 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.

Q. Do you agree with Ms. Bulkley that Staff's DCF analysis does not reasonably reflect the utility growth that is expected to occur over the longer-term?[121]

A. No, I do not. It is basic regulatory economics that long-term growth rates for utilities will eventually converge to the level of long-term gross domestic product ("GDP").[122] Staff has consistently held the view that while it is possible that a company or industry could grow at a rate faster than the GDP in the short to medium term, no company or industry will do so in perpetuity.[123]

[119] Pages 36-37, Bulkley's Rebuttal Testimony.
[120] FERC Opinion 569-A.
[121] Page 36, lines 9-20, Bulkley's Rebuttal Testimony.
[122] Morin, R. A. (2006), New Regulatory Finance. Public Utilities Reports, page 302
[123] Page 10, lines 17-19, Won's Rebuttal testimony.

7. Market Risk Premium and CAPM

Q. Do you agree with Ms. Bulkley that the MRPs relied upon by Staff are not reasonable?[124]

A. No, I do not. Ms. Bulkley's reasons why the MRPs relied upon by Staff are unreasonable make no sense. Staff used the MRPs from two most widely accepted methods in the financial industry. One is developed by Roger G. Ibbotson who is a professor in the Practice Emeritus of Finance at Yale School of Management.[125] The other method developed by Aswath Damodaran who is a Professor of Finance at the Stern School of Business at New York University.[126]

Q. Why does Ms. Bulkley insist that the MRPs relied upon by Staff are not reasonable?

A. Ms. Bulkley gave three reasons why she insisted the MRPs relied upon by Staff are not reasonable:

> First, in addition to the historical arithmetic mean return to estimate the market risk premium, Dr. Won has incorrectly relied on the historical geometric mean return to calculate the risk premium.
>
> Second, Dr. Won has incorrectly used the total return on long-term government bonds to calculate his historical market risk premium instead of the income-only return on long-term government bonds.
>
> Third, Dr. Won's historical market risk premia fail to consider the inverse relationship between interest rates and the market risk premium under current market conditions (i.e., as interest rates decrease, the market risk premium increases).[127]

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[124] Page 42, lines 3-5, Bulkley's Rebuttal Testimony.
[125] Yale School of Management, https://som.yale.edu/faculty-research/faculty-directory/roger-g-ibbotson.
[126] New York University, Stern School of Business, https://pages.stern.nyu.edu/adamodar/.
[127] Page 42, lines 5-13, Bulkley's Rebuttal Testimony.

Q. Do you agree with Ms. Bulkley's first reason that in addition to the arithmetic mean, Staff incorrectly relied on the geometric mean to calculate the MRP?[128]

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. It is well-known fact that 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.[129] Dr. Damodaran also stated that there are strong arguments that can be made for the use of geometric average in both empirical studies and the asset pricing model theory.[130]

In addition, research sponsored by the Society of Actuaries' Pension Section Research Committee found that the geometric mean was superior to arithmetic 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.[131] Moreover, many other theoretical and empirical studies support the use of geometric means to calculate MRP.[132]

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

[128] Page 42, lines 5-7, Bulkley's Rebuttal Testimony.
[129] Damodaran, A. (1999). Estimating Equity Risk Premiums.
[130] Ibid.
[131] Modugno, V. (2012). Estimating Equity Risk Premiums.
[132] 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.

second quarter of 2022, which was 3.04%. For the MRP estimate, Staff used average 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 1926-2021,[133] and (2) the long-term historical return differences between S&P 500 and long-term government bonds from 1928-2021.[134]

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.[135] Many theoretical and empirical studies and financial reports presented MRP estimates using both arithmetic means and geometric means.[136] 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.[137]

For typical investment horizons, the proper compounding rate for forecasting returns is in between the arithmetic and geometric means.[138] Many financial analysts use a compromise of the

[133] Duff & Phelps, the Stocks, Bonds, Bills, and Inflation (SBBI®) Monthly Dataset.
[134] Risk Premium, Damodaran Online, Stern School of Business, NYU.
[135] 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.
[136] Ibbotson, R. G. (2011). The equity risk premium. Rethinking the Equity Risk Premium, CFA Research Foundation Publications, 4, 18-26.
[137] 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.
[138] Jacquier, E., Kane, A., & Marcus, A. J. (2003). Geometric or arithmetic mean: A reconsideration. Financial Analysts Journal, 59(6), 46-53.

two, a weighted average of arithmetic and geometric mean.[139] Therefore, Staff's method to consider both arithmetic and geometric means when calculating the MRP in the CAPM analysis is a widely accepted approach in financial analysis.[140] 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's second reason that Staff has incorrectly used the total return on long-term government bonds to calculate your historical MRP instead of the income-only return on long-term government bonds?[141]

A. No, I do not. Because Staff used long-term historical data over a 95-year span, 1926-2021, utilizing income return or total return does not make a material change. To justify her assertion of only using the income return, Ms. Bulkley quoted an article of Morningstar, which is the former publisher, Duff & Phelps, of the historical dataset Staff relied upon for my historical MRPs that is now published by Kroll.[142] It is interesting to note that the most recent Kroll equity risk premium in the United States, i.e. MRP,[143] is 6.0%.[144] This is consistent with my MRP estimation of 6.03% using Kroll's total return on long-term government bonds data.[145]

In contrast, Ms. Bulkley utilized her rebuttal testimony MRP estimate range of 8.73% to 8.93%, more than 250 basis points higher than Kroll's MRP of 6.0%, using the income-only return

[139] Blume, M. E. (1974). Unbiased estimators of long-run expected rates of return. Journal of the American Statistical Association, 69(347), 634-638.
[140] Hammond, B., & Leibowitz, M. (2011). Rethinking the equity risk premium: An overview and some new ideas. Rethinking the Equity Risk Premium, 1-17.
[141] Page 42, lines 7-10, Bulkley's Rebuttal Testimony.
[142] Page 45, lines 7-9, Bulkley's Rebuttal Testimony.
[143] Kroll's article lists this figure as "equity risk premium" and then describes it as a key input "used to calculate the cost of equity capital in the context of the Capital Asset Pricing Model (CAPM) and other models used to develop discount rates." CAPM identifies this figure as "Market Risk Premium" (MRP).
[144] Kroll, Impact of High Inflation and Market Volatility on Cost of Capital Assumptions – October 2022 Update.
[145] Schedule RJ-d14, Won's Direct Testimony.

on long-term government bonds.[146] This is more evidence of how Ms. Bulkley's MRP is overstated in her CAPM COE estimates. It is clear that Ms. Bulkley used unreasonably overstated MRPs in her CAPM analysis. In addition, Staff's use of an MRP of 6.03% that is using the total return, instead of income-only return, on long-term government bonds for the CAPM analysis is more realistic.

Q. Do you agree with Ms. Bulkley's third reason that your historical MRP fails to consider the inverse relationship between interest rates and the MRP under current market conditions?[147]

A. No, I do not. Staff is aware of the inverse relationship between interest rates and the MRP under current market conditions. Because of this inverse relationship between interest rates and the MRP, CAPM estimates could be easily overestimated using a CAPM model under current market conditions where the Fed was under pressure to increase interest rates with unusual speed. Therefore, Staff is aware of upwardly biased CAPM COE estimates. Ms. Bulkley insisted her use of forecasted higher MRP estimates, as used in her CAPM analysis, specifically addresses this concern,[148] but a higher MRP only overstates what are already upward biased CAPM COE estimates. Therefore, Staff properly considered the inverse relationship between interest rates and the MRP under current market conditions, but Ms. Bulkley does not.

Q. Do you agree with Ms. Bulkley that Staff relied on different methodologies to determine COE and ROE, without a basis to do so, and biased the COE results?

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[146] Schedule AEB-R-1, Attachments 3, Bulkley's Rebuttal Testimony.
[147] Page 42, lines 10-13, Bulkley's Rebuttal Testimony.
[148] Page 67, lines 9-10, Bulkley's Rebuttal Testimony.

A. No, I do not. Staff did not change Staff's methodology for recommending an appropriate authorized ROE for any utility rate cases. Staff used the identical 'methodology' of Staff's cost of capital analysis and rate of return analysis. Staff only changes its methods to produce an appropriate recommendation when considering specific situations such as market conditions and data quality for each rate case. To use the identical methodology to get proper results, Staff not only used proper procedures of calculation methods with properly updated input values, but also used identical principles and assumptions.

Q. What is the difference between a "method" and a "methodology?"

A. According to Webster's Dictionary, a "method" is a procedure for attaining an object, and a "methodology" is the system of principles, procedures and practices applied to a particular branch of knowledge.[149] In financial analysis, methods are just specific tools and procedures used to collect and analyze data, but the methodology is the underlying philosophy, assumptions, and principles for the overall analysis, strategy, and rationale including all the methods and other detailed information about the analysis.[150]

Q. Why is Ms. Bulkley's assertion that Staff's use of different methodologies can bias its COE results not true?

A. First, Ms. Bulkley confused the difference between the concepts of "methodology" and "method." Second, it is true that Staff changed its method of the comparative COE analysis because Staff did not compare the two reference periods using CAPM in this proceeding but used a comparative CAPM COE analysis for 2022 MAWC case. Third, Staff has proper reason to use a CAPM analysis only for estimating COE in the reference period of the current rate case and

[149] Webster's II New College Dictionary.
[150] Ryan, B. (2002). Research methods and methodology in finance and accounting. Cengage Learning EMEA.

avoids using a CAPM analysis for comparison of the two reference periods. Fourth, Staff did not calculate any "biased" COE results and has no such intentions.

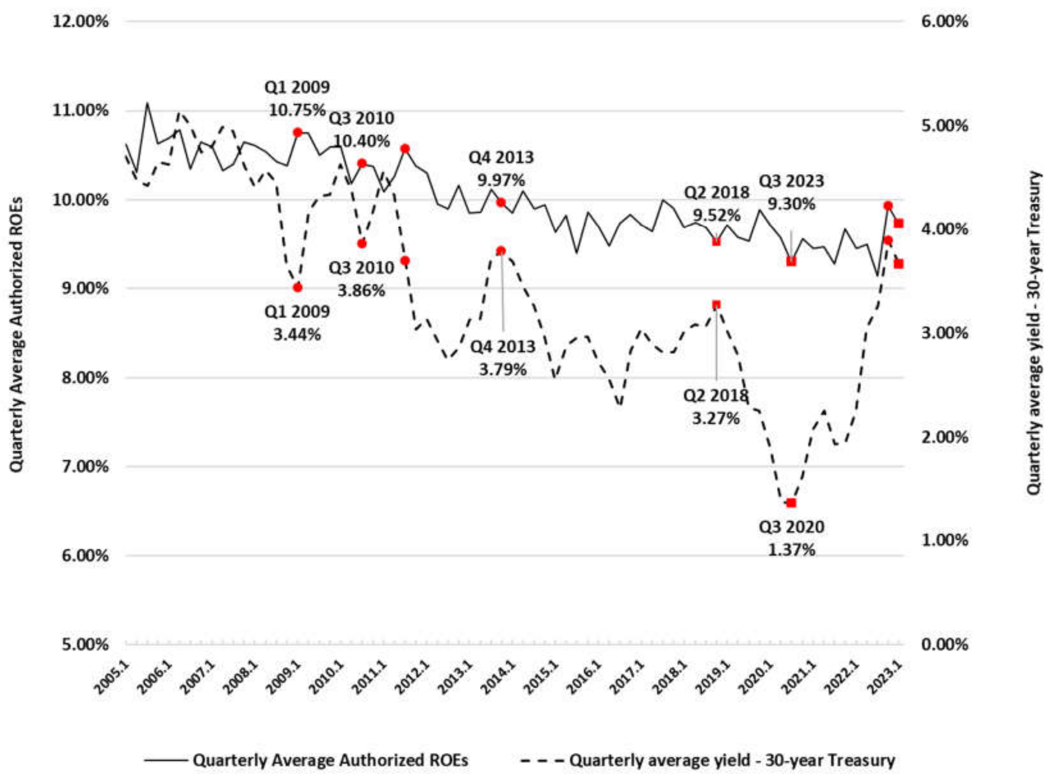
Q. What is Staff's reason to use the CAPM analysis only for estimating the COE in the reference period of the current rate case?

A. The CAPM analysis for estimating COE is very sensitive to the risk-free rate. In the past two years, other input values such as the risk measure Beta of MRP have not quickly changed as much as the risk-free rate measured by 30-year Treasury bond yields. In other words, almost all differences in CAPM COE estimates between the two reference periods is determined by changes in the risk-free rate as measured by the 30-year Treasury bond yields. Actually, the 30-year Treasury bond yield has increased more than 250 basis points in the past two years.[151] This means that if Staff would rely on a comparison of CAPM COE estimates, Staff's recommended ROE in this proceeding would be higher than 11.50%. However, an ROE greater than 11.50% is unreasonable considering the average electric utility authorized ROE has been 9.63% in 2023 to date.[152]

A more fundamental problem in using the CAPM COE estimates in the comparative COE analysis is that historically, authorized ROEs have not changed as much as the changes in the 30-year Treasury bond yields. In Figure 5 referenced from Ms. Bulkley's rebuttal testimony, quarterly 30-year Treasury bond yields and quarterly authorized ROEs of vertically integrated electric utilities in the U.S. are compared:[153]

[151] Board of Governors of the Federal Reserve System, Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, https://fred.stlouisfed.org/data/GS30.txt.
[152] S&P Capital IQ Pro, RRA, Retrieved in March 3, 2023.
[153] Page 11, Figure 1, Bulkley's Rebuttal Testimony.

Figure 5. 30-Year Treasury Bond Yields and
Authorized ROE of Vertically-Integrated Electric Utility



From February 2018 to April 2020, the 30-year Treasury bond yields fell from 3.13% to 1.27%, a decline of 186 basis points. However, during the same time period, the average electric utility authorized ROEs are within the range of 9.4% to 9.8%, a range of 40 basis points. Therefore, relying on the comparative COE analysis using CAPM analysis is unreasonable under current circumstances. In an economics point of view, the current 30-year Treasury bond hike is not a natural capital market phenomenon. This is derived from government intervention to the market to fight the inflation rate hike through the Fed's monetary policy activity using unusual speed in increases of interest rates. Considering all of the theoretical and empirical evidence, Ms. Bulkley's assertion that Staff should use a CAPM analysis in the comparative COE analysis is preposterous.

8. Rule of Thumb Methodology

Q. Do you agree with Ms. Bulkley that Staff does not take into consideration the inverse relationship between interest rates and risk premium?[154]

A. No, I do not. Staff considered the inverse relationship between interest rates and risk premium in Staff's "rule of thumb" risk premium analysis. Considering current interest rate hikes, the inverse relationship between interest rates and risk premium implies the risk premium should be lower than during normal economic situations. For a utility company such as Ameren Missouri that has a credit rating of "BBB+", Staff usually considers a risk premium range of 3% to 5%.[155] However, in this case, Staff took into consideration the inverse relationship between interest rates and the risk premium and employed a risk premium range of 3% to 4%.[156] Therefore, Ms. Bulkley's assertion that Staff does not take into consideration the inverse relationship between interest rates and the risk premium is baseless.

Q. Do you agree with Ms. Bulkley that Staff has utilized different ranges of the "rule of thumb" over time so that there is no consensus as to the "rule of thumb," highlighting its arbitrary nature and illustrating that it is overly simplistic and unreliable?[157]

A. No, I do not. It is true that Staff has utilized different ranges of the "rule of thumb" for each case considering the market conditions and corporate specific risk because Staff always consistently uses identical methodology to utilize the most appropriate method such as input data. Because Staff's "rule of thumb" method is a risk premium analysis, Staff used a different risk premium from the 3% to 5% that Staff witness Peter Chari used in Ameren Missouri's 2021 rate

[154] Page 51, lines 15-16, Bulkley's Rebuttal Testimony.
[155] Page 27, Staff Report Cost of Service, September 3, 2021, Case No. ER-2021-0240.
[156] Page 34, lines 1-2, Won's Direct Testimony.
[157] Page 52, lines 3-10, Bulkley's Rebuttal Testimony.

case for Staff's "rule of thumb" to estimate the cost of equity.[158] However, as explained above, Staff considered the inverse relationship between interest rates and the risk premium and employed a risk premium range of 3% to 4%.[159] Therefore, Ms. Bulkley's assertion that Staff's "rule of thumb" method of a risk premium analysis is overly simplistic and unreliable is simply unreasonable.

Q. Do you agree with Ms. Bulkley that Staff's "rule of thumb" risk premium analysis is outdated and does not reflect the increases in interest rates that occurred after September 30, 2022, and does not support nor serve as a reasonableness check of the result of Staff's DCF analysis, but rather suggests that Staff's DCF result is significantly understated?

A. No, I do not. If Staff properly updated its "rule of thumb" risk premium analysis, considering the increases in interest rates that occurred after September 30, 2022, the "rule of thumb" risk premium analysis consistently supports Staff's DCF COE estimate of 8.04%. As Ms. Bulkley recognized, there were significant increases in interest rates that occurred after September 30, 2022. With consideration to the inverse relationship between interest rates and risk premium, the current proper risk premium is a range of 2.5% to 3.5%.[160] To use the most current data as of February 28, 2023, "A" rated and "Baa" rated utility bond yields are 5.29% and 5.54%, respectively. Adding the 2.5% to 3.5% risk premium, the "rule of thumb" indicates a COE between 7.79% and 9.04%. Therefore, Ms. Bulkley's assertion that an updated Staff's "rule of thumb" risk premium analysis does not support nor serve as a reasonableness check of the result of his DCF analysis is absurd. Again, updated analysis results support that Staff's DCF analysis is adequate.

[158] Page 27, Staff Report Cost of Service, September 3, 2021, Case No. ER-2021-0240.
[159] Page 34, lines 1-2, Won's Direct Testimony.
[160] Mergent Bond Record.

Q. Do you agree with Ms. Bulkley that Staff used MRP in the "Rule of Thumb" instead of ERP?[161]

A. No, I do not. Staff did not use MRP in the Rule of Thumb risk premium approach. Staff clearly stated in Won's Direct Testimony that Staff's rule of thumb is an original form of the bond yield-plus risk premium method that uses an ERP.[162] MRP is estimated as the difference between the total return of stock market and the government bond yield. In contrast, ERP is a company or industry specific risk premium measured by the difference between its equity return and bond yield.[163] Ms. Bulkley might have inadvertently misread Staff's COS report on this point because the conceptual differences between MRP and ERP are too basic for financial analysts to otherwise confuse.

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. Mr. Murray disagrees with Staff's recommendation of authorized ROE, ratemaking capital structure and allowed ROR for Ameren Missouri in this proceeding.[164] The areas in which Staff addresses issues of Mr. Murray's rebuttal testimony include:

- Capital Structure, and
- Recommended ROE.

Staff will discuss each in turn, below.

[161] Pages 50-53, Bulkley's Direct Testimony.
[162] Page 33, lines 15-19, Won's Direct Testimony.
[163] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, pages 121-123.
[164] Page 37, lines 3-26, Murray's Rebuttal Testimony.

1. Capital Structure

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

A. Mr. Murray disagreed with Staff's recommended ratemaking capital structure to use Ameren Missouri's actual standalone capital structure. Mr. Murray believes that Ameren Corp. has been able to consistently manage Ameren Missouri's capital structures for ratemaking to achieve an end-of-period ratemaking common equity ratio range of 51.75% to 52.30% for rate cases over the last ten years.[165] Although Ameren Missouri explicitly stated, "Ameren Missouri has neither internally identified nor externally communicated a targeted capital structure,"[166] Mr. Murray stated, "Ameren Corp. targets 52% common equity at Ameren Missouri, which, as the ultimate parent of Ameren Missouri, it can accurately achieve by managing the capital flows to and from Ameren Missouri."[167]

Q. What capital structure does Staff recommend in this proceeding?

A. Staff recommends Ameren Missouri's actual standalone capital structure consisting of 51.91% common equity, 0.66% preferred stock, and 47.43% long-term debt as of December 31, 2022 based on Ameren Missouri's true-up information.[168]

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

A. Mr. Murray did not change his support for a capital structure of 43.00% common equity, 0.69% preferred stock, and 56.31% long-term debt based on his analysis of Ameren Corp.'s

[165] Page 3, lines 2-4, Murray's Rebuttal Testimony.
[166] Staff Data Request No. 0192.
[167] Page 4, lines 19-24, Murray's Rebuttal Testimony.
[168] Staff's Data Request No. 0191.1 and Won's True-Up Workpaper.

capital structure that is in line with Ameren Corp.'s recent targeted consolidated capital structure.[169]

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

A. Staff has one major concern with Mr. Murray's recommendation. Mr. Murray's recommended capital structure was developed based on Ameren Corp.'s consolidated capital structure, instead of Ameren Missouri's standalone capital structure. Staff did not find any critical reason to avoid using Ameren Missouri's standalone capital structures for the purpose of ratemaking. Mr. Murray insisted that Ameren Missouri's common equity ratio be set no higher than Ameren Corp.'s, which is currently approximately 43%, net of short-term debt.[170] However, Mr. Murray's recommended equity ratio of 43.00%, based on his analysis of Ameren Corp.'s capital structure, is 744 basis points lower than the recent average electric utility equity ratio for other electric utility companies throughout the U.S., which was approximately 50.44% in 2022.[171]

Q. Has Mr. Murray presented any new information in his rebuttal testimony to change Staff's capital structure recommendation?

A. No. In fact, Mr. Murray confirmed some of Staff's reasons for recommending Ameren Missouri's standalone capital structure, instead of Ameren Corp.'s consolidated capital structure, for ratemaking in this proceeding.

Q. Please state what Mr. Murray confirmed.

A. Mr. Murray confirmed the following reasons for Staff recommending Ameren Missouri's own capital structure for ratemaking in this proceeding:

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[169] Page 39, lines 14-17, Murray's Direct Testimony.
[170] Page 49, lines 3-4, Murray's Direct Testimony.
[171] S&P Capital IQ Pro, retrieved in January 3, 2023.

(1) Ameren Missouri issues its own long-term debt and short-term debt directly to third-party investors.[172] Ameren Corp has not provided long-term debt financing to Ameren Missouri since January 1, 2020.[173] Mr. Murray found that Ameren Missouri has been relying more heavily on long-term capital rather than short-term debt to fund its liquidity needs.[174] Mr. Murray did not comment that Ameren Missouri's affiliates' [and Ameren Corp.'s] assets are not pledged as security for Ameren Missouri's debt, but this is important information for determining financial independency. Staff confirmed that Ameren Missouri's assets have not secured Ameren Corporation or its subsidiaries' debts nor do they secure each other's debts.[175]

(2) Ameren Missouri's capital structure supports its credit rating. Although Mr. Murray admits that, "Moody's gives weight to Ameren Missouri's stand-alone capital structure for purposes of assigning its long-term issuer rating of 'Baa1'",[176] he believes it is inappropriate for Staff to make a blanket statement that Ameren Missouri's capital structure supports its credit rating. Mr. Murray cites S&P Global Rating's statement, that it uses a group rating methodology to assign a credit rating 'BBB+' to Ameren Missouri, as evidence that Ameren Missouri's own capital structure is not used to support its credit rating. However, S&P also assigned Ameren Missouri a 'Stand-alone Credit Profile' of 'bbb+' that it is reporting separately from Ameren Missouri's 'Group Credit Profile' of 'bbb+'.[177] Furthermore, there is nothing in the S&P Global Rating statement, which suggests Ameren Missouri's capital structure does not support its own credit rating.

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[172] Page 10, line 6, Murray's Direct Testimony.
[173] Page 11, lines 9-10, Murray's Direct Testimony.
[174] Page 10, lines 10-13, Murray's Direct Testimony.
[175] Staff Data Request No. 0196.
[176] Page 11, lines 13-15, Murray's Direct Testimony.
[177] S&P Ratings, RatingDirect - Union Electric Co., d/b/a Ameren Missouri, Published April 30, 2021.

(3) Mr. Murray did not include Ameren Missouri's short-term debt in his recommended ratemaking capital structure.[178] Mr. Murray found that Ameren Corp. uses its shared credit facilities with its regulated utility subsidiaries to facilitate access to the commercial paper markets,[179] but this fact cannot be the reason to consider Ameren Missouri financially dependent upon Ameren Corp. Even though Ameren Missouri shares a credit facility with other subsidiaries of Ameren Corp., Ameren Missouri has not used short-term debt for immediate cash needs. Currently, most major utilities use similar shared credit facilities.

(4) There is no double leverage. Mr. Murray disagreed with the standard definition of double leverage which is a direct reconciliation of the use of holding company debt to purchase equity in any specific subsidiary.[180] Mr. Murray insisted that Ameren Corp. uses an indirect double leverage strategy because it is the regulated subsidiary that allows Ameren Corp. the ability to issue significant amounts of holding company debt in addition to its subsidiary debt.[181] However, if it is true that there is double leverage in the case where both the parent and subsidiary issue debt, then all major utilities in the U.S. have double leverage. Based on the standard definition within the financial industry, double leverage occurs only when a holding company borrows in the debt market and transfers the proceeds to a subsidiary company, causing the holding company to acquire a large equity stake in a subsidiary company.[182] Therefore, if there was double leverage, we would see an increase in the debt ratio of the parent company's capital structure and

[178] Page 39, lines 3-6, Murray's Direct Testimony.
[179] Page 10, lines 21-29, Murray's Direct Testimony.
[180] Page 12, lines 18-21, Murray's Rebuttal Testimony.
[181] Page 13, lines 1-2, Murray's Rebuttal Testimony.
[182] Giacchino, L. R., & Lesser, J. A. (2011). Principles of Utility Corporate Finance. Public Utilities Reports.

a corresponding increase in the equity ratio of the capital structure of the subsidiary. However, there is no such evidence for Ameren Corp. and Ameren Missouri.[183]

Q. What is Staff's overall opinion about Mr. Murray's rebuttal testimony concerning Staff's capital structure?

A. Mr. Murray agrees with Staff that Spire Missouri's financing relationship with Spire Inc. is an appropriate comparable for Ameren Missouri's financing relationship with Ameren Corp.[184] The most recent Commission decision regarding ratemaking capital structure was determined in Spire Missouri's last rate case, Case No. GR-2021-0108, in 2021 ("2021 Spire Case"). In the 2021 Spire Case, the Commission clearly stated,

> The Commission finds that the appropriate capital structure to use for ratemaking purposes is that of **Spire Missouri**, modified to address the inclusion of short-term debt. The Commission finds that Spire Missouri's short-term debt is being used to finance long-term assets.[185] [Emphasis added.]

In the 2021 Spire rate case, the Commission's decision on capital structure was to use Spire Missouri's standalone capital structure, not the parent company's consolidated capital structure. Staff found that there is no evidence that the Commission's decision in the 2021 Spire rate case should be changed in the case of Ameren Missouri. The decision was based on whether the operating utility subsidiary had an independently determined capital structure with its own long-term debt issuances secured by its own assets that were the subject of that rate case, and that those assets did not secure the debt of the parent or its other subsidiaries including unregulated operations. The circumstances are the same in this rate case. Therefore, Staff recommends the

[183] Staff Data Request No. 0196.1.
[184] Page 8, lines 9-10, Murray's Rebuttal Testimony.
[185] On page 96, *Amended Report and Order* issued November 12, 2021, Case No. GR-2021-0108.

Commission find Ameren Missouri's standalone capital structure appropriate for setting ROR in this proceeding.

2. Recommended ROE

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

A. Mr. Murray continued to support that the Commission set Ameren Missouri's authorized ROE at 9.25%.[186] In his direct testimony, Mr. Murray recommended 9.25% based on a range of 8.40% to 9.25%.[187]

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

A. Mr. Murray did not agree with Staff's recommended ROE of 9.59% in a range of 9.34% to 9.84%. Mr. Murray stated, "Considering the Commission authorized Ameren Missouri a 9.53% ROE in its 2014 rate case, Case No. ER-2014-0258, it is not logical to consider an ROE any higher than this level."[188]

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

A. Staff's concerns are that Mr. Murray's benchmark case, Case No. ER-2014-0258, is too old to utilize for the purpose of ratemaking in 2023. Staff considered more than 10 years of rate case history for Ameren Missouri to understand the trend of authorized ROE decisions, not to directly determine a specific value in recommending a current authorized ROE for Ameren Missouri. The comparison of cases from 9 years ago (or older) to directly determine specific values would be unfair or invalid because economic and financial market conditions have changed too much since that time and are not comparable.

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[186] Page 20, lines 5-6, Murray's Rebuttal Testimony.
[187] Page 2, lines 18-19, Murray's Direct Testimony.
[188] Page 36, lines 17-19, Murray's Rebuttal Testimony.

IV. TRUE-UP DIRECT TESTIMONY

1. Capital Structure

Q. Did you perform an analysis of Ameren Missouri's capital structure as of December 31, 2022, the end of the true-up period for this proceeding?

A. Yes, I did.

Q. What is the result of your analysis?

A. As of December 31, 2022, Ameren Missouri's capital structure consisted of 51.91% common equity, 0.66% preferred Stock, and 47.43% long-term debt.[189]

Q. Is this capital structure reasonable for setting Ameren Missouri's ROR in this proceeding?

A. Yes. The true-up information does not change Staff's earlier conclusion that Ameren Missouri meets the guidelines for using its own standalone capital structure, not its parent company's capital structure, for ratemaking purposes. Ameren Missouri still meets the guidelines for determining when to use its own capital structure for ratemaking purpose.[190] The guidelines are the following: (1) Ameren Missouri has an independently determined capital structure.[191] (2) Ameren Missouri's debt is secured by its own assets and not the assets of its parent company, or any of Ameren Corp.'s other subsidiaries.[192] (3) Ameren Missouri's stand-alone capital structure supports its own bond rating as evidenced by ratings from Moody's and S&P.[193]

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[189] Staff's Data Request No. 0191.1 and Won's True-Up Workpaper.
[190] David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.
[191] Staff's Data Request No. 0196.
[192] Staff's Data Request No. 0169.2.
[193] S&P Global Ratings.

(4) The parent company of Ameren Missouri, or Ameren Corp.'s consolidated enterprise, is not significantly diversified into non-utility operations.[194]

2. Cost of Preferred Stock

Q. What is the cost of preferred stock for Ameren Corp. and Ameren Missouri as of December 31, 2022?

A. As of December 31, 2022, the cost of preferred stock for Ameren Corp. and Ameren Missouri are 4.094% and 4.180%, respectively.[195]

Q. What is Staff's recommended cost of preferred stock in this proceeding?

A Staff recommends the cost of preferred stock of 4.180% for setting Ameren Missouri's ROR in this proceeding.[196]

3. Cost of Long-Term Debt

Q. What is the embedded cost of long-term debt for Ameren Corp. and Ameren Missouri as of December 31, 2022?

A. As of December 31, 2022, the cost of long-term debt of Ameren Corp. and Ameren Missouri are 3.680% and 3.906%, respectively. [197]

Q. What is Staff's recommended cost of long-term debt in this proceeding?

A Staff recommends the cost of long-term debt of 3.906% for setting Ameren Missouri's ROR in this proceeding.[198]

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[194] SEC 10-K Form.
[195] Staff's Data Request No. 0187.
[196] Won's True-Up Workpaper.
[197] Staff's Data Request No. 0187.
[198] Won's True-Up Direct Workpaper.

V. SUMMARY AND CONCLUSIONS

Q. Please summarize the conclusions of your surrebuttal and true-up testimonies.

A. Ms. Bulkley and Staff disagree over the appropriate ROE for Ameren Missouri. Ms. Bulkley's proposed ROE of 10.20% is not just and reasonable considering her inappropriate reliance on unreasonable inputs to her COE analyses. Ms. Bulkley's belief that the COE and the authorized ROE are equivalent defies basic financial logic and, more importantly, market evidence. Staff disagrees with Mr. Murray's recommended ROE of 9.25% based on his comparison to cases more than 9 years old. Considering the current trend of interest rate hikes,[199] Staff continues to recommend an authorized ROE of 9.59%, in a reasonable range of 9.34% to 9.84%.

Staff disagrees with Mr. Murray's recommendation based on his analysis of Ameren Corp.'s consolidated capital structure consisting of 43.00% common equity, 0.69% preferred stock and 56.31% long-term debt. Staff continues to recommend using Ameren Missouri's standalone capital structure for the purpose of ratemaking in this proceeding.

Staff recommends an overall ROR of 6.86% for Ameren Missouri, as of December 31, 2022. Staff's ROR recommendation for Ameren Missouri incorporates a capital structure consisting of 51.91% common equity, 0.66% preferred stock, and 47.43% long-term debt, with an authorized ROE of 9.59%, a cost of preferred stock of 4.180%, and a 3.906% cost of long-term debt.[200]

Q. Does this conclude your surrebuttal and true-up direct testimonies?

A. Yes.

[199] Yahoo Finance, Fed stresses ongoing interest rate hikes needed in monetary report to Congress, Retrieved March 3, 2023, https://www.msn.com/en-us/money/other/fed-stresses-ongoing-interest-rate-hikes-needed-in-monetary-report-to-congress/ar-AA18bDDE.
[200] Schedule SJW-TD-1, Won's 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 Electric Service	)))	Case No. ER-2022-0337

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

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 9th day of March 2023.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

D Suzie Mankin

Notary Public

UNION ELECTRIC COMPANY, d/b/a AMEREN MISSOURI
CASE NO. ER-2022-0337
ALLOWED RATE OF RETURN

Weighted Cost of Capital as of December 31, 2022

Capital Component	Percentage of Capital [1]	Embedded Cost	Allowed Rate of Return Common Equity Return of: Lower **9.34%**	ROE **9.59%**	Upper **9.84%**
Common Stock Equity	51.91%	-	4.85%	4.98%	5.11%
Preferred Stock	0.66%	4.180% [2]	0.03%	0.03%	0.03%
Long-Term Debt	47.43%	3.906% [3]	1.85%	1.85%	1.85%
Total	**100.00%**		**6.73%**	**6.86%**	**6.99%**

Note:

[1] Source: Staff Data Request No. 0191.1, True up update as of January 30, 2023.

[2] Source: Staff Data Request No. 0187, True up update as of January 30, 2023.

[3] Source: Staff Data Request No. 0187, True up update as of January 30, 2023.