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MISSOURI PUBLIC SERVICE COMMISSION

FINANCIAL AND BUSINESS ANALYSIS DIVISION

FINANCIAL ANALYSIS DEPARTMENT

REBUTTAL TESTIMONY

OF

SEOUNG JOUN WON, PhD

UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

CASE NO. GR-2021-0241

Jefferson City, Missouri
October 2021

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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") 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 prepared the Rate of Return section of Staff's Cost of Service Report ("COS Report"), filed September 3, 2021?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the direct testimonies of Ann E. Bulkley, Darryl T. Sagel, and David Murray. Ms. Bulkley sponsored return on equity ("ROE") testimony on behalf of Union Electric Company, d/b/a Ameren Missouri's ("Ameren Missouri" or the "Company"), a wholly-owned subsidiary of Ameren Corporation ("Ameren Corp." or the "parent Company"). Mr. Sagel sponsored rate of return ("ROR") and capital structure testimony on behalf of Ameren Missouri. Mr. Murray sponsored ROE, ROR, and capital structure testimony on behalf of The Office of the Public Counsel ("OPC"). Within this testimony, Staff

will address issues related to a just and reasonable ROR to be applied to Ameren Missouri's gas utility rate base for ratemaking purposes in this proceeding. Staff's analyses and conclusions are supported by the data presented in Staff's rebuttal workpapers.

I. EXECUTIVE SUMMARY

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

A. Staff's rebuttal will focus on Ms. Bulkley's recommended ROE and Mr. Sagel's capital structure and recommended ROR. Ms. Bulkley recommended an ROE of 9.80% within a range of 9.65% to 10.40%, and Mr. Sagel recommended an ROR of 6.94% based on a pro forma capital structure, as of September 30, 2021, consisting of 47.345% long-term debt, 0.728% preferred stock and 51.927% common equity with a cost of debt of 3.853% and a cost of preferred stock of 4.180%.[1]

During the audit review process, Staff discerned that Ms. Bulkley introduced a series of biased estimates for her cost of equity ("COE") to recommend overstated ROE.[2] Ms. Bulkley overestimated COE by using inflated input data and improper estimation methods in her direct testimony. In this rebuttal testimony, Staff will provide a detailed explanation on how Ms. Bulkley used unreasonable upwardly-biased input data in the Constant Growth form of the Discounted Cash Flow ("DCF") model, the Multi-Stage DCF model, the Capital Asset Pricing Model ("CAPM"), the Empirical Capital Asset Pricing Model ("ECAPM"), and the Bond Yield Plus Risk Premium ("BYPRP") analysis.[3]

[1] Schedule DTS-D1, Sagel's Direct Testimony.
[2] Ms. Bulkley falsely used the terms ROE and COE interchangeably. As explained Staff's COS report, COE is the return required by investors; ROE is the return set by a regulatory utility commission.
[3] On page 3, lines 14-20, Bulkley's Direct Testimony.

Mr. Sagel's proposed ROR is based on Ameren Missouri's standalone projected capital structure and cost of debt as of September 30, 2021, with Ms. Bulkley's recommended ROE.[4] Staff is investigating how Ameren Missouri is going to achieve the 51.93% equity ratio, as of September 30, 2021, compared to the 50.32% as of June 30, 2021. At this time, Staff will not address any major issues with the pro forma standalone capital structure of Ameren Missouri as of the true-up date that Mr. Sagel recommended for ratemaking in this proceeding. Staff will keep monitoring Ameren Missouri and Ameren Corp.'s capital structure during this proceeding and will make a final recommendation based on the actual true-up capital structure of Ameren Missouri in later testimony filings.

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

A. Mr. Murray recommended a ROE of 9.25% within a range of 8.5% to 9.5% and a ROR of 6.34% based on his recommended capital structure of 45.00% common equity, 54.18% long-term debt, and 0.82% preferred stock, and applying cost of long-term debt of 3.95% and cost of preferred stock of 4.18%.[5] Although it is lower than Staff's recommended authorized ROE of 9.50%, Mr. Murray's point recommendation ROE of 9.25% still lies within Staff's reasonable range values of 9.25% and 9.75%.

Mr. Murray's recommended common equity to total capital ratio ("equity ratio") of 45.00% is 600 basis points lower than the average level of actual Ameren Missouri common equity ratio of 51%.[6] Mr. Murray's recommended common equity ratio is based on the long-term targeting equity ratio of Ameren Corp.'s consolidated capital structure.[7] Staff expresses concern with

[4] On page 11, Sagel's Direct Testimony.
[5] Schedule DM-D-8, Murray's Direct Testimony.
[6] Schedule SJW-5-2, Staff COS Repot.
[7] On page 32, lines 13-16, Murray's Direct Testimony.

Mr. Murray's recommended capital structure using Ameren Corp.'s capital structure ratios instead of Ameren Missouri's. Staff did not find any reason to use Ameren Corp's capital structure for ratemaking purposes in this proceeding.

II. RESPONSE TO TESTIMONY OF AMEREN MISSOURI'S WITNESSES

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

A. Staff is responding to the testimonies of Ms. Bulkley and Mr. Sagel. The areas in which Staff addresses issues of Ms. Bulkley's direct testimony include:

- Recommended ROE,
- Proxy Group Criteria,
- Growth Rates for DCF Models,
- Market Risk Premium for CAPM,
- Empirical CAPM Method,
- BYPRP Analysis, and
- Regulatory and Business Risks.

Then, Staff will address Mr. Sagel's recommended capital structure. Staff will discuss each in turn, below.

1. Recommended ROE

Q. What is Ms. Bulkley's recommended ROE for Ameren Missouri in this proceeding?

A. Ms. Bulkley recommended an ROE of 9.80%, within a range of 9.65% to 10.40%, for use in this proceeding.[8]

Q. How did Ms. Bulkley determine her recommended ROE?

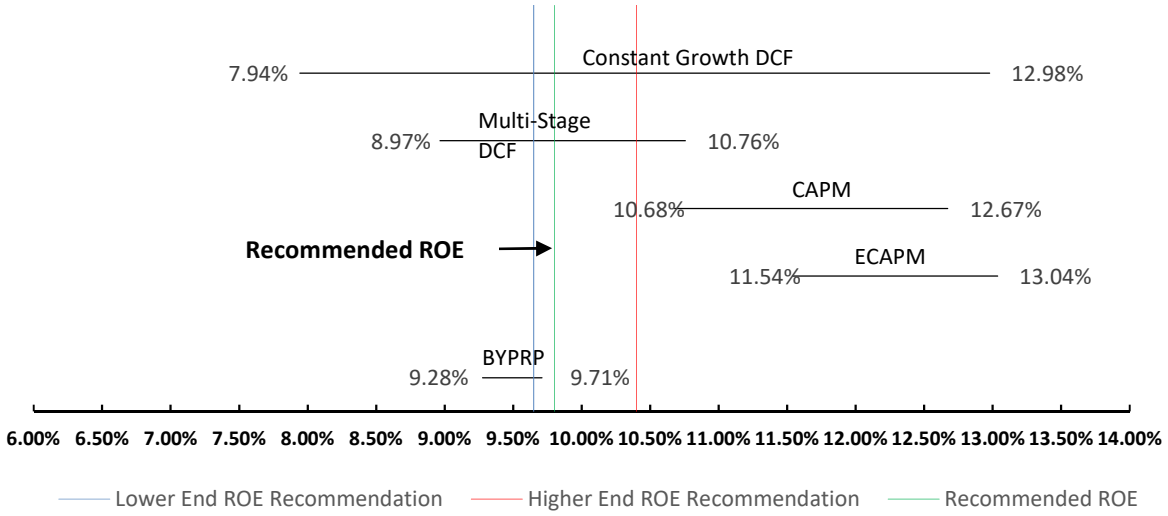
[8] On page 7, lines 4-10, Bulkley's Direct Testimony.

A. Ms. Bulkley determined her recommended ROE from a range of the results of her COE estimates. Ms. Bulkley calculated a COE estimate range of 7.94% to 13.04%.[9] For her ROE recommendation, Ms. Bulkley considered company-specific risk factors and current and prospective capital market conditions but did not precisely state the procedure for selecting the recommended point estimation of 9.80% from within the low or high end of her reasonable COE range of 9.65% to 10.40% and from within her COE estimate analytic results of 7.94% to 13.04%.[10]

Q. How did Ms. Bulkley estimate her COE?

A. Ms. Bulkley applied COE estimation models such as constant-growth DCF, the multi-stage DCF model, the CAPM, the ECAPM, and the BYPRP to natural gas distribution utility ("NGU") proxy group.[11] Ms. Bulkley's COE estimates for each analysis method and recommended ROE are summarized in Figure 1:[12]

Figure 1. Ms. Bulkley's COE Estimates and ROE Recommendation



[9] On page 69, Figure 10, Ibid.
[10] Ibid.
[11] On page 7, Ibid.
[12] 1 Summary, Won's Rebuttal Workpaper.

Q. What are Staff's concerns with Ms. Bulkley's recommended ROE?

A. Staff's concern is that Ms. Bulkley's recommended ROE of 9.80% is too high compared to the average authorized ROE of 9.52% in gas utility rate cases completed in 2021.[13] Ms. Bulkley's recommended ROE is based on her overstated COE estimates. Ms. Bulkley presented unreasonable COE estimation procedures using exaggerated input values for her COE estimation models. Ms. Bulkley utilized a variety of data sources and analysis methods to produce inflated input values. The following summarizes the steps that led to Ms. Bulkley's overestimation of her COE:

1. Selecting inappropriate biased data,
2. Producing overestimated input values, and
3. Utilizing inadequate estimation methods.

Staff will describe how each of Ms. Bulkley's COE estimates are overstated by presenting detailed investigation results later in this testimony.

2. Proxy Group Criteria

Q. What are Ms. Bulkley's proxy groups for estimating Ameren Missouri's COE?

A. Ms. Bulkley selected seven NGU companies for her proxy group for Ameren Missouri's COE estimation. The NGU proxy group was selected from ten publicly-traded natural gas distribution utility companies classified by Value Line as gas utilities.[14] The following is the list of Ms. Bulkley's natural gas utility proxy group and associated ticker symbols:

[13] S&P Global Market Intelligence, Retrieved on August 25, 2021.
[14] On page 30, lines 13-14, Bulkley's Direct Testimony.

Table 1. Natural Gas Utility Proxy Group and Ticker

	Natural Gas Utility Proxy	Ticker
1	Atmos Energy Corporation	ATO
2	NiSource Inc.	NI
3	Northwest Natural Holding Company	NWN
4	ONE Gas, Inc.	OGS
5	South Jersey Industries, Inc.	SJI
6	Southwest Gas Holdings, Inc.[15]	SWX
7	Spire Inc.	SR

Q. What is Staff's concern with Ms. Bulkley's proxy group selection criteria?

A. Staff's major concern is that Ms. Bulkley employed selection criteria for her NGU proxy group that had an effect of inflating her COE estimates. For instance, one of Ms. Bulkley's selection criteria is that a NGU should have a mean constant growth DCF result greater than 7.00%.[16] Ms. Bulkley insisted that any NGU that has a mean constant growth DCF result lower than 7.00% should be excluded from her proxy group because such returns would provide equity investors a risk premium of only 414 basis points above A-rated utility bonds.[17] Staff strongly disagrees with Ms. Bulkley's argument.

Q. Why does Staff disagree with Ms. Bulkley's proxy group selection criterion to exclude companies that have a mean constant growth DCF result lower than 7.00%?

A. Ms. Bulkley's selection criterion that a company should have a mean constant growth DCF result greater than 7.00 % is based on her assumption that an equity risk premium ("ERP") of 4.14% is too low to attract equity investors. However, it is widely accepted in the

[15] In Figure 5 on page 32 of her direct testimony, with Ticker "SWX", Ms. Bulkley's listed the company name as "Southwest Gas Corporation" not "Southwest Gas Holdings, Inc." However, Southwest Gas Corporation is a private company. In her workpaper, SWX is a ticker symbol of Southwest Gas Holdings, Inc. in the New York Stock Exchange.
[16] On page 31, lines 8-18, Ibid.
[17] On page 31, lines 15-18, Ibid.

financial investment industry that the typical ERPs are in the range of 3% to 6%.[18] In other words, a return of 7.00% with an ERP of 4.14% is well within the acceptable range.[19] The selection criterion that the company should have a mean constant growth DCF result greater than 7.00% represents Ms. Bulkley's inappropriate screening of her proxy group to overstate COE estimates.

Q. Does Staff have any other concerns with Ms. Bulkley's proxy group selection criteria?

A. Yes. Ms. Bulkley's selection criteria ignore utilities with unreasonably high mean constant growth DCF results. For instance, according to her mean constant growth DCF, the COE estimate result of South Jersey Industries, Inc. ("SJI") is 26.58%.[20] The S&P Global bond rating of SJI is BBB, comparable to Moody's Baa-rated utility bonds.[21] In July 2021, the average yield on Moody's Baa-rated utility bonds was 3.20%.[22] This means that, according to Ms. Bulkley's argument, SJI's ERP should be 23.38%.[23] This is not acceptable as a reasonable perpetual growth rate for the DCF model. If Ms. Bulkley has issues with COE estimates that are too low, she should likewise have issues with unreasonably high COE estimates like the 26.58% for SJI.

3. Growth Rates for Discounted Cash Flow Models

Q. What is Staff's concern with Ms. Bulkley's constant-growth DCF model?

A. Ms. Bulkley used unreasonably high growth rates in her constant-growth DCF model, which overstated her COE estimates. Ms. Bulkley exclusively used projected earnings

[18] Credit Suisse Global Investment Returns Yearbook 2020, Elroy Dimson, Paul Marsh, Mike Staunton, February 2020; and Dr. Morin reported ERP of 5.7% using Moody's Natural Gas Index, on page 416, Roger A. Morin, New Regulatory Finance (Public Utilities Reports, Inc. 2006).
[19] ERP: 3% < 4.14% (414 basis points) < 6%.
[20] Schedule AEB-D2, Attachment 3 Constant DCF, Bulkley's Direct Testimony.
[21] Giacchino, L. R., & Lesser, J. A. (2011). Principles of Utility Corporate Finance. Public Utilities Reports, on page 62.
[22] Mergent Bond Record, August 2021.
[23] ERP (23.38%) = COE (26.58%) – Bond Yield (3.20%)

growth rates, which she erroneously called long-term growth rates.[24] Analysts' projected growth rates are for periods of 3 to 5 years, which is considered short given the infinite investment horizon assumed in the DCF. Because of overstated growth rates Ms. Bulkley's DCF COE estimates are unreasonably upward biased.

Q. What is wrong with using exclusively projected earnings growth rates for Ms. Bulkley's constant-growth DCF COE estimates?

A. Analysts' projected earnings growth rates are not suitable for use, exclusively, in the constant-growth DCF model because the growth rates that Ms. Bulkley utilized are not perpetual growth rates and are often shorter than five-year projected growth rates. The constant-growth DCF model assumes a perpetual investment horizon. By exclusively using these analysts' projected growth rates in the context of the constant-growth DCF model, Ms. Bulkley makes an unreasonable assumption that natural gas utilities will grow at these often high and precarious shorter term growth rates, in perpetuity. Analysts are of the consensus opinion that long-term growth rates for utilities will eventually converge to the level of long-term gross domestic product ("GDP").[25] Staff has consistently held the view that while it is possible that a company or industry may grow at a rate faster than the GDP in the short to medium term, no company or industry may do so in perpetuity. Currently, the GDP is projected to grow at a long-term rate of 3.70% to 3.80%.[26] An example of Ms. Bulkley's unreasonably high growth rates is the 24.5% growth rate used to produce SJI's mean and high DCF COE estimates of 26.58%

[24] On page 39, Bulkley's Direct Testimony.
[25] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, page 302.
[26] Federal Open Market Committee, retrieved on July 18, 2021,
(https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20200610.htm).
An Update to the Economic Outlook: 2021 to 2031, Congressional Budget Office, July 2021,
(https://www.cbo.gov/system/files/2021-02/56965-Economic-Outlook.pdf).

and 30.69%, respectively. Such high growth rates should not be used in constant-growth DCF COE estimates.

Q. What is wrong with the GDP growth rates used in Ms. Bulkley's multi-stage DCF COE estimates?

A. The GDP growth rate estimate of 5.56% used in Ms. Bulkley's multistage DCF is too high compared to other reliable projected nominal GDP growth rates. Ms. Bulkley's GDP growth estimate of 5.56%, based on real GDP growth rate of 3.21% from 1929 through 2019, plus a projected inflation rate of 2.27%, is around 180 basis points higher than the reliable nominal long-term GDP growth rate estimates of 3.70% and 3.80%, reported by the Congressional Budget Office ("CBO") and Federal Open Market Committee ("FOMC"), respectively.[27] It is unusual how Ms. Bulkley estimated her projected long-term GDP growth rate; adding historical (from the period 1929 to 2019) real GDP growth rate to the projected inflation rate. Staff is not aware of any projected long-term GDP growth rate estimates that are as high as historical GDP growth rates. Currently, the Federal Reserve ("Fed") estimates a long-term inflation rate of 2.00%, which means that Ms. Bulkley's 2.27% is too high. It is Staff's position that reasonable long-term GDP growth estimates should be limited to the 3.70% to 3.80% reported by the CBO and FOMC.

Q. What growth rates should Ms. Bulkley have used?

A. As Staff alluded to above, appropriate growth rates for use in the constant-growth or multi-stage DCF models should give consideration to the long-term growth rates, represented by the projected long-term GDP growth rates of 3.70%.[28] For example, the Federal Energy

[27] Federal Open Market Committee, retrieved on July 18, 2021, (https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20200610.htm).
[28] An Update to the Economic Outlook: 2021 to 2031, Congressional Budget Office, July 2021, (https://www.cbo.gov/system/files/2021-02/56965-Economic-Outlook.pdf).

Regulatory Commission ("FERC") incorporates long-term GDP growth rates into calculations within the constant-growth DCF by using a ratio of two-thirds analyst projected long-term growth rates to one-third long-term GDP growth rates.[29] If Ms. Bulkley had used a similar approach with a proper GDP growth rate in the constant-growth DCF model, her DCF COE estimate for the 180-day average stock price would be 8.75% instead of 9.61%.[30] If Ms. Bulkley had used a similar approach with a proper GDP growth rate in the multi-stage DCF model, her DCF COE estimate for the 180-day average stock price would be 7.97% instead of 9.44%.[31] Therefore, reasonable DCF COE results are currently much lower than Ms. Bulkley's estimations.

4. Market Risk Premium of Capital Asset Pricing Models

Q. Please explain Ms. Bulkley's CAPM COE estimation methods.

A. Ms. Bulkley employed the traditional CAPM and the empirical CAPM ("ECAPM") using Value Line Beta, Bloomberg Beta and long-term average Beta with three different risk-free rates of 1.77%, 2.06% and 2.80% and a total market return of 14.13% resulting in three different market risk premiums ("MRP") of 12.36%, 12.07% and 11.33%.[32] For her natural gas utility proxy group, the ranges of Ms. Bulkley's CAPM and ECAPM COE estimates are 10.68% to 12.67% and 11.54% to 13.04%, respectively.[33]

Q. What is Staff's concern with Ms. Bulkley's CAPM COE estimates?

[29] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.,* Opinion No. 569, 169 FERC ¶ 61,129 (2019).
[30] 3 Constant DCF 1, Won's Rebuttal Workpaper.
[31] 4 Multi-Stage DCF 1, Won's Rebuttal Workpaper.
[32] Schedule AEB-D2, Attachment 7 CAPM Alt, Bulkley's Direct Testimony.
[33] Schedule AEB-D2, Attachment 1 Summary, Bulkley's Direct Testimony.

A. Ms. Bulkley's CAPM and ECAPM COE estimates are too high. Even compared to her average COE estimate of 9.76% using multi-stage DCF, Ms. Bulkley's average CAPM and ECAPM COE estimate of 11.69% and 12.30%, respectively, are too high.[34] Staff found that Ms. Bulkley's CAPM COE estimates are too high because she used unreasonably high MRPs. Ms. Bulkley's MRPs of 12.36%, 12.07% and 11.33% are much higher than regular US financial service industry's MRP estimates of around 4.00% to 7.00%.[35]

Q. How were Ms. Bulkley's MRPs estimated?

A. Ms. Bulkley calculated her MRPs as the difference between expected market return on the S&P 500 Index and risk-free rate. For estimating expected market return, Ms. Bulkley conducted several steps of calculations. First, using the data of companies on the S&P 500 Index, Ms. Bulkley calculated an estimated weighted average dividend yield of 1.58% and an estimated weighted average growth rate of 12.45%.[36] Second, using the constant growth DCF model with her estimated dividend yield and growth rate, Ms. Bulkley estimated the expected market return of 14.13%.[37] Finally, Ms. Bulkley calculated implied MRPs estimated as the difference between the implied expected equity market returns and the various risk-free rates. Ms. Bulkley's implied MRP over the current 30-day average of the 30-year U.S. Treasury bond yield, and projected yields on the 30-year U.S. Treasury bond, ranges from 11.33% to 12.36%.[38] Table 2 shows Ms. Bulkley's three MRP estimates and their associated estimation methods:[39]

[34] 1 Summary, Won's Rebuttal Workpaper.
[35] See Figure 2. "MRP and corresponding COE".
[36] Schedule AEB-D2, Attachment 9 Market Return, Bulkley's Direct Testimony.
[37] Ibid.
[38] Schedule AEB-D2, Attachment 7 CAPM Alt, Bulkley's Direct Testimony.
[39] On pages 35-36, Bulkley's Direct Testimony.

Table 2. Bulkley's Market Risk Premium Estimation

	MRP Estimate Method	(%)
[1]	Current 30-day average of 30-year U.S. Treasury bond yield	12.36
[2]	Near-term projected 30-year U.S. Treasury bond yield	12.07
[3]	Projected 30-year U.S. Treasury bond yield (2022 - 2026)	11.33
	Average	11.92

Q. What is wrong with Ms. Bulkley's constant-growth DCF model estimation of market return of 14.13%?

A. Ms. Bulkley's constant-growth DCF procedure has two main faults. First, when Ms. Bulkley calculated her expected total return using the DCF, she included companies that have unreasonably high or low projected earnings per share ("EPS") growth rates. For example, Ms. Bulkley included Salesforce.com Inc's unreasonably high projected EPS growth rate of 46.50% for her expected total return.[40] To calculate a reasonable total market expected return using the DCF, companies with extremely low or high growth rates should be excluded. FERC found that S&P 500 companies with growth rates that are negative or in excess of 20% should be excluded because such extremely low or high growth rates are not representative of sustainable growth rates.[41]

Second, for her expected total market return estimation using the DCF model, Ms. Bulkley's data set included companies that do not pay dividends or for which dividend information was not available. Dividend yield information is essential to utilizing the DCF model.[42] Consistent with Staff's position that the DCF model assumes a long-term investment

[40] Schedule AEB-D2, Attachment 9 Market Return, Bulkley's Direct Testimony.
[41] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.,* Opinion No. 569, 169 FERC ¶ 61,129 (2019).
[42] David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.

horizon, Staff further finds that the growth rates that Ms. Bulkley used are short-term in horizon, which makes them unsuitable for the constant-growth DCF model she used to estimate her expected market return. Staff recalculated an expected total return based on the FERC's DCF model and criteria, including only companies with available dividend yields, and found a reasonable total market return of 9.43%. Taking into account the current risk-free rate of 2.26% results in Ms. Bulkley's estimated MRPs of less than 8%.[43]

Q. What are other financial institutions' current MRP estimates?

A. Other financial institutions' MRP estimates range from 4.63% to 6.43%.[44] According to 2020 survey research based on 1,946 responses from business and economic professors, the U.S. average and median MRP estimates are 5.6% and 5.4%, respectively.[45] The American Appraisal Risk Premium Quarterly, Value Line, and Duff & Phelps calculated MRPs of 6.0%, 5.5%, and 5.0%, respectively.[46] Duff and Phelps' current MRPs range from 4.43% (geometric average), to 6.07% (arithmetic average), using historical data from 1926 to 2020.[47] Professor Aswath Damodaran of NYU Stern School of Business, a noted equity valuation professor, currently estimates MRPs in the range of 4.84% to 6.43%:[48]

continued on next page

[43] 7 CAPM Alt, Won's Rebuttal Workpaper.
[44] 6 CAPM, Won's Rebuttal Workpaper.
[45] Fernandez, P., de Apellániz, E., & F Acín, J. (2020). Survey: Market Risk Premium and Risk-Free Rate used for 81 countries in 2020.
[46] FERC Opinion No. 569, 169 FERC ¶ 61,129.
[47] 2020 Cost of Capital: Annual U.S. Guidance and Examples, Duff and Phelps.
[48] Risk Premium, Damodaran Online, Stern School of Business, NYU.

Figure 2. MRP and corresponding COE

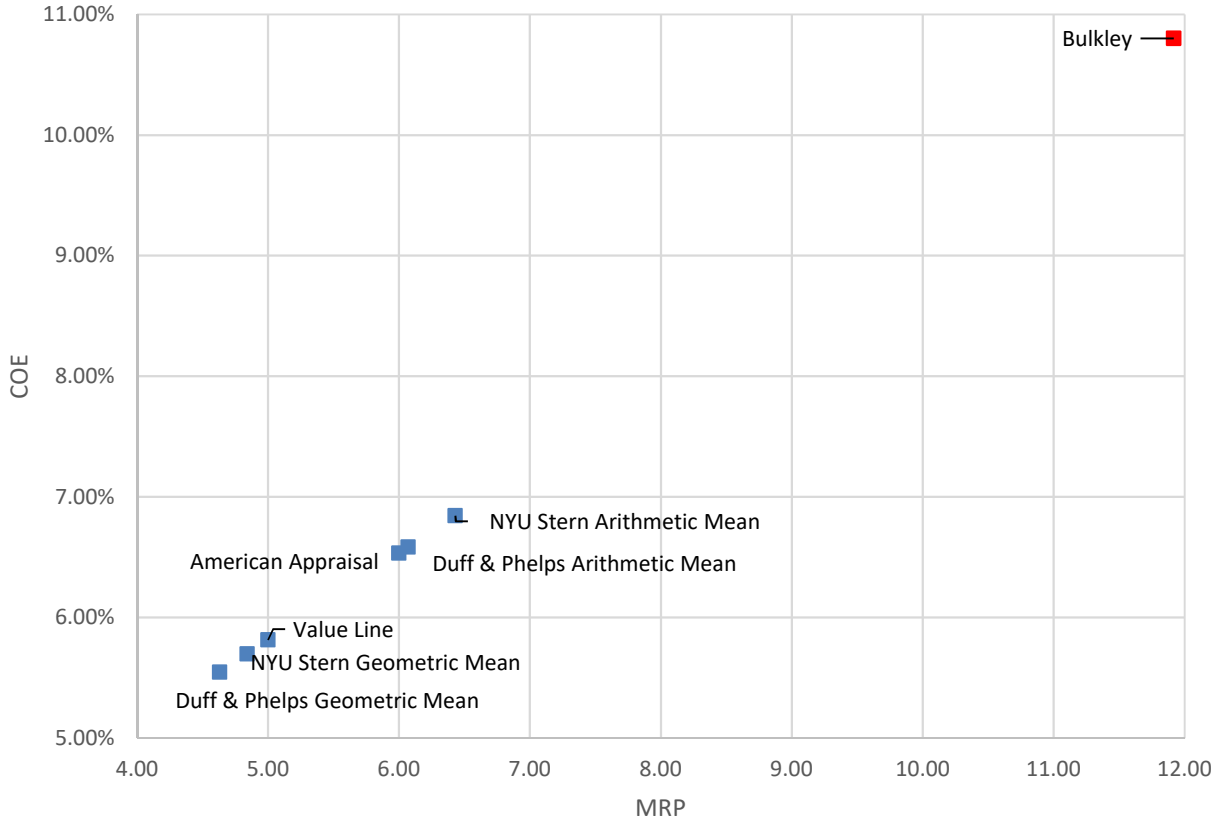


Figure 2 compares COE estimates with their corresponding MRPs, for Ms. Bulkley's natural gas proxy group, calculated with reasonable MRPs and Ms. Bulkley's unreasonable MRPs, assuming the same 30-day average of 30-Year U.S Treasury bond yield of 1.77% used in Ms. Bulkley's estimation.[49] As shown in Figure 2, Ms. Bulkley's CAPM COE estimate of 11.63%, with its corresponding MRP of 10.80%, is an extreme outlier when compared with the other estimates. This clearly indicates that Ms. Bulkley's MRPs are too high and, consequently, her COE estimates are too high as well.

Q. Please summarize your concern with Ms. Bulkley's MRPs.

[49] Schedule AEB-D2, Attachment 7 CAPM Alt, Bulkley's Direct Testimony.

A. As presented in Table 2, Ms. Bulkley used three MRP estimates. As Staff already pointed out, all three MRP estimates are too high compared to other widely accepted MRP estimates in the financial industry.

Q. What would Ms. Bulkley's CAPM COE estimates be if she had used proper input data?

A. With more reasonable assumptions, such as an MRP of 5.50% and a risk-free rate of 2.26%,[50] Ms. Bulkley's average CAPM COE estimate would be 6.22%.[51] This is well within the range of Staff's COE estimates of 6.14% to 8.64%, which are much lower than Ms. Bulkley's average CAPM COE estimate of 10.80%.

5. Empirical Capital Asset Pricing Model

Q. What is your concern with Ms. Bulkley's ECAPM model?

A. Like her average CAPM COE estimate of 11.69%, Ms. Bulkley's average ECAPM COE estimate of 12.30% assumes too high an MRP.[52] In addition, the ECAPM model itself overestimates COE because of an adjustment to account for the supposed tendency of the CAPM method to underestimate COE for companies with low Beta coefficients.

Q. How did Ms. Bulkley adjust her CAPM COE to ECAPM COE?

A. Ms. Bulkley multiplied 75% of her MRPs by the Beta coefficient and added the remaining 25% MRPs, unadjusted.[53] This adjustment is consistent with Dr. Roger Morin's

[50] The assumption of the estimated MRP of 5.51% is the average of the eight MRP estimates in Figure 2. The risk free rate of 2.26% is an average of 30-year Treasury bond at yields of three months ending June 2021.
[51] 7 CAPM Alt, Won's Rebuttal Workpaper.
[52] 1 Summary, Ibid.
[53] Original CAPM COE estimate equals Risk-Free Rate + Beta × MRP but ECAMP COE estimate equals Risk-Free Rate + 0.25 × MRP + 0.75 × Beta × MRP or Risk-Free Rate + Alpha + Beta × (MRP – Alpha) where Alpha = 0.25 × MRP.

formula.[54] Dr. Morin's formula was based on his finding, with data between 1926 and 1984, that the regular CAPM underestimated returns by about 2.00%. However, there is no evidence that Dr. Morin's adjustment factor of 25% would hold with data after 1984.[55] Furthermore, Dr. Morin also cited other studies that found that the CAPM produced returns between - 9.61% and 13.56%, meaning that the CAPM actually overestimated COE in some instances.[56] Such variations in findings do not lend credibility to Ms. Bulkley's use of the ECAPM.

6. Bond Yield Plus Risk Premium Analysis

Q. What is Ms. Bulkley's BYPRP method?

A. The conventional BYPRP method is based on the idea that since investors in stocks take greater risks than investors in bonds, the former expect to earn a return on a stock investment that reflects a premium over and above the return they expect to earn on a bond investment.[57] This premium required by investors for an investment in common stock over an investment in corresponding debt is called the risk premium.[58] Multiple approaches have been developed to determine the risk-premium for a utility. Ms. Bulkley's BYPRP is different from the conventional method. Ms. Bulkley's BYPRP used a regression analysis based on authorized ROEs for utility companies relative to risk-free rates (Treasury yields).[59] Ms. Bulkley used monthly data of risk-free rates and authorized ROEs derived from 678 natural gas utility rate cases from 1992

[54] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, page 190.
[55] Ibid.
[56] Ibid.
[57] Brigham, E. F., Shome, D. K., & Vinson, S. R. (1985). The risk premium approach to measuring a utility's cost of equity. Financial Management, 33-45.
[58] Morin, R. A. (2006). New Regulatory Finance. Public Utilities Reports, page 108.
[59] On page 52, lines 7-17, Bulkley's Direct Testimony.

through January 2021 as reported by Regulatory Research Associates ("RRA").[60] Because Ms. Bulkley defined the risk premium as the authorized ROE minus the risk-free rate, Ms. Bulkley's BYPRP analysis method can directly estimate the authorized ROE, while in contrast, her DCF and CAPM are only able to directly estimate COE. Ms. Bulkley's regression analysis result is the following equation:

$$\text{Risk Premium (\%)} = 8.54 - 0.5803 \text{ Risk-Free Rate (\%)}.$$[61]

Q. What are Ms. Bulkley's BYPRP ROE estimates?

A. Ms. Bulkley's BYPRP ROE estimates range from 9.28% to 9.71%, with a mean of 9.46%.[62] For her BYPRP ROE estimation, Ms. Bulkley used three risk-free rates: 30-day average of the 30-year U.S. Treasury bond yield (i.e., 1.77%), the near-term (Q2 2021 – Q2 2022) projections of the 30-year U.S. Treasury bond yield (i.e., 2.06%), and a longer-term (2022 – 2026) projection of the 30-year U.S. Treasury bond yield (i.e., 2.80%).

Q. What is Staff's concern with Ms. Bulkley's BYPRP ROE estimates?

A. Staff does not have a major concern with Ms. Bulkley's BYPRP ROE estimates because all her BYPRP ROE estimates, ranging from 9.28% to 9.71%, with a mean of 9.46%, are within Staff's recommended authorized ROE range of 9.25% to 9.75%. Staff recalculated Ms. Bulkley's BYPRP ROE estimate using a risk-free rate of 2.26% that is an average of 30-year Treasury bond at yields of three months ending June 2021, resulting in an estimated ROE of 9.48% that is only 2 basis points lower that Staff's point recommended authorized ROE of 9.50%.

[60] According to Ms. Bulkley this analysis began with a total of 1,084 natural gas cases across the U.S., which were screened to eliminate limited issue rider cases, transmission cases, and cases that did not specify an authorized ROE. After applying those screening criteria, the analysis was based on data for 678 cases.
[61] Schedule AEB-D2, Attachment 10 Risk Premium, Bulkley's Direct Testimony.
[62] Page 53, line 4 to page 54, line 2, Bulkley's Direct Testimony.

7. Regulatory and Business Risks

Q. What adjustments did Ms. Bulkley make to her COE regarding Ameren Missouri's business and regulatory risks?

A. Ms. Bulkley did not make specific adjustments to her COE while she estimated the effect of Ameren Missouri's business and regulatory risks on the ROE. Ms. Bulkley considered other risks such as small size risk and regulatory risk to determine where Ameren Missouri's required ROE falls within the range of her analytic results.

Q. What is Staff's concern with Ms. Bulkley's size consideration?

A. Ms. Bulkley insisted that Ameren Missouri's natural gas distribution operations are substantially smaller than the median for the proxy group companies in terms of market capitalization. Ms. Bulkley made an argument that, "[t]he impact of weather variability, the loss of large customers to bypass opportunities, or the destruction of demand as a result of general macroeconomic conditions or fuel price volatility will have a proportionately greater impact on the earnings and cash flow volatility of smaller utilities."[63] However, Ameren Missouri is not a small-size company in terms of its utility services even if its gas utility service is small. Ameren Missouri is the largest utility company in Missouri.[64] In addition, the Commission has granted many favorable regulatory mechanisms to Ameren Missouri to protect it from such variability, as explained in Staff witness John P. Cassidy's rebuttal testimony for the current Ameren Missouri electric utility service rate case, Case No. ER-2021-0240. Therefore, Ms. Bulkley's size consideration is meaningless for Ameren Missouri operations as a whole with her upwardly-biased COE estimates.

[63] On page 55, lines 12-15, Bulkley's Direct Testimony.
[64] Ameren Fact Sheet, retrieved September, 29, 2021, (https://www.ameren.com/company/about-ameren).

Q. Do you agree with Ms. Bulkley's statement that the RRA jurisdictional ranking and the S&P credit supportiveness ranking for Missouri indicates greater risk than the average for the proxy group?

A. No, I do not. According to a recently published S&P Global Ratings' article, Updated Views On North American Utility Regulatory Jurisdictions - June 2021, Missouri is classified in the category of "Very Credit Supportive," with a "Strong and Adequate" utility regulatory environment in jurisdictions among U.S. states and Canadian provinces.[65] In addition, it is unclear how Ms. Bulkley compared her proxy group to Ameren Missouri's regulatory environment; when questioned on this point by Staff she just provided the RRA jurisdictional ranking without a specific comparison.[66] Furthermore, the Commission has allowed several favorable regulatory mechanisms for Ameren Missouri's gas utility service. On the expense side, Ameren Missouri has cost recovery mechanisms consisting of the Purchased Gas Adjustment ("PGA") and the Actual Cost Adjustment ("ACA"). On the income side, Ameren Missouri has the revenue stabilization mechanism of the Delivery Charge Adjustment ("DCA") rider that is designed to isolate usage ranges where variations are primarily related to weather and conservation.[67] In addition, Ameren Missouri has an ability to use a capital tracking mechanism consisting of an Infrastructure System Replacement Surcharge ("ISRS") rider that allows it to recover a portion of capital investment costs between rate cases. Currently, Ameren Missouri uses various and considerable protections against business risks that were granted to it by the Commission. On April 9, 2021, the Commission authorized Ameren Missouri to track and defer

[65] 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).
[66] Staff's Data Request No. 0327.
[67] Tariff Sheet No. 31, Union Electric Company Gas Service.

into a regulatory asset the incremental costs caused by the COVID-19 pandemic.[68] Staff witness John P. Cassidy addresses in more detail the regulatory lag mitigation - business risk reduction mechanisms such as the Plant In Service Accounting ("PISA") and Renewable Energy Standard Rate Adjustment Mechanisms ("RESRAM") in his rebuttal testimony in the current Ameren Missouri electric utility service rate case, Case No. ER-2021-0240. Considering the series of favorable regulatory mechanisms and accounting authority orders granted by the Commission to Ameren Missouri, Ms. Bulkley's arguments alleging unusually high regulatory risk for the Company are baseless.

Q. What is Staff's recalculated COE estimate for Ameren Missouri with proper inputs and models?

A. Staff's recalculated average estimates with proper inputs and models are summarized in Table 3:

Table 3. Bulkley's Estimation and Staff's Recalculation[69]

	Cost of Equity	
COE Estimation Methods	Bulkley' Estimate	Staff Recalculation
Discounted Cash Flow	9.96%	8.74%
Capital Asset Pricing Model	12.00%	8.14%
	Return on Equity	
ROE Estimation Method	Bulkley' Estimate	Staff Recalculation
Bond Yield Plus Risk Premium Analysis	9.46%	9.48%

As is evident in Table 3, Ms. Bulkley's COE estimates are too high compared to Staff's recalculated COE. In contrast, Ms. Bulkley's ROE estimation based on her BYPRP analysis is

[68] Order Approving Stipulation and Agreement, Case No. GU-2021-0112.
[69] 1 Summary, Won's Rebuttal Workpaper.

lower than Staff's. Considering her upwardly-biased input data, Staff recommends that Ms. Bulkley's DCF and CAPM COE estimates should not be utilized for calculating a just and reasonable authorized ROE.

8. The Capital Structure of Ameren Missouri for ROR

Q. What capital structure and ROR did Mr. Sagel recommend for Ameren Missouri's ratemaking in this proceeding?

A. Mr. Sagel recommended a projected capital structure, as of September 30, 2021, with 51.93% common equity, 0.73% preferred stock and 47.34% long-term debt, for Ameren Missouri.[70] Ameren Missouri requested an update of all elements of the capital structure at the proposed September 30, 2021, true-up date. Mr. Sagel recommended an authorized ROR of 6.943%, calculated using Ms. Bulkley's recommended ROE of 9.80%, cost of preferred stock of 4.180%, and embedded cost of debt of 3.853%, applied to a capital structure consisting of 4.345% long-term debt, 0.728% preferred stock and 54.25% common equity.[71]

Q. Does Staff have concerns with the capital structure recommended by Ameren Missouri's witness?

A. Staff is investigating how Ameren Missouri's recommended capital structure, as of September 30, 2021, is achievable. As of June 30, 2021, Ameren Missouri's capital structure was 50.32% common equity, 48.95% long-term debt and 0.73% preferred stock.[72] Ameren Missouri explained that its expected strong cash flow in the third quarter of 2021 will help raise the equity ratio to 51.93%, from the 50.32% as of June 30, 2021.[73] Ameren Missouri is yet to provide detailed

[70] Page 11, Table 2, Sagel Direct Testimony.
[71] WE Schedule DTS-D1, Ibid.
[72] Staff's Data Request No. 0114.
[73] Staff's Data Request No. 0651, Case No. ER-2021-0240.

information to support its higher equity ratio as of September 30, 2021. Staff will keep monitoring the actual changes in Ameren Missouri's recommended capital structure and cost of debt through September 30, 2021, the end of the true-up period. Staff will address its final recommended capital structure in its surrebuttal and true-up testimony at a later point of the case.

III. RESPONSE TO TESTIMONY OF OPC WITNESS MURRAY

Q. What is Mr. Murray's recommended ROE for use in this proceeding?

A. Mr. Murray recommended that the Commission set Ameren Missouri's authorized ROE at 9.25%, in the range of 8.50% to 9.50%, based on his COE estimates range of 6.5% to 7.0%.[74] Mr. Murray estimated his COE using a multi-stage DCF approach and a CAPM analysis.

Q. Do you have any concerns with Mr. Murray's recommended ROE?

A. Staff does not have major concerns with Mr. Murray's ROE recommendation. Mr. Murray's recommended ROE of 9.25% is 25 basis points lower than Staff's 9.50%, but within Staff's reasonable range of 9.25% to 9.75%.[75] Mr. Murray's recommended ROE is the same as the Commission's authorized ROE of 9.25% in the Empire District's electric rate case (Case No. ER-2019-0374).[76] Although Staff does not agree with Mr. Murray's estimation procedures for his recommended ROE, Staff found no substantial deficiency in Mr. Murray's ROE recommendation.

Q. What is Mr. Murray's recommended capital structure for use in this proceeding?

A. Mr. Murray recommended Ameren Corp.'s capital structure consisting of approximately 45.00% common equity, 0.82% preferred stock, and 54.18% long-term debt for use in setting Ameren Missouri's ROR.[77] Mr. Murray's recommended common equity ratio is not

[74] On page 2, lines 16-19, Murray's Direct Testimony.
[75] On page 2, lines 20-22, Ibid.
[76] On page 6, lines 2-5, Ibid.
[77] On page 32, lines 12-13, Ibid.

exactly the same as Ameren Corp's consolidated capital structure as of December 31, 2020. Mr. Murray argued that the capital structure he recommended is the capital structure that is in line with the capital structure ratios Ameren Corp. is targeting for its consolidated operations over the long-term.[78]

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. Mr. Murray argued that because Ameren Corp., the parent company of Ameren Missouri, manages Ameren Missouri for purposes of taking advantage of debt capacity afforded by Ameren Corp.'s low-risk regulated utility subsidiaries, the appropriate capital structure for Ameren Missouri ratemaking should be the same as Ameren Corp.'s.[79]

Q. Please explain why Staff disagrees with Mr. Murray's recommendation to use Ameren Corp.'s capital structure instead of Ameren Missouri's own capital structure, for ratemaking.

A. It is Staff's position that Ameren Missouri's stand-alone capital structure represents the actual capital structure used to finance Ameren Missouri's respective jurisdictional rate base. In addition, Ameren Missouri's own capital structure is consistent with the capital structure ratios maintained by, or authorized for, other natural gas utilities. Mr. Murray's recommended equity ratio of 45% is much lower than the average of his natural gas proxy group's equity ratio of

[78] On page 32, lines 13-16, Ibid.
[79] On page 33, lines 7-11, Ibid.

approximately 51%.[80] Also, the recent average equity ratio for other gas utility companies throughout the U.S. is approximately 51%.

Q. Please explain more about equity ratios used in other NGU rate cases.

A. In 2021, the average equity ratios from fully litigated and settled rate cases are 50.71% and 50.61%, respectively. Table 4 presents information compiled and published by RRA, which details the average equity ratios from Commissions around the U.S. in the years 2011 - 2021, along with the number of cases considered:

Table 4. Equity Ratios of Natural Gas Utility Rate Cases (2011-2021)[81]

	Natural Gas					
	Fully Litigated		Settled		Natural Gas Total	
Year	Equity (%)	Case (No.)	Equity (%)	Case (No.)	Equity (%)	Case (No.)
2011	52.64	8	51.82	8	52.33	16
2012	51.06	21	50.97	14	51.03	35
2013	51.98	12	48.53	9	50.60	21
2014	52.86	15	48.61	11	51.06	26
2015	51.17	5	49.32	11	49.94	16
2016	52.11	10	48.60	16	50.01	26
2017	50.39	7	50.63	17	50.55	24
2018	50.56	17	50.27	23	50.39	40
2019	52.00	12	52.30	20	52.18	32
2020	52.38	12	52.68	22	52.57	34
2021	50.71	7	50.61	13	50.64	20

Considering the historical equity ratio of approximately 51% used for calculating the allowed ROR for NGU rate cases, Mr. Murray's recommended equity ratio of 45% appears to be too low.

Q. Does Mr. Murray's recommendation to use the parent company's capital structure meet the standard of generally-accepted utility ratemaking procedures?

[80] 15 Proxy Capital Structure, Won's Rebuttal Workpaper.
[81] Regulated Research Associates, S&P Global Market Intelligence, Retrieved September 22, 2020.

A. No. Mr. Murray's recommendation is not compatible with typical regulatory practices on when to use a parent company's capital structure instead of a subsidiary's own capital structure for the subsidiary's ratemaking. The Society of Utility and Regulatory Financial Analysts ("SURFA") lists the following four guidelines for determining when to use a parent company's capital structure, in its guidebook, The Cost of Capital – A Practitioner's Guide ("CRRA Guide"):

> 1. Whether the subsidiary utility obtains **all** of its capital from its parent, or issues its own debt and preferred stock;
> 2. Whether the parent guarantees **any** of the securities issued by the subsidiary;
> 3. Whether the subsidiary's capital structure is independent of its parent (i.e., existence of double leverage, absence of proper relationship between risk and leverage of utility and **non**-utility subsidiaries); and,
> 4. Whether the parent (or consolidated enterprise) is diversified into **non**-utility operations.[82]

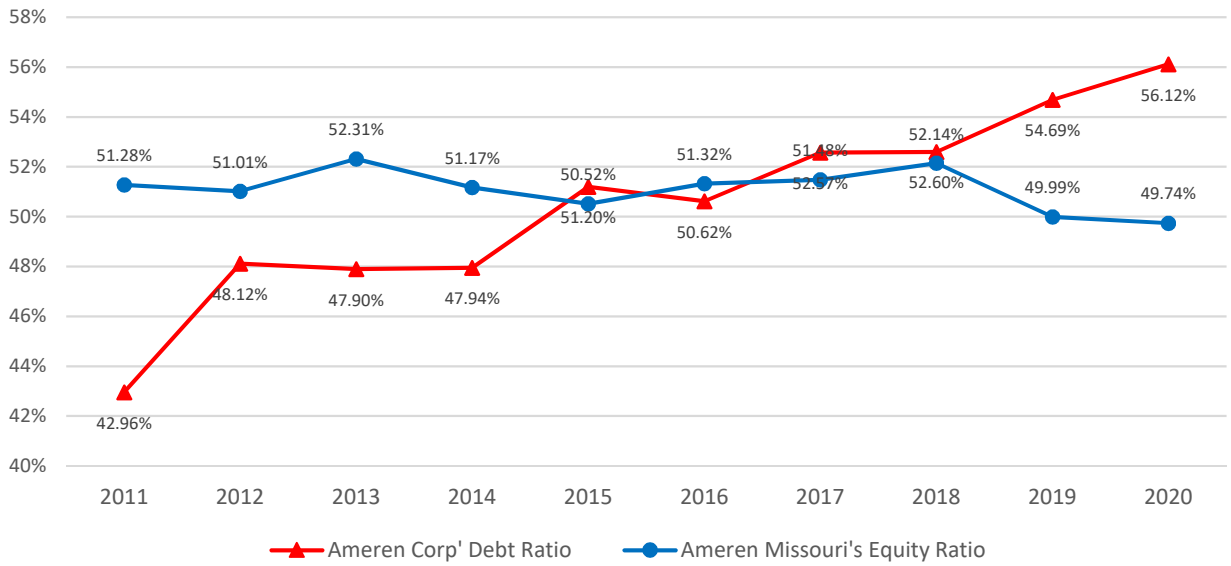
There is nothing in these guidelines that suggests that it is appropriate to use Ameren Corp.'s (the parent company of Ameren Missouri) capital structure to set Ameren Missouri's ROR.

For the first guideline, except for common stock and equity contributions, Ameren Missouri has not received any other long-term financing or preferred stock, from Ameren Corp.[83] Although Ameren Missouri has predominantly issued commercial paper to external investors for short-term funds, it has borrowed from affiliates via the utility money pool from time to time. This is a usual financial relationship between the holding company and its subsidiaries. Also, Ameren

[82] David C. Parcell in The Cost of Capital – A Practitioner's Guide prepared for SURFA.
[83] Staff's Data Request No. 0328.

Missouri's stand-alone capital structure supports its own bond rating.[84] Both Ameren Missouri and Ameren Corp. are rated BBB+ and Baa1 by S&P and Moody's, respectively.[85] Therefore, Ameren Missouri meets the first criterion. For the second guideline, Ameren Corp. or Ameren Corp.'s other subsidiaries do not guarantee the securities issued by Ameren Missouri.[86] For the third guideline, Staff has not found the existence of double leverage, or absence of a proper relationship between risk and leverage of utility and non-utility subsidiaries.[87] Staff reviewed 10-year historical data of Ameren Corp's debt ratio and Ameren Missouri's equity ratio to see if there is any evidence of double-leverage.[88] Figure 3 shows Ameren Corp's debt ratio and Ameren Missouri's equity ratio in the period between 2011 and 2020:

Figure 3. Ameren Crop's Debt Ratio and Ameren Missouri's Equity Ratio (2011-2020)



[84] RatingDirect®, S&P Global Ratings, Union Electric Co. d/b/a/ Ameren Missouri, April 30, 2021.
[85] Credit Opinion (April 1, 2021), Moody's Investors Service.
[86] Staff's Data Request No. 0328.
[87] Staff's Data Request No. 0122.
[88] Ameren Corp's debt ratio is defined as the ratio of long-term debt plus current maturities long-term debt to total capital. Ameren Missouri's equity ratio is defined as the ratio of total shareholder's equity minus goodwill to total capital. Both data sources are 10-K.

As presented in Figure 3, Ameren Corp's debt ratio significantly increased from 42.96% to 56.12% during the 10-year period ended 2020, while Ameren Missouri's equity ratio only fluctuated around 50% and 52% in the same period. If Ameren Corp. borrowed money to invest in the subsidiary (Ameren Missouri), we would see a significant increase in the equity ratio on the books of Ameren Missouri that corresponds to an increase in the debt ratio on the books of Ameren Corp., a scenario called double-leverage.[89] Based upon this analysis, Staff is not concerned that Ameren Missouri's current capital structure is the result of double-leveraging. For the fourth guideline, according to Ameren Corp.'s consolidated balance sheet in 2020, Ameren Corp.'s non-utility assets and revenue are less than 1.0% of Ameren Corp.'s total assets and total revenue.[90] This is not concerning because Ameren Corp's non-utility operations are insignificant.

Q. Do you agree with Mr. Murray that Ameren Missouri should have a lower common equity ratio than the 52% because of Ameren Missouri's decision to elect use of the PISA mechanism?[91]

A. No, I do not. It is true that Ameren Missouri's business risk has declined due to the passage of SB 564, passed by the Missouri Legislature in 2018, and Ameren Missouri's decision to elect PISA. However, this does not justify using the consolidated capital structure of Ameren Corp, the parent company, for ratemaking purposes. The issue of business risk can be considered when determining the reasonable ROE for ratemaking, not capital structure.

Q. Do you agree that Ameren Corp's capital structure with about 45% equity ratio is the capital structure that reflects Ameren Missouri's debt capacity?

[89] Giacchino, L. R., & Lesser, J. A. (2011). Principles of Utility Corporate Finance. Public Utilities Reports.
[90] Staff's Data Request No. 0329.
[91] Page 34, line 21 to page 35, line 3, Murray's Direct Testimony.

A. No, I do not. If Ameren Missouri's equity ratio is changed from 50.32% to 45%, its credit rating would likely be lower than the current BBB+ because of a higher debt ratio. According to S&P Ratings, as of September 16, 2021, Ameren Missouri's credit rating is BBB+ with "Excellent" business risk profile ("BRF") and "Significant" financial risk profile ("FRP").[92] Staff does not think that it is Mr. Murray's intention to impair Ameren Missouri's credit rating but his capital structure recommendation might do just that. It is also important to note that Ameren Missouri's projected capital expenditures require financial investment that can be accomplished by its ability to access both equity and debt. The debt capacity that Mr. Murray claims Ameren Missouri has can be used for that.

Q. Do you have any other concerns with Mr. Murray's recommendation?

A. Yes, I do. Mr. Murray recommended a cost of debt of 3.95% based on projected debt values as of September 30, 2021.[93] Mr. Murray adjusted Ameren Missouri's cost of debt as of June 30, 2021 to reflect additional long-term debt of $626.7 million he added to Ameren Missouri's capital structure.[94] Staff is of the position that the appropriate cost of debt for Ameren Missouri is 3.91% that matches Ameren Missouri's capital structure as June 30, 2021 at this time.[95] Staff will review Ameren Missouri true-up embedded cost of debt as of September 30, 2021 when data is available.

IV. SUMMARY AND CONCLUSIONS

Q. Please summarize the conclusions of your rebuttal testimony.

[92] RatingDirect®, S&P Global Ratings, Union Electric Co. d/b/a/ Ameren Missouri, April 30, 2021.
[93] Schedule DM-D-8, Murray's Direct Testimony.
[94] Ibid.
[95] Staff Data Request No. 0114.

A. Ms. Bulkley's recommended ROE of 9.80% for Ameren Missouri is not just and reasonable considering her inappropriate reliance on unreasonable inputs to her DCF and CAPM analyses. Staff accepts Ms. Bulkley's BYPRP ROE estimates, ranging from 9.28% to 9.71%, because they support Staff's recommended ROE. Staff recommends that the reasonable authorized ROE to use in this proceeding is 9.50%, in a reasonable range of 9.25% to 9.75%. Staff does not have major concerns with OPC witness Murray's recommended authorized ROE of 9.25% because it is within Staff's zone of reasonableness.

Staff recommends that the appropriate capital structure to use to set Ameren Missouri's allowed ROR of 6.72% in this proceeding is Ameren Missouri's stand-alone capital structure consisting of 48.93% long-term debt, 0.75% preferred stock and 50.32% common equity with 4.18% cost of prepared stock and 3.91% cost of debt, as of June 30, 2021. Staff will keep monitoring Ameren Missouri's updated capital structure and cost of debt until the true-up period and will make its final recommendation at that time.

Q. Does this conclude your rebuttal testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Adjust Its Revenues for Natural Gas Service	)))	Case No. GR-2021-0241

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 *Rebuttal Testimony of Seoung Joun Won*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

SEOUNG JOUN WON, PhD

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 14th day of October 2021.

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

Notary Public