Exhibit No. 405

Office of the Public Counsel – Exhibit 405
David Murray
Direct Testimony
File Nos. ER-2021-0240 & GR-2021-0241

Exhibit No.:	405
Issue(s):	Rate of Return (ROR)/ Return on Equity (ROE)/ Capital Structure
Witness/Type of Exhibit:	Murray/Direct
Sponsoring Party:	Public Counsel
Case No.:	ER-2021-0240

DIRECT TESTIMONY

OF

DAVID MURRAY

Submitted on Behalf of the Office of the Public Counsel

UNION ELECTRIC COMPANY
D/B/A AMEREN MISSOURI

FILE NO. ER-2021-0240

** **

Denotes Confidential Information that has been Redacted

September 3, 2021

PUBLIC

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase its Revenues for Electric Service	)))))	Case No. ER-2021-0240

AFFIDAVIT OF DAVID MURRAY

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

David Murray, of lawful age and being first duly sworn, deposes and states:

1. My name is David Murray. I am a Utility Regulatory Manager for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my direct testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

David Murray
Utility Regulatory Manager

Subscribed and sworn to me this 3rd day of September 2021.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

TIFFANY HILDEBRAND
My Commission Expires
August 8, 2023
Cole County
Commission #15637121

Tiffany Hildebrand
Notary Public

My Commission expires August 8, 2023.

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DIRECT TESTIMONY

OF

DAVID MURRAY

UNION ELECTRIC COMPANY d/b/a AMEREN MISSOURI

FILE NO. ER-2021-0240

Q. Please state your name and business address.

A. My name is David Murray and my business address is P.O. Box 2230, Jefferson City, Missouri 65102.

Q. By whom are you employed and in what capacity?

A. I am employed by the Missouri Office of the Public Counsel ("OPC") as a Utility Regulatory Manager.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of the OPC.

Q. What it the purpose of your testimony?

A. To recommend a fair and reasonable rate of return ("ROR") for purposes of setting Ameren Missouri's revenue requirement for its regulated electric utility operations.

Q. What experience, knowledge and education qualify you to sponsor ROR testimony in this case?

A. Please see the attached Schedule DM-D-1 for my qualifications as well as a summary of the cases in which I have sponsored testimony on ROR and other financial issues.

Q. What aspects of ROR will you address?

A. I will address a fair and reasonable allowed return on common equity ("ROE") and a fair and reasonable capital structure.

Q. What is your main conclusion after analyzing Ameren Missouri's specific financial situation as well as the current state of capital markets?

A. Ameren Missouri's allowed ROE should be set at 9%, but at the very least no higher than The Empire District Electric Company's ("Empire") authorized ROE of 9.25% set in Case No. ER-2019-0374. Ameren Missouri's authorized common equity ratio should be more consistent with Ameren Corp.'s actual consolidated common equity ratios, which have been around 45% recently after excluding short-term debt.

Q. Before you discuss the details supporting your analysis, can you summarize the rationale for your conclusions?

A. Yes. Although capital structure and the allowed ROE are interrelated as to the ultimate impact on Ameren Missouri's revenue requirement, I will first briefly explain my rationale for each component, separately.

I recommend that the Commission set Ameren Missouri's allowed ROE for its electric utility operations at 9.0% based on a range of 8.5% to 9.25%. Although utility industry capital market conditions indicate an increase in the cost of common equity ("COE") since the Commission set Empire's ROE at 9.25%, the COE for regulated electric utilities and the local natural gas distribution utilities ("LDCs") is still lower at approximately 6.5% to 7.0%. The decline in the cost of capital is being directly captured in the ROE allowed for Ameren Illinois' electric utility operations. Factoring in recent lower interest rates will cause Ameren Illinois' authorized ROE for its electric utility operations to be 7.36% for 2022 under its prescribed ROE formula (average 30-year United States Treasury yield of 1.56% plus a 580 basis point risk premium). A 9% authorized ROE for Ameren Missouri's electric utility operations will cause Ameren Missouri's electric utility investments to be more attractive than Ameren Illinois' electric utility investments. Although this justifies an even lower allowed ROE than 9%, I also recognize that Ameren Illinois' formula ROE is over 100 basis points lower than the ROEs of 8.38% in 2021 and 8.91% in 2020.

Although there has been speculation that long-term interest rates will increase, causing utilities' cost of capital to increase, this simply hasn't happened. In fact, post the onset of the COVID-19 pandemic, utility bond yields declined even further than they had prior to the onset of the COVID-19 pandemic. There is no reason to set Ameren Missouri's ROE higher based on speculation that long-term interest rates will increase considering they have been in an overall declining trend over the past decade. This "lower for longer" interest rate environment allows utility companies, such as Ameren Missouri, to continue to raise capital at low costs. This reduces Ameren Missouri's cost of service.

I recommend that the Commission set Ameren Missouri's authorized common equity ratio at 45% rather than the 52% ratio Ameren Corporation ("Ameren Corp") has been targeting for Ameren Missouri over the last several rate cases. Ameren Missouri's business risk profile declined after Missouri passed Senate Bill ("SB") 564, which allowed Ameren Missouri to elect, in September 2018, an investor-friendly ratemaking mechanism referred to as plant in service accounting ("PISA") for its electric utility operations.[1] Ameren Missouri's reduced business risk profile allows for greater debt capacity, as Moody's directly acknowledged in response to the availability of the PISA mechanism when it relaxed the benchmark credit metrics it requires for Ameren Corp to maintain its current credit rating. However, the reduced cost of capital afforded by such higher debt capacity is not being shared with Ameren Missouri's customers. Rather, Ameren Corp is managing Ameren Missouri's capital structure for purposes of maintaining a higher ROR for ratemaking rather than achieving a lower cost of capital. Ameren Corp has been and continues to misappropriate Ameren Missouri's higher debt capacity to Ameren Corp, which benefits Ameren Corp's shareholders at the expense of Ameren Missouri's ratepayers. The Commission can rectify this unfair transfer of Ameren Missouri's debt capacity to Ameren Corp by authorizing Ameren Missouri a common equity ratio consistent with Ameren Corp's on a consolidated basis.

[1] SB 564 resulted in the creation/modification of several Sections of Chapter 393 with the primary new subsection being Section 393.1400, RSMo.

Q. Did you take any other matters into consideration when determining a fair and reasonable allowed ROE to apply to your recommended capital structure?

A. Yes. I recognize that Ameren Missouri has affiliates that compete with it for capital. In my opinion, Ameren Corp should choose projects between Ameren Illinois' electric utility operations and Ameren Missouri's electric utility operations based on economic efficiency rather than which jurisdiction awards the highest ROR. For the upcoming 2022 calendar year, an 8.32% authorized ROE applied to a 45% equity ratio would cause Ameren Missouri electric utility investments to create similar shareholder value as compared to Ameren Illinois' electric utility investments. Therefore, an authorized ROE above this level makes Ameren Missouri's electric utility capital projects more attractive for shareholders than Ameren Illinois' electric utility capital projects.

FAIR RETURN ON COMMON EQUITY

Q. How did you determine the approach you would take to estimate a fair and reasonable allowed ROE for purposes of this case?

A. I reconciled the principles established in *Hope* and *Bluefield*[2] with modern financial models used to estimate the COE. While setting the allowed ROE based on the COE is at least theoretically sufficient to allow a company to attract capital in efficient markets, because average allowed ROEs have been set higher than the COE, this fact must be considered when determining a fair and reasonable allowed ROE. In fact, this Commission has set a "zone of reasonableness standard" [3] for purposes of setting an allowed ROE with the starting point for this zone of reasonableness being a recent industry average allowed ROE. Considering these principles, I first estimate Ameren Missouri's current COE, then compared my current COE estimates to those I estimated in recent rate cases to determine if there has been a fundamental change in the cost of capital. My analysis also includes

[2] *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 64 S.Ct. 281, 88 L.Ed. 333 (1943); *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679, *43 S.Ct. 675, 67 L.Ed. 1176* (1923).
[3] *State ex rel. Missouri Gas Energy v. Public Service Commission,* 186 S.W.3d 376, 383 (Mo App. W.D. 2005)

consideration of other recently authorized ROEs with specific consideration given to Ameren Illinois' allowed ROE for its electric utility operations.

Q. Based on your analysis, what is your estimate of Ameren Missouri's COE?

A. Ameren Missouri's COE is no higher than a range of 6.5% to 7.0%.

Q. Based on your analysis and awareness of capital market conditions, investor expectations and recent average allowed ROEs for electric utilities, what do you consider to be a fair and reasonable allowed ROE for Ameren Missouri's electric utility operations?

A. 8.50% to 9.25%. 8.5% is approximately the lowest ROE that the Commission would consider under its "zone of reasonableness" standard, while 9.25% would appropriately reduce Ameren Missouri's current authorized ROE of 9.53% for its electric utility operations. After considering my COE estimates, the Commission's authorized ROE for Empire and the likely 2022 authorized ROE for Ameren Illinois' electric utility operations, I consider the mid-point of my range, 9.0%, to be fair and reasonable if applied to my recommended common equity ratio of 45%.

Q. How did you inform yourself for purposes of determining the best methods and approaches to use to estimate Ameren Missouri's COE?

A. For purposes of this case, I reviewed Ameren Corp's Board of Directors ("BOD") strategic financing and investment considerations since June 30, 2020, as well as equity investment research reports covering Ameren Corp and the utility industry for the same period. After performing this research, I estimated Ameren Missouri's COE by performing a company-specific COE analysis on Ameren Corp as well as a COE analysis on a broad electric utility industry proxy group.

Q. What specific COE models did you use?

A. I used a multi-stage discounted cash flow ("DCF") method, with specific emphasis on consensus analysts' estimated dividends and the modeled growth of dividends. When the

DCF method is applied to dividends as the proxy for cash flow, it is more specifically defined as the dividend discount model ("DDM"). I also applied the Capital Asset Pricing Model ("CAPM") to both Ameren Corp and the proxy groups. Finally, I performed simple and logical reasonableness checks to test the reasonableness of my COE estimates. These reasonableness checks recognize the basic characteristics of utility stocks, mainly being that they are perceived as yield/income investments by the investment community. One such reasonableness check is a straight-forward bond-yield-plus-risk-premium ("BYPRP") method included in the Chartered Financial Analyst ("CFA") Program curriculum.

Q. Ameren Missouri also filed a natural gas distribution rate case, Case No. GR-2021-0241. How do you plan to approach your recommended ROR for Ameren Missouri's natural gas distribution operations compared to the electric utility operations?

A. I will make a separate recommendation for Ameren Missouri's gas distribution operations in that case. However, the testimony I file in both cases will compare and contrast the two subsectors of the utility industry because this provides the Commission with useful information that should allow it to determine if the authorized ROR should be different for the electric utility system and the natural gas distribution system.

Q. Are Ameren Missouri's electric and gas distribution utility operations owned and financed separately?

A. No. Ameren Missouri directly owns the gas and electric systems and either provides direct debt financing or receives financing from Ameren Corp to finance these systems. They are only segregated as divisions for regulatory and performance evaluation purposes.

Q. Which system dominates how Ameren chooses to capitalize Ameren Missouri?

A. It's electric utility system, which makes up approximately 97% of Ameren Missouri's total rate base.

Q. Can you describe current capital market conditions as it relates to the electric utility industry and the LDC industry in general and Ameren Corp specifically before you discuss the details of how you specifically estimated Ameren Missouri's COE?

A. Yes. This information should help provide some context as to the current state of utility capital markets and what this implies about the trend in capital markets over approximately the last decade when long-term interest rates entered into a prolonged period of lower levels with a declining trend.

Q. Did you sponsored ROR testimony in past Ameren Missouri rate cases?

A. Yes. Please see Schedule DM-D-1 attached for a complete list of Ameren Missouri rate cases in which I sponsored ROR testimony for either Staff of the Missouri Public Service Commission ("Staff") or OPC.

Q. What ROE have you recommended the Commission authorize Ameren Missouri's electric utility operations in the last several rate cases?

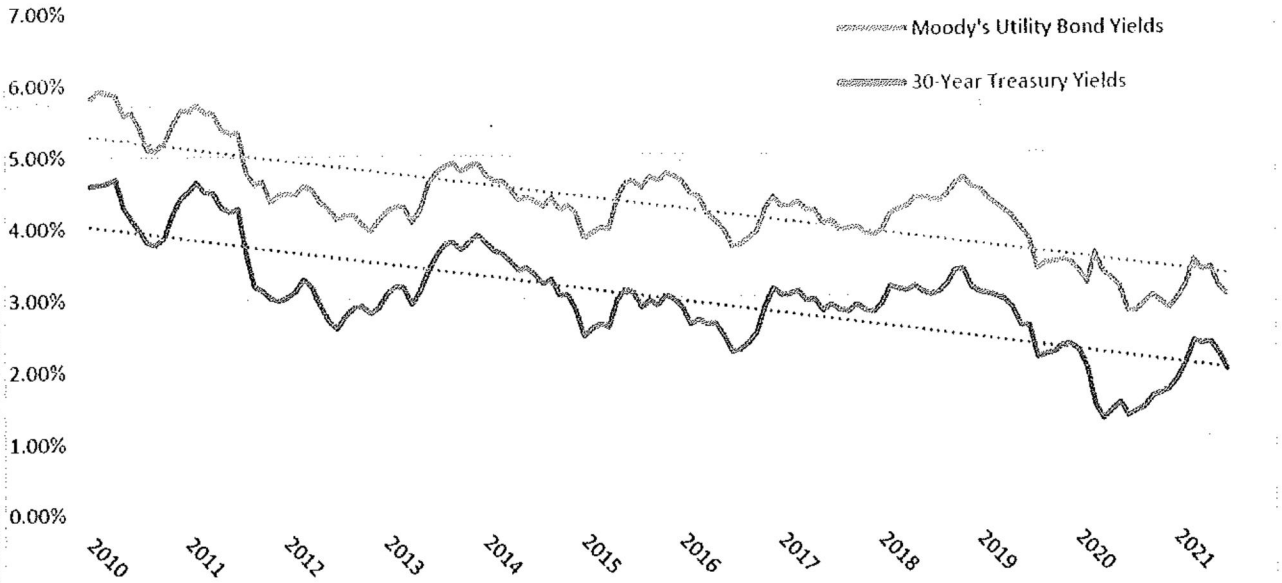
A. I have consistently recommended the Commission reduce Ameren Missouri's allowed ROE to 9.25% from its current authorized ROE of 9.53%. Although the COE has varied over much of Ameren Missouri's past rate cases, with it reaching its all-time low right before the onset of the COVID-19 pandemic, I have consistently urged the Commission to lower Ameren Missouri's allowed ROE (and Missouri's other major utilities) by at least 25 basis points to recognize the sustained and declining trend in the costs of capital.

Q. How do current investment grade utility bond yields compare to investment grade utility bond yields over the past decade?

A. Current investment grade utility bond yields are lower.[4] The below graph shows long-term bond yields since January 1, 2010, which captures the prolonged period of lower long-term interest rates post the recession/financial crisis of 2008/2009. While the early stages of

[4] S&P rates Ameren and Ameren Missouri investment grade at BBB+; Moody's rates Ameren and Ameren Missouri investment grade at Baa1.

lower long-term interest rates in the first half of this decade were considered by some as potentially anomalous because of the Federal Reserve Bank's ("Fed") quantitative easing ("QE") programs[5] through the end of 2013, since that time, long-term interest rates have continued an overall declining trend.



Average utility long-term bond yields dropped to modern all-time lows in the latter half of 2020 - levels not experienced since the late 1940s and early 1950s (I am not aware of a publication at the time, such as Regulatory Research Associates, that would provide information on allowed returns to provide guidance for current decisions). However, they have recently moderated to levels consistent with shortly before the onset of the COVID-19 pandemic, which until 2020, had been the lowest levels achieved since the 1960s.

[5] QE involved three rounds of the Fed's direct intervention in bond markets beyond just lowering the Fed Funds rate. The Fed's QE programs had the express intent of reducing long-term interest rates.

Q. Why is it important to evaluate trends in long-term interest rates when evaluating the utility industry's COE?

A. Utility stocks are a close alternative to bond investments. In fact, the investment community estimates fair prices of utility stocks based on regressions to bond yields.[6] Utility stocks are often referred to as bond-substitutes or pseudo bonds. **

**[7] Therefore, changes in utility stock valuation levels typically have a strong inverse correlation to changes in bond yields, i.e. as bond yields decline, utility stock prices increase.

Q. Since April 2020, have utility stock valuations and bond yields provided traditional and consistent signals about utilities' cost of capital?

A. No. Utility and corporate bond yields have declined significantly since even before the pandemic, which were already trading at yields-to-maturity ("YTM") that were at 60-year lows. During most of the post-pandemic months in 2020, utility and corporate bonds were trading at YTM that were at 70-to-80 year lows. However, broader utility industry stocks (mainly LDC and electric utility stocks) actually declined on both an absolute and relative basis (as compared to the S&P 500). During recent months, utility valuation levels have rebounded, but not to the all-time highs they reached in February 2020.

Consequently, while the utility industry is undoubtedly able to issue bonds at even lower costs than shortly before the pandemic, the utility equity market data has not been as conclusive about the direction of utility equity costs. For example, as I will discuss later in my analysis using the Capital Asset Pricing Model ("CAPM") analysis, utility stock betas have increased, implying a higher COE. However, the valuation ratios for the electric

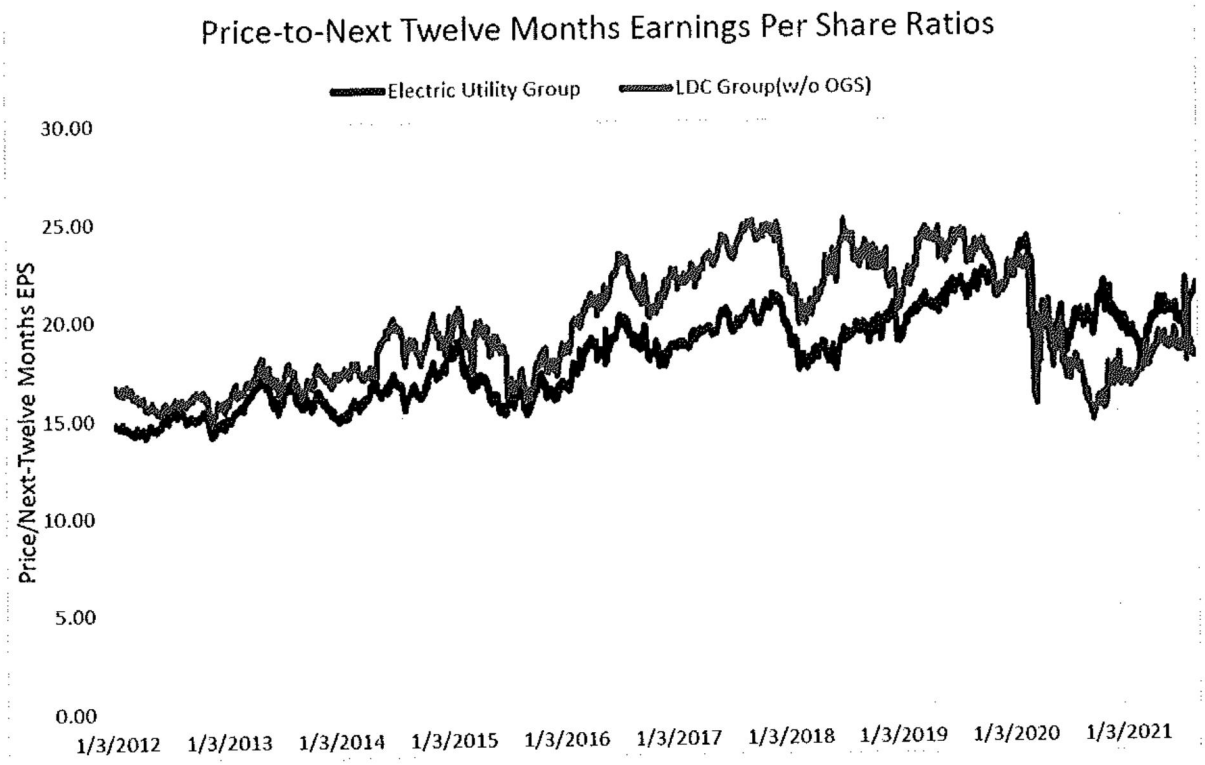
[6] Julien Dumoulin-Smith, et. al, "2Q 2020 Regulated Utilities Preview: The Covid Compendium Condensing What We Know," July 20, 2020, Bank of America Merrill Lynch. Jeremy Tonet, CFA, et. al., "Regulateds 1Q21 Preview: Peaceful Easy Feeling – Utes Enter Earnings with Improved Weather, Investment Tailwinds," April 19, 2021, JP Morgan. Sophie Karp, "Utilities 3Q20 Earnings Preview: Be Green and Be Regulated," October 18, 2020, KeyBank. Daniel Ford, CFA, et. al., "Mind the Gap(s): 2021 Utility Outlook," December 14, 2020, UBS Securities.

[7] Ameren Dividend Policy Considerations, Finance Committee, February 2021, p. 3-21.

utility and LDC industry are only slightly lower than the all-time highs achieved just before the pandemic.

Q. Can you provide a graphic illustration that compares the LDC industry's price-to-next-twelve-months-earnings (P/E) ratios to the electric utility industry's P/E ratios since January 1, 2012?

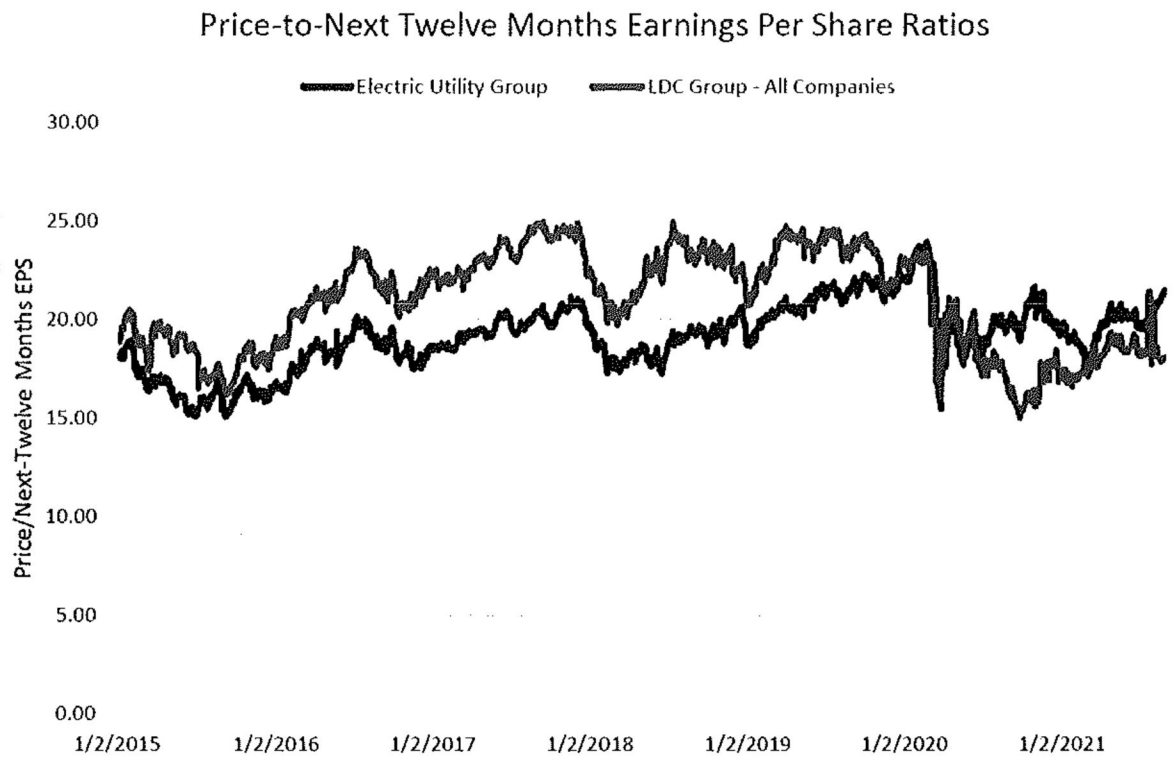
A. Yes. First, I should note that P/E ratios are often used to evaluate the relative cost to the investor to buy a share of earnings and the potential growth of those earnings. Also, for context regarding the favorableness of utility P/E ratios over the past several years, utility P/E ratios averaged 14.4x since 1995.[8] A graph of the P/E ratios for the LDC and electric utility industry follows:



As can be seen in the above graph, the LDC industry traded at a premium to the electric utility industry until the end of 2019. The premium was especially pronounced

[8] Durgesh Chopra, et. al., "Utes Close To Fair Value In Our Bond Model," Evercore ISI, April 18, 2021, p. 8.

during the latter half of the last decade. Because One Gas Company (the only 100% pure-play LDC company of all of the publicly-traded LDCs) did not become a publicly-traded company until 2014, it is not included in the above graph. In order to provide more robust data on the LDC industry for the last half of the decade and focus on the significant change in the relative trading values for the LDC industry compared to the electric utility industry, I also provide the following graph showing P/E data since January 1, 2015:



As is graphically illustrated, LDC's traded at a significant premium to electric utilities for the five-year period, January 1, 2015 through December 31, 2019. The average P/E multiple was approximately 3x higher over this period. However, beginning in early 2020 and until very recently, LDCs traded at a discount to electric utilities. LDCs traded at an average P/E that was 1.6x lower than electric utilities for all of 2020. Not until

recently, have LDC P/E ratios started to trade closer to par with electric utilities, but still at a slight discount.[9]

Q. Have Ameren's investment banks provided it expert insight as it relates to the current valuation differences between electric utilities and LDCs?

A. Yes. Goldman Sachs attributed LDC's discounted valuations to the following:

> **____________________________________
> ____________
>
> ____________________________________
> ________ **

Q. Can you provide some recent market commentary that supports your analysis and commentary about utility stock valuation levels?

A. Yes. On August 30, 2021, the Wall Street Journal ("WSJ") provided the following comments about recent trading patterns for utility stocks and other defensive industries, such as healthcare:

> Utilities and healthcare are among the best-performing groups in the S& P 500 so far this quarter, with gains of 7.8% and 6.6%, respectively, compared with a 4.9% rise in the broad stock index. Big winners include utility NextEra Energy Inc., which is up 14% this quarter, while shares of medical company Danaher Corp. are up 19%...
>
> ...The S& P 500 has advanced 20% this year and set 52 record closes—its highest number of records in a calendar year through the end of August, according to Dow Jones Market Data. Valuations have edged lower this year as earnings soared but remain at historically high levels...
>
> ...Healthcare stocks have relatively attractive valuations, some investors said. The sector traded late last week at about 18 times its projected earnings over the

[9] LDC P/E ratios increased for a short period of time around July 2021 due to some extraordinarily high P/E ratios for Northwest Natural Gas Company. This appears to have been an aberration and should not be considered reflective of investors' view of a fair P/E multiple for the LDC industry.
[10] Ameren Board of Directors Discussion Materials, Goldman Sachs & Co. LLC, December 11, 2020, p. 3.

> next 12 months, compared with about 21 times for the S& P 500, according to FactSet.
>
> The utilities group, meanwhile, traded at 20 times projected earnings, a more modest discount to the broad market, but boasts a dividend yield of 3%—more than double that of the S& P 500.[11]

Although utilities are currently trading at a discount relative to the S&P 500, as compared to the premium they traded to the S&P 500 through most of the past decade, this was due to the fact that the S&P 500 traded at a lower P/E ratio prior to aggressive actions taken by the United States' Federal Reserve Bank (i.e. monetary policy) and the United States' government (i.e. fiscal policy) in response to the COVID-19 pandemic. The fact that the S&P 500 valuation ratios increased relative to utility industry's valuation ratios suggests the aggressive monetary and fiscal policy caused the markets' cost of capital to decline more relative to the utility industry. In order to correctly interpret these market signals, it is important to not only analyze valuation ratios across industries at points in time, but also for the same industry over periods.

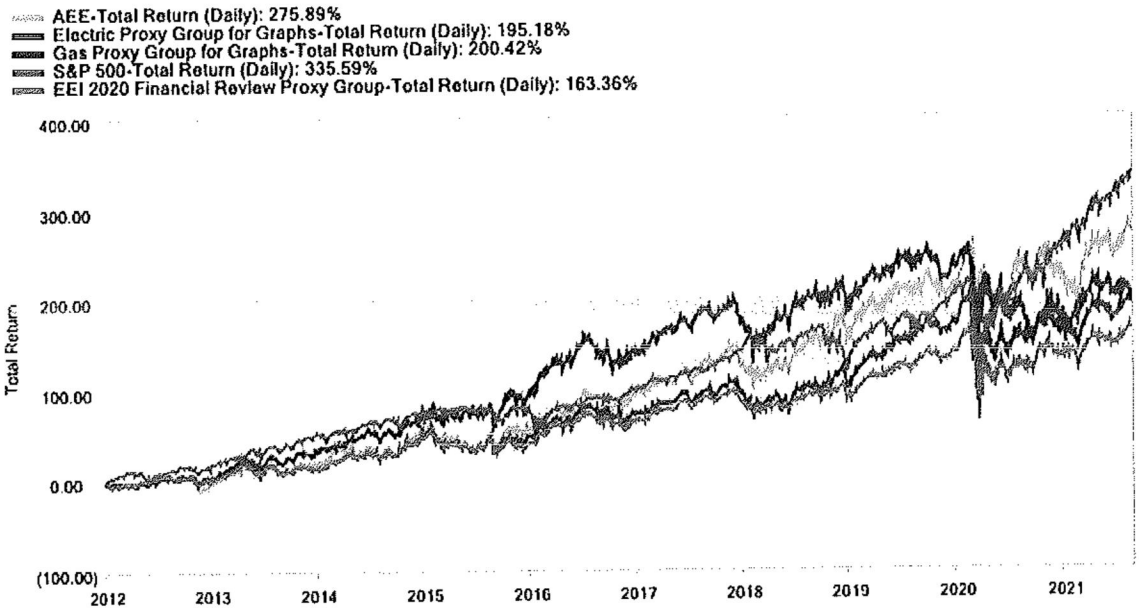
Q. Do investors expect allowed ROEs to be reduced because of the current and prolonged low cost of capital environment?

A. Yes. While investors are accustomed to the practice of commissions allowing ROEs higher than the COE, they price in the potential that commissions will reduce allowed ROEs due to very low long-term interest rates. This is especially true the longer the U.S. capital markets experience a "lower for longer" yield environment.[12]

Q. Can you provide information on how Ameren Corp's shareholder returns have compared to its peers and to the S&P 500?

A. Yes. See the below chart for a graphic illustration of Ameren Corp's total return as compared to an electric utility proxy group, EEI's Broad Electric Utility Proxy Group, an LDC proxy group, and the S&P 500.

[11] Karen Langley, "Investors Signal Cautious Outlook," Wall Street Journal, August 30, 2021, page A1 and A2.
[12] Durgesh Chopra, et. al, "Utilities vs Inflation," August 29, 2021, Evercore ISI. Neil Kalton, et. al., "DDM Analysis Supports Sector Valuation & Quality/Growth Trade," August 19, 2019, Wells Fargo.



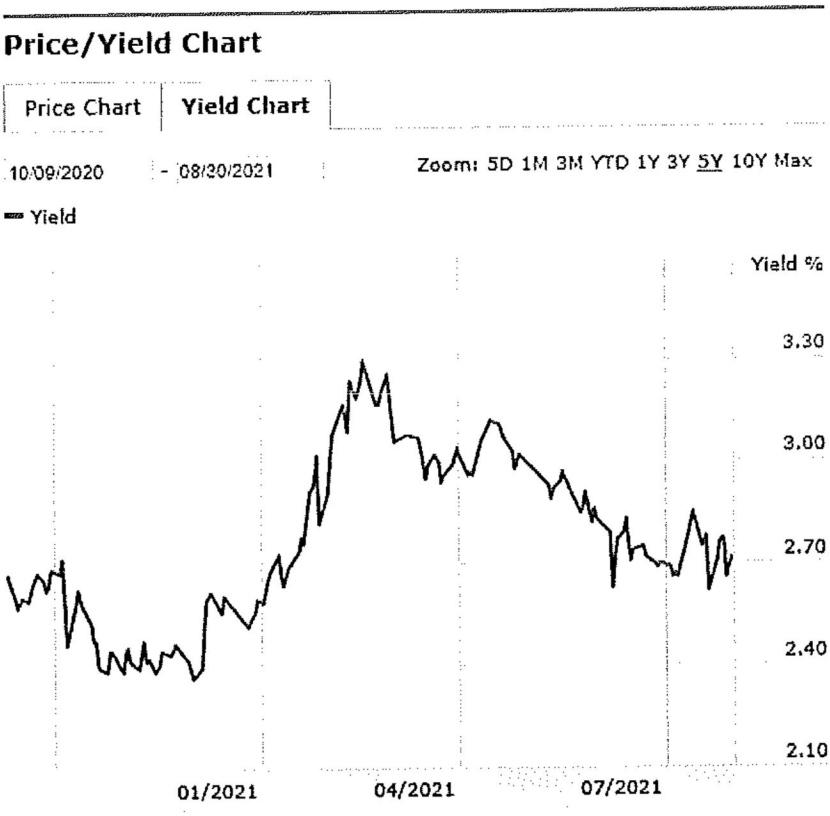
Ameren Corp's (trading ticker is "AEE") total return has outperformed that of its electric utility peers, LDCs and has slightly underperformed the S&P 500. Until the onset of the COVID-19 pandemic, Ameren Corp had also outperformed the S&P 500. After the Federal Reserve and Congress instituted aggressive monetary and fiscal policies, respectively, in reaction to the COVID-19 pandemic, this caused a rapid increase in the S&P 500 index, especially among some of the largest technology companies in the S&P 500, which make up approximately 25% of the S&P 500's total market capitalization. Much of this increased value in these larger technology stocks has been attributed to the lower discount rates applied to anticipated profits/cash flows that are not likely to be realized until many years into the future (lower discount rate results in a higher estimate of the present value of these anticipated distant cash flows).

The total returns shown in the chart above convert into the following compound annual returns for Ameren Corp, Electric Proxy Group, EEI, the LDC proxy group and the S&P 500, respectively: 14.68%, 11.85%, 10.54%, 12.05% and 16.44%.

Q. Are you aware of any information specific to Ameren Missouri that supports the fact that Ameren Missouri's cost of capital is quite low?

A. Yes. In Ameren Missouri's 2019 rate case, I discussed the fact that Ameren Missouri issued a 30-year bond on October 1, 2019, with a coupon rate of 3.25%. At the time, this was the lowest coupon rate I had ever observed on a 30-year utility bond in the 20-year period in which I have been sponsoring ROR testimony. After searching the Commission's archives at the time, I determined the last time Ameren Missouri had been able to issue a 30-year bond at a cost consistent with its recent issuance was in 1952.

Since Ameren Missouri's 2019 rate case, it issued a 30-year bond at an even lower coupon rate. On October 9, 2020, Ameren Missouri issued a 30-year bond with a coupon rate of 2.625% (CUSIP: 906548CS9). Although the yield-to-maturity for over-the-counter trades increased to as high as 3.3% in the spring of 2021, these bonds have been trading close to their original coupon rate for most of July and August 2021 (see the below chart).

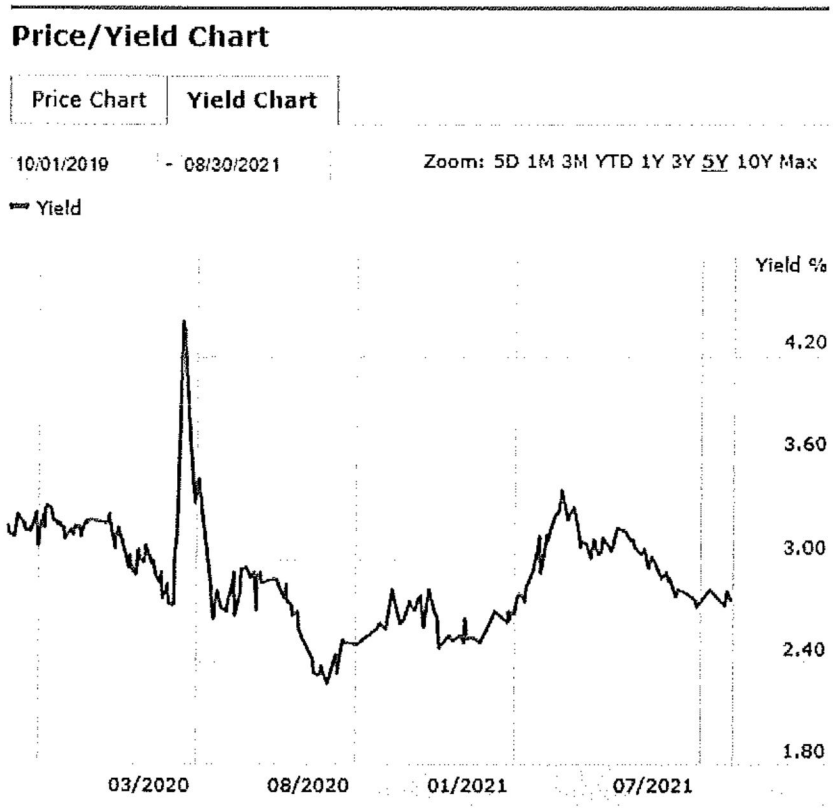


[13]

Q. How do the yields on Ameren Missouri's bonds compare to the period shortly before the onset of the COVID-19 pandemic, which is consistent with the period of Ameren Missouri's and Empire' rate cases in 2019?

A. Ameren Missouri's 3.25% coupon bond is trading slightly below the YTM at which it traded for most of the period up to the onset of the COVID-19 pandemic. Just a few days before the fear of the pandemic disrupted capital markets, Ameren Missouri's 3.25% bonds traded at a YTM consistent with those at which it is trading currently. See the below chart:

[13] http://finra-markets.morningstar.com/BondCenter/BondDetail.jsp?ticker=C938553&symbol=AEE5056585



[14]

COST OF EQUITY METHODS

Q. Now that you have provided some context on changes in utility capital market conditions generally and Ameren Corp and Ameren Missouri specifically, can you discuss how you decided to approach your COE estimate for Ameren Missouri in this case?

A. Yes. I performed a company-specific COE analysis on Ameren Corp. as well as a proxy group COE analysis. I used a multi-stage DCF approach and a CAPM. I then tested the reasonableness of my estimates by using simple, straightforward sanity checks, such as the straight-forward bond-yield-plus-risk-premium ("BYPRP") method discussed in the CFA curriculum.

[14] http://finra-markets.morningstar.com/BondCenter/BondDetail.jsp?ticker=C852425&symbol=AEE4888370

Q. How have you informed yourself as to reasonable and rational inputs for your COE approaches?

A. Being that the objective of a ROR witness is to emulate investors' approaches to analyzing and making investment recommendations as it relates to investing in utility stocks, I have made it a priority to review and analyze how equity research analysts determine a utility stock price estimate in practice. This has allowed me to test the theory of cost of capital estimation in utility ROR testimony as it compares to how utility stocks are actually valued. I have discovered investment analysts do use multi-stage DCF approaches to estimate fundamental values of utility stocks, and/or they use relative valuation techniques that compare a company's P/E ratios to averages for the industry and/or potentially a more tailored subset of peer companies. In my experience, professional equity ("Wall Street") analysts project long-term CAGR in EPS to determine whether a company's P/E ratio deserves a premium or a discount to its peers. Wall Street analysts do not use these estimated long-term CAGRs in EPS for purposes of projecting a perpetual dividend growth rate, as some ROR witnesses suggest. When performing an absolute valuation analysis, such as a DCF/DDM, Wall Street analysts assume rational perpetual growth rates in the 2.5% to 3.3% range for electric utility companies and LDCs. Finally, and most relevant to the task at hand, they estimate utilities' COE to be in the 6% range.[15]

Q. What equity research firms cover Ameren Corp's stock?

A. According to Ameren Corp's website, the following firms cover its stock: Argus Research Corporation, Bank of American Merrill Lynch ("BAML"), Barclays, BMO Capital Markets, Evercore ISI, Goldman Sachs, Guggenheim, JP Morgan, KeyBanc Capital Markets ("KeyBanc"), Mizuho, Morgan Stanley, Morningstar Equity Research, UBS, Value Line, Wells Fargo Securities, and Wolfe Research ("Wolfe").[16]

[15] Durgesh Chopra, et. al, "Utilities vs Inflation," August 29, 2021, Evercore ISI. Neil Kalton, Sarah Akers, and Jonathan Reeder, "DDM Analysis Supports Sector Valuation & Quality/Growth Trade," August 19, 2019, Wells Fargo.
[16] https://www.amereninvestors.com/company-info/analyst-coverage/default.aspx

Q. Why is it important to analyze this information to determine a fair and reasonable allowed ROE for Ameren Missouri?

A. Analyzing this information is important because these Wall Street analysts are the very individuals that underlie various consensus estimates widely considered by investors. ROR witnesses recognize the influence Wall Street analysts have on utility stock prices by the very fact that they use consensus EPS forecasts for purposes of estimating the COE.

Q. Did you review any of these firms' research for purposes of performing your cost of equity analysis and preparing your testimony?

A. Yes. I mainly relied on reports Ameren Missouri made available for review in response to Staff Data Request No. 0126. However, over my career I have established relationships with some firms/analysts who have distributed this material to me directly through their email distribution lists. These relationships were borne from my role as a regulator in which many of these analysts seek information related to Missouri's general and specific regulatory issues. I have also interacted with these analysts through my participation in organizations, such as the Society of Utility and Regulatory Analysts ("SURFA").

Q. How did you approach the multi-stage DCF/DDM analysis you performed on Ameren Corp?

A. Schedule DM-D-2-1 and DM-D-2-2 attached to my testimony illustrate the primary logic and assumptions I used in my multi-stage approach. For the first stage, I used consensus analysts' estimates for dividend per share ("DPS") through 2025. Ameren Corp's consensus dividend payout ratio is projected to be 56.55% in 2025. Ameren Corp's current guidance on its dividend payout ratio is in the range of 55% to 70%. Being that Ameren Corp plans to be in a high capital expenditure cycle through at least the next ten years, I assumed Ameren Corp would retain more capital and therefore target a dividend payout ratio of 56.55% for approximately the next ten years. Over this period I assumed Ameren's DPS would grow in line with Ameren's projected EPS, which I modeled to gradually decline from 2025 to 2035, when it would grow perpetually at a rate in the range of 2.5% to 3.5%, with 3% being the base case. This perpetual growth rate range is consistent with

the ** ———— ** As Ameren Corp's EPS growth transitions to a sustainable growth rate by 2035, I appropriately increased Ameren Corp's dividend payout ratio to consider the fact that it would not need to retain as much earnings for reinvestment. For my base case scenario, this caused Ameren Corp's DPS to grow at a CAGR of 9.25% for the period 2032 through 2035, as compared to a 3.43% CAGR in EPS for the same period.

Q. Can you provide some additional explanation as to the rationale underlying your assumed growth rates for Ameren Corp?

A. Yes. Through recent investment communications and actions, Ameren Corp has signaled that it plans to increase its dividend in line with its long-term CAGR in EPS guidance of 6% to 8%.[18] Ameren Corp has also communicated to investors that it plans to increase rate base at a CAGR of approximately 8% through 2025 by investing $17.1 billion. Ameren Corp has also communicated that it anticipates an additional $23 billion of regulated investment opportunities through 2030 for a total of $40 billion.[19] But these ramped up investment programs are finite and will eventually return to a maintenance level of capital investment, similar to how it treated investment in Ameren Missouri before it was granted the legal authority to use PISA. Once the Company achieves this steady state, then it should gravitate toward a dividend payout ratio that ensures it will have sufficient internal equity capital to fund its investments. Using the maintenance level of capital expenditures Ameren Corp made in Ameren Missouri as a proxy, a targeted dividend payout ratio of approximately 66.67% is consistent with this level of investment.

[17] ** ———— **. Staff Study on Long-Term Growth of Value Line Central Utilities. Moody's Public Utility Index.

[18] https://www.prnewswire.com/news-releases/ameren-corporation-increases-quarterly-cash-dividend-by-6-8-percent-marking-eighth-consecutive-year-of-growth-301227708.html

[19] Leading the Way to a Sustainable Energy Future, UBS Kohler Mid-West Utilities Conference, August 19, 2021.

Q. What does industry data suggest is a sustainable growth rate for a predominately regulated electric utility company, such as Ameren Missouri?

A. I reviewed past actual historical industry growth rate data from the Moody's electric utility index,[20] a sample group of electric utility companies in which data was available from Value Line,[21] and commentary/analysis available from institutional investors/analysts.[22] This information supports a perpetual growth rate in the range of 2.5% to 3.5%. A perpetual growth rate within this range is also consistent with the "sustainable growth model," which estimates EPS growth by multiplying an average long-term industry retention rate by an expected book ROE. Assuming the utility industry reverts to its long-term earnings retention rate of approximately 30% and allowed ROEs are eventually lowered to compress the spread between the COE and the allowed ROE, this would support a 2.7% perpetual growth rate if investment opportunities are available (9% allowed ROE multiplied by 30%). Both Wells Fargo and Evercore ISI, equity research firms that follow Ameren Corp, assume scenarios where allowed ROEs eventually decline to between 9% to 9.25% as we remain in a prolonged period of low cost of capital.[23]

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[20] Staff Cost of Service Report, Case No. ER-2011-0028, p. 18.
[21] *Id.*
[22] Discussed throughout this testimony.
[23] Durgesh Chopra, et. al, "Q2 2021 Earnings Recap," August 8, 2021, Evercore ISI. Neil Kalton, Sarah Akers, and Jonathan Reeder, "DDM Analysis Supports Sector Valuation & Quality/Growth Trade," August 19, 2019, Wells Fargo.
[24] Ameren Dividend Policy Considerations, Ameren Finance Committee, October 2017, p. 5-10.

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Q. How does this compare to perpetual growth rates used by equity analysts to estimate fair prices for utility stocks?

A. This is fairly consistent with the perpetual growth rates used for purposes of estimating utility stock prices. For example, Evercore ISI uses a perpetual growth rate of 2.5% in its 3-stage DDM analyses of electric utility stocks.[26] Wells Fargo uses an average perpetual growth rate of around 3%.[27]

Q. How do these growth rates compare to how Ameren Missouri's earnings and rate base grew over the past ten years when Ameren Corp was limiting its investment in Ameren Missouri to maintain safe and reliable service?

A. Based on Ameren Missouri's rate base through the true-up period, December 31, 2019, in the 2019 rate case,[28] Ameren Missouri's CAGR in its rate base has been in the range of 2.2% to 3% since the 2010 to 2011 time period. This further supports a rational expected terminal growth rate when the utility industry is maintaining its system to ensure safe and reliable service.

[25] Ameren Board of Directors Discussion Materials, Goldman Sachs & Co. LLC, December 11, 2020, p. 3.
[26] *Id.*
[27] *Id.*
[28] Case No. ER-2019-0335, Laura Moore Direct Testimony, July 3, 2019, p. 18

Q. What cost of equity did you estimate for Ameren Corp using the multi-stage approach?

A. Using Ameren Corp's most recent 3-month average stock price of approximately $85 and discounting prospective dividends by reasonable growth rates in the intermediate future as well as perpetually, the implied COE for Ameren Corp is approximately 6.8% to 7.1% (see Schedule DM-D-2). Given that this COE estimate assumes Ameren Corp can achieve CAGR in EPS of over 6% for approximately the next 10 years, I consider this COE estimate to be higher than likely. Therefore, this COE estimate will be the basis for the upper end of my estimated COE range.

PROXY GROUP COST OF EQUITY

Q. Should you compare your estimate of Ameren Corp's company-specific COE to the COE of a proxy group of other regulated electric utilities?

A. Yes. Investors frequently evaluate the attractiveness of a utility company's share price by comparing it to the average of peer proxy group, whether it's based on a broader utility index or a custom proxy group.

Q. How did you approach selecting a custom proxy group for purposes of comparing Ameren Corp's COE versus its peers?

A. I decided to analyze a broad proxy group of utilities classified as "regulated" and "mostly regulated" utilities by the Edison Electric Institute ("EEI").[29] Although I estimated a COE based on this broad electric proxy group, I also reviewed the companies EEI classifies as "regulated," but even these companies may have non-regulated operations that contribute to volatility to earnings and/or cash flows. Therefore, I reviewed the various business segments of each of these companies to determine which generally have less than 10% of their operations exposed to competitive markets, which was 18 companies. I also analyzed

[29] EEI classifies companies as "Regulated" if at least 80% of their assets are dedicated to regulated utility operations.

financial and market data (charts shown in my testimony) of a subset of the EEI companies I have consistently followed in electric rate cases since 2012.

Q. Did you perform a multi-stage DCF analyses on these companies?

A. Yes, but my analysis was more generic because of my lack of familiarity of intimate details of each of these companies. However, I applied the same principles as I did when applying the multi-stage DCF to Ameren Corp. For the first stage (August 31, 2021 through June 30, 2025) I used Wall Street analysts' consensus DPS estimates to the extent they were available. For the second stage (June 30, 2025 through June 30, 2035), I allowed for a gradual decline from Wall Street analysts' projected 5-year CAGR in EPS to a sustainable perpetual growth rate of 3% starting in June 30, 2035. In order to estimate investors' anticipated annual DPS over the second stage, I determined consensus analysts' estimated dividend payout ratios as of 2025. I then allowed the dividend payout ratios to gradually converge to a sustainable payout ratio of 66.67% starting in 2035. This payout ratio is consistent with the constant/sustainable-growth DCF theory that requires DPS, EPS and book value per share ("BVPS") to grow in perpetuity at the same rate. This payout ratio is consistent with the proportion of earnings utility companies should retain to sustain a 3% growth rate at a 9% book ROE.

My industry COE estimate based on application of the multi-stage DCF to the proxy group shows a COE of around 7% (see Schedule DM-D-3-1).

Q. If you had performed your multi-stage similar to how you did so when with Staff, what COE would you have estimated?

A. My estimate would have been approximately 6.75%. The higher COE estimate using my current approach is mainly due to the fact that adjusting the dividend payout ratio for a sustainable stage recognizes that dividends will increase faster than EPS during the transition period. However, in order to ensure that DPS, EPS and BVPS grow in equilibrium in the terminal stage, my current method is consistent with the assumptions of the constant-growth DCF and therefore should be used. Regardless, because it is clear that the COE is much lower than allowed ROEs, I don't consider it critical to narrow down the

COE to a precise estimate. In my opinion, the fact that a reasonable and logical COE estimate for the electric utility industry is much lower than average awarded ROEs illustrates the reasonableness of my recommended authorized ROE of 9.00%.

Q. Are there any other models that investors typically use to estimate the utility industries' COE?

A. Yes. In my experience, many Wall Street analysts use the CAPM to determine a discount rate, i.e. the COE, to apply to expected cash flows to the equity investor. The CAPM shows the specific impact of lower interest rates on the cost of capital. Although COE estimates can be manipulated with the CAPM by using unreasonable risk premium estimates, fortunately there are a variety of authoritative sources that provide equity risk premium estimates that can form the basis for a consensus view on reasonable risk premium based on current capital market conditions. In fact, in the past Ameren Corp's own financial advisors provided equity risk premium estimates that can be used as a test of reasonableness because these equity risk premiums were used directly by Ameren Corp for purposes of making financial management decisions.

Q. What is the underlying theory that supports the use of the CAPM to estimate the cost of equity for utilities?

A. The CAPM is based on capital market theory in which it is recognized that although the total risk of a company and/or industry consists of market ("systematic") risk and asset/business-specific ("unsystematic") risk, investors are only compensated for systematic risk because holding a diversified portfolio allows the investor to avoid unsystematic risk. Systematic risks are unanticipated events in the economy, such as economic growth, changes in interest rates, demographic changes, etc., that affect almost all assets to some degree. The required risk premium for incurring the market risk as it relates to the investment/portfolio is determined by adjusting the market risk premium by the beta of the stock or portfolio. The adjusted risk premium is then added to a risk-free rate to determine the cost of equity. The CAPM is typically expressed in equation form as follows:

$K_e = Rf + \beta\ (RPm)$

Where:
K_e = the cost of equity for a security;
Rf = the risk-free rate;
β = beta; and
RP_m = equity risk premium.

For purposes of my CAPM analysis, I relied on Duff & Phelps (D&P) recommended equity risk premium of 5.5% provided as of December 8, 2020[30] and a range of realized historical equity risk premiums of 4.62% (geometric historical mean for 1926 through 2020) to 6.07% (arithmetic historical annual mean for the period 1926 through 2020) derived from data provided by Ibbotson Associates' Stocks, Bonds, Bills and Inflation database. Although each of these equity risk premium estimates use various methods and risk-free rates to arrive at their final estimates, I do not consider any estimate outside these to be consistent with the investment community's "consensus." One of the primary drivers of using a higher equity risk premium versus a lower equity risk premium is due to whether this equity risk premium is applied to a normalized risk-free rate or a current risk-free rate (higher equity risk premiums applied to lower current low risk-free rates). Long-term expected nominal market returns for the S&P 500 are as low as 4% to 5%.[31] Therefore, equity risk premiums in the 5.5% to 6.0% range may actually be excessive for purposes of a CAPM analysis.

Q. What does the beta represent in a CAPM analysis?

A. Beta is statistically defined as the covariance of the returns on an asset (in this case an individual stock or group of stocks) with the return on the S&P 500 divided by the variance of the returns on the S&P 500. This statistical measure is intended to provide investors with insight regarding expected volatility of a security (or portfolio of securities) as it relates to market volatility. A beta of less than one implies less expected volatility than the

[30] https://www.duffandphelps.com/insights/publications/cost-of-capital/duff-and-phelps-recommended-us-equity-risk-premium-decreased-december-2020

[31] First Quarter 2021 Survey of Professional Forecasters, Philadelphia Federal Reserve Board (Feb. 12, 2021), https://www.philadelphiafed.org/-/media/frbp/assets/surveys-and-data/survey-of-professional-forecasters/2021/spfq121.pdf, and John Bilton et al., *Executive Summary: A new Portfolio for a New Decade*, J.P.Morgan (Nov. 9, 2020), https://am.jpmorgan.com/us/en/asset-management/institutional/insights/portfolio-insights/ltcma/executive-summary/.