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Issue(s):	**ROR/ROE Methodology** **Capital Structure** **Miscellaneous**
Witness:	**Adam W. Woodard**
Type of Exhibit:	**Rebuttal Testimony**
Sponsoring Party:	**Spire Missouri Inc.**
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SPIRE MISSOURI INC.

GR-2025-0107

REBUTTAL TESTIMONY

OF

ADAM W. WOODARD

****Denotes Confidential Information****

TABLE OF CONTENTS

I. INTRODUCTION 1

II. RESPONSE TO STAFF WITNESS WON'S TESTIMONY 6

III. RESPONSE TO STAFF WITNESS BOLIN 18

IV. RESPONSE TO OPC WITNESS DAVID MURRAY 20

V. RESPONSE TO MIEC WITNESS WALTERS 36

VI. UPDATES 43

VII. CONCLUSION 44

SCHEDULES

AWW-R-1 through AWW-R-22: Schedules from Mr. Woodard's Direct Testimony, Updated with Year-to-Date Data Where Possible (and in the Case of AWW-R-22, Updated to Include Other Parties' Recommendations)

AWW-R-23: A More Complete Summary of Mr. Woodard's Cost of Equity ("COE") Analyses

AWW-R-24 through AWW-R-29: Mr. Woodard's Analysis of Other Parties' Recommendations

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Adam Woodard, and my business address is 700 Market Street, St. Louis, MO 63101.

Q. ARE YOU THE SAME ADAM WOODARD THAT SUBMITTED DIRECT TESTIMONY IN THIS CASE?

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 Dr. Seoung Joun Won on behalf of Staff of the Missouri Public Service Commission ("Staff"), Kim Bolin on behalf of Staff, Dave Murray on behalf of the Missouri Office of Public Counsel ("OPC"), and Chris Walters on behalf of the Missouri Industrial Energy Consumers ("MIEC") regarding their respective recommendations for the return on equity and capital structure for the Spire Missouri Inc. ("Spire Missouri" or "Company") in this proceeding. I have not responded to every position offered by these witnesses. This should not be construed as tacit agreement in any position or statement made by these witnesses.

Q. ARE YOU SPONSORING ANY EXHIBITS IN SUPPORT OF REBUTTAL TESTIMONY?

A. Yes, **Schedules AWW-R-1 to R-29**, which have been prepared by me or under my control or direction. **Schedules AWW-R-1** through **AWW-R-21** are schedules from my direct testimony that I updated with year-to-date data where possible. **Schedule AWW-R-22**, also filed with my direct testimony, has been updated to include other parties' recommendations. **Schedule AWW-R-23** is a more complete summary of my cost of

equity ("COE") analyses. Finally, **Schedules AWW-R-24** through **AWW-R-29**, discussed further below, include my analysis of other parties' recommendations.

Q. HAVE YOU UPDATED YOUR COST OF CAPITAL TESTIMONY TO SUPPORT YOUR REBUTTAL TESTIMONY THAT REFLECTS CURRENT MARKET CONDITIONS?

A. Yes, as discussed in greater detail herein, updated COE analyses have been prepared based on market data through May 15, 2025, to rebut the COE analyses of the other witnesses in this proceeding. These analyses will support the observation that the COE for Spire Missouri has remained in a similar range since last November when I offered direct testimony on the matter, and I continue to recommend an authorized return on equity ("ROE") of 10.50%. My recommendation continues to not only be based on multiple COE analyses, but also specific risks and impacts realized and to be realized by Spire Missouri. An updated cost of debt (4.34%) is also included in my testimony as Spire Missouri priced new long-term debt in early April. Actual long-term capital structure has been revised based upon earnings realized and financing completed to the date of this testimony. I continue to recommend a 55% equity layer based upon my original direct testimony and further support included in my rebuttal including observations made from the testimony offered by other cost of capital witnesses, but I also acknowledge that Staff's capital structure position is substantially correct.

Q. HOW HAVE MARKET CONDITIONS CHANGED SINCE DIRECT TESTIMONY WAS FILED IN NOVEMBER OF 2024?

A. Maybe, most significantly, and despite some expectations to the contrary, long-term treasury yields (30-year) rose by 30 basis points in the intervening six months since direct

testimony was filed. However, it would be a misnomer to say interest rates rose across the board. Objectively, the yield curve has steepened, which returns some degree of normalcy to the capital markets after weathering an extended period with an inverted yield curve. Generally, long-term rates are supposed to be higher than short-term rates. The Federal Reserve cut the fed funds rate by 25 basis points in December and the 5-year treasury declined by a similar amount over the last six months from 4.30% to 4.06%. Meanwhile, the 10-year Treasury is unchanged (4.39% vs 4.38%). The long-term treasury rate is important when estimating cost of capital as it often serves as the risk-free rate. All else being equal, a higher risk-free rate raises capital asset pricing model ("CAPM") COE estimates. While improving relative to the broader market, utility equities are trading at a very similar level on an expected price-earnings basis over the last six months. Consensus and Value Line earnings growth estimates have risen. Stock market volatility has been in the news as investors adjust to the administration's tariff plans. The S&P 500 currently stands just above where it was last November. However, after reaching an all-time high on February 19, 2025, the index collapsed nearly 20% in early April and then fully recovered to November 2024 levels. Overall market volatility rose significantly during these few months and has since moderated. Betas in the utility sector actually declined during this period as they measure volatility over a longer period of time. Beta is also an important input in CAPM and a lower beta typically leads to a lower COE estimate. The final input in CAPM is the market risk premium ("MRP"). The Company uses a historical MRP, which ticked up from 6.80% to 7.00% as market returns for 2024 were added into the analysis. Other measures of the MRP also moved higher as the often-cited Kroll MRP adjusted from 5.00% to 5.50%. The higher risk-free rate coupled with a slightly higher

MRP left the CAPM COE in a similar range despite the lower betas. Discounted cash flow ("DCF") analysis COE estimates ticked up slightly with slightly higher revised growth rates.

Q. WHAT PRINCIPLES SHOULD BE CONSIDERED IN ESTABLISHING AN AUTHORIZED RETURN ON CAPITAL?

A. The primary factors that should be considered are whether the authorized return is: (1) commensurate with returns on investments in other firms with corresponding risks; (2) sufficient to assure confidence in a company's financial integrity; and (3) sufficient to maintain creditworthiness and attract capital on reasonable terms. Importantly, it is the impact of the return that should be considered rather than any specifically applied methodology.

Q. DO YOU HAVE ANY GENERAL OBSERVATIONS OF THE COST OF CAPITAL TESTIMONY OFFERED BY OTHER PARTIES TO THIS PROCEEDING?

A. Yes. I appreciate the effort that each party put into their testimony. Witnesses for Staff, OPC, and MIEC offered 162 pages of testimony and countless schedules of data and analysis. While I do not always agree with the other parties, each testimony contained discussion of current market conditions, and each witness seemed to agree that conditions have shifted the COE higher in the last couple of years since Spire Missouri's last rate proceeding. Various forms and iterations of cost of capital analysis were also offered, and I will discuss each party's analyses and my position further below. However, it should be noted that each witness offers a recommendation below the national average authorized ROE for gas utilities over the last year ignoring the upward trend in ROEs in jurisdictions throughout the country.

Q. A CENTRAL POINT OF YOUR DIRECT TESTIMONY WAS EVALUATING THE IMPACT OF THE COST OF CAPITAL SET IN THIS CASE ON THE COMPANY. DID OTHER PARTIES PROVIDE TESTIMONY ON THIS ISSUE?

A. No. The impact to Spire Missouri is not mentioned or taken into account by other parties. Each party advocates for an authorized ROE for Spire Missouri that is below the national average, which the Company will not even have an opportunity to earn due to regulatory lag. Setting a reasonable ROE requires the consideration that lag is inherent in this jurisdictional framework.

Q. WHAT ARE THE ROE RECOMMENDATIONS OF THE OTHER PARTIES INVOLVED IN THIS PROCEEDING?

A. The other parties' ROE recommendations are as follows:

	ROE Range	**Recommended ROE**
Staff	9.38% - 9.88%	9.63%
OPC	9.00% - 9.50%	9.50%
MIEC	9.00% - 9.90%	9.45%

Q. WHAT ARE THE CAPITAL STRUCTURE RECOMMENDATIONS OF THE OTHER PARTIES INVOLVED IN THIS PROCEEDING?

A. The other parties' capital structure recommendations are the following:

	Equity	**Long-Term Debt**	**Short-Term Debt**
Staff	53.19%	46.81%	0%
OPC	41.5%	51.5%	7.0%
MIEC	53.2%	46.8%	0%

Q. SINCE THE FILING OF YOUR DIRECT TESTIMONY, ARE THERE NEW, RELEVANT COST OF CAPITAL DATA POINTS IN THE INDUSTRY?

A. Yes. In S&P's Regulatory Research Associates ("RRA") 1st Quarter 2025 report, the national average is 9.73%. See **Schedule SAW-R-1** attached to the rebuttal testimony of Company witness Scott Weitzel for this complete report. In Illinois, the Illinois Commerce Commission authorized a 9.90% ROE recommended by Staff for Liberty Utilities (Midstates Natural Gas) in Corp Docket D-24-0043. In cases this year for Nicor Gas and Ameren Illinois, Staff has recommended 9.93%.

II. RESPONSE TO STAFF WITNESS WON'S TESTIMONY

Q. CAN YOU SUMMARIZE WITNESS WON'S TESTIMONY?

A. Yes. Dr. Won has recommended a 9.63% authorized ROE based on a range of 9.38% to 9.88% and Spire Missouri's actual capital structure of 53.19%. He believes this will fairly compensate for Spire Missouri's current market COE, which he estimates to be 8.52% to 10.00%. While Dr. Won states that the recommendation was primarily based upon Staff's DCF and CAPM analyses, the specific ROE recommendation of 9.63% is the result of a regression analysis presented as having a high level of predictive value. I will discuss this analysis further below.

Q. WHAT WERE THE RESULTS OF DR. WON'S DCF AND CAPM ANALYSES?

A. His DCF range was 7.86% to 9.49%, and his CAPM range was 9.19% to 10.52%. However, Dr. Won does not appear to place much emphasis on these ranges and suggests they overstate the Company's COE. While I do not agree fully with the application of these methodologies, I do not believe them to be overstating Spire Missouri's COE.

Q. WHAT PROXY GROUP DOES DR. WON USE FOR HIS DCF AND CAPM ANALYSIS?

A. He uses a proxy group that includes Atmos Energy Corporation ("ATO"), Northwest Natural Holding Company ("NWN"), ONE Gas, Inc. ("OGS"), Southwest Gas Holdings, Inc. ("SWX") and Spire Inc. ("SR"). He also considered, but excluded, Chesapeake Utilities Corporation ("CPK"), New Jersey Resources ("NJR"), NiSource Inc. ("NI"), and South Jersey Industries.

Q. DO YOU AGREE WITH THIS PROXY GROUP?

A: No. First, it is too small. Dr. Won uses a number of criteria to screen for the proxy group including investment grade credit ratings, no pending mergers or acquisitions, and no reduction of dividends since 2015. NI is excluded because it spun off its pipeline business in 2015. While Staff interprets this as a dividend decrease, through the spin-off, investors received shares in Columbia Pipeline Group, Inc. and the combined dividends of NI and Columbia Pipeline Group, Inc. actually increased, not decreased. In addition, this spin-off occurred ten years ago and would have minimal impact on the analysis. In fact, NI would be a better fit for the proxy group due to a business mix more focused on regulated utilities. NJR and CPK were excluded because their holding companies do not have an investment grade rating. However, New Jersey Natural Gas, the utility subsidiary of NJR, has investment-grade ratings from Moody's and Fitch, and CPK and Chesapeake Utilities, the utility subsidiary of CPK, both have investment-grade ratings from Fitch. These three companies should be included in a proxy group used to evaluate a reasonable ROE for Spire Missouri. NWN and SWX were involved in M&A in Q1 of 2025. SWX is spinning off its construction subsidiary, Centuri, and NWN is acquiring SiEnergy. The Company does not believe these activities should disqualify either NWN or SWX from the proxy group in the future.

Q. WOULD ADDING THE EXCLUDED UTILITIES CREATE AN ACCEPTABLE PROXY GROUP?

A. While it would improve the proxy group, a broader utility group, like the one used in the Company's analysis, is more appropriate. The benefit of the larger proxy group that was detailed in the Company's direct testimony is that it is identical to the peer set to which Spire Inc. actively compares itself in the capital markets and is identical to the proxy group found in Spire Inc.'s proxy statement. While there are different utility types included, I can confidently state this is a group of companies that the Company actively competes with for capital. We have similar equity research teams. We attend the same investor conferences. We have similar shareholder bases. We are regulated by similar (and in some cases the same) jurisdictions. This commonality can create a more holistic view of the COE.

Q. DID YOU HAVE ANY OTHER CONCERNS WITH DR. WON'S PROXY GROUP?

A. Yes. The proxy group should not include the Company. It is more common than not to exclude the examined company from the proxy group, which is intended to provide an independent benchmark of market-based COE estimates for comparable companies. If the examined company is included, it could introduce circularity or bias as the company's market data (e.g., dividends, growth or beta) would include the estimate, potentially skewing the result. Avoiding self-referential bias aligns with the standards set forth in *Hope*[1] and *Bluefield*,[2] which require rates to be commensurate with returns on investments in other enterprises of comparable risk.

Q. CAN YOU SUMMARIZE DR. WON'S DCF ANALYSIS?

A. Yes. Dr. Won produces a two-step DCF analysis using:

[1] *Fed. Power Comm'n v. Hope Nat'l Gas Co.,* 320 U.S. 591 (1944).
[2] *Bluefield Waterworks and Improvement Co. v. Pub. Serv. Comm'n of W. Va.,* 262 U.S. 679 (1923).

1. Average monthly high and low stock prices for Q1 of 2025;
2. An adjusted dividend yield as expressed by $(1+0.5g)D$ to "compensate" for dividends being paid on a quarterly basis; and
3. A growth rate constructed by using "the average of analysts' projected" earnings per share ("EPS"), dividends per share ("DPS"), and book value per share ("BVPS"), and the projected nominal GDP growth rate. It appears from an examination of Staff's workpapers that projective growth is weighted at 80% while GDP growth is weighted at 20%.

His DCF estimation ranges from 7.86% to 9.49% with an average COE estimate of 8.67%. This range was created by averaging the two highest and lowest COE estimates out of the *five* company proxy group (including Spire), and the average computed by averaging the upper and lower bounds.

Q. DO YOU AGREE WITH DR. WON'S DCF ANALYSIS?

A. No, I identified a number of issues with the DCF analysis. First, in compiling a stock price to be used in the DCF analysis, Staff takes the high and low stock price for each month of the quarter and then averages these six values together to come up with the stock price input. While I do not believe that the correct averages were calculated,[3] I also disagree with this approach, as the current stock price is the most up-to-date measure of value in adherence to the efficient market hypothesis, the theoretical basis of both DCF and CAPM.

[3]Staff's average stock price for each of its proxy group companies for Q1 of 2025 does not equal the actual average stock price for any of the proxy group companies. As an example, Spire's average closing stock price for Q1 of 2025 was $73.13 while Staff uses $72.95. Further, the high and low values for each month are also not the actual high and low values for each month. As an example, Spire's high closing stock price for January 2025 was $72.32 realized on January 21, 2025, while Staff uses $69.45. The low price is incorrect as well.

Second, Staff adjusts the dividend used to "account for the fact that dividends are paid on a quarterly basis" using discounted growth formula. While true that companies pay quarterly dividends, these dividends usually are only increased once per year, and there is no common point in time when companies make this increase. The Company did not limit the growth in the dividend in a similar fashion. The more significant issue in Staff's DCF analysis around dividends is the continued use of historical versus current dividends in this prospective analysis, and the use of incorrect dividends for the proxy group utilities. The incorrect dividend is used in 4 out of the 5 proxy group companies. The only correct dividend is the one for Southwest Gas, which has not increased its dividend over the last year. Third, Staff's growth rate used in its DCF analysis is also problematic. A two-step analysis is being presented with growth inputs coming from Value Line reports (source date not disclosed) and the Congressional Budget Office ("CBO"). However, it is not clear how growth is weighted in the two steps. It is assumed from Staff's workpapers that the Value Line inputs are only given 20% weighting while the CBO input is given 80% weighting, but it is unclear why growth is weighted in this arbitrary manner. Staff also implies that Value Line projections are consensus by describing them as "analysts' estimates." They are not. Value Line estimates are produced by a single analyst and are usually not included in consensus estimates. Regardless, the most appropriate growth estimates are those of earnings per share, as that is what analysts and investors are focused on when valuing a company. While Dr. Won cites FERC's Opinion No. 575[4] in support of his DCF analysis, this same opinion supports the sole use of EPS growth rates.

Q. HOW DOES YOUR DCF ANALYSIS DIFFER FROM DR. WON'S?

[4] *Entergy Arkansas, Inc*., Opinion No. 575, 175 FERC ¶ 61,136 (2021).

A. My DCF analysis, provided in my direct testimony and updated with this rebuttal testimony, uses single point in time stock prices, current dividends with simple growth, and consensus EPS growth estimates to provide depth of perspective. This avoids the arbitrary transition point when projected growth ends and is replaced by a lower "permanent" rate in a two-step DCF analysis, a product of the assumption that utility growth will end in the relatively near-term despite any evidence that rate base growth, the primary driver of this trend, is not set to shift lower anytime soon. For instance, Spire Missouri filed an Integrated Resource Plan[5] in November 2024 that mapped out steady rate base growth to support safety and reliability of its gas distribution system over multiple decades. This will drive steady earnings growth contrary to the arbitrary assumptions made in a two-step DCF.

Q. WHAT WOULD RESULT FROM DR. WON'S DCF MODEL BEING UPDATED BASED ON YOUR ABOVE TESTIMONY?

A. The COE estimate increases to 9.93% (average of the proxy group). Please see **Schedule AWW-R-24** for an updated version of Dr. Won's model.

Q. CAN YOU SUMMARIZE DR. WON'S CAPM ANALYSIS?

A. Yes. Dr. Won's CAPM analysis relies on:

1. A risk-free rate equal to the 3-month average yield of the 30-year US Treasury for Q1 2025 (4.71%);
2. Betas for the proxy group as published by Value Line; and
3. A simple average of four measures of historical market risk premium.

[5] Case No. GO-2025-0161, Mo. PSC (2025).

His CAPM estimation based on the proxy group ranges from 9.19% to 10.52% with an average estimate of 9.85%.

Q. DO YOU AGREE WITH DR. WON'S CAPM ANALYSIS?

A. There are elements of his CAPM analysis that are very similar to my own. An identical risk-free rate (30-year treasury) is used, but the Company did not use a 3-month average. The Company also used Value Line betas in its analysis. The primary difference is that while both Dr. Won and the Company incorporate a historical market risk premium that is derived by an arithmetic average of returns of the S&P 500 and 10-year U.S. Treasury bonds from 1928 to 2024, he produces three additional historical risk premiums (one arithmetically derived and two geometrically derived) and then takes a simple average of the four to produce a market risk premium. Only an arithmetic average is appropriate.

Q. WHY SHOULD ONLY ARITHMETIC AVERAGES BE USED IN DERIVING A HISTORICAL MARKET RISK PREMIUM?

A: This topic is examined at length in *New Regulatory Finance*, Morin, 2006, Appendix 4-A "Arithmetic versus Geometric Means in Estimating the Cost of Capital" pages 133-143. Morin states directly:

> Only arithmetic means are correct for forecasting purposes and for estimating the cost of capital. There is no theoretical or empirical justification for the use of geometric mean rates of return as a measure of the appropriate discount rate in computing the cost of capital or in computing present values. In any event, the CAPM is developed on the premise of expected returns being averages and risk being measured with standard deviation. Since the latter is estimated around the arithmetic average, and not the geometric average, it is logical to stay with arithmetic averages to estimate the market premium. Morin, p. 156.

The arithmetic mean is used to estimate the expected returns as it better captures the average outcome of a volatile process. The geometric mean is more relevant for estimating

the realized return as it reflects the compounded growth rate. Dr. Won is attempting to lower his CAPM estimate by introducing geometric averages, which by their very nature smooth through volatility, which is an important consideration in assessing cost of capital. Geometric averages should be completely absent from this calculation.

Q. YOU MENTION THAT DR. WON RECOMMENDS A SPECIFIC ROE OF 9.63% BASED ON A REGRESSION ANALYSIS. WHAT ANALYSIS DOES HE USE?

A. He presents a form of Bond Yield Plus Risk Premium ("BYPRP") model. The concept is that a company's ROE can be estimated by adding its equity risk premium to the yield on its long-term debt. He states that this analysis examines Moody's 'A' rated and 'Baa' rated public utility bond yields versus 363 authorized ROEs of natural gas utilities from 2014 to 2024. A risk premium was derived by subtracting the 3-month moving average of the bond yields and average authorized ROEs for each month during this time period. He then regressed the monthly utility bond yields and risk premiums over the time period.

Q. DO YOU BELIEVE THIS APPROACH TO A BYPRP PROVIDES ANY PREDICTIVE VALUE OF CURRENT AND PROSPECTIVE ROES?

A. No. The data sets are skewed as his rolling average is not trailing but prospective and terminates in December of 2024 despite the rest of the analysis running through the end of Q1 2025. This averaging method effectively leaves December and November of 2024 incomplete as it only incorporates one and two months, respectively. The larger issue is that the regression analysis is performed without an independent variable. The independent variable (risk premium) is mathematically dependent on the dependent variable (bond yield). This circularity leads to biased and unreliable regression results, as the model

violates the assumption of independence between variables. This approach artificially inflates correlations and produces misleading coefficients.

Q. WHAT WERE THE RESULTS OF DR. WON'S REGRESSION ANALYSIS?

A. His analysis produced an R-squared value of 0.96 and a very low p-value associated with the regression coefficient implying a high level of predictive value. However, while these statistics appear favorable, they are quite misleading. This type of analysis is not determinative regardless of construction as a proper regression would compare bond yields as the dependent variable and authorized ROEs (directly) as the independent variable to avoid endogeneity and collinearity issues. If this is done using the same data and time period, the R-squared value is .01 suggesting very little or no predictive value. See **Schedule AWW-R-25**.

Q. ARE THERE OTHER ISSUES WITH DR. WON'S REGRESSION MODEL?

A. Yes. It is unclear why Staff is only using a ten-year timeframe for its analysis and does not include the Q1 2025 data. Authorized ROEs and bond data inputs are readily available back to 1980, and an analysis of a larger pool of data would be more determinative. Dr. Won also uses monthly inputs despite the absence of authorized ROEs in many months, which he fills in using simple averages. This smoothing of the data impacts results by raising correlations artificially. The rolling average also creates issues as it presumes the influence of the bond yield at the point of ROE authorization. The final point of observation is more likely to be somewhere near the midpoint of a proceeding (maybe at true-up). Bond yields should be compared at this point in time rather than at authorization.

Q. DO YOU HAVE ANY THOUGHTS ON HOW TO IMPROVE THIS TYPE OF ANALYSIS AND CREATE GREATER TRANSPARENCY AROUND THE RESULTS?

A. Yes. Dr. Won utilizes monthly data, however, as mentioned earlier, authorized ROE inputs are not available for every month. Given that, in an effort to create a larger data set, the Company has performed a regression using each individual rate proceeding as a data point, which results in more than 1,350 data points. The 30-year treasury yield is compared at the midpoint of each case (considering the individual filing dates and order dates), and multiple regressions are performed to examine different time periods. The results of this approach suggest 10.71% with a R-square of 0.89 based on 1,323 observations. See **Schedule AWW-R-25**.

Q. DID DR. WON HAVE ANY CONCERNS WITH SPIRE MISSOURI'S COST OF DEBT?

A. It did not appear so. Dr. Won's cost of debt was 4.2%. This was lower than the Company's recommendation of 4.254%, but it should be updated after true up.

Q. CAN YOU SUMMARIZE DR. WON'S CAPITAL STRUCTURE TESTIMONY?

A. Yes. He assessed whether the actual, hypothetical, or projected capital structure should be used for ratemaking in this proceeding and what amount of short-term debt, if any, should be included in the capital structure. The potential use of parent company capital structure is related to the question of hypothetical capital structure. Staff followed the four guidelines included in the Society of Utility and Regulatory Financial Analysts ("SURFA") guidebook (Cost of Capital – A Practitioner's 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.

Dr. Won reflected on prior rate proceedings where the Commission found Spire Missouri's stand-alone capital structure should be used for the purpose of ratemaking and found there have not been any discernible changes to Spire Missouri's or Spire Inc.'s capital structure policies to change Staff's recommendation, finding: Spire Missouri has not received long-term financing from Spire Inc. or its other subsidiaries; Spire Missouri has separate credit ratings that are supported by its stand-alone capital structure; Spire Inc. does not guarantee any of Spire Missouri's securities; equity contributions made to Spire Missouri by Spire Inc. are supported by simultaneous equity issuance of Spire shares to the market; debt is not being raised at Spire Inc. and contributed to Spire Missouri as equity; and while Spire Inc. has a small footprint in non-utility businesses, it is of a size that Dr. Won did not see as a concern. Dr. Won also does not include short-term debt in his ratemaking capital structure based upon its most current review of Spire Missouri's financial statements (December 31, 2024). He recommends Spire Missouri's stand-alone capital structure composed of 53.19% common equity and 46.81% long-term debt for ratemaking in this proceeding based upon Spire Missouri's actual capital structure as of December 31, 2024.

Q. DO YOU AGREE WITH STAFF'S CAPITAL STRUCTURE RECOMMENDATION?

A: Essentially, yes. The Company agrees with Staff's calculation of Spire Missouri's stand-alone capital structure as of December 31, 2024, which was composed of 53.2% equity and 46.8% long-term debt. I agree that use of Spire Missouri's actual standalone capital structure, excluding short term debt, is appropriate for ratemaking purposes under normal circumstances.

Q. DO YOU BELIEVE ANY ADJUSTMENTS TO CAPITAL STRUCTURE ARE WARRANTED IN THIS CASE?

A. In this case, I continue to recommend that the Commission consider adopting a slightly increased equity layer of 55% to offset the impacts to Spire Missouri's capital structure that resulted from the significant underearning of its authorized return on equity since 2021.

Q. DO YOU AGREE WITH DR. WON THAT SPIRE MISSOURI'S ORDERED CAPITAL STRUCTURE HAS BEEN CONSISTENT?

A. Up until Case No. GR-2021-0108, yes. However, in that case, the Company disagreed with the Commission decision to include short-term debt in Spire Missouri's capital structure. In that case, the Commission ordered short-term debt based on a 13-month average of short-term debt to the balance of short-term assets, while, historically, short term debt was evaluated as of the end of the true-up period. This outlier case should not be used as a precedent, as the Company had taken significant short-term debt at that time to cover the extraordinary gas costs incurred from Winter Storm Uri.

III. RESPONSE TO STAFF WITNESS BOLIN

Q. WHILE STAFF DOES NOT YET RECOMMEND SHORT-TERM DEBT TO BE INCLUDED IN SPIRE MISSOURI'S CAPITAL STRUCTURE, WITNESS BOLIN TESTIFIES THAT THE ** [redacted] ** IS THAT TRUE?

A: No. To be more precise, the Company provided a detailed monthly schedule of "Assets resulting from Cash Outflows not in Rate Base". Some of these items are short-term assets and some of them are longer-term regulatory assets that are not returning a rate base return. They are all either not receiving a return or receiving a short-term debt return. As of December 31, 2024 short-term debt balances ** [redacted] ** The trailing 13-month average was ** [redacted] ** The trailing 25-month average was ** [redacted] ** These balances do not account for assets in rate base not receiving a return, which are substantial and a significant contributor to regulatory lag and Spire Missouri's underearning. Spire Missouri regularly terms out short-term debt to long-term debt for purposes of fully capitalizing true net plant (rate base). The Company is certainly not earning excess returns through its short-term debt financing practices. Staff put together its own schedule for purposes of direct testimony and came up with a larger short-term debt position, but Staff's schedule did not indicate where and how the Company receives compensation for these carried balances.

Q. CAN YOU EXPLAIN WHERE SPIRE MISSOURI ORIGINATES ITS SHORT-TERM DEBT FINANCING?

A. Yes. Spire Missouri's short-term debt is either originated as commercial paper at Spire Inc. and loaned directly to Spire Missouri as notes payable or as a term loan from a bank, or syndicate of banks, directly to Spire Missouri. Spire Inc. has secured necessary liquidity for the companies it owns from a master credit facility for several years, as is customary for large utility holding companies. The largest businesses each have their own borrowing sub-limit. Spire Missouri's $700 million sub-limit is the largest within Spire Inc.'s $1.5 billion master credit facility. Instead of borrowing directly from the bank facility, Spire Inc. issues commercial paper to investors backed by its own credit standing, supplemented by the undrawn credit facility. This is often considerably less expensive than direct borrowing and the larger scale creates economies of scale that Spire Missouri would not be able to recognize if it raised its short-term financing needs directly on its own.

The rate on the commercial paper is not the only cost of short-term debt. There are bank, accounting, and legal fees associated with credit facility that provides support for the commercial paper, and this ongoing issuance requires ratings from the credit rating agencies for it to be marketable. These costs are typically recognized in cost of service over time, but if short-term debt is used in the ratemaking capital structure the Company would expect to be reimbursed for them up front in order to avoid further regulatory lag.

Short-term debt is, at times, raised directly at Spire Missouri through term loans in order to supplement or replace commercial paper borrowing. This is more common at times of acute liquidity stress such as around Winter Storm Uri or during the pandemic.

Q. CAN YOU EXPLAIN WHY AND HOW SPIRE MISSOURI USES SHORT-TERM DEBT?

A. Yes. Spire Missouri uses short-term debt to finance its broadly defined working capital needs and certain regulatory assets not receiving a rate base return, and to provide preliminary financing for its capital expenditure program. Working capital includes balances for common items for a gas utility such as deferred gas costs, construction work in process ("CWIP"), and the difference between accounts payable and accounts receivable. It also includes less common items that are more specific to Spire Missouri such as unrecovered weather normalization balances. Spire Missouri also carries certain longer-term regulatory assets that are not currently earning a rate base return in short-term debt, such as the overheads-related O&M deferral ordered in Case No. GR-2021-0108. Spire Missouri also regularly funds its capital expenditure program with short-term debt initially. Capital expenditures come in all different shapes and sizes and include a mix of material and labor costs. It is prudent financial practice to build these capital expenditure-related balances to a larger amount to more efficiently place in the long-term debt capital markets, given the related cost of such financing, and Spire Missouri should not be penalized for doing so by inclusion of short-term debt in its capital structure for ratemaking purposes.

IV. RESPONSE TO OPC WITNESS DAVID MURRAY

Q. CAN YOU SUMMARIZE WITNESS MURRAY'S TESTIMONY?

A. Yes. He recommends an authorized ROE of 9.50% based on a range of 9.00% to 9.50%. This recommendation considered relative stock valuation levels, an estimated LDC industry COE range of 7.8% to 8.3%, an estimated Spire Inc. COE range of 8.2% to 8.7%, a comparison between gas and electric COEs, and "zone of reasonableness" range based on last year's average RRA reported average authorized ROE for gas utilities of 9.72%.

Mr. Murray recommends a common equity ratio of 41.5% based on his evaluation of Spire Inc.'s average common equity ratio from September 30, 2023, to September 30, 2024.

Q. DO YOU AGREE WITH MR. MURRAY'S ROE RECOMMENDATION?

A. No. He provides analysis around cost of equity and provides a COE estimate range for gas utilities of 7.8% to 8.3% and 8.2% to 8.7% for Spire Inc. He then offers 9.50% as a reasonable authorized ROE. The rationale is simply "that although the cost of capital has increased over the last couple of years, an authorized ROE of 9.50% still allows Spire Missouri the ability to create shareholder value by simply investing in rate base because a 9.50% ROE is higher than the COE for investments in natural gas utility infrastructure."[6] Mr. Murray establishes a COE estimate and then applies a premium to support his authorized ROE recommendation. Using the midpoint of his estimated COE range for gas utilities, this premium is implied to be 145 basis points. The Company does not agree with either his COE estimate range or the unsubstantiated premium to this estimate range used to support the authorized ROE recommendation.

Q. WHAT WAS SPIRE MISSOURI'S EARNED ROE SINCE THE LAST RATE PROCEEDING?

A. Spire Missouri's earned ROE in 2022 was 6.91%, in 2023 was 6.55%, and in 2024 was 6.22%.

Q. ARE THESE EARNED ROES BELOW MR. MURRAY'S COE ESTIMATE RANGE?

A. Yes.

Q. WHAT DOES THAT IMPLY?

[6] Murray Dir. Test. pp. 33-34.

A. Spire Missouri is not earning a return sufficient to compensate its equity investor for the risk they bear. This erodes investor confidence, making it hard to attract or retain equity capital. If earned ROE is below COE, a utility may struggle to cover dividend payments or reinvest in infrastructure without increasing debt, which raises leverage and financial risk, and may lead to an unbalanced capital structure. Spire Missouri was downgraded by Standard & Poor's on June 3, 2024. If this dynamic persists, it will limit internally generated funds and will discourage external investment. This is a signal that Spire Missouri's ROE is set too low relative to market conditions or its risk profile. As mentioned above, Spire Missouri's earned ROEs have been very low since its last rate proceeding, much lower than any party's position in that case. This is certainly due to various aspects of regulatory lag, however, Mr. Murray does not factor this into his analysis.

Q. HAVE MR. MURRAY'S ROE RECOMMENDATIONS CHANGED WITH CAPITAL MARKET CONDITIONS OVER TIME?

A. Not really. He has recommended a 9.50% ROE in the most recent cases filed by Evergy Missouri West, Inc., Ameren Missouri (electric and gas), and now Spire Missouri. He did recommend a 9.25% ROE in December 2024 in the Missouri-American Water Company proceeding.

Q. DID MR. MURRAY PREPARE COST OF EQUITY ANALYSIS TO SUPPORT HIS ROE RECOMMENDATION?

A. Yes, he does provide a multi-stage DCF and CAPM analysis to support his COE estimate, but does not provide any analysis to support his ROE recommendation. It is simply presented and is presumably a spread above the estimated COE.

Q. WHAT PROXY GROUP DOES MR. MURRAY USE FOR HIS DCF AND CAPM ANALYSIS?

A. His "LDC Proxy Group" includes ATO, NJR, NI, NWN, OGS, SWX and SR. He recognizes ATO and OGS as the only "pure play" gas LDCs among the group.

Q. DO YOU AGREE WITH THIS PROXY GROUP?

A. No. While larger than the proxy group used by Dr. Won, it is still small and includes Spire Missouri's parent company. Mr. Murray argues that Spire Inc. should be included because it is investment growth, not rate of return, that drives expected growth in EPS. Investment growth certainly matters, however, recovery and return on investment are material drivers as well. Mr. Murray, like Dr. Won, also ignores the circularity and bias that including the examined company, or its parent, brings to analysis. The Company is supportive of an examination of Spire Inc. in isolation, and provides this analysis in its own testimony, but the examined company should not be included in the proxy group.

Q. CAN YOU SUMMARIZE MR. MURRAY'S DCF ANALYSIS?

A. Mr. Murray utilizes a multi-stage DCF analysis that includes three stages. The first two stages have specific time periods, while the third assumes cash flows in perpetuity. Consensus analysts' dividend per share ("DPS") estimates are used in the first stage, which extends to 2029. The next stage extends from 2029 to 2039 and uses an estimated linear transition from the prior consensus estimated growth rates to an assumed long-term growth rate. Given the reliance on DPS estimates, an estimated payout ratio is used in the transition estimate. Mr. Murray also uses three separate assumptions of long-term growth in its final stage and perpetual growth rates of 2% to 3.3%.

Q. WHAT WERE THE RESULTS OF MR. MURRAY'S DCF ANALYSIS?

A. His proxy group COE estimate using this DCF analysis ranged from 7.80% to 8.05%.[7] The Company's review of Mr. Murray's schedules would suggest a simple average range from 8.08% to 8.28%. The absolute estimated range of the proxy group was 7.18% on the low end to 8.94% on the high end.

Q. DO YOU AGREE WITH THIS DCF ANALYSIS?

A. No, however, I noted above that it does not appear Mr. Murray relies on this for his ROE recommendation, and I do not recommend that the Commission rely on this analysis either. While I do not have a specific problem with this form of DCF, multiple components of Mr. Murray's model are problematic due to assumptions being made. First, it should be recognized that the duration of the stages used appear to be arbitrarily chosen to specifically influence the calculation. The consensus financial forecasts used by Mr. Murray are generally offered for a shorter period of time (3-4 years), but, for utilities specifically, are sustainable for a longer period. For instance, like many utilities, Spire Inc. provides long-term earnings guidance of 5-7%. This is based on long-term deployment and recovery of capital. In fact, Spire Inc. provides 10-year capital expenditure guidance that is centered around Spire Missouri, and Spire Missouri itself filed an Integrated Resource Plan that extends well past 2029. This underpins the 3-4 year guidance that Mr. Murray uses for his first stage, as it is therefore reasonable to use the forecasts set using capital expenditure data points well beyond 2029. Moreover, Spire Missouri is a very old natural gas distribution system with a significant amount of required replacement capital to ensure system safety and reliability. This is yet another reason why the guidance of 7-8% rate base growth will extend well beyond 2029.

[7] Murray Dir. Test. Schedules DM-D-2, DM-D-3, and DM-D-4.

Second, Mr. Murray uses both assumptions of long-term growth and perpetual growth rates of 2% to 3.3% in his final stage, despite having evidence in his testimony that the compound growth rate using DVP, BVPS, and EPS from 1968 to 2016 was 4.25%.[8] While the Company has not verified this, but, taken at face value, it should be recognized the local gas distribution sector underinvested in replacement capital significantly until just before the end of this approximately 50-year period. This growth rate is also substantially higher than the range of perpetual growth rates. This only supports a higher long-term growth rate for Spire Missouri and the sector.

Q. DO INVESTMENT ANALYSTS USE ESTIMATED LONG-TERM COMPOUND ANNUAL GROWTH RATES ("CAGRS") IN EPS FOR PURPOSES OF PROJECTING A PERPETUAL DIVIDEND GROWTH RATE AS SUGGESTED BY SOME ROR WITNESSES?

A. Yes. Many analysts (and investors) use projected EPS growth as a proxy for dividend growth when valuing utility companies, largely because utilities typically maintain stable payout ratios, and their dividends tend to grow in line with earnings. Utility companies themselves contribute to this practice by explicitly guiding dividend growth in line with earnings growth. Spire Inc. provides similar guidance.

Q. HOW WOULD YOU ADJUST MR. MURRAY'S DCF ANALYSIS?

A. This analysis could be simplified by using a simple constant growth model similar to that offered in my direct testimony with a growth projection of 5.67% applied to the proxy group endorsed by Mr. Murray. This would yield a COE estimate of 9.50%. See **Schedule AWW-R-26** for this calculation, which yields a COE identical to OPC's recommended

[8] Murray Dir. Test. p. 26.

ROE. However, this more direct approach does not allow for a random spread to be applied to a much lower estimated COE as is the case with OPC's approach.

Q. CAN YOU SUMMARIZE MR. MURRAY'S CAPM MODEL?

A. Despite offering an estimated COE of approximately 8.25% based on its CAPM analysis, OPC actually provides three separate versions yielding a somewhat broad range of values. The first CAPM analysis uses a 3-month average of the 20-year U.S. Treasury rate, an S&P Market Intelligence calculated raw beta using the Value Line method and then Blume adjusted, and a market risk premium of 5.00% to 6.00%. The second CAPM analysis is the same as the first but uses a 3-month average of the 30-year U.S. Treasury rate. The third CAPM analysis uses a 20-year U.S. Treasury spot yield, the same beta as used in the other analyses, and a market risk premium of 5.00% recommended by Kroll as of June 5, 2024. The results of these three analyses range from 8.18% to 9.02% for Spire and 8.16% to 9.00% for the proxy group. However, it is unclear how these ranges translate to an estimate of 8.25%.

Q. DOES THE COMPANY AGREE WITH OPC'S CAPM MODEL?

A. No, however, I noted above that it does not appear Mr. Murray relies on this for his ROE recommendation, and I do not recommend that the Commission rely on this analysis either. My primary concern is with Mr. Murray's underestimation of the beta inputs and his use of the market risk premiums in his analyses.

Q. WHAT IS THE PROBLEM WITH THE BETAS USED IN MR. MURRAY'S CAPM ANALYSIS?

A. Mr. Murray describes his betas as being calculated via a template provided by S&P Market Intelligence based on "the Value Line approach" (per Schedule DM-D-5). The raw betas

were then Blume adjusted (0.35 + 0.67 x raw beta). Value Line's published betas are based on a regression of five years of historical weekly returns of a stock or portfolio of stocks as compared to the weekly returns of the market.

The problem with the beta inputs used in Mr. Murray's analyses is that they are not Value Line betas. Mr. Murray references Value Line in his testimony and schedule and then calculates the betas using an online application. The simplest way to incoporate Value Line betas (which are already Blume adjusted) is to pull them directly from Value Line's website where the current, actual Value Line betas are searchable. Mr. Murray understated the proxy group beta by 15% and Spire's beta by 11%.

Q. WHAT WOULD THE RESULTS OF MR. MURRAY'S CAPM ANALYSIS BE IF ACTUAL VALUE LINE BETAS WERE USED?

A. If true Value Line betas were used, the CAPM COE estimate range for Spire Missouri rises to 8.63% to 9.56% and 8.77% to 9.73% for the proxy group, a 50 basis point increase from Mr. Murray's ranges. Should his CAPM analysis support his ROE recommendation, then his recommended ROE should also increase.

Q. WHAT IS THE PROBLEM WITH THE MARKET RISK PREMIUMS USED IN MR. MURRAY'S CAPM MODEL?

A. Two versions of Mr. Murray's CAPM analysis use 5.00% and 6.00% market risk premiums (creating two separate outputs per version). Coupled with his stated Kroll equity risk premium of 5.00%, which is contained in this range, he states in his direct testimony that he does not consider an estimate outside this range to be consistent with the investment community's "consensus."[9] The range offered by Mr. Murray seems to be loosely derived

[9] Murray Dir. Test. p. 30.

from historical equity risk premiums of 5.42% to 6.83% described as the geometric and arithmetic annual means for the period 1926 through 2024. He is using data described as being provided by "Ibbotson Associates' Stocks, Bonds, Bills and Inflation" database. Some of my specific concerns with these MRPs are as follows:

1. The range of historical equity risk premiums includes 5.42% (described as the geometric historical annual mean for the period 1926 through 2024) and 6.83% (described as the arithmetic historical annual mean for the period 1926 through 2024). This is presumed to be calculated from "Ibbotson," the stated source of the data. Mr. Murray does not provide workpapers in support of this calculation, but Staff workpapers do include this data, which do not support Mr. Murray's calculations. Staff's calculations (which the Company has not verified) would indicate geometric and arithmetic historical averages for the same time period of 4.52% and 5.90%, respectively.

2. The data described as "Ibbotson" in Mr. Murray's testimony is a historical reference to a database originally produced and maintained by Roger G. Ibbotson and Rex A. Sinquefield. The ownership of the database (which has also been referred to as the SBBI dataset), and the maintenance thereof, has changed multiple times since it was established and was most recently recognized as a Morningstar product. Effective February 1, 2025, Morningstar halted data updates and production for this data. The Company strongly objects to the use of an unsupported out-of-date database to supply an important input in cost of capital analysis.

3. Mr. Murray takes the position that any MRP outside a 5.00% to 6.00% range is outside the "consensus" of the investment community. As mentioned earlier, the

Ibbotson-Morningstar historical equity risk premiums were mentioned with a range that extended beyond 6.00%. However, very similar datasets to the Ibbotson-Morningstar data would suggest a higher historical equity risk premium. Professor Aswath Damodaran from Stern School of Business at New York University maintains an online database of historical return information that is widely used in the financial community. Both Dr. Won the Company and Staff offered identical historical market risk premiums in support of their respective CAPM analyses which included a long-term arithmetically measured risk premium of 7.00%.

4. The other equity risk premium relied upon in Mr. Murray's CAPM analyses is the equity risk premium of 5.00% recommended by Kroll (formerly Duff & Phelps), a financial advisory solutions firm, on June 5, 2024. However, Kroll updated its recommended equity risk premium on April 15, 2025, to 5.50%. Mr. Murray filed direct testimony on April 23, 2025. This is a widely reported and available recommendation despite much of the Kroll platform being subscription-based and proprietary.

5. Mr. Murray cites a range of equity risk premiums that includes both arithmetic and geometric historic annual means. As stated earlier in the response to Dr. Won's testimony, this is not correct. It is best practice in the financial analyst community to use an average of annual returns (arithmetic mean) in establishing forward-looking equity risk premiums. The geometric mean is the compounded average return and thus smooths through single-period risk and volatility, thus understating future expectations. The use of arithmetic means in establishing a historical market risk premium is strongly endorsed by both Kroll and the CFA Institute.

Q. IF MR. MURRAY'S CAPM ANALYSES ARE UPDATED WITH TRUE VALUE LINE BETAS AND ONLY AN ARITHMETICALLY DERIVED MARKET RISK PREMIUM IS USED IN ADDITION TO AN UPDATED KROLL MARKET RISK PREMIUM, WHAT IS THE RANGE OF COE ESTIMATES?

A: If the proxy group betas are updated and coupled with the current Kroll market risk premium at the current 20-year U.S. Treasury rate, the CAPM COE estimate rises to 9.44% for Spire Inc. and 9.62% for the proxy group. If these same betas are used with an arithmetic historical market risk premium of 7.00% and the trailing 90-day 30-Year U.S. Treasury rate (4.71%) the CAPM COE estimate rises to 10.31% for Spire Inc. and 10.54% for the proxy group. If this analysis was relied upon by Mr. Murray, it would suggest a higher ROE recommendation much closer to what was proposed by the Company. See **Schedule AWW-R-27** for my corrections to Mr. Murray's CAPM analyses and **Schedule AWW-R-28** for a comparison between Mr. Murray's betas and the true Value Line betas.

Q. CAN YOU SUMMARIZE MR. MURRAY'S "SIMPLE TESTS OF REASONABLENESS"?

A. Yes. Mr. Murray uses a "simple rule of thumb" approach *suggested* by the Charter Financial Analyst (understood to mean the CFA Institute) of estimating COE by adding a 3% to 4% risk premium to a company's bond yield. Mr. Murray suggests applying a 3% premium to the yield of a recently issued 10-year Spire Missouri bond implies a COE of 8.64%. A second simple test assumes that if the average LDC dividend yield is approximately 3.6% and 50% of LDC stock returns are from capital gains over the long-term then this translates to a 7.2% required return.

Q. DOES THE COMPANY AGREE WITH MR. MURRAY'S "SIMPLE RULE OF THUMB" APPROACH?

A. No. The CFA Institute does not explicitly endorse a "simple rule of thumb" approach that involves adding a 3% to 4% premium to a company's bond yield to estimate the cost of equity in its official curriculum, guidance, or resources. The CFA curriculum does mention the related BYPRP method as a potential alternative to CAPM for private companies or when market data is unreliable, but otherwise emphasizes a more rigorous market-data driven approach to COE estimation. The risk premium added to the bond yield should reflect the additional systematic risk of equity and no specific range is universally endorsed. The CFA Institute specifically cautions that this method is less precise than CAPM and DCF because it relies on subjective judgment for establishing the premium. This "simple rule of thumb" is not endorsed by Kroll either.

Q. WERE YOU ABLE TO DETERMINE HOW MR. MURRAY ESTABLISHES HIS "FAIR AND REASONABLE" ALLOWED ROE RANGE IN THIS CASE?

A. No. Mr. Murray proposes a "fair and reasonable" allowed ROE range of 9.00% to 9.50% with a point recommendation of 9.50%. He suggests this is based on Spire Inc.'s COE, the LDC industry's COE, utility stock valuation levels since 2012, investor expectations on allowed ROEs, average authorized ROEs for natural gas utility companies, and Spire Missouri's previously authorized ROE. However, he estimates Spire Missouri's COE to be in a range between 7.80% and 8.30%. This suggests a "premium" of approximately 150 basis points above the COE, but it is unclear how this range is determined. If the COE analyses discussed above are in fact used, then, applying my suggestions to the COE analyses should result in a higher ROE recommendation.

Q: WHAT IS THE AVERAGE AUTHORIZED ROE FOR GAS UTILITIES IN 2025?

A: As of May 15, 2025, the average authorized ROE for gas utilities is 9.76%. This average includes ten reported cases with outcomes ranging from 9.50% to 9.90%. All but one of these cases were settled. The highest authorized ROE was set in Washington for Puget Sound Energy in January of 2025. It was the only fully litigated case thus far in 2025.

Q. HAVE AVERAGE AUTHORIZED ROEs FOR GAS UTILITIES TRENDED HIGHER YEAR OVER YEAR?

A. Yes. The average authorized ROE for gas utilities in 2024 was 9.71% over 58 reported cases. Again, in Illinois in 2025, ICC Staff recommended authorized ROEs of 9.93% for two gas utilities.

Q. HOW DOES MR. MURRAY'S AUTHORIZED ROE RECOMMENDATION AND "REASONABLE" RANGE COMPARE TO RECENT TRENDS IN OTHER REGULATORY JURISDICTIONS?

While Mr. Murray indicates that he considered average authorized ROEs for gas utility companies, his "reasonable" range of 9.00% to 9.50% is considerably lower than recent outcomes throughout the country. There have been no ROEs set at or below the bottom of his "reasonable" range since August of 2021. The authorization of a 9.50% would match the lowest authorized ROE established in 2025 for a gas utility.

Q. WHAT IS MR. MURRAY'S RECOMMENDED CAPITAL STRUCTURE?

A. Mr. Murray recommends his own unique interpretation of parent company capital structure. He recommends a capital structure consisting of approximately 41.5% common equity, 51.5% long-term debt and 7% short-term debt. This is OPC's interpretation of parent capital structure as is admitted in direct testimony. This is *not* actually Spire Inc.'s

consolidated capital structure as of September 30, 2024. OPC suggests a virtual capital structure based on another virtual capital structure all of its own choosing.

Q. DO YOU AGREE WITH MR. MURRAY'S RECOMMENDED CAPITAL STRUCTURE?

A. No. The Company disagrees with Mr. Murray's viewpoint on capital structure. Spire receives frequent inquiries from financial analysts[10], investors, and the rating agencies on Mr. Murray's continued recommendation of parent company capital structure. Financial stakeholders are left with the impression that this is a risk, which elevates perceived regulatory risk (and cost of capital). Spire Missouri's sole shareholder is Spire Inc. (a Missouri corporation), which is a utility holding company that owns other operating utility companies, natural gas midstream businesses, and a natural gas marketing business. Spire Inc. is a publicly traded company on the New York Stock Exchange and publicly files financial statements quarterly with the Securities and Exchange Commission ("SEC"). Spire Missouri is also a SEC registrant, and its stand-alone financial statements are also filed quarterly along with those of its sole shareholder. This provides a significant amount of transparency around both Spire Inc. and Spire Missouri and their respective and standalone capital structures.

Q. WHY DO YOU BELIEVE THAT MR. MURRAY INCLUDES SHORT-TERM DEBT IN HIS RECOMMENDED CAPITAL STRUCTURE?

[10] These inquiries also include questions about the use of certain materials in other parties' testimony. OPC had made numerous references and citations to proprietary equity research reports. Each of these reports contains a prohibition on distribution or reproduction without express permission that is printed in the report's disclaimer language. Some of the research analysts that provide coverage on the shares of Spire Missouri have expressed concern that these reports have been reproduced publicly in prior testimony.

A. I believe that it is a misunderstanding of what our short-term balances actually are. Spire Missouri generates a monthly schedule to manage short-term balances, and provides a specific line-item detail of carried balances that are not being provided long-term rate base recovery. Some items, such as WNAR, receive a specific short-term rate recovery which is intended to replicate short-term debt rates. Some items do not receive any recovery at all. This analysis specifically excludes rate base that is not yet receiving recovery – a conservative presentation since this is a significant contributor to regulatory lag. These items include several significant items beyond CWIP and deferred gas balances.

Q. MR. MURRAY CITES INCREASED DEBT LEVELS AT SPIRE INC. AS A RESULT OF COSTS INCURRED DURING WINTER STORM URI AND THAT ITS EQUITY LAYER HAS NOT RECOVERED EVEN AFTER THESE COSTS. IS THAT A VALID ASSESSMENT?

A. No. Spire Missouri incurred excess costs from Winter Storm Uri and the following winter season that again saw higher spot gas prices due to international disruption of the natural gas markets stemming from the conflict in the Ukraine. Regardless, Spire Inc.'s common equity percentage (excluding short-term debt) on March 31, 2025, was 51.2% (per 2nd quarter 10-Q of Spire Inc.).

Q: MR. MURRAY ALSO CITES STANDARD & POOR'S DOWNGRADE OF SPIRE INC. ON JUNE 3, 2024, AND SUGGESTS THAT SPIRE INC. REQUIRES MORE EQUITY IN ITS CAPITAL STRUCTURE. IS THAT TRUE?

A: No. The downgrade was primarily premised on excessive deferred gas costs at Spire Missouri and prolonged regulatory lag and underearning for Spire Missouri. In fact, Spire Inc. continued to contribute equity to Spire Missouri during this timeframe in an attempt

to stabilize its financial profile through its weather-related margin losses and significant underearning below its authorized return.

Q. DOES SPIRE MISSOURI MAINTAIN EXCESS DEBT CAPACITY THAT IS IMPAIRED BY EXCESS LEVERAGE AT SPIRE INC.?

A. No. Spire Inc.'s debt is mainly used to finance the company's non-utility businesses (not the utility operating companies).

Q. HAVE THE REGULATED UTILITIES OWNED BY SPIRE INC. CONFERRED CREDITWORTHINESS THAT IT HAS USED TO DIRECTLY SUPPORT CREDIT FOR ITS NON-REGULATED SUBSIDIARIES?

A. No. Spire Inc., not Spire Missouri, guarantees the performance of its non-regulated subsidiaries.

Q. WHY DID SPIRE MISSOURI PAUSE DIVIDEND PAYMENTS TO SPIRE INC.?

A. Spire Missouri temporarily suspended its dividend to Spire Inc. as it continued to deploy significant capital in its system to the benefit of ratepayers, while significantly underearning its authorized returns. This created financial instability and weakened Spire Missouri's credit metrics (as well as those of its parent Spire Inc.). The Company did not believe that reducing capital while waiting for more consistent and complete recovery was the right decision for the safety and reliability of its distribution system, so it elected to retain more capital by not issuing a dividend to its sole shareholder.

Q: DO SPIRE MISSOURI EMPLOYEES MANAGE SPIRE INC. AND ITS OTHER SUBSIDIARIES AS IS ASSERTED BY MR. MURRAY?

A: No. Technically Spire Inc. and its other subsidiaries are managed by employees of Spire Services Inc. This shared services approach provides substantial benefits to ratepayers as the cost benefits of greater scale are applied to each operating subsidiary.

Q: DO YOU AGREE WITH THE COST OF LONG-TERM DEBT MR. MURRAY APPLIES TO ITS RECOMMENDED CAPITAL STRUCTURE?

A: No. Mr. Murray recommends a 4.25% cost of debt be applied to a capital structure that consists of 51.5% long-term debt. The problem with this is the 51.5% is not correct. Spire Missouri's actual debt which has been independently placed with outside investors is approximately 47% of the total long-term capital structure. While the overall cost of debt is a bit higher through true-up, the additional 4-5% of the capital structure that Mr. Murray is suggesting be shifted to long-term debt does not exist yet. Applying a historical cost of debt for this incremental leverage while the current debt market is much higher (as it is now) is not appropriate. This incremental debt would need to be recognized at its current market cost of at least 6% but perhaps could be higher depending on potential credit rating impacts coming out of this case.

Q: HOW DO YOU RESPOND TO WITNESS MR. MURRAY'S INCLUSION OF SHORT-TERM DEBT IN THE CAPITAL STRUCTURE?

A: As explained in detail above in response to Staff, it is inappropriate to include short-term debt in the capital structure. The Company also does not agree with the rate being used for the short-term debt it is including.

V. RESPONSE TO MIEC WITNESS WALTERS

Q. CAN YOU SUMMARIZE THE COST OF CAPITAL TESTIMONY OF MIEC WITNESS WALTERS?

A: Yes. Mr. Walters estimates the range of a fair market ROE for Spire Missouri between 9.00% and 9.90% with a point recommendation of 9.45% and specifically cites the risk reducing effect of the Company's proposed expansion of its current "decoupling mechanism" and recently enacted legislation. He recommends the use of Spire Missouri's actual capital structure (53.2%) for ratemaking purposes. Mr. Walters also specifically calls for the Commission to reject the Company's ROE and equity layer recommendations.

Q. DO YOU AGREE WITH MR. WALTERS THAT THE COMMISSION SHOULD USE SPIRE MISSOURI'S ACTUAL CAPTIAL STRUCTURE (53.2% EQUITY FOR RATE MAKING PURPOSES?

A: Yes. Mr. Walters is aligned with the company and Staff in wanting to use Spire Missouri's capital structure which was approximately 53% at the time of their direct filing.

Q. DO YOU AGREE WITH MR. WALTERS THAT THERE HAS BEEN A TREND OF DECLINING ROEs FOR ELECTRIC AND GAS UTILITIES OVER THE LAST TEN YEARS?

A: He makes the direct statement that authorized ROEs have declined over the last ten years and offers a chart (Figure CCW-1) of electric and gas authorized ROEs from 2006 to 2024. The 2024 data points are asterisked as being Regulatory Research Associates January – December 2024 data, which looks to be the complete year. Authorized ROEs certainly have declined from 2006 levels but clearly bottomed out in 2020 and 2021 and risen over the last three years. This is directly observable in Figure CCW-1 and contradicts the general statement made by Mr. Walters.

Q. DID YOU MAKE ANY OBSERVATIONS OF TABLE CCW-1 OFFERED BY MR. WALTERS THAT PROVIDES SOME BROAD DETAIL OF HISTORICAL DISTRIBUTIONS OF AUTHORIZED ROES?

A. The 2025 data presented should be updated as the current average is now 9.76% with a median of 9.80%. There is one case out of ten reported that has a 9.50% with no cases returning authorized ROEs below this level. Mr. Walters proposes a 9.45% which would be the lowest authorized ROE in 2025 anywhere in the nation. The 2025 values are also higher than presented in Table CCW-2.

Q. IS THERE ANY EVIDENCE OF ROBUST VALUATIONS OF REGULATED UTILITY EQUITY SECURITIES?

A. While there has been some improvement in the relative valuation of utility shares recently, the sector still trades at a fairly significant discount to the S&P 500 on a forward P/E basis so describing valuations as "robust" might be premature.

Q. DO YOU HAVE ANY COMMENT AROUND MR. WALTERS'S DISCUSSION OF FORECASTED INTEREST RATES?

A. He suggests near and intermediate term projections of the 30-year treasury (a commonly used risk-free rate) are 4.20% to 4.30% despite being 4.50% at the time testimony was authored. However, the 30-year U.S. Treasury rate is 5.03% as of May 23, 2025.

Q. DOES MOODY'S HAVE A "NEGATIVE" OUTLOOK ON THE REGULATED ELECTRIC AND GAS SECTOR AS SUGGESTED IN MR. WALTERS'S TESTIMONY?

A. Mr. Walters cites a "recent" Moody's report from November 2022 to signal that the rating agency remains "negative" on the sector due to increased pricing pressure on consumers. I

do not believe this to be true. Moody's is no longer negative on the sector and has always been concerned about customer affordability. Spire Missouri is also concerned about customer affordability and routinely discusses this in its investor relations materials. Moody's is also concerned about cost recovery generally, which it has brought up multiple times in the context of Spire Missouri not earning near its authorized returns.

Q. CAN YOU SUMMARIZE THE ORGANIZATION OF MR. WALTERS'S COST OF EQUITY ANALYSIS?

A. Yes. He develops a proxy group that is then used in multiple DCF and CAPM analyses. Constant growth, sustainable growth, and multi-stage DCF models are used to create an estimated mean and median value. Several versions of the CAPM model are used with different beta and risk premium inputs. Mr. Walters also prepares a bond yield plus risk premium analysis, which is included in its support of its authorized ROE recommendation.

Q. WHAT PROXY GROUP DOES MR. WALTERS USE FOR HIS DCF AND CAPM ANALYSIS?

A. He started with the companies that are a part of the "Value Line Investment Survey's Natural Gas Utility Universe." I am not familiar with this "Universe" that he alludes to, which includes seven gas utility companies. Value Line's coverage of the sector includes ten gas utility companies. Regardless, Mr. Walters decided to drop NI because it recently sold a minority interest in one of its utility subsidiaries to an affiliate of Blackstone Infrastructure Partners leaving it with six companies (including Spire), which he believed was too small. In order to bolster the proxy group, Mr. Walters reviewed the "Value Line Investment Survey's Water Utility Universe." The premise of including these additional companies is that they are all engaged in the utility *distribution* business. The companies

in Mr. Walters's proxy group include: ATO, NJR, NWN, OGS, SGX, Atmos Energy, New Jersey Resources, Northwest Natural, ONE Gas, Southwest Gas, UGI, American States Water, American Water Works, California Water Service Group, Essential Utilities, Middlesex Water and SJW Group. It does not include Spire Inc.

Q. DOES THE COMPANY AGREE WITH MR. WALTERS'S PROXY GROUP?

A. No. I agree with him that six is too small for a proxy group, but I disagree with the exclusion of NI from the proxy group. It is also curious that MIEC does not include Chesapeake Utilities as it is covered by Value Line.

Q. CAN YOU SUMMARIZE MR. WALTERS'S DCF ANALYSIS?

A. Yes. He uses three DCF models in his testimony. His constant growth DCF model utilizes 13-week average stock prices, the annualized current dividend adjusted for next year's growth, and consensus earnings growth rates (as a proxy for dividend growth rates) from Zack's, S&P Capital IQ, and I/B/E/S (as of March 21, 2025). The average growth rate for the proxy group is 9.32%, which seems high and looks to be influenced by a few of the smaller water companies included in the proxy group. The average COE estimate of his constant growth DCF is 12.90%. Mr. Walters's sustainable growth DCF model is constructed in a similar fashion to the constant growth model except the growth rate is adjusted by an expected earnings retention ratio. The average "sustainable" growth rate for the proxy group is 5.83%. The average COE estimate of his sustainable growth DCF is 9.33%. The multi-stage DCF model used by Mr. Walters includes three stages. The first stage through year five assumes consensus earnings growth. The second stage from years six to ten assumes a period of transition growth to a perpetual growth rate. The third stage from ten to perpetuity uses an assumed perpetual growth rate. A 4.14% perpetual growth

rate is used in the model based on the consensus of economists' long-term projected nominal GDP growth rate. The average COE estimate of his multi-stage growth DCF is 8.93%.

Q. DOES THE COMPANY AGREE WITH MIEC'S DCF ANALYSIS?

A. As discussed earlier, I find multi-stage DCF models to be problematic when attempting to estimate COE, but Mr. Walters's models are reasonable.

Q. CAN THE COMPANY SUMMARIZE MIEC'S CAPM ANALYSIS?

A. Yes. The three inputs used in any CAPM analysis are a risk-free rate, a market risk premium and a measure of a stock's beta. Mr. Walters uses the *Blue Chip Financial Forecasts'* 30-Year Treasury bond yield of 4.60% in each analysis except the Kroll MRP, in which he uses spot rates. Four separate beta calculations are used for the proxy group: current Value Line, historical Value Line, current S&P Market Intelligence, and 3-year Value Line. The average beta for the proxy group across these calculation methods ranges from 0.70 to 0.91. Each beta value is then coupled with three different market risk premium values to calculate an estimated CAPM COE. Mr. Walters utilizes the Kroll MRP of 5.00%, a risk premium derived MRP of 7.10%, and an average FERC S&P 500 derived MRP of 7.80%. His multi-faceted CAPM analysis yields a range of COE estimates from 8.27% to 11.69%.

Q. DOES THE COMPANY AGREE WITH MIEC'S CAPM ANALYSIS?

A. No. Mr. Walters is using an outdated Kroll MRP. As discussed earlier, Kroll moved its MRP to 5.50% in April 2025. If this is adjusted with an updated spot risk-free rate, the low end of his CAPM analysis rises to 8.88% from 8.27%. Betas from both S&P Market Intelligence and Value Line are used. S&P uses the S&P 500 while Value Line uses the

NYSE Composite Index, but only one of the proxy companies (ATO) is in the S&P 500 while all of them are in the much larger NYSE Composite Index. A historical and 3-year Value Line beta is also unnecessary. Mr. Walters alludes to market disruption from earlier 2020 distorting the typical 5-year calculation for stock betas. We are no longer in a 5-year period that includes this market volatility. My CAPM model uses a historical MRP, which is close to 7.10%, and a Kroll based analysis is a reasonable estimate to establish a range. See **Schedule AWW-R-29** for Mr. Walters's CAPM analysis updated with the current Kroll MRP of 5.50%

Q. CAN YOU SUMMARIZE MR. WALTERS'S BOND YIELD PLUS RISK PREMIUM APPROACH TO COE ESTIMATION?

A. Yes. This risk premium model is based on two estimates of an equity risk premium. The difference between authorized ROEs and Treasury bonds and Moody's 'A' rated utility bonds is quantified on an annual basis back to 1986. The average risk premium over Treasury bonds over this time period was 5.63%. The average risk premium over Moody's 'A' rated utility bonds over this time period was 4.17%. If these premia are added to recent Treasury and Moody's bond values it produces a range of 9.73% to 10.23%.

Q. DO YOU AGREE WITH THIS BOND YIELD PLUS RISK PREMIUM APPROACH?

A: This simple estimation suggests authorized ROEs should be higher than those proposed by the witnesses for Staff, OPC and MIEC. Obviously not all jurisdictions are directly comparable to Missouri. For example, MIEC repeatedly separates out Arkansas, Indiana, Florida, and Michigan from capital structure comparisons. It should be noted that Alabama and Mississippi, two jurisdictions that directly impact capital allocation decisions for Spire

Inc., have not appeared in the cited surveys for over thirty years. They both have currently authorized ROEs that are higher than those proposed by Staff, OPC, or MIEC.

Q. CAN YOU SUMMARIZE MR. WALTERS'S RECOMMENDED ROE IN THIS PROCEEDING?

A: Mr. Walters summarizes the ranges produced by the various COE estimation analyses produced in Figure CCW-5 and comes to the conclusion that the proper range for an authorized ROE in this proceeding should be 9.00% to 9.90%. Mr. Walters directly discounts models offered in his testimony as using unsustainable growth rates and beta estimates that are not reflective of investor expectations. It also seems to be based on his assessment that Spire Missouri's risk profile has somehow been lowered by "the risk reducing effect of expanding the Company's proposal to expand its current revenue decoupling mechanism" and "recently enacted Missouri legislation."

Even allowing for some discounting of some of the models (and correcting others) that were used to create the ranges in Figure CCW-5 (reproduced below) the range proposed by Mr. Walters seems to be artificially low. Each of the models utilized by him produced a COE estimate range that extends beyond 10%, yet its ROE range does not exceed 9.90%. More concerning are the suggestions that Spire Missouri's ROE should be lower because of a "decoupling mechanism" it does not currently have and enacted Missouri legislation (presumably SB4) that is not yet effective. Both of these items could change how Spire Missouri earns its rate of return, however, neither have an impact on Spire Missouri's risk profile in this case.

VI. UPDATES

Q WHAT IS SPIRE MISSOURI'S UPDATED COST OF DEBT?

A. It is 4.34%. See **Schedule AWW-R-18**.

Q. WHAT IS SPIRE MISSOURI'S UPDATED ACTUAL CAPITAL STRUCTURE?

A. **[redacted]**

Q. HAS SPIRE MISSOURI UPDATED ITS ESTIMATES OF ITS COST OF EQUITY?

A. Yes. See **Schedule AWW-R-20.**

Q. IS SPIRE MISSOURI UPDATING ITS RECOMMENDED ROE?

A. No.

Q. WHAT IS SPIRE MISSOURI'S UPDATED RATE OF RETURN?

A: 7.728%. See **Schedule AWW-R-21**.

VII. CONCLUSION

Q. Does this conclude your testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Spire Missouri Inc. d/b/a Spire's	)	
Request for Authority to Implement a General	)	
Rate Increase for Natural Gas Service Provided	)	File No. GR-2025-0107
In the Company's Missouri Service Areas	)	

AFFIDAVIT

STATE OF MISSOURI	)	
	)	SS.
CITY OF ST. LOUIS	)	

Adam W. Woodard, of lawful age, being first duly sworn, deposes and states:

1. My name is Adam W. Woodard. I am the Executive Vice President & Chief Financial Officer for Spire Inc. My business address is 700 Market Street, St. Louis, Missouri 63101.

2. This affidavit is attached to my rebuttal testimony, which is filed on behalf of Spire Missouri Inc.

3. I hereby swear and affirm that my answers to the questions contained in my rebuttal testimony are true and correct to the best of my knowledge, information, and belief.

Adam W. Woodard

Subscribed and sworn to before me this 28th day of May 2025.

Notary Public

TAMMY L. KIRKSEY
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI
MY COMMISSION EXPIRES NOVEMBER 20, 2028
ST. LOUIS CITY
COMMISSION #24459582

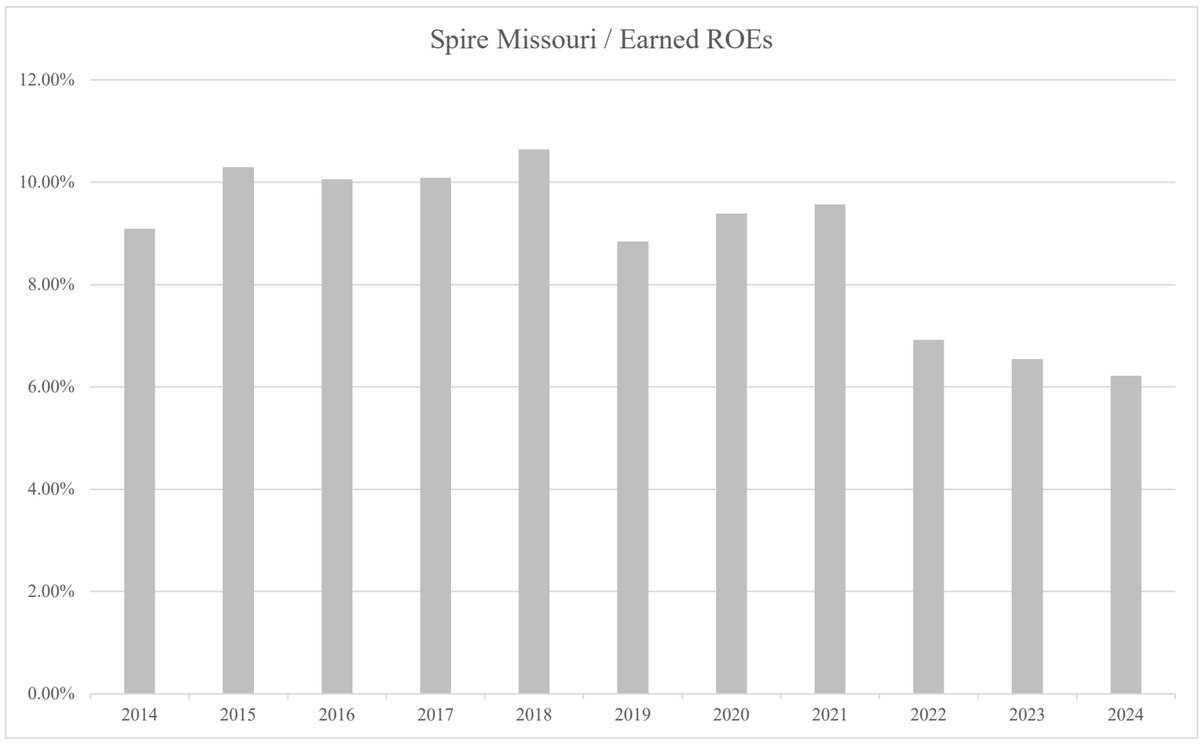
GR-2025-0107
Schedule AWW-R-1
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Historical Financial Ratios

	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	AVERAGES 3-Year	5-Year	10-Year
Net Income	90.1	105.3	105.9	113.0	129.3	115.0	130.2	144.1	114.9	117.5	118.4	-6.3%	0.6%	2.8%
Common Equity	1,007.8	1,037.8	1,068.5	1,171.0	1,259.9	1,339.3	1,435.1	1,577.9	1,745.4	1,844.8	1,963.7	7.6%	8.0%	6.9%
Return on Average Equity	9.09%	10.30%	10.06%	10.09%	10.64%	8.85%	9.39%	9.57%	6.91%	6.55%	6.22%	6.56%	7.73%	8.86%
FFO / Debt (S&P Adjusted)	21.99%	24.32%	24.51%	21.92%	20.59%	17.57%	18.82%	17.74%	15.06%	12.03%	13.17% *	13.42%	15.36%	18.57%
Long-Term Debt	807.9	808.1	808.3	873.9	824.4	925.0	1,092.0	1,338.4	1,387.7	1,785.4	1,803.4	17.8%	16.7%	7.2%
Equity	1,007.8	1,037.8	1,068.5	1,171.0	1,259.9	1,339.3	1,435.1	1,577.9	1,745.4	1,844.8	1,963.7	8.7%	7.9%	6.6%
Long-Term Capitalization	1,815.7	1,845.9	1,876.8	2,044.9	2,084.3	2,264.3	2,527.1	2,916.3	3,133.1	3,630.2	3,767.1	12.8%	11.7%	6.9%
Equity %	55.5%	56.2%	56.9%	57.3%	60.4%	59.1%	56.8%	54.1%	55.7%	50.8%	52.1%	52.9%	53.9%	56.0%
Gross Plant	2,403.3	2,579.1	2,718.5	3,091.8	3,331.0	3,643.2	3,931.2	4,266.6	4,550.4	4,964.9	5,420.2	8.3%	8.3%	8.5%
Accumulated Depreciation	542.3	590.0	604.5	681.6	705.8	764.1	825.7	905.1	982.1	1,043.2	1,086.0	6.3%	7.3%	7.2%
Net Plant	1,861.0	1,989.1	2,114.0	2,410.2	2,625.2	2,879.1	3,105.5	3,361.5	3,568.3	3,921.7	3,921.7	5.3%	6.4%	7.7%
Depreciation & Amortization	78.5	82.6	88.6	93.1	102.8	111.5	118.0	129.2	145.3	158.7	174.0	10.4%	9.3%	8.3%
Depreciation %	3.36%	3.32%	3.34%	3.20%	3.20%	3.20%	3.12%	3.15%	3.30%	3.34%	3.35%	3.33%	3.25%	3.25%
* estimated	18.9%	20.8%	21.1%	21.0%	24.4%	20.6%	19.5%	18.1%	16.1%	13.5%	13.8%			

source: S&P Capital IQ

GR-2025-0107
AWW-R-2
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Historical Earned ROEs

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Earned ROE	9.09%	10.30%	10.06%	10.09%	10.64%	8.85%	9.39%	9.57%	6.91%	6.55%	6.22%



GR-2025-0107
AWW-R-3
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Proxy Group

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
Company	Ticker	Market Capitalization	Enterprise Value	Current Quarter Dividend	Announced Growth	Annualized Dividend	Stock Price	Forward Dividend Yield	TTM P/E	FY25 P/E	FY26 P/E	TTM EBITDA	EV/EBITDA	Value Line Beta	Consensus LT Growth	Value Line LT Growth	Company Guidance	Guidance Midpoint	Credit Ratings S&P	Credit Ratings Moody's
ALLETE, Inc.	ALE	$3,772.3	$6,130.1	$0.730	February	$2.92	$65.08	4.49%	20.39	17.29	15.10	$455	13.48	0.80	10.59%	6.00%	5-7%	6.00%	BBB	A2
Alliant Energy Corporation	LNT	15,851.8	26,455.8	$0.508	January	2.03	61.71	3.29%	21.28	19.23	17.93	1,759	15.04	0.80	6.89%	6.00%	5-7%	6.00%	**A-**	Baa1
Ameren Corporation	AEE	26,168.4	45,897.4	$0.710	February	2.84	96.82	2.93%	21.47	19.54	18.23	3,268	14.04	0.80	7.27%	6.50%	6-8%	7.00%	**A**	A2
American Water Works Company	AWK	27,373.8	41,693.8	$0.828	April	3.31	140.37	2.36%	25.57	24.55	22.90	2,602	16.02	0.90	6.56%	4.50%	7-9%	8.00%	A	A3
Atmos Energy Corporation	ATO	24,773.8	32,621.7	$0.870	November	3.48	155.97	2.23%	21.52	21.64	20.06	2,190	14.90	0.80	6.87%	7.00%	6-8%	7.00%	A-	A1
Avista Corporation	AVA	3,090.4	6,118.4	$0.490	February	1.96	38.36	5.11%	16.19	15.01	14.00	608	10.06	0.80	6.54%	5.50%	4-6%	5.00%	BBB	Baa2
Black Hills Corporation	BKH	4,254.1	8,641.0	$0.676	January	2.70	58.67	4.61%	14.84	14.30	13.61	784	11.02	0.90	5.57%	3.50%	4-6%	5.00%	BBB+	Baa2
CenterPoint Energy, Inc.	CNP	24,301.1	44,572.1	$0.220	September	0.88	37.23	2.36%	25.09	21.29	19.79	3,362	13.26	0.90	7.99%	6.50%	6-8%	7.00%	**BBB+**	**A2**
Chesapeake Utilities Corporation	CPK	2,806.5	4,317.0	$0.685	May	2.74	120.31	2.28%	22.17	19.27	17.81	326	13.24	0.80	9.88%	8.00%	8%+	8.00%	NA	NA
Essential Utilities, Inc.	WTRG	10,697.7	18,466.2	$0.326	August	1.30	38.16	3.41%	17.09	18.20	17.11	1,240	14.89	0.90	6.35%	6.00%	5-7%	6.00%	A-	**Baa2**
Evergy, Inc.	EVRG	15,117.0	29,521.0	$0.668	November	2.67	65.70	4.06%	17.30	16.25	15.37	2,667	11.07	0.80	5.84%	7.50%	4-6%	5.00%	BBB+	Baa2
IDACORP, Inc.	IDA	6,174.6	8,994.1	$0.860	October	3.44	114.30	3.01%	20.32	19.65	17.95	559	16.08	0.70	7.42%	6.00%	NA	NA	BBB	**Baa1**
MDU Resources Group, Inc.	MDU	3,522.7	5,656.8	$0.130	August	0.52	17.24	3.02%	13.59	17.85	16.65	488	11.60	1.10	8.06%	NM	6-8%	7.00%	**BBB+**	NA
MGE Energy, Inc.	MGEE	3,348.1	4,080.6	$0.450	August	1.80	91.63	1.96%	25.91	25.35	23.60	268	15.25	0.80	6.97%	7.00%	NA	NA	AA-	Aa2
National Fuel Gas Company	NFG	7,320.3	10,219.9	$0.515	June	2.06	81.02	2.54%	190.19	11.85	9.82	1,288	7.94	0.90	NM	8.50%	5-7%	6.00%	BBB-	Baa3
New Jersey Resources Corp.	NJR	4,641.2	7,969.9	$0.450	July	1.80	46.24	3.89%	11.17	14.66	14.82	745	10.69	0.90	5.32%	5.00%	7-9%	8.00%	NA	A1
NiSource inc.	NI	18,211.5	34,926.7	$0.280	January	1.12	38.69	2.89%	20.65	20.67	19.24	2,583	13.52	0.90	7.43%	9.50%	6-8%	7.00%	BBB+	Baa1
Northwest Natural Holding Company	NWN	1,641.8	3,932.7	$0.490	October	1.96	40.73	4.81%	15.64	14.14	13.51	412	9.55	0.80	9.01%	6.50%	4-6%	5.00%	**A**	A2
NorthWestern Energy Group, Inc.	NWE	3,402.3	6,481.5	$0.660	February	2.64	55.44	4.76%	14.44	15.53	14.36	582	11.14	0.80	6.02%	4.50%	4-6%	5.00%	BBB	Baa2
OGE Energy Corp.	OGE	8,842.4	14,704.0	$0.421	September	1.69	43.92	3.84%	18.25	19.29	18.06	1,313	11.20	0.90	5.88%	6.50%	5-7%	6.00%	A-	A3
ONE Gas, Inc.	OGS	4,443.9	7,636.6	$0.670	January	2.68	74.15	3.61%	17.67	17.37	16.54	738	10.34	0.80	6.32%	4.50%	4-6%	5.00%	A-	A3
Pinnacle West Capital Corporation	PNW	10,808.0	23,037.8	$0.895	October	3.58	90.52	3.95%	18.13	19.91	17.83	2,023	11.39	0.80	3.57%	5.00%	5-7%	6.00%	BBB+	Baa1
Portland General Electric Company	POR	4,621.5	9,998.5	$0.525	April	2.10	42.20	4.98%	14.76	13.06	12.46	1,040	9.61	0.80	3.89%	6.50%	5-7%	6.00%	**A3**	BBB+
Southwest Gas Holdings, Inc.	SWX	4,974.9	9,795.7	$0.620	February	2.48	69.18	3.58%	22.16	18.87	17.28	990	9.89	0.80	16.56%	10.00%	5-7%	6.00%	BBB	Baa1
TXNM Energy, Inc.	TXNM	4,936.0	11,129.6	$0.408	December	1.63	53.27	3.06%	23.82	19.09	17.32	880	12.64	0.70	7.18%	4.50%	7-9%	8.00%	BBB+	Baa1
UGI Corporation	UGI	7,571.9	14,185.9	$0.375	May	1.50	35.31	4.25%	14.32	11.33	11.31	1,797	7.89	1.10	3.15%	6.50%	4-6%	5.00%	A-	A3
Expanded Proxy Group Average		$9,718.0	$16,814.8	0.56		2.22	68.16	3.51%	25.54	17.89	16.64	$1,345	12.15	0.85	7.09%	6.30%		6.25%		
Base Proxy Group Average		$8,633.2	$14,423.3	0.56		2.22	72.57	3.44%	18.16	17.24	16.32	$1,223	11.25	0.86	8.07%	7.13%		6.38%		
Spire, Inc.	SR	4,284.0	9,266.8	$0.785	November	3.14	72.59	4.33%	17.74	16.15	14.33	807	11.48	0.80	9.06%	4.50%	5-7%	6.00%	A-	A1

A Market Capitalization ($ Millions), Factset, End of Day May 15, 2025
B Enterprise Value ($ Millions), Factset, End of Day May 15, 2025
C Factset, End of Day May 15, 2025
D Month that dividend raise is typically announced
E [C] x 4
F Factset, End of Day May 15, 2025
G [E] / [F]
H Trailing Twelve Months Price-Earnings Ratio as of End of Day May 15, 2025
I Consensus Forward FY2026 Price-Earnings Ratio as of End of Day May 15, 2025
J Consensus Forward FY2025 Price-Earnings Ratio as of End of Day May 15, 2025
K Trailing Twelve Months EBITDA ($ Millions), Factset as of End of Day May 15, 2025
L [B]/[K]
M Value Line estimated beta as of End of Day May 15, 2025 (5-Year weekly inputs vs NYSE Composite Index / Blume adjusted)
N Consensus Long-Term Growth Estimate of Reporting Analysts, Factset, End of Day May 15, 2025
O Value Line Long-Term Growth Estimate, through May 2025
P Current Company Long-Term Earnings Guidance
Q Midpoint of Company Guidance
R Current S&P rating at the operating company
S Current Moody's rating at the operating company

GR-2025-0107
AWW-R-4
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Base Discounted Cash Flow Analysis

		A	B	C	D	E	F	G	H	I
Company	Ticker	Annualized Dividend	Stock Price	Forward Dividend Yield	Consensus LT Div Growth	Value Line LT Div Growth	Consensus LT Growth	Value Line LT Growth	Consensus Cost of Equity	Value Line Cost of Equity
Atmos Energy Corporation	ATO	$3.48	$155.97	2.23%	2.38%	2.39%	6.87%	7.00%	9.25%	9.39%
Chesapeake Utilities	CPK	2.74	120.31	2.28%	2.50%	2.46%	9.88%	8.00%	12.38%	10.46%
New Jersey Resources Corporation	NJR	1.80	46.24	3.89%	4.10%	4.09%	5.32%	5.00%	9.42%	9.09%
NiSource Inc.	NI	1.12	38.69	2.89%	3.11%	3.17%	7.43%	9.50%	10.54%	12.67%
Northwest Natural Holding Company	NWN	1.96	40.73	4.81%	5.25%	5.12%	9.01%	6.50%	14.25%	11.62%
ONE Gas, Inc.	OGS	2.68	74.15	3.61%	3.84%	3.78%	6.32%	4.50%	10.16%	8.28%
Southwest Gas Holdings, Inc.	SWX	2.48	69.18	3.58%	4.18%	3.94%	16.56%	10.00%	20.74%	13.94%
UGI Corp.	UGI	1.50	35.31	4.25%	4.38%	4.52%	3.15%	6.50%	7.54%	11.02%
Average		$2.22	$72.57	3.44%	3.72%	3.68%	8.07%	7.13%	11.79%	10.81%
Median		$2.22	$57.71	3.60%	3.97%	3.86%	7.15%	6.75%	10.35%	10.74%
Spire, Inc.	SR	3.14	72.59	4.33%	4.72%	4.52%	9.06%	4.50%	13.78%	9.02%

A Current quarterly dividend x 4
B Factset, End of Day May 15, 2025
C [A] / [B]
D [C] x (1+[F])
E [C] x (1+[G])
F Consensus Long-Term Growth Estimate of Reporting Analysts, Factset, End of Day May 15, 2025
G Value Line Long-Term Growth Estimate, through May 2025
H [D] + [F]
I [E] + [G]

GR-2025-0107
AWW-R-5
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Expanded Discounted Cash Flow Analysis

Company	Ticker	A Annualized Dividend	B Stock Price	C Forward Dividend Yield	D Consensus LT Div Growth	E Value Line LT Div Growth	F Consensus LT Growth	G Value Line LT Growth	H Consensus Cost of Equity	I Value Line Cost of Equity
ALLETE, Inc.	ALE	$2.92	$65.08	4.49%	4.96%	4.76%	10.59%	6.00%	15.55%	10.76%
Alliant Energy Corporation	LNT	2.03	61.71	3.29%	3.52%	3.49%	6.89%	6.00%	10.40%	9.49%
Ameren Corporation	AEE	2.84	96.82	2.93%	3.15%	3.12%	7.27%	6.50%	10.41%	9.62%
American Water Works Company	AWK	3.31	140.37	2.36%	2.51%	2.46%	6.56%	4.50%	9.07%	6.96%
Atmos Energy Corporation	ATO	3.48	155.97	2.23%	2.38%	2.39%	6.87%	7.00%	9.25%	9.39%
Avista Corporation	AVA	1.96	38.36	5.11%	5.44%	5.39%	6.54%	5.50%	11.99%	10.89%
Black Hills Corporation	BKH	2.70	58.67	4.61%	4.87%	4.77%	5.57%	3.50%	10.44%	8.27%
CenterPoint Energy, Inc.	CNP	0.88	37.23	2.36%	2.55%	2.52%	7.99%	6.50%	10.55%	9.02%
Chesapeake Utilities Corporation	CPK	2.74	120.31	2.28%	2.50%	2.46%	9.88%	8.00%	12.38%	10.46%
Essential Utilities, Inc.	WTRG	1.30	38.16	3.41%	3.63%	3.62%	6.35%	6.00%	9.98%	9.62%
Evergy, Inc.	EVRG	2.67	65.70	4.06%	4.30%	4.37%	5.84%	7.50%	10.14%	11.87%
IDACORP, Inc.	IDA	3.44	114.30	3.01%	3.23%	3.19%	7.42%	6.00%	10.66%	9.19%
MDU Resources Group, Inc.	MDU	0.52	17.24	3.02%	NM	3.23%	8.06%	7.00%	NM	7.00%
MGE Energy, Inc.	MGEE	1.80	91.63	1.96%	2.10%	2.10%	6.97%	7.00%	9.07%	9.10%
National Fuel Gas Company	NFG	2.06	81.02	2.54%	NM	2.76%	NM	8.50%	NM	11.26%
New Jersey Resources Corp.	NJR	1.80	46.24	3.89%	4.10%	4.09%	5.32%	5.00%	9.42%	9.09%
NiSource inc.	NI	1.12	38.69	2.89%	3.11%	3.17%	7.43%	9.50%	10.54%	12.67%
Northwest Natural Holding Company	NWN	1.96	40.73	4.81%	5.25%	5.12%	9.01%	6.50%	14.25%	11.62%
NorthWestern Energy Group, Inc.	NWE	2.64	55.44	4.76%	5.05%	4.98%	6.02%	4.50%	11.07%	9.48%
OGE Energy Corp.	OGE	1.69	43.92	3.84%	4.06%	4.09%	5.88%	6.50%	9.94%	10.59%
ONE Gas, Inc.	OGS	2.68	74.15	3.61%	3.84%	3.78%	6.32%	4.50%	10.16%	8.28%
Pinnacle West Capital Corporation	PNW	3.58	90.52	3.95%	4.10%	4.15%	3.57%	5.00%	7.67%	9.15%
Portland General Electric Company	POR	2.10	42.20	4.98%	5.17%	5.30%	3.89%	6.50%	9.06%	11.80%
Southwest Gas Holdings, Inc.	SWX	2.48	69.18	3.58%	4.18%	3.94%	16.56%	10.00%	20.74%	13.94%
TXNM Energy, Inc.	TXNM	1.63	53.27	3.06%	3.28%	3.20%	7.18%	4.50%	10.46%	7.70%
UGI Corporation	UGI	1.50	35.31	4.25%	4.38%	4.52%	3.15%	6.50%	7.54%	11.02%
Average		$2.22	$68.16	3.51%	3.82%	3.73%	7.09%	6.33%	10.86%	9.93%
Median		$2.08	$60.19	3.50%	3.95%	3.70%	6.87%	6.50%	10.41%	9.55%
Spire, Inc.	SR	3.14	72.59	4.33%	4.72%	4.52%	9.06%	4.50%	13.78%	9.02%

A Current quarterly dividend x 4
B Factset, End of Day May 15, 2025
C [A] / [B]
D [C] x (1+[F])
E [C] x (1+[G])
F Consensus Long-Term Growth Estimate of Reporting Analysts, Factset, End of Day May 15, 2025
G Value Line Long-Term Growth Estimate, through May 2025
H [D] + [F]
I [E] + [G]

GR-2025-0107
AWW-R-6
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Summary of DCF Estimates

	BASE	EXPANDED
Value Line Growth		
Average	10.81%	9.93%
Median	10.74%	9.55%
Consensus Growth		
Average	11.79%	10.86%
Median	10.35%	10.41%

10.65%	9.71%
10.57%	9.37%
11.29%	10.50%
10.36%	10.16%

GR-2025-0107
AWW-R-7
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Flotation Costs

Offering Date	Transactions	Shares Issued	Market Price Per Share	Average Offering Price Per Share	Total Offering Expense Per Share	Net Proceeds Per Share (3)	Gross Equity Issue Before Costs	Total Net Proceeds (4)	Total Flotation Costs (6)	Flotation Cost Percentage (7)
2023	ATM	564,801			$1.329		38,668,509	37,917,823	386,685	1.94%
2022	ATM	365,625			$2.258		27,972,381	27,510,657	461,724	1.65%
2022	ATM	354,000			$2.206		23,479,413	23,062,619	416,794	1.78%
2020	ATM	110,000			$2.505		9,517,204	9,331,824	185,380	1.95%
2020	ATM	333,861			$5.397		22,968,844	22,465,364	503,480	2.19%
2019	ATM	179,630			$4.890		15,038,356	14,523,973	514,384	3.42%
5/10/2018	Equity Offering	2,300,000	$71.10	$68.75	$2.251	$68.85	163,530,000	158,352,700	5,177,300	3.17%
5/12/2016	Equity Offering	2,185,000	$64.70	$63.05	$2.186	$62.51	141,369,500	136,593,090	4,776,410	3.38%
6/11/2014	Equity Offering	10,350,000	$47.19	$46.25	$1.808	$45.38	488,416,500	469,703,700	18,712,800	3.83%
5/29/2013	Equity Offering	10,005,000	$45.09	$44.50	$1.824	$43.27	451,125,450	432,876,330	18,249,120	4.05%
Annual legal & audit fees			$364,000				$1,382,086,158	$1,332,338,081	$49,384,077	3.60%

Expanded DCF Dividend Yield	3.55%	**1,948,000,000**	
Expanded DCF Adjusted Dividend Yield	3.44%	equity at 9/30/24	
Flotation Adjusted Dividend Yield	3.57%		
Flotation Cost Adjustment	0.12%	70,118,099	total gross up to rate base
(add to DCF and CAPM estimates)			

GR-2025-0107
AWW-R-8
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Historical Market Risk Premium

Year	10-Year U.S. Treasury Bond Rate	Return	Year	S&P 500 Values	Dividends	Total Return
1927	3.17%		1927	17.7	0.62	
1928	3.45%	0.84%	1928	24.4	1.05	43.8%
1929	3.36%	4.20%	1929	21.5	0.88	-8.3%
1930	3.22%	4.54%	1930	15.3	0.72	-25.1%
1931	3.93%	-2.56%	1931	8.1	0.50	-43.8%
1932	3.35%	8.79%	1932	6.9	0.50	-8.6%
1933	3.53%	1.86%	1933	10.0	0.41	50.0%
1934	3.01%	7.96%	1934	9.5	0.35	-1.2%
1935	2.84%	4.47%	1935	13.4	0.51	46.7%
1936	2.59%	5.02%	1936	17.2	0.54	31.9%
1937	2.73%	1.38%	1937	10.6	0.56	-35.3%
1938	2.56%	4.21%	1938	13.1	0.50	29.3%
1939	2.35%	4.41%	1939	12.5	0.54	-1.1%
1940	2.01%	5.40%	1940	10.6	0.55	-10.7%
1941	2.47%	-2.02%	1941	8.7	0.54	-12.8%
1942	2.49%	2.29%	1942	9.8	0.59	19.2%
1943	2.49%	2.49%	1943	11.7	0.55	25.1%
1944	2.48%	2.58%	1944	13.3	0.61	19.0%
1945	2.33%	3.80%	1945	17.4	0.68	35.8%
1946	2.24%	3.13%	1946	15.3	0.60	-8.4%
1947	2.39%	0.92%	1947	15.3	0.80	5.2%
1948	2.44%	1.95%	1948	15.2	0.97	5.7%
1949	2.19%	4.66%	1949	16.8	1.19	18.3%
1950	2.39%	0.43%	1950	20.4	1.53	30.8%
1951	2.70%	-0.30%	1951	23.8	1.50	23.7%
1952	2.75%	2.27%	1952	26.6	1.51	18.2%
1953	2.59%	4.14%	1953	24.8	1.44	-1.2%
1954	2.51%	3.29%	1954	36.0	1.87	52.6%
1955	2.96%	-1.34%	1955	45.5	2.23	32.6%
1956	3.59%	-2.26%	1956	46.7	2.19	7.4%
1957	3.21%	6.80%	1957	40.0	1.80	-10.5%
1958	3.86%	-2.10%	1958	55.2	2.26	43.7%
1959	4.69%	-2.65%	1959	59.9	1.98	12.1%
1960	3.84%	11.64%	1960	58.1	1.98	0.3%
1961	4.06%	2.06%	1961	71.6	2.04	26.6%
1962	3.86%	5.69%	1962	63.1	2.15	-8.8%
1963	4.13%	1.68%	1963	75.0	2.35	22.6%
1964	4.18%	3.73%	1964	84.8	2.58	16.4%
1965	4.62%	0.72%	1965	92.4	2.83	12.4%
1966	4.84%	2.91%	1966	80.3	2.88	-10.0%
1967	5.70%	-1.58%	1967	96.5	2.98	23.8%
1968	6.03%	3.27%	1968	103.9	3.04	10.8%
1969	7.65%	-5.01%	1969	92.1	3.24	-8.2%
1970	6.39%	16.75%	1970	92.2	3.19	3.6%
1971	5.93%	9.79%	1971	102.1	3.16	14.2%
1972	6.36%	2.82%	1972	118.1	3.19	18.8%
1973	6.74%	3.66%	1973	97.6	3.61	-14.3%
1974	7.43%	1.99%	1974	68.6	3.72	-25.9%
1975	8.00%	3.61%	1975	90.2	3.73	37.0%
1976	6.87%	15.98%	1976	107.5	4.22	23.8%
1977	7.69%	1.29%	1977	95.1	4.86	-7.0%
1978	9.01%	-0.78%	1978	96.1	5.18	6.5%
1979	10.39%	0.67%	1979	107.9	5.97	18.5%
1980	12.84%	-2.99%	1980	135.8	6.44	31.7%
1981	13.72%	8.20%	1981	122.6	6.83	-4.7%
1982	10.54%	32.81%	1982	140.6	6.93	20.4%
1983	11.83%	3.20%	1983	164.9	7.12	22.3%
1984	11.50%	13.73%	1984	167.2	7.83	6.1%
1985	9.26%	25.71%	1985	211.3	8.20	31.2%
1986	7.11%	24.28%	1986	242.2	8.19	18.5%
1987	8.99%	-4.96%	1987	247.1	9.17	5.8%
1988	9.11%	8.22%	1988	277.7	10.22	16.5%
1989	7.84%	17.69%	1989	353.4	11.73	31.5%
1990	8.08%	6.24%	1990	330.2	12.35	-3.1%
1991	7.09%	15.00%	1991	417.1	12.97	30.2%
1992	6.77%	9.36%	1992	435.7	12.64	7.5%
1993	5.77%	14.21%	1993	466.5	12.69	10.0%
1994	7.81%	-8.04%	1994	459.3	13.36	1.3%
1995	5.71%	23.48%	1995	615.9	14.17	37.2%
1996	6.30%	1.43%	1996	740.7	14.89	22.7%
1997	5.81%	9.94%	1997	970.4	15.52	33.1%
1998	4.65%	14.92%	1998	1,229.2	16.20	28.3%
1999	6.44%	-8.25%	1999	1,469.3	16.71	20.9%
2000	5.11%	16.66%	2000	1,320.3	16.27	-9.0%
2001	5.05%	5.57%	2001	1,148.1	15.74	-11.8%
2002	3.82%	15.12%	2002	879.8	16.08	-22.0%
2003	4.25%	0.38%	2003	1,111.9	17.39	28.4%
2004	4.22%	4.49%	2004	1,211.9	19.44	10.7%
2005	4.39%	2.87%	2005	1,248.3	22.22	4.8%
2006	4.70%	1.96%	2006	1,418.3	24.88	15.6%
2007	4.02%	10.21%	2007	1,468.4	27.73	5.5%
2008	2.21%	20.10%	2008	903.3	28.39	-36.6%
2009	3.84%	-11.12%	2009	1,115.1	22.41	25.9%
2010	3.29%	8.46%	2010	1,257.6	22.73	14.8%
2011	1.88%	16.04%	2011	1,257.6	26.43	2.1%
2012	1.76%	2.97%	2012	1,426.2	31.25	15.9%
2013	3.04%	-9.10%	2013	1,848.4	36.28	32.1%
2014	2.17%	10.75%	2014	2,058.9	39.44	13.5%
2015	2.27%	1.28%	2015	2,043.9	43.39	1.4%
2016	2.45%	0.69%	2016	2,238.8	45.70	11.8%
2017	2.41%	2.80%	2017	2,673.6	48.93	21.6%
2018	2.69%	-0.02%	2018	2,506.9	53.75	-4.2%
2019	1.92%	9.64%	2019	3,230.8	58.50	31.2%
2020	0.93%	11.33%	2020	3,756.1	57.00	18.0%
2021	1.51%	-4.42%	2021	4,766.2	59.20	28.5%
2022	3.88%	-17.83%	2022	3,839.5	66.98	-18.0%
2023	3.88%	3.88%	2023	4,769.8	70.30	26.1%
2024	4.58%	-1.64%	2024	5,881.6	74.83	24.9%
Average	4.77%	4.79%				11.79%
						7.00% Market Risk Premium
						7.02% MRP (Income Only)

Sources: Federal Reserve of St. Louis (FRED) & FACTSET
As compiled by: Damodaran Online

GR-2025-0107
AWW-R-9
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Base CAPM & ECAPM Analysis

		A	B	C	D	E				
Company	Ticker	30-Year UST Risk-Free Rate	Value Line Beta	Market Risk Premium	CAPM Cost of Equity	ECAPM Cost of Equity				
Atmos Energy Corporation	ATO	4.91%	0.80	7.00%	10.51%	10.86%	4.93%	5.50%	8.85%	9.33%
Chesapeake Utilities	CPK	4.91%	0.80	7.00%	10.51%	10.86%	4.93%	5.50%	8.85%	9.33%
New Jersey Resources Corporation	NJR	4.91%	0.90	7.00%	11.21%	11.39%	4.93%	5.50%	9.34%	9.88%
NiSource Inc.	NI	4.91%	0.90	7.00%	11.21%	11.39%	4.93%	5.50%	9.34%	9.88%
Northwest Natural Holding Company	NWN	4.91%	0.80	7.00%	10.51%	10.86%	4.93%	5.50%	8.85%	9.33%
ONE Gas, Inc.	OGS	4.91%	0.80	7.00%	10.51%	10.86%	4.93%	5.50%	8.85%	9.33%
Southwest Gas Holdings, Inc.	SWX	4.91%	0.80	7.00%	10.51%	10.86%	4.93%	5.50%	8.85%	9.33%
UGI Corp.	UGI	4.91%	1.10	7.00%	12.61%	12.44%	4.93%	5.50%	10.33%	10.98%
Average		4.91%	0.86	7.00%	10.95%	11.19%	4.93%	5.50%	9.16%	9.67%
Median		4.91%	0.80	7.00%	10.51%	10.86%	4.93%	5.50%	8.85%	9.33%
Spire, Inc.		4.91%	0.80	7.00%	10.51%	10.86%	4.93%	5.50%	8.85%	9.33%

A Current yield on 30-Year U.S. Treasury Bond, Factset, End of Day May 15, 2025
B Value Line estimated beta as of End of Day May 15, 2024 (5-Year weekly inputs vs NYSE Composite Index / Blume adjusted)
C Historical MRP calculated as the difference between the Total Return of the S&P 500 and the 10-year U.S. Treasury bond between 1927 and 2023 (see Exhibit #7)
D [A] + [B] x [C]
E ([A] + 0.25 x [C]) + (0.75 x ([B] x [C])

GR-2025-0107
AWW-R-10
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Expanded CAPM & ECAPM Analysis

Company		A 30-Year UST Risk-Free Rate	B Value Line Beta	C Market Risk Premium	D CAPM Cost of Equity	E ECAPM Cost of Equity
ALLETE, Inc.	ALE	4.91%	0.80	7.00%	10.51%	10.86%
Alliant Energy Corporation	LNT	4.91%	0.80	7.00%	10.51%	10.86%
Ameren Corporation	AEE	4.91%	0.80	7.00%	10.51%	10.86%
American Water Works Company	AWK	4.91%	0.90	7.00%	11.21%	11.39%
Atmos Energy Corporation	ATO	4.91%	0.80	7.00%	10.51%	10.86%
Avista Corporation	AVA	4.91%	0.80	7.00%	10.51%	10.86%
Black Hills Corporation	BKH	4.91%	0.90	7.00%	11.21%	11.39%
CenterPoint Energy, Inc.	CNP	4.91%	0.90	7.00%	11.21%	11.39%
Chesapeake Utilities Corporation	CPK	4.91%	0.80	7.00%	10.51%	10.86%
Essential Utilities, Inc.	WTRG	4.91%	0.90	7.00%	11.21%	11.39%
Evergy, Inc.	EVRG	4.91%	0.80	7.00%	10.51%	10.86%
IDACORP, Inc.	IDA	4.91%	0.70	7.00%	9.81%	10.34%
MDU Resources Group, Inc.	MDU	4.91%	1.10	7.00%	12.61%	12.44%
MGE Energy, Inc.	MGEE	4.91%	0.80	7.00%	10.51%	10.86%
National Fuel Gas Company	NFG	4.91%	0.90	7.00%	11.21%	11.39%
New Jersey Resources Corp.	NJR	4.91%	0.90	7.00%	11.21%	11.39%
NiSource inc.	NI	4.91%	0.90	7.00%	11.21%	11.39%
Northwest Natural Holding Company	NWN	4.91%	0.80	7.00%	10.51%	10.86%
NorthWestern Energy Group, Inc.	NWE	4.91%	0.80	7.00%	10.51%	10.86%
OGE Energy Corp.	OGE	4.91%	0.90	7.00%	11.21%	11.39%
ONE Gas, Inc.	OGS	4.91%	0.80	7.00%	10.51%	10.86%
Pinnacle West Capital Corporation	PNW	4.91%	0.80	7.00%	10.51%	10.86%
Portland General Electric Company	POR	4.91%	0.80	7.00%	10.51%	10.86%
Southwest Gas Holdings, Inc.	SWX	4.91%	0.80	7.00%	10.51%	10.86%
TXNM Energy, Inc.	TXNM	4.91%	0.70	7.00%	9.81%	10.34%
UGI Corporation	UGI	4.91%	1.10	7.00%	12.61%	12.44%
Average		4.91%	0.85	7.00%	10.83%	11.10%
Median		4.91%	0.80	7.00%	10.51%	10.86%
Spire, Inc.		4.91%	0.80	7.00%	10.51%	10.86%

A Current yield on 30-Year U.S. Treasury Bond, Factset, End of Day May 15, 2025
B Value Line estimated beta as of End of Day November 15, 2024 (5-Year weekly inputs vs NYSE Composite Index / Blume adjusted)
C Historical MRP calculated as the difference between the Total Return of the S&P 500 and the 10-year U.S. Treasury bond between 1927 and 2023 (see Exhibit #7)
D [A] + [B] x [C]
E ([A] + 0.25 x [C]) + (0.75 x ([B] x [C])

GR-2025-0107
AWW-R-11
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Summary of CAMP & ECAPM Estimates

	BASE	EXPANDED	Spire Inc.
CAPM			
Average	10.95%	10.83%	10.51%
Median	10.51%	10.51%	
ECAPM			
Average	11.19%	11.10%	10.86%
Median	10.86%	10.86%	

GR-2025-0107
AWW-R-12
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
RRA Gas Utility Rate Case Outcomes Since 1980 (Annual Averages)

Date	Return on Equity	Return on Capital	Equity to Total Capital
1980	14.05%	10.44%	40.53%
1981	15.13%	11.55%	40.88%
1982	15.65%	16.96%	41.02%
1983	15.24%	11.39%	43.26%
1984	15.33%	11.43%	42.53%
1985	14.73%	17.68%	45.83%
1986	13.46%	11.03%	46.06%
1987	12.72%	10.75%	45.91%
1988	12.84%	10.65%	45.81%
1989	12.87%	10.95%	47.64%
1990	12.68%	10.84%	47.25%
1991	12.45%	10.99%	47.16%
1992	12.02%	10.36%	46.65%
1993	11.37%	9.58%	46.29%
1994	11.24%	9.66%	48.11%
1995	11.44%	9.61%	50.15%
1996	11.12%	9.55%	47.52%
1997	11.30%	9.67%	47.76%
1998	11.51%	9.77%	49.50%
1999	10.74%	NA	49.22%
2000	11.34%	9.47%	48.91%
2001	10.96%	NA	43.96%
2002	11.17%	9.00%	48.92%
2003	10.99%	9.34%	49.93%
2004	10.63%	9.15%	45.81%
2005	10.41%	8.80%	48.40%
2006	10.40%	8.58%	47.24%
2007	10.22%	8.69%	48.47%
2008	10.39%	8.28%	50.35%
2009	10.22%	7.76%	48.49%
2010	10.15%	NA	48.70%
2011	9.92%	8.13%	52.49%
2012	9.94%	7.63%	51.13%
2013	9.68%	7.67%	50.60%
2014	9.78%	7.53%	51.11%
2015	9.60%	7.40%	49.93%
2016	9.54%	7.54%	50.06%
2017	9.72%	7.30%	49.88%
2018	9.59%	7.41%	50.12%
2019	9.72%	NA	51.86%
2020	9.47%	NA	51.87%
2021	9.56%	NA	50.94%
2022	9.53%	7.21%	51.38%
2023	9.64%	7.29%	52.45%
2024	9.71%	7.26%	51.38%
2025 YTD	9.75%	7.28%	51.53%

source: Capital IQ / RRA
Frequency : Annual
Service Type : Natural Gas

GR-2025-0107
AWW-R-13
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
RRA Gas Utility Rate Case Outcomes Since 1980 (Quarterly Averages)

Date	Return on Equity
03/1980	13.45%
06/1980	14.38%
09/1980	13.87%
12/1980	14.35%
03/1981	14.71%
06/1981	14.61%
09/1981	14.86%
12/1981	15.70%
03/1982	15.55%
06/1982	15.62%
09/1982	15.77%
12/1982	15.63%
03/1983	15.41%
06/1983	14.84%
09/1983	15.24%
12/1983	15.40%
03/1984	15.39%
06/1984	15.07%
09/1984	15.46%
12/1984	15.33%
03/1985	15.03%
06/1985	15.44%
09/1985	14.64%
12/1985	14.37%
03/1986	14.05%
06/1986	13.28%
09/1986	13.09%
12/1986	13.62%
03/1987	12.61%
06/1987	13.04%
09/1987	12.70%
12/1987	12.69%
03/1988	12.94%
06/1988	12.48%
09/1988	12.79%
12/1988	12.98%
03/1989	12.99%
06/1989	13.25%
09/1989	12.56%
12/1989	12.94%

03/1990	12.68%
06/1990	12.81%
09/1990	12.36%
12/1990	12.78%
03/1991	12.69%
06/1991	12.53%
09/1991	12.43%
12/1991	12.33%
03/1992	12.42%
06/1992	11.98%
09/1992	11.87%
12/1992	11.94%
03/1993	11.75%
06/1993	11.71%
09/1993	11.39%
12/1993	11.16%
03/1994	11.12%
06/1994	10.84%
09/1994	10.87%
12/1994	11.53%
03/1995	NA
06/1995	11.00%
09/1995	11.07%
12/1995	11.61%
03/1996	11.45%
06/1996	10.88%
09/1996	11.25%
12/1996	11.19%
03/1997	11.31%
06/1997	11.70%
09/1997	12.00%
12/1997	10.92%
03/1998	NA
06/1998	11.37%
09/1998	11.41%
12/1998	11.69%
03/1999	10.82%
06/1999	11.25%
09/1999	NA
12/1999	10.38%
03/2000	10.66%
06/2000	11.03%
09/2000	11.33%
12/2000	12.10%
03/2001	11.38%
06/2001	10.75%
09/2001	NA
12/2001	10.65%
03/2002	10.67%

06/2002	11.64%
09/2002	11.50%
12/2002	11.01%
03/2003	11.38%
06/2003	11.36%
09/2003	10.61%
12/2003	10.84%
03/2004	11.06%
06/2004	10.57%
09/2004	10.37%
12/2004	10.66%
03/2005	10.65%
06/2005	10.54%
09/2005	10.47%
12/2005	10.32%
03/2006	10.68%
06/2006	10.60%
09/2006	10.34%
12/2006	10.14%
03/2007	10.52%
06/2007	10.13%
09/2007	10.03%
12/2007	10.12%
03/2008	10.38%
06/2008	10.17%
09/2008	10.55%
12/2008	10.34%
03/2009	10.24%
06/2009	10.11%
09/2009	9.88%
12/2009	10.31%
03/2010	10.24%
06/2010	9.99%
09/2010	10.43%
12/2010	10.09%
03/2011	10.10%
06/2011	9.88%
09/2011	9.65%
12/2011	9.88%
03/2012	9.63%
06/2012	9.83%
09/2012	9.75%
12/2012	10.07%
03/2013	9.57%
06/2013	9.47%
09/2013	9.60%
12/2013	9.83%
03/2014	9.54%
06/2014	9.84%

09/2014	9.45%
12/2014	10.28%
03/2015	9.47%
06/2015	9.43%
09/2015	9.75%
12/2015	9.68%
03/2016	9.48%
06/2016	9.42%
09/2016	9.47%
12/2016	9.68%
03/2017	9.60%
06/2017	9.47%
09/2017	10.14%
12/2017	9.68%
03/2018	9.68%
06/2018	9.43%
09/2018	9.69%
12/2018	9.53%
03/2019	9.55%
06/2019	9.73%
09/2019	9.80%
12/2019	9.74%
03/2020	9.35%
06/2020	9.55%
09/2020	9.52%
12/2020	9.50%
03/2021	9.71%
06/2021	9.48%
09/2021	9.43%
12/2021	9.59%
03/2022	9.38%
06/2022	9.23%
09/2022	9.52%
12/2022	9.65%
03/2023	9.75%
06/2023	9.45%
09/2023	9.66%
12/2023	9.63%
03/2024	9.62%
06/2024	9.93%
Sep-24	9.64%
Dec-24	9.70%
Mar-25	9.73%
Last Twelve Months Average	9.75%

Source: Capital IQ / RRA
Frequency : Quarterly
Service Type : Natural Gas

GR-2025-0107
AWW-R-14
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
30-Year Treasury Yields (by Month, Quarter and Year)

	30-Year UST		30-Year UST		30-Year UST
Jan-80	10.60%				
Feb-80	12.13%				
Mar-80	12.34%	Mar-80	11.69%		
Apr-80	11.40%	Apr-80	11.96%		
May-80	10.36%	May-80	11.37%		
Jun-80	9.81%	Jun-80	10.52%		
Jul-80	10.24%	Jul-80	10.14%		
Aug-80	11.00%	Aug-80	10.35%		
Sep-80	11.34%	Sep-80	10.86%		
Oct-80	11.59%	Oct-80	11.31%		
Nov-80	12.37%	Nov-80	11.77%		
Dec-80	12.40%	Dec-80	12.12%	1980	11.30%
Jan-81	12.14%	Jan-81	12.30%	1981	13.44%
Feb-81	12.80%	Feb-81	12.45%	1982	12.76%
Mar-81	12.69%	Mar-81	12.54%	1983	11.18%
Apr-81	13.20%	Apr-81	12.90%	1984	12.39%
May-81	13.60%	May-81	13.16%	1985	10.79%
Jun-81	12.96%	Jun-81	13.25%	1986	7.80%
Jul-81	13.59%	Jul-81	13.38%	1987	8.58%
Aug-81	14.17%	Aug-81	13.57%	1988	8.96%
Sep-81	14.67%	Sep-81	14.14%	1989	8.45%
Oct-81	14.68%	Oct-81	14.51%	1990	8.61%
Nov-81	13.35%	Nov-81	14.23%	1991	8.14%
Dec-81	13.45%	Dec-81	13.83%	1992	7.67%
Jan-82	14.22%	Jan-82	13.67%	1993	6.60%
Feb-82	14.22%	Feb-82	13.96%	1994	7.37%
Mar-82	13.53%	Mar-82	13.99%	1995	6.88%
Apr-82	13.37%	Apr-82	13.71%	1996	6.70%
May-82	13.24%	May-82	13.38%	1997	6.61%
Jun-82	13.92%	Jun-82	13.51%	1998	5.58%
Jul-82	13.55%	Jul-82	13.57%	1999	5.87%
Aug-82	12.77%	Aug-82	13.41%	2000	5.94%
Sep-82	12.07%	Sep-82	12.80%	2001	5.49%
Oct-82	11.17%	Oct-82	12.00%	2002	5.44%
Nov-82	10.54%	Nov-82	11.26%	2003	5.11%
Dec-82	10.54%	Dec-82	10.75%	2004	5.14%
Jan-83	10.63%	Jan-83	10.57%	2005	4.56%
Feb-83	10.88%	Feb-83	10.68%	2006	4.87%
Mar-83	10.63%	Mar-83	10.71%	2007	4.83%
Apr-83	10.48%	Apr-83	10.66%	2008	4.28%
May-83	10.53%	May-83	10.55%	2009	4.07%

Jun-83	10.93%	Jun-83	10.65%	2010	4.25%
Jul-83	11.40%	Jul-83	10.95%	2011	3.91%
Aug-83	11.82%	Aug-83	11.38%	2012	2.92%
Sep-83	11.63%	Sep-83	11.62%	2013	3.45%
Oct-83	11.58%	Oct-83	11.68%	2014	3.34%
Nov-83	11.75%	Nov-83	11.65%	2015	2.84%
Dec-83	11.88%	Dec-83	11.74%	2016	2.60%
Jan-84	11.75%	Jan-84	11.79%	2017	2.90%
Feb-84	11.95%	Feb-84	11.86%	2018	3.11%
Mar-84	12.38%	Mar-84	12.03%	2019	2.58%
Apr-84	12.65%	Apr-84	12.33%	2020	1.56%
May-84	13.43%	May-84	12.82%	2021	2.05%
Jun-84	13.44%	Jun-84	13.17%	2022	3.12%
Jul-84	13.21%	Jul-84	13.36%	2023	4.09%
Aug-84	12.54%	Aug-84	13.06%	2024	4.41%
Sep-84	12.29%	Sep-84	12.68%		
Oct-84	11.98%	Oct-84	12.27%		
Nov-84	11.56%	Nov-84	11.94%		
Dec-84	11.52%	Dec-84	11.69%		
Jan-85	11.45%	Jan-85	11.51%		
Feb-85	11.47%	Feb-85	11.48%		
Mar-85	11.81%	Mar-85	11.58%		
Apr-85	11.47%	Apr-85	11.58%		
May-85	11.05%	May-85	11.44%		
Jun-85	10.45%	Jun-85	10.99%		
Jul-85	10.50%	Jul-85	10.67%		
Aug-85	10.56%	Aug-85	10.50%		
Sep-85	10.61%	Sep-85	10.56%		
Oct-85	10.50%	Oct-85	10.56%		
Nov-85	10.06%	Nov-85	10.39%		
Dec-85	9.54%	Dec-85	10.03%		
Jan-86	9.40%	Jan-86	9.67%		
Feb-86	8.93%	Feb-86	9.29%		
Mar-86	7.96%	Mar-86	8.76%		
Apr-86	7.39%	Apr-86	8.09%		
May-86	7.52%	May-86	7.62%		
Jun-86	7.57%	Jun-86	7.49%		
Jul-86	7.27%	Jul-86	7.45%		
Aug-86	7.33%	Aug-86	7.39%		
Sep-86	7.62%	Sep-86	7.41%		
Oct-86	7.70%	Oct-86	7.55%		
Nov-86	7.52%	Nov-86	7.61%		
Dec-86	7.37%	Dec-86	7.53%		
Jan-87	7.39%	Jan-87	7.43%		
Feb-87	7.54%	Feb-87	7.43%		
Mar-87	7.55%	Mar-87	7.49%		
Apr-87	8.25%	Apr-87	7.78%		
May-87	8.78%	May-87	8.19%		
Jun-87	8.57%	Jun-87	8.53%		

Jul-87	8.64%	Jul-87	8.66%
Aug-87	8.97%	Aug-87	8.73%
Sep-87	9.59%	Sep-87	9.07%
Oct-87	9.61%	Oct-87	9.39%
Nov-87	8.95%	Nov-87	9.38%
Dec-87	9.12%	Dec-87	9.23%
Jan-88	8.83%	Jan-88	8.97%
Feb-88	8.43%	Feb-88	8.79%
Mar-88	8.63%	Mar-88	8.63%
Apr-88	8.95%	Apr-88	8.67%
May-88	9.23%	May-88	8.94%
Jun-88	9.00%	Jun-88	9.06%
Jul-88	9.14%	Jul-88	9.12%
Aug-88	9.32%	Aug-88	9.15%
Sep-88	9.06%	Sep-88	9.17%
Oct-88	8.89%	Oct-88	9.09%
Nov-88	9.02%	Nov-88	8.99%
Dec-88	9.01%	Dec-88	8.97%
Jan-89	8.93%	Jan-89	8.99%
Feb-89	9.01%	Feb-89	8.98%
Mar-89	9.17%	Mar-89	9.04%
Apr-89	9.03%	Apr-89	9.07%
May-89	8.83%	May-89	9.01%
Jun-89	8.27%	Jun-89	8.71%
Jul-89	8.08%	Jul-89	8.39%
Aug-89	8.12%	Aug-89	8.16%
Sep-89	8.15%	Sep-89	8.12%
Oct-89	8.00%	Oct-89	8.09%
Nov-89	7.90%	Nov-89	8.02%
Dec-89	7.90%	Dec-89	7.93%
Jan-90	8.26%	Jan-90	8.02%
Feb-90	8.50%	Feb-90	8.22%
Mar-90	8.56%	Mar-90	8.44%
Apr-90	8.76%	Apr-90	8.61%
May-90	8.73%	May-90	8.68%
Jun-90	8.46%	Jun-90	8.65%
Jul-90	8.50%	Jul-90	8.56%
Aug-90	8.86%	Aug-90	8.61%
Sep-90	9.03%	Sep-90	8.80%
Oct-90	8.86%	Oct-90	8.92%
Nov-90	8.54%	Nov-90	8.81%
Dec-90	8.24%	Dec-90	8.55%
Jan-91	8.27%	Jan-91	8.35%
Feb-91	8.03%	Feb-91	8.18%
Mar-91	8.29%	Mar-91	8.20%
Apr-91	8.21%	Apr-91	8.18%
May-91	8.27%	May-91	8.26%
Jun-91	8.47%	Jun-91	8.32%
Jul-91	8.45%	Jul-91	8.40%

Aug-91	8.14%	Aug-91	8.35%
Sep-91	7.95%	Sep-91	8.18%
Oct-91	7.93%	Oct-91	8.01%
Nov-91	7.92%	Nov-91	7.93%
Dec-91	7.70%	Dec-91	7.85%
Jan-92	7.58%	Jan-92	7.73%
Feb-92	7.85%	Feb-92	7.71%
Mar-92	7.97%	Mar-92	7.80%
Apr-92	7.96%	Apr-92	7.93%
May-92	7.89%	May-92	7.94%
Jun-92	7.84%	Jun-92	7.90%
Jul-92	7.60%	Jul-92	7.78%
Aug-92	7.39%	Aug-92	7.61%
Sep-92	7.34%	Sep-92	7.44%
Oct-92	7.53%	Oct-92	7.42%
Nov-92	7.61%	Nov-92	7.49%
Dec-92	7.44%	Dec-92	7.53%
Jan-93	7.34%	Jan-93	7.46%
Feb-93	7.09%	Feb-93	7.29%
Mar-93	6.82%	Mar-93	7.08%
Apr-93	6.85%	Apr-93	6.92%
May-93	6.92%	May-93	6.86%
Jun-93	6.81%	Jun-93	6.86%
Jul-93	6.63%	Jul-93	6.79%
Aug-93	6.32%	Aug-93	6.59%
Sep-93	6.00%	Sep-93	6.32%
Oct-93	5.94%	Oct-93	6.09%
Nov-93	6.21%	Nov-93	6.05%
Dec-93	6.25%	Dec-93	6.13%
Jan-94	6.29%	Jan-94	6.25%
Feb-94	6.49%	Feb-94	6.34%
Mar-94	6.91%	Mar-94	6.56%
Apr-94	7.27%	Apr-94	6.89%
May-94	7.41%	May-94	7.20%
Jun-94	7.40%	Jun-94	7.36%
Jul-94	7.58%	Jul-94	7.46%
Aug-94	7.49%	Aug-94	7.49%
Sep-94	7.71%	Sep-94	7.59%
Oct-94	7.94%	Oct-94	7.71%
Nov-94	8.08%	Nov-94	7.91%
Dec-94	7.87%	Dec-94	7.96%
Jan-95	7.85%	Jan-95	7.93%
Feb-95	7.61%	Feb-95	7.78%
Mar-95	7.45%	Mar-95	7.64%
Apr-95	7.36%	Apr-95	7.47%
May-95	6.95%	May-95	7.25%
Jun-95	6.57%	Jun-95	6.96%
Jul-95	6.72%	Jul-95	6.75%
Aug-95	6.86%	Aug-95	6.72%

Sep-95	6.55%	Sep-95	6.71%
Oct-95	6.37%	Oct-95	6.59%
Nov-95	6.26%	Nov-95	6.39%
Dec-95	6.06%	Dec-95	6.23%
Jan-96	6.05%	Jan-96	6.12%
Feb-96	6.24%	Feb-96	6.12%
Mar-96	6.60%	Mar-96	6.30%
Apr-96	6.79%	Apr-96	6.54%
May-96	6.93%	May-96	6.77%
Jun-96	7.06%	Jun-96	6.93%
Jul-96	7.03%	Jul-96	7.01%
Aug-96	6.84%	Aug-96	6.98%
Sep-96	7.03%	Sep-96	6.97%
Oct-96	6.81%	Oct-96	6.89%
Nov-96	6.48%	Nov-96	6.77%
Dec-96	6.55%	Dec-96	6.61%
Jan-97	6.83%	Jan-97	6.62%
Feb-97	6.69%	Feb-97	6.69%
Mar-97	6.93%	Mar-97	6.82%
Apr-97	7.09%	Apr-97	6.90%
May-97	6.94%	May-97	6.99%
Jun-97	6.77%	Jun-97	6.93%
Jul-97	6.51%	Jul-97	6.74%
Aug-97	6.58%	Aug-97	6.62%
Sep-97	6.50%	Sep-97	6.53%
Oct-97	6.33%	Oct-97	6.47%
Nov-97	6.11%	Nov-97	6.31%
Dec-97	5.99%	Dec-97	6.14%
Jan-98	5.81%	Jan-98	5.97%
Feb-98	5.89%	Feb-98	5.90%
Mar-98	5.95%	Mar-98	5.88%
Apr-98	5.92%	Apr-98	5.92%
May-98	5.93%	May-98	5.93%
Jun-98	5.70%	Jun-98	5.85%
Jul-98	5.68%	Jul-98	5.77%
Aug-98	5.54%	Aug-98	5.64%
Sep-98	5.20%	Sep-98	5.47%
Oct-98	5.01%	Oct-98	5.25%
Nov-98	5.25%	Nov-98	5.15%
Dec-98	5.06%	Dec-98	5.11%
Jan-99	5.16%	Jan-99	5.16%
Feb-99	5.37%	Feb-99	5.20%
Mar-99	5.58%	Mar-99	5.37%
Apr-99	5.55%	Apr-99	5.50%
May-99	5.81%	May-99	5.65%
Jun-99	6.04%	Jun-99	5.80%
Jul-99	5.98%	Jul-99	5.94%
Aug-99	6.07%	Aug-99	6.03%
Sep-99	6.07%	Sep-99	6.04%

Oct-99	6.26%	Oct-99	6.13%
Nov-99	6.15%	Nov-99	6.16%
Dec-99	6.35%	Dec-99	6.25%
Jan-00	6.63%	Jan-00	6.38%
Feb-00	6.23%	Feb-00	6.40%
Mar-00	6.05%	Mar-00	6.30%
Apr-00	5.85%	Apr-00	6.04%
May-00	6.15%	May-00	6.02%
Jun-00	5.93%	Jun-00	5.98%
Jul-00	5.85%	Jul-00	5.98%
Aug-00	5.72%	Aug-00	5.83%
Sep-00	5.83%	Sep-00	5.80%
Oct-00	5.80%	Oct-00	5.78%
Nov-00	5.78%	Nov-00	5.80%
Dec-00	5.49%	Dec-00	5.69%
Jan-01	5.54%	Jan-01	5.60%
Feb-01	5.45%	Feb-01	5.49%
Mar-01	5.34%	Mar-01	5.44%
Apr-01	5.65%	Apr-01	5.48%
May-01	5.78%	May-01	5.59%
Jun-01	5.67%	Jun-01	5.70%
Jul-01	5.61%	Jul-01	5.69%
Aug-01	5.48%	Aug-01	5.59%
Sep-01	5.48%	Sep-01	5.52%
Oct-01	5.32%	Oct-01	5.43%
Nov-01	5.12%	Nov-01	5.31%
Dec-01	5.48%	Dec-01	5.31%
Jan-02	5.45%	Jan-02	5.35%
Feb-02	5.45%	Feb-02	5.46%
Mar-02	5.81%	Mar-02	5.57%
Apr-02	5.79%	Apr-02	5.68%
May-02	5.76%	May-02	5.79%
Jun-02	5.68%	Jun-02	5.74%
Jul-02	5.59%	Jul-02	5.68%
Aug-02	5.28%	Aug-02	5.52%
Sep-02	4.96%	Sep-02	5.28%
Oct-02	5.18%	Oct-02	5.14%
Nov-02	5.18%	Nov-02	5.11%
Dec-02	5.13%	Dec-02	5.16%
Jan-03	5.14%	Jan-03	5.15%
Feb-03	5.02%	Feb-03	5.10%
Mar-03	5.03%	Mar-03	5.06%
Apr-03	5.13%	Apr-03	5.06%
May-03	4.76%	May-03	4.97%
Jun-03	4.62%	Jun-03	4.84%
Jul-03	5.13%	Jul-03	4.84%
Aug-03	5.45%	Aug-03	5.07%
Sep-03	5.28%	Sep-03	5.29%
Oct-03	5.30%	Oct-03	5.34%

Nov-03	5.25%	Nov-03	5.28%
Dec-03	5.21%	Dec-03	5.25%
Jan-04	5.13%	Jan-04	5.20%
Feb-04	5.08%	Feb-04	5.14%
Mar-04	4.90%	Mar-04	5.04%
Apr-04	5.28%	Apr-04	5.09%
May-04	5.51%	May-04	5.23%
Jun-04	5.48%	Jun-04	5.42%
Jul-04	5.31%	Jul-04	5.43%
Aug-04	5.15%	Aug-04	5.31%
Sep-04	4.98%	Sep-04	5.15%
Oct-04	4.94%	Oct-04	5.02%
Nov-04	4.95%	Nov-04	4.96%
Dec-04	4.91%	Dec-04	4.93%
Jan-05	4.77%	Jan-05	4.88%
Feb-05	4.56%	Feb-05	4.75%
Mar-05	4.77%	Mar-05	4.70%
Apr-05	4.65%	Apr-05	4.66%
May-05	4.49%	May-05	4.64%
Jun-05	4.28%	Jun-05	4.47%
Jul-05	4.38%	Jul-05	4.38%
Aug-05	4.44%	Aug-05	4.37%
Sep-05	4.45%	Sep-05	4.42%
Oct-05	4.64%	Oct-05	4.51%
Nov-05	4.70%	Nov-05	4.60%
Dec-05	4.62%	Dec-05	4.65%
Jan-06	4.57%	Jan-06	4.63%
Feb-06	4.57%	Feb-06	4.59%
Mar-06	4.73%	Mar-06	4.62%
Apr-06	5.06%	Apr-06	4.79%
May-06	5.20%	May-06	5.00%
Jun-06	5.15%	Jun-06	5.14%
Jul-06	5.13%	Jul-06	5.16%
Aug-06	5.00%	Aug-06	5.09%
Sep-06	4.85%	Sep-06	4.99%
Oct-06	4.85%	Oct-06	4.90%
Nov-06	4.69%	Nov-06	4.80%
Dec-06	4.68%	Dec-06	4.74%
Jan-07	4.85%	Jan-07	4.74%
Feb-07	4.82%	Feb-07	4.78%
Mar-07	4.72%	Mar-07	4.80%
Apr-07	4.87%	Apr-07	4.80%
May-07	4.90%	May-07	4.83%
Jun-07	5.20%	Jun-07	4.99%
Jul-07	5.11%	Jul-07	5.07%
Aug-07	4.93%	Aug-07	5.08%
Sep-07	4.79%	Sep-07	4.94%
Oct-07	4.77%	Oct-07	4.83%
Nov-07	4.52%	Nov-07	4.69%

Dec-07	4.53%	Dec-07	4.61%
Jan-08	4.33%	Jan-08	4.46%
Feb-08	4.52%	Feb-08	4.46%
Mar-08	4.39%	Mar-08	4.41%
Apr-08	4.44%	Apr-08	4.45%
May-08	4.60%	May-08	4.48%
Jun-08	4.69%	Jun-08	4.58%
Jul-08	4.57%	Jul-08	4.62%
Aug-08	4.50%	Aug-08	4.59%
Sep-08	4.27%	Sep-08	4.45%
Oct-08	4.17%	Oct-08	4.31%
Nov-08	4.00%	Nov-08	4.15%
Dec-08	2.87%	Dec-08	3.68%
Jan-09	3.13%	Jan-09	3.33%
Feb-09	3.59%	Feb-09	3.20%
Mar-09	3.64%	Mar-09	3.45%
Apr-09	3.76%	Apr-09	3.66%
May-09	4.23%	May-09	3.88%
Jun-09	4.52%	Jun-09	4.17%
Jul-09	4.41%	Jul-09	4.39%
Aug-09	4.37%	Aug-09	4.43%
Sep-09	4.19%	Sep-09	4.32%
Oct-09	4.19%	Oct-09	4.25%
Nov-09	4.31%	Nov-09	4.23%
Dec-09	4.49%	Dec-09	4.33%
Jan-10	4.60%	Jan-10	4.47%
Feb-10	4.62%	Feb-10	4.57%
Mar-10	4.64%	Mar-10	4.62%
Apr-10	4.69%	Apr-10	4.65%
May-10	4.29%	May-10	4.54%
Jun-10	4.13%	Jun-10	4.37%
Jul-10	3.99%	Jul-10	4.14%
Aug-10	3.80%	Aug-10	3.97%
Sep-10	3.77%	Sep-10	3.85%
Oct-10	3.87%	Oct-10	3.81%
Nov-10	4.19%	Nov-10	3.94%
Dec-10	4.42%	Dec-10	4.16%
Jan-11	4.52%	Jan-11	4.38%
Feb-11	4.65%	Feb-11	4.53%
Mar-11	4.51%	Mar-11	4.56%
Apr-11	4.50%	Apr-11	4.55%
May-11	4.29%	May-11	4.43%
Jun-11	4.23%	Jun-11	4.34%
Jul-11	4.27%	Jul-11	4.26%
Aug-11	3.65%	Aug-11	4.05%
Sep-11	3.18%	Sep-11	3.70%
Oct-11	3.13%	Oct-11	3.32%
Nov-11	3.02%	Nov-11	3.11%
Dec-11	2.98%	Dec-11	3.04%

Jan-12	3.03%	Jan-12	3.01%
Feb-12	3.11%	Feb-12	3.04%
Mar-12	3.28%	Mar-12	3.14%
Apr-12	3.18%	Apr-12	3.19%
May-12	2.93%	May-12	3.13%
Jun-12	2.70%	Jun-12	2.94%
Jul-12	2.59%	Jul-12	2.74%
Aug-12	2.77%	Aug-12	2.69%
Sep-12	2.88%	Sep-12	2.75%
Oct-12	2.90%	Oct-12	2.85%
Nov-12	2.80%	Nov-12	2.86%
Dec-12	2.88%	Dec-12	2.86%
Jan-13	3.08%	Jan-13	2.92%
Feb-13	3.17%	Feb-13	3.04%
Mar-13	3.16%	Mar-13	3.14%
Apr-13	2.93%	Apr-13	3.09%
May-13	3.11%	May-13	3.07%
Jun-13	3.40%	Jun-13	3.15%
Jul-13	3.61%	Jul-13	3.37%
Aug-13	3.76%	Aug-13	3.59%
Sep-13	3.79%	Sep-13	3.72%
Oct-13	3.68%	Oct-13	3.74%
Nov-13	3.80%	Nov-13	3.76%
Dec-13	3.89%	Dec-13	3.79%
Jan-14	3.77%	Jan-14	3.82%
Feb-14	3.66%	Feb-14	3.77%
Mar-14	3.62%	Mar-14	3.68%
Apr-14	3.52%	Apr-14	3.60%
May-14	3.39%	May-14	3.51%
Jun-14	3.42%	Jun-14	3.44%
Jul-14	3.33%	Jul-14	3.38%
Aug-14	3.20%	Aug-14	3.32%
Sep-14	3.26%	Sep-14	3.26%
Oct-14	3.04%	Oct-14	3.17%
Nov-14	3.04%	Nov-14	3.11%
Dec-14	2.83%	Dec-14	2.97%
Jan-15	2.46%	Jan-15	2.78%
Feb-15	2.57%	Feb-15	2.62%
Mar-15	2.63%	Mar-15	2.55%
Apr-15	2.59%	Apr-15	2.60%
May-15	2.96%	May-15	2.73%
Jun-15	3.11%	Jun-15	2.89%
Jul-15	3.07%	Jul-15	3.05%
Aug-15	2.86%	Aug-15	3.01%
Sep-15	2.95%	Sep-15	2.96%
Oct-15	2.89%	Oct-15	2.90%
Nov-15	3.03%	Nov-15	2.96%
Dec-15	2.97%	Dec-15	2.96%
Jan-16	2.86%	Jan-16	2.95%

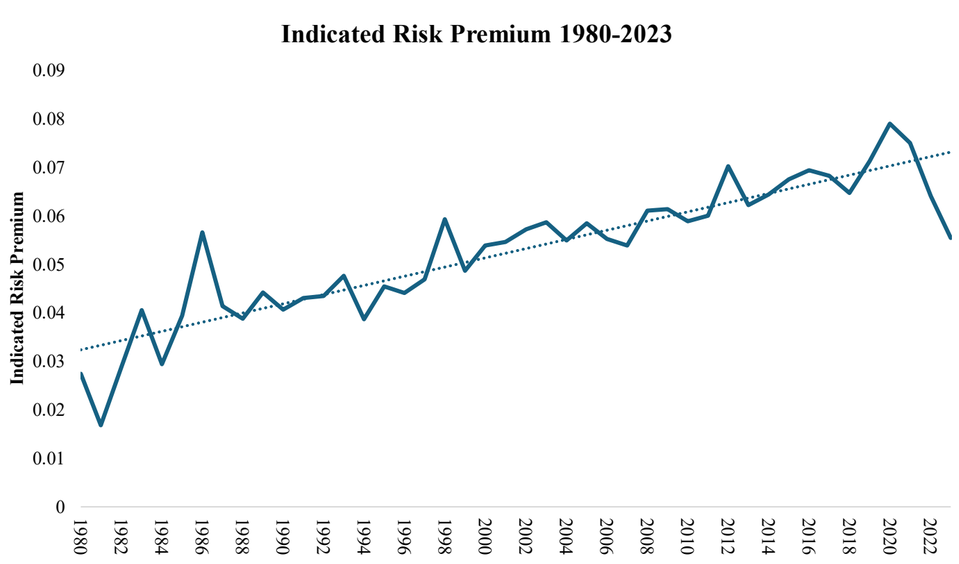
Feb-16	2.62%	Feb-16	2.82%
Mar-16	2.68%	Mar-16	2.72%
Apr-16	2.62%	Apr-16	2.64%
May-16	2.63%	May-16	2.64%
Jun-16	2.45%	Jun-16	2.57%
Jul-16	2.23%	Jul-16	2.44%
Aug-16	2.26%	Aug-16	2.31%
Sep-16	2.35%	Sep-16	2.28%
Oct-16	2.50%	Oct-16	2.37%
Nov-16	2.86%	Nov-16	2.57%
Dec-16	3.11%	Dec-16	2.82%
Jan-17	3.02%	Jan-17	3.00%
Feb-17	3.03%	Feb-17	3.05%
Mar-17	3.08%	Mar-17	3.04%
Apr-17	2.94%	Apr-17	3.02%
May-17	2.96%	May-17	2.99%
Jun-17	2.80%	Jun-17	2.90%
Jul-17	2.88%	Jul-17	2.88%
Aug-17	2.80%	Aug-17	2.83%
Sep-17	2.78%	Sep-17	2.82%
Oct-17	2.88%	Oct-17	2.82%
Nov-17	2.80%	Nov-17	2.82%
Dec-17	2.77%	Dec-17	2.82%
Jan-18	2.88%	Jan-18	2.82%
Feb-18	3.13%	Feb-18	2.93%
Mar-18	3.09%	Mar-18	3.03%
Apr-18	3.07%	Apr-18	3.10%
May-18	3.13%	May-18	3.10%
Jun-18	3.05%	Jun-18	3.08%
Jul-18	3.01%	Jul-18	3.06%
Aug-18	3.04%	Aug-18	3.03%
Sep-18	3.15%	Sep-18	3.07%
Oct-18	3.34%	Oct-18	3.18%
Nov-18	3.36%	Nov-18	3.28%
Dec-18	3.10%	Dec-18	3.27%
Jan-19	3.04%	Jan-19	3.17%
Feb-19	3.02%	Feb-19	3.05%
Mar-19	2.98%	Mar-19	3.01%
Apr-19	2.94%	Apr-19	2.98%
May-19	2.82%	May-19	2.91%
Jun-19	2.57%	Jun-19	2.78%
Jul-19	2.57%	Jul-19	2.65%
Aug-19	2.12%	Aug-19	2.42%
Sep-19	2.16%	Sep-19	2.28%
Oct-19	2.19%	Oct-19	2.16%
Nov-19	2.28%	Nov-19	2.21%
Dec-19	2.30%	Dec-19	2.26%
Jan-20	2.22%	Jan-20	2.27%
Feb-20	1.97%	Feb-20	2.16%

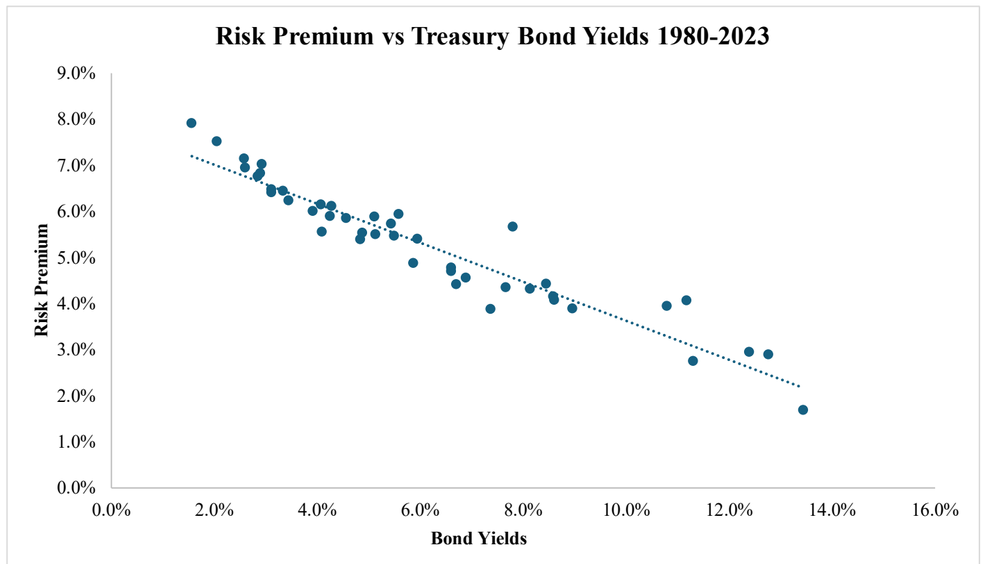
Mar-20	1.46%	Mar-20	1.88%
Apr-20	1.27%	Apr-20	1.57%
May-20	1.38%	May-20	1.37%
Jun-20	1.49%	Jun-20	1.38%
Jul-20	1.31%	Jul-20	1.39%
Aug-20	1.36%	Aug-20	1.39%
Sep-20	1.42%	Sep-20	1.36%
Oct-20	1.57%	Oct-20	1.45%
Nov-20	1.62%	Nov-20	1.54%
Dec-20	1.67%	Dec-20	1.62%
Jan-21	1.82%	Jan-21	1.70%
Feb-21	2.04%	Feb-21	1.84%
Mar-21	2.34%	Mar-21	2.07%
Apr-21	2.30%	Apr-21	2.23%
May-21	2.32%	May-21	2.32%
Jun-21	2.16%	Jun-21	2.26%
Jul-21	1.94%	Jul-21	2.14%
Aug-21	1.92%	Aug-21	2.01%
Sep-21	1.94%	Sep-21	1.93%
Oct-21	2.06%	Oct-21	1.97%
Nov-21	1.94%	Nov-21	1.98%
Dec-21	1.85%	Dec-21	1.95%
Jan-22	2.10%	Jan-22	1.96%
Feb-22	2.25%	Feb-22	2.07%
Mar-22	2.41%	Mar-22	2.25%
Apr-22	2.81%	Apr-22	2.49%
May-22	3.07%	May-22	2.76%
Jun-22	3.25%	Jun-22	3.04%
Jul-22	3.10%	Jul-22	3.14%
Aug-22	3.13%	Aug-22	3.16%
Sep-22	3.56%	Sep-22	3.26%
Oct-22	4.04%	Oct-22	3.58%
Nov-22	4.00%	Nov-22	3.87%
Dec-22	3.66%	Dec-22	3.90%
Jan-23	3.66%	Jan-23	3.77%
Feb-23	3.80%	Feb-23	3.71%
Mar-23	3.77%	Mar-23	3.74%
Apr-23	3.68%	Apr-23	3.75%
May-23	3.86%	May-23	3.77%
Jun-23	3.87%	Jun-23	3.80%
Jul-23	3.96%	Jul-23	3.90%
Aug-23	4.28%	Aug-23	4.04%
Sep-23	4.47%	Sep-23	4.24%
Oct-23	4.95%	Oct-23	4.57%
Nov-23	4.66%	Nov-23	4.69%
Dec-23	4.14%	Dec-23	4.58%
Jan-24	4.26%	Jan-24	4.35%
Feb-24	4.38%	Feb-24	4.26%
Mar-24	4.36%	Mar-24	4.33%

Apr-24	4.66%	Apr-24	4.47%
May-24	4.62%	May-24	4.55%
Jun-24	4.44%	Jun-24	4.57%
Jul-24	4.46%	Jul-24	4.51%
Aug-24	4.15%	Aug-24	4.35%
Sep-24	4.04%	Sep-24	4.22%
Oct-24	4.38%	Oct-24	4.19%
Nov-24	4.54%	Nov-24	4.32%
Dec-24	4.58%	Dec-24	4.50%
Jan-25	4.85%	Jan-25	4.66%
Feb-25	4.68%	Feb-25	4.70%
Mar-25	4.60%	Mar-25	4.71%
Apr-25	4.71%	Apr-25	4.66%
May-25		May-25	

source: Federal Reserve of St. Louis (FRED)

GR-2025-0107
AWW-R-15
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Historical Risk Premium Implied ROE





Risk free rate:	**4.91%**		
Regression Equation:	-2.08%	0.078602	5.78%
Suggested Risk Premium:	5.78%		
Implied Return on Equity	**10.69%**		
market risk premium from 1980-2023:	6.06%		

GR-2025-0107
AWW-R-16
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Indicated Risk Premium

	A	B	C
	30-Year U.S. Treasury	Authorized Gas LDC ROEs	Indicated Risk Premium
1980	11.30%	14.05%	2.75%
1981	13.44%	15.13%	1.68%
1982	12.76%	15.65%	2.89%
1983	11.18%	15.24%	4.06%
1984	12.39%	15.33%	2.94%
1985	10.79%	14.73%	3.94%
1986	7.80%	13.46%	5.66%
1987	8.58%	12.72%	4.14%
1988	8.96%	12.84%	3.88%
1989	8.45%	12.87%	4.43%
1990	8.61%	12.68%	4.07%
1991	8.14%	12.45%	4.31%
1992	7.67%	12.02%	4.35%
1993	6.60%	11.37%	4.77%
1994	7.37%	11.24%	3.87%
1995	6.88%	11.44%	4.55%
1996	6.70%	11.12%	4.42%
1997	6.61%	11.30%	4.69%
1998	5.58%	11.51%	5.93%
1999	5.87%	10.74%	4.88%
2000	5.94%	11.34%	5.39%
2001	5.49%	10.96%	5.47%
2002	5.44%	11.17%	5.73%
2003	5.11%	10.99%	5.88%
2004	5.14%	10.63%	5.50%
2005	4.56%	10.41%	5.85%
2006	4.87%	10.40%	5.53%
2007	4.83%	10.22%	5.39%
2008	4.28%	10.39%	6.11%
2009	4.07%	10.22%	6.15%
2010	4.25%	10.15%	5.90%
2011	3.91%	9.92%	6.01%
2012	2.92%	9.94%	7.02%
2013	3.45%	9.68%	6.23%
2014	3.34%	9.78%	6.44%
2015	2.84%	9.60%	6.76%
2016	2.60%	9.54%	6.94%
2017	2.90%	9.72%	6.83%
2018	3.11%	9.59%	6.48%
2019	2.58%	9.72%	7.14%
2020	1.56%	9.47%	7.91%
2021	2.05%	9.56%	7.51%
2022	3.12%	9.53%	6.41%
2023	4.09%	9.64%	5.55%
2024	4.41%	9.71%	5.30%
Average	6.06%	11.34%	5.28%

A	Federal Reserve of St. Louis (FRED)
B	RRA / Capital IQ
C	[B] - [C]

GR-2025-0107
AWW-R-17
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
RRA Regression Output

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.953707377
R Square	0.909557761
Adjusted R Square	0.907404375
Standard Error	0.004143944
Observations	44

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.007253307	0.007253307	422.3847906	1.55288E-23
Residual	42	0.000721235	1.71723E-05		
Total	43	0.007974543			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.078601722	0.001402092	56.06029825	4.11258E-41	0.075772185	0.081431259	0.075772185	0.081431259
X Variable 1	-0.423350209	0.020598977	-20.55200211	1.55288E-23	-0.464920627	-0.381779792	-0.464920627	-0.381779792

GR-2025-0107
AWW-R-18
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Annualized Cost of Debt as of May 2025

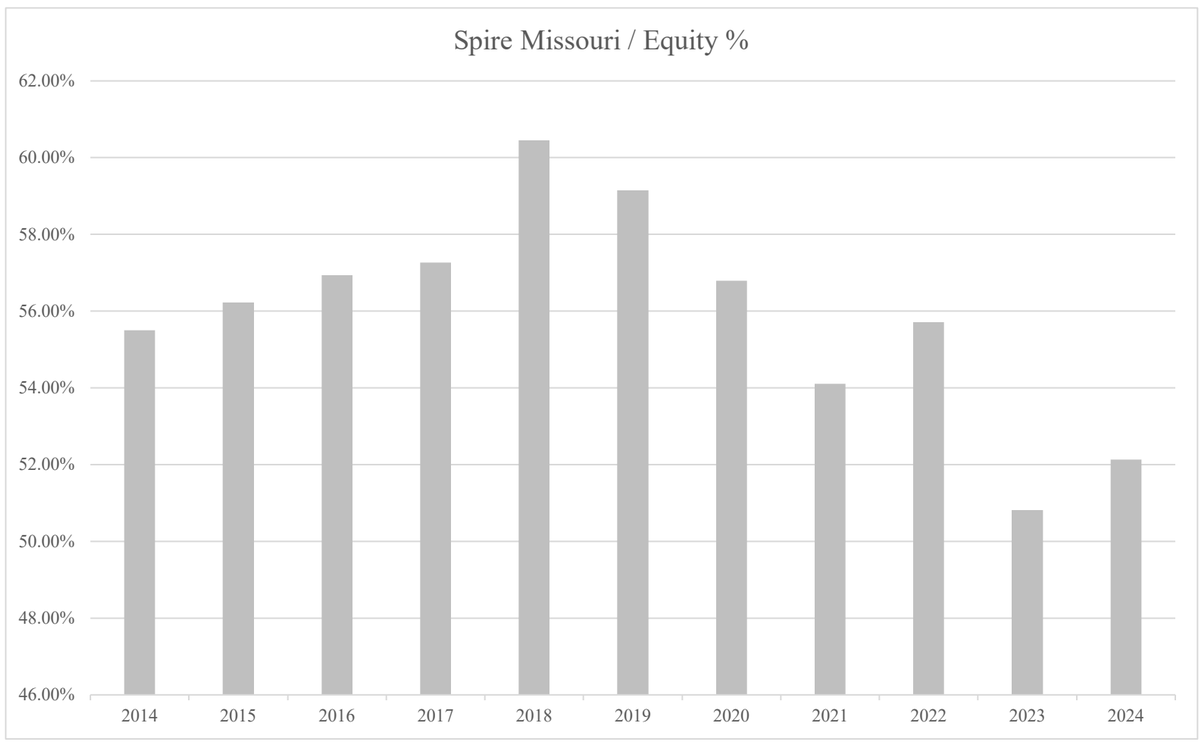
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
						UNAMORTIZED BALANCES					ANNUALIZED AMORTIZATION				
SERIES	COUPON	ISSUED	MATURITY	PRINCIPAL	OUTSTANDING	DISC/(PREM) & ISSUANCE EXP	INT HEDGE (GAIN)/LOSS EXP	LOSS	CARRYING VALUE	COUPON INTEREST	DISC/(PREM) & ISSUANCE EXP	INT HEDGE (GAIN)/LOSS EXP	LOSS	ANNUALIZED EXP	EMBEDDED COST
First Mortgage Bonds	5.150%	13-Aug-24	15-Aug-34	$320,000,000	$320,000,000	3,764,299	(17,819,199.15)			$16,480,000	406,952	(2,007,797)			
First Mortgage Bonds	3.400%	15-Mar-13	15-Mar-28	$45,000,000	$45,000,000	38,303				$1,530,000	12,947				
First Mortgage Bonds	7.000%	01-Jun-19	01-Jun-29	$25,000,000	$19,285,000	26,050				$1,349,950	6,252				
First Mortgage Bonds	2.840%	12-Nov-19	15-Nov-29	$275,000,000	$275,000,000	719,063	2,530,300.10			$7,810,000	155,473	613,406			
First Mortgage Bonds	7.900%	21-Sep-00	15-Sep-30	$30,000,000	$30,000,000	71,816				$2,370,000	13,157				
First Mortgage Bonds	3.680%	15-Sep-17	15-Sep-32	$50,000,000	$50,000,000	165,616				$1,840,000	22,205	(82,415)			
First Mortgage Bonds	6.000%	28-Apr-04	01-May-34	$100,000,000	$99,245,000	485,962				$5,954,700	53,500				
First Mortgage Bonds	6.150%	09-Jun-06	01-Jun-36	$55,000,000	$54,500,000	268,787				$3,351,750	24,070				
First Mortgage Bonds	4.625%	13-Aug-13	15-Aug-43	$100,000,000	$99,945,000	1,084,256	(6,252,380.63)			$4,622,456	59,007	(349,784)			
First Mortgage Bonds	4.230%	15-Sep-17	15-Sep-47	$70,000,000	$70,000,000	303,316	(2,902,731.95)			$2,961,000	13,506	(52,274)			
First Mortgage Bonds	3.300%	20-May-21	01-Jun-51	$305,000,000	$305,000,000	3,920,570	9,988,295.24			$10,065,000	150,116	372,283			
First Mortgage Bonds	4.380%	15-Sep-17	15-Sep-57	$50,000,000	$50,000,000	205,248				$2,190,000	6,323	(53,802)			
First Mortgage Bonds	4.800%	15-Feb-23	15-Feb-33	$400,000,000	$400,000,000	3,127,867	(12,910,807.79)			$19,200,000	397,190	(1,750,618)			
First Mortgage Bonds	*4.880%*	*01-May-25*	*15-Sep-30*	*$90,000,000*	*$90,000,000*	*600,000*				*$4,392,000*	*120,000*				
First Mortgage Bonds	*5.120%*	*01-May-25*	*15-Sep-32*	*$60,000,000*	*$60,000,000*	*400,000*				*$3,072,000*	*57,143*				
TOTAL LONG-TERM DEBT				###########	###########	15,181,152	(27,366,524)	6,227,331.78	$1,973,933,041	$87,188,856	1,497,842	(3,311,001)	281,456	$85,657,153	**4.339%**

1,946,566,516 Adjusted Carrying Value

Carrying Value = Face Amount Outstanding less Unamortized Discount & Issuance Expenses, Int Hedge Expenses, and Loss on Reacquired Debt
J = F - G - H - I
Annualized Expense = Annual Coupon Interest plus Annual Amortization of Discount & Issuance Expenses, Int Hedge Expenses, and Loss on Reacquired Debt
O = K + L + M + N
Embedded Cost = Annualized Expense divided by Carrying Value
P = O / J

GR-2025-0107
AWW-R-19
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Historical Equity Layer

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Equity %	55.50%	56.22%	56.93%	57.26%	60.45%	59.15%	56.79%	54.11%	55.71%	50.82%	52.13%



GR-2025-0107
AWW-R-20
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
ROE Plot

	Proxy Groups	Spire Inc.	-50bps	+50bps
Base DCF Value Line	10.81%	9.02%	10.31%	11.31%
Base DCF Consensus	11.79%	13.78%	11.29%	12.29%
Expanded DCF Value Line	9.93%	9.02%	9.43%	10.43%
Expanded DCF Consensus	10.86%	13.78%	10.36%	11.36%
Base CAPM	10.95%	11.21%	10.45%	11.45%
Expanded CAPM	10.83%	11.21%	10.33%	11.33%
Base ECAPM	11.19%	10.86%	10.69%	11.69%
Expanded ECAPM	11.10%	10.86%	10.60%	11.60%
Historical Risk Premium	10.69%	NA	10.19%	11.19%
Total Average	10.91%	11.22%	10.41%	11.41%
2024 RRA Authorized ROE Gas Average	9.71%		9.21%	10.21%
2024 Year-to-Date Gas Average - Litigated	9.89%		9.39%	10.39%

GR-2025-0107
AWW-R-21
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Rate of Return

EQUITY	55%	10.50%	5.775%
DEBT	45%	4.339%	1.953%
		RATE OF RETURN	7.728%

GR-2025-0107
AWW-R-22
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Derivation of FFO to Debt
Spire Missouri Cost of Capital Position vs. OPC vs. Staff vs. MIEC

FFO to Debt = (ROE x Equity % + Depreciation %) / (1 - Equity %)

	Spire Missouri	OPC	Staff	MIEC
Return on Average Equity:	10.50%	9.50%	9.63%	9.45%
Equity / Total Capitalization:	55.0%	42%	52%	52%
Depreciation Rate:	3.35%	3.35%	3.35%	3.35%
FFO to Debt	20.28%	12.66%	17.41%	17.22%

GR-2025-0107
AWW-R-23
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Rate of Return with Each Cost of Equity Analysis

Recommended

EQUITY	55%	10.50%	5.775%
DEBT	45%	4.339%	1.953%
		RATE OF RETURN	7.728%

Expanded DCF Consensus

EQUITY	55%	10.86%	5.975%
DEBT	45%	4.339%	1.953%
		RATE OF RETURN	7.928%

Expanded CAPM

EQUITY	55%	10.83%	5.958%
DEBT	45%	4.339%	1.953%
		RATE OF RETURN	7.911%

Historical Risk Premium

EQUITY	55%	10.69%	5.880%
DEBT	45%	4.339%	1.953%
		RATE OF RETURN	7.833%

Larger CAPM

EQUITY	53%	9.75%	5.168%
DEBT	47%	4.339%	2.040%
		RATE OF RETURN	7.207%

GR-2025-0107
AWW-R-24
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Updated Staff DCF

Company	Ticker	Annualized Dividend	Stock Price	Current Dividend Yield	Expected Dividend Yield	CBO LT GDP	Value Line LT Growth	"Sustainable" Growth Rate	Value Line Cost of Equity
Atmos Energy Corporation	ATO	$3.48	$155.97	2.23%	2.39%	3.90%	7.00%	6.38%	8.77%
Northwest Natural Holding Company	NWN	1.96	40.73	4.81%	5.12%	3.90%	6.50%	5.98%	11.10%
ONE Gas, Inc.	OGS	2.68	74.15	3.61%	3.78%	3.90%	4.50%	4.38%	8.16%
Southwest Gas Holdings, Inc.	SWX	2.48	69.18	3.58%	3.94%	3.90%	10.00%	8.78%	12.72%
Spire, Inc.	SR	3.14	72.59	4.33%	4.52%	3.90%	4.50%	4.38%	8.90%
Average								5.98%	**9.93%**

Corrections:
Stock Price
Current Dividend Yield
Expected Dividend Yield
Updated Value Line Growth

GR-2025-0107
AWW-R-25
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
ROE Regression - Comparison of R Squares

	Independent Variables	Dependent Variables
10-Year (2014-2025) vs 30-Year UST	0.01773	0.84631
10-Year (2014-2025) vs 'BBB' Bond	0.01226	0.83848
45-Year (1980-2025) vs 30-Year UST	0.89381	0.81648
45-Year (1980-2025) vs 'BBB' Bond	0.90129	0.81648

Note: Authorized ROEs regressed vs 30-Year U.S. Treasury yields or 'BBB' Moody's bond yields at midpoint of each specific rate proceeding. No time intervals were created.

Independent variables: Regression compares the authorized ROE directly against treasury or bond yields.
Depedendent variables: Regression compares the difference between the authorized ROE and the treasury or bond yields ("premium") with the same treasury or bond yield.

GR-2025-0107
AWW-R-26
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Updated OPC DCF

Company	Ticker	Annualized Dividend	Stock Price	Forward Dividend Yield	Consensus LT Div Growth	CONSTANT GROWTH	Consensus Cost of Equity	Actual Consensus LT Growth
Atmos Energy Corporation	ATO	$3.48	$155.97	2.23%	2.36%	**5.67%**	8.03%	6.87%
New Jersey Resources Corporation	NJR	1.80	46.24	3.89%	4.11%	**5.67%**	9.78%	5.32%
NiSource Inc.	NI	1.12	38.69	2.89%	3.06%	**5.67%**	8.73%	7.43%
Northwest Natural Holding Company	NWN	1.96	40.73	4.81%	5.09%	**5.67%**	10.76%	9.01%
ONE Gas, Inc.	OGS	2.68	74.15	3.61%	3.82%	**5.67%**	9.49%	6.32%
Southwest Gas Holdings, Inc.	SWX	2.48	69.18	3.58%	3.79%	**5.67%**	9.46%	16.56%
Spire, Inc.	SR	3.14	71.94	4.36%	4.61%	**5.67%**	10.28%	9.06%
Average							9.50%	

GR-2025-0107
AWW-R-27
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Original and Updated OPC CAPM

		ORIGINAL																
		20Y UST	Beta	MRP/Low	MRP/High	COE/Low	COE/High	Spot	Low	High	VL Beta	Kroll	Old Spot	New Spot	Old Beta+Spot Updated MRP	Old Spot+MRP Updated Beta	Updated ALL	Historical MRP	Old Spot Updated Beta+MRP
Atmos Energy Corporation	ATO	4.76%	0.70	5.00%	6.00%	8.26%	8.96%	4.71%	8.21%	8.91%	0.80	5.50%	4.63%	5.04%	8.48%	8.63%	9.44%	7.00%	10.31%
New Jersey Resources Corporation	NJR	4.76%	0.75	5.00%	6.00%	8.51%	9.26%	4.71%	8.46%	9.21%	0.90	5.50%	4.63%	5.04%	8.76%	9.13%	9.99%	7.00%	11.01%
NiSource Inc.	NI	4.76%	0.72	5.00%	6.00%	8.36%	9.08%	4.71%	8.31%	9.03%	0.90	5.50%	4.63%	5.04%	8.59%	9.13%	9.99%	7.00%	11.01%
Northwest Natural Holding Company	NWN	4.76%	0.66	5.00%	6.00%	8.06%	8.72%	4.71%	8.01%	8.67%	0.80	5.50%	4.63%	5.04%	8.26%	8.63%	9.44%	7.00%	10.31%
ONE Gas, Inc.	OGS	4.76%	0.67	5.00%	6.00%	8.11%	8.78%	4.71%	8.06%	8.73%	0.80	5.50%	4.63%	5.04%	8.32%	8.63%	9.44%	7.00%	10.31%
Southwest Gas Holdings, Inc.	SWX	4.76%	0.74	5.00%	6.00%	8.46%	9.20%	4.71%	8.41%	9.15%	0.80	5.50%	4.63%	5.04%	8.70%	8.63%	9.44%	7.00%	10.31%
Average		4.76%	0.71	5.00%	6.00%	8.29%	9.00%	4.71%	8.24%	8.95%	0.83	5.50%	4.63%	5.04%	8.52%	8.80%	9.62%	7.00%	10.54%
Spire, Inc.		4.76%	0.71	5.00%	6.00%	8.31%	9.02%	4.71%	8.26%	8.97%	0.80	5.50%	4.63%	5.04%	8.54%	8.63%	9.44%	7.00%	10.31%
Average including Spire Inc.			0.71	5.00%	6.00%	8.30%	9.00%	4.71%	8.25%	8.95%	0.83	5.50%	4.63%	5.04%	8.52%	8.77%	9.60%	7.00%	10.51%

GR-2025-0107
AWW-R-28
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Original and Updated OPC Betas

		OPC	Value Line	
Atmos Energy Corporation	ATO	0.70	0.80	-14%
New Jersey Resources Corporation	NJR	0.75	0.90	-20%
NiSource Inc.	NI	0.72	0.90	-25%
Northwest Natural Holding Company	NWN	0.66	0.80	-21%
ONE Gas, Inc.	OGS	0.67	0.80	-19%
Southwest Gas Holdings, Inc.	SWX	0.74	0.80	-8%
Average		0.71	0.83	-18%
Median		0.71	0.80	-13%
Spire, Inc.		0.71	0.8	-13%

GR-2025-0107
AWW-R-29
SPIRE MISSOURI
Rebuttal Testimony / 5.30.25
Updated MIEC CAPM

Beta	Risk-Free Rate	Beta	Kroll MRP	COE Estimate
Value Line	5.03%	0.91	5.50%	10.04%
Historical Value Line	5.03%	0.77	5.50%	9.27%
S&P	5.03%	0.70	5.50%	8.88%
3-Year Value Line	5.03%	0.80	5.50%	9.43%