Exhibit No:	**___**
Issue:	**ROE**
Witness:	**Dylan W. D'Ascendis**
Type of Exhibit:	**Rebuttal Testimony**
Sponsoring Party:	**Spire Missouri Inc.**
Case No.:	**GR-2021-0108**
Testimony Date:	**June 17, 2021**

SPIRE MISSOURI INC.

CASE NO. GR-2021-0108

REBUTTAL TESTIMONY

OF

DYLAN W. D'ASCENDIS

JUNE 17, 2021

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REBUTTAL TESTIMONY OF DYLAN W. D'ASCENDIS

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME, AFFILIATION, AND BUSINESS ADDRESS.

A. My name is Dylan W. D'Ascendis. I am employed by ScottMadden, Inc. as a Partner. My business address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ 08054.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?

A. I am submitting this rebuttal testimony (referred to throughout as my "Rebuttal Testimony") before the Missouri Public Service Commission ("Commission") on behalf of Spire Missouri Inc. ("Spire" or the "Company").

Q. DID YOU FILE DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes, I did.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my Rebuttal Testimony is three-fold. First, I update the analyses in my Direct Testimony to reflect current data. Second, I address capital market conditions and their effect on the Company's investor-required return. Third, I respond to the Commission's Staff Report – Cost of Service ("Staff Report"), as supported by Dr. Seoung Joun Won, and to the Direct Testimony of Mr. David Murray, who testifies on behalf of the Office of the Public Counsel ("OPC") (collectively, the "Opposing Witnesses"), as they relate to the Company's return on common equity ("ROE") on its Missouri jurisdictional rate base.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A. Based on my updated ROE analyses as of May 28, 2021, my range of reasonable ROEs is between 9.44% and 12.53% (unadjusted) and 9.66% and 12.75% (adjusted). Given my

updated ranges applicable to the Utility Proxy Group and Spire, I maintain my specific ROE recommendation of 9.95%. In view of current markets and the updated results of my ROE models, ROEs of 9.37% (Staff Report) and 9.25% (OPC), are insufficient at this time.

Q. HAVE YOU PREPARED SCHEDULES IN SUPPORT OF YOUR RECOMMENDATION?

A. Yes. I have prepared DWD Schedule R-1 through DWD Schedule R-8, which were prepared by me or under my direction.

Q. HOW IS THE REMAINDER OF YOUR REBUTTAL TESTIMONY ORGANIZED?

A. The remainder of my Rebuttal Testimony contains the following:

- My updated analyses;
- My response to the Opposing Witnesses' interpretation of current capital market conditions;
- My response to Dr. Won's analysis;
- My response to Mr. Murray's analysis; and
- My conclusions and recommendations.

Q. PLEASE SUMMARIZE THE KEY ISSUES AND RECOMMENDATIONS OFFERED BY OPPOSING WITNESSES THAT YOU ADDRESS IN YOUR REBUTTAL TESTIMONY.

A. My Rebuttal Testimony reviews and responds to the Opposing Witnesses' interpretations of current capital market conditions and their conclusions from those interpretations. I then review and respond to the Opposing Witnesses' analyses concerning the ROE applicable to the Company. Specific to Dr. Won's analyses, I have concerns regarding the following:

- His flawed assumption that the market-data derived ROE is not equal to the authorized ROE in this proceeding;
- His determination of the appropriate ROE based on the relative change in model results from the Company's previous case;
- His misapplication of the Discounted Cash Flow ("DCF") model;
- His misapplication of the Capital Asset Pricing Model ("CAPM");
- The applicability of the "rule of thumb" risk premium model ("RPM");
- His comparison to recent authorized ROEs nationwide; and
- His failure to reflect Company-specific factors (size, credit risk, and flotation costs) in his recommended common equity cost rate.

Mr. Murray's analyses fall short in the following respects:

- His determination of the appropriate ROE for Spire in this proceeding;
- The applicability of an electric utility proxy group for use in an ROE study for a natural gas distribution utility;
- His misapplication of the DCF;
- His misapplication of the CAPM;
- His misapplication of the Bond Yield Plus Risk Premium;
- His failure to reflect Company-specific factors (size, credit risk, and flotation costs) in his recommended common equity cost rate; and
- His position that the ROE needs to be adjusted should the Commission approve the Company's requested capital structure.

II. UPDATED ANALYSIS

Q. HAVE YOU UPDATED YOUR COST OF COMMON EQUITY ANALYSES FOR YOUR REBUTTAL TESTIMONY?

A. Yes, I have. Due to the passage of time since my Direct Testimony analysis (data as of September 30, 2020), I have updated my analyses using data as of May 28, 2021.

Q. HAVE YOU UPDATED YOUR UTILITY PROXY GROUP SELECTION CRITERIA TO REFLECT 2020 YEAR-END DATA?

A. Yes, I have. Using fiscal year 2020 data, NiSource Inc. fails the criteria of having at least 60% of net operating income and assets attributable to natural gas distribution operations. As such, I have eliminated them from my updated Utility Proxy Group.

Q. HAVE YOU APPLIED ANY OF YOUR ROE MODELS DIFFERENTLY IN YOUR UPDATED ANALYSES?

A. No, I have not.

Q. WHAT ARE THE RESULTS OF YOUR UPDATED ANALYSES?

A. Using data available as of May 28, 2021, my updated results are presented in page 2 of DWD Schedule R-1 and in Table 1, below.

Table 1: Updated Cost of Common Equity Results

	Utility Proxy Group
Discounted Cash Flow Model	9.44%
Risk Premium Model	10.79%
Capital Asset Pricing Model	11.89%
Market Models Applied to Comparable Risk, Non-Price Regulated Companies	12.53%
Indicated Range of Common Equity Cost Rates before Adjustment	9.44%-12.53%
Business Risk Adjustment	0.10%
Credit Risk Adjustment	-0.10%
Flotation Cost Adjustment	0.22%
Recommended Range of Common Equity Cost Rates after Adjustment	9.66%-12.75%
Recommended Cost of Common Equity	9.95%

In view of the unadjusted and adjusted ranges of ROE, I maintain my original ROE recommendation of 9.95%. Upon reviewing my updated results, two items became apparent: 1) the indicated results of the majority of my ROE models have increased from my analyses presented in my Direct Testimony, which is a directional indicator that the investor-required return has increased since my Direct Testimony; and 2) my recommended ROE of 9.95% is a conservative measure of the Company's ROE at this time.

III. CAPITAL MARKET CONDITIONS

Q. PLEASE SUMMARIZE THE OPPOSING WITNESSES' INTERPRETATIONS OF THE CURRENT CAPITAL MARKET ENVIRONMENT.

A. Dr. Won claims that capital markets are less risky now compared to those during the Company's last rate case (Case Nos. GR-2017-0215 and GR-2017-0216).[1] As justification for his conclusion, Dr. Won points out that interest rates are lower now than during the Company's last rate case and states that interest rates have strong relationships to both Gross Domestic Product ("GDP") and inflation. Because Dr. Won believes GDP growth is projected to be low, he assumes that interest rates will also be low, leading to an extended low ROE environment for utilities.[2]

Dr. Won also discusses utility price-to-earnings ("P/E") ratios, which are higher during the pendency of this case compared to last case. Dr. Won explains that the higher the P/E ratio, the lower the expected return.[3]

Regarding actual current capital market conditions, Dr. Won notes that current capital market conditions are characterized by increasing interest rates, improving unemployment rates, and rebounding inflation.[4] Dr. Won also cites Federal Reserve ("Fed") Chairman Jerome Powell's statements on September 17, 2020 which reflect no significant change to the Fed Funds Rate until it sees evidence of a tightening labor market and inflation reaches 2.00%.[5]

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1 Staff Report, at 5.
2 *Ibid.*, at 10.
3 *Ibid.*, at 12.
4 *Ibid.*, at 8-9.
5 *Ibid.*, at 9.

Mr. Murray states that market data has provided inconsistent signals regarding the utility cost of capital, as utility bond yields are at historic lows, which indicates a lower cost of capital, but utility betas are rising, which indicates a higher cost of capital.[6] Mr. Murray attributes the increase in utility betas to the common theory that during significant market corrections, all securities, including utilities, move in tandem with the market.[7]

The Opposing Witnesses share the view that utility stock investments are akin to bond investments, and as such, are defensive investments with low risk.[8]

Q. DO YOU AGREE WITH THE OPPOSING WITNESSES' OBSERVATIONS AND CONCLUSIONS REGARDING CURRENT CAPITAL MARKET CONDITIONS AND THE EFFECT OF THOSE CONDITONS ON SPIRE'S ROE?

A. Not entirely. While I agree with most of the Opposing Witnesses' observations, I do not agree with their conclusions. First, I do not agree that current market conditions dictate a prolonged low interest rate environment. Second, I do not agree that elevated P/E ratios necessarily mean lower ROEs. Finally, I do not agree that utility stock investments are akin to bond investments.

Q. PLEASE PROVIDE YOUR INTERPRETATION OF THE CURRENT INTEREST RATE ENVIRONMENT.

A. Again, I generally agree with the Opposing Witnesses regarding their observation that interest rates have been falling steadily for the last several years. Where we diverge is that the extreme dislocation in interest rates during 2020 was due to a volatility-driven "flight to safety" as opposed to a systematic lowering of capital costs.

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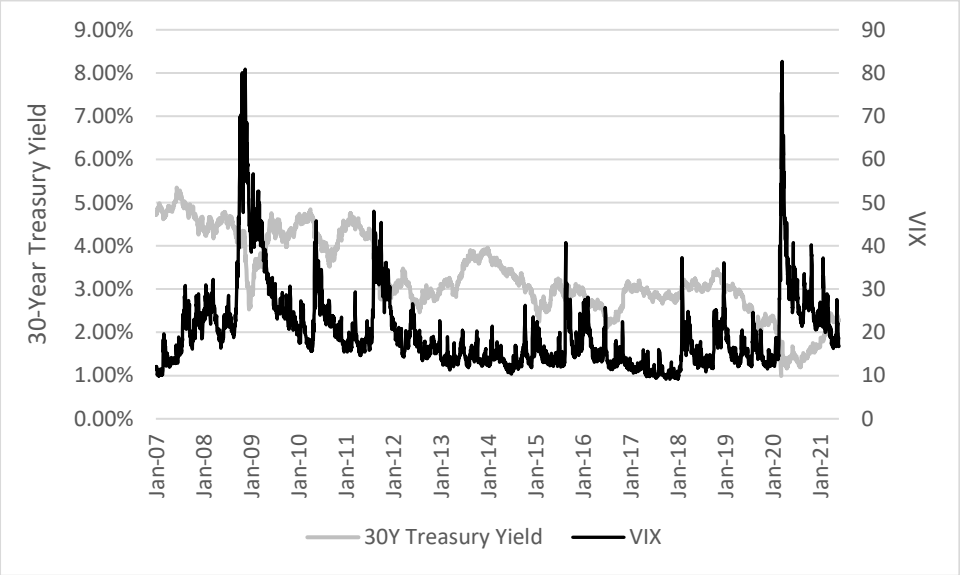
6 Murray Direct Testimony, at 10.
7 *Ibid.*, at 35-36.
8 Staff Report, at 11, 19; Murray Direct Testimony, at 9, 38.

Significant and abrupt increases in volatility tend to be associated with significant and abrupt declines in Treasury yields. That relationship makes intuitive sense; as volatility (*i.e.*, risk) increases, investors seek to avoid a capital loss by investing in Treasury securities in a "flight to safety". Because Treasury yields are inversely related to Treasury bond prices, as investors bid up the prices of bonds, they bid down the yields. As Chart 1 below demonstrates, decreases in the 30-year Treasury yield are coincident with significant increases in the Chicago Board Options Exchange ("CBOE") Volatility Index ("VIX"), a visible, widely reported, and popular measure of the stock market's expectation of volatility.[9]

Chart 1: 30-Year Treasury Yields vs. VIX[10]



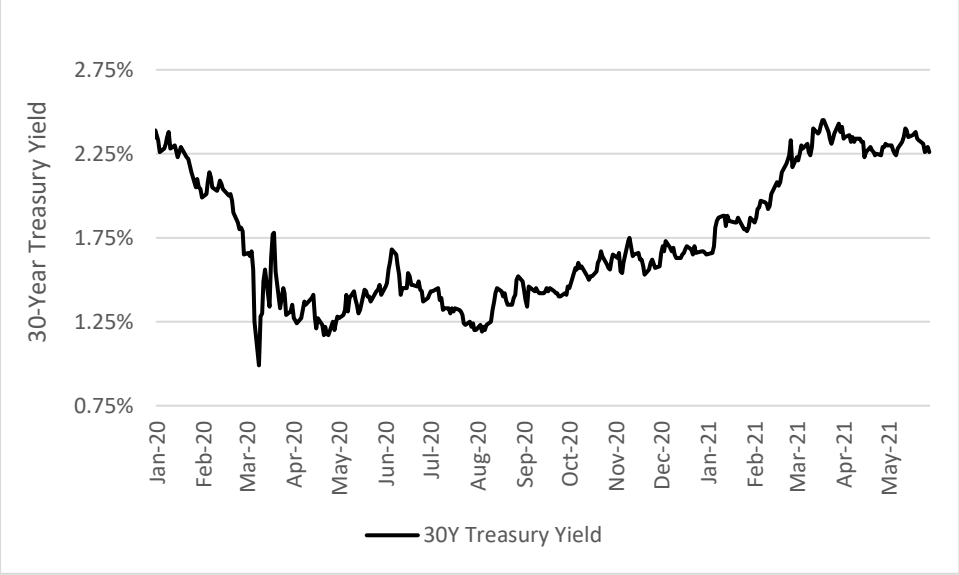
9 The VIX is a calculation designed to produce a measure of constant, 30-day expected volatility of the U.S. stock market, derived from real-time, mid-quote prices of S&P 500 Index call and put options. Source: www.cboe.com/vix.

10 Source: Bloomberg Professional.

Q. HAVE INTEREST RATES GENERALLY RISEN OVER THE LAST TWELVE MONTHS?

A. Yes, they have. As VIX stabilized, interest rates have generally returned to pre-pandemic levels as shown on Chart 2, below.

Chart 2: 30-Year Treasury Yields – January 2020 to May 2021[11]



Q. AS MENTIONED EARLIER, DR. WON CITED THE FED'S SEPTEMBER COMMENTS REFLECTING NO CHANGES TO THE FED FUNDS RATE UNTIL IT SEES TIGHTENING IN THE LABOR MARKET AND INFLATION AT 2.00%. HAVE YOU MONITORED THOSE MEASURES SINCE THE FED'S STATEMENT?

A. Yes, I have. Regarding the unemployment rate, Dr. Won's cited unemployment rate of 6.2% is accurate, but he is comparing that unemployment rate with the pre-pandemic unemployment rate of 3.5%, which was the lowest unemployment rate for 50 years.[12] The

11 Source: Bloomberg Professional.
12 Source: Bureau of Labor Statistics.

average American unemployment rate is 5.8% over the period 1948-present,[13] which is comparable to the current unemployment rate of 6.2%.

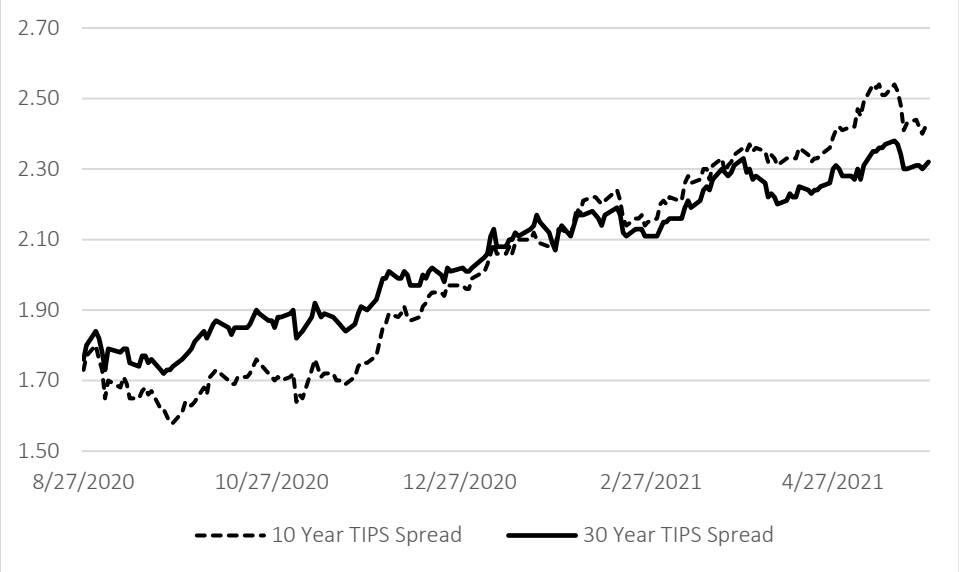
Moving to inflation, on August 27, 2020, Federal Chairman Powell released a statement noting that the Federal Open Market Committee ("FOMC") will adopt an approach towards inflation that "could be viewed as a flexible form of average inflation targeting"; meaning that following periods in which inflation has run below 2.00%, "appropriate monetary policy will likely aim to achieve inflation moderately above 2 percent for some time."[14]

Since Mr. Powell's remarks, the breakeven inflation rate, represented as the ten-year and 30-year Treasury Inflation-Protected Securities spread, has increased from 1.73% and 1.76%, respectively, to 2.42% and 2.32% respectively, as of May 28, 2021. Further, as shown in Chart 3 below, breakeven inflation has trended upward since the Federal Reserve's policy change at a relative consistent pace.

13 Source: Bureau of Labor Statistics dating back to January 1948.

14 New Economic Challenges and the Fed's Monetary Policy Review, Remarks by Jerome H. Powell, Chair Board of Governors of the Federal Reserve System, August 27, 2020.

Chart 3: Breakeven Inflation Since August 27, 2020[15]



Further, looking to other measures of inflation such as the Consumer Price Index ("CPI"), the year-over-year increase in April 2021 was the highest it has been in over ten years.

Q. HAS THE FED MADE ANY ADDITIONAL STATEMENTS SUBSEQUENT TO THE SEPTEMBER MEETING REFERRED TO BY DR. WON?

A. Yes. Recently, several FOMC participants have indicated that it would be appropriate for the Fed to increase the Fed Funds Rate as early as 2022.[16]

In addition, the FOMC released minutes from its April 2021 meeting on May 19, 2021, which note that "[a]mid progress on vaccinations and strong policy support, indicators of economic activity and employment had strengthened."

15 Source: Federal Reserve (https://www.federalreserve.gov/datadownload/)
16 Federal Open Market Committee, Summary of Economic Projections, March 17, 2021.

Q. DO YOU AGREE WITH DR. WON THAT GDP IS STRONGLY RELATED TO INTEREST RATES?

A. No, I do not. To verify my position, I calculated the correlation coefficient between annual GDP growth rates and long-term interest rates from 1929-2020. The result of the study shows the correlation of GDP growth with interest rates was -0.13, with the scale of 0.00 being not correlated, and plus/minus 1.00 as perfectly correlated (positively/negatively, respectively).

Q. DO YOU AGREE WITH DR. WON THAT INFLATION IS STRONGLY RELATED TO INTEREST RATES?

A. Yes, I do. Generally, when inflation is increasing, central banks will attempt to raise interest rates by reducing bond buying programs or increasing their interbank offered rates in an attempt to keep inflation at target levels (a long-term average of 2.00%, as noted above). Over the period 1947-2020, the relationship between inflation, as measured by the year-over-year change in the CPI and interest rates had a 0.63 correlation coefficient, showing a strong positive relationship, which is statistically significant.

Q. IS THERE A LINK BETWEEN INFLATION AND AUTHORIZED ROES?

A. Yes, there is. Looking at the yearly growth in the CPI and the corresponding authorized ROEs for natural gas utilities, I calculated a correlation of 0.64. In addition, I found the relationship between the two variables to be statistically significant.

Q. WHAT ARE YOUR CONCLUSIONS ABOUT THE CURRENT INTEREST RATE ENVIRONMENT?

A. While interest rates declined sharply at the outset of the COVID-19 pandemic due to high market volatility, as that volatility stabilized, interest rates have returned to pre-pandemic

levels. Furthermore, because inflation is positively correlated to both interest rates and authorized ROEs, the current inflationary environment may lead to both increasing interest rates and authorized ROEs.

Q. DR. WON CLAIMS THAT THE HIGHER P/E RATIOS FOR THE GAS PROXY GROUP IS EVIDENCE OF A LOWER ROE. IS HE CORRECT?

A. No, he is not. Dr. Won's position is that a higher P/E ratio translates into a lower earnings yield (dividend yield), which indicates a lower ROE estimate.[17]

When we look to the data underlying Dr. Won's claim, we observe that his position is incorrect. First, looking at Schedule SJW-13, Column [3], we notice that despite the increased P/E ratios in the current period, the current dividend yield is actually higher than it was for Spire's previous case. Second, looking at Dr. Won's Workpapers that support his P/E ratio analysis, I note that from February 24, 2021 to February 25, 2021 (one day), the P/E ratio for Dr. Won's proxy group fell from 24.11 to 12.30, subsequently averaging 12.55 for the period February 25, 2021 through March 29, 2021 (the end of Dr. Won's analytical period). Given that 12.55 is lower than the 13.88 during the period of Spire's last case, it would appear that the required ROE is currently higher, which is consistent with other capital market and economic data for the two periods discussed above and in response to Dr. Won. Finally, the P/E ratio for the most recent period (12.55) is consistent with price data for Dr. Won's proxy group as shown on Schedule SJW-12. As shown on Table 2, below, current prices are, on average, 10.52% lower than they were in Spire's previous

17 Staff Report, at 12.

case, and since "higher stock prices mean lower COE,"[18] the reduction in stock prices equates to a higher cost of equity ("COE").

Table 2: Comparison of Dr. Won's Average Proxy Group Stock Prices Current and Previous Case[19]

Company	Current	Previous	% Difference
Atmos Energy Corporation	91.08	81.74	11.44%
New Jersey Resources Corporation	38.05	40.98	-7.14%
Northwest Natural Holding Company	47.21	60.21	-21.58%
ONE Gas, Inc.	72.34	69.66	3.85%
South Jersey Industries, Inc.	23.98	36.20	-33.76%
Southwest Gas Holdings, Inc.	62.83	80.65	-22.10%
Spire Inc.	65.88	68.88	-4.35%
Average			-10.52%

Q. EVEN IF YOU ASSUMED DR. WON'S PREMISE WAS CORRECT (P/E RATIOS LOWERED DIVIDEND YIELDS), DOES THAT NECESSARILY MEAN THAT THE INDICATED ROE FOR THAT COMPANY WOULD BE LOWER?

A. Mo, it would not. The dcf model has two components: the dividend yield component and the growth component. Because increased p/e ratios indicate higher growth prospects, it

18 *Ibid.*, at 12.
19 Schedule SJW-12.

would be assumed that companies with higher p/e ratios would also have higher projected earnings per share ("eps") growth rates.

Q. BOTH DR. WON AND MR. MURRAY CLAIM THAT UTILITY EQUITY INVESTMENTS ARE PROXIES FOR UTILITY BOND INVESTMENTS.[20] DO YOU AGREE?

A. No. Fixed income investments (*i.e.* utility bond investments) are investments without the volatility of stock prices and produce income through the payment of coupon payments on bonds or dividends on preferred stocks.

Q. DO UTILITY STOCK RETURNS REFLECT LOW VOLATILITY?

A. No, they do not. The market data of the Combined Gas Proxy Group exhibits significant price volatility, as shown in DWD Schedule R-2. From February 3, 2020 to May 28, 2021, utilities were generally more volatile (*i.e.*, risky) than the market indices, and had returns that underperformed the Dow Jones Industrial Average ("DJIA") and the S&P 500.

Table 3: Annualized Volatility and Returns of Utility Groups and Market Indices February 2020 through May 2021[21]

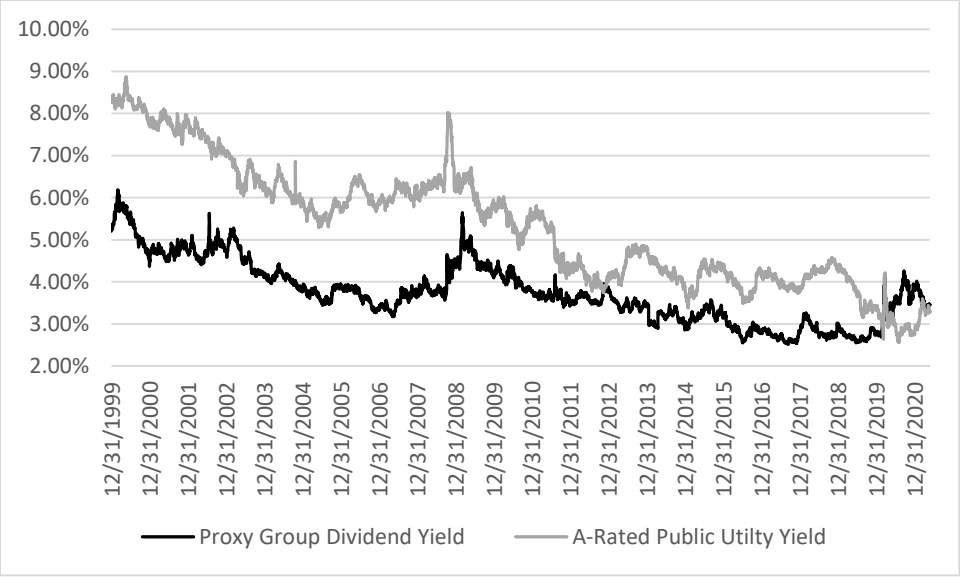
	Combined Gas Proxy Group	Murray Electric Proxy Group	Dow Jones Utility Average (DJU)	Utilities Select SPDR (XLU)	Dow Jones Industrial Average	S&P 500
Price Change	-14.40%	-9.05%	-4.39%	-5.54%	22.20%	30.34%
Annualized Volatility	47.40%	38.93%	34.58%	34.79%	32.59%	30.87%

20 Staff Report, at 11; Murray Direct Testimony, at 7.
21 Source: S&P Global Market Intelligence.

Q. DO UTILITY STOCKS PROVIDE COMPARABLE YIELDS TO INCOME INVESTMENTS?

A. No, they do not. As shown on Chart 4, below, the dividend yield for the Combined Proxy Group is steadily and significantly below the A-rated public utility bond yield. Further, despite the recent, brief reversal of this trend, it is clear from the chart that this reversal is anomalous, as the two are roughly equal currently, with utility dividend yields trending downwards in recent weeks while utility bond yields have trended upwards.

Chart 4: A-Rated Public Utility Bond Yields and Dividend Yields of the Utility Proxy Group 2000 – Present[22]



Given the high price volatility and lower dividend yield of natural gas distribution utility stocks, no rational income investor would consider a natural gas distribution utility stock a comparable investment to utility bond yields.

Q. MR. MURRAY CITES A BERNSTEIN STUDY WHICH STATES FROM 1974-2010, UTILITY INVESTORS RECEIVED 68% OF THEIR RETURN VIA

22 Source: S&P Global Market Intelligence; Bloomberg Professional.

DIVIDENDS AND THE REMAINDER THROUGH PRICE APPRECIATION.[23] HAVE YOU CALCULATED UTILITY RETURNS TO INVESTORS FOR THE PERIOD 2010-2020?

A. Yes, I have. As shown on DWD Schedule R-3 the median company in Mr. Murray's proxy groups now provide their investors 69% of their total returns through capital appreciation, which is the inverse result of the Bernstein study cited by Mr. Murray. Because utility stocks provide more of their total return through capital appreciation than dividends, the Opposing Witnesses' assumption that utility stock investments are akin to bond investments is misplaced.

Q. GIVEN THE FALL IN UTILITY STOCK PRICES DURING THE CORONAVIRUS PANDEMIC, AS NOTED PREVIOUSLY, IS DR. WON'S POSITION THAT UTILITY STOCKS REPRESENT SAFE HAVENS DURING PERIODS OF ECONOMIC SLOWDOWN CORRECT?[24]

A. No, it is not. Despite Dr. Won's claim that "[i]n times of economic slowdown, utility equities perform better than the overall market," as shown on DWD Schedule R-2 and in Table 3, above, that is not the case. Another way to determine whether utility stocks are safe havens during economic slowdowns is to look at the relationship between utilities and market indices. I have calculated the correlation coefficients of the price changes of several groups of utilities relative to the S&P 500 and the DJIA from February 1, 2020 to May 28, 2021. Table 4, below, shows correlation coefficients for the following relationships:

- The price changes of the S&P 500 relative to the price changes of the combined gas

23 Murray Direct Testimony, at 38.
24 Staff Report, at 11.

proxy group;

- The price changes of the S&P 500 relative to the price changes of Mr. Murray's electric proxy group;
- The price changes of the S&P 500 relative to the price changes of the Dow Jones Utility Average ("DJU");
- The price changes of the S&P 500 relative to the price changes of the Utilities Select SPDR ("XLU");
- The price changes of the DJIA relative to the price changes of the combined gas proxy group;
- The price changes of the DJIA relative to the price changes of Mr. Murray's electric proxy group;
- The price changes of the DJIA relative to the price changes of the DJU; and
- The price changes of the DJIA relative to the price changes of the XLU.

Table 4: Calculation of Correlation Coefficients for Utility Groups Relative to Market Indices from February 2020 through May 2021[25]

Group	S&P 500	DJIA
Combined Gas Proxy Group	73.77%	76.44%
Murray Electric Proxy Group	75.41%	75.03%
DJU	79.99%	80.28%
XLU	80.21%	80.32%

As shown on Table 4, utility stocks have been trading in tandem with market indices during the current market dislocation, which is consistent with the risk and return data shown on Table 3. The behavior of utility stocks to move in tandem with the market during market distress is not limited to the current period. During the Great Recession (December 2007

25 Source: S&P Global Market Intelligence.

to June 2009), correlations between these same groups were similar, as shown on Table 5, below:

Table 5: Calculation of Correlation Coefficients for Utility Groups Relative to Market Indices from December 2007 to June 2009[26]

Group	S&P 500	DJIA
Combined Gas Proxy Group	81.01%	81.46%
Murray Electric Proxy Group	77.74%	79.28%
DJU	81.57%	82.13%
XLU	78.36%	78.59%

This increasing correlation is not surprising. As Morningstar recently explained, during volatile markets there is often little distinction in returns across assets or portfolios. That is, "correlations go to 1."[27] This is consistent with Mr. Murray's statement on pages 35 and 36 of his direct testimony when he states, "[i]t is quite common for all securities, both higher-risk and lower-risk securities, to move in tandem during significant market corrections." A direct consequence of increased correlations is higher Beta coefficients and ultimately higher investor-required returns for utilities.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING CURRENT CAPITAL MARKET CONDITIONS AND THEIR EFFECT ON THE COMPANY'S ROE?

A. Given all of the above, current market conditions are recovering from the COVID-19 pandemic and are reflecting concerns about increasing inflation. Since inflation is positively correlated to both interest rates and authorized ROEs, increases in inflation would indicate a rising cost of common equity for Spire.

26 Source: S&P Global Market Intelligence.

27 Morningstar, *Correlations Going to 1: Amid Market Collapse, U.S. Stock Fund Factors Show Little Differentiation*, March 6, 2020.

IV. RESPONSE TO STAFF WITNESS WON

Q. PLEASE PROVIDE A SUMMARY OF DR. WON'S ANALYSES AND CONCLUSIONS REGARDING THE COMPANY'S ROE.

A. Dr. Won presents his analyses as of March 31, 2021 and June 30, 2017, the earlier date corresponding to Staff's analysis in Spire's last rate case. Dr. Won uses the 9.80% authorized ROE in that case as a benchmark, and then adjusts that benchmark return based on changes in his model results from that case to this one, to form his recommendation. Dr. Won calculates relative changes of negative 0.52% and negative 0.34% based on his DCF model and CAPM results, respectively, averaging negative 0.43%. Subtracting 0.43% from the 9.80% benchmark ROE results in a point estimate of 9.37%, within a range of 9.12% and 9.62%. While Dr. Won's recommended range is from 9.12% to 9.62%, his analytical results of his models range from 6.40% to 8.10%.[28]

Q. DO YOU HAVE ANY GENERAL COMMENTS ON DR. WON'S ANALYSES AND RECOMMENDATIONS?

A. Yes, I do. Dr. Won's recommendation does not directly rely on the results of his analytical models, but the relative changes of those model results over time. In view of his model results, I find it hard to imagine that they can be relied on to be a directional indicator of the investor-required return. Model results of 6.40% and 8.10% are far removed from authorized ROEs in the country since at least 1980. Furthermore, Dr. Won's own CAPM result of 6.40% fails his "rule of thumb" criterion for a reasonable ROE.[29]

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28 Staff Report, at Schedules SJW-13 and SJW-14.

29 Given the Company's embedded cost of debt of 4.00%, a reasonable ROE based on the "Rule of Thumb" would range between 7.00% and 9.00%. While I do not agree with the "Rule of Thumb" RPM, as will be discussed in detail below, this emphasizes the unreasonableness of Dr. Won's ROE model results.

Q. DOES DR. WON'S NON-RELIANCE ON HIS MODEL'S RESULTS REVEAL A FUNDAMENTAL MISUNDERSTANDING OF THE RELATIONSHIP BETWEEN THE COST OF COMMON EQUITY AND THE ROE THAT WILL ULTIMATELY BE AUTHORIZED IN THIS CASE?

A. Yes. Dr. Won states that "COE is a market-determined, minimum return investors are willing to accept for their investment in a company compared to returns on other available investments. An authorized ROE, on the other hand, is a Commission-determined return granted to monopoly industries, allowing them the opportunity to earn just and reasonable compensation for their investments."[30] This, coupled with the way Dr. Won arrived at his 9.37% ROE, clearly show he misunderstands the relationship between the cost of common equity and the authorized ROE.

Q. PLEASE SUMMARIZE THE RELATIONSHIP BETWEEN ALLOWED ROES AND INVESTOR-REQUIRED ROES.

A. For regulated utilities, the ROE equals the investor-required ROE which equals the allowed ROE, as reflected in the *Hope* and *Bluefield* Supreme Court decisions cited in both my Direct Testimony[31] and Dr. Won's testimony.[32] This relationship holds because utility regulation by regulatory commissions acts as a substitute for competition.

30 Staff Report, at 7.
31 D'Ascendis Direct Testimony, at 6.
32 Staff Report, at 6.

Q. IS THE CONCEPT OF UTILITY REGULATION AS A SUBSTITUTE FOR MARKET COMPETITION WIDELY ACCEPTED AS A FACT AND REFLECTED AS SUCH IN ACADEMIC LITERATURE?

A. Yes, it is. The *Cost of Capital Manual*, which is the training manual for the Society of Utility and Regulatory Financial Analysts, states:

> In a sense, the "visible hand of public regulation was (created) to replace the invisible hand of Adam Smith in order to protect consumers against exorbitant charges, restriction of output, deterioration of service, and unfair discrimination."[footnote omitted]
>
> ***
>
> As indicated above, regulation of public utilities reflects a belief that the competitive mechanism alone cannot be relied upon to protect the public interest. Essentially, it is theorized that a truly competitive market involving utilities cannot survive and, thereby, will fail to promote the general economic welfare. But this does not mean that regulation should alter the norm of competitive behavior for utilities. On the contrary, the primary objective of regulation is to produce market results (*i.e.*, price and quantity supplied) in the utility sectors of the economy closely approximating those conditions which would be obtained if utility rates and services were determined competitively.[33]

Additionally, in Principles of Public Utility Rates, Bonbright states:

> Lest the reader of this chapter gain the impression that it is intended to deny the relevance of any tests of reasonable rates derived from the theory or the behavior of competitive prices, let me state my conviction that no such conclusion would be warranted. On the contrary, a study of price behavior both under assumed conditions of pure competition and under actual conditions of mixed competition is essential to the development of sound principles of utility rate control. Not only that: any good program of public utility rate making must go a certain distance in accepting competitive-price principles as guides to monopoly pricing. For rate regulation must necessarily try to accomplish the major objectives that unregulated competition is designed to accomplish; and the similarity of purpose calls for a considerable degree of similarity of price behavior.
>
> Regulation, then, as I conceive it, is indeed a substitute for competition; and it is even a partly imitative substitute. But so is a Diesel locomotive a partly imitative substitute for a steam locomotive, and so is a telephone message a partly imitative

33 David C. Parcell, *Cost of Capital Manual*, Society of Utility and Regulatory Financial Analysts, 2010 Edition, at 3-4.

> substitute for a telegraph message. What I am trying to emphasize by these crude analogies is that the very nature of a monopolistic public utility is such as to preclude an attempt to make the emulation of competition very close. The fact, for example, that theories of pure competition leave no room for rate discrimination, while suggesting a reason for viewing the practice with skepticism, does not prove that discrimination should be outlawed. And a similar statement would apply alike to the use of an original-cost or a fair value rate base, neither of which is defensible under the theory or practice of competitive pricing.[34]

Finally, Phillips states in The Regulation of Public Utilities:

> Public utilities are no longer, if they ever were, isolated from the rest of the economy. It is possible that the expanding utility sector has been taking too large a share of the nation's resources, especially of investment.[footnote omitted] At a minimum, regulation must be viewed in the context of the entire economy – and evaluated in a similar context. Public utilities have always operated within the framework of a competitive system. They must obtain capital, labor and materials in competition with unregulated industries. Adequate profits are not guaranteed to them. Regulation then, should provide incentives to adopt new methods, improve quality, increase efficiency, cut costs, develop new markets and expand output in line with customer demand. In short, regulation is a substitute for competition and should attempt to put the utility sector under the same restraints competition places on the industrial sector.[35]

In view of the legal standards and treatises on regulation likening regulation of utilities and the competitive market, it is plain to see that allowed returns and investor-required returns are equal.

Q. DO YOU HAVE ANY ADDITIONAL CONCERNS REGARDING DR. WON'S ANALYSES AND CONCLUSIONS?

A. Yes. I have several, as follows:

- His application of the DCF model;
- His application of the CAPM;
- The applicability of his "rule-of-thumb" analysis; and
- His failure to reflect Company-specific factors in his determination of his ROE

34 James C. Bonbright, Principles of Public Utility Rates, Columbia University Press, 1961, at 106-107.
35 Charles F. Phillips, The Regulation of Public Utilities, Public Utility Reports, Inc., 1993, at 173.

recommendation.

Application of the Discounted Cash Flow Model

Q. PLEASE DESCRIBE DR. WON'S APPLICATION OF THE DCF MODEL.

A. Dr. Won performs a DCF model using the following inputs:

- Three months of historical prices from the Wall Street Journal;
- Current dividends from Value Line Investment Survey ("Value Line");
- Projected dividends per share ("DPS") growth rates from *Value Line*; and
- Projected GDP growth from the Congressional Budget Office.

Using these inputs, Dr. Won applies one-half a weighted growth rate (2/3 projected DPS growth, 1/3 projected GDP growth) to the dividend yield and then adds the adjusted dividend yield to the weighted growth rate to arrive at average indicated ROEs of 8.61% and 8.10% for the 2017 and current market data, respectively. The difference between the 2017 and current ROEs, or negative 0.52%, is the indicated change in the investor-required return using the DCF model.

Q. DO YOU HAVE ANY SPECIFIC CONCERNS WITH DR. WON'S APPLICATION OF THE DCF MODEL?

A. Yes, I do. While I appreciate Dr. Won's use of projected growth rates in the DCF model, I do not agree with Dr. Won's use of expected DPS growth rates as the growth rate in a DCF analysis. In addition, even though Dr. Won claims that his DCF model is a constant growth model, the use of projected GDP growth rates implies that Dr. Won is actually using a type of multi-stage DCF model, which is not applicable to utility companies.

Q. WHY ARE EPS GROWTH ESTIMATES MOST APPROPRIATE FOR USE IN THE DCF?

A. Over the long run, there can be no growth in DPS without growth in EPS. Earnings expectations have a more significant, but not sole, influence on market prices than dividend expectations. Thus, the use of earnings growth rates in a DCF analysis provides a better match between investors' market appreciation expectations implicit in market prices and the growth rate component of the DCF. Consequently, earnings expectations have a significant influence on market prices which affect market price appreciation, and hence, the "growth" experienced by investors. This should be evident even to relatively unsophisticated investors just by listening to financial news reports on radio, TV, or reading newspapers. In fact, Morin states:

> Because of the dominance of institutional investors and their influence on individual investors, analysts' forecasts of long-run growth rates provide a sound basis for estimating required returns. Financial analysts exert a strong influence on the expectations of many investors who do not possess the resources to make their own forecasts, that is, they are a cause of g. The accuracy of these forecasts in the sense of whether they turn out to be correct is not at issue here, as long as they reflect widely held expectations. As long as the forecasts are typical and/or influential in that they are consistent with current stock price levels, they are relevant. The use of analysts' forecasts in the DCF model is sometimes denounced on the grounds that it is difficult to forecast earnings and dividends for only one year, let alone for longer time periods. This objection is unfounded, however, because it is present investor expectations that are being priced; it is the consensus forecast that is embedded in price and therefore in required return, and not the future as it will turn out to be.
>
> * * *
>
> Published studies in the academic literature demonstrate that growth forecasts made by security analysts represent an appropriate source of DCF growth rates, are reasonable indicators of investor expectations and are more accurate than forecasts based on historical growth. These studies show that investors rely on analysts' forecasts to a greater extent than on historic data only.[36]

36 Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 298. ("Morin")

However, while EPS is a significant factor influencing market prices, it is by no means the only factor that affects market prices, a fact recognized by Bonbright regarding public utilities.[37] In addition, studies performed by Cragg and Malkiel demonstrate that analysts' forecasts are superior to historical growth rate extrapolations. They state:

> Efficient market hypotheses suggest that valuation should reflect the information available to investors. Insofar as analysts' forecasts are more precise than other types we should therefore expect their differences from other measures to be reflected in the market. It is therefore noteworthy that our regression results do support the hypothesis that analysts' forecasts are needed even when calculated growth rates are available. As we noted when we described the data, security analysts do not use simple mechanical methods to obtain their evaluations of companies. The growth-rate figures we obtained were distilled from careful examination of all aspects of the companies' records, evaluation of contingencies to which they might be subject, and whatever information about their prospects the analysts could glean from the companies themselves of from other sources. It is therefore notable that the results of their efforts are found to be so much more relevant to the valuation than the various simpler and more "objective" alternatives that we tried.[38]

In addition, Vander Weide and Carleton conclude:

> . . . our studies affirm the superiority of analyst's forecasts over simple historical growth extrapolations in the stock price formation process. Indirectly, this finding lends support to the use of valuation models whose input includes expected growth rates.[39]

Q. IN REVIEWING THE FINANCIAL LITERATURE, DID YOU DISCOVER ANY PUBLICATIONS THAT SUPPORTED THE USE OF PROJECTED DPS GROWTH RATES FOR USE IN A DCF MODEL?

A. No, I did not.

---

37 James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates (Public Utilities Reports, Inc., 1988), at 334.

38 John G. Cragg and Burton G. Malkiel, Expectations and the Structure of Share Prices (University of Chicago Press, 1982) Chapter 4.

39 James H. Vander Weide and Willard T. Carleton, *Investor Growth Expectations: Analysts vs. History;* The Journal of Portfolio Management, Spring 1988 78-82.

Q. LIKEWISE, ARE YOU AWARE OF ANY SOURCES OF DATA WHICH PROVIDE PROJECTED DPS GROWTH RATES TO INVESTORS?

A. *Value Line* is the only source of which I am aware that publishes projected DPS growth rates. If investors indeed valued projected DPS growth rates, there would be a market for that data. As they are not relied on by investors to determine their required returns on investments, there is not. Conversely, projected EPS growth rates are widely available to investors.

Q. WHY IS A MULTI-STAGE DCF MODEL AN INAPPROPRIATE APPROACH TO ESTIMATING THE ROE FOR A UTILITY?

A. As noted in my Direct Testimony, given that utilities are in the mature stage (steady-stage) of the company/industry life cycle, this necessitates the use of a constant growth DCF,[40] as opposed to a multi-stage DCF.

Q. ARE THERE EXAMPLES IN BASIC FINANCE TEXTS THAT SUPPORT YOUR POSITION?

A. Yes. For example, in Investments, life cycles and multi-stage growth models are discussed:

> As useful as the constant-growth DDM (dividend discount model) formula is, you need to remember that it is based on a simplifying assumption, namely, that the dividend growth rate will be constant forever. In fact, firms typically pass through life cycles with very different dividend profiles in different phases. In early years, there are ample opportunities for profitable reinvestment in the company. Payout ratios are low, and growth is correspondingly rapid. In later years, the firm matures, production capacity is sufficient to meet market demand, competitors enter the market, and attractive opportunities for reinvestment may become harder to find. In this mature phase, the firm may choose to increase the dividend payout ratio, rather than retain earnings. The dividend level increases, but thereafter it grows at a slower pace because the company has fewer growth opportunities.
>
> Table 18.2 illustrates this pattern. It gives Value Line's forecasts of return on assets,

40 D'Ascendis Direct Testimony, at 15.

> dividend payout ratio, and 3-year growth in earnings per share for a sample of the firms in the computer software industry versus those of east coast electric utilities…
>
> By in large, the software firms have attractive investment opportunities. The median return on assets of these firms is forecast to be 19.5%, and the firms have responded with high plowback ratios. Most of these firms pay no dividends at all. The high return on assets and high plowback result in rapid growth. The median growth rate of earnings per share in this group is projected at 17.6%.
>
> In contrast, the electric utilities are *more representative of mature firms*. Their median return on assets is lower, 6.5%; dividend payout is higher, 68%; and median growth is lower, 4.6%.
>
> ***
>
> To value companies with temporarily high growth, analysts use a multistage version of the dividend discount model. Dividends in the early high-growth period are forecast and their combined present value is calculated. Then, once the firm is projected to settle down to *a steady-growth phase, the constant-growth DDM is applied to value the remaining stream of dividends*.[41] (Clarification and emphasis added)

In view of the above, Dr. Won should not apply a Multi-Stage DCF model, as it is not applicable to utilities, and instead exclusively rely on the three- to five-year projected EPS growth rates for each company. He also should not apply the GDP growth rate to his company-specific growth rate, because it is not a company-specific growth rate, nor is it an upper bound for growth.

Q. WHY IS LONG-TERM GROWTH IN GDP NOT THE APPLICABLE MEASURE OF LONG-TERM GROWTH?

A. First, GDP is not a market measure—rather it is a measure of the value of the total output of goods and services, excluding inflation, in an economy. While I understand that EPS growth is also not a market measure, it is well-established in the financial literature that

41 Z. Bodie, A. Kane, and A. J. Marcus, Investments, 7th Edition, McGraw-Hill Irwin, 2008, at 616-617.

projected growth in EPS is the superior measure of dividend growth in a DCF model.[42] Furthermore, GDP is simply the sum of all private industry and government output in the United States, and its growth rate is simply an average of the value of those industries. To illustrate, DWD Schedule R-4 presents the compound growth rate of the industries that comprise GDP from 1947 through 2020. Of the 15 industries represented, seven industries, including utilities, grew faster than the overall GDP, and eight industries grew slower than the overall GDP.[43]

Q. WHAT WOULD DR. WON'S DCF MODEL RESULTS BE IF HE CORRECTLY RELIED SOLELY ON PROJECTED EPS GROWTH RATES?

A. As shown on DWD Schedule R-5, the indicated DCF cost rates are 9.20% and 10.60% using 2017 and current market data, respectively. This approach indicates an increasing cost of capital (by 140 basis points) since the Company's last rate case.

Application of the Capital Asset Pricing Model

Q. PLEASE PROVIDE A BRIEF SUMMARY OF DR. WON'S APPLICATION OF THE CAPM.

A. Dr. Won performs his CAPM analysis using the following inputs:

- Self-calculated Beta coefficients;
- Three-month average 30- year Treasury bond yields; and
- Four market risk premiums ("MRP"), which include:

42 Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management, Spring 1986; Christofi, Christofi, Lori and Moliver, *Evaluating Common Stocks Using Value Line's Projected Cash Flows and Implied Growth Rate*, Journal of Investing, Spring 1999; Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992; and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management, Spring 1988.

43 Source of Information: Bureau of Economic Analysis.

- Duff & Phelps historical geometric mean total return on large stocks less historical geometric mean total returns on long-term government bonds;
- Duff & Phelps historical arithmetic mean total return on large stocks less historical arithmetic mean total returns on long-term government bonds;
- NYU/Stern historical geometric mean total return on large stocks less historical geometric mean total returns on long-term government bonds; and
- NYU/Stern historical arithmetic mean total return on large stocks less historical arithmetic mean total returns on long-term government bonds.

Using those inputs, Dr. Won derives indicated CAPM results of 6.74% and 6.40% using 2017 and current market data, respectively. The difference between the 2017 and current indicated ROEs, or 0.34%, is the indicated change in the investor-required return using the CAPM.

Q. WHAT ISSUES DO YOU HAVE WITH DR. WON'S CAPM ANALYSIS?

A. Dr. Won's CAPM analysis is flawed in at least four respects. First, Dr. Won did not use Beta coefficients published by a widely available source. Second, he has incorrectly relied on a historical, *i.e.*, recent,[44] 30-year Treasury bond yield as his risk-free rate, despite the fact that both ratemaking and the cost of capital are prospective and long-term in nature. Third, he incorrectly calculated the MRP by relying on: 1) a geometric mean historical market ERP; and 2) the historical <u>total</u> return on U.S. Treasury bonds. Finally, Dr. Won

44 Schedule SJW-14.

did not incorporate an empirical CAPM ("ECAPM") analysis even though empirical evidence indicates that low-beta securities, such as utilities, earn returns higher than the CAPM predicts, and high-beta securities earn less.

Q. DO YOU AGREE WITH DR. WON'S CALCULATED BETA COEFFICIENT?

A. No, I do not. His calculation of Beta coefficients is not readily available to investors and, therefore, not relevant to the investor-required return. The importance of using readily available information in an ROE analysis refers to the Efficient Market Hypothesis ("EMH"). The relevance of the EMH as it relates to Dr. Won's calculated Beta coefficients is that they are not readily available to investors and, therefore, not considered by them in calculating their required returns. As such, they should be discarded by the Commission in this proceeding.

Q. PLEASE EXPAND ON THE IMPORTANCE OF THE EMH.

A. According to Eugene F. Fama,[45] a market in which prices always "fully reflect" available information is called "efficient." There are three forms of the EMH, namely:

(1) The "weak" form asserts that all past market prices and data are fully reflected in securities prices. In other words, technical analysis cannot enable an investor to "outperform the market."

(2) The "semi-strong" form asserts that all publicly available information is fully reflected in securities prices. In other words, fundamental analysis cannot enable an investor to "outperform the market."

(3) The "strong" form asserts that all information, both public and private, is fully

45 Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, The Journal of Finance, Vol. 25, No. 2. (May 1970), at 383-417.

reflected in securities prices. In other words, even insider information cannot enable an investor to "outperform the market."

The "semi-strong" form is generally considered the most realistic because the illegal use of insider information can enable an investor to "beat the market" and earn excessive returns, thereby disproving the "strong" form. The semi-strong form of the EMH assumes that all relevant information is available to the investor, which means the Beta coefficients from *Value Line* would be considered by investors when making investment decisions and, therefore, should be included in Dr. Won's CAPM analysis.

Q. DOES DR. WON RELY ON *VALUE LINE* DATA IN HIS ANALYSES?

A. Yes, he does. He relies on *Value Line* data in selecting his proxy group companies and uses dividends per share data and projected DPS growth rates in his DCF analysis.

Q. WOULD USING *VALUE LINE* BETAS CHANGE DR. WON'S CONCLUSION REGARDING THE DIFFERENCE IN RISK FROM LAST CASE TO THIS CASE BASED ON THE INDICATED ROE PRODUCED BY THE CAPM?

A. Yes. Keeping all else equal, replacing Dr. Won's calculated betas with *Value Line* betas for both time periods indicates a 0.09% **increase** in the indicated ROE from last case to this case as determined by the CAPM, as shown in DWD Schedule R-6. Given the additional flaws in Dr. Won's CAPM analysis, as will be discussed below, this 0.09% indicated increase in risk is a conservative measure.

Q. WHY IS DR. WON'S USE OF CURRENT YIELDS (*I.E.*, A RECENT THREE-MONTH AVERAGE), ON 30-YEAR U.S. TREASURY BONDS NOT APPROPRIATE FOR COST OF CAPITAL PURPOSES?

A. Dr. Won ignores the fact that the cost of capital and ratemaking are both prospective. As such, the fundamental analytical issue in applying the CAPM is to ensure that all three components of the model (*i.e.*, the risk-free rate, Beta coefficient, and the MRP) are consistent with market conditions and investor expectations. As, Morningstar observes:

> It is important to note that the expected equity risk premium, as it is used in discount rates and cost of capital analysis, is a forward-looking concept. That is, the equity risk premium that is used in the discount rate should be reflective of what investors think the risk premium will be going forward.[46]

Dr. Won implicitly agrees with this as he states: "[i]n rate cases, the investors' required return from the stock could be considered to be the expected market COE of utility stock investors."[47]

Q. PLEASE COMMENT ON DR. WON'S USE OF THE GEOMETRIC MEAN HISTORICAL MARKET RETURN.

A. On page 18 of his direct testimony, Dr. Won notes that he has relied on both the arithmetic and geometric mean returns for the S&P 500 as tabulated by Duff & Phelps and NYU/Stern. However, only arithmetic mean return rates, equity risk premiums ("ERP"), and yields are appropriate for cost of capital purposes because *ex-post* (historical) total returns and ERPs differ in size and direction over time, indicating volatility, *i.e.*, variance or risk. The arithmetic mean captures the prospect for variance in returns and ERPs,

46 Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 53.
47 Staff Report, at 16.

providing the valuable insight needed by investors in estimating risk in the *future* when making a *current* investment. Absent such valuable insight into the potential variance of returns, investors cannot meaningfully evaluate prospective risk. The geometric mean of ex-post ERPs provides no insight into the potential variance of future returns because the geometric mean relates the change over many time periods to a constant rate of change, rather than the year-to-year fluctuations, or variance, *critical to risk analysis.* Therefore, the geometric mean is of little to no value to investors seeking to measure risk. Moreover, from a statistical perspective, since stock returns and ERPs are randomly generated, the arithmetic mean is expectational and consistent with the prospective nature of the cost of capital and ratemaking noted above.

The financial literature is quite clear that risk is measured by the variability of expected returns, *i.e.*, the probability distribution of returns.[48] Duff & Phelps 2021 SBBI® Yearbook Stocks, Bonds, Bills and Inflation ("SBBI-2021")[49] explains in detail why the arithmetic mean is the correct mean to use when estimating the cost of capital.

In addition, Weston and Brigham provide the standard financial textbook definition of the riskiness of an asset when they state:

> The riskiness of an asset is defined in terms of the likely variability of future returns from the asset. (emphasis added)[50]

Furthermore, Morin states:

> The geometric mean answers the question of what constant return you would have had to achieve in each year to have your investment growth match the return achieved by the stock market. The arithmetic mean answers the question of what growth rate is the best estimate of the future amount of money that will be produced by continually reinvesting in the stock market. It is the rate of return which, compounded over multiple periods, gives the mean of the probability distribution of

48 Eugene F. Brigham, Fundamentals of Financial Management, (The Dryden Press, 1989), at 639.
49 SBBI-2021, at p. 10-22.
50 J. Fred Weston and Eugene F. Brigham, Essentials of Managerial Finance, 3rd Edition (The Dryden Press, 1974), at 272.

> ending wealth. (emphasis added)[51]

In addition, Brealey and Myers note:

> The proper uses of arithmetic and compound rates of return from past investments are often misunderstood... Thus the arithmetic average of the returns correctly measures the opportunity cost of capital for investments... *Moral*: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return. (italics in original)[52]

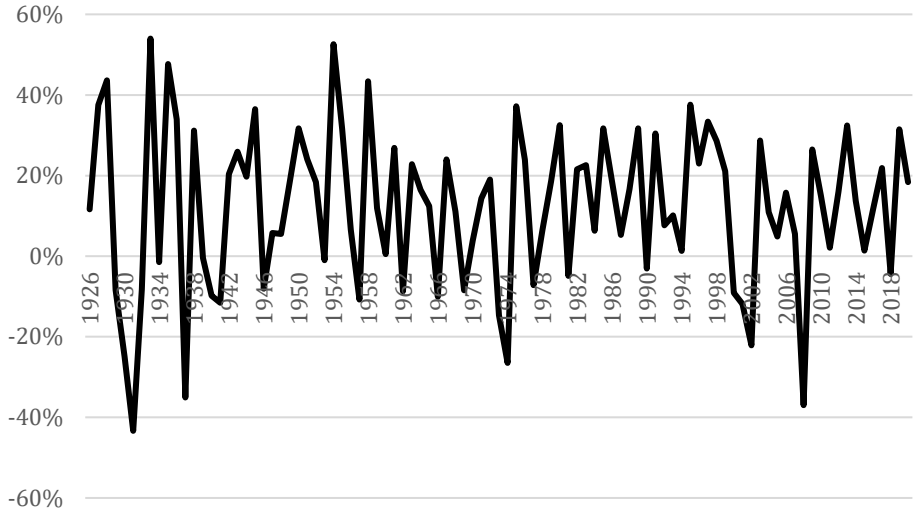
As previously discussed, investors gain insight into relative riskiness by analyzing expected *future* variability. This is accomplished using the arithmetic mean of a random distribution of returns/premiums. Only the arithmetic mean considers all the returns/premiums over a period of time, hence, providing meaningful insight into the variance and standard deviation of those returns/premiums.

Q. CAN IT BE DEMONSTRATED THAT THE ARITHMETIC MEAN TAKES INTO ACCOUNT ALL OF THE RETURNS AND, THEREFORE, IS THE ONLY APPROPRIATE MEAN TO USE WHEN ESTIMATING THE COST OF CAPITAL?

A. Yes. Pages 1 and 2 of DWD Schedule R-7 graphically demonstrate this. Page 1 charts the SBBI-2021 returns on large company stocks for each and every year from 1926 through 2020. It is clear from looking at the year-to-year variation of these returns that stock market returns and, hence, MRPs vary (see Chart 5, below).

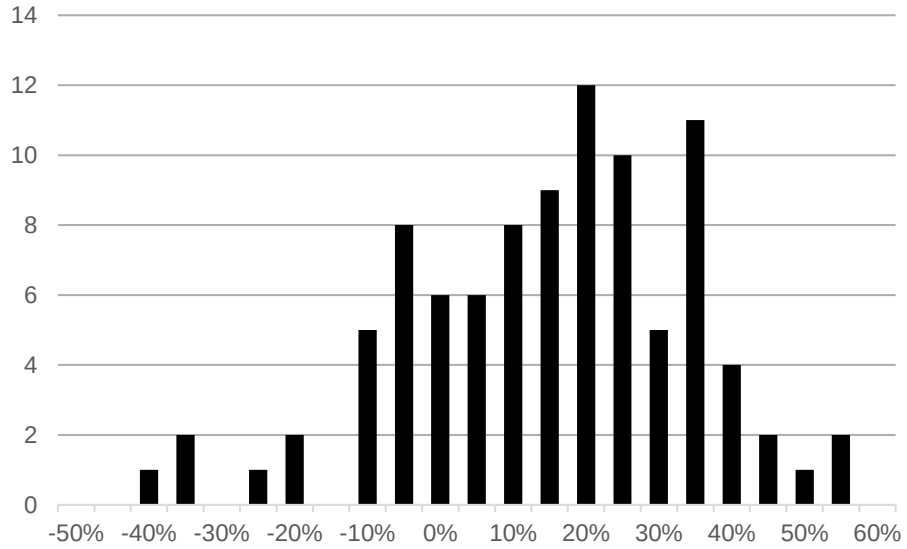
51 Morin, at 133.
52 Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, 5th Ed. (McGraw-Hill Publications, Inc., 1996), at 146 – 147.

Chart 5: U.S. Large Company Stock Returns 1926-2020[53]



The distribution of each of those returns for the period from 1926 through 2020 is shown on page 2 of DWD Schedule R-7 and Chart 6, below.

Chart 6: Frequency Distribution of Observed Market Returns, 1926 - 2020[54]



53 SBBI-2021 at Appendix A-1.
54 DWD Schedule R-7, at 2.

There is a clear bell-shaped pattern to the probability distribution of returns, an indication that they are randomly generated and not serially correlated. The arithmetic mean of this distribution of returns considers each and every return in the distribution. In doing so, the arithmetic mean takes into account the standard deviation or likely variance which may be experienced in the future when estimating the rate of return based on such historical returns. In contrast, the geometric mean considers only two of the returns, the initial and terminal years, which, in this case, are 1926 and 2020. Based on only those two years, a constant rate of return is calculated by the geometric average. That constant return is graphically represented by a flat line, showing no year-to-year variation, for the entire 1926 to 2020 time period. This is obviously unrealistic, based on the histogram shown in Chart 6 above. In view of the foregoing, Dr. Won should have exclusively relied on the long-term arithmetic average return on the market in calculating his historical risk premium using SBBI-2021 data.

Q. PLEASE COMMENT ON DR. WON'S USE OF THE HISTORICAL MEAN TOTAL RETURN ON U.S. TREASURY SECURITIES.

A. Although relying on Duff & Phelps' historical returns in his CAPM analysis, Dr. Won has ignored their recommendation to rely on the income return and not the total return on U.S. Treasury securities in deriving an MRP. As indicated in SBBI-2021:

> Another point to keep in mind when calculating the equity risk premium is that the income return on the appropriate-horizon Treasury security, rather than the total return, is used in the calculation.
>
> The total return comprises three return components: the income return, the capital appreciation return, and the reinvestment return. The income return is defined as the portion of the total return that results from a periodic cash flow or, in this case, the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in reaction to unexpected fluctuations in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the

return.[55]

Also, as shown in SBBI-2021 on page 6-17, the standard deviation for the income return on long-term government bonds is 2.6%, which is the lowest (*i.e.*, least risky) measure of all bond returns followed by SBBI. Dr. Won's recommended measure of the risk-free rate, the total return on long-term government bonds, has a standard deviation of 9.8%, which is the highest (*i.e.*, most risky) measure of all bond returns followed by SBBI. These measures alone warrant the use of the income return on long-term government bonds as the appropriate proxy of the risk-free rate for use in the calculation of the MRP in a CAPM analysis.

In view of the above, the correct derivation of the historical MRP is the difference between the arithmetic mean total return on large company common stocks of 12.20%, and the arithmetic mean 1926-2020 income return on long-term government bonds of 4.90%, which results in an MRP of 7.30%.[56]

Q. DOES DR. WON PERFORM AN ECAPM IN HIS ANALYSIS?

A. No. Dr. Won failed to consider the ECAPM, despite the fact that numerous tests of the CAPM have confirmed the ECAPM's validity by showing that the empirical Security Market Line ("SML") described by the traditional CAPM is not as steeply sloped as the predicted SML. While the results of these tests support the notion that beta is related to security returns, the empirical SML described by the CAPM formula is not as steeply sloped as the predicted SML,[57] as discussed on page 31 of my Direct Testimony.

55 SBBI-2021, at 10-22.
56 *Ibid.*, at 6-17.
57 Morin, at 175.

Dr. Won's "Rule of Thumb" Analysis

Q. PLEASE DESCRIBE DR. WON'S "RULE OF THUMB" ANALYSIS.

A. Dr. Won performs a "rule of thumb" analysis as a "test of reasonableness" which he claims is a risk premium method that "allows an objective test of individuals' COE estimates" by "simply adding an equity risk premium to the yield-to-maturity ("YTM") of the subject company's long-term debt."[58] He determines that risk premium to be in the range of 3% to 5%. Based on the application of the "rule of thumb" analysis to current A- and Baa-rated utility bond yields, Dr. Won concludes that ROEs in the range of 6.40% to 8.10% are reasonable.

Q. DO YOU AGREE WITH DR. WON'S "RULE OF THUMB" ANALYSIS?

A. No, I do not. First, Dr. Won's approach relies on his premise that utility stocks are proxies for bond investments, which as discussed earlier, is incorrect. Second, Dr. Won's "rule of thumb" analysis ignores the inverse relationship between interest rates and equity risk premiums, which I noted in my Direct Testimony,[59] and is consistent with financial literature on the subject. In fact, Morin, which Dr. Won cites to in support of his 3% to 5% range, notes "beginning in 1980, risk premiums varied inversely with the level of interest rates – rising when rates fell and declining when rates rose."[60] Plainly, ERPs are not static and vary with interest rates. As interest rates have fallen over the last several years, the ERP has steadily risen, as shown on Chart 7, below:

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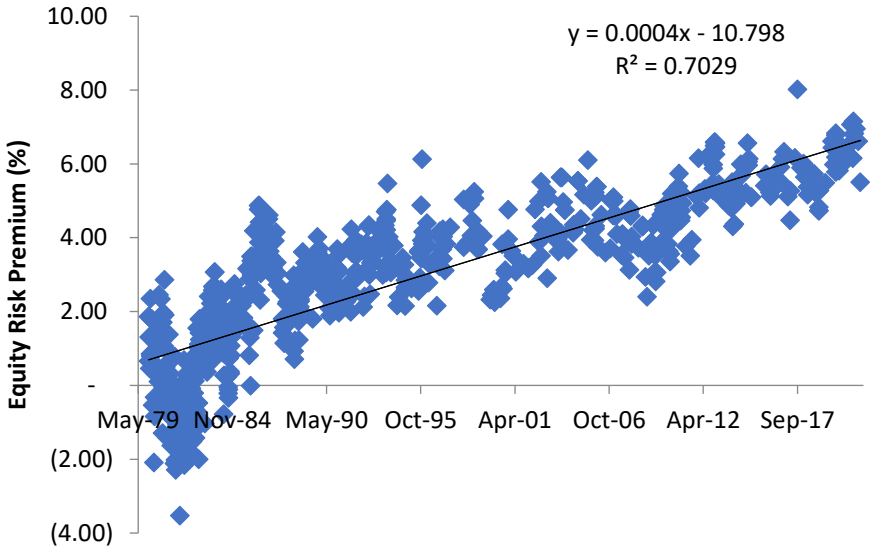
58 Staff Report, at 19.

59 D'Ascendis Direct Testimony, at 28-29. *See, e.g.*, Robert S. Harris and Felicia C. Marston, *The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts*, Journal of Applied Finance, Vol. 11, No. 1, 2001, at 11-12; Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, Financial Management, Spring 1985, at 33-45.

60 Morin, at 128.

Chart 7: Equity Risk Premiums: 1980 – Current[61]



If Dr. Won's "rule of thumb" actually applied, all ERPs would be between 3% and 5%, but as shown, this is clearly not the case, as ERPs have consistently exceeded the 5% threshold since 2010.

Failure to Reflect Company-Specific Factors

Q. HAS DR. WON REFLECTED SPIRE'S COMPANY-SPECIFIC FACTORS WHEN DETERMINING HIS RECOMMENDED ROE IN THIS PROCEEDING?

A. No, he did not. As discussed in my Direct Testimony,[62] Dr. Won should have considered Spire's smaller size and less risky bond ratings relative to his proxy group as well as flotation costs in determining his ROE recommendation.

61 Source: Regulatory Research Associates, Bloomberg Professional; see also; DWD Schedule R-1, page 23.
62 D'Ascendis Direct Testimony, at 40-48.

Comparison to Recent Authorized ROEs

Q. PLEASE COMMENT ON DR. WON'S USE OF RECENT AUTHORIZED ROES IN SUPPORTING HIS ROE RECOMMENDATION.

A. Dr. Won states that his 9.37% recommendation "is in line with current authorized ROEs." In looking to current authorized ROEs, Dr. Won points to the 2020 overall average, fully litigated average, and settled average of 9.46%, 9.44%, and 9.47%, respectively, as compared to the 2017 averages for each of these three categories of 9.72%, 9.82%, and 9.68%, respectively.[63]

Q. SHOULD THE COMMISSION BE BOUND BY HISTORICAL AUTHORIZED ROES?

A. No. While authorized ROEs may be reasonable benchmarks of acceptable ROEs in more normal economic conditions, they understate the investor-required return during an unstable economic environment, as was the case for the majority of 2020. The reason why historical authorized returns understate the investor-required return is because authorized ROEs are a lagging indicator of investor-required returns; *i.e.*, authorized ROEs are based on market data presented in an evidentiary record, which spans a period before the decision, sometimes lasting over a year in some cases. When markets are disjointed, as they are now, historical authorized returns do not completely reflect the investor required return because the economic conditions in the past are not representative of economic conditions now.

63 Staff Report, at 21.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING DR. WON'S ROE ANALYSIS?

A. While I do not agree with the premise of his ROE analysis, *i.e.*, using changes in model results over time and applying those changes to a benchmark return, reasonable inputs to Dr. Won's models indicate an increase in the indicated ROE since Spire's last rate case, not a decrease like Dr. Won contends. As shown in Table 6, below, those increases result in an average increase of 74 basis points[64] to Spire's previously authorized ROE. These results are corroborated by observations of several measures of risk that have increased since the Company's last case.

Table 6: Dr. Won Updated Model Results and Comparative Risk Measures: Case No. GR-2017-0216 and Present Docket[65]

Measure	Previous Case: GR-2017-0216	Present Case: GR-2021-0108
Dr. Won Updated DCF	9.20%	10.60%
Dr. Won Updated CAPM	6.87%	6.96%
Gas Proxy Group Annualized Volatility	16.43%	29.78%
S&P 500 Annualized Volatility	10.09%	13.91%
Gas Proxy Group Beta Coefficients	0.75	0.90
Average CoV – 30 Year Treasury Bonds	2.16%	4.34%
Average CoV – A-Rated Public Utility Bonds	1.43%	3.10%
Inflation	2.03%	2.23%
VIX	11.71	21.53

64 74 = (140 + 9) / 2; 140 and 9 reflect the increases to Dr. Won's DCF and CAPM, respectively, based on reasonable adjustments.

65 Sources: Bloomberg Professional, *Value Line*, S&P Global Market Intelligence, Bureau of Economic Analysis. VIX, Average coefficients of variations ("CoV") and annualized volatilities based on duration of proceedings for Case No. GR-2017-0216 (April 11, 2017-February 21, 2018) and for present docket (December 11, 2020-May 28, 2021). Inflation measured as average year-over-year growth for CPI for months April 2017-February 2018 and December 2020-April 2020.

V. RESPONSE TO OPC WITNESS MURRAY

Q. PLEASE PROVIDE A SUMMARY OF MR. MURRAY'S ANALYSES AND CONCLUSIONS REGARDING THE COMPANY'S ROE.

A. Mr. Murray recommends that the appropriate ROE for Spire is 9.25%, based on a range of 8.50% to 9.50%, assuming his proposed capital structure is accepted.[66] His recommendation is based on comparing Spire's risk profile to that of The Empire District Electric Company ("EDE") in Case No. ER-2019-0374, in which the Commission awarded EDE an ROE of 9.25%.[67] Mr. Murray's recommended ROE based on the results of his analytical models, however, is between 6.50% and 7.50%.[68] Specifically, Mr. Murray performs several multi-stage DCF analyses, with results ranging from 7.37% to 7.88%, and several CAPM analyses, which range from 5.44% to 6.76%.

Q. DO YOU HAVE ANY GENERAL COMMENTS REGARDING MR. MURRAY'S ANALYSES AND CONCLUSIONS?

A. Yes, I do. Like Dr. Won, Mr. Murray relies on making relative risk adjustments to a recently authorized return for EDE rather than relying on market models applied to a proxy group of comparable risk companies. EDE is a vertically integrated electric utility, which has significantly different risks than that of Spire, which is a natural gas distribution utility, a fact which Mr. Murray devotes several pages to in his direct testimony.[69]

Also like Dr. Won, Mr. Murray assumes that market-based ROE analyses are not equal to the authorized ROE awarded to utilities stating: "because it is abundantly clear that the

66 Murray Direct Testimony, at 38.
67 *Ibid.*, at 2.
68 *Ibid.*, at 5.
69 *Ibid.*, at 10-22.

COE is much lower than the allowed ROEs, I don't consider it critical to attempt to determine a precise COE estimate."[70] As discussed previously, that assumption is incorrect.

Finally, Mr. Murray's analytical results, which range from approximately 5.50% to 7.90%, are below any reasonable measure of ROE for natural gas distribution utilities since at least 1980. As with Dr. Won, Mr. Murray's CAPM analysis fails his own "rule of thumb" criterion for a reasonable ROE.

Q. WHAT SPECIFIC ISSUES DO YOU HAVE WITH MR. MURRAY'S ANALYSES AND CONCLUSIONS?

A. I have several issues, as follows:

- His reliance on electric utility-specific measures of ROE for a natural gas distribution utility;
- His application of the DCF model;
- His application of the CAPM;
- The applicability of his "rule-of-thumb" analysis;
- His failure to reflect Company-specific factors in his determination of his ROE recommendation; and
- His recommendation to reduce the ROE if the Company's capital structure is approved by the Commission.

70 *Ibid.*, at 32.

Reliance on Electric Utility-Based Cost of Capital Measures for a Natural Gas Distribution Utility

Q. PLEASE DESCRIBE MR. MURRAY'S RELIANCE ON ELECTRIC UTILITY-SPECIFIC MEASURES OF COST OF CAPITAL.

A. Mr. Murray's benchmark return is based on an authorized ROE for EDE, which is an electric utility, and he also performs DCF models on an electric utility proxy group.

Q. WHY IS MR. MURRAY'S RELIANCE ON THE AUTHORIZED ROE FOR EDE INCORRECT?

A. EDE is a vertically-integrated electric utility, which, as Mr. Murray notes but does not seem to take into consideration, is influenced by different factors and market expectations than natural gas utilities. For example, Mr. Murray notes that electric utilities have "significant potential to capitalize on investment opportunities related to the 'green' movement",[71] as well as pointing out that "it is difficult for investor to project potential growth for the industry past the next couple of decades,"[72] and notes that Wells Fargo evaluated a scenario in which the natural gas utility industry would be worth $0 by 2060.[73] In comparison, Mr. Murray notes that "[a] reasonable argument can be made that the electric utility industry should have a higher perpetual growth rate compared to LDCs."[74] It is clear from Mr. Murray's own testimony that electric utilities and natural gas utilities face different risks, and in fact, natural gas utilities face greater risk.

71 *Ibid.*, at 13.
72 *Ibid.*, at 18.
73 *Ibid.*, at 15.
74 *Ibid.*, at 33.

Q. DOES MR. MURRAY PRESENT ANALYSIS THAT ALSO ILLUSTRATES THE DIFFERENCE BETWEEN THE ELECTRIC AND NATURAL GAS UTILITY INDUSTRIES?

A. Yes, he does. Mr. Murray notes on page 36 of his Direct Testimony the Beta coefficients for the two groups are different. In fact, Mr. Murray notes that natural gas betas are higher than electric betas, which indicates that investors view natural gas utilities as riskier investments.[75] More simply, the assets that comprise the systems are substantially different (*i.e.* pipes versus wires; generation, transmission and distribution versus distribution-only).

Application of the Discounted Cash Flow Model

Q. PLEASE BRIEFLY SUMMARIZE MR. MURRAY'S DCF ANALYSIS.

A. As noted above, Mr. Murray applies several multi-stage DCF analyses to Spire, Inc., a proxy group of natural gas utilities, and a proxy group of electric utilities. Based on those three applications, he finds the following indicated ranges:

Table 7: Mr. Murray DCF Results[76]

	Indicated Range
Spire, Inc.	7.37% - 7.68%
Natural Gas Utilities	7.70% - 7.90%
Pure-Play Natural Gas Utilities	7.40% - 7.70%
Electric Utilities	7.30% - 7.40%

75 *Ibid.*, at 37.
76 *Ibid.*, at 28, 30, and 33.

Q. DO YOU FIND MR. MURRAY'S INDICATED DCF RESULTS TO BE REASONABLE?

A. No, I do not. As discussed previously, the multi-stage DCF is not applicable to utility companies. As such, the Commission should give zero weight to Mr. Murray's multi-stage DCF analysis.

Q. DOES MR. MURRAY RELY ON THE RESULTS OF HIS MULTI-STAGE DCF FOR HIS RECOMMENDATION IN THIS PROCEEDING?

A. No, he does not. For his ROE recommendation, he simply refers to the EDE decision and makes a relative risk adjustment. Because Mr. Murray himself does not rely on his own model results, I recommend the Commission do the same.

Application of the Capital Asset Pricing Model

Q. PLEASE DESCRIBE MR. MURAY'S APPLICATION OF THE CAPM.

A. Mr. Murray performs his CAPM analysis using the following inputs:

- Self-calculated Beta coefficients;
- Three-month average 20- and 30- year Treasury bond yields;
- Duff & Phelps' normalized risk-free rate; and
- Three MRPs, which include:
  - Duff & Phelps' historical geometric mean total return on large stocks less historical geometric mean total returns on long-term government bonds;
  - Duff & Phelps' historical arithmetic mean total return on large stocks less historical arithmetic mean total returns on long-term government bonds; and
  - Duff & Phelps' recommended ERP.

Using those inputs, Mr. Murray derives indicated CAPM results ranging from 5.44% and 6.69%.

Q. DOES MR. MURRAY RELY ON HIS CAPM RESULTS IN DETERMINING HIS ROE RECOMMENDATION?

A. No, he does not. Mr. Murray only uses the CAPM and his Bond Yield Plus Risk Premium (discussed below) to "test [his] conclusions"[77] from his DCF models. Similar to his DCF results, Mr. Murray clearly does not take into account his CAPM results in determining his recommended ROE and, as such, it is unclear the extent the results are used even as a check.

Q. WHAT ISSUES DO YOU HAVE WITH MR. MURRAY'S CAPM ANALYSES AND RESULTS?

A. Mr. Murray's CAPM analysis is flawed in at least four respects. First, Mr. Murray did not use Beta coefficients published by a widely available source. Second, he has incorrectly relied on an historical, *i.e.*, recent,[78] 20- and 30-year Treasury bond yields as his risk-free rate, despite the fact that both ratemaking and the cost of capital are prospective and long-term in nature. Third, he incorrectly calculated the MRP by relying on: 1) a geometric mean historical market ERP; 2) the historical total return on U.S. Treasury bonds; and 3) the Duff & Phelps recommended ERP. Finally, Mr. Murray did not incorporate an ECAPM analysis even though empirical evidence indicates that low-beta securities, such as utilities, earn returns higher than the CAPM predicts, and high-beta securities earn less. Because I have addressed the applicability of calculated betas, historical interest rates, geometric

77 *Ibid.*, at 33.
78 Schedules DM-D-8-1 and DM-D-8-2.

mean data, total returns on risk-free assets, and the use of the ECAPM in response to Dr. Won, I will not repeat those discussions here. Instead, I will focus solely on Mr. Murray's use of 20-year Treasury bonds and the Duff & Phelps recommended ERP.

Q. WHY IS MR. MURRAY'S USE OF 20-YEAR U.S. TREASURY BONDS NOT APPROPRIATE FOR COST OF CAPITAL PURPOSES?

A. As discussed below, tenor of the risk-free rate used in the CAPM should match the life (or duration) of the underlying investment. As noted by Morningstar:

> The traditional thinking regarding the time horizon of the chosen Treasury security is that it should match the time horizon of whatever is being valued. When valuing a business that is being treated as a going concern, the appropriate Treasury yield should be that of a long-term Treasury bond. Note that the horizon is a function of the investment, not the investor. If an investor plans to hold stock in a company for only five years, the yield on a five-year Treasury note would not be appropriate since the company will continue to exist beyond those five years.[79]

Morin also confirms this when he states:

> [b]ecause common stock is a long-term investment and because the cash flows to investors in the form of dividends last indefinitely, the yield on very long-term government bonds, namely, the yield on 30-year Treasury bonds, is the best measure of the risk-free rate for use in the CAPM (footnote omitted)… The expected common stock return is based on long-term cash flows, regardless of an individual's holding time period.[80]

Pratt and Grabowski recommend a similar approach to selecting the risk-free rate: "In theory, when determining the risk-free rate and the matching ERP you should be matching the risk-free security and the ERP with the period in which the investment cash flows are expected."[81] As a practical matter, equity securities represent a perpetual claim on cash flows; 30-year Treasury bonds are the longest-maturity securities available to approximate that perpetual claim. Thus, Mr. Murray's use of a 20-year Treasury bond yield does not

79 Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 44.
80 Morin, at 151
81 Shannon Pratt and Roger Grabowski, Cost of Capital: Applications and Examples, 3rd Ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2008), at 92.

match the life of the assets being valued. The use of a 30-year Treasury bond yield is a more appropriate risk-free rate.

Q. WHAT IS YOUR POSITION ON THE 5.50% MRP QUOTED BY DUFF & PHELPS?

A. The determination of the MRP as calculated by Duff & Phelps is not transparent, especially in view of the historical data presented in SBBI – 2021, or the composition of its supply side method, which are already well known by investors. Because of the transparency of the historical data and how to gather and use the components of the supply-side model, both the historical MRP using the long-term arithmetic mean return on large company stocks, less the long-term arithmetic income returns on long-term Government bonds, using data compiled by the Center for Research in Security Prices and the supply-side model, are superior measures of the MRP than the Duff & Phelps simplistic and opaque MRP forecast.

Q. MR. MURRAY POINTS TO LONG-TERM EXPECTED NOMINAL MARKET RETURNS IN THE RANGE OF 4.00% TO 5.00%. DO YOU HAVE ANY ISSUES WITH THESE EXPECTATIONS?

A. Yes, I do. Mr. Murray derives the expected range based in part on the Philadelphia Federal Reserve Board's Survey of Professional Forecasters ("Philadelphia Survey"), despite instances in academic literature that support the conclusion that MRPs using surveys are not widely used by practitioners.

For example, Dr. Damodaran, who is relied on by Dr. Won in developing his MRP, states the following about the applicability of survey MRPs:

> While survey premiums have become more accessible, very few practitioners seem to be inclined to use the numbers from these surveys in computations and there are several reasons for this reluctance:
>
> 1. Survey risk premiums are responsive to recent stock prices movements,

with survey numbers generally increasing after bullish periods and decreasing after market decline. Thus, the peaks in the SIA survey premium of individual investors occurred in the bull market of 1999, and the more moderate premiums of 2003 and 2004 occurred after the market collapse in 2000 and 2001.

2. Survey premiums are sensitive not only to whom the question is directed at but how the question is asked. For instance, individual investors seem to have higher (and more volatile) expected returns on equity than institutional investors and the survey numbers vary depending upon the framing of the question. [footnote omitted].

3. In keeping with other surveys that show differences across sub-groups, the premium seems to vary depending on who gets surveyed. Kaustia, Lehtoranta and Puttonen (2011) surveyed 1,465 Finnish investment advisors and note that not only are male advisors more likely to provide an estimate but that their estimated premiums are roughly 2% lower than those obtained from female advisors, after controlling for experience, education and other factors. [footnote omitted].

4. Studies that have looked at the efficacy of survey premiums indicate that if they have any predictive power, it is in the wrong direction. Fisher and Statman (2000) document the negative relationship between investor sentiment (individual and institutional) and stock returns. [footnote omitted]. In other words, investors becoming more optimistic (and demanding a larger premium) is more likely to be a precursor to poor (rather than good) market returns.

As technology aids the process, the number and sophistication of surveys of both individual and institutional investors will also increase. However, it is also likely that these survey premiums will be more reflections of the recent past rather than good forecasts of the future.[82]

Q. ARE THERE OTHER ISSUES WITH THE USE OF THE PHILADELPHIA SURVEY?

A. Yes, there are. As shown in Table 9 below, in the past, the Philadelphia Survey respondents have provided forecasts that significantly underestimated actual market returns. As Table

82 Aswath Damodaran, Stern School of Business, *Equity Risk Determinants, Estimation and Implications – The 2020 Edition*, Updated March 2020, at 26-27.

8 demonstrates, from 2004 through 2011, the average and median market return over the following ten years[83] was 11.16% and 14.06%, exceeding the Philadelphia Survey forecasts by an average of over 5.00%.

Table 8: S&P 500 Market Return vs. Philadelphia Survey Median Expected Return[84]

	Actual (median)	Actual (Average)	Survey Estimate
2011 – 2020	14.85%	14.49%	7.25%
2010 – 2019	14.38%	14.15%	7.00%
2009 – 2018	14.38%	13.65%	6.50%
2008 – 2017	14.38%	10.39%	6.50%
2007 – 2016	12.83%	8.75%	7.50%
2006 – 2015	14.38%	9.14%	7.00%
2005 – 2014	14.38%	9.49%	7.00%
2004 – 2013	12.97%	9.21%	7.75%
Average	14.06%	11.16%	7.06%

Application of the Bond Yield Plus Risk Premium Model

Q. PLEASE SUMMARIZE MR. MURRAY'S BOND YIELD PLUS RISK PREMIUM ANALYSIS.

A. Similar to Dr. Won, Mr. Murray adds 3% to 4% to the Company's bond yield as a test of reasonableness on his ROE estimates.[85] Because I have addressed the issues with such an approach in response to Dr. Won, I will not repeat that discussion here.

83 Survey estimates are based on First Quarter projections from the first year of the respective ten-year window. For example, 2004 – 2013 estimate was sourced from the Philadelphia Survey released in February 2004.

84 Source: Morningstar, Inc., 2021 SBBI Yearbook, Appendix A-1; https://www.philadelphiafed.org/surveys-and-data/real-time-data-research/survey-of-professional-forecasters.

85 Murray Direct Testimony, at 37.

Failure to Reflect Company-Specific Factors

Q. HAS MR. MURRAY REFLECTED SPIRE'S COMPANY-SPECIFIC FACTORS WHEN DETERMINING HIS RECOMMENDED ROE IN THIS PROCEEDING?

A. No, he has not. As discussed in my Direct Testimony,[86] Mr. Murray should have considered Spire's smaller size and less risky bond ratings relative to his proxy group as well as flotation costs in determining his ROE recommendation.

Capital Structure Return on Equity Adjustment

Q. PLEASE SUMMARIZE MR. MURRAY'S POSITION REGARDING THE COMPANY'S ROE AND CAPITAL STRUCTURE.

A. Mr. Murray states that his 9.25% recommendation is dependent on the Commission accepting his recommended capital structure, and if the Commission were to adopt the Company's proposed capital structure, the Commission should authorize an ROE no higher than 8.50%.

Q. IS MR. MURRAY'S DOWNWARD ADJUSTMENT OF 75 BASIS POINTS TO HIS RECOMMENDED ROE IF THE COMPANY'S REQUESTED EQUITY RATIO IS APPROVED APPROPRIATE?

A. No, it is not. Since the cost of capital is a comparative exercise, one must compare Spire's requested equity ratio with the equity ratios maintained by the proxy group from which the ROE is determined. The Company's requested ratemaking common equity ratio of 54.28% is reasonable and consistent with the range of common equity ratios maintained by Mr. Murray's Gas Proxy Group. As shown on page 1 of DWD Schedule R-8, common equity

86 D'Ascendis Direct Testimony, at 40-48.

ratios of the Utility Proxy Group companies range from 31.01% to 62.99% for last five quarters.

To provide a more robust analysis, I also considered *Value Line's* projected equity ratios for the Mr. Murray's Gas Proxy Group for 2024-2026. That analysis shows a range of projected common equity ratios between 39.50% and 60.00%, which is also consistent with Spire's requested equity ratio.

Finally, I compared the Company's ratemaking common equity ratio with the equity ratios maintained by the operating subsidiaries of the Mr. Murray's Gas Proxy Group companies. As shown on page 2 of DWD Schedule R-8, common equity ratios of the operating utility subsidiaries of the Utility Proxy Group range from 31.01% to 64.82% for the last five quarters, which was consistent with Spire's requested equity ratio. Because Spire's requested equity ratio is within the current and expected ranges of equity ratios maintained by the Utility Proxy Group, and within the range of the operating subsidiaries of the Utility Proxy Group, a financial risk adjustment is unnecessary and should be dismissed by the Commission.

VI. CONCLUSION AND RECOMMENDATION

Q. PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY.

A. In this Rebuttal Testimony, I updated my ROE models with market data as of May 28, 2021. The results of the ROE models produced indicated ranges of ROEs from 9.44% to 12.53% (unadjusted) and from 9.66% to 12.75% (adjusted).[87] Given these ranges, I

87 DWD Schedule R-1, at 2.

maintain my initial recommendation of 9.95%, which, in light of the current capital markets, is reasonable, if not conservative.

I then discussed capital market conditions and determined that given increases in inflation and interest rates, utility investors are requiring higher returns. I also discussed the clear difference between utility stock investments and bond investments.

Regarding the Opposing Witnesses' direct testimonies, I discussed my disagreements with their analyses, which I supported with citations to the academic literature and empirical analyses.

Q. SHOULD ANY OR ALL OF THE ARGUMENTS MADE BY THE OPPOSING WITNESSES PERSUADE THE COMMISSION TO LOWER THE RETURN ON COMMON EQUITY IT APPROVES FOR SPIRE BELOW YOUR RECOMMENDATION?

A. No, they should not. My recommended cost of common equity of 9.95%, is both reasonable and conservative. It will provide the Company with sufficient earnings to enable it to attract necessary new capital efficiently and at a reasonable cost, to the benefit of both customers and investors.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Spire Missouri Inc.'s Request for Authority to Implement a General Rate Increase for Natural Gas Service Provided in the Company's Missouri Service Areas	)))))	File No. GR-2021-0108

AFFIDAVIT

STATE OF NEW JERSEY	)	
	)	SS.
COUNTY OF BURLINGTON	)	

Dylan W. D'Ascendis, of lawful age, being first duly sworn, deposes and states:

1. My name is Dylan W. D'Ascendis. I am employed as Partner for ScottMadden, Inc. My business address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ 08054.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony on behalf of Spire Missouri, Inc.

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

Dylan W. D'Ascendis

Subscribed and sworn to before me this 14 day of June 2021.

Margaret A Clancy
Notary Public of New Jersey
My Commission Expires 6/9/2024

Margaret A Clancy
Notary Public

Spire Missouri Inc.
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at May 28, 2021

Type Of Capital	Ratios (1)	Cost Rate	Weighted Cost Rate
Long-Term Debt	45.72%	3.994% (1)	1.826%
Common Equity	54.28%	9.950% (2)	5.401%
Total	100.00%		7.227%

Notes:

(1) Company-provided.
(2) From page 2 of this Schedule.

Spire Missouri Inc.
Brief Summary of Common Equity Cost Rate

Line No.	Principal Methods	Proxy Group of Seven Natural Gas Distribution Companies
1.	Discounted Cash Flow Model (DCF) (1)	9.44%
2.	Risk Premium Model (RPM) (2)	10.79%
3.	Capital Asset Pricing Model (CAPM) (3)	11.89%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	12.53%
5.	Range of Common Equity Model Results	9.44% - 12.53%
6.	Size Risk Adjustment (5)	0.10%
7.	Credit Risk Adjustment (6)	-0.10%
8.	Flotation Cost Adjustment (7)	0.22%
9.	Indicated Range of Common Equity Cost Rates after Adjustment	9.66% - 12.75%
10.	Recommended Common Equity Cost Rate	9.95%

Notes:
(1) From page 3 of this Schedule.
(2) From page 11 of this Schedule.
(3) From page 24 of this Schedule.
(4) From page 29 of this Schedule.
(5) Adjustment to reflect the Company's greater business risk due to its smaller size relative to the Utility Proxy Group as detailed in Mr. D'Ascendis' direct testimony.
(6) Company-specific risk adjustment to reflect Spire Missouri's lower risk due to a higher long-term issuer rating relative to the proxy group as detailed in Mr. D'Ascendis' direct testimony.
(7) From page 37 of this Schedule.

Spire Missouri Inc.
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for the
Proxy Group of Seven Natural Gas Distribution Companies

Proxy Group of Seven Natural Gas Distribution Companies	[1] Average Dividend Yield (1)	[2] Value Line Projected Five Year Growth in EPS (2)	[3] Zack's Five Year Projected Growth Rate in EPS	[4] Bloomberg's Five Year Projected Growth Rate in EPS	[5] Yahoo! Finance Projected Five Year Growth in EPS	[6] Average Projected Five Year Growth in EPS (3)	[7] Adjusted Dividend Yield (4)	[8] Indicated Common Equity Cost Rate (5)
Atmos Energy Corporation	2.54 %	7.00 %	7.30 %	7.10 %	7.17 %	7.14 %	2.63 %	9.77 %
New Jersey Resources Corporation	3.19	2.00	7.10	7.33	6.00	5.61	3.28	8.89
Northwest Natural Holding Company	3.57	5.50	3.90	4.42	3.80	4.41	3.65	8.06
ONE Gas, Inc.	3.02	6.50	5.00	5.67	5.00	5.54	3.10	8.64
South Jersey Industries, Inc.	4.84	11.50	5.40	4.93	4.80	6.66	5.00	11.66
Southwest Gas Holdings, Inc.	3.45	9.00	5.50	4.50	4.00	5.75	3.55	9.30
Spire Inc.	3.49	10.00	5.50	5.33	7.31	7.04	3.61	10.65
							Average	9.57 %
							Median	9.30 %
							Average of Mean and Median	9.44 %

Notes:

(1) Indicated dividend at 05/28/2021 divided by the average closing price of the last 60 trading days ending 05/28/2021 for each company.
(2) From pages 4 through 10 of this Schedule.
(3) Average of columns 2 through 5 excluding negative growth rates.
(4) This reflects a growth rate component equal to one-half the conclusion of growth rate (from column 6) x column 1 to reflect the periodic payment of dividends (Gordon Model) as opposed to the continuous payment. Thus, for Atmos Energy Corporation, 2.54% x (1+(1/2 x 7.14%)) = 2.63%.
(5) Column 6 + column 7.

Source of Information:
Value Line Investment Survey
www.zacks.com Downloaded on 05/28/2021
www.yahoo.com Downloaded on 05/28/2021
Bloomberg Professional Services

ATMOS ENERGY CORP. NYSE-ATO

RECENT PRICE **98.51** | P/E RATIO **18.9** (Trailing: 18.5 Median: 19.0) | RELATIVE P/E RATIO **0.87** | DIV'D YLD **2.7%** | **VALUE LINE**

TIMELINESS 3 Lowered 4/2/21
SAFETY 1 Raised 6/6/14
TECHNICAL 5 Lowered 4/9/21
BETA .80 (1.00 = Market)

18-Month Target Price Range

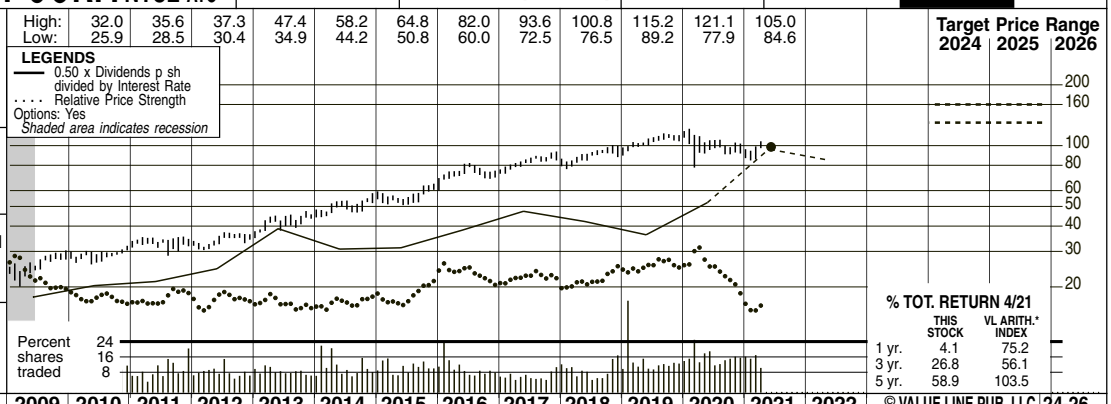
Low-High	Midpoint (% to Mid)
$75-$159	$117 (20%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	160	(+60%)	*15%*
Low	130	(+30%)	*10%*

Institutional Decisions

	2Q2020	3Q2020	4Q2020
to Buy	233	256	280
to Sell	262	231	228
Hld's(000)	108597	108898	107949



2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
61.75	75.27	66.03	79.52	53.69	53.12	48.15	38.10	42.88	49.22	40.82	32.23	26.01	28.00	24.32	22.41	*24.50*	*25.05*	Revenues per sh [A]	*35.50*
3.90	4.26	4.14	4.19	4.29	4.64	4.72	4.76	5.14	5.42	5.81	6.19	6.62	7.24	7.57	8.03	*8.55*	*9.10*	"Cash Flow" per sh	*10.25*
1.72	2.00	1.94	2.00	1.97	2.16	2.26	2.10	2.50	2.96	3.09	3.38	3.60	4.00	4.35	4.72	*5.10*	*5.45*	Earnings per sh [AB]	*6.50*
1.24	1.26	1.28	1.30	1.32	1.34	1.36	1.38	1.40	1.48	1.56	1.68	1.80	1.94	2.10	2.30	*2.50*	*2.70*	Div'ds Decl'd per sh [C■]	*3.30*
4.14	5.20	4.39	5.20	5.51	6.02	6.90	8.12	9.32	8.32	9.61	10.46	10.72	13.19	14.19	15.38	*15.80*	*15.75*	Cap'l Spending per sh	*15.15*
19.90	20.16	22.01	22.60	23.52	24.16	24.98	26.14	28.47	30.74	31.48	33.32	36.74	42.87	48.18	53.95	*62.15*	*70.25*	Book Value per sh	*87.85*
80.54	81.74	89.33	90.81	92.55	90.16	90.30	90.24	90.64	100.39	101.48	103.93	106.10	111.27	119.34	125.88	*133.00*	*137.00*	Common Shs Outst'g [D]	*155.00*
16.1	13.5	15.9	13.6	12.5	13.2	14.4	15.9	15.9	16.1	17.5	20.8	22.0	21.7	23.2	22.3	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*22.5*
.86	.73	.84	.82	.83	.84	.90	1.01	.89	.85	.88	1.09	1.11	1.17	1.24	1.13			Relative P/E Ratio	*1.25*
4.5%	4.7%	4.2%	4.8%	5.3%	4.7%	4.2%	4.1%	3.5%	3.1%	2.9%	2.4%	2.3%	2.2%	2.1%	2.2%			Avg Ann'l Div'd Yield	*2.3%*
4347.6	3438.5	3886.3	4940.9	4142.1	3349.9	2759.7	3115.5	2901.8	2821.1	*3260*	*3430*	Revenues ($mill) [A]	*5500*
199.3	192.2	230.7	289.8	315.1	350.1	382.7	444.3	511.4	580.5	*665*	*735*	Net Profit ($mill)	*1000*
36.4%	33.8%	38.2%	39.2%	38.3%	36.4%	36.6%	27.0%	21.4%	19.5%	*20.5%*	*21.5%*	Income Tax Rate	*25.0%*
4.6%	5.6%	5.9%	5.9%	7.6%	10.5%	13.9%	14.3%	17.6%	20.6%	*20.4%*	*21.4%*	Net Profit Margin	*18.2%*
49.4%	45.3%	48.8%	44.3%	43.5%	38.7%	44.0%	34.3%	38.0%	40.0%	*48.0%*	*45.0%*	Long-Term Debt Ratio	*40.0%*
50.6%	54.7%	51.2%	55.7%	56.5%	61.3%	56.0%	65.7%	62.0%	60.0%	*52.0%*	*55.0%*	Common Equity Ratio	*60.0%*
4461.5	4315.5	5036.1	5542.2	5650.2	5651.8	6965.7	7263.6	9279.7	11323	*15900*	*17500*	Total Capital ($mill)	*22700*
5147.9	5475.6	6030.7	6725.9	7430.6	8280.5	9259.2	10371	11788	13355	*14500*	*15650*	Net Plant ($mill)	*19100*
6.1%	6.1%	5.9%	6.4%	6.6%	7.2%	6.4%	6.9%	6.1%	5.5%	*5.5%*	*5.5%*	Return on Total Cap'l	*5.5%*
8.8%	8.1%	8.9%	9.4%	9.9%	10.1%	9.8%	9.3%	8.9%	8.6%	*8.0%*	*7.5%*	Return on Shr. Equity	*7.5%*
8.8%	8.1%	8.9%	9.4%	9.9%	10.1%	9.8%	9.3%	8.9%	8.6%	*8.0%*	*7.5%*	Return on Com Equity	*7.5%*
3.3%	2.8%	4.0%	4.7%	4.9%	5.1%	4.9%	4.8%	4.6%	4.4%	*4.0%*	*4.0%*	Retained to Com Eq	*3.5%*
62%	65%	56%	50%	51%	50%	50%	48%	48%	49%	*50%*	*50%*	All Div'ds to Net Prof	*51%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $7316.6 mill. **Due in 5 Yrs** $410.0 mill.
LT Debt $7316.4 mill. **LT Interest** $370.0 mill.
(LT interest earned: 9.5x; total interest coverage: 9.5x)
Leases, Uncapitalized Annual rentals $20.4 mill.

Pfd Stock None

Pension Assets-9/20 $528.9 mill.
Oblig. $604.2 mill.
Common Stock 130,671,944 shs.
as of 4/30/21

MARKET CAP: $12.9 billion (Large Cap)

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	24.5	20.8	865.3
Other	433.5	450.5	755.1
Current Assets	458.0	471.3	1620.4
Accts Payable	265.0	235.8	263.6
Debt Due	464.9	.2	.2
Other	479.5	546.4	607.5
Current Liab.	1209.4	782.4	871.3
Fix. Chg. Cov.	990%	1306%	1320%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	-8.5%	-11.0%	*6.0%*
"Cash Flow"	5.5%	7.0%	*5.0%*
Earnings	8.0%	9.0%	*7.0%*
Dividends	5.0%	7.5%	*7.5%*
Book Value	7.5%	10.0%	*10.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) [A] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2018	889.2	1219.4	562.2	444.7	3115.5
2019	877.8	1094.6	485.7	443.7	2901.8
2020	875.6	977.6	493.0	474.9	2821.1
2021	914.5	1319.1	*525.9*	*500.5*	*3260*
2022	*960*	*1405*	*545*	*520*	*3430*

Fiscal Year Ends	EARNINGS PER SHARE [A B E] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2018	1.40	1.57	.64	.41	4.00
2019	1.38	1.82	.68	.49	4.35
2020	1.47	1.95	.79	.53	4.72
2021	1.71	2.30	*.67*	*.42*	*5.10*
2022	*1.82*	*2.27*	*.80*	*.56*	*5.45*

Cal-endar	QUARTERLY DIVIDENDS PAID [C■] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.45	.45	.45	.485	1.84
2018	.485	.485	.485	.525	1.98
2019	.525	.525	.525	.575	2.15
2020	.575	.575	.575	.625	2.35
2021	.625	.625			

BUSINESS: Atmos Energy Corporation is engaged primarily in the distribution and sale of natural gas to over three million customers through six regulated natural gas utility operations: Louisiana Division, West Texas Division, Mid-Tex Division, Mississippi Division, Colorado-Kansas Division, and Kentucky/Mid-States Division. Gas sales breakdown for fiscal 2020: 68.6%, residential; 26.2%, commercial; 3.6%, industrial; and 1.6% other. The company sold Atmos Energy Marketing, 1/17. Officers and directors own approximately 1.2% of common stock (12/20 Proxy). President and Chief Executive Officer: Kevin Akers. Incorporated: Texas. Address: Three Lincoln Centre, Suite 1800, 5430 LBJ Freeway, Dallas, Texas 75240. Telephone: 972-934-9227. Internet: www.atmosenergy.com.

Atmos Energy shined during the first half of fiscal 2021 (which concludes on September 30th). Earnings per share jumped 17%, to $4.01, relative to the previous-year total of $3.42. One contributor was the natural gas distribution unit, which benefited from higher rates, primarily in the Mid-Tex, Mississippi, Louisiana, and West Texas divisions. Customer growth, mainly in the Mid-Tex unit, and a decrease in operating expenses also helped. Meanwhile, the performance of the pipeline and storage business got a lift from a GRIP filing approved in May, 2020 plus diminished system maintenance costs. Although the coronavirus has not gone away, full-year profits might increase around 8%, to $5.10 a share, compared to last year's $4.72 figure. Regarding fiscal 2022, we look for share net to rise at a similar percentage rate, to $5.45, assuming that operating margins widen further.

A powerful storm hit the service area, particularly Texas, in February. Consequently, the company experienced unprecedented market pricing for natural gas costs, resulting in total gas purchases during that month of $2.3 billion. To help pay for those expenses, it issued $2.2 billion in long-term debt. Leadership adds that it is working with regulators to recover these costs. Even though finances are now more leveraged, we believe these actions make sense.

Good things appear to be in store over the 2024-2026 time frame. Atmos ranks as one of the country's largest natural gas-only distributors, boasting more than three million customers across several states, including Texas, Louisiana, and Mississippi. Furthermore, it appears that the pipeline and storage unit has promising overall expansion opportunities, since it operates in one of the most-active drilling regions in the world. Finally, the balance sheet remains adequate. In the company's present configuration, annual earnings advances might be between 6% and 8% during the 3- to 5-year period.

The stock holds decent, risk-adjusted total return potential. Long-term capital appreciation possibilities are solid, even after taking recent price strength into account. Consider, too, the healthy dividend growth prospects.

Frederick L. Harris, III *May 28, 2021*

(A) Fiscal year ends Sept. 30th. **(B)** Diluted shrs. Excl. nonrec. gains (loss): '10, 5¢; '11, (1¢); '18, $1.43; '20, 17¢. Excludes discontinued operations: '11, 10¢; '12, 27¢; '13, 14¢; '17, 13¢. Next egs. rpt. due early Aug. **(C)** Dividends historically paid in early March, June, Sept., and Dec. ■ Div. reinvestment plan. Direct stock purchase plan avail. **(D)** In millions. **(E)** Qtrs may not add due to change in shrs outstanding.

Company's Financial Strength	A+
Stock's Price Stability	95
Price Growth Persistence	90
Earnings Predictability	100

NEW JERSEY RES. NYSE-NJR

RECENT PRICE 42.59 | P/E RATIO 19.4 (Trailing: 15.5 Median: 17.0) | RELATIVE P/E RATIO 0.89 | DIV'D YLD 3.1% | VALUE LINE

TIMELINESS 3 Raised 5/21/21
SAFETY 2 Lowered 4/17/20
TECHNICAL 3 Raised 4/16/21
BETA 1.00 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$16-$52	$34 (-20%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+15%)	7%
Low	35	(-20%)	-1%

Institutional Decisions

	2Q2020	3Q2020	4Q2020
to Buy	139	129	132
to Sell	97	105	118
Hld's(000)	67573	69155	71013

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
High:	22.0	25.2	25.1	23.8	32.1	34.1	38.9	45.4	51.8	51.2	44.7	43.9								
Low:	16.7	19.8	19.3	19.5	21.9	26.8	30.5	33.7	35.6	40.3	21.1	33.3								
	38.10	39.81	36.31	45.37	31.17	32.05	36.30	27.08	38.38	44.40	32.09	21.90	26.28	33.24	29.01	20.39	*24.75*	*26.55*	Revenues per sh [A]	*28.40*
	1.31	1.37	1.22	1.81	1.58	1.63	1.70	1.86	1.93	2.73	2.52	2.46	2.68	3.72	2.99	3.30	*3.45*	*3.75*	"Cash Flow" per sh	*4.00*
	.88	.93	.78	1.35	1.20	1.23	1.29	1.36	1.37	2.08	1.78	1.61	1.73	2.72	1.96	2.07	*2.15*	*2.40*	Earnings per sh [B]	*2.55*
	.45	.48	.51	.56	.62	.68	.72	.77	.81	.86	.93	.98	1.04	1.11	1.19	1.27	*1.34*	*1.42*	Div'ds Decl'd per sh [C]■	*1.65*
	.64	.64	.73	.86	.90	1.05	1.13	1.26	1.33	1.52	3.76	4.15	3.80	4.39	5.83	4.65	*4.10*	*4.10*	Cap'l Spending per sh	*4.00*
	5.30	7.50	7.75	8.64	8.29	8.81	9.36	9.80	10.65	11.48	12.99	13.58	14.33	16.18	17.37	19.26	*20.30*	*21.50*	Book Value per sh [D]	*24.60*
	82.64	82.88	83.22	84.12	83.17	82.35	82.89	83.05	83.32	84.20	85.19	85.88	86.32	87.69	89.34	95.80	*97.00*	*98.00*	Common Shs Outst'g [E]	*100.00*
	16.8	16.1	21.6	12.3	14.9	15.0	16.8	16.8	16.0	11.7	16.6	21.3	22.4	15.6	24.3	17.7	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*17.0*
	.89	.87	1.15	.74	.99	.95	1.05	1.07	.90	.62	.84	1.12	1.13	.84	1.29	.91			Relative P/E Ratio	*.95*
	3.1%	3.2%	3.0%	3.3%	3.5%	3.7%	3.3%	3.4%	3.7%	3.5%	3.1%	2.9%	2.7%	2.6%	2.5%	3.5%			Avg Ann'l Div'd Yield	*3.7%*
	3009.2	2248.9	3198.1	3738.1	2734.0	1880.9	2268.6	2915.1	2592.0	1953.7	*2400*	*2600*	Revenues ($mill) [A]	*2840*
	106.5	112.4	113.7	176.9	153.7	138.1	149.4	240.5	175.0	196.2	*210*	*235*	Net Profit ($mill)	*260*
	30.2%	7.1%	25.4%	30.2%	26.3%	15.5%	17.2%	- -	NMF	5.0%	*5.0%*	*5.0%*	Income Tax Rate	*5.0%*
	3.5%	5.0%	3.6%	4.7%	5.6%	7.3%	6.6%	8.2%	6.7%	10.0%	*8.7%*	*9.1%*	Net Profit Margin	*9.1%*
	35.5%	39.2%	36.6%	38.2%	43.2%	47.7%	44.6%	45.4%	49.8%	55.1%	*54.0%*	*54.5%*	Long-Term Debt Ratio	*53.0%*
	64.5%	60.8%	63.4%	61.8%	56.8%	52.3%	55.4%	54.6%	50.2%	44.9%	*46.0%*	*45.5%*	Common Equity Ratio	*47.0%*
	1203.1	1339.0	1400.3	1564.4	1950.6	2230.1	2233.7	2599.6	3088.9	4104.2	*4270*	*4605*	Total Capital ($mill)	*5260*
	1295.9	1484.9	1643.1	1884.1	2128.3	2407.7	2609.7	2651.0	3041.2	3983.0	*4065*	*4145*	Net Plant ($mill)	*4400*
	9.7%	9.2%	9.0%	12.1%	8.6%	6.9%	7.7%	10.1%	6.4%	5.6%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.0%*
	13.7%	13.8%	12.8%	18.3%	13.9%	11.8%	12.1%	16.9%	11.3%	10.6%	*10.5%*	*11.0%*	Return on Shr. Equity	*10.5%*
	13.7%	13.8%	12.8%	18.3%	13.9%	11.8%	12.1%	16.9%	11.3%	10.6%	*10.5%*	*11.0%*	Return on Com Equity	*10.5%*
	6.2%	6.2%	5.2%	11.0%	7.0%	4.8%	5.0%	10.2%	4.6%	4.3%	*4.0%*	*4.5%*	Retained to Com Eq	*3.5%*
	55%	55%	59%	40%	50%	60%	59%	40%	59%	60%	*62%*	*59%*	All Div'ds to Net Prof	*64%*

% TOT. RETURN 4/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	29.2	75.2
3 yr.	11.6	56.1
5 yr.	36.4	103.5

Target Price Range 2024 | 2025 | 2026

LEGENDS
0.40 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 3/08
2-for-1 split 3/15
Options: Yes
Shaded area indicates recession

2-for-1

Percent shares traded

CAPITAL STRUCTURE as of 3/31/21
Total Debt $2296.3 mill. **Due in 5 Yrs** $420.5 mill.
LT Debt $2265.2 mill. **LT Interest** $47.1 mill.
Incl. $54.9 mill. capitalized leases.
(LT interest earned: 5.0x; total interest coverage: 5.0x)
Pension Assets-9/20 $404.4 mill.
Oblig. $643.0 mill.
Pfd Stock None

Common Stock 96,339,849 shs.
as of 5/3/21
MARKET CAP: $4.1 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	2.7	117.0	57.7
Other	508.9	505.3	477.5
Current Assets	511.6	622.3	535.2
Accts Payable	295.9	270.1	288.2
Debt Due	46.9	152.6	31.1
Other	103.6	111.0	96.8
Current Liab.	446.4	533.7	416.1
Fix. Chg. Cov.	545%	545%	550%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	-2.5%	-6.5%	*.5%*
"Cash Flow"	7.0%	7.0%	*3.0%*
Earnings	6.0%	5.5%	*2.0%*
Dividends	7.0%	6.5%	*5.5%*
Book Value	7.5%	8.5%	*5.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) [A] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2018	705.3	1019.1	543.4	647.3	2915.1
2019	811.8	866.2	434.9	479.1	2592.0
2020	615.0	639.6	299.0	400.1	1953.7
2021	454.3	802.2	*525*	*618.5*	*2400*
2022	*505*	*850*	*575*	*670*	*2600*

Fiscal Year Ends	EARNINGS PER SHARE [A B] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2018	1.53	1.61	d.09	d.33	2.72
2019	.61	1.27	d.20	.29	1.96
2020	.44	1.12	d.06	.57	2.07
2021	.46	1.77	*d.20*	*.12*	*2.15*
2022	*.50*	*1.85*	*d.13*	*.18*	*2.40*

Cal-endar	QUARTERLY DIVIDENDS PAID [C] ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.255	.255	.255	.273	1.04
2018	.273	.273	.273	.2925	1.11
2019	.2925	.2925	.2925	.3125	1.19
2020	.3125	.3125	.3125	.3325	1.27
2021	.3325	.3325			

BUSINESS: New Jersey Resources Corp. is a holding company providing retail/wholesale energy svcs. to customers in NJ, and in states from the Gulf Coast to New England, and Canada. New Jersey Natural Gas had 558,000 cust. at 9/30/20. Fiscal 2020 volume: 215 bill. cu. ft. (14% interruptible, 21% res., 10% commercial & elec. utility, 55% capacity release programs). N.J. Natural Energy subsidiary provides unregulated retail/wholesale natural gas and related energy svcs. 2020 dep. rate: 2.8%. Has 1,156 empls. Off./dir. own 1.3% of common; BlackRock, 14.3%; Vanguard, 10.6% (12/20 Proxy). CEO, President & Director: Steven D. Westhoven. Incorporated: New Jersey. Address: 1415 Wyckoff Road, Wall, NJ 07719. Telephone: 732-938-1480. Web: www.njresources.com.

Since our February review, shares of New Jersey Resources have advanced nicely. The company's stock price increased about 15% over that time frame. This uptick likely reflected the better-than-expected financial results, of late.

The retailer and wholesaler of energy services posted solid results for the March quarter. To that point, revenues increased 25.4%, to $802.2 million, thanks to double-digit gains of nonutility volumes of nearly 44% and to a lesser extent a 4% rise in utility volumes. Meanwhile, on the profitability front, overall expenses fell 970 basis points, as a percentage of the top line. All told, these factors drove the bottom line 58% higher, to $1.77 per share. This was markedly better than our call for earnings of $0.90.

We have raised our fiscal 2021 (ends September 30th) share-net estimate by $0.50, bringing that figure to $2.15. Our revised figure would represent a year-over-year gain of about 4%, and falls at the top end of management's recently increased guidance range of $2.05 to $2.15. The primary driver of this year's results will largely be the Energy Services division that has been able to take advantage of the increased volatility affecting commodity prices these days. At the same time, the New Jersey Natural Gas (NJNG) regulated utility segment has added roughly 3,700 new customer accounts in the first six months of this year. Combined, we look for New Jersey Resources annual revenues to advance more than 20% this year, to $2.4 billion. That said, the industry's operating environment has been experiencing elevated uncertainty due to the COVID-19 pandemic; volatility surrounding commodity prices; a slump in end-user demand; and now fossil fuels transportation factors.

We look for this steady momentum to continue into next year, as well. The NJNG unit is on pace to add 28,000-30,000 new customers from 2021-2023. At the same time, the regulated utility business filed for a base rate case increase of about $165 million, which would help to return some of its investments in capital expansion projects.

Steady dividend growth aside, these shares appear richly valued.

Bryan J. Fong *May 28, 2021*

(A) Fiscal year ends Sept. 30th.
(B) Diluted earnings. Qtly. revenues and egs. may not sum to total due to rounding and change in shares outstanding. Next earnings report due early Aug.
(C) Dividends historically paid in early Jan., April, July, and October. ■ Dividend reinvestment plan available.
(D) Includes regulatory assets in 2020: $527.5 million, $5.51/share.
(E) In millions, adjusted for splits.

Company's Financial Strength	A+
Stock's Price Stability	80
Price Growth Persistence	60
Earnings Predictability	55

N.W. NATURAL NYSE-NWN

RECENT PRICE **54.22** | P/E RATIO **21.3** (Trailing: 20.4 Median: 24.0) | RELATIVE P/E RATIO **0.98** | DIV'D YLD **3.5%** | **VALUE LINE**

TIMELINESS 3 Raised 11/20/20
SAFETY 3 Lowered 3/19/21
TECHNICAL 4 Raised 5/7/21
BETA .85 (1.00 = Market)

18-Month Target Price Range

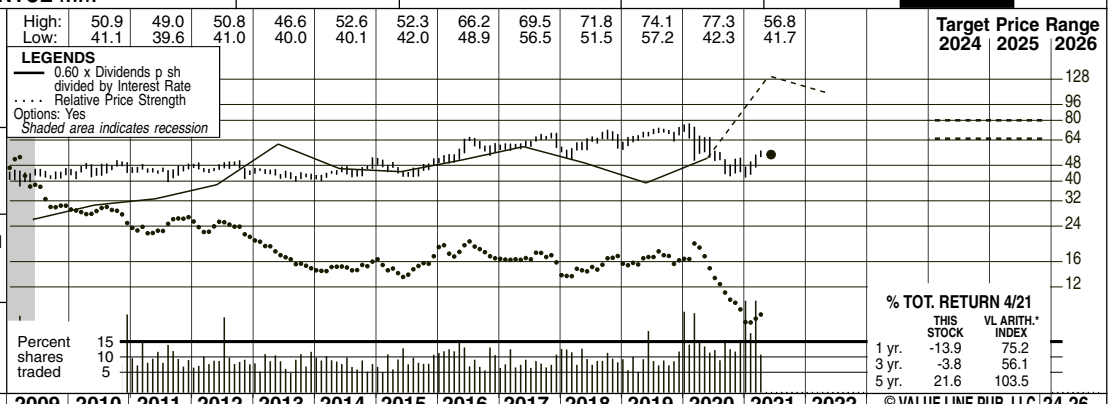
Low-High	Midpoint (% to Mid)
$27-$71	$49 (-10%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	90	(+65%)	*15%*
Low	60	(+10%)	*6%*

Institutional Decisions

	2Q2020	3Q2020	4Q2020
to Buy	73	92	99
to Sell	103	94	85
Hld's(000)	21936	21896	22201



% TOT. RETURN 4/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-13.9	75.2
3 yr.	-3.8	56.1
5 yr.	21.6	103.5

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
33.01	37.20	39.13	39.16	38.17	30.56	31.72	27.14	28.02	27.64	26.39	23.61	26.52	24.45	24.49	25.29	*26.80*	*27.80*	Revenues per sh	*31.05*
4.34	4.76	5.41	5.31	5.20	5.18	5.00	4.94	5.04	5.05	4.91	4.93	1.04	5.28	5.15	5.69	*5.80*	*6.05*	"Cash Flow" per sh	*6.85*
2.11	2.35	2.76	2.57	2.83	2.73	2.39	2.22	2.24	2.16	1.96	2.12	d1.94	2.33	2.19	2.30	*2.55*	*2.65*	Earnings per sh [A]	*3.10*
1.32	1.39	1.44	1.52	1.60	1.68	1.75	1.79	1.83	1.85	1.86	1.87	1.88	1.89	1.90	1.91	*1.92*	*1.93*	Div'ds Decl'd per sh [B]■	*1.96*
3.48	3.56	4.48	3.92	5.09	9.35	3.76	4.91	5.13	4.40	4.37	4.87	7.43	7.43	7.95	9.18	*8.40*	*8.70*	Cap'l Spending per sh	*9.40*
21.28	22.01	22.52	23.71	24.88	26.08	26.70	27.23	27.77	28.12	28.47	29.71	25.85	26.41	28.42	29.05	*33.85*	*37.10*	Book Value per sh [D]	*45.30*
27.58	27.24	26.41	26.50	26.53	26.58	26.76	26.92	27.08	27.28	27.43	28.63	28.74	28.88	30.47	30.59	*31.00*	*31.00*	Common Shs Outst'g [C]	*32.00*
17.0	15.9	16.7	18.1	15.2	17.0	19.0	21.1	19.4	20.7	23.7	26.9	- -	26.6	30.9	25.0	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*24.0*
.91	.86	.89	1.09	1.01	1.08	1.19	1.34	1.09	1.09	1.19	1.41	- -	1.44	1.65	1.30			Relative P/E Ratio	*1.35*
3.7%	3.7%	3.1%	3.3%	3.7%	3.6%	3.9%	3.8%	4.2%	4.1%	4.0%	3.3%	3.0%	3.0%	2.8%	3.3%			Avg Ann'l Div'd Yield	*2.6%*
848.8	730.6	758.5	754.0	723.8	676.0	762.2	706.1	746.4	773.7	*830*	*860*	Revenues ($mill)	*995*
63.9	59.9	60.5	58.7	53.7	58.9	d55.6	67.3	65.3	70.3	*79.0*	*82.0*	Net Profit ($mill)	*120*
40.4%	42.4%	40.8%	41.5%	40.0%	40.9%	- -	26.4%	16.2%	23.1%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
7.5%	8.2%	8.0%	7.8%	7.4%	8.7%	NMF	9.5%	8.8%	9.1%	*9.5%*	*9.5%*	Net Profit Margin	*10.0%*
47.3%	48.5%	47.6%	44.8%	42.5%	44.4%	47.9%	48.1%	48.2%	49.2%	*49.0%*	*46.5%*	Long-Term Debt Ratio	*43.0%*
52.7%	51.5%	52.4%	55.2%	57.5%	55.6%	52.1%	51.9%	51.8%	50.8%	*51.0%*	*53.5%*	Common Equity Ratio	*57.0%*
1356.2	1424.7	1433.6	1389.0	1357.7	1529.8	1426.0	1468.9	1672.0	1748.8	*2050*	*2150*	Total Capital ($mill)	*2550*
1893.9	1973.6	2062.9	2121.6	2182.7	2260.9	2255.0	2421.4	2438.9	2654.8	*2640*	*2750*	Net Plant ($mill)	*3105*
6.2%	5.7%	5.8%	5.8%	5.5%	5.1%	NMF	5.8%	5.2%	5.2%	*4.0%*	*4.0%*	Return on Total Cap'l	*4.0%*
8.9%	8.2%	8.1%	7.6%	6.9%	6.9%	NMF	8.8%	7.5%	7.9%	*7.5%*	*7.0%*	Return on Shr. Equity	*7.0%*
8.9%	8.2%	8.1%	7.6%	6.9%	6.9%	NMF	8.8%	7.5%	7.9%	*7.5%*	*7.0%*	Return on Com Equity	*7.0%*
2.4%	1.6%	1.5%	1.1%	.6%	.9%	NMF	2.1%	1.4%	1.7%	*2.0%*	*2.0%*	Retained to Com Eq	*2.5%*
73%	80%	81%	85%	92%	87%	NMF	76%	82%	79%	*75%*	*73%*	All Div'ds to Net Prof	*63%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $1192.2 mill. **Due in 5 Yrs** $360.2 mill.
LT Debt $860.7 mill. **LT Interest** $43.1 mill.

(Total interest coverage: 3.1x)

Pension Assets-12/20 $373.9 mill.
Oblig. $595.2 mill.

Pfd Stock None

Common Stock 30,656,006 shares
as of 4/26/21

MARKET CAP $1.7 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	9.6	30.2	17.9
Other	284.1	293.0	284.9
Current Assets	293.7	323.2	302.8
Accts Payable	113.4	97.9	88.6
Debt Due	224.2	399.9	331.5
Other	144.6	129.3	165.6
Current Liab.	482.2	627.1	585.7
Fix. Chg. Cov.	336%	335%	312%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	-3.5%	-2.0%	*4.0%*
"Cash Flow"	0.5%	1.5%	*4.0%*
Earnings	-1.5%	1.5%	*5.5%*
Dividends	1.5%	0.5%	*.5%*
Book Value	1.0%	- -	*8.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	264.7	124.6	91.2	226.7	706.1
2019	285.4	123.4	90.3	247.3	746.4
2020	285.2	135.0	93.3	260.2	773.7
2021	315.9	*145*	*110*	*259.1*	*830*
2022	*320*	*150*	*120*	*270*	*860*

Calendar	EARNINGS PER SHARE [A] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	1.46	d.01	d.39	1.27	2.33
2019	1.50	.07	d.61	1.26	2.19
2020	1.58	d.17	d.61	1.50	2.30
2021	1.94	*d.10*	*d.60*	*1.31*	*2.55*
2022	*1.96*	*d.08*	*d.58*	*1.35*	*2.65*

Calendar	QUARTERLY DIVIDENDS PAID [B] ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.47	.47	.47	.4725	1.88
2018	.4725	.4725	.4725	.475	1.89
2019	.475	.475	.475	.4775	1.90
2020	.4775	.4775	.4775	.48	1.91
2021	.48	.48			

BUSINESS: Northwest Natural Holding Co. distributes natural gas to 1000 communities, 775,000 customers, in Oregon (89% of customers) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 3.7 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline system. Owns local underground storage. Rev. breakdown: residential, 37%; commercial, 22%; industrial, gas transportation, 41%. Employs 1,167. BlackRock Inc. owns 16.4% of shares; State Street, 15.4%; Off./Dir., 1.03% (4/21 proxy). CEO: David H. Anderson. Inc.: Oregon. Address: 220 NW 2nd Ave., Portland, OR 97209. Tel.: 503-226-4211. Internet: www.nwnatural.com.

Since our February review, shares of Northwest Natural Holding Co. are trading markedly higher. In fact, over that time frame, the stock's price climbed approximately 17%. While this is encouraging, investors should recall that NWN shares did sell off from the highs experienced in 2020. In fact, the stock lost more than 45% of its value through the lows that were hit earlier this year.

Meanwhile, the company posted solid financial results for the March quarter. This is evident in revenues advancing 10.8%, to $315.9 million, thanks to new rate increases in Oregon, customer growth, and asset management benefits. In fact, the regulated utility business added 11,000 natural gas meters over the past 12 months. Additionally, the colder-than-normal weather patterns across NWN's service territory helped to drive end-use consumer demand. Those benefits were partially offset by ongoing challenges stemming from the COVID-19 pandemic. However, with vaccines rolling out, it appears that there is a light at the end of that tunnel. On the margin front, overall expenses decreased 320 basis points, as a percentage of the top line. Combined, these factors drove the bottom line 22.8% higher, to $1.94 a share. This bested our call of $1.60.

We have raised our 2021 revenue and earnings estimate by $10 million and $0.05, to $830 million and $2.55 a share, respectively. Our revised figure would represent a more-than-10% year-over-year share-net advance. This should be supported by an estimated 7.5% rise in sales, thanks to new customer accounts at the Natural Gas Distribution business. At the same time, the Other business segment has been getting a boost from acquisitions. The NW Natural Water Company continues to purchase water and waste water utilities, thereby expanding its geographic footprint and providing clean, reliable service to its customers.

Neutrally ranked shares of Northwest Natural may appeal to income-seeking patient investors. Indeed, the stock's above-average dividend yield is enticing and well covered. What's more, NWN offers worthwhile recovery potential for the pull to 2024-2026.

Bryan J. Fong *May 28, 2021*

(A) Diluted earnings per share. Excludes nonrecurring items: '06, ($0.06); '08, ($0.03); '09, $0.06; May not sum due to rounding. Next earnings report due in early Aug.
(B) Dividends historically paid in mid-February, May, August, and November.
■ Dividend reinvestment plan available.
(C) In millions.
(D) Includes intangibles. In 2020: $69.2 million, $2.26/share.

Company's Financial Strength	A
Stock's Price Stability	85
Price Growth Persistence	30
Earnings Predictability	5

ONE GAS, INC. NYSE-OGS

RECENT PRICE 74.20 | P/E RATIO 19.5 (Trailing: 19.8 Median: NMF) | RELATIVE P/E RATIO 0.90 | DIV'D YLD 3.2% | VALUE LINE

TIMELINESS 3 Raised 3/26/21
SAFETY 2 New 6/2/17
TECHNICAL 4 Raised 5/28/21
BETA .80 (1.00 = Market)

18-Month Target Price Range

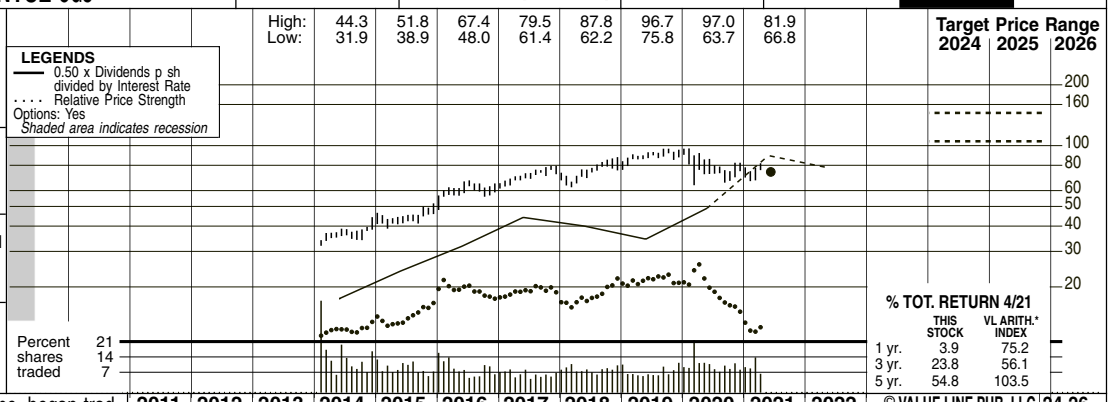
Low-High	Midpoint (% to Mid)
$60-$121	$91 (20%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	145	(+95%)	*20%*
Low	105	(+40%)	*12%*

Institutional Decisions

	2Q2020	3Q2020	4Q2020
to Buy	142	130	123
to Sell	137	151	163
Hld's(000)	42060	42057	42726



The shares of ONE Gas, Inc. began trading "regular-way" on the New York Stock Exchange on February 3, 2014. That happened as a result of the separation of ONEOK's natural gas distribution operation. Regarding the details of the spinoff, on January 31, 2014, ONEOK distributed one share of OGS common stock for every four shares of ONEOK common stock held by ONEOK shareholders of record as of the close of business on January 21. It should be mentioned that ONEOK did not retain any ownership interest in the new company.

CAPITAL STRUCTURE as of 3/31/21
Total Debt $4529.7 mill. **Due in 5 Yrs** $1020.0 mill.
LT Debt $4082.7 mill. **LT Interest** $150.0 mill.
(LT interest earned: 4.8x; total interest coverage: 4.8x)
Leases, Uncapitalized Annual rentals $7.9 mill.
Pfd Stock None
Pension Assets-12/20 $987.6 mill.
Oblig. $1077.6 mill.
Common Stock 53,245,144 shs.
as of 4/26/21
MARKET CAP: $4.0 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	17.9	8.0	704.9
Other	488.3	531.9	453.8
Current Assets	506.2	539.9	1158.7
Accts Payable	120.5	152.3	228.0
Debt Due	516.5	418.2	447.0
Other	235.7	226.6	204.0
Current Liab.	872.7	797.1	879.0
Fix. Chg. Cov.	567%	587%	595%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	- -	-1.0%	*6.0%*
"Cash Flow"	- -	8.0%	*6.0%*
Earnings	- -	10.0%	*6.5%*
Dividends	- -	14.5%	*7.0%*
Book Value	- -	3.0%	*10.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	638.5	292.5	238.3	464.4	1633.7
2019	661.0	290.6	248.6	452.5	1652.7
2020	528.2	273.3	244.6	484.2	1530.3
2021	625.3	*320*	*257*	*472.7*	*1675*
2022	*650*	*355*	*300*	*505*	*1810*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	1.72	.39	.31	.83	3.25
2019	1.76	.46	.33	.96	3.51
2020	1.72	.48	.39	1.09	3.68
2021	1.79	*.51*	*.42*	*1.08*	*3.80*
2022	*1.85*	*.55*	*.47*	*1.13*	*4.00*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.42	.42	.42	.42	1.68
2018	.46	.46	.46	.46	1.84
2019	.50	.50	.50	.50	2.00
2020	.54	.54	.54	.54	2.16
2021	.58	.58			

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
	- -	- -	- -	34.92	29.62	27.30	29.43	31.08	31.32	28.78	*31.30*	*33.85*	Revenues per sh	*43.00*
	- -	- -	- -	4.52	4.82	5.43	5.96	6.32	6.96	7.36	*7.75*	*8.20*	"Cash Flow" per sh	*9.75*
	- -	- -	- -	2.07	2.24	2.65	3.02	3.25	3.51	3.68	*3.80*	*4.00*	Earnings per sh A	*5.00*
	- -	- -	- -	.84	1.20	1.40	1.68	1.84	2.00	2.16	*2.32*	*2.48*	Div'ds Decl'd per sh B■	*2.95*
	- -	- -	- -	5.70	5.63	5.91	6.81	7.50	7.91	8.87	*9.00*	*9.20*	Cap'l Spending per sh	*9.75*
	- -	- -	- -	34.45	35.24	36.12	37.47	38.86	40.35	42.01	*44.40*	*48.45*	Book Value per sh	*74.40*
	- -	- -	- -	52.08	52.26	52.28	52.31	52.57	52.77	53.17	*53.50*	*53.50*	Common Shs Outst'g C	*57.00*
	- -	- -	- -	17.8	19.8	22.7	23.5	23.1	25.3	21.7	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*25.0*
	- -	- -	- -	.94	1.00	1.19	1.18	1.25	1.35	1.11			Relative P/E Ratio	*1.40*
	- -	- -	- -	2.3%	2.7%	2.3%	2.4%	2.5%	2.3%	2.7%			Avg Ann'l Div'd Yield	*2.4%*
	- -	- -	- -	1818.9	1547.7	1427.2	1539.6	1633.7	1652.7	1530.3	*1675*	*1810*	Revenues ($mill)	*2450*
	- -	- -	- -	109.8	119.0	140.1	159.9	172.2	186.7	196.4	*205*	*215*	Net Profit ($mill)	*285*
	- -	- -	- -	38.4%	38.0%	37.8%	36.4%	23.7%	18.7%	17.5%	*17.0%*	*17.5%*	Income Tax Rate	*22.0%*
	- -	- -	- -	6.0%	7.7%	9.8%	10.4%	10.5%	11.3%	12.8%	*12.2%*	*11.9%*	Net Profit Margin	*11.6%*
	- -	- -	- -	40.1%	39.5%	38.7%	37.8%	38.6%	37.7%	41.5%	*64.0%*	*62.0%*	Long-Term Debt Ratio	*47.0%*
	- -	- -	- -	59.9%	60.5%	61.3%	62.2%	61.4%	62.3%	58.5%	*36.0%*	*38.0%*	Common Equity Ratio	*53.0%*
	- -	- -	- -	2995.3	3042.9	3080.7	3153.5	3328.1	3415.5	3815.7	*6600*	*6820*	Total Capital ($mill)	*8000*
	- -	- -	- -	3293.7	3511.9	3731.6	4007.6	4283.7	4565.2	4867.1	*5100*	*5330*	Net Plant ($mill)	*6000*
	- -	- -	- -	4.4%	4.7%	5.2%	5.8%	5.9%	6.4%	6.0%	*5.0%*	*5.0%*	Return on Total Cap'l	*5.0%*
	- -	- -	- -	6.1%	6.5%	7.4%	8.2%	8.4%	8.8%	8.8%	*8.5%*	*8.5%*	Return on Shr. Equity	*6.5%*
	- -	- -	- -	6.1%	6.5%	7.4%	8.2%	8.4%	8.8%	8.8%	*8.5%*	*8.5%*	Return on Com Equity	*6.5%*
	- -	- -	- -	3.7%	3.1%	3.5%	3.7%	3.7%	3.8%	3.7%	*3.5%*	*3.0%*	Retained to Com Eq	*3.0%*
	- -	- -	- -	40%	53%	52%	55%	56%	56%	58%	*61%*	*62%*	All Div'ds to Net Prof	*59%*

BUSINESS: ONE Gas, Inc. provides natural gas distribution services to more than two million customers. There are three divisions: Oklahoma Natural Gas, Kansas Gas Service, and Texas Gas Service. The company purchased 153 Bcf of natural gas supply in 2020, compared to 174 Bcf in 2019. Total volumes delivered by customer (fiscal 2020): transportation, 58.3%; residential, 31.7%; commercial & industrial, 9.4%; other, .6%. ONE Gas has around 3,600 employees. BlackRock owns 11.9% of common stock; The Vanguard Group, 9.7%; American Century Investment, 7.6%; officers and directors, 1.9% (4/21 Proxy). CEO: Pierce H. Norton II. Incorporated: Oklahoma. Address: 15 East Fifth Street, Tulsa, Oklahoma 74103. Tel.: 918-947-7000. Internet: www.onegas.com.

ONE Gas' bottom line exhibited some improvement in the opening quarter of 2021. Share net of $1.79 was 4% higher than the prior-year total of $1.72. That partially reflected benefits from new rates, primarily in Texas and Oklahoma. Another contributing factor was an expanded customer base in Oklahoma and Texas. The effective income tax rate decreased, as well. The company adds that there was only a small number of outages across the service area despite the severe storm that occurred there in February (see below for more details). Although the effects of the coronavirus have continued, we believe that full-year earnings will increase around 3%, to $3.80 a share. Assuming further growth of operating margins in 2022, share net might advance another 5%, to $4.00.

Winter Storm Uri prompted leadership to take certain actions. Given that event, ONE Gas experienced unprecedented market pricing for gas costs in its Kansas, Oklahoma, and Texas territories, which resulted in aggregated natural gas purchases for February of approximately $2.1 billion. To pay for these expenses, the company issued $1 billion of 0.85 percent senior notes due 2023, $700 million of 1.10 percent senior notes due 2024, and $800 million of floating-rate senior notes due 2023. It should also be stated that ONE Gas seeks to recover those costs through future rate filings. Still, since the balance sheet is now more leveraged, we lowered the Financial Strength rating one notch, to B++.

Business prospects over the 2024-2026 span seem promising. The company remains the leading natural gas distributor (as measured by customer count) in both Oklahoma and Kansas, and holds the number-three position in Texas. Moreover, these markets seem to have decent growth possibilities and are located in one of the most active drilling regions in the United States. Also, ONE Gas seems capable of satisfying its working capital requirements, capital expenditures, and other commitments for a while.

These shares, although just an Average (3) selection for Timeliness, possess solid long-term total return potential.

Frederick L. Harris, III *May 28, 2021*

(A) Diluted EPS. Excludes nonrecurring gain: 2017, $0.06. Next earnings report due early Aug. Quarterly EPS for 2018 don't add up due to rounding.

(B) Dividends historically paid in early March, June, Sept., and Dec. ■ Dividend reinvestment plan. Direct stock purchase plan.

(C) In millions.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	80
Earnings Predictability	100

SOUTH JERSEY INDS. NYSE-SJI

RECENT PRICE 25.66 | P/E RATIO 14.3 (Trailing: 14.2 Median: 19.0) | RELATIVE P/E RATIO 0.66 | DIV'D YLD 5.0% | VALUE LINE

TIMELINESS 5 Lowered 5/28/21
SAFETY 3 Lowered 8/28/20
TECHNICAL 5 Lowered 5/21/21
BETA 1.05 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$18-$51	$35 (35%)

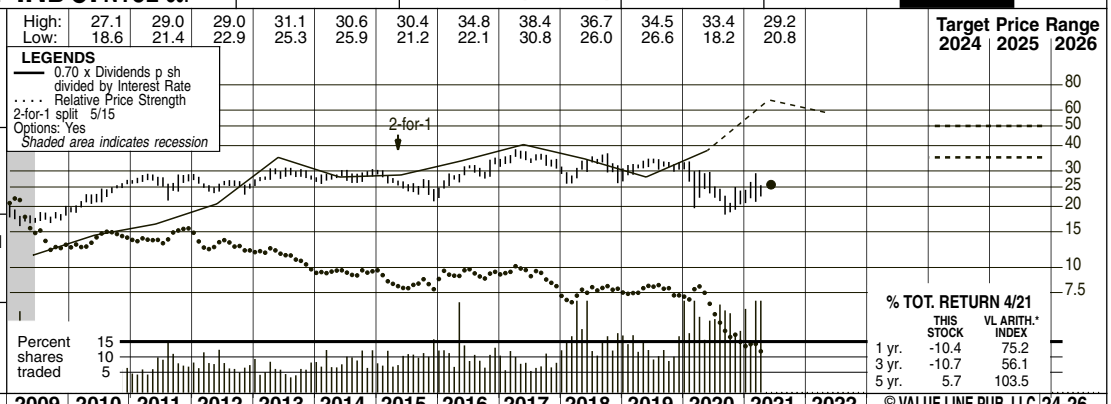
2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+95%)	*21%*
Low	35	(+35%)	*12%*

Institutional Decisions

	2Q2020	3Q2020	4Q2020
to Buy	88	132	110
to Sell	110	64	91
Hld's(000)	83521	85672	110377

	2024	2025	2026
Target Price Range			



% TOT. RETURN 4/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-10.4	75.2
3 yr.	-10.7	56.1
5 yr.	5.7	103.5

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
15.89	15.88	16.15	16.18	14.19	15.48	13.71	11.16	11.18	12.98	13.52	13.04	15.63	19.20	17.63	15.32	*17.25*	*18.10*	Revenues per sh	*21.75*
1.25	1.75	1.60	1.74	1.86	2.10	2.23	2.34	2.48	2.67	2.42	2.67	2.79	2.91	2.56	3.32	*2.95*	*3.25*	"Cash Flow" per sh	*4.15*
.86	1.23	1.05	1.14	1.19	1.35	1.45	1.52	1.52	1.57	1.44	1.34	1.23	1.38	1.12	1.68	*1.80*	*1.95*	Earnings per sh A	*2.70*
.43	.46	.51	.56	.61	.68	.75	.83	.90	.96	1.02	1.06	1.10	1.13	1.16	1.19	*1.25*	*1.32*	Div'ds Decl'd per sh B ■	*1.50*
1.60	1.26	.94	1.04	1.83	2.79	3.20	4.01	4.84	5.01	4.87	3.50	3.43	3.99	5.46	4.84	*5.85*	*6.65*	Cap'l Spending per sh	*7.85*
6.75	7.55	8.12	8.67	9.12	9.54	10.33	11.63	12.64	13.65	14.62	16.22	14.99	14.82	15.41	16.51	*18.20*	*18.85*	Book Value per sh C	*22.60*
57.96	58.65	59.22	59.46	59.59	59.75	60.43	63.31	65.43	68.33	70.97	79.48	79.55	85.51	92.39	100.59	*103.00*	*105.00*	Common Shs Outst'g D	*115.00*
16.6	11.9	17.2	15.9	15.0	16.8	18.4	16.9	18.9	18.0	17.9	21.7	27.9	22.6	28.3	14.9	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*16.0*
.88	.64	.91	.96	1.00	1.07	1.15	1.08	1.06	.95	.90	1.14	1.40	1.22	1.51	.77			Relative P/E Ratio	*.90*
3.0%	3.2%	2.8%	3.1%	3.4%	3.0%	2.8%	3.2%	3.1%	3.4%	3.9%	3.6%	3.2%	3.6%	3.7%	4.8%			Avg Ann'l Div'd Yield	*3.5%*
828.6	706.3	731.4	887.0	959.6	1036.5	1243.1	1641.3	1628.6	1541.4	*1775*	*1900*	Revenues ($mill)	*2500*
87.0	93.3	97.1	104.0	99.0	102.8	98.1	116.2	103.0	163.0	*185*	*205*	Net Profit ($mill)	*300*
22.4%	10.8%	- -	- -	5.9%	42.0%	- -	- -	- -	9.9%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
10.5%	13.2%	13.3%	11.7%	10.3%	9.9%	7.9%	7.1%	6.3%	10.6%	*10.4%*	*10.8%*	Net Profit Margin	*12.0%*
40.5%	45.0%	45.1%	48.0%	49.2%	38.5%	48.5%	62.4%	59.2%	62.6%	*63.0%*	*63.0%*	Long-Term Debt Ratio	*60.5%*
59.5%	55.0%	54.9%	52.0%	50.8%	61.5%	51.5%	37.6%	40.8%	37.4%	*37.0%*	*37.0%*	Common Equity Ratio	*39.5%*
1048.3	1337.6	1507.4	1791.9	2043.9	2097.2	2315.4	3373.9	3493.9	4437.3	*5075*	*5380*	Total Capital ($mill)	*6600*
1352.4	1578.0	1859.1	2134.1	2448.1	2623.8	2700.2	3653.5	4073.5	4464.2	*4800*	*5150*	Net Plant ($mill)	*5800*
8.9%	7.4%	6.8%	6.4%	5.4%	5.4%	5.1%	4.4%	4.0%	4.8%	*4.5%*	*5.0%*	Return on Total Cap'l	*5.5%*
13.9%	12.7%	11.7%	11.2%	9.5%	8.0%	8.2%	9.2%	7.2%	9.8%	*10.0%*	*10.5%*	Return on Shr. Equity	*11.5%*
13.9%	12.7%	11.7%	11.2%	9.5%	8.0%	8.2%	9.2%	7.2%	9.8%	*10.0%*	*10.5%*	Return on Com Equity	*11.5%*
6.7%	5.8%	4.8%	4.3%	2.8%	1.6%	.9%	1.7%	NMF	2.9%	*3.0%*	*3.5%*	Retained to Com Eq	*5.0%*
52%	55%	59%	61%	71%	80%	89%	82%	104%	70%	*70%*	*68%*	All Div'ds to Net Prof	*58%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $3377.5 mill. **Due in 5 Yrs** $380.1 mill.
LT Debt $3063.4 mill. **LT Interest** $100 mill.

Leases, Uncapitalized Annual rentals $1.2 mill.
Pension Assets-12/20 $331 mill.
Oblig. $481.8 mill.
Pfd Stock None

Common Stock 112,421,394 shs.
as of 5/1/21

MARKET CAP: $2.9 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	6.4	34.0	30.4
Other	646.1	472.8	458.5
Current Assets	652.5	506.8	488.9
Accts Payable	232.2	256.6	218.1
Debt Due	1316.6	739.2	314.1
Other	183.1	167.8	220.5
Current Liab.	1731.9	1163.6	752.7
Fix. Chg. Cov.	176%	238%	333%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	1.5%	6.5%	*4.0%*
"Cash Flow"	4.5%	3.0%	*6.0%*
Earnings	1.5%	-1.5%	*11.5%*
Dividends	6.5%	4.0%	*4.5%*
Book Value	5.5%	2.5%	*6.5%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	521.9	227.3	302.5	589.6	1641.3
2019	637.3	266.9	261.2	463.2	1628.6
2020	534.1	260.0	261.5	485.8	1541.4
2021	674.3	*285*	*285*	*530.7*	*1775*
2022	*640*	*320*	*320*	*620*	*1900*

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	1.19	.07	d.27	.39	1.38
2019	1.09	d.13	d.30	.46	1.12
2020	1.15	d.01	d.06	.62	1.68
2021	1.26	*.01*	*d.05*	*.58*	*1.80*
2022	*1.32*	*.02*	*d.02*	*.63*	*1.95*

Calendar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	- -	.273	.273	.553	1.10
2018	- -	.280	.280	.567	1.13
2019	- -	.287	.287	.582	1.16
2020	- -	.295	.295	.598	1.19
2021	- -	.303			

BUSINESS: South Jersey Industries, Inc. is a holding company. The company distributes natural gas in New Jersey and Maryland. South Jersey Gas rev. mix '20: residential, 48%; commercial, 23%; cogen. and electric gen., 9%; industrial, 20%. Acq. Elizabethtown Gas and Elkton Gas, 7/18. Nonutil. oper. incl. South Jersey Energy, South Jersey Resources Group, South Jersey Exploration, Marina Energy, South Jersey Energy Service Plus, and SJI Midstream. Has about 1,130 empl. Off./dir. own less than 1% of common; BlackRock, 14.4%; State Street Corporation, 13.9%; The Vanguard Group, 10.8% (3/21 proxy). Pres. & CEO: Michael J. Renna. Chairman: Joseph M. Rigby. Inc.: NJ. Addr.: 1 South Jersey Plaza, Folsom, NJ 08037. Tel.: 609-561-9000. Web: www.sjindustries.com.

South Jersey Industries has recently completed two concurrent registered public offerings. This included $228 million in shares of common stock and $300 million in equity units. The equity units were also listed on the New York Stock Exchange. Net proceeds from these offerings will be used to reduce leverage and for general purposes, as well as for capital expenditures mainly for its regulated businesses, such as infrastructure investments. Investors were not pleased by this development and the shares fell on the news. This issuance of additional shares drives down the price of a security and dilutes the ownership interest of existing stockholders.

But the equity has staged a partial rebound lately. The company posted good results for the March quarter. The top line increased roughly 26%, year over year, to $674.3 million. Adjusted earnings per share of $1.26 compared favorably with the prior-year tally. The company's utility and nonutility operations both fared well in the recent period.

Prospects for the coming years appear favorable here. The company's utility businesses should continue to benefit from solid customer growth, rate relief, and infrastructure modernization programs that allow South Jersey to enhance the reliability of its systems and earn an authorized return on these investments. Elsewhere, we expect favorable results on the nonutility side. The Energy Management segment's Wholesale Services line should continue to benefit from improved asset optimization opportunities and additional fuel management contracts. Earnings from fuel cell and solar investments ought to support performance at the Energy Production segment.

This stock is ranked to trail the broader market averages for the coming six to 12 months. Looking further out, we anticipate increasing revenue and healthy growth in earnings per share for the company over the pull to mid-decade. From the recent quotation, this equity offers attractive long-term total return potential. This is helped by a relatively generous dividend yield. All told, patient, income-oriented accounts may find something to like here.

Michael Napoli, CFA *May 28, 2021*

(A) Based on economic egs. from 2007. GAAP EPS: '10, $1.11; '11, $1.49; '12, $1.49; '13, $1.28; '14, $1.46; '15, $1.52; '16, $1.56; '17, ($0.04); '18, $0.21; '19, $0.84; '20, $1.62. Excl. nonrecur. gain (loss): '10, ($0.24); '11, $0.04; '12, ($0.03); '13, ($0.24); '14, ($0.11); '15, $0.08; '16, $0.22; '17, ($1.27); '18, ($1.17); '19, ($0.28); '20, ($0.06). Next egs. rpt. due early August. **(B)** Div'ds paid early April, July, Oct., and late Dec. ■ Div. reinvest. plan avail. **(C)** Incl. reg. assets. In 2020: $674.0 mill., $6.70 per shr. **(D)** In mill., adj. for split.

Company's Financial Strength	B++
Stock's Price Stability	60
Price Growth Persistence	15
Earnings Predictability	65

SOUTHWEST GAS NYSE-SWX

RECENT PRICE **68.88** | P/E RATIO **15.3** (Trailing: 14.2 Median: 19.0) | RELATIVE P/E RATIO **0.71** | DIV'D YLD **3.5%** | **VALUE LINE**

TIMELINESS 3 Lowered 1/8/21
SAFETY 3 Lowered 1/4/91
TECHNICAL 4 Raised 5/28/21
BETA .95 (1.00 = Market)

18-Month Target Price Range

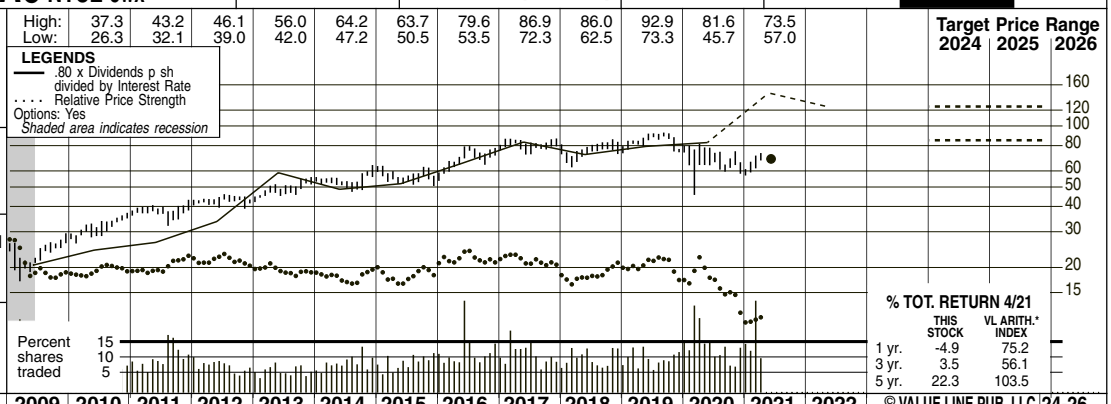
Low-High	Midpoint (% to Mid)
$48-$119	$84 (20%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	125	(+80%)	*18%*
Low	85	(+25%)	*9%*

Institutional Decisions

	2Q2020	3Q2020	4Q2020
to Buy	130	116	140
to Sell	123	137	123
Hld's(000)	48082	46991	48058



% TOT. RETURN 4/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-4.9	75.2
3 yr.	3.5	56.1
5 yr.	22.3	103.5

2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
43.59	48.47	50.28	48.53	42.00	40.18	41.07	41.77	42.08	45.61	52.00	51.82	53.00	54.31	56.72	57.68	*59.30*	*60.65*	Revenues per sh	*67.70*
5.20	5.97	6.21	5.76	6.16	6.46	6.81	7.73	8.24	8.47	8.62	9.29	8.83	8.14	9.40	9.87	*10.50*	*11.05*	"Cash Flow" per sh	*14.00*
1.25	1.98	1.95	1.39	1.94	2.27	2.43	2.86	3.11	3.01	2.92	3.18	3.62	3.68	3.94	4.14	*4.50*	*4.75*	Earnings per sh A	*6.50*
.82	.82	.86	.90	.95	1.00	1.06	1.18	1.32	1.46	1.62	1.80	1.98	2.08	2.18	2.28	*2.37*	*2.48*	Div'ds Decl'd per sh B■†	*2.80*
7.49	8.27	7.96	6.79	4.81	4.73	8.29	8.57	7.86	8.53	10.30	11.15	12.97	14.44	17.06	14.43	*13.55*	*16.40*	Cap'l Spending per sh	*24.60*
19.10	21.58	22.98	23.49	24.44	25.62	26.66	28.35	30.47	31.95	33.61	35.03	37.74	42.47	45.56	46.77	*50.00*	*52.85*	Book Value per sh	*63.10*
39.33	41.77	42.81	44.19	45.09	45.56	45.96	46.15	46.36	46.52	47.38	47.48	48.09	53.03	55.01	57.19	*59.00*	*61.00*	Common Shs Outst'g C	*65.00*
20.6	15.9	17.3	20.3	12.2	14.0	15.7	15.0	15.8	17.9	19.4	21.6	22.2	20.6	21.3	16.8	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*16.0*
1.10	.86	.92	1.22	.81	.89	.98	.95	.89	.94	.98	1.13	1.12	1.11	1.13	.87			Relative P/E Ratio	*.90*
3.2%	2.6%	2.6%	3.2%	4.0%	3.2%	2.8%	2.8%	2.7%	2.7%	2.9%	2.6%	2.5%	2.7%	2.6%	3.3%			Avg Ann'l Div'd Yield	*2.7%*
1887.2	1927.8	1950.8	2121.7	2463.6	2460.5	2548.8	2880.0	3119.9	3298.9	*3500*	*3700*	Revenues ($mill)	*4400*
112.3	133.3	145.3	141.1	138.3	152.0	173.8	182.3	213.9	232.3	*260*	*285*	Net Profit ($mill)	*410*
36.2%	36.2%	35.0%	35.7%	36.4%	33.9%	32.8%	25.3%	20.5%	21.6%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
6.0%	6.9%	7.4%	6.7%	5.6%	6.2%	6.8%	6.3%	6.9%	7.0%	*7.4%*	*7.7%*	Net Profit Margin	*9.3%*
43.2%	49.2%	49.4%	52.4%	49.3%	48.2%	49.8%	48.3%	47.9%	50.5%	*50.5%*	*50.0%*	Long-Term Debt Ratio	*48.0%*
56.8%	50.8%	50.6%	47.6%	50.7%	51.8%	50.2%	51.7%	52.1%	49.5%	*49.5%*	*50.0%*	Common Equity Ratio	*52.0%*
2155.9	2576.9	2793.7	3123.9	3143.5	3213.5	3613.3	4359.3	4806.4	5407.2	*5950*	*6425*	Total Capital ($mill)	*7850*
3218.9	3343.8	3486.1	3658.4	3891.1	4132.0	4523.7	5093.2	5685.2	6176.1	*6400*	*6750*	Net Plant ($mill)	*8000*
6.4%	6.4%	6.3%	5.7%	5.5%	5.8%	5.8%	5.2%	5.4%	5.3%	*5.0%*	*5.5%*	Return on Total Cap'l	*6.0%*
9.2%	10.2%	10.3%	9.5%	8.7%	9.1%	9.6%	8.1%	8.5%	8.7%	*9.0%*	*9.0%*	Return on Shr. Equity	*10.0%*
9.2%	10.2%	10.3%	9.5%	8.7%	9.1%	9.6%	8.1%	8.5%	8.7%	*9.0%*	*9.0%*	Return on Com Equity	*10.0%*
5.3%	6.1%	6.1%	5.0%	4.0%	4.1%	4.5%	3.6%	3.9%	4.0%	*4.0%*	*4.0%*	Retained to Com Eq	*5.5%*
43%	40%	41%	47%	54%	55%	53%	55%	54%	54%	*54%*	*53%*	All Div'ds to Net Prof	*44%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $3073.9 mill. **Due in 5 Yrs** $750.9 mill.
LT Debt $2696.6 mill. **LT Interest** $100.0 mill.
(Total interest coverage: 4.3x) (48% of Cap'l)
Leases, Uncapitalized Annual rentals $13.9 mill.
Pension Assets-12/20 $1238.7 mill.
Oblig. $1581.4 mill.
Pfd Stock None

Common Stock 58,001,396 shs.
as of 4/30/21

MARKET CAP: $4.0 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	49.5	83.4	92.3
Other	810.4	787.6	908.6
Current Assets	859.9	871.0	1000.9
Accts Payable	238.9	231.3	182.8
Debt Due	374.5	147.4	377.3
Other	466.5	533.3	475.9
Current Liab.	1079.9	912.0	1036.0
Fix. Chg. Cov.	340%	379%	419%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	2.5%	4.0%	*3.0%*
"Cash Flow"	4.0%	1.5%	*7.5%*
Earnings	7.5%	5.5%	*9.0%*
Dividends	8.5%	8.0%	*4.5%*
Book Value	6.0%	7.0%	*6.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	754.3	670.9	668.1	786.7	2880.0
2019	833.6	713.0	725.2	848.1	3119.9
2020	836.3	757.2	791.2	914.2	3298.9
2021	885.9	*825*	*840*	*949.1*	*3500*
2022	*925*	*875*	*900*	*1000*	*3700*

Calendar	EARNINGS PER SHARE A D Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2018	1.63	.44	.25	1.36	3.68
2019	1.77	.41	.10	1.67	3.94
2020	1.31	.68	.32	1.82	4.14
2021	2.03	*.50*	*.25*	*1.72*	*4.50*
2022	*1.95*	*.60*	*.35*	*1.85*	*4.75*

Calendar	QUARTERLY DIVIDENDS PAID B■† Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.450	.495	.495	.495	1.94
2018	.495	.520	.520	.520	2.06
2019	.520	.545	.545	.545	2.16
2020	.545	.570	.570	.570	2.26
2021	.570	.595			

BUSINESS: Southwest Gas Holdings, Inc. is the parent holding company of Southwest Gas and Centuri Group. Southwest Gas is a regulated gas distributor serving 2.1 million customers in Arizona, Nevada, and California. Centuri provides construction services. 2020 margin mix: residential and small commercial, 85%; large commercial and industrial, 3%; transportation, 12%. Total throughput: 2.2 billion therms. Has 11,149 employees. Off. & dir. own .8% of common; BlackRock, Inc., 12.3%; The Vanguard Group, Inc., 9.8%; Lazard Asset Management LLC, 9.4% (3/21 Proxy). Chairman: Michael J. Melarkey. Pres. & CEO: John P. Hester. Inc.: DE. Addr.: 8360 S. Durango Drive, P.O. Box 98510 Las Vegas, Nevada 89193. Tel.: 702-876-7237. Web: www.swgas.com.

Shares of Southwest Gas have moved higher in price in the current year. The company reported favorable results for the March period. The top line increased roughly 6%, year to year, to $885.9 million. Earnings per share of $2.03 marked a considerable improvement over the prior-year tally. The utility business benefited from favorable rulings in several rate cases. Its territories in Arizona, California, and Nevada have all experienced significant growth, driving increased demand for new homes, and natural gas services in general. Many of the communities that the company serves have benefited in recent times from the easing of pandemic-related restrictions. The infrastructure services operation, Centuri, also fared well. This business continues to gain as its regulated utility customers modernize their energy infrastructure.

We anticipate solid operating results going forward. Southwest's utility operation ought to further benefit from healthy growth in the customer base. Infrastructure investments by the utility should also pay off in the years ahead. Rate relief will likely continue to benefit performance, too. The company depends on such approved revenue increases to offset increasing expenses and allow it to earn an acceptable return on investment. Elsewhere, Centuri, the company's infrastructure services business, should also perform fairly well. This line derives its revenue from the installation, replacement, repair, and maintenance of energy distribution systems. Centuri has a robust client base, and ought to benefit from the ongoing need of utilities to replace aging infrastructure. Measures by the company to control costs should also pay off.

This stock is ranked to track the broader market averages for the coming six to 12 months. Looking further out, we anticipate solid growth in revenues and earnings for the company over the pull to mid-decade. From the recent quotation, this stock offers attractive long-term total return potential. The dividend should continue to increase at a steady rate in the coming years. In addition, Southwest Gas earns good marks for Financial Strength, Price Stability, and Earnings Predictability. Volatility is subdued, too.

Michael Napoli, CFA *May 28, 2021*

(A) Diluted earnings. Excl. nonrec. gains (losses): '05, (11¢); '06, 7¢. Next egs. report due early August. **(B)** Dividends historically paid early March, June, September, and December. ■† Div'd reinvestment and stock purchase plan avail. **(C)** In millions. **(D)** Totals may not sum due to rounding.

Company's Financial Strength	A
Stock's Price Stability	80
Price Growth Persistence	60
Earnings Predictability	100

SPIRE INC. NYSE-SR

RECENT PRICE 74.48 | P/E RATIO 14.6 (Trailing: 25.9 Median: 19.0) | RELATIVE P/E RATIO 0.67 | DIV'D YLD 3.6% | VALUE LINE

TIMELINESS 3 Raised 5/21/21
SAFETY 2 Raised 6/20/03
TECHNICAL 2 Raised 5/28/21
BETA .85 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$37-$92	$65 (-15%)

2024-26 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	130	(+75%)	*18%*
Low	95	(+30%)	*10%*

Institutional Decisions

	2Q2020	3Q2020	4Q2020
to Buy	127	145	131
to Sell	130	121	148
Hld's(000)	40679	40642	41028

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
High:	37.8	42.8	44.0	48.5	55.2	61.0	71.2	82.9	81.1	88.0	88.0	77.9						
Low:	30.8	32.9	36.5	37.4	44.0	49.1	57.1	62.3	60.1	71.7	50.6	59.3						

LEGENDS
0.35 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession

Target Price Range 2024 | 2025 | 2026

% TOT. RETURN 4/21

	THIS STOCK	VL ARITH.* INDEX
1 yr.	7.4	75.2
3 yr.	15.3	56.1
5 yr.	38.2	103.5

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	© VALUE LINE PUB. LLC	24-26
	75.43	93.51	93.40	100.44	85.49	77.83	71.48	49.90	31.10	37.68	45.59	33.68	36.07	38.78	38.30	35.96	*42.85*	*36.90*	Revenues per sh [A]	*58.20*
	2.98	3.81	3.87	4.22	4.56	4.11	4.62	4.58	3.12	3.87	6.15	6.16	6.54	7.55	7.12	5.25	*9.10*	*8.55*	"Cash Flow" per sh	*10.50*
	1.90	2.37	2.31	2.64	2.92	2.43	2.86	2.79	2.02	2.35	3.16	3.24	3.43	4.33	3.52	1.44	*5.00*	*4.30*	Earnings per sh [A B]	*5.50*
	1.37	1.40	1.45	1.49	1.53	1.57	1.61	1.66	1.70	1.76	1.84	1.96	2.10	2.25	2.37	2.49	*2.60*	*2.72*	Div'ds Decl'd per sh [C ■]	*3.10*
	2.84	2.97	2.72	2.57	2.36	2.56	3.02	4.83	4.00	3.96	6.68	6.42	9.08	9.86	16.15	12.37	*11.25*	*10.85*	Cap'l Spending per sh	*11.45*
	17.31	18.85	19.79	22.12	23.32	24.02	25.56	26.67	32.00	34.93	36.30	38.73	41.26	44.51	45.14	44.19	*54.40*	*56.25*	Book Value per sh [D]	*75.00*
	21.17	21.36	21.65	21.99	22.17	22.29	22.43	22.55	32.70	43.18	43.36	45.65	48.26	50.67	50.97	51.60	*52.50*	*53.50*	Common Shs Outst'g [E]	*55.00*
	16.2	13.6	14.2	14.3	13.4	13.7	13.0	14.5	21.3	19.8	16.5	19.6	19.8	16.7	22.8	NMF	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*20.5*
	.86	.73	.75	.86	.89	.87	.82	.92	1.20	1.04	.83	1.03	1.00	.90	1.21	NMF			Relative P/E Ratio	*1.15*
	4.4%	4.3%	4.4%	3.9%	3.9%	4.7%	4.3%	4.1%	4.0%	3.8%	3.5%	3.1%	3.1%	3.1%	3.0%	3.4%			Avg Ann'l Div'd Yield	*2.8%*
	1603.3	1125.5	1017.0	1627.2	1976.4	1537.3	1740.7	1965.0	1952.4	1855.4	*2250*	*1975*	Revenues ($mill) [A]	*3200*
	63.8	62.6	52.8	84.6	136.9	144.2	161.6	214.2	184.6	88.6	*265*	*230*	Net Profit ($mill)	*300*
	31.4%	29.6%	25.0%	27.6%	31.2%	32.5%	32.4%	32.4%	15.7%	12.3%	*20.0%*	*21.0%*	Income Tax Rate	*23.5%*
	4.0%	5.6%	5.2%	5.2%	6.9%	9.4%	9.3%	10.9%	9.5%	4.8%	*11.8%*	*11.6%*	Net Profit Margin	*9.4%*
	38.9%	36.1%	46.6%	55.1%	53.0%	50.9%	50.0%	45.7%	45.0%	49.0%	*49.0%*	*49.0%*	Long-Term Debt Ratio	*45.0%*
	61.1%	63.9%	53.4%	44.9%	47.0%	49.1%	50.0%	54.3%	55.0%	51.0%	*51.0%*	*51.0%*	Common Equity Ratio	*55.0%*
	937.7	941.0	1959.0	3359.4	3345.1	3601.9	3986.3	4155.5	4625.6	4946.0	*5600*	*5900*	Total Capital ($mill)	*7500*
	928.7	1019.3	1776.6	2759.7	2941.2	3300.9	3665.2	3970.5	4352.0	4680.1	*5100*	*5400*	Net Plant ($mill)	*6800*
	8.1%	7.9%	3.3%	3.1%	5.1%	4.9%	5.0%	6.3%	5.1%	2.9%	*6.0%*	*5.5%*	Return on Total Cap'l	*5.5%*
	11.1%	10.4%	5.0%	5.6%	8.7%	8.2%	8.1%	9.5%	7.3%	3.5%	*9.5%*	*7.5%*	Return on Shr. Equity	*7.5%*
	11.1%	10.4%	5.0%	5.6%	8.7%	8.2%	8.1%	9.5%	7.9%	3.2%	*9.5%*	*7.5%*	Return on Com Equity	*7.5%*
	4.9%	4.3%	1.0%	1.5%	3.7%	3.3%	3.3%	4.7%	2.7%	NMF	*4.0%*	*2.5%*	Retained to Com Eq	*3.0%*
	56%	59%	81%	73%	58%	59%	60%	51%	66%	NMF	*57%*	*70%*	All Div'ds to Net Prof	*62%*

CAPITAL STRUCTURE as of 3/31/21
Total Debt $3456.8 mill. **Due in 5 Yrs**$1690.0 mill.
LT Debt $2692.5 mill. **LT Interest** $130.0 mill.
(Total interest coverage: 2.0x)

Leases, Uncapitalized Annual rentals $8.8 mill.
Pension Assets-9/20 $897.9 mill.
Oblig. $1401.3 mill.
Pfd Stock $242.0 mill. **Pfd Div'd** $14.8 mill.
Common Stock 51,679,561 shs.
as of 4/30/21

MARKET CAP: $3.8 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2019	2020	3/31/21
Cash Assets	5.8	4.1	104.0
Other	608.7	586.5	936.0
Current Assets	614.5	590.6	1040.0
Accts Payable	301.5	243.3	352.1
Debt Due	783.2	708.4	764.3
Other	384.1	497.5	391.1
Current Liab.	1468.8	1449.2	1507.5
Fix. Chg. Cov.	272%	373%	385%

ANNUAL RATES (of change (per sh))	Past 10 Yrs.	Past 5 Yrs.	Est'd '18-'20 to '24-'26
Revenues	-8.0%	- -	*7.5%*
"Cash Flow"	4.5%	8.5%	*8.0%*
Earnings	1.5%	4.5%	*10.0%*
Dividends	4.5%	6.0%	*4.5%*
Book Value	7.0%	5.5%	*9.0%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.)[A] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2018	561.8	813.4	350.6	239.2	1965.0
2019	602.0	803.5	321.3	225.6	1952.4
2020	566.9	715.5	321.1	251.9	1855.4
2021	512.6	1104.9	*377.5*	*255*	*2250*
2022	*530*	*803*	*376*	*266*	*1975*

Fiscal Year Ends	EARNINGS PER SHARE [A B F] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2018	2.39	2.03	.52	d.51	4.33
2019	1.32	3.04	d.09	d.74	3.52
2020	1.24	2.54	d1.87	d.45	1.44
2021	1.65	3.55	*.48*	*d.68*	*5.00*
2022	*1.75*	*2.74*	*.45*	*d.64*	*4.30*

Calendar	QUARTERLY DIVIDENDS PAID [C ■] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.525	.525	.525	.525	2.10
2018	.5625	.5625	.5625	.5625	2.25
2019	.5925	.5925	.5925	.5925	2.37
2020	.6225	.6225	.6225	.6225	2.49
2021	.65	.65			

BUSINESS: Spire Inc., formerly known as the Laclede Group, Inc., is a holding company for natural gas utilities, which distributes natural gas across Missouri, including the cities of St. Louis and Kansas City, Alabama, and Mississippi. Has roughly 1.7 million customers. Acquired Missouri Gas 9/13, Alabama Gas Co 9/14. Utility therms sold and transported in fiscal 2020: 3.3 bill. Revenue mix for regulated operations: residential, 68%; commercial and industrial, 22%; transportation, 6%; other, 4%. Has about 3,583 employees. Officers and directors own 3.0% of common shares; BlackRock, 12.0% (1/21 proxy). Chairman: Edward Glotzbach; CEO: Suzanne Sitherwood. Inc.: Missouri. Address: 700 Market Street, St. Louis, Missouri 63101. Tel.: 314-342-0500. Internet: www.spireenergy.com.

Spire registered impressive numbers during the first half of fiscal 2021 (concludes September 30th). Share net of $5.20 surged around 38%, compared to the prior-year total of $3.78. This was made possible partially by the Gas Utility division, helped by increased Infrastructure System Replacement Surcharge (ISRS) revenues, the effects of colder temperatures, plus diminished operating costs. Moreover, favorable market conditions, especially in February when Winter Storm Uri struck parts of the U.S., drove the performance of the Gas Marketing unit. Given that the company faces an easy bottom-line comparison in the third quarter, it appears that full-year share net will jump nearly 3.5 times, to $5.00, versus the uninspiring fiscal 2020 tally of $1.44 (which was crushed by the impact of COVID-19). Turning to next year, we expect lower, though still respectable, earnings of $4.30 a share, since the second-quarter matchup will be challenging.

***Value Line* is optimistic about the company's prospects over the 2024-2026 period.** The gas utilities boast 1.7 million customers in Mississippi, Alabama, and Missouri, providing a measure of regional diversity. Furthermore, the other operations, particularly pipelines, hold promise. Additional expansionary projects and technological enhancements in customer service and elsewhere ought to assist Spire, too. Finally, the balance sheet (see below) is healthy.

The Financial Strength rating resides at B++. When March ended, there was around $675 million of available liquidity partly via a revolving credit facility. Too, long-term debt was a manageable 49.6% of total capital, and short-term commitments did not seem to be a major hurdle. So, the company ought to be able to meet its various obligations (including interest payments, capital expenditures, and dividends) with relative ease. Acquisitions are also plausible.

These good-quality shares have risen greatly in value in recent months. It appears that Spire's strong results of late are a driving force behind that movement. Also, long-term total return potential is solid. Meanwhile, the stock is neutrally ranked for Timeliness.

Frederick L. Harris, III *May 28, 2021*

(A) Fiscal year ends Sept. 30th. **(B)** Based on diluted shares outstanding. Excludes nonrecurring loss: '06, 7¢. Excludes gain from discontinued operations: '08, 94¢. Next earnings report due late July. **(C)** Dividends paid in early January, April, July, and October. ■ Dividend reinvestment plan available. **(D)** Incl. deferred charges. In '20: $1,171.6 mill., $22.71/sh. **(E)** In millions. **(F)** Qtly. egs. may not sum due to rounding or change in shares outstanding.

Company's Financial Strength	B++
Stock's Price Stability	90
Price Growth Persistence	55
Earnings Predictability	50

Spire Missouri Inc.
Summary of Risk Premium Models for the
Proxy Group of Seven Natural Gas Distribution Companies

	Proxy Group of Seven Natural Gas Distribution Companies	
Predictive Risk Premium Model (PRPM) (1)	11.03	%
Risk Premium Using an Adjusted Total Market Approach (2)	10.55	%
Average	10.79	%

Notes:
(1) From page 12 of this Schedule.
(2) From page 13 of this Schedule.

Spire Missouri Inc.
Indicated ROE
Derived by the Predictive Risk Premium Model (1)

Proxy Group of Seven Natural Gas Distribution Companies	[1] LT Average Predicted Variance	[2] Spot Predicted Variance	[3] Recommended Variance	[4] GARCH Coefficient	[5] Predicted Risk Premium (2)	[6] Risk-Free Rate (3)	[7] Indicated ROE (4)
Atmos Energy Corporation	0.33%	0.48%	0.33%	2.2565	9.44%	2.88%	12.32%
New Jersey Resources Corporation	0.38%	0.34%	0.38%	2.0814	9.99%	2.88%	12.87%
Northwest Natural Holding Company	0.32%	0.38%	0.32%	1.5413	6.17%	2.88%	9.05%
ONE Gas, Inc.	0.30%	0.43%	0.30%	4.0633	15.63%	2.88%	NMF
South Jersey Industries, Inc.	0.39%	0.69%	0.39%	1.6346	7.85%	2.88%	10.73%
Southwest Gas Holdings, Inc.	0.43%	0.38%	0.43%	1.3628	7.34%	2.88%	10.22%
Spire Inc.	0.71%	0.52%	0.71%	0.9445	8.37%	2.88%	11.25%
						Average	11.07%
						Median	10.99%
					Average of Mean and Median		11.03%

Notes:

(1) The Predictive Risk Premium Model uses historical data to generate a predicted variance and a GARCH coefficient. The historical data used are the equity risk premiums for the first available trading month as reported by Bloomberg Professional Service.

(2) (1+(Column [3] * Column [4])^12) - 1.

(3) From note 2 on page 25 of this Schedule.

(4) Column [5] + Column [6].

Spire Missouri Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Seven Natural Gas Distribution Companies	
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	3.56	%
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	0.39	(2)
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	3.95	%
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.04	(3)
5.	Adjusted Prospective Bond Yield	3.99	%
6.	Equity Risk Premium (4)	6.56	
7.	Risk Premium Derived Common Equity Cost Rate	10.55	%

Notes:
(1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 20 and 21 of this Schedule).
(2) The average yield spread of A2 rated public utility bonds over Aaa rated corporate bonds of 0.39% from page 14 of this Schedule.
(3) Adjustment to reflect the A2/A3 Moody's LT issuer rating of the Utility Proxy Group as shown on page 15 of this Schedule. The 0.04% upward adjustment is derived by taking 1/6 of the spread between A2 and Baa2 Public Utility Bonds (1/6 * 0.26% = 0.04%) as derived from page 14 of this Schedule.
(4) From page 17 of this Schedule.

Spire Missouri Inc.
Interest Rates and Bond Spreads for
Moody's Corporate and Public Utility Bonds

Selected Bond Yields - Moody's

	[1] Aaa Rated Corporate Bond	[2] Aa2 Rated Public Utility Bond	[3] A2 Rated Public Utility Bond	[4] Baa2 Rated Public Utility Bond
May-2021	2.96 %	3.17 %	3.33 %	3.58 %
Apr-2021	2.90	3.13	3.30	3.57
Mar-2021	3.04	3.27	3.44	3.72
Average	2.97	3.19 %	3.36 %	3.62 %

Selected Bond Spreads

A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds: 0.39 % (1)

Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds: 0.26 % (2)

A2 Rated Public Utility Bonds Over Aa2 Rated Public Utility Bonds: 0.17 % (3)

Notes:
(1) Column [3] - Column [1].
(2) Column [4] - Column [3].
(3) Column [3] - Column [2].

Source of Information:
Bloomberg Professional Service

Spire Missouri Inc.
Comparison of Long-Term Issuer Ratings for
Proxy Group of Seven Natural Gas Distribution Companies

Proxy Group of Seven Natural Gas Distribution Companies	Moody's Long-Term Issuer Rating May 2021		Standard & Poor's Long-Term Issuer Rating May 2021	
	Long-Term Issuer Rating (1)	Numerical Weighting (2)	Long-Term Issuer Rating (1)	Numerical Weighting (2)
Atmos Energy Corporation	A1	5.0	A-	7.0
New Jersey Resources Corporation	A1	5.0	NR	- -
Northwest Natural Holding Company	Baa1	8.0	A+	5.0
ONE Gas, Inc.	A3	7.0	BBB+	8.0
South Jersey Industries, Inc.	A3	7.0	BBB	9.0
Southwest Gas Holdings, Inc.	Baa1	8.0	A-	7.0
Spire Inc.	A1/A2	5.5	A-	7.0
Average	A2/A3	6.5	A-	7.2

Notes:

(1) Ratings are that of the average of each company's utility operating subsidiaries.
(2) From page 16 of this Schedule.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Numerical Assignment for
Moody's and Standard & Poor's Bond Ratings

Moody's Bond Rating	Numerical Bond Weighting	Standard & Poor's Bond Rating
Aaa	1	AAA
Aa1	2	AA+
Aa2	3	AA
Aa3	4	AA-
A1	5	A+
A2	6	A
A3	7	A-
Baa1	8	BBB+
Baa2	9	BBB
Baa3	10	BBB-
Ba1	11	BB+
Ba2	12	BB
Ba3	13	BB-
B1	14	B+
B2	15	B
B3	16	B-

Spire Missouri Inc.
Judgment of Equity Risk Premium for
Proxy Group of Seven Natural Gas Distribution Companies

Line No.		Proxy Group of Seven Natural Gas Distribution Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	8.16 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A2 rated bonds (2)	5.88
3.	Predicted Equity Risk Premium Based on Regression Analysis of 800 Fully-Litigated Natural Gas Utility Rate Cases	5.64
4.	Average equity risk premium	6.56 %

Notes: (1) From page 18 of this Schedule.
(2) From page 22 of this Schedule.
(3) From page 23 of this Schedule.

Spire Missouri Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Natural Gas Distribution Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Seven Natural Gas Distribution Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.69
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.87
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	4.60
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	10.76
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	12.78
7.	Conclusion of Equity Risk Premium	8.77 %
8.	Adjusted Beta (7)	0.93
9.	Forecasted Equity Risk Premium	8.16 %

Notes provided on page 19 of this Schedule.

Spire Missouri Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for the
Proxy Group of Seven Natural Gas Distribution Companies

Notes:

(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Duff & Phelps 2021 SBBI® Yearbook minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1928-2020.

(2) This equity risk premium is based on a regression of the monthly equity risk premiums of large company common stocks relative to Moody's average Aaa and Aa rated corporate bond yields from 1928-2020 referenced in Note 1 above.

(3) The Predictive Risk Premium Model (PRPM) is discussed in the accompanying direct testimony. The Ibbotson equity risk premium based on the PRPM is derived by applying the PRPM to the monthly risk premiums between Ibbotson large company common stock monthly returns and average Aaa and Aa corporate monthly bond yields, from January 1928 through May 2021.

(4) The equity risk premium based on the Value Line Summary and Index is derived by subtracting the average consensus forecast of Aaa corporate bonds of 3.56% (from page 13 of this Schedule) from the projected 3-5 year total annual market return of 8.16% (described fully in note 1 on page 25 of this Schedule).

(5) Using data from Value Line for the S&P 500, an expected total return of 14.32% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.56% results in an expected equity risk premium of 10.76%.

(6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 16.34% was derived based upon expected dividend yields and long-term earnings growth estimates as a proxy for capital appreciation. Subtracting the average consensus forecast of Aaa corporate bonds of 3.56% results in an expected equity risk premium of 12.78%.

(7) Average of mean and median beta from page 24 of this Schedule.

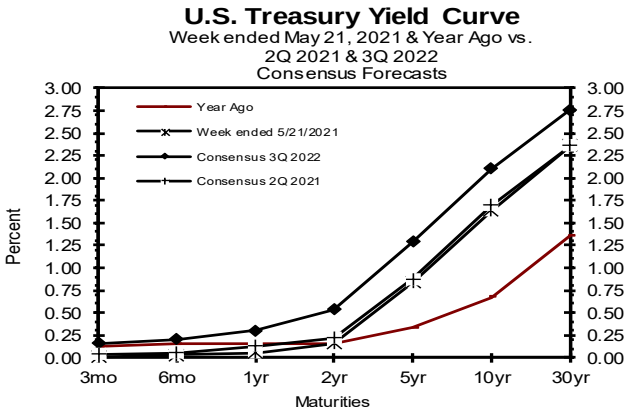
Sources of Information:

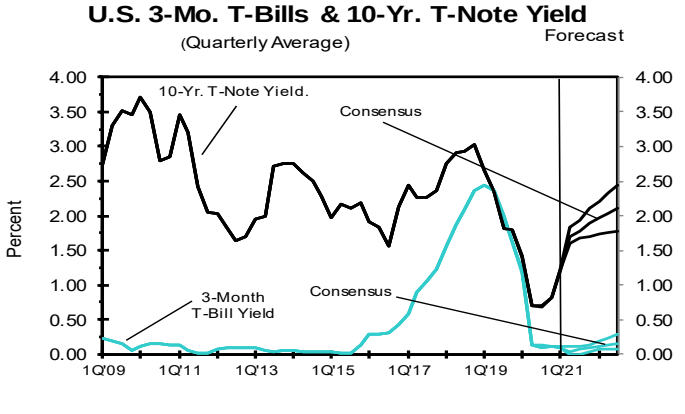
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2021
Bloomberg Professional Service

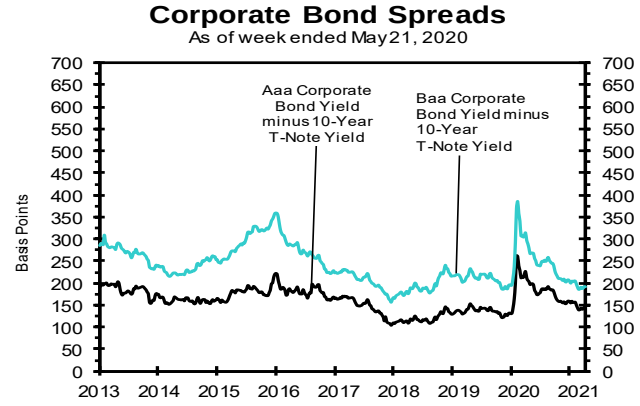
Consensus Forecasts of U.S. Interest Rates and Key Assumptions

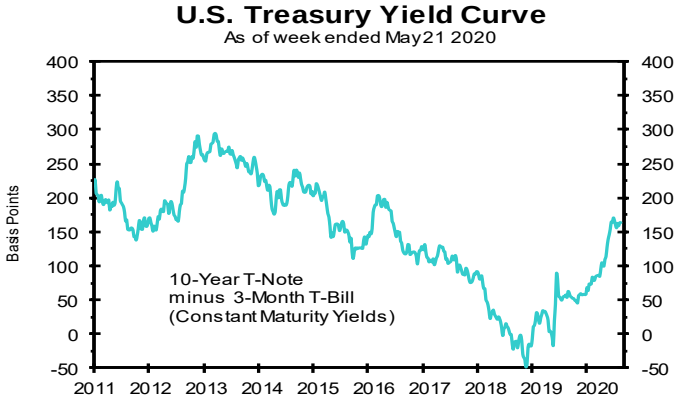
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			*Latest Qtr*	2Q	3Q	4Q	1Q	2Q	3Q
Interest Rates	May 21	May 14	May 7	Apr 30	Apr	Mar	Feb	1Q 2021	2021	2021	2021	2022	2022	2022
Federal Funds Rate	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**
LIBOR, 3-mo.	0.15	0.16	0.17	0.18	0.18	0.19	0.19	0.20	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**
Commercial Paper, 1-mo.	0.04	0.04	0.29	0.04	0.04	0.07	0.06	0.07	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**
Treasury bill, 3-mo.	0.01	0.02	0.02	0.01	0.02	0.03	0.04	0.05	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**
Treasury bill, 6-mo.	0.03	0.04	0.04	0.04	0.04	0.05	0.06	0.07	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**
Treasury bill, 1 yr.	0.05	0.05	0.06	0.05	0.06	0.08	0.07	0.08	**0.1**	**0.1**	**0.2**	**0.2**	**0.3**	**0.3**
Treasury note, 2 yr.	0.16	0.16	0.16	0.17	0.16	0.15	0.12	0.13	**0.2**	**0.3**	**0.3**	**0.4**	**0.5**	**0.5**
Treasury note, 5 yr.	0.84	0.83	0.81	0.86	0.86	0.82	0.54	0.60	**0.9**	**1.0**	**1.1**	**1.2**	**1.2**	**1.3**
Treasury note, 10 yr.	1.64	1.65	1.60	1.63	1.64	1.61	1.26	1.32	**1.7**	**1.8**	**1.9**	**2.0**	**2.0**	**2.1**
Treasury note, 30 yr.	2.36	2.36	2.27	2.29	2.30	2.34	2.04	2.07	**2.4**	**2.5**	**2.6**	**2.6**	**2.7**	**2.8**
Corporate Aaa bond	3.09	3.11	3.01	3.04	3.04	3.15	2.84	2.88	**3.0**	**3.1**	**3.3**	**3.3**	**3.3**	**3.4**
Corporate Baa bond	3.56	3.57	3.48	3.51	3.51	3.62	3.30	3.35	**3.8**	**4.0**	**4.1**	**4.2**	**4.2**	**4.3**
State & Local bonds	2.64	2.65	2.65	2.63	2.66	2.74	2.63	2.68	**2.6**	**2.7**	**2.8**	**2.9**	**2.9**	**2.9**
Home mortgage rate	3.00	2.94	2.96	2.98	3.06	3.08	2.81	2.88	**3.1**	**3.3**	**3.4**	**3.5**	**3.5**	**3.6**
	History								Consensus Forecasts-Quarterly					
	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q
Key Assumptions	2019	2019	2019	2020	2020	2020	2020	2021	2021	2021	2021	2022	2022	2022
Fed's AFE $ Index	110.4	110.6	110.5	111.4	112.4	107.3	105.2	103.4	**102.7**	**102.7**	**102.9**	**102.9**	**103.1**	**103.2**
Real GDP	1.5	2.6	2.4	-5.0	-31.4	33.4	4.3	6.4	**9.3**	**6.9**	**5.0**	**3.9**	**3.1**	**2.6**
GDP Price Index	2.5	1.5	1.4	1.4	-1.8	3.5	2.0	4.3	**3.3**	**2.5**	**2.1**	**2.2**	**2.2**	**2.3**
Consumer Price Index	3.5	1.3	2.6	1.0	-3.1	4.7	2.4	3.7	**4.8**	**2.6**	**2.1**	**2.2**	**2.3**	**2.2**
PCE Price Index	2.5	1.4	1.5	1.3	-1.6	3.7	1.5	3.7	**4.0**	**2.4**	**2.0**	**2.1**	**2.2**	**2.2**

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index, PCE Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data: Treasury rates from the Federal Reserve Board's H.15; AAA-AA and A-BBB corporate bond yields from Bank of America-Merrill Lynch and are 15+ years, yield to maturity; State and local bond yields from Bank of America-Merrill Lynch, A-rated, yield to maturity; Mortgage rates from Freddie Mac, 30-year, fixed; LIBOR quotes from Intercontinental Exchange. All interest rate data are sourced from Haver Analytics. Historical data for Fed's Major Currency Index are from FRSR H.10. Historical data for Real GDP, GDP Price Index and PCE Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index history is from the Department of Labor's Bureau of Labor Statistics (BLS).









Long-Range Survey:

The table below contains the results of our twice-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are consensus estimates for the years 2022 through 2027 and averages for the five-year periods 2023-2027 and 2028-2032. Apply these projections cautiously. Few if any economic, demographic and political forces can be evaluated accurately over such long time spans.

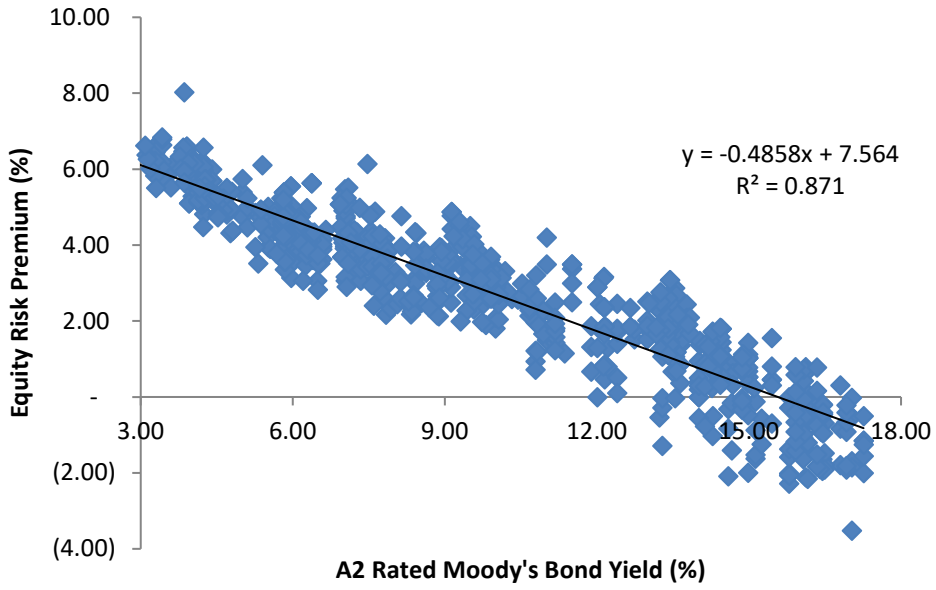
		Average For The Year						Five-Year Averages	
		2022	2023	2024	2025	2026	2027	2023-2027	2028-2032
1. Federal Funds Rate	**CONSENSUS**	**0.1**	**0.4**	**1.0**	**1.6**	**1.9**	**2.1**	**1.4**	**2.2**
	Top 10 Average	0.2	0.7	1.6	2.4	2.6	2.7	2.0	2.7
	Bottom 10 Average	0.1	0.1	0.5	0.9	1.3	1.5	0.9	1.6
2. Prime Rate	**CONSENSUS**	**3.3**	**3.5**	**4.2**	**4.7**	**5.0**	**5.2**	**4.5**	**5.2**
	Top 10 Average	3.4	3.8	4.7	5.4	5.7	5.8	5.1	5.8
	Bottom 10 Average	3.2	3.3	3.7	4.0	4.4	4.6	4.0	4.7
3. LIBOR, 3-Mo.	**CONSENSUS**	**0.4**	**0.6**	**1.3**	**1.8**	**2.1**	**2.3**	**1.6**	**2.4**
	Top 10 Average	0.5	1.0	1.8	2.4	2.7	2.9	2.2	3.0
	Bottom 10 Average	0.2	0.4	0.8	1.2	1.6	1.7	1.1	1.8
4. Commercial Paper, 1-Mo	**CONSENSUS**	**0.2**	**0.6**	**1.3**	**1.8**	**2.1**	**2.3**	**1.6**	**2.4**
	Top 10 Average	0.4	0.9	1.6	2.3	2.6	2.8	2.0	2.8
	Bottom 10 Average	0.1	0.3	0.9	1.3	1.8	1.9	1.2	2.0
5. Treasury Bill Yield, 3-Mo	**CONSENSUS**	**0.2**	**0.5**	**1.0**	**1.6**	**1.9**	**2.1**	**1.4**	**2.2**
	Top 10 Average	0.3	0.8	1.6	2.2	2.5	2.7	1.9	2.7
	Bottom 10 Average	0.1	0.2	0.6	0.9	1.3	1.5	0.9	1.6
6. Treasury Bill Yield, 6-Mo	**CONSENSUS**	**0.2**	**0.5**	**1.1**	**1.6**	**2.0**	**2.2**	**1.5**	**2.3**
	Top 10 Average	0.3	0.8	1.7	2.3	2.6	2.7	2.0	2.8
	Bottom 10 Average	0.1	0.3	0.6	1.0	1.4	1.6	1.0	1.7
7. Treasury Bill Yield, 1-Yr	**CONSENSUS**	**0.3**	**0.7**	**1.2**	**1.8**	**2.1**	**2.3**	**1.6**	**2.4**
	Top 10 Average	0.5	1.0	1.8	2.4	2.8	2.9	2.2	3.0
	Bottom 10 Average	0.2	0.3	0.7	1.1	1.5	1.7	1.1	1.8
8. Treasury Note Yield, 2-Yr	**CONSENSUS**	**0.5**	**0.9**	**1.5**	**2.0**	**2.3**	**2.5**	**1.8**	**2.6**
	Top 10 Average	0.7	1.3	2.1	2.7	3.0	3.1	2.5	3.3
	Bottom 10 Average	0.3	0.5	0.9	1.3	1.6	1.8	1.2	1.9
9. Treasury Note Yield, 5-Yr	**CONSENSUS**	**1.2**	**1.6**	**2.1**	**2.5**	**2.8**	**2.8**	**2.4**	**3.0**
	Top 10 Average	1.5	2.0	2.8	3.3	3.5	3.5	3.0	3.6
	Bottom 10 Average	0.9	1.2	1.5	1.8	2.0	2.2	1.7	2.3
10. Treasury Note Yield, 10-Yr	**CONSENSUS**	**2.0**	**2.4**	**2.7**	**3.0**	**3.2**	**3.3**	**2.9**	**3.3**
	Top 10 Average	2.3	2.8	3.4	3.8	4.0	3.9	3.6	4.0
	Bottom 10 Average	1.7	1.9	2.1	2.3	2.5	2.6	2.3	2.7
11. Treasury Bond Yield, 30-Yr	**CONSENSUS**	**2.6**	**2.9**	**3.3**	**3.6**	**3.8**	**3.8**	**3.5**	**3.9**
	Top 10 Average	3.0	3.5	4.0	4.5	4.6	4.5	4.2	4.6
	Bottom 10 Average	2.3	2.4	2.5	2.7	2.9	3.1	2.7	3.2
12. Corporate Aaa Bond Yield	**CONSENSUS**	**3.3**	**3.7**	**4.1**	**4.5**	**4.7**	**4.7**	**4.3**	**4.8**
	Top 10 Average	3.6	4.2	4.7	5.2	5.4	5.4	5.0	5.4
	Bottom 10 Average	3.1	3.2	3.4	3.7	3.9	4.1	3.7	4.2
13. Corporate Baa Bond Yield	**CONSENSUS**	**4.3**	**4.7**	**5.1**	**5.4**	**5.6**	**5.7**	**5.3**	**5.8**
	Top 10 Average	4.6	5.1	5.6	6.1	6.3	6.2	5.9	6.4
	Bottom 10 Average	4.0	4.3	4.5	4.7	4.9	5.2	4.7	5.2
14. State & Local Bonds Yield	**CONSENSUS**	**2.9**	**3.2**	**3.6**	**3.9**	**4.1**	**4.2**	**3.8**	**4.2**
	Top 10 Average	3.2	3.5	4.1	4.5	4.7	4.7	4.3	4.8
	Bottom 10 Average	2.6	2.9	3.1	3.4	3.7	3.7	3.3	3.8
15. Home Mortgage Rate	**CONSENSUS**	**3.6**	**4.0**	**4.4**	**4.7**	**4.9**	**5.0**	**4.6**	**5.0**
	Top 10 Average	4.0	4.5	5.0	5.5	5.6	5.6	5.2	5.7
	Bottom 10 Average	3.2	3.6	3.8	4.0	4.2	4.3	4.0	4.4
A. Fed's AFE Nominal $ Index	**CONSENSUS**	**103.7**	**103.7**	**104.0**	**103.7**	**103.6**	**103.3**	**103.7**	**103.1**
	Top 10 Average	105.3	106.0	106.8	107.0	107.3	107.5	106.9	107.9
	Bottom 10 Average	102.0	101.5	101.4	100.8	100.4	100.0	100.8	99.4
		Year-Over-Year, % Change						Five-Year Averages	
		2022	2023	2024	2025	2026	2027	2023-2027	2028-2032
B. Real GDP	**CONSENSUS**	**4.2**	**2.6**	**2.3**	**2.2**	**2.1**	**2.1**	**2.2**	**2.1**
	Top 10 Average	5.3	3.3	2.7	2.5	2.4	2.4	2.7	2.5
	Bottom 10 Average	2.9	2.0	1.9	1.8	1.8	1.7	1.8	1.7
C. GDP Chained Price Index	**CONSENSUS**	**2.3**	**2.3**	**2.2**	**2.1**	**2.2**	**2.1**	**2.2**	**2.1**
	Top 10 Average	2.6	2.6	2.4	2.4	2.4	2.4	2.4	2.3
	Bottom 10 Average	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9
D. Consumer Price Index	**CONSENSUS**	**2.4**	**2.4**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**	**2.2**
	Top 10 Average	2.8	2.7	2.5	2.5	2.5	2.4	2.5	2.4
	Bottom 10 Average	2.1	2.1	1.9	1.9	2.0	1.9	2.0	1.9
E. PCE Price Index	**CONSENSUS**	**2.3**	**2.2**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**
	Top 10 Average	2.7	2.5	2.4	2.4	2.4	2.4	2.4	2.3
	Bottom 10 Average	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9

Spire Missouri Inc.
Derivation of Mean Equity Risk Premium Based Studies
Using Holding Period Returns and
Projected Market Appreciation of the S&P Utility Index

Line No.		Implied Equity Risk Premium
	Equity Risk Premium based on S&P Utility Index Holding Period Returns (1):	
1.	Historical Equity Risk Premium	4.16 %
2.	Regression of Historical Equity Risk Premium (2)	6.37
3.	Forecasted Equity Risk Premium Based on PRPM (3)	5.61
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	7.45
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	5.82
6.	Average Equity Risk Premium (6)	5.88 %

Notes:
(1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2020. Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.
(2) This equity risk premium is based on a regression of the monthly equity risk premiums of the S&P Utility Index relative to Moody's A2 rated public utility bond yields from 1928 - 2020 referenced in note 1 above.
(3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - May 2021.
(4) Using data from Value Line for the S&P Utilities Index, an expected return of 11.40% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.95%, calculated on line 3 of page 13 of this Schedule results in an equity risk premium of 7.45%. (11.40% - 3.95% = 7.45%)
(5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 9.77% was derived based on expected dividend yields and long-term growth estimates as a proxy for market appreciation. Subtracting the expected A2 rated public utility bond yield of 3.95%, calculated on line 3 of page 13 of this Schedule results in an equity risk premium of 5.82%. (9.77% - 3.95% =
(6) Average of lines 1 through 5.

Spire Missouri Inc.
Prediction of Equity Risk Premiums Relative to
Moody's A2 Rated Utility Bond Yields



Constant	Slope	Prospective A2 Rated Utility Bond (1)	Prospective Equity Risk Premium
7.564001 %	-0.48585	3.95 %	5.64 %

Notes:
(1) From line 3 of page 13 of this Schedule.

Source of Information:
Regulatory Research Associates
Bloomberg Professional Services

Spire Missouri Inc.
Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

Proxy Group of Seven Natural Gas Distribution Companies	[1] Value Line Adjusted Beta	[2] Bloomberg Adjusted Beta	[3] Average Beta	[4] Market Risk Premium (1)	[5] Risk-Free Rate (2)	[6] Traditional CAPM Cost Rate	[7] ECAPM Cost Rate	[8] Indicated Common Equity Cost
Atmos Energy Corporation	0.80	0.91	0.86	9.62 %	2.88 %	11.15 %	11.49 %	11.32 %
New Jersey Resources Corporation	1.00	0.97	0.98	9.62	2.88	12.30	12.35	12.33
Northwest Natural Holding Company	0.85	0.85	0.85	9.62	2.88	11.05	11.42	11.23
ONE Gas, Inc.	0.80	1.00	0.90	9.62	2.88	11.54	11.78	11.66
South Jersey Industries, Inc.	1.05	0.98	1.02	9.62	2.88	12.69	12.64	12.67
Southwest Gas Holdings, Inc.	0.95	1.09	1.02	9.62	2.88	12.69	12.64	12.67
Spire Inc.	0.85	1.00	0.92	9.62	2.88	11.73	11.92	11.82
Mean			0.94			11.88 %	12.03 %	11.96 %
Median			0.92			11.73 %	11.92 %	11.82 %
Average of Mean and Median			0.93			11.81 %	11.98 %	11.89 %

Notes on page 25 of this Schedule.

Spire Missouri Inc.
Notes to Accompany the Application of the CAPM and ECAPM

Notes:

(1) The market risk premium (MRP) is derived by using six different measures from three sources: Ibbotson, Value Line, and Bloomberg as illustrated below:

Historical Data MRP Estimates:

Measure 1: Ibbotson Arithmetic Mean MRP (1926-2020)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2020:	12.20	%
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.05	
MRP based on Ibbotson Historical Data:	7.15	%

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data
(1926-2020) 9.39 %

Measure 3: Application of the PRPM to Ibbotson Historical Data:
(January 1926 - May 2021) 10.98 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending May 28, 2021)

Total projected return on the market 3-5 years hence*:	8.16	%
Projected Risk-Free Rate (see note 2):	2.88	
MRP based on Value Line Summary & Index:	5.28	%

*Forcasted 3-5 year capital appreciation plus expected dividend yield

Measure 5: Value Line Projected Return on the Market based on the S&P 500

Total return on the Market based on the S&P 500:	14.32	%
Projected Risk-Free Rate (see note 2):	2.88	
MRP based on Value Line data	11.44	%

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	16.34	%
Projected Risk-Free Rate (see note 2):	2.88	
MRP based on Bloomberg data	13.46	%
Average of Value Line, Ibbotson, and Bloomberg MRP:	9.62	%

(2) For reasons explained in the direct testimony, the appropriate risk-free rate for cost of capital purposes is the average forecast of 30 year Treasury Bonds per the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts. (See pages 20 and 21 of this Schedule.) The projection of the risk-free rate is illustrated below:

Second Quarter 2021	2.40	%
Third Quarter 2021	2.50	
Fourth Quarter 2021	2.60	
First Quarter 2022	2.60	
Second Quarter 2022	2.70	
Third Quarter 2022	2.80	
2023-2027	3.50	
2028-2032	3.90	
	2.88	%

(3) Average of Column 6 and Column 7.

Sources of Information:
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2021
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Bloomberg Professional Services

Spire Missouri Inc.
Basis of Selection of the Group of Non-Price Regulated Companies
Comparable in Total Risk to the Utility Proxy Group

The criteria for selection of the Non-Price Regulated Proxy Group was that the non-price regulated companies be domestic and reported in Value Line Investment Survey (Standard Edition).

The Non-Price Regulated Proxy Group companies were then selected based on the unadjusted beta range of 0.61 – 0.89 and residual standard error of the regression range of 2.7297 – 3.2557 of the Utility Proxy Group.

These ranges are based upon plus or minus two standard deviations of the unadjusted beta and standard error of the regression. Plus or minus two standard deviations captures 95.50% of the distribution of unadjusted betas and residual standard errors of the regression.

The standard deviation of the Gas Utility Proxy Group's residual standard error of the regression is 0.1315. The standard deviation of the standard error of the regression is calculated as follows:

$$\text{Standard Deviation of the Std. Err. of the Regr.} = \frac{\text{Standard Error of the Regression}}{\sqrt{2N}}$$

where: N = number of observations. Since Value Line betas are derived from weekly price change observations over a period of five years, N = 259

$$\text{Thus, } 0.1315 = \frac{2.9927}{\sqrt{518}} = \frac{2.9927}{22.7596}$$

Source of Information: Value Line, Inc., March 2021
Value Line Investment Survey (Standard Edition)

Spire Missouri Inc.
Basis of Selection of Comparable Risk
Domestic Non-Price Regulated Companies

Proxy Group of Seven Natural Gas Distribution Companies	[1] Value Line Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
Atmos Energy Corporation	0.80	0.66	2.7453	0.0685
New Jersey Resources Corporation	0.95	0.92	3.0205	0.0754
Northwest Natural Holding Company	0.80	0.69	3.1454	0.0785
ONE Gas, Inc.	0.80	0.67	2.7077	0.0676
South Jersey Industries, Inc.	1.05	1.00	3.4767	0.0868
Southwest Gas Holdings, Inc.	0.95	0.88	3.0244	0.0755
Spire Inc.	0.85	0.71	2.8287	0.0706
Average	0.89	0.79	2.9927	0.0747
Beta Range (+/- 2 std. Devs. of Beta)	0.64	0.94		
2 std. Devs. of Beta	0.15			
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.7297	3.2557		
Std. dev. of the Res. Std. Err.	0.1315			
2 std. devs. of the Res. Std. Err.	0.2630			

Source of Information: Valueline Proprietary Database, March 2021

Spire Missouri Inc.
Proxy Group of Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

Proxy Group of Forty-Eight Non-Price Regulated Companies	[1] VL Adjusted Beta	[2] Unadjusted Beta	[3] Residual Standard Error of the Regression	[4] Standard Deviation of Beta
Apple Inc.	0.90	0.81	3.1746	0.0792
Abbott Labs.	0.95	0.88	2.7401	0.0684
Assurant Inc.	0.90	0.84	2.9537	0.0737
ANSYS, Inc.	0.85	0.74	2.8841	0.0720
Booz Allen Hamilton	0.90	0.82	3.0468	0.0760
Becton, Dickinson	0.80	0.66	2.8952	0.0722
Brown-Forman 'B'	0.90	0.77	2.7453	0.0685
Broadridge Fin'l	0.85	0.70	2.7332	0.0682
Brady Corp.	1.00	0.93	3.0007	0.0749
CACI Int'l	0.95	0.86	3.1684	0.0791
Casey's Gen'l Stores	0.90	0.78	3.2522	0.0812
Cadence Design Sys.	0.90	0.79	3.0338	0.0757
Cerner Corp.	0.90	0.84	2.7309	0.0681
CSW Industrials	0.90	0.81	2.8884	0.0721
Quest Diagnostics	0.85	0.75	2.7411	0.0684
Lauder (Estee)	0.95	0.85	2.8216	0.0704
Exponent, Inc.	0.90	0.79	2.9131	0.0727
Fastenal Co.	0.90	0.85	3.2203	0.0804
Gentex Corp.	0.95	0.91	2.7546	0.0687
Int'l Flavors & Frag	0.95	0.87	3.2238	0.0804
Ingredion Inc.	0.90	0.78	2.8793	0.0718
Iron Mountain	0.90	0.82	3.0897	0.0771
Hunt (J.B.)	0.95	0.86	2.8344	0.0707
J&J Snack Foods	0.90	0.84	2.9208	0.0729
Henry (Jack) & Assoc	0.85	0.71	2.7734	0.0692
ManTech Int'l 'A'	0.85	0.77	3.0653	0.0765
McCormick & Co.	0.80	0.66	2.7887	0.0696
Altria Group	0.90	0.83	2.9215	0.0729
MSA Safety	1.00	0.94	3.0076	0.0750
MSCI Inc.	0.95	0.87	2.9662	0.0740
Motorola Solutions	0.90	0.80	2.7926	0.0697
Vail Resorts	0.95	0.88	3.1939	0.0797
Maxim Integrated	0.95	0.87	2.9404	0.0734
Northrop Grumman	0.85	0.71	2.9032	0.0724
Old Dominion Freight	0.90	0.83	3.0708	0.0766
PerkinElmer Inc.	0.95	0.86	2.8896	0.0721
Philip Morris Int'l	0.95	0.88	3.2481	0.0811
Pool Corp.	0.85	0.75	3.2001	0.0799
Post Holdings	0.95	0.86	3.0105	0.0751
RLI Corp.	0.80	0.64	2.9883	0.0746
Rollins, Inc.	0.85	0.73	2.9697	0.0741
Selective Ins. Group	0.85	0.77	3.0004	0.0749
Sirius XM Holdings	0.95	0.91	2.7995	0.0699
Bio-Techne Corp.	0.80	0.67	3.2475	0.0810
Tetra Tech	0.90	0.84	3.0245	0.0755
Waters Corp.	0.95	0.86	2.7531	0.0687
West Pharmac. Svcs.	0.85	0.70	3.1887	0.0796
Western Union	0.80	0.67	2.7346	0.0682
Average	0.90	0.80	2.9609	0.0739
Proxy Group of Seven Natural Gas Distribution Companies	0.89	0.79	2.9927	0.0747

Source of Information: Valueline Proprietary Database, March 2021

Spire Missouri Inc.
Summary of Cost of Equity Models Applied to
Proxy Group of Forty-Eight Non-Price Regulated Companies
Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

Principal Methods	Proxy Group of Forty-Eight Non-Price Regulated Companies
Discounted Cash Flow Model (DCF) (1)	12.83 %
Risk Premium Model (RPM) (2)	12.62
Capital Asset Pricing Model (CAPM) (3)	11.84
	12.43 %
	12.62 %
	12.53 %

Notes:
(1) From page 30 of this Schedule.
(2) From page 31 of this Schedule.
(3) From page 34 of this Schedule.

Spire Missouri Inc.
DCF Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

Proxy Group of Forty-Eight Non-Price Regulated Companies	[1] Average Dividend Yield	[2] Value Line Projected Five Year Growth in EPS	[3] Zack's Five Year Projected Growth Rate in EPS	[4] Bloomberg's Five Year Projected Growth Rate in EPS	[5] Yahoo! Finance Projected Five Year Growth in EPS	[6] Average Projected Five Year Growth Rate in EPS	[7] Adjusted Dividend Yield	[8] Indicated Common Equity Cost Rate (1)
Apple Inc.	0.69 %	14.50 %	12.50 %	12.10 %	17.93 %	14.26 %	0.74 %	15.00 %
Abbott Labs.	1.51	11.50	13.80	13.63	16.49	13.86	1.61	15.47
Assurant Inc.	1.76	11.50	17.50	17.50	17.50	16.00	1.90	17.90
ANSYS, Inc.	-	8.00	12.30	12.58	10.74	10.90	-	NA
Booz Allen Hamilton	1.80	10.50	10.60	13.00	9.67	10.94	1.90	12.84
Becton, Dickinson	1.35	7.50	8.90	8.30	11.85	9.14	1.41	10.55
Brown-Forman 'B'	0.97	11.00	NA	5.39	7.40	7.93	1.01	8.94
Broadridge Fin'l	1.48	8.50	NA	12.30	11.60	10.80	1.56	12.36
Brady Corp.	1.59	7.50	7.00	9.00	7.00	7.63	1.65	9.28
CACI Int'l	-	13.50	13.10	12.06	13.68	13.08	-	NA
Casey's Gen'l Stores	0.63	8.00	NA	15.81	7.85	10.55	0.66	11.21
Cadence Design Sys.	-	9.50	14.40	11.60	14.40	12.48	-	NA
Cerner Corp.	1.18	8.00	12.30	10.46	11.63	10.60	1.24	11.84
CSW Industrials	0.45	8.50	NA	12.00	12.00	10.83	0.47	11.30
Quest Diagnostics	1.91	10.00	26.50	(5.40)	3.26	13.25	2.04	15.29
Lauder (Estee)	0.71	11.00	10.70	18.20	27.18	16.77	0.77	17.54
Exponent, Inc.	0.83	12.50	NA	13.30	15.00	13.60	0.89	14.49
Fastenal Co.	2.21	8.00	9.00	8.70	7.95	8.41	2.30	10.71
Gentex Corp.	1.35	10.50	10.10	13.15	15.80	12.39	1.43	13.82
Int'l Flavors & Frag	2.20	7.50	9.80	21.48	7.72	11.63	2.33	13.96
Ingredion Inc.	2.76	7.50	NA	11.00	1.90	6.80	2.85	9.65
Iron Mountain	6.32	11.50	1.70	0.66	1.70	3.89	6.44	10.33
Hunt (J.B.)	0.71	8.00	15.00	15.00	21.53	14.88	0.76	15.64
J&J Snack Foods	1.55	10.00	NA	NA	6.00	8.00	1.61	9.61
Henry (Jack) & Assoc	1.18	9.00	10.90	12.47	10.64	10.75	1.24	11.99
ManTech Int'l 'A'	1.79	9.00	5.10	5.53	3.87	5.88	1.84	7.72
McCormick & Co.	1.53	5.50	6.70	5.87	6.00	6.02	1.58	7.60
Altria Group	6.94	6.00	4.00	4.35	4.35	4.68	7.10	11.78
MSA Safety	1.10	6.50	NA	9.00	18.00	11.17	1.16	12.33
MSCI Inc.	0.69	16.00	NA	15.00	15.31	15.44	0.74	16.18
Motorola Solutions	1.49	7.00	9.00	12.20	7.37	8.89	1.56	10.45
Vail Resorts	-	9.50	NA	87.08	72.95	56.51	-	NA
Maxim Integrated	-	8.00	10.00	11.95	21.91	12.97	-	NA
Northrop Grumman	1.84	7.00	NA	5.67	5.77	6.15	1.90	8.05
Old Dominion Freight	0.32	9.00	17.20	18.98	18.93	16.03	0.35	16.38
PerkinElmer Inc.	0.21	11.00	37.90	5.66	37.90	23.11	0.23	23.34
Philip Morris Int'l	5.19	6.50	8.70	10.75	12.75	9.67	5.44	15.11
Pool Corp.	0.83	15.00	NA	NA	17.00	16.00	0.90	16.90
Post Holdings	-	11.00	NA	20.30	31.20	20.83	-	NA
RLI Corp.	0.89	12.50	NA	NA	9.80	11.15	0.94	12.09
Rollins, Inc.	0.91	11.50	NA	NA	8.20	9.85	0.95	10.80
Selective Ins. Group	1.33	8.50	9.50	9.51	5.10	8.15	1.38	9.53
Sirius XM Holdings	0.96	35.50	12.70	40.32	10.10	24.66	1.08	25.74
Bio-Techne Corp.	0.32	12.50	14.00	19.03	15.00	15.13	0.34	15.47
Tetra Tech	0.62	13.50	15.00	13.85	15.00	14.34	0.66	15.00
Waters Corp.	-	6.00	7.10	8.19	7.77	7.26	-	NA
West Pharmac. Svcs.	0.22	17.00	25.80	18.55	25.80	21.79	0.24	22.03
Western Union	3.74	6.00	NA	4.57	9.19	6.59	3.86	10.45
							Mean	13.33 %
							Median	12.33 %
							Average of Mean and Median	12.83 %

NA= Not Available

(1) The application of the DCF model to the domestic, non-price regluated comparable risk companies is identical to the application of the DCF to the Utility Proxy Group. The dividend yield is derived by using the 60 day average price and the spot indicated dividend as of May 28, 2021. The dividend yield is then adjusted by 1/2 the average projected growth rate in EPS, which is calculated by averaging the 5 year projected growth in EPS provided by Value Line, www.zacks.com, Bloomberg Professional Services, and www.yahoo.com (excluding any negative growth rates) and then adding that growth rate to the adjusted dividend yield.

Source of Information:
Value Line Investment Survey
www.zacks.com Downloaded on 05/28/2021
www.yahoo.com Downloaded on 05/28/2021
Bloomberg Professional Services

Spire Missouri Inc.
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Proxy Group of Forty-Eight Non-Price Regulated Companies
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1)	4.46 %
2.	Equity Risk Premium (2)	8.16
3.	Risk Premium Derived Common Equity Cost Rate	12.62 %

Notes: (1) Average forecast of Baa2 corporate bonds based upon the consensus of nearly 50 economists reported in Blue Chip Financial Forecasts dated June 1, 2021 (see pages 20 and 21 of this Schedule). The estimates are detailed below.

Second Quarter 2021	3.80 %
Third Quarter 2021	4.00
Fourth Quarter 2021	4.10
First Quarter 2022	4.20
Second Quarter 2022	4.20
Third Quarter 2022	4.30
2023-2027	5.30
2028-2032	5.80
Average	4.46 %

(2) From page 33 of this Schedule.

Spire Missouri Inc.
Comparison of Long-Term Issuer Ratings for the
Proxy Group of Forty-Eight Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Natural Gas Distribution Companies

	Moody's Long-Term Issuer Rating May 2021		Standard & Poor's Long-Term Issuer Rating May 2021	
Proxy Group of Forty-Eight Non-Price Regulated Companies	Long-Term Issuer Rating	Numerical Weighting (1)	Long-Term Issuer Rating	Numerical Weighting (1)
Apple Inc.	Aa1	2.0	AA+	2.0
Abbott Labs.	A2	6.0	A+	5.0
Assurant Inc.	Baa3	10.0	BBB	9.0
ANSYS, Inc.	NA	--	NA	--
Booz Allen Hamilton	NA	--	NA	--
Becton, Dickinson	Baa3	10.0	BBB	9.0
Brown-Forman 'B'	A1	5.0	A-	7.0
Broadridge Fin'l	Baa1	8.0	BBB+	8.0
Brady Corp.	NA	--	NA	--
CACI Int'l	NA	--	BB+	11.0
Casey's Gen'l Stores	NA	--	NA	--
Cadence Design Sys.	Baa2	9.0	BBB+	8.0
Cerner Corp.	NA	--	NA	--
CSW Industrials	NA	--	NA	--
Quest Diagnostics	Baa2	9.0	BBB+	8.0
Lauder (Estee)	A1	5.0	A+	5.0
Exponent, Inc.	NA	--	NA	--
Fastenal Co.	NA	--	NA	--
Gentex Corp.	NA	--	NA	--
Int'l Flavors & Frag	Baa3	10.0	BBB	9.0
Ingredion Inc.	Baa1	8.0	BBB	9.0
Iron Mountain	Ba3	13.0	BB-	13.0
Hunt (J.B.)	Baa1	8.0	BBB+	8.0
J&J Snack Foods	NA	--	NA	--
Henry (Jack) & Assoc	NA	--	NA	--
ManTech Int'l 'A'	WR	--	BB+	11.0
McCormick & Co.	Baa2	9.0	BBB	9.0
Altria Group	A3	7.0	BBB	9.0
MSA Safety	NA	--	NA	--
MSCI Inc.	Ba1	11.0	BB+	11.0
Motorola Solutions	Baa3	10.0	BBB-	10.0
Vail Resorts	B2	15.0	BB	12.0
Maxim Integrated	Baa1	8.0	BBB+	8.0
Northrop Grumman	Baa2	9.0	BBB+	8.0
Old Dominion Freight	NA	--	NA	--
PerkinElmer Inc.	Baa3	10.0	BBB	9.0
Philip Morris Int'l	A2	6.0	A	6.0
Pool Corp.	NA	--	NA	--
Post Holdings	B2	15.0	B+	14.0
RLI Corp.	Baa2	9.0	BBB	9.0
Rollins, Inc.	NA	--	NA	--
Selective Ins. Group	Baa2	9.0	BBB	9.0
Sirius XM Holdings	NA	--	BB	12.0
Bio-Techne Corp.	NA	--	NA	--
Tetra Tech	NA	--	NA	--
Waters Corp.	NA	--	NA	--
West Pharmac. Svcs.	NA	--	NA	--
Western Union	Baa2	9.0	BBB	9.0
Average	Baa2	8.8	BBB	8.9

Notes:
(1) From page 16 of this Schedule.

Source of Information:
Bloomberg Professional Services

Spire Missouri Inc.
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
Proxy Group of Forty-Eight Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Seven Natural Gas Distribution Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Forty-Eight Non-Price Regulated Companies
	Ibbotson-Based Equity Risk Premiums:	
1.	Ibbotson Equity Risk Premium (1)	5.92 %
2.	Regression on Ibbotson Risk Premium Data (2)	8.69
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.87
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	4.60
5	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	10.76
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	12.78
7.	Conclusion of Equity Risk Premium	8.77 %
8.	Adjusted Beta (7)	0.93
9.	Forecasted Equity Risk Premium	8.16 %

Notes:
(1) From note 1 of page 19 of this Schedule.
(2) From note 2 of page 19 of this Schedule.
(3) From note 3 of page 19 of this Schedule.
(4) From note 4 of page 19 of this Schedule.
(5) From note 5 of page 19 of this Schedule.
(6) From note 6 of page 19 of this Schedule.
(7) Average of mean and median beta from page 34 of this Schedule.

Sources of Information:
Stocks, Bonds, Bills, and Inflation - 2021 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2021
Bloomberg Professional Services

Spire Missouri Inc.
Traditional CAPM and ECAPM Results for the Proxy Group of Non-Price-Regulated Companies Comparable in Total Risk to the
Proxy Group of Seven Natural Gas Distribution Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Forty-Eight Non-Price Regulated Companies	Value Line Adjusted Beta	Bloomberg Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Apple Inc.	0.90	1.01	0.96	9.62 %	2.88 %	12.11 %	12.21 %	12.16 %
Abbott Labs.	0.90	0.85	0.88	9.62	2.88	11.34	11.63	11.49
Assurant Inc.	0.90	1.00	0.95	9.62	2.88	12.02	12.14	12.08
ANSYS, Inc.	0.85	0.97	0.91	9.62	2.88	11.63	11.85	11.74
Booz Allen Hamilton	0.90	0.92	0.91	9.62	2.88	11.63	11.85	11.74
Becton, Dickinson	0.80	0.58	0.69	9.62	2.88	9.52	10.26	9.89
Brown-Forman 'B'	0.90	0.97	0.94	9.62	2.88	11.92	12.06	11.99
Broadridge Fin'l	0.80	0.84	0.82	9.62	2.88	10.77	11.20	10.98
Brady Corp.	1.00	1.05	1.02	9.62	2.88	12.69	12.64	12.67
CACI Int'l	0.95	1.01	0.98	9.62	2.88	12.30	12.35	12.33
Casey's Gen'l Stores	0.90	0.91	0.91	9.62	2.88	11.63	11.85	11.74
Cadence Design Sys.	0.90	0.98	0.94	9.62	2.88	11.92	12.06	11.99
Cerner Corp.	0.90	0.89	0.90	9.62	2.88	11.54	11.78	11.66
CSW Industrials	0.90	1.05	0.97	9.62	2.88	12.21	12.28	12.24
Quest Diagnostics	0.85	0.96	0.91	9.62	2.88	11.63	11.85	11.74
Lauder (Estee)	0.95	1.00	0.98	9.62	2.88	12.30	12.35	12.33
Exponent, Inc.	0.90	0.94	0.92	9.62	2.88	11.73	11.92	11.82
Fastenal Co.	0.90	0.95	0.92	9.62	2.88	11.73	11.92	11.82
Gentex Corp.	0.95	1.06	1.01	9.62	2.88	12.59	12.57	12.58
Int'l Flavors & Frag	0.95	1.08	1.02	9.62	2.88	12.69	12.64	12.67
Ingredion Inc.	0.90	0.92	0.91	9.62	2.88	11.63	11.85	11.74
Iron Mountain	0.90	1.02	0.96	9.62	2.88	12.11	12.21	12.16
Hunt (J.B.)	0.95	0.91	0.93	9.62	2.88	11.82	11.99	11.91
J&J Snack Foods	0.90	0.77	0.84	9.62	2.88	10.96	11.34	11.15
Henry (Jack) & Assoc	0.85	0.89	0.87	9.62	2.88	11.25	11.56	11.40
ManTech Int'l 'A'	0.85	1.11	0.98	9.62	2.88	12.30	12.35	12.33
McCormick & Co.	0.80	0.70	0.75	9.62	2.88	10.09	10.69	10.39
Altria Group	0.90	0.88	0.89	9.62	2.88	11.44	11.70	11.57
MSA Safety	1.00	0.99	1.00	9.62	2.88	12.50	12.50	12.50
MSCI Inc.	0.95	0.94	0.94	9.62	2.88	11.92	12.06	11.99
Motorola Solutions	0.90	0.96	0.93	9.62	2.88	11.82	11.99	11.91
Vail Resorts	0.95	1.14	1.05	9.62	2.88	12.98	12.86	12.92
Maxim Integrated	0.95	0.99	0.97	9.62	2.88	12.21	12.28	12.24
Northrop Grumman	0.85	0.80	0.83	9.62	2.88	10.86	11.27	11.07
Old Dominion Freight	0.95	0.97	0.96	9.62	2.88	12.11	12.21	12.16
PerkinElmer Inc.	0.90	0.84	0.87	9.62	2.88	11.25	11.56	11.40
Philip Morris Int'l	0.95	0.91	0.93	9.62	2.88	11.82	11.99	11.91
Pool Corp.	0.85	0.95	0.90	9.62	2.88	11.54	11.78	11.66
Post Holdings	0.95	0.90	0.93	9.62	2.88	11.82	11.99	11.91
RLI Corp.	0.80	0.90	0.85	9.62	2.88	11.05	11.42	11.23
Rollins, Inc.	0.85	0.69	0.77	9.62	2.88	10.29	10.84	10.56
Selective Ins. Group	0.85	0.97	0.91	9.62	2.88	11.63	11.85	11.74
Sirius XM Holdings	0.95	1.10	1.02	9.62	2.88	12.69	12.64	12.67
Bio-Techne Corp.	0.80	0.93	0.86	9.62	2.88	11.15	11.49	11.32
Tetra Tech	0.95	1.06	1.00	9.62	2.88	12.50	12.50	12.50
Waters Corp.	0.95	0.86	0.91	9.62	2.88	11.63	11.85	11.74
West Pharmac. Svcs.	0.80	0.75	0.78	9.62	2.88	10.38	10.91	10.65
Western Union	0.80	1.05	0.93	9.62	2.88	11.82	11.99	11.91
		Mean	0.92			11.70 %	11.90 %	11.80 %
		Median	0.93			11.78 %	11.96 %	11.87 %
		Average of Mean and Median	0.93			11.74 %	11.93 %	11.84 %

Notes:
(1) From note 1 of page 25 of this Schedule.
(2) From note 2 of page 25 of this Schedule.
(3) Average of CAPM and ECAPM cost rates.

Spire Missouri Inc.
Derivation of Investment Risk Adjustment Based upon
Ibbotson Associates' Size Premia for the Decile Portfolios of the NYSE/AMEX/NASDAQ

Line No.		[1] Market Capitalization on September 30, 2020 (1) (millions)		[2] Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	[3] Applicable Size Premium (3)	[4] Spread from Applicable Size Premium (4)
1.	Spire Missouri Inc.	$ 2,702.269		5	1.09%	
2.	Proxy Group of Seven Natural Gas Distribution Companies	$ 4,615.314	1.7 x	4	0.75%	0.34%
			[A]	[B]	[C]	[D]

	Decile	Market Capitalization of Smallest Company (millions)	Market Capitalization of Largest Company (millions)	Size Premium (Return in Excess of CAPM)*
Largest	1	$ 29,025.803	$ 1,966,078.882	-0.22%
	2	13,178.743	28,808.073	0.49%
	3	6,743.361	13,177.828	0.71%
	4	3,861.858	6,710.676	0.75%
	5	2,445.693	3,836.536	1.09%
	6	1,591.865	2,444.745	1.37%
	7	911.586	1,591.765	1.54%
	8	451.955	911.103	1.46%
	9	190.019	451.800	2.29%
Smallest	10	2.194	189.831	5.01%

*From 2021 Duff & Phelps Cost of Capital Navigator

Notes:

(1) From page 36 of this Schedule.

(2) Gleaned from Columns [B] and [C] on the bottom of this page. The appropriate decile (Column [A]) corresponds to the market capitalization of the proxy group, which is found in Column [1].

(3) Corresponding risk premium to the decile is provided in Column [D] on the bottom of this page.

(4) Line No. 1 Column [3] – Line No. 2 Column [3]. For example, the 0.34% in Column [4], Line No. 2 is derived as follows 0.34% = 1.09% - 0.75%.

Spire Missouri Inc.
Market Capitalization of Spire Missouri Inc. and the
Proxy Group of Seven Natural Gas Distribution Companies

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2020 (millions)	[2] Book Value per Share at Fiscal Year End 2020 (1)	[3] Total Common Equity at Fiscal Year End 2020 (millions)	[4] Closing Stock Market Price on May 28, 2021	[5] Market-to-Book Ratio on May 28, 2021 (2)	[6] Market Capitalization on May 28, 2021 (3) (millions)
Spire Missouri Inc.		NA	NA	1,538.877 (4)	NA		
Based upon Proxy Group of Seven Natural Gas Distribution Companies						175.6 (5)	$ 2,702.269 (6)
Proxy Group of Seven Natural Gas Distribution Companies							
Atmos Energy Corporation	NYSE	$ 125.882	$ 53.949	$ 6,791.203	$ 99.170	183.8 %	$ 12,483.765
New Jersey Resources Corporation	NYSE	95.949	19.226	1,844.692	42.720	222.2	4,098.949
Northwest Natural Holding Company	NYSE	30.589	29.054	888.733	52.880	182.0	1,617.546
ONE Gas, Inc.	NYSE	53.167	42.006	2,233.311	74.320	176.9	3,951.352
South Jersey Industries, Inc.	NYSE	100.592	16.571	1,666.876	26.660	160.9	2,681.781
Southwest Gas Holdings, Inc.	NYSE	57.193	46.771	2,674.953	66.010	141.1	3,775.305
Spire Inc.	NYSE	51.612	44.182	2,280.300	71.660	162.2	3,698.501
Average		$ 73.569	$ 35.966	$ 2,625.724	$ 61.917	175.6 %	$ 4,615.314

NA= Not Available

Notes: (1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 1 * Column 4.
(4) Initial requested rate base multiplied by the initial requested common equity ratio.
(5) The market-to-book ratio of Spire Missouri Inc. on May 28, 2021 is assumed to be equal to the market-to-book ratio of Proxy Group of Seven Natural Gas Distribution Companies on May 28, 2021 as appropriate.
(6) Column [3] multiplied by Column [5].

Source of Information: 2020 Annual Forms 10K
yahoo.finance.com
Bloomberg Professional

Spire Missouri Inc.
Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

Equity Issuances since 2010

Date of Offering	Transaction (1)	[Column 1] Shares Issued	[Column 2] Market Price per Share	[Column 3] Average Offering Price per Share	[Column 4] Market Pressure (2)	[Column 5] Total Offering Expense per Share	[Column 6] Net Proceeds per Share (3)	[Column 7] Gross Equity Issue before Costs (4)	[Column 8] Total Net Proceeds (5)	[Column 9] Total Flotation Costs (6)	[Column 10] Flotation Cost Percentage (7)
5/10/2018	Equity Offering	2,300,000	$ 71.10	$ 68.75	$ 2.35	$ 2.251	$ 66.4993	$ 163,530,000	$ 152,948,426	$ 10,581,574	6.47%
5/12/2016	Equity Offering	2,185,000	$ 64.70	$ 63.05	$ 1.65	$ 2.186	$ 60.8636	$ 141,369,500	$ 132,986,967	$ 8,382,534	5.93%
6/11/2014	Equity Offering	10,350,000	$ 47.19	$ 46.25	$ 0.94	$ 1.808	$ 44.4421	$ 488,416,500	$ 459,976,063	$ 28,440,438	5.82%
5/29/2013	Equity Offering	10,005,000	$ 45.09	$ 44.50	$ 0.59	$ 1.824	$ 42.6757	$ 451,125,450	$ 426,970,128	$ 24,155,322	5.35%
								$ 1,244,441,450	$ 1,172,881,583	$ 71,559,867	5.75%

Flotation Cost Adjustment

	Average Dividend Yield	Average Projected EPS Growth Rate	Adjusted Dividend Yield	Average DCF Cost Rate Unadjusted for Flotation (8)	DCF Cost Rate Adjusted for Flotation (9)	Flotation Cost Adjustment (10)
Proxy Group of Eight Natural Gas Distribution Companies	3.44 %	6.02 %	3.54 %	9.56 %	9.78 %	0.22 %

See page 38 of this Schedule for notes.

Source of Information: Company SEC filings

Spire Missouri Inc.
Notes to Accompany the
Derivation of the Flotation Cost Adjustment to the Cost of Common Equity

(1) Company SEC Filings

(2) Column 2 – Column 3.

(3) Column 2 – the sum of columns 4 and 5.

(4) Column 1 * Column 2.

(5) Column1 * Column 6.

(6) Column1 * (the sum of columns 4 and 5).

(7) (Column 7 – Column 8) divided by Column 7.

(8) Using the average growth rate from page 3 of this Schedule.

(9) Adjustment for flotation costs based on adjusting the average DCF constant growth cost rate in accordance with the following:

$$K = \frac{D(1+0.5g)}{P(1-F)} + g,$$

where g is the growth factor and F is the percentage of flotation costs.

(10) Flotation cost adjustment of 0.22% equals the difference between the flotation adjusted average DCF cost rate of 9.78% and the unadjusted average DCF cost rate of 9.56% of the Utility Proxy Group.

Source of Information:

Company SEC Filings

Spire Missouri Inc.
Calculation of Price Appreciation and Annualized Volatility of the
Combined Gas Proxy Group, Mr. Murray's Electric Proxy Group,
Other Utility Indices, and Market Indices since January 31, 2020

Combined Gas Proxy Group	Price Appreciation (1)	Annualized Volatility (2)
Atmos Energy Corporation	-15.26%	38.03%
New Jersey Resources Corporation	3.39%	57.42%
NiSource Inc.	-13.00%	40.76%
Northwest Natural Holding Company	-27.94%	55.42%
ONE Gas Inc.	-21.35%	46.11%
South Jersey Industries, Inc.	-13.44%	53.51%
Southwest Gas Holdings, Inc.	-12.58%	46.17%
Spire Inc.	-15.01%	44.17%
Average	-14.40%	47.70%

Mr. Murray Electric Proxy Group	Price Appreciation (1)	Annualized Volatility (2)
Alliant Energy Corporation	-3.72%	35.25%
Ameren Corporation	2.62%	38.97%
American Electric Power Company, Inc.	-17.48%	34.73%
CMS Energy Corporation	-8.42%	35.26%
DTE Energy Company	4.06%	42.60%
IDACORP, Inc.	-12.69%	38.72%
OGE Energy Corporation	-24.75%	40.24%
Pinnacle West Capital Corporation	-13.42%	40.39%
Portland General Electric Company	-22.05%	45.09%
The Southern Company	-9.20%	41.20%
WEC Energy Group	-5.99%	38.88%
Xcel Energy, Inc.	2.44%	35.84%
Average	-9.05%	38.93%
Dow Jones Utility Average	-4.39%	34.58%
Utilities Select SPDR Fund	-5.54%	34.79%
Dow Jones Industrial Average	22.20%	32.59%
S&P 500	30.34%	30.87%

Notes:
(1) (5/28/2021 price minus 1/31/2020 price) divided by 1/31/2020 price.
(2) Standard deviation of returns over the period multiplied by the square root of 252, or number of trading days in a year.

Source: S&P Global Market Intelligence

Spire Missouri Inc.
Calculation of Price Appreciation and Dividends as a Percentage of Total Returns
for the Combined Gas Proxy Group and Mr. Murray's Electric Proxy Group

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Price (1)						
Combined Gas Proxy Group	12/31/2010	12/31/2020	Price Appreciation (2)	Cumulative Dividends (3)	Total Return (4)	Price as % of Total Return (5)	Dividends as % of Total Return (6)
Atmos Energy Corporation	31.20	95.43	64.23	17.29	81.51	78.80%	21.20%
New Jersey Resources Corporation	21.56	35.55	13.99	10.00	24.00	58.32%	41.68%
NiSource Inc.	6.92	22.94	16.02	5.79	21.81	73.44%	26.56%
Northwest Natural Holding Company	46.47	45.99	(0.48)	18.54	18.06	-2.66%	102.66%
ONE Gas Inc.	33.10	76.77	43.67	11.12	54.79	79.70%	20.30%
South Jersey Industries, Inc.	26.41	21.55	(4.86)	10.09	5.23	-92.88%	192.88%
Southwest Gas Holdings, Inc.	36.67	60.75	24.08	16.64	40.72	59.14%	40.86%
Spire Inc.	36.54	64.04	27.50	20.00	47.50	57.89%	42.11%
					Average	38.97%	61.03%
					Median	58.73%	41.27%
					Average excluding NWN and SJI	67.88%	32.12%
					Median excluding NWN and SJI	66.29%	33.71%

	Price (1)						
Mr. Murray Electric Proxy Group	12/31/2010	12/31/2020	Price Appreciation (2)	Cumulative Dividends (3)	Total Return (4)	Price as % of Total Return (5)	Dividends as % of Total Return (6)
Alliant Energy Corporation	18.39	51.53	33.14	11.53	44.67	74.20%	25.80%
Ameren Corporation	28.19	78.06	49.87	17.28	67.15	74.26%	25.74%
American Electric Power Company, Inc.	35.98	83.27	47.29	22.60	69.89	67.66%	32.34%
CMS Energy Corporation	18.60	61.01	42.41	12.23	54.64	77.62%	22.38%
DTE Energy Company	45.32	121.41	76.09	30.83	106.92	71.16%	28.84%
IDACORP, Inc.	36.98	96.03	59.05	19.82	78.87	74.87%	25.13%
OGE Energy Corporation	22.77	31.86	9.09	11.11	20.20	45.01%	54.99%
Pinnacle West Capital Corporation	41.45	79.95	38.50	25.32	63.82	60.32%	39.68%
Portland General Electric Company	21.70	42.77	21.07	12.65	33.72	62.48%	37.52%
The Southern Company	38.23	61.43	23.20	21.97	45.17	51.36%	48.64%
WEC Energy Group	29.43	92.03	62.60	18.15	80.75	77.52%	22.48%
Xcel Energy, Inc.	23.55	66.67	43.12	13.35	56.47	76.36%	23.64%
					Average	67.74%	32.26%
					Median	72.68%	27.32%
					Average Gas and Electric Companies	56.23%	43.77%
					Median Gas and Electric Companies	69.41%	30.59%
					Average excluding NWN and SJI	67.78%	32.22%
					Median excluding NWN and SJI	72.30%	27.70%

Notes:
(1) Source: Yahoo! Finance; OGS began trading on January 16, 2014
(2) Column [2] - Column [1]
(3) Source: Yahoo! Finance
(4) Column [3] - Column [4]
(5) Column [3] / Column [5]
(6) Column [4] / Column [5]

Spire Missouri Inc.
Gross Domestic Product by Industry

Industry	1947	2020	CAGR
Agriculture, forestry, fishing, and hunting	19.9	175.8	3.03%
Mining	5.8	192.5	4.91%
Utilities	3.5	336.9	**6.46%**
Construction	8.9	897.6	**6.52%**
Manufacturing	63.4	2,269.2	5.02%
Wholesale trade	15.6	1,217.7	6.15%
Retail trade	23.2	1,200.9	5.56%
Transportation and warehousing	14.1	595.9	5.26%
Information	7.7	1,161.4	**7.11%**
Finance, insurance, real estate, rental, and leasing	25.8	4,660.2	**7.38%**
Professional and business services	8.2	2,673.6	**8.25%**
Educational services, health care, and social assistance	4.6	1,807.5	**8.53%**
Arts, entertainment, recreation, accommodation, and food services	8.0	679.7	**6.27%**
Other services, except government	7.5	421.9	5.68%
Government	33.5	2,645.7	6.17%
Total Gross Domestic Product	249.7	20,936.5	6.25%

Source: Bureau of Economic Analysis

Spire Missouri Inc.
Recreation of Dr. Won's DCF Model
Indicated Common Equity Cost Rate Using the Discounted Cash Flow Model for
Dr. Won's Proxy Group

	[1]	[2]	[3]	[4]
Dr. Won's Proxy Group (2021)	Average Dividend Yield (1)	Value Line Projected Five Year Growth in EPS (2)	Adjusted Dividend Yield (3)	Indicated Common Equity Cost Rate (4)
Atmos Energy Corporation	2.53 %	7.00 %	2.61 %	9.61 %
New Jersey Resources Corporation	3.34	1.50	3.36	4.86
Northwest Natural Holding Company	4.05	5.50	4.16	9.66
ONE Gas, Inc.	2.99	6.50	3.08	9.58
South Jersey Industries, Inc.	5.00	10.50	5.27	15.77
Southwest Gas Holdings, Inc.	3.60	8.00	3.74	11.74
Spire Inc.	3.78	9.00	3.95	12.95
			Average	10.60 %

Dr. Won's Proxy Group (2017)	Average Dividend Yield (1)	Value Line Projected Five Year Growth in EPS (2)	Adjusted Dividend Yield (3)	Indicated Common Equity Cost Rate (4)
Atmos Energy Corporation	2.20 %	6.50 %	2.27 %	8.77 %
New Jersey Resources Corporation	2.49	3.00	2.53	5.53
Northwest Natural Holding Company	3.12	7.00	3.23	10.23
ONE Gas, Inc.	2.41	9.50	2.53	12.03
South Jersey Industries, Inc.	3.04	3.00	3.08	6.08
Southwest Gas Holdings, Inc.	2.46	7.00	2.54	9.54
Spire Inc.	3.05	9.00	3.19	12.19
			Average	9.20 %

Notes:
(1) From Schedule SJW-13.
(2) From Schedule SJW-11.
(3) Column 1 x (1+(1/2 Column 2)).
(4) Column 2 + Column 3.

Source of Information:

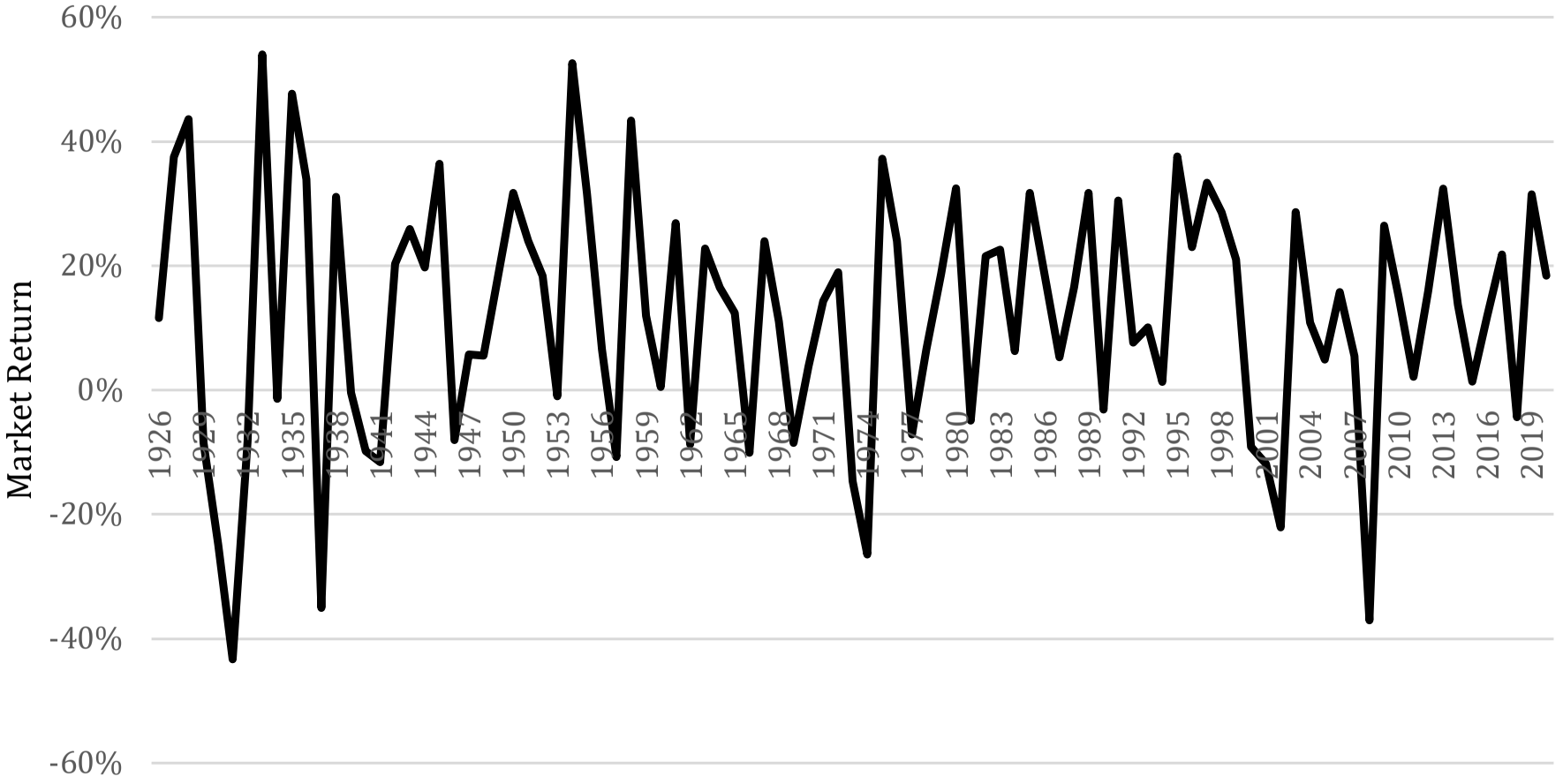
Spire Missouri Inc.
Recreation of Dr. Won's CAPM Model
Indicated Common Equity Cost Rate Using the Capital Asset Pricing Model for
Dr. Won's Proxy Group

Dr. Won's Proxy Group (2021)	[1] Beta (1)	[2] Risk-Free Rate (2)	[3] D&P MRP (G) (2)	[4] D&P MRP (A) (2)	[5] NYU MRP (G) (2)	[6] NYU MRP (A) (2)	[7] CAPM D&P (G) (3)	[8] CAPM D&P (A) (4)	[9] CAPM NYU (G) (5)	[10] CAPM NYU (A) (6)
Atmos Energy Corporation	0.80	2.07 %	4.70 %	6.10 %	4.84 %	6.43 %	5.83 %	6.95 %	5.95 %	7.21
New Jersey Resources Corporation	0.95	2.07	4.70	6.10	4.84	6.43	6.54	7.87	6.67	8.18
Northwest Natural Holding Company	0.80	2.07	4.70	6.10	4.84	6.43	5.83	6.95	5.95	7.21
ONE Gas, Inc.	0.80	2.07	4.70	6.10	4.84	6.43	5.83	6.95	5.95	7.21
South Jersey Industries, Inc.	1.05	2.07	4.70	6.10	4.84	6.43	7.01	8.48	7.16	8.82
Southwest Gas Holdings, Inc.	0.95	2.07	4.70	6.10	4.84	6.43	6.54	7.87	6.67	8.18
Spire Inc.	0.85	2.07	4.70	6.10	4.84	6.43	6.07	7.26	6.19	7.53
							6.23	7.47	6.36	7.76
Average D&P and NYU CAPM (7)										6.96

Dr. Won's Proxy Group (2017)	Beta (1)	Risk-Free Rate (2)	D&P MRP (G) (2)	D&P MRP (A) (2)	NYU MRP (G) (2)	NYU MRP (A) (2)	CAPM D&P (G) (3)	CAPM D&P (A) (3)	CAPM NYU (G) (3)	CAPM NYU (A) (3)
Atmos Energy Corporation	0.70	2.90 %	4.50 %	6.00 %	4.93 %	6.38 %	6.05 %	7.10 %	6.35 %	7.36
New Jersey Resources Corporation	0.80	2.90	4.50	6.00	4.93	6.38	6.50	7.70	6.84	8.00
Northwest Natural Holding Company	0.65	2.90	4.50	6.00	4.93	6.38	5.83	6.80	6.10	7.04
ONE Gas, Inc.	0.70	2.90	4.50	6.00	4.93	6.38	6.05	7.10	6.35	7.36
South Jersey Industries, Inc.	0.80	2.90	4.50	6.00	4.93	6.38	6.50	7.70	6.84	8.00
Southwest Gas Holdings, Inc.	0.75	2.90	4.50	6.00	4.93	6.38	6.28	7.40	6.60	7.68
Spire Inc.	0.70	2.90	4.50	6.00	4.93	6.38	6.05	7.10	6.35	7.36
							6.18	7.27	6.49	7.55
Average D&P and NYU CAPM (7)										6.87

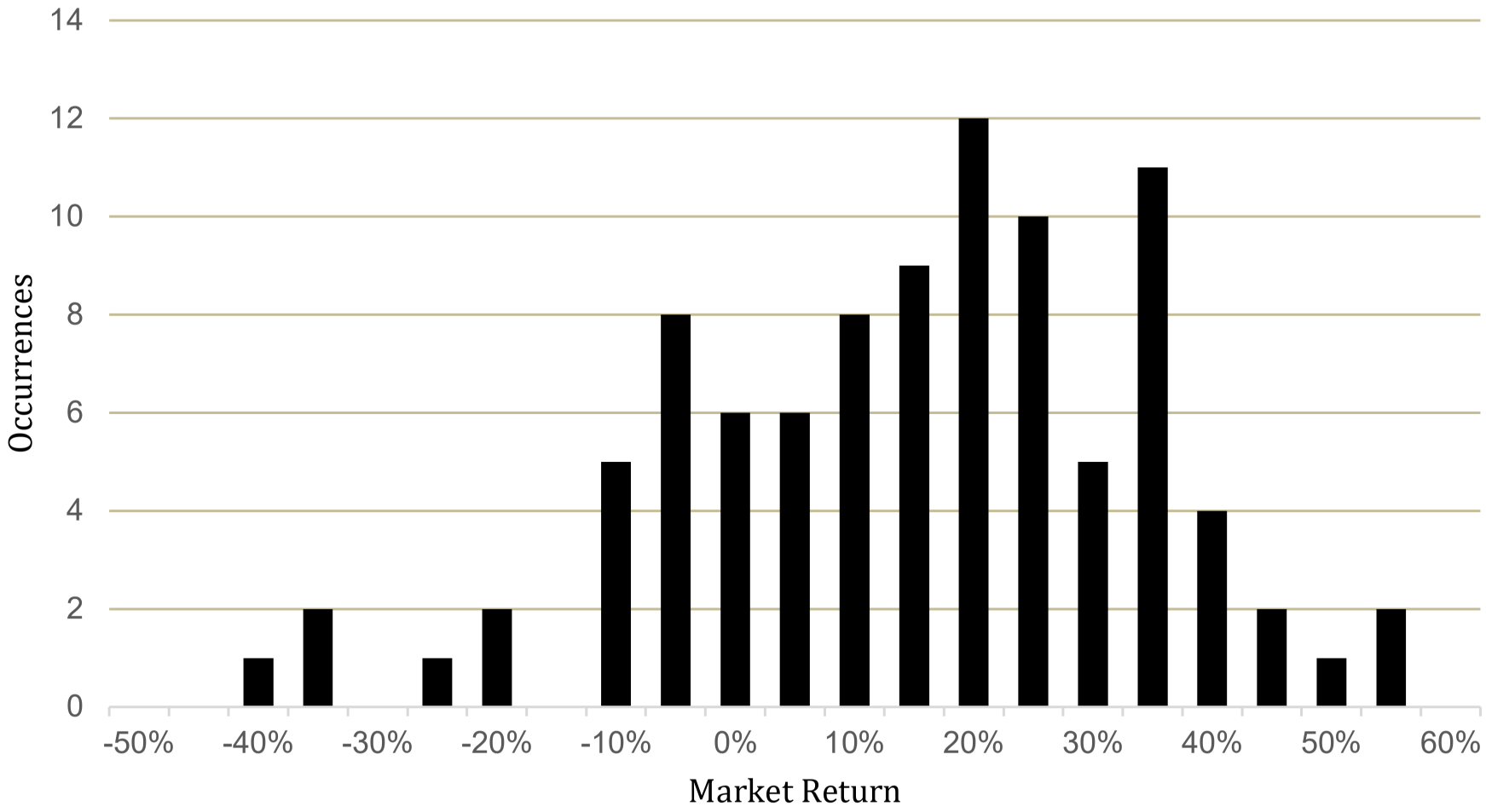
Notes:
(1) Source: Value Line
(2) Source: Schedule SJW-14
(3) Column [2] + Column [1] * Column [3]
(4) Column [2] + Column [1] * Column [4]
(5) Column [2] + Column [1] * Column [5]
(6) Column [2] + Column [1] * Column [6]
(7) Average Columns [7] - [10]

U.S. Large Company Stock Returns 1926 - 2020



Source: Duff & Phelps, SBBI 2021 Yearbook: Stocks, Bonds, Bills, and Inflation 1926 - 2020, Appendix A

Histogram of U.S. Large Company Stock Returns 1926 - 2020



Source: Duff & Phelps, SBBI 2021 Yearbook: Stocks, Bonds, Bills, and Inflation 1926 - 2020, Appendix A

Spire Missouri Inc.
Range of Capital Structures for the Past Five Quarters for the
Combined Gas Proxy Group of Eight Natural Gas Distribution Companies

Common Equity Ratio

Company	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1
Atmos Energy Corporation	51.67%	58.46%	59.98%	58.78%	59.29%
New Jersey Resources Corporation	44.33%	42.56%	44.65%	52.10%	54.16%
NiSource Inc.	33.15%	32.49%	31.01%	33.01%	35.83%
Northwest Natural Holding Company	49.48%	48.19%	47.16%	48.09%	48.59%
ONE Gas, Inc.	36.00%	58.53%	58.17%	58.08%	62.99%
South Jersey Industries, Inc.	35.14%	36.26%	37.83%	38.30%	37.11%
Southwest Gas Holdings, Inc.	50.09%	49.10%	48.96%	48.16%	50.68%
Spire Inc.	44.98%	44.96%	45.55%	45.94%	47.01%

Five Quarter Range 31.01% - 62.99%

Long-Term Debt Ratio

Company	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1
Atmos Energy Corporation	48.33%	41.54%	40.02%	41.22%	40.71%
New Jersey Resources Corporation	55.67%	57.44%	55.35%	47.90%	45.84%
NiSource Inc.	60.92%	61.64%	62.98%	60.92%	57.68%
Northwest Natural Holding Company	50.52%	51.81%	52.84%	51.91%	51.41%
ONE Gas, Inc.	64.00%	41.47%	41.83%	41.92%	37.01%
South Jersey Industries, Inc.	64.86%	63.74%	62.17%	61.70%	62.89%
Southwest Gas Holdings, Inc.	49.91%	50.90%	51.04%	51.84%	49.32%
Spire Inc.	50.65%	50.40%	49.62%	49.26%	48.30%

Five Quarter Range 37.01% - 64.86%

Source: S&P Global Market Intelligence; S&P Capital IQ; Company Filings

Spire Missouri Inc.
Range of Capital Structures for the Past Five Quarters for the
Combined Gas Proxy Group of Eight Natural Gas Distribution Companies at the Operating Company Level

Common Equity Ratio

Company	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1
Atmos Energy Corporation	51.67%	58.46%	59.98%	58.78%	59.29%
New Jersey Natural Gas Company	55.58%	54.13%	53.10%	57.64%	58.62%
NiSource Inc.	33.15%	32.49%	31.01%	33.01%	35.83%
Northwest Natural Gas Company	49.01%	47.66%	46.76%	47.79%	48.33%
ONE Gas, Inc.	36.00%	58.53%	58.17%	58.08%	62.99%
South Jersey Gas Company	56.53%	54.94%	57.03%	54.94%	54.61%
Southwest Gas Corporation	49.33%	47.81%	47.76%	47.15%	49.97%
Spire Alabama Inc.	59.05%	57.75%	64.35%	64.75%	64.82%
Spire Missouri Inc.	59.20%	57.73%	56.79%	56.78%	56.71%

Five Quarter Range 31.01% - 64.82%

Long-Term Debt Ratio

Company	2021Q1	2020Q4	2020Q3	2020Q2	2020Q1
Atmos Energy Corporation	48.33%	41.54%	40.02%	41.22%	40.71%
New Jersey Natural Gas Company	44.42%	45.87%	46.90%	42.36%	41.38%
NiSource Inc.	60.92%	61.64%	62.98%	60.92%	57.68%
Northwest Natural Gas Company	50.99%	52.34%	53.24%	52.21%	51.67%
ONE Gas, Inc.	64.00%	41.47%	41.83%	41.92%	37.01%
South Jersey Gas Company	43.47%	45.06%	42.97%	45.06%	45.39%
Southwest Gas Corporation	50.67%	52.19%	52.24%	52.85%	50.03%
Spire Alabama Inc.	40.95%	42.25%	35.65%	35.25%	35.18%
Spire Missouri Inc.	40.80%	42.27%	43.21%	43.22%	43.29%

Five Quarter Range 35.18% - 64.00%

Source: S&P Global Market Intelligence; S&P Capital IQ; Company Filings