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SPIRE MISSOURI INC.

CASE NO. GR-2021-0108

DIRECT TESTIMONY
OF
DYLAN W. D'ASCENDIS

December 11, 2020

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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 Director. 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 direct testimony (referred to throughout as my "Direct Testimony") before the Missouri Public Service Commission ("Commission") on behalf of Spire Missouri Inc. ("Spire" or the "Company").

Q. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUND.

A. I have offered expert testimony on behalf of investor-owned utilities in over 20 state regulatory commissions in the United States, the Federal Energy Regulatory Commission, the Alberta Utility Commission, and one American Arbitration Association panel on issues including, but not limited to, common equity cost rate, rate of return, valuation, capital structure, class cost of service, and rate design.

On behalf of the American Gas Association ("AGA"), I calculate the AGA Gas Index, which serves as the benchmark against which the performance of the American Gas Index Fund ("AGIF") is measured on a monthly basis. The AGA Gas Index and AGIF are a market capitalization weighted index and mutual fund, respectively, comprised of the common stocks of the publicly traded corporate members of the AGA.

I am a member of the Society of Utility and Regulatory Financial Analysts ("SURFA"). In 2011, I was awarded the professional designation "Certified Rate of

Return Analyst" by SURFA, which is based on education, experience, and the successful completion of a comprehensive written examination.

I am also a member of the National Association of Certified Valuation Analysts ("NACVA") and was awarded the professional designation "Certified Valuation Analyst" by the NACVA in 2015.

I am a graduate of the University of Pennsylvania, where I received a Bachelor of Arts degree in Economic History. I have also received a Master of Business Administration with high honors and concentrations in Finance and International Business from Rutgers University.

The details of my educational background and expert witness appearances are shown in Appendix A.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my Direct Testimony is to present evidence on behalf of Spire and recommend a return on common equity ("ROE") for its Missouri jurisdictional rate base.

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

A. Yes. I have prepared Schedules DWD-D1 through DWD-D9, which were prepared by me or under my direction.

SUMMARY

Q. WHAT IS YOUR RECOMMENDED ROE FOR SPIRE?

A. I recommend that the Commission authorize Spire the opportunity to earn an ROE of 9.95% on its jurisdictional rate base within a reasonable range of 9.94% to 12.07%.

The ratemaking capital structure and cost of long-term debt is sponsored by Company Witness Wesley Selinger. The overall rate of return is summarized on page 1 of Schedule DWD-D1 and in Table 1 below:

Table 1: Summary of Recommended Weighted Average Cost of Capital

Type of Capital	Ratios	Cost Rate	Weighted Cost Rate
Long-Term Debt	45.84%	4.00%	1.83%
Common Equity	54.16%	9.95%	5.39%
Total	100.00%		7.22%

Q. PLEASE SUMMARIZE YOUR RECOMMENDED ROE.

A. My recommended ROE of 9.95% is summarized on page 2 of Schedule DWD-D1. I have assessed the market-based common equity cost rates of companies of relatively similar, but not necessarily identical, risk to Spire. Using companies of relatively comparable risk as proxies is consistent with the principles of fair rate of return established in the *Hope*[1] and *Bluefield*[2] decisions. No proxy group can be identical in risk to any single company. Consequently, there must be an evaluation of relative risk between the Company and the proxy group to determine if it is appropriate to adjust the proxy group's indicated rate of return.

My recommendation results from the application of several cost of common equity models, specifically the Discounted Cash Flow ("DCF") model, the Risk Premium Model ("RPM"), and the Capital Asset Pricing Model ("CAPM"), to the market data of the Utility Proxy Group whose selection criteria will be discussed below. In

1 Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944) ("*Hope*").
2 Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 262 U.S. 679 (1922) ("*Bluefield*").

addition, I applied the DCF model, RPM, and CAPM to the Non-Price Regulated Proxy Group. The results derived from each are as follows:

Table 2: Summary of Common Equity Cost Rates for all Models Used:

Discounted Cash Flow Model (DCF)	9.74%
Risk Premium Model (RPM)	10.04%
Capital Asset Pricing Model (CAPM)	11.58%
Cost of Equity Models Applied to Comparable Risk, Non-Price Regulated Companies	11.87%
Indicated Range of Common Equity Cost Rates Before Adjustments	9.74% - 11.87%
Size Adjustment	0.10%
Credit Risk Adjustment	-0.14%
Flotation Cost Adjustment	0.24%
Indicated Range of Common Equity Cost Rates After Adjustment	9.94% - 12.07%
Recommended Cost of Common Equity	9.95%

The indicated range of common equity cost rates applicable to the Utility Proxy Group is between 9.74% and 11.87% before any Company-specific adjustments. I then adjusted the indicated common equity cost rate model results upward by 0.10% to reflect the Company's smaller relative size, and downward by 0.14% to reflect the relative risk of the Company's bond rating, as compared to the Utility Proxy Group. I then adjusted the indicated common equity cost rate upward by 0.24% to account for flotation costs. These adjustments resulted in a Company-specific indicated range of common equity cost rates between 9.94% and 12.07%. Given the Utility Proxy Group and Company-specific ranges of common equity cost rates, I recommend the Commission consider a common equity cost rate of 9.95% for use in setting rates for the Company.

GENERAL PRINCIPLES

Q. WHAT GENERAL PRINCIPLES HAVE YOU CONSIDERED IN ARRIVING AT YOUR RECOMMENDED COMMON EQUITY COST RATE OF 9.95%?

A. In unregulated industries, marketplace competition is the principal determinant of the price of products or services. For regulated public utilities, regulation must act as a substitute for marketplace competition. Assuring that the utility can fulfill its obligations to the public, while providing safe and reliable service at all times, requires a level of earnings sufficient to maintain the integrity of presently invested capital. Sufficient earnings also permit the attraction of needed new capital at a reasonable cost, for which the utility must compete with other firms of comparable risk, consistent with the fair rate of return standards established by the U.S. Supreme Court in the previously cited *Hope* and *Bluefield* cases. Consequently, marketplace data must be relied on in assessing a common equity cost rate appropriate for ratemaking purposes. Just as the use of market data for the Utility Proxy Group adds the reliability necessary to inform expert judgment in arriving at a recommended common equity cost rate, the use of multiple generally accepted common equity cost rate models also adds reliability and accuracy when arriving at a recommended common equity cost rate.

Business Risk

Q. PLEASE DEFINE BUSINESS RISK AND EXPLAIN WHY IT IS IMPORTANT FOR DETERMINING A FAIR RATE OF RETURN.

A. The investor-required return on common equity reflects investors' assessment of the total investment risk of the subject firm. Total investment risk is often discussed in the context of business and financial risk.

Business risk reflects the uncertainty associated with owning a company's common stock without the company's use of debt and/or preferred stock financing. One way of considering the distinction between business and financial risk is to view the former as the uncertainty of the expected earned return on common equity, assuming the firm is financed with no debt.

Examples of business risks generally faced by utilities include, but are not limited to, the regulatory environment, mandatory environmental compliance requirements, customer mix and concentration of customers, service territory economic growth, market demand, risks and uncertainties of supply, operations, capital intensity, size, the degree of operating leverage, emerging technologies including distributed energy resources, the vagaries of weather, and the like, all of which have a direct bearing on earnings. Although analysts, including rating agencies, may categorize business risks individually, as a practical matter, such risks are interrelated and not wholly distinct from one another. Therefore, it is difficult to specifically and numerically quantify the effect of any individual risk on investors' required return, *i.e.*, the cost of capital.

For determining an appropriate return on common equity, the relevant issue is where investors see the subject company as falling within a spectrum of risk. To the extent investors view a company as being exposed to higher risk, the required return will increase, and vice versa.

For regulated utilities, business risks are both long-term and near-term in nature. Whereas near-term business risks are reflected in year-to-year variability in earnings and cash flow brought about by economic or regulatory factors, long-term business risks reflect the prospect of an impaired ability of investors to obtain both a fair rate of return on, and return of, their capital. Moreover, because utilities accept the obligation to provide safe, adequate, and reliable service at all times (in exchange for a reasonable opportunity to earn a fair return on their investment), they generally do not have the option to delay, defer, or reject capital investments. Because those investments are capital-intensive, utilities generally do not have the option to avoid raising external funds during periods of capital market distress, if necessary.

Long-term business risks are of paramount concern to equity investors because utilities invest in long-lived assets,. That is, the risk of not recovering the return on their investment extends far into the future. The timing and nature of events that may lead to losses, however, also are uncertain and, consequently, those risks and their implications for the required return on equity tend to be difficult to quantify. Regulatory commissions (like investors who commit their capital) must review a variety of quantitative and qualitative data and apply their reasoned judgment to determine how long-term risks weigh in their assessment of the market-required return on common equity.

Financial Risk

Q. PLEASE DEFINE FINANCIAL RISK AND EXPLAIN WHY IT IS IMPORTANT IN DETERMINING A FAIR RATE OF RETURN.

A. Financial risk is the additional risk created by the introduction of debt and preferred stock into the capital structure. The higher the proportion of debt and preferred stock in the capital structure, the higher the financial risk to common equity owners (*i.e.,* failure to receive dividends due to default or other covenants). Therefore, consistent with the basic financial principle of risk and return, common equity investors require higher returns as compensation for bearing higher financial risk.

Q. CAN BOND AND CREDIT RATINGS BE A PROXY FOR A FIRM'S COMBINED BUSINESS AND FINANCIAL RISKS TO EQUITY OWNERS (*I.E.*, INVESTMENT RISK)?

A Yes, similar bond ratings/issuer credit ratings reflect, and are representative of, similar combined business and financial risks (*i.e.*, total risk) faced by bond investors.[3] Although specific business or financial risks may differ between companies, the same bond/credit rating indicates that the combined risks are roughly similar from a debtholder perspective. The caveat is that these debtholder risk measures do not translate directly to risks for common equity.

3 Risk distinctions within S&P's bond rating categories are recognized by a plus or minus, e.g., within the A category, an S&P rating can be an A+, A, or A-. Similarly, risk distinction for Moody's ratings are distinguished by numerical rating gradations, e.g., within the A category, a Moody's rating can be A1, A2 and A3.

Q. DO RATING AGENCIES ACCOUNT FOR COMPANY SIZE IN THEIR BOND RATINGS?

A. No. Neither S&P nor Moody's have minimum company size requirements for any given rating level. This means, all else equal, a relative size analysis must be conducted for equity investments in companies with similar bond ratings.

SPIRE AND THE UTILITY PROXY GROUP

Q. ARE YOU FAMILIAR WITH SPIRE'S OPERATIONS?

A. Yes. Spire provides natural gas distribution services to approximately 1.2 million residential, commercial and industrial customers across two regions, Spire Missouri East (serving St. Louis and eastern Missouri) and Spire Missouri West (serving Kansas City and western Missouri).[4] Spire Missouri has long-term issuer ratings of A1 from Moody's and A- from S&P. Spire Missouri is not publicly-traded as it comprises an operating subsidiary of Spire, Inc. (the "Parent"), which has natural gas distribution operations in Missouri, Alabama, and Mississippi serving approximately 1.7 million customers and is publicly-traded under ticker symbol SR.

Q. PLEASE EXPLAIN HOW YOU CHOSE THE COMPANIES IN THE UTILITY PROXY GROUP.

A. The companies selected for the Utility Proxy Group met the following criteria:

(i) They were included in the Natural Gas Utility Group of *Value Line's Standard Edition* (August 31, 2020)("*Value Line*");

4 *See,* Spire, Inc., SEC Form 10-K at 4 (Sept. 30, 2019).

(ii) They have 60% or greater of fiscal year 2019 total operating income derived from, and 60% or greater of fiscal year 2019 total assets attributable to, regulated gas distribution operations;

(iii) At the time of preparation of this testimony, they had not publicly announced that they were involved in any major merger or acquisition activity (*i.e.*, one publicly-traded utility merging with or acquiring another);

(iv) They have not cut or omitted their common dividends during the five years ended 2019 or through the time of preparation of this testimony;

(v) They have *Value Line* and Bloomberg Professional Services ("Bloomberg") adjusted betas;

(vi) They have positive *Value Line* five-year dividends per share ("DPS") growth rate projections; and

(vii) They have *Value Line*, Zacks, Yahoo! Finance, or Bloomberg consensus five-year earnings per share ("EPS") growth rate projections.

The following eight companies met these criteria:

Table 3: Utility Proxy Group Companies

Company Name	Ticker Symbol
Atmos Energy Corporation	ATO
New Jersey Resources Corporation	NJR
NiSource Inc.	NI
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
South Jersey Industries, Inc.	SJI
Southwest Gas Holdings, Inc.	SWX
Spire Inc.	SR

Q. PLEASE DESCRIBE SCHEDULE DWD-D2, PAGE 1.

A. Page 1 of Schedule DWD-D2 contains comparative capitalization and financial statistics for the Utility Proxy Group for the years 2015 to 2019.

During the five-year period ending 2019, the historically achieved average earnings rate on book common equity for the group averaged 8.78%, the average common equity ratio based on total permanent capital (excluding short-term debt) was 50.98%, and the average dividend payout ratio was 67.31%.

Total debt to earnings before interest, taxes, depreciation, and amortization for the years 2015 to 2019 ranges between 4.05 and 7.13 times, with an average of 5.46 times. Funds from operations to total debt range from 13.73% to 26.24%, with an average of 19.60%.

<u>COMMON EQUITY COST RATE MODELS</u>

Discounted Cash Flow Model

Q. WHAT IS THE THEORETICAL BASIS OF THE DCF MODEL?

A. The theory underlying the DCF model is that the present value of an expected future stream of net cash flows during the investment holding period can be determined by discounting those cash flows at the cost of capital, or the investors' capitalization rate. DCF theory indicates that an investor buys a stock for an expected total return rate, which is derived from the cash flows received from dividends and market price appreciation. Mathematically, the dividend yield on market price plus a growth rate equals the capitalization rate; *i.e.*, the total common equity return rate expected by investors.

Q. WHICH VERSION OF THE DCF MODEL DID YOU USE?

A. I used the single-stage constant growth DCF model in my analyses. The constant growth DCF model is appropriate to use for utility companies because due to their position on the company/industry life cycle. Generally, there are three stages in a company / industry life cycle: (1) the growth stage is characterized by rapidly expanding sales, high margins, and low payout ratios in order to continue growing the firm; (2) the transition stage is characterized by increased competition, which mutes revenue growth and margins and increases payout ratios as investment opportunities decrease; and (3) the maturity (steady-state) stage is characterized by few investment opportunities and stable revenues, margins, and growth for the remainder of its life. The utility industry is in the maturity (steady-state) stage of the company / industry life cycle, and as such, nessessitates the use of the constant growth DCF.

Q. PLEASE DESCRIBE THE DIVIDEND YIELD YOU USED IN APPLYING THE CONSTANT GROWTH DCF MODEL.

A. The unadjusted dividend yields are based on the proxy companies' dividends as of September 30, 2020, divided by the average closing market price for the 60 trading days ended September 30, 2020.[5]

Q. PLEASE EXPLAIN YOUR ADJUSTMENT TO THE DIVIDEND YIELD.

A. Because dividends are paid periodically (*e.g.* quarterly), as opposed to continuously (daily), an adjustment must be made to the dividend yield. This is often referred to as the discrete, or the Gordon Periodic, version of the DCF model.

DCF theory calls for using the full growth rate, or D_1, in calculating the model's dividend yield component. Since the companies in the Utility Proxy Group increase their quarterly dividends at various times during the year, a reasonable assumption is to reflect one-half the annual dividend growth rate in the dividend yield component, or $D_{1/2}$. Because the dividend should be representative of the next 12-month period, this adjustment is a conservative approach that does not overstate the dividend yield. Therefore, the actual average dividend yields in Column 1, page 1 of Schedule DWD-D3 have been adjusted upward to reflect one-half the average projected growth rate shown in Column 6 of that Schedule.

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5 *See,* Column 1, page 1 of Schedule DWD-D3.

Q. PLEASE EXPLAIN THE BASIS FOR THE GROWTH RATES YOU APPLY TO THE UTILITY PROXY GROUP IN YOUR CONSTANT GROWTH DCF MODEL.

A. Investors with more limited resources than institutional investors are likely to rely on widely available financial information services, such as *Value Line*, Zacks, and Yahoo! Finance. Investors realize that analysts have significant insight into the dynamics of the industries and individual companies they analyze, as well as companies' abilities to effectively manage the effects of changing laws and regulations, and ever-changing economic and market conditions. For these reasons, I used analysts' five-year forecasts of EPS growth in my DCF analysis.

Over the long run, there can be no growth in DPS without growth in EPS. Security analysts' earnings expectations have a more significant influence on market prices than dividend expectations. Thus, using projected earnings growth rates in a DCF analysis provides a better match between investors' market price appreciation expectations and the growth rate component of the DCF.

Q. PLEASE SUMMARIZE THE CONSTANT GROWTH DCF MODEL RESULTS.

A. As shown on page 1 of Schedule DWD-D3, for the Utility Proxy Group, the mean result of applying the single-stage DCF model is 10.02%, the median result is 9.45%, and the average of the two is 9.74%. In arriving at a conclusion for the constant growth DCF-indicated common equity cost rate for the Utility Proxy Group, I relied on an average of the mean and the median results of the DCF.

The Risk Premium Model

Q. PLEASE DESCRIBE THE THEORETICAL BASIS OF THE RPM.

A. The RPM is based on the fundamental financial principle of risk and return; namely, that investors require greater returns for bearing greater risk. The RPM recognizes that common equity capital has greater investment risk than debt capital, as common equity shareholders are behind debt holders in any claim on a company's assets and earnings. As a result, investors require higher returns from common stocks than from bonds to compensate them for bearing the additional risk.

While it is possible to directly observe bond returns and yields, investors' required common equity returns cannot be directly determined or observed. According to RPM theory, one can estimate a common equity risk premium over bonds (either historically or prospectively), and use that premium to derive a cost rate of common equity. The cost of common equity equals the expected cost rate for long-term debt capital, plus a risk premium over that cost rate, to compensate common shareholders for the added risk of being unsecured and last-in-line for any claim on the corporation's assets and earnings upon liquidation.

Q. PLEASE EXPLAIN HOW YOU DERIVED YOUR INDICATED COST OF COMMON EQUITY BASED ON THE RPM.

A. To derive my indicated cost of common equity under the RPM, I used two risk premium methods. The first method was the Predictive Risk Premium Model ("PRPM") and the second method was a risk premium model using a total market approach. The PRPM estimates the risk-return relationship directly, while the total market approach indirectly derives a risk premium by using known metrics as a proxy for risk.

Q. PLEASE EXPLAIN THE PRPM.

A. The PRPM, published in the *Journal of Regulatory Economics,*[6] was developed from the work of Robert F. Engle, who shared the Nobel Prize in Economics in 2003 "for methods of analyzing economic time series with time-varying volatility" or ARCH.[7] Engle found that volatility changes over time and is related from one period to the next, especially in financial markets. Engle discovered that volatility of prices and returns clusters over time and is therefore highly predictable and can be used to predict future levels of risk and risk premiums.

The PRPM estimates the risk-return relationship directly, as the predicted equity risk premium is generated by predicting volatility or risk. The PRPM is not based on an <u>estimate</u> of investor behavior, but rather on an evaluation of the results of that behavior (*i.e.*, the variance of historical equity risk premiums).

The inputs to the model are the historical returns on the common shares of each Utility Proxy Group company minus the historical monthly yield on long-term U.S. Treasury securities through September 2020. Using a generalized form of ARCH, known as GARCH, I calculated each Utility Proxy Group company's projected equity risk premium using Eviews© statistical software. When the GARCH model is applied to the historical return data, it produces a predicted GARCH variance series[8] and a GARCH coefficient.[9] Multiplying the predicted monthly variance by the GARCH coefficient and then annualizing it[10] produces the predicted annual equity

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6 Pauline M. Ahern, Frank J. Hanley and Richard A. Michelfelder, Ph.D. *A New Approach for Estimating the Equity Risk Premium for Public Utilities*, <u>The Journal of Regulatory Economics</u> (December 2011), 40:261-278.

7 Autoregressive conditional heteroscedasticity; See also, <u>www.nobelprize.org</u>.

8 Illustrated on Columns 1 and 2, page 2 of Schedule DWD-D4.

9 Illustrated on Column 4, page 2 of Schedule DWD-D4.

10 Annualized Return = (1 + Monthly Return) ^12 - 1

risk premium. I then added the forecasted 30-year U.S. Treasury bond yield of 2.11%[11] to each company's PRPM-derived equity risk premium to arrive at an indicated cost of common equity. The 30-year U.S. Treasury bond yield is a consensus forecast derived from *Blue Chip Financial Services ("Blue Chip").*[12] The mean PRPM indicated common equity cost rate for the Utility Proxy Group is 9.81%, the median is 9.77%, and the average of the two is 9.79%. Consistent with my reliance on the average of the mean and median results of the DCF model, I relied on the average of the mean and median results of the Utility Proxy Group PRPM to calculate a cost of common equity rate of 9.79%.

Q. PLEASE EXPLAIN THE TOTAL MARKET APPROACH RPM.

A. The total market approach RPM adds a prospective public utility bond yield to an average of: 1) an equity risk premium that is derived from a Beta-adjusted total market equity risk premium, 2) an equity risk premium based on the S&P Utilities Index, and 3) an equity risk premium based on authorized ROEs for gas utilities.

Q. PLEASE EXPLAIN THE BASIS OF THE EXPECTED BOND YIELD OF 3.56% APPLICABLE TO THE UTILITY PROXY GROUP.

A. The first step in the total market approach RPM analysis is to determine the expected bond yield. Because both ratemaking and the cost of capital, including the common equity cost rate, are prospective in nature, a prospective yield on similarly-rated long-term debt is essential. I relied on a consensus forecast of about 50 economists of the expected yield on Aaa-rated corporate bonds for the six calendar quarters ending with the first calendar quarter of 2022, and *Blue Chip's* long-term projections for 2022 to

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11 *See*, Column 6, page 2 of Schedule DWD-D4.

12 *See*, Blue Chip Financial Forecasts, June 1, 2020 at page 14 and October 1, 2020 at page 2.

2026, and 2027 to 2031. As shown on line 1, page 3 of Schedule DWD-D4, the average expected yield on Moody's Aaa-rated corporate bonds is 2.96%. In order to adjust the expected Aaa-rated corporate bond yield to an equivalent A2-rated public utility bond yield, I made an upward adjustment of 0.54%, which represents a recent spread between Aaa-rated corporate bonds and A2-rated public utility bonds.[13] Adding that recent 0.54% spread to the expected Aaa-rated corporate bond yield of 2.96% results in an expected A2-rated public utility bond yield of 3.50%. Since the Utility Proxy Group's average Moody's long-term issuer rating is A2/A3, another adjustment to the expected A2-rated public utility bond is needed to reflect the difference in bond ratings. An upward adjustment of 0.06%, which represents one-sixth of a recent spread between A2/A3-rated and Baa2-rated public utility bond yields, is necessary to make the A2 prospective bond yield applicable to an A2/A3-rated public utility bond.[14] Adding the 0.06% to the 3.50% prospective A2-rated public utility bond yield results in a 3.56% expected bond yield applicable to the Utility Proxy Group.

Table 4: Summary of the Calculation of the Utility Proxy Group Projected Bond Yield[15]

Prospective Yield on Moody's Aaa-Rated Corporate Bonds (*Blue Chip*)	2.96%
Adjustment to Reflect Yield Spread Between Moody's Aaa-Rated Corporate Bonds and Moody's A2-Rated Utility Bonds	0.54%
Adjustment to Reflect the Utility Proxy Group's Average Moody's Bond Rating of A2/A3	0.06%

13 As shown on line 2 and explained in note 2, page 3 of Schedule DWD-D4.
14 As shown on line 4 and explained in note 3, page 3 of Schedule DWD-D4.
15 As shown on page 3 of Schedule DWD-D4.

Prospective Bond Yield Applicable to the Utility Proxy Group	3.56%

Q. PLEASE EXPLAIN HOW THE BETA-DERIVED EQUITY RISK PREMIUM IS DETERMINED.

A. The components of the Beta-derived equity risk premium model are: 1) an expected market equity risk premium over corporate bonds, and 2) the Beta coefficient. The derivation of the Beta-derived equity risk premium that I applied to the Utility Proxy Group is shown on lines 1 through 9, on page 8 of Schedule DWD-D4. The total Beta-derived equity risk premium I applied is based on an average of three historical market data-based equity risk premiums, two *Value Line*-based equity risk premiums, and a Bloomberg-based equity risk premium. Each of these is described below.

Q. HOW DID YOU DERIVE A MARKET EQUITY RISK PREMIUM BASED ON LONG-TERM HISTORICAL DATA?

A. To derive an historical market equity risk premium, I used the most recent holding period returns for the large company common stocks from the Stocks, Bonds, Bills, and Inflation ("SBBI") Yearbook 2020 ("SBBI - 2020")[16] less the average historical yield on Moody's Aaa/Aa2-rated corporate bonds for the period 1928 to 2019. Using holding period returns over a very long time is appropriate because it is consistent with the long-term investment horizon presumed by investing in a going concern, *i.e.*, a company expected to operate in perpetuity.

SBBI's long-term arithmetic mean monthly total return rate on large company common stocks was 11.83% and the long-term arithmetic mean monthly yield on Moody's Aaa/Aa2-rated corporate bonds was 6.05%.[17] As shown on line 1, page 8 of

16 *See*, SBBI-2020 Appendix A Tables: Morningstar Stocks, Bonds, Bills, & Inflation 1926-2019.
17 As explained in note 1, page 9 of Schedule DWD-D4.

Schedule DWD-D4, subtracting the mean monthly bond yield from the total return on large company stocks results in a long-term historical equity risk premium of 5.78%. I used the arithmetic mean monthly total return rates for the large company stocks and yields (income returns) for the Moody's Aaa/Aa corporate bonds, because they are appropriate for the purpose of estimating the cost of capital as noted in SBBI - 2020.[18] Using the arithmetic mean return rates and yields is appropriate because historical total returns and equity risk premiums provide insight into the variance and standard deviation of returns needed by investors in estimating future risk when making a current investment. If investors relied on the geometric mean of historical equity risk premiums, they would have no insight into the potential variance of future returns, because the geometric mean relates the change over many periods to a constant rate of change, thereby obviating the year-to-year fluctuations, or variance, which is critical to risk analysis.

Q. PLEASE EXPLAIN THE DERIVATION OF THE REGRESSION-BASED MARKET EQUITY RISK PREMIUM.

A. To derive the regression-based market equity risk premium of 9.42% shown on line 2, page 8 of Schedule DWD-D4, I used the same monthly annualized total returns on large company common stocks relative to the monthly annualized yields on Moody's Aaa/Aa2-rated corporate bonds as mentioned above. I modeled the relationship between interest rates and the market equity risk premium using the observed monthly market equity risk premium as the dependent variable, and the monthly yield on Moody's Aaa/Aa2-rated corporate bonds as the independent variable. I then used

18 *See*, SBBI - 2020, at page 10-22.

a linear Ordinary Least Squares ("OLS") regression, in which the market equity risk premium is expressed as a function of the Moody's Aaa/Aa2-rated corporate bonds yield:

$$RP = \alpha + \beta\ (R_{Aaa/Aa})$$

Q. PLEASE EXPLAIN THE DERIVATION OF THE PRPM EQUITY RISK PREMIUM.

A. I used the same PRPM approach described above to the PRPM equity risk premium. The inputs to the model are the historical monthly returns on large company common stocks minus the monthly yields on Moody's Aaa/Aa2-rated corporate bonds during the period from January 1928 through September 2020.[19] Using the previously discussed generalized form of ARCH, known as GARCH, the projected equity risk premium is determined using Eviews© statistical software. The resulting PRPM predicted a market equity risk premium of 9.54%.[20]

Q. PLEASE EXPLAIN THE DERIVATION OF A PROJECTED EQUITY RISK PREMIUM BASED ON VALUE LINE DATA FOR YOUR RPM ANALYSIS.

A. As noted above, because both ratemaking and the cost of capital are prospective, a prospective market equity risk premium is needed. The derivation of the forecasted or prospective market equity risk premium can be found in note 4, page 9 of Schedule DWD-D4. Consistent with my calculation of the dividend yield component in my DCF analysis, this prospective market equity risk premium is derived from an average of the three- to five-year median market price appreciation potential by *Value Line* for the 13 weeks ended October 2, 2020, plus an average of the median

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19 Data from January 1928 to December 2019 is from SBBI - 2020. Data from January 2020 to July 2020 is from Bloomberg.

20 Shown on line 3, page 8 of Schedule DWD-D4.

estimated dividend yield for the common stocks of the 1,700 firms covered in *Value Line* (Standard Edition).[21]

The average median expected price appreciation is 55%, which translates to an 11.58% annual appreciation, and when added to the average of *Value Line's* median expected dividend yields of 2.32%, equates to a forecasted annual total return rate on the market of 13.90%. The forecasted Moody's Aaa-rated corporate bond yield of 2.96% is deducted from the total market return of 13.90%, resulting in an equity risk premium of 10.94%, as shown on line 4, page 8 of Schedule DWD-D4.

Q. PLEASE EXPLAIN THE DERIVATION OF AN EQUITY RISK PREMIUM BASED ON THE S&P 500 COMPANIES.

A. Using data from *Value Line*, I calculated an expected total return on the S&P 500 companies using expected dividend yields and long-term growth estimates as a proxy for capital appreciation. The expected total return for the S&P 500 is 13.98%. Subtracting the prospective yield on Moody's Aaa-rated corporate bonds of 2.96% results in an 11.02% projected equity risk premium.

Q. PLEASE EXPLAIN THE DERIVATION OF AN EQUITY RISK PREMIUM BASED ON BLOOMBERG DATA.

A. Using data from Bloomberg, I calculated an expected total return on the S&P 500 using expected dividend yields and long-term growth estimates as a proxy for capital appreciation, identical to the method described above. The expected total return for the S&P 500 is 13.30%. Subtracting the prospective yield on Moody's Aaa-rated corporate bonds of 2.96% results in a 10.34% projected equity risk premium.

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21 As explained in detail in note 1, page 2 of Schedule DWD-D4.

Q. WHAT IS YOUR CONCLUSION OF A BETA-DERIVED EQUITY RISK PREMIUM FOR USE IN YOUR RPM ANALYSIS?

A. I gave equal weight to all six equity risk premiums based on each source – historical, *Value Line*, and Bloomberg – in arriving at a 9.51% equity risk premium.

Table 5: Summary of the Calculation of the Equity Risk Premium Using Total Market Returns[22]

Historical Spread Between Total Returns of Large Stocks and Aaa and Aa2-Rated Corporate Bond Yields (1928 – 2019)	5.78%
Regression Analysis on Historical Data	9.42%
PRPM Analysis on Historical Data	9.54%
Prospective Equity Risk Premium using Total Market Returns from *Value Line* Summary & Index less Projected Aaa Corporate Bond Yields	10.94%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P 500 less Projected Aaa Corporate Bond Yields	11.02%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P 500 less Projected Aaa Corporate Bond Yields	10.34%
Average	9.51%

After calculating the average market equity risk premium of 9.51%, I adjusted it by the Beta coefficient to account for the risk of the Utility Proxy Group. As discussed below, the Beta coefficient is a meaningful measure of prospective relative risk to the market as a whole, and is a logical way to allocate a company's, or proxy group's, share of the market's total equity risk premium relative to corporate bond yields. As shown on page 1 of Schedule DWD-D5, the average of the mean and median Beta coefficient for the Utility Proxy Group is 0.89. Multiplying the 0.89 average Beta

22 As shown on page 8 of Schedule DWD-D4.

coefficient by the market equity risk premium of 9.51% results in a Beta-adjusted equity risk premium for the Utility Proxy Group of 8.46%.

Q. HOW DID YOU DERIVE THE EQUITY RISK PREMIUM BASED ON THE S&P UTILITY INDEX AND MOODY'S A2-RATED PUBLIC UTILITY BONDS?

A. I estimated three equity risk premiums based on S&P Utility Index holding period returns, and two equity risk premiums based on the expected returns of the S&P Utilities Index, using *Value Line* and Bloomberg data, respectively. Turning first to the S&P Utility Index holding period returns, I derived a long-term monthly arithmetic mean equity risk premium between the S&P Utility Index total returns of 10.74% and monthly Moody's A2-rated public utility bond yields of 6.53% from 1928 to 2019, to arrive at an equity risk premium of 4.21%.[23] I then used the same historical data to derive an equity risk premium of 6.88% based on a regression of the monthly equity risk premiums. The final S&P Utility Index holding period equity risk premium involved applying the PRPM, using the historical monthly equity risk premiums from January 1928 to September 2020, to arrive at a PRPM-derived equity risk premium of 5.53% for the S&P Utility Index.

I then derived expected total returns on the S&P Utilities Index of 10.52% and 9.16% using data from *Value Line* and Bloomberg, respectively, and subtracted the prospective Moody's A2-rated public utility bond yield of 3.50%[24], which resulted in equity risk premiums of 7.02% and 5.66%, respectively. As with the market equity

23 As shown on line 1, page 12 of Schedule DWD-D4.
24 Derived on line 3, page 3 of Schedule DWD-D4.

risk premiums, I equally weighted each risk premium to arrive at my utility-specific equity risk premium of 5.86%.

Table 6: Summary of the Calculation of the Equity Risk Premium Using S&P Utility Index Holding Returns[25]

Historical Spread Between Total Returns of the S&P Utilities Index and A2-Rated Utility Bond Yields (1928 – 2019)	4.21%
Regression Analysis on Historical Data	6.88%
PRPM Analysis on Historical Data	5.53%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P Utilities Index less Projected A2-Rated Utility Bond Yields	7.02%
Prospective Equity Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P Utilities Index less Projected A2-Rated Utility Bond Yields	5.66%
Average	5.86%

Q. HOW DID YOU DERIVE AN EQUITY RISK PREMIUM OF 5.84% BASED ON AUTHORIZED ROES FOR GAS DISTRIBUTION UTILITIES?

A. The equity risk premium of 5.84% shown on line 3, page 7 of Schedule DWD-D4 is the result of a regression analysis based on regulatory awarded ROEs related to the yields on Moody's A2-rated public utility bonds. That analysis is shown on page 13 of Schedule DWD-D4. Page 13 of Schedule DWD-D4 contains the graphical results of a regression analysis of 791 rate cases for gas distribution utilities which were fully litigated during the period from January 1, 1980 through September 30, 2020. It shows the implicit equity risk premium relative to the yields on A2-rated public utility bonds immediately prior to the issuance of each regulatory decision. It is readily discernible that there is an inverse relationship between the yield on A2-rated

25 As shown on page 12 of Schedule DWD-D4.

public utility bonds and equity risk premiums. In other words, as interest rates decline, the equity risk premium rises and vice versa, a result consistent with financial literature on the subject.[26] I used the regression results to estimate the equity risk premium applicable to the projected yield on Moody's A2-rated public utility bonds. Given the expected A2-rated utility bond yield of 3.50%, it can be calculated that the indicated equity risk premium applicable to that bond yield is 5.84%, which is shown on page 13 of Schedule DWD-D4.

Q. WHAT WAS YOUR CONCLUSION OF AN EQUITY RISK PREMIUM FOR USE IN YOUR TOTAL MARKET APPROACH RPM ANALYSIS?

A. The equity risk premium I applied to the Utility Proxy Group was 6.72%, which is the average of the Beta-adjusted equity risk premium for the Utility Proxy Group, the S&P Utilities Index, and the authorized return utility equity risk premiums of 8.46%, 5.86%, and 5.84%, respectively.[27]

Q. WHAT IS THE INDICATED RPM COMMON EQUITY COST RATE BASED ON THE TOTAL MARKET APPROACH?

A. As shown on line 7, page 3 of Schedule DWD-D4 and shown on Table 7, below, I calculated a common equity cost rate of 10.28% for the Utility Proxy Group based on the total market approach RPM.

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26 *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.

27 As shown on page 7 of Schedule DWD-D4.

Table 7: Summary of the Total Market Return Risk Premium Model[28]

Prospective Moody's A2/A3-Rated Utility Bond Applicable to the Utility Proxy Group	3.56%
Prospective Equity Risk Premium	6.72%
Indicated Cost of Common Equity	10.28%

Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE PRPM AND THE TOTAL MARKET APPROACH RPM?

A. As shown on page 1 of Schedule DWD-D4, the indicated RPM-derived common equity cost rate is 10.04%, which gives equal weight to the PRPM (9.79%) and the adjusted-market approach results (10.28%).

The Capital Asset Pricing Model

Q. PLEASE EXPLAIN THE THEORETICAL BASIS OF THE CAPM.

A. CAPM theory defines risk as the co-variability of a security's returns with the market's returns as measured by the Beta coefficient (β). A Beta coefficient less than 1.0 indicates lower variability than the market as a whole, while a Beta coefficient greater than 1.0 indicates greater variability than the market.

The CAPM assumes that all non-market or unsystematic risk can be eliminated through diversification. The risk that cannot be eliminated through diversification is called market, or systematic, risk. In addition, the CAPM presumes that investors only require compensation for systematic risk, which is the result of macroeconomic and other events that affect the returns on all assets. The model is applied by adding a risk-free rate of return to a market risk premium, which is adjusted proportionately

28 As shown on page 3 of Schedule DWD-D4.

to reflect the systematic risk of the individual security relative to the total market as measured by the Beta coefficient. The traditional CAPM model is expressed as:

$$R_s = R_f + \beta\,(R_m - R_f)$$

Where:	R_s	=	Return rate on the common stock;
	R_f	=	Risk-free rate of return;
	R_m	=	Return rate on the market as a whole; and
	β	=	Adjusted Beta coefficient (volatility of the security relative to the market as a whole)

Numerous tests of the CAPM have measured the extent to which security returns and Beta coefficients are related as predicted by the CAPM, confirming its validity. The empirical CAPM ("ECAPM") reflects the reality that while the results of these tests support the notion that the Beta coefficient is related to security returns, the empirical Security Market Line ("SML") described by the CAPM formula is not as steeply sloped as the predicted SML.[29]

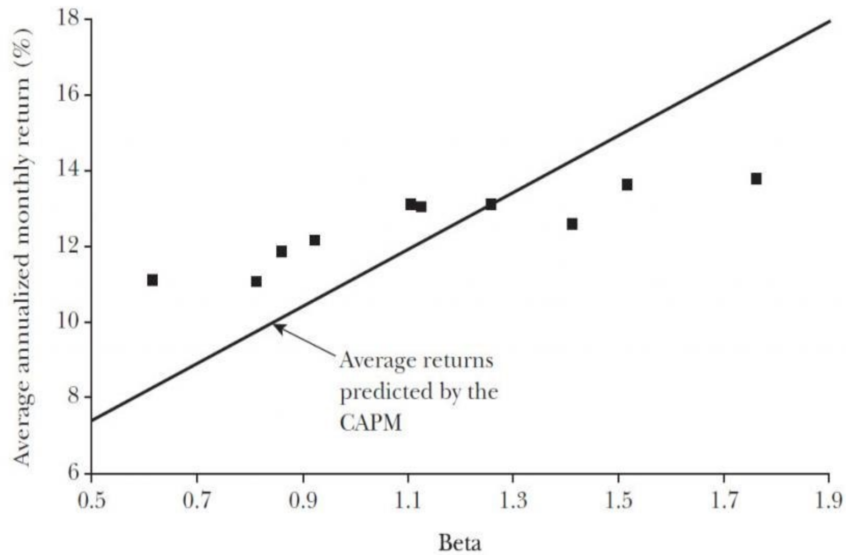
The ECAPM reflects this empirical reality. Fama and French clearly state regarding Figure 2, below, that "[t]he returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low."[30]

29 Roger A. Morin, New Regulatory Finance, at page 175 ("Morin").

30 Eugene F. Fama and Kenneth R. French, *The Capital Asset Pricing Model: Theory and Evidence*, Journal of Economic Perspectives, Vol. 18, No. 3, Summer 2004 at 33 ("Fama & French").

Figure 2 http://pubs.aeaweb.org/doi/pdfplus/10.1257/0895330042162430

Average Annualized Monthly Return versus Beta for Value Weight Portfolios Formed on Prior Beta, 1928–2003



In addition, Morin observes that 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. Morin states:

> With few exceptions, the empirical studies agree that … low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.[31]
>
> * * *
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:
>
> $$K = R_F + x\,(R_M - R_F) + (1-x)\ \beta(R_M - R_F)$$
>
> where x is a fraction to be determined empirically. The value of x that best explains the observed relationship [is] Return = 0.0829 + 0.0520 β is between 0.25 and 0.30. If x = 0.25, the equation becomes:
>
> $$K = R_F + 0.25(R_M - R_F) + 0.75\ \beta(R_M - R_F)^{32}$$

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31 Morin, at 175.

Fama and French provide similar support for the ECAPM when they state:

> The early tests firmly reject the Sharpe-Lintner version of the CAPM. There is a positive relation between beta and average return, but it is too 'flat.'… The regressions consistently find that the intercept is greater than the average risk-free rate… and the coefficient on beta is less than the average excess market return… This is true in the early tests… as well as in more recent cross-section regressions tests, like Fama and French (1992).[33]

Finally, Fama and French further note:

> Confirming earlier evidence, the relation between beta and average return for the ten portfolios is much flatter than the Sharpe-Linter CAPM predicts. The returns on low beta portfolios are too high, and the returns on the high beta portfolios are too low. For example, the predicted return on the portfolio with the lowest beta is 8.3 percent per year; the actual return as 11.1 percent. The predicted return on the portfolio with the t beta is 16.8 percent per year; the actual is 13.7 percent.[34]

Clearly, the justification from Morin, Fama, and French, along with their reviews of other academic research on the CAPM, validate the use of the ECAPM. In view of theory and practical research, I have applied both the traditional CAPM and the ECAPM to the companies in the Utility Proxy Group and averaged the results.

Q. WHAT BETA COEFFICIENTS DID YOU USE IN YOUR CAPM ANALYSIS?

A. For the Beta coefficients in my CAPM analysis, I considered two sources: *Value Line* and Bloomberg. While both of those services adjust their calculated (or "raw") Beta coefficients to reflect the tendency of the Beta coefficient to regress to the market mean of 1.00, *Value Line* calculates the Beta coefficient over a five-year period, while Bloomberg calculates it over a two-year period.

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32 Morin, at 190.
33 Fama & French, at 32.
34 *Ibid*., at 33.

Q. PLEASE DESCRIBE YOUR SELECTION OF A RISK-FREE RATE OF RETURN.

A. As shown in Column 5, page 1 of Schedule DWD-D5, the risk-free rate adopted for both applications of the CAPM is 2.11%. This risk-free rate is based on the average of the *Blue Chip* consensus forecast of the expected yields on 30-year U.S. Treasury bonds for the six quarters ending with the first calendar quarter of 2022, and long-term projections for the years 2022 to 2026 and 2027 to 2031.

Q. WHY IS THE YIELD ON LONG-TERM U.S. TREASURY BONDS APPROPRIATE FOR USE AS THE RISK-FREE RATE?

A. The yield on long-term U.S. Treasury bonds is almost risk-free and its term is consistent with the long-term cost of capital to public utilities measured by the yields on Moody's A2-rated public utility bonds; the long-term investment horizon inherent in utilities' common stocks; and the long-term life of the jurisdictional rate base to which the allowed fair rate of return (*i.e.*, cost of capital) will be applied. In contrast, short-term U.S. Treasury yields are more volatile and largely a function of Federal Reserve monetary policy.

Q. PLEASE EXPLAIN THE ESTIMATION OF THE EXPECTED RISK PREMIUM FOR THE MARKET USED IN YOUR CAPM ANALYSES.

A. The basis of the market risk premium is explained in detail in note 1 on Schedule DWD-D5. As discussed above, the market risk premium is derived from an average of three historical data-based market risk premiums, two *Value Line* data-based market risk premiums, and one Bloomberg data-based market risk premium.

The long-term income return on U.S. Government securities of 5.09% was deducted from the <u>SBBI - 2020</u> monthly historical total market return of 12.10%, which resulted in an historical market equity risk premium of 7.01%.[35] I applied a linear OLS regression to the monthly annualized historical returns on the S&P 500 relative to historical yields on long-term U.S. Government securities from SBBI -2020. That regression analysis yielded a market equity risk premium of 10.18%. The PRPM market equity risk premium is 10.66%, and was derived using the PRPM relative to the yields on long-term U.S. Treasury securities from January 1926 through September 2020.

The *Value Line*-derived forecasted total market equity risk premium was derived by deducting the forecasted risk-free rate of 2.11%, discussed above, from the *Value Line* projected total annual market return of 13.90%, resulting in a forecasted total market equity risk premium of 11.79%. The S&P 500 projected market equity risk premium using *Value Line* data was derived by subtracting the projected risk-free rate of 2.11% from the projected total return of the S&P 500 of 13.98%. The resulting market equity risk premium is 11.87%.

The S&P 500 projected market equity risk premium using Bloomberg data was derived by subtracting the projected risk-free rate of 2.11% from the projected total return of the S&P 500 of 13.30%. The resulting market equity risk premium is 11.19%. These six measures, when averaged, result in an average total market equity risk premium of 10.45%.

Table 8: Summary of the Calculation of the Market Risk Premium for Use in the CAPM[36]

Historical Spread Between Total Returns of Large Stocks	7.01%

35 SBBI - 2020, at Appendix A-1 (1) through A-1 (3) and Appendix A-7 (19) through A-7 (21).

36 As shown on page 2 of Schedule DWD-D5.

and Long-Term Government Bond Yields (1926 – 2019)	
Regression Analysis on Historical Data	10.18%
PRPM Analysis on Historical Data	10.66%
Prospective Market Risk Premium using Total Market Returns from *Value Line* Summary & Index less Projected 30-Year Treasury Bond Yields	11.79%
Prospective Market Risk Premium using Measures of Capital Appreciation and Income Returns from *Value Line* for the S&P 500 less Projected 30-Year Treasury Bond Yields	11.87%
Prospective Market Risk Premium using Measures of Capital Appreciation and Income Returns from Bloomberg Professional Services for the S&P 500 less Projected 30-Year Treasury Bond Yields	11.19%
Average	10.45%

Q. WHAT ARE THE RESULTS OF YOUR APPLICATION OF THE TRADITIONAL AND EMPIRICAL CAPM TO THE UTILITY PROXY GROUP?

A. As shown on page 1 of Schedule DWD-D5, the mean result of my CAPM/ECAPM analyses is 11.59%, the median is 11.56%, and the average of the two is 11.58%. Consistent with my reliance on the average of mean and median DCF results discussed above, the indicated common equity cost rate using the CAPM/ECAPM is 11.58%.

Common Equity Cost Rates for a Proxy Group of Domestic, Non-Price Regulated Companies Based on the DCF, RPM, and CAPM

Q. WHY DO YOU ALSO CONSIDER A PROXY GROUP OF DOMESTIC, NON-PRICE REGULATED COMPANIES?

A. In the *Hope* and *Bluefield* cases, the U.S. Supreme Court did not specify that comparable risk companies had to be utilities. Since the purpose of rate regulation is to be a substitute for marketplace competition, non-price regulated firms operating in the competitive marketplace make an excellent proxy if they are comparable in total risk to the Utility Proxy Group being used to estimate the cost of common equity. The selection of such domestic, non-price regulated competitive firms theoretically and empirically results in a proxy group which is comparable in total risk to the Utility Proxy Group, since all of these companies compete for capital in the exact same markets.

Q. HOW DID YOU SELECT NON-PRICE REGULATED COMPANIES THAT ARE COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. In order to select a proxy group of domestic, non-price regulated companies similar in total risk to the Utility Proxy Group, I relied on the Beta coefficients and related statistics derived from *Value Line* regression analyses of weekly market prices over the most recent 260 weeks (*i.e.*, five years). These selection criteria resulted in a proxy group of 41 domestic, non-price regulated firms comparable in total risk to the Utility Proxy Group. Total risk is the sum of non-diversifiable market risk and diversifiable company-specific risks. The criteria used in selecting the domestic, non-price regulated firms was:

(i) They must be covered by *Value Line* (Standard Edition);

(ii) They must be domestic, non-price regulated companies, *i.e.*, not utilities;

(iii) Their Beta coefficients must lie within plus or minus two standard deviations of the average unadjusted Beta coefficients of the Utility Proxy Group; and

(iv) The residual standard errors of the *Value Line* regressions which gave rise to the unadjusted Beta coefficients must lie within plus or minus two standard deviations of the average residual standard error of the Utility Proxy Group.

Beta coefficients measure market, or systematic, risk, which is not diversifiable. The residual standard errors of the regressions measure each firm's company-specific, diversifiable risk. Companies that have similar Beta coefficients <u>and</u> similar residual standard errors resulting from the same regression analyses have similar total investment risk.

Q. HAVE YOU PREPARED A SCHEDULE WHICH SHOWS THE DATA FROM WHICH YOU SELECTED THE 41 DOMESTIC, NON-PRICE REGULATED COMPANIES THAT ARE COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. Yes, the basis of my selection and both proxy groups' regression statistics are shown in Schedule DWD-D6.

Q. DID YOU CALCULATE COMMON EQUITY COST RATES USING THE DCF MODEL, RPM, AND CAPM FOR THE NON-PRICE REGULATED PROXY GROUP?

A. Yes. Because the DCF model, RPM, and CAPM have been applied in an identical manner as described above, I will not repeat the details of the rationale and application of each model. One exception is in the application of the RPM, where I did not use public utility-specific equity risk premiums, nor did I apply the PRPM to the individual non-price regulated companies.

Page 2 of Schedule DWD-D7 derives the constant growth DCF model common equity cost rate. As shown, the indicated common equity cost rate, using the constant growth DCF for the Non-Price Regulated Proxy Group comparable in total risk to the Utility Proxy Group, is 11.71%.

Pages 3 through 5 of Schedule DWD-D7 contain the data and calculations that support the 12.53% RPM common equity cost rate. As shown on line 1, page 3 of Schedule DWD-D7, the consensus prospective yield on Moody's Baa2-rated corporate bonds for the six quarters ending in the first quarter of 2022, and for the years 2022 to 2026 and 2027 to 2031, is 4.08%.[37] Since the Non-Price Regulated Proxy Group has an average Moody's long-term issuer rating of Baa1, a downward adjustment of 0.20% to the projected Baa2-rated corporate bond yield is necessary to reflect the difference in ratings, which results in a projected Baa1-rated corporate bond yield of 3.88%.

When the Beta-adjusted risk premium of 8.65%[38] relative to the Non-Price Regulated Proxy Group is added to the prospective Baa1-rated corporate bond yield of 3.88%, the indicated RPM common equity cost rate is 12.53%.

Page 6 of Schedule DWD-D7 contains the inputs and calculations that support my indicated CAPM/ECAPM common equity cost rate of 11.74%.

Q. WHAT IS THE COST RATE OF COMMON EQUITY BASED ON THE NON-PRICE REGULATED PROXY GROUP COMPARABLE IN TOTAL RISK TO THE UTILITY PROXY GROUP?

A. As shown on page 1 of Schedule DWD-D7, the results of the common equity models applied to the Non-Price Regulated Proxy Group – which group is comparable in total risk to the Utility Proxy Group – are as follows: 11.71% (DCF), 12.53% (RPM), and 11.74% (CAPM). The average of the mean and median of these models is

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37 Blue Chip Financial Forecasts, June 1, 2020, at page 14 and October 1, 2020, at page 2.

38 Derived on page 5 of Schedule DWD-D7.

11.87%, which I used as the indicated common equity cost rates for the Non-Price Regulated Proxy Group.

<u>CONCLUSION OF COMMON EQUITY COST RATE BEFORE ADJUSTMENTS</u>

Q. WHAT IS THE INDICATED COMMON EQUITY COST RATE BEFORE ADJUSTMENTS?

A. By applying multiple cost of common equity models to the Utility Proxy Group and the Non-Price Regulated Proxy Group, the indicated range of common equity cost rates attributable to the Utility Proxy Group before any relative risk adjustments is between 9.74% and 11.87%. I used multiple cost of common equity models as primary tools in arriving at my recommended common equity cost rate, because no single model is so inherently precise that it can be relied on to the exclusion of other theoretically sound models. Using multiple models adds reliability to the estimated common equity cost rate, with the prudence of using multiple cost of common equity models supported in both the financial literature and regulatory precedent.

<u>ADJUSTMENTS TO THE COMMON EQUITY COST RATE</u>

A. Size Adjustment

Q. DOES SPIRE'S SMALLER SIZE RELATIVE TO THE UTILITY PROXY GROUP COMPANIES INCREASE ITS BUSINESS RISK?

A. Yes. Spire's smaller size relative to the Utility Proxy Group companies indicates greater relative business risk for the Company because, all else being equal, size has a material bearing on risk.

Size affects business risk because smaller companies generally are less able to cope with significant events that affect sales, revenues and earnings. For example, smaller companies face more risk exposure to business cycles and economic conditions, both nationally and locally. Additionally, the loss of revenues from a few larger customers would have a greater effect on a small company than on a bigger company with a larger, more diverse, customer base.

As further evidence that smaller firms are riskier, investors generally demand greater returns from smaller firms to compensate for less marketability and liquidity of their securities. Duff & Phelps' 2020 Valuation Handbook – U.S. Guide to Cost of Capital ("D&P – 2020") discusses the nature of the small-size phenomenon, providing an indication of the magnitude of the size premium based on several measures of size. In discussing "Size as a Predictor of Equity Returns," D&P – 2020 states:

> The size effect is based on the empirical observation that companies of smaller size are associated with greater risk and, therefore, have greater cost of capital [sic]. The "size" of a company is one of the most important risk elements to consider when developing cost of equity capital estimates for use in valuing a business simply because size has been shown to be a *predictor* of equity returns. In other words, there is a significant (negative) relationship between size and historical equity returns - as size *decreases*, returns tend to *increase*, and vice versa. (footnote omitted) (emphasis in original)[39]

Furthermore, in "The Capital Asset Pricing Model: Theory and Evidence," Fama and French note size is indeed a risk factor which must be reflected when estimating the cost of common equity. On page 14, they note:

> . . . the higher average returns on small stocks and high book-to-

39 Duff & Phelps Valuation Handbook – U.S. Guide to Cost of Capital, Wiley 2020, at 4-1.

> market stocks reflect unidentified state variables that produce undiversifiable risks (covariances) in returns not captured in the market return and are priced separately from market betas.[40]

Based on this evidence, Fama and French proposed their three-factor model which includes a size variable in recognition of the effect size has on the cost of common equity.

Also, it is a basic financial principle that the use of funds invested, and not the source of funds, is what gives rise to the risk of any investment.[41] Eugene Brigham, a well-known authority, states:

> A number of researchers have observed that portfolios of small-firms (sic) have earned consistently higher average returns than those of large-firm stocks; this is called the "small-firm effect." On the surface, it would seem to be advantageous to the small firms to provide average returns in a stock market that are higher than those of larger firms. In reality, it is bad news for the small firm; **what the small-firm effect means is that the capital market demands higher returns on stocks of small firms than on otherwise similar stocks of the large firms**. (emphasis added)[42]

Consistent with the financial principle of risk and return discussed above, increased relative risk due to small size must be considered in the allowed rate of return on common equity. Therefore, the Commission's authorization of a cost rate of common equity in this proceeding must appropriately reflect the unique risks of Spire, including its small relative size, which is justified and supported above by evidence in the financial literature.

40 Fama & French, at 25-43.

41 Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance (McGraw-Hill Book Company, 1996), at 204-205, 229.

42 Eugene F. Brigham, Fundamentals of Financial Management, Fifth Edition (The Dryden Press, 1989), at 623.

Q. IS THERE A WAY TO QUANTIFY A RELATIVE RISK ADJUSTMENT DUE TO SPIRE'S SMALL SIZE WHEN COMPARED TO THE UTILITY PROXY GROUP?

A. Yes. Spire has greater relative risk than the average utility in the Utility Proxy Group because of its smaller size, as measured by an estimated market capitalization of common equity for Spire.

Table 9: Size as Measured by Market Capitalization for Spire's Gas Operations and the Utility Proxy Group

	Market Capitalization* ($ Millions)	Times Greater than The Company
Spire Missouri	$2,299.08	
Utility Proxy Group	$4,402.08	1.9x
*From page 1 of Schedule DWD-D8.		

Spire's estimated market capitalization was $2,299.08 million as of September 30, 2020, compared with the market capitalization of the average company in the Utility Proxy Group of $4,402.08 million as of September 30, 2020. The average company in the Utility Proxy Group has a market capitalization 1.9 times the size of Spire's estimated market capitalization.

As a result, it is necessary to upwardly adjust the indicated range of common equity cost rates attributable to the Utility Proxy Group to reflect Spire's greater risk due to their smaller relative size. The determination is based on the size premiums for portfolios of New York Stock Exchange, American Stock Exchange, and NASDAQ listed companies ranked by deciles for the 1926 to 2019 period. The average size premium for the Utility Proxy Group with a market capitalization of $4,402.08

million falls in the fourth decile, while the Company's estimated market capitalization of $2,299.08 million places it in the sixth decile. The size premium spread between the fourth decile and the sixth decile is 0.55%. Even though an 0.55% upward size adjustment is indicated, I applied a size premium of 0.10% to the Company's indicated common equity cost rate to be conservative.

Q. SINCE SPIRE IS PART OF A LARGER COMPANY, WHY IS THE SIZE OF THE TOTAL COMPANY NOT MORE APPROPRIATE TO USE WHEN DETERMINING THE SIZE ADJUSTMENT?

A. The return derived in this proceeding will not apply to Spire Inc.'s operations as a whole, but only Spire Missouri's. Spire is the sum of its constituent parts, including those constituent parts' ROEs. Potential investors in the Parent are aware that it is a combination of operations in each state, and that each state's operations experience the operating risks specific to their jurisdiction. The market's expectation of Spire's return is commensurate with the realities of the composite operations in each of the states in which it operates.

Credit Risk Adjustment

Q. PLEASE DISCUSS YOUR PROPOSED CREDIT RISK ADJUSTMENT.

A. Spire's long-term issuer ratings are A1 and A- from Moody's Investors Services and S&P, respectively, compared to the average long-term issuer ratings for the Utility Proxy Group of A2/A3 and A-, respectively.[43] Hence, a downward credit risk

43 Source: S&P Global Market Intelligence.

adjustment is necessary to reflect the higher A1 credit rating of Spire relative to the A2/A3 average Moody's bond rating of the Utility Proxy Group.[44]

An indication of the magnitude of the necessary downward adjustment to reflect the lesser credit risk inherent in an A1 bond rating relative to the Utility Proxy Group average rating of A2/A3 is determined by first taking one-third of a recent three-month average spread between Moody's Aa2 and A2 utility bonds of 0.25%, shown on page 4 of Schedule DWD-D4. The indicated 0.08% adjustment is representative of an A2 utility bond rating. Then I took one-sixth of the recent three-month spread between A2 and Baa2 Moody's utility bonds of 0.34%, to get an additional 0.06% adjustment to reflect the Utility Proxy Group rating of A2/A3. The two calculations result in a total downward adjustment of 0.14%[45] to reflect Spire's higher credit rating.

Flotation Costs

Q. WHAT ARE FLOTATION COSTS?

A. Flotation costs are those costs associated with the sale of new issuances of common stock. They include market pressure and the mandatory unavoidable costs of issuance (*e.g.*, underwriting fees and out-of-pocket costs for printing, legal, registration, etc.). For every dollar raised through debt or equity offerings, the Company receives less than one full dollar in financing.

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44 As shown on page 5 of Schedule DWD-D4.

45 0.14% = 0.25% * (1/3) + 0.34% * (1/6).

Q. WHY IS IT IMPORTANT TO RECOGNIZE FLOTATION COSTS IN THE ALLOWED COMMON EQUITY COST RATE?

A. It is important because there is no other mechanism in the ratemaking paradigm through which such costs can be recognized and recovered. Because these costs are real, necessary, and legitimate, recovery of these costs should be permitted. As noted by Morin:

> The costs of issuing these securities are just as real as operating and maintenance expenses or costs incurred to build utility plants, and fair regulatory treatment must permit recovery of these costs….
>
> The simple fact of the matter is that common equity capital is not free….[Flotation costs] must be recovered through a rate of return adjustment.[46]

Q. SHOULD FLOTATION COSTS BE RECOGNIZED ONLY IF THERE WAS AN ISSUANCE DURING THE TEST YEAR OR THERE IS AN IMMINENT POST-TEST YEAR ISSUANCE OF ADDITIONAL COMMON STOCK?

A. No. As noted above, there is no mechanism to recapture such costs in the ratemaking paradigm other than an adjustment to the allowed common equity cost rate. Flotation costs are charged to capital accounts and are not expensed on a utility's income statement. As such, flotation costs are analogous to capital investments, albeit negative, reflected on the balance sheet. Recovery of capital investments relates to the expected useful lives of the investment. Since common equity has a very long and indefinite life (assumed to be infinity in the standard regulatory DCF model), flotation costs should be recovered through an adjustment to common equity cost

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46 Morin, at p. 321.

rate, even when there has not been an issuance during the test year, or in the absence of an expected imminent issuance of additional shares of common stock.

Historical flotation costs are a permanent loss of investment to the utility and should be accounted for. When any company, including a utility, issues common stock, flotation costs are incurred for legal, accounting, printing fees and the like. For each dollar of issuing market price, a small percentage is expensed and is permanently unavailable for investment in utility rate base. Since these expenses are charged to capital accounts, and not expensed on the income statement, the only way to restore the full value of that dollar of issuing price (with an assumed investor required return of 10%) is for the net investment of $0.95 to earn more than 10% to net back to the investor a fair return on that dollar. In other words, if a company issues stock at $1.00 with 5% in flotation costs, it will net $0.95 in investment. Assuming the investor in that stock requires a 10% return on his or her invested $1.00 (*i.e.*, a return of $0.10), the company needs to earn approximately 10.5% on its invested $0.95 to receive a $0.10 return.

Q. DO THE COMMON EQUITY COST RATE MODELS YOU HAVE USED ALREADY REFLECT INVESTORS' ANTICIPATION OF FLOTATION COSTS?

A. No. All of these models assume no transaction costs. The literature is quite clear that these costs are not reflected in the market prices paid for common stocks. For example, Brigham and Daves confirm this and provide the methodology utilized to calculate the flotation adjustment.[47] In addition, Morin confirms the need for such an

47 Eugene F. Brigham and Phillip R. Daves, Intermediate Financial Management, 9th Edition, Thomson/Southwestern, at p. 342.

adjustment even when no new equity issuance is imminent.[48] Consequently, it is proper to include a flotation cost adjustment when using cost of common equity models to estimate the common equity cost rate.

Q. HOW DID YOU CALCULATE THE FLOTATION COST ALLOWANCE?

A. I modified the DCF calculation to provide a dividend yield that would reimburse investors for issuance costs in accordance with the method cited in literature by Brigham and Daves, as well as by Morin. The flotation cost adjustment recognizes the actual costs of issuing equity that were incurred by Spire in its equity issuances during fiscal years 2013, 2014, 2016, and 2018. Based on the issuance costs shown on page 1 of schedule DWD-D9, an adjustment of 0.24% is required to reflect the flotation costs applicable to the Utility Proxy Group.

Q. WHAT IS THE INDICATED COST OF COMMON EQUITY AFTER YOUR COMPANY-SPECIFIC ADJUSTMENTS?

A. Applying the 0.10% size adjustment, the -0.14% credit risk adjustment, and the 0.24% flotation cost adjustment, to the indicated range of common equity cost rates between 9.74% and 11.87% results in a Company-specific range of common equity rates between 9.94% and 12.07%. In consideration of both of these indicated ranges, I recommend an ROE of 9.95% for Spire in this proceeding.

CONCLUSION

Q. WHAT IS YOUR RECOMMENDED ROE FOR SPIRE?

A. Given the discussion above and the results from the analyses, I recommend that an ROE of 9.95% is appropriate for the Company at this time.

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48 Morin, at pp. 327-30.

Q. IN YOUR OPINION, IS YOUR PROPOSED ROE OF 9.95% FAIR AND REASONABLE TO SPIRE AND ITS CUSTOMERS?

A. Yes, it is.

Q. DOES THIS CONCLUDE YOUR DIRECT 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 CAMDEN	)	

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

1. My name is Dylan W. D'Ascendis. I am a Director at 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 direct testimony on behalf of Spire Missouri, Inc.

3. Under penalty of perjury, I declare that the foregoing is true and correct to the best of my knowledge and belief.

Dylan W. D'Ascendis

Date: 12/10/2020

<u>Spire Missouri Inc.</u>

Table of Contents

Supporting Schedules Accompanying the Direct Testimony of

Dylan W. D'Ascendis, CRRA, CVA

Spire Missouri Inc.
Recommended Capital Structure and Cost Rates
for Ratemaking Purposes
at September 30, 2020

Type Of Capital	Ratios (1)	Cost Rate		Weighted Cost Rate
Long-Term Debt	45.84%	4.00%	(1)	1.83%
Common Equity	54.16%	9.95%	(2)	5.39%
Total	100.00%			7.22%

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 Eight Natural Gas Distribution Companies
1.	Discounted Cash Flow Model (DCF) (1)	9.74%
2.	Risk Premium Model (RPM) (2)	10.04%
3.	Capital Asset Pricing Model (CAPM) (3)	11.58%
4.	Market Models Applied to Comparable Risk, Non-Price Regulated Companies (4)	11.87%
5.	Range of Common Equity Model Results	9.74% - 11.87%
6.	Size Risk Adjustment (5)	0.10%
7.	Credit Risk Adjustment (6)	-0.14%
8.	Flotation Cost Adjustment (7)	0.24%
9.	Indicated Range of Common Equity Cost Rates after Adjustment	9.94% - 12.07%
10.	Recommended Common Equity Cost Rate	9.95%

Notes:
(1) From page 1 of Schedule DWD-D3.
(2) From page 1 of Schedule DWD-D4.
(3) From page 1 of Schedule DWD-D5.
(4) From page 1 of Schedule DWD-D7.
(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 1 of Schedule DWD-D9.

Proxy Group of Eight Natural Gas Distribution Companies
CAPITALIZATION AND FINANCIAL STATISTICS (1)
2015 - 2019, Inclusive

	2019	2018	2017	2016	2015	5 YEAR AVERAGE
			(MILLIONS OF DOLLARS)			
CAPITALIZATION STATISTICS						
AMOUNT OF CAPITAL EMPLOYED						
TOTAL PERMANENT CAPITAL	$5,766.012	$5,230.971	$4,526.086	$4,097.362	$3,865.836	
SHORT-TERM DEBT	$591.508	$524.769	$421.133	$416.576	$270.239	
TOTAL CAPITAL EMPLOYED	$6,357.520	$5,755.740	$4,947.219	$4,513.938	$4,136.075	
INDICATED AVERAGE CAPITAL COST RATES (2)						
TOTAL DEBT	3.72 %	3.76 %	3.89 %	3.71 %	3.79 %	
PREFERRED STOCK	4.60	2.64	NA	NA	NA	
CAPITAL STRUCTURE RATIOS						
BASED ON TOTAL PERMANENT CAPITAL:						
LONG-TERM DEBT	48.31 %	48.82 %	49.56 %	47.99 %	48.26 %	48.59 %
PREFERRED STOCK	1.36	0.80	-	-	-	0.43
COMMON EQUITY	50.32	50.39	50.44	52.01	51.74	50.98
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
BASED ON TOTAL CAPITAL:						
TOTAL DEBT, INCLUDING SHORT-TERM	52.85 %	53.12 %	53.82 %	51.71 %	52.08 %	52.72 %
PREFERRED STOCK	1.20	0.70	-	-	-	0.38
COMMON EQUITY	45.94	46.18	46.18	48.29	47.92	46.90
TOTAL	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
FINANCIAL STATISTICS						
FINANCIAL RATIOS - MARKET BASED						
EARNINGS / PRICE RATIO	3.82 %	3.94 %	4.10 %	4.69 %	5.35 %	4.38 %
MARKET / AVERAGE BOOK RATIO	212.41	207.67	215.14	195.03	148.01	195.65
DIVIDEND YIELD	2.76	2.88	2.76	2.92	3.46	2.96
DIVIDEND PAYOUT RATIO	75.76	54.33	75.74	62.18	68.54	67.31
RATE OF RETURN ON AVERAGE BOOK COMMON EQUITY	8.22 %	8.47 %	8.84 %	9.18 %	9.18 %	8.78 %
TOTAL DEBT / EBITDA (3)	5.75 x	6.20 x	7.13 x	4.19 x	4.05 x	5.46 x
FUNDS FROM OPERATIONS / TOTAL DEBT (4)	13.73 %	21.90 %	15.82 %	20.33 %	26.24 %	19.60 %
TOTAL DEBT / TOTAL CAPITAL	52.85 %	53.12 %	53.82 %	51.71 %	52.08 %	52.72 %

Notes:
(1) All capitalization and financial statistics for the group are the arithmetic average of the achieved results for each individual company in the group, and are based upon financial statements as originally reported in each year.

(2) Computed by relating actual total debt interest or preferred stock dividends booked to average of beginning and ending total debt or preferred stock reported to be outstanding.
(3) Total debt relative to EBITDA (Earnings before Interest, Income Taxes, Depreciation and Amortization).
(4) Funds from operations (sum of net income, depreciation, amortization, net deferred income tax and investment tax credits, less total AFUDC) plus interest charges as a percentage of total debt.

Source of Information: Company Annual Forms 10-K

Capital Structure Based upon Total Permanent Capital for the
Proxy Group of Eight Natural Gas Distribution Companies
2015 - 2019, Inclusive

	2019	2018	2017	2016	2015	5 YEAR AVERAGE
Atmos Energy Corporation						
Long-Term Debt	38.03 %	39.15 %	44.03 %	41.32 %	43.46 %	41.20 %
Preferred Stock	-	-	-	-	-	0.00
Common Equity	61.97	60.85	55.97	58.68	56.54	58.80
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
New Jersey Resources Corporation						
Long-Term Debt	50.11 %	47.89 %	48.45 %	49.09 %	43.57 %	47.82 %
Preferred Stock	-	-	-	-	-	0.00
Common Equity	49.89	52.11	51.55	50.91	56.43	52.18
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
NiSource Inc.						
Long-Term Debt	53.40 %	51.90 %	64.35 %	61.20 %	62.41 %	58.65 %
Preferred Stock	5.97	6.38	-	-	-	2.47
Common Equity	40.63	41.72	35.65	38.80	37.59	38.88
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Northwest Natural Holding Company						
Long-Term Debt	50.43 %	49.12 %	51.22 %	45.82 %	43.52 %	48.02 %
Preferred Stock	-	-	-	-	-	0.00
Common Equity	49.57	50.88	48.78	54.18	56.48	51.98
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
ONE Gas, Inc.						
Long-Term Debt	37.65 %	38.62 %	37.84 %	38.71 %	39.48 %	38.46 %
Preferred Stock	-	-	-	-	-	0.00
Common Equity	62.35	61.38	62.16	61.29	60.52	61.54
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
South Jersey Industries, Inc.						
Long-Term Debt	64.06 %	69.16 %	49.88 %	44.65 %	49.96 %	55.54 %
Preferred Stock	-	-	-	-	-	0.00
Common Equity	35.94	30.84	50.12	55.35	50.04	44.46
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Southwest Gas Holdings, Inc.						
Long-Term Debt	49.58 %	48.73 %	49.45 %	49.06 %	49.63 %	49.29 %
Preferred Stock	-	-	-	-	-	0.00
Common Equity	50.42	51.27	50.55	50.94	50.37	50.71
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Spire Inc.						
Long-Term Debt	43.25 %	45.95 %	51.27 %	54.10 %	54.06 %	49.72 %
Preferred Stock	4.93	-	-	-	-	0.99
Common Equity	51.82	54.05	48.73	45.90	45.94	49.29
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %
Proxy Group of Eight Natural Gas Distribution Companies						
Long-Term Debt	48.31 %	48.81 %	49.56 %	47.99 %	48.26 %	48.59 %
Preferred Stock	1.36	0.80	-	-	-	0.43
Common Equity	50.33	50.39	50.44	52.01	51.74	50.98
Total Capital	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Source of Information
Annual Forms 10-K

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

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Eight Natural Gas Distribution Companies	Average Dividend Yield (1)	Value Line Projected Five Year Growth in EPS (2)	Zack's Five Year Projected Growth Rate in EPS	Bloomberg's Five Year Projected Growth Rate in EPS	Yahoo! Finance Projected Five Year Growth in EPS	Average Projected Five Year Growth in EPS (3)	Adjusted Dividend Yield (4)	Indicated Common Equity Cost Rate (5)
Atmos Energy Corporation	2.31 %	7.00 %	7.30 %	7.34 %	7.25 %	7.22 %	2.39 %	9.61 %
New Jersey Resources Corporation	4.39	2.00	6.00	6.50	6.00	5.13	4.50	9.63
NiSource Inc.	3.62	13.00	5.50	5.74	1.81	6.51	3.74	10.25
Northwest Natural Holding Company	3.76	NMF	3.30	4.06	3.30	3.55	3.83	7.38
ONE Gas, Inc.	2.94	6.50	5.50	5.67	5.00	5.67	3.02	8.69
South Jersey Industries, Inc.	5.30	12.50	10.70	7.84	10.70	10.44	5.58	16.02
Southwest Gas Holdings, Inc.	3.42	9.00	5.00	5.00	4.00	5.75	3.52	9.27
Spire Inc.	4.21	5.50	4.80	4.88	4.71	4.97	4.31	9.28
							Average	10.02 %
							Median	9.45 %
							Average of Mean and Median	9.74 %

NA= Not Available
NMF= Not Meaningful Figure

Notes:

(1) Indicated dividend at 09/30/2020 divided by the average closing price of the last 60 trading days ending 09/30/2020 for each company.

(2) From pages 2 through 9 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, 2.31% x (1+(1/2 x 7.22%)) = 2.39%.

(5) Column 6 + column 7.

Source of Information:
Value Line Investment Survey
www.zacks.com Downloaded on 09/30/2020
www.yahoo.com Downloaded on 09/30/2020
Bloomberg Professional Services

ATMOS ENERGY CORP. NYSE-ATO

RECENT PRICE 104.12 | P/E RATIO 21.4 (Trailing: 22.2; Median: 18.0) | RELATIVE P/E RATIO 0.97 | DIV'D YLD 2.4% | VALUE LINE

TIMELINESS 2 Raised 8/28/20
SAFETY 1 Raised 6/6/14
TECHNICAL 4 Lowered 8/28/20
BETA .80 (1.00 = Market)

High:	30.3	32.0	35.6	37.3	47.4	58.2	64.8	82.0	93.6	100.8	115.2	121.1
Low:	20.1	25.9	28.5	30.4	34.9	44.2	50.8	60.0	72.5	76.5	89.2	77.9

18-Month Target Price Range

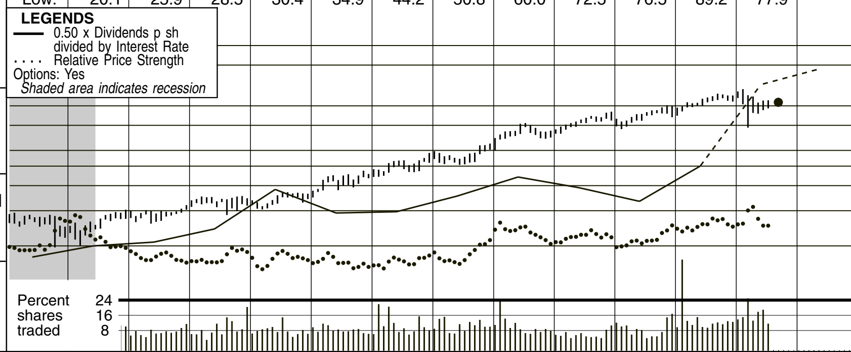
Low-High	Midpoint (% to Mid)
$81-$180	$131 (25%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	160	(+55%)	13%
Low	130	(+25%)	8%

Institutional Decisions

	3Q2019	4Q2019	1Q2020
to Buy	262	272	268
to Sell	193	215	251
Hld's(000)	99815	102747	103070



Target Price Range

2023 | 2024 | 2025

200, 160, 100, 80, 60, 50, 40, 30, 20

% TOT. RETURN 7/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-1.2	-1.7
3 yr.	29.6	9.9
5 yr.	113.4	31.7

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
46.50	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	**22.60**	**22.70**	Revenues per sh A	**37.95**
2.91	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	**8.15**	**8.45**	"Cash Flow" per sh	**9.80**
1.58	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	**4.70**	**4.95**	Earnings per sh AB	**6.00**
1.22	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**	**2.46**	Div'ds Decl'd per sh C■	**3.00**
3.03	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	**15.30**	**15.40**	Cap'l Spending per sh	**15.50**
18.05	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	**53.75**	**57.25**	Book Value per sh	**66.20**
62.80	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	**124.00**	**130.00**	Common Shs Outst'g D	**145.00**
15.9	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	*Bold figures are*		Avg Ann'l P/E Ratio	**24.0**
.84	.86	.73	.84	.82	.83	.84	.90	1.01	.89	.85	.88	1.09	1.11	1.17	1.27	*Value Line*		Relative P/E Ratio	**1.35**
4.9%	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%	*estimates*		Avg Ann'l Div'd Yield	**2.1%**

CAPITAL STRUCTURE as of 6/30/20
Total Debt $4531.5 mill. **Due in 5 Yrs** $565.0 mill.
LT Debt $4531.3 mill. **LT Interest** $275.0 mill.
(LT interest earned: 7.3x; total interest coverage: 7.3x)
Leases, Uncapitalized Annual rentals $21.0 mill.

Pfd Stock None

Pension Assets-9/19 $530.1 mill. **Oblig.** $577.3 mill.
Common Stock 123,354,982 shs. **as of 7/31/20**

MARKET CAP: $12.8 billion (Large Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
4789.7	4347.6	3438.5	3886.3	4940.9	4142.1	3349.9	2759.7	3115.5	2901.8	**2800**	**2950**	Revenues ($mill) A	**5500**
201.2	199.3	192.2	230.7	289.8	315.1	350.1	382.7	444.3	511.4	**585**	**645**	Net Profit ($mill)	**870**
38.5%	36.4%	33.8%	38.2%	39.2%	38.3%	36.4%	36.6%	27.0%	21.4%	**19.5%**	**20.5%**	Income Tax Rate	**24.0%**
4.2%	4.6%	5.6%	5.9%	5.9%	7.6%	10.5%	13.9%	14.3%	17.6%	**20.9%**	**21.9%**	Net Profit Margin	**15.8%**
45.4%	49.4%	45.3%	48.8%	44.3%	43.5%	38.7%	44.0%	34.3%	38.0%	**41.0%**	**40.0%**	Long-Term Debt Ratio	**40.0%**
54.6%	50.6%	54.7%	51.2%	55.7%	56.5%	61.3%	56.0%	65.7%	62.0%	**59.0%**	**60.0%**	Common Equity Ratio	**60.0%**
3987.9	4461.5	4315.5	5036.1	5542.2	5650.2	5651.8	6965.7	7263.6	9279.7	**11300**	**12400**	Total Capital ($mill)	**16000**
4793.1	5147.9	5475.6	6030.7	6725.9	7430.6	8280.5	9259.2	10371	11788	**13100**	**14300**	Net Plant ($mill)	**18000**
6.9%	6.1%	6.1%	5.9%	6.4%	6.6%	7.2%	6.4%	6.9%	6.1%	**6.5%**	**6.5%**	Return on Total Cap'l	**6.5%**
9.2%	8.8%	8.1%	8.9%	9.4%	9.9%	10.1%	9.8%	9.3%	8.9%	**9.0%**	**8.5%**	Return on Shr. Equity	**9.0%**
9.2%	8.8%	8.1%	8.9%	9.4%	9.9%	10.1%	9.8%	9.3%	8.9%	**9.0%**	**8.5%**	Return on Com Equity	**9.0%**
3.5%	3.3%	2.8%	4.0%	4.7%	4.9%	5.1%	4.9%	4.8%	4.6%	**4.5%**	**4.5%**	Retained to Com Eq	**4.5%**
62%	62%	65%	56%	50%	51%	50%	50%	48%	48%	**49%**	**50%**	All Div'ds to Net Prof	**50%**

CURRENT POSITION ($MILL.)	2018	2019	6/30/20
Cash Assets	13.8	24.5	208.1
Other	465.1	433.5	394.1
Current Assets	478.9	458.0	602.2
Accts Payable	217.3	265.0	200.1
Debt Due	1150.8	464.9	.2
Other	547.0	479.5	502.4
Current Liab.	1915.1	1209.4	702.7
Fix. Chg. Cov.	926%	990%	980%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	-9.0%	-9.5%	*6.5%*
"Cash Flow"	5.5%	7.0%	*5.5%*
Earnings	7.5%	9.5%	*7.0%*
Dividends	4.0%	6.5%	*7.5%*
Book Value	6.5%	8.5%	*7.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2017	780.2	988.2	526.5	464.8	2759.7
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	***453.8***	***2800***
2021	***890***	***1050***	***540***	***470***	***2950***

Fiscal Year Ends	EARNINGS PER SHARE A B E Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2017	1.08	1.52	.67	.34	3.60
2018	1.40	1.57	.64	.41	4.00
2019	1.38	1.82	.68	.49	4.35
2020	1.47	1.95	.79	***.49***	***4.70***
2021	***1.53***	***2.05***	***.81***	***.56***	***4.95***

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.42	.42	.42	.45	1.71
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		

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 2019: 66%, residential; 27%, commercial; 5%, industrial; and 2% other. The company sold Atmos Energy Marketing, 1/17. Officers and directors own approximately 1.4% of common stock (12/19 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 Corporation, though not immune to the effects of COVID-19, has performed fairly well of late. In fact, during the first nine months of fiscal 2020 (which ends September 30th), share net advanced 8.5%, to $4.21, versus the $3.88 tally for the same period last year. That was brought about partially by the natural gas distribution business, which got a lift from higher rates, mostly in the Mississippi, Mid-Tex, Louisiana, and West Texas divisions. Customer growth, mainly in the Mid-Tex operation, also helped. Elsewhere, results of the pipeline and storage division enjoyed an increase in revenue from Gas Reliability Infrastructure Program filings approved in fiscal 2019 and 2020. If there are no major setbacks in the fourth quarter, it seems that profits will climb around 8%, to $4.70 a share, for the entire fiscal year. Looking at fiscal 2021, the company's share net might rise another 5%, to $4.95, as operating margins widen further.

Finances remain in strong shape. At the conclusion of June, cash and equivalents amounted to $208.1 million. Moreover, long-term debt was a manageable 41% of total capital, and short-term obligations were minimal. Also, approximately $3 billion of common stock and/or debt securities remained available for issuance (out of $4 billion) under a shelf registration statement that expires in February, 2023. Finally, the company can access four revolving credit facilities aggregating $2.2 billion plus a $1.5 billion commercial paper program. All things considered, Atmos Energy ought to have little difficulty satisfying its commitments (including working capital needs and dividend payments) for some time. Acquisitions are also possible.

The high-quality stock has strengthened a bit in price over the past few months. We believe that movement can be traced, to a certain degree, to the company's solid earnings in fiscal 2020. Too, these shares are pegged at 2 (Above Average) for Timeliness. What's more, capital appreciation potential during the 18-month period looks solid. But the dividend yield does not stand out compared to the average of *Value Line's* Natural Gas Utility Industry group.

Frederick L. Harris, III *August 28, 2020*

(A) Fiscal year ends Sept. 30th. **(B)** Diluted shrs. Excl. nonrec. gains (loss): '10, 5¢; '11, (1¢); '18, $1.43; 3Q '20, 17¢. Excludes discontinued operations: '11, 10¢; '12, 27¢; '13, 14¢; '17, 13¢. Next egs. rpt. due early Nov.
(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	85
Earnings Predictability	100

NEW JERSEY RES. NYSE-NJR

RECENT PRICE **32.48** | P/E RATIO **15.2** (Trailing: 18.1; Median: 17.0) | RELATIVE P/E RATIO **0.69** | DIV'D YLD **3.8%** | VALUE LINE

TIMELINESS **4** Lowered 4/3/20
SAFETY **2** Lowered 4/17/20
TECHNICAL **3** Raised 6/19/20
BETA .90 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$25-$57	$41 (25%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(+40%)	12%
Low	35	(+10%)	6%

Institutional Decisions

	3Q2019	4Q2019	1Q2020
to Buy	125	169	123
to Sell	102	99	131
Hld's(000)	61471	67787	67063

High:	21.2	22.0	25.2	25.1	23.8	32.1	34.1	38.9	45.4	51.8	51.2	44.7
Low:	15.0	16.7	19.8	19.3	19.5	21.9	26.8	30.5	33.7	35.6	40.3	21.1

% TOT. RETURN 7/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-35.5	-1.7
3 yr.	-19.7	9.9
5 yr.	24.0	31.7

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
30.44	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	**21.35**	**28.35**	Revenues per sh A	**30.05**
1.25	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	**2.90**	**3.30**	"Cash Flow" per sh	**3.55**
.85	.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	**1.90**	**2.25**	Earnings per sh B	**2.40**
.43	.45	.48	.51	.56	.62	.68	.72	.77	.81	.86	.93	.98	1.04	1.11	1.19	**1.27**	**1.34**	Div'ds Decl'd per sh C■	**1.57**
.72	.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	**4.70**	**4.10**	Cap'l Spending per sh	**4.00**
5.62	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	**20.50**	**21.65**	Book Value per sh D	**25.80**
83.22	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	**96.00**	**97.00**	Common Shs Outst'g E	**100.00**
15.3	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	*Bold figures are*		Avg Ann'l P/E Ratio	**17.0**
.81	.89	.87	1.15	.74	.99	.95	1.05	1.07	.90	.62	.84	1.12	1.13	.84	1.33	*Value Line*		Relative P/E Ratio	**.95**
3.3%	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%	*estimates*		Avg Ann'l Div'd Yield	**3.7%**

CAPITAL STRUCTURE as of 6/30/20
Total Debt $2243.6 mill. **Due in 5 Yrs** $420.5 mill.
LT Debt $1664.5 mill. **LT Interest** $47.1 mill.
Incl. $38.6 mill. capitalized leases.
(LT interest earned: 5.0x; total interest coverage: 5.0x)
Pension Assets-9/19 $372.6 mill. **Oblig.** $620.5 mill.
Pfd Stock None
Common Stock 95,930,191 shs.
as of 8/5/20
MARKET CAP: $3.1 billion (Mid Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
2639.3	3009.2	2248.9	3198.1	3738.1	2734.0	1880.9	2268.6	2915.1	2592.0	**2050**	**2750**	Revenues ($mill) A	**3005**
101.8	106.5	112.4	113.7	176.9	153.7	138.1	149.4	240.5	175.0	**185**	**220**	Net Profit ($mill)	**240**
41.4%	30.2%	7.1%	25.4%	30.2%	26.3%	15.5%	17.2%	NMF	NMF	**15.0%**	**15.0%**	Income Tax Rate	**15.0%**
3.9%	3.5%	5.0%	3.6%	4.7%	5.6%	7.3%	6.6%	8.2%	6.7%	**8.9%**	**8.0%**	Net Profit Margin	**8.0%**
37.2%	35.5%	39.2%	36.6%	38.2%	43.2%	47.7%	44.6%	45.4%	49.8%	**44.5%**	**44.5%**	Long-Term Debt Ratio	**43.5%**
62.8%	64.5%	60.8%	63.4%	61.8%	56.8%	52.3%	55.4%	54.6%	50.2%	**55.5%**	**55.5%**	Common Equity Ratio	**56.5%**
1154.4	1203.1	1339.0	1400.3	1564.4	1950.6	2230.1	2233.7	2599.6	3088.9	**3500**	**3800**	Total Capital ($mill)	**4580**
1135.7	1295.9	1484.9	1643.1	1884.1	2128.3	2407.7	2609.7	2651.0	3041.2	**3800**	**3875**	Net Plant ($mill)	**4115**
9.7%	9.7%	9.2%	9.0%	12.1%	8.6%	6.9%	7.7%	10.1%	6.4%	**6.0%**	**6.5%**	Return on Total Cap'l	**6.0%**
14.0%	13.7%	13.8%	12.8%	18.3%	13.9%	11.8%	12.1%	16.9%	11.3%	**9.5%**	**10.5%**	Return on Shr. Equity	**9.5%**
14.0%	13.7%	13.8%	12.8%	18.3%	13.9%	11.8%	12.1%	16.9%	11.3%	**9.5%**	**10.5%**	Return on Com Equity	**9.5%**
6.7%	6.2%	6.2%	5.2%	11.0%	7.0%	4.8%	5.0%	10.2%	4.6%	**3.0%**	**4.5%**	Retained to Com Eq	**3.0%**
52%	55%	55%	59%	40%	50%	60%	59%	40%	59%	**67%**	**59%**	All Div'ds to Net Prof	**65%**

CURRENT POSITION ($MILL.)	2018	2019	6/30/20
Cash Assets	1.5	2.7	42.8
Other	768.6	508.9	478.3
Current Assets	770.1	511.6	521.1
Accts Payable	373.5	295.9	222.4
Debt Due	275.5	46.9	579.1
Other	101.9	103.6	100.8
Current Liab.	750.9	446.4	902.3
Fix. Chg. Cov.	545%	545%	550%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	-2.5%	-4.0%	.5%
"Cash Flow"	7.5%	7.5%	2.0%
Earnings	7.0%	6.0%	2.0%
Dividends	7.0%	6.5%	6.0%
Book Value	7.0%	8.5%	8.5%

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2017	541.1	733.5	457.5	536.5	2268.6
2018	705.3	1019.0	543.4	647.3	2915.1
2019	811.8	866.3	434.9	479.1	2592.0
2020	615.0	639.6	299.0	**496.4**	**2050**
2021	**665**	**965**	**535**	**585**	**2750**

Fiscal Year Ends	EARNINGS PER SHARE A B Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2017	.47	1.21	.20	d.14	1.73
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	**.40**	**1.90**
2021	**.55**	**1.25**	**d.05**	**.50**	**2.25**

Cal-endar	QUARTERLY DIVIDENDS PAID C ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.24	.24	.24	.255	.98
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		

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 547,600 cust. at 9/30/19. Fiscal 2019 volume: 232 bill. cu. ft. (17% interruptible, 17% res., 9% commercial & elec. utility, 40% capacity release programs). N.J. Natural Energy subsidiary provides unregulated retail/wholesale natural gas and related energy svcs. 2019 dep. rate: 2.6%. Has 1,108 empls. Off./dir. own 1.3% of common; BlackRock, 13.9%; Vanguard, 10.4% (12/19 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.

New Jersey Resources posted mixed results for its fiscal third quarter (ended June 30th). To wit, the top line fell 31.2% on a year-over-year basis, to $299.0 million. This reflected a hefty, almost 85% drop in nonutility volumes, partially offset by a 6.4% rise in its utility business. Meanwhile, on the profitability front, total expenses increased 590 basis points as a percentage of revenues. All told, after excluding unrealized losses on derivative instruments and hedging activities, and accounting for a healthy uptick in the number of common shares outstanding, NJR's bottom line loss improved nearly 70%, to a deficit of $0.06 a share. This bested our call for a loss of $0.14.

We have raised our earnings outlook for fiscal 2020 (ends September 30th). The volume slump a the nonutility business will likely drag down NJR's overall top line. In fact, we think the retail and wholesale energy services provider will experience a roughly 20% drop in revenues this year, to $2.050 billion. This will largely reflect weakness at the Energy Services segment. Alternatively, the New Jersey Natural Gas (NJNG) regulated utility business appears poised to perform quite well this year. To that end, NJNG has added 5,879 new customer accounts over the first nine months of this fiscal year. What's more, management plans to add 28,000-30,000 new meters in the 2020-2022 time frame. In light of the recent stronger-than-anticipated earnings, we have added $0.40 to our bottom-line call, bringing that estimate to $1.90. Still, the challenging operating environment is weighing on New Jersey Resources' business mix. This is evident in our estimated annual earnings decline of about 3%.

The overall financial position is in good shape. So far this year, cash reserves swelled nearly 15-fold, to $42.8 million. At the same time, the long-term debt load ticked about 8.5% higher, and now represents a relatively normal 48% of total capital when viewed against other companies in this space.

At the recent quotation, shares of New Jersey Resources do not stand out. The stock market appears to have already priced in the earnings growth we envision for the pull to 2023-2025.

Bryan J. Fong *August 28, 2020*

(A) Fiscal year ends Sept. 30th.
(B) Diluted earnings. Qtly. sales and egs. may not sum to total due to rounding and change in shares outstanding. Next earnings report due early Nov.
(C) Dividends historically paid in early Jan., April, July, and October. ■ Dividend reinvestment plan available.
(D) Includes regulatory assets in 2019: $496.6 million, $5.56/share.
(E) In millions, adjusted for splits.

Company's Financial Strength	A+
Stock's Price Stability	85
Price Growth Persistence	70
Earnings Predictability	45

NISOURCE INC. NYSE-NI

RECENT PRICE 23.96 | P/E RATIO 18.2 (Trailing: 17.9 Median: 21.0) | RELATIVE P/E RATIO 0.83 | DIV'D YLD 3.5% | VALUE LINE

TIMELINESS 3 Lowered 4/5/19
SAFETY 2 Raised 11/29/19
TECHNICAL 3 Raised 4/24/20
BETA .85 (1.00 = Market)

18-Month Target Price Range
Low-High Midpoint (% to Mid)
$19-$40 $30 (25%)

2023-25 PROJECTIONS

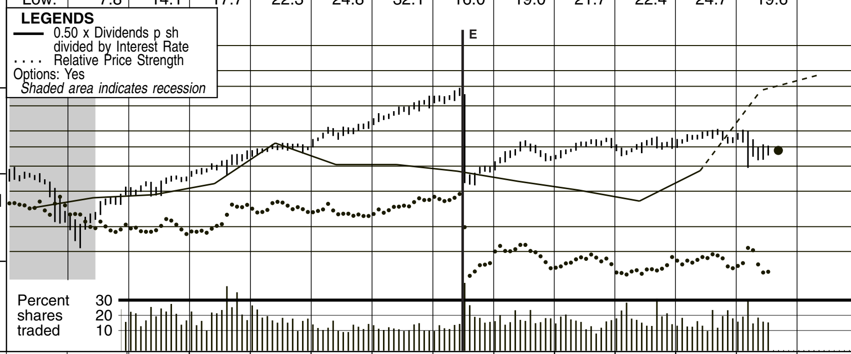
	Price	Gain	Ann'l Total Return
High	40	(+65%)	16%
Low	30	(+25%)	9%

Institutional Decisions

	3Q2019	4Q2019	1Q2020
to Buy	228	255	214
to Sell	192	203	230
Hld's(000)	343395	347952	345200

High:	15.8	18.0	24.0	26.2	33.5	44.9	49.2	26.9	27.8	28.1	30.7	30.5	
Low:	7.8	14.1	17.7	22.3	24.8	32.1	16.0	19.0	21.7	22.4	24.7	19.6	

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



Target Price Range
2023 | 2024 | 2025
80
60
50
40
30
25
20
15
10
7.5

% TOT. RETURN 7/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-15.7	-1.7
3 yr.	2.0	9.9
5 yr.	61.3	31.7

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
24.63	28.97	27.37	28.96	32.36	24.02	22.99	21.33	16.31	18.04	20.47	14.58	13.90	14.46	13.74	13.63	*13.30*	*14.05*	Revenues per sh	*17.20*
3.47	3.14	3.18	3.20	3.32	2.96	3.19	2.98	3.13	3.41	3.60	2.27	2.71	2.07	2.82	3.03	*3.10*	*3.25*	"Cash Flow" per sh	*4.10*
1.62	1.08	1.14	1.14	1.34	.84	1.06	1.05	1.37	1.57	1.67	.63	1.00	.39	1.30	1.32	*1.30*	*1.40*	Earnings per sh A	*2.05*
.92	.92	.92	.92	.92	.92	.92	.92	.94	.98	1.02	.83	.64	.70	.78	.80	*.86*	*.92*	Div'd Decl'd per sh B ■	*1.16*
1.91	2.17	2.33	2.88	3.54	2.81	2.88	3.99	4.83	5.99	6.42	4.26	4.57	5.03	4.88	4.72	*4.70*	*4.70*	Cap'l Spending per sh	*4.70*
17.69	18.09	18.32	18.52	17.24	17.54	17.63	17.71	17.90	18.77	19.54	12.04	12.60	12.82	13.08	13.36	*13.75*	*14.20*	Book Value per sh C	*16.20*
270.63	272.62	273.65	274.18	274.26	276.79	279.30	282.18	310.28	313.68	316.04	319.11	323.16	337.02	372.36	382.14	*383.00*	*384.00*	Common Shs Outst'g D	*385.00*
13.0	21.4	19.2	18.8	12.1	14.3	15.3	19.4	17.9	18.9	22.7	37.3	23.2	NMF	19.3	21.2	*Bold figures are*		Avg Ann'l P/E Ratio	*16.0*
.69	1.14	1.04	1.00	.73	.95	.97	1.22	1.14	1.06	1.19	1.88	1.22	NMF	1.04	1.15	*Value Line*		Relative P/E Ratio	*.90*
4.4%	4.0%	4.2%	4.3%	5.7%	7.6%	5.7%	4.5%	3.8%	3.3%	2.7%	3.5%	2.8%	2.8%	3.1%	2.9%	*estimates*		Avg Ann'l Div'd Yield	*4.2%*
						6422.0	6019.1	5061.2	5657.3	6470.6	4651.8	4492.5	4874.6	5114.5	5208.9	*5100*	*5400*	Revenues ($mill)	*6615*
						294.6	303.8	410.6	490.9	530.7	198.6	328.1	128.6	463.3	494.7	*490*	*530*	Net Profit ($mill)	*785*
						32.4%	35.0%	34.4%	34.8%	36.9%	41.6%	35.7%	71.0%	19.7%	20.2%	*21.0%*	*21.0%*	Income Tax Rate	*22.0%*
						--	--	--	--	--	--	--	--	2.9%	2.0%	*2.0%*	*2.0%*	AFUDC % to Net Profit	*2.0%*
						54.7%	55.6%	55.1%	56.3%	56.9%	60.7%	59.8%	63.5%	55.3%	56.8%	*55.5%*	*55.0%*	Long-Term Debt Ratio	*55.0%*
						45.3%	44.4%	44.9%	43.7%	43.1%	39.3%	40.2%	36.5%	37.9%	36.9%	*44.5%*	*45.0%*	Common Equity Ratio	*45.0%*
						10859	11264	12373	13480	14331	9792.0	10129	11832	12856	13843	*15875*	*16105*	Total Capital ($mill)	*17005*
						11097	11800	12916	14365	16017	12112	13068	14360	15543	16912	*15750*	*16000*	Net Plant ($mill)	*17250*
						4.5%	4.4%	5.0%	5.2%	5.3%	4.0%	5.0%	2.6%	5.0%	4.9%	*3.0%*	*3.5%*	Return on Total Cap'l	*4.5%*
						6.0%	6.1%	7.4%	8.3%	8.6%	5.2%	8.1%	3.0%	8.1%	8.3%	*8.0%*	*8.5%*	Return on Shr. Equity	*11.0%*
						6.0%	6.1%	7.4%	8.3%	8.6%	5.2%	8.1%	3.0%	9.3%	8.6%	*8.0%*	*8.5%*	Return on Com Equity	*11.0%*
						.8%	.9%	2.5%	3.1%	3.4%	NMF	3.0%	NMF	3.7%	2.7%	*2.0%*	*2.5%*	Retained to Com Eq	*4.5%*
						87%	85%	67%	62%	61%	NMF	63%	NMF	61%	72%	*73%*	*72%*	All Div'ds to Net Prof	*61%*

CAPITAL STRUCTURE as of 6/30/20
Total Debt $9989.3 mill. **Due in 5 Yrs** $2196 mill.
LT Debt $8810.2 mill. **LT Interest** $379 mill.
(Interest cov. earned: 2.2x) (61% of Cap'l)

Leases, Uncapitalized Annual rentals $27.2 mill.
Pension Assets-12/18 $2.3 bill. **Oblig.** $2.7 bill.

Pfd Stock $880 mill. **Pfd Div'd** $28.5 mill.

Common Stock 383,023,038 shs.
as of 7/30/20
MARKET CAP: $9.2 billion (Large Cap)

CURRENT POSITION ($MILL.)	2018	2019	6/30/20
Cash Assets	112.8	139.3	142.2
Other	1942.6	1714.6	2717.4
Current Assets	2055.4	1853.9	2859.6
Accts Payable	883.8	666.0	482.9
Debt Due	2027.2	1783.6	1179.1
Other	1125.8	1296.2	1565.7
Current Liab.	4036.8	3745.8	3227.7
Fix. Chg. Cov.	246%	250%	255%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	-7.0%	-5.5%	*3.5%*
"Cash Flow"	-2.0%	-5.0%	*7.5%*
Earnings	-1.0%	-8.0%	*13.0%*
Dividends	-2.0%	-5.0%	*7.5%*
Book Value	-3.0%	-7.0%	*5.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	1598.6	990.7	917.0	1368.3	4874.6
2018	1750.8	1007.0	895.0	1461.7	5114.5
2019	1869.8	1010.4	931.5	1397.2	5208.9
2020	1605.5	962.7	*1000*	*1531.8*	*5100*
2021	*1680*	*1040*	*1075*	*1605*	*5400*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.65	d.14	.04	d.16	.39
2018	.77	.07	.10	.38	1.30
2019	.82	.05	--	.45	1.32
2020	.76	.13	*.09*	*.32*	*1.30*
2021	*.78*	*.15*	*.12*	*.35*	*1.40*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.155	.155	.165	.165	.64
2017	.175	.175	.175	.175	.70
2018	.195	.195	.195	.195	.78
2019	.200	.200	.200	.200	.80
2020	.21	.21	.21		

BUSINESS: NiSource Inc. is a holding company for Northern Indiana Public Service Company (NIPSCO), which supplies electricity and gas to the northern third of Indiana. Customers: 472,000 electric in Indiana, 3.5 million gas in Indiana, Ohio, Pennsylvania, Kentucky, Virginia, Maryland, Massachusetts through its Columbia subsidiaries. Revenue breakdown, 2019: electrical, 33%; gas, 67%; other, less than 1%. Generating sources, 2018: coal, 69.4%; purchased & other, 30.6%. 2019 reported depreciation rates: 2.9% electric, 2.2% gas. Has 8,087 employees. Chairman: Richard L. Thompson. President & Chief Executive Officer: Joseph Hamrock. Incorporated: Indiana. Address: 801 East 86th Ave., Merrillville, Indiana 46410. Tel.: 877-647-5990. Internet: www.nisource.com.

NiSource recently posted mixed June-quarter financial results. On the downside, revenues fell 4.7%, to $962.7 million, reflecting a drop in customer and other revenues of 3.8% and 27.2%, respectively, as the challenging operating environment caused by the coronavirus pandemic applied pressure to end-use consumer demand. Further complications came from the volatility impacting the commodity markets. Although fossil fuel prices have rebounded from the 52-week lows experienced earlier this year, they are still well off their highs. On the margin front, cost of goods sold fell 550 basis points as a percentage of the top line. All told, these factors equated to a 160% rise in earnings per share, to $0.13. This was markedly above our call for $0.10.

Still, we have left our 2020 bottom-line estimate unchanged, at this time. Our figure of $1.30 per share would represent a slight annual declined. This will likely stem from a revenue downturn of about 2%, to $5.1 billion, as volumes fall off for both the commercial and industrial customers. Elsewhere, management expects a number of accounts will fall into the bad-debt category, as economic headwinds related to the pandemic weigh on customers' ability to pay. These factors have also prompted us to reduce our 2021 top- and bottom-line estimates by $100 million and a dime, to $5.4 billion and $1.40 a share, respectively.

The divestiture of Columbia Gas of Massachusetts appears to be moving forward. That deal is still pending regulatory approval. It looks like NiSource will make a $56 million payment into an energy relief fund to settle matters related to the greater Lawrence events.

Meantime, rate cases augur well for growth prospects. The Columbia Gas of Pennsylvania and Columbia Gas of Maryland units have both filed for rate increases totaling nearly $107 million annually, combined. These increases will go towards continued capital improvement projects. NiSource has about $1.7 billion-$1.8 billion in growth and reliability initiatives planned each year.

But these shares are not overly compelling given the difficult economic backdrop and operating environment.

Bryan J. Fong *August 28, 2020*

(A) Dil. EPS. Excl. nonrec. gains (losses): '05, (4¢); gains (losses) on disc. ops.: '05, 10¢; '06, (11¢); '07, 3¢; '08, ($1.14); '15, (30¢); '18, ($1.48). Next egs. report due late Nov. Qtl'y egs. may not sum to total due to rounding.
(B) Div'ds historically paid in mid-Feb., May, Aug., Nov. ■ Div'd reinv. avail.
(C) Incl. intang in '19: $1485.9 million, $3.89/sh.
(D) In mill.
(E) Spun off Columbia Pipeline Group (7/15)

Company's Financial Strength	B+
Stock's Price Stability	95
Price Growth Persistence	40
Earnings Predictability	40

N.W. NATURAL NYSE-NWN

RECENT PRICE **53.22** | P/E RATIO **22.5** (Trailing: 25.8 Median: 23.0) | RELATIVE P/E RATIO **1.02** | DIV'D YLD **3.6%** | VALUE LINE

TIMELINESS 3 Lowered 5/22/20
SAFETY 1 Raised 3/18/05
TECHNICAL 3 Raised 4/3/20
BETA .80 (1.00 = Market)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High:	46.5	50.9	49.0	50.8	46.6	52.6	52.3	66.2	69.5	71.8	74.1	77.3
Low:	37.7	41.1	39.6	41.0	40.0	40.1	42.0	48.9	56.5	51.5	57.2	50.4

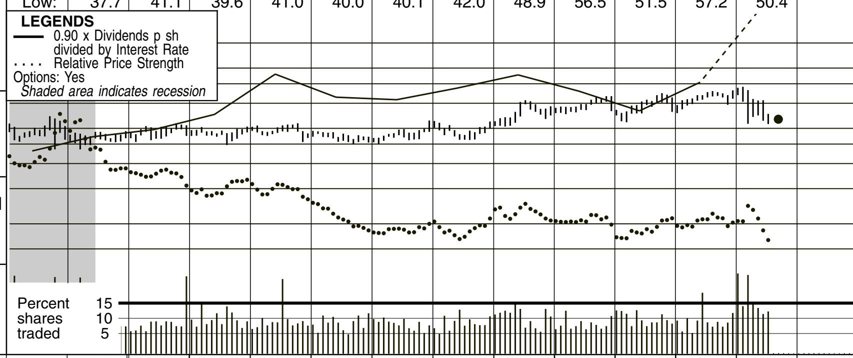
18-Month Target Price Range
Low-High Midpoint (% to Mid)
$42-$102 $72 (35%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	85	(+60%)	15%
Low	70	(+30%)	10%

Institutional Decisions

	3Q2019	4Q2019	1Q2020
to Buy	107	120	88
to Sell	90	95	133
Hld's(000)	21608	23102	22679



Target Price Range

2023	2024	2025

% TOT. RETURN 7/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-23.4	-1.7
3 yr.	-8.0	9.9
5 yr.	43.3	31.7

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
25.69	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	25.15	26.45	Revenues per sh	29.40
3.92	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	4.85	5.20	"Cash Flow" per sh	6.15
1.86	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	2.35	2.55	Earnings per sh A	3.20
1.30	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	Div'ds Decl'd per sh B■	1.97
5.52	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	7.80	6.15	Cap'l Spending per sh	6.25
20.64	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	29.70	31.85	Book Value per sh D	38.40
27.55	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	31.00	31.00	Common Shs Outst'g C	32.00
16.7	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	Bold figures are		Avg Ann'l P/E Ratio	24.0
.88	.91	.86	.89	1.09	1.01	1.08	1.19	1.34	1.09	1.09	1.19	1.41	- -	1.44	1.68	Value Line		Relative P/E Ratio	1.35
4.2%	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%	estimates		Avg Ann'l Div'd Yield	2.6%

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
812.1	848.8	730.6	758.5	754.0	723.8	676.0	762.2	706.1	746.4	780	820	Revenues ($mill)	940
72.7	63.9	59.9	60.5	58.7	53.7	58.9	d55.6	67.3	65.3	80.0	85.0	Net Profit ($mill)	95.0
40.5%	40.4%	42.4%	40.8%	41.5%	40.0%	40.9%	- -	26.4%	16.2%	21.0%	21.0%	Income Tax Rate	21.0%
8.9%	7.5%	8.2%	8.0%	7.8%	7.4%	8.7%	NMF	9.5%	8.8%	9.4%	9.7%	Net Profit Margin	10.9%
46.1%	47.3%	48.5%	47.6%	44.8%	42.5%	44.4%	47.9%	48.1%	48.2%	47.5%	47.0%	Long-Term Debt Ratio	47.5%
53.9%	52.7%	51.5%	52.4%	55.2%	57.5%	55.6%	52.1%	51.9%	51.8%	52.5%	53.0%	Common Equity Ratio	52.5%
1284.8	1356.2	1424.7	1433.6	1389.0	1357.7	1529.8	1426.0	1468.9	1672.0	1755	1855	Total Capital ($mill)	1825
1854.2	1893.9	1973.6	2062.9	2121.6	2182.7	2260.9	2255.0	2421.4	2438.9	2535	2640	Net Plant ($mill)	3065
7.0%	6.2%	5.7%	5.8%	5.8%	5.5%	5.1%	NMF	5.8%	5.2%	5.0%	5.5%	Return on Total Cap'l	5.5%
10.5%	8.9%	8.2%	8.1%	7.6%	6.9%	6.9%	NMF	8.8%	7.5%	8.0%	8.0%	Return on Shr. Equity	8.5%
10.5%	8.9%	8.2%	8.1%	7.6%	6.9%	6.9%	NMF	8.8%	7.5%	8.0%	8.0%	Return on Com Equity	8.5%
4.0%	2.4%	1.6%	1.5%	1.1%	.6%	.9%	NMF	2.1%	1.4%	1.5%	2.0%	Retained to Com Eq	3.0%
61%	73%	80%	81%	85%	92%	87%	NMF	76%	82%	81%	75%	All Div'ds to Net Prof	61%

CAPITAL STRUCTURE as of 6/30/20
Total Debt $1187.1 mill. **Due in 5 Yrs** $910.0 mill.
LT Debt $918.9 mill. **LT Interest** $40.0 mill.

(Total interest coverage: 3.7x)

Pension Assets-12/19 $313.1 mill.
Oblig. $515.7 mill.

Pfd Stock None

Common Stock 30,547,293 shares
as of 8/3/20

MARKET CAP $1.6 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2018	2019	6/30/20
Cash Assets	12.6	9.6	137.1
Other	283.3	284.1	179.3
Current Assets	295.9	293.7	316.4
Accts Payable	115.9	113.4	79.9
Debt Due	247.6	224.2	268.2
Other	145.6	144.6	138.8
Current Liab.	509.1	482.2	486.9
Fix. Chg. Cov.	357%	336%	368%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	-4.0%	-2.0%	2.5%
"Cash Flow"	-3.0%	-5.5%	8.0%
Earnings	-11.0%	-17.0%	24.5%
Dividends	2.0%	.5%	1.0%
Book Value	1.5%	-.5%	2.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	297.3	136.3	88.2	240.4	762.2
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	105	254.8	780
2021	305	145	110	260	820

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	1.40	.10	d.30	d3.14	d1.94
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.40	1.34	2.35
2021	1.60	d.05	d.35	1.35	2.55

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.4675	.4675	.4675	.470	1.87
2017	.470	.470	.470	.4725	1.88
2018	.4725	.4725	.4725	.475	1.89
2019	.475	.475	.475	.4775	1.90
2020	.4775	.4775	.4775		

BUSINESS: Northwest Natural Holding Co. distributes natural gas to 1000 communities, 750,000 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 15.5% of shares; Off./Dir. own less than 1% (4/20 proxy). CEO: David H. Anderson. Inc.: Oregon. Address: 220 NW 2nd Ave., Portland, OR 97209. Tel.: 503-226-4211. Internet: www.nwnatural.com.

Northwest Natural Holding recorded mixed second-quarter results. Revenues expanded to $135.0 million, aided by additional contributions from the North Mist natural gas storage facility and its recently acquired water operations. It added around 13,000 new customers over the past 12 months, growing its base by 1.7%. However, the company incurred higher gas costs and maintenance expenses. Moreover, interest expense rose due to a higher debt load, but a tax benefit helped some. Overall, these factors led to a net loss of $0.17 per share during the quarter. Still, the utility ought to have better results in the coming months, as it will likely benefit from new legislation in Oregon. This allows utilities to recover 5% of renewable natural gas' incremental costs, which would equate to about $30 million annually. Additionally, the company filed for a $45.8 million increase in revenues with the Oregon Public Utility Commission. If approved, this would take effect in November, though we don't think it will earn the full amount. Northwest sold about 1.4 million shares in June, which will spread profits among a higher total share count. Overall, we have reduced our 2020 full-year share-net estimate by a dime to $2.35.

The long-term outlook is bright here. Revenues will likely expand at a steady clip, assuming the company's rate cases yield favorable outcomes. Moreover, the entry into the water utility space should further enhance the top line as it closed several new water utility transactions. These include Suncadia in Washington State and its first water utility in Texas. Too, Northwest closed on a few water utilities in Idaho and will likely see some economies of scale emerge over the long haul. We project that earnings will expand to $2.55 per share in 2021 and $3.20 per share by mid-decade.

Shares of Northwest Natural Holding are neutrally ranked for Timeliness. This equity holds ample 3- to 5-year recovery potential based on our projections. Too, the dividend yield is attractive, though we expect modest increases in the payout in the years ahead. Overall, we think this equity will appeal to connservative long-term accounts.

John E. Seibert III *August 28, 2020*

(A) Diluted earnings per share. Excludes non-recurring items: '06, ($0.06); '08, ($0.03); '09, $0.06; May not sum due to rounding. Next earnings report due in early November.
(B) Dividends historically paid in mid-February, May, August, and November.
■ Dividend reinvestment plan available.
(C) In millions.
(D) Includes intangibles. In 2019: $343.2 million, $11.26/share.

Company's Financial Strength	A
Stock's Price Stability	90
Price Growth Persistence	40
Earnings Predictability	5

ONE GAS, INC. NYSE-OGS

RECENT PRICE **75.18** | P/E RATIO **21.0** (Trailing: 21.5 Median: NMF) | RELATIVE P/E RATIO **0.95** | DIV'D YLD **3.0%** | **VALUE LINE**

TIMELINESS 3 Lowered 2/28/20
SAFETY 2 New 6/2/17
TECHNICAL 3 Raised 5/8/20
BETA .80 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$60-$131	$96 (25%)

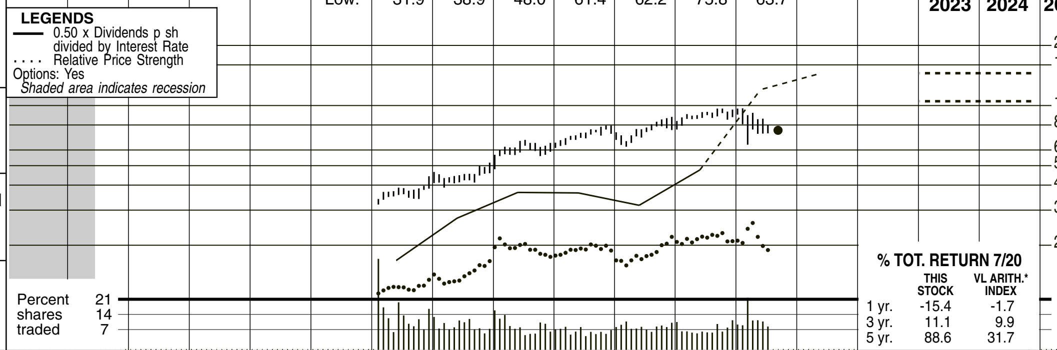
2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	145	(+95%)	20%
Low	105	(+40%)	11%

Institutional Decisions

	3Q2019	4Q2019	1Q2020
to Buy	133	153	124
to Sell	132	132	157
Hld's(000)	40475	41714	41769

	2014	2015	2016	2017	2018	2019	2020
High:	44.3	51.8	67.4	79.5	87.8	96.7	97.0
Low:	31.9	38.9	48.0	61.4	62.2	75.8	63.7



% TOT. RETURN 7/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-15.4	-1.7
3 yr.	11.1	9.9
5 yr.	88.6	31.7

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.

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
--	--	--	--	34.92	29.62	27.30	29.43	31.08	31.32	**28.30**	**30.20**	Revenues per sh	**40.00**
--	--	--	--	4.52	4.82	5.43	5.96	6.32	6.96	**7.10**	**7.55**	"Cash Flow" per sh	**9.65**
--	--	--	--	2.07	2.24	2.65	3.02	3.25	3.51	**3.50**	**3.65**	Earnings per sh A	**4.75**
--	--	--	--	.84	1.20	1.40	1.68	1.84	2.00	**2.16**	**2.32**	Div'ds Decl'd per sh B■	**2.80**
--	--	--	--	5.70	5.63	5.91	6.81	7.50	7.91	**8.80**	**8.95**	Cap'l Spending per sh	**9.35**
--	--	--	--	34.45	35.24	36.12	37.47	38.86	40.35	**44.15**	**45.80**	Book Value per sh	**54.10**
--	--	--	--	52.08	52.26	52.28	52.31	52.57	52.77	**53.00**	**53.50**	Common Shs Outst'g C	**55.00**
--	--	--	--	17.8	19.8	22.7	23.5	23.1	25.3	*Bold figures are*	*Value Line estimates*	Avg Ann'l P/E Ratio	**26.5**
--	--	--	--	.94	1.00	1.19	1.18	1.25	1.37			Relative P/E Ratio	**1.45**
--	--	--	--	2.3%	2.7%	2.3%	2.4%	2.5%	2.3%			Avg Ann'l Div'd Yield	**2.2%**
--	--	--	--	1818.9	1547.7	1427.2	1539.6	1633.7	1652.7	**1500**	**1615**	Revenues ($mill)	**2200**
--	--	--	--	109.8	119.0	140.1	159.9	172.2	186.7	**185**	**195**	Net Profit ($mill)	**260**
--	--	--	--	38.4%	38.0%	37.8%	36.4%	23.7%	18.7%	**19.0%**	**19.5%**	Income Tax Rate	**22.0%**
--	--	--	--	6.0%	7.7%	9.8%	10.4%	10.5%	11.3%	**12.3%**	**12.1%**	Net Profit Margin	**11.8%**
--	--	--	--	40.1%	39.5%	38.7%	37.8%	38.6%	37.7%	**40.0%**	**40.0%**	Long-Term Debt Ratio	**38.0%**
--	--	--	--	59.9%	60.5%	61.3%	62.2%	61.4%	62.3%	**60.0%**	**60.0%**	Common Equity Ratio	**62.0%**
--	--	--	--	2995.3	3042.9	3080.7	3153.5	3328.1	3415.5	**3900**	**4085**	Total Capital ($mill)	**4800**
--	--	--	--	3293.7	3511.9	3731.6	4007.6	4283.7	4565.2	**4800**	**5030**	Net Plant ($mill)	**5750**
--	--	--	--	4.4%	4.7%	5.2%	5.8%	5.9%	6.4%	**6.0%**	**6.0%**	Return on Total Cap'l	**6.5%**
--	--	--	--	6.1%	6.5%	7.4%	8.2%	8.4%	8.8%	**8.0%**	**8.0%**	Return on Shr. Equity	**8.5%**
--	--	--	--	6.1%	6.5%	7.4%	8.2%	8.4%	8.8%	**8.0%**	**8.0%**	Return on Com Equity	**8.5%**
--	--	--	--	3.7%	3.1%	3.5%	3.7%	3.7%	3.8%	**3.0%**	**3.0%**	Retained to Com Eq	**3.5%**
--	--	--	--	40%	53%	52%	55%	56%	56%	**62%**	**64%**	All Div'ds to Net Prof	**59%**

CAPITAL STRUCTURE as of 6/30/20
Total Debt $1812.4 mill. **Due in 5 Yrs** $1150.0 mill.
LT Debt $1581.9 mill. **LT Interest** $85.0 mill.
(LT interest earned: 4.7x; total interest coverage: 4.7x)
Leases, Uncapitalized Annual rentals $7.6 mill.
Pfd Stock None
Pension Assets-12/19 $908.0 mill. **Oblig.** $1001.4 mill.
Common Stock 52,920,531 shs. as of 7/20/20
MARKET CAP: $4.0 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2018	2019	6/30/20
Cash Assets	21.3	17.9	10.5
Other	522.0	488.3	336.9
Current Assets	543.3	506.2	347.4
Accts Payable	174.5	120.5	62.7
Debt Due	299.5	516.5	230.5
Other	224.9	235.7	197.6
Current Liab.	698.9	872.7	490.8
Fix. Chg. Cov.	677%	567%	560%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	--	-2.5%	4.5%
"Cash Flow"	--	7.0%	7.0%
Earnings	--	9.5%	6.5%
Dividends	--	17.0%	7.5%
Book Value	--	2.5%	5.5%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	550.4	279.7	247.1	462.4	1539.6
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	*245*	*453.5*	*1500*
2021	*590*	*310*	*255*	*460*	*1615*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	1.34	.39	.36	.93	3.02
2018	1.72	.39	.31	.83	3.25
2019	1.76	.46	.33	.96	3.51
2020	1.72	.48	*.33*	*.97*	*3.50*
2021	*1.80*	*.50*	*.36*	*.99*	*3.65*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.35	.35	.35	.35	1.40
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		

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 174 Bcf of natural gas supply in 2019, compared to 180 Bcf in 2018. Total volumes delivered by customer (fiscal 2019): transportation, 56.6%; residential, 32.5%; commercial & industrial, 10.3%; other, .6%. ONE Gas has around 3,600 employees. BlackRock owns 12.1% of common stock; The Vanguard Group, 10.1%; T. Rowe Price Associates, 7.0%; officers and directors, 1.9% (4/20 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, Inc. posted lackluster results through the first half of 2020. Profits of $2.20 per share were a couple of pennies lower than last year's $2.22 total. That can be traced, to a certain degree, to diminished gas sales, net of weather normalization, primarily in Kansas and Oklahoma because of warmer weather. Also, there was a decrease in transportation volumes in Kansas as well as a higher effective income tax rate.

Prospects over the remaining six months don't appear exciting, either. The coronavirus is having an unfavorable impact on results. However, the effects are being partially offset by regulatory actions enabling the company to use an accounting mechanism to accumulate and defer certain incremental costs incurred (including bad-debt expenses) and lost revenues in connection with the pandemic. Moreover, leadership implemented a comprehensive set of procedures to protect the safety of employees and customers. Even so, it seems that full-year earnings will be around $3.50 a share, flat relative to the 2019 tally of $3.51. But concerning 2021, the bottom line stands to increase 4% or so, to $3.65 a share, assuming that COVID-19 is largely under control.

This year's capital expenditures, including asset removal costs, are now anticipated to lie between $500 million and $525 million. (That's above both the initial $475 million target and the 2019 amount of $465 million.) The increase is attributed mainly to the extension of service to new customers. Around 70% of the funds are being utilized for system integrity and pipeline replacement projects. We believe that corporate finances are quite sufficient to make those initiatives possible. Notably, leadership expects the spending budget to range between $475 million and $525 million annually during the 2020-2024 period, with roughly the same percentage of capital allocated to where it is at present.

The equity has some appealing attributes. Capital gains potential in the 18-month period and out to mid-decade looks solid. Consider, also, the dividend growth prospects, although the yield does not stand out compared to the average of *Value Line's* Natural Gas Utility group.

Frederick L. Harris, III *August 28, 2020*

(A) Diluted EPS. Excludes nonrecurring gain: 2017, $0.06. Next earnings report due early Nov. 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	A
Stock's Price Stability	95
Price Growth Persistence	100
Earnings Predictability	95

SOUTH JERSEY INDS. NYSE-SJI

RECENT PRICE **24.14** | P/E RATIO **15.6** (Trailing: 18.6 / Median: 19.0) | RELATIVE P/E RATIO **0.71** | DIV'D YLD **5.1%** | **VALUE LINE**

TIMELINESS	3 Lowered 7/20/18
SAFETY	3 Lowered 8/28/20
TECHNICAL	3 Raised 4/24/20
BETA	1.00 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$18-$50	$34 (40%)

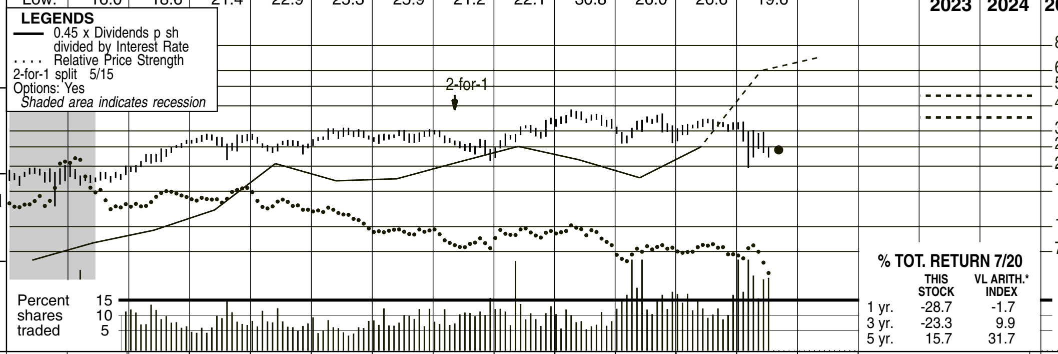
2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	45	(+85%)	20%
Low	35	(+45%)	14%

Institutional Decisions

	3Q2019	4Q2019	1Q2020
to Buy	101	124	108
to Sell	100	95	125
Hld's(000)	77210	79196	78322

High:	20.4	27.1	29.0	29.0	31.1	30.6	30.4	34.8	38.4	36.7	34.5	33.4
Low:	16.0	18.6	21.4	22.9	25.3	25.9	21.2	22.1	30.8	26.0	26.6	19.6



% TOT. RETURN 7/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-28.7	-1.7
3 yr.	-23.3	9.9
5 yr.	15.7	31.7

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
14.75	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	**15.25**	**16.30**	Revenues per sh	**19.55**
1.22	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	**2.50**	**2.80**	"Cash Flow" per sh	**3.85**
.79	.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	**1.50**	**1.70**	Earnings per sh A	**2.50**
.41	.43	.46	.51	.56	.61	.68	.75	.83	.90	.96	1.02	1.06	1.10	1.13	1.16	**1.20**	**1.25**	Div'ds Decl'd per sh B ■	**1.40**
1.34	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	**5.45**	**5.85**	Cap'l Spending per sh	**7.25**
6.20	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	**16.60**	**17.25**	Book Value per sh C	**20.45**
55.52	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	**101.00**	**103.00**	Common Shs Outst'g D	**110.00**
14.1	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	*Bold figures are*		Avg Ann'l P/E Ratio	**16.0**
.74	.88	.64	.91	.96	1.00	1.07	1.15	1.08	1.06	.95	.90	1.14	1.40	1.22	1.53	*Value Line*		Relative P/E Ratio	**.90**
3.7%	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%	*estimates*		Avg Ann'l Div'd Yield	**3.5%**

CAPITAL STRUCTURE as of 6/30/20
Total Debt $3137.1 mill. **Due in 5 Yrs** $1045 mill.
LT Debt $2566.4 mill. **LT Interest** $95.0 mill.

Leases, Uncapitalized Annual rentals $1.2 mill.
Pension Assets-12/19 $312.5 mill. **Oblig.** $439.4 mill.

Pfd Stock None

Common Stock 100,586,050 shs. as of 8/1/20

MARKET CAP: $2.4 billion (Mid Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
925.1	828.6	706.3	731.4	887.0	959.6	1036.5	1243.1	1641.3	1628.6	**1540**	**1680**	Revenues ($mill)	**2150**
81.0	87.0	93.3	97.1	104.0	99.0	102.8	98.1	116.2	103.0	**145**	**170**	Net Profit ($mill)	**275**
15.2%	22.4%	10.8%	- -	- -	5.9%	42.0%	- -	- -	22.0%	**25.0%**	**21.0%**	Income Tax Rate	**21.0%**
8.8%	10.5%	13.2%	13.3%	11.7%	10.3%	9.9%	7.9%	7.1%	6.3%	**9.4%**	**10.1%**	Net Profit Margin	**12.8%**
37.4%	40.5%	45.0%	45.1%	48.0%	49.2%	38.5%	48.5%	62.4%	59.2%	**61.0%**	**61.0%**	Long-Term Debt Ratio	**59.0%**
62.6%	59.5%	55.0%	54.9%	52.0%	50.8%	61.5%	51.5%	37.6%	40.8%	**39.0%**	**39.0%**	Common Equity Ratio	**41.0%**
910.1	1048.3	1337.6	1507.4	1791.9	2043.9	2097.2	2315.4	3373.9	3493.9	**4275**	**4575**	Total Capital ($mill)	**5500**
1193.3	1352.4	1578.0	1859.1	2134.1	2448.1	2623.8	2700.2	3653.5	4073.5	**4350**	**4700**	Net Plant ($mill)	**5600**
9.5%	8.9%	7.4%	6.8%	6.4%	5.4%	5.4%	5.1%	4.4%	4.0%	**4.5%**	**5.0%**	Return on Total Cap'l	**6.0%**
14.2%	13.9%	12.7%	11.7%	11.2%	9.5%	8.0%	8.2%	9.2%	7.2%	**8.5%**	**9.5%**	Return on Shr. Equity	**12.0%**
14.2%	13.9%	12.7%	11.7%	11.2%	9.5%	8.0%	8.2%	9.2%	7.2%	**8.5%**	**9.5%**	Return on Com Equity	**12.0%**
7.1%	6.7%	5.8%	4.8%	4.3%	2.8%	1.6%	.9%	1.7%	NMF	**1.5%**	**2.5%**	Retained to Com Eq	**5.5%**
50%	52%	55%	59%	61%	71%	80%	89%	82%	104%	**84%**	**76%**	All Div'ds to Net Prof	**56%**

CURRENT POSITION ($MILL.)	2018	2019	6/30/20
Cash Assets	30.0	6.4	7.3
Other	633.2	646.1	415.5
Current Assets	663.2	652.5	422.8
Accts Payable	410.5	232.2	160.4
Debt Due	1004.4	1316.6	570.7
Other	165.9	183.1	195.1
Current Liab.	1580.8	1731.9	926.2
Fix. Chg. Cov.	112%	176%	206%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	- -	6.0%	2.0%
"Cash Flow"	5.0%	3.5%	6.0%
Earnings	1.5%	-2.5%	12.5%
Dividends	8.0%	6.0%	3.5%
Book Value	6.5%	6.0%	5.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	425.8	244.4	227.1	345.8	1243.1
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	**260.0**	**485.9**	**1540**
2021	**575**	**285**	**290**	**530**	**1680**

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	.72	.06	d.05	.50	1.23
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.20**	**.56**	**1.50**
2021	**1.20**	**.05**	**d.15**	**.60**	**1.70**

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	- -	.264	.264	.536	1.06
2017	- -	.273	.273	.553	1.10
2018	- -	.280	.280	.567	1.13
2019	- -	.287	.287	.582	1.16
2020	- -	.295	.295		

BUSINESS: South Jersey Industries, Inc. is a holding company. The company distributes natural gas in New Jersey and Maryland. South Jersey Gas rev. mix '19: residential, 47%; commercial, 23%; cogen. and electric gen., 12%; industrial, 18%. Acq. Elizabethtown Gas and Elkton Gas, 7/18. Nonutil. operations include South Jersey Energy, South Jersey Resources Group, South Jersey Exploration, Marina Energy, South Jersey Energy Service Plus, and SJI Midstream. Has about 1,100 employees. Off./dir. own less than 1% of common; BlackRock, 15.5%; The Vanguard Group, 11.4% (3/20 proxy). Pres. & CEO: Michael J. Renna. Chairman: Joseph M. Rigby. Inc.: NJ. Addr.: 1 South Jersey Plaza, Folsom, NJ 08037. Tel.: 609-561-9000. Internet: www.sjindustries.com.

Shares of South Jersey Industries have declined in price lately. The company has posted mixed results in recent periods. Revenue comparisons have not been favorable, but the bottom line has fared better. In the June quarter, the top line fell modestly, year over year. But expenses remained in check, and the share deficit narrowed to $0.01. Looking forward, we expect that considerable economic weakness due to restrictive social measures implemented to curb the spread of the coronavirus will constrain the top line in the back half of the year, though we do envision a measure of improvement in the December period. Earnings comparisons will likely remain favorable, assuming lower cost of sales. All things considered, we project a moderate top-line pullback but a strong share-earnings advance for South Jersey for full-year 2020.

The company recently completed an equity offering. South Jersey received gross proceeds of about $200 million in an at-the-market offering. This transaction was completed in mid-June, and satisfies the company's plan to raise equity capital this year. The share count has increased moderately as a result.

We envision further operating improvement here from 2020 onward. The company's utility operations and regulatory initiatives should continue to fare well. Its businesses should further benefit from growth in the customer base. Infrastructure investments will allow the company to modernize its system and meet growing demand for natural gas within its service territories. Infrastructure replacement programs allow South Jersey to earn an authorized return on approved investments. We anticipate better results on the nonutility side, as well.

This neutrally ranked stock has ample investment appeal. We anticipate solid bottom-line growth for the company over the pull to mid-decade. From the recent quotation, this equity offers worthwhile long-term total return potential. This is helped by a generous dividend yield. Moreover, South Jersey Industries earns fairly good marks for Price Stability and Earnings Predictability. Subscribers seeking exposure to the utility space might want to take a closer look.

Michael Napoli, CFA *August 28, 2020*

(A) Based on economic egs. from 2007. GAAP EPS: '08, $1.29; '09, $0.97; '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. Excl. nonrecur. gain (loss): '09, ($0.22); '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). Next egs. rpt. due early November. **(B)** Div'ds paid early April, July, Oct., and late Dec. ■ Div. reinvest. plan avail. **(C)** Incl. reg. assets. In 2019: $665.9 mill., $7.21 per shr. **(D)** In mill., adj. for split.

Company's Financial Strength	B++
Stock's Price Stability	70
Price Growth Persistence	20
Earnings Predictability	65

SOUTHWEST GAS NYSE-SWX

RECENT PRICE **69.45** | P/E RATIO **16.2** (Trailing: 18.5, Median: 18.0) | RELATIVE P/E RATIO **0.74** | DIV'D YLD **3.3%** | VALUE LINE

TIMELINESS	3	Raised 3/20/20
SAFETY	3	Lowered 1/4/91
TECHNICAL	3	Raised 5/22/20

BETA .90 (1.00 = Market)

18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$52-$119	$86 (25%)

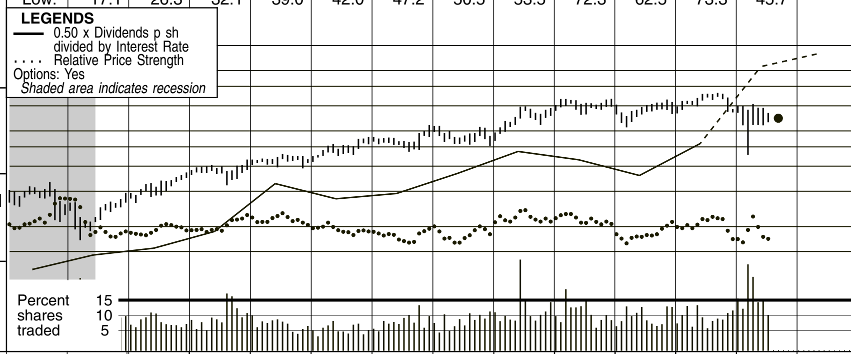
2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	120	(+75%)	*17%*
Low	80	(+15%)	*7%*

Institutional Decisions

	3Q2019	4Q2019	1Q2020
to Buy	153	155	118
to Sell	122	136	155
Hld's(000)	45864	47563	47511

High:	29.5	37.3	43.2	46.1	56.0	64.2	63.7	79.6	86.9	86.0	92.9	81.6
Low:	17.1	26.3	32.1	39.0	42.0	47.2	50.5	53.5	72.3	62.5	73.3	45.7



Target Price Range 2023 | 2024 | 2025

% TOT. RETURN 7/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-20.0	-1.7
3 yr.	-6.4	9.9
5 yr.	40.2	31.7

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
40.14	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	*56.60*	*59.00*	Revenues per sh	*65.40*
5.57	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	*9.75*	*10.35*	"Cash Flow" per sh	*13.45*
1.66	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	*3.85*	*4.35*	Earnings per sh A	*6.25*
.82	.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	*2.26*	*2.35*	Div'ds Decl'd per sh B■†	*2.65*
8.23	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	*15.45*	*17.80*	Cap'l Spending per sh	*21.55*
19.18	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	*48.25*	*50.85*	Book Value per sh	*61.15*
36.79	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	*57.00*	*59.00*	Common Shs Outst'g C	*65.00*
14.3	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	*Bold figures are*		Avg Ann'l P/E Ratio	*16.0*
.76	1.10	.86	.92	1.22	.81	.89	.98	.95	.89	.94	.98	1.13	1.12	1.11	1.15	*Value Line*		Relative P/E Ratio	*.90*
3.5%	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%	*estimates*		Avg Ann'l Div'd Yield	*2.7%*
						1830.4	1887.2	1927.8	1950.8	2121.7	2463.6	2460.5	2548.8	2880.0	3119.9	*3225*	*3480*	Revenues ($mill)	*4250*
						103.9	112.3	133.3	145.3	141.1	138.3	152.0	173.8	182.3	213.9	*215*	*250*	Net Profit ($mill)	*395*
						34.7%	36.2%	36.2%	35.0%	35.7%	36.4%	33.9%	32.8%	25.3%	20.5%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
						5.7%	6.0%	6.9%	7.4%	6.7%	5.6%	6.2%	6.8%	6.3%	6.9%	*6.7%*	*7.2%*	Net Profit Margin	*9.3%*
						49.1%	43.2%	49.2%	49.4%	52.4%	49.3%	48.2%	49.8%	48.3%	47.9%	*50.0%*	*50.0%*	Long-Term Debt Ratio	*44.5%*
						50.9%	56.8%	50.8%	50.6%	47.6%	50.7%	51.8%	50.2%	51.7%	52.1%	*50.0%*	*50.0%*	Common Equity Ratio	*55.5%*
						2291.7	2155.9	2576.9	2793.7	3123.9	3143.5	3213.5	3613.3	4359.3	4806.4	*5500*	*6000*	Total Capital ($mill)	*7175*
						3072.4	3218.9	3343.8	3486.1	3658.4	3891.1	4132.0	4523.7	5093.2	5685.2	*6000*	*6400*	Net Plant ($mill)	*7600*
						6.1%	6.4%	6.4%	6.3%	5.7%	5.5%	5.8%	5.8%	5.2%	5.4%	*5.0%*	*5.0%*	Return on Total Cap'l	*6.5%*
						8.9%	9.2%	10.2%	10.3%	9.5%	8.7%	9.1%	9.6%	8.1%	8.5%	*8.0%*	*8.5%*	Return on Shr. Equity	*10.0%*
						8.9%	9.2%	10.2%	10.3%	9.5%	8.7%	9.1%	9.6%	8.1%	8.5%	*8.0%*	*8.5%*	Return on Com Equity	*10.0%*
						5.1%	5.3%	6.1%	6.1%	5.0%	4.0%	4.1%	4.5%	3.6%	3.9%	*3.0%*	*3.5%*	Retained to Com Eq	*5.5%*
						43%	43%	40%	41%	47%	54%	55%	53%	55%	54%	*60%*	*55%*	All Div'ds to Net Prof	*44%*

CAPITAL STRUCTURE as of 6/30/20
Total Debt $2869.0 mill. **Due in 5 Yrs** $898.8 mill.
LT Debt $2639.3 mill. **LT Interest** $100.0 mill.
(Total interest coverage: 3.4x) (49% of Cap'l)
Leases, Uncapitalized Annual rentals $13.0 mill.
Pension Assets-12/19 $1027.8 mill. **Oblig.** $1405.7 mill.
Pfd Stock None

Common Stock 55,914,516 shs. **as of 7/31/20**

MARKET CAP: $3.9 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2018	2019	6/30/20
Cash Assets	85.4	49.5	199.6
Other	754.4	810.4	667.6
Current Assets	839.8	859.9	867.2
Accts Payable	249.0	238.9	189.4
Debt Due	185.1	374.5	229.7
Other	504.5	466.5	498.9
Current Liab.	938.6	1079.9	918.0
Fix. Chg. Cov.	370%	340%	354%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	1.5%	5.0%	*3.0%*
"Cash Flow"	4.0%	1.5%	*7.5%*
Earnings	8.0%	4.5%	*9.0%*
Dividends	8.5%	9.5%	*4.0%*
Book Value	6.0%	6.5%	*6.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	654.7	560.5	593.2	740.4	2548.8
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	*760*	*871.5*	*3225*
2021	*890*	*825*	*825*	*940*	*3480*

Cal-endar	EARNINGS PER SHARE A D Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2017	1.45	.37	.21	1.58	3.62
2018	1.63	.44	.25	1.36	3.68
2019	1.77	.41	.10	1.67	3.94
2020	1.31	.68	*.20*	*1.66*	*3.85*
2021	*1.75*	*.60*	*.25*	*1.75*	*4.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B■† Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.405	.450	.450	.450	1.76
2017	.450	.495	.495	.495	1.94
2018	.495	.520	.520	.520	2.06
2019	.520	.545	.545	.545	2.16
2020	.545	.570			

BUSINESS: Southwest Gas Holdings, Inc. is the parent holding company of Southwest Gas and Centuri Group. Southwest Gas is a regulated gas distributor serving about 2.1 million customers in parts of Arizona, Nevada, and California. Centuri provides construction services. 2019 margin mix: residential and small commercial, 84%; large commercial and industrial, 3%; transportation, 13%. Total throughput: 2.3 billion therms. Has 8,944 employees. Off. & dir. own .8% of common stock; BlackRock, Inc., 13.5%; The Vanguard Group, Inc., 10.3%; T.Rowe Price Assoc., Inc., 6.8% (3/20 Proxy). Chairman: Michael J. Melarkey. Pres. & CEO: John P. Hester. Inc.: DE. Address: 5241 Spring Mountain Road, Las Vegas, Nevada 89193. Telephone: 702-876-7237. Internet: www.swgas.com.

Southwest Gas reported fairly solid results for the June quarter. The top line advanced approximately 6%, year over year, to $757.2 million. Business fundamentals remained fairly solid despite a challenging macroeconomic environment. The utility segment performed relatively well, while the infrastructure services line, Centuri, benefited as its customers continued to invest capital to enhance the safety and reliability of their delivery systems. Earnings per share clocked in at $0.68, a strong improvement from the prior-year tally. The bottom line benefited from a $12 million gain ($0.22 per share) due to increases in the cash surrender value of company-owned life insurance policies.

Performance ought to remain fairly solid in the coming quarters. Considerable economic weakness associated with restrictive social measures adopted to curb the spread of the coronavirus will likely still have some impact on the company's operations. Still, demand ought to remain relatively healthy for the essential services that Southwest Gas provides. Performance on the utility side should be supported by a growing customer base, infrastructure tracker mechanisms, expansion projects, and rate relief. The company currently has rate case proceedings ongoing for each of the three states it serves. These proceedings are expected to be resolved by the end of the year. Elsewhere, the infrastructure services operation will likely benefit from the increasing need for utilities to replace aging infrastructure, though this line may experience a measure of unevenness in the near term.

This stock is neutrally ranked for Timeliness. Looking further out, we anticipate greater revenues and earnings per share for the company over the pull to mid-decade. However, this appears to be partly discounted by the recent quotation, and the stock's appreciation potential is not particularly compelling. Moreover, the dividend yield is not especially attractive for a utility. A pullback in the stock price some time in the future may present conservative accounts with a more advantageous entry point. Southwest Gas earns good marks for Financial Strength, Price Stability, Growth Persistence, and Earnings Predictability.

Michael Napoli, CFA *August 28, 2020*

(A) Diluted earnings. Excl. nonrec. gains (losses): '05, (11¢); '06, 7¢. Next egs. report due early November. (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	85
Price Growth Persistence	90
Earnings Predictability	95

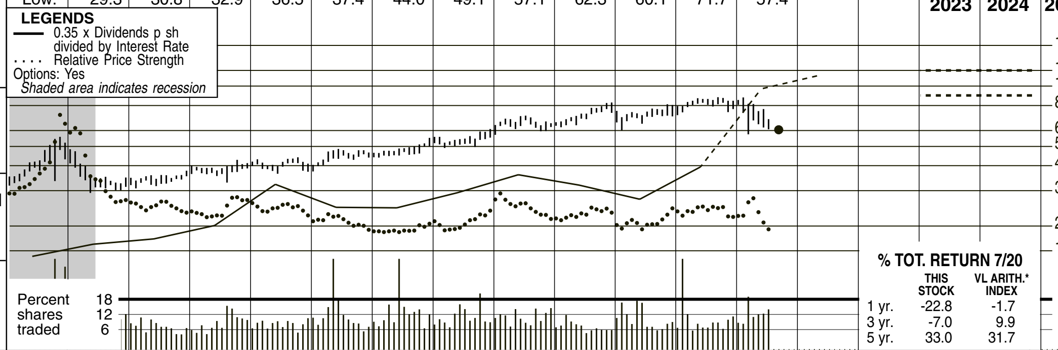
SPIRE INC. NYSE-SR

RECENT PRICE **60.54** | P/E RATIO **NMF** (Trailing: 51.7 / Median: 18.0) | RELATIVE P/E RATIO **NMF** | DIV'D YLD **4.3%** | **VALUE LINE**

TIMELINESS 3 Lowered 11/30/18
SAFETY 2 Raised 6/20/03
TECHNICAL 3 Raised 5/1/20
BETA .80 (1.00 = Market)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
High:	48.3	37.8	42.8	44.0	48.5	55.2	61.0	71.2	82.9	81.1	88.0	88.0	
Low:	29.3	30.8	32.9	36.5	37.4	44.0	49.1	57.1	62.3	60.1	71.7	57.4	

Target Price Range
2023 | 2024 | 2025



18-Month Target Price Range

Low-High	Midpoint (% to Mid)
$53-$117	$85 (40%)

2023-25 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	120	(+100%)	21%
Low	90	(+50%)	13%

Institutional Decisions

	3Q2019	4Q2019	1Q2020
to Buy	115	127	120
to Sell	117	114	116
Hld's(000)	41800	42195	42039

% TOT. RETURN 7/20

	THIS STOCK	VL ARITH.* INDEX
1 yr.	-22.8	-1.7
3 yr.	-7.0	9.9
5 yr.	33.0	31.7

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	© VALUE LINE PUB. LLC	23-25
59.59	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	***35.10***	***36.40***	Revenues per sh A	***58.20***
2.79	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	***4.70***	***7.25***	"Cash Flow" per sh	***9.75***
1.82	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	***1.10***	***3.30***	Earnings per sh A B	***5.15***
1.35	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***	***2.61***	Div'ds Decl'd per sh C■	***3.00***
2.45	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	***12.50***	***10.10***	Cap'l Spending per sh	***10.50***
16.96	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	***50.50***	***55.45***	Book Value per sh D	***72.00***
20.98	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	***52.00***	***52.50***	Common Shs Outst'g E	***55.00***
15.7	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	*Bold figures are*		Avg Ann'l P/E Ratio	***20.5***
.83	.86	.73	.75	.86	.89	.87	.82	.92	1.20	1.04	.83	1.03	1.00	.90	1.24	*Value Line*		Relative P/E Ratio	***1.15***
4.7%	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%	*estimates*		Avg Ann'l Div'd Yield	***2.9%***

CAPITAL STRUCTURE as of 6/30/20
Total Debt $2961.3 mill. **Due in 5 Yrs** $725.0 mill.
LT Debt $2478.3 mill. **LT Interest** $120.0 mill.
(Total interest coverage: 3.1x)

Leases, Uncapitalized Annual rentals $8.2 mill.
Pension Assets-9/19 $521.8 mill. **Oblig.** $751.4 mill.
Pfd Stock $242.0 mill. **Pfd Div'd** $3.4 mill.
Common Stock 51,482,424 shs.
as of 7/31/20

MARKET CAP: $3.1 billion (Mid Cap)

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		23-25
1735.0	1603.3	1125.5	1017.0	1627.2	1976.4	1537.3	1740.7	1965.0	1952.4	***1825***	***1910***	Revenues ($mill) A	***3200***
54.0	63.8	62.6	52.8	84.6	136.9	144.2	161.6	214.2	184.6	***55.0***	***175***	Net Profit ($mill)	***285***
33.4%	31.4%	29.6%	25.0%	27.6%	31.2%	32.5%	32.4%	32.4%	15.7%	***15.0%***	***16.0%***	Income Tax Rate	***23.5%***
3.1%	4.0%	5.6%	5.2%	5.2%	6.9%	9.4%	9.3%	10.9%	9.5%	***3.0%***	***9.2%***	Net Profit Margin	***8.9%***
40.5%	38.9%	36.1%	46.6%	55.1%	53.0%	50.9%	50.0%	45.7%	45.0%	***49.0%***	***48.0%***	Long-Term Debt Ratio	***45.0%***
59.5%	61.1%	63.9%	53.4%	44.9%	47.0%	49.1%	50.0%	54.3%	55.0%	***51.0%***	***52.0%***	Common Equity Ratio	***55.0%***
899.9	937.7	941.0	1959.0	3359.4	3345.1	3601.9	3986.3	4155.5	4625.6	***5150***	***5600***	Total Capital ($mill)	***7200***
884.1	928.7	1019.3	1776.6	2759.7	2941.2	3300.9	3665.2	3970.5	4352.0	***4650***	***5070***	Net Plant ($mill)	***6500***
7.4%	8.1%	7.9%	3.3%	3.1%	5.1%	4.9%	5.0%	6.3%	5.1%	***2.5%***	***4.5%***	Return on Total Cap'l	***5.5%***
10.1%	11.1%	10.4%	5.0%	5.6%	8.7%	8.2%	8.1%	9.5%	7.3%	***2.0%***	***6.0%***	Return on Shr. Equity	***7.0%***
10.1%	11.1%	10.4%	5.0%	5.6%	8.7%	8.2%	8.1%	9.5%	7.9%	***2.0%***	***6.0%***	Return on Com Equity	***7.0%***
3.6%	4.9%	4.3%	1.0%	1.5%	3.7%	3.3%	3.3%	4.7%	2.7%	***NMF***	***1.0%***	Retained to Com Eq	***3.0%***
64%	56%	59%	81%	73%	58%	59%	60%	51%	66%	***NMF***	***80%***	All Div'ds to Net Prof	***60%***

CURRENT POSITION ($MILL.)	2018	2019	6/30/20
Cash Assets	4.4	5.8	7.4
Other	655.2	608.7	551.9
Current Assets	659.6	614.5	559.3
Accts Payable	290.1	301.5	200.8
Debt Due	729.1	783.2	483.0
Other	302.5	384.1	424.0
Current Liab.	1321.7	1468.8	1107.8
Fix. Chg. Cov.	284%	272%	275%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '17-'19 to '23-'25
Revenues	-8.5%	-1.0%	*7.5%*
"Cash Flow"	5.5%	13.0%	*5.5%*
Earnings	3.5%	9.5%	*5.5%*
Dividends	4.0%	5.5%	*5.0%*
Book Value	7.0%	7.0%	*8.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.)A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2017	495.1	663.4	323.5	258.7	1740.7
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	***221.5***	***1825***
2021	***580***	***760***	***340***	***230***	***1910***

Fiscal Year Ends	EARNINGS PER SHARE A B F Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2017	.99	2.36	.45	d.28	3.43
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.81***	***1.10***
2021	***1.27***	***2.61***	***.20***	***d.78***	***3.30***

Cal-endar	QUARTERLY DIVIDENDS PAID C ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2016	.49	.49	.49	.49	1.96
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		

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 1.8 million customers. Acquired Missouri Gas 9/13, Alabama Gas Co 9/14. Utility therms sold and transported in fiscal 2019: 3.4 bill. Revenue mix for regulated operations: residential, 68%; commercial and industrial, 23%; transportation, 6%; other, 3%. Has about 3,536 employees. Officers and directors own 2.9% of common shares; BlackRock, 15.0% (1/20 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 Inc. is about to close the books on a disappointing fiscal 2020 (ends September 30th). Through the first nine months, share net plunged 55%, to $1.91, relative to last year's $4.27 tally. This reflects the impact of the pandemic, which began to have an increasingly greater effect on the company as the months progressed. Notably, in the third quarter, it incurred a total pre-tax impairment charge of $148.6 million, equal to $2.29 a share aftertax, due primarily to the writedown of the value of storage assets and, to a lesser degree, two commercial compressed natural gas fueling stations. Spire contends, though, that it is pursuing operating efficiencies and potential regulatory mechanisms to help offset the damage from COVID-19. Unfortunately, it seems that profits for the entire year will still tumble nearly 70%, to $1.10 a share, versus the fiscal 2019 figure of $3.52. But assuming that the health crisis dissipates, the bottom line stands to recover threefold, to $3.30 a share, in fiscal 2021.

We are optimistic about the energy firm's business prospects out to mid-decade. The gas utilities boast 1.8 million customers in Mississippi, Alabama, and Missouri, providing a measure of regional diversity. Also, the other operations, especially pipelines, show promise. Additional expansionary projects and technological enhancements in customer service and elsewhere ought to help, too. Lastly, Spire's balance sheet is solid (see below).

The Financial Strength rating resides at B++. At the end of June, there was almost $650 million of available liquidity partly via a revolving credit facility. Too, long-term debt sat at a manageable 48% of total capital, and short-term obligations were not a big problem. So, the company should be able to satisfy its various commitments (including interest payments, capital expenditures, and dividends) for a while. Acquisitions are also plausible.

These good-quality shares have taken a major step backward in recent months. We think that price move stems partly from the company's weak third-quarter performance. But recovery potential out to mid-decade now looks appealing. Consider, too, the dividend yield and 18-month capital gains potential.

Frederick L. Harris, III *August 28, 2020*

(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 Oct. **(C)** Dividends paid in early January, April, July, and October. ■ Dividend reinvestment plan available. **(D)** Incl. deferred charges. In '19: $1,171.6 mill., $22.99/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	95
Price Growth Persistence	75
Earnings Predictability	65

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

	Proxy Group of Eight Natural Gas Distribution Companies
Predictive Risk Premium Model (PRPM) (1)	9.79 %
Risk Premium Using an Adjusted Total Market Approach (2)	10.28 %
Average	10.04 %

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

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

Proxy Group of Eight Natural Gas Distribution Companies	[1] LT Average Predicted Variance	[2] Spot Predicted Variance	[3] Recommended Variance (2)	[4] GARCH Coefficient	[5] Predicted Risk Premium (3)	[6] Risk-Free Rate (4)	[7] Indicated ROE (5)
Atmos Energy Corporation	0.33%	0.27%	0.33%	2.1892	9.02%	2.11%	11.13%
New Jersey Resources Corporation	0.38%	0.33%	0.38%	1.9232	9.13%	2.11%	11.24%
NiSource Inc.	0.50%	0.71%	0.50%	0.7280	4.41%	2.11%	6.52%
Northwest Natural Holding Company	0.33%	0.41%	0.33%	1.4788	5.93%	2.11%	8.04%
ONE Gas, Inc.	0.26%	0.28%	0.26%	3.3056	10.64%	2.11%	12.75%
South Jersey Industries, Inc.	0.38%	0.58%	0.38%	1.5190	7.15%	2.11%	9.26%
Southwest Gas Holdings, Inc.	0.44%	0.50%	0.44%	1.3514	7.33%	2.11%	9.44%
Spire Inc.	0.71%	0.37%	0.71%	0.9028	7.98%	2.11%	10.09%
						Average	9.81%
						Median	9.77%
						Average of Mean and Median	9.79%

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) Given current market conditions, I recommend using the long-term average predicted variance.

(3) $(1+(\text{Column [3]} * \text{Column [4]})^{12}) - 1$.

(4) From note 2 on page 2 of Schedule DWD-D5.

(5) 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 Eight Natural Gas Distribution Companies	
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	2.96	%
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A2 Rated Public Utility Bonds	0.54	(2)
3.	Adjusted Prospective Yield on A2 Rated Public Utility Bonds	3.50	%
4.	Adjustment to Reflect Bond Rating Difference of Proxy Group	0.06	(3)
5.	Adjusted Prospective Bond Yield	3.56	%
6.	Equity Risk Premium (4)	6.72	
7.	Risk Premium Derived Common Equity Cost Rate	10.28	%

Notes:

(1) Consensus forecast of Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 10 and 11 of this Schedule).

(2) The average yield spread of A2 rated public utility bonds over Aaa rated corporate bonds of 0.54% from page 4 of this Schedule.

(3) Adjustment to reflect the A2/A3 Moody's LT issuer rating of the Utility Proxy Group as shown on page 5 of this Schedule. The 0.06% upward adjustment is derived by taking 1/6 of the spread between A2 and Baa2 Public Utility Bonds (1/6 * 0.34% = 0.06%) as derived from page 4 of this Schedule.

(4) From page 7 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]	[2]	[3]	[4]
	Aaa Rated Corporate Bond	Aa2 Rated Public Utility Bond	A2 Rated Public Utility Bond	Baa2 Rated Public Utility Bond
Sep-2020	2.31 %	2.62 %	2.84 %	3.17 %
Aug-2020	2.25	2.49	2.73	3.06
Jul-2020	2.14	2.46	2.74	3.09
Average	2.23 %	2.52 %	2.77 %	3.11 %

Selected Bond Spreads

	Selected Bond Spreads
A2 Rated Public Utility Bonds Over Aaa Rated Corporate Bonds:	0.54 % (1)
Baa2 Rated Public Utility Bonds Over A2 Rated Public Utility Bonds:	0.34 % (2)
A2 Rated Public Utility Bonds Over Aa2 Rated Public Utility Bonds:	0.25 % (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 Eight Natural Gas Distribution Companies

	Moody's Long-Term Issuer Rating September 2020		Standard & Poor's Long-Term Issuer Rating September 2020	
Proxy Group of Eight Natural Gas Distribution Companies	Long-Term Issuer Rating (1)	Numerical Weighting (2)	Long-Term Issuer Rating (1)	Numerical Weighting (2)
Atmos Energy Corporation	A1	5.0	A	6.0
New Jersey Resources Corporation	A1	5.0	NR	- -
NiSource Inc.	Baa1/Baa2	8.5	BBB+	8.0
Northwest Natural Holding Company	Baa1	8.0	A+	5.0
ONE Gas, Inc.	A2	6.0	A	6.0
South Jersey Industries, Inc.	A3	7.0	BBB	9.0
Southwest Gas Holdings, Inc.	A3	7.0	A-	7.0
Spire Inc.	A1/A2	5.5	A-	7.0
Average	A2/A3	6.5	A-	6.9

Notes:

(1) Ratings are that of the average of each company's utility operating subsidiaries.
(2) From page 6 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 Eight Natural Gas Distribution Companies

Line No.		Proxy Group of Eight Natural Gas Distribution Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	8.46 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	5.86
3.	Predicted Equity Risk Premium Based on Regression Analysis of 791 Fully-Litigated Natural Gas Utility Rate Cases	5.84
4.	Average equity risk premium	6.72 %

Notes: (1) From page 8 of this Schedule.
(2) From page 12 of this Schedule.
(3) From page 13 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 Eight Natural Gas Distribution Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Eight Natural Gas Distribution Companies	
	Ibbotson-Based Equity Risk Premiums:		
1.	Ibbotson Equity Risk Premium (1)	5.78	%
2.	Regression on Ibbotson Risk Premium Data (2)	9.42	
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.54	
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	10.94	
5.	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.02	
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	10.34	
7.	Conclusion of Equity Risk Premium	9.51	%
8.	Adjusted Beta (7)	0.89	
9.	Forecasted Equity Risk Premium	8.46	%

Notes provided on page 9 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 Eight Natural Gas Distribution Companies

Notes:

(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2020 Market Report minus the arithmetic mean monthly yield of Moody's average Aaa and Aa corporate bonds from 1928-2019.

(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 1928-2019 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 September 2020.

(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 2.96% (from page 3 of this Schedule) from the projected 3-5 year total annual market return of 13.90% (described fully in note 1 on page 2 of Schedule DWD-D5).

(5) Using data from Value Line for the S&P 500, an expected total return of 13.98% 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 2.96% results in an expected equity risk premium of 11.02%.

(6) Using data from the Bloomberg Professional Service for the S&P 500, an expected total return of 13.30% 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 2.96% results in an expected equity risk premium of 10.34%.

(7) Average of mean and median beta from Schedule DWD-D5.

Sources of Information:

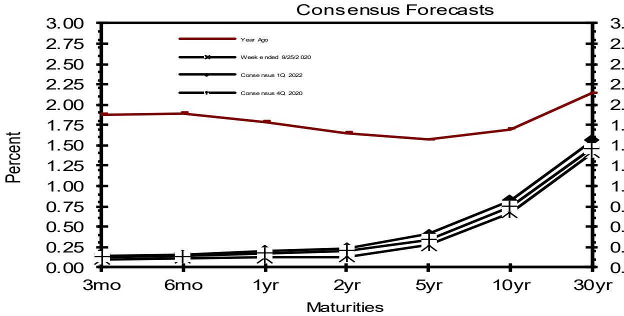
Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2020 and October 1, 2020
Bloomberg Professional Service

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

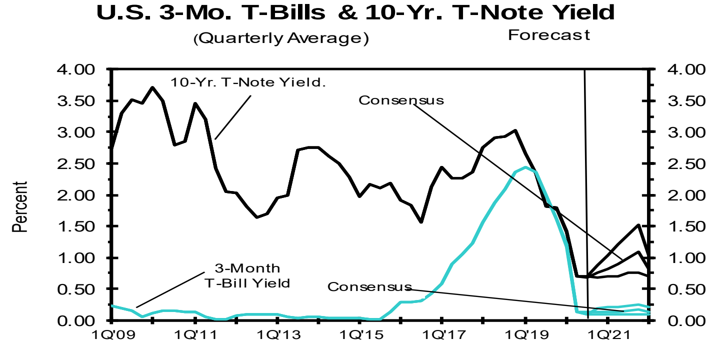
	History								Consensus Forecasts-Quarterly Avg.					
	Average For Week Ending				Average For Month			Latest Qtr	4Q	1Q	2Q	3Q	4Q	1Q
Interest Rates	Sep 25	Sep 18	Sep 11	Sep 4	Aug	Jul	Jun	3Q 2020*	**2020**	**2021**	**2021**	**2021**	**2021**	**2022**
Federal Funds Rate	0.09	0.09	0.09	0.09	0.10	0.09	0.08	0.09	**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.	0.22	0.23	0.25	0.25	0.25	0.27	0.31	0.26	**0.3**	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**
Commercial Paper, 1-mo.	0.10	0.10	0.09	0.09	0.09	0.11	0.12	0.10	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Treasury bill, 3-mo.	0.10	0.11	0.12	0.11	0.10	0.13	0.16	0.12	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**
Treasury bill, 6-mo.	0.11	0.12	0.13	0.12	0.12	0.14	0.18	0.13	**0.1**	**0.2**	**0.2**	**0.2**	**0.2**	**0.2**
Treasury bill, 1 yr.	0.12	0.13	0.14	0.12	0.13	0.15	0.18	0.14	**0.2**	**0.2**	**0.2**	**0.2**	**0.3**	**0.3**
Treasury note, 2 yr.	0.13	0.14	0.14	0.14	0.14	0.15	0.19	0.14	**0.2**	**0.2**	**0.3**	**0.3**	**0.3**	**0.4**
Treasury note, 5 yr.	0.27	0.28	0.27	0.27	0.27	0.28	0.34	0.27	**0.3**	**0.4**	**0.5**	**0.5**	**0.6**	**0.7**
Treasury note, 10 yr.	0.67	0.69	0.69	0.68	0.65	0.62	0.73	0.65	**0.8**	**0.8**	**0.9**	**1.0**	**1.1**	**1.1**
Treasury note, 30 yr.	1.41	1.44	1.43	1.42	1.36	1.31	1.49	1.36	**1.5**	**1.6**	**1.6**	**1.7**	**1.8**	**1.9**
Corporate Aaa bond	2.56	2.55	2.57	2.54	2.48	2.43	2.73	2.49	**2.3**	**2.4**	**2.5**	**2.6**	**2.7**	**2.7**
Corporate Baa bond	3.20	3.18	3.21	3.17	3.09	3.12	3.44	3.14	**3.5**	**3.6**	**3.6**	**3.7**	**3.7**	**3.8**
State & Local bonds	2.91	2.92	2.92	2.93	2.88	2.99	3.10	2.94	**2.4**	**2.4**	**2.5**	**2.6**	**2.6**	**2.6**
Home mortgage rate	2.90	2.87	2.86	2.93	2.94	3.02	3.16	2.95	**3.0**	**3.0**	**3.1**	**3.1**	**3.2**	**3.2**
	History								Consensus Forecasts-Quarterly					
	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
Key Assumptions	2018	2019	2019	2019	2019	2020	2020	2020**	**2020**	**2021**	**2021**	**2021**	**2021**	**2022**
Fed's AFE $ Index	109.4	109.4	110.3	110.5	110.3	111.2	112.4	107.2	**107.2**	**107.1**	**106.9**	**106.3**	**106.2**	**106.5**
Real GDP	1.3	2.9	1.5	2.6	2.4	-5.0	-31.7	21.5	**4.6**	**4.3**	**4.0**	**3.8**	**3.4**	**3.1**
GDP Price Index	1.8	1.2	2.5	1.5	1.4	1.4	-2.0	1.9	**1.5**	**1.7**	**1.5**	**1.7**	**1.7**	**1.8**
Consumer Price Index	1.3	0.9	3.0	1.8	2.4	1.2	-3.5	3.2	**2.1**	**1.9**	**1.8**	**2.0**	**2.0**	**2.0**

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP 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 and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS). *Interest rate data for 3Q 2020 based on historical data through the week ended September 23. **Data for 3Q 2020 for the Fed's AFE $ Index based on data through the week ended September 25. Figures for 3Q 2020 Real GDP, GDP Chained Price Index and Consumer Price Index are consensus forecasts from the September 2020 survey.

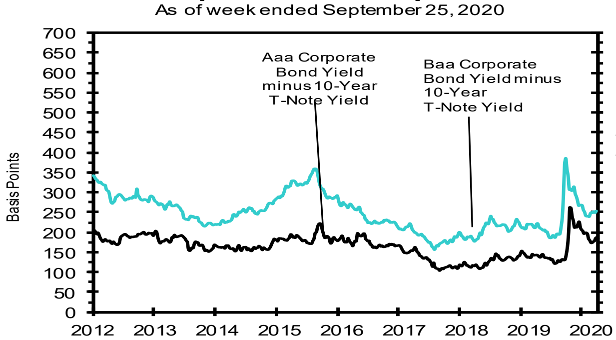
U.S. Treasury Yield Curve
Week ended September 25, 2020 & Year Ago vs.
4Q 2020 & 1Q 2022
Consensus Forecasts



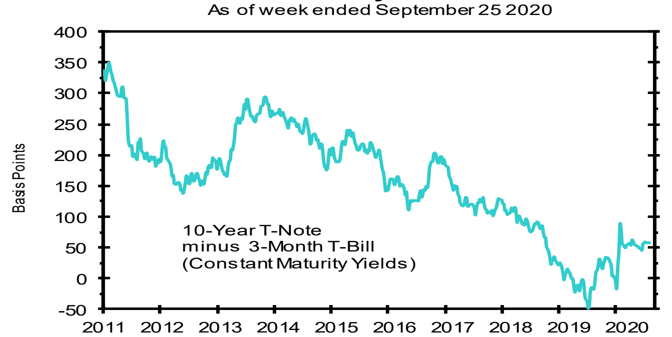
U.S. 3-Mo. T-Bills & 10-Yr. T-Note Yield
(Quarterly Average)



Corporate Bond Spreads
As of week ended September 25, 2020



U.S. Treasury Yield Curve
As of week ended September 25 2020



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 2021 through 2026 and averages for the five-year periods 2022-2026 and 2027-2031. 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	
		2021	2022	2023	2024	2025	2026	2022-2026	2027-2031
1. Federal Funds Rate	**CONSENSUS**	**0.2**	**0.4**	**1.0**	**1.6**	**1.9**	**2.1**	**1.4**	**2.3**
	Top 10 Average	0.4	0.8	1.6	2.2	2.5	2.7	1.9	2.8
	Bottom 10 Average	0.1	0.1	0.4	1.0	1.3	1.5	0.9	1.7
2. Prime Rate	**CONSENSUS**	**3.4**	**3.6**	**4.1**	**4.7**	**5.0**	**5.2**	**4.5**	**5.4**
	Top 10 Average	3.5	3.9	4.6	5.3	5.5	5.7	5.0	5.9
	Bottom 10 Average	3.3	3.3	3.7	4.2	4.5	4.7	4.1	4.9
3. LIBOR, 3-Mo.	**CONSENSUS**	**0.6**	**0.9**	**1.4**	**2.0**	**2.3**	**2.4**	**1.8**	**2.6**
	Top 10 Average	0.8	1.3	1.9	2.5	2.7	3.0	2.3	3.1
	Bottom 10 Average	0.4	0.5	0.9	1.6	1.9	2.0	1.4	2.1
4. Commercial Paper, 1-Mo	**CONSENSUS**	**0.6**	**0.9**	**1.4**	**2.0**	**2.2**	**2.3**	**1.7**	**2.6**
	Top 10 Average	0.7	1.2	1.8	2.3	2.6	2.8	2.1	3.0
	Bottom 10 Average	0.3	0.5	1.1	1.6	1.9	2.0	1.4	2.2
5. Treasury Bill Yield, 3-Mo	**CONSENSUS**	**0.2**	**0.5**	**1.1**	**1.6**	**1.9**	**2.1**	**1.4**	**2.3**
	Top 10 Average	0.4	0.9	1.6	2.2	2.4	2.6	1.9	2.8
	Bottom 10 Average	0.1	0.2	0.5	1.1	1.4	1.6	0.9	1.8
6. Treasury Bill Yield, 6-Mo	**CONSENSUS**	**0.3**	**0.6**	**1.1**	**1.7**	**2.0**	**2.2**	**1.5**	**2.5**
	Top 10 Average	0.4	0.9	1.7	2.3	2.6	2.7	2.0	3.0
	Bottom 10 Average	0.2	0.2	0.6	1.2	1.5	1.7	1.1	1.9
7. Treasury Bill Yield, 1-Yr	**CONSENSUS**	**0.4**	**0.7**	**1.3**	**1.8**	**2.1**	**2.3**	**1.7**	**2.6**
	Top 10 Average	0.5	1.1	1.8	2.4	2.7	2.9	2.2	3.1
	Bottom 10 Average	0.2	0.3	0.7	1.3	1.6	1.8	1.1	2.0
8. Treasury Note Yield, 2-Yr	**CONSENSUS**	**0.5**	**0.9**	**1.5**	**2.0**	**2.3**	**2.5**	**1.8**	**2.7**
	Top 10 Average	0.8	1.3	2.0	2.5	2.9	3.0	2.4	3.3
	Bottom 10 Average	0.3	0.4	0.9	1.4	1.7	2.0	1.3	2.2
9. Treasury Note Yield, 5-Yr	**CONSENSUS**	**0.7**	**1.1**	**1.7**	**2.2**	**2.5**	**2.7**	**2.0**	**2.9**
	Top 10 Average	1.1	1.6	2.3	2.8	3.1	3.3	2.6	3.5
	Bottom 10 Average	0.5	0.7	1.2	1.6	1.8	2.1	1.5	2.3
10. Treasury Note Yield, 10-Yr	**CONSENSUS**	**1.2**	**1.5**	**2.1**	**2.5**	**2.7**	**2.9**	**2.3**	**3.1**
	Top 10 Average	1.5	2.0	2.6	3.1	3.3	3.5	2.9	3.8
	Bottom 10 Average	0.8	1.1	1.6	1.9	2.1	2.2	1.8	2.5
11. Treasury Bond Yield, 30-Yr	**CONSENSUS**	**1.8**	**2.2**	**2.7**	**3.1**	**3.3**	**3.5**	**3.0**	**3.8**
	Top 10 Average	2.2	2.7	3.3	3.7	3.9	4.1	3.5	4.4
	Bottom 10 Average	1.4	1.7	2.2	2.6	2.8	2.9	2.4	3.1
12. Corporate Aaa Bond Yield	**CONSENSUS**	**2.8**	**3.2**	**3.6**	**4.0**	**4.2**	**4.3**	**3.9**	**4.6**
	Top 10 Average	3.1	3.6	4.2	4.6	4.7	4.8	4.4	5.1
	Bottom 10 Average	2.4	2.7	3.1	3.5	3.7	3.8	3.4	4.2
13. Corporate Baa Bond Yield	**CONSENSUS**	**4.1**	**4.5**	**4.9**	**5.2**	**5.3**	**5.4**	**5.0**	**5.7**
	Top 10 Average	4.6	5.0	5.4	5.7	5.8	6.0	5.6	6.2
	Bottom 10 Average	3.6	3.9	4.3	4.6	4.7	4.8	4.4	5.2
14. State & Local Bonds Yield	**CONSENSUS**	**2.6**	**3.0**	**3.5**	**3.7**	**3.8**	**3.8**	**3.6**	**4.1**
	Top 10 Average	3.0	3.3	3.9	4.2	4.3	4.4	4.0	4.6
	Bottom 10 Average	2.3	2.6	2.9	3.2	3.2	3.3	3.0	3.7
15. Home Mortgage Rate	**CONSENSUS**	**3.4**	**3.6**	**4.0**	**4.4**	**4.5**	**4.7**	**4.2**	**4.9**
	Top 10 Average	3.8	4.0	4.5	4.8	5.0	5.2	4.7	5.5
	Bottom 10 Average	3.0	3.2	3.5	3.9	4.1	4.1	3.7	4.4
A. Fed's AFE Nominal $ Index	**CONSENSUS**	**112.8**	**112.6**	**112.5**	**111.8**	**111.4**	**111.0**	**111.9**	**110.6**
	Top 10 Average	114.1	114.5	114.1	113.8	113.5	113.4	113.9	113.9
	Bottom 10 Average	111.7	110.7	110.7	110.2	109.5	108.7	110.0	107.6

		Year-Over-Year, % Change						Five-Year Averages	
		2021	2022	2023	2024	2025	2026	2022-2026	2027-2031
B. Real GDP	**CONSENSUS**	**3.2**	**3.2**	**2.4**	**2.2**	**2.1**	**2.0**	**2.4**	**2.1**
	Top 10 Average	5.7	4.3	2.9	2.5	2.3	2.3	2.9	2.4
	Bottom 10 Average	0.5	2.2	1.9	1.9	1.8	1.8	1.9	1.8
C. GDP Chained Price Index	**CONSENSUS**	**1.1**	**1.7**	**1.9**	**2.0**	**2.0**	**2.0**	**1.9**	**2.0**
	Top 10 Average	1.8	2.2	2.2	2.2	2.3	2.2	2.2	2.2
	Bottom 10 Average	0.3	1.3	1.6	1.8	1.8	1.8	1.7	1.9
D. Consumer Price Index	**CONSENSUS**	**1.3**	**2.0**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.2**
	Top 10 Average	2.2	2.5	2.3	2.3	2.4	2.3	2.4	2.4
	Bottom 10 Average	0.4	1.5	1.8	1.8	1.9	1.9	1.8	2.0

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	4.21 %
2.	Regression of Historical Equity Risk Premium (2)	6.88
3.	Forecasted Equity Risk Premium Based on PRPM (3)	5.53
4.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Value Line Data) (4)	7.02
5.	Forecasted Equity Risk Premium based on Projected Total Return on the S&P Utilities Index (Bloomberg Data) (5)	5.66
6.	Average Equity Risk Premium (6)	5.86 %

Notes:

(1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2019. 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 - 2019 referenced in note 1 above.

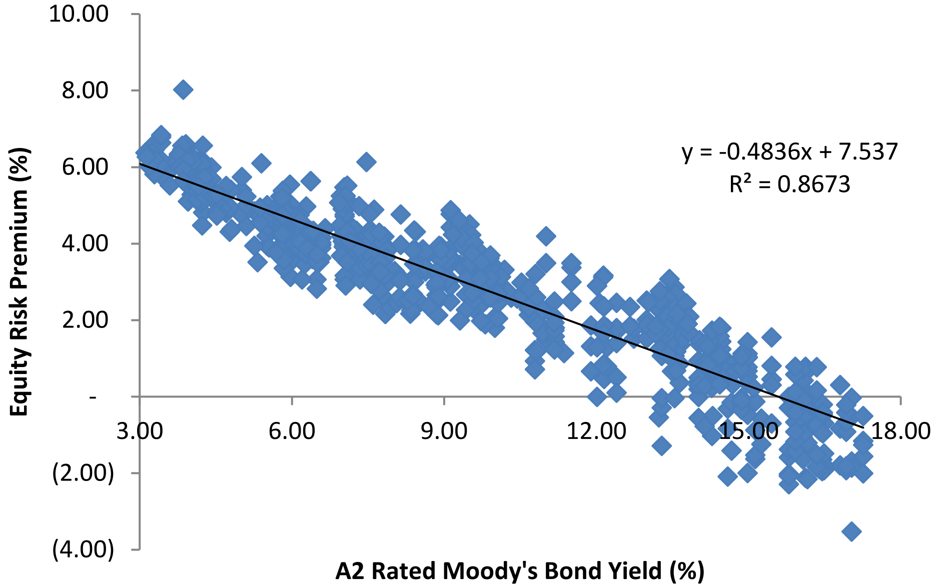
(3) The Predictive Risk Premium Model (PRPM) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A2 rated public utility bonds from January 1928 - September 2020.

(4) Using data from Value Line for the S&P Utilities Index, an expected return of 10.52% 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 3.50%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 7.02%. (10.52% - 3.50% = 7.02%)

(5) Using data from Bloomberg Professional Service for the S&P Utilities Index, an expected return of 9.16% 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 3.50%, calculated on line 3 of page 3 of this Schedule results in an equity risk premium of 5.66%. (9.16% - 3.50% = 5.66%)

(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	
7.536962	%	-0.48364	3.50	%	5.84	%

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

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)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Eight Natural Gas Distribution Companies	Value Line Adjusted Beta	Bloomberg Adjusted Beta	Average Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate	ECAPM Cost Rate	Indicated Common Equity Cost Rate (3)
Atmos Energy Corporation	0.80	0.86	0.83	10.45 %	2.11 %	10.78 %	11.23 %	11.01 %
New Jersey Resources Corporation	0.90	0.93	0.91	10.45	2.11	11.62	11.85	11.74
NiSource Inc.	0.85	0.97	0.91	10.45	2.11	11.62	11.85	11.74
Northwest Natural Holding Company	0.80	0.85	0.82	10.45	2.11	10.68	11.15	10.91
ONE Gas, Inc.	0.80	0.94	0.87	10.45	2.11	11.20	11.54	11.37
South Jersey Industries, Inc.	1.00	0.97	0.98	10.45	2.11	12.35	12.40	12.38
Southwest Gas Holdings, Inc.	0.90	1.03	0.97	10.45	2.11	12.25	12.33	12.29
Spire Inc.	0.80	0.93	0.86	10.45	2.11	11.10	11.46	11.28
Mean			0.89			11.45 %	11.73 %	11.59 %
Median			0.89			11.41 %	11.70 %	11.56 %
Average of Mean and Median			0.89			11.43 %	11.72 %	11.58 %

Notes on page 2 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 (1926-2019)

Arithmetic Mean Monthly Returns for Large Stocks 1926-2019:	12.10	%
Arithmetic Mean Income Returns on Long-Term Government Bonds:	5.09	
MRP based on Ibbotson Historical Data:	7.01	%

Measure 2: Application of a Regression Analysis to Ibbotson Historical Data (1926-2019) — 10.18 %

Measure 3: Application of the PRPM to Ibbotson Historical Data: (January 1926 - September 2020) — 10.66 %

Value Line MRP Estimates:

Measure 4: Value Line Projected MRP (Thirteen weeks ending October 02, 2020)

Total projected return on the market 3-5 years hence*:	13.90	%
Projected Risk-Free Rate (see note 2):	2.11	
MRP based on Value Line Summary & Index:	11.79	%

*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:	13.98	%
Projected Risk-Free Rate (see note 2):	2.11	
MRP based on Value Line data	11.87	%

Measure 6: Bloomberg Projected MRP

Total return on the Market based on the S&P 500:	13.30	%
Projected Risk-Free Rate (see note 2):	2.11	
MRP based on Bloomberg data	11.19	%
Average of Value Line, Ibbotson, and Bloomberg MRP:	10.45	%

(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 10 and 11 of Schedule DWD-D4.) The projection of the risk-free rate is illustrated below:

Fourth Quarter 2020	1.50	%
First Quarter 2021	1.60	
Second Quarter 2021	1.60	
Third Quarter 2021	1.70	
Fourth Quarter 2021	1.80	
First Quarter 2022	1.90	
2022-2026	3.00	
2027-2031	3.80	
	2.11	%

(3) Average of Column 6 and Column 7.

Sources of Information:

Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2020 and October 1, 2020
Stocks, Bonds, Bills, and Inflation - 2020 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 2.6400 – 3.1488 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 0.1272. 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

$$\text{Thus, } 0.1272 = \frac{2.8944}{\sqrt{518}} = \frac{2.8944}{22.7596}$$

Source of Information: Value Line, Inc., September 2020
Value Line Investment Survey (Standard Edition)

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

	[1]	[2]	[3]	[4]
Proxy Group of Eight Natural Gas Distribution Companies	Value Line Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
Atmos Energy Corporation	0.80	0.66	2.6516	0.0639
New Jersey Resources Corporation	0.90	0.83	2.9410	0.0709
NiSource Inc.	0.85	0.72	2.5741	0.0621
Northwest Natural Holding Company	0.80	0.64	2.9915	0.0721
ONE Gas, Inc.	0.80	0.65	2.7223	0.0657
South Jersey Industries, Inc.	1.00	0.94	3.4732	0.0838
Southwest Gas Holdings, Inc.	0.90	0.83	3.0233	0.0729
Spire Inc.	0.80	0.69	2.7779	0.0670
Average	0.86	0.75	2.8944	0.0698

Beta Range (+/- 2 std. Devs. of Beta)	0.61	0.89
2 std. Devs. of Beta	0.14	
Residual Std. Err. Range (+/- 2 std. Devs. of the Residual Std. Err.)	2.6400	3.1488
Std. dev. of the Res. Std. Err.	0.1272	
2 std. devs. of the Res. Std. Err.	0.2544	

Source of Information: Valueline Proprietary Database, September 2020

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

	[1]	[2]	[3]	[4]
Proxy Group of Forty-One Non-Price Regulated Companies	VL Adjusted Beta	Unadjusted Beta	Residual Standard Error of the Regression	Standard Deviation of Beta
Apple Inc.	0.90	0.82	2.9301	0.0707
Assurant Inc.	0.90	0.83	2.8328	0.0683
Amgen	0.85	0.71	2.7710	0.0668
Amer. Tower 'A'	0.90	0.82	2.9258	0.0706
ANSYS, Inc.	0.90	0.78	2.7817	0.0671
Booz Allen Hamilton	0.90	0.83	2.9779	0.0718
Becton, Dickinson	0.80	0.68	2.7571	0.0665
Bio-Rad Labs. 'A'	0.80	0.64	3.0465	0.0735
Broadridge Fin'l	0.85	0.72	2.7607	0.0666
Cadence Design Sys.	0.95	0.86	2.9525	0.0712
Cerner Corp.	0.95	0.86	2.8908	0.0697
Chemed Corp.	0.85	0.74	2.6626	0.0642
CSW Industrials	0.85	0.75	2.7722	0.0704
Lauder (Estee)	0.90	0.82	2.7685	0.0668
Exponent, Inc.	0.85	0.74	2.8830	0.0695
Hershey Co.	0.85	0.70	2.7360	0.0660
Int'l Flavors & Frag	0.90	0.82	3.0758	0.0742
Ingredion Inc.	0.90	0.81	2.8462	0.0686
Intel Corp.	0.85	0.77	3.0841	0.0744
Iron Mountain	0.95	0.87	3.0751	0.0742
Hunt (J.B.)	0.95	0.87	2.7881	0.0672
J&J Snack Foods	0.90	0.80	2.7601	0.0666
St. Joe Corp.	0.85	0.72	2.9838	0.0720
ManTech Int'l 'A'	0.85	0.71	3.1009	0.0748
McCormick & Co.	0.85	0.70	2.7767	0.0670
Altria Group	0.85	0.74	2.8919	0.0697
Motorola Solutions	0.90	0.81	2.8385	0.0685
Vail Resorts	0.90	0.77	3.0849	0.0744
Maxim Integrated	0.95	0.87	3.0087	0.0726
Northrop Grumman	0.85	0.73	2.8790	0.0694
Old Dominion Freight	0.95	0.87	3.0856	0.0744
Pool Corp.	0.90	0.80	2.8410	0.0685
Rollins, Inc.	0.85	0.76	2.8905	0.0697
Selective Ins. Group	0.85	0.72	2.7828	0.0671
Tetra Tech	0.90	0.81	2.8814	0.0695
Texas Instruments	0.90	0.79	2.6711	0.0644
AMERCO	0.90	0.83	2.6726	0.0645
United Parcel Serv.	0.80	0.64	2.7088	0.0653
Waters Corp.	0.95	0.87	2.7023	0.0652
West Pharmac. Svcs.	0.80	0.68	3.1016	0.0748
Western Union	0.85	0.72	2.6612	0.0642
Average	0.88	0.78	2.8700	0.0700
Proxy Group of Eight Natural Gas Distribution Companies	0.86	0.75	2.8944	0.0698

Source of Information: Valueline Proprietary Database, September 2020

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

Principal Methods	Proxy Group of Forty-One Non-Price Regulated Companies
Discounted Cash Flow Model (DCF) (1)	11.71 %
Risk Premium Model (RPM) (2)	12.53
Capital Asset Pricing Model (CAPM) (3)	11.74
	11.99 %
	11.74 %
	11.87 %

Notes:
(1) From page 2 of this Schedule.
(2) From page 3 of this Schedule.
(3) From page 6 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 Eight Natural Gas Distribution Companies

Proxy Group of Forty-One 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.	0.74 %	15.50 %	11.00 %	9.50 %	12.46 %	12.12 %	0.78 %	12.90 %
Assurant Inc.	2.18	6.50	NA	36.60	19.40	20.83	2.41	23.24
Amgen	2.59	6.50	7.20	7.67	6.87	7.06	2.68	9.74
Amer. Tower 'A'	1.80	7.50	14.40	15.61	14.87	13.09	1.92	15.01
ANSYS, Inc.	-	10.00	NA	10.90	7.10	9.33	-	NA
Booz Allen Hamilton	1.51	10.50	10.60	NA	11.83	10.98	1.59	12.57
Becton, Dickinson	1.25	9.00	8.00	8.73	6.40	8.03	1.30	9.33
Bio-Rad Labs. 'A'	-	11.50	NA	21.75	17.80	17.02	-	NA
Broadridge Fin'l	1.72	9.00	NA	7.40	10.00	8.80	1.80	10.60
Cadence Design Sys.	-	10.00	13.70	10.89	13.70	12.07	-	NA
Cerner Corp.	1.01	9.00	10.90	11.76	10.50	10.54	1.06	11.60
Chemed Corp.	0.28	11.50	9.60	9.64	9.65	10.10	0.29	10.39
CSW Industrials	0.74	8.50	NA	12.00	12.00	10.83	0.78	11.61
Lauder (Estee)	0.93	12.00	12.00	14.99	13.31	13.08	0.99	14.07
Exponent, Inc.	0.96	11.50	NA	15.00	15.00	13.83	1.03	14.86
Hershey Co.	2.26	5.00	8.50	7.40	6.78	6.92	2.34	9.26
Int'l Flavors & Frag	2.48	8.00	NA	7.20	0.38	5.19	2.54	7.73
Ingredion Inc.	3.16	6.00	NA	8.60	1.90	5.50	3.25	8.75
Intel Corp.	2.56	7.00	7.50	6.62	8.62	7.44	2.66	10.10
Iron Mountain	8.65	8.50	5.80	0.06	8.00	5.59	8.89	14.48
Hunt (J.B.)	0.81	6.50	15.00	13.50	10.09	11.27	0.86	12.13
J&J Snack Foods	1.76	6.00	NA	NA	6.00	6.00	1.81	7.81
St. Joe Corp.	-	15.00	NA	NA	(28.10)	15.00	-	NA
ManTech Int'l 'A'	1.81	12.00	7.40	7.36	7.02	8.45	1.89	10.34
McCormick & Co.	1.26	6.50	5.60	9.89	4.80	6.70	1.30	8.00
Altria Group	8.24	6.00	4.00	4.45	6.10	5.14	8.45	13.59
Motorola Solutions	1.74	8.00	9.00	NA	10.32	9.11	1.82	10.93
Vail Resorts	-	18.00	NA	30.04	(17.62)	24.02	-	NA
Maxim Integrated	-	4.50	10.00	11.65	6.02	8.04	-	NA
Northrop Grumman	1.77	11.00	NA	19.56	8.62	13.06	1.89	14.95
Old Dominion Freight	0.32	7.50	9.50	9.24	10.07	9.08	0.33	9.41
Pool Corp.	0.74	9.00	NA	17.00	17.00	14.33	0.79	15.12
Rollins, Inc.	0.61	12.00	NA	NA	8.20	10.10	0.64	10.74
Selective Ins. Group	1.66	6.50	NA	NA	(2.19)	6.50	1.71	8.21
Tetra Tech	0.76	11.00	15.00	15.50	15.00	14.13	0.81	14.94
Texas Instruments	2.99	4.00	9.30	10.00	10.00	8.33	3.11	11.44
AMERCO	-	7.50	NA	NA	15.00	11.25	-	NA
United Parcel Serv.	2.74	6.00	7.90	9.30	7.31	7.63	2.84	10.47
Waters Corp.	-	6.00	3.80	3.13	5.30	4.56	-	NA
West Pharmac. Svcs.	0.24	16.00	17.40	14.94	15.00	15.83	0.26	16.09
Western Union	3.95	6.00	25.80	(0.30)	8.67	10.50	4.16	14.66
							Mean	11.97 %
							Median	11.44 %
							Average of Mean and Median	11.71 %

NA= Not Available
NMF= Not Meaningful Figure

(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 September 30, 2020. 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 09/30/2020
www.yahoo.com Downloaded on 09/30/2020
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-One Non-Price Regulated Companies
1.	Prospective Yield on Baa2 Rated Corporate Bonds (1)	4.08 %
2.	Adjustment to Reflect Proxy Group Bond Rating (2)	(0.20)
3.	Prospective Bond Rating	3.88
4.	Equity Risk Premium (3)	8.65
5	Risk Premium Derived Common Equity Cost Rate	12.53 %

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, 2020 and October 1, 2020 (see pages 10 and 11 of Schedule DWD-D4). The estimates are detailed below.

Fourth Quarter 2020	3.50 %
First Quarter 2021	3.60
Second Quarter 2021	3.60
Third Quarter 2021	3.70
Fourth Quarter 2021	3.70
First Quarter 2022	3.80
2022-2026	5.00
2027-2031	5.70
Average	4.08 %

(2) To reflect the Baa1 average rating of the non-utility proxy group, the prosepctive yield on Baa2 corporate bonds must be adjusted downward by 1/3 of the spread between A2 and Baa2 corporate bond yields as shown below:

	A2 Corp. Bond Yield	Baa2 Corp. Bond Yield	Spread
Sep-2020	2.79 %	3.36 %	0.57 %
Aug-2020	2.68	3.27	0.59
Jul-2020	2.69	3.31	0.62
	Average yield spread		0.59 %
	1/3 of spread		0.20 %

(3) From page 5 of this Schedule.

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

	Moody's Long-Term Issuer Rating September 2020		Standard & Poor's Long-Term Issuer Rating September 2020	
Proxy Group of Forty-One 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
Assurant Inc.	Baa3	10.0	BBB	9.0
Amgen	Baa1	8.0	A-	7.0
Amer. Tower 'A'	Baa3	10.0	BBB-	10.0
ANSYS, Inc.	NA	--	NA	--
Booz Allen Hamilton	NA	--	NA	--
Becton, Dickinson	Ba1	11.0	BBB	9.0
Bio-Rad Labs. 'A'	Baa2	9.0	BBB	9.0
Broadridge Fin'l	Baa1	8.0	BBB+	8.0
Cadence Design Sys.	Baa2	9.0	BBB+	8.0
Cerner Corp.	NA	--	NA	--
Chemed Corp.	WR	--	NR	--
CSW Industrials	NA	--	NA	--
Lauder (Estee)	A1	5.0	A+	5.0
Exponent, Inc.	NA	--	NA	--
Hershey Co.	A1	5.0	A	6.0
Int'l Flavors & Frag	Baa3	10.0	BBB	9.0
Ingredion Inc.	Baa1	8.0	BBB	9.0
Intel Corp.	A1	5.0	A+	5.0
Iron Mountain	Ba3	13.0	BB-	13.0
Hunt (J.B.)	Baa1	8.0	BBB+	8.0
J&J Snack Foods	NA	--	NA	--
St. Joe Corp.	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
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	9.0
Old Dominion Freight	NA	--	NA	--
Pool Corp.	NA	--	NA	--
Rollins, Inc.	NA	--	NA	--
Selective Ins. Group	Baa2	9.0	BBB	9.0
Tetra Tech	NA	--	NA	--
Texas Instruments	A1	5.0	A+	5.0
AMERCO	WR	--	NR	--
United Parcel Serv.	A2	6.0	A-	7.0
Waters Corp.	NA	--	NA	--
West Pharmac. Svcs.	NA	--	NA	--
Western Union	Baa2	9.0	BBB	9.0
Average	Baa1	8.3	BBB+	8.3

Notes:
(1) From page 6 of Schedule DWD-D4.

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-One Non-Price Regulated Companies of Comparable risk to the
Proxy Group of Eight Natural Gas Distribution Companies

Line No.	Equity Risk Premium Measure	Proxy Group of Forty-One Non-Price Regulated Companies	
	Ibbotson-Based Equity Risk Premiums:		
1.	Ibbotson Equity Risk Premium (1)	5.78	%
2.	Regression on Ibbotson Risk Premium Data (2)	9.42	
3.	Ibbotson Equity Risk Premium based on PRPM (3)	9.54	
4.	Equity Risk Premium Based on Value Line Summary and Index (4)	10.94	
5	Equity Risk Premium Based on Value Line S&P 500 Companies (5)	11.02	
6.	Equity Risk Premium Based on Bloomberg S&P 500 Companies (6)	10.34	
7.	Conclusion of Equity Risk Premium	9.51	%
8.	Adjusted Beta (7)	0.91	
9.	Forecasted Equity Risk Premium	8.65	%

Notes:
(1) From note 1 of page 9 of Schedule DWD-D4.
(2) From note 2 of page 9 of Schedule DWD-D4.
(3) From note 3 of page 9 of Schedule DWD-D4.
(4) From note 4 of page 9 of Schedule DWD-D4.
(5) From note 5 of page 9 of Schedule DWD-D4.
(6) From note 6 of page 9 of Schedule DWD-D4.
(7) Average of mean and median beta from page 6 of this Schedule.

Sources of Information:
Stocks, Bonds, Bills, and Inflation - 2020 SBBI Yearbook, John Wiley & Sons, Inc.
Value Line Summary and Index
Blue Chip Financial Forecasts, June 1, 2020 and October 1, 2020
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 Eight Natural Gas Distribution Companies

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Proxy Group of Forty-One 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	10.45 %	2.11 %	12.14 %	12.25 %	12.19 %
Assurant Inc.	0.90	1.07	0.98	10.45	2.11	12.35	12.40	12.38
Amgen	0.85	0.80	0.82	10.45	2.11	10.68	11.15	10.91
Amer. Tower 'A'	0.90	0.88	0.89	10.45	2.11	11.41	11.70	11.55
ANSYS, Inc.	0.90	0.96	0.93	10.45	2.11	11.83	12.01	11.92
Booz Allen Hamilton	0.90	0.92	0.91	10.45	2.11	11.62	11.85	11.74
Becton, Dickinson	0.80	0.68	0.74	10.45	2.11	9.84	10.52	10.18
Bio-Rad Labs. 'A'	0.80	0.71	0.76	10.45	2.11	10.05	10.68	10.37
Broadridge Fin'l	0.85	0.83	0.84	10.45	2.11	10.89	11.31	11.10
Cadence Design Sys.	0.95	0.94	0.95	10.45	2.11	12.04	12.17	12.10
Cerner Corp.	0.95	0.96	0.95	10.45	2.11	12.04	12.17	12.10
Chemed Corp.	0.85	0.96	0.91	10.45	2.11	11.62	11.85	11.74
CSW Industrials	0.85	0.98	0.92	10.45	2.11	11.72	11.93	11.83
Lauder (Estee)	0.90	0.96	0.93	10.45	2.11	11.83	12.01	11.92
Exponent, Inc.	0.85	0.90	0.88	10.45	2.11	11.31	11.62	11.46
Hershey Co.	0.85	0.77	0.81	10.45	2.11	10.57	11.07	10.82
Int'l Flavors & Frag	0.90	1.00	0.95	10.45	2.11	12.04	12.17	12.10
Ingredion Inc.	0.90	0.94	0.92	10.45	2.11	11.72	11.93	11.83
Intel Corp.	0.85	0.97	0.91	10.45	2.11	11.62	11.85	11.74
Iron Mountain	0.95	1.10	1.02	10.45	2.11	12.77	12.72	12.74
Hunt (J.B.)	0.95	0.93	0.94	10.45	2.11	11.93	12.09	12.01
J&J Snack Foods	0.90	0.77	0.83	10.45	2.11	10.78	11.23	11.01
St. Joe Corp.	0.85	0.97	0.91	10.45	2.11	11.62	11.85	11.74
ManTech Int'l 'A'	0.85	1.10	0.98	10.45	2.11	12.35	12.40	12.38
McCormick & Co.	0.85	0.70	0.78	10.45	2.11	10.26	10.84	10.55
Altria Group	0.85	0.85	0.85	10.45	2.11	10.99	11.38	11.19
Motorola Solutions	0.90	0.95	0.92	10.45	2.11	11.72	11.93	11.83
Vail Resorts	0.90	1.15	1.03	10.45	2.11	12.87	12.80	12.83
Maxim Integrated	0.95	0.97	0.96	10.45	2.11	12.14	12.25	12.19
Northrop Grumman	0.85	0.84	0.84	10.45	2.11	10.89	11.31	11.10
Old Dominion Freight	0.95	1.01	0.98	10.45	2.11	12.35	12.40	12.38
Pool Corp.	0.90	0.93	0.92	10.45	2.11	11.72	11.93	11.83
Rollins, Inc.	0.85	0.70	0.77	10.45	2.11	10.16	10.76	10.46
Selective Ins. Group	0.85	0.93	0.89	10.45	2.11	11.41	11.70	11.55
Tetra Tech	0.90	1.01	0.95	10.45	2.11	12.04	12.17	12.10
Texas Instruments	0.90	0.90	0.90	10.45	2.11	11.52	11.78	11.65
AMERCO	0.90	1.02	0.96	10.45	2.11	12.14	12.25	12.19
United Parcel Serv.	0.80	0.88	0.84	10.45	2.11	10.89	11.31	11.10
Waters Corp.	0.95	0.89	0.92	10.45	2.11	11.72	11.93	11.83
West Pharmac. Svcs.	0.80	0.82	0.81	10.45	2.11	10.57	11.07	10.82
Western Union	0.85	1.00	0.93	10.45	2.11	11.83	12.01	11.92
		Mean	0.90			11.51 %	11.77 %	11.64 %
		Median	0.92			11.72 %	11.93 %	11.83 %
		Average of Mean and Median	0.91			11.62 %	11.85 %	11.74 %

Notes:
(1) From note 1 of page 2 of Schedule DWD-D5.
(2) From note 2 of page 2 of Schedule DWD-D5.
(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

		[1]		[2]	[3]	[4]
Line No.		Market Capitalization on September 30, 2020 (1) (millions)	(times larger)	Applicable Decile of the NYSE/AMEX/ NASDAQ (2)	Applicable Size Premium (3)	Spread from Applicable Size Premium (4)
1.	Spire Missouri Inc.	$ 2,299.083		6	1.34%	
2.	Proxy Group of Eight Natural Gas Distribution Companies	$ 4,402.076	1.9 x	4	0.79%	0.55%

	[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	$ 31,090.379	$ 1,061,355.011	-0.28%
	2	13,142.606	30,542.936	0.50%
	3	6,618.604	13,100.225	0.73%
	4	4,312.546	6,614.962	0.79%
	5	2,688.889	4,311.252	1.10%
	6	1,669.856	2,685.865	1.34%
	7	993.855	1,668.282	1.47%
	8	515.621	993.847	1.59%
	9	230.024	515.603	2.22%
Smallest	10	1.973	229.748	4.99%

*From 2020 Duff & Phelps Cost of Capital Navigator

Notes:

(1) From page 2 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 0.55% in Column [4], Line No. 2 is derived as follows 0.55% = 1.34% - 0.79%.

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

Company	Exchange	[1] Common Stock Shares Outstanding at Fiscal Year End 2019 (millions)	[2] Book Value per Share at Fiscal Year End 2019 (1)	[3] Total Common Equity at Fiscal Year End 2019 (millions)	[4] Closing Stock Market Price on September 30, 2020	[5] Market-to-Book Ratio on September 30, 2020 (2)	[6] Market Capitalization on September 30, 2020 (3) (millions)
Spire Missouri Inc.		NA	NA	1,538.877 (4)	NA		
Based upon Proxy Group of Eight Natural Gas Distribution Companies						149.4 (5)	$ 2,299.083 (6)
Proxy Group of Eight Natural Gas Distribution Companies							
Atmos Energy Corporation	NYSE	119.339	$ 48.184	$ 5,750.223	$ 95.590	198.4 %	$ 11,407.608
New Jersey Resources Corporation	NYSE	89.338	17.369	1,551.717	27.020	155.6	2,413.914
NiSource Inc.	NYSE	382.136	15.666	5,986.700	22.000	140.4	8,406.985
Northwest Natural Holding Company	NYSE	30.472	28.419	865.999	45.390	159.7	1,383.124
ONE Gas, Inc.	NYSE	52.772	40.351	2,129.390	69.010	171.0	3,641.778
South Jersey Industries, Inc.	NYSE	92.394	15.410	1,423.785	19.270	125.0	1,780.435
Southwest Gas Holdings, Inc.	NYSE	55.007	45.556	2,505.914	63.100	138.5	3,470.969
Spire Inc.	NYSE	50.974	49.889	2,543.000	53.200	106.6	2,711.791
Average		109.054	$ 32.606	$ 2,844.591	$ 49.323	149.4 %	$ 4,402.076

NA= Not Available

Notes: (1) Column 3 / Column 1.
(2) Column 4 / Column 2.
(3) Column 1 * Column 4.
(4) Requested rate base multiplied by the requested common equity ratio.
(5) The market-to-book ratio of Spire Missouri Inc. on September 30, 2020 is assumed to be equal to the market-to-book ratio of Proxy Group of Eight Natural Gas Distribution Companies on September 30, 2020 as appropriate.
(6) Column [3] multiplied by Column [5].

Source of Information: 2019 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

		[Column 1]	[Column 2]	[Column 3]	[Column 4]	[Column 5]	[Column 6]	[Column 7]	[Column 8]	[Column 9]	[Column 10]
Date of Offering	Transaction (1)	Shares Issued	Market Price per Share	Average Offering Price per Share	Market Pressure (2)	Total Offering Expense per Share	Net Proceeds per Share (3)	Gross Equity Issue before Costs (4)	Total Net Proceeds (5)	Total Flotation Costs (6)	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	3.74 %	6.16 %	3.86 %	10.02 %	10.26 %	0.24 %

See page 2 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-provided.

(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 Schedule DWD-D3.

(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 0.24% equals the difference between the flotation adjusted average DCF cost rate of 10.26% and the unadjusted average DCF cost rate of 10.02% of the Utility Proxy Group.

Source of Information:

Company provided information