

Company: Southern California Gas Company (U 904 G)  
Proceeding: 2023 Cost of Capital  
Application: A.22-04-\_\_\_\_\_  
Exhibit: SCG-04

**SOUTHERN CALIFORNIA GAS COMPANY**  
**PREPARED DIRECT TESTIMONY OF JAMES M. COYNE**  
**(RETURN ON EQUITY)**

**BEFORE THE PUBLIC UTILITIES COMMISSION**  
**OF THE STATE OF CALIFORNIA**

April 2022

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1 This work includes calculating the cost of capital for the purpose of ratemaking and  
2 providing expert testimony and studies on matters pertaining to rate policy, valuation,  
3 capital costs, and performance-based regulation. I have authored numerous articles on the  
4 energy industry, lectured on utility regulation for regulatory commission staff, and  
5 provided testimony before the Federal Energy Regulatory Commission (“FERC”), the  
6 Canadian Energy Regulator (“CER”), as well as state and provincial jurisdictions in the  
7 U.S. and Canada, including the California Public Utilities Commission. I hold a B.S. in  
8 Business Administration from Georgetown University and an M.S. in Resource Economics  
9 from the University of New Hampshire. My educational and professional background is  
10 summarized more fully in Exhibit JMC-1.

11 **Q. Are you sponsoring any exhibits in this case?**

12 A. Yes. My analyses and recommendations are supported by the data presented in Exhibits  
13 JMC-2 through JMC-10, which have been prepared by me or under my direction. I am  
14 sponsoring the following exhibits:

- 15 • JMC-2 – Comprehensive Summary of ROE Results
- 16 • JMC-3 – Proxy Group Screening Analysis
- 17 • JMC-4 – Constant Growth DCF Analysis
- 18 • JMC-5.1 – Market Risk Premium
- 19 • JMC-5.2 – CAPM Analysis
- 20 • JMC-6 – Risk Premium Analysis
- 21 • JMC-7 – Expected Earnings Analysis
- 22 • JMC-8 – Capital Expenditures Analysis
- 23 • JMC-9 – Regulatory Risk Assessment

- JMC-10 – Capital Structure Analysis

**Q. What is the purpose of your testimony?**

A. The purpose of my direct testimony is to present evidence and provide a recommendation for SoCalGas' return on equity ("ROE"). My direct testimony also discusses the Company's capital structure in comparison to the proxy group companies supporting my analysis.

## **II. OVERVIEW AND SUMMARY**

**Q. What is your conclusion regarding the appropriate cost of equity for SoCalGas?**

A. I have estimated SoCalGas' ROE based on the results from four alternative models: the Discounted Cash Flow ("DCF") model, the Capital Asset Pricing Model ("CAPM"), the Bond Yield Plus Risk Premium model, and the Expected Earnings model. As shown in Exhibit JMC-2, these models produce a range of estimates of SoCalGas' cost of equity, with a four model average of 10.60 percent using current interest rates and 10.77 percent using projected interest rates. Based on these analyses, I consider an ROE range of 10.00 percent to 11.00 percent to be reasonable. Considering the Company's specific risk profile, I recommend an ROE of 10.75 percent as just and reasonable for SoCalGas.

**Q. Please provide a brief overview of the analyses that you conducted to support your ROE recommendation.**

A. As mentioned, my ROE recommendation is based on the range of results produced from four modeling methodologies. Analysts and academics understand that ROE models are tools to be used in the ROE estimation process, and that strict adherence to any single

1 approach, or the specific results of any single approach, can lead to flawed conclusions.  
2 No model can exactly pinpoint the correct cost of equity, but each is designed to provide  
3 an estimate of the return required to attract equity investment. Therefore, my analysis  
4 considers the range of results produced by these four different models. From within that  
5 range, regulators use informed judgment to select an authorized ROE that takes into  
6 consideration the relevant risk factors, as well as capital market conditions in order to  
7 determine a fair return. The DCF analysis estimates the cost of equity based on market  
8 data on dividend yields and analysts' projected earnings per share growth rates from  
9 reputable third-party sources. The CAPM analysis is based on both current and forecasted  
10 interest rates and a forward-looking market risk premium. The Risk Premium approach is  
11 based on the spread between authorized ROEs for natural gas utilities and Treasury bond  
12 yields. The Expected Earnings approach is based on projected returns on book equity that  
13 investors expect to receive over the next three to five years. My ROE range  
14 recommendation is ultimately based on the range of results produced by these four  
15 methodologies.

16  
17 My recommendation also considers the general economic and capital market environment  
18 and the influence capital market conditions exert over the results of the DCF, CAPM and  
19 Risk Premium models. In addition, I consider the Company's business and regulatory risks  
20 in relation to a set of proxy companies to assist in the determination of the appropriate ROE  
21 and capital structure from within the range of analytical results. Based on the risk factors  
22 I have analyzed, and considering the Company's risk profile in relation to the results for

1 an average risk utility represented by the proxy group companies, my analysis indicates  
2 SoCalGas is above average risk.

3 **Q. Your ROE recommendation for SoCalGas is higher than the Company’s currently**  
4 **authorized ROE. Please summarize the primary factors that support this view.**

5 A. SoCalGas’ current ROE of 10.05 percent was authorized in December 2019. While interest  
6 rates on government and corporate bonds declined to historically low levels in 2020 and  
7 2021 due to the COVID-19 pandemic and the federal government and Federal Reserve’s  
8 extraordinary intervention to keep interest rates low to minimize the pandemic’s economic  
9 impacts, they have since rebounded. Interest rates are projected to increase as fiscal and  
10 monetary stimulus continue to unwind, the economy reaches pre-pandemic levels, and the  
11 Federal Reserve shifts from reducing interest rates during the pandemic to combating  
12 sustained inflation. The consumer price index rose by 7.9 percent through February, the  
13 fastest pace of annual inflation in over 40 years.<sup>1</sup> In November 2021, the Federal Reserve  
14 began curtailing its extensive amount of “quantitative easing,” where the Federal Reserve  
15 purchases government and corporate bonds from banks to support the flow of credit. On  
16 March 16, 2022, the Federal Reserve announced a 25-basis point increase in the federal  
17 funds rate, from 0.00 percent to 0.25 percent to 0.25 percent to 0.50 percent—its first  
18 increase in the federal funds rate (which impacts all other interest rates) since reducing the  
19 rate to zero in March 2020—while projecting six more rate hikes this year and a further  
20 reduction in quantitative easing.<sup>2</sup>

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<sup>1</sup> The New York Times, *Surging U.S. Inflation Raises Stakes as War Pushes Up Prices* (March 10, 2022), available at: <https://www.nytimes.com/2022/03/10/business/economy/cpi-inflation-february-2022.html>.

<sup>2</sup> The Federal Reserve Press Release, *Federal Reserve issues FOMC statement* (March 16, 2022), available at: <https://www.federalreserve.gov/newsevents/pressreleases/monetary20220316a.htm>

1  
2 Simultaneously, other risk factors indicate that equity investors now require a higher rate  
3 of return from utility investments. Among these factors, the industry—SoCalGas and  
4 California utilities in particular—faces complex structural challenges associated with  
5 climate change and decarbonization.

6  
7 Since the Commission’s 2019 decision, volatility in equity markets has reached levels not  
8 seen since the financial crisis of 2008/2009. Credit spreads between government and utility  
9 bonds increased to levels well above their historical average, and the correlation between  
10 utility share prices and the broader market has increased, which reflects the fact that  
11 investors have not viewed the utility sector as a safe-haven during the economic downturn  
12 resulting from the pandemic. Beta coefficients (which are the measure of risk in the CAPM  
13 analysis) have increased substantially for natural gas utilities compared to the overall  
14 market since the Commission’s prior decision. Furthermore, as noted, the economic  
15 stimulus provided through monetary and fiscal policy has resulted in higher inflationary  
16 pressures, with correspondingly higher levels of interest rates. Taken together, these  
17 factors drive higher estimates of the cost of equity than those considered by the  
18 Commission in 2019.

19 **Q. How is the remainder of your Direct Testimony organized?**

20 A. The remainder of my Direct Testimony is organized as follows. Section III provides  
21 background on the regulatory principles that guide the determination of ROE. Section IV  
22 presents a review of current and prospective economic and capital market conditions and  
23 the implications for utility cost of capital. Section V describes the criteria and approach



1 for the selection of a proxy group of comparable companies. Section VI provides a  
2 description of the data and methodologies used to estimate the cost of equity, as well as the  
3 results of the various ROE estimation models. Section VII provides an assessment of the  
4 business and regulatory risk factors I have considered in arriving at an appropriate ROE  
5 for SoCalGas. Section VIII reviews SoCalGas' capital structure in the context of the proxy  
6 group. Finally, Section IX summarizes my results, conclusions, and recommendation.

### 8 **III. REGULATORY PRINCIPLES**

9 **Q. Please describe the guiding principles used in establishing the cost of capital for a**  
10 **regulated utility.**

11 A. The foundations of public utility regulation require that utilities receive a fair rate of return  
12 sufficient to attract capital, maintain the financial integrity of the company, and provide  
13 investors with returns comparable to those of equivalent risk. The basic tenets of this  
14 regulatory doctrine originate from several bellwether decisions by the United States  
15 Supreme Court, notably *Bluefield Waterworks and Improvement Company v. Public*  
16 *Service Commission of West Virginia*, 262 U.S. 679 (1923) ("*Bluefield*"), and *Federal*  
17 *Power Commission v. Hope Natural Gas Company*, 320 U.S. 591 (1944) ("*Hope*"). In  
18 *Bluefield*, the Court stated:

19 A public utility is entitled to such rates as will permit it to earn a return on  
20 the value of the property which it employs for the convenience of the public  
21 equal to that generally being made at the same time and in the same general  
22 part of the country on investments in other business undertakings which are  
23 attended by corresponding risks and uncertainties...

24 The return should be reasonably sufficient to assure investor confidence in  
25 the financial soundness of the utility and should be adequate, under efficient  
26 and economical management, to maintain and support its credit and enable  
27 it to raise the money necessary for the proper discharge of its public duties.

1 Later, in *Hope*, the Court established a standard for the ROE that remains the guiding  
2 principle for ratemaking regulatory proceedings to this day:

3 [T]he return to the equity owner should be commensurate with returns on  
4 investments in other enterprises having corresponding risks. That return,  
5 moreover, should be sufficient to assure confidence in the financial integrity  
6 of the enterprise, so as to maintain its credit and to attract capital.

7 **Q. Has the Commission provided similar guidance?**

8 A. Yes, the Commission applies these same legal standards in setting the cost of capital for  
9 utilities under its jurisdiction. In doing so, the Commission summarizes:

10 We attempt to set the ROE at a level of return commensurate with market  
11 returns on investments having corresponding risks, and adequate to enable  
12 a utility to attract investors to finance the replacement and expansion of a  
13 utility's facilities to fulfill its public utility service obligation. To  
14 accomplish this objective, we have consistently evaluated analytical  
15 financial models as a starting point to arrive at a fair ROE.<sup>3</sup>

16 **Q. Please explain how these principles apply in the context of the regulated rate of  
17 return.**

18 A. Regulated utilities rely primarily on common equity and long-term debt to finance  
19 permanent property, plant, and equipment. The allowed rate of return for a regulated utility  
20 is based on its weighted average cost of capital, where the costs of the individual sources  
21 of capital (*i.e.*, debt and equity) are weighted by their respective book values. The ROE  
22 represents the cost of raising and retaining equity capital and is estimated by using one or  
23 more analytical techniques that use market data to quantify investor requirements for equity  
24 returns. However, the ROE cannot be derived through quantitative metrics and models  
25 alone. To properly estimate the ROE, the financial, regulatory, and economic context must  
26 also be considered.

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<sup>3</sup> Decision (“D.”) 12-12-034 at 18; D.19-12-056 at 16; *see generally* D.18-03-035 at 6.

1  
2 The DCF, CAPM, Risk Premium and Expected Earnings approaches, while fundamental  
3 to the ROE determination, are still only models. The results of these models cannot be  
4 mechanistically applied without also using informed judgment to consider economic and  
5 capital market conditions and the relative risk of SoCalGas as compared to the proxy group  
6 companies.

7  
8 Based on these legal and regulatory standards, the Commission's order in this case should  
9 provide SoCalGas with the opportunity to earn a return on equity that is:

- 10
- 11 • Commensurate with returns on investments in enterprises having  
12 comparable risks;
  - 13 • Adequate to attract capital on reasonable terms, thereby enabling SoCalGas  
14 to provide safe, reliable service; and
  - 15 • Sufficient to ensure the financial soundness of SoCalGas' natural gas utility  
16 operations.

17 Importantly, a fair return must satisfy all three of these standards. The allowed ROE should  
18 enable SoCalGas to finance capital expenditures on reasonable terms and provide the  
19 Company with the ability to raise capital under a full range of capital market circumstances,  
20 which benefits both the Company and its customers.

21 **Q. What are your conclusions regarding regulatory principles?**

22 A. The ratemaking process is premised on the principle that, in order for investors and  
companies to commit the capital needed to provide safe and reliable utility services, the

1 utility must have the opportunity to recover invested capital and the market-required return  
2 on that capital. Because utility operations are capital-intensive, regulatory decisions should  
3 enable the utility to attract capital on favorable terms. The financial community carefully  
4 monitors the current and expected financial condition of utility companies as well as the  
5 regulatory environment in which they operate. In that respect, the regulatory environment  
6 is one of the most important factors considered by both debt and equity investors in their  
7 assessments of risk. It is therefore essential that the ROE authorized in this proceeding  
8 takes into consideration the current and expected capital market conditions that SoCalGas  
9 faces, as well as investors' expectations and requirements regarding both risks and returns.  
10 A reasonable ROE is required both for continued capital investment by SoCalGas and to  
11 maintain confidence in California's regulatory environment among credit rating agencies  
12 and investors.

13  
14 The cost of equity is a true cost in the capital market, where investors face many choices.  
15 Setting an ROE that fairly represents the true cost of equity balances the interest of both  
16 ratepayers as well as shareholders. If ROE is set too low it harms both investors and  
17 ratepayers, as it impairs the financial health and integrity of the utility such that they are  
18 unable to make the investments they need to maintain the safety, integrity, and reliability  
19 of the system—such as through wildfire mitigation—in addition to meeting important  
20 public policy goals. This, in turn, requires utilities to rely more on debt to finance  
21 investments, which can reduce credit ratings, further increasing costs to ratepayers.  
22

1 **IV. ECONOMIC AND CAPITAL MARKET CONDITIONS**

2 **Q. Why is it important to consider the effects of current and expected economic and**  
3 **financial market conditions when setting the appropriate ROE?**

4 A. It is important to consider current and expected conditions in the general economy and  
5 financial markets because the authorized ROE for a public utility should allow the utility  
6 to attract investor capital at a reasonable cost under a variety of economic and financial  
7 market conditions, as underscored by the *Hope* and *Bluefield* decisions. The standard ROE  
8 estimation tools, such as the DCF, CAPM, Risk Premium, and Expected Earnings models,  
9 each reflect the state of the general economy and financial markets by incorporating  
10 specific economic and financial data. These inputs are, however, only samples of the  
11 various economic and market forces that determine a utility's required return.  
12 Consideration must be given to whether the assumptions relied on in the current or  
13 projected market data are appropriate. If investors do not expect current market conditions  
14 to be sustained in the future, it is possible that the ROE estimation models will not provide  
15 an accurate estimate of investors' forward-looking required return. Therefore, an  
16 assessment of current and projected market conditions is integral to any ROE  
17 recommendation.

18 **Q. What are the key factors affecting the cost of equity for regulated utilities in the**  
19 **current and prospective capital markets?**

20 A. The cost of equity for regulated utility companies is being affected by several key factors  
21 in the current and prospective capital markets including ongoing uncertainty and volatility  
22 in equity markets, as well as the economic recovery and inflation risk in 2022 and beyond.

1 In this section, I discuss each of these factors and how it affects the models used to estimate  
2 the cost of equity for regulated utilities.

3 **A. Ongoing Uncertainty and Volatility in Capital Markets**

4 **Q. Please discuss economic and capital market conditions.**

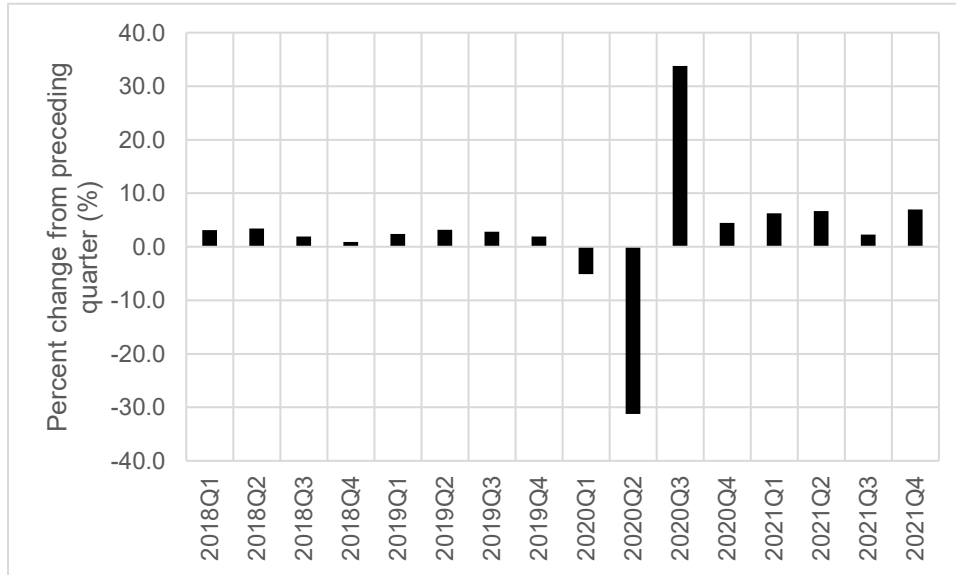
5 A. Capital market conditions have been significantly impacted by the economic impacts of  
6 the COVID-19 pandemic, and most recently, the Russian invasion of Ukraine. Federal  
7 measures taken to contain the economic fallout from COVID-19 were extraordinary by any  
8 measure. As shown in Figure 1, over the past two years real gross domestic product  
9 (“GDP”) has been extremely volatile, tracking from an unprecedented decline of 31.2  
10 percent to growth of 33.8 percent in 2020, and more recently settling to an average annual  
11 growth rate of 5.7 percent in 2021.<sup>4</sup>

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<sup>4</sup> Gross Domestic Product (Third Estimate), GDP by Industry, and Corporate Profits (Revised), 4th Quarter and Year 2021, U.S. Bureau of Economic Analysis (BEA).

1

**Figure 1: U.S. Real GDP Growth – 2018Q1-2021Q4<sup>5</sup>**



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8

To spare consumers and businesses from this sharp decline, the federal government and Federal Reserve took a series of unprecedented steps to stabilize financial markets. While utilities have traditionally been a “safe-haven” for investors, that has not been true during the COVID-19 pandemic. Capital market conditions changed dramatically in 2020 and 2021, resulting in greater risk for investors in both the broader equity market and utility stocks.

9

**Q. What steps did the Federal Reserve and the U.S. Congress take to stabilize financial markets and support the economy in response to COVID-19?**

10

11

**A.** In response to the economic effects of COVID-19, the Federal Reserve decreased the federal funds rate (which influences all other interest rates) twice in March 2020, resulting in a target range of 0.00 percent to 0.25 percent (which remained in effect until March

12

13

<sup>5</sup> Source: U.S. Bureau of Economic Analysis (BEA), *Gross Domestic Product (Third Estimate), Corporate Profits (Revised Estimate), and GDP by Industry, Third Quarter 2021* (December 22, 2021) available at: <https://www.bea.gov/news/2021/gross-domestic-product-third-estimate-gdp-industry-and-corporate-profits-revised-3rd>.

1 2022), and also announced plans to increase its holdings of both Treasury and mortgage-  
2 backed securities. From December 2020 through November 2021, the Federal Reserve  
3 purchased at least \$80 billion per month of Treasury securities and at least \$40 billion per  
4 month of mortgage-backed securities to support the flow of credit to households and  
5 businesses during the pandemic.<sup>6</sup> In addition, on March 23, 2020, the Federal Reserve  
6 began expansive programs to support credit to large employers, including the Primary  
7 Market Corporate Credit Facility (“PMCCF”) to provide liquidity for new issuances of  
8 corporate bonds, and the Secondary Market Corporate Credit Facility (“SMCCF”) to  
9 provide liquidity for outstanding corporate debt issuances. Further, the Federal Reserve  
10 supported the flow of credit to consumers and businesses through the Term Asset-Backed  
11 Securities Loan Facility (“TALF”).<sup>7</sup>

12  
13 These “quantitative easing” programs allowed the Federal Reserve to purchase government  
14 bonds and corporate bonds from banks. The banks then received cash from the Federal  
15 Reserve, which resulted in an expansion of the money supply. This increase in the money  
16 supply kept short-term interest rates low and increased the ability of banks to lend to  
17 consumers and businesses. Investors in longer term bonds also responded, which affected  
18 the entire duration of the bond yield curve, from very near-term rates to 30-year yields. As  
19 shown in Figure 2, the programs enacted by the Federal Reserve resulted in an

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<sup>6</sup> CNBC, *Fed will aggressively dial back its bond buying, sees three rate hikes next year* (December 15, 2021), available at <https://www.cnbc.com/2021/12/15/fed-will-aggressively-dial-back-its-monthly-bond-buying-sees-three-rate-hikes-next-year.html>.

<sup>7</sup> Federal Reserve Board Press Release, *Federal Reserve announces extensive new measures to support the economy* (March 23, 2020), available at: <https://www.federalreserve.gov/newsevents/pressreleases/monetary20200323b.htm>.





1 U.S. Congress approved additional fiscal stimulus of \$1.9 trillion in response to the  
2 ongoing economic effects of COVID-19. The extraordinary measures taken by the Federal  
3 Reserve and U.S. Congress to support the economy and stabilize financial markets have  
4 distorted bond markets (deliberately driving government and corporate yields lower) and  
5 equity markets (creating upward pressure on valuations and downward pressure on yields  
6 for dividend paying companies such as utilities). In March 2020, for the first time on  
7 record, the yield on a 10-year treasury bond dropped below 1.0 percent,<sup>10</sup> and remained  
8 below 1.0 percent for the remainder of 2020.<sup>11</sup> The 10-year treasury bond yield remained  
9 low throughout 2021, beginning the year below 1.0 percent, ending the year at 1.52 percent  
10 with an average of 1.45 percent.<sup>12</sup> Before the onset of COVID-19, the 10-year Treasury  
11 yield had reached levels as low as 1.45 percent on only two occasions: July 24-25, 2012  
12 and July 5-11, 2016. Moreover, these fiscal stimulus programs have increased inflationary  
13 pressures, as evidenced in the sharp run-up in inflation and corresponding upward spike in  
14 bond yields since late November 2021.

15 **Q. Are conditions expected to stabilize in the near-term?**

16 A. The economy remains in a tenuous recovery phase of the business cycle. Recent global  
17 events associated with the Russian invasion of Ukraine has caused further uncertainty. As  
18 such, capital market conditions continue to be unstable with expectations for inflation and  
19 interest rates to increase; with the latter evidenced by the Federal Reserve's recently  
20 curtailing quantitative easing and, on March 16, 2022, enacting the first of several planned

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<sup>10</sup> FRED, Economic Data, available at: <https://fred.stlouisfed.org/series/DGS10>.

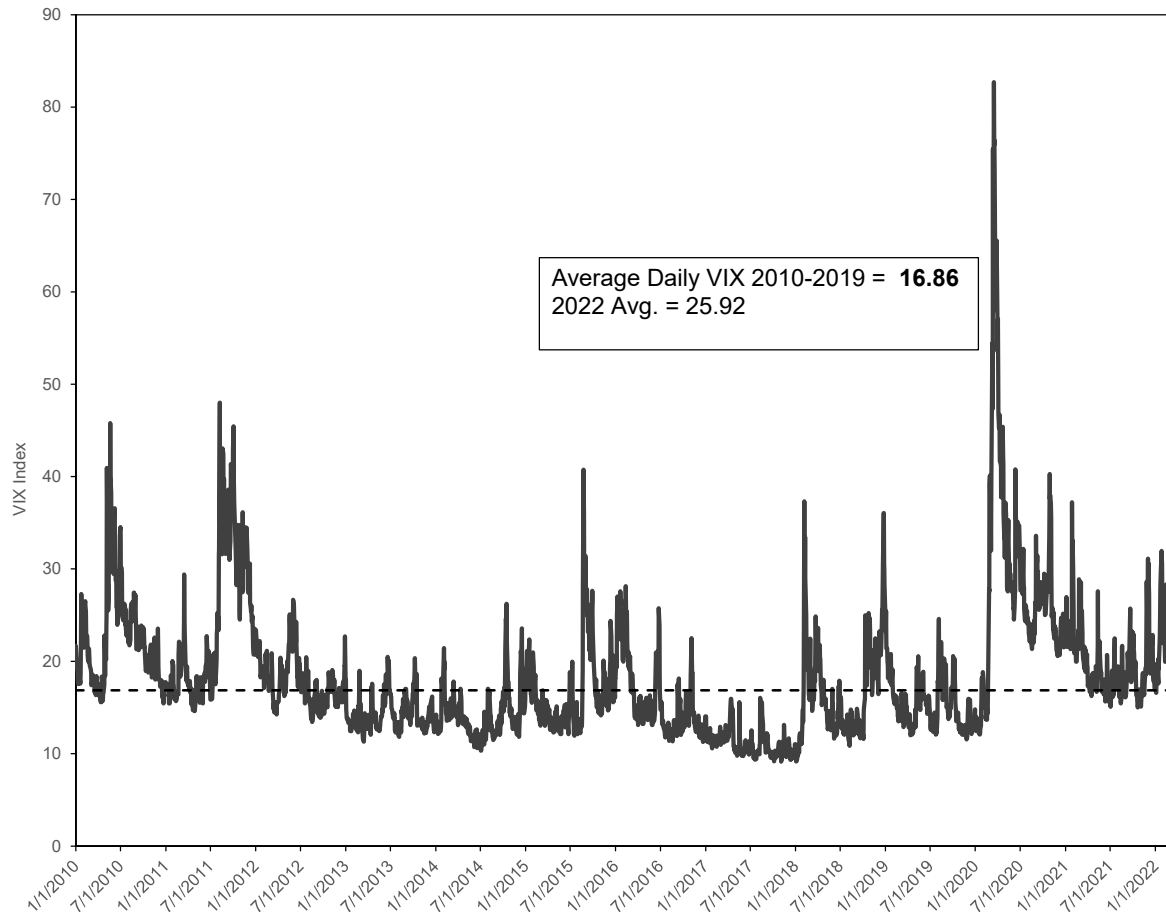
<sup>11</sup> U.S. Department of the Treasury, available at: <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/pages/TextView.aspx?data=yieldYear&year=2020>.

<sup>12</sup> U.S. Department of the Treasury, available at: <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/pages/TextView.aspx?data=yieldYear&year=2021>.

1 rate hikes. While expansive monetary and fiscal programs provided for some price  
2 stability, as shown in Figure 3, the Chicago Board Options Exchange (“CBOE”) Volatility  
3 Index (“VIX”) has remained above long-term historical levels, indicating stock investors  
4 remain anxious about the economy and company earnings. The VIX, a measure of  
5 expected price fluctuations in the S&P 500, reached 82.69 on March 16, 2020 in response  
6 to the pandemic. As a point of comparison, the VIX last traded above 80 in November  
7 2008 during the financial crisis and Great Recession of 2008/09. The VIX continued to  
8 exceed levels above 35.00 in 2021 and in 2022 has averaged 25.92 through March 15,  
9 2022, compared to the long-term average of 16.86 from 2010-2019. This indicates that  
10 equity market volatility levels have partially settled but continue to remain above the  
11 historical mean.

1

**Figure 3: CBOE VIX – January 1, 2010 – March, 15, 2022<sup>13</sup>**



2

3 **Q. Has the cost of equity for utility companies been affected by the circumstances**  
4 **surrounding the pandemic and the federal government’s response?**

5 A. Yes. The cost of equity for regulated utility companies has been affected by the dramatic  
6 shifts in market conditions during 2020, and the subsequent economic recovery. There  
7 have been two primary impacts on utility stocks during this period. First, the relative risk  
8 of utility company stocks has trended more in-line with the broader market since February  
9 2020 when the COVID-19 pandemic became a concern in financial markets. This higher

<sup>13</sup> Source: Bloomberg Professional.

1 risk is reflected in the Beta coefficients, which are the measure of risk in the CAPM, where  
 2 1.0 is the market average and where higher betas translate to greater risk and higher  
 3 required equity returns. Beta coefficients increased substantially between January 2020  
 4 and February 2022 for the utility companies used in my cost of capital analysis. Figure 4  
 5 presents the average Value Line and Bloomberg Beta coefficients for my proxy group  
 6 companies and Sempra Energy over this period. Higher Beta coefficients for utilities signal  
 7 an increase in relative risk, and therefore a higher required return to justify taking on those  
 8 risks. These higher Beta coefficients reflect direct market evidence of an increase in cost  
 9 of equity for utilities (as measured with the CAPM model). Increases in utility Beta  
 10 coefficients are likewise observable for shorter measurement periods and even when you  
 11 remove the most volatile periods at the pandemic's outset (February-April 2020). Investors  
 12 have not viewed the utilities sector as a safe-haven during the capital market conditions  
 13 associated with COVID-19, and even though bond yields have declined, the cost of equity  
 14 has increased.

15 **Figure 4: Beta Coefficients for Proxy Group and Sempra Energy**

	<b>January 2020</b>	<b>February 2022</b>
<i>Proxy Group Average</i>		
Value Line Beta	0.63	0.85
Bloomberg Beta	0.601	0.822
<i>Sempra Energy</i>		
Value Line Beta	0.70	0.95
Bloomberg Beta	0.633	0.912

16

1 The second impact on utility stocks is the relative underperformance of utility stocks  
2 compared to the broader market.

3 **Q. How have utilities performed relative to the broader equity market since the onset of**  
4 **COVID-19?**

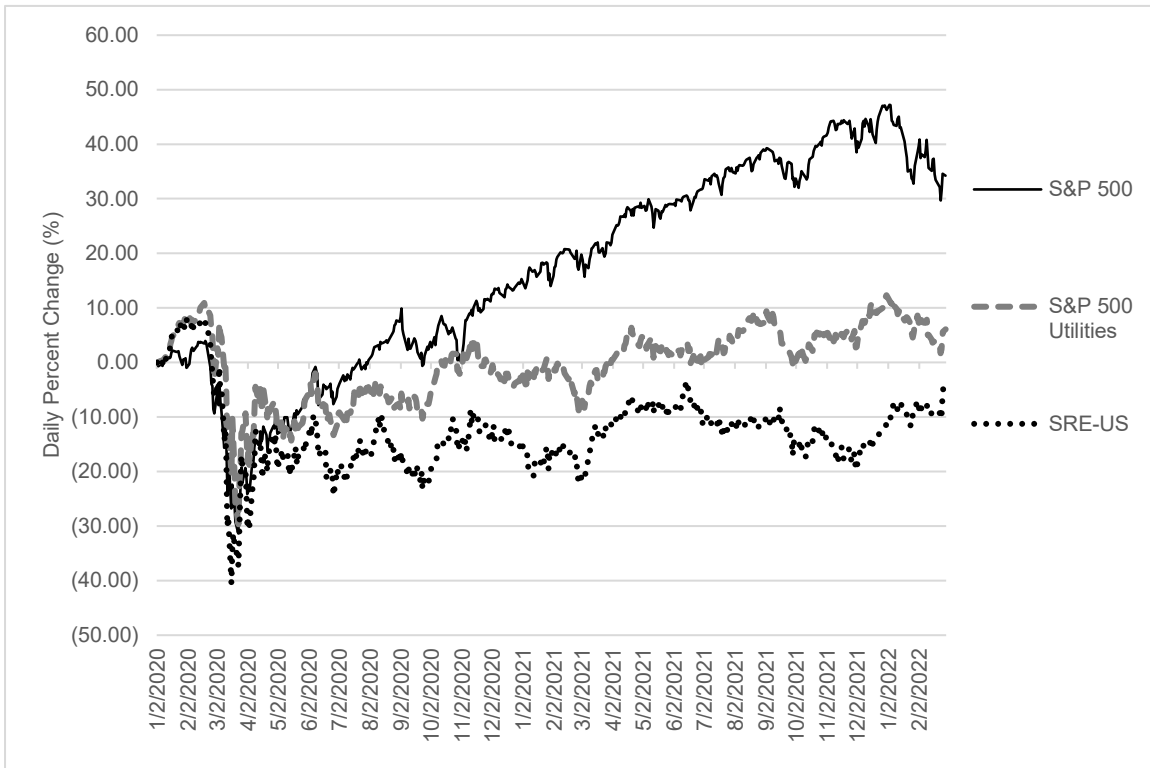
5 A. While the overall market has surpassed its pre-pandemic levels, the same is not true with  
6 the utility sector. The S&P Utilities sector was one of the worst performing market sectors  
7 in 2020, declining by 7.49 percent from the mid-February peak as compared to a 12.57  
8 percent increase for the S&P 500. The only market sectors that underperformed utilities  
9 in 2020 were real estate (down 8.30 percent) and energy (down 26.31 percent). At end of  
10 2020, seven of the other eight market sectors were above their mid-February 2020 levels,  
11 led by technology (up 28.09 percent), consumer discretionary (up 22.92 percent), and  
12 materials (up 22.26 percent).<sup>14</sup> By the end of 2021, the S&P 500 had substantially  
13 recovered and had increased more than 40 percent above its pre-pandemic levels.  
14 However, over that same time period, the S&P Utilities Index had only increased 12  
15 percent. Figure 5 compares the daily performance of the S&P 500 stock market index and  
16 the S&P Utilities Index as of February 28, 2022. Performance is shown as the percentage  
17 gain from January 1, 2020. As Figure 5 shows, the S&P 500 has largely recovered as it  
18 now exceeds its pre-COVID-19 levels. However, the S&P Utilities Index and Sempra  
19 Energy's stock price significantly lag the broader market compared to pre-pandemic levels.  
20 A decline in stock price indicates that investors are treating the sector with greater caution  
21 as they sort through the implications of the shifting economic environment on utilities. Just  
22 as an increase in Beta signals an increase in the cost of equity in the CAPM model, a decline

---

<sup>14</sup> Comparison from February 19, 2020 through December 31, 2020.

1 in stock price indicates an increase in the cost of equity in the DCF model. These are  
2 consistent messages from the market data.

3 **Figure 5: Relative Performance of Utilities and the S&P 500,**  
4 **January 2020 – February 2022<sup>15</sup>**



5  
6 **Q. How has the current economic environment affected the credit ratings for utilities?**

7 A. According to S&P Global, credit ratings for North American utilities “weakened sharply  
8 in 2020”, and “[t]he percentage of North American regulated utilities with a negative  
9 outlook or on CreditWatch with negative implications surged from 18% in 2019 to 36% in  
10 2020”, and “the number of downgrades exceeded the number of upgrades by a wide margin  
11 in 2020 for the first time since 2010.” On the causes of the weakening credit profiles, S&P  
12 stated: “The main causes of weakening credit quality reflected environment, social, and

<sup>15</sup> Source: S&P Capital IQ Pro.

1 governance (ESG) risks, regulatory issues, and companies’ practice of strategically  
2 managing financial measures close to their downgrade threshold with little or no cushion”,  
3 and the COVID-19 pandemic “was not the culprit for weaker credit quality” the report  
4 states.<sup>16</sup> Updating its view, a more recent report focused on the impacts of sustained  
5 inflation, S&P concluded “[u]nfortunately for many utilities in the sector, the threat of  
6 inflation comes at a time when credit metrics are already under pressure relative to  
7 downside ratings thresholds.” S&P added that “[t]his comes as companies in the sector  
8 have already added record levels of debt to offset historically high capital spending aimed  
9 at modernizing the grid, building new transmission lines, reducing coal generation, and  
10 adding renewable power investments,” and concludes “[t]aken together, if inflation  
11 increases last longer than currently expected, we could see somewhat reduced profitability  
12 from regulatory lag coupled with higher interest rates and increasing debt burdens. These  
13 factors could add to an already downward trajectory in key credit metrics in the sector.”  
14 Among the utilities identified in the report as operating with a “minimal financial cushion”  
15 and more susceptible to these risks, is Sempra Energy:

16 We expect companies operating with minimal financial cushion will be  
17 more susceptible to rising inflation risks and regulatory lag. We believe this  
18 would likely include Sempra Energy, Edison International, PG&E Corp.,  
19 Consolidated Edison Inc., Southern Co., and Puget Energy Inc. All of these  
20 companies currently have a negative outlook and have been consistently  
21 operating with less than 100 basis points of cushion from their funds from  
22 operations to debt downgrade threshold. Additionally, they are operating  
23 with negative discretionary cash flow reflecting their robust capital  
24 spending plans. This spending is earmarked for costs involved in reducing

---

<sup>16</sup> S&P Global, *Utility sector's credit ratings weakened sharply in 2020: S&P Global Ratings* (January 21, 2021), available at: <https://www.spglobal.com/platts/en/market-insights/latest-news/natural-gas/012121-utility-sectors-credit-ratings-weakened-sharply-in-2020-sampp-global-ratings>.



1 their carbon footprint, enhancing safety and reliability, and, in the case of  
2 California's utilities, wildfire mitigation technology.<sup>17</sup>

3  
4 While the views of rating agencies represent an important consideration, they are not the  
5 only factor that equity investors consider. The important distinction is that credit rating  
6 agencies are primarily focused on the ability of a utility to pay its debts, while equity  
7 analysts and institutional investors are more concerned with profitability and value  
8 creation.

9 **Q. Have utility commissions recognized that the pandemic's low interest rate**  
10 **environment did not reflect the same reduction in utilities' cost of equity?**

11 A. Yes. Figure 6 demonstrates that authorized returns for utilities have largely been consistent  
12 since the last cost of capital decision. As S&P recently recognized, "State utility  
13 commissions have recognized that long-term bond yields have been artificially suppressed  
14 due to the Fed's unprecedented intervention in the capital markets. As such, authorized  
15 returns have been somewhat resistant to the decline in interest rates."<sup>18</sup>

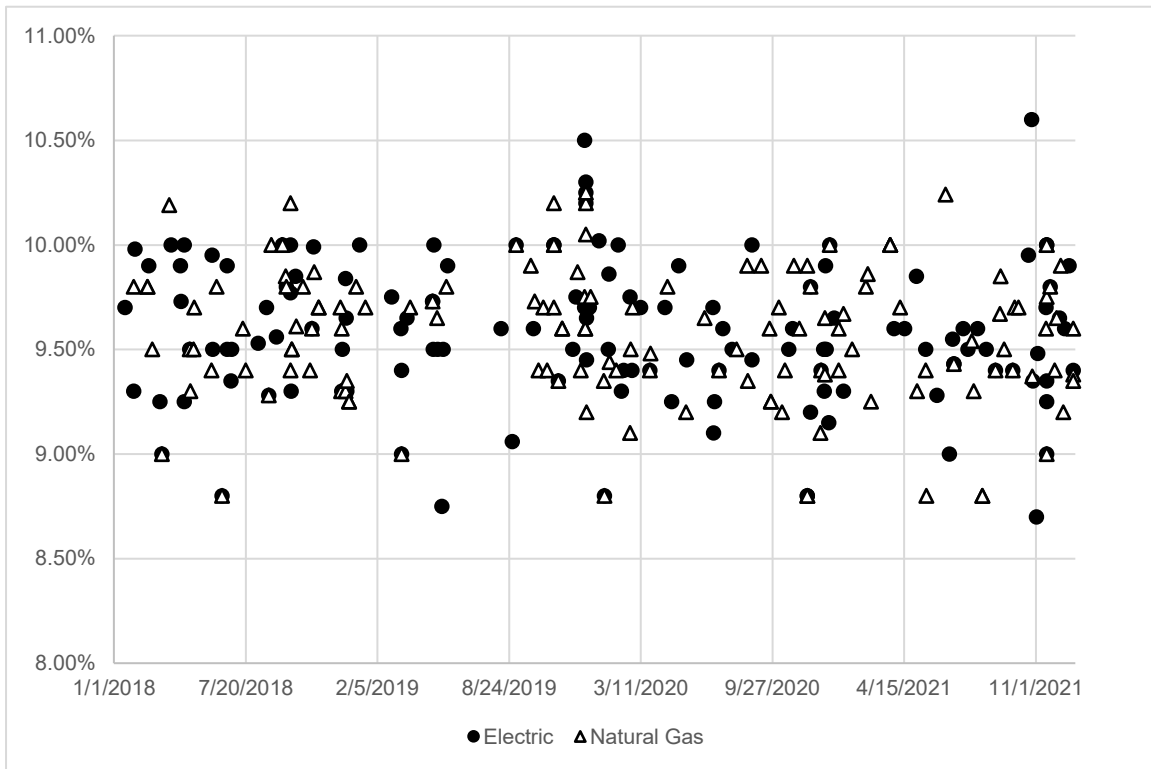
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<sup>17</sup> S&P Global, *Will Rising Inflation Threaten North American Investor-Owned Regulated Utilities' Credit Quality?* (July 20, 2021), available at:  
<https://www.spglobal.com/ratings/en/research/articles/210720-will-rising-inflation-threaten-north-american-investor-owned-regulated-utilities-credit-quality-12010362>.

<sup>18</sup> See S&P Global, *The Big Picture: 2022 Electric, Natural Gas and Water Utilities Outlook* (November 2, 2021) (expecting that "ROEs may increase" as interest rates rise), available at:  
<https://www.spglobal.com/marketintelligence/en/news-insights/blog/the-big-picture-2022-electric-natural-gas-and-water-utilities-outlook>.

1

**Figure 6: Authorized ROEs 2018-2021**



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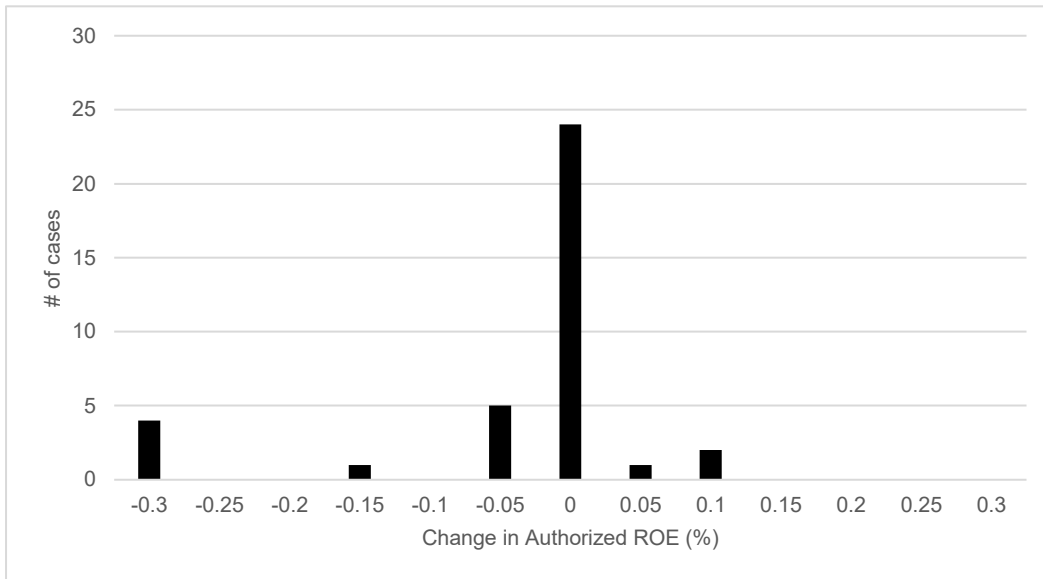
10

11

I also focused on individual companies that have received multiple ROE authorizations from 2019 through 2021 to remove the underlying variables in quarterly and annually authorized ROE summary data. As shown in Figure 7, in the United States, there were 37 instances of a single utility filing multiple rate cases between 2019 and 2021. In 70 percent of these cases authorized ROE was either unchanged (23 cases) or increased (3 cases). There were 11 cases where the ROE was reduced, but even in these cases the maximum reduction was 32 basis points and the average was 17 basis points.<sup>19</sup> As a point of reference, these decisions do not reflect SoCalGas' greater risk than the average U.S. utility.

<sup>19</sup> Source: Capital IQ Pro, Regulatory Research Associates.

1 **Figure 7: Histogram of Individual Company Changes in Authorized ROEs 2019-**  
2 **2021<sup>20</sup>**



3  
4 **Q. What are your conclusions regarding the effects of the current market environment**  
5 **on the cost of equity for SoCalGas?**

6 A. The risks to equity investors are currently elevated in comparison to the conditions that  
7 existed during the 2019 timeframe when SoCalGas' last cost of capital case was filed and  
8 decided. Given the uncertainty and volatility that have characterized capital markets since  
9 February 2020, the increase in relative risk of the utility industry (as measured by Beta)  
10 compared to the broader market, and the pressures cited by S&P on utility credit quality, it  
11 is reasonable that equity investors would require a higher ROE to compensate them for the  
12 additional risk associated with owning common stock. This is reflected in utilities' stock  
13 market underperformance and increased Beta coefficients.

14  

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<sup>20</sup> Source: Capital IQ Pro, Regulatory Research Associates.

1 **B. Economic Recovery and Inflation Risk**

2 **Q. Are there indications the Federal Reserve is normalizing monetary policy?**

3 A. Yes. As noted, on March 16, 2022, the Federal Open Market Committee (“FOMC”)  
4 announced its decision to raise the target range for the federal funds rate to a target range  
5 of 0.25 percent to 0.50 percent and anticipates ongoing increases. The FOMC  
6 acknowledged the invasion of Ukraine by Russia creating highly uncertain implications for  
7 the U.S. Economy.<sup>21</sup> Moreover, the Federal Reserve’s FOMC is now forecasting several  
8 increases in the federal funds rate that would bring the rate to a target range of 1.75 percent  
9 to 2.00 percent by the end of 2022.<sup>22</sup> In the December 15, 2021 FOMC meeting, in  
10 response to inflation exceeding the Federal Reserve’s target of 2 percent for a sustained  
11 period of time, the Federal Reserve decided to increase the pace of its taper of bond  
12 purchases. Beginning in January, the Federal Reserve began to reduce asset purchases of  
13 Treasuries by \$20 billion and mortgage-backed securities by \$10 billion on a monthly  
14 basis.<sup>23</sup> This change is double the initial plan outlined at the November 2, 2021 meeting,  
15 which called for reducing asset purchases of Treasuries by \$10 billion and mortgage-  
16 backed securities by \$5 billion on a monthly basis.<sup>24</sup>

17 **Q. Why has the Federal Reserve decided to normalize monetary policy?**

18 A. The Federal Reserve has accelerated plans to normalize monetary policy in response to  
19 increasing inflation. While the Federal Reserve initially viewed inflation as transitory, it  
20 has been higher and more persistent than the target levels and is expected to continue in  
21 2022. Specifically, Federal Reserve Chairman Jerome Powell stated:

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<sup>21</sup> Federal Reserve, Press Release, (Mar. 16, 2022).

<sup>22</sup> Federal Reserve, Summary of Economic Projections, (Mar. 16, 2021), Figure 2.

<sup>23</sup> Federal Reserve, Press Release, (Dec. 15, 2021).

<sup>24</sup> Federal Reserve, Press Release, (Nov. 3, 2021).

1 We are phasing out our purchases more rapidly because with elevated  
2 inflation pressures and a rapidly strengthening labor market the economy  
3 no longer needs increasing amounts of policy support.<sup>25</sup>

4  
5 **Q. Please describe the significance of current inflationary pressure and expectations over**  
6 **the near-term.**

7 A. Inflation is currently at its highest level in approximately 40 years and interest rates have  
8 recently increased from historic low-levels observed at the onset of the pandemic. The  
9 year-over-year (“YOY”) change in the Consumer Price Index (“CPI”) published by the  
10 Bureau of Labor Statistics increased steadily in 2021 rising from 1.37 percent in January  
11 2021 to 7.0 percent in December 2021. The change in the CPI in December 2021 was the  
12 largest 12-month increase since 1982. This trend has continued with the YOY change in  
13 CPI rising to 7.5 percent in January 2022 and 7.9 percent in February 2022. Goldman  
14 Sachs opined: “A very high inflation path in 2022 should make an easy case for steady rate  
15 hikes at all seven remaining FOMC meetings.”<sup>26</sup> Adding uncertainty to the economic  
16 outlook, the current expectation is that the Federal Reserve will raise the federal funds rate  
17 six quarter-point increases in 2022, followed by three to four increases in 2023.<sup>27</sup> Further,  
18 as noted, the Federal Reserve decided to reduce its holdings of Treasury and mortgage-

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<sup>25</sup> FOMC Meeting Press Conference, Transcript of Chair Powell’s Opening Statement (December 15, 2021), at 4.

<sup>26</sup> Bloomberg, *Goldman Sachs Sees Fed Hiking More Times in 2023 Amid Inflation* (February 28, 2022), available at: <https://www.bloomberg.com/news/articles/2022-02-28/goldman-raises-u-s-inflation-forecasts-sees-more-hikes-in-2023>.

<sup>27</sup> Federal Reserve, Summary of Economic Projections, (Mar. 16, 2021), Figure 2.

1 backed securities.<sup>28</sup> This means that the historic low interest rate environment is unlikely  
2 to be sustained in 2022.<sup>29</sup>

3 **Q. What effect will inflation have on long-term interest rates?**

4 A. Inflation and the Federal Reserve’s normalization of monetary policy will likely result in  
5 increases in long-term interest rates. Specifically, inflation reduces the purchasing power  
6 of the future interest payments an investor expects to receive over the duration of the bond.  
7 This risk increases the longer the duration of the bond. As a result, if investors expect  
8 increased levels of inflation, they will require higher yields to compensate for the increased  
9 risk of inflation which means interest rates will increase.

10 **Q. What conclusions do you draw from your analysis of capital market conditions?**

11 A. While short-term interest rates currently remain low, investors are increasingly faced with  
12 inflationary pressures, and the Federal Reserve is unwinding its pandemic response  
13 measures. Long-term interest rates have increased substantially since the historic lows of  
14 2020, and are expected to continue to increase. This supports the use of both current and  
15 forecast bond yields in the CAPM and Risk Premium models.

16  
17 High utility valuations are expected to decline as utilities underperform the broader market.  
18 Under these circumstances, the results of the DCF model would understate the forward-  
19 looking cost of equity because the dividend yield is calculated using historical average  
20 stock prices which do not fully reflect these expectations. These circumstances reinforce

---

<sup>28</sup> Federal Reserve, Press Release (December 15, 2021), *available at*:

<https://www.federalreserve.gov/monetarypolicy/files/monetary20211215a1.pdf>

<sup>29</sup> See S&P Global, *The Big Picture: 2022 Electric, Natural Gas and Water Utilities Outlook*

(November 2, 2021) (expecting that “ROEs may increase” as interest rates rise), *available at*:

<https://www.spglobal.com/marketintelligence/en/news-insights/blog/the-big-picture-2022-electric-natural-gas-and-water-utilities-outlook>.

1 the importance of considering the results of multiple models, as I have with the CAPM,  
2 DCF, Risk Premium, and Expected Earnings approaches.

3  
4 **V. PROXY GROUP SELECTION**

5 **Q. Why is it necessary to select a proxy group to estimate the cost of equity for**  
6 **SoCalGas?**

7 A. Since the ROE is a market-based concept and SoCalGas is not publicly traded, it is  
8 necessary to establish a group of companies that is both publicly traded and comparable to  
9 SoCalGas. Even if SoCalGas were a publicly traded entity, it is possible that transitory  
10 events could bias the Company's market value in one way or another in a given period of  
11 time. A significant benefit of using a proxy group is the ability to mitigate the effects of  
12 short-term events that may be associated with any one company. The proxy companies  
13 used in my ROE analyses possess a set of business and operating characteristics similar to  
14 SoCalGas' natural gas utility operations, and thus provide a reasonable basis for estimating  
15 the Company's ROE.

16 **Q. Please provide a summary profile of SoCalGas.**

17 A. SoCalGas is a wholly owned subsidiary of Sempra Energy, providing natural gas services  
18 to a population of approximately 22 million covering a 24,000 square mile service territory  
19 that encompasses Southern California and portions of central California.<sup>30</sup> SoCalGas has  
20 long-term issuer ratings from S&P of A (Outlook: Negative), Moody's Investors Service  
21 ("Moody's") of A2 (Outlook: Stable), and FitchRatings ("Fitch") of A (Outlook: Stable).<sup>31</sup>

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<sup>30</sup> Sempra Energy 2021 SEC Form 10-K at 15.

<sup>31</sup> *Id.* at 78.

1 **Q. Please describe the specific screening criteria you have utilized to select a proxy**  
2 **group.**

3 A. I began with the ten investor-owned domestic natural gas distribution companies covered  
4 by Value Line and then screened companies according to the following criteria:

- 5 1. Consistently pays quarterly cash dividends;
- 6 2. Maintains an investment grade long-term issuer rating (BBB- or higher) from  
7 S&P;
- 8 3. Is covered by more than one equity analyst;
- 9 4. Has positive earnings growth rates published by at least two of the following  
10 sources: Value Line, Thomson First Call (as reported by Yahoo! Finance), and  
11 Zack's Investment Research ("Zacks");
- 12 5. Regulated net operating income makes up more than 60percent of the  
13 consolidated company's revenue and net operating income (based on a 3-year  
14 average from 2018-2020);
- 15 6. Natural gas distribution net operating income makes up more than 60 percent of  
16 the consolidated company's regulated revenue and net operating income (based  
17 on a 3-year average from 2018-2020); and
- 18 7. Is not involved in a merger or other transformative transaction for an approximate  
19 six-month period prior to my analysis.

20 **Q. What is the composition of your resulting proxy group?**

21 A. Based on the screening criteria discussed above, I arrived at a proxy group consisting of  
22 the companies shown in Figure 8. The results of my screening process are shown in Exhibit  
23 JMC-3.



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**Figure 8: Proxy Group**

<b>Company</b>	<b>Ticker</b>
Atmos Energy Corporation	ATO
New Jersey Resources Corporation	NJR
NiSource Inc.	NI
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
Spire, Inc.	SR

**Q. Do your screening criteria result in a group of companies that investors would view as comparable to SoCalGas?**

A. Yes. I have selected this group of natural gas utilities to best align with the financial and operational characteristics of SoCalGas. The proxy group screening criterion requiring an investment grade credit rating ensures that the proxy group companies, like SoCalGas, are in sound financial condition. Additionally, I have screened on the percent of revenue and net operating income from regulated operations to differentiate between utilities that are protected by regulation and those with substantial unregulated operations or market-related risks. The proxy group also includes companies with substantial natural gas operations. These screens collectively reflect key risk factors that investors consider in making investments in natural gas utilities.

**Q. What is your conclusion with regard to the proxy group for SoCalGas?**

A. My conclusion is that my group of six natural gas utilities adequately reflects the broad set of risks that investors consider when investing in a U.S. regulated natural gas utility such as SoCalGas. Later in my testimony, I will evaluate whether an adjustment should be made

1 to the results of my ROE analyses to account for differences in SoCalGas' company-  
2 specific risks relative to the proxy group companies.

3  
4 **VI. DETERMINATION OF THE APPROPRIATE COST OF EQUITY**

5 **Q. What models did you use in your ROE analyses?**

6 A. I have utilized four ROE estimation models: the Constant Growth DCF, the CAPM, the  
7 Bond Yield Plus Risk Premium, and Expected Earnings. The following describes each of  
8 the models and inputs I have utilized to estimate SoCalGas' cost of equity.

9 **A. Constant Growth DCF Model**

10 **Q. Please describe the DCF approach.**

11 A. The DCF approach is based on the theory that a stock's current price represents the present  
12 value of all expected future cash flows. In its simplest form, the DCF model expresses the  
13 ROE as the sum of the expected dividend yield and long-term growth rate:

$$k = \frac{D(1+g)}{P_0} + g \quad [1]$$

14  
15 Where "k" equals the required return, "D" is the current dividend, "g" is the expected  
16 growth rate, and "P" represents the subject company's stock price.

17 Assuming a constant growth rate in dividends, the model may be rearranged to compute  
18 the ROE accordingly, as shown in Formula [2]:

$$r = \frac{D}{P} + g \quad [2]$$

19  
20 Stated in this manner, the cost of common equity is equal to the dividend yield plus the  
21 dividend growth rate.

1 **Q. What are the assumptions underlying the Constant Growth DCF model?**

2 A. The Constant Growth DCF model is based on the following assumptions: (1) a constant  
3 average growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a  
4 constant price-to-earnings multiple; and (4) a discount rate greater than the expected  
5 growth rate.

6 **Q. Please summarize your application of the Constant Growth DCF model.**

7 A. I calculated DCF results for each of the proxy group companies using the following inputs:

- 8 1. Average stock prices for the historical period, over 30-, 90-, and 180-trading  
9 days through February 28, 2022;
- 10 2. Annualized dividend per share as of February 28, 2022; and
- 11 3. Company-specific earnings growth forecasts for the term g.

12 My application of the Constant Growth DCF model is provided in Exhibit JMC-4.

13 **Q. Why did you use averaging periods of 30, 90, and 180 trading days?**

14 A. It is important to use an average of recent trading days to calculate the term P in the DCF  
15 model to ensure that the calculated ROE is not skewed by anomalous events that may affect  
16 stock prices on any given trading day. At the same time, it is important to reflect the  
17 conditions that have defined the financial markets over the recent past. In my view,  
18 consideration of those three averaging periods reasonably balances these interests.

19 **Q. Did you adjust the dividend yield to account for periodic growth in dividends?**

20 A. Yes, I did. Utility companies tend to increase their quarterly dividends at different times  
21 throughout the year, so it is reasonable to assume that such increases will be evenly  
22 distributed over calendar quarters. Given that assumption, it is reasonable to apply one-

1 half of the expected annual dividend growth rate for the purposes of calculating this  
2 component of the DCF model. This adjustment ensures that the expected dividend yield is  
3 representative of the coming 12-month period. Accordingly, the DCF estimates reflect  
4 one-half of the expected growth in the dividend yield.<sup>32</sup>

5 **Q. What sources of growth have you used in your DCF analysis?**

6 A. I have used the consensus analyst five-year growth estimates in earnings per share (“EPS”)  
7 from Thomson First Call and Zacks, as well as EPS growth rate estimates published by  
8 Value Line.

9 **Q. Why did you focus on earnings per share growth?**

10 A. The Constant Growth DCF model assumes that dividends grow at a constant rate in  
11 perpetuity. Accordingly, in order to reduce the long-term growth rate to a single measure,  
12 one must assume a constant payout ratio, and that earnings per share, dividends per share,  
13 and book value per share all grow at the same constant rate. Over the long term, however,  
14 dividend growth can only be sustained by earnings growth. As noted by Brigham and  
15 Houston in their text, *Fundamentals of Financial Management*: “Growth in dividends  
16 occurs primarily as a result of growth in *earnings per share* (EPS).”<sup>33</sup> It is therefore  
17 important to focus on measures of long-term earnings growth from credible sources as an  
18 appropriate measure of long-term growth in the DCF model.

---

<sup>32</sup> The expected dividend yield is calculated as  $d_1 = d_0 (1 + \frac{1}{2} g)$ .

<sup>33</sup> Eugene F. Brigham and Joel F. Houston, *Fundamentals of Financial Management* (Concise Fourth Edition, Thomson South-Western), at 317 (emphasis added).

1 **Q. Are other sources of dividend growth available to investors?**

2 A. Yes, although that does not mean that investors incorporate such estimates into their  
3 investment decisions. Academic studies suggest that investors base their investment  
4 decisions on analysts' expectations of growth in earnings.<sup>34</sup> I am not aware of any similar  
5 findings regarding non-earnings-based growth estimates. In addition, the only forward-  
6 looking growth rates that are available on a consensus basis are analysts' EPS growth rates.  
7 The fact that earnings growth projections are the only widely-accepted estimates of growth  
8 provides further support that earnings growth is the most meaningful measure of growth  
9 among the investment community.

10 **Q. What are the results of your Constant Growth DCF analysis?**

11 A. The results of my Constant Growth DCF analysis are provided in Exhibit JMC-4 and  
12 summarized in Figure 9.

13 **Figure 9: Constant Growth DCF Results**

	<b>Mean Low</b>	<b>Mean</b>	<b>Mean High</b>
30-day average	8.17%	9.65%	11.13%
90-day average	8.29%	9.76%	11.25%
180-day average	8.28%	9.76%	11.24%

14

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<sup>34</sup> See, e.g., Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts Growth Forecasts*, Financial Management, Summer 1992, at 65; and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management, Spring 1988, at 81. Please note that while the original study was published in 1988, it was updated in 2004 under the direction of Dr. Vander Weide. The results of that updated study are consistent with Vander Weide and Carleton's original conclusions.

1 **Q. How did you calculate the Mean High, Mean Low, and Overall Mean DCF results?**

2 A. I calculated the Mean High DCF result using the maximum growth rate (*i.e.*, the maximum  
3 of the First Call, Value Line, and Zacks EPS growth rates) in combination with the  
4 expected dividend yield for each of the proxy group companies. I used a similar method  
5 to calculate the Mean Low DCF results, using the minimum growth rate for each company.  
6 The Mean results reflect the average growth rate from each source for each company in  
7 combination with the expected dividend yield.

8 **Q. What is your conclusion regarding the results of the DCF model?**

9 A. My primary conclusion is that the results of the DCF model likely understate the cost of  
10 equity for utilities under current market conditions. While the DCF continues to be used  
11 by investors and regulators, the reliability of the DCF model has been subject to increasing  
12 scrutiny over the past decade emphasizing the importance of using multiple models.<sup>35</sup>  
13 Consequently, in an investment environment dominated by volatility and uncertainty, it is  
14 necessary to also consider the results of Risk Premium models, such as the CAPM and  
15 Bond Yield Risk Premium analysis (consistent with FERC's approach). I also include the  
16 Expected Earnings model in order to determine where to set the appropriate return. These  
17 models rely on market data and analyst inputs that mitigate the problems associated with  
18 the DCF method.

19  

---

<sup>35</sup> See D.19-12-056 (noting that the CPUC reviews multiple models to consider ROE).

1        **B.     CAPM Analysis**

2        **Q.     Please briefly describe the general form of the Capital Asset Pricing Model.**

3        A.     The CAPM is a risk premium approach that estimates the cost of equity for a given security  
4        as a function of a risk-free return plus a risk premium (to compensate investors for the non-  
5        diversifiable or “systematic” risk of that security).<sup>36</sup> As shown in Equation [3], the CAPM  
6        is defined by four components, each of which must theoretically be a forward-looking  
7        estimate:

8                    
$$K_e = r_f + \beta(r_m - r_f) \quad [3]$$

9        where:

10                    $K_e$  = the required ROE for a given security;

11                    $r_f$  = the risk-free rate of return;

12                    $\beta$  = the Beta of an individual security; and

13                    $r_m$  = the required return for the market as a whole.

14        The term  $(r_m - r_f)$  represents the Market Risk Premium (“MRP”). According to the theory  
15        underlying the CAPM, since unsystematic risk can be diversified away, investors should  
16        be concerned only with systematic or non-diversifiable risk. Non-diversifiable risk is  
17        measured by Beta, which is defined as:

18                   
$$\beta = \frac{\text{Covariance}(r_e, r_m)}{\text{Variance}(r_m)} \quad [4]$$

19        where:

20                    $r_e$  = the rate of return for the individual security or portfolio.

---

<sup>36</sup> Systematic risks are fundamental market risks that reflect aggregate economic measures and therefore cannot be mitigated through diversification. Unsystematic risks reflect company-specific risks that can be mitigated and ultimately eliminated through investments in a portfolio of companies and/or market sectors.

1 The variance of the market return, noted in Equation [4], is a measure of the uncertainty of  
2 the general market, and the covariance between the return on a specific security and the  
3 market reflects the extent to which the return on that security will respond to a given change  
4 in the market return. Thus, Beta represents the risk that the selected security will not be  
5 effective in diversifying systematic market risks.

6 **Q. Have economic and financial market conditions also affected the CAPM?**

7 A. Yes. Given the extraordinarily low level of interest rates on Treasury bonds as compared  
8 to historical levels, using current or even near-term projections of government bond yields  
9 would distort market expectations for a reasonable risk-free rate. Using the 5-year forecast  
10 of bond yields helps alleviate these short-term market factors affecting the risk-free rate,  
11 or “ $r_f$ ” in the CAPM formula. As discussed in Section IV, interest rates have increased in  
12 recent months and are expected to continue to increase as the economy recovers from the  
13 effects of the COVID-19 pandemic and the Federal Reserve raises the federal funds rate.  
14 Further, due to the fiscal and monetary stimulus provided to the U.S. economy in recent  
15 months, inflation risk is elevated. It is also important to recognize that SoCalGas is  
16 financing long-lived assets, and the cost of capital should be forward looking to reflect that  
17 perspective.

18 **Q. What risk-free rate did you use in your CAPM analysis?**

19 A. Since both the CAPM and Risk Premium models assume long-term investment horizons, I  
20 used the Blue Chip forecast of the yield on 30-year Treasury bonds for 2023-2027 of 3.40  
21 percent as my estimate of the risk-free rate.<sup>37</sup> That time period reflects a forward-looking

---

<sup>37</sup> Blue Chip Financial Forecasts, Volume 40, No. 12, December 1, 2021, at 14.





1 Financial Forecasts is widely relied on by investors and provides a useful  
2 proxy for investor expectations for the risk-free rate.<sup>39</sup>

3 **Q. What measures of Beta did you use in your CAPM analysis?**

4 A. As shown in Exhibit JMC-5.2, I considered two measures of Beta for the proxy group  
5 companies: (1) the reported Beta coefficients from Bloomberg (which are calculated using  
6 five years of weekly data against the S&P 500 Index); and (2) the reported Beta coefficients  
7 from Value Line (which are calculated using five years of weekly data against the New  
8 York Stock Exchange Composite Index). Beta coefficients for utilities have increased  
9 substantially since January 2020, as utilities have traded more like the broader market.  
10 However, it is important to emphasize that Beta coefficients are calculated over a five-year  
11 period, so this recent increase is not a short-term market phenomenon. The recent  
12 movement in betas captures a trend that began five years ago, but has been accelerated by  
13 the recent market conditions. The substantial increase in Beta coefficients for the proxy  
14 group companies represents a significant departure from how investors have typically  
15 viewed utilities relative to the broader market and is not just COVID-19 related.

16 **Q. What Market Risk Premium did you use in your CAPM analysis?**

17 A. I used the Constant Growth DCF model to estimate the total market return for the S&P 500  
18 Index, using projected earnings growth rates and dividend yields from three sources: (1)  
19 S&P's Earnings and Estimates report; (2) Bloomberg Professional; and (3) Value Line.  
20 Using the DCF model for a broad-based total market return mitigates the challenges  
21 specific to the utilities sector. As of February 28, 2022, the average total market return

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<sup>39</sup> D.P.U. 17-05 Petition of NSTAR Electric Company and Western Massachusetts Electric Company, each doing business as Eversource Energy, Pursuant to G.L. c. 164, § 94 and 220 CMR 5.00 et seq., for Approval of General Increases in Base Distribution Rates for Electric Service and a Performance Based Ratemaking Mechanism, November 30, 2017, at 693.

1 from these three sources is 15.98 percent, as shown in Figure 10 (also see Exhibit JMC-  
2 5.1). Recognizing S&P's estimates are higher than the others, I relied only on the DCF  
3 approach using earnings growth rates estimates from Bloomberg and Value Line, which  
4 results in an estimated expected market return of 15.62 percent.

5 **Figure 10: Total Market Return**

Source	Market Return
S&P Earnings & Estimates	16.69%
Bloomberg Professional	15.08%
Value Line	16.17%
Average – All Methods	15.98%

6 I then calculated the MRP by subtracting the risk-free rate (based on the current 30-year  
7 Treasury bond yield of 2.20 percent, or the 5-year forecast of the 30-year Treasury bond of  
8 3.40 percent) from the total market return. My calculation as shown in Exhibit JMC-5.2  
9 yielded a forward looking “ex-ante” MRP of 12.22 percent to 13.43 percent.

10  
11 The CAPM is inherently a forward-looking model since it is designed to estimate investors’  
12 required equity return expectations. The MRP should, therefore, reflect investors’  
13 expected equity market returns relative to expected returns on Treasury securities. While  
14 these return expectations may be informed by history, they should primarily reflect  
15 forward-looking return expectations.

1 **Q. What are the results of your CAPM analyses?**

2 A. Using the MRP as calculated above, and the projected risk-free rate, I now have the  
3 required market return (R<sub>m</sub>) input to equation [3] and can solve the CAPM model. As  
4 shown in Exhibit JMC-5.2, the CAPM results are 13.79 percent (using Value Line Betas)  
5 and 13.45 percent (using Bloomberg Betas), or an average of 13.62 percent. Applying the  
6 30-day average yield on 30-year Treasury bonds, the CAPM results are 13.61 percent  
7 (using Value Line Betas) and 13.24 percent (using Bloomberg Betas), or an average of  
8 13.43 percent.

9 **Q. What is your conclusion regarding the results of the CAPM approach?**

10 A. The results of the CAPM model are appreciably higher than the results from the other  
11 models, driven by market factors affecting all three of the model's inputs: higher interest  
12 rates, higher betas, and higher expectations for overall market equity returns. While I do  
13 not discount these factors, these results further reinforce the benefit of balance found in  
14 multiple models.

15

16 **C. Risk Premium Analysis**

17 **Q. Please describe the Risk Premium approach that you used.**

18 A. I use an approach similar to that adopted by FERC. In general terms, this approach  
19 recognizes that equity is riskier than debt because equity investors bear the residual risk  
20 associated with ownership. Equity investors, therefore, require a greater return (*i.e.*, a  
21 premium) than would a bondholder. The Risk Premium approach estimates the cost of  
22 equity as the sum of the Equity Risk Premium and the yield on a particular class of bonds.

23 
$$ROE = RP + Y \quad [5]$$

1 Where:

2  $RP$  = Risk Premium (difference between allowed ROE and the 30-Year Treasury  
3 Yield) and

4  $Y$  = Applicable bond yield.

5 Since the equity risk premium is not directly observable, it is typically estimated using a  
6 variety of approaches, some of which incorporate *ex-ante*, or forward-looking, estimates  
7 of the cost of equity and others that consider historical, or *ex-post*, estimates. For my Risk  
8 Premium analysis, I have relied on authorized returns from a large sample of natural gas  
9 utilities.

10 **Q. What did your Risk Premium analysis reveal?**

11 A. To estimate the relationship between risk premia and interest rates, I conducted a  
12 regression analysis using the following equation:

13 
$$RP = a + (b \times Y) \quad [6]$$

14 where:

15  $RP$  = Risk Premium (difference between allowed ROEs and the 30-Year Treasury  
16 Yield);

17  $a$  = Intercept term;

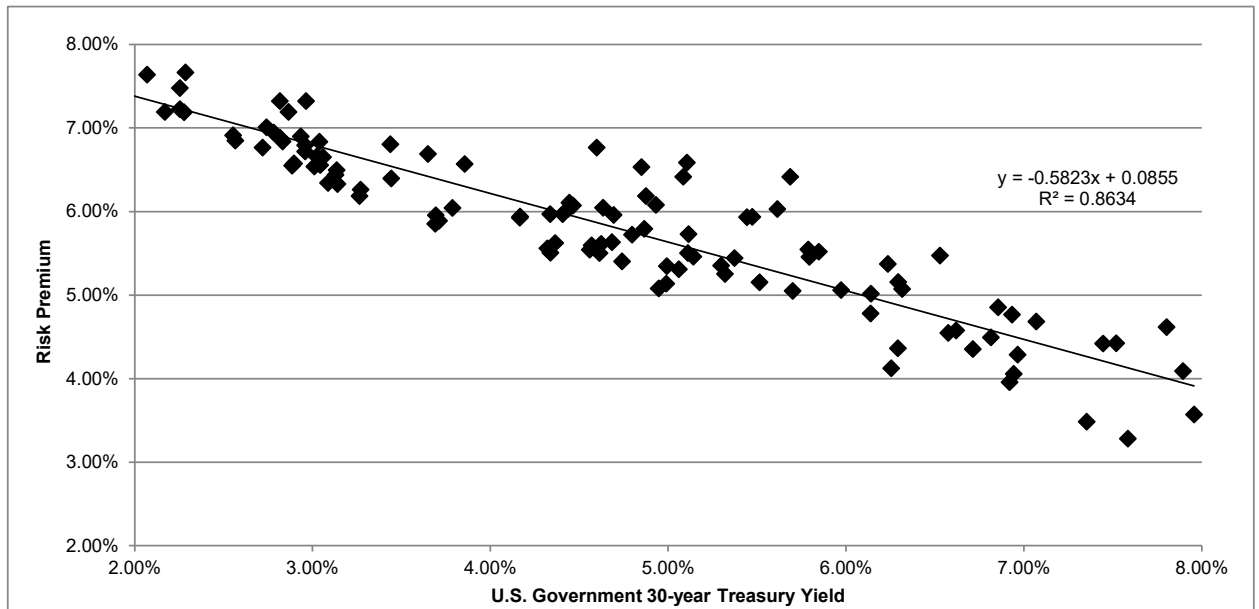
18  $b$  = Slope term; and

19  $Y$  = 30-Year Treasury Yield.

20 Data regarding allowed ROEs were derived from natural gas utility company rate cases  
21 from January 1, 1992 through February 28, 2022, as reported by Regulatory Research  
22 Associates.

1

**Figure 11: Risk Premium Results – Natural Gas Utilities**



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As illustrated by Figure 11 (above), the risk premium varies with the level of bond yield, and generally increases as the bond yields decrease, and vice versa. In order to apply this relationship to current and expected bond yields, I consider three estimates of the 30-year Treasury yield, including the current 30-day average, a near-term Blue Chip consensus forecast for Q2 2022 – Q2 2023, and a Blue Chip consensus forecast for 2023–2027. I find this 5-year result to be most applicable for the following reasons: (1) investors are expecting increases in government bond yields; (2) investors typically have a multi-year view of their required returns on equity; and (3) SoCalGas’ capital expenditure plan requires that the Company continue to be able to attract capital on reasonable terms and conditions. Based on the regression coefficients in Exhibit JMC-6, which allow for the estimation of the risk premium at varying bond yields, the results of my Risk Premium analysis are shown in Figure 12.

1 **Figure 12: Risk Premium Results Using 30-Year Treasury Yield**

	<b>Using 30-Day Average Yield on 30-Year Treasury Bond</b>	<b>Using Q2 2022–Q2 2023 Forecast for Yield on 30-Year Treasury Bond<sup>40</sup></b>	<b>Using 2023-2027 Forecast for Yield 30-Year Treasury Bond<sup>41</sup></b>
<i>Natural Gas Utilities</i>			
Yield	2.20%	2.74%	3.40%
Risk Premium	7.27%	6.95%	6.57%
Resulting ROE	9.47%	9.69%	9.97%

2

3 **Q. What is your conclusion regarding the results of the Risk Premium model?**

4 A. I believe the Risk Premium model provides an important perspective on the primary  
5 relationship between the risk-free rate and utility authorized ROEs over a variety of  
6 financial and economic cycles. This is particularly important today given the anticipated  
7 shift from a very low interest rate environment to one of higher rates, and this impact can  
8 be captured directly in the model.

9 **D. Expected Earning Analysis**

10 **Q. Have you conducted any other analysis to estimate the cost of equity for SoCalGas?**

11 A. Yes. I have also conducted an Expected Earnings analysis to estimate the cost of equity  
12 for SoCalGas based on the projected ROEs for the proxy group companies.

<sup>40</sup> Blue Chip Financial Forecasts, Vol. 41, No. 3, March 1, 2022, at 2

<sup>41</sup> Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2020, at 14.

1 **Q. What is an Expected Earnings Analysis?**

2 A. The Expected Earnings methodology is a comparable earnings analysis that calculates the  
3 earnings that an investor expects to receive on the book value of a stock. The Expected  
4 Earnings analysis is a forward-looking estimate of investors' expected returns. The use of  
5 an Expected Earnings approach based on the proxy companies provides a range of the  
6 expected returns on a group of risk-comparable companies to the subject company. This  
7 range is useful in helping to determine the opportunity cost of investing in the subject  
8 company, which is relevant in determining a company's ROE.

9  
10 The Expected Earnings approach relying on expected returns for like-risk companies is a  
11 core strength of the model and consistent with the basic tenets of *Hope*: "the return to the  
12 equity owner should be commensurate with returns on investments in other enterprises  
13 having corresponding risks." Since the Expected Earnings model provides an accounting-  
14 based approach that relies on investment analysts' projections of earnings on book equity,  
15 it affords the benefit of analyst insights, knowledge and expertise in interpreting a given  
16 company's earnings prospects in the context of current market conditions.

17 **Q. How is the Expected Earnings Approach calculated?**

18 A. I relied primarily on the projected ROE for the proxy companies as reported by Value Line  
19 for the period from 2024-2026. I then adjusted those projected ROEs to account for the  
20 fact that the ROEs reported by Value Line are calculated on the basis of common shares  
21 outstanding at the end of the period, as opposed to average shares outstanding over the  
22 entire period. As shown in Exhibit JMC-7, the Expected Earnings analysis results in a  
23 mean of 9.77 percent and a median of 8.89 percent.



1 **Q. What is your conclusion regarding the results of the Expected Earnings model?**

2 A. The model captures investor expectations for ROEs for each company in the proxy group  
3 as estimated by impartial analysts. This is a valuable tool given the objective to measure  
4 required returns for SoCalGas. It is reasonable to assume that investors would require  
5 returns from investment in SoCalGas similar to those they could earn in comparable  
6 investments, so these results are informative.

7 **E. Evaluating Model Results**

8 **Q. Please explain how you have considered the results of the DCF, CAPM, Risk  
9 Premium and Expected Earnings analysis to arrive at your ROE recommendation.**

10 A. As shown in Figure 13, I have considered the results of the DCF, CAPM, Bond Yield Plus  
11 Risk Premium, and Expected Earnings analyses. While I would typically rely on the results  
12 of analyses using projected interest rates, especially given the current capital market  
13 environment and the prospect for inflationary pressures in the near future, I considered the  
14 range using both current and projected interest rates.

15 **Figure 13: Base ROE Results**

	<b>Model Results (Current Interest Rates)</b>	<b>Model Results (Projected Interest Rates)</b>
DCF	9.72%	9.72%
CAPM	13.43%	13.62%
Risk Premium	9.47%	9.97%
Expected Earnings	9.77%	9.77%
Range	9.47% – 13.43%	9.72% – 13.62%
Average ROE	10.60%	10.77%

16

1 As discussed in the next Section of my testimony, these mean estimates serve as a base  
2 ROE prior to consideration of relative business and financial risks.

3  
4 **VII. BUSINESS AND FINANCIAL RISKS**

5 **Q. Are there factors specific to SoCalGas' risk profile that you also considered in**  
6 **developing your ROE recommendation?**

7 A. Yes, there are several factors that have a direct bearing on SoCalGas' risk profile in relation  
8 to the proxy group. Those risk factors include: (1) the Company's substantial capital  
9 expenditure program; (2) California's clean energy mandates; and (3) regulatory risk  
10 relative to the proxy group companies. In aggregate, those risk factors elevate SoCalGas'  
11 risk profile relative to the proxy group and would support an authorized ROE above the  
12 mean, although I have not made an explicit adjustment.

13 **A. Capital Expenditure Program**

14 **Q. Please discuss SoCalGas' capital spending program.**

15 A. The Company plans a major capital investment program over the 2022-2026 period,  
16 totaling approximately \$9.8 billion, which will result in an unprecedented increase in the  
17 Company's invested plant, focused on continued enhancements in operational safety and  
18 reliability, and modernization of energy networks with a focus on climate resiliency. As  
19 with any utility facing substantial capital expenditure requirements, the Company's risk  
20 profile is affected in two significant and related ways: (1) the heightened level of  
21 investment increases the risk of under recovery or delayed recovery of the invested capital;  
22 and (2) an inadequate return would put downward pressure on key credit metrics. The  
23 absolute level of investment required will put significant pressure on the Company's credit

1 metrics and its ability to raise capital. The terms under which the Company is able to raise  
2 capital will have lasting impacts for the Company’s customers.

3 **Q. Do credit rating agencies recognize the risks associated with elevated levels of**  
4 **capital expenditures?**

5 A. Yes. From a credit perspective, the additional pressure on cash flows associated with  
6 higher levels of capital expenditures exerts corresponding pressure on credit metrics and,  
7 therefore, credit ratings. To that point, S&P explains the importance of regulatory  
8 support for large capital projects:

9 When applicable, a jurisdiction’s willingness to support large capital  
10 projects with cash during construction is an important aspect of our analysis.  
11 This is especially true when the project represents a major addition to rate  
12 base and entails long lead times and technological risks that make it  
13 susceptible to construction delays. Broad support for all capital spending is  
14 the most credit-sustaining. Support for only specific types of capital  
15 spending, such as specific environmental projects or system integrity plans,  
16 is less so, but still favorable for creditors. Allowance of a cash return on  
17 construction work-in-progress or similar ratemaking methods historically  
18 were extraordinary measures for use in unusual circumstances, but when  
19 construction costs are rising, cash flow support could be crucial to maintain  
20 credit quality through the spending program. Even more favorable are those  
21 jurisdictions that present an opportunity for a higher return on capital  
22 projects as an incentive to investors.<sup>42</sup>

23 With regard to SoCalGas’ credit profile, S&P acknowledged that due to “robust capital  
24 spending, we expect negative discretionary cash flow, necessitating consistent access to  
25 the capital markets.”<sup>43</sup> Therefore, to the extent that SoCalGas’ rates do not permit the  
26 Company an opportunity to recover its full cost of doing business, SoCalGas will face

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<sup>42</sup> S&P Global Ratings, *Assessing U.S. Investor-Owned Utility Regulatory Environments* (August 10, 2016) at 7, available at:

<https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/12143406>

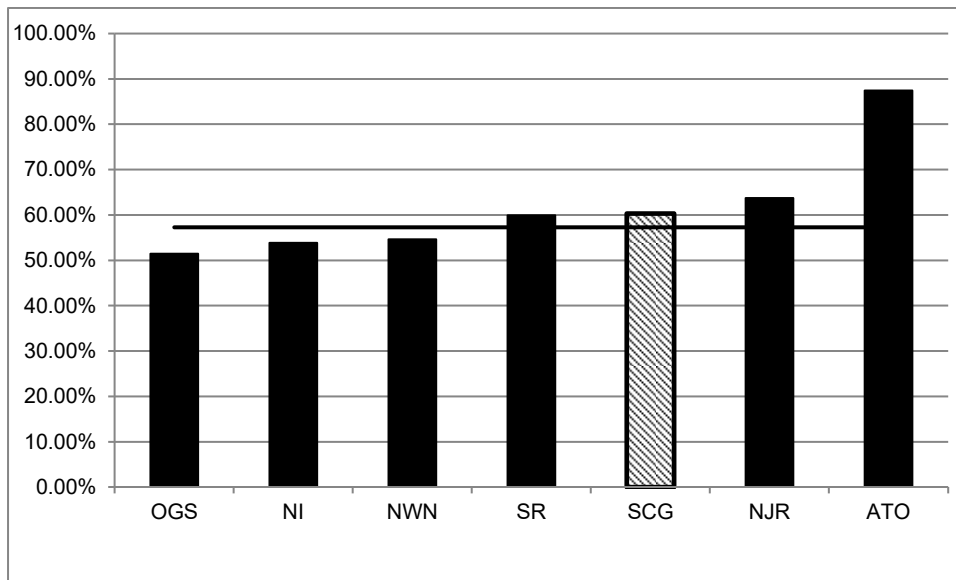
<sup>43</sup> S&P Global Ratings, *Southern California Gas Co.* (May 14, 2021) at 6.

1 increased recovery risk and thus increased pressure on its credit metrics. Maintaining  
2 access to capital markets on favorable terms is especially important for utilities and their  
3 customers, during periods of significant capital investment.

4 **Q. Have you analyzed how SoCalGas' capital spending program compares to those of**  
5 **the proxy group companies?**

6 A. Yes. I compared the ratio of projected capital expenditures to net utility plant for SoCalGas  
7 to the ratios for the proxy group companies. Figure 14 shows that SoCalGas' ratio of  
8 projected capital expenditures to net utility plant is nominally higher than the median ratio  
9 for the proxy group of approximately 57 percent.

10 **Figure 14: Ratio of 2022-26 Capital Expenditures to 2021 Net Utility Plant**



11  
12 **Q. What is your conclusion regarding how SoCalGas' projected capital expenditure**  
13 **program affects the Company's risk profile and cost of equity?**

14 A. My primary conclusion is that SoCalGas is projecting a substantial capital spending  
15 program through 2026 that will require the Company to maintain access to capital markets

1 on favorable terms and conditions. SoCalGas' ratio of capital expenditure requirements to  
2 net utility plant is consistent with the ratios for the proxy group average, and the absolute  
3 magnitude of SoCalGas' capital program places pressure on the Company's cash flows and  
4 credit metrics. For these reasons, it is important that the authorized ROE be set at a level  
5 that allows SoCalGas to continue to attract both debt and equity under favorable terms  
6 under a variety of economic and financial market conditions.

7 **B. Environmental and Clean Energy Mandates**

8 **Q. Please describe the environmental mandates that will be required by SoCalGas to**  
9 **achieve California's clean energy goals.**

10 A. Assembly Bill 100 ("AB 32") the California Global Warming Solutions Act of 2006,  
11 assigned responsibility to the California Air Resources Board ("CARB") for monitoring  
12 and establishing policies for reducing greenhouse gas ("GHG") emissions, including a  
13 comprehensive plan for achieving quantifiable GHG emissions reductions. CARB's plans  
14 propose that some conventional natural gas be displaced with above-market renewable  
15 natural gas, which could result in increased costs that may not be fully recoverable in rates.  
16 Further, CARB is currently considering updates to its GHG reduction plans that could  
17 reduce natural gas demand. In addition, Senate Bill 1440 ("SB 1440") was passed in 2018  
18 and requires the Commission to consider adopting Renewable Natural Gas ("RNG") targets  
19 for natural gas utilities. The Commission issued its decision implementing SB 1440 in  
20 February 2022 and requires SoCalGas to develop a Renewable Gas Procurement Plan  
21 requiring the Company to replace 12.2 percent of the traditional gas it delivers to core

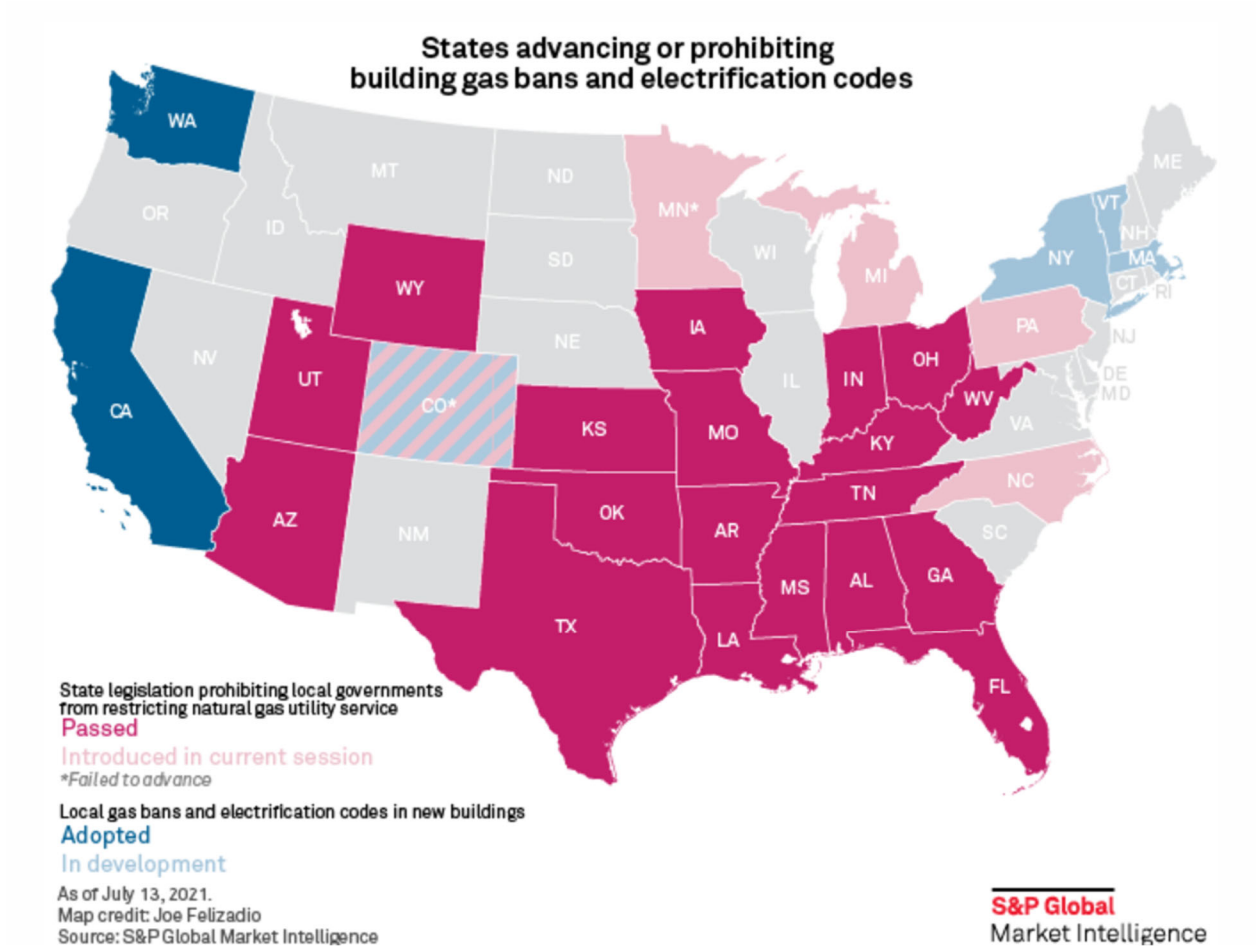
1 customers with renewable gas by 2030 and an interim goal of procuring approximately 3  
2 percent renewable gas by 2025.

3  
4 In addition, legislators and other stakeholder groups have expressed a desire to further limit  
5 or eliminate reliance on natural gas as an energy source by advocating increased use of  
6 renewable electricity and electrification in lieu of the use of natural gas. Certain California  
7 state agencies have recently proposed public policies that would restrict the use and  
8 consumption of natural gas, (*e.g.*, new buildings and appliances), and certain local city  
9 governments have passed ordinances restricting use of natural gas connections in newly  
10 constructed buildings. These proposals and ordinances and other similar regulatory actions  
11 would reduce natural gas use over time.

12  
13 Placing California in perspective, the map below shows the increasing divergence of state  
14 policies regarding the use of natural gas. California is one of two states where local gas  
15 bans and electrification codes in new buildings have been adopted. On the other hand,  
16 nineteen states have adopted laws that prohibit local governments from restricting natural  
17 gas utility service. This clearly places SoCal Gas at a disadvantage when it comes to future  
18 growth versus its U.S. peers.

1

Figure 15: State Energy Policy



2

3

4 **Q. Do the credit rating agencies recognize the risk associated with GHG reduction**  
5 **initiatives to SoCalGas?**

6 A. Yes. Moody’s has pointed to the carbon transition as a risk, observing “Our analysis also  
7 considers the significant demands that are placed on the California utilities, including many  
8 ambitious public policy initiatives on clean energy, efficiency, pipeline safety as well as  
9 methane leak reduction. California is experiencing growing opposition to natural gas and

1 the trend stands out as a credit negative for SoCalGas.”<sup>44</sup> Moody’s also points to the  
2 SoCalGas exposure to “to higher levels of scrutiny and the aggressive environmental  
3 policies in California,” as well as “growing opposition in California to natural gas.”<sup>45</sup> As  
4 such, I conclude that SoCalGas is exposed to a greater risk than the proxy group companies,  
5 on average, with respect to environmental and clean energy mandates.

6  
7 **C. Regulatory Risk**

8 **Q. Please explain how the regulatory framework affects investors’ risk assessments.**

9 A. The ratemaking process is premised on the principle that, for investors and companies to  
10 commit the capital needed to provide safe and reliable utility services, the utility must have  
11 the opportunity to recover invested capital and the market-required return on such capital.  
12 Regulatory commissions recognize that, because utility operations are capital intensive,  
13 regulatory decisions should enable the utility to attract capital at reasonable terms, thereby  
14 balancing the long-term interests of investors and customers. In that respect, the regulatory  
15 framework in which a utility operates is one of the most important factors in both debt and  
16 equity investors’ risk assessments. Because investors have many investment alternatives,  
17 even within a given market sector, the Company’s authorized return must be adequate on  
18 a relative basis to ensure its ability to attract capital under a variety of economic and  
19 financial market conditions.

---

<sup>44</sup> Moody’s Investors Service, “Southern California Gas Company, Update to credit analysis,” January 4, 2022, at 6.

<sup>45</sup> *Id.* at 8.



1 **Q. Please explain how credit rating agencies consider the regulatory framework in**  
2 **establishing a company’s credit rating.**

3 A. Moody’s and S&P both consider the overall regulatory framework in establishing credit  
4 ratings. Moody’s establishes credit ratings based on four key factors:

5 **Figure 16: Moody’s Rating Factors**

<b>Factor</b>	<b>Weighting</b>
Regulatory Framework	25%
Ability to Recover Costs and Earn Returns	25%
Diversification	10%
Financial Strength	40%
Total	100%

6  
7 Two of these factors (*i.e.*, regulatory framework and the ability to recover costs and earn  
8 returns) are based on the regulatory environment such that half of Moody’s overall  
9 assessment of business and financial risk for regulated utilities is based upon the regulatory  
10 environment.<sup>46</sup> Moody’s further subdivides the first two factors, Regulatory Framework  
11 and the Ability to Recover Costs and Earn Returns, into sub-factors to help “provide more  
12 granularity and transparency on the overall regulatory environment, which is the most  
13 important consideration for this sector.”<sup>47</sup> Similarly, S&P has identified the regulatory  
14 environment as an important factor, stating, “we believe the fundamental regulatory  
15 environment in the jurisdictions in which a utility operates often influence credit quality  
16 the most.”<sup>48</sup>

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<sup>46</sup> Moody’s Investor Service, Rating Methodology, Regulated Electric and Gas Utilities, December 23, 2013, at 6.

<sup>47</sup> *Id.* at 3.

<sup>48</sup> Standard & Poor’s, *Assessing U.S. Utility Regulatory Environments*, March 11, 2010, at 2.

1 **Q. Please explain the effect of regulatory risk on the Company’s ability to raise capital**  
2 **and the impact on customers.**

3 A. Given the robust capital spending plan, and the consequent need to raise capital, it is  
4 important that the Company be able to maintain access to the capital markets at reasonable  
5 rates. When Moody’s downgraded SoCalGas in May 2020, it observed “SoCalGas’  
6 downgrade reflects our view that the company is exposed to a regulatory environment that  
7 exhibits above average volatility with respect to support and therefore requires a stronger  
8 financial profile for its rating.”<sup>49</sup> In addition, Moody’s observes “We view California as  
9 having higher political risk than most jurisdictions in the US. California's utilities tend to  
10 receive a higher level of scrutiny from both the media and public and issues can quickly  
11 become contentious and litigious. We observe a higher level of disallowances,  
12 impairments, fines and penalties compared to other jurisdictions in the US.”<sup>50</sup> In other  
13 states, the regulatory environment and political risks have come into increased focus for  
14 investors. For example, in New York, several of the state’s operating utilities have  
15 experienced an erosion in credit metrics, and received credit rating downgrades. Figure 17  
16 below summarizes the recent credit ratings actions by Moody’s on New York utilities.

---

<sup>49</sup> Moody’s Investors Service, “Rating Action: Moody’s downgrades Southern California Gas Company to A2 from A1; stable outlook,” May 29, 2020.

<sup>50</sup> Moody’s Investors Service, “Southern California Gas Company, Update to credit analysis,” January 4, 2022, at 6.

1 **Figure 17: Moody’s Rating Actions on New York Utilities**<sup>51</sup>

<b>Credit Action</b>	<b>Date</b>
Brooklyn Union Gas (“KEDNY”) and KeySpan Gas East (“KEDLI”) - put on review for downgrade	November 2019
KEDNY and KEDLI - ratings confirmed with negative outlooks	December 2019
Consolidated Edison, Inc. (“ConEd”), Consolidated Edison Company of New York, Inc. (“CECONY”) and Orange and Rockland Utilities (“O&R”)	December 2019
ConEd and CECONY downgraded	March 2020
Niagara Mohawk - negative outlook	June 2020
KEDNY - review for downgrade	August 2020
New York State Electric & Gas and Rochester Gas and Electric - negative outlooks	September 2020
Central Hudson Gas & Electric - negative outlook	October 2020
KEDNY - downgraded to Baa1	November 2020

2 Declining credit ratings will increase costs to customers by increasing the cost of debt as  
3 the New York utilities continue to raise capital to support their capital programs. As  
4 discussed above, the Company’s capital expenditure program is designed to benefit and  
5 deliver value for customers. However, given the significant level of planned capital  
6 expenditures, any increases in borrowing costs could have a significant effect on the costs  
7 to customers.

8 **Q. Have you performed an analysis of the regulatory mechanisms for SoCalGas as**  
9 **compared to those for the proxy group companies?**

10 A. Yes. I have conducted an analysis of the regulatory mechanisms that are in place for  
11 SoCalGas compared with those for the operating utility companies held by the proxy group.  
12 The results of my analysis are presented in Exhibit JMC-9. Specifically, I examined the

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<sup>51</sup> Moody’s Investors Service, “Latest political intervention into regulatory oversight is credit negative for New York utilities,” November 13, 2020, at 1.

1 following factors that affect the regulatory risk of SoCalGas and the proxy group  
2 companies: (1) test year convention; (2) rate base convention; (3) revenue decoupling; (4)  
3 and capital cost recovery.

4  
5 While SoCalGas has a number of regulatory balancing accounts, it is instructive to look at  
6 the overall regulatory cost recovery mechanisms available to the proxy companies when  
7 evaluating the regulatory risk of the subject company to the proxy group. As shown in  
8 Exhibit JMC-9, 42 percent of the operating companies in the proxy group provide service  
9 in jurisdictions that allow the use of a fully or partially forecasted test year, which is  
10 effectively similar to SoCalGas' projected rate base for the forecasted test year.  
11 Approximately 54 percent of the operating companies in the proxy group use year-end rate  
12 base, which provides more timely cost recovery of capital investments, while 46 percent,  
13 like SoCalGas, use average rate base. SoCalGas is able to apply a true-up mechanism to  
14 mitigate volumetric risk through decoupling, consistent with approximately 88 percent of  
15 the operating companies held by the proxy group that have either full or partial revenue  
16 decoupling mechanisms that protect against volumetric risk. Approximately 75 percent of  
17 the operating utilities held by the proxy group companies have capital cost tracking  
18 mechanisms that allow them to recover capital investments between rate cases. While such  
19 tracking mechanisms can improve cash flow and predictability, Moody's has observed that  
20 tracking mechanisms "in the case of California, the benefits are often undermined by long  
21 and drawn out regulatory proceedings that result in significant regulatory lag."<sup>52</sup> Overall,

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<sup>52</sup> Moody's Investors Service, "Southern California Gas Company, Update to credit analysis," January 4, 2022, at 5.

1 from an investor perspective, the regulatory structures available to SoCalGas do not offer  
2 any level of risk mitigation that is meaningfully different from the proxy companies.

3 **Q. What are your conclusions regarding the perceived risks related to the California**  
4 **regulatory environment?**

5 A. As discussed throughout this section of my testimony, both Moody's and S&P have  
6 identified the supportiveness of the regulatory environment as an important consideration  
7 in developing their overall credit ratings for regulated utilities. As shown in Exhibit JMC-  
8 9, the proxy group companies have many of the cost recovery mechanisms that have been  
9 implemented by SoCalGas. Overall, S&P considers California's regulatory environment  
10 to be "More Credit Supportive,"<sup>53</sup> which is S&P's second-lowest ranking. Only one state  
11 is ranked lower (New Mexico is "Credit Supportive") in the most recent update from  
12 November 2021.<sup>54</sup> In addition, SoCalGas also faces uncertainty and risk associated with  
13 how the state will address the operations of natural gas utilities in its movement towards  
14 achieving net-zero carbon emissions. As such, SoCalGas faces a higher degree of  
15 regulatory and policy risk compared to the proxy companies.

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<sup>53</sup> S&P's rankings include: 1) Credit Supportive; 2) More credit supportive; 3) Very credit supportive;  
4) Highly credit supportive; and 5) most credit supportive.

<sup>54</sup> S&P Global Ratings, "Views On North American Utility Regulatory Jurisdictions May Foreshadow  
Future Credit Trends--November 2021," November 4, 2021, at 2.

1 **VIII. CAPITAL STRUCTURE**

2 **Q. What is SoCalGas' proposed capital structure?**

3 A. As discussed in SCG-02 (Arazi), SoCalGas is proposing a financial capital structure  
4 consisting of 54.0 percent common equity, 0.4 percent preferred equity, and 45.6 percent  
5 debt.

6 **Q. How have you assessed the reasonableness of SoCalGas' proposed capital structure**  
7 **with respect to the proxy group?**

8 A. The proxy group has been selected to reflect comparable companies in terms of business  
9 and financial risks. Therefore, it is appropriate to compare the financial capital structures  
10 of the proxy group companies to the financial capital structure proposed by SoCalGas in  
11 order to assess whether the Company's capital structure is reasonable and consistent with  
12 industry standards for companies with commensurate risk. I calculated the weighted  
13 average capital structures for each of the proxy group operating companies for the most  
14 recent year reported. Exhibit JMC-10 shows that the Company's proposed common equity  
15 ratio of 54.0 percent is within the range of actual common equity ratios of 47.44 percent to  
16 60.04 percent for the operating companies held by the proxy group over this period.

17 **Q. What is your conclusion regarding the appropriateness of SoCalGas' proposed**  
18 **capital structure in this proceeding?**

19 A. Based on the analysis presented in Exhibit JMC-10, my conclusion is that SoCalGas'  
20 proposed financial capital structure is reasonable. Sufficient equity in the capital structure  
21 is an important factor for maintaining SoCalGas' financial integrity and investment grade

1 credit rating and it is an essential component of SoCalGas' financial policies enabling  
2 access to capital on favorable terms in a variety of market circumstances.

3  
4 **IX. CONCLUSIONS**

5 **Q. What is your conclusion regarding a fair ROE for SoCalGas?**

6 A. Based on the quantitative analyses provided in my Direct Testimony, I have established a  
7 range of ROE results shown previously in Figure 13 (also see Exhibit JMC-2 for summary  
8 table). I consider a reasonable range of ROE for SoCalGas to be in the range 10.00 percent  
9 to 11.00 percent. In creating this range, I give weight to the results of the DCF, CAPM,  
10 Bond Yield Risk Premium and the Expected Earnings analysis. From within that range,  
11 and considering the Company's risk profile, I recommend an ROE of 10.75 percent as just  
12 and reasonable for SoCalGas. This is just below the mean of all four models using  
13 projected interest rates which I believe is appropriate, especially in the current market  
14 environment.

15 **Q. What is your recommendation with regard to the capital structure for SoCalGas in  
16 this proceeding?**

17 A. I support SoCalGas' actual financial capital structure of 54.0 percent common equity, 0.4  
18 percent preferred equity, and 45.6 percent long-term debt as reasonable relative to the  
19 range of capital structures for the operating companies held by the proxy group  
20 companies.

21 **Q. Does this conclude your direct testimony?**

22 A. Yes, it does.

**JMC-1**

**JAMES M. COYNE RESUME**



## **JAMES M. COYNE**

Senior Vice President

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Mr. Coyne provides financial, regulatory, strategic, and litigation support services to clients in the natural gas, power, and utilities industries. Drawing upon his industry and regulatory expertise, he regularly advises utilities, public agencies and investors on business strategies, investment evaluations, and matters pertaining to rate and regulatory policy. Prior to Concentric, Mr. Coyne worked in senior consulting positions focused on North American utilities industries, in corporate planning for an integrated energy company, and in regulatory and policy positions in Maine and Massachusetts. He has authored numerous articles on the energy industry and provided testimony and expert reports before federal, state and provincial jurisdictions in the U.S. and Canada. Mr. Coyne holds a B.S. in Business from Georgetown University and an M.S. in Resource Economics from the University of New Hampshire.

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### **AREAS OF EXPERTISE**

#### Energy Regulation

- Rate policy
- Cost of capital
- Incentive regulation
- Fuels and power markets

#### Management and Business Strategy

- Fuels and power market assessments
- Investment feasibility
- Corporate and business unit planning
- Benchmarking and productivity analysis

#### Financial and Economic Advisory

- Valuation analysis
- Due diligence
- Buy and sell-side advisory

#### Litigation Support and Expert Testimony

- Rate and regulatory policy
- Fuels and power markets
- Contract litigation
- Valuation and damages



## PROFESSIONAL HISTORY

### **Concentric Energy Advisors, Inc. (2006 – Present)**

Senior Vice President

Vice President

### **FTI Consulting (Lexecon) (2002 – 2006)**

Senior Managing Director – Energy Practice

### **Arthur Andersen LLP (2000 – 2002)**

Managing Director, Andersen Corporate Finance – Energy and Utilities

### **Navigant Consulting, Inc. (1996 – 2000)**

Managing Director, Financial Services Practice

Senior Vice President, Strategy Practice

### **TotalFinaElf (1990 – 1996)**

Manager, Corporate Planning and Development

Manager, Investor Relations

Manager of Strategic Planning and Vice President, Natural Gas Division

### **Arthur D. Little, Inc. (1989 – 1990)**

Senior Consultant – International Energy Practice

### **DRI/McGraw-Hill (1984 – 1989)**

Director, North American Natural Gas Consulting

Senior Economist, U.S. Electricity Service

### **Massachusetts Energy Facilities Siting Council (1982 – 1984)**

Senior Economist – Gas and Electric Utilities

### **Maine Office of Energy Resources (1981 – 1982)**

State Energy Economist

## EDUCATION

### **University of New Hampshire**

M.S., Resource Economics, *with honors*, 1981

### **Georgetown University**

B.S., Business Administration and Economics, *cum laude*, 1975

## DESIGNATIONS AND AFFILIATIONS

Community Rowing Inc., Board of Directors, 2015 - 2019

Georgetown University, Alumni Admissions Interviewer, 1988 – current

NASD General Securities Representative and Managing Principal (Series 7, 63 and 24 Certifications), 2001



American Petroleum Institute, CEO's Liaison to Management and Policy Committees, 1994-1996

National Petroleum Council, Regulatory and Policy Task Forces, 1992

President, International Association for Energy Economics, Dallas Chapter, 1995

Gas Research Institute, Economics Advisory Committee, 1990-1993

NARUC, Advanced Regulatory Studies Program, Michigan State University, 1984

## **PUBLICATIONS AND RESEARCH**

"Advancing FERC's Methodology for Determining Allowed ROEs for Electric Transmission Companies," submitted to FERC on behalf of EEI, James Coyne, Joshua Nowak and Julie Lieberman, May, 2020.

"Regulator Rationale for Ratepayer-Funded Electricity and Natural Gas Innovation", James M. Coyne, Robert C. Yardley, Jr. and Jessalyn G. Pryciak, Energy Regulation Quarterly, Volume 6, Issue 3, 2018.

"Stimulating Innovation on Behalf of Canada's Electricity and Natural Gas Consumers" (with Robert Yardley), prepared for the Canadian Gas Association and Canadian Electricity Association, May 2015.

"Autopilot Error: Why Similar U.S. and Canadian Risk Profiles Yield Varied Rate-making Results" (with John Trogonoski), Public Utilities Fortnightly, May 2010

"A Comparative Analysis of Return on Equity of Natural Gas Utilities" (with Dan Dane and Julie Lieberman), prepared for the Ontario Energy Board, June 2007

"Do Utilities Mergers Deliver?" (with Prescott Hartshorne), Public Utilities Fortnightly, June 2006

"Winners and Losers: Utility Strategy and Shareholder Return" (with Prescott Hartshorne), Public Utilities Fortnightly, October 2004

"Winners and Losers in Restructuring: Assessing Electric and Gas Company Financial Performance" (with Prescott Hartshorne), white paper distributed to clients and press, August 2003

"The New Generation Business," commissioned by the Electric Power Research Institute (EPRI) and distributed to EPRI members to contribute to a series on the changes in the Power Industry, December 2001

Potential for Natural Gas in the United States, Volume V, Regulatory and Policy Issues (co-author), National Petroleum Council, December 1992

"Natural Gas Outlook," articles on U.S. natural gas markets, published quarterly in the Data Resources Energy Review and Natural Gas Review, 1984-1989

## **SELECTED SPEAKING ENGAGEMENTS**

"Energy Sector in Transition", Ontario Energy Association, Toronto, ON, September 24, 2018.

"Understanding Regulated Utilities in Today's Capital Markets", NARUC Annual Meeting, La Quinta, CA, November 14, 2016.



“Rate of Return: Where the Regulatory Rubber Meets the Road,” CAMPUT Annual Conference, Montreal, Quebec, May 17, 2016.

“Innovations in Utility Business Models and Regulation”, The Canadian Association of Members of Public Utility Tribunals (CAMPUT) 2015 Energy Regulation Course, Queens University, Kingston, Ontario, June 2015

“M&A and Valuations,” Panelist at Infocast Utility Scale Solar Summit, September 2010

“The Use of Expert Evidence,” The Canadian Association of Members of Public Utility Tribunals (CAMPUT) 2010 Energy Regulation Course, Queens University, Kingston, Ontario, June 2010

“A Comparative Analysis of Return on Equity for Utilities in Canada and the U.S.”, The Canadian Association of Members of Public Utility Tribunals (CAMPUT) Annual Conference, Banff, Alberta, April 22, 2008

“Nuclear Power on the Verge of a New Era,” moderator for a client event co-hosted by Sutherland Asbill & Brennan and Lexecon, Washington D.C., October 2005

“The Investment Implications of the Repeal of PUCHA,” Skadden Arps Client Conference, New York, NY, October 2005

“Anatomy of the Deal,” First Annual Energy Transactions Conference, Newport, RI, May 2005

“The Outlook for Wind Power,” Skadden Arps Annual Energy and Project Finance Seminar, Naples, FL, March 2005

“Direction of U.S. M&A Activity for Utilities,” Energy and Mineral Law Foundation Conference, Sanibel Island, FL, February 2002

“Outlook for U.S. Merger & Acquisition Activity,” Utility Mergers & Acquisitions Conference, San Antonio, TX, October 2001

“Investor Perspectives on Emerging Energy Companies,” Panel Moderator at Energy Venture Conference, Boston, MA, June 2001

“Electric Generation Asset Transactions: A Practical Guide,” workshop conducted at the 1999 Thai Electricity and Gas Investment Briefing, Bangkok, Thailand, July 1999

“New Strategic Options for the Power Sector,” Electric Utility Business Environment Conference, Denver, CO, May 1999

“Electric and Gas Industries: Moving Forward Together,” New England Gas Association Annual Meeting, November 1998

“Opportunities and Challenges in the Electric Marketplace,” Electric Power Research Institute, July 1998



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
<b>Alberta Beverage Container Management Board</b>				
Alberta Beverage Container Management Board	2016 2019	Expert for the Board	N/A	Return Margin on Bottle Depots
<b>Alberta Utilities Commission</b>				
ATCO Utilities Group	2008 2009	ATCO Gas; ATCO Pipelines Ltd.; ATCO Electric Ltd.	Application No. 1578571 / Proceeding ID. 85	2009 Generic Cost of Capital Proceeding (Gas & Electric)
Enmax Power Corporation	2017	Enmax	22570	Cost of Common Equity
Enmax Power Corporation	2020	Enmax	24110	2021 Generic Cost of Capital
<b>American Arbitration Association</b>				
TransCanada Corporation	2004	TransCanada Corporation	AAA Case No. 50T 1810018804	Valuation of Natural Gas Pipeline
<b>British Columbia Utilities Commission</b>				
FortisBC	2012	FortisBC Utilities	G-20-12	Cost of Capital Adjustment Mechanisms
FortisBC	2015 2016	FortisBC Utilities	Project 3698852	Cost of Capital (Gas and Electric Distribution)
FortisBC	2022	FortisBC Utilities		Cost of Capital (Gas and Electric Distribution)
<b>California Public Utilities Commission</b>				
San Diego Gas & Electric Company	2019	San Diego Gas & Electric Company	A-19-04-014	Cost of Capital (Gas Distribution)
San Diego Gas & Electric Company	2021	San Diego Gas & Electric Company	A-21-08-014	Cost of Capital (Electric & Gas Distribution)
<b>Canada Energy Regulator</b>				
Enbridge Pipelines Inc.	2021	Enbridge Pipelines Inc.	RH-001-2020	Cost of Capital (Oil Pipeline)
<b>Connecticut Department of Public Utility Control</b>				
Aquarion Water Company of CT/ Macquarie Securities	2007	Aquarion Water Company of CT	DPUC Docket No. 07-05-19	Return on Equity (Water)
<b>Federal Energy Regulatory Commission</b>				
Atlantic Power Corporation	2007	Atlantic Path 15, LLC	ER08-374-000	Return on Equity (Electric)
Atlantic Power Corporation	2010	Atlantic Path 15, LLC	Docket No. ER11-2909-000	Return on Equity (Electric)
Atlantic Power Corporation	2011	Atlantic Path 15, LLC	Docket Nos. ER11-2909 and EL11-29	Rate of Return (Electric Transmission)



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Startrans IO, LLC	2012	Startrans IO, LLC	ER-13-272-000	Cost of Capital (Electric Transmission)
Startrans IO, LLC	2015	Startran IO, LLC	ER-16-194-000 and EL16-25-000	Cost of Capital (Electric Transmission)
Northern States Power Company	2019	Northern States Power Company	ER20-26-000	Cost of Capital (Electric Transmission)
PPL Electric Utilities Corp.	2020	PP&I Industrial Customer Alliance v. PPL Electric	EL20-48-000	Answering Testimony in Response to a Section 206 ROE Complaint
South First Energy Operating Companies	2020	South First Energy Operating Companies	ER21-253-000	Cost of Capital (Electric Transmission)
<b>Florida Public Service Commission</b>				
Florida Power & Light Company	2021	Florida Power & Light Company	Docket No. 20210015-EI	Cost of Capital (Electric)
<b>Hawaii Public Utility Commission</b>				
The Gas Company	2017	The Gas Company	Docket No. 2017-0105	Cost of Capital (Gas Distribution)
<b>Maine Public Utilities Commission</b>				
Bangor Hydro Electric Company	1998	Bangor Hydro Electric Company	MPUC Docket No. 98-820	Transaction-Related Financial Advisory Services, Valuation
Central Maine Power Company	2007	Central Maine Power Company	MPUC Docket No. 2007-215	Sales Forecast
Enmax Corporation	2019	Enmax Corporation	2019-00097	Regulatory Approval of Emera Maine Acquisition
Versant Power	2021	Versant Power	MPUC Docket No. 2020-00316	Cost of Capital (Electric)
<b>Maryland State Board of Contract Appeals</b>				
Green Planet Power Solutions	2018	Green Planet Power Solutions and Maryland Bio Energy LLC v. Maryland Department of General Services	MSBCA 3061	Contract Litigation, Power Purchase Agreement, Damages Analysis
<b>Massachusetts Superior Court</b>				
Burncoat Pond Watershed District	2010	Central Water District v. Burncoat Pond Watershed District	WDCV 2001-0105	Valuation/Eminent Domain



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
<b>Minnesota Public Utilities Commission</b>				
Northern States Power Company	2015 2016	Northern States Power Company	E-002-GR-15-826	Cost of Capital (Electric)
Northern States Power Company	2017	Northern States Power Company	E002/M-17-797 G002/M-17-787 E002/M-17-818	Cost of Capital (Electric and Gas Rate Riders for Transmission, Renewable Generation and Gas Distribution)
<b>New Brunswick Energy and Utilities Board</b>				
Liberty Utilities (Gas New Brunswick) LP	2021	Liberty Utilities (Gas New Brunswick) LP	491	Cost of Capital (Gas)
<b>Newfoundland and Labrador Board of Commissioners of Public Utilities</b>				
Newfoundland Power	2016	Newfoundland Power	2016 GRA	Cost of Capital (Electric)
Newfoundland Power	2018	Newfoundland Power	2018 GRA	Cost of Capital (Electric)
Newfoundland Power	2021	Newfoundland Power	2021 GRA	Cost of Capital (Electric)
<b>New Jersey Board of Public Utilities</b>				
Conectiv	2000- 2001	Atlantic City Electric Company	NJBPU Docket No. EM00020106	Transaction-Related Financial Advisory Services
<b>Nova Scotia Utility and Review Board</b>				
Nova Scotia Power Inc.	2012	Nova Scotia Power Inc.	2013 GRA	Return on Equity/Business Risk (Electric)
Nova Scotia Power Inc.	2022	Nova Scotia Power Inc.	2022 GRA	Return on Equity/Business Risk (Electric)
<b>Ontario Energy Board</b>				
Enbridge Gas Distribution and Hydro One Networks and the Coalition of Large Distributors	2009	Enbridge Gas Distribution and Hydro One Networks and the Coalition of Large Distributors	EB-2009-0084	Ontario Energy Board's 2009 Consultative Process on Cost of Capital Review (Gas & Electric)
Enbridge Gas Distribution	2012	Enbridge Gas Distribution	EB-2011-0354	Industry Benchmarking Study and Cost of Capital (Gas Distribution)
Enbridge Gas Distribution	2014	Enbridge Gas Distribution	EB-2012-0459	Incentive Regulation Plan and Industry Productivity Study



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
Ontario Power Generation	2016	Ontario Power Generation	EB-2016-0152	Cost of Capital (Electric Generation)
Ontario Power Generation	2020	Ontario Power Generation	EB-2020-0290	Capital Structure (Electric Generation)
<b>Prince Edward Island Regulatory and Appeals Commission</b>				
Maritime Electric Company	2015	Maritime Electric Company	UE20942	Return on Capital (Electric)
<b>Régie de l'énergie du Québec</b>				
Gaz Métro	2012	Gaz Métro	R-3809-2012	Return on Equity/Business Risk/ Capital Structure (Gas Distribution)
Hydro-Québec Distribution and Hydro- Québec TransÉnergie	2013	Hydro-Québec Distribution and Hydro- Québec TransÉnergie	R-3842-2013	Return on Equity/Business Risk (Electric)
Hydro-Québec Distribution	2014	Hydro-Québec Distribution	R-3905-2014	Remuneration of Deferral Accounts
Hydro-Québec Distribution and Hydro- Québec TransÉnergie	2015-2017	Hydro-Québec Distribution and Hydro- Québec TransÉnergie	R-3897-2014	Performance-Based Ratemaking
<b>South Carolina Public Service Commission</b>				
Piedmont Natural Gas Company	2022	Piedmont Natural Gas Company	2022-89-G	Return on Equity
<b>South Dakota Public Service Commission</b>				
Northern States Power Company-MN	2012	Northern States Power Company-MN	EL 11-019	Return on Equity
<b>Texas Public Utility Commission</b>				
Texas New Mexico Power Company	2004	Texas New Mexico Power Company	PUC Docket No. 29206	Auction Process and Stranded Cost Recovery
<b>U.S. Department of Commerce</b>				
Government of Québec	2017	Duty Investigation of Uncoated Groundwood Paper from Canada	PUC Docket No. 29206	Contracting for Renewable Resources, Market Analysis, Damages Analysis
<b>Vermont Public Service Board</b>				
Vermont Gas Systems, Inc.	2006	Vermont Gas Systems, Inc.	VPSB Docket No. 7109	Models of Incentive Regulation
Vermont Gas Systems, Inc.	2012	Vermont Gas Systems, Inc.	Docket No. 7803A	Cost of Capital (Gas Distribution)





<b>SPONSOR</b>	<b>DATE</b>	<b>CASE/APPLICANT</b>	<b>DOCKET</b>	<b>SUBJECT</b>
Green Mountain Power Corporation	2013	Green Mountain Power Corporation	Docket No. 8191	Return on Equity (Electric)
Vermont Gas Systems, Inc.	2016	Vermont Gas Systems, Inc.	Docket No. 8698/8710	Return on Equity (Gas Distribution)
Green Mountain Power Corporation	2017	Green Mountain Power Corporation	Docket No. Tariff-8677	Return on Equity (Electric)
Green Mountain Power Corporation	2018	Green Mountain Power Corporation	18-0974	Return on Equity (Electric)
<b>State Corporation of Virginia</b>				
Dominion Energy Virginia	2021	Virginia Electric and Power Company	PUR-2021-00058	Cost of Capital (Electric)
<b>Wisconsin Public Service Commission</b>				
Wisconsin Power and Light Company	2007	Wisconsin Power and Light Company	PSCW Docket No. 6680-CE-170	Return on Equity (Electric)
Wisconsin Power and Light Company	2007	Wisconsin Power and Light Company	PSCW Docket No. 6680-CE-171	Return on Equity (Electric)
Northern States Power Company	2011	Northern States Power Company	PSCW Docket No. 4220-UR-117	Return on Equity (Electric)
Northern States Power Company	2013	Northern States Power Company	PSCW Docket No. 4220-UR-119	Return on Equity (Gas & Electric)
Northern States Power Company	2015	Northern States Power Company	PSCW Docket No. 4220-UR-121	Return on Equity (Gas & Electric)
Northern States Power Company	2017 2019	Northern States Power Company	PSCW Docket No. 4220-UR-123, 4220-UR-124	Return on Equity (Gas & Electric)
Northern States Power Company	2021	Northern States Power Company	4220-UR-125	Cost of Capital (Electric, Affidavit)
<b>Yukon Utilities Board</b>				
ATCO Electric Yukon	2016	ATCO Electric Yukon	2016-2017 GRA	Return on Equity (Electric)

**JMC-2**

**COMBINED DCF, CAPM, RISK PREMIUM AND EXPECTED EARNINGS RESULTS -  
CURRENT INTEREST RATES**

COMBINED DCF, CAPM, RISK PREMIUM AND EXPECTED EARNINGS RESULTS - CURRENT INTEREST RATES

Company	30-Day DCF	90-Day DCF	180-Day DCF	CAPM VL Beta	CAPM BB Beta	AVG DCF	AVG CAPM	Risk Premium	Expected Earnings	Four-Model Average
Atmos Energy Corporation	10.01%	10.17%	10.22%	12.94%	12.74%	10.13%	12.84%	9.47%	9.44%	10.47%
New Jersey Resources Corporation	9.22%	9.28%	9.34%	15.62%	13.75%	9.28%	14.69%	9.47%	12.37%	11.45%
NISource Inc.	10.32%	10.53%	10.67%	13.61%	13.42%	10.51%	13.52%	9.47%	12.41%	11.47%
Northwest Natural Gas Company	9.84%	9.88%	9.72%	12.94%	12.51%	9.82%	12.73%	9.47%	8.21%	10.05%
ONE Gas, Inc.	7.92%	8.09%	8.14%	12.94%	13.72%	8.05%	13.33%	9.47%	7.88%	9.68%
Spire, Inc.	10.57%	10.62%	10.47%	13.61%	13.29%	10.55%	13.45%	9.47%	8.34%	10.45%
<b>PROXY GROUP MEAN</b>	<b>9.65%</b>	<b>9.76%</b>	<b>9.76%</b>	<b>13.61%</b>	<b>13.24%</b>	<b>9.72%</b>	<b>13.43%</b>	<b>9.47%</b>	<b>9.77%</b>	<b>10.60%</b>
<b>PROXY GROUP MEDIAN</b>	<b>9.93%</b>	<b>10.02%</b>	<b>9.97%</b>	<b>13.28%</b>	<b>13.35%</b>	<b>9.97%</b>	<b>13.39%</b>	<b>9.47%</b>	<b>8.89%</b>	<b>10.46%</b>
Range - Low	7.92%	8.09%	8.14%	12.94%	12.51%	8.05%	12.73%	9.47%	7.88%	9.68%
Range - High	10.57%	10.62%	10.67%	15.62%	13.75%	10.55%	14.69%	9.47%	12.41%	11.47%

COMBINED DCF, CAPM, RISK PREMIUM AND EXPECTED EARNINGS RESULTS - PROJECTED INTEREST RATES

Company	30-Day DCF	90-Day DCF	180-Day DCF	CAPM VL Beta	CAPM BB Beta	AVG DCF	AVG CAPM	Risk Premium	Expected Earnings	Four-Model Average
Atmos Energy Corporation	10.01%	10.17%	10.22%	13.18%	13.00%	10.13%	13.09%	9.97%	9.44%	10.66%
New Jersey Resources Corporation	9.22%	9.28%	9.34%	15.62%	13.92%	9.28%	14.77%	9.97%	12.37%	11.60%
NISource Inc.	10.32%	10.53%	10.67%	13.79%	13.62%	10.51%	13.70%	9.97%	12.41%	11.65%
Northwest Natural Gas Company	9.84%	9.88%	9.72%	13.18%	12.79%	9.82%	12.99%	9.97%	8.21%	10.24%
ONE Gas, Inc.	7.92%	8.09%	8.14%	13.18%	13.89%	8.05%	13.53%	9.97%	7.88%	9.86%
Spire, Inc.	10.57%	10.62%	10.47%	13.79%	13.50%	10.55%	13.65%	9.97%	8.34%	10.63%
<b>PROXY GROUP MEAN</b>	<b>9.65%</b>	<b>9.76%</b>	<b>9.76%</b>	<b>13.79%</b>	<b>13.45%</b>	<b>9.72%</b>	<b>13.62%</b>	<b>9.97%</b>	<b>9.77%</b>	<b>10.77%</b>
<b>PROXY GROUP MEDIAN</b>	<b>9.93%</b>	<b>10.02%</b>	<b>9.97%</b>	<b>13.49%</b>	<b>13.56%</b>	<b>9.97%</b>	<b>13.59%</b>	<b>9.97%</b>	<b>8.89%</b>	<b>10.64%</b>
Range - Low	7.92%	8.09%	8.14%	13.18%	12.79%	8.05%	12.99%	9.97%	7.88%	9.86%
Range - High	10.57%	10.62%	10.67%	15.62%	13.92%	10.55%	14.77%	9.97%	12.41%	11.65%

**JMC-3**

**PROXY GROUP SELECTION**

PROXY GROUP SELECTION

[1]	[2]	[3]	[4]	[5]	[6]
Pays Dividends (Yes/No)	S&P Rating	Positive Earnings Growth by Analyst more than one (Yes/No)	Regulated Total Income (%)	Regulated Gas Income / Total Regulated Income (%)	Involved in Merger (Yes/No)
Company					
Atmos Energy Corporation	ATO	Yes	100.00%	64.64%	No
New Jersey Resources Corporation	NJR	Yes	67.77%	100.54%	No
NISource Inc.	NI	Yes	99.56%	66.09%	No
Northwest Natural Gas Company	NWN	Yes	99.84%	91.42%	No
ONE Gas, Inc.	OGS	Yes	100.00%	100.00%	No
Spire, Inc.	SR	Yes	97.04%	100.00%	No

[1] Source: Bloomberg Professional

[2] Source: S&P Capital IQ Pro; New Jersey Natural Gas Co is rated A1 by Moody's and Northwest Natural Gas is rated A+ by S&P and Baa1 by Moody's.

[3] Source: Value Line, Zacks and Yahoo Finance

[4] Source: Company 10-K reports, average of three most recent years

[5] Source: Company 10-K reports, average of three most recent years

[10] Source: Bloomberg Professional

**JMC-4**

**30-DAY CONSTANT GROWTH DCF**

30-DAY CONSTANT GROWTH DCF

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
Atmos Energy Corporation	\$2.72	\$105.99	2.57%	2.66%	7.50%	7.25%	7.30%	7.35%	9.91%	10.01%	10.16%
New Jersey Resources Corporation	\$1.45	\$40.05	3.62%	3.72%	4.50%	6.00%	6.00%	5.50%	8.20%	9.22%	9.73%
NISource Inc.	\$0.94	\$28.47	3.30%	3.42%	10.50%	3.52%	6.70%	6.91%	6.88%	10.32%	13.97%
Northwest Natural Gas Company	\$1.93	\$47.56	4.06%	4.17%	6.00%	5.90%	5.10%	5.67%	9.26%	9.84%	10.18%
ONE Gas, Inc.	\$2.48	\$77.30	3.21%	3.28%	6.00%	2.90%	5.00%	4.63%	6.15%	7.92%	9.30%
Spire, Inc.	\$2.74	\$64.64	4.24%	4.37%	9.00%	4.30%	5.30%	6.20%	8.63%	10.57%	13.43%
<b>PROXY GROUP MEAN</b>			<b>3.50%</b>	<b>3.60%</b>	<b>7.25%</b>	<b>4.98%</b>	<b>5.90%</b>	<b>6.04%</b>	<b>8.17%</b>	<b>9.65%</b>	<b>11.13%</b>

Notes

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 30-day average as of February 28, 2022
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

90-DAY CONSTANT GROWTH DCF

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
Atmos Energy Corporation	ATO	\$100.16	2.72%	2.82%	7.50%	7.25%	7.30%	7.35%	10.06%	10.17%	10.32%
New Jersey Resources Corporation	NJR	\$39.42	3.68%	3.78%	4.50%	6.00%	6.00%	5.50%	8.26%	9.28%	9.79%
NISource Inc.	NI	\$26.81	3.51%	3.63%	10.50%	3.52%	6.70%	6.91%	7.09%	10.53%	14.19%
Northwest Natural Gas Company	NWN	\$47.06	4.10%	4.22%	6.00%	5.90%	5.10%	5.67%	9.31%	9.88%	10.22%
ONE Gas, Inc.	OGS	\$73.37	3.38%	3.46%	6.00%	2.90%	5.00%	4.63%	6.33%	8.09%	9.48%
Spire, Inc.	SR	\$63.89	4.29%	4.42%	9.00%	4.30%	5.30%	6.20%	8.68%	10.62%	13.48%
<b>PROXY GROUP MEAN</b>			3.61%	3.72%	7.25%	4.98%	5.90%	6.04%	8.29%	9.76%	11.25%

Notes

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 90-day average as of February 28, 2022
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])



180-DAY CONSTANT GROWTH DCF

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth	Low DCF ROE	Mean DCF ROE	High DCF ROE
Atmos Energy Corporation	ATO	\$98.15	2.77%	2.87%	7.50%	7.25%	7.30%	7.35%	10.12%	10.22%	10.38%
New Jersey Resources Corporation	NJR	\$38.84	3.73%	3.84%	4.50%	6.00%	6.00%	5.50%	8.32%	9.34%	9.84%
NISource Inc.	NI	\$25.87	3.63%	3.76%	10.50%	3.52%	6.70%	6.91%	7.22%	10.67%	14.32%
Northwest Natural Gas Company	NWN	\$48.95	3.94%	4.05%	6.00%	5.90%	5.10%	5.67%	9.14%	9.72%	10.06%
ONE Gas, Inc.	OGS	\$72.38	3.43%	3.51%	6.00%	2.90%	5.00%	4.63%	6.38%	8.14%	9.53%
Spire, Inc.	SR	\$66.19	4.14%	4.27%	9.00%	4.30%	5.30%	6.20%	8.53%	10.47%	13.33%
<b>PROXY GROUP MEAN</b>			3.61%	3.72%	7.25%	4.98%	5.90%	6.04%	8.28%	9.76%	11.24%

Notes

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 180-day average as of February 28, 2022
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

**JMC-5.1**

**MARKET RISK PREMIUM DERIVED FROM S&P EARNINGS AND ESTIMATE  
REPORT (SP 500 MRP 1)**

MARKET RISK PREMIUM DERIVED FROM S&P EARNINGS AND ESTIMATE REPORT

[1] S&P's estimate of the S&P 500 Dividend Yield	1.46%
[2] S&P's estimate of the S&P 500 Growth Rate	15.12%
[3] S&P 500 Estimated Required Market Return	16.69%

Notes:

[1] Source: S&P Dow Jones Indices, S&P 500 Earnings and Estimate Report, February 28, 2022

[2] Source: S&P Dow Jones Indices, S&P 500 Earnings and Estimate Report, February 28, 2022

[3] Equals  $((1) \times (1 + (0.5 \times [2]))) + [2]$

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED BLOOMBERG GROWTH RATES

[4] Cap. Weighted Estimate of the S&P 500 Dividend Yield	1.44%
[5] Cap. Weighted Estimate of the S&P 500 Growth Rate	13.54%
[6] Cap. Weighted S&P 500 Estimated Required Market Ret.	15.08%

Notes:

- [4] Source: Bloomberg Professional, as of February 28, 2022
- [5] Source: Bloomberg Professional, as of February 28, 2022
- [6] Equals ([4] x (1 + (0.5 x [5]))) + [5]

Name	Ticker	Shares Outst'g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
LyondellBasell Industries NV	LYB	328.01	97.23	4.65	8.00	31,892.41	0.08%	0.39%	0.68%
Signature Bank/New York NY	SBNY	62.57	344.89	0.65	12.25	21,579.42	0.06%	0.04%	0.70%
American Express Co	AXP	759.36	194.54	0.88	28.39	147,724.92	0.39%	0.35%	11.11%
Verizon Communications Inc	VZ	4197.82	53.67	4.77	2.90	225,297.21	0.60%	2.85%	1.73%
Broadcom Inc	AVGO	409.61	587.44	2.79	14.17	240,623.06	0.64%	1.78%	9.03%
Boeing Co/The	BA	583.00	205.34	n/a	80.64	119,713.22	0.32%		25.58%
Caterpillar Inc	CAT	535.89	187.58	2.37	11.73	100,521.87	0.27%	0.63%	3.13%
JPMorgan Chase & Co	JPM	2952.81	141.80	2.82	3.23	418,708.32	1.11%	3.13%	3.59%
Chevron Corp	CVX	1947.55	144.00	3.94	28.85	280,447.63	0.74%	2.93%	21.44%
Coca-Cola Co/The	KO	4335.47	62.24	2.83	9.69	269,839.84	0.72%	2.02%	6.93%
AbbVie Inc	ABBV	1768.75	147.77	3.82	-0.71	261,368.78	0.69%	2.64%	-0.49%
Walt Disney Co/The	DIS	1820.63	148.46	n/a	30.44	270,291.18	0.72%		21.80%
FleetCor Technologies Inc	FLT	81.20	234.20	n/a	16.01	19,016.81	0.05%		0.81%
Extra Space Storage Inc	EXR	134.15	188.15	3.19	11.62	25,240.89	0.07%	0.21%	0.78%
Exxon Mobil Corp	XOM	4233.59	78.42	4.49	26.88	331,998.28	0.88%	3.95%	23.65%
Phillips 66	PSX	438.46	84.24	4.37	7.28	36,936.04	0.10%	0.43%	0.71%
General Electric Co	GE	1099.32	95.51	0.34	8.50	104,996.24	0.28%	0.09%	2.36%
HP Inc	HPQ	1053.37	34.36	2.91	2.34	36,193.66	0.10%	0.28%	0.22%
Home Depot Inc/The	HD	1044.24	315.83	2.41	7.32	329,802.00	0.87%	2.10%	6.40%
Monolithic Power Systems Inc	MPWR	46.51	458.70	0.65	24.50	21,333.68	0.06%	0.04%	1.38%
International Business Machines Corp	IBM	899.31	122.51	5.35	13.42	110,174.47	0.29%	1.56%	3.92%
Johnson & Johnson	JNJ	2629.27	164.57	2.58	7.33	432,698.63	1.15%	2.95%	8.41%
McDonald's Corp	MCD	743.59	244.77	2.26	8.81	182,007.30	0.48%	1.09%	4.25%
Merck & Co Inc	MRK	2527.73	76.58	3.60	9.63	193,573.87	0.51%	1.85%	4.94%
3M Co	MMM	571.10	148.65	4.01	7.67	84,894.02	0.22%	0.90%	1.72%
American Water Works Co Inc	AWK	181.73	151.09	1.60	7.69	27,456.83	0.07%	0.12%	0.56%
Bank of America Corp	BAC	8069.80	44.20	1.90	3.50	356,685.20	0.95%	1.80%	3.31%
Pfizer Inc	PFE	5623.35	46.94	3.41	3.41	263,959.86	0.70%	2.38%	2.38%
Procter & Gamble Co/The	PG	2397.07	155.89	2.23	5.99	373,678.62	0.99%	2.21%	5.93%
AT&T Inc	T	7142.89	23.69	8.78	3.86	169,215.14	0.45%	3.94%	1.73%
Travelers Cos Inc/The	TRV	241.50	171.83	2.05	3.97	41,497.12	0.11%	0.23%	0.44%
Raytheon Technologies Corp	RTX	1492.33	102.70	1.99	13.46	153,262.39	0.41%	0.81%	5.47%
Analog Devices Inc	ADI	523.32	160.29	1.90	11.18	83,882.16	0.22%	0.42%	2.48%
Walmart Inc	WMT	2773.88	135.16	1.66	9.85	374,917.35	0.99%	1.65%	9.79%
Cisco Systems Inc/Delaware	CSCO	4154.17	55.77	2.73	5.20	231,677.95	0.61%	1.67%	3.19%
Intel Corp	INTC	4072.00	47.70	3.06	6.10	194,234.40	0.51%	1.58%	3.14%
General Motors Co	GM	1453.02	46.72	n/a	9.96	67,885.14	0.18%		1.79%
Microsoft Corp	MSFT	7496.87	298.79	0.83	12.78	2,239,988.59	5.94%	4.93%	75.86%
Dollar General Corp	DG	231.71	198.34	0.85	9.82	45,956.77	0.12%	0.10%	1.20%
Cigna Corp	CI	320.95	237.78	1.88	9.19	76,316.20	0.20%	0.38%	1.86%
Kinder Morgan Inc	KMI	2267.49	17.40	6.21	5.15	39,454.24	0.10%	0.65%	0.54%
Citigroup Inc	C	1980.90	59.23	3.44	9.23	117,328.41	0.31%	1.07%	2.87%
American International Group Inc	AIG	814.76	61.24	2.09	21.00	49,895.78	0.13%	0.28%	2.78%
Altria Group Inc	MO	1817.26	51.29	7.02	3.60	93,207.11	0.25%	1.73%	0.89%
HCA Healthcare Inc	HCA	303.60	250.31	0.89	12.65	75,994.12	0.20%	0.18%	2.55%
Under Armour Inc	UA	188.67	17.89	n/a	25.00	3,375.29	0.01%		0.22%
International Paper Co	IP	376.36	43.53	4.25	16.90	16,383.12	0.04%	0.18%	0.73%
Hewlett Packard Enterprise Co	HPE	1300.27	15.92	3.02	4.28	20,700.31	0.05%	0.17%	0.23%
Abbott Laboratories	ABT	1763.48	120.62	1.56	11.67	212,711.20	0.56%	0.88%	6.58%
Aflac Inc	AFL	649.86	61.09	2.62	n/a	0.00	0.00%	0.00%	
Air Products and Chemicals Inc	APD	221.72	236.30	2.74	13.78	52,391.73	0.14%	0.38%	1.91%
Royal Caribbean Cruises Ltd	RCL	254.82	80.72	n/a	-188.41	20,569.07	0.05%		-10.27%
Hess Corp	HES	309.73	101.06	0.99	47.10	31,301.01	0.08%	0.08%	3.91%
Archer-Daniels-Midland Co	ADM	562.17	78.45	2.04	1.24	44,102.00	0.12%	0.24%	0.14%
Automatic Data Processing Inc	ADP	420.05	204.44	2.03	13.45	85,874.00	0.23%	0.46%	3.06%
Verisk Analytics Inc	VRSK	161.28	177.34	0.70	n/a	0.00	0.00%	0.00%	
AutoZone Inc	AZO	20.63	1863.39	n/a	10.57	38,449.19	0.10%		1.08%
Avery Dennison Corp	AVY	82.46	176.20	1.54	7.60	14,529.63	0.04%	0.06%	0.29%
Enphase Energy Inc	ENPH	133.94	166.70	n/a	36.20	22,327.13	0.06%		2.14%
MSCI Inc	MSCI	81.27	501.69	0.83	13.30	40,771.34	0.11%	0.09%	1.44%
Ball Corp	BLL	321.50	89.74	0.89	7.70	28,851.05	0.08%	0.07%	0.59%
Ceridian HCM Holding Inc	CDAY	152.05	72.91	n/a	58.30	11,085.97	0.03%		1.71%

Name	Ticker	Shares Outst'g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Carrier Global Corp	CARR	855.51	44.88	1.34	8.95	38,395.47	0.10%	0.14%	0.91%
Bank of New York Mellon Corp/The	BK	804.50	53.15	2.56	9.50	42,758.91	0.11%	0.29%	1.08%
Otis Worldwide Corp	OTIS	424.96	78.33	1.23	9.63	33,287.27	0.09%	0.11%	0.85%
Baxter International Inc	BAX	502.29	84.97	1.32	13.05	42,679.92	0.11%	0.15%	1.48%
Becton Dickinson and Co	BDX	284.77	271.28	1.28	10.45	77,252.68	0.20%	0.26%	2.14%
Berkshire Hathaway Inc	BRK/B	1291.21	321.45	n/a	2.30	415,060.42	1.10%		2.53%
Best Buy Co Inc	BBY	240.56	96.64	2.90	7.07	23,247.82	0.06%	0.18%	0.44%
Boston Scientific Corp	BSX	1426.73	44.17	n/a	18.63	63,018.44	0.17%		3.11%
Bristol-Myers Squibb Co	BMJ	2179.71	68.67	3.15	6.98	149,680.89	0.40%	1.25%	2.77%
Fortune Brands Home & Security Inc	FBHS	134.17	86.90	1.29	8.96	11,659.72	0.03%	0.04%	0.28%
Brown-Forman Corp	BF/B	309.74	65.23	1.16	7.68	20,204.54	0.05%	0.06%	0.41%
Coterra Energy Inc	CTRA	813.58	23.33	9.60	16.78	18,980.77	0.05%	0.48%	0.84%
Campbell Soup Co	CPB	301.74	44.97	3.29	2.31	13,569.16	0.04%	0.12%	0.08%
Hilton Worldwide Holdings Inc	HLT	279.14	148.86	n/a	37.88	41,552.63	0.11%		4.17%
Carnival Corp	CCL	986.36	20.33	n/a	n/a	0.00	0.00%		
Qorvo Inc	QRVO	108.43	136.78	n/a	11.82	14,831.33	0.04%		0.46%
Lumen Technologies Inc	LUMN	1023.37	10.36	9.65	-10.47	10,602.13	0.03%	0.27%	-0.29%
UDR Inc	UDR	318.27	54.87	2.64	5.32	17,463.20	0.05%	0.12%	0.25%
Clorox Co/The	CLX	123.06	145.79	3.18	-0.45	17,940.63	0.05%	0.15%	-0.02%
Paycom Software Inc	PAYC	60.21	339.21	n/a	25.40	20,425.19	0.05%		1.37%
CMS Energy Corp	CMS	289.76	64.01	2.87	7.03	18,547.54	0.05%	0.14%	0.35%
Newell Brands Inc	NWL	425.50	23.75	3.87	7.00	10,105.63	0.03%	0.10%	0.19%
Colgate-Palmolive Co	CL	840.49	76.95	2.34	8.73	64,675.47	0.17%	0.40%	1.50%
EPAM Systems Inc	EPAM	56.88	207.75	n/a	25.70	11,816.61	0.03%		0.80%
Comerica Inc	CMA	131.08	95.49	2.85	11.22	12,516.73	0.03%	0.09%	0.37%
IPG Photonics Corp	IPGP	52.94	130.35	n/a	12.40	6,900.60	0.02%		0.23%
Conagra Brands Inc	CAG	479.70	34.97	3.57	6.45	16,775.04	0.04%	0.16%	0.29%
Consolidated Edison Inc	ED	354.09	85.77	3.68	3.85	30,370.30	0.08%	0.30%	0.31%
Corning Inc	GLW	845.85	40.40	2.67	11.45	34,172.30	0.09%	0.24%	1.04%
Cummins Inc	GMI	142.43	204.12	2.84	8.54	29,072.20	0.08%	0.22%	0.66%
Caesars Entertainment Inc	CZR	214.12	84.19	n/a	-39.81	18,027.02	0.05%		-1.90%
Danaher Corp	DHR	715.35	274.41	0.36	21.85	196,300.02	0.52%	0.19%	11.37%
Target Corp	TGT	479.12	199.77	1.80	20.57	95,714.60	0.25%	0.46%	5.22%
Deere & Co	DE	306.78	360.02	1.17	14.68	110,448.38	0.29%	0.34%	4.30%
Dominion Energy Inc	D	810.46	79.53	3.36	6.87	64,456.12	0.17%	0.57%	1.17%
Dover Corp	DOV	144.06	156.86	1.28	14.60	22,596.47	0.06%	0.08%	0.87%
Alliant Energy Corp	LNT	250.48	58.40	2.93	5.97	14,627.97	0.04%	0.11%	0.23%
Duke Energy Corp	DUK	769.00	100.41	3.92	5.17	77,215.29	0.20%	0.80%	1.06%
Regency Centers Corp	REG	171.37	65.89	3.79	13.86	11,291.77	0.03%	0.11%	0.41%
Eaton Corp PLC	ETN	398.80	154.29	2.10	12.23	61,530.85	0.16%	0.34%	1.99%
Ecolab Inc	ECL	286.75	176.26	1.16	14.50	50,542.91	0.13%	0.16%	1.94%
PerkinElmer Inc	PKI	126.20	179.61	0.16	1.60	22,666.78	0.06%	0.01%	0.10%
Emerson Electric Co	EMR	594.00	92.92	2.22	11.17	55,194.48	0.15%	0.32%	1.63%
EOG Resources Inc	EOG	585.42	114.92	2.61	9.74	67,276.35	0.18%	0.47%	1.74%
Aon PLC	AON	213.94	292.14	0.70	12.00	62,501.60	0.17%	0.12%	1.99%
Entergy Corp	ETR	203.03	105.21	3.84	4.85	21,360.58	0.06%	0.22%	0.27%
Equifax Inc	EFX	122.09	218.34	0.71	13.45	26,656.04	0.07%	0.05%	0.95%
IQVIA Holdings Inc	IQV	190.91	230.12	n/a	17.56	43,932.67	0.12%		2.04%
Gartner Inc	IT	82.29	280.42	n/a	13.50	23,074.92	0.06%		0.83%
FedEx Corp	FDX	264.97	222.27	1.35	12.20	58,894.66	0.16%	0.21%	1.90%
FMC Corp	FMC	125.70	117.25	1.81	9.23	14,738.21	0.04%	0.07%	0.36%
Brown & Brown Inc	BRO	282.22	67.61	0.61	8.00	19,080.62	0.05%	0.03%	0.40%
Ford Motor Co	F	3933.40	17.56	2.28	-6.94	69,070.42	0.18%	0.42%	-1.27%
NextEra Energy Inc	NEE	1962.75	78.27	2.17	9.45	153,624.05	0.41%	0.88%	3.85%
Franklin Resources Inc	BEN	502.12	29.73	3.90	n/a	0.00	0.00%	0.00%	
Garmin Ltd	GRMN	192.79	110.44	2.64	11.10	21,291.40	0.06%	0.15%	0.63%
Freight-McMora Inc	FCX	1454.78	46.95	0.64	-14.26	68,301.97	0.18%	0.12%	2.58%
Dexcom Inc	DXCM	97.07	413.91	n/a	15.45	40,176.59	0.11%		1.64%
General Dynamics Corp	GD	277.70	234.45	2.03	10.29	65,106.30	0.17%	0.35%	1.77%
General Mills Inc	GIS	603.21	67.43	3.03	6.50	40,674.25	0.11%	0.33%	0.70%
Genuine Parts Co	GPC	141.96	122.16	2.93	16.20	17,342.20	0.05%	0.13%	0.74%
Atmos Energy Corp	ATO	135.43	109.81	2.48	7.39	14,871.79	0.04%	0.10%	0.29%
WW Grainger Inc	GWV	51.11	477.06	1.36	12.27	24,381.58	0.06%	0.09%	0.79%
Halliburton Co	HAL	898.57	33.53	1.43	44.87	30,129.12	0.08%	0.11%	3.58%
L3Harris Technologies Inc	LHX	193.07	252.31	1.78	4.39	48,712.48	0.13%	0.23%	0.57%
Healthpeak Properties Inc	PEAK	539.30	31.06	3.86	12.16	16,750.78	0.04%	0.17%	0.54%
Catalent Inc	CTLT	179.13	102.04	n/a	17.25	18,278.22	0.05%		0.84%
Fortive Corp	FTV	359.10	64.75	0.43	10.63	23,251.73	0.06%	0.03%	0.66%
Hershey Co/The	HSY	145.63	202.26	1.78	7.75	29,454.72	0.08%	0.14%	0.60%
Synchrony Financial	SYF	521.27	42.78	2.06	36.95	22,300.02	0.06%	0.12%	2.18%
Hormel Foods Corp	HRL	542.57	47.64	2.18	6.71	25,848.03	0.07%	0.15%	0.46%
Arthur J Gallagher & Co	AJG	208.54	158.19	1.29	14.81	32,989.26	0.09%	0.11%	1.29%
Mondelez International Inc	MDLZ	1388.33	65.48	2.14	7.58	90,907.72	0.24%	0.52%	1.83%
CenterPoint Energy Inc	CNP	628.87	27.35	2.49	3.53	17,199.49	0.05%	0.11%	0.16%
Humana Inc	HUM	126.63	434.32	0.73	12.70	54,999.68	0.15%	0.11%	1.85%
Willis Towers Watson PLC	WTW	117.75	222.30	1.48	16.00	26,174.94	0.07%	0.10%	1.11%
Illinois Tool Works Inc	ITW	312.93	216.34	2.26	11.60	67,698.63	0.18%	0.40%	2.08%
CDW Corp/DE	CDW	134.94	172.46	1.16	13.10	23,272.44	0.06%	0.07%	0.81%
Trane Technologies PLC	TT	233.54	153.93	1.74	11.84	35,948.50	0.10%	0.17%	1.13%
Interpublic Group of Cos Inc/The	IPG	393.96	36.80	3.15	3.07	14,497.73	0.04%	0.12%	0.12%
International Flavors & Fragrances Inc	IFF	254.69	133.00	2.38	6.62	33,873.11	0.09%	0.21%	0.59%
Jacobs Engineering Group Inc	J	129.22	123.00	0.75	13.56	15,893.69	0.04%	0.03%	0.57%

Name	Ticker	Shares	Outst'g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Generac Holdings Inc	GNRC	63.78	315.47	n/a	11.10	20,121.94	0.05%		0.59%	
NXP Semiconductors NV	NXPI	262.54	190.12	1.78	18.60	49,913.72	0.13%	0.24%	2.46%	
Kellogg Co	K	341.68	63.94	3.63	4.05	21,846.70	0.06%	0.21%	0.23%	
Broadridge Financial Solutions Inc	BR	116.77	146.21	1.75	12.20	17,073.38	0.05%	0.08%	0.55%	
Kimberly-Clark Corp	KMB	336.99	130.15	3.57	-1.35	43,859.64	0.12%	0.41%	-0.16%	
Kimco Realty Corp	KIM	616.66	23.53	3.23	8.91	14,509.99	0.04%	0.12%	0.34%	
Oracle Corp	ORCL	2670.45	75.97	1.68	7.57	202,873.86	0.54%	0.91%	4.07%	
Kroger Co/The	KR	735.26	46.80	1.79	8.26	34,409.98	0.09%	0.16%	0.75%	
Lennar Corp	LEN	261.37	89.88	1.67	4.55	23,492.30	0.06%	0.10%	0.28%	
Eli Lilly & Co	LLY	952.35	249.95	1.57	14.41	238,039.13	0.63%	0.99%	9.09%	
Bath & Body Works Inc	BBWI	257.72	53.37	1.50	9.26	13,754.68	0.04%	0.05%	0.34%	
Charter Communications Inc	CHTR	172.74	601.78	n/a	25.32	103,952.08	0.28%		6.97%	
Lincoln National Corp	LNC	172.46	67.42	2.67	20.79	11,626.92	0.03%	0.08%	0.64%	
Loews Corp	L	248.20	61.34	0.41	n/a	0.00	0.00%	0.00%		
Lowe's Cos Inc	LOW	670.00	221.06	1.45	18.83	148,110.20	0.39%	0.57%	7.39%	
IDEX Corp	IEX	76.12	191.90	1.13	13.00	14,607.43	0.04%	0.04%	0.50%	
Marsh & McLennan Cos Inc	MMC	502.77	155.41	1.38	7.81	78,134.86	0.21%	0.29%	1.62%	
Masco Corp	MAS	239.93	56.04	2.00	12.42	13,445.45	0.04%	0.07%	0.44%	
S&P Global Inc	SPGI	354.36	375.70	0.90	8.60	133,132.68	0.35%	0.32%	3.03%	
Medtronic PLC	MDT	1342.57	104.99	2.40	7.50	140,956.00	0.37%	0.90%	2.80%	
Viatis Inc	VTRS	1209.39	11.01	4.36	n/a	0.00	0.00%	0.00%		
CVS Health Corp	CVS	1312.51	103.65	2.12	7.20	136,041.66	0.36%	0.77%	2.60%	
DuPont de Nemours Inc	DD	512.91	77.37	1.71	10.43	39,683.61	0.11%	0.18%	1.10%	
Micron Technology Inc	MU	1119.78	88.86	0.45	17.17	99,503.38	0.26%	0.12%	4.53%	
Motorola Solutions Inc	MSI	168.21	220.43	1.43	11.20	37,078.31	0.10%	0.14%	1.10%	
Cboe Global Markets Inc	CBOE	106.60	117.29	1.64	n/a	0.00	0.00%	0.00%		
Laboratory Corp of America Holdings	LH	93.40	271.26	n/a	-6.59	25,335.68	0.07%		-0.44%	
Newmont Corp	NEM	792.50	66.20	3.32	-3.00	52,463.63	0.14%	0.46%	-0.42%	
NIKE Inc	NKE	1276.29	136.55	0.89	14.74	174,277.13	0.46%	0.41%	6.81%	
NiSource Inc	NI	405.39	28.93	3.25	6.69	11,727.79	0.03%	0.10%	0.21%	
Norfolk Southern Corp	NSC	239.78	256.52	1.93	11.31	61,507.60	0.16%	0.32%	1.84%	
Principal Financial Group Inc	PFG	261.23	70.64	3.62	8.30	18,453.15	0.05%	0.18%	0.41%	
Eversource Energy	ES	344.44	81.80	3.12	7.66	28,175.19	0.07%	0.23%	0.57%	
Northrop Grumman Corp	NOC	156.10	442.14	1.42	0.30	69,018.94	0.18%	0.26%	0.05%	
Wells Fargo & Co	WFC	3814.56	53.37	1.87	8.01	203,582.91	0.54%	1.01%	4.32%	
Nucor Corp	NUE	269.13	131.62	1.52	n/a	0.00	0.00%	0.00%		
PVH Corp	PVH	69.98	97.89	0.15	56.81	6,850.15	0.02%	0.00%	1.03%	
Occidental Petroleum Corp	OXY	934.06	43.73	1.19	n/a	0.00	0.00%	0.00%		
Omnicom Group Inc	OMC	208.99	83.89	3.34	8.77	17,532.24	0.05%	0.16%	0.41%	
ONEOK Inc	OKE	445.94	65.30	5.73	n/a	0.00	0.00%	0.00%		
Raymond James Financial Inc	RJF	207.60	109.65	1.24	10.90	22,763.56	0.06%	0.07%	0.66%	
Parker-Hannifin Corp	PH	128.48	296.39	1.39	13.15	38,079.59	0.10%	0.14%	1.33%	
Rollins Inc	ROL	492.09	32.63	1.23	11.10	16,056.77	0.04%	0.05%	0.47%	
PPL Corp	PPL	735.36	26.17	3.06	5.20	19,244.42	0.05%	0.16%	0.27%	
ConocoPhillips	COP	1299.53	94.86	1.94	n/a	0.00	0.00%	0.00%		
PulteGroup Inc	PHM	248.65	49.66	1.21	24.62	12,348.01	0.03%	0.04%	0.81%	
Pinnacle West Capital Corp	PNW	112.93	70.83	4.80	-3.77	7,998.07	0.02%	0.10%	-0.08%	
PNC Financial Services Group Inc/The	PNC	418.46	199.25	2.51	21.40	83,377.16	0.22%	0.55%	4.73%	
PPG Industries Inc	PPG	236.00	133.45	1.77	12.66	31,494.07	0.08%	0.15%	1.06%	
Progressive Corp/The	PGR	584.85	105.93	0.38	32.79	61,953.05	0.16%	0.06%	5.38%	
Public Service Enterprise Group Inc	PEG	502.08	64.83	3.33	3.28	32,549.72	0.09%	0.29%	0.28%	
Robert Half International Inc	RHI	110.69	120.29	1.43	-6.90	13,314.42	0.04%	0.05%	-0.24%	
Edison International	EIX	380.70	63.42	4.42	3.05	24,143.80	0.06%	0.28%	0.20%	
Schlumberger NV	SLB	1413.02	39.24	1.27	43.92	55,446.87	0.15%	0.19%	6.45%	
Charles Schwab Corp/The	SCHW	1814.62	84.46	0.95	21.75	153,262.89	0.41%	0.38%	8.83%	
Sherwin-Williams Co/The	SHW	260.37	263.13	0.91	10.11	68,512.21	0.18%	0.17%	1.83%	
West Pharmaceutical Services Inc	WST	74.28	387.08	0.19	8.57	28,753.08	0.08%	0.01%	0.65%	
J M Smucker Co/The	SJM	108.36	134.75	2.94	1.49	14,601.91	0.04%	0.11%	0.06%	
Snap-on Inc	SNA	53.44	210.18	2.70	6.89	11,231.81	0.03%	0.08%	0.21%	
AMETEK Inc	AME	231.70	129.79	0.68	11.67	30,072.47	0.08%	0.05%	0.93%	
Southern Co/The	SO	1059.80	64.77	4.08	5.03	68,643.51	0.18%	0.74%	0.91%	
Truist Financial Corp	TFC	1328.12	62.22	3.09	9.07	82,635.63	0.22%	0.68%	1.99%	
Southwest Airlines Co	LUV	592.34	43.80	n/a	29.70	25,944.58	0.07%		2.04%	
W R Berkley Corp	WRB	176.79	90.30	0.58	13.67	15,964.23	0.04%	0.02%	0.58%	
Stanley Black & Decker Inc	SWK	163.35	162.70	1.94	8.53	26,577.37	0.07%	0.14%	0.60%	
Public Storage	PSA	175.46	355.02	2.25	12.89	62,292.52	0.17%	0.37%	2.13%	
Arista Networks Inc	ANET	307.77	122.73	n/a	17.19	37,772.24	0.10%		1.72%	
Sysco Corp	SY	507.45	87.10	2.16	13.95	44,198.63	0.12%	0.25%	1.63%	
Corteva Inc	CTVA	726.53	52.03	1.08	11.10	37,801.20	0.10%	0.11%	1.11%	
Texas Instruments Inc	TXN	923.55	169.99	2.71	8.30	156,993.75	0.42%	1.13%	3.45%	
Textron Inc	TXT	216.68	73.13	0.11	13.88	15,845.95	0.04%	0.00%	0.58%	
Thermo Fisher Scientific Inc	TMO	391.19	544.00	0.22	10.28	212,808.45	0.56%	0.12%	5.79%	
TJX Cos Inc/The	TJX	1192.88	66.10	1.79	69.15	78,849.24	0.21%	0.37%	14.45%	
Globe Life Inc	GL	99.34	100.96	0.78	n/a	0.00	0.00%	0.00%		
Johnson Controls International plc	JCI	702.63	64.96	2.09	14.30	45,642.65	0.12%	0.25%	1.73%	
Ulta Beauty Inc	ULTA	54.12	374.50	n/a	45.46	20,267.94	0.05%		2.44%	
Union Pacific Corp	UNP	636.90	245.95	1.92	9.33	156,645.31	0.42%	0.80%	3.87%	
Keysight Technologies Inc	KEYS	180.80	157.37	n/a	10.31	28,452.50	0.08%		0.78%	
UnitedHealth Group Inc	UNH	940.90	475.87	1.22	12.19	447,745.61	1.19%	1.45%	14.46%	
Marathon Oil Corp	MRO	730.77	22.56	1.24	-1.68	16,486.06	0.04%	0.05%	-0.07%	
Bio-Rad Laboratories Inc	BIO	24.86	625.96	n/a	13.90	15,561.99	0.04%		0.57%	
Ventas Inc	VTR	399.50	54.00	3.33	13.82	21,572.78	0.06%	0.19%	0.79%	

Name	Ticker	Shares	Outst'g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
VF Corp	VFC	388.90	58.02	3.45	29.56	22,564.09	0.06%	0.21%	1.77%	
Vornado Realty Trust	VNO	191.72	43.28	4.90	-15.89	8,297.81	0.02%	0.11%	-0.35%	
Vulcan Materials Co	VMC	132.79	181.45	0.88	24.14	24,095.11	0.06%	0.06%	1.54%	
Weyerhaeuser Co	WY	746.33	38.88	1.85	n/a	0.00	0.00%	0.00%		
Whirlpool Corp	WHR	58.61	201.27	3.48	6.16	11,796.64	0.03%	0.11%	0.19%	
Williams Cos Inc/The	WMB	1215.59	31.28	5.43	6.00	38,023.75	0.10%	0.55%	0.60%	
Constellation Energy Corp	CEG	326.00	45.98	1.23	n/a	0.00	0.00%	0.00%		
WEC Energy Group Inc	WEC	315.44	90.88	3.20	6.62	28,666.73	0.08%	0.24%	0.50%	
Adobe Inc	ADBE	471.70	467.68	n/a	16.45	220,604.66	0.58%		9.62%	
AES Corp/The	AES	667.40	21.23	2.98	8.00	14,168.80	0.04%	0.11%	0.30%	
Amgen Inc	AMGN	557.03	226.48	3.43	7.40	126,155.93	0.33%	1.15%	2.47%	
Apple Inc	AAPL	16319.44	165.12	0.53	9.40	2,694,666.10	7.14%	3.81%	67.12%	
Autodesk Inc	ADSK	219.97	220.23	n/a	16.90	48,444.65	0.13%		2.17%	
Cintas Corp	CTAS	103.73	375.32	1.01	6.00	38,933.07	0.10%	0.10%	0.62%	
Comcast Corp	CMCSA	4523.79	46.76	2.31	10.68	211,532.23	0.56%	1.29%	5.98%	
Molson Coors Beverage Co	TAP	200.60	52.18	2.91	5.98	10,467.26	0.03%	0.08%	0.17%	
KLA Corp	KLAC	150.72	348.50	1.21	14.54	52,524.18	0.14%	0.17%	2.02%	
Marriott International Inc/MD	MAR	326.31	170.14	n/a	40.03	55,518.55	0.15%		5.89%	
McCormick & Co Inc/MD	MKC	249.74	95.17	1.56	5.05	23,768.04	0.06%	0.10%	0.32%	
PACCAR Inc	PCAR	347.57	91.81	1.48	10.90	31,910.59	0.08%	0.13%	0.92%	
Costco Wholesale Corp	COST	443.43	519.25	0.61	10.71	230,252.07	0.61%	0.37%	6.53%	
First Republic Bank/CA	FRC	179.06	173.26	0.51	12.39	31,023.94	0.08%	0.04%	1.02%	
Stryker Corp	SYK	377.55	263.35	1.06	12.07	99,426.48	0.26%	0.28%	3.18%	
Tyson Foods Inc	TSN	292.46	92.66	1.99	0.78	27,098.88	0.07%	0.14%	0.06%	
Lamb Weston Holdings Inc	LW	145.20	66.43	1.48	13.26	9,645.90	0.03%	0.04%	0.34%	
Applied Materials Inc	AMAT	883.40	134.20	0.72	12.18	118,551.61	0.31%	0.22%	3.82%	
American Airlines Group Inc	AAL	649.16	17.25	n/a	n/a	0.00	0.00%			
Cardinal Health Inc	CAH	277.06	54.01	3.63	4.34	14,964.06	0.04%	0.14%	0.17%	
Cerner Corp	CERN	293.34	93.25	1.16	11.00	27,354.33	0.07%	0.08%	0.80%	
Cincinnati Financial Corp	CINF	160.43	122.79	2.25	n/a	0.00	0.00%	0.00%		
Paramount Global	PARA	607.88	30.61	3.14	1.85	18,607.11	0.05%	0.15%	0.09%	
DR Horton Inc	DHI	354.36	85.40	1.05	18.07	30,262.17	0.08%	0.08%	1.45%	
Electronic Arts Inc	EA	281.22	130.09	0.52	9.30	36,584.17	0.10%	0.05%	0.90%	
Expeditors International of Washington Inc	EXPD	169.40	103.36	1.12	-7.65	17,509.60	0.05%	0.05%	-0.35%	
Fastenal Co	FAST	575.55	51.46	2.41	9.30	29,618.01	0.08%	0.19%	0.73%	
M&T Bank Corp	MTB	129.03	182.23	2.63	7.54	23,513.87	0.06%	0.16%	0.47%	
Xcel Energy Inc	XEL	544.21	67.33	2.90	6.90	36,641.93	0.10%	0.28%	0.67%	
Fiserv Inc	FISV	652.20	97.67	n/a	16.40	63,700.08	0.17%		2.77%	
Fifth Third Bancorp	FITB	683.67	47.84	2.51	2.20	32,706.82	0.09%	0.22%	0.19%	
Gilead Sciences Inc	GILD	1253.89	60.40	4.83	8.67	75,734.77	0.20%	0.97%	1.74%	
Hasbro Inc	HAS	138.96	97.05	2.89	5.60	13,486.07	0.04%	0.10%	0.20%	
Huntington Bancshares Inc/OH	HBAN	1438.09	15.52	3.99	17.65	22,319.13	0.06%	0.24%	1.04%	
Welltower Inc	WELL	447.28	83.29	2.93	19.74	37,253.95	0.10%	0.29%	1.95%	
Biogen Inc	BIIB	146.96	211.01	n/a	-5.95	31,010.66	0.08%		-0.49%	
Northern Trust Corp	NTRS	207.90	113.90	2.46	13.60	23,679.58	0.06%	0.15%	0.85%	
Packaging Corp of America	PKG	93.53	147.19	2.72	3.00	13,767.27	0.04%	0.10%	0.11%	
Paychex Inc	PAYX	360.76	119.06	2.22	9.00	42,951.73	0.11%	0.25%	1.02%	
People's United Financial Inc	PBCT	427.92	21.08	3.46	n/a	0.00	0.00%	0.00%		
QUALCOMM Inc	QCOM	1127.00	171.99	1.58	15.57	193,832.73	0.51%	0.81%	8.00%	
Roper Technologies Inc	ROP	105.60	448.22	0.55	11.93	47,333.38	0.13%	0.07%	1.50%	
Ross Stores Inc	ROST	353.33	91.39	1.25	53.80	32,290.83	0.09%	0.11%	4.60%	
IDEXX Laboratories Inc	IDXX	84.25	532.35	n/a	10.92	44,849.96	0.12%		1.30%	
Starbucks Corp	SBUX	1150.30	91.79	2.14	12.48	105,586.04	0.28%	0.60%	3.49%	
KeyCorp	KEY	927.76	25.07	3.11	19.12	23,258.97	0.06%	0.19%	1.18%	
Fox Corp	FOXA	315.81	41.83	1.15	8.39	13,210.16	0.04%	0.04%	0.29%	
Fox Corp	FOX	247.10	38.26	1.25	8.39	9,453.89	0.03%	0.03%	0.21%	
State Street Corp	STT	366.07	85.33	2.67	10.20	31,236.50	0.08%	0.22%	0.84%	
Norwegian Cruise Line Holdings Ltd	NCLH	416.89	19.49	n/a	153.32	8,125.23	0.02%		3.30%	
US Bancorp	USB	1483.90	56.54	3.25	9.31	83,899.82	0.22%	0.72%	2.07%	
A O Smith Corp	AOS	131.41	68.58	1.63	10.00	9,012.37	0.02%	0.04%	0.24%	
NortonLifeLock Inc	NLOK	582.18	28.98	1.73	9.50	16,871.61	0.04%	0.08%	0.42%	
T Rowe Price Group Inc	TROW	228.09	144.56	3.32	3.32	32,973.12	0.09%	0.29%	0.29%	
Waste Management Inc	WM	414.59	144.40	1.59	11.37	59,866.36	0.16%	0.25%	1.80%	
Constellation Brands Inc	STZ	164.34	215.62	1.41	8.05	35,434.78	0.09%	0.13%	0.76%	
DENTSPLY SIRONA Inc	XRAY	218.61	54.14	0.92	10.25	11,835.38	0.03%	0.03%	0.32%	
Zions Bancorp NA	ZION	151.57	70.89	2.14	8.93	10,745.08	0.03%	0.06%	0.25%	
Alaska Air Group Inc	ALK	125.91	56.14	n/a	n/a	0.00	0.00%			
Invesco Ltd	IVZ	460.75	21.24	3.20	0.20	9,786.35	0.03%	0.08%	0.01%	
Linde PLC	LIN	508.33	293.24	1.60	9.73	149,063.28	0.39%	0.63%	3.84%	
Intuit Inc	INTU	283.17	474.37	0.57	17.43	134,325.93	0.36%	0.20%	6.21%	
Morgan Stanley	MS	1781.30	90.74	3.09	3.33	161,635.07	0.43%	1.32%	1.43%	
Microchip Technology Inc	MCHP	555.99	70.33	1.44	17.71	39,102.85	0.10%	0.15%	1.84%	
Chubb Ltd	CB	426.23	203.64	1.57	12.87	86,797.27	0.23%	0.36%	2.96%	
Hologic Inc	HOLX	249.98	71.17	n/a	-18.45	17,791.36	0.05%		-0.87%	
Citizens Financial Group Inc	CFG	422.14	52.42	2.98	0.99	22,128.68	0.06%	0.17%	0.06%	
O'Reilly Automotive Inc	ORLY	66.60	649.24	n/a	15.72	43,240.03	0.11%		1.80%	
Allstate Corp/The	ALL	278.35	122.36	2.78	3.63	34,058.42	0.09%	0.25%	0.33%	
Equity Residential	EQR	375.92	85.30	2.83	10.96	32,065.72	0.08%	0.24%	0.93%	
BorgWarner Inc	BWA	239.97	41.01	1.66	29.15	9,841.21	0.03%	0.04%	0.76%	
Organon & Co	OGN	253.55	37.33	3.00	-2.99	9,465.02	0.03%	0.08%	-0.07%	
Host Hotels & Resorts Inc	HST	714.15	18.27	0.16	n/a	0.00	0.00%	0.00%		
Incyte Corp	INCY	221.33	68.30	n/a	36.00	15,116.50	0.04%		1.44%	

Name	Ticker	Shares Outst'g	Price	Dividend Yield	Bloomberg Long-Term Growth Estimate	Market Cap Excl. n/a	% of Total Market Cap.	Cap. Div. Yield	Cap. Weighted Long-Term Growth
Simon Property Group Inc	SPG	342.85	137.56	4.80	8.67	47,162.31	0.12%	0.60%	1.08%
Eastman Chemical Co	EMN	128.97	118.47	2.57	13.76	15,278.84	0.04%	0.10%	0.56%
Twitter Inc	TWTR	800.64	35.55	n/a	39.00	28,462.79	0.08%		2.94%
AvalonBay Communities Inc	AVB	139.75	238.59	2.67	8.02	33,343.43	0.09%	0.24%	0.71%
Prudential Financial Inc	PRU	376.30	111.66	4.30	2.40	42,017.66	0.11%	0.48%	0.27%
United Parcel Service Inc	UPS	732.55	210.42	2.89	8.90	154,144.01	0.41%	1.18%	3.63%
Walgreens Boots Alliance Inc	WBA	863.27	46.09	4.14	0.74	39,788.21	0.11%	0.44%	0.08%
STERIS PLC	STE	100.13	240.00	0.72	10.80	24,030.48	0.06%	0.05%	0.69%
McKesson Corp	MCK	149.80	274.96	0.68	11.66	41,188.46	0.11%	0.07%	1.27%
Lockheed Martin Corp	LMT	272.33	433.80	2.58	4.12	118,135.45	0.31%	0.81%	1.29%
AmerisourceBergen Corp	ABC	209.14	142.53	1.29	8.25	29,808.30	0.08%	0.10%	0.65%
Capital One Financial Corp	COF	413.66	153.27	1.57	41.05	63,401.82	0.17%	0.26%	6.90%
Waters Corp	WAT	60.52	316.73	n/a	10.35	19,167.23	0.05%		0.53%
Nordson Corp	NDSN	57.94	226.49	0.90	11.93	13,123.06	0.03%	0.03%	0.41%
Dollar Tree Inc	DLTR	224.96	142.08	n/a	11.55	31,961.75	0.08%		0.98%
Darden Restaurants Inc	DRI	127.72	145.22	3.03	12.85	18,548.08	0.05%	0.15%	0.63%
Match Group Inc	MTCH	285.15	111.49	n/a	48.47	31,791.15	0.08%		4.08%
Dominio's Pizza Inc	DPZ	36.39	432.21	0.87	n/a	0.00	0.00%	0.00%	
NVR Inc	NVR	3.38	4958.44	n/a	26.00	16,774.40	0.04%		1.16%
NetApp Inc	NTAP	222.28	78.38	2.55	11.16	17,422.15	0.05%	0.12%	0.52%
Citrix Systems Inc	CTXS	125.55	102.50	1.44	10.20	12,868.77	0.03%	0.05%	0.35%
DXC Technology Co	DXC	244.48	34.03	n/a	27.18	8,319.59	0.02%		0.60%
Old Dominion Freight Line Inc	ODFL	114.86	314.03	0.38	17.72	36,070.74	0.10%	0.04%	1.69%
DaVita Inc	DVA	96.30	112.77	n/a	10.56	10,859.75	0.03%		0.30%
Hartford Financial Services Group Inc/The	HIG	331.65	69.48	2.22	7.00	23,042.83	0.06%	0.14%	0.43%
Iron Mountain Inc	IRM	289.83	49.18	5.03	4.00	14,253.84	0.04%	0.19%	0.15%
Estee Lauder Cos Inc/The	EL	232.42	296.33	0.81	12.21	68,874.20	0.18%	0.15%	2.23%
Cadence Design Systems Inc	CDNS	277.34	151.43	n/a	13.72	41,996.99	0.11%		1.53%
Tyler Technologies Inc	TYL	41.35	428.26	n/a	16.27	17,708.12	0.05%		0.76%
Universal Health Services Inc	UHS	67.55	143.93	0.56	9.42	9,722.76	0.03%	0.01%	0.24%
Skyworks Solutions Inc	SWKS	164.01	138.17	1.62	9.94	22,660.71	0.06%	0.10%	0.60%
Quest Diagnostics Inc	DGX	119.46	131.27	2.01	-6.42	15,680.86	0.04%	0.08%	-0.27%
Activision Blizzard Inc	ATVI	779.24	81.50	0.58	10.80	63,507.65	0.17%	0.10%	1.82%
Rockwell Automation Inc	ROK	116.20	266.58	1.68	10.46	30,975.53	0.08%	0.14%	0.86%
Kraft Heinz Co/The	KHC	1223.74	39.22	4.08	4.60	47,995.08	0.13%	0.52%	0.59%
American Tower Corp	AMT	455.89	226.87	2.45	13.04	103,426.63	0.27%	0.67%	3.57%
Regeneron Pharmaceuticals Inc	REGN	106.72	618.36	n/a	-3.27	65,988.91	0.17%		-0.57%
Amazon.com Inc	AMZN	508.84	3071.26	n/a	18.87	1,562,792.22	4.14%		78.13%
Jack Henry & Associates Inc	JKHY	72.83	176.80	1.11	15.05	12,875.46	0.03%	0.04%	0.51%
Ralph Lauren Corp	RL	46.29	132.04	2.08	90.72	6,111.60	0.02%	0.03%	1.47%
Boston Properties Inc	BXP	156.68	122.31	3.20	-8.21	19,163.04	0.05%	0.16%	-0.42%
Amphenol Corp	APH	598.94	76.01	1.05	10.14	45,525.43	0.12%	0.13%	1.22%
Howmet Aerospace Inc	HWM	418.91	35.92	0.22	33.00	15,047.07	0.04%	0.01%	1.32%
Pioneer Natural Resources Co	PXD	242.88	239.60	6.31	13.23	58,195.01	0.15%	0.97%	2.04%
Valero Energy Corp	VLO	409.30	83.51	4.69	n/a	0.00	0.00%	0.00%	
Synopsys Inc	SNPS	153.10	312.39	n/a	16.36	47,826.60	0.13%		2.07%
Etsy Inc	ETSY	127.03	154.89	n/a	23.77	19,676.14	0.05%		1.24%
CH Robinson Worldwide Inc	CHRW	128.80	96.68	2.28	12.65	12,452.29	0.03%	0.08%	0.42%
Accenture PLC	ACN	658.33	316.02	1.23	11.00	208,046.39	0.55%	0.68%	6.06%
TransDigm Group Inc	TDG	55.46	666.59	n/a	23.15	36,970.41	0.10%		2.27%
Yum! Brands Inc	YUM	288.98	122.58	1.86	11.59	35,423.29	0.09%	0.17%	1.09%
Prologis Inc	PLD	739.75	145.85	2.17	8.27	107,891.81	0.29%	0.62%	2.36%
FirstEnergy Corp	FE	570.34	41.85	3.73	4.63	23,868.90	0.06%	0.24%	0.29%
VeriSign Inc	VRSN	110.17	213.72	n/a	8.80	23,544.89	0.06%		0.55%
Quanta Services Inc	PWR	142.69	108.94	0.26	14.50	15,544.65	0.04%	0.01%	0.60%
Henry Schein Inc	HSIC	137.17	86.38	n/a	14.95	11,849.00	0.03%		0.47%
Ameren Corp	AEE	255.41	85.95	2.75	7.70	21,952.49	0.06%	0.16%	0.45%
ANSYS Inc	ANSS	87.23	324.19	n/a	11.65	28,279.09	0.07%		0.87%
FactSet Research Systems Inc	FDS	37.80	406.09	0.81	9.00	15,348.98	0.04%	0.03%	0.37%
NVIDIA Corp	NVDA	2500.00	243.85	0.07	25.13	609,625.00	1.62%	0.11%	40.59%
Sealed Air Corp	SEE	148.16	67.13	1.19	8.79	9,945.85	0.03%	0.03%	0.23%
Cognizant Technology Solutions Corp	CTSH	524.54	86.13	1.25	12.40	45,178.20	0.12%	0.15%	1.48%
SVB Financial Group	SIVB	58.75	606.00	n/a	7.00	35,601.29	0.09%		0.66%
Intuitive Surgical Inc	ISRG	357.74	290.33	n/a	3.25	103,863.82	0.28%		0.89%
Take-Two Interactive Software Inc	TTWO	115.42	162.00	n/a	9.90	18,697.39	0.05%		0.49%
Republic Services Inc	RSRG	316.43	120.28	1.53	8.76	38,060.32	0.10%	0.15%	0.88%
eBay Inc	EBAY	587.53	54.59	1.61	8.92	32,073.21	0.08%	0.14%	0.76%
Goldman Sachs Group Inc/The	GS	337.92	341.29	2.34	6.80	115,329.74	0.31%	0.72%	2.08%
SBA Communications Corp	SBAC	108.78	303.39	0.94	23.30	33,003.07	0.09%	0.08%	2.04%
Sempra Energy	SRE	315.07	144.22	3.18	5.85	45,439.54	0.12%	0.38%	0.70%
Moody's Corp	MCO	185.20	322.03	0.87	10.00	59,639.96	0.16%	0.14%	1.58%
Booking Holdings Inc	BKNG	40.89	2172.25	n/a	28.35	88,818.96	0.24%		6.67%
F5 Inc	FFIV	60.74	200.85	n/a	13.60	12,199.23	0.03%		0.44%
Akamai Technologies Inc	AKAM	160.35	108.26	n/a	16.30	17,359.17	0.05%		0.75%
Charles River Laboratories International Inc	CRL	50.49	291.16	n/a	15.15	14,699.50	0.04%		0.59%
MarketAxess Holdings Inc	MKTX	37.84	381.43	0.73	10.80	14,431.40	0.04%	0.03%	0.41%
Devon Energy Corp	DVN	664.20	59.55	6.72	16.68	39,553.11	0.10%	0.70%	1.75%
Alphabet Inc	GOOGL	300.76	2701.14	n/a	20.34	812,381.36	2.15%		43.79%
Bio-Techne Corp	TECH	39.29	419.41	0.31	25.07	16,477.78	0.04%	0.01%	1.09%
Teleflex Inc	TFX	46.85	336.31	0.40	11.70	15,754.44	0.04%	0.02%	0.49%
Netflix Inc	NFLX	443.96	394.52	n/a	27.97	175,152.28	0.46%		12.98%
Allegion plc	ALLE	88.23	114.52	1.43	7.09	10,104.10	0.03%	0.04%	0.19%



Name	Ticker	Shares	Outst'g	Price	Dividend Yield	Bloomberg	Market Cap	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
						Long-Term Growth Estimate				
Agilent Technologies Inc	A	302.00	130.36	0.64	10.65	39,368.72	0.10%	0.07%	1.11%	
Anthem Inc	ANTM	241.30	451.85	1.13	10.09	109,033.21	0.29%	0.33%	2.92%	
Trimble Inc	TRMB	251.22	69.75	n/a	10.00	17,522.32	0.05%		0.46%	
CME Group Inc	CME	359.40	236.53	1.69	7.85	85,007.70	0.23%	0.38%	1.77%	
Juniper Networks Inc	JNPR	322.76	33.79	2.49	8.85	10,906.03	0.03%	0.07%	0.26%	
BlackRock Inc	BLK	152.04	743.89	2.62	10.00	113,102.52	0.30%	0.79%	3.00%	
DTE Energy Co	DTE	193.75	121.59	2.91	5.87	23,558.31	0.06%	0.18%	0.37%	
Nasdaq Inc	NDQA	164.41	171.15	1.26	10.64	28,139.11	0.07%	0.09%	0.79%	
Celanese Corp	CE	108.03	139.28	1.95	8.26	15,046.28	0.04%	0.08%	0.33%	
Philip Morris International Inc	PM	1549.83	101.07	4.95	7.86	156,641.12	0.42%	2.05%	3.26%	
salesforce.com Inc	CRM	985.00	210.53	n/a	17.28	207,372.05	0.55%		9.50%	
Ingersoll Rand Inc	IR	407.97	50.52	0.16	14.85	20,610.54	0.05%	0.01%	0.81%	
Huntington Ingalls Industries Inc	HI	39.99	204.40	2.31	25.20	8,173.75	0.02%	0.05%	0.55%	
MetLife Inc	MET	825.08	67.55	2.84	1.41	55,734.02	0.15%	0.42%	0.21%	
Under Armour Inc	UA	253.22	15.63	n/a	n/a	0.00	0.00%			
Tapestry Inc	TPR	263.99	40.90	2.44	13.53	10,797.19	0.03%	0.07%	0.39%	
CSX Corp	CSX	2193.39	33.91	1.18	12.45	74,377.82	0.20%	0.23%	2.45%	
Edwards Lifesciences Corp	EW	623.21	112.37	n/a	14.33	70,029.77	0.19%		2.66%	
Ameriprise Financial Inc	AMP	110.75	299.79	1.51	14.50	33,202.04	0.09%	0.13%	1.28%	
Zebra Technologies Corp	ZBRA	53.08	413.34	n/a	10.80	21,940.09	0.06%		0.63%	
Zimmer Biomet Holdings Inc	ZBH	209.18	123.39	0.78	8.63	25,810.33	0.07%	0.05%	0.59%	
CBRE Group Inc	CBRE	334.67	96.85	n/a	19.40	32,412.40	0.09%		1.67%	
Mastercard Inc	MA	969.73	360.82	0.54	22.26	349,897.62	0.93%	0.50%	20.64%	
CarMax Inc	KMX	161.68	109.33	n/a	17.07	17,676.47	0.05%		0.80%	
Intercontinental Exchange Inc	ICE	561.85	128.12	1.19	9.55	71,984.48	0.19%	0.23%	1.82%	
Fidelity National Information Services Inc	FIS	609.59	95.23	1.97	11.81	58,051.35	0.15%	0.30%	1.82%	
Chipotle Mexican Grill Inc	CMG	28.03	1523.35	n/a	29.20	42,702.55	0.11%		3.30%	
Wynn Resorts Ltd	WYNN	115.90	86.52	n/a	n/a	0.00	0.00%			
Live Nation Entertainment Inc	LYV	224.63	120.82	n/a	n/a	0.00	0.00%			
Assurant Inc	AIZ	55.16	169.71	1.60	17.67	9,361.54	0.02%	0.04%	0.44%	
NRG Energy Inc	NRG	242.15	37.84	3.70	29.36	9,163.07	0.02%	0.09%	0.71%	
Regions Financial Corp	RF	937.15	24.19	2.81	-1.12	22,669.56	0.06%	0.17%	-0.07%	
Monster Beverage Corp	MNST	529.36	84.40	n/a	10.20	44,677.90	0.12%		1.21%	
Mosaic Co/The	MOS	368.31	52.43	0.86	-5.67	19,310.44	0.05%	0.04%	-0.29%	
Baker Hughes Co	BKR	953.34	29.38	2.45	63.81	28,009.16	0.07%	0.18%	4.74%	
Expedia Group Inc	EXPE	150.23	196.11	n/a	32.25	29,461.80	0.08%		2.52%	
Evergy Inc	EVER	226.99	62.41	3.67	6.21	14,166.63	0.04%	0.14%	0.23%	
Discovery Inc	DISCA	169.58	28.05	n/a	-2.75	4,756.72	0.01%		-0.03%	
CF Industries Holdings Inc	CF	207.31	81.19	1.48	8.87	16,831.09	0.04%	0.07%	0.40%	
Leidos Holdings Inc	LDOS	140.51	101.84	1.41	7.17	14,309.03	0.04%	0.05%	0.27%	
APA Corp	APA	346.78	35.63	1.40	14.62	12,355.63	0.03%	0.05%	0.48%	
Alphabet Inc	GOOG	315.64	2697.82	n/a	20.34	851,537.21	2.26%		45.90%	
TE Connectivity Ltd	TEL	325.58	142.43	1.57	9.02	46,371.65	0.12%	0.19%	1.11%	
Cooper Cos Inc/The	COO	49.30	409.02	0.01	11.90	20,163.05	0.05%	0.00%	0.64%	
Discover Financial Services	DFS	284.90	123.44	1.62	25.35	35,168.55	0.09%	0.15%	2.36%	
Visa Inc	V	1658.42	216.12	0.69	18.44	358,418.59	0.95%	0.66%	17.51%	
Mid-America Apartment Communities Inc	MAA	115.34	204.61	2.13	n/a	0.00	0.00%	0.00%		
Xylem Inc/NY	XYL	179.90	88.95	1.35	15.75	16,002.19	0.04%	0.06%	0.67%	
Marathon Petroleum Corp	MPC	565.21	77.87	2.98	10.93	44,013.14	0.12%	0.35%	1.27%	
Tractor Supply Co	TSCO	112.77	203.79	1.81	9.10	22,981.81	0.06%	0.11%	0.55%	
Advanced Micro Devices Inc	AMD	1627.37	123.34	n/a	32.95	200,719.20	0.53%		17.53%	
ResMed Inc	RMD	146.23	246.75	0.68	15.97	36,083.24	0.10%	0.07%	1.53%	
Mettler-Toledo International Inc	MTD	22.81	1408.74	n/a	17.37	32,127.72	0.09%		1.48%	
Copart Inc	CPRT	237.19	122.88	n/a	n/a	0.00	0.00%			
Albemarle Corp	ALB	117.04	195.89	0.81	24.28	22,926.38	0.06%	0.05%	1.48%	
Fortinet Inc	FTNT	160.82	344.52	n/a	17.16	55,403.98	0.15%		2.52%	
Moderna Inc	MRNA	402.87	153.60	n/a	-165.06	61,881.29	0.16%		-27.07%	
Essex Property Trust Inc	ESS	65.28	317.17	2.77	7.22	20,704.54	0.05%	0.15%	0.40%	
Realty Income Corp	O	591.32	66.09	4.48	7.57	39,080.40	0.10%	0.46%	0.78%	
Westrock Co	WRK	263.21	45.27	2.21	14.21	11,915.70	0.03%	0.07%	0.45%	
IHS Markit Ltd	INFO	#N/A	N/A	#N/A	N/A	11.20	0.00%	0.00%	0.00%	
Westinghouse Air Brake Technologies Corp	WAB	185.29	92.82	0.65	10.27	17,198.62	0.05%	0.03%	0.47%	
Pool Corp	POOL	40.17	458.58	0.70	n/a	0.00	0.00%	0.00%		
Western Digital Corp	WDC	312.92	50.94	n/a	13.62	15,940.04	0.04%		0.58%	
PepsiCo Inc	PEP	1383.45	163.74	2.63	7.35	226,526.27	0.60%	1.58%	4.41%	
Diamondback Energy Inc	FANG	177.42	138.10	1.74	23.11	24,501.01	0.06%	0.11%	1.50%	
ServiceNow Inc	NOW	200.00	579.92	n/a	36.00	115,984.00	0.31%		11.06%	
Church & Dwight Co Inc	CHD	242.69	97.85	1.07	6.83	23,747.41	0.06%	0.07%	0.43%	
Duke Realty Corp	DRE	382.77	53.00	2.11	7.56	20,286.70	0.05%	0.11%	0.41%	
Federal Realty Investment Trust	FRT	78.62	117.58	3.64	13.11	9,243.79	0.02%	0.09%	0.32%	
MGM Resorts International	MGM	439.17	44.29	0.02	0.85	19,450.93	0.05%	0.00%	0.04%	
American Electric Power Co Inc	AEP	504.21	90.65	3.44	6.24	45,706.82	0.12%	0.42%	0.76%	
SolarEdge Technologies Inc	SEDG	52.82	319.42	n/a	23.27	16,871.44	0.04%		1.04%	
PTC Inc	PTC	116.95	111.28	n/a	12.14	13,014.42	0.03%		0.42%	
JB Hunt Transport Services Inc	JBHT	104.85	202.93	0.79	21.50	21,277.21	0.06%	0.04%	1.21%	
Lam Research Corp	LRCX	139.50	561.35	1.07	13.53	78,308.33	0.21%	0.22%	2.81%	
Mohawk Industries Inc	MHK	65.07	140.78	n/a	13.59	9,160.70	0.02%		0.33%	
Pentair PLC	PNR	165.10	57.91	1.45	9.60	9,560.88	0.03%	0.04%	0.24%	
Vertex Pharmaceuticals Inc	VRTX	254.58	230.02	n/a	28.98	58,557.80	0.16%		4.50%	
Amcor PLC	AMCR	1513.73	11.63	4.13	7.80	17,604.65	0.05%	0.19%	0.36%	
Meta Platforms Inc	FB	2309.08	211.03	n/a	19.42	487,285.15	1.29%		25.07%	
T-Mobile US Inc	TMUS	1249.29	123.21	n/a	20.33	153,925.02	0.41%		8.29%	

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United Rentals Inc	URI	72.42	321.62	n/a	14.01	23,292.36	0.06%		0.86%
ABIOMED Inc	ABMD	45.52	310.74	n/a	n/a	0.00	0.00%		
Honeywell International Inc	HON	685.82	189.75	2.07	10.35	130,134.16	0.34%	0.71%	3.57%
Alexandria Real Estate Equities Inc	ARE	159.94	189.40	2.43	-2.12	30,293.20	0.08%	0.19%	-0.17%
Delta Air Lines Inc	DAL	639.93	39.92	n/a	86.00	25,546.01	0.07%		5.82%
Seagate Technology Holdings PLC	STX	218.90	103.16	2.71	8.18	22,581.52	0.06%	0.16%	0.49%
United Airlines Holdings Inc	UAL	323.61	44.40	n/a	n/a	0.00	0.00%		
News Corp	NWS	198.48	22.43	0.89	14.30	4,451.97	0.01%	0.01%	0.17%
Centene Corp	CNC	582.87	82.62	n/a	10.65	48,156.39	0.13%		1.36%
Martin Marietta Materials Inc	MLM	62.40	379.40	0.64	13.23	23,672.66	0.06%	0.04%	0.83%
Teradyne Inc	TER	162.42	117.92	0.37	12.64	19,152.21	0.05%	0.02%	0.64%
PayPal Holdings Inc	PYPL	1165.01	111.93	n/a	19.93	130,399.01	0.35%		6.89%
Tesla Inc	TSLA	1033.51	870.43	n/a	36.20	899,596.37	2.38%		86.29%
DISH Network Corp	DISH	290.57	31.96	n/a	1.75	9,286.65	0.02%		0.04%
Dow Inc	DOW	735.75	58.96	4.75	27.00	43,379.64	0.11%	0.55%	3.10%
Penn National Gaming Inc	PENN	168.32	51.35	n/a	16.00	8,643.39	0.02%		0.37%
Everest Re Group Ltd	RE	39.27	298.22	2.08	41.40	11,711.70	0.03%	0.06%	1.28%
Teledyne Technologies Inc	TDY	47.20	429.38	n/a	9.22	20,264.59	0.05%		0.50%
News Corp	NWSA	390.87	22.32	0.90	14.30	8,724.31	0.02%	0.02%	0.33%
Exelon Corp	EXC	978.32	42.56	3.17	n/a	0.00	0.00%	0.00%	
Global Payments Inc	GPV	281.97	133.38	0.75	17.43	37,608.89	0.10%	0.07%	1.74%
Crown Castle International Corp	CCI	432.22	166.59	3.53	10.10	72,002.70	0.19%	0.67%	1.93%
Aptiv PLC	APTIV	270.51	129.44	n/a	22.27	35,015.33	0.09%		2.07%
Advance Auto Parts Inc	AAP	61.10	204.48	2.93	16.53	12,493.32	0.03%	0.10%	0.55%
Align Technology Inc	ALGN	78.80	511.46	n/a	15.28	40,300.49	0.11%		1.63%
Illumina Inc	ILMN	157.00	326.60	n/a	31.19	51,276.20	0.14%		4.24%
LKQ Corp	LKQ	285.01	46.95	2.13	3.30	13,381.41	0.04%	0.08%	0.12%
Nielsen Holdings PLC	NLSN	359.49	17.42	1.38	n/a	0.00	0.00%	0.00%	
Zoetis Inc	ZTS	471.97	193.65	0.67	12.56	91,397.18	0.24%	0.16%	3.04%
Zimvie Inc	ZIMV	#N/A	#N/A	n/a	n/a	0.00	0.00%		
Equinix Inc	EQIX	90.72	709.73	1.75	18.30	64,387.42	0.17%	0.30%	3.12%
Digital Realty Trust Inc	DLR	284.47	134.92	3.44	14.56	38,380.56	0.10%	0.35%	1.48%
Las Vegas Sands Corp	LVS	763.99	42.86	n/a	n/a	0.00	0.00%		
Discovery Inc	DISCK	330.15	27.97	n/a	-2.75	9,234.41	0.02%		-0.07%

MARKET RISK PREMIUM CALCULATION USING CAP. WEIGHTED VALUE LINE GROWTH RATES

[7] Cap. Weighted Estimate of the S&P 500 Dividend Yield	1.45%
[8] Cap. Weighted Estimate of the S&P 500 Growth Rate	14.61%
[9] Cap. Weighted S&P 500 Estimated Required Market Return	16.17%

Notes:

- [7] Source: Bloomberg Professional, as of February 28, 2022
- [8] Source: Bloomberg Professional, as of February 28, 2022 and Value Line, as of February 28, 2022
- [9] Equals  $([7] \times (1 + (0.5 \times [8]))) + [8]$

Name	Ticker	Shares Outstg	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
LyondellBasell Industries NV	LYB	328.01	97.23	4.65	5.50	31,892.41	0.09%	0.41%	0.49%
Signature Bank/New York NY	SBNY	62.57	344.89	0.65	12.00	21,579.42	0.06%	0.04%	0.72%
American Express Co	AXP	759.36	194.54	0.88	12.00	147,724.92	0.41%	0.36%	4.91%
Verizon Communications Inc	VZ	4197.82	53.67	4.77	2.50	225,297.21	0.62%	2.98%	1.56%
Broadcom Inc	AVGO	409.61	587.44	2.79	27.00	240,623.06	0.67%	1.86%	18.00%
Boeing Co/The	BA	583.00	205.34	n/a		0.00	0.00%		0.00%
Caterpillar Inc	CAT	535.89	187.58	2.37	8.00	100,521.87	0.28%	0.66%	2.23%
JPMorgan Chase & Co	JPM	2952.81	141.80	2.82	7.50	418,708.32	1.16%	3.27%	8.70%
Chevron Corp	CVX	1947.55	144.00	3.94	25.00	280,447.63	0.78%	3.07%	19.43%
Coca-Cola Co/The	KO	4335.47	62.24	2.83	7.00	269,839.84	0.75%	2.11%	5.23%
AbbVie Inc	ABBV	1768.75	147.77	3.82	6.50	261,368.78	0.72%	2.76%	4.71%
Walt Disney Co/The	DIS	1820.63	148.46	n/a	37.50	270,291.18	0.75%		28.09%
FleetCor Technologies Inc	FLT	81.20	234.20	n/a	11.00	19,016.81	0.05%		0.58%
Extra Space Storage Inc	EXR	134.15	188.15	3.19	5.50	25,240.89	0.07%	0.22%	0.38%
Exxon Mobil Corp	XOM	4233.59	78.42	4.49		0.00	0.00%	0.00%	0.00%
Phillips 66	PSX	438.46	84.24	4.37	17.00	36,936.04	0.10%	0.45%	1.74%
General Electric Co	GE	1099.32	95.51	0.34	15.00	104,996.24	0.29%	0.10%	4.36%
HP Inc	HPQ	1053.37	34.36	2.91	15.50	36,193.66	0.10%	0.29%	1.55%
Home Depot Inc/The	HD	1044.24	315.83	2.41	11.00	329,802.00	0.91%	2.20%	10.05%
Monolithic Power Systems Inc	MPWR	46.51	458.70	0.65	20.50	21,333.68	0.06%	0.04%	1.21%
International Business Machines Corp	IBM	899.31	122.51	5.35	0.50	110,174.47	0.31%	1.63%	0.15%
Johnson & Johnson	JNJ	2629.27	164.57	2.58	8.00	432,698.63	1.20%	3.09%	9.59%
McDonald's Corp	MCD	743.59	244.77	2.26	10.00	182,007.30	0.50%	1.14%	5.04%
Merck & Co Inc	MRK	2527.73	76.58	3.60	7.50	193,573.87	0.54%	1.93%	4.02%
3M Co	MMM	571.10	148.65	4.01	6.00	84,894.02	0.24%	0.94%	1.41%
American Water Works Co Inc	AWK	181.73	151.09	1.60	8.50	27,456.83	0.08%	0.12%	0.65%
Bank of America Corp	BAC	8069.80	44.20	1.90	7.50	356,685.20	0.99%	1.88%	7.41%
Pfizer Inc	PFE	5623.35	46.94	3.41	11.50	263,959.86	0.73%	2.49%	8.41%
Procter & Gamble Co/The	PG	2397.07	155.89	2.23	7.00	373,678.62	1.04%	2.31%	7.25%
AT&T Inc	T	7142.89	23.69	8.78	1.50	169,215.14	0.47%	4.12%	0.70%
Travelers Cos Inc/The	TRV	241.50	171.83	2.05	8.00	41,497.12	0.11%	0.24%	0.92%
Raytheon Technologies Corp	RTX	1492.33	102.70	1.99	7.50	153,262.39	0.42%	0.84%	3.19%
Analog Devices Inc	ADI	523.32	160.29	1.90	11.00	83,882.16	0.23%	0.44%	2.56%
Walmart Inc	WMT	2773.88	135.16	1.66	7.50	374,917.35	1.04%	1.72%	7.79%
Cisco Systems Inc/Delaware	CSCO	4154.17	55.77	2.73	7.00	231,677.95	0.64%	1.75%	4.49%
Intel Corp	INTC	4072.00	47.70	3.06	7.00	194,234.40	0.54%	1.65%	3.77%
General Motors Co	GM	1453.02	46.72	n/a	12.00	67,885.14	0.19%		2.26%
Microsoft Corp	MSFT	7496.87	298.79	0.83	17.50	2,239,988.59	6.21%	5.15%	108.62%
Dollar General Corp	DG	231.71	198.34	0.85	10.50	45,956.77	0.13%	0.11%	1.34%
Cigna Corp	CI	320.95	237.78	1.88	10.00	76,316.20	0.21%	0.40%	2.11%
Kinder Morgan Inc	KMI	2267.49	17.40	6.21	19.00	39,454.24	0.11%	0.68%	2.08%
Citigroup Inc	C	1980.90	59.23	3.44	7.00	117,328.41	0.33%	1.12%	2.28%
American International Group Inc	AIG	814.76	61.24	2.09	31.50	49,895.78	0.14%	0.29%	4.36%
Altria Group Inc	MO	1817.26	51.29	7.02	5.50	93,207.11	0.26%	1.81%	1.42%
HCA Healthcare Inc	HCA	303.60	250.31	0.89	12.50	75,994.12	0.21%	0.19%	2.63%
Under Armour Inc	UA	188.67	17.89	n/a	33.00	3,375.29	0.01%		0.31%
International Paper Co	IP	376.36	43.53	4.25	12.00	16,383.12	0.05%	0.19%	0.54%
Hewlett Packard Enterprise Co	HPE	1300.27	15.92	3.02	6.50	20,700.31	0.06%	0.17%	0.37%
Abbott Laboratories	ABT	1763.48	120.62	1.56	10.00	212,711.20	0.59%	0.92%	5.89%
Aflac Inc	AFL	649.86	61.09	2.62	11.00	39,700.01	0.11%	0.29%	1.21%
Air Products and Chemicals Inc	APD	221.72	236.30	2.74	12.00	52,391.73	0.15%	0.40%	1.74%
Royal Caribbean Cruises Ltd	RCL	254.82	80.72	n/a		0.00	0.00%		0.00%
Hess Corp	HES	309.73	101.06	0.99		0.00	0.00%	0.00%	0.00%
Archer-Daniels-Midland Co	ADM	562.17	78.45	2.04	12.50	44,102.00	0.12%	0.25%	1.53%
Automatic Data Processing Inc	ADP	420.05	204.44	2.03	9.00	85,874.00	0.24%	0.48%	2.14%
Verisk Analytics Inc	VRSK	161.28	177.34	0.70	10.50	28,601.93	0.08%	0.06%	0.83%
AutoZone Inc	AZO	20.63	1863.39	n/a	16.50	38,449.19	0.11%		1.76%
Avery Dennison Corp	AVY	82.46	176.20	1.54	9.00	14,529.63	0.04%	0.06%	0.36%
Enphase Energy Inc	ENPH	133.94	166.70	n/a	40.00	22,327.13	0.06%		2.47%
MSCI Inc	MSCI	81.27	501.69	0.83	15.50	40,771.34	0.11%	0.09%	1.75%
Ball Corp	BLL	321.50	89.74	0.89	21.00	28,851.05	0.08%	0.07%	1.68%
Ceridian HCM Holding Inc	CDAY	152.05	72.91	n/a		0.00	0.00%		0.00%

Name	Ticker	Shares	Outst'g	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Carrier Global Corp	CARR	855.51	44.88	1.34			0.00	0.00%	0.00%	0.00%
Bank of New York Mellon Corp/The	BK	804.50	53.15	2.56	5.00	42,758.91	0.12%	0.30%	0.59%	
Otis Worldwide Corp	OTIS	424.96	78.33	1.23		0.00	0.00%	0.00%	0.00%	
Baxter International Inc	BAX	502.29	84.97	1.32	9.50	42,679.92	0.12%	0.16%	1.12%	
Becton Dickinson and Co	BDX	284.77	271.28	1.28	6.00	77,252.68	0.21%	0.27%	1.28%	
Berkshire Hathaway Inc	BRK/B	1291.21	321.45	n/a	6.00	415,060.42	1.15%		6.90%	
Best Buy Co Inc	BBY	240.56	96.64	2.90	8.50	23,247.82	0.06%	0.19%	0.55%	
Boston Scientific Corp	BSX	1426.73	44.17	n/a	16.00	63,018.44	0.17%		2.79%	
Bristol-Myers Squibb Co	BMJ	2179.71	68.67	3.15	12.50	149,680.89	0.41%	1.30%	5.18%	
Fortune Brands Home & Security Inc	FBHS	134.17	86.90	1.29	11.00	11,659.72	0.03%	0.04%	0.36%	
Brown-Forman Corp	BF/B	309.74	65.23	1.16	13.00	20,204.54	0.06%	0.06%	0.73%	
Coterra Energy Inc	CTRA	813.58	23.33	9.60		0.00	0.00%	0.00%	0.00%	
Campbell Soup Co	CPB	301.74	44.97	3.29	5.50	13,569.16	0.04%	0.12%	0.21%	
Hilton Worldwide Holdings Inc	HLT	279.14	148.86	n/a		0.00	0.00%		0.00%	
Carnival Corp	CCL	986.36	20.33	n/a		0.00	0.00%		0.00%	
Qorvo Inc	QRVO	108.43	136.78	n/a	27.00	14,831.33	0.04%		1.11%	
Lumen Technologies Inc	LUMN	1023.37	10.36	9.65	3.50	10,602.13	0.03%	0.28%	0.10%	
UDR Inc	UDR	318.27	54.87	2.64	6.00	17,463.20	0.05%	0.13%	0.29%	
Clorox Co/The	CLX	123.06	145.79	3.18	5.00	17,940.63	0.05%	0.16%	0.25%	
Paycom Software Inc	PAYC	60.21	339.21	n/a	20.00	20,425.19	0.06%		1.13%	
CMS Energy Corp	CMS	289.76	64.01	2.87	6.00	18,547.54	0.05%	0.15%	0.31%	
Newell Brands Inc	NWL	425.50	23.75	3.87		0.00	0.00%	0.00%	0.00%	
Colgate-Palmolive Co	CL	840.49	76.95	2.34	5.00	64,675.47	0.18%	0.42%	0.90%	
EPAM Systems Inc	EPAM	56.88	207.75	n/a	23.50	11,816.61	0.03%		0.77%	
Comerica Inc	CMA	131.08	95.49	2.85	6.00	12,516.73	0.03%	0.10%	0.21%	
IPG Photonics Corp	IPGP	52.94	130.35	n/a	17.00	6,900.60	0.02%		0.33%	
Conagra Brands Inc	CAG	479.70	34.97	3.57	4.50	16,775.04	0.05%	0.17%	0.21%	
Consolidated Edison Inc	ED	354.09	85.77	3.68	3.50	30,370.30	0.08%	0.31%	0.29%	
Corning Inc	GLW	845.85	40.40	2.67	20.00	34,172.30	0.09%	0.25%	1.89%	
Cummins Inc	CMI	142.43	204.12	2.84	8.00	29,072.20	0.08%	0.23%	0.64%	
Caesars Entertainment Inc	CZR	214.12	84.19	n/a		0.00	0.00%		0.00%	
Danaher Corp	DHR	715.35	274.41	0.36	21.00	196,300.02	0.54%	0.20%	11.42%	
Target Corp	TGT	479.12	199.77	1.80	15.00	95,714.60	0.27%	0.48%	3.98%	
Deere & Co	DE	306.78	360.02	1.17	21.50	110,448.38	0.31%	0.36%	6.58%	
Dominion Energy Inc	D	810.46	79.53	3.36	11.50	64,456.12	0.18%	0.60%	2.05%	
Dover Corp	DOV	144.06	156.86	1.28	9.00	22,596.47	0.06%	0.08%	0.56%	
Alliant Energy Corp	LNT	250.48	58.40	2.93	5.50	14,627.97	0.04%	0.12%	0.22%	
Duke Energy Corp	DUK	769.00	100.41	3.92	7.00	77,215.29	0.21%	0.84%	1.50%	
Regency Centers Corp	REG	171.37	65.89	3.79	16.00	11,291.77	0.03%	0.12%	0.50%	
Eaton Corp PLC	ETN	398.80	154.29	2.10	11.50	61,530.85	0.17%	0.36%	1.96%	
Ecolab Inc	ECL	286.75	176.26	1.16	8.00	50,542.91	0.14%	0.16%	1.12%	
PerkinElmer Inc	PKI	126.20	179.61	0.16	10.00	22,666.78	0.06%	0.01%	0.63%	
Emerson Electric Co	EMR	594.00	92.92	2.22	11.50	55,194.48	0.15%	0.34%	1.76%	
EOG Resources Inc	EOG	585.42	114.92	2.61	16.00	67,276.35	0.19%	0.49%	2.98%	
Aon PLC	AON	213.94	292.14	0.70	7.00	62,501.60	0.17%	0.12%	1.21%	
Entergy Corp	ETR	203.03	105.21	3.84	3.00	21,360.58	0.06%	0.23%	0.18%	
Equifax Inc	EFX	122.09	218.34	0.71	10.50	26,656.04	0.07%	0.05%	0.78%	
IQVIA Holdings Inc	IQV	190.91	230.12	n/a	14.50	43,932.67	0.12%		1.77%	
Gartner Inc	IT	82.29	280.42	n/a	20.50	23,074.92	0.06%		1.31%	
FedEx Corp	FDX	264.97	222.27	1.35	13.00	58,894.66	0.16%	0.22%	2.12%	
FMC Corp	FMC	125.70	117.25	1.81	10.50	14,738.21	0.04%	0.07%	0.43%	
Brown & Brown Inc	BRO	282.22	67.61	0.61	10.50	19,080.62	0.05%	0.03%	0.56%	
Ford Motor Co	F	3933.40	17.56	2.28	29.00	69,070.42	0.19%	0.44%	5.55%	
NextEra Energy Inc	NEE	1962.75	78.27	2.17	11.00	153,624.05	0.43%	0.92%	4.68%	
Franklin Resources Inc	BEN	502.12	29.73	3.90	11.00	14,928.15	0.04%	0.16%	0.46%	
Garmin Ltd	GRMN	192.79	110.44	2.64	10.00	21,291.40	0.06%	0.16%	0.59%	
Freeport-McMoRan Inc	FCX	1454.78	46.95	0.64	37.50	68,301.97	0.19%	0.12%	7.10%	
Dexcom Inc	DXCM	97.07	413.91	n/a	34.00	40,176.59	0.11%		3.79%	
General Dynamics Corp	GD	277.70	234.45	2.03	6.00	65,106.30	0.18%	0.37%	1.08%	
General Mills Inc	GIS	603.21	67.43	3.03	3.50	40,674.25	0.11%	0.34%	0.39%	
Genuine Parts Co	GPC	141.96	122.16	2.93	7.00	17,342.20	0.05%	0.14%	0.34%	
Atmos Energy Corp	ATO	135.43	109.81	2.48	7.50	14,871.79	0.04%	0.10%	0.31%	
WW Grainger Inc	GWV	51.11	477.06	1.36	6.50	24,381.58	0.07%	0.09%	0.44%	
Halliburton Co	HAL	898.57	33.53	1.43	9.50	30,129.12	0.08%	0.12%	0.79%	
L3Harris Technologies Inc	LHX	193.07	252.31	1.78		0.00	0.00%	0.00%	0.00%	
Healthpeak Properties Inc	PEAK	539.30	31.06	3.86	-12.00	16,750.78	0.05%	0.18%	-0.56%	
Catalent Inc	CTLT	179.13	102.04	n/a	21.00	18,278.22	0.05%		1.06%	
Fortive Corp	FTV	359.10	64.75	0.43	12.00	23,251.73	0.06%	0.03%	0.77%	
Hershey Co/The	HSY	145.63	202.26	1.78	6.00	29,454.72	0.08%	0.15%	0.49%	
Synchrony Financial	SYF	521.27	42.78	2.06	9.50	22,300.02	0.06%	0.13%	0.59%	
Hormel Foods Corp	HRL	542.57	47.64	2.18	6.50	25,848.03	0.07%	0.16%	0.47%	
Arthur J Gallagher & Co	AJG	208.54	158.19	1.29	14.50	32,989.26	0.09%	0.12%	1.33%	
Mondelez International Inc	MDLZ	1388.33	65.48	2.14	8.00	90,907.72	0.25%	0.54%	2.02%	
CenterPoint Energy Inc	CNP	628.87	27.35	2.49	4.50	17,199.49	0.05%	0.12%	0.21%	
Humana Inc	HUM	126.63	434.32	0.73	12.00	54,999.68	0.15%	0.11%	1.83%	
Willis Towers Watson PLC	WTW	117.75	222.30	1.48	11.00	26,174.94	0.07%	0.11%	0.80%	
Illinois Tool Works Inc	ITW	312.93	216.34	2.26	11.00	67,698.63	0.19%	0.42%	2.06%	
CDW Corp/DE	CDW	134.94	172.46	1.16	11.00	23,272.44	0.06%	0.07%	0.71%	
Trane Technologies PLC	TT	233.54	153.93	1.74		0.00	0.00%	0.00%	0.00%	
Interpublic Group of Cos Inc/The	IPG	393.96	36.80	3.15	12.00	14,497.73	0.04%	0.13%	0.48%	
International Flavors & Fragrances Inc	IFF	254.69	133.00	2.38	7.00	33,873.11	0.09%	0.22%	0.66%	
Jacobs Engineering Group Inc	J	129.22	123.00	0.75	15.00	15,893.69	0.04%	0.03%	0.66%	

Name	Ticker	Shares	Outst'g	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Generac Holdings Inc	GNRC	63.78		315.47	n/a	23.50	20,121.94	0.06%		1.31%
NXP Semiconductors NV	NXPI	262.54		190.12	1.78	11.00	49,913.72	0.14%	0.25%	1.52%
Kellogg Co	K	341.68		63.94	3.63	3.50	21,846.70	0.06%	0.22%	0.21%
Broadridge Financial Solutions Inc	BR	116.77		146.21	1.75	9.00	17,073.38	0.05%	0.08%	0.43%
Kimberly-Clark Corp	KMB	336.99		130.15	3.57	4.50	43,859.64	0.12%	0.43%	0.55%
Kimco Realty Corp	KIM	616.66		23.53	3.23	10.50	14,509.99	0.04%	0.13%	0.42%
Oracle Corp	ORCL	2670.45		75.97	1.68	10.00	202,873.86	0.56%	0.95%	5.62%
Kroger Co/The	KR	735.26		46.80	1.79	6.50	34,409.98	0.10%	0.17%	0.62%
Lennar Corp	LEN	261.37		89.88	1.67	12.50	23,492.30	0.07%	0.11%	0.81%
Eli Lilly & Co	LLY	952.35		249.95	1.57	12.00	238,039.13	0.66%	1.03%	7.92%
Bath & Body Works Inc	BBWI	257.72		53.37	1.50	26.00	13,754.68	0.04%	0.06%	0.99%
Charter Communications Inc	CHTR	172.74		601.78	n/a	29.50	103,952.08	0.29%		8.50%
Lincoln National Corp	LNC	172.46		67.42	2.67	9.00	11,626.92	0.03%	0.09%	0.29%
Loews Corp	L	248.20		61.34	0.41	12.50	15,224.71	0.04%	0.02%	0.53%
Lowe's Cos Inc	LOW	670.00		221.06	1.45	16.50	148,110.20	0.41%	0.59%	6.77%
IDEX Corp	IEX	76.12		191.90	1.13	8.00	14,607.43	0.04%	0.05%	0.32%
Marsh & McLennan Cos Inc	MMC	502.77		155.41	1.38	12.00	78,134.86	0.22%	0.30%	2.60%
Masco Corp	MAS	239.93		56.04	2.00	10.00	13,445.45	0.04%	0.07%	0.37%
S&P Global Inc	SPGI	354.36		375.70	0.90	10.50	133,132.68	0.37%	0.33%	3.87%
Medtronic PLC	MDT	1342.57		104.99	2.40	8.50	140,956.00	0.39%	0.94%	3.32%
Viatis Inc	VTRS	1209.39		11.01	4.36		0.00	0.00%	0.00%	0.00%
CVS Health Corp	CVS	1312.51		103.65	2.12	6.00	136,041.66	0.38%	0.80%	2.26%
DuPont de Nemours Inc	DD	512.91		77.37	1.71		0.00	0.00%	0.00%	0.00%
Micron Technology Inc	MU	1119.78		88.86	0.45	22.50	99,503.38	0.28%	0.12%	6.20%
Motorola Solutions Inc	MSI	168.21		220.43	1.43	7.00	37,078.31	0.10%	0.15%	0.72%
Cboe Global Markets Inc	CBOE	106.60		117.29	1.64	12.00	12,503.35	0.03%	0.06%	0.42%
Laboratory Corp of America Holdings	LH	93.40		271.26	n/a	6.00	25,335.68	0.07%		0.42%
Newmont Corp	NEM	792.50		66.20	3.32	12.00	52,463.63	0.15%	0.48%	1.74%
NIKE Inc	NKE	1276.29		136.55	0.89	27.00	174,277.13	0.48%	0.43%	13.04%
NISource Inc	NI	405.39		28.93	3.25	10.50	11,727.79	0.03%	0.11%	0.34%
Norfolk Southern Corp	NSC	239.78		256.52	1.93	10.00	61,507.60	0.17%	0.33%	1.70%
Principal Financial Group Inc	PFGE	261.23		70.64	3.62	6.00	18,453.15	0.05%	0.19%	0.31%
Eversource Energy	ES	344.44		81.80	3.12	5.50	28,175.19	0.08%	0.24%	0.43%
Northrop Grumman Corp	NOC	156.10		442.14	1.42	8.50	69,018.94	0.19%	0.27%	1.63%
Wells Fargo & Co	WFC	3814.56		53.37	1.87	5.50	203,582.91	0.56%	1.06%	3.10%
Nucor Corp	NUE	269.13		131.62	1.52	12.00	35,422.23	0.10%	0.15%	1.18%
PVH Corp	PVH	69.98		97.89	0.15	14.00	6,850.15	0.02%	0.00%	0.27%
Occidental Petroleum Corp	OXY	934.06		43.73	1.19	30.50	40,846.62	0.11%	0.13%	3.45%
Omnicom Group Inc	OMC	208.99		83.89	3.34	6.00	17,532.34	0.05%	0.16%	0.29%
ONEOK Inc	OKE	445.94		65.30	5.73	12.00	29,119.69	0.08%	0.46%	0.97%
Raymond James Financial Inc	RJF	207.60		109.65	1.24	10.50	22,763.56	0.06%	0.08%	0.66%
Parker-Hannifin Corp	PH	128.48		296.39	1.39	13.50	38,079.59	0.11%	0.15%	1.42%
Rollins Inc	ROL	492.09		32.63	1.23	10.50	16,056.77	0.04%	0.05%	0.47%
PPL Corp	PPL	735.36		26.17	3.06		0.00	0.00%	0.00%	0.00%
ConocoPhillips	COP	1299.53		94.86	1.94	16.50	123,273.13	0.34%	0.66%	5.64%
PulteGroup Inc	PHM	248.65		49.66	1.21	13.00	12,348.01	0.03%	0.04%	0.44%
Pinnacle West Capital Corp	PNW	112.93		70.83	4.80	0.00	7,998.97	0.02%	0.11%	0.00%
PNC Financial Services Group Inc/The	PNC	418.46		199.25	2.51	11.50	83,377.16	0.23%	0.58%	2.66%
PPG Industries Inc	PPG	236.00		133.45	1.77	10.00	31,494.07	0.09%	0.15%	0.87%
Progressive Corp/The	PGR	584.85		105.93	0.38	4.50	61,953.05	0.17%	0.06%	0.77%
Public Service Enterprise Group Inc	PEG	502.08		64.83	3.33	4.00	32,549.72	0.09%	0.30%	0.36%
Robert Half International Inc	RHI	110.69		120.29	1.43	7.50	13,314.42	0.04%	0.05%	0.28%
Edison International	EIX	380.70		63.42	4.42		0.00	0.00%	0.00%	0.00%
Schlumberger NV	SLB	1413.02		39.24	1.27	11.50	55,446.87	0.15%	0.20%	1.77%
Charles Schwab Corp/The	SCHW	1814.62		84.46	0.95	7.00	153,262.89	0.42%	0.40%	2.97%
Sherwin-Williams Co/The	SHW	260.37		263.13	0.91	10.50	68,512.21	0.19%	0.17%	1.99%
West Pharmaceutical Services Inc	WST	74.28		387.08	0.19	17.00	28,753.08	0.08%	0.01%	1.35%
J M Smucker Co/The	SJM	108.36		134.75	2.94	4.00	14,601.91	0.04%	0.12%	0.16%
Snap-on Inc	SNA	53.44		210.18	2.70	4.50	11,231.81	0.03%	0.08%	0.14%
AMETEK Inc	AME	231.70		129.79	0.68	9.00	30,072.47	0.08%	0.06%	0.75%
Southern Co/The	SO	1059.80		64.77	4.08	5.50	68,643.51	0.19%	0.78%	1.05%
Truist Financial Corp	TFC	1328.12		62.22	3.09	7.00	82,635.63	0.23%	0.71%	1.60%
Southwest Airlines Co	LUV	592.34		43.80	n/a	29.50	25,944.58	0.07%		2.12%
W R Berkley Corp	WRB	176.79		90.30	0.58	17.50	15,964.23	0.04%	0.03%	0.77%
Stanley Black & Decker Inc	SWK	163.35		162.70	1.94	6.00	26,577.37	0.07%	0.14%	0.44%
Public Storage	PSA	175.46		355.02	2.25	6.50	62,292.52	0.17%	0.39%	1.12%
Arista Networks Inc	ANET	307.77		122.73	n/a	4.50	37,772.24	0.10%		0.47%
Sysco Corp	SY	507.45		87.10	2.16	17.50	44,198.63	0.12%	0.26%	2.14%
Corteva Inc	CTVA	726.53		52.03	1.08		0.00	0.00%	0.00%	0.00%
Texas Instruments Inc	TXN	923.55		169.99	2.71	9.00	156,993.75	0.44%	1.18%	3.92%
Textron Inc	TXT	216.68		73.13	0.11	8.50	15,845.95	0.04%	0.00%	0.37%
Thermo Fisher Scientific Inc	TMO	391.19		544.00	0.22	15.50	212,808.45	0.59%	0.13%	9.14%
TJX Cos Inc/The	TJX	1192.88		66.10	1.79	20.00	78,849.24	0.22%	0.39%	4.37%
Globe Life Inc	GL	99.34		100.96	0.78	8.00	10,029.16	0.03%	0.02%	0.22%
Johnson Controls International plc	JCI	702.63		64.96	2.09	14.00	45,642.65	0.13%	0.26%	1.77%
Ulta Beauty Inc	ULTA	54.12		374.50	n/a	15.50	20,267.94	0.06%		0.87%
Union Pacific Corp	UNP	636.90		245.95	1.92	9.00	156,645.31	0.43%	0.83%	3.91%
Keysight Technologies Inc	KEYS	180.80		157.37	n/a	13.00	28,452.50	0.08%		1.02%
UnitedHealth Group Inc	UNH	940.90		475.87	1.22	12.00	447,745.61	1.24%	1.51%	14.89%
Marathon Oil Corp	MRO	730.77		22.56	1.24		0.00	0.00%	0.00%	0.00%
Bio-Rad Laboratories Inc	BIO	24.86		625.96	n/a	9.50	15,561.99	0.04%		0.41%
Ventas Inc	VTR	399.50		54.00	3.33	4.50	21,572.78	0.06%	0.20%	0.27%

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VF Corp	VFC	388.90		58.02	3.45	9.50	22,564.09	0.06%	0.22%	0.59%
Vornado Realty Trust	VNO	191.72		43.28	4.90	-22.50	8,297.81	0.02%	0.11%	-0.52%
Vulcan Materials Co	VMC	132.79		181.45	0.88	10.00	24,095.11	0.07%	0.06%	0.67%
Weyerhaeuser Co	WY	746.33		38.88	1.85	22.00	29,017.35	0.08%	0.15%	1.77%
Whirlpool Corp	WHR	58.61		201.27	3.48	9.50	11,796.64	0.03%	0.11%	0.31%
Williams Cos Inc/The	WMB	1215.59		31.28	5.43	10.00	38,023.75	0.11%	0.57%	1.05%
Constellation Energy Corp	CEG	326.00		45.98	1.23	0.00	0.00	0.00%	0.00%	0.00%
WEC Energy Group Inc	WEC	315.44		90.88	3.20	6.50	28,666.73	0.08%	0.25%	0.52%
Adobe Inc	ADBE	471.70		467.68	n/a	15.50	220,604.66	0.61%		9.48%
AES Corp/The	AES	667.40		21.23	2.98	24.00	14,168.80	0.04%	0.12%	0.94%
Amgen Inc	AMGN	557.03		226.48	3.43	5.50	126,155.93	0.35%	1.20%	1.92%
Apple Inc	AAPL	16319.44		165.12	0.53	13.00	2,694,666.10	7.47%	3.98%	97.07%
Autodesk Inc	ADSK	219.97		220.23	n/a	18.00	48,444.65	0.13%		2.42%
Cintas Corp	CTAS	103.73		375.32	1.01	13.50	38,933.07	0.11%	0.11%	1.46%
Comcast Corp	CMCSA	4523.79		46.76	2.31	11.00	211,532.23	0.59%	1.35%	6.45%
Molson Coors Beverage Co	TAP	200.60		52.18	2.91	41.00	10,467.26	0.03%	0.08%	1.19%
KLA Corp	KLAC	150.72		348.50	1.21	21.00	52,524.18	0.15%	0.18%	3.06%
Marriott International Inc/MD	MAR	326.31		170.14	n/a	17.50	55,518.55	0.15%		2.69%
McCormick & Co Inc/MD	MKC	249.74		95.17	1.56	6.00	23,768.04	0.07%	0.10%	0.40%
PACCAR Inc	PCAR	347.57		91.81	1.48	5.00	31,910.59	0.09%	0.13%	0.44%
Costco Wholesale Corp	COST	443.43		519.25	0.61	10.50	230,252.07	0.64%	0.39%	6.70%
First Republic Bank/CA	FRC	179.06		173.26	0.51	13.50	31,023.94	0.09%	0.04%	1.16%
Stryker Corp	SYK	377.55		263.35	1.06	8.50	99,426.48	0.28%	0.29%	2.34%
Tyson Foods Inc	TSN	292.46		92.66	1.99	6.00	27,098.88	0.08%	0.15%	0.45%
Lamb Weston Holdings Inc	LW	145.20		66.43	1.48	6.00	9,645.90	0.03%	0.04%	0.16%
Applied Materials Inc	AMAT	883.40		134.20	0.72	16.50	118,551.61	0.33%	0.23%	5.42%
American Airlines Group Inc	AAL	649.16		17.25	n/a	0.00	0.00	0.00%	0.00%	0.00%
Cardinal Health Inc	CAH	277.06		54.01	3.63	5.00	14,964.06	0.04%	0.15%	0.21%
Cerner Corp	CERN	293.34		93.25	1.16	9.50	27,354.33	0.08%	0.09%	0.72%
Cincinnati Financial Corp	CINF	160.43		122.79	2.25	15.00	19,699.69	0.05%	0.12%	0.82%
Paramount Global	PARA	607.88		30.61	3.14	7.00	18,607.11	0.05%	0.16%	0.36%
DR Horton Inc	DHI	354.36		85.40	1.05	11.00	30,262.17	0.08%	0.09%	0.92%
Electronic Arts Inc	EA	281.22		130.09	0.52	10.50	36,584.17	0.10%	0.05%	1.06%
Expeditors International of Washington Inc	EXPD	169.40		103.36	1.12	11.50	17,509.60	0.05%	0.05%	0.56%
Fastenal Co	FAST	575.55		51.46	2.41	9.00	29,618.01	0.08%	0.20%	0.74%
M&T Bank Corp	MTB	129.03		182.23	2.63	8.00	23,513.87	0.07%	0.17%	0.52%
Xcel Energy Inc	XEL	544.21		67.33	2.90	6.00	36,641.93	0.10%	0.29%	0.61%
Fiserv Inc	FISV	652.20		97.67	n/a	13.00	63,700.08	0.18%		2.29%
Fifth Third Bancorp	FITB	683.67		47.84	2.51	11.50	32,706.82	0.09%	0.23%	1.04%
Gilead Sciences Inc	GILD	1253.89		60.40	4.83	3.50	75,734.77	0.21%	1.01%	0.73%
Hasbro Inc	HAS	138.96		97.05	2.89	11.50	13,486.07	0.04%	0.11%	0.43%
Huntington Bancshares Inc/OH	HBAN	1438.09		15.52	3.99	12.00	22,319.13	0.06%	0.25%	0.74%
Welltower Inc	WELL	447.28		83.29	2.93	-1.50	37,253.95	0.10%	0.30%	-0.15%
Biogen Inc	BIIB	146.96		211.01	n/a	7.00	31,010.66	0.09%		0.60%
Northern Trust Corp	NTRS	207.90		113.90	2.46	8.00	23,679.58	0.07%	0.16%	0.52%
Packaging Corp of America	PKG	93.53		147.19	2.72	9.00	13,767.27	0.04%	0.10%	0.34%
Paychex Inc	PAYX	360.76		119.06	2.22	9.00	42,951.73	0.12%	0.26%	1.07%
People's United Financial Inc	PECT	427.92		21.08	3.46	2.50	9,020.55	0.02%	0.09%	0.06%
QUALCOMM Inc	QCOM	1127.00		171.99	1.58	18.50	193,832.73	0.54%	0.85%	9.94%
Roper Technologies Inc	ROP	105.60		448.22	0.55	8.50	47,333.38	0.13%	0.07%	1.11%
Ross Stores Inc	ROST	353.33		91.39	1.25	14.00	32,290.83	0.09%	0.11%	1.25%
IDEXX Laboratories Inc	IDXX	84.25		532.35	n/a	14.00	44,849.96	0.12%		1.74%
Starbucks Corp	SBUX	1150.30		91.79	2.14	16.50	105,586.04	0.29%	0.62%	4.83%
KeyCorp	KEY	927.76		25.07	3.11	9.50	23,258.97	0.06%	0.20%	0.61%
Fox Corp	FOXA	315.81		41.83	1.15	10.50	13,210.16	0.04%	0.04%	0.38%
Fox Corp	FOX	247.10		38.26	1.25	0.00	0.00	0.00%	0.00%	0.00%
State Street Corp	STT	366.07		85.33	2.67	8.00	31,236.50	0.09%	0.23%	0.69%
Norwegian Cruise Line Holdings Ltd	NCLH	416.89		19.49	n/a	0.00	0.00	0.00%		0.00%
US Bancorp	USB	1483.90		56.54	3.25	6.50	83,899.82	0.23%	0.76%	1.51%
A O Smith Corp	AOS	131.41		68.58	1.63	10.00	9,012.37	0.02%	0.04%	0.25%
NortonLifeLock Inc	NLOK	582.18		28.98	1.73	11.00	16,871.61	0.05%	0.08%	0.51%
T Rowe Price Group Inc	TROW	228.09		144.56	3.32	12.00	32,973.12	0.09%	0.30%	1.10%
Waste Management Inc	WM	414.59		144.40	1.59	7.50	59,866.36	0.17%	0.26%	1.24%
Constellation Brands Inc	STZ	164.34		215.62	1.41	5.50	35,434.78	0.10%	0.14%	0.54%
DENTSPLY SIRONA Inc	XRAY	218.61		54.14	0.92	12.00	11,835.38	0.03%	0.03%	0.39%
Zions Bancorp NA	ZION	151.57		70.89	2.14	7.50	10,745.08	0.03%	0.06%	0.22%
Alaska Air Group Inc	ALK	125.91		56.14	n/a	0.00	0.00	0.00%	0.00%	0.00%
Invesco Ltd	IVZ	460.75		21.24	3.20	15.50	9,786.35	0.03%	0.09%	0.42%
Linde PLC	LIN	508.33		293.24	1.60	0.00	0.00	0.00%	0.00%	0.00%
Intuit Inc	INTU	283.17		474.37	0.57	18.50	134,325.93	0.37%	0.21%	6.89%
Morgan Stanley	MS	1781.30		90.74	3.09	10.50	161,635.07	0.45%	1.38%	4.70%
Microchip Technology Inc	MCHP	555.99		70.33	1.44	10.50	39,102.85	0.11%	0.16%	1.14%
Chubb Ltd	CB	426.23		203.64	1.57	12.50	86,797.27	0.24%	0.38%	3.01%
Hologic Inc	HOLX	249.98		71.17	n/a	25.00	17,791.36	0.05%		1.23%
Citizens Financial Group Inc	CFG	422.14		52.42	2.98	8.50	22,128.68	0.06%	0.18%	0.52%
O'Reilly Automotive Inc	ORLY	66.60		649.24	n/a	13.00	43,240.03	0.12%		1.56%
Allstate Corp/The	ALL	278.35		122.36	2.78	5.00	34,058.42	0.09%	0.26%	0.47%
Equity Residential	EQR	375.92		85.30	2.83	2.00	32,065.72	0.09%	0.25%	0.18%
BorgWarner Inc	BWA	239.97		41.01	1.66	8.00	9,841.21	0.03%	0.05%	0.22%
Organon & Co	OGN	253.55		37.33	3.00	0.00	0.00	0.00%	0.00%	0.00%
Host Hotels & Resorts Inc	HST	714.15		18.27	0.16	10.00	13,047.52	0.04%	0.01%	0.36%
Incyte Corp	INCY	221.33		68.30	n/a	25.50	15,116.50	0.04%		1.07%

Name	Ticker	Shares	Outst'g	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a	% of Total Market Cap	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Simon Property Group Inc	SPG	342.85	137.56	4.80	1.50	47,162.31	0.13%	0.63%	0.20%	
Eastman Chemical Co	EMN	128.97	118.47	2.57	8.00	15,278.84	0.04%	0.11%	0.34%	
Twitter Inc	TWTR	800.64	35.55	n/a	39.00	28,462.79	0.08%		3.08%	
AvalonBay Communities Inc	AVB	139.75	238.59	2.67	1.50	33,343.43	0.09%	0.25%	0.14%	
Prudential Financial Inc	PRU	376.30	111.66	4.30	4.50	42,017.66	0.12%	0.50%	0.52%	
United Parcel Service Inc	UPS	732.55	210.42	2.89	11.50	154,144.01	0.43%	1.23%	4.91%	
Waigreens Boots Alliance Inc	WBA	863.27	46.09	4.14	7.50	39,788.21	0.11%	0.46%	0.83%	
STERIS PLC	STE	100.13	240.00	0.72	11.50	24,030.48	0.07%	0.05%	0.77%	
McKesson Corp	MCK	149.80	274.96	0.68	10.00	41,188.46	0.11%	0.08%	1.14%	
Lockheed Martin Corp	LMT	272.33	433.80	2.58	6.50	118,135.45	0.33%	0.85%	2.13%	
AmerisourceBergen Corp	ABC	209.14	142.53	1.29	6.50	29,808.30	0.08%	0.11%	0.54%	
Capital One Financial Corp	COF	413.66	153.27	1.57		0.00	0.00%	0.00%	0.00%	
Waters Corp	WAT	60.52	316.73	n/a	6.00	19,167.23	0.05%		0.32%	
Nordson Corp	NDSN	57.94	226.49	0.90	13.50	13,123.06	0.04%	0.03%	0.49%	
Dollar Tree Inc	DLTR	224.96	142.08	n/a	10.00	31,961.75	0.09%		0.89%	
Darden Restaurants Inc	DRI	127.72	145.22	3.03	15.50	18,548.08	0.05%	0.16%	0.80%	
Match Group Inc	MTCH	285.15	111.49	n/a	18.50	31,791.15	0.09%		1.63%	
Domino's Pizza Inc	DPZ	36.39	432.21	0.87	16.50	15,726.83	0.04%	0.04%	0.72%	
NVR Inc	NVR	3.38	4958.44	n/a	9.00	16,774.40	0.05%		0.42%	
NetApp Inc	NTAP	222.28	78.38	2.55	8.00	17,422.15	0.05%	0.12%	0.39%	
Citrix Systems Inc	CTXS	125.55	102.50	1.44	8.00	12,868.77	0.04%	0.05%	0.29%	
DXC Technology Co	DXC	244.48	34.03	n/a	6.00	8,319.59	0.02%		0.14%	
Old Dominion Freight Line Inc	ODFL	114.86	314.03	0.38	12.00	36,070.74	0.10%	0.04%	1.20%	
DaVita Inc	DVA	96.30	112.77	n/a	16.00	10,859.75	0.03%		0.48%	
Hartford Financial Services Group Inc/The	HIG	331.65	69.48	2.22	6.50	23,042.83	0.06%	0.14%	0.42%	
Iron Mountain Inc	IRM	289.83	49.18	5.03	10.00	14,253.84	0.04%	0.20%	0.39%	
Estee Lauder Cos Inc/The	EL	232.42	296.33	0.81	11.50	68,874.20	0.19%	0.15%	2.19%	
Cadence Design Systems Inc	CDNS	277.34	151.43	n/a	12.00	41,996.99	0.12%		1.40%	
Tyler Technologies Inc	TYL	41.35	428.26	n/a	14.00	17,708.12	0.05%		0.69%	
Universal Health Services Inc	UHS	67.55	143.93	0.56	11.00	9,722.78	0.03%	0.01%	0.30%	
Skyworks Solutions Inc	SWKS	164.01	138.17	1.62	16.00	22,660.71	0.06%	0.10%	1.00%	
Quest Diagnostics Inc	DGX	119.46	131.27	2.01	7.50	15,680.86	0.04%	0.09%	0.33%	
Activision Blizzard Inc	ATVI	779.24	81.50	0.58	15.00	63,507.65	0.18%	0.10%	2.64%	
Rockwell Automation Inc	ROK	116.20	266.58	1.68	10.00	30,975.53	0.09%	0.14%	0.86%	
Kraft Heinz Co/The	KHC	1223.74	39.22	4.08	4.00	47,995.08	0.13%	0.54%	0.53%	
American Tower Corp	AMT	455.89	226.87	2.45	9.00	103,426.63	0.29%	0.70%	2.58%	
Regeneron Pharmaceuticals Inc	REGN	106.72	618.36	n/a	12.50	65,988.91	0.18%		2.29%	
Amazon.com Inc	AMZN	508.84	3071.26	n/a	26.50	1,562,792.22	4.33%		114.76%	
Jack Henry & Associates Inc	JKHY	72.83	176.80	1.11	10.50	12,875.46	0.04%	0.04%	0.37%	
Ralph Lauren Corp	RL	46.29	132.04	2.08	12.50	6,111.60	0.02%	0.04%	0.21%	
Boston Properties Inc	BXP	156.68	122.31	3.20	-2.00	19,163.04	0.05%	0.17%	-0.11%	
Amphenol Corp	APH	598.94	76.01	1.05	12.00	45,525.43	0.13%	0.13%	1.51%	
Howmet Aerospace Inc	HWM	418.91	35.92	0.22	12.50	15,047.07	0.04%	0.01%	0.52%	
Pioneer Natural Resources Co	PXD	242.88	239.60	6.31	23.00	58,195.01	0.16%	1.02%	3.71%	
Valero Energy Corp	VLO	409.30	83.51	4.69	11.00	34,180.98	0.09%	0.44%	1.04%	
Synopsys Inc	SNPS	153.10	312.39	n/a	14.00	47,826.60	0.13%		1.86%	
Etsy Inc	ETSY	127.03	154.89	n/a	29.00	19,676.14	0.05%		1.58%	
CH Robinson Worldwide Inc	CHRW	128.80	96.68	2.28	9.00	12,452.29	0.03%	0.08%	0.31%	
Accenture PLC	ACN	658.33	316.02	1.23	12.00	208,046.39	0.58%	0.71%	6.92%	
TransDigm Group Inc	TDG	55.46	666.59	n/a	16.50	36,970.41	0.10%		1.69%	
Yum! Brands Inc	YUM	288.98	122.58	1.86	10.50	35,423.29	0.10%	0.18%	1.03%	
Prologis Inc	PLD	739.75	145.85	2.17	8.50	107,891.81	0.30%	0.65%	2.54%	
FirstEnergy Corp	FE	570.34	41.85	3.73	10.00	23,868.90	0.07%	0.25%	0.66%	
Veeva Systems Inc	VRSN	110.17	213.72	n/a	8.50	23,544.89	0.07%		0.55%	
Quanta Services Inc	PWR	142.69	108.94	0.26	12.50	15,544.65	0.04%	0.01%	0.54%	
Henry Schein Inc	HSIC	137.17	86.38	n/a	7.00	11,849.00	0.03%		0.23%	
Ameren Corp	AEE	255.41	85.95	2.75	6.50	21,952.49	0.06%	0.17%	0.40%	
ANSYS Inc	ANSS	87.23	324.19	n/a	8.50	28,279.09	0.08%		0.67%	
FactSet Research Systems Inc	FDS	37.80	406.09	0.81	9.50	15,348.98	0.04%	0.03%	0.40%	
NVIDIA Corp	NVDA	2500.00	243.85	0.07	20.00	609,625.00	1.69%	0.11%	33.79%	
Sealed Air Corp	SEE	148.16	67.13	1.19	13.50	9,945.85	0.03%	0.03%	0.37%	
Cognizant Technology Solutions Corp	CTSH	524.54	86.13	1.25	7.00	45,178.20	0.13%	0.16%	0.88%	
SVB Financial Group	SIVB	58.75	606.00	n/a	5.00	35,601.29	0.10%		0.49%	
Intuitive Surgical Inc	ISRG	357.74	290.33	n/a	13.00	103,863.82	0.29%		3.74%	
Take-Two Interactive Software Inc	TTWO	115.42	162.00	n/a	15.00	18,697.39	0.05%		0.78%	
Republic Services Inc	RSB	316.43	120.28	1.53	10.50	38,060.32	0.11%	0.16%	1.11%	
eBay Inc	EBAY	587.53	54.59	1.61	16.50	32,073.21	0.09%	0.14%	1.47%	
Goldman Sachs Group Inc/The	GS	337.92	341.29	2.34	8.50	115,329.74	0.32%	0.75%	2.72%	
SBA Communications Corp	SBAC	108.78	303.39	0.94	42.50	33,003.07	0.09%	0.09%	3.89%	
Sempra Energy	SRE	315.07	144.22	3.18	10.00	45,439.54	0.13%	0.40%	1.26%	
Moody's Corp	MCO	185.20	322.03	0.87	9.00	59,639.96	0.17%	0.14%	1.49%	
Booking Holdings Inc	BKNG	40.89	2172.25	n/a	14.00	88,818.96	0.25%		3.45%	
F5 Inc	FFIV	60.74	200.85	n/a	7.00	12,199.23	0.03%		0.24%	
Akamai Technologies Inc	AKAM	160.35	108.26	n/a	9.50	17,359.17	0.05%		0.46%	
Charles River Laboratories International Inc	CRL	50.49	291.16	n/a	6.50	14,699.50	0.04%		0.26%	
MarketAxess Holdings Inc	MKTX	37.84	381.43	0.73	14.00	14,431.40	0.04%	0.03%	0.56%	
Devon Energy Corp	DVN	664.20	59.55	6.72	29.50	39,553.11	0.11%	0.74%	3.23%	
Alphabet Inc	GOOGL	300.76	2701.14	n/a		0.00	0.00%		0.00%	
Bio-Techne Corp	TECH	39.29	419.41	0.31	17.50	16,477.78	0.05%	0.01%	0.80%	
Teleflex Inc	TEF	46.85	336.31	0.40	15.00	15,754.44	0.04%	0.02%	0.65%	
Netflix Inc	NFLX	443.96	394.52	n/a	23.50	175,152.28	0.49%		11.41%	
Allegion plc	ALLE	88.23	114.52	1.43	9.50	10,104.10	0.03%	0.04%	0.27%	

Name	Ticker	Shares	Outst'g	Price	Dividend Yield	Value Line Long-Term Growth Estimate	Market Cap Excl. n/a Growth	% of Total Market Cap.	Cap. Weighted Div. Yield	Cap. Weighted Long-Term Growth
Agilent Technologies Inc	A	302.00	130.36	0.64	11.50	39,368.72	0.11%	0.07%	1.25%	
Anthem Inc	ANTM	241.30	451.85	1.13	12.50	109,033.21	0.30%	0.34%	3.78%	
Trimble Inc	TRMB	251.22	69.75	n/a	14.50	17,522.32	0.05%		0.70%	
CME Group Inc	CME	359.40	236.53	1.69	8.50	85,007.70	0.24%	0.40%	2.00%	
Juniper Networks Inc	JNPR	322.76	33.79	2.49	7.00	10,906.03	0.03%	0.08%	0.21%	
BlackRock Inc	BLK	152.04	743.89	2.62	11.00	113,102.52	0.31%	0.82%	3.45%	
DTE Energy Co	DTE	193.75	121.59	2.91	1.00	23,558.31	0.07%	0.19%	0.07%	
Nasdaq Inc	NDAQ	164.41	171.15	1.26	6.50	28,139.11	0.08%	0.10%	0.51%	
Celanese Corp	CE	108.03	139.28	1.95	6.50	15,046.28	0.04%	0.08%	0.27%	
Philip Morris International Inc	PM	1549.83	101.07	4.95	7.00	156,641.12	0.43%	2.15%	3.04%	
salesforce.com Inc	CRM	985.00	210.53	n/a	20.00	207,372.05	0.57%		11.49%	
Ingersoll Rand Inc	IR	407.97	50.52	0.16		0.00	0.00%	0.00%	0.00%	
Huntington Ingalls Industries Inc	HII	39.99	204.40	2.31	10.00	8,173.75	0.02%	0.05%	0.23%	
MetLife Inc	MET	825.08	67.55	2.84	6.50	55,734.02	0.15%	0.44%	1.00%	
Under Armour Inc	UA	253.22	15.63	n/a		0.00	0.00%		0.00%	
Tapestry Inc	TPR	263.99	40.90	2.44	10.00	10,797.19	0.03%	0.07%	0.30%	
CSX Corp	CSX	2193.39	33.91	1.18	10.00	74,377.82	0.21%	0.24%	2.06%	
Edwards Lifesciences Corp	EW	623.21	112.37	n/a	12.50	70,029.77	0.19%		2.43%	
Ameriprise Financial Inc	AMP	110.75	299.79	1.51	13.50	33,202.04	0.09%	0.14%	1.24%	
Zebra Technologies Corp	ZBRA	53.08	413.34	n/a	10.50	21,940.09	0.06%		0.64%	
Zimmer Biomet Holdings Inc	ZBH	209.18	123.39	0.78	7.00	25,810.33	0.07%	0.06%	0.50%	
CBRE Group Inc	CBRE	334.67	96.85	n/a	10.00	32,412.40	0.09%		0.90%	
Mastercard Inc	MA	969.73	360.82	0.54	13.00	349,897.62	0.97%	0.53%	12.60%	
CarMax Inc	KMX	161.68	109.33	n/a	13.50	17,676.47	0.05%		0.66%	
Intercontinental Exchange Inc	ICE	561.85	128.12	1.19	8.00	71,984.48	0.20%	0.24%	1.60%	
Fidelity National Information Services Inc	FIS	609.59	95.23	1.97	28.00	58,051.35	0.16%	0.32%	4.50%	
Chipotle Mexican Grill Inc	CMG	28.03	1523.35	n/a	20.00	42,702.55	0.12%		2.37%	
Wynn Resorts Ltd	WYNN	115.90	86.52	n/a	27.00	10,027.58	0.03%		0.75%	
Live Nation Entertainment Inc	LYV	224.63	120.82	n/a		0.00	0.00%		0.00%	
Assurant Inc	AIZ	55.16	169.71	1.60	15.50	9,361.54	0.03%	0.04%	0.40%	
NRG Energy Inc	NRG	242.15	37.84	3.70	-1.50	9,163.07	0.03%	0.09%	-0.04%	
Regions Financial Corp	RF	937.15	24.19	2.81	10.50	22,669.56	0.06%	0.18%	0.66%	
Monster Beverage Corp	MNST	529.36	84.40	n/a	13.00	44,677.90	0.12%		1.61%	
Mosaic Co/The	MOS	368.31	52.43	0.86	56.50	19,310.44	0.05%	0.05%	3.02%	
Baker Hughes Co	BKR	953.34	29.38	2.45		0.00	0.00%	0.00%	0.00%	
Xpedia Group Inc	EXPE	150.23	196.11	n/a		0.00	0.00%		0.00%	
Evergy Inc	EVERG	226.99	62.41	3.67	8.00	14,166.63	0.04%	0.14%	0.31%	
Discovery Inc	DISCA	169.58	28.05	n/a	13.50	4,756.72	0.01%		0.18%	
CF Industries Holdings Inc	CF	207.31	81.19	1.48	19.50	16,831.09	0.05%	0.07%	0.91%	
Leidos Holdings Inc	LDOS	140.51	101.84	1.41	8.50	14,309.03	0.04%	0.06%	0.34%	
APA Corp	APA	346.78	35.63	1.40		0.00	0.00%	0.00%	0.00%	
Alphabet Inc	GOOG	315.64	2697.82	n/a	23.50	851,537.21	2.36%		55.45%	
TE Connectivity Ltd	TEL	325.58	142.43	1.57	10.00	46,371.65	0.13%	0.20%	1.28%	
Cooper Cos Inc/The	COO	49.30	409.02	0.01	19.00	20,163.05	0.06%	0.00%	1.06%	
Discover Financial Services	DFS	284.90	123.44	1.62	16.00	35,168.55	0.10%	0.16%	1.56%	
Visa Inc	V	1658.42	216.12	0.69	12.00	358,418.59	0.99%	0.69%	11.92%	
Mid-America Apartment Communities Inc	MAA	115.34	204.61	2.13	9.00	23,599.92	0.07%	0.14%	0.59%	
Kylem Inc/NY	XYL	179.90	88.95	1.35	6.50	16,002.19	0.04%	0.06%	0.29%	
Marathon Petroleum Corp	MPC	565.21	77.87	2.98		0.00	0.00%	0.00%	0.00%	
Tractor Supply Co	TSCO	112.77	203.79	1.81	11.00	22,981.81	0.06%	0.11%	0.70%	
Advanced Micro Devices Inc	AMD	1627.37	123.34	n/a	30.00	200,719.20	0.56%		16.69%	
ResMed Inc	RMD	146.23	246.75	0.68	8.50	36,083.24	0.10%	0.07%	0.85%	
Mettler-Toledo International Inc	MTD	22.81	1408.74	n/a	13.50	32,127.72	0.09%		1.20%	
Copart Inc	CPRT	237.19	122.88	n/a	12.00	29,145.66	0.08%		0.97%	
Albemarle Corp	ALB	117.04	195.89	0.81	6.50	22,926.38	0.06%	0.05%	0.41%	
Fortinet Inc	FTNT	160.82	344.52	n/a	24.00	55,403.98	0.15%		3.68%	
Moderna Inc	MRNA	402.87	153.60	n/a		0.00	0.00%		0.00%	
Essex Property Trust Inc	ESS	65.28	317.17	2.77	-0.50	20,704.54	0.06%	0.16%	-0.03%	
Realty Income Corp	O	591.32	66.09	4.48	3.50	39,080.40	0.11%	0.48%	0.38%	
Westrock Co	WRK	263.21	45.27	2.21	18.50	11,915.70	0.03%	0.07%	0.61%	
IHS Markit Ltd	INFO	#N/A	N/A	#N/A	N/A	0.00	0.00%		0.00%	
Westinghouse Air Brake Technologies Corp	WAB	185.29	92.82	0.65	9.00	17,198.62	0.05%	0.03%	0.43%	
Pool Corp	POOL	40.17	458.58	0.70	17.00	18,420.24	0.05%	0.04%	0.87%	
Western Digital Corp	WDC	312.92	50.94	n/a	9.00	15,940.04	0.04%		0.40%	
PepsiCo Inc	PEP	1383.45	163.74	2.63	6.50	226,526.27	0.63%	1.65%	4.08%	
Diamondback Energy Inc	FANG	177.42	138.10	1.74		0.00	0.00%	0.00%	0.00%	
ServiceNow Inc	NOW	200.00	579.92	n/a	44.50	115,984.00	0.32%		14.30%	
Church & Dwight Co Inc	CHD	242.69	97.85	1.07	8.00	23,747.41	0.07%	0.07%	0.53%	
Duke Realty Corp	DRE	382.77	53.00	2.11	-2.00	20,286.70	0.06%	0.12%	-0.11%	
Federal Realty Investment Trust	FRT	78.62	117.58	3.64	2.00	9,243.79	0.03%	0.09%	0.05%	
MGM Resorts International	MGM	439.17	44.29	0.02	25.00	19,450.93	0.05%	0.00%	1.35%	
American Electric Power Co Inc	AEP	504.21	90.65	3.44	6.50	45,706.82	0.13%	0.44%	0.82%	
SolarEdge Technologies Inc	SEDG	52.82	319.42	n/a	19.50	16,871.44	0.05%		0.91%	
PTC Inc	PTC	116.95	111.28	n/a		0.00	0.00%		0.00%	
JB Hunt Transport Services Inc	JBHT	104.85	202.93	0.79	11.00	21,277.21	0.06%	0.05%	0.65%	
Lam Research Corp	LRCX	139.50	561.35	1.07	17.50	78,308.33	0.22%	0.23%	3.80%	
Mohawk Industries Inc	MHK	65.07	140.78	n/a	10.50	9,160.70	0.03%		0.27%	
Pentair PLC	PNR	165.10	57.91	1.45	14.00	9,560.88	0.03%	0.04%	0.37%	
Vertex Pharmaceuticals Inc	VRTX	254.58	230.02	n/a	18.50	58,557.80	0.16%		3.00%	
Amcor PLC	AMCR	1513.73	11.63	4.13	15.00	17,604.65	0.05%	0.20%	0.73%	
Meta Platforms Inc	FB	2309.08	211.03	n/a	21.50	487,285.15	1.35%		29.03%	
T-Mobile US Inc	TMUS	1249.29	123.21	n/a	8.50	153,925.02	0.43%		3.63%	



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United Rentals Inc	URI	72.42	321.62	n/a	12.50	23,292.36	0.06%		0.81%
ABIOMED Inc	ABMD	45.52	310.74	n/a	7.50	14,143.64	0.04%		0.29%
Honeywell International Inc	HON	685.82	189.75	2.07	11.00	130,134.16	0.36%	0.74%	3.97%
Alexandria Real Estate Equities Inc	ARE	159.94	189.40	2.43	12.00	30,293.20	0.08%	0.20%	1.01%
Delta Air Lines Inc	DAL	639.93	39.92	n/a	49.00	25,546.01	0.07%		3.47%
Seagate Technology Holdings PLC	STX	218.90	103.16	2.71	15.00	22,581.52	0.06%	0.17%	0.94%
United Airlines Holdings Inc	UAL	323.61	44.40	n/a		0.00	0.00%		0.00%
News Corp	NWS	198.48	22.43	0.89		0.00	0.00%	0.00%	0.00%
Centene Corp	CNC	582.87	82.62	n/a	10.00	48,156.39	0.13%		1.33%
Martin Marietta Materials Inc	MLM	62.40	379.40	0.64	10.50	23,672.66	0.07%	0.04%	0.69%
Teradyne Inc	TER	162.42	117.92	0.37	13.50	19,152.21	0.05%	0.02%	0.72%
PayPal Holdings Inc	PYPL	1165.01	111.93	n/a	16.00	130,399.01	0.36%		5.78%
Tesla Inc	TSLA	1033.51	870.43	n/a	51.50	899,596.37	2.49%		128.38%
DISH Network Corp	DISH	290.57	31.96	n/a	4.00	9,286.65	0.03%		0.10%
Dow Inc	DOW	735.75	58.96	4.75		0.00	0.00%	0.00%	0.00%
Penn National Gaming Inc	PENN	168.32	51.35	n/a	28.00	8,643.39	0.02%		0.67%
Everest Re Group Ltd	RE	39.27	298.22	2.08	11.00	11,711.70	0.03%	0.07%	0.36%
Teledyne Technologies Inc	TDY	47.20	429.38	n/a	14.50	20,264.59	0.06%		0.81%
News Corp	NWSA	390.87	22.32	0.90		0.00	0.00%	0.00%	0.00%
Exelon Corp	EXC	978.32	42.56	3.17		0.00	0.00%	0.00%	0.00%
Global Payments Inc	GPN	281.97	133.38	0.75	16.50	37,608.89	0.10%	0.08%	1.72%
Crown Castle International Corp	CCI	432.22	166.59	3.53	12.00	72,002.70	0.20%	0.70%	2.39%
Aptiv PLC	APTV	270.51	129.44	n/a	21.50	35,015.33	0.10%		2.09%
Advance Auto Parts Inc	AAP	61.10	204.48	2.93	11.00	12,493.32	0.03%	0.10%	0.38%
Align Technology Inc	ALGN	78.80	511.46	n/a	17.00	40,300.49	0.11%		1.90%
Illumina Inc	ILMN	157.00	326.60	n/a	10.00	51,276.20	0.14%		1.42%
LKQ Corp	LKQ	285.01	46.95	2.13	14.00	13,381.41	0.04%	0.08%	0.52%
Nielsen Holdings PLC	NLSN	359.49	17.42	1.38		0.00	0.00%	0.00%	0.00%
Zoetis Inc	ZTS	471.97	193.65	0.67	12.00	91,397.18	0.25%	0.17%	3.04%
Zimvie Inc	ZIMV	#N/A	#N/A	n/a		0.00	0.00%		0.00%
Equinix Inc	EQIX	90.72	709.73	1.75	17.00	64,387.42	0.18%	0.31%	3.03%
Digital Realty Trust Inc	DLR	284.47	134.92	3.44	8.50	38,380.56	0.11%	0.37%	0.90%
Las Vegas Sands Corp	LVS	763.99	42.86	n/a	17.00	32,744.61	0.09%		1.54%
Discovery Inc	DISCK	330.15	27.97	n/a		0.00	0.00%		0.00%

## **JMC-5.2**

### **CAPITAL ASSET PRICING MODEL – CURRENT RISK-FREE RATE & VL BETA**

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & VL BETA  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Atmos Energy Corporation	ATO	2.20%	0.80	15.62%	13.43%	12.94%
New Jersey Resources Corporation	NJR	2.20%	1.00	15.62%	13.43%	15.62%
NiSource Inc.	NI	2.20%	0.85	15.62%	13.43%	13.61%
Northwest Natural Gas Company	NWN	2.20%	0.80	15.62%	13.43%	12.94%
ONE Gas, Inc.	OGS	2.20%	0.80	15.62%	13.43%	12.94%
Spire, Inc.	SR	2.20%	0.85	15.62%	13.43%	13.61%
Mean			0.85			13.61%

Notes:

- [1] Source: Bloomberg Professional  
[2] Source: Value Line, as of February 28, 2022  
[3] Source: JMC-5.1 SP500 MRP 3  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE & BLOOMBERG BETA  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Atmos Energy Corporation	ATO	2.20%	0.785	15.62%	13.43%	12.74%
New Jersey Resources Corporation	NJR	2.20%	0.861	15.62%	13.43%	13.75%
NiSource Inc.	NI	2.20%	0.836	15.62%	13.43%	13.42%
Northwest Natural Gas Company	NWN	2.20%	0.768	15.62%	13.43%	12.51%
ONE Gas, Inc.	OGS	2.20%	0.858	15.62%	13.43%	13.72%
Spire, Inc.	SR	2.20%	0.826	15.62%	13.43%	13.29%
Mean			0.822			13.24%

Notes:

- [1] Source: Bloomberg Professional  
[2] Source: Bloomberg Professional, 5-Year Betas as of February 28, 2022  
[3] Source: JMC-5.1 SP500 MRP 3  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & VL BETA  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Atmos Energy Corporation	ATO	3.40%	0.80	15.62%	12.22%	13.18%
New Jersey Resources Corporation	NJR	3.40%	1.00	15.62%	12.22%	15.62%
NiSource Inc.	NI	3.40%	0.85	15.62%	12.22%	13.79%
Northwest Natural Gas Company	NWN	3.40%	0.80	15.62%	12.22%	13.18%
ONE Gas, Inc.	OGS	3.40%	0.80	15.62%	12.22%	13.18%
Spire, Inc.	SR	3.40%	0.85	15.62%	12.22%	13.79%
Mean			0.85			13.79%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021, at 14

[2] Source: Value Line, as of February 28, 2022

[3] Source: JMC-5.1 SP500 MRP 3

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2023 - 2027)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Atmos Energy Corporation	ATO	3.40%	0.785	15.62%	12.22%	13.00%
New Jersey Resources Corporation	NJR	3.40%	0.861	15.62%	12.22%	13.92%
NiSource Inc.	NI	3.40%	0.836	15.62%	12.22%	13.62%
Northwest Natural Gas Company	NWN	3.40%	0.768	15.62%	12.22%	12.79%
ONE Gas, Inc.	OGS	3.40%	0.858	15.62%	12.22%	13.89%
Spire, Inc.	SR	3.40%	0.826	15.62%	12.22%	13.50%
Mean			0.822			13.45%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021, at 14

[2] Source: Bloomberg Professional, 5-Year Betas as of February 28, 2022

[3] Source: JMC-5.1 SP500 MRP 3

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

**JMC-6**

**BOND YIELD PLUS RISK PREMIUM NATURAL GAS UTILITIES**

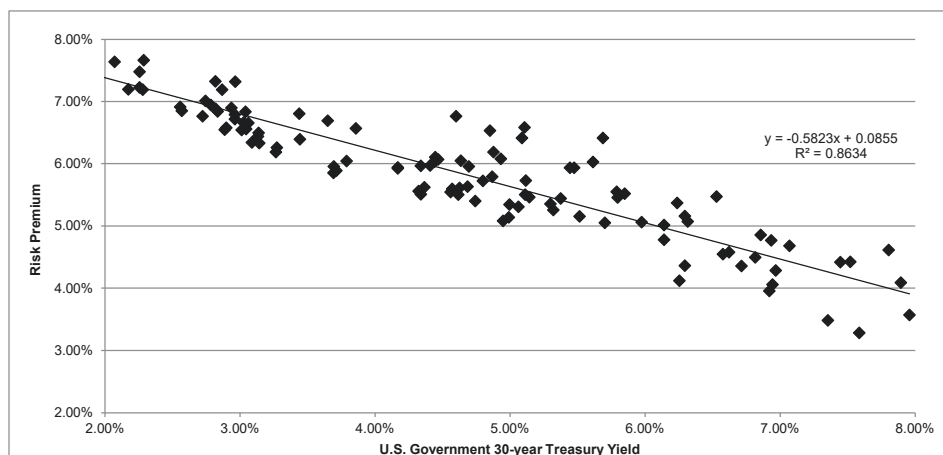
BOND YIELD PLUS RISK PREMIUM  
NATURAL GAS UTILITIES

	[1] Average Authorized Gas ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
1992.1	12.42%	7.80%	4.62%
1992.2	11.98%	7.89%	4.09%
1992.3	11.87%	7.45%	4.42%
1992.4	11.94%	7.52%	4.42%
1993.1	11.75%	7.07%	4.68%
1993.2	11.71%	6.86%	4.85%
1993.3	11.39%	6.31%	5.07%
1993.4	11.16%	6.14%	5.02%
1994.1	11.12%	6.57%	4.55%
1994.2	10.84%	7.35%	3.48%
1994.3	10.87%	7.58%	3.28%
1994.4	11.53%	7.96%	3.57%
1995.2	11.00%	6.94%	4.06%
1995.3	11.07%	6.71%	4.35%
1995.4	11.61%	6.23%	5.37%
1996.1	11.45%	6.29%	5.16%
1996.2	10.88%	6.92%	3.96%
1996.3	11.25%	6.96%	4.29%
1996.4	11.19%	6.62%	4.58%
1997.1	11.31%	6.81%	4.49%
1997.2	11.70%	6.93%	4.77%
1997.3	12.00%	6.53%	5.47%
1997.4	10.92%	6.14%	4.78%
1998.2	11.37%	5.85%	5.52%
1998.3	11.41%	5.47%	5.94%
1998.4	11.69%	5.10%	6.59%
1999.1	10.82%	5.37%	5.44%
1999.2	11.25%	5.79%	5.46%
1999.4	10.38%	6.25%	4.12%
2000.1	10.66%	6.29%	4.36%
2000.2	11.03%	5.97%	5.06%
2000.3	11.33%	5.79%	5.55%
2000.4	12.10%	5.69%	6.41%
2001.1	11.38%	5.44%	5.93%
2001.2	10.75%	5.70%	5.05%
2001.4	10.65%	5.30%	5.35%
2002.1	10.67%	5.51%	5.15%
2002.2	11.64%	5.61%	6.03%
2002.3	11.50%	5.08%	6.42%
2002.4	11.01%	4.93%	6.08%
2003.1	11.38%	4.85%	6.53%
2003.2	11.36%	4.60%	6.76%
2003.3	10.61%	5.11%	5.50%
2003.4	10.84%	5.11%	5.73%
2004.1	11.06%	4.88%	6.18%
2004.2	10.57%	5.32%	5.25%
2004.3	10.37%	5.06%	5.31%
2004.4	10.66%	4.86%	5.79%
2005.1	10.65%	4.69%	5.96%
2005.2	10.54%	4.47%	6.07%
2005.3	10.47%	4.44%	6.03%
2005.4	10.32%	4.68%	5.63%
2006.1	10.68%	4.63%	6.05%
2006.2	10.60%	5.14%	5.46%
2006.3	10.34%	4.99%	5.34%
2006.4	10.14%	4.74%	5.40%
2007.1	10.52%	4.80%	5.72%
2007.2	10.13%	4.99%	5.14%
2007.3	10.03%	4.95%	5.08%
2007.4	10.12%	4.61%	5.50%
2008.1	10.38%	4.41%	5.97%
2008.2	10.17%	4.57%	5.60%

BOND YIELD PLUS RISK PREMIUM  
NATURAL GAS UTILITIES

	[1] Average Authorized Gas ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
2008.3	10.55%	4.44%	6.11%
2008.4	10.34%	3.65%	6.69%
2009.1	10.24%	3.44%	6.81%
2009.2	10.11%	4.17%	5.94%
2009.3	9.88%	4.32%	5.56%
2009.4	10.31%	4.34%	5.97%
2010.1	10.24%	4.62%	5.61%
2010.2	9.99%	4.36%	5.62%
2010.3	10.43%	3.86%	6.57%
2010.4	10.09%	4.17%	5.93%
2011.1	10.10%	4.56%	5.54%
2011.2	9.85%	4.34%	5.51%
2011.3	9.65%	3.69%	5.96%
2011.4	9.88%	3.04%	6.84%
2012.1	9.63%	3.14%	6.50%
2012.2	9.83%	2.93%	6.90%
2012.3	9.75%	2.74%	7.01%
2012.4	10.06%	2.86%	7.19%
2013.1	9.57%	3.13%	6.44%
2013.2	9.47%	3.14%	6.33%
2013.3	9.60%	3.71%	5.89%
2013.4	9.83%	3.79%	6.04%
2014.1	9.54%	3.69%	5.85%
2014.2	9.84%	3.44%	6.39%
2014.3	9.45%	3.26%	6.19%
2014.4	10.28%	2.96%	7.32%
2015.1	9.47%	2.55%	6.91%
2015.2	9.43%	2.88%	6.55%
2015.3	9.75%	2.96%	6.79%
2015.4	9.68%	2.96%	6.72%
2016.1	9.48%	2.72%	6.76%
2016.2	9.42%	2.57%	6.85%
2016.3	9.47%	2.28%	7.19%
2016.4	9.67%	2.83%	6.84%
2017.1	9.60%	3.04%	6.56%
2017.2	9.47%	2.90%	6.58%
2017.3	10.14%	2.82%	7.32%
2017.4	9.70%	2.82%	6.88%
2018.1	9.68%	3.02%	6.66%
2018.2	9.43%	3.09%	6.34%
2018.3	9.71%	3.06%	6.65%
2018.4	9.53%	3.27%	6.26%
2019.1	9.55%	3.01%	6.54%
2019.2	9.73%	2.78%	6.94%
2019.3	9.95%	2.29%	7.66%
2019.4	9.73%	2.25%	7.48%
2020.1	9.35%	1.89%	7.46%
2020.2	9.55%	1.38%	8.17%
2020.3	9.52%	1.37%	8.15%
2020.4	9.47%	1.62%	7.86%
2021.1	9.71%	2.07%	7.64%
2021.2	9.48%	2.25%	7.22%
2021.3	9.40%	1.93%	7.46%
2021.4	9.59%	1.94%	7.65%
2022.1	9.36%	2.17%	7.19%
AVERAGE	10.44%	4.52%	5.91%
MEDIAN	10.34%	4.60%	5.96%

BOND YIELD PLUS RISK PREMIUM  
NATURAL GAS UTILITIES



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.92920
R Square	0.86341
Adjusted R Square	0.86222
Standard Error	0.00386
Observations	117

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.0108	0.0108	726.9297	0.0000
Residual	115	0.0017	0.0000		
Total	116	0.0125			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0855	0.00104	82.18787	0.00000	0.08340	0.08752	0.08340	0.08752
X Variable 1	-0.5823	0.02160	-26.96163	0.00000	-0.62503	-0.53948	-0.62503	-0.53948

	[7]	[8]	[9]
	U.S. Govt. 30-year Treasury	Risk Premium	ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	2.20%	7.27%	9.47%
Blue Chip Near-Term Projected Forecast (Q2 2022 - Q2 2023) [5]	2.74%	6.95%	9.69%
Blue Chip Long-Term Projected Forecast (2023-2027) [6]	3.40%	6.57%	9.97%
AVERAGE			9.71%

Notes:

- [1] Source: Regulatory Research Associates, rate cases through February 28, 2022
- [2] Source: Bloomberg Professional, quarterly bond yields are the average of each trading day in the quarter
- [3] Equals Column [1] - Column [2]
- [4] Source: Bloomberg Professional
- [5] Source: Blue Chip Financial Forecasts, Vol. 41, No. 3, March 1, 2022 at 2
- [6] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021 at 14
- [7] See notes [4] & [5]
- [8] Equals  $0.085463 + (-0.582257 \times \text{Column [6]})$
- [9] Equals Column [6] + Column [7]



**JMC-7**

**EXPECTED EARNINGS ANALYSIS**

EXPECTED EARNINGS ANALYSIS

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Company	Value Line ROE 2024-2026	Value Line Total Capital 2020	Value Line Common Equity Ratio 2020	Total Equity 2020	Value Line Total Capital 2024-2026	Value Line Common Equity Ratio 2024-2026	Total Equity 2024-2026	Compound Annual Growth Rate	Adjustment Factor	Adjusted Return on Common Equity
Atmos Energy Corporation	9.00%	12,837	61.60%	7,908	21,400	60.00%	12,840	10.18%	1.048	9.44%
New Jersey Resources Corporation	12.00%	3,793	43.00%	1,631	5,230	42.50%	2,223	6.39%	1.031	12.37%
NiSource Inc.	12.00%	15,315	34.00%	5,207	17,680	41.50%	7,337	7.10%	1.034	12.41%
Northwest Natural Gas Company	8.00%	2,065	51.00%	1,053	2,465	55.50%	1,368	5.37%	1.026	8.21%
ONE Gas, Inc.	7.50%	6,400	38.50%	2,464	8,500	48.00%	4,080	10.61%	1.050	7.88%
Spire, Inc.	8.00%	5,597	43.20%	2,418	8,200	45.00%	3,690	8.82%	1.042	8.34%
Mean										9.77%
Median										8.89%

Notes:

- [1] Source: Value Line
- [2] Source: Value Line
- [3] Source: Value Line
- [4] Equals [2] x [3]
- [5] Source: Value Line
- [6] Source: Value Line
- [7] Equals [5] x [6]
- [8] Equals ([7] / [4]) ^ (1/5) - 1
- [9] Equals 2 x (1 + [8]) / (2 + [8])
- [10] Equals [1] x [9]

**JMC-8**

**YEARS 2022-2026 CAPITAL EXPENDITURES AS A PERCENT OF 2021 NET  
UTILITY PLANT (\$ MILLIONS)**

YEARS 2022-2026 CAPITAL EXPENDITURES AS A PERCENT OF 2021 NET UTILITY PLANT  
(\$ Millions)

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
		2021	2022	2023	2024	2025	2026	Years 1-5 Cap. Ex. / Year 0 Net Plant
<b>Atmos Energy Corporation</b>	<b>ATO</b>							
Capital Spending per Share			\$17.75	\$17.60	\$17.80	\$18.00	\$18.00	
Common Shares Outstanding			138.00	142.00	148.50	155.00	155.00	
Capital Expenditures			\$2,449.5	\$2,499.2	\$2,643.3	\$2,790.0	\$2,790.0	87.44%
Net Plant			\$15,064.0					
<b>New Jersey Resources Corporation</b>	<b>NJR</b>							
Capital Spending per Share			\$5.35	\$5.30	\$5.40	\$5.50	\$5.50	
Common Shares Outstanding			98.00	99.00	99.50	100.00	100.00	
Capital Expenditures			\$524.3	\$524.7	\$537.3	\$550.0	\$550.0	63.75%
Net Plant			\$4,213.5					
<b>NiSource, Inc.</b>	<b>NI</b>							
Capital Spending per Share			\$4.50	\$4.45	\$4.40	\$4.35	\$4.35	
Common Shares Outstanding			400.00	405.00	410.00	415.00	415.00	
Capital Expenditures			\$1,800.0	\$1,802.3	\$1,804.0	\$1,805.3	\$1,805.3	53.83%
Net Plant			\$16,750.0					
<b>Northwest Natural Gas Company</b>	<b>NWN</b>							
Capital Spending per Share			\$8.70	\$9.05	\$9.23	\$9.40	\$9.40	
Common Shares Outstanding			31.00	31.00	31.50	32.00	32.00	
Capital Expenditures	2022-2026		\$269.7	\$280.6	\$290.6	\$300.8	\$300.8	54.64%
Net Plant			\$2,640.0					
<b>ONE Gas, Inc.</b>	<b>OGS</b>							
Capital Spending per Share			\$9.20	\$9.40	\$9.60	\$9.80	\$9.80	
Common Shares Outstanding			53.50	54.00	55.50	57.00	57.00	
Capital Expenditures			\$492.2	\$507.6	\$532.8	\$558.6	\$558.6	51.45%
Net Plant			\$5,150.0					
<b>Spire, Inc.</b>	<b>SR</b>							
Capital Spending per Share			\$10.95	\$11.15	\$11.33	\$11.50	\$11.50	
Common Shares Outstanding			52.00	52.50	53.75	55.00	55.00	
Capital Expenditures			\$569.4	\$585.4	\$608.7	\$632.5	\$632.5	59.90%
Net Plant			\$5,055.7					
<b>Southern California Gas Company</b>	<b>SCG</b>							
Capital Spending per Share								
Common Shares Outstanding								
Capital Expenditures								60.33%
Net Plant [9]			\$16,243.0					
SCG CapEx Total [8]								9,800.00
SCG CapEx Annual Average								
Proxy Group Median								57.27%
SCG / Proxy Group Median								1.05

Notes:

[1] - [6] Source: Value Line, dated February 25, 2022

[7] Equals (Column [2] + [3] + [4] + [5] + [6]) / Column [1]

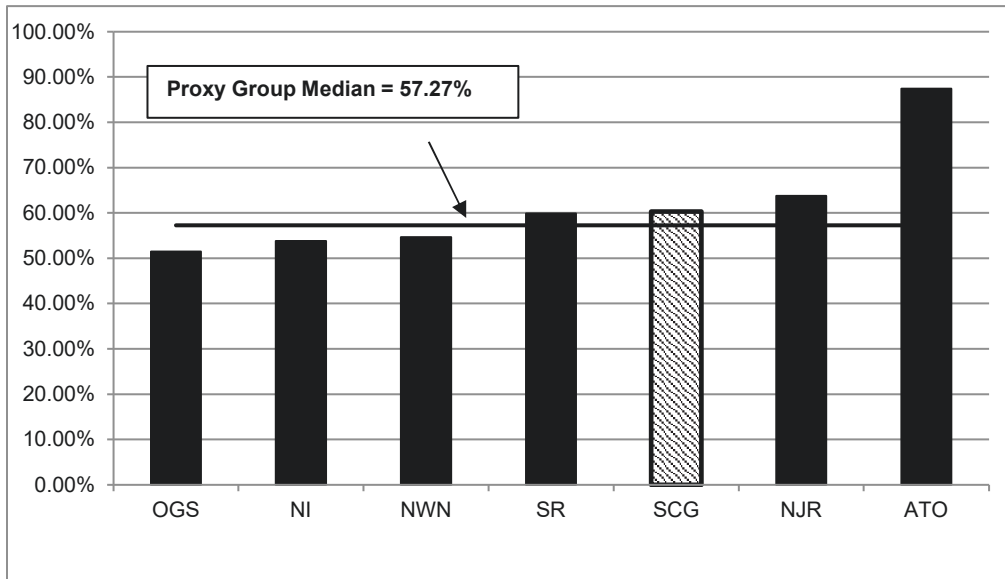
[8] Source: Company Data

[9] Source: SEC Form 10-K, Southern California Gas Company, for the year ended 12/31/2021, at F-24 (Net PP&E)

**JMC-8**

**2022-2026 CAPITAL EXPENDITURES AS A PERCENT OF 2021 NET PLANT**

2022-2026 CAPITAL EXPENDITURES AS A PERCENT OF 2021 NET PLANT



Projected CAPEX / 2020 Net Plant

Company	2022-2026
1 ONE Gas, Inc.	OGS 51.45%
2 NiSource, Inc.	NI 53.83%
3 Northwest Natural Gas Company	NWN 54.64%
4 Spire, Inc.	SR 59.90%
5 Southern California Gas Company	SCG 60.33%
6 New Jersey Resopurces Corporation	NJR 63.75%
7 Atmos Energy Corporation	ATO 87.44%
Proxy Group Median	57.27%
SCG/Proxy Group	1.05

Notes:

Source: JMC-8 CapEx 1

**JMC-9**

**COMPARISON OF SOUTHERN CALIFORNIA GAS AND PROXY GROUP  
COMPANIES RISK ASSESSMENT**

COMPARISON OF SOUTHERN CALIFORNIA GAS AND PROXY GROUP COMPANIES  
RISK ASSESSMENT

Company	Jurisdiction/Service	Test Year	Rate Base	Revenue Decoupling	Capital Cost Recovery Mechanism
		[1]	[2]	[3]	[4]
Atmos Energy Corporation	Kansas - Gas	Historical	Year End	Partial	Yes
	Kentucky - Gas	Fully Forecast	Average	Partial	Yes
	Louisiana - Gas	Historical	Year End	Partial	Yes
	Mississippi - Gas	Partially Forecast	Average	Partial	Yes
	Tennessee - Gas	Fully Forecast	Average	Partial	No
	Texas - Gas	Historical	Year End	Partial	Yes
New Jersey Resources Corporation NISource Inc.	New Jersey - Gas	Partially Forecast	Year End	Full	Yes
	Indiana - Gas	Historical	Year End	Partial	Yes
	Kentucky - Gas	Fully Forecast	Average	Partial	Yes
	Maryland - Gas	Historical	Average	Partial	Yes
	Ohio - Gas	Historical	Year End	No	Yes
	Pennsylvania - Gas	Fully Forecast	Average	Partial	Yes
Northwest Natural Gas Company	Virginia - Gas	Fully Forecast	Average	Partial	Yes
	Oregon - Gas	Fully Forecast	Average	Partial	Yes
	Washington - Gas	Historical	Average	No	No
	Kansas - Gas	Historical	Year End	Partial	Yes
	Oklahoma - Gas	Historical	Year End	Partial	No
	Texas - Gas	Historical	Year End	Partial	Yes
Southwest Gas Corporation	Arizona - Gas	Historical	Year End	Full	Yes
	California - Gas	Fully Forecast	Average	Full	No
	Nevada - Gas	Historical	Year End	Full	Yes
	Alabama - Gas	Fully Forecast	Average	Full	No
	Missouri East - Gas	Historical	Year End	Partial	No
	Missouri West - Gas	Historical	Year End	No	Yes
Proxy Group Operating Company Count	Fully Forecast	8	Year End	Full	4
	Partially Forecast	2	Average	Partial	17
	Historical	14		No	3
Southern California Gas	Forecast	41.67%	Year End	RDM	87.50%
	California	Forecast	Average	CCR	75.00%

Notes

- [1] Source: S&P Global - Market
- [2] Source: S&P Global - Market Intelligence Rate Case History (Past Rate Cases), accessed 3/23/2022
- [3] - [4] Source: "Adjustment Clauses: A State-by-state Overview," Regulatory Research Associates, November 12, 2019. Operating subsidiaries not covered in this report were excluded from this exhibit.



**JMC-10**

**CAPITAL STRUCTURE ANALYSIS**

CAPITAL STRUCTURE ANALYSIS

COMMON EQUITY RATIO [1]				
Proxy Group Company	Ticker	2020	2019	MRY
Atmos Energy Corporation	ATO	58.31%	58.43%	58.31%
New Jersey Resources Corporation	NJR	55.45%	58.87%	55.45%
NiSource Inc.	NI	54.43%	54.33%	54.43%
Northwest Natural Gas Company	NWN	47.44%	49.19%	47.44%
One Gas Inc.	OGS	60.04%	63.28%	60.04%
Spire Inc.	SR	58.52%	60.85%	58.52%
<b>Proxy Group</b>				
MEAN		55.70%	57.49%	55.70%
LOW		47.44%	49.19%	47.44%
HIGH		60.04%	63.28%	60.04%

COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES				
Company Name	Ticker	2020	2019	MRY
Atmos Energy Corporation	ATO	58.31%	58.43%	58.31%
New Jersey Natural Gas Company	NJR	55.45%	58.87%	55.45%
Columbia Gas of Kentucky, Inc.	NI	54.68%	54.23%	54.68%
Columbia Gas of Maryland, Inc.	NI	54.95%	52.38%	54.95%
Columbia Gas of Ohio, Inc.	NI	50.45%	53.00%	50.45%
Columbia Gas of Pennsylvania, Inc.	NI	55.68%	55.59%	55.68%
Columbia Gas of Virginia, Inc.	NI	43.69%	42.53%	43.69%
Northern Indiana Public Service Company LLC	NI	58.01%	56.43%	58.01%
Northwest Natural Gas Company	NWN	47.44%	49.19%	47.44%
Kansas Gas Service Company, Inc.	OGS	60.33%	63.55%	60.33%
Oklahoma Natural Gas Company	OGS	59.85%	63.10%	59.85%
Texas Gas Service Company, Inc.	OGS	59.99%	63.23%	59.99%
Spire Alabama Inc.	SR	64.35%	66.82%	64.35%
Spire Gulf Inc.	SR	40.55%	37.18%	40.55%
Spire Mississippi Inc.	SR	100.00%	100.00%	100.00%
Spire Missouri Inc.	SR	56.68%	59.05%	56.68%

Notes:

[1] Ratios are weighted by actual common capital, preferred equity, and long-term debt of Operating Subsidiaries.

[2] Natural Gas operating subsidiaries where data was unable to be obtained for 2019 and 2020 were removed from the analysis.

CAPITAL STRUCTURE ANALYSIS

LONG-TERM DEBT RATIO [1]				
Proxy Group Company	Ticker	2020	2019	MRY
Atmos Energy Corporation	ATO	41.69%	41.57%	41.69%
New Jersey Resources Corporation	NJR	44.55%	41.13%	44.55%
NiSource Inc.	NI	45.57%	45.67%	45.57%
Northwest Natural Gas Company	NWN	52.56%	50.81%	52.56%
One Gas Inc.	OGS	39.96%	36.72%	39.96%
Spire Inc.	SR	41.48%	39.15%	41.48%
<b>Proxy Group</b>				
MEAN		44.30%	42.51%	44.30%
LOW		39.96%	36.72%	39.96%
HIGH		52.56%	50.81%	52.56%

LONG-TERM DEBT RATIO - UTILITY OPERATING COMPANIES				
Company Name	Ticker	2020	2019	MRY
Atmos Energy Corporation	ATO	41.69%	41.57%	41.69%
New Jersey Natural Gas Company	NJR	44.55%	41.13%	44.55%
Columbia Gas of Kentucky, Inc.	NI	45.32%	45.77%	45.32%
Columbia Gas of Maryland, Inc.	NI	45.05%	47.62%	45.05%
Columbia Gas of Ohio, Inc.	NI	49.55%	47.00%	49.55%
Columbia Gas of Pennsylvania, Inc.	NI	44.32%	44.41%	44.32%
Columbia Gas of Virginia, Inc.	NI	56.31%	57.47%	56.31%
Northern Indiana Public Service Company LLC	NI	41.99%	43.57%	41.99%
Northwest Natural Gas Company	NWN	52.56%	50.81%	52.56%
Kansas Gas Service Company, Inc.	OGS	39.67%	36.45%	39.67%
Oklahoma Natural Gas Company	OGS	40.15%	36.90%	40.15%
Texas Gas Service Company, Inc.	OGS	40.01%	36.77%	40.01%
Spire Alabama Inc.	SR	35.65%	33.18%	35.65%
Spire Gulf Inc.	SR	59.45%	62.82%	59.45%
Spire Mississippi Inc.	SR	0.00%	0.00%	0.00%
Spire Missouri Inc.	SR	43.32%	40.95%	43.32%

Notes:

[1] Ratios are weighted by actual common capital, preferred equity, and long-term debt of Operating Subsidiaries.

[2] Natural Gas operating subsidiaries where data was unable to be obtained for 2019 and 2020 were removed from the analysis.

CAPITAL STRUCTURE ANALYSIS

PREFERRED EQUITY RATIO [1]				
Proxy Group Company	Ticker	2020	2019	MRY
Atmos Energy Corporation	ATO	0.00%	0.00%	0.00%
New Jersey Resources Corporation	NJR	0.00%	0.00%	0.00%
NiSource Inc.	NI	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	0.00%	0.00%	0.00%
One Gas Inc.	OGS	0.00%	0.00%	0.00%
Spire Inc.	SR	0.00%	0.00%	0.00%
<b>Proxy Group</b>				
MEAN		0.00%	0.00%	0.00%
LOW		0.00%	0.00%	0.00%
HIGH		0.00%	0.00%	0.00%

PREFERRED EQUITY RATIO - UTILITY OPERATING COMPANIES				
Company Name	Ticker	2020	2019	MRY
Atmos Energy Corporation	ATO	0.00%	0.00%	0.00%
New Jersey Natural Gas Company	NJR	0.00%	0.00%	0.00%
Columbia Gas of Kentucky, Inc.	NI	0.00%	0.00%	0.00%
Columbia Gas of Maryland, Inc.	NI	0.00%	0.00%	0.00%
Columbia Gas of Ohio, Inc.	NI	0.00%	0.00%	0.00%
Columbia Gas of Pennsylvania, Inc.	NI	0.00%	0.00%	0.00%
Columbia Gas of Virginia, Inc.	NI	0.00%	0.00%	0.00%
Northern Indiana Public Service Company LLC	NI	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	0.00%	0.00%	0.00%
Kansas Gas Service Company, Inc.	OGS	0.00%	0.00%	0.00%
Oklahoma Natural Gas Company	OGS	0.00%	0.00%	0.00%
Texas Gas Service Company, Inc.	OGS	0.00%	0.00%	0.00%
Spire Alabama Inc.	SR	0.00%	0.00%	0.00%
Spire Gulf Inc.	SR	0.00%	0.00%	0.00%
Spire Mississippi Inc.	SR	0.00%	0.00%	0.00%
Spire Missouri Inc.	SR	0.00%	0.00%	0.00%

Notes:

[1] Ratios are weighted by actual common capital, preferred equity, and long-term debt of Operating Subsidiaries.

[2] Natural Gas operating subsidiaries where data was unable to be obtained for 2019 and 2020 were removed from the analysis.