

Direct Testimony and Schedules  
Joshua C. Nowak

Before the North Dakota Public Service Commission  
State of North Dakota

In the Matter of the Application of Northern States Power Company  
for Authority to Increase Rates for Natural Gas Service in North Dakota

Case No. PU-23-\_\_\_\_  
Exhibit\_\_\_\_(JCN-1)

**Return on Equity**

December 29, 2023

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1 **I. INTRODUCTION**

2

3 Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.

4 A. My name is Joshua C. Nowak. I am employed by Concentric Energy Advisors,  
5 Inc. (Concentric) as a Vice President. Concentric is a management consulting  
6 and economic advisory firm, focused on the North American energy and water  
7 industries. Based in Marlborough, Massachusetts and Washington, D.C.,  
8 Concentric specializes in regulatory and litigation support, financial advisory  
9 services, energy market strategies, market assessments, energy commodity  
10 contracting and procurement, economic feasibility studies, and capital market  
11 analyses. My business address is 293 Boston Post Road West, Suite 500,  
12 Marlborough, Massachusetts 01752.

13

14 Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

15 A. I am submitting this testimony to the North Dakota Public Services  
16 Commission (the Commission) on behalf of Northern States Power Company,  
17 a Minnesota corporation (NSP or the Company), and wholly owned subsidiary  
18 of Xcel Energy Inc. (XEI).

19

20 Q. PLEASE DESCRIBE YOUR EXPERIENCE IN THE ENERGY AND UTILITY INDUSTRIES  
21 AND YOUR EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS.

22 A. I hold a Bachelor's degree in Economics from Boston College, and have more  
23 than 15 years of experience in providing economic, financial, and strategic  
24 advisory services. As a consultant, I primarily advise clients in regulated utility  
25 industries and have provided testimony regarding financial matters before  
26 multiple regulatory agencies. I have advised numerous energy and utility clients  
27 on a wide range of financial and economic issues with primary concentrations

1 in valuation and utility rate matters. Many of these assignments have included  
2 the determination of the cost of capital for valuation and ratemaking purposes.  
3 I have provided testimony before the Federal Energy Regulatory Commission  
4 (FERC) as well as state and provincial jurisdictions in the U.S. and Canada. Prior  
5 to joining Concentric in 2018, I was employed by National Grid USA where I  
6 was responsible for regulatory filings related to the cost of capital across the  
7 company's multiple U.S. operating companies and service territories. A  
8 summary of my professional and educational background is presented in  
9 Exhibit\_\_\_\_(JCN-1), Schedule 1.

10  
11 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

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

16  
17 Q. ARE YOU SPONSORING ANY SCHEDULES IN THIS PROCEEDING?

18 A. Yes. My analyses and recommendations are supported by the data presented in  
19 Exhibit\_\_\_\_(JCN-1), Schedules 2 through 13, which have been prepared by me  
20 or under my direction. I sponsor the following schedules:

- 21 • Schedule 2 – Comprehensive Summary of ROE Results
- 22 • Schedule 3 – Proxy Group Screening Analysis
- 23 • Schedule 4 – Constant Growth Discounted Cash Flow (DCF) Analysis
- 24 • Schedule 5 – Market Risk Premium (MRP) Estimate
- 25 • Schedule 6 – Capital Asset Pricing Model (CAPM) Analysis
- 26 • Schedule 7 – Bond Yield Plus Risk Premium (Risk Premium) Analysis
- 27 • Schedule 8 – Expected Earnings Analysis

- Schedule 9 – Flotation Cost Analysis
- Schedule 10 – Regulatory Framework Comparison
- Schedule 11 – Capitalization and Financial Statistics
- Schedule 12 – Proxy Group Capital Structure Analysis
- Schedule 13 – Calculation of Debt Cost Rates

## II. SUMMARY OF TESTIMONY

Q. WHAT IS YOUR CONCLUSION REGARDING THE APPROPRIATE COST OF EQUITY AND CAPITAL STRUCTURE FOR NSP?

A. I have estimated NSP's ROE based on the results of the Constant Growth DCF model, the CAPM, and the Bond Yield Plus Risk Premium model and the general economic and capital market environment and the influence such conditions exert over the results. To assess the reasonableness of the DCF, CAPM, and Risk Premium results and evaluate the available returns for alternative investments, I also considered the Expected Earnings analysis. In addition, I analyzed the Company's business and regulatory risk profile that must be considered in determining where the Company's cost of equity falls within the range of analytical results. A summary of the results of my analyses are shown below in Table 1.

**Table 1**  
**Summary of Results Including Flotation Costs**

	Average	Median
<i>Primary Analyses</i>		
DCF	10.21%	9.88%
CAPM	11.65%	11.57%
Risk Premium	10.42%	10.42%
<b>Average</b>	<b>10.76%</b>	<b>10.72%</b>
<i>Benchmark Analyses</i>		
Expected Earnings	9.94%	9.84%

The DCF, CAPM, and Risk Premium, analyses produce a range of estimates of the Company's cost of equity of 9.88 percent to 11.65 percent, including flotation costs, with an average of approximately 10.76 percent. Based on these analyses, I consider an ROE range of 9.90 percent to 10.90 percent to be reasonable. From within that range, I recommend an ROE of 10.20 percent. My recommendation is below the midpoint of the range and 56 basis points below the average of the DCF, CAPM, and Risk Premium analyses and therefore represents a conservative estimate of NSP's cost of equity. As to the capital structure, NSP's requested capital structure of 52.50 percent equity and 47.50 percent debt (47.38 percent long-term debt and 0.12 percent short-term debt) is within the range of actual common equity ratios of 44.43 percent to 59.79 percent for the operating companies held by the proxy group, and, therefore, reasonable. With regard to the Company's cost of debt, I recommend

1 a cost of long-term debt of 4.54 percent a cost of short-term debt of 7.72  
2 percent, as discussed below.

3  
4 Q. HOW IS THE REQUIRED ROE DETERMINED?

5 A. Unlike the cost of long-term debt, for example, the required ROE cannot be  
6 directly observed. Therefore, the required ROE is estimated by using analytical  
7 techniques that rely on market-based data to quantify investor expectations  
8 regarding required equity returns, adjusted for certain incremental costs and  
9 risks. Based on the results of those analyses and considering other qualitative  
10 factors, informed judgment is used to determine where within the range of  
11 results the cost of equity for the Company should rightly fall. The resulting cost  
12 of equity serves as the recommended ROE for ratemaking purposes.

13  
14 Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT YOU CONDUCTED  
15 TO SUPPORT YOUR ROE RECOMMENDATION.

16 A. As mentioned, my ROE recommendation is based on the range of results  
17 produced from four modeling methodologies. Analysts and academics  
18 understand that ROE models are tools to be used in the ROE estimation  
19 process, and that strict adherence to any single approach, or the specific results  
20 of any single approach, can lead to flawed conclusions. No model can exactly  
21 pinpoint the correct cost of equity, but each is designed to provide a unique  
22 estimate of the return required to attract equity investment. Therefore, my  
23 analysis considers the range of results produced by these different analyses. The  
24 DCF analysis estimates the cost of equity based on market data on dividend  
25 yields and analysts' projected earnings per share growth rates from reputable  
26 third-party sources. The CAPM analysis is based on both current and forecasted  
27 interest rates and a forward-looking market risk premium. The Risk Premium



1 approach calculates the risk premium as the spread between authorized ROEs  
2 for natural gas distribution utilities and Treasury bond yields. The Expected  
3 Earnings approach is based on projected returns on book equity that investors  
4 expect to receive over the next three to five years. My ROE recommendation  
5 is ultimately based on the range of results produced by these methodologies.

6  
7 My recommendation also considers the general economic and capital market  
8 environment and the influence capital market conditions exert over the results  
9 of the DCF, CAPM, and Risk Premium models. In addition, I consider the  
10 Company's business and regulatory risks in relation to a set of proxy companies  
11 to assist in the determination of the appropriate ROE, capital structure, and  
12 cost of debt from within the range of my analytical results.

13  
14 Q. HOW IS THE REMAINDER OF YOUR DIRECT TESTIMONY ORGANIZED?

15 A. The remainder of my Direct Testimony is organized as follows:

- 16 • Section III provides background on the regulatory principles that guide  
17 the determination of ROE.
- 18 • Section IV presents a review of current and prospective economic and  
19 capital market conditions and the implications on the cost of capital for  
20 utilities.
- 21 • Section V describes the criteria and approach for the selection of a proxy  
22 group of comparable companies.
- 23 • Section VI provides a description of the data and methodologies used to  
24 estimate the cost of equity, as well as the results of the various ROE  
25 estimation models and concludes with my recommendation and an  
26 assessment of its reasonableness under the *Hope* test.

- Section VII discusses NSP’s business risks relative to the proxy group and other considerations relevant to determining the Company’s allowed ROE.
- Section VIII reviews NSP’s capital structure in the context of the proxy group.
- Section IX presents NSP’s cost of debt.
- Finally, Section X summarizes my results, conclusions, and recommendation.

### III. REGULATORY PRINCIPLES

Q. PLEASE DESCRIBE THE GUIDING PRINCIPLES USED IN ESTABLISHING THE COST OF CAPITAL FOR A REGULATED UTILITY.

A. The foundations of public utility regulation require that utilities receive a fair rate of return sufficient to attract needed capital to maintain important infrastructure for customers at reasonable rates. The basic tenets of this regulatory doctrine originate from several bellwether decisions by the United States Supreme Court, notably *Bluefield Waterworks and Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) (*Bluefield*), and *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591 (1944) (*Hope*). In *Bluefield*, the Court stated:

A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties...The return should be reasonably sufficient to assure investor confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to

1 maintain and support its credit and enable it to raise the money  
2 necessary for the proper discharge of its public duties.  
3

4 Later, in *Hope*, the Court expanded on the standard for setting an appropriate  
5 ROE:

6 [T]he return to the equity owner should be commensurate with  
7 returns on investments in other enterprises having corresponding  
8 risks. That return, moreover, should be sufficient to assure  
9 confidence in the financial integrity of the enterprise, so as to maintain  
10 its credit and to attract capital.  
11

12 Q. PLEASE EXPLAIN HOW THESE PRINCIPLES APPLY IN THE CONTEXT OF THE  
13 REGULATED RATE OF RETURN.

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

25 Based on these widely recognized standards, the Commission's order in this  
26 case should provide NSP with the opportunity to earn a return on equity that  
27 is:

- 28 • Adequate to allow the Company to attract the capital that is necessary to  
29 provide safe and reliable service (the capital attraction standard);

- Sufficient to ensure the Company's ability to maintain its financial integrity (the financial integrity standard); and
- At a level that is comparable to returns required on investments of similar risk (the comparability standard).

Importantly, a fair return must satisfy all three of these standards established under *Hope* and *Bluefield*. The allowed ROE should enable the Company to finance capital expenditures on reasonable terms and provide it with the ability to raise capital under a full range of capital market circumstances to serve its customers. The DCF, CAPM, Risk Premium, and Expected Earnings approaches, while fundamental to the ROE determination, are still only models. The results of these models cannot be mechanically applied without also using informed judgment to consider economic and capital market conditions and the relative risk of NSP as compared to the proxy group companies.

Q. HOW DO THESE PRINCIPLES SERVE CUSTOMER INTERESTS?

A. Because utility operations are capital intensive, regulatory decisions, including the determination of the cost of equity, should enable the utility to attract capital at reasonable terms. Doing so balances the long-term interests of investors and customers. In particular, a fair return significantly contributes to the Company's overall financial integrity. A strong financial profile is necessary to maintain access to capital markets at reasonable terms. The ability to access capital markets at reasonable terms ensures that the Company is able to make timely investments necessary to provide safe and reliable service. In addition, with respect to debt capital, a strong financial profile supports lower borrowing costs for those investments, which can include fixed interest payments over the

1 course of decades. As such, customers benefit from a lower cost of service  
2 when the Company is able to access lower borrowing costs.

3  
4 Q. IS NSP'S ABILITY TO ATTRACT EQUITY CAPITAL AFFECTED BY ROES THAT ARE  
5 AUTHORIZED FOR OTHER UTILITIES?

6 A. Yes, it is. NSP, as part of XEI, competes with other investments of similar risk  
7 for equity capital from the market. In addition, NSP competes with other  
8 investments within XEI for equity capital from its parent company. Therefore,  
9 the ROE awarded to a utility sends an important signal to investors regarding  
10 whether there is regulatory support for financial integrity, dividends, growth,  
11 and fair compensation for business and financial risk. A company's cost of  
12 equity is defined by, and equal to, the opportunity cost of investing in that  
13 company. In other words, if higher returns are available from other investments  
14 of comparable risk, investors (including parent companies) have an incentive to  
15 direct their capital to those investments. This means that an authorized ROE  
16 for NSP that is below ROEs authorized for other utilities could increase the  
17 overall cost of capital required for investments to be made on behalf of  
18 customers in North Dakota.

19  
20 As a practical matter, the fact that NSP's North Dakota operations only  
21 represent a portion of NSP's overall operations is not relevant to determining  
22 the Company's cost of equity capital. While capital is raised at the NSP-level of  
23 the organization, investors view the Company's overall risk profile on a sum-  
24 of-the-parts basis. As such, each component (*e.g.*, NSP's North Dakota gas  
25 operations) must have an authorized ROE that is commensurate with its  
26 standalone risk. To the extent that the authorized ROE for any component is

1 below investors' required returns for NSP's North Dakota gas operations, this  
2 could increase the overall cost of capital for the Company.

3  
4 Q. WHAT ARE YOUR CONCLUSIONS REGARDING REGULATORY PRINCIPLES?

5 A. The ratemaking process is premised on the principle that, in order for investors  
6 and companies to commit the capital needed to provide safe and reliable utility  
7 services, the utility must have the opportunity to recover invested capital and  
8 the market-required return on that capital. Because utility operations are capital  
9 intensive, regulatory decisions should enable the utility to attract capital on  
10 favorable terms. The financial community carefully monitors the current and  
11 expected financial condition of utility companies as well as the regulatory  
12 environment in which they operate. In that respect, the regulatory environment  
13 is one of the most important factors considered by both debt and equity  
14 investors in their assessments of risk. It is therefore necessary that the ROE  
15 authorized in this proceeding take into consideration the current and expected  
16 capital market conditions that NSP faces, as well as investors' expectations and  
17 requirements regarding both risks and returns. A reasonable ROE is required  
18 both for continued capital investment by the Company and to maintain  
19 confidence in the Company's regulatory environment among credit rating  
20 agencies and investors.

#### IV. ECONOMIC AND CAPITAL MARKET CONDITIONS

Q. WHY IS IT IMPORTANT TO CONSIDER THE EFFECTS OF CURRENT AND EXPECTED ECONOMIC AND FINANCIAL MARKET CONDITIONS WHEN SETTING THE APPROPRIATE ROE?

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

Q. WHAT ARE THE KEY FACTORS AFFECTING THE COST OF EQUITY FOR REGULATED UTILITIES IN THE CURRENT AND PROSPECTIVE CAPITAL MARKETS?

A. The cost of equity for regulated utility companies is being affected by several key factors in the current and prospective capital markets including the Federal Reserve's aggressively tighter monetary policy, ongoing inflation concerns, and

1 the heightened uncertainty and volatility in equity markets. Collectively, these  
2 factors contribute to heightened market risk and an increase in investor-  
3 required returns. In this section, I discuss these factors and how they affect the  
4 models used to estimate the cost of equity for regulated utilities.

5  
6 **A. Monetary Policy**

7 Q. HOW DO THE NATION’S MONETARY POLICY ACTIONS AFFECT CAPITAL MARKETS  
8 AND THE U.S. ECONOMY?

9 A. The Federal Reserve is responsible for “conducting the nation’s monetary  
10 policy by influencing money and credit conditions in the economy in pursuit of  
11 full employment and stable prices.”<sup>1</sup> The Federal Reserve implements monetary  
12 policy through raising or lowering interest rates, which impacts the demand for  
13 goods and services. This, in turn, impacts employment and inflation. Monetary  
14 policy has shifted dramatically over the past several years, in response first to  
15 COVID-19, and then to record high inflation. The capital markets are  
16 significantly affected by the Federal Reserve’s policy. While the primary  
17 monetary policy tool used by the Federal Reserve is the short-term interest rate  
18 for overnight interbank loans, it has far-reaching consequences for capital  
19 markets and significantly influences long-term interest rates and the cost of  
20 equity. As discussed in more detail below, current Federal Reserve policy is  
21 increasingly focused on inflationary concerns, but it is important to note, even  
22 if inflation moderates, the current monetary policy stance is likely to have a  
23 long-lasting effect on capital market conditions.

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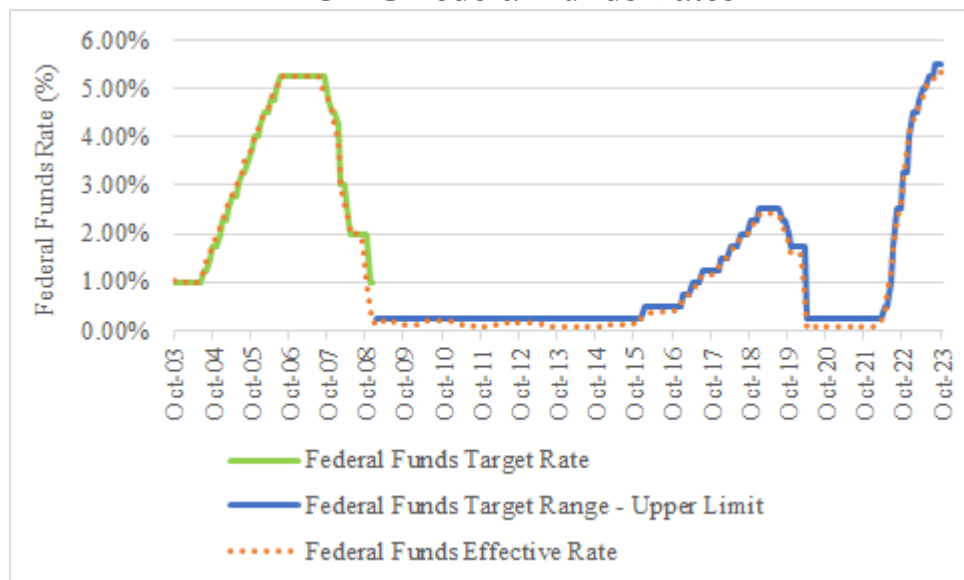
<sup>1</sup> Federal Reserve, “The Fed - What is the purpose of the Federal Reserve System?” available at [https://www.federalreserve.gov/faqs/about\\_12594.htm](https://www.federalreserve.gov/faqs/about_12594.htm).



1 Q. WHAT STEPS DID THE FEDERAL RESERVE TAKE TO STABILIZE FINANCIAL  
2 MARKETS AND SUPPORT THE ECONOMY IN RESPONSE TO PERSISTENT  
3 INFLATION?

4 A. Inflation surged to historically high levels in 2022, and the Federal Reserve  
5 chose to aggressively battle inflation through raising interest rates. Previously,  
6 in response to the economic effects of COVID-19, the Federal Reserve  
7 decreased the federal funds rate in March 2020 to a target range of 0.00 percent  
8 to 0.25 percent (which remained in effect until March 2022) in addition to other  
9 stimulus measures that increased the supply of money in the economy. The  
10 Federal Reserve began unwinding its quantitative easing program in 2022 and  
11 has thus far increased the target rate 11 times to a target rate of 5.25 percent to  
12 5.50 percent (the highest level the highest level in the last 20 years) as shown in  
13 Figure 1 below.

14 **Figure 1**  
15 **FOMC Federal Funds Rates**



25 In November 2023, the Federal Reserve indicated that inflation remains a key  
26 consideration for the Committee:

1 The Committee seeks to achieve maximum employment and inflation  
2 at the rate of 2 percent over the longer run. In support of these goals,  
3 the Committee decided to maintain the target range for the federal  
4 funds rate at 5-1/4 to 5-1/2 percent. The Committee will continue to  
5 assess additional information and its implications for monetary policy.  
6 In determining the extent of additional policy firming that may be  
7 appropriate to return inflation to 2 percent over time, the Committee  
8 will take into account the cumulative tightening of monetary policy,  
9 the lags with which monetary policy affects economic activity and  
10 inflation, and economic and financial developments. In addition, the  
11 Committee will continue reducing its holdings of Treasury securities  
12 and agency debt and agency mortgage-backed securities, as described  
13 in its previously announced plans. The Committee is strongly  
14 committed to returning inflation to its 2 percent objective.<sup>2</sup>  
15

16 Interest rates may not fully reflect the effects of inflation because no one knows  
17 exactly how high interest rates must go before inflation returns to more  
18 acceptable levels. Although year-over-year inflation rates have eased somewhat  
19 over the last few months, the Federal Reserve also affirmed that inflation  
20 “remains elevated,” and the “Committee remains highly attentive to inflation  
21 risks.”<sup>3</sup> Chairman of the Federal Reserve, Jerome Powell, earlier reiterated the  
22 Fed’s objective to bring inflation down to its two percent target, and was  
23 “prepared to raise rates further if appropriate, and intend to hold policy at a  
24 restrictive level until we are confident that inflation is moving sustainably down  
25 toward our objective.”<sup>4</sup>

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<sup>2</sup> FOMC Press Release (November 1, 2023). Available here:

<https://www.federalreserve.gov/newsevents/pressreleases/monetary20231101a.htm>

<sup>3</sup> *Ibid.*

<sup>4</sup> Board of Governors of the Federal Reserve System, Remarks by Jerome H. Powell, “Inflation: Progress and the Path Ahead,” August 25, 2023.

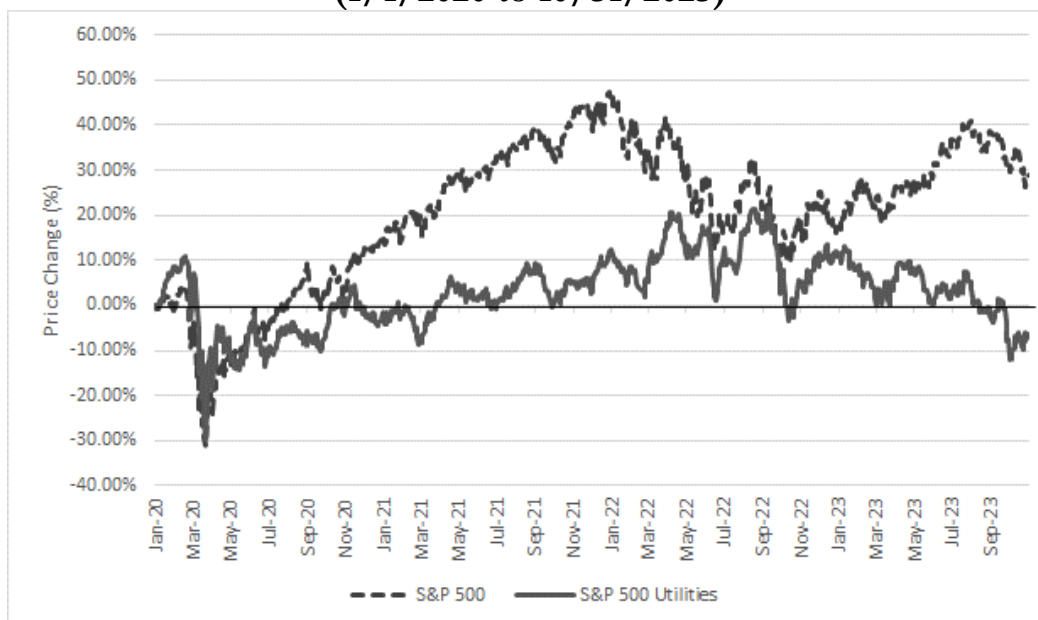
1 Q. HOW HAVE CAPITAL MARKETS RESPONDED?

2 A. In response to monetary policy, record high inflation and disappointing  
3 earnings reports, capital markets have been volatile, and the stock market has  
4 lost substantial value. While the S&P 500 closed at record highs on the first  
5 trading day of 2022,<sup>5</sup> by mid-June, the S&P 500 was down more than 21 percent,  
6 wiping out all of 2021's gains. The utility sector has fared far worse. While the  
7 overall market has surpassed its pre-pandemic levels, the same is not true with  
8 regard to the utility sector as utilities have underperformed the broader market  
9 since 2020, and especially in 2023. As shown in Figure 2, the broad market, as  
10 measured by the S&P 500 Index has increased 28.73 percent. However, the  
11 utility industry, as measured by the S&P 500 Utilities Index has *decreased* 6.47  
12 percent. Over the last twelve months, the S&P 500 Utilities Index price change  
13 *decreased* by 8.76 percent as compared to an increase of 8.76 percent in the S&P  
14 500 Index. This suggests a more difficult environment for raising capital for  
15 utilities and upward pressure in the cost of equity capital for utilities. That is, a  
16 decrease in stock price indicates investors require a higher return for an equity  
17 investment.

---

<sup>5</sup> CNBC, "The Dow Jones Industrial Average rose 246.76 points, or 0.6%, to close at 36,585.06. The S&P 500 also rose 0.6%, to close at 4,796.56," January 2, 2022, available at <https://www.cnbc.com/2022/01/02/futures-stock-market-news-open-to-close.html>.

**Figure 2**  
**S&P 500 and S&P 500 Utilities Indices Performance**  
**(1/1/2020 to 10/31/2023)**



Q. HOW HAVE CAPITAL MARKETS CHANGED SINCE THE COMPANY'S LAST RATE DECISION?

A. The Company filed a settlement agreement on May 27, 2022, which included an ROE of 9.80 percent. The Commission issued its Order accepting the settlement agreement on October 27, 2022. As noted above, over the last twelve months (from November 1, 2022 through October 31, 2023), utilities have underperformed the broader market as utility stock prices have declined, which indicates an increase in cost of equity capital for utility companies. This is consistent with the increase in interest rates since the Company's settlement agreement was filed. On October 27, 2022, the 30-day average yield on the 30-year Treasury bond was 3.87 percent. For the 30-day period ending October 31, 2023, the average yield on the 30-year Treasury bond was 4.84 percent, representing a 97-basis point increase.

## B. Persistent Inflation Risk

Q. PLEASE DESCRIBE THE SIGNIFICANCE OF CURRENT INFLATIONARY PRESSURE.

A. While inflation pressure has decreased since the highs seen in 2022—the highest level in approximately 40 years—due largely to the Federal Reserve’s interest rate hikes over 2022 and 2023, inflationary concerns persist, with inflation as of September 2023 at approximately 3.70 percent, based on the year-over-year (YOY) change in the Consumer Price Index (CPI) published by the Bureau of Labor Statistics.<sup>6</sup> Indeed, the most recent monthly report on the Consumer Price Index reported an increase from the prior month with a 3.7 percent increase over the prior year.<sup>7</sup> As shown in Figure 3, despite the decline over 2023, inflation remains well above the Federal Reserve’s target of 2.00 percent.<sup>8</sup>

**Figure 3**  
**Consumer Price Index, 12-month Percentage Change vs Current Federal Reserve Target**



<sup>6</sup> Source: Bureau of Labor Statistics, <https://www.bls.gov/charts/consumer-price-index/consumer-price-index-by-category-line-chart.htm>.

<sup>7</sup> US Bureau of Labor Statistics, Economic News Release, Consumer Price Index Summary, September 13, 2023.

<sup>8</sup> Board of Governors of the Federal Reserve System, Remarks by Jerome H. Powell, “Inflation: Progress and the Path Ahead,” August 25, 2023.

1 Q. WHAT IS THE PRACTICAL EFFECT OF INFLATION ON A UTILITY'S COST OF  
2 SERVICE?

3 A. Much like any other company, utilities have been subject to significant cost  
4 pressures driven by inflation. Price-levels have risen significantly over the past  
5 two years at a rate much higher than experienced in the prior two decades. In  
6 fact, since the Company's last rate filing in September 2021, prices have  
7 increased by 12.3 percent, as measured by CPI. Therefore, a significant portion  
8 of the NSP's rate request is driven by macroeconomic factors that are beyond  
9 the Company's control.

10  
11 Q. WHAT EFFECT WILL INFLATION HAVE ON LONG-TERM INTEREST RATES?

12 A. Inflation and the Federal Reserve's tighter monetary policy will likely result in  
13 increases in long-term interest rates. Specifically, inflation reduces the  
14 purchasing power of the future interest payments an investor expects to receive  
15 over the duration of the bond. This risk increases the longer the duration of the  
16 bond. As a result, if investors expect continued levels of high inflation, they will  
17 require higher yields to compensate for the increased risk of inflation which  
18 means interest rates will increase.

19  
20 Looking forward, the inflation risks in the market are twofold: (1) either  
21 inflation becomes embedded in the economy if the Federal Reserve does not  
22 move aggressively enough in tightening monetary policy; or (2) the Federal  
23 Reserve responds to inflationary pressure by raising short-term interest rates to  
24 a level that causes a slowdown in economic growth or a recession.

1       **C.     Ongoing Uncertainty and Volatility in Capital Markets**

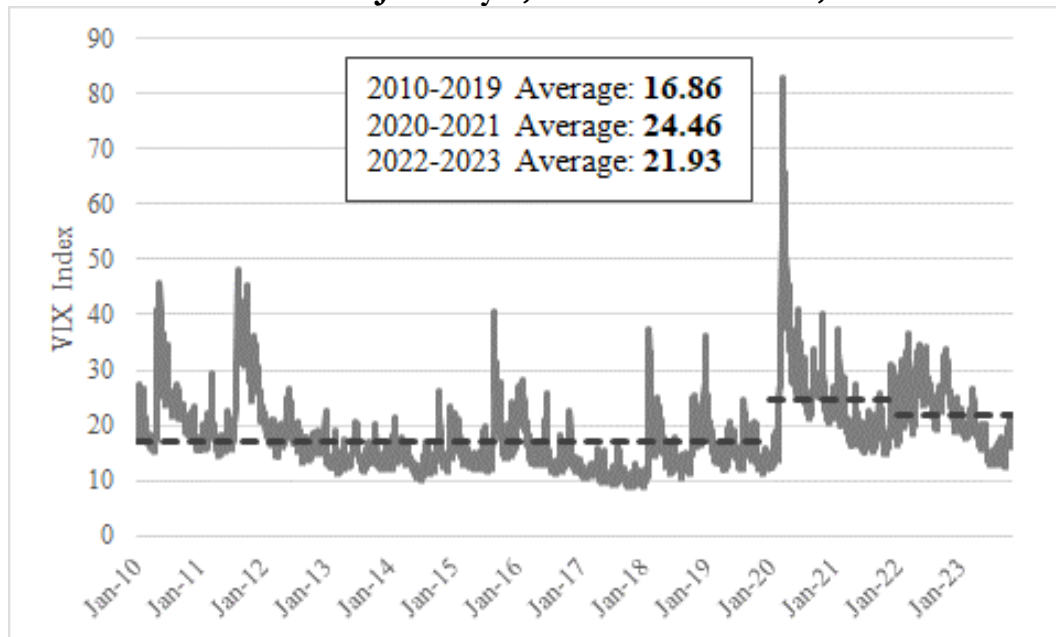
2    Q.   ARE CONDITIONS EXPECTED TO STABILIZE IN THE NEAR TERM?

3    A.   The economy remains in a tenuous phase of the business cycle with concerns  
4       over a potential recession, persistent inflation, and potentially escalating interest  
5       rates. As such, capital market conditions continue to be unstable as interest rates  
6       and inflation have increased. The Chicago Board Options Exchange (CBOE)  
7       Volatility Index (VIX) has remained above long-term historical levels, indicating  
8       stock investors remain anxious about the economy and company earnings. The  
9       VIX, a measure of expected price fluctuations in the S&P 500, reached 82.7 on  
10      March 16, 2020, in response to the pandemic. As a point of comparison, the  
11      VIX last traded above 80 in November 2008 during the financial crisis and  
12      Great Recession of 2008/09. The VIX has continued to reach levels above 25.0  
13      in 2023. As shown in Figure 4, the average level in 2022-2023 has been 21.93  
14      through October 31, 2023, compared to the average of 16.86 from 2010-2019.<sup>9</sup>  
15      This indicates that equity market volatility levels have partially settled but  
16      continue to remain above the historical mean.

---

<sup>9</sup> Source: Chicago Board Options Exchange (CBOE). Available at  
[https://www.cboe.com/tradable\\_products/vix/vix\\_historical\\_data/](https://www.cboe.com/tradable_products/vix/vix_historical_data/).

**Figure 4**  
**CBOE VIX – January 1, 2010 – October 31, 2023<sup>4</sup>**



Similarly, the most recent Consumer Confidence Survey Expectations Index findings (based on consumers’ short-term economic outlook) dropped to 75.6 in October 2023 (an index level of 80 or below historically signals a recession within the next year). According to the Conference Board, “Consumer fears of an impending recession also ticked back up, consistent with the short and shallow economic contraction we anticipate for the first half of 2024” and that “consumer confidence fell again in October 2023, marking three consecutive months of decline.”<sup>10</sup> Of note, unlike the June and July Consumer Confidence surveys, past three surveys factor in: (1) the most recent Federal Reserve interest rate increase and (2) the Fitch Ratings (Fitch) downgrade on U.S. debt to AA+ recently from AAA. In its Rating Action Commentary, Fitch cites, among other

<sup>10</sup> The Conference Board. Consumer Confidence Survey Press Release October 31, 2023.



1 factors, the Federal Reserve's monetary tightening measures, indicating  
2 expectations of another rate hike to 5.50 percent to 5.75 percent, stating:

3 The resilience of the economy and the labor market are complicating  
4 the Fed's goal of bringing inflation towards its 2% target. While  
5 headline inflation fell to 3% in June, core PCE inflation, the Fed's key  
6 price index, remained stubbornly high at 4.1% yoy. This will likely  
7 preclude cuts in the Federal Funds Rate until March 2024.<sup>11</sup>  
8

9 While market expectations of a "soft landing," rather than a recession are  
10 common among equity analysts, as Bank of America's recently revised analysis  
11 notes:

12 "[O]ur revisions imply we no longer expect a mild recession and,  
13 instead, think the economy may be able to skirt one," the research  
14 note read. However, it added, "the economy is not entirely out of the  
15 woods yet and a mild recession remains our second most likely  
16 outcome."<sup>12</sup>  
17

18 Q. HAS THE COST OF EQUITY FOR UTILITY COMPANIES BEEN AFFECTED BY THESE  
19 CIRCUMSTANCES?

20 A. Yes. The cost of equity for regulated utility companies has been affected by the  
21 market conditions during this period. With interest rates at sustained, elevated  
22 levels, utilities companies are no longer viewed as a safe haven. With Treasury  
23 yields in in the range of 4.88 percent to 5.56 percent,<sup>13</sup> utility dividend yields

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<sup>11</sup> Fitch Ratings. "Rating Action Commentary." August 1, 2023. Available at <https://www.fitchratings.com/research/sovereigns/fitch-downgrades-united-states-long-term-ratings-to-aa-from-aaa-outlook-stable-01-08-2023>

<sup>12</sup> The Hill. "Bank of America now expecting 'soft landing' instead of recession." August 4, 2023. Available at <https://thehill.com/business/economy/4138171-bank-of-america-now-expecting-soft-landing-instead-of-recession/>

<sup>13</sup> Source: Federal Reserve. On October 31, 2023 the yield on the 1-month Treasury bill was 5.56 percent, and the yield on the 10-year Treasury bond was 4.88 percent.

1 near 4.10 percent<sup>14</sup> fail to offer investors a sufficient risk premium relative to  
2 risk-free investments in Treasuries. Further, the utility industry is capital-  
3 intensive, requiring significant investments, meaning that utility companies will  
4 also have to bear the costs of higher interest rates to access capital markets. The  
5 Federal Reserve's expectation for sustained, higher interest rates will continue  
6 to put upward pressure on the cost of capital causing investors to continue to  
7 require higher returns for investments in the utility industry.

8  
9 Q. HOW HAS THE CURRENT ECONOMIC ENVIRONMENT AFFECTED THE CREDIT  
10 RATINGS FOR UTILITIES?

11 A. According to a recent report by S&P Global Ratings (S&P), credit ratings for  
12 North American utilities "weakened sharply in 2020." According to S&P, "[t]he  
13 percentage of North American regulated utilities with a negative outlook or on  
14 CreditWatch with negative implications surged from 18% in 2019 to 36% in  
15 2020." The report also indicated "that the number of downgrades exceeded the  
16 number of upgrades by a wide margin in 2020 for the first time since 2010."  
17 Regarding the causes of the weakening credit profiles, S&P stated: "The main  
18 causes of weakening credit quality reflected environment, social, and  
19 governance (ESG) risks, regulatory issues, and companies' practice of  
20 strategically managing financial measures close to their downgrade threshold  
21 with little or no cushion," and the COVID-19 pandemic "was not the culprit  
22 for weaker credit quality" the report states.<sup>15</sup> That trend continued in 2021, as  
23 S&P noted that "credit quality weakened again in 2021 and represented the  
24 second consecutive year that downgrades outpaced upgrades" primarily due to

---

<sup>14</sup> Source: Exhibit\_\_\_\_(JCN-1), Schedule 4, the proxy group mean 30-day average dividend yield was 4.11 percent as of October 31, 2023.

<sup>15</sup> S&P Global Ratings, *Utility Sector's credit ratings weakened sharply in 2020*, January 21, 2021.

1 weak financial measures and ESG-related risks.<sup>16</sup> Fitch points to capital  
2 spending, rising interest rates, and high fuel prices creating cost pressures  
3 leading to a “deteriorating” outlook on the utilities sector.<sup>17</sup> While the views of  
4 rating agencies represent an important consideration, they are not the only  
5 factor that equity investors consider. The important distinction is that credit  
6 rating agencies are primarily focused on the ability of a utility to pay its debts,  
7 while equity analysts and institutional investors are more concerned with  
8 profitability and value creation.

9  
10 Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE EFFECTS OF THE CURRENT  
11 MARKET ENVIRONMENT ON THE COST OF EQUITY FOR NSP?

12 A. The current capital market conditions are heavily influenced by monetary policy  
13 aimed at mitigating inflationary pressures. This has caused both short-term and  
14 long-term interest rates to increase substantially. As a practical matter, investors  
15 consider a range of opportunities, which includes bonds. With the sustained  
16 increase in interest rates, utilities are less attractive absent a corresponding  
17 increase in returns. With the Federal Reserve’s expectation for higher interest  
18 rates for an extended period of time, this will continue to put upward pressure  
19 on the cost of capital for utilities. Therefore, it is important that these factors  
20 are accounted for in the cost of equity models.

---

<sup>16</sup> S&P Global Ratings, *For the First Time Ever, The Median Investor-Owned Utility Ratings Falls to The ‘BBB’ Category*, January 20, 2022.

<sup>17</sup> S&P Global Market Intelligence, “Fitch sees various cost pressures behind ‘deteriorating’ US utilities outlook,” November 14, 2022.

1       **D.     Conclusions**

2    Q.   WHAT CONCLUSIONS DO YOU DRAW FROM YOUR ANALYSIS OF CAPITAL MARKET  
3       CONDITIONS?

4    A.   Investors face inflationary pressures, as well as increasing debt costs as the  
5       Federal Reserve continues its response to inflation concerns. Long-term interest  
6       rates have increased substantially since the historical lows of 2020 and are  
7       expected to remain elevated. Importantly, this requires the use of both current  
8       and forecast bond yields in the CAPM and Risk Premium models. Fluctuations  
9       in utility valuations impact the results of the DCF model. The dividend yield is  
10      calculated using historical average stock prices, which may not fully reflect  
11      forward market expectations. These circumstances collectively reinforce the  
12      importance of using multiple models, as I have with the CAPM, DCF, Risk  
13      Premium, and Expected Earnings approaches.

14  
15                   **V.   PROXY GROUP SELECTION**

16  
17   Q.   WHY IS IT NECESSARY TO SELECT A PROXY GROUP TO ESTIMATE THE COST OF  
18       EQUITY FOR NSP?

19   A.   Since the ROE is a market-based concept and NSP is not publicly traded, it is  
20       necessary to establish a group of companies that is both publicly traded and  
21       comparable to NSP as a proxy. Even if NSP were a publicly traded entity, it is  
22       possible that transitory events could bias the Company's market value in one  
23       way or another in a given period. A significant benefit of using a proxy group is  
24       the ability to mitigate the effects of short-term events that may be associated  
25       with any one company. The proxy companies used in my ROE analyses possess  
26       a set of business and operating characteristics similar to the Company's natural

1 gas utility operations, and thus provide a reasonable basis for estimating the  
2 Company's ROE.

3  
4 Q. PLEASE PROVIDE A SUMMARY PROFILE OF NSP.

5 A. NSP provides natural gas distribution and electric generation, transmission, and  
6 distribution service to approximately 1.5 million retail electric customers and  
7 500,000 natural gas customers in Minnesota, North Dakota, and South  
8 Dakota.<sup>18</sup> The Company has long-term issuer ratings from S&P of A (Outlook:  
9 Stable), Moody's Investors Service (Moody's) of Baa1 (Outlook: Stable), and  
10 Fitch of A- (Outlook: Stable).<sup>19</sup>

11  
12 Q. PLEASE DESCRIBE THE SPECIFIC SCREENING CRITERIA YOU HAVE UTILIZED TO  
13 SELECT A PROXY GROUP.

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

- 17 1. Consistently pays quarterly cash dividends because it is a necessary  
18 assumption in the DCF model;
- 19 2. Maintains an investment grade long-term issuer rating (BBB- or higher)  
20 from S&P to ensure the proxy companies have a comparable financial  
21 risk profile to that of the Company;
- 22 3. Is covered by more than one equity analyst to ensure that estimates are  
23 consensus-based;

---

<sup>18</sup> Xcel Energy Inc., SEC Form 10-K, for the fiscal year ended December 31, 2022, at 10.

<sup>19</sup> S&P Global Ratings. "Research Update: Northern States Power Co. Upgraded to 'A' On Sustained Financial Performance, Outlook Stable; Debt Ratings Raised." July 24, 2023; Moody's. "Issuer Comment: Northern States Power Company (Minnesota)." August 15, 2023; FitchRatings. "Northern States Power Company-Minnesota." April 11, 2023.

- 1           4. Has positive earnings growth rates, which is a necessary assumption in  
2           the DCF model, published by at least two of the following sources:  
3           Value Line, First Call (as reported by Yahoo! Finance), and Zacks  
4           Investment Research (Zacks);
- 5           5. Regulated net operating income makes up more than 60 percent of the  
6           consolidated company's net operating income (based on a 3-year  
7           average from 2020-2022) to ensure that the proxy companies are  
8           primarily regulated utilities;
- 9           6. Natural gas distribution net operating income makes up more than 60  
10          percent of the consolidated company's regulated net operating income  
11          (based on a 3-year average from 2020-2022) to ensure the proxy  
12          companies have a comparable business risk profile to that of the  
13          Company; and
- 14          7. Is not involved in a significant merger, or other transformative  
15          transaction, as such activities may have a temporary effect on such  
16          companies' stock prices and projections unrelated to the overall cost of  
17          capital.

18  
19   Q. DOES YOUR SCREENING CRITERIA RESULT IN A GROUP OF COMPANIES THAT  
20   INVESTORS WOULD VIEW AS COMPARABLE TO NSP?

21   A. Yes. While no proxy group will be identical in risk to the Company, I believe  
22   this group of natural gas distribution utilities is reasonably comparable to the  
23   financial and operational characteristics of NSP's gas utility operations. The  
24   proxy group screening criterion requiring an investment grade credit rating  
25   ensures that the proxy group companies, like NSP, are in sound financial  
26   condition. Because credit ratings take into account business and financial risks,  
27   the ratings provide a broad measure of investment risk for investors. I have

1 screened on the percentage contribution of the natural gas utility segment to  
2 regulated consolidated financial results to select companies that, since this  
3 proceeding is limited to determining the appropriate ROE for the standalone  
4 natural gas operations of NSP. These screens collectively reflect key risk factors  
5 that investors consider in making investments in natural gas distribution  
6 utilities.

7  
8 Q. WHAT IS THE COMPOSITION OF YOUR RESULTING PROXY GROUP?

9 A. Based on the screening criteria discussed above, and financial information  
10 through fiscal year 2022, I arrived at a proxy group consisting of the six  
11 companies shown in Table 2. The results of my screening process are shown in  
12 Exhibit\_\_\_(JCN-1), Schedule 3.

13  
14 **Table 2**  
15 **Proxy Group**

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

16  
17  
18  
19  
20  
21  
22  
23 Q. IS IT APPROPRIATE TO INCLUDE NISOURCE, INC. IN YOUR PROXY GROUP,  
24 DESPITE ITS RECENT TRANSACTION?

25 A. Yes, it is. NiSource, Inc. (NiSource) announced that an affiliate of Blackstone  
26 Infrastructure Partners, L.P., a fund managed by Blackstone Inc., has agreed to  
27 acquire a 19.9 percent stake in Northern Indiana Public Service Company LLC

1 from NiSource Inc.<sup>20</sup> However, considering that the acquisition is a minority  
2 share transaction in a single NiSource operating company, it is not anticipated  
3 to have a transformative effect on the company. Further, the purpose of this  
4 screen is to eliminate the impact of extraordinary price changes, such as those  
5 often caused by merger and acquisition activity. However, since the  
6 announcement, in June 2023, there has been no meaningful change in  
7 NiSource's stock price performance relative to other utility companies.

8  
9 Q. WHAT IS YOUR CONCLUSION WITH REGARD TO THE PROXY GROUP FOR NSP?

10 A. I conclude that my group of six natural gas distribution utilities adequately  
11 reflects the broad set of risks that investors consider when investing in a U.S.  
12 regulated natural gas utility such as NSP.

13  
14 **VI. DETERMINATION OF THE APPROPRIATE COST OF EQUITY**

15  
16 Q. WHAT MODELS DID YOU USE IN YOUR ROE ANALYSES?

17 A. I have considered the results of several ROE estimation models, including the  
18 Constant Growth DCF model, the CAPM, the Bond Yield Plus Risk Premium  
19 approach, and an Expected Earnings analysis. Consistent with the practice of  
20 many analysts, when estimating the cost of equity, I gather and evaluate as much  
21 relevant data (both quantitative and qualitative) as can be reasonably obtained.

---

<sup>20</sup> "NiSource announces agreement to sell minority equity interest in NIPSCO to strengthen financial foundation and support sustainable, long-term growth." June 20, 2023. Available at <https://www.prnewswire.com/news-releases/nisource-announces-agreement-to-sell-minority-equity-interest-in-nipSCO-to-strengthen-financial-foundation-and-support-sustainable-long-term-growth-301855173.html>



### 1 A. Constant Growth DCF Model

2 Q. PLEASE DESCRIBE THE DCF APPROACH.

A. DCF analyses are a common method of valuation, used extensively by analysts across all industries, to estimate the value of future cash flows, adjusted for the time value of money. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows, which for purposes of the model, are assumed to be equal to all expected future dividends. Thus, the return required by investors is implied by the per share price of a company's common stock. In its most general form, the DCF model is expressed as follows:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \dots + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

Where  $P_0$  represents the current stock price,  $D_1 \dots D_\infty$  are all expected future dividends, and  $k$  is the discount rate, or required ROE. Equation [1] is a standard present value calculation, which can be simplified and rearranged, to the Constant Growth form of the DCF model, expressed as the sum of the expected dividend yield and long-term growth rate:

$$k = \frac{D(1+g)}{P_0} + g \quad [2]$$

Where “k” equals the required return, “D” is the current dividend, “g” is the expected growth rate, and “ $P_0$ ” represents the current stock price. Stated in this manner, the cost of common equity is equal to the expected dividend yield plus the dividend growth rate.

1 Q. WHAT ARE THE ASSUMPTIONS UNDERLYING THE CONSTANT GROWTH DCF  
2 MODEL?

3 A. The Constant Growth DCF model is based on the following assumptions: (1)  
4 a constant average growth rate for earnings and dividends; (2) a stable dividend  
5 payout ratio; (3) a constant price-to-earnings multiple;<sup>21</sup> and (4) a discount rate  
6 greater than the expected growth rate.

7  
8 Q. PLEASE SUMMARIZE YOUR APPLICATION OF THE CONSTANT GROWTH DCF  
9 MODEL.

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

- 12 • Average stock prices for the historical period, over 30, 90, and 180  
13 trading days through October 31, 2023;
- 14 • Annualized dividend per share as of October 31, 2023; and
- 15 • Company-specific earnings growth forecasts for the term *g*.

16  
17 My application of the Constant Growth DCF model is provided in  
18 Exhibit\_\_\_\_(JCN-1), Schedule 4.

19  
20 Q. WHY DID YOU USE AVERAGING PERIODS OF 30, 90, AND 180 TRADING DAYS?

21 A. It is important to use an average of recent trading days to calculate the term *P*  
22 in the DCF model to ensure that the calculated ROE is not skewed by  
23 anomalous events that may affect stock prices on any given trading day. At the

---

<sup>21</sup> The price-to-earning multiple, or P/E ratio, is a common valuation metric that evaluates a company's current stock price relative to its earnings per share (EPS).

1 same time, it is important to reflect the conditions that have defined the  
2 financial markets over the recent past. In the Company's last case, Docket No.  
3 PU-21-381, Advocacy Staff consultants relied on four-week period.<sup>22</sup> In  
4 addition to a 30-day period, I also consider 90-day and 180-day averaging  
5 periods. In my view, consideration of those three averaging periods reasonably  
6 balances these interests.

7  
8 Q. DID YOU ADJUST THE DIVIDEND YIELD TO ACCOUNT FOR PERIODIC GROWTH  
9 IN DIVIDENDS?

10 A. Yes, I did. Utility companies tend to increase their quarterly dividends at  
11 different times throughout the year, so it is reasonable to assume that such  
12 increases will be evenly distributed over calendar quarters. Given that  
13 assumption, it is reasonable to apply one-half of the expected annual dividend  
14 growth rate for the purposes of calculating this component of the DCF model.  
15 This adjustment ensures that the expected dividend yield is representative of  
16 the coming 12-month period. Accordingly, the DCF estimates reflect one-half  
17 of the expected growth in the dividend yield.<sup>23</sup>

18  
19 Q. WHAT SOURCES OF GROWTH HAVE YOU USED IN YOUR DCF ANALYSIS?

20 A. I have used the consensus analyst five-year growth estimates in earnings per  
21 share (EPS) from First Call and Zacks, as well as EPS growth rate estimates  
22 published by Value Line.

---

<sup>22</sup> Docket No. PU-21-381 Direct Testimony of Marlon F. Griffing on Behalf of the North Dakota Public Service Commission Advocacy Staff, filed on March 1, 2022, at 23.

<sup>23</sup> The expected dividend yield is calculated as  $d_1 = d_0 (1 + \frac{1}{2} g)$ .

1 Q. WHY DID YOU FOCUS ON EPS GROWTH?

2 A. The Constant Growth DCF model assumes that dividends grow at a constant  
3 rate in perpetuity. Accordingly, in order to reduce the long-term growth rate to  
4 a single measure, one must assume a constant payout ratio, and that earnings  
5 per share, dividends per share, and book value per share all grow at the same  
6 constant rate. Over the long term, however, dividend growth can only be  
7 sustained by earnings growth. As noted by Brigham and Houston in their text,  
8 *Fundamentals of Financial Management*: “Growth in dividends occurs primarily as a  
9 result of growth in *earnings per share* (EPS).”<sup>24</sup> It is therefore important to focus  
10 on measures of long-term earnings growth from credible sources as an  
11 appropriate measure of long-term growth in the DCF model.

12  
13 Q. ARE OTHER SOURCES OF DIVIDEND GROWTH AVAILABLE TO INVESTORS?

14 A. Yes, although that does not mean that investors incorporate such estimates into  
15 their investment decisions. Academic studies suggest that investors base their  
16 investment decisions on analysts’ expectations of growth in earnings.<sup>25</sup> I am not  
17 aware of any similar findings regarding non-earnings-based growth estimates.  
18 In addition, the only forward-looking growth rates that are available on a  
19 consensus basis are analysts’ EPS growth rates. The fact that earnings growth  
20 projections are the only widely accepted estimates of growth provides further

---

<sup>24</sup> Eugene F. Brigham and Joel F. Houston, Fundamentals of Financial Management (Concise Fourth Edition, Thomson South-Western), at 317 (emphasis added).

<sup>25</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.

support that earnings growth is the most meaningful measure of growth among the investment community.

Q. WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF ANALYSIS?

A. The results of my Constant Growth DCF analysis are provided in Schedule 4, and Schedule 2 includes my results including flotation costs, which are summarized in Table 3.

**Table 3**  
**Constant Growth DCF Results including Flotation Costs**

	Low	Mean	High
30-day average	9.54%	10.42%	11.92%
90-day average	9.23%	10.20%	11.73%
180-day average	9.02%	10.01%	11.66%

Q. HOW DID YOU CALCULATE THE MEAN HIGH, MEAN LOW, AND OVERALL MEAN DCF RESULTS?

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

## B. CAPM Analysis

Q. PLEASE BRIEFLY DESCRIBE THE GENERAL FORM OF THE CAPITAL ASSET PRICING MODEL.

A. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium (to compensate investors for the non-diversifiable or “systematic” risk of that security).<sup>26</sup> As shown in Equation [3], the CAPM is defined by four components, each of which must theoretically be a forward-looking estimate:

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

Where:

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

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

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

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

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

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

Where:

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

---

<sup>26</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  
2 uncertainty of the general market, and the covariance between the return on a  
3 specific security and the market reflects the extent to which the return on that  
4 security will respond to a given change in the market return. Thus, Beta  
5 represents the risk that the selected security will not be effective in diversifying  
6 systematic market risks.

7  
8 Q. HAVE ECONOMIC AND FINANCIAL MARKET CONDITIONS ALSO AFFECTED THE  
9 CAPM?

10 A. Yes. As the Federal Reserve is taking steps to tighten monetary policy, it is  
11 important to consider both current and projected bond yields. Using the five-  
12 year forecast of bond yields helps alleviate short-term market factors affecting  
13 the risk-free rate, or “ $r_f$ ” in the CAPM formula. As discussed in Section IV,  
14 interest rates have increased in recent months and are expected to continue to  
15 increase. Further, due to the fiscal and monetary stimulus provided to the U.S.  
16 economy over the past two years, concerns over inflation remain. It is also  
17 important to recognize that NSP is financing long-lived assets, and the cost of  
18 capital should be forward looking to reflect that perspective.

19  
20 Q. WHAT RISK-FREE RATE DID YOU USE IN YOUR CAPM ANALYSIS?

21 A. I considered three estimates of the expected risk-free rate: (1) the current 30-  
22 day average yield on 30-year U.S. Treasury bonds (*i.e.*, 4.84 percent);<sup>27</sup> (2) the  
23 projected 30-year U.S. Treasury bond yield for Q1 2024 through Q1 2025 (*i.e.*,

---

<sup>27</sup> Bloomberg Professional, as of October 31, 2023.

1 4.44 percent);<sup>28</sup> and (3) the projected 30-year U.S. Treasury bond yield for 2025  
2 through 2029 (*i.e.*, 3.80 percent).<sup>29</sup>

3  
4 Q. WHAT MEASURES OF BETA DID YOU USE IN YOUR CAPM ANALYSIS?

5 A. As shown in Exhibit\_\_\_\_(JCN-1), Schedule 6, I applied two measures of Beta  
6 for the proxy group companies: (1) the reported Beta coefficients from  
7 Bloomberg (which are calculated using ten years of weekly data against the S&P  
8 500 Index); and (2) the reported Beta coefficients from Value Line (which are  
9 calculated using five years of weekly data against the New York Stock Exchange  
10 Composite Index).

11  
12 Q. WHAT MARKET RISK PREMIUM DID YOU USE IN YOUR CAPM ANALYSIS?

13 A. Consistent with the approach adopted by FERC, I used the Constant Growth  
14 DCF model to estimate the market capitalization-weighted total market return  
15 for the S&P 500 Index, using projected earnings growth rates and dividend  
16 yields. To calculate the Constant Growth DCF estimate for each company in  
17 the S&P 500 Index, I relied on dividend yields as of October 31, 2023, as  
18 reported by Bloomberg Professional, and projected EPS growth rates from  
19 Value Line (see Exhibit\_\_\_\_(JCN-1), Schedule 5). In my initial analysis, I  
20 included all companies in the S&P 500. When investors purchase the S&P 500  
21 or a mutual fund or exchange traded fund that mirrors the S&P 500 Index, their  
22 total return is based on the returns for all 500 companies in the S&P Index. As  
23 such, this methodology provides the best indication as to the expected return  
24 for the overall market using the S&P 500 as a proxy. Applying this methodology

---

<sup>28</sup> Blue Chip Financial Forecasts, Vol. 42, No. 11, November 1, 2023, at 2.

<sup>29</sup> Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14.



suggests an expected market return of 14.27 percent. However, I applied an average of both the Value Line-derived market return and FERC's more conservative convention to consider only a subset of S&P 500 companies with growth rates that are between 0 percent and 20 percent, or an expected market return of 12.12 percent.

Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSES?

A. The results of my CAPM analysis are provided in Schedule 6, and the results including flotation costs are summarized in Schedule 2 and in Table 4.

**Table 4**  
**Proxy Group Average CAPM Results including Flotation Costs**

	CAPM Result
<i>Value Line Beta Coefficients</i>	
Current Risk-Free Rate	12.10%
2024-25 Projected Risk-Free Rate	12.05%
2025-29 Projected Risk-Free Rate	11.96%
<i>Bloomberg Beta Coefficients</i>	
Current Risk-Free Rate	11.38%
2024-25 Projected Risk-Free Rate	11.29%
2025-29 Projected Risk-Free Rate	11.14%

**C. Bond Yield Plus Risk Premium Analysis**

Q. PLEASE DESCRIBE THE RISK PREMIUM APPROACH THAT YOU USED.

A. In general terms, this approach recognizes that equity is riskier than debt because equity investors bear the residual risk associated with ownership. Equity investors, therefore, require a greater return (*i.e.*, a premium) than would a

1 bondholder. The Risk Premium approach estimates the cost of equity as the  
2 sum of the Equity Risk Premium and the yield on a particular class of bonds.

$$3 \quad \text{ROE} = RP + Y \quad [5]$$

4  
5 Where:

6  $RP$  = Risk Premium (difference between allowed ROE and  
7 the 30-Year Treasury Yield); and  
8  $Y$  = Applicable bond yield.  
9

10 Since the equity risk premium is not directly observable, it is typically estimated  
11 using a variety of approaches, some of which incorporate *ex-ante*, or forward-  
12 looking, estimates of the cost of equity and others that consider historical, or  
13 *ex-post*, estimates. For my Risk Premium analysis, I have relied on authorized  
14 returns from a large sample of natural gas utility companies.  
15

16 Q. WHAT DID YOUR RISK PREMIUM ANALYSIS REVEAL?

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

$$19 \quad RP = a + (b \times Y) \quad [6]$$

20  
21 Where:

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

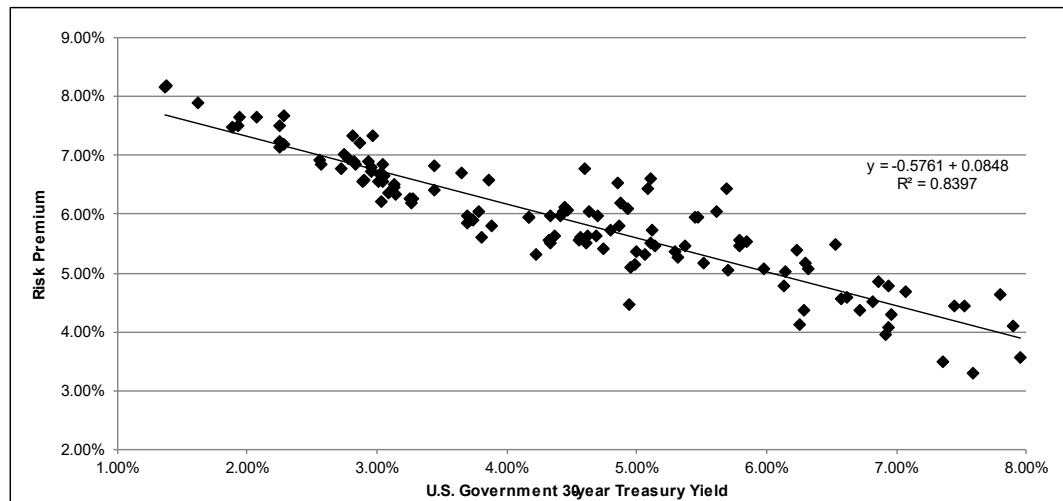
24  $a$  = Intercept term;

25  $b$  = Slope term; and

26  $Y$  = 30-Year Treasury Yield.  
27

1 Data regarding allowed ROEs were derived from 771 natural gas utility  
2 company rate cases from January 1, 1992 through October 31, 2023, as reported  
3 by Regulatory Research Associates.

5 **Figure 5**  
6 **Risk Premium Results**



15

16 As illustrated by Figure 5 (above), the risk premium varies with the level of bond  
17 yield, and generally increases as the bond yields decrease, and vice versa. In  
18 order to apply this relationship to current and expected bond yields, I consider  
19 three estimates of the 30-year Treasury yield, including the current 30-day  
20 average, a near-term Blue Chip consensus forecast for Q1 2024 – Q1 2025, and  
21 a Blue Chip consensus forecast for 2025–2029. I find the projected five-year  
22 result to be most applicable for the following reasons: (1) investors are  
23 expecting increases in government bond yields and (2) investors typically have  
24 a multi-year view of their required returns on equity. Based on the regression  
25 coefficients in Exhibit\_\_\_\_(JCN-1), Schedule 7, which allow for the estimation  
26 of the risk premium at varying bond yields, and results including flotation costs

in Schedule 2, the results of my Risk Premium analysis are shown in Table 5 below.

**Table 5**  
**Risk Premium Results Using 30-Year Treasury Yield**

	<b>30-Day Average Yield on 30-Year Treasury Bond</b>	<b>Q1 2024–Q1 2025 Forecast for Yield on 30-Year Treasury Bond</b>	<b>2025-2029 Forecast for Yield 30-Year Treasury Bond</b>
Yield	4.84%	4.44%	3.80%
Risk Premium	5.69%	5.92%	6.29%
Resulting ROE	10.53%	10.36%	10.09%
Flotation Costs	0.09%	0.09%	0.09%
ROE including flotation costs	10.62%	10.45%	10.18%

**D. Expected Earnings Analysis**

Q. HAVE YOU CONDUCTED ANY OTHER ANALYSIS TO ESTIMATE THE COST OF EQUITY FOR NSP?

A. Yes. I have also conducted an Expected Earnings analysis to estimate the cost of equity for NSP based on the projected ROEs for the proxy group companies. Since the proxy group of natural gas distribution utilities were selected as reasonably comparable to the financial and operational characteristics of NSP's North Dakota gas utility operations, the expected ROEs for the proxy companies represent comparable returns required on investments of similar risk to NSP's jurisdictional gas utility operations.

1 Q. WHAT IS AN EXPECTED EARNINGS ANALYSIS?

2 A. The Expected Earnings methodology is a comparable earnings analysis that  
3 calculates the earnings that an investor expects to receive on the book value of  
4 a stock. The Expected Earnings analysis is a forward-looking estimate of  
5 investors' expected returns. The use of an Expected Earnings approach based  
6 on the proxy companies provides a range of the expected returns on a group of  
7 risk-comparable companies to the subject company. This range is useful in  
8 helping to determine the opportunity cost of investing in the subject company,  
9 which is relevant in determining a company's ROE. The Expected Earnings  
10 approach relying on expected returns for like-risk companies is a core strength  
11 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  
13 enterprises having corresponding risks." Since the Expected Earnings model  
14 provides an accounting-based approach that relies on investment analysts'  
15 projections of earnings on book equity, it affords the benefit of analyst insights,  
16 knowledge, and expertise in interpreting a given company's earnings prospects  
17 in the context of current market conditions.

18  
19 Q. HOW IS THE EXPECTED EARNINGS APPROACH CALCULATED?

20 A. I relied on the projected ROE for the proxy companies as reported by Value  
21 Line for the period from 2026-2028. I then adjusted those projected ROEs to  
22 account for the fact that the ROEs reported by Value Line are calculated on the  
23 basis of common shares outstanding at the end of the period, as opposed to  
24 average shares outstanding over the entire period (see Exhibit\_\_\_\_(JCN-1),  
25 Schedule 8). As shown in Table 6 below and Schedule 2, the Expected Earnings  
26 analysis, including flotation costs, results in a mean of 9.94 percent and a median  
27 of 9.84 percent.

**Table 6**  
**Expected Earnings Results including Flotation Costs**

	<b>ROE</b>
Proxy Group Average	9.94%
Proxy Group Median	9.84%

Q. WHAT IS YOUR CONCLUSION REGARDING THE RESULTS OF THE EXPECTED EARNINGS MODEL?

A. The model captures investor expectations for ROEs for each company in the proxy group as estimated by impartial analysts. This is a valuable tool given the nature of the analysis in this proceeding is designed to measure required returns for NSP. It is reasonable to assume that investors would require returns from investment in NSP similar to those they could earn in comparable investments, so these results are informative and a reasonable check on the other model results discussed above.

#### **E. Evaluating Model Results**

Q. PLEASE EXPLAIN HOW YOU CONSIDERED THE RESULTS OF THE DCF, CAPM, RISK PREMIUM, AND EXPECTED EARNINGS ANALYSIS TO ARRIVE AT YOUR ROE RECOMMENDATION.

A As shown in Table 7, I have considered the results of the DCF, CAPM, Risk Premium, and Expected Earnings analyses. For the Constant Growth DCF results, I included the average of the 30-day, 90-day, and 180-day analyses. For the CAPM result, I relied on the average of current and projected Treasury yields, the average of Value Line and Bloomberg Betas coefficients, and the MRP derived from the S&P 500 companies. For the Risk Premium analysis, I relied on the average of current and projected Treasury yields.

**Table 7**  
**Base ROE Results including Flotation Costs**

	Average	Median
<i>Primary Analyses</i>		
DCF	10.21%	9.88%
CAPM	11.65%	11.57%
Risk Premium	10.42%	10.42%
<b>Average</b>	<b>10.76%</b>	<b>10.72%</b>
<i>Benchmark Analyses</i>		
Expected Earnings	9.94%	9.84%

As discussed in the next Section of my testimony, these estimates serve as a base prior to consideration of the relative business and financial risks of NSP as compared to the proxy companies.

## VII. BUSINESS RISKS AND OTHER CONSIDERATIONS

Q ARE THERE FACTORS SPECIFIC TO NSP'S RISK PROFILE THAT YOU ALSO CONSIDERED IN DEVELOPING YOUR ROE RECOMMENDATION?

A. Notwithstanding the care taken to establish a risk-comparable group of companies and to consider multiple analyses, market expectations with respect to future risks and growth opportunities will vary from company to company. Therefore, the Company's business and financial risks must also be taken into consideration when determining where the Company's cost of equity falls within the range of results. These risk factors, discussed below, should be

1 compared to the risks of the proxy group including: (1) the Company's capital  
2 expenditure program; (2) and regulatory risk relative to the proxy group  
3 companies; and (3) the regulatory framework in which NSP operates and the  
4 regulatory mechanisms available to the Company relative to those available to  
5 the proxy companies. In addition, I considered the effect of flotation costs on  
6 the cost of equity.

7  
8 **A. Flotation Cost Adjustment**

9 Q WHAT ARE FLOTATION COSTS?

10 A. Flotation costs are the costs associated with the sale of new issues of common  
11 stock. These costs include out-of-pocket expenditures for preparation, filing,  
12 underwriting, and other costs of issuance of common stock.

13  
14 Q. WHY IS IT IMPORTANT TO RECOGNIZE FLOTATION COSTS IN THE ALLOWED  
15 ROE?

16 A. Allowed ROE is the only ratemaking mechanism through which these necessary  
17 costs are recovered. Flotation costs are reflected on the utility's balance sheet as  
18 "paid in capital" and are not expensed on the utility's income statement. When  
19 a company issues common stock, flotation costs are incurred and netted against  
20 the proceeds from the issuance reducing the amount available for investment  
21 in rate base by the amount of the flotation costs.

22  
23 Q. DO ACADEMIC AND FINANCIAL EXPERTS RECOGNIZE THE NEED TO CONSIDER  
24 FLOTATION COSTS IN A UTILITY'S COST OF EQUITY?

25 A. Yes. Dr. Roger Morin, a recognized expert in regulatory economics and finance,  
26 summarizes:

27 The costs of issuing these securities are just as real as operating and  
28 maintenance expenses or costs incurred to build utility plants, and fair



1 regulatory treatment must permit recovery of these costs.... The  
2 simple fact of the matter is that common equity capital is not free....  
3 [Flotation costs] must be recovered through a rate of return  
4 adjustment.<sup>30</sup>  
5

6 According to Dr. Shannon Pratt, a published expert in cost of capital estimation:

7 Flotation costs occur when new issues of stock or debt are sold to the  
8 public. The firm usually incurs several kinds of flotation or  
9 transaction costs, which reduce the actual proceeds received by the  
10 firm. Some of these are direct out-of-pocket outlays, such as fees paid  
11 to underwriters, legal expenses, and prospectus preparation costs.  
12 Because of this reduction in proceeds, the firm's required returns on  
13 these proceeds equate to a higher return to compensate for the  
14 additional costs. Flotation costs can be accounted for either by  
15 amortizing the cost, thus reducing the cash flow to discount, or by  
16 incorporating the cost into the cost of capital. Because flotation costs  
17 are not typically applied to operating cash flow, one must incorporate  
18 them into the cost of capital.<sup>31</sup>  
19

20 Q. WHAT IS YOUR RECOMMENDED FLOTATION COST ADJUSTMENT AND HOW DID  
21 YOU CALCULATE IT?

22 A. Based on the XEI's costs shown in Exhibit\_\_\_\_(JCN-1), Schedule 9, I conclude  
23 that flotation costs for XEI have equaled roughly 2.09 percent of gross equity  
24 raised. To properly reflect these issuance costs in my cost of capital estimates,  
25 it would require a 9-basis point addition to the ROE results produced by my  
26 ROE estimates for NSP, as shown in Schedule 9, which I have considered in  
27 my recommendation.

---

<sup>30</sup> Roger A. Morin, *New Regulatory Finance* (Public Utility Reports, Inc., 2006), at 321.

<sup>31</sup> Shannon P. Pratt, *Cost of Capital Estimation and Applications*, Second Edition, at 220-221.

1       **B.     Capital Expenditure Program**

2   Q.   PLEASE DISCUSS NSP'S CAPITAL SPENDING PROGRAM.

3   A.   The Company plans critical capital investments on gas-related projects. As with  
4       any utility facing capital expenditure requirements, the Company's risk profile  
5       is affected in two significant and related ways: (1) the heightened level of  
6       investment increases the risk of under recovery or delayed recovery of the  
7       invested capital; and (2) an inadequate return would put downward pressure on  
8       key credit metrics. The investment required will put incremental pressure on the  
9       Company's ability to raise capital, and the terms will have lasting impacts for  
10      the Company's customers.

11  
12   Q.   DO CREDIT RATING AGENCIES RECOGNIZE THE RISKS ASSOCIATED WITH  
13       ELEVATED LEVELS OF CAPITAL EXPENDITURES?

14   A.   Yes. From a credit perspective, the additional pressure on cash flows associated  
15       with capital expenditures exerts corresponding pressure on credit metrics and,  
16       therefore, credit ratings. To that point, S&P explains the importance of  
17       regulatory support for large capital projects:

18       When applicable, a jurisdiction's willingness to support large capital  
19       projects with cash during construction is an important aspect of our  
20       analysis. This is especially true when the project represents a major  
21       addition to rate base and entails long lead times and technological  
22       risks that make it susceptible to construction delays. Broad support  
23       for all capital spending is the most credit-sustaining. Support for only  
24       specific types of capital spending, such as specific environmental  
25       projects or system integrity plans, is less so, but still favorable for  
26       creditors. Allowance of a cash return on construction work-in-  
27       progress or similar ratemaking methods historically were  
28       extraordinary measures for use in unusual circumstances, but when  
29       construction costs are rising, cash flow support could be crucial to  
30       maintain credit quality through the spending program. Even more

1 favorable are those jurisdictions that present an opportunity for a  
2 higher return on capital projects as an incentive to investors.<sup>32</sup>  
3

4 While NSP's credit profile is based on its combined electric and gas operations,  
5 capital spending is a significant concern to the credit rating agencies. S&P  
6 acknowledged the expectation for the Company's "capital spending to grow  
7 from historical levels."<sup>33</sup> Similarly, Fitch points to NSP's "large capex plan" as  
8 a key ratings driver.<sup>34</sup> Moody's observes that final rates from NSP's electric rate  
9 case, "along with any resulting adjustments to the utility's capital expenditure  
10 program, will drive NSP-Minnesota's financial performance going forward."<sup>35</sup>  
11 A key component in each of the credit rating agencies' review of NSP's capital  
12 expenditures is the expectation for the Company to "receive balanced yet  
13 constructive rate outcomes."<sup>36</sup> As I discuss in more detail later in my testimony,  
14 the Company's authorized ROE is an important indication of the regulatory risk  
15 and the determination of "constructive" rate outcomes. To the extent that  
16 NSP's rates do not permit the Company an opportunity to recover its full cost  
17 of doing business, NSP will face increased pressure on its credit metrics.  
18 Maintaining access to capital markets on favorable terms is especially important  
19 for utilities and their customers, during periods of significant capital investment.

---

<sup>32</sup> S&P Global Ratings, "Assessing U.S. Investor-Owned Utility Regulatory Environments," August 10, 2016, at 7.

<sup>33</sup> S&P Global Ratings, "Northern States Power Co. Upgraded To 'A' On Sustained Financial Performance, Outlook Stable; Debt Ratings Raised," July 24, 2023, at 1.

<sup>34</sup> Fitch Ratings, "Northern States Power Company-Minnesota," April 11, 2023, at 1.

<sup>35</sup> Moody's Investor Service, "Northern States Power Company (Minnesota)," August 15, 2023, at 2.

<sup>36</sup> S&P Global Ratings, "Northern States Power Co. Upgraded To 'A' On Sustained Financial Performance, Outlook Stable; Debt Ratings Raised," July 24, 2023, at 1.

1 Q. WHAT IS YOUR CONCLUSION REGARDING HOW NSP'S PROJECTED CAPITAL  
2 EXPENDITURE PROGRAM AFFECTS THE COMPANY'S RISK PROFILE AND COST OF  
3 EQUITY?

4 A. My primary conclusion is that NSP's capital spending program will require the  
5 Company to maintain access to capital markets on favorable terms and  
6 conditions. NSP's capital program places pressure on the Company's cash flows  
7 and credit metrics. For these reasons, it is important that the authorized ROE  
8 be set at a level that allows NSP to continue to attract both debt and equity  
9 under favorable terms under a variety of economic and financial market  
10 conditions.

11  
12 Q. DOES YOUR RECOMMENDATION INCLUDE A DOWNWARD OR UPWARD  
13 ADJUSTMENT FOR NSP'S CAPITAL EXPENDITURE PROGRAM?

14 A. No, it does not. All the proxy group natural gas distribution utilities face a  
15 challenging environment requiring continuous access to capital in order to meet  
16 public expectations of safe, reliable, and reasonably economic utility service.  
17 NSP's capital spending program will require the Company to maintain  
18 continuous access to capital markets on reasonable terms and conditions. For  
19 these reasons, it is important that the authorized ROE be set at a level that  
20 allows NSP to continue to attract both debt and equity under favorable terms  
21 under a variety of economic and financial market conditions, including the  
22 inflationary conditions we are facing today and in the foreseeable future. As  
23 discussed in Section IV, investors consider a range of opportunities, which  
24 includes bonds. The Company has to compete with a broad range of  
25 investments to obtain the capital necessary to deliver on its investment program.  
26 With the sustained increase in interest rates, utilities are less attractive absent a  
27 corresponding increase in returns.

1       **C.     Regulatory Framework**

2     Q.   IS THERE ANY BASIS TO CONSIDER NSP LESS RISKY THAN ITS PEER UTILITIES?

3     A.   No, there is not. I have undertaken a review of regulatory mechanisms designed  
4       to mitigate certain business risks, and they support treating the results from the  
5       proxy group I selected as representative of the business risk of a prudently  
6       managed regulated natural gas utility like NSP. The results of my analysis are  
7       presented in Exhibit\_\_\_\_(JCN-1), Schedule 10. Specifically, I examined the  
8       following factors that affect the regulatory risk of the Company and the proxy  
9       group companies: (1) test year convention; (2) rate base convention; (3) revenue  
10      decoupling; and (4) capital cost recovery.

11  
12      As shown in Schedule 10, 48 percent of the operating companies in the proxy  
13      group like NSP provide service in jurisdictions that allow the use of a fully or  
14      partially forecasted test year. Further, 43 percent of the operating companies in  
15      the proxy group use average rate base like NSP, while 57 percent are allowed to  
16      use year-end rate base. NSP has revenue protection against fluctuations in  
17      customer demand, while approximately 86 percent of the operating companies  
18      held by the proxy group have either full or partial revenue decoupling  
19      mechanisms that protect against volumetric risk. The Company has no capital  
20      infrastructure investment rider, while approximately 71 percent of the operating  
21      companies in the proxy group have a cost recovery mechanism for capital  
22      investment (*e.g.*, infrastructure replacement), putting the Company at a  
23      disadvantage in this regard.

24      Typically, a regulatory mechanism is proposed to offset the effect of an  
25      incremental risk factor. In these circumstances, the effect of the regulatory  
26      mechanism merely restores a utility's risk profile to the position it was in prior  
27      to the incremental risk. As it relates to the determination of the cost of equity,

1 it is important to recognize an analysis of regulatory mechanisms is a  
2 comparative assessment. For any regulatory mechanism to have an effect on the  
3 cost of equity, it would require that the mechanism changes the risk relative to  
4 the proxy companies, and investors change their return requirements as a  
5 consequence of the mechanism. As discussed above and as shown in Schedule  
6 10, the regulatory mechanisms proposed by the Company and the regulatory  
7 mechanisms employed by the proxy companies indicate that NSP and the proxy  
8 group have generally comparable mechanisms, and therefore similar regulatory  
9 risk profiles, aside from capital cost recovery, which the Company does not  
10 have. As such, no adjustment to the Company's ROE is required.

11  
12 Q. PLEASE EXPLAIN HOW THE REGULATORY FRAMEWORK AFFECTS INVESTORS'  
13 RISK ASSESSMENTS.

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

1 Q. PLEASE EXPLAIN HOW CREDIT RATING AGENCIES CONSIDER THE REGULATORY  
2 FRAMEWORK IN ESTABLISHING A COMPANY’S CREDIT RATING.

3 A. Moody’s and S&P both consider the overall regulatory framework in  
4 establishing credit ratings. As shown in Table 8, Moody’s establishes credit  
5 ratings based on four key factors:

6  
7 **Table 8**  
8 **Moody’s Rating Factors**

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

14  
15 Two of these factors (*i.e.*, regulatory framework and the ability to recover costs  
16 and earn returns) are based on the regulatory environment such that half of  
17 Moody’s overall assessment of business and financial risk for regulated utilities  
18 is based upon the regulatory environment.<sup>37</sup> Moody’s further subdivides the first  
19 two factors, Regulatory Framework and the Ability to Recover Costs and Earn  
20 Returns, into sub-factors to help “provide more granularity and transparency  
21 on the overall regulatory environment, which is the most important  
22 consideration for this sector.”<sup>38</sup> Similarly, S&P has identified the regulatory  
23 environment as an important factor, stating, “we believe the fundamental

---

<sup>37</sup> Moody’s Investor Service, Rating Methodology, Regulated Electric and Gas Utilities, December 23, 2013, at 1,2.

<sup>38</sup> *Id.*, at 3.

1 regulatory environment in the jurisdictions in which a utility operates often  
2 influence credit quality the most.”<sup>39</sup>

3  
4 Q. PLEASE EXPLAIN THE EFFECT OF REGULATORY RISK ON THE COMPANY’S  
5 ABILITY TO RAISE CAPITAL AND THE IMPACT ON CUSTOMERS.

6 A. Given the Company’s capital spending requirements, and the consequent need  
7 to raise capital, it is important that the Company be able to maintain access to  
8 the capital markets at reasonable rates. Regulatory decisions have a significant  
9 impact on a company’s credit rating and ability to raise capital, which ultimately  
10 impacts customers.

11  
12 **D. Authorized ROEs and Regulatory Risk**

13 Q. HOW HAVE ROE AUTHORIZATIONS IN NORTH DAKOTA COMPARED TO  
14 COMPARABLE UTILITIES IN OTHER JURISDICTIONS?

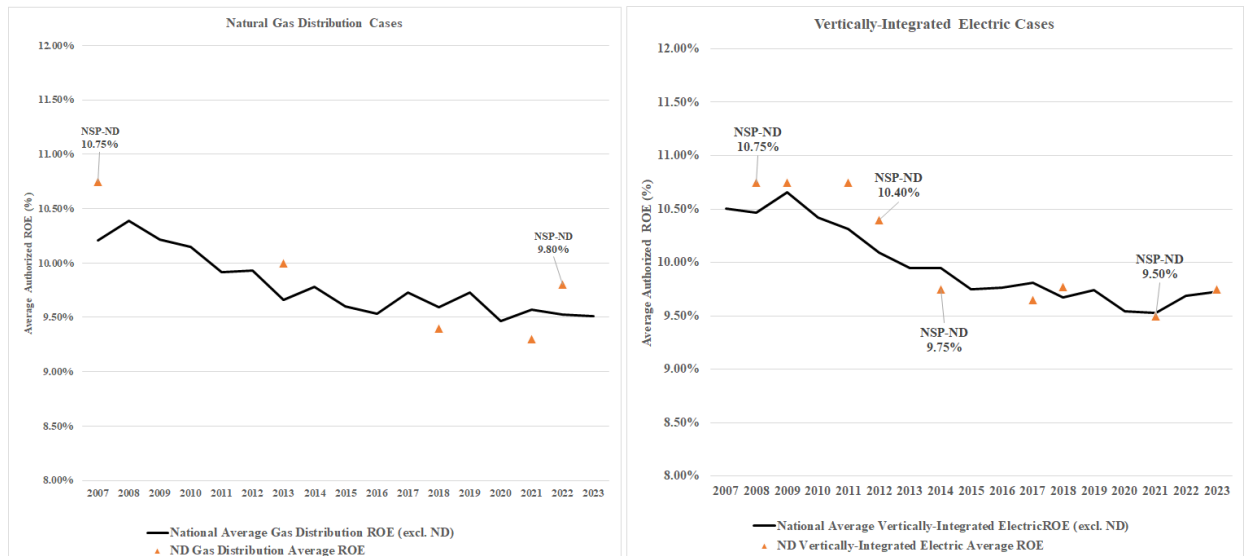
15 A. As shown in Figure 6, the Commission has been generally supportive of gas  
16 utilities’ capital needs and has historically authorized ROEs that are generally  
17 comparable to the national average for other natural gas distribution utilities  
18 during the same period, as well as for vertically-integrated electric cases.

---

<sup>39</sup> S&P, *Assessing U.S. Utility Regulatory Environments*, March 11, 2010, at 2.



**Figure 6**  
**Authorized ROEs for Vertically Integrated and Natural Gas Utilities 2007-2023**



Q. ARE AUTHORIZED ROES FROM PRIOR NSP RATE CASES A REASONABLE BENCHMARK TO ASSESS THE CURRENT COST OF EQUITY FOR NSP?

A. Market conditions at the time the authorized returns were established are different from conditions going forward. For example, as shown in Figure 7, in NSP’s most recent rate case, the Commission authorized an ROE of 9.80 percent in 2022, at a time when interest rates were significantly lower than current interest rates.<sup>40</sup> The 30-year Treasury yield in 2022 averaged 3.11 percent.<sup>41</sup> By contrast, during NSP’s earlier rate case, the Company was authorized an ROE of 10.75 percent, when the 30-year Treasury rate averaged 4.84 percent that year.<sup>42</sup> In fact, the current 30-day average of the 30-year

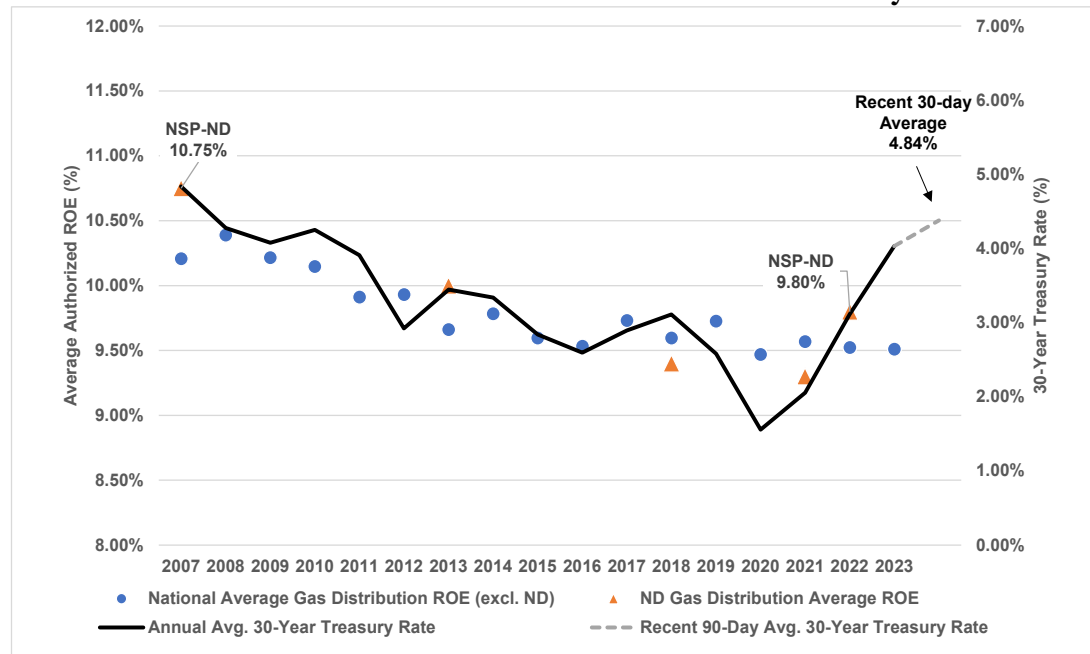
<sup>40</sup> PU-21-381, Northern States Power Company 2021 Natural Gas Rate Increase. Findings of Fact, Conclusions of Law and Order (October 27, 2022), at 3.

<sup>41</sup> Bloomberg Professional.

<sup>42</sup> Bloomberg Professional.

Treasury rate is 4.84 percent as of October 31, 2023.<sup>43</sup> As such, the capital market conditions have changed substantially since the NSP was authorized an ROE of 9.80 percent in 2022.

**Figure 7**  
**Natural Gas Authorized ROEs vs 30-Year Treasury Rates**



Utilities compete for capital with other investments of similar risk, including other natural gas distribution utilities. Thus, the ROE awarded to NSP sends an important signal to investors regarding whether there is regulatory support for financial integrity, dividends, growth, and fair compensation for business and financial risk. As a result, returns that are comparable to other utilities help to assess the opportunity cost of investing in the subject company, which helps determine a company's ROE. Such comparable returns are a reflection of the

<sup>43</sup> *Ibid.*

1 conclusion that regulators make based on the evidence provided by such  
2 market-based analyses.

3  
4 **VIII. CAPITAL STRUCTURE**  
5

6 Q. WHAT IS NSP'S PROPOSED WEIGHTED AVERAGE COST OF CAPITAL?

7 A. The Company's proposed test year capital structure includes long-term debt,  
8 short-term debt, and common equity. The Company's proposed revenue  
9 requirement for the test year reflects a Weighted Average Cost of Capital  
10 (WACC) of 7.52 percent, as shown on Exhibit\_\_\_\_(JCN-1), Schedule 11.  
11

12 Q. WHAT IS NSP'S PROPOSED CAPITAL STRUCTURE?

13 A. NSP is proposing a financial capital structure targeting a mix of 52.50 percent  
14 common equity and 47.50 percent debt (47.38 percent long-term debt and 0.12  
15 percent short-term debt).  
16

17 Q. DOES NSP HAVE A STANDALONE CAPITAL STRUCTURE THAT IS SEPARATE FROM  
18 XEI'S CAPITAL STRUCTURES?

19 A. Yes, NSP is a separate corporate entity recognized by the Securities and  
20 Exchange Commission that maintains its own capital structure and issues its  
21 own debt to investors. The North Dakota jurisdictional gas operations' capital  
22 structure represents an allocated portion of NSP's overall capital structure.  
23

24 Q. WHY IS THE COMPANY'S RECOMMENDED CAPITAL STRUCTURE APPROPRIATE  
25 FOR RATEMAKING PURPOSES?

26 A. It is almost universally the practice to authorize a ratemaking capital structure  
27 based on an operating utility's capital structure, except where the operating

1 company's capital structure is anomalous or unreasonable. For example, it is  
2 FERC's general preference to use an operating company's own capital structure  
3 if the operating company provides its own financing by issuing its own debt  
4 without guarantees from its parent or affiliates, and the actual capital structure  
5 is reasonable given its operating risk.

6  
7 Q. HOW HAVE YOU ASSESSED THE REASONABLENESS OF NSP'S PROPOSED CAPITAL  
8 STRUCTURE WITH RESPECT TO THE PROXY GROUP?

9 A. As a preliminary matter, the proposed capital structure is highly consistent with  
10 the capital structure approved in the Company's most recent rate proceeding.  
11 In Case No. PU-21-381, the Company's actual capital structure of 52.54 percent  
12 common equity, 47.03 percent long-term debt, and 0.43 percent short-term  
13 debt was authorized by the Commission.<sup>44</sup> The proxy group has been selected  
14 to reflect comparable companies in terms of business and financial risks.  
15 Therefore, it is appropriate to compare the financial capital structures of the  
16 proxy group companies to the financial capital structure proposed by the  
17 Company in order to assess whether the Company's capital structure is  
18 reasonable and consistent with industry standards for companies with  
19 commensurate risk. I calculated the weighted average capital structures for each  
20 of the proxy group operating companies for the past three years through 2022.  
21 Exhibit\_\_\_\_(JCN-1), Schedule 12 shows that the Company's proposed common  
22 equity ratio of 52.50 percent is within the range of actual common equity ratios  
23 of 44.43 percent to 59.79 percent for the operating companies held by the proxy  
24 group over this period and is near the proxy group mean of 52.70 percent.

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<sup>44</sup> Case No. PU-21-381, Findings of Fact, Conclusions of Law and Orders, October 27, 2022 adopting Settlement Agreement, filed June 8, 2022, at 2.

1 Q. HOW DID THE COMPANY DEVELOP THE BALANCES FOR THE VARIOUS  
2 COMPONENTS OF CAPITAL STRUCTURE?

3 A. The Company developed its balances for the various components of capital  
4 structure is as follows:

- 5 • Long-term debt balances are based on the average of forecasted month-  
6 end balances for the 12 months ending December 2024, and include  
7 forecasted long-term debt issuances and retirements during that period;
- 8 • Short-term debt balances are based on the average of forecasted  
9 month-end balances for the 12 months ending December 2024; and
- 10 • Common equity balances represent the average of forecasted 13  
11 month-end equity balances from December 2021 through  
12 December 2024. The common equity balance averages the  
13 accounting month-end balances consistent with Generally Accepted  
14 Accounting Principles (GAAP) and eliminates the non-regulated  
15 investments.

16  
17 The derivation of the balances of long-term debt, short-term debt, and common  
18 equity for the Company's proposed capital structure is presented on Schedule  
19 11.

20  
21 Q. WHAT IS YOUR CONCLUSION REGARDING THE APPROPRIATENESS OF NSP'S  
22 PROPOSED CAPITAL STRUCTURE IN THIS PROCEEDING?

23 A. Based on the analysis presented in Schedule 12, my conclusion is that NSP's  
24 proposed capital structure is reasonable. Sufficient equity in the capital structure  
25 is an important factor for maintaining NSP's financial integrity and investment  
26 grade credit rating and it is an essential component of NSP's financial policies

1 enabling access to capital on favorable terms in a variety of market  
2 circumstances.

3  
4 **IX. COST OF DEBT**  
5

6 Q. ON WHAT BASIS IS NSP PROPOSING TO SET ITS COST OF DEBT?

7 A. NSP is proposing to use its expected cost of debt for the test year.  
8

9 Q. WHAT IS THE COMPANY'S PROPOSED LONG-TERM DEBT COST?

10 A. The Company proposes to use a long-term cost of debt of 4.54 percent. The  
11 cost of long-term debt for the test year includes the actual and forecasted  
12 coupon rate on all bonds expected to be outstanding for each month of the test  
13 year. In addition to the interest expense, the cost of long-term debt also includes  
14 actual amortization expenses for debt issuance costs, discounts or premiums,  
15 losses on reacquired debt, gains and losses from hedging transactions, and the  
16 annual amortization of the upfront fees associated with the Company's multi-  
17 year credit agreement.  
18

19 Q. WHAT IS THE COMPANY'S PROPOSED SHORT-TERM DEBT COST?

20 A. The Company proposes to use a short-term cost of debt of 7.72 percent. The  
21 cost of short-term debt in the test year includes a forecasted 4.87 percent  
22 interest expense for commercial paper, plus a 2.86 percent monthly financing  
23 fee associated for its participation in the credit facility, which provides the back-  
24 up liquidity required for its commercial paper program.

1 Q. ARE THE PROPOSED SHORT- AND LONG-TERM DEBT COSTS REASONABLE?

2 A. Yes. The Company's approach is consistent with prior approved regulatory  
3 proceedings.

4  
5 **X. CONCLUSION**  
6

7 Q. PLEASE SUMMARIZE YOUR TESTIMONY AND RECOMMENDATIONS.

8 A. Based on the quantitative analyses provided in my Direct Testimony, I have  
9 established a range of ROE results shown previously in Table 1 (also see  
10 Schedule 2). The DCF, CAPM, and Bond Yield Risk Premium, analysis produce  
11 a range of estimates of the Company's cost of equity of 9.88 percent to 11.65  
12 percent, including flotation costs. Based on these analyses, I consider an ROE  
13 range of 9.90 percent to 10.90 percent to be reasonable. I recommend an ROE  
14 of 10.20 percent, which is below the midpoint of the range and 56 basis points  
15 below the average of the DCF, CAPM, and Risk Premium analyses and  
16 therefore represents a conservative estimate of NSP's cost of equity. In  
17 addition, I support NSP's actual capital structure of 52.50 percent common  
18 equity and 47.50 percent debt (47.38 percent long-term debt and 0.12 percent  
19 short-term debt). as reasonable relative to the range of capital structures for the  
20 operating companies held by the proxy group companies. With regard to the  
21 Company's cost of debt, I recommend a cost of long-term debt of 4.54 percent  
22 and a cost of short-term debt of 7.72 percent.

23  
24 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

25 A. Yes, it does.



**JOSHUA C. NOWAK**  
VICE PRESIDENT

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Mr. Nowak is a financial and economic consultant with more than fifteen years of experience in the energy industry. He has provided expert testimony on regulatory issues in several proceedings before the Federal Energy Regulatory Commission and regulatory commissions in Alaska, Connecticut, Kentucky, New Brunswick, New Hampshire, New York, Ohio, and Texas. Mr. Nowak specializes in providing rate case services on economic conditions and financial market matters related to the cost of capital. He is also experienced in providing strategic direction on financing activities including bond offerings, credit rating analysis, and investor relations. Previously, Josh was the Director of Regulatory Strategy & Integrated Analytics at National Grid where he was responsible for issues related to the cost of capital across its federal and state jurisdictional operating companies. He holds a Bachelor's Degree in Economics and History from Boston College.

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**REPRESENTATIVE EXPERIENCE**

Expert Testimony and Litigation Support

Mr. Nowak's work includes regulatory project management, research, and analysis for expert witness testimony. His work has included:

- Expert testimony on cost of capital, financial markets, return on equity, capital structure, and debt financing issues
- Regulatory strategy in return on equity proceedings, including coordination across several utilities in joint-party proceedings
- Extensive support for expert testimony in cost of capital and return on equity proceedings through research, financial analysis, and testimony development
- Expert testimony, sponsoring lead-lag studies, in support of utility cash working capital requirements
- Project management of expert testimony assignments, including all phases of the regulatory schedule
- Performing analysis to support expert testimony regarding affiliate expenses and allocations

Policy Analysis

Mr. Nowak has contributed to projects related to policy review including:

- A review of natural gas capacity options and a cost-benefit analysis for state regulators seeking to reduce energy costs for ratepayers
- Analysis of the economic and environmental benefits of changes to natural gas ratemaking/expansion policy





### Management and Operations Consulting

Mr. Nowak has taken a lead analytical role in developing benchmarking analyses and process reviews. Specifically, he has:

- Developed benchmarking analyses, in support of expert testimony, comparing electric and gas utilities' cost and operational efficiency, taking into account a situational assessment of exogenous factors
- Performed a process review of a gas utility's expansion projects, including an evaluation of policies, procedures, and financial models
- Supported analysis for a report of the reasonableness of a shared service company's administrative and general costs

### Financial Analysis

Other financial analysis Mr. Nowak has conducted include:

- Extensive analysis on issues related to utilities' cost of capital
- Developing dispatch models to estimate revenues for merchant powerplants
- Estimating damages for breach of contract in fuel delivery commitment
- Researching strategic investment opportunities for merchant generators
- A report on the profitability of various generation technologies in a deregulated energy market
- Reviewing internal financial models used by utility clients
- Supporting utility asset appraisals, including research and analysis for income approach, cost approach, and sales comparison approach

### Other Experience

In his previous work, Mr. Nowak contributed to the evaluation of regulatory policy for government clients. His experience included performing policy analysis, including economic impact assessments, for federal regulations.

## PROFESSIONAL HISTORY

### **Concentric Energy Advisors, Inc. (2018 – Present)**

Vice President

Assistant Vice President

### **National Grid USA (2017 – 2018)**

Director, Regulatory Strategy & Integrated Analytics

### **ScottMadden, Inc. (formerly Sussex Economic Advisors, LLC) (2012 – 2016)**

Director

Principal



**Concentric Energy Advisors, Inc. (2007 – 2012)**

Senior Consultant

Consultant

Assistant Consultant

Analyst

**RTI International (2006 – 2007)**

Economist

**EDUCATION**

**Boston College**

B.A., Economics and History, 2006



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
<b>Regulatory Commission of Alaska</b>				
ENSTAR Natural Gas Company, a Division of Semco Energy, Inc.	06/16	ENSTAR Natural Gas Company, a Division of Semco Energy, Inc.	TA 285-4	Cash Working Capital
<b>Connecticut Public Utilities Regulatory Authority</b>				
Aquarion Water Company of Connecticut	08/22	Aquarion Water Company of Connecticut	Docket No. 22-07-01	Return on Equity
Aquarion Water Company of Connecticut	01/22	Aquarion Water Company of Connecticut	Docket No. 13-02-20RE06	Return on Equity and Cost of Debt
<b>Federal Energy Regulatory Commission</b>				
Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Niagara Mohawk Power Corporation d/b/a National Grid, New York State Electric & Gas Corporation, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation	04/21	Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Niagara Mohawk Power Corporation d/b/a National Grid, New York State Electric & Gas Corporation, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation	EL21-66-000, ER21-1647-000	Transmission Ownership Risk and Returns
Central Hudson Gas & Electric Corporation	12/19	Central Hudson Gas & Electric Corporation	ER20-715-000	Return on Equity
<b>Kentucky Public Service Commission</b>				
Duke Energy Kentucky, Inc.	12/22	Duke Energy Kentucky, Inc.	Case No. 2022-00372	Return on Equity
<b>Minnesota Public Utilities Commission</b>				
Northern States Power Company (Xcel Energy Inc.)	11/23	Northern States Power Company (Xcel Energy Inc.)	G-002/GR-23-413	Return on Equity



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
<b>Public Utilities Commission of New Hampshire</b>				
Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities	04/16	Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities	Docket No. DE 16-383	Cash Working Capital
<b>New Brunswick Energy and Utilities Board</b>				
New Brunswick Power Corporation (NB Power)	11/22	New Brunswick Power Corporation (NB Power)	Matter 541	Macroeconomic Environment and Capital Market Conditions
<b>New York Public Service Commission</b>				
National Fuel Gas Distribution Corporation	10/23	National Fuel Gas Distribution Corporation	Case 23-G-0627	Return on Equity
Central Hudson Gas & Electric Corporation	07/23	Central Hudson Gas & Electric Corporation	Case 23-E-0418/ Case 23-G-0419	Return on Equity
The Brooklyn Union Gas Company d/b/a National Grid NY ("KEDNY) and KeySpan Gas East Corporation d/b/a National Grid ("KEDLI")	04/23	The Brooklyn Union Gas Company d/b/a National Grid NY ("KEDNY) and KeySpan Gas East Corporation d/b/a National Grid ("KEDLI")	Case 23-G-0225/ Case 23-G-0226	Return on Equity
Niagara Mohawk Power Corporation d/b/a National Grid	07/20	Niagara Mohawk Power Corporation d/b/a National Grid	Case 20-E-0380/ Case 20-G- 0381	Return on Equity
Niagara Mohawk Power Corporation d/b/a National Grid	07/17	Niagara Mohawk Power Corporation d/b/a National Grid	Case 17-E-0238 / Case 17-G- 0239	Capital Structure and Overall Cost of Capital



SPONSOR	DATE	CASE/APPLICANT	DOCKET	SUBJECT
<b>Public Utilities Commission of Ohio</b>				
Duke Energy Ohio, Inc.	01/23	Duke Energy Ohio, Inc.	Case No. 22-1153-EL-UNC	Return on Equity
<b>Public Utility Commission of Texas</b>				
Wind Energy Transmission Texas, LLC	05/15	Wind Energy Transmission Texas, LLC	Docket No. 44746	Cash Working Capital
Lone Star Transmission, LLC	05/14	Lone Star Transmission, LLC	Docket No. 42469	Cash Working Capital
<b>Railroad Commission of Texas</b>				
Texas Gas Service Company, a Division of One Gas, Inc.	06/16	Texas Gas Service Company, a Division of One Gas, Inc.	GUD No. 10526	Cash Working Capital
Texas Gas Service Company, a Division of One Gas, Inc.	03/16	Texas Gas Service Company, a Division of One Gas, Inc.	GUD No. 10506	Cash Working Capital
Texas Gas Service Company, a Division of One Gas, Inc.	12/15	Texas Gas Service Company, a Division of One Gas, Inc.	GUD No. 10488	Cash Working Capital
CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	03/14	CenterPoint Energy Resources Corp., d/b/a CenterPoint Energy Entex and CenterPoint Energy Texas Gas	GUD No. 10432	Cash Working Capital

SUMMARY OF RESULTS INCLUDING FLOTATION COSTS

Company	Ticker	Primary Analyses															Benchmark Analysis	Average of DCF, CAPM, and Risk Premium
		CONSTANT GROWTH DCF				CAPM						Risk Premium (Average)						
						Value Line Beta			Bloomberg Beta			Average	Current Yield	Near-Term Projected Yield	Long-Term Projected Yield	Average	Current Yield	
		30-Day Average	90-Day Average	180-Day Average	Average	Current Yield	Near-Term Projected Yield	Long-Term Projected Yield	Current Yield	Near-Term Projected Yield	Long-Term Projected Yield							
Atmos Energy Corporation	ATO	10.17%	10.03%	10.03%	10.08%	12.03%	11.97%	11.88%	11.20%	11.10%	10.94%	11.52%	10.62%	10.45%	10.18%	10.42%	10.45%	10.67%
New Jersey Resources Corporation	NJR	9.91%	9.74%	9.42%	9.69%	12.87%	12.85%	12.82%	11.67%	11.59%	11.47%	12.21%	10.62%	10.45%	10.18%	10.42%	12.09%	10.77%
NiSource Inc.	NI	11.92%	11.73%	11.66%	11.77%	12.45%	12.41%	12.35%	11.74%	11.66%	11.54%	12.03%	10.62%	10.45%	10.18%	10.42%	10.60%	11.40%
Northwest Natural Gas Company	NWN	9.58%	9.34%	9.02%	9.31%	11.62%	11.54%	11.41%	10.79%	10.67%	10.48%	11.08%	10.62%	10.45%	10.18%	10.42%	9.23%	10.27%
ONE Gas Inc.	OGS	9.54%	9.23%	9.08%	9.29%	11.62%	11.54%	11.41%	11.52%	11.43%	11.29%	11.47%	10.62%	10.45%	10.18%	10.42%	8.89%	10.39%
Spire, Inc.	SR	11.39%	11.15%	10.82%	11.12%	12.03%	11.97%	11.88%	11.38%	11.28%	11.14%	11.61%	10.62%	10.45%	10.18%	10.42%	8.38%	11.05%
Low		9.54%	9.23%	9.02%	9.29%	11.62%	11.54%	11.41%	10.79%	10.67%	10.48%	11.08%					8.38%	10.27%
Median		10.04%	9.88%	9.72%	9.88%	12.03%	11.97%	11.88%	11.45%	11.36%	11.22%	11.57%	10.62%	10.45%	10.18%	10.42%	9.84%	10.72%
Mean		10.42%	10.20%	10.01%	10.21%	12.10%	12.05%	11.96%	11.38%	11.29%	11.14%	11.65%	10.62%	10.45%	10.18%	10.42%	9.94%	10.76%
High		11.92%	11.73%	11.66%	11.77%	12.87%	12.85%	12.82%	11.74%	11.66%	11.54%	12.21%					12.09%	11.40%

SUMMARY OF RESULTS EXCLUDING FLOTATION COSTS

Company	Ticker	Primary Analyses														Benchmark Analysis	Average of DCF, CAPM, and Risk Premium	
		CONSTANT GROWTH DCF				CAPM						Risk Premium (Average)						
						Value Line Beta			Bloomberg Beta			Average	Current Yield	Near-Term Projected Yield	Long-Term Projected Yield	Average		
		30-Day Average	90-Day Average	180-Day Average	Average	Current Yield	Near-Term Projected Yield	Long-Term Projected Yield	Current Yield	Near-Term Projected Yield	Long-Term Projected Yield							Expected Earnings
Atmos Energy Corporation	ATO	10.08%	9.94%	9.94%	9.99%	11.94%	11.88%	11.79%	11.11%	11.01%	10.85%	11.43%	10.53%	10.36%	10.09%	10.33%	10.36%	10.58%
New Jersey Resources Corporation	NJR	9.82%	9.65%	9.33%	9.60%	12.78%	12.76%	12.73%	11.58%	11.50%	11.38%	12.12%	10.53%	10.36%	10.09%	10.33%	12.00%	10.68%
NiSource Inc.	NI	11.83%	11.64%	11.57%	11.68%	12.36%	12.32%	12.26%	11.65%	11.57%	11.45%	11.94%	10.53%	10.36%	10.09%	10.33%	10.51%	11.31%
Northwest Natural Gas Company	NWN	9.49%	9.25%	8.93%	9.22%	11.53%	11.45%	11.32%	10.70%	10.58%	10.39%	10.99%	10.53%	10.36%	10.09%	10.33%	9.14%	10.18%
ONE Gas Inc.	OGS	9.45%	9.14%	8.99%	9.20%	11.53%	11.45%	11.32%	11.43%	11.34%	11.20%	11.38%	10.53%	10.36%	10.09%	10.33%	8.80%	10.30%
Spire, Inc.	SR	11.30%	11.06%	10.73%	11.03%	11.94%	11.88%	11.79%	11.29%	11.19%	11.05%	11.52%	10.53%	10.36%	10.09%	10.33%	8.29%	10.96%
Low		9.45%	9.14%	8.93%	9.20%	11.53%	11.45%	11.32%	10.70%	10.58%	10.39%	10.99%					8.29%	10.18%
Median		9.95%	9.79%	9.63%	9.79%	11.94%	11.88%	11.79%	11.36%	11.27%	11.13%	11.48%	10.53%	10.36%	10.09%	10.33%	9.75%	10.63%
Mean		10.33%	10.11%	9.92%	10.12%	12.01%	11.96%	11.87%	11.29%	11.20%	11.05%	11.56%	10.53%	10.36%	10.09%	10.33%	9.85%	10.67%
High		11.83%	11.64%	11.57%	11.68%	12.78%	12.76%	12.73%	11.65%	11.57%	11.45%	12.12%					12.00%	11.31%

PROXY GROUP SCREENING DATA AND RESULTS - PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]
						%	%	
			S&P Credit Rating Between BBB- and AAA	Covered by More Than 1 Analyst	Positive Growth Rates From At Least 2 Sources	Regulated Operating Income of Total Income > 60%	Regulated Gas Income of Total Regulated Income > 60%	Significant Merger or Transaction
Company	Ticker	Dividends						
Atmos Energy Corporation	ATO	Yes	A-	Yes	Yes	100.00%	66.03%	No
Chesapeake Utilities Corporation	CPK	Yes	NR	Yes	Yes	81.13%	42.84%	Yes
New Jersey Resources Corporation	NJR	Yes	NR	Yes	Yes	66.35%	92.48%	No
NiSource Inc.	NI	Yes	BBB+	Yes	Yes	99.85%	65.67%	No
Northwest Natural Gas Company	NWN	Yes	A+	Yes	Yes	99.84%	91.01%	No
ONE Gas, Inc.	OGS	Yes	A-	Yes	Yes	100.00%	100.00%	No
Southwest Gas Corporation	SWX	Yes	BBB-	Yes	Yes	76.88%	100.00%	Yes
Spire, Inc.	SR	Yes	A-	Yes	Yes	88.78%	100.00%	No
UGI Corporation	UGI	Yes	NR	Yes	Yes	21.61%	100.00%	Yes

Notes:

[1] Source: Bloomberg Professional

[2] Source: S&P Capital IQ Pro

[3] Source: Yahoo! Finance and Zacks

[4] Source: Yahoo! Finance, Value Line Investment Survey, and Zacks

[5] - [6] Source: Form 10-Ks for 2020, 2021, & 2022, three-year average

[7] SNL Financial News Releases

30-DAY CONSTANT GROWTH DCF

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	\$2.96	\$108.89	2.72%	2.82%	7.00%	7.50%	7.30%	7.27%	9.81%	10.08%	10.32%
New Jersey Resources Corporation	NJR	\$1.68	\$41.60	4.04%	4.15%	5.00%	6.00%	6.00%	5.67%	9.14%	9.82%	10.16%
NiSource Inc.	NI	\$1.00	\$25.37	3.94%	4.09%	9.50%	6.70%	7.00%	7.73%	10.77%	11.83%	13.63%
Northwest Natural Gas Company	NWN	\$1.95	\$38.60	5.05%	5.16%	6.50%	2.80%	3.70%	4.33%	7.92%	9.49%	11.72%
ONE Gas Inc.	OGS	\$2.60	\$67.61	3.85%	3.95%	6.50%	5.00%	5.00%	5.50%	8.94%	9.45%	10.47%
Spire, Inc.	SR	\$2.88	\$57.02	5.05%	5.20%	8.00%	n/a	4.20%	6.10%	9.36%	11.30%	13.25%
Median				3.99%	4.12%	6.75%	6.00%	5.50%	5.88%	9.25%	9.95%	11.09%
Mean				4.11%	4.23%	7.08%	5.60%	5.53%	6.10%	9.32%	10.33%	11.59%

Notes:

- [1] Source: Bloomberg Professional  
[2] Source: Bloomberg Professional, equals 30-day average as of October 31, 2023  
[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	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	\$2.96	\$114.73	2.58%	2.67%	7.00%	7.50%	7.30%	7.27%	9.67%	9.94%	10.18%
New Jersey Resources Corporation	NJR	\$1.68	\$43.40	3.87%	3.98%	5.00%	6.00%	6.00%	5.67%	8.97%	9.65%	9.99%
NiSource Inc.	NI	\$1.00	\$26.57	3.76%	3.91%	9.50%	6.70%	7.00%	7.73%	10.59%	11.64%	13.44%
Northwest Natural Gas Company	NWN	\$1.95	\$40.54	4.81%	4.91%	6.50%	2.80%	3.70%	4.33%	7.68%	9.25%	11.47%
ONE Gas Inc.	OGS	\$2.60	\$73.35	3.54%	3.64%	6.50%	5.00%	5.00%	5.50%	8.63%	9.14%	10.16%
Spire, Inc.	SR	\$2.88	\$59.85	4.81%	4.96%	8.00%	n/a	4.20%	6.10%	9.11%	11.06%	13.00%
Median				3.82%	3.94%	6.75%	6.00%	5.50%	5.88%	9.04%	9.79%	10.82%
Mean				3.90%	4.01%	7.08%	5.60%	5.53%	6.10%	9.11%	10.11%	11.37%

Notes:

- [1] Source: Bloomberg Professional  
[2] Source: Bloomberg Professional, equals 90-day average as of October 31, 2023  
[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	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	\$2.96	\$114.66	2.58%	2.68%	7.00%	7.50%	7.30%	7.27%	9.67%	9.94%	10.18%
New Jersey Resources Corporation	NJR	\$1.68	\$47.19	3.56%	3.66%	5.00%	6.00%	6.00%	5.67%	8.65%	9.33%	9.67%
NiSource Inc.	NI	\$1.00	\$27.10	3.69%	3.83%	9.50%	6.70%	7.00%	7.73%	10.51%	11.57%	13.37%
Northwest Natural Gas Company	NWN	\$1.95	\$43.33	4.50%	4.60%	6.50%	2.80%	3.70%	4.33%	7.36%	8.93%	11.15%
ONE Gas Inc.	OGS	\$2.60	\$76.47	3.40%	3.49%	6.50%	5.00%	5.00%	5.50%	8.48%	8.99%	10.01%
Spire, Inc.	SR	\$2.88	\$64.11	4.49%	4.63%	8.00%	n/a	4.20%	6.10%	8.79%	10.73%	12.67%
Median				3.63%	3.75%	6.75%	6.00%	5.50%	5.88%	8.72%	9.63%	10.66%
Mean				3.70%	3.82%	7.08%	5.60%	5.53%	6.10%	8.91%	9.92%	11.17%

Notes:

- [1] Source: Bloomberg Professional  
[2] Source: Bloomberg Professional, equals 180-day average as of October 31, 2023  
[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])

MARKET RISK PREMIUM DERIVED FROM S&P 500 - ALL COMPANIES

[1] Estimate of the S&P 500 Dividend Yield	1.68%
[2] Estimate of the S&P 500 Growth Rate	12.49%
[3] S&P 500 Estimated Required Market Return	14.27%

Notes:  
[1] Sum of [9]  
[2] Sum of [11]  
[3] Equals ([1] x (1 + 0.5 x [2])) + [2]

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	90.24	324	29,270	0.08%	5.54%	0.00%	2.00%	0.00%
American Express Co	AXP	146.03	729	106,419	0.31%	1.64%	0.01%	8.50%	0.03%
Verizon Communications Inc	VZ	35.13	4,204	147,690	0.43%	7.57%	0.03%	1.50%	0.01%
Broadcom Inc	AVGO	841.37	413	347,264	1.00%	2.19%	0.02%	30.00%	0.30%
Boeing Co/The	BA	186.82	605	Excl.	0.00%	n/a	n/a		n/a
Caterpillar Inc	CAT	226.05	510	115,318	0.33%	2.30%	0.01%	13.50%	0.04%
JPMorgan Chase & Co	JPM	139.06	2,906	404,120	1.16%	3.02%	0.04%	8.50%	0.10%
Chevron Corp	CVX	145.73	1,867	272,114	0.78%	4.14%	0.03%	21.50%	0.17%
Coca-Cola Co/The	KO	56.49	4,323	244,230	0.70%	3.26%	0.02%	7.50%	0.05%
AbbVie Inc	ABBV	141.18	1,765	249,189	0.72%	4.39%	0.03%	2.00%	0.01%
Walt Disney Co/The	DIS	81.59	1,830	149,292	0.43%	n/a	n/a	65.00%	0.28%
FleetCor Technologies Inc	FLT	225.17	74	16,653	0.05%	n/a	n/a	13.50%	0.01%
Extra Space Storage Inc	EXR	103.59	211	21,886	0.06%	2.36%	0.00%	5.00%	0.00%
Exxon Mobil Corp	XOM	105.85	3,963	419,475	1.21%	3.59%	0.04%	7.00%	0.08%
Phillips 66	PSX	114.07	445	50,794	0.15%	3.68%	0.01%	15.50%	0.02%
General Electric Co	GE	108.63	1,088	118,231	0.34%	0.29%	0.00%	27.00%	0.09%
HP Inc	HPQ	26.33	988	26,021	0.07%	3.99%	0.00%	12.50%	0.01%
Home Depot Inc/The	HD	284.69	1,000	284,709	0.82%	2.94%	0.02%	6.50%	0.05%
Monolithic Power Systems Inc	MPWR	441.74	48	21,164	0.06%	0.91%	0.00%	15.00%	0.01%
International Business Machines Corp	IBM	144.64	913	132,074	0.38%	4.59%	0.02%	3.00%	0.01%
Johnson & Johnson	JNJ	148.34	2,407	357,096	1.03%	3.21%	0.03%	5.00%	0.05%
Lululemon Athletica Inc	LULU	393.48	121	47,778	0.14%	n/a	n/a	16.50%	0.02%
McDonald's Corp	MCD	262.17	729	191,060	0.55%	2.55%	0.01%	10.50%	0.06%
Merck & Co Inc	MRK	102.70	2,538	260,603	0.75%	2.84%	0.02%	8.50%	0.06%
3M Co	MMM	90.95	552	50,233	0.14%	6.60%	0.01%	4.50%	0.01%
American Water Works Co Inc	AWK	117.65	195	22,903	0.07%	2.41%	0.00%	3.00%	0.00%
Bank of America Corp	BAC	26.34	7,914	208,448	0.60%	3.64%	0.02%	5.00%	0.03%
Pfizer Inc	PFE	30.56	5,646	172,541	0.50%	5.37%	0.03%	2.00%	0.01%
Procter & Gamble Co/The	PG	150.03	2,357	353,604	1.02%	2.51%	0.03%	5.50%	0.06%
AT&T Inc	T	15.40	7,150	110,110	0.32%	7.21%	0.02%	1.50%	0.00%
Travelers Cos Inc/The	TRV	167.44	228	38,243	0.11%	2.39%	0.00%	7.50%	0.01%
RTX Corp	RTX	81.39	1,438	117,031	0.34%	2.90%	0.01%	15.00%	0.05%
Analog Devices Inc	ADI	157.33	498	78,400	0.23%	2.19%	0.00%	11.50%	0.03%
Walmart Inc	WMT	163.41	2,692	439,828	1.27%	1.40%	0.02%	6.50%	0.08%
Cisco Systems Inc	CSCO	52.13	4,051	211,155	0.61%	2.99%	0.02%	8.50%	0.05%
Intel Corp	INTC	36.50	4,216	Excl.	0.00%	1.37%	0.00%		n/a
General Motors Co	GM	28.20	1,369	38,619	0.11%	1.28%	0.00%	8.50%	0.01%
Microsoft Corp	MSFT	338.11	7,432	2,512,922	7.24%	0.89%	0.06%	11.50%	0.83%
Dollar General Corp	DG	119.04	219	26,126	0.08%	1.98%	0.00%	2.00%	0.00%
Cigna Group/The	CI	309.20	296	91,517	0.26%	1.59%	0.00%	10.00%	0.03%
Kinder Morgan Inc	KMI	16.20	2,223	36,009	0.10%	6.98%	0.01%	17.50%	0.02%
Citigroup Inc	C	39.49	1,914	75,580	0.22%	5.37%	0.01%	2.50%	0.01%
American International Group Inc	AIG	61.31	712	43,647	0.13%	2.35%	0.00%	14.00%	0.02%
Altria Group Inc	MO	40.17	1,769	71,047	0.20%	9.76%	0.02%	6.00%	0.01%
HCA Healthcare Inc	HCA	226.14	268	60,529	0.17%	1.06%	0.00%	12.50%	0.02%
International Paper Co	IP	33.73	346	11,671	0.03%	5.48%	0.00%	6.00%	0.00%
Hewlett Packard Enterprise Co	HPE	15.38	1,283	19,730	0.06%	3.12%	0.00%	7.50%	0.00%
Abbott Laboratories	ABT	94.55	1,735	164,078	0.47%	2.16%	0.01%	4.50%	0.02%
Aflac Inc	AFL	78.11	594	46,402	0.13%	2.15%	0.00%	8.00%	0.01%
Air Products and Chemicals Inc	APD	282.44	222	62,744	0.18%	2.48%	0.00%	10.50%	0.02%
Royal Caribbean Cruises Ltd	RCL	84.73	256	Excl.	0.00%	n/a	n/a		n/a
Hess Corp	HES	144.40	307	44,340	0.13%	1.21%	0.00%	23.50%	0.03%
Archer-Daniels-Midland Co	ADM	71.57	533	38,174	0.11%	2.52%	0.00%	7.50%	0.01%
Automatic Data Processing Inc	ADP	218.22	412	89,841	0.26%	2.29%	0.01%	10.50%	0.03%
Verisk Analytics Inc	VRSK	227.36	145	32,973	0.10%	0.60%	0.00%	8.00%	0.01%
AutoZone Inc	AZO	2,477.13	18	43,682	0.13%	n/a	n/a	13.00%	0.02%
Avery Dennison Corp	AVY	174.07	81	14,018	0.04%	1.86%	0.00%	9.50%	0.00%
Enphase Energy Inc	ENPH	79.58	137	10,867	0.03%	n/a	n/a	27.50%	0.01%
MSCI Inc	MSCI	471.55	79	37,295	0.11%	1.17%	0.00%	12.50%	0.01%
Ball Corp	BALL	48.15	315	15,170	0.04%	1.66%	0.00%	13.00%	0.01%
Axon Enterprise Inc	AXON	204.49	75	15,288	0.04%	n/a	n/a	24.00%	0.01%
Ceridian HCM Holding Inc	CDAY	64.01	156	Excl.	0.00%	n/a	n/a		n/a
Carrier Global Corp	CARR	47.66	839	39,989	0.12%	1.55%	0.00%	13.00%	0.01%

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Bank of New York Mellon Corp/The	BK	42.50	769	32,686	0.09%	3.95%	0.00%	7.00%	0.01%
Otis Worldwide Corp	OTIS	77.21	409	31,599	0.09%	1.76%	0.00%	11.00%	0.01%
Baxter International Inc	BAX	32.43	506	16,423	0.05%	3.58%	0.00%	6.00%	0.00%
Becton Dickinson & Co	BDX	252.78	290	73,334	0.21%	1.44%	0.00%	5.00%	0.01%
Berkshire Hathaway Inc	BRK/B	341.33	1,308	446,484	1.29%	n/a	n/a	6.00%	0.08%
Best Buy Co Inc	BBY	66.82	218	14,543	0.04%	5.51%	0.00%	3.00%	0.00%
Boston Scientific Corp	BSX	51.19	1,464	74,954	0.22%	n/a	n/a	13.00%	0.03%
Bristol-Myers Squibb Co	BMJ	51.53	2,035	Excl.	0.00%	4.42%	0.00%		n/a
Brown-Forman Corp	BF/B	56.16	310	17,417	0.05%	1.46%	0.00%	16.50%	0.01%
Coterra Energy Inc	CTRA	27.50	755	Excl.	0.00%	2.91%	0.00%		n/a
Campbell Soup Co	CPB	40.41	298	12,027	0.03%	3.66%	0.00%	5.00%	0.00%
Hilton Worldwide Holdings Inc	HLT	151.53	256	Excl.	0.00%	0.40%	0.00%		n/a
Carnival Corp	CCL	11.46	1,119	Excl.	0.00%	n/a	n/a		n/a
Qorvo Inc	QRVO	87.42	98	8,559	0.02%	n/a	n/a	14.50%	0.00%
UDR Inc	UDR	31.81	329	10,463	0.03%	5.28%	0.00%	15.50%	0.00%
Clorox Co/The	CLX	117.70	124	14,595	0.04%	4.08%	0.00%	11.00%	0.00%
Paycom Software Inc	PAYC	244.97	60	14,813	0.04%	0.61%	0.00%	21.00%	0.01%
CMS Energy Corp	CMS	54.34	292	15,854	0.05%	3.59%	0.00%	6.50%	0.00%
Colgate-Palmolive Co	CL	75.12	823	61,852	0.18%	2.56%	0.00%	8.50%	0.02%
EPAM Systems Inc	EPAM	217.57	58	12,611	0.04%	n/a	n/a	20.50%	0.01%
Comerica Inc	CMA	39.40	132	5,196	0.01%	7.21%	0.00%	4.00%	0.00%
Conagra Brands Inc	CAG	27.36	478	13,077	0.04%	5.12%	0.00%	3.50%	0.00%
Airbnb Inc	ABNB	118.29	426	Excl.	0.00%	n/a	n/a		n/a
Consolidated Edison Inc	ED	87.79	345	30,281	0.09%	3.69%	0.00%	6.00%	0.01%
Corning Inc	GLW	26.76	853	22,831	0.07%	4.19%	0.00%	17.50%	0.01%
Cummins Inc	CMI	216.30	142	30,638	0.09%	3.11%	0.00%	10.00%	0.01%
Caesars Entertainment Inc	CZR	39.89	216	Excl.	0.00%	n/a	n/a		n/a
Danaher Corp	DHR	192.02	739	141,889	0.41%	0.56%	0.00%	11.00%	0.04%
Target Corp	TGT	110.79	462	51,141	0.15%	3.97%	0.01%	12.00%	0.02%
Deere & Co	DE	365.36	288	105,224	0.30%	1.48%	0.00%	13.50%	0.04%
Dominion Energy Inc	D	40.32	837	33,739	0.10%	6.62%	0.01%	2.50%	0.00%
Dover Corp	DOV	129.95	140	18,179	0.05%	1.57%	0.00%	6.50%	0.00%
Alliant Energy Corp	LNT	48.79	253	12,330	0.04%	3.71%	0.00%	6.50%	0.00%
Steel Dynamics Inc	STLD	106.51	166	17,643	0.05%	1.60%	0.00%	2.00%	0.00%
Duke Energy Corp	DUK	88.89	771	68,534	0.20%	4.61%	0.01%	5.00%	0.01%
Regency Centers Corp	REG	60.26	171	10,305	0.03%	4.31%	0.00%	10.50%	0.00%
Eaton Corp PLC	ETR	207.91	399	83,018	0.24%	1.65%	0.00%	12.00%	0.03%
Ecolab Inc	ECL	167.74	285	47,812	0.14%	1.26%	0.00%	10.00%	0.01%
Revvity Inc	RVTY	82.85	124	10,285	0.03%	0.34%	0.00%	-1.50%	0.00%
Emerson Electric Co	EMR	88.97	572	50,846	0.15%	2.34%	0.00%	6.50%	0.01%
EOG Resources Inc	EOG	126.25	582	73,510	0.21%	2.61%	0.01%	15.00%	0.03%
Aon PLC	AON	309.40	200	61,947	0.18%	0.80%	0.00%	9.50%	0.02%
Entergy Corp	ETR	95.59	211	20,213	0.06%	4.73%	0.00%	0.50%	0.00%
Equifax Inc	EFX	169.57	123	20,894	0.06%	0.92%	0.00%	12.00%	0.01%
EQT Corp	EQT	42.38	411	Excl.	0.00%	1.49%	0.00%		n/a
IQVIA Holdings Inc	IQV	180.83	183	33,114	0.10%	n/a	n/a	14.50%	0.01%
Gartner Inc	IT	332.04	79	26,173	0.08%	n/a	n/a	10.50%	0.01%
FedEx Corp	FDX	240.10	251	60,366	0.17%	2.10%	0.00%	7.00%	0.01%
FMC Corp	FMC	53.20	125	6,636	0.02%	4.36%	0.00%	10.00%	0.00%
Brown & Brown Inc	BRO	69.42	285	19,757	0.06%	0.75%	0.00%	6.50%	0.00%
Ford Motor Co	F	9.75	3,932	38,338	0.11%	6.15%	0.01%	45.50%	0.05%
NextEra Energy Inc	NEE	58.30	2,024	117,983	0.34%	3.21%	0.01%	9.50%	0.03%
Franklin Resources Inc	BEN	22.79	499	11,372	0.03%	5.27%	0.00%	2.00%	0.00%
Garmin Ltd	GRMN	102.53	191	19,630	0.06%	2.85%	0.00%	5.00%	0.00%
Freeport-McMoRan Inc	FCX	33.78	1,434	48,428	0.14%	1.78%	0.00%	12.50%	0.02%
Dexcom Inc	DXCM	88.83	386	Excl.	0.00%	n/a	n/a		n/a
General Dynamics Corp	GD	241.31	273	65,853	0.19%	2.19%	0.00%	9.50%	0.02%
General Mills Inc	GIS	65.24	581	37,923	0.11%	3.62%	0.00%	5.50%	0.01%
Genuine Parts Co	GPC	128.86	140	18,066	0.05%	2.95%	0.00%	9.00%	0.00%
Atmos Energy Corp	ATO	107.66	148	15,983	0.05%	2.75%	0.00%	7.00%	0.00%
WW Grainger Inc	GWV	729.83	50	36,224	0.10%	1.02%	0.00%	11.00%	0.01%
Halliburton Co	HAL	39.34	895	35,211	0.10%	1.63%	0.00%	28.50%	0.03%
L3Harris Technologies Inc	LHX	179.41	190	34,005	0.10%	2.54%	0.00%	19.50%	0.02%
Healthpeak Properties Inc	PEAK	15.55	547	8,507	0.02%	7.72%	0.00%	14.50%	0.00%
Insulet Corp	PODD	132.57	70	Excl.	0.00%	n/a	n/a		n/a
Catalent Inc	CTLT	34.39	180	6,200	0.02%	n/a	n/a	21.00%	0.00%
Fortive Corp	FTV	65.28	351	22,942	0.07%	0.43%	0.00%	16.00%	0.01%
Hershey Co/The	HSY	187.35	150	28,081	0.08%	2.54%	0.00%	9.50%	0.01%
Synchrony Financial	SYF	28.05	414	11,607	0.03%	3.57%	0.00%	47.00%	0.02%
Hormel Foods Corp	HRL	32.55	546	17,788	0.05%	3.38%	0.00%	7.50%	0.00%
Arthur J Gallagher & Co	AJG	235.49	216	50,842	0.15%	0.93%	0.00%	22.00%	0.03%
Mondelez International Inc	MDLZ	66.21	1,360	90,073	0.26%	2.57%	0.01%	11.50%	0.03%
CenterPoint Energy Inc	CNP	26.88	629	16,919	0.05%	2.98%	0.00%	6.50%	0.00%
Humana Inc	HUM	523.69	124	64,889	0.19%	0.68%	0.00%	12.50%	0.02%
Willis Towers Watson PLC	WTW	235.89	103	24,358	0.07%	1.42%	0.00%	9.00%	0.01%
Illinois Tool Works Inc	ITW	224.12	301	67,435	0.19%	2.50%	0.00%	11.00%	0.02%
CDW Corp/DE	CDW	200.40	134	26,863	0.08%	1.18%	0.00%	7.00%	0.01%
Trane Technologies PLC	TT	190.31	228	43,466	0.13%	1.58%	0.00%	13.00%	0.02%

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Interpublic Group of Cos Inc/The	IPG	28.40	383	10,877	0.03%	4.37%	0.00%	8.50%	0.00%
International Flavors & Fragrances Inc	IFF	68.35	255	17,447	0.05%	4.74%	0.00%	8.00%	0.00%
Generac Holdings Inc	GNRC	84.07	62	5,233	0.02%	n/a	n/a	19.00%	0.00%
NXP Semiconductors NV	NXPI	172.43	258	44,453	0.13%	2.35%	0.00%	8.50%	0.01%
Kellanova	K	50.47	342	17,278	0.05%	4.44%	0.00%	3.00%	0.00%
Broadridge Financial Solutions Inc	BR	170.64	118	20,071	0.06%	1.88%	0.00%	8.50%	0.00%
Kimberly-Clark Corp	KMB	119.64	338	40,431	0.12%	3.95%	0.00%	7.00%	0.01%
Kimco Realty Corp	KIM	17.94	620	11,121	0.03%	5.35%	0.00%	11.00%	0.00%
Oracle Corp	ORCL	103.40	2,739	283,251	0.82%	1.55%	0.01%	10.00%	0.08%
Kroger Co/The	KR	45.37	719	32,635	0.09%	2.56%	0.00%	6.00%	0.01%
Lennar Corp	LEN	106.68	250	26,686	0.08%	1.41%	0.00%	3.50%	0.00%
Eli Lilly & Co	LLY	553.93	949	525,843	1.52%	0.82%	0.01%	19.00%	0.29%
Bath & Body Works Inc	BBWI	29.65	227	6,742	0.02%	2.70%	0.00%	26.50%	0.01%
Charter Communications Inc	CHTR	402.80	148	59,582	0.17%	n/a	n/a	12.50%	0.02%
Loews Corp	L	64.01	223	14,290	0.04%	0.39%	0.00%	24.50%	0.01%
Lowe's Cos Inc	LOW	190.57	577	109,981	0.32%	2.31%	0.01%	8.00%	0.03%
Hubbell Inc	HUBB	270.10	54	14,486	0.04%	1.81%	0.00%	10.00%	0.00%
IDEX Corp	IEX	191.41	76	14,476	0.04%	1.34%	0.00%	8.00%	0.00%
Marsh & McLennan Cos Inc	MMC	189.65	493	93,511	0.27%	1.50%	0.00%	9.00%	0.02%
Masco Corp	MAS	52.09	225	11,694	0.03%	2.19%	0.00%	6.50%	0.00%
S&P Global Inc	SPGI	349.31	318	111,150	0.32%	1.03%	0.00%	7.50%	0.02%
Medtronic PLC	MDT	70.56	1,331	93,882	0.27%	3.91%	0.01%	7.50%	0.02%
Viatis Inc	VTRS	8.90	1,200	Excl.	0.00%	5.39%	0.00%		n/a
CVS Health Corp	CVS	69.01	1,284	88,636	0.26%	3.51%	0.01%	8.50%	0.02%
DuPont de Nemours Inc	DD	72.88	459	33,456	0.10%	1.98%	0.00%	9.50%	0.01%
Micron Technology Inc	MU	66.87	1,098	73,426	0.21%	0.69%	0.00%	9.50%	0.02%
Motorola Solutions Inc	MSI	278.46	167	46,508	0.13%	1.26%	0.00%	11.00%	0.01%
Cboe Global Markets Inc	CBOE	163.89	106	17,293	0.05%	1.34%	0.00%	13.00%	0.01%
Laboratory Corp of America Holdings	LH	199.73	85	16,957	0.05%	1.44%	0.00%	1.00%	0.00%
Newmont Corp	NEM	37.47	795	29,781	0.09%	4.27%	0.00%	8.00%	0.01%
NIKE Inc	NKE	102.77	1,224	125,792	0.36%	1.32%	0.00%	17.00%	0.06%
NiSource Inc	NI	25.16	413	10,397	0.03%	3.97%	0.00%	9.50%	0.00%
Norfolk Southern Corp	NSC	190.79	226	43,144	0.12%	2.83%	0.00%	8.50%	0.01%
Principal Financial Group Inc	PFG	67.68	242	16,359	0.05%	3.96%	0.00%	5.50%	0.00%
Eversource Energy	ES	53.79	349	18,777	0.05%	5.02%	0.00%	6.50%	0.00%
Northrop Grumman Corp	NOC	471.43	151	71,088	0.20%	1.59%	0.00%	9.50%	0.02%
Wells Fargo & Co	WFC	39.77	3,632	144,430	0.42%	3.52%	0.01%	10.50%	0.04%
Nucor Corp	NUE	147.79	249	36,759	0.11%	1.38%	0.00%	2.00%	0.00%
Occidental Petroleum Corp	OXY	61.81	885	54,682	0.16%	1.16%	0.00%	17.00%	0.03%
Omnicom Group Inc	OMC	74.91	198	14,827	0.04%	3.74%	0.00%	7.00%	0.00%
ONEOK Inc	OKE	65.20	582	37,977	0.11%	5.86%	0.01%	12.00%	0.01%
Raymond James Financial Inc	RJF	95.44	209	19,928	0.06%	1.76%	0.00%	15.00%	0.01%
PG&E Corp	PCG	16.30	2,134	34,776	0.10%	n/a	n/a	8.00%	0.01%
Parker-Hannifin Corp	PH	368.91	129	47,409	0.14%	1.60%	0.00%	14.50%	0.02%
Rollins Inc	ROL	37.61	484	18,205	0.05%	1.60%	0.00%	10.50%	0.01%
PPL Corp	PPL	24.57	737	18,110	0.05%	3.91%	0.00%	8.00%	0.00%
ConocoPhillips	COP	118.80	1,197	142,262	0.41%	0.51%	0.00%	9.00%	0.04%
PulteGroup Inc	PHM	73.59	216	15,866	0.05%	0.87%	0.00%	8.00%	0.00%
Pinnacle West Capital Corp	PNW	74.18	113	8,405	0.02%	4.75%	0.00%	2.50%	0.00%
PNC Financial Services Group Inc/The	PNC	114.47	398	45,598	0.13%	5.42%	0.01%	6.50%	0.01%
PPG Industries Inc	PPG	122.77	236	28,949	0.08%	2.12%	0.00%	3.00%	0.00%
Progressive Corp/The	PGR	158.09	585	92,489	0.27%	0.25%	0.00%	12.00%	0.03%
Veralto Corp	VLTO	69.00	246	Excl.	0.00%	n/a	n/a		n/a
Public Service Enterprise Group Inc	PEG	61.65	499	30,770	0.09%	3.70%	0.00%	4.00%	0.00%
Robert Half Inc	RHI	74.77	106	7,918	0.02%	2.57%	0.00%	9.50%	0.00%
Cooper Cos Inc/The	COO	311.75	50	15,439	0.04%	0.02%	0.00%	12.00%	0.01%
Edison International	EIX	63.06	383	24,170	0.07%	4.68%	0.00%	4.50%	0.00%
Schlumberger NV	SLB	55.66	1,423	79,228	0.23%	1.80%	0.00%	26.00%	0.06%
Charles Schwab Corp/The	SCHW	52.04	1,770	92,122	0.27%	1.92%	0.01%	9.00%	0.02%
Sherwin-Williams Co/The	SHW	238.21	256	60,974	0.18%	1.02%	0.00%	7.00%	0.01%
West Pharmaceutical Services Inc	WST	318.29	74	23,550	0.07%	0.25%	0.00%	17.00%	0.01%
J M Smucker Co/The	SJM	113.84	102	11,628	0.03%	3.72%	0.00%	6.00%	0.00%
Snap-on Inc	SNA	257.94	53	13,614	0.04%	2.51%	0.00%	6.00%	0.00%
AMETEK Inc	AME	140.77	231	32,490	0.09%	0.71%	0.00%	10.00%	0.01%
Southern Co/The	SO	67.30	1,092	73,459	0.21%	4.16%	0.01%	6.50%	0.01%
Truist Financial Corp	TFC	28.36	1,334	37,823	0.11%	7.33%	0.01%	6.00%	0.01%
Southwest Airlines Co	LUV	22.23	596	Excl.	0.00%	3.24%	0.00%		n/a
W R Berkley Corp	WRB	67.42	258	17,397	0.05%	0.65%	0.00%	15.00%	0.01%
Stanley Black & Decker Inc	SWK	85.05	153	13,039	0.04%	3.81%	0.00%	1.00%	0.00%
Public Storage	PSA	238.71	176	41,972	0.12%	5.03%	0.01%	7.50%	0.01%
Arista Networks Inc	ANET	200.37	311	62,335	0.18%	n/a	n/a	13.00%	0.02%
Sysco Corp	SY	66.49	504	33,526	0.10%	3.01%	0.00%	16.00%	0.02%
Corteva Inc	CTVA	48.14	710	34,156	0.10%	1.33%	0.00%	13.50%	0.01%
Texas Instruments Inc	TXN	142.01	908	128,974	0.37%	3.66%	0.01%	3.00%	0.01%
Textron Inc	TXT	76.00	196	14,896	0.04%	0.11%	0.00%	16.00%	0.01%
Thermo Fisher Scientific Inc	TMO	444.77	386	171,659	0.49%	0.31%	0.00%	9.50%	0.05%
TJX Cos Inc/The	TJX	88.07	1,144	100,759	0.29%	1.51%	0.00%	17.00%	0.05%
Globe Life Inc	GL	116.36	95	11,033	0.03%	0.77%	0.00%	9.00%	0.00%

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Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Johnson Controls International plc	JCI	49.02	680	33,349	0.10%	3.02%	0.00%	11.50%	0.01%
Ulta Beauty Inc	ULTA	381.31	49	18,772	0.05%	n/a	n/a	13.50%	0.01%
Union Pacific Corp	UNP	207.61	610	126,558	0.36%	2.50%	0.01%	6.50%	0.02%
Keysight Technologies Inc	KEYS	122.05	178	21,673	0.06%	n/a	n/a	13.00%	0.01%
UnitedHealth Group Inc	UNH	535.56	926	496,092	1.43%	1.40%	0.02%	12.00%	0.17%
Blackstone Inc	BX	92.35	718	66,348	0.19%	3.47%	0.01%	15.00%	0.03%
Marathon Oil Corp	MRO	27.31	606	16,541	0.05%	1.61%	0.00%	22.50%	0.01%
Bio-Rad Laboratories Inc	BIO	275.28	24	6,623	0.02%	n/a	n/a	11.50%	0.00%
Ventas Inc	VTR	42.46	402	17,085	0.05%	4.24%	0.00%	23.50%	0.01%
VF Corp	VFC	14.73	389	5,728	0.02%	2.44%	0.00%	9.00%	0.00%
Vulcan Materials Co	VMC	196.49	133	26,108	0.08%	0.88%	0.00%	9.50%	0.01%
Weyerhaeuser Co	WY	28.69	730	20,944	0.06%	2.65%	0.00%	-2.50%	0.00%
Whirlpool Corp	WHR	104.56	55	5,735	0.02%	6.69%	0.00%	-1.50%	0.00%
Williams Cos Inc/The	WMB	34.40	1,216	41,845	0.12%	5.20%	0.01%	10.50%	0.01%
Constellation Energy Corp	CEG	112.92	322	Excl.	0.00%	1.00%	0.00%		n/a
WEC Energy Group Inc	WEC	81.39	315	25,673	0.07%	3.83%	0.00%	6.00%	0.00%
Adobe Inc	ADBE	532.06	455	242,247	0.70%	n/a	n/a	12.00%	0.08%
AES Corp/The	AES	14.90	670	9,977	0.03%	4.45%	0.00%	14.00%	0.00%
Amgen Inc	AMGN	255.70	535	136,845	0.39%	3.33%	0.01%	6.00%	0.02%
Apple Inc	AAPL	170.77	15,634	2,669,858	7.69%	0.56%	0.04%	10.50%	0.81%
Autodesk Inc	ADSK	197.63	214	42,246	0.12%	n/a	n/a	10.00%	0.01%
Cintas Corp	CTAS	507.12	102	51,652	0.15%	1.06%	0.00%	14.00%	0.02%
Comcast Corp	CMCSA	41.29	4,016	165,806	0.48%	2.81%	0.01%	9.00%	0.04%
Molson Coors Beverage Co	TAP	57.77	201	11,609	0.03%	2.84%	0.00%	41.50%	0.01%
KLA Corp	KLAC	469.70	136	63,847	0.18%	1.11%	0.00%	13.50%	0.02%
Marriott International Inc/MD	MAR	188.56	298	56,236	0.16%	1.10%	0.00%	17.50%	0.03%
Fiserv Inc	FI	113.75	600	68,271	0.20%	n/a	n/a	9.50%	0.02%
McCormick & Co Inc/MD	MKC	63.90	251	16,057	0.05%	2.44%	0.00%	4.50%	0.00%
PACCAR Inc	PCAR	82.53	523	43,171	0.12%	1.31%	0.00%	5.00%	0.01%
Costco Wholesale Corp	COST	552.44	443	244,588	0.70%	0.74%	0.01%	10.50%	0.07%
Stryker Corp	SYK	270.22	380	102,624	0.30%	1.11%	0.00%	7.00%	0.02%
Tyson Foods Inc	TSN	46.35	286	13,235	0.04%	4.14%	0.00%	6.00%	0.00%
Lamb Weston Holdings Inc	LW	89.80	145	13,014	0.04%	1.25%	0.00%	12.00%	0.00%
Applied Materials Inc	AMAT	132.35	837	110,715	0.32%	0.97%	0.00%	5.50%	0.02%
American Airlines Group Inc	AAL	11.15	654	Excl.	0.00%	n/a	n/a		n/a
Cardinal Health Inc	CAH	91.00	246	22,418	0.06%	2.20%	0.00%	6.50%	0.00%
Cincinnati Financial Corp	CINF	99.67	157	15,639	0.05%	3.01%	0.00%	10.50%	0.00%
Paramount Global	PARA	10.88	610	6,641	0.02%	1.84%	0.00%	1.50%	0.00%
DR Horton Inc	DHI	104.40	338	35,318	0.10%	0.96%	0.00%	5.00%	0.01%
Electronic Arts Inc	EA	123.79	271	33,536	0.10%	0.61%	0.00%	16.00%	0.02%
Fair Isaac Corp	FICO	845.87	25	21,026	0.06%	n/a	n/a	16.00%	0.01%
Expeditors International of Washington Inc	EXPD	109.25	148	16,158	0.05%	1.26%	0.00%	10.00%	0.00%
Fastenal Co	FAST	58.34	571	33,336	0.10%	2.40%	0.00%	6.50%	0.01%
M&T Bank Corp	MTB	112.75	166	18,713	0.05%	4.61%	0.00%	6.50%	0.00%
Xcel Energy Inc	XEL	59.27	552	32,706	0.09%	3.51%	0.00%	6.00%	0.01%
Fifth Third Bancorp	FITB	23.71	681	16,146	0.05%	5.90%	0.00%	4.50%	0.00%
Gilead Sciences Inc	GILD	78.54	1,246	97,862	0.28%	3.82%	0.01%	13.50%	0.04%
Hasbro Inc	HAS	45.15	139	6,264	0.02%	6.20%	0.00%	8.50%	0.00%
Huntington Bancshares Inc/OH	HBAN	9.65	1,448	13,974	0.04%	6.42%	0.00%	10.50%	0.00%
Welltower Inc	WELL	83.61	532	44,503	0.13%	2.92%	0.00%	12.00%	0.02%
Biogen Inc	BIIB	237.54	145	34,401	0.10%	n/a	n/a	-1.00%	0.00%
Northern Trust Corp	NTRS	65.91	207	13,646	0.04%	4.55%	0.00%	5.50%	0.00%
Packaging Corp of America	PKG	153.05	90	13,761	0.04%	3.27%	0.00%	9.00%	0.00%
Paychex Inc	PAYX	111.05	361	40,115	0.12%	3.21%	0.00%	9.50%	0.01%
QUALCOMM Inc	QCOM	108.99	1,116	121,633	0.35%	2.94%	0.01%	5.50%	0.02%
Ross Stores Inc	ROST	115.97	339	39,271	0.11%	1.16%	0.00%	14.00%	0.02%
IDEXX Laboratories Inc	IDXX	399.47	83	33,161	0.10%	n/a	n/a	10.50%	0.01%
Starbucks Corp	SBUX	92.24	1,145	105,652	0.30%	2.47%	0.01%	16.00%	0.05%
KeyCorp	KEY	10.22	936	9,568	0.03%	8.02%	0.00%	7.50%	0.00%
Fox Corp	FOXA	30.39	254	7,709	0.02%	1.71%	0.00%	8.00%	0.00%
Fox Corp	FOX	27.91	236	Excl.	0.00%	1.86%	0.00%		n/a
State Street Corp	STT	64.63	309	19,944	0.06%	4.27%	0.00%	7.00%	0.00%
Norwegian Cruise Line Holdings Ltd	NCLH	13.60	425	Excl.	0.00%	n/a	n/a		n/a
US Bancorp	USB	31.88	1,557	49,636	0.14%	6.02%	0.01%	4.00%	0.01%
A O Smith Corp	AOS	69.76	123	8,568	0.02%	1.83%	0.00%	9.50%	0.00%
Gen Digital Inc	GEN	16.66	639	10,653	0.03%	3.00%	0.00%	10.50%	0.00%
T Rowe Price Group Inc	TROW	90.50	223	20,224	0.06%	5.39%	0.00%	2.00%	0.00%
Waste Management Inc	WM	164.33	403	66,188	0.19%	1.70%	0.00%	6.50%	0.01%
Constellation Brands Inc	STZ	234.15	184	43,005	0.12%	1.52%	0.00%	6.50%	0.01%
DENTSPLY SIRONA Inc	XRAY	30.41	212	6,438	0.02%	1.84%	0.00%	12.00%	0.00%
Zions Bancorp NA	ZION	30.85	148	4,570	0.01%	5.32%	0.00%	4.00%	0.00%
Alaska Air Group Inc	ALK	31.63	127	Excl.	0.00%	n/a	n/a		n/a
Invesco Ltd	IVZ	12.97	450	5,831	0.02%	6.17%	0.00%	6.50%	0.00%
Intuit Inc	INTU	494.95	280	138,714	0.40%	0.73%	0.00%	14.50%	0.06%
Morgan Stanley	MS	70.82	1,657	117,346	0.34%	4.80%	0.02%	7.50%	0.03%
Microchip Technology Inc	MCHP	71.29	544	38,806	0.11%	2.30%	0.00%	10.00%	0.01%
Chubb Ltd	CB	214.62	408	87,562	0.25%	1.60%	0.00%	15.00%	0.04%
Hologic Inc	HOLX	66.17	245	16,208	0.05%	n/a	n/a	25.00%	0.01%

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			Shares	Market	Weight in	Current	Cap-Weighted	Value Line	Cap-Weighted
Name	Ticker	Price	Outstanding	Capitalization	Index	Dividend Yield	Dividend Yield	Long-Term Growth Est.	Long-Term Growth Est.
Citizens Financial Group Inc	CFG	23.43	466	10,924	0.03%	7.17%	0.00%	4.50%	0.00%
O'Reilly Automotive Inc	ORLY	930.44	60	55,474	0.16%	n/a	n/a	11.00%	0.02%
Allstate Corp/The	ALL	128.13	262	33,515	0.10%	2.78%	0.00%	10.50%	0.01%
Equity Residential	EQR	55.33	379	20,972	0.06%	4.79%	0.00%	-5.00%	0.00%
BorgWarner Inc	BWA	36.90	235	8,674	0.02%	1.19%	0.00%	7.00%	0.00%
Keurig Dr Pepper Inc	KDP	30.33	1,398	42,412	0.12%	2.84%	0.00%	12.00%	0.01%
Host Hotels & Resorts Inc	HST	15.48	712	11,016	0.03%	4.65%	0.00%	51.00%	0.02%
Incyte Corp	INCY	53.93	224	12,086	0.03%	n/a	n/a	32.00%	0.01%
Simon Property Group Inc	SPG	109.89	326	35,851	0.10%	6.92%	0.01%	3.50%	0.00%
Eastman Chemical Co	EMN	74.73	119	8,860	0.03%	4.23%	0.00%	6.00%	0.00%
AvalonBay Communities Inc	AVB	165.74	142	23,538	0.07%	3.98%	0.00%	6.00%	0.00%
Prudential Financial Inc	PRU	91.44	363	33,193	0.10%	5.47%	0.01%	3.00%	0.00%
United Parcel Service Inc	UPS	141.25	723	102,163	0.29%	4.59%	0.01%	7.50%	0.02%
Walgreens Boots Alliance Inc	WBA	21.08	864	18,211	0.05%	9.11%	0.00%	1.00%	0.00%
STERIS PLC	STE	209.98	99	20,742	0.06%	0.99%	0.00%	10.00%	0.01%
McKesson Corp	MCK	455.36	135	61,429	0.18%	0.54%	0.00%	9.00%	0.02%
Lockheed Martin Corp	LMT	454.64	248	112,796	0.33%	2.77%	0.01%	7.00%	0.02%
Cencora Inc	COR	185.15	202	37,433	0.11%	1.05%	0.00%	9.00%	0.01%
Capital One Financial Corp	COF	101.29	381	38,591	0.11%	2.37%	0.00%	4.00%	0.00%
Waters Corp	WAT	238.53	59	14,098	0.04%	n/a	n/a	10.00%	0.00%
Nordson Corp	NDSN	212.59	57	12,121	0.03%	1.28%	0.00%	9.00%	0.00%
Dollar Tree Inc	DLTR	111.09	220	24,440	0.07%	n/a	n/a	9.00%	0.01%
Darden Restaurants Inc	DRI	145.53	120	17,509	0.05%	3.60%	0.00%	15.00%	0.01%
Evergy Inc	EVERG	49.14	230	11,282	0.03%	4.99%	0.00%	7.50%	0.00%
Match Group Inc	MTCH	34.60	278	9,622	0.03%	n/a	n/a	16.50%	0.00%
Domino's Pizza Inc	DPZ	338.99	35	11,824	0.03%	1.43%	0.00%	12.00%	0.00%
NVR Inc	NVR	5,412.62	3	17,375	0.05%	n/a	n/a	3.50%	0.00%
NetApp Inc	NTAP	72.78	209	15,196	0.04%	2.75%	0.00%	8.00%	0.00%
Old Dominion Freight Line Inc	ODFL	376.66	109	41,157	0.12%	0.42%	0.00%	9.00%	0.01%
DaVita Inc	DVA	77.23	91	7,051	0.02%	n/a	n/a	7.00%	0.00%
Hartford Financial Services Group Inc/The	HIG	73.45	301	22,092	0.06%	2.56%	0.00%	8.00%	0.01%
Iron Mountain Inc	IRM	59.07	292	17,240	0.05%	4.40%	0.00%	4.00%	0.00%
Estee Lauder Cos Inc/The	EL	128.87	232	29,936	0.09%	2.05%	0.00%	8.00%	0.01%
Cadence Design Systems Inc	CDNS	239.85	272	65,254	0.19%	n/a	n/a	12.00%	0.02%
Tyler Technologies Inc	TYL	372.90	42	15,691	0.05%	n/a	n/a	10.50%	0.00%
Universal Health Services Inc	UHS	125.89	62	7,823	0.02%	0.64%	0.00%	6.00%	0.00%
Skyworks Solutions Inc	SWKS	86.74	159	13,826	0.04%	3.14%	0.00%	3.50%	0.00%
Quest Diagnostics Inc	DGX	130.10	112	14,628	0.04%	2.18%	0.00%	4.00%	0.00%
Rockwell Automation Inc	ROK	262.81	115	30,186	0.09%	1.90%	0.00%	9.50%	0.01%
Kraft Heinz Co/The	KHC	31.46	1,228	38,642	0.11%	5.09%	0.01%	6.00%	0.01%
American Tower Corp	AMT	178.19	466	83,066	0.24%	3.64%	0.01%	5.00%	0.01%
Regeneron Pharmaceuticals Inc	REGN	779.89	107	83,246	0.24%	n/a	n/a	1.50%	0.00%
Amazon.com Inc	AMZN	133.09	10,334	1,375,356	3.96%	n/a	n/a	19.50%	0.77%
Jack Henry & Associates Inc	JKHY	140.99	73	10,264	0.03%	1.48%	0.00%	7.00%	0.00%
Ralph Lauren Corp	RL	112.53	40	4,545	0.01%	2.67%	0.00%	12.50%	0.00%
Boston Properties Inc	BXP	53.57	157	8,403	0.02%	7.32%	0.00%	-1.00%	0.00%
Amphenol Corp	APH	80.55	598	48,194	0.14%	1.09%	0.00%	12.50%	0.02%
Howmet Aerospace Inc	HWM	44.10	412	18,178	0.05%	0.45%	0.00%	12.00%	0.01%
Pioneer Natural Resources Co	PXD	239.00	233	55,761	0.16%	3.08%	0.00%	8.50%	0.01%
Valero Energy Corp	VLO	127.00	340	43,238	0.12%	3.21%	0.00%	1.50%	0.00%
Synopsys Inc	SNPS	469.44	152	71,394	0.21%	n/a	n/a	15.50%	0.03%
Etsy Inc	ETSY	62.30	123	7,664	0.02%	n/a	n/a	10.00%	0.00%
CH Robinson Worldwide Inc	CHRW	81.83	116	9,528	0.03%	2.98%	0.00%	6.00%	0.00%
Accenture PLC	ACN	297.09	665	197,502	0.57%	1.74%	0.01%	12.50%	0.07%
TransDigm Group Inc	TDG	828.09	55	45,696	0.13%	n/a	n/a	26.00%	0.03%
Yum! Brands Inc	YUM	120.86	280	33,866	0.10%	2.00%	0.00%	11.50%	0.01%
Prologis Inc	PLD	100.75	924	93,079	0.27%	3.45%	0.01%	2.50%	0.01%
FirstEnergy Corp	FE	35.60	574	20,428	0.06%	4.61%	0.00%	4.00%	0.00%
VeriSign Inc	VRSN	199.66	102	20,385	0.06%	n/a	n/a	13.00%	0.01%
Quanta Services Inc	PWR	167.12	145	24,266	0.07%	0.19%	0.00%	15.00%	0.01%
Henry Schein Inc	HSIC	64.98	131	8,485	0.02%	n/a	n/a	9.00%	0.00%
Ameren Corp	AEE	75.71	262	19,872	0.06%	3.33%	0.00%	6.50%	0.00%
ANSYS Inc	ANSS	278.26	87	24,150	0.07%	n/a	n/a	8.50%	0.01%
FactSet Research Systems Inc	FDS	431.89	38	16,407	0.05%	0.91%	0.00%	10.50%	0.00%
NVIDIA Corp	NVDA	407.80	2,470	1,007,266	2.90%	0.04%	0.00%	40.00%	1.16%
Sealed Air Corp	SEE	30.79	144	4,446	0.01%	2.60%	0.00%	7.50%	0.00%
Cognizant Technology Solutions Corp	CTSH	64.47	505	32,560	0.09%	1.80%	0.00%	8.00%	0.01%
Intuitive Surgical Inc	ISRG	262.22	352	92,320	0.27%	n/a	n/a	12.50%	0.03%
Take-Two Interactive Software Inc	TTWO	133.75	170	Excl.	0.00%	n/a	n/a		n/a
Republic Services Inc	RSG	148.49	315	46,720	0.13%	1.44%	0.00%	12.50%	0.02%
eBay Inc	EBAY	39.23	532	20,877	0.06%	2.55%	0.00%	9.50%	0.01%
Goldman Sachs Group Inc/The	GS	303.61	330	100,091	0.29%	3.62%	0.01%	5.00%	0.01%
SBA Communications Corp	SBAC	208.63	108	22,612	0.07%	1.63%	0.00%	23.50%	0.02%
Sempra	SRE	70.03	629	44,070	0.13%	3.40%	0.00%	6.50%	0.01%
Moody's Corp	MCO	308.00	183	56,364	0.16%	1.00%	0.00%	16.00%	0.03%
ON Semiconductor Corp	ON	62.64	431	26,979	0.08%	n/a	n/a	13.00%	0.01%
Booking Holdings Inc	BKNG	2,789.56	36	99,565	0.29%	n/a	n/a	22.00%	0.06%
F5 Inc	FFIV	151.59	59	8,975	0.03%	n/a	n/a	10.00%	0.00%



STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Akamai Technologies Inc	AKAM	103.33	152	15,677	0.05%	n/a	n/a	5.00%	0.00%
Charles River Laboratories International Inc	CRL	168.36	51	8,632	0.02%	n/a	n/a	8.00%	0.00%
MarketAxess Holdings Inc	MKTX	213.75	38	8,102	0.02%	1.35%	0.00%	9.50%	0.00%
Devon Energy Corp	DVN	46.57	641	29,837	0.09%	4.21%	0.00%	10.50%	0.01%
Bio-Techne Corp	TECH	54.63	158	8,645	0.02%	0.59%	0.00%	13.00%	0.00%
Alphabet Inc	GOOGL	124.08	5,918	Excl.	0.00%	n/a	n/a		n/a
Teleflex Inc	TFX	184.75	47	8,682	0.03%	0.74%	0.00%	10.00%	0.00%
Bunge Ltd	B369743	105.98		Excl.	0.00%	2.50%	0.00%		n/a
Netflix Inc	NFLX	411.69	438	180,188	0.52%	n/a	n/a	13.00%	0.07%
Allegion plc	ALLE	98.36	88	8,635	0.02%	1.83%	0.00%	10.50%	0.00%
Agilent Technologies Inc	A	103.37	293	30,245	0.09%	0.87%	0.00%	13.50%	0.01%
Warner Bros Discovery Inc	WBD	9.94	2,437	Excl.	0.00%	n/a	n/a		n/a
Elevance Health Inc	ELV	450.09	235	105,753	0.30%	1.32%	0.00%	12.50%	0.04%
Trimble Inc	TRMB	47.13	248	11,703	0.03%	n/a	n/a	5.50%	0.00%
CME Group Inc	CME	213.46	360	76,791	0.22%	2.06%	0.00%	7.50%	0.02%
Juniper Networks Inc	JNPR	26.92	319	8,584	0.02%	3.27%	0.00%	10.50%	0.00%
BlackRock Inc	BLK	612.28	149	91,415	0.26%	3.27%	0.01%	7.50%	0.02%
DTE Energy Co	DTE	96.38	206	19,865	0.06%	3.95%	0.00%	4.50%	0.00%
Nasdaq Inc	NDAQ	49.60	491	24,369	0.07%	1.77%	0.00%	6.00%	0.00%
Celanese Corp	CE	114.51	109	12,465	0.04%	2.45%	0.00%	6.50%	0.00%
Philip Morris International Inc	PM	89.16	1,552	138,413	0.40%	5.83%	0.02%	5.00%	0.02%
Salesforce Inc	CRM	200.83	973	195,408	0.56%	n/a	n/a	18.00%	0.10%
Ingersoll Rand Inc	IR	60.68	404	24,539	0.07%	0.13%	0.00%	12.50%	0.01%
Roper Technologies Inc	ROP	488.57	107	52,136	0.15%	0.56%	0.00%	8.00%	0.01%
Huntington Ingalls Industries Inc	HII	219.82	40	8,764	0.03%	2.26%	0.00%	10.00%	0.00%
MetLife Inc	MET	60.01	752	45,129	0.13%	3.47%	0.00%	7.50%	0.01%
Tapestry Inc	TPR	27.56	227	6,268	0.02%	5.08%	0.00%	16.50%	0.00%
CSX Corp	CSX	29.85	1,976	58,988	0.17%	1.47%	0.00%	8.50%	0.01%
Edwards Lifesciences Corp	EW	63.72	607	38,646	0.11%	n/a	n/a	10.50%	0.01%
Ameriprise Financial Inc	AMP	314.57	103	32,283	0.09%	1.72%	0.00%	11.00%	0.01%
Zebra Technologies Corp	ZBRA	209.43	51	10,756	0.03%	n/a	n/a	1.50%	0.00%
Zimmer Biomet Holdings Inc	ZBH	104.41	209	21,818	0.06%	0.92%	0.00%	6.50%	0.00%
CBRE Group Inc	CBRE	69.34	305	21,134	0.06%	n/a	n/a	8.50%	0.01%
Camden Property Trust	CPT	84.88	107	9,063	0.03%	4.71%	0.00%	-3.00%	0.00%
Mastercard Inc	MA	376.35	930	350,170	1.01%	0.61%	0.01%	16.00%	0.16%
CarMax Inc	KMX	61.09	159	9,693	0.03%	n/a	n/a	-3.50%	0.00%
Intercontinental Exchange Inc	ICE	107.44	595	63,920	0.18%	1.56%	0.00%	7.00%	0.01%
Fidelity National Information Services Inc	FIS	49.11	592	29,096	0.08%	4.24%	0.00%	23.50%	0.02%
Chipotle Mexican Grill Inc	CMG	1,942.20	27	53,304	0.15%	n/a	n/a	20.00%	0.03%
Wynn Resorts Ltd	WYNN	87.78	114	10,001	0.03%	1.14%	0.00%	27.00%	0.01%
Live Nation Entertainment Inc	LYV	80.02	230	Excl.	0.00%	n/a	n/a		n/a
Assurant Inc	AIZ	148.90	53	7,895	0.02%	1.88%	0.00%	10.50%	0.00%
NRG Energy Inc	NRG	42.38	229	9,710	0.03%	3.56%	0.00%	-2.50%	0.00%
Regions Financial Corp	RF	14.53	938	13,635	0.04%	6.61%	0.00%	9.50%	0.00%
Monster Beverage Corp	MNST	51.10	1,048	53,528	0.15%	n/a	n/a	11.00%	0.02%
Mosaic Co/The	MOS	32.48	332	10,792	0.03%	2.46%	0.00%	1.50%	0.00%
Baker Hughes Co	BKR	34.42	1,006	Excl.	0.00%	2.32%	0.00%		n/a
Expedia Group Inc	EXPE	95.29	138	Excl.	0.00%	n/a	n/a		n/a
CF Industries Holdings Inc	CF	79.78	193	15,393	0.04%	2.01%	0.00%	9.00%	0.00%
Leidos Holdings Inc	LDOS	99.12	138	13,630	0.04%	1.53%	0.00%	7.00%	0.00%
APA Corp	APA	39.72	307	12,205	0.04%	2.52%	0.00%	19.50%	0.01%
Alphabet Inc	GOOG	125.30	5,725	717,343	2.07%	n/a	n/a	13.00%	0.27%
First Solar Inc	FSLR	142.45	107	15,220	0.04%	n/a	n/a	27.50%	0.01%
TE Connectivity Ltd	TEL	117.85	314	36,998	0.11%	2.00%	0.00%	10.50%	0.01%
Discover Financial Services	DFS	82.08	250	20,525	0.06%	3.41%	0.00%	4.00%	0.00%
Linde PLC	LIN	382.16	485	185,306	0.53%	1.33%	0.01%	8.50%	0.05%
Visa Inc	V	235.10	1,594	374,749	1.08%	0.88%	0.01%	13.50%	0.15%
Mid-America Apartment Communities Inc	MAA	118.15	117	13,785	0.04%	4.74%	0.00%	-12.50%	0.00%
Xylem Inc/NY	XYL	93.54	241	22,550	0.06%	1.41%	0.00%	6.00%	0.00%
Marathon Petroleum Corp	MPC	151.25	380	57,429	0.17%	2.18%	0.00%	14.50%	0.02%
Tractor Supply Co	TSCO	192.56	109	20,952	0.06%	2.14%	0.00%	13.50%	0.01%
Advanced Micro Devices Inc	AMD	98.50	1,616	159,144	0.46%	n/a	n/a	25.50%	0.12%
ResMed Inc	RMD	141.22	147	20,772	0.06%	1.36%	0.00%	9.50%	0.01%
Mettler-Toledo International Inc	MTD	985.20	22	21,541	0.06%	n/a	n/a	11.00%	0.01%
Jacobs Solutions Inc	J	133.30	126	16,785	0.05%	0.78%	0.00%	11.00%	0.01%
Copart Inc	CPRT	43.52	960	41,787	0.12%	n/a	n/a	7.00%	0.01%
VICI Properties Inc	VICI	27.90	1,035	28,863	0.08%	5.95%	0.00%	8.00%	0.01%
Albemarle Corp	ALB	126.78	117	14,877	0.04%	1.26%	0.00%	-4.50%	0.00%
Fortinet Inc	FTNT	57.17	785	44,898	0.13%	n/a	n/a	24.00%	0.03%
Moderna Inc	MRNA	75.96	381	28,910	0.08%	n/a	n/a	-20.00%	-0.02%
Essex Property Trust Inc	ESS	213.92	64	13,730	0.04%	4.32%	0.00%	2.00%	0.00%
CoStar Group Inc	CSGP	73.41	408	29,978	0.09%	n/a	n/a	14.00%	0.01%
Realty Income Corp	O	47.38	724	34,299	0.10%	6.48%	0.01%	5.50%	0.01%
Westrock Co	WRK	35.93	256	9,213	0.03%	3.37%	0.00%	8.50%	0.00%
Westinghouse Air Brake Technologies Corp	WAB	106.02	179	18,994	0.05%	0.64%	0.00%	10.50%	0.01%
Pool Corp	POOL	315.77	39	12,214	0.04%	1.39%	0.00%	14.00%	0.00%
Western Digital Corp	WDC	40.15	324	13,014	0.04%	n/a	n/a	3.00%	0.00%
PepsiCo Inc	PEP	163.28	1,375	224,488	0.65%	3.10%	0.02%	7.00%	0.05%



STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Diamondback Energy Inc	FANG	160.32	179	Excl.	0.00%	2.10%	0.00%		n/a
Palo Alto Networks Inc	PANW	243.02	311	Excl.	0.00%	n/a	n/a		n/a
ServiceNow Inc	NOW	581.85	205	119,279	0.34%	n/a	n/a	61.00%	0.21%
Church & Dwight Co Inc	CHD	90.94	246	22,376	0.06%	1.20%	0.00%	6.00%	0.00%
Federal Realty Investment Trust	FRT	91.19	82	7,434	0.02%	4.78%	0.00%	2.50%	0.00%
MGM Resorts International	MGM	34.92	351	12,253	0.04%	n/a	n/a	25.00%	0.01%
American Electric Power Co Inc	AEP	75.54	515	38,916	0.11%	4.66%	0.01%	6.50%	0.01%
SolarEdge Technologies Inc	SEDG	75.95	57	4,296	0.01%	n/a	n/a	27.00%	0.00%
Invitation Homes Inc	INVH	29.69	612	Excl.	0.00%	3.50%	0.00%		n/a
PTC Inc	PTC	140.42	119	16,687	0.05%	n/a	n/a	16.00%	0.01%
JB Hunt Transport Services Inc	JBHT	171.87	103	17,727	0.05%	0.98%	0.00%	9.00%	0.00%
Lam Research Corp	LRCX	588.22	132	77,523	0.22%	1.36%	0.00%	8.00%	0.02%
Mohawk Industries Inc	MHK	80.38	64	5,119	0.01%	n/a	n/a	2.50%	0.00%
GE HealthCare Technologies Inc	GEHC	66.57	455	Excl.	0.00%	0.18%	0.00%		n/a
Pentair PLC	PNR	58.12	165	9,607	0.03%	1.51%	0.00%	13.00%	0.00%
Vertex Pharmaceuticals Inc	VRTX	362.11	258	93,459	0.27%	n/a	n/a	12.00%	0.03%
Amcor PLC	AMCR	8.89	1,446	12,859	0.04%	5.62%	0.00%	13.00%	0.00%
Meta Platforms Inc	META	301.27	2,220	668,701	1.93%	n/a	n/a	11.00%	0.21%
T-Mobile US Inc	TMUS	143.86	1,156	166,370	0.48%	1.81%	0.01%	20.00%	0.10%
United Rentals Inc	URI	406.27	68	27,537	0.08%	1.46%	0.00%	17.00%	0.01%
Honeywell International Inc	HON	183.26	659	120,814	0.35%	2.36%	0.01%	11.00%	0.04%
Alexandria Real Estate Equities Inc	ARE	93.13	174	16,184	0.05%	5.33%	0.00%	11.00%	0.01%
Delta Air Lines Inc	DAL	31.25	643	Excl.	0.00%	1.28%	0.00%		n/a
Seagate Technology Holdings PLC	STX	68.25	209	14,277	0.04%	4.10%	0.00%	7.00%	0.00%
United Airlines Holdings Inc	UAL	35.01	327	Excl.	0.00%	n/a	n/a		n/a
News Corp	NWS	21.44	192	Excl.	0.00%	0.93%	0.00%		n/a
Centene Corp	CNC	68.98	534	36,849	0.11%	n/a	n/a	10.00%	0.01%
Martin Marietta Materials Inc	MLM	408.94	62	25,274	0.07%	0.72%	0.00%	12.00%	0.01%
Teradyne Inc	TER	83.27	154	12,825	0.04%	0.53%	0.00%	12.50%	0.00%
PayPal Holdings Inc	PYPL	51.80	1,098	56,878	0.16%	n/a	n/a	12.00%	0.02%
Tesla Inc	TSLA	200.84	3,179	638,454	1.84%	n/a	n/a	26.00%	0.48%
Arch Capital Group Ltd	ACGL	86.68	373	32,340	0.09%	n/a	n/a	21.00%	0.02%
Dow Inc	DOW	48.34	703	33,987	0.10%	5.79%	0.01%	7.00%	0.01%
Everest Group Ltd	EG	395.62	43	17,170	0.05%	1.77%	0.00%	10.00%	0.00%
Teledyne Technologies Inc	TDY	374.59	47	17,675	0.05%	n/a	n/a	9.50%	0.00%
News Corp	NWSA	20.68	380	7,850	0.02%	0.97%	0.00%	19.00%	0.00%
Exelon Corp	EXC	38.94	994	Excl.	0.00%	3.70%	0.00%		n/a
Global Payments Inc	GPN	106.22	260	27,659	0.08%	0.94%	0.00%	13.50%	0.01%
Crown Castle Inc	CCI	92.98	434	40,353	0.12%	6.73%	0.01%	7.00%	0.01%
Aptiv PLC	APTIV	87.20	283	24,662	0.07%	n/a	n/a	33.50%	0.02%
Align Technology Inc	ALGN	184.59	77	14,127	0.04%	n/a	n/a	17.00%	0.01%
Illumina Inc	ILMN	109.42	158	17,321	0.05%	n/a	n/a	6.50%	0.00%
Kenvue Inc	KVUE	18.60	1,915	Excl.	0.00%	4.30%	0.00%		n/a
Targa Resources Corp	TRGP	83.61	224	Excl.	0.00%	2.39%	0.00%		n/a
LKQ Corp	LKQ	43.92	268	11,753	0.03%	2.73%	0.00%	13.00%	0.00%
Zoetis Inc	ZTS	157.00	460	72,270	0.21%	0.96%	0.00%	9.00%	0.02%
Equinix Inc	EQIX	729.64	94	68,501	0.20%	2.34%	0.00%	15.00%	0.03%
Digital Realty Trust Inc	DLR	124.36	303	37,662	0.11%	3.92%	0.00%	-3.00%	0.00%
Molina Healthcare Inc	MOH	332.95	58	19,411	0.06%	n/a	n/a	11.50%	0.01%
Las Vegas Sands Corp	LVS	47.46	764	Excl.	0.00%	1.69%	0.00%		n/a

Notes:

[4] Source: Bloomberg Professional

[5] Source: Bloomberg Professional

[6] Equals [4] x [5]

[7] Equals [6] / Sum of Column [6]

[8] Source: Bloomberg Professional

[9] Equals [7] x [8]

[10] Source: Value Line, as of October 31, 2023

[11] Equals [7] x [10]

MARKET RISK PREMIUM DERIVED FROM S&P 500 - FERC METHODOLOGY

[1] Estimate of the S&P 500 Dividend Yield	1.78%
[2] Estimate of the S&P 500 Growth Rate	10.25%
[3] S&P 500 Estimated Required Market Return	12.12%

Notes:

- [1] Sum of [9]  
[2] Sum of [11]  
[3] Equals ([1] x (1 + 0.5 x [2])) + [2]

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	90.24	324	29,270	0.09%	5.54%	0.01%	2.00%	0.00%
American Express Co	AXP	146.03	729	106,419	0.34%	1.64%	0.01%	8.50%	0.03%
Verizon Communications Inc	VZ	35.13	4,204	147,690	0.48%	7.57%	0.04%	1.50%	0.01%
Broadcom Inc	AVGO	841.37	413	Excl.	Excl.	2.19%	n/a	30.00%	n/a
Boeing Co/The	BA	186.82	605	Excl.	Excl.	n/a	n/a		n/a
Caterpillar Inc	CAT	226.05	510	115,318	0.37%	2.30%	0.01%	13.50%	0.05%
JPMorgan Chase & Co	JPM	139.06	2,906	404,120	1.31%	3.02%	0.04%	8.50%	0.11%
Chevron Corp	CVX	145.73	1,867	Excl.	Excl.	4.14%	n/a	21.50%	n/a
Coca-Cola Co/The	KO	56.49	4,323	244,230	0.79%	3.26%	0.03%	7.50%	0.06%
AbbVie Inc	ABBV	141.18	1,765	249,189	0.81%	4.39%	0.04%	2.00%	0.02%
Walt Disney Co/The	DIS	81.59	1,830	Excl.	Excl.	n/a	n/a	65.00%	n/a
FleetCor Technologies Inc	FLT	225.17	74	16,653	0.05%	n/a	n/a	13.50%	0.01%
Extra Space Storage Inc	EXR	103.59	211	21,886	0.07%	2.36%	0.00%	5.00%	0.00%
Exxon Mobil Corp	XOM	105.85	3,963	419,475	1.36%	3.59%	0.05%	7.00%	0.10%
Phillips 66	PSX	114.07	445	50,794	0.16%	3.68%	0.01%	15.50%	0.03%
General Electric Co	GE	108.63	1,088	Excl.	Excl.	0.29%	n/a	27.00%	n/a
HP Inc	HPQ	26.33	988	26,021	0.08%	3.99%	0.00%	12.50%	0.01%
Home Depot Inc/The	HD	284.69	1,000	284,709	0.92%	2.94%	0.03%	6.50%	0.06%
Monolithic Power Systems Inc	MPWR	441.74	48	21,164	0.07%	0.91%	0.00%	15.00%	0.01%
International Business Machines Corp	IBM	144.64	913	132,074	0.43%	4.59%	0.02%	3.00%	0.01%
Johnson & Johnson	JNJ	148.34	2,407	357,096	1.16%	3.21%	0.04%	5.00%	0.06%
Lululemon Athletica Inc	LULU	393.48	121	47,778	0.15%	n/a	n/a	16.50%	0.03%
McDonald's Corp	MCD	262.17	729	191,060	0.62%	2.55%	0.02%	10.50%	0.06%
Merck & Co Inc	MRK	102.70	2,538	260,603	0.84%	2.84%	0.02%	8.50%	0.07%
3M Co	MMM	90.95	552	50,233	0.16%	6.60%	0.01%	4.50%	0.01%
American Water Works Co Inc	AWK	117.65	195	22,903	0.07%	2.41%	0.00%	3.00%	0.00%
Bank of America Corp	BAC	26.34	7,914	208,448	0.67%	3.64%	0.02%	5.00%	0.03%
Pfizer Inc	PFE	30.56	5,646	172,541	0.56%	5.37%	0.03%	2.00%	0.01%
Procter & Gamble Co/The	PG	150.03	2,357	353,604	1.14%	2.51%	0.03%	5.50%	0.06%
AT&T Inc	T	15.40	7,150	110,110	0.36%	7.21%	0.03%	1.50%	0.01%
Travelers Cos Inc/The	TRV	167.44	228	38,243	0.12%	2.39%	0.00%	7.50%	0.01%
RTX Corp	RTX	81.39	1,438	117,031	0.38%	2.90%	0.01%	15.00%	0.06%
Analog Devices Inc	ADI	157.33	498	78,400	0.25%	2.19%	0.01%	11.50%	0.03%
Walmart Inc	WMT	163.41	2,692	439,828	1.42%	1.40%	0.02%	6.50%	0.09%
Cisco Systems Inc	CSCO	52.13	4,051	211,155	0.68%	2.99%	0.02%	8.50%	0.06%
Intel Corp	INTC	36.50	4,216	Excl.	Excl.	1.37%	n/a		n/a
General Motors Co	GM	28.20	1,369	38,619	0.12%	1.28%	0.00%	8.50%	0.01%
Microsoft Corp	MSFT	338.11	7,432	2,512,922	8.13%	0.89%	0.07%	11.50%	0.94%
Dollar General Corp	DG	119.04	219	26,126	0.08%	1.98%	0.00%	2.00%	0.00%
Cigna Group/The	CI	309.20	296	91,517	0.30%	1.59%	0.00%	10.00%	0.03%
Kinder Morgan Inc	KMI	16.20	2,223	36,009	0.12%	6.98%	0.01%	17.50%	0.02%
Citigroup Inc	C	39.49	1,914	75,580	0.24%	5.37%	0.01%	2.50%	0.01%
American International Group Inc	AIG	61.31	712	43,647	0.14%	2.35%	0.00%	14.00%	0.02%
Altria Group Inc	MO	40.17	1,769	71,047	0.23%	9.76%	0.02%	6.00%	0.01%
HCA Healthcare Inc	HCA	226.14	268	60,529	0.20%	1.06%	0.00%	12.50%	0.02%
International Paper Co	IP	33.73	346	11,671	0.04%	5.48%	0.00%	6.00%	0.00%
Hewlett Packard Enterprise Co	HPE	15.38	1,283	19,730	0.06%	3.12%	0.00%	7.50%	0.00%
Abbott Laboratories	ABT	94.55	1,735	164,078	0.53%	2.16%	0.01%	4.50%	0.02%
Aflac Inc	AFL	78.11	594	46,402	0.15%	2.15%	0.00%	8.00%	0.01%
Air Products and Chemicals Inc	APD	282.44	222	62,744	0.20%	2.48%	0.01%	10.50%	0.02%
Royal Caribbean Cruises Ltd	RCL	84.73	256	Excl.	Excl.	n/a	n/a		n/a
Hess Corp	HES	144.40	307	Excl.	Excl.	1.21%	n/a	23.50%	n/a
Archer-Daniels-Midland Co	ADM	71.57	533	38,174	0.12%	2.52%	0.00%	7.50%	0.01%
Automatic Data Processing Inc	ADP	218.22	412	89,841	0.29%	2.29%	0.01%	10.50%	0.03%
Verisk Analytics Inc	VRSK	227.36	145	32,973	0.11%	0.60%	0.00%	8.00%	0.01%
AutoZone Inc	AZO	2,477.13	18	43,682	0.14%	n/a	n/a	13.00%	0.02%
Avery Dennison Corp	AVY	174.07	81	14,018	0.05%	1.86%	0.00%	9.50%	0.00%
Enphase Energy Inc	ENPH	79.58	137	Excl.	Excl.	n/a	n/a	27.50%	n/a
MSCI Inc	MSCI	471.55	79	37,295	0.12%	1.17%	0.00%	12.50%	0.02%
Ball Corp	BALL	48.15	315	15,170	0.05%	1.66%	0.00%	13.00%	0.01%
Axon Enterprise Inc	AXON	204.49	75	Excl.	Excl.	n/a	n/a	24.00%	n/a

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Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Ceridian HCM Holding Inc	CDAY	64.01	156	Excl.	Excl.	n/a	n/a		n/a
Carrier Global Corp	CARR	47.66	839	39,989	0.13%	1.55%	0.00%	13.00%	0.02%
Bank of New York Mellon Corp/The	BK	42.50	769	32,686	0.11%	3.95%	0.00%	7.00%	0.01%
Otis Worldwide Corp	OTIS	77.21	409	31,599	0.10%	1.76%	0.00%	11.00%	0.01%
Baxter International Inc	BAX	32.43	506	16,423	0.05%	3.58%	0.00%	6.00%	0.00%
Becton Dickinson & Co	BDX	252.78	290	73,334	0.24%	1.44%	0.00%	5.00%	0.01%
Berkshire Hathaway Inc	BRK/B	341.33	1,308	446,484	1.45%	n/a	n/a	6.00%	0.09%
Best Buy Co Inc	BBY	66.82	218	14,543	0.05%	5.51%	0.00%	3.00%	0.00%
Boston Scientific Corp	BSX	51.19	1,464	74,954	0.24%	n/a	n/a	13.00%	0.03%
Bristol-Myers Squibb Co	BMJ	51.53	2,035	Excl.	Excl.	4.42%	n/a		n/a
Brown-Forman Corp	BF/B	56.16	310	17,417	0.06%	1.46%	0.00%	16.50%	0.01%
Coterra Energy Inc	CTRA	27.50	755	Excl.	Excl.	2.91%	n/a		n/a
Campbell Soup Co	CPB	40.41	298	12,027	0.04%	3.66%	0.00%	5.00%	0.00%
Hilton Worldwide Holdings Inc	HLT	151.53	256	Excl.	Excl.	0.40%	n/a		n/a
Carnival Corp	CCL	11.46	1,119	Excl.	Excl.	n/a	n/a		n/a
Qorvo Inc	QRVO	87.42	98	8,559	0.03%	n/a	n/a	14.50%	0.00%
UDR Inc	UDR	31.81	329	10,463	0.03%	5.28%	0.00%	15.50%	0.01%
Clorox Co/The	CLX	117.70	124	14,595	0.05%	4.08%	0.00%	11.00%	0.01%
Paycom Software Inc	PAYC	244.97	60	Excl.	Excl.	0.61%	n/a	21.00%	n/a
CMS Energy Corp	CMS	54.34	292	15,854	0.05%	3.59%	0.00%	6.50%	0.00%
Colgate-Palmolive Co	CL	75.12	823	61,852	0.20%	2.56%	0.01%	8.50%	0.02%
EPAM Systems Inc	EPAM	217.57	58	Excl.	Excl.	n/a	n/a	20.50%	n/a
Comerica Inc	CMA	39.40	132	5,196	0.02%	7.21%	0.00%	4.00%	0.00%
Conagra Brands Inc	CAG	27.36	478	13,077	0.04%	5.12%	0.00%	3.50%	0.00%
Airbnb Inc	ABNB	118.29	426	Excl.	Excl.	n/a	n/a		n/a
Consolidated Edison Inc	ED	87.79	345	30,281	0.10%	3.69%	0.00%	6.00%	0.01%
Corning Inc	GLW	26.76	853	22,831	0.07%	4.19%	0.00%	17.50%	0.01%
Cummins Inc	CMI	216.30	142	30,638	0.10%	3.11%	0.00%	10.00%	0.01%
Caesars Entertainment Inc	CZR	39.89	216	Excl.	Excl.	n/a	n/a		n/a
Danaher Corp	DHR	192.02	739	141,889	0.46%	0.56%	0.00%	11.00%	0.05%
Target Corp	TGT	110.79	462	51,141	0.17%	3.97%	0.01%	12.00%	0.02%
Deere & Co	DE	365.36	288	105,224	0.34%	1.48%	0.01%	13.50%	0.05%
Dominion Energy Inc	D	40.32	837	33,739	0.11%	6.62%	0.01%	2.50%	0.00%
Dover Corp	DOV	129.95	140	18,179	0.06%	1.57%	0.00%	6.50%	0.00%
Alliant Energy Corp	LNT	48.79	253	12,330	0.04%	3.71%	0.00%	6.50%	0.00%
Steel Dynamics Inc	STLD	106.51	166	17,643	0.06%	1.60%	0.00%	2.00%	0.00%
Duke Energy Corp	DUK	88.89	771	68,534	0.22%	4.61%	0.01%	5.00%	0.01%
Regency Centers Corp	REG	60.26	171	10,305	0.03%	4.31%	0.00%	10.50%	0.00%
Eaton Corp PLC	ETN	207.91	399	83,018	0.27%	1.65%	0.00%	12.00%	0.03%
Ecolab Inc	ECL	167.74	285	47,812	0.15%	1.26%	0.00%	10.00%	0.02%
Revvity Inc	RVTY	82.85	124	Excl.	Excl.	0.34%	n/a	-1.50%	n/a
Emerson Electric Co	EMR	88.97	572	50,846	0.16%	2.34%	0.00%	6.50%	0.01%
EOG Resources Inc	EOG	126.25	582	73,510	0.24%	2.61%	0.01%	15.00%	0.04%
Aon PLC	AON	309.40	200	61,947	0.20%	0.80%	0.00%	9.50%	0.02%
Entergy Corp	ETR	95.59	211	20,213	0.07%	4.73%	0.00%	0.50%	0.00%
Equifax Inc	EFX	169.57	123	20,894	0.07%	0.92%	0.00%	12.00%	0.01%
EQT Corp	EQT	42.38	411	Excl.	Excl.	1.49%	n/a		n/a
IQVIA Holdings Inc	IQV	180.83	183	33,114	0.11%	n/a	n/a	14.50%	0.02%
Gartner Inc	IT	332.04	79	26,173	0.08%	n/a	n/a	10.50%	0.01%
FedEx Corp	FDX	240.10	251	60,366	0.20%	2.10%	0.00%	7.00%	0.01%
FMC Corp	FMC	53.20	125	6,636	0.02%	4.36%	0.00%	10.00%	0.00%
Brown & Brown Inc	BRO	69.42	285	19,757	0.06%	0.75%	0.00%	6.50%	0.00%
Ford Motor Co	F	9.75	3,932	Excl.	Excl.	6.15%	n/a	45.50%	n/a
NextEra Energy Inc	NEE	58.30	2,024	117,983	0.38%	3.21%	0.01%	9.50%	0.04%
Franklin Resources Inc	BEN	22.79	499	11,372	0.04%	5.27%	0.00%	2.00%	0.00%
Garmin Ltd	GRMN	102.53	191	19,630	0.06%	2.85%	0.00%	5.00%	0.00%
Freeport-McMoRan Inc	FCX	33.78	1,434	48,428	0.16%	1.78%	0.00%	12.50%	0.02%
Dexcom Inc	DXCM	88.83	386	Excl.	Excl.	n/a	n/a		n/a
General Dynamics Corp	GD	241.31	273	65,853	0.21%	2.19%	0.00%	9.50%	0.02%
General Mills Inc	GIS	65.24	581	37,923	0.12%	3.62%	0.00%	5.50%	0.01%
Genuine Parts Co	GPC	128.86	140	18,066	0.06%	2.95%	0.00%	9.00%	0.01%
Atmos Energy Corp	ATO	107.66	148	15,983	0.05%	2.75%	0.00%	7.00%	0.00%
WW Grainger Inc	GWV	729.83	50	36,224	0.12%	1.02%	0.00%	11.00%	0.01%
Halliburton Co	HAL	39.34	895	Excl.	Excl.	1.63%	n/a	28.50%	n/a
L3Harris Technologies Inc	LHX	179.41	190	34,005	0.11%	2.54%	0.00%	19.50%	0.02%
Healthpeak Properties Inc	PEAK	15.55	547	8,507	0.03%	7.72%	0.00%	14.50%	0.00%
Insulet Corp	PODD	132.57	70	Excl.	Excl.	n/a	n/a		n/a
Catalent Inc	CTLT	34.39	180	Excl.	Excl.	n/a	n/a	21.00%	n/a
Fortive Corp	FTV	65.28	351	22,942	0.07%	0.43%	0.00%	16.00%	0.01%
Hershey Co/The	HSY	187.35	150	28,081	0.09%	2.54%	0.00%	9.50%	0.01%
Synchrony Financial	SYF	28.05	414	Excl.	Excl.	3.57%	n/a	47.00%	n/a
Hormel Foods Corp	HRL	32.55	546	17,788	0.06%	3.38%	0.00%	7.50%	0.00%
Arthur J Gallagher & Co	AJG	235.49	216	Excl.	Excl.	0.93%	n/a	22.00%	n/a
Mondelez International Inc	MDLZ	66.21	1,360	90,073	0.29%	2.57%	0.01%	11.50%	0.03%
CenterPoint Energy Inc	CNP	26.88	629	16,919	0.05%	2.98%	0.00%	6.50%	0.00%
Humana Inc	HUM	523.69	124	64,889	0.21%	0.68%	0.00%	12.50%	0.03%

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Willis Towers Watson PLC	WTW	235.89	103	24,358	0.08%	1.42%	0.00%	9.00%	0.01%
Illinois Tool Works Inc	ITW	224.12	301	67,435	0.22%	2.50%	0.01%	11.00%	0.02%
CDW Corp/DE	CDW	200.40	134	26,863	0.09%	1.18%	0.00%	7.00%	0.01%
Trane Technologies PLC	TT	190.31	228	43,466	0.14%	1.58%	0.00%	13.00%	0.02%
Interpublic Group of Cos Inc/The	IPG	28.40	383	10,877	0.04%	4.37%	0.00%	8.50%	0.00%
International Flavors & Fragrances Inc	IFF	68.35	255	17,447	0.06%	4.74%	0.00%	8.00%	0.00%
Generac Holdings Inc	GNRC	84.07	62	5,233	0.02%	n/a	n/a	19.00%	0.00%
NXP Semiconductors NV	NXPI	172.43	258	44,453	0.14%	2.35%	0.00%	8.50%	0.01%
Kellanova	K	50.47	342	17,278	0.06%	4.44%	0.00%	3.00%	0.00%
Broadridge Financial Solutions Inc	BR	170.64	118	20,071	0.06%	1.88%	0.00%	8.50%	0.01%
Kimberly-Clark Corp	KMB	119.64	338	40,431	0.13%	3.95%	0.01%	7.00%	0.01%
Kimco Realty Corp	KIM	17.94	620	11,121	0.04%	5.35%	0.00%	11.00%	0.00%
Oracle Corp	ORCL	103.40	2,739	283,251	0.92%	1.55%	0.01%	10.00%	0.09%
Kroger Co/The	KR	45.37	719	32,635	0.11%	2.56%	0.00%	6.00%	0.01%
Lennar Corp	LEN	106.68	250	26,686	0.09%	1.41%	0.00%	3.50%	0.00%
Eli Lilly & Co	LLY	553.93	949	525,843	1.70%	0.82%	0.01%	19.00%	0.32%
Bath & Body Works Inc	BBWI	29.65	227	Excl.	Excl.	2.70%	n/a	26.50%	n/a
Charter Communications Inc	CHTR	402.80	148	59,582	0.19%	n/a	n/a	12.50%	0.02%
Loews Corp	L	64.01	223	Excl.	Excl.	0.39%	n/a	24.50%	n/a
Lowe's Cos Inc	LOW	190.57	577	109,981	0.36%	2.31%	0.01%	8.00%	0.03%
Hubbell Inc	HUBB	270.10	54	14,486	0.05%	1.81%	0.00%	10.00%	0.00%
IDEX Corp	IEX	191.41	76	14,476	0.05%	1.34%	0.00%	8.00%	0.00%
Marsh & McLennan Cos Inc	MMC	189.65	493	93,511	0.30%	1.50%	0.00%	9.00%	0.03%
Masco Corp	MAS	52.09	225	11,694	0.04%	2.19%	0.00%	6.50%	0.00%
S&P Global Inc	SPGI	349.31	318	111,150	0.36%	1.03%	0.00%	7.50%	0.03%
Medtronic PLC	MDT	70.56	1,331	93,882	0.30%	3.91%	0.01%	7.50%	0.02%
Viatis Inc	VTRS	8.90	1,200	Excl.	Excl.	5.39%	n/a	n/a	n/a
CVS Health Corp	CVS	69.01	1,284	88,636	0.29%	3.51%	0.01%	8.50%	0.02%
DuPont de Nemours Inc	DD	72.88	459	33,456	0.11%	1.98%	0.00%	9.50%	0.01%
Micron Technology Inc	MU	66.87	1,098	73,426	0.24%	0.69%	0.00%	9.50%	0.02%
Motorola Solutions Inc	MSI	278.46	167	46,508	0.15%	1.26%	0.00%	11.00%	0.02%
Cboe Global Markets Inc	CBOE	163.89	106	17,293	0.06%	1.34%	0.00%	13.00%	0.01%
Laboratory Corp of America Holdings	LH	199.73	85	16,957	0.05%	1.44%	0.00%	1.00%	0.00%
Newmont Corp	NEM	37.47	795	29,781	0.10%	4.27%	0.00%	8.00%	0.01%
NIKE Inc	NKE	102.77	1,224	125,792	0.41%	1.32%	0.01%	17.00%	0.07%
NiSource Inc	NI	25.16	413	10,397	0.03%	3.97%	0.00%	9.50%	0.00%
Norfolk Southern Corp	NSC	190.79	226	43,144	0.14%	2.83%	0.00%	8.50%	0.01%
Principal Financial Group Inc	PFG	67.68	242	16,359	0.05%	3.96%	0.00%	5.50%	0.00%
Eversource Energy	ES	53.79	349	18,777	0.06%	5.02%	0.00%	6.50%	0.00%
Northrop Grumman Corp	NOC	471.43	151	71,088	0.23%	1.59%	0.00%	9.50%	0.02%
Wells Fargo & Co	WFC	39.77	3,632	144,430	0.47%	3.52%	0.02%	10.50%	0.05%
Nucor Corp	NUE	147.79	249	36,759	0.12%	1.38%	0.00%	2.00%	0.00%
Occidental Petroleum Corp	OXY	61.81	885	54,682	0.18%	1.16%	0.00%	17.00%	0.03%
Omnicom Group Inc	OMC	74.91	198	14,827	0.05%	3.74%	0.00%	7.00%	0.00%
ONEOK Inc	OKE	65.20	582	37,977	0.12%	5.86%	0.01%	12.00%	0.01%
Raymond James Financial Inc	RJF	95.44	209	19,928	0.06%	1.76%	0.00%	15.00%	0.01%
PG&E Corp	PCG	16.30	2,134	34,776	0.11%	n/a	n/a	8.00%	0.01%
Parker-Hannifin Corp	PH	368.91	129	47,409	0.15%	1.60%	0.00%	14.50%	0.02%
Rollins Inc	ROL	37.61	484	18,205	0.06%	1.60%	0.00%	10.50%	0.01%
PPL Corp	PPL	24.57	737	18,110	0.06%	3.91%	0.00%	8.00%	0.00%
ConocoPhillips	COP	118.80	1,197	142,262	0.46%	0.51%	0.00%	9.00%	0.04%
PulteGroup Inc	PHM	73.59	216	15,866	0.05%	0.87%	0.00%	8.00%	0.00%
Pinnacle West Capital Corp	PNW	74.18	113	8,405	0.03%	4.75%	0.00%	2.50%	0.00%
PNC Financial Services Group Inc/The	PNC	114.47	398	45,598	0.15%	5.42%	0.01%	6.50%	0.01%
PPG Industries Inc	PPG	122.77	236	28,949	0.09%	2.12%	0.00%	3.00%	0.00%
Progressive Corp/The	PGR	158.09	585	92,489	0.30%	0.25%	0.00%	12.00%	0.04%
Veralto Corp	VLTO	69.00	246	Excl.	Excl.	n/a	n/a	n/a	n/a
Public Service Enterprise Group Inc	PEG	61.65	499	30,770	0.10%	3.70%	0.00%	4.00%	0.00%
Robert Half Inc	RHI	74.77	106	7,918	0.03%	2.57%	0.00%	9.50%	0.00%
Cooper Cos Inc/The	COO	311.75	50	15,439	0.05%	0.02%	0.00%	12.00%	0.01%
Edison International	EIX	63.06	383	24,170	0.08%	4.68%	0.00%	4.50%	0.00%
Schlumberger NV	SLB	55.66	1,423	Excl.	Excl.	1.80%	n/a	26.00%	n/a
Charles Schwab Corp/The	SCHW	52.04	1,770	92,122	0.30%	1.92%	0.01%	9.00%	0.03%
Sherwin-Williams Co/The	SHW	238.21	256	60,974	0.20%	1.02%	0.00%	7.00%	0.01%
West Pharmaceutical Services Inc	WST	318.29	74	23,550	0.08%	0.25%	0.00%	17.00%	0.01%
J M Smucker Co/The	SJM	113.84	102	11,628	0.04%	3.72%	0.00%	6.00%	0.00%
Snap-on Inc	SNA	257.94	53	13,614	0.04%	2.51%	0.00%	6.00%	0.00%
AMETEK Inc	AME	140.77	231	32,490	0.11%	0.71%	0.00%	10.00%	0.01%
Southern Co/The	SO	67.30	1,092	73,459	0.24%	4.16%	0.01%	6.50%	0.02%
Truist Financial Corp	TFC	28.36	1,334	37,823	0.12%	7.33%	0.01%	6.00%	0.01%
Southwest Airlines Co	LUV	22.23	596	Excl.	Excl.	3.24%	n/a	n/a	n/a
W R Berkley Corp	WRB	67.42	258	17,397	0.06%	0.65%	0.00%	15.00%	0.01%
Stanley Black & Decker Inc	SWK	85.05	153	13,039	0.04%	3.81%	0.00%	1.00%	0.00%
Public Storage	PSA	238.71	176	41,972	0.14%	5.03%	0.01%	7.50%	0.01%
Arista Networks Inc	ANET	200.37	311	62,335	0.20%	n/a	n/a	13.00%	0.03%
Sysco Corp	SY	66.49	504	33,526	0.11%	3.01%	0.00%	16.00%	0.02%

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Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Corteva Inc	CTVA	48.14	710	34,156	0.11%	1.33%	0.00%	13.50%	0.01%
Texas Instruments Inc	TXN	142.01	908	128,974	0.42%	3.66%	0.02%	3.00%	0.01%
Textron Inc	TXT	76.00	196	14,896	0.05%	0.11%	0.00%	16.00%	0.01%
Thermo Fisher Scientific Inc	TMO	444.77	386	171,659	0.56%	0.31%	0.00%	9.50%	0.05%
TJX Cos Inc/The	TJX	88.07	1,144	100,759	0.33%	1.51%	0.00%	17.00%	0.06%
Globe Life Inc	GL	116.36	95	11,033	0.04%	0.77%	0.00%	9.00%	0.00%
Johnson Controls International plc	JCI	49.02	680	33,349	0.11%	3.02%	0.00%	11.50%	0.01%
Ulta Beauty Inc	ULTA	381.31	49	18,772	0.06%	n/a	n/a	13.50%	0.01%
Union Pacific Corp	UNP	207.61	610	126,558	0.41%	2.50%	0.01%	6.50%	0.03%
Keysight Technologies Inc	KEYS	122.05	178	21,673	0.07%	n/a	n/a	13.00%	0.01%
UnitedHealth Group Inc	UNH	535.56	926	496,092	1.61%	1.40%	0.02%	12.00%	0.19%
Blackstone Inc	BX	92.35	718	66,348	0.21%	3.47%	0.01%	15.00%	0.03%
Marathon Oil Corp	MRO	27.31	606	Excl.	Excl.	1.61%	n/a	22.50%	n/a
Bio-Rad Laboratories Inc	BIO	275.28	24	6,623	0.02%	n/a	n/a	11.50%	0.00%
Ventas Inc	VTR	42.46	402	Excl.	Excl.	4.24%	n/a	23.50%	n/a
VF Corp	VFC	14.73	389	5,728	0.02%	2.44%	0.00%	9.00%	0.00%
Vulcan Materials Co	VMC	196.49	133	26,108	0.08%	0.88%	0.00%	9.50%	0.01%
Weyerhaeuser Co	WY	28.69	730	Excl.	Excl.	2.65%	n/a	-2.50%	n/a
Whirlpool Corp	WHR	104.56	55	Excl.	Excl.	6.69%	n/a	-1.50%	n/a
Williams Cos Inc/The	WMB	34.40	1,216	41,845	0.14%	5.20%	0.01%	10.50%	0.01%
Constellation Energy Corp	CEG	112.92	322	Excl.	Excl.	1.00%	n/a		n/a
WEC Energy Group Inc	WEC	81.39	315	25,673	0.08%	3.83%	0.00%	6.00%	0.00%
Adobe Inc	ADBE	532.06	455	242,247	0.78%	n/a	n/a	12.00%	0.09%
AES Corp/The	AES	14.90	670	9,977	0.03%	4.45%	0.00%	14.00%	0.00%
Amgen Inc	AMGN	255.70	535	136,845	0.44%	3.33%	0.01%	6.00%	0.03%
Apple Inc	AAPL	170.77	15,634	2,669,858	8.64%	0.56%	0.05%	10.50%	0.91%
Autodesk Inc	ADSK	197.63	214	42,246	0.14%	n/a	n/a	10.00%	0.01%
Cintas Corp	CTAS	507.12	102	51,652	0.17%	1.06%	0.00%	14.00%	0.02%
Comcast Corp	CMCSA	41.29	4,016	165,806	0.54%	2.81%	0.02%	9.00%	0.05%
Molson Coors Beverage Co	TAP	57.77	201	Excl.	Excl.	2.84%	n/a	41.50%	n/a
KLA Corp	KLAC	469.70	136	63,847	0.21%	1.11%	0.00%	13.50%	0.03%
Marriott International Inc/MD	MAR	188.56	298	56,236	0.18%	1.10%	0.00%	17.50%	0.03%
Fiserv Inc	FI	113.75	600	68,271	0.22%	n/a	n/a	9.50%	0.02%
McCormick & Co Inc/MD	MKC	63.90	251	16,057	0.05%	2.44%	0.00%	4.50%	0.00%
PACCAR Inc	PCAR	82.53	523	43,171	0.14%	1.31%	0.00%	5.00%	0.01%
Costco Wholesale Corp	COST	552.44	443	244,588	0.79%	0.74%	0.01%	10.50%	0.08%
Stryker Corp	SYK	270.22	380	102,624	0.33%	1.11%	0.00%	7.00%	0.02%
Tyson Foods Inc	TSN	46.35	286	13,235	0.04%	4.14%	0.00%	6.00%	0.00%
Lamb Weston Holdings Inc	LW	89.80	145	13,014	0.04%	1.25%	0.00%	12.00%	0.01%
Applied Materials Inc	AMAT	132.35	837	110,715	0.36%	0.97%	0.00%	5.50%	0.02%
American Airlines Group Inc	AAL	11.15	654	Excl.	Excl.	n/a	n/a		n/a
Cardinal Health Inc	CAH	91.00	246	22,418	0.07%	2.20%	0.00%	6.50%	0.00%
Cincinnati Financial Corp	CINF	99.67	157	15,639	0.05%	3.01%	0.00%	10.50%	0.01%
Paramount Global	PARA	10.88	610	6,641	0.02%	1.84%	0.00%	1.50%	0.00%
DR Horton Inc	DHI	104.40	338	35,318	0.11%	0.96%	0.00%	5.00%	0.01%
Electronic Arts Inc	EA	123.79	271	33,536	0.11%	0.61%	0.00%	16.00%	0.02%
Fair Isaac Corp	FICO	845.87	25	21,026	0.07%	n/a	n/a	16.00%	0.01%
Expeditors International of Washington Inc	EXPD	109.25	148	16,158	0.05%	1.26%	0.00%	10.00%	0.01%
Fastenal Co	FAST	58.34	571	33,336	0.11%	2.40%	0.00%	6.50%	0.01%
M&T Bank Corp	MTB	112.75	166	18,713	0.06%	4.61%	0.00%	6.50%	0.00%
Xcel Energy Inc	XEL	59.27	552	32,706	0.11%	3.51%	0.00%	6.00%	0.01%
Fifth Third Bancorp	FITB	23.71	681	16,146	0.05%	5.90%	0.00%	4.50%	0.00%
Gilead Sciences Inc	GILD	78.54	1,246	97,862	0.32%	3.82%	0.01%	13.50%	0.04%
Hasbro Inc	HAS	45.15	139	6,264	0.02%	6.20%	0.00%	8.50%	0.00%
Huntington Bancshares Inc/OH	HBAN	9.65	1,448	13,974	0.05%	6.42%	0.00%	10.50%	0.00%
Welltower Inc	WELL	83.61	532	44,503	0.14%	2.92%	0.00%	12.00%	0.02%
Biogen Inc	BIIB	237.54	145	Excl.	Excl.	n/a	n/a	-1.00%	n/a
Northern Trust Corp	NTRS	65.91	207	13,646	0.04%	4.55%	0.00%	5.50%	0.00%
Packaging Corp of America	PKG	153.05	90	13,761	0.04%	3.27%	0.00%	9.00%	0.00%
Paychex Inc	PAYX	111.05	361	40,115	0.13%	3.21%	0.00%	9.50%	0.01%
QUALCOMM Inc	QCOM	108.99	1,116	121,633	0.39%	2.94%	0.01%	5.50%	0.02%
Ross Stores Inc	ROST	115.97	339	39,271	0.13%	1.16%	0.00%	14.00%	0.02%
IDEXX Laboratories Inc	IDXX	399.47	83	33,161	0.11%	n/a	n/a	10.50%	0.01%
Starbucks Corp	SBUX	92.24	1,145	105,652	0.34%	2.47%	0.01%	16.00%	0.05%
KeyCorp	KEY	10.22	936	9,568	0.03%	8.02%	0.00%	7.50%	0.00%
Fox Corp	FOXA	30.39	254	7,709	0.02%	1.71%	0.00%	8.00%	0.00%
Fox Corp	FOX	27.91	236	Excl.	Excl.	1.86%	n/a		n/a
State Street Corp	STT	64.63	309	19,944	0.06%	4.27%	0.00%	7.00%	0.00%
Norwegian Cruise Line Holdings Ltd	NCLH	13.60	425	Excl.	Excl.	n/a	n/a		n/a
US Bancorp	USB	31.88	1,557	49,636	0.16%	6.02%	0.01%	4.00%	0.01%
A O Smith Corp	AOS	69.76	123	8,568	0.03%	1.83%	0.00%	9.50%	0.00%
Gen Digital Inc	GEN	16.66	639	10,653	0.03%	3.00%	0.00%	10.50%	0.00%
T Rowe Price Group Inc	TROW	90.50	223	20,224	0.07%	5.39%	0.00%	2.00%	0.00%
Waste Management Inc	WM	164.33	403	66,188	0.21%	1.70%	0.00%	6.50%	0.01%
Constellation Brands Inc	STZ	234.15	184	43,005	0.14%	1.52%	0.00%	6.50%	0.01%
DENTSPLY SIRONA Inc	XRAY	30.41	212	6,438	0.02%	1.84%	0.00%	12.00%	0.00%

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Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Zions Bancorp NA	ZION	30.85	148	4,570	0.01%	5.32%	0.00%	4.00%	0.00%
Alaska Air Group Inc	ALK	31.63	127	Excl.	Excl.	n/a	n/a		n/a
Invesco Ltd	IVZ	12.97	450	5,831	0.02%	6.17%	0.00%	6.50%	0.00%
Intuit Inc	INTU	494.95	280	138,714	0.45%	0.73%	0.00%	14.50%	0.07%
Morgan Stanley	MS	70.82	1,657	117,346	0.38%	4.80%	0.02%	7.50%	0.03%
Microchip Technology Inc	MCHP	71.29	544	38,806	0.13%	2.30%	0.00%	10.00%	0.01%
Chubb Ltd	CB	214.62	408	87,562	0.28%	1.60%	0.00%	15.00%	0.04%
Hologic Inc	HOLX	66.17	245	Excl.	Excl.	n/a	n/a	25.00%	n/a
Citizens Financial Group Inc	CFG	23.43	466	10,924	0.04%	7.17%	0.00%	4.50%	0.00%
O'Reilly Automotive Inc	ORLY	930.44	60	55,474	0.18%	n/a	n/a	11.00%	0.02%
Allstate Corp/The	ALL	128.13	262	33,515	0.11%	2.78%	0.00%	10.50%	0.01%
Equity Residential	EQR	55.33	379	Excl.	Excl.	4.79%	n/a	-5.00%	n/a
BorgWarner Inc	BWA	36.90	235	8,674	0.03%	1.19%	0.00%	7.00%	0.00%
Keurig Dr Pepper Inc	KDP	30.33	1,398	42,412	0.14%	2.84%	0.00%	12.00%	0.02%
Host Hotels & Resorts Inc	HST	15.48	712	Excl.	Excl.	4.65%	n/a	51.00%	n/a
Incyte Corp	INCY	53.93	224	Excl.	Excl.	n/a	n/a	32.00%	n/a
Simon Property Group Inc	SPG	109.89	326	35,851	0.12%	6.92%	0.01%	3.50%	0.00%
Eastman Chemical Co	EMN	74.73	119	8,860	0.03%	4.23%	0.00%	6.00%	0.00%
AvalonBay Communities Inc	AVB	165.74	142	23,538	0.08%	3.98%	0.00%	6.00%	0.00%
Prudential Financial Inc	PRU	91.44	363	33,193	0.11%	5.47%	0.01%	3.00%	0.00%
United Parcel Service Inc	UPS	141.25	723	102,163	0.33%	4.59%	0.02%	7.50%	0.02%
Walgreens Boots Alliance Inc	WBA	21.08	864	18,211	0.06%	9.11%	0.01%	1.00%	0.00%
STERIS PLC	STE	209.98	99	20,742	0.07%	0.99%	0.00%	10.00%	0.01%
McKesson Corp	MCK	455.36	135	61,429	0.20%	0.54%	0.00%	9.00%	0.02%
Lockheed Martin Corp	LMT	454.64	248	112,796	0.37%	2.77%	0.01%	7.00%	0.03%
Cencora Inc	COR	185.15	202	37,433	0.12%	1.05%	0.00%	9.00%	0.01%
Capital One Financial Corp	COF	101.29	381	38,591	0.12%	2.37%	0.00%	4.00%	0.00%
Waters Corp	WAT	238.53	59	14,098	0.05%	n/a	n/a	10.00%	0.00%
Nordson Corp	NDSN	212.59	57	12,121	0.04%	1.28%	0.00%	9.00%	0.00%
Dollar Tree Inc	DLTR	111.09	220	24,440	0.08%	n/a	n/a	9.00%	0.01%
Darden Restaurants Inc	DRI	145.53	120	17,509	0.06%	3.60%	0.00%	15.00%	0.01%
Evergy Inc	EVERG	49.14	230	11,282	0.04%	4.99%	0.00%	7.50%	0.00%
Match Group Inc	MTCH	34.60	278	9,622	0.03%	n/a	n/a	16.50%	0.01%
Domino's Pizza Inc	DPZ	338.99	35	11,824	0.04%	1.43%	0.00%	12.00%	0.00%
NVR Inc	NVR	5,412.62	3	17,375	0.06%	n/a	n/a	3.50%	0.00%
NetApp Inc	NTAP	72.78	209	15,196	0.05%	2.75%	0.00%	8.00%	0.00%
Old Dominion Freight Line Inc	ODFL	376.66	109	41,157	0.13%	0.42%	0.00%	9.00%	0.01%
DaVita Inc	DVA	77.23	91	7,051	0.02%	n/a	n/a	7.00%	0.00%
Hartford Financial Services Group Inc/The	HIG	73.45	301	22,092	0.07%	2.56%	0.00%	8.00%	0.01%
Iron Mountain Inc	IRM	59.07	292	17,240	0.06%	4.40%	0.00%	4.00%	0.00%
Estee Lauder Cos Inc/The	EL	128.87	232	29,936	0.10%	2.05%	0.00%	8.00%	0.01%
Cadence Design Systems Inc	CDNS	239.85	272	65,254	0.21%	n/a	n/a	12.00%	0.03%
Tyler Technologies Inc	TYL	372.90	42	15,691	0.05%	n/a	n/a	10.50%	0.01%
Universal Health Services Inc	UHS	125.89	62	7,823	0.03%	0.64%	0.00%	6.00%	0.00%
Skyworks Solutions Inc	SWKS	86.74	159	13,826	0.04%	3.14%	0.00%	3.50%	0.00%
Quest Diagnostics Inc	DGX	130.10	112	14,628	0.05%	2.18%	0.00%	4.00%	0.00%
Rockwell Automation Inc	ROK	262.81	115	30,186	0.10%	1.90%	0.00%	9.50%	0.01%
Kraft Heinz Co/The	KHC	31.46	1,228	38,642	0.13%	5.09%	0.01%	6.00%	0.01%
American Tower Corp	AMT	178.19	466	83,066	0.27%	3.64%	0.01%	5.00%	0.01%
Regeneron Pharmaceuticals Inc	REGN	779.89	107	83,246	0.27%	n/a	n/a	1.50%	0.00%
Amazon.com Inc	AMZN	133.09	10,334	1,375,356	4.45%	n/a	n/a	19.50%	0.87%
Jack Henry & Associates Inc	JKHY	140.99	73	10,264	0.03%	1.48%	0.00%	7.00%	0.00%
Ralph Lauren Corp	RL	112.53	40	4,545	0.01%	2.67%	0.00%	12.50%	0.00%
Boston Properties Inc	BXP	53.57	157	Excl.	Excl.	7.32%	n/a	-1.00%	n/a
Amphenol Corp	APH	80.55	598	48,194	0.16%	1.09%	0.00%	12.50%	0.02%
Howmet Aerospace Inc	HWM	44.10	412	18,178	0.06%	0.45%	0.00%	12.00%	0.01%
Pioneer Natural Resources Co	PXD	239.00	233	55,761	0.18%	3.08%	0.01%	8.50%	0.02%
Valero Energy Corp	VLO	127.00	340	43,238	0.14%	3.21%	0.00%	1.50%	0.00%
Synopsys Inc	SNPS	469.44	152	71,394	0.23%	n/a	n/a	15.50%	0.04%
Etsy Inc	ETSY	62.30	123	7,664	0.02%	n/a	n/a	10.00%	0.00%
CH Robinson Worldwide Inc	CHRW	81.83	116	9,528	0.03%	2.98%	0.00%	6.00%	0.00%
Accenture PLC	ACN	297.09	665	197,502	0.64%	1.74%	0.01%	12.50%	0.08%
TransDigm Group Inc	TDG	828.09	55	Excl.	Excl.	n/a	n/a	26.00%	n/a
Yum! Brands Inc	YUM	120.86	280	33,866	0.11%	2.00%	0.00%	11.50%	0.01%
Prologis Inc	PLD	100.75	924	93,079	0.30%	3.45%	0.01%	2.50%	0.01%
FirstEnergy Corp	FE	35.60	574	20,428	0.07%	4.61%	0.00%	4.00%	0.00%
VeriSign Inc	VRSN	199.66	102	20,385	0.07%	n/a	n/a	13.00%	0.01%
Quanta Services Inc	PWR	167.12	145	24,266	0.08%	0.19%	0.00%	15.00%	0.01%
Henry Schein Inc	HSIC	64.98	131	8,485	0.03%	n/a	n/a	9.00%	0.00%
Ameren Corp	AEE	75.71	262	19,872	0.06%	3.33%	0.00%	6.50%	0.00%
ANSYS Inc	ANSS	278.26	87	24,150	0.08%	n/a	n/a	8.50%	0.01%
FactSet Research Systems Inc	FDS	431.89	38	16,407	0.05%	0.91%	0.00%	10.50%	0.01%
NVIDIA Corp	NVDA	407.80	2,470	Excl.	Excl.	0.04%	n/a	40.00%	n/a
Sealed Air Corp	SEE	30.79	144	4,446	0.01%	2.60%	0.00%	7.50%	0.00%
Cognizant Technology Solutions Corp	CTSH	64.47	505	32,560	0.11%	1.80%	0.00%	8.00%	0.01%
Intuitive Surgical Inc	ISRG	262.22	352	92,320	0.30%	n/a	n/a	12.50%	0.04%



STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Take-Two Interactive Software Inc	TTWO	133.75	170	Excl.	Excl.	n/a	n/a		n/a
Republic Services Inc	RSG	148.49	315	46,720	0.15%	1.44%	0.00%	12.50%	0.02%
eBay Inc	EBAY	39.23	532	20,877	0.07%	2.55%	0.00%	9.50%	0.01%
Goldman Sachs Group Inc/The	GS	303.61	330	100,091	0.32%	3.62%	0.01%	5.00%	0.02%
SBA Communications Corp	SBAC	208.63	108	Excl.	Excl.	1.63%	n/a	23.50%	n/a
Sempra	SRE	70.03	629	44,070	0.14%	3.40%	0.00%	6.50%	0.01%
Moody's Corp	MCO	308.00	183	56,364	0.18%	1.00%	0.00%	16.00%	0.03%
ON Semiconductor Corp	ON	62.64	431	26,979	0.09%	n/a	n/a	13.00%	0.01%
Booking Holdings Inc	BKNG	2,789.56	36	Excl.	Excl.	n/a	n/a	22.00%	n/a
F5 Inc	FFIV	151.59	59	8,975	0.03%	n/a	n/a	10.00%	0.00%
Akamai Technologies Inc	AKAM	103.33	152	15,677	0.05%	n/a	n/a	5.00%	0.00%
Charles River Laboratories International Inc	CRL	168.36	51	8,632	0.03%	n/a	n/a	8.00%	0.00%
MarketAxess Holdings Inc	MKTX	213.75	38	8,102	0.03%	1.35%	0.00%	9.50%	0.00%
Devon Energy Corp	DVN	46.57	641	29,837	0.10%	4.21%	0.00%	10.50%	0.01%
Bio-Techne Corp	TECH	54.63	158	8,645	0.03%	0.59%	0.00%	13.00%	0.00%
Alphabet Inc	GOOGL	124.08	5,918	Excl.	Excl.	n/a	n/a		n/a
Teleflex Inc	TFX	184.75	47	8,682	0.03%	0.74%	0.00%	10.00%	0.00%
Bunge Ltd	B369743E	105.98	0	Excl.	Excl.	2.50%	n/a		n/a
Netflix Inc	NFLX	411.69	438	180,188	0.58%	n/a	n/a	13.00%	0.08%
Allegion plc	ALLE	98.36	88	8,635	0.03%	1.83%	0.00%	10.50%	0.00%
Agilent Technologies Inc	A	103.37	293	30,245	0.10%	0.87%	0.00%	13.50%	0.01%
Warner Bros Discovery Inc	WBD	9.94	2,437	Excl.	Excl.	n/a	n/a		n/a
Elevance Health Inc	ELV	450.09	235	105,753	0.34%	1.32%	0.00%	12.50%	0.04%
Trimble Inc	TRMB	47.13	248	11,703	0.04%	n/a	n/a	5.50%	0.00%
CME Group Inc	CME	213.46	360	76,791	0.25%	2.06%	0.01%	7.50%	0.02%
Juniper Networks Inc	JNPR	26.92	319	8,584	0.03%	3.27%	0.00%	10.50%	0.00%
BlackRock Inc	BLK	612.28	149	91,415	0.30%	3.27%	0.01%	7.50%	0.02%
DTE Energy Co	DTE	96.38	206	19,865	0.06%	3.95%	0.00%	4.50%	0.00%
Nasdaq Inc	NDAQ	49.60	491	24,369	0.08%	1.77%	0.00%	6.00%	0.00%
Celanese Corp	CE	114.51	109	12,465	0.04%	2.45%	0.00%	6.50%	0.00%
Philip Morris International Inc	PM	89.16	1,552	138,413	0.45%	5.83%	0.03%	5.00%	0.02%
Salesforce Inc	CRM	200.83	973	195,408	0.63%	n/a	n/a	18.00%	0.11%
Ingersoll Rand Inc	IR	60.68	404	24,539	0.08%	0.13%	0.00%	12.50%	0.01%
Roper Technologies Inc	ROP	488.57	107	52,136	0.17%	0.56%	0.00%	8.00%	0.01%
Huntington Ingalls Industries Inc	HII	219.82	40	8,764	0.03%	2.26%	0.00%	10.00%	0.00%
MetLife Inc	MET	60.01	752	45,129	0.15%	3.47%	0.01%	7.50%	0.01%
Tapestry Inc	TPR	27.56	227	6,268	0.02%	5.08%	0.00%	16.50%	0.00%
CSX Corp	CSX	29.85	1,976	58,988	0.19%	1.47%	0.00%	8.50%	0.02%
Edwards Lifesciences Corp	EW	63.72	607	38,646	0.13%	n/a	n/a	10.50%	0.01%
Ameriprise Financial Inc	AMP	314.57	103	32,283	0.10%	1.72%	0.00%	11.00%	0.01%
Zebra Technologies Corp	ZBRA	209.43	51	10,756	0.03%	n/a	n/a	1.50%	0.00%
Zimmer Biomet Holdings Inc	ZBH	104.41	209	21,818	0.07%	0.92%	0.00%	6.50%	0.00%
CBRE Group Inc	CBRE	69.34	305	21,134	0.07%	n/a	n/a	8.50%	0.01%
Camden Property Trust	CPT	84.88	107	Excl.	Excl.	4.71%	n/a	-3.00%	n/a
Mastercard Inc	MA	376.35	930	350,170	1.13%	0.61%	0.01%	16.00%	0.18%
CarMax Inc	KMX	61.09	159	Excl.	Excl.	n/a	n/a	-3.50%	n/a
Intercontinental Exchange Inc	ICE	107.44	595	63,920	0.21%	1.56%	0.00%	7.00%	0.01%
Fidelity National Information Services Inc	FIS	49.11	592	Excl.	Excl.	4.24%	n/a	23.50%	n/a
Chipotle Mexican Grill Inc	CMG	1,942.20	27	53,304	0.17%	n/a	n/a	20.00%	0.03%
Wynn Resorts Ltd	WYNN	87.78	114	Excl.	Excl.	1.14%	n/a	27.00%	n/a
Live Nation Entertainment Inc	LYV	80.02	230	Excl.	Excl.	n/a	n/a		n/a
Assurant Inc	AIZ	148.90	53	7,895	0.03%	1.88%	0.00%	10.50%	0.00%
NRG Energy Inc	NRG	42.38	229	Excl.	Excl.	3.56%	n/a	-2.50%	n/a
Regions Financial Corp	RF	14.53	938	13,635	0.04%	6.61%	0.00%	9.50%	0.00%
Monster Beverage Corp	MNST	51.10	1,048	53,528	0.17%	n/a	n/a	11.00%	0.02%
Mosaic Co/The	MOS	32.48	332	10,792	0.03%	2.46%	0.00%	1.50%	0.00%
Baker Hughes Co	BKR	34.42	1,006	Excl.	Excl.	2.32%	n/a		n/a
Expedia Group Inc	EXPE	95.29	138	Excl.	Excl.	n/a	n/a		n/a
CF Industries Holdings Inc	CF	79.78	193	15,393	0.05%	2.01%	0.00%	9.00%	0.00%
Leidos Holdings Inc	LDOS	99.12	138	13,630	0.04%	1.53%	0.00%	7.00%	0.00%
APA Corp	APA	39.72	307	12,205	0.04%	2.52%	0.00%	19.50%	0.01%
Alphabet Inc	GOOG	125.30	5,725	717,343	2.32%	n/a	n/a	13.00%	0.30%
First Solar Inc	FSLR	142.45	107	Excl.	Excl.	n/a	n/a	27.50%	n/a
TE Connectivity Ltd	TEL	117.85	314	36,998	0.12%	2.00%	0.00%	10.50%	0.01%
Discover Financial Services	DFS	82.08	250	20,525	0.07%	3.41%	0.00%	4.00%	0.00%
Linde PLC	LIN	382.16	485	185,306	0.60%	1.33%	0.01%	8.50%	0.05%
Visa Inc	V	235.10	1,594	374,749	1.21%	0.88%	0.01%	13.50%	0.16%
Mid-America Apartment Communities Inc	MAA	118.15	117	Excl.	Excl.	4.74%	n/a	-12.50%	n/a
Xylem Inc/NY	XYL	93.54	241	22,550	0.07%	1.41%	0.00%	6.00%	0.00%
Marathon Petroleum Corp	MPC	151.25	380	57,429	0.19%	2.18%	0.00%	14.50%	0.03%
Tractor Supply Co	TSCO	192.56	109	20,952	0.07%	2.14%	0.00%	13.50%	0.01%
Advanced Micro Devices Inc	AMD	98.50	1,616	Excl.	Excl.	n/a	n/a	25.50%	n/a
ResMed Inc	RMD	141.22	147	20,772	0.07%	1.36%	0.00%	9.50%	0.01%
Mettler-Toledo International Inc	MTD	985.20	22	21,541	0.07%	n/a	n/a	11.00%	0.01%
Jacobs Solutions Inc	J	133.30	126	16,785	0.05%	0.78%	0.00%	11.00%	0.01%
Copart Inc	CPRT	43.52	960	41,787	0.14%	n/a	n/a	7.00%	0.01%

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Price	Shares Outstanding	Market Capitalization	Weight in Index	Current Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
VICI Properties Inc	VICI	27.90	1,035	28,863	0.09%	5.95%	0.01%	8.00%	0.01%
Albemarle Corp	ALB	126.78	117	Excl.	Excl.	1.26%	n/a	-4.50%	n/a
Fortinet Inc	FTNT	57.17	785	Excl.	Excl.	n/a	n/a	24.00%	n/a
Moderna Inc	MRNA	75.96	381	Excl.	Excl.	n/a	n/a	-20.00%	n/a
Essex Property Trust Inc	ESS	213.92	64	13,730	0.04%	4.32%	0.00%	2.00%	0.00%
CoStar Group Inc	CSGP	73.41	408	29,978	0.10%	n/a	n/a	14.00%	0.01%
Realty Income Corp	O	47.38	724	34,299	0.11%	6.48%	0.01%	5.50%	0.01%
Westrock Co	WRK	35.93	256	9,213	0.03%	3.37%	0.00%	8.50%	0.00%
Westinghouse Air Brake Technologies Corp	WAB	106.02	179	18,994	0.06%	0.64%	0.00%	10.50%	0.01%
Pool Corp	POOL	315.77	39	12,214	0.04%	1.39%	0.00%	14.00%	0.01%
Western Digital Corp	WDC	40.15	324	13,014	0.04%	n/a	n/a	3.00%	0.00%
PepsiCo Inc	PEP	163.28	1,375	224,488	0.73%	3.10%	0.02%	7.00%	0.05%
Diamondback Energy Inc	FANG	160.32	179	Excl.	Excl.	2.10%	n/a		n/a
Palo Alto Networks Inc	PANW	243.02	311	Excl.	Excl.	n/a	n/a		n/a
ServiceNow Inc	NOW	581.85	205	Excl.	Excl.	n/a	n/a	61.00%	n/a
Church & Dwight Co Inc	CHD	90.94	246	22,376	0.07%	1.20%	0.00%	6.00%	0.00%
Federal Realty Investment Trust	FRT	91.19	82	7,434	0.02%	4.78%	0.00%	2.50%	0.00%
MGM Resorts International	MGM	34.92	351	Excl.	Excl.	n/a	n/a	25.00%	n/a
American Electric Power Co Inc	AEP	75.54	515	38,916	0.13%	4.66%	0.01%	6.50%	0.01%
SolarEdge Technologies Inc	SEDG	75.95	57	Excl.	Excl.	n/a	n/a	27.00%	n/a
Invitation Homes Inc	INVH	29.69	612	Excl.	Excl.	3.50%	n/a		n/a
PTC Inc	PTC	140.42	119	16,687	0.05%	n/a	n/a	16.00%	0.01%
JB Hunt Transport Services Inc	JBHT	171.87	103	17,727	0.06%	0.98%	0.00%	9.00%	0.01%
Lam Research Corp	LRCX	588.22	132	77,523	0.25%	1.36%	0.00%	8.00%	0.02%
Mohawk Industries Inc	MHK	80.38	64	5,119	0.02%	n/a	n/a	2.50%	0.00%
GE HealthCare Technologies Inc	GEHC	66.57	455	Excl.	Excl.	0.18%	n/a		n/a
Pentair PLC	PNR	58.12	165	9,607	0.03%	1.51%	0.00%	13.00%	0.00%
Vertex Pharmaceuticals Inc	VRTX	362.11	258	93,459	0.30%	n/a	n/a	12.00%	0.04%
Amcor PLC	AMCR	8.89	1,446	12,859	0.04%	5.62%	0.00%	13.00%	0.01%
Meta Platforms Inc	META	301.27	2,220	668,701	2.16%	n/a	n/a	11.00%	0.24%
T-Mobile US Inc	TMUS	143.86	1,156	166,370	0.54%	1.81%	0.01%	20.00%	0.11%
United Rentals Inc	URI	406.27	68	27,537	0.09%	1.46%	0.00%	17.00%	0.02%
Honeywell International Inc	HON	183.26	659	120,814	0.39%	2.36%	0.01%	11.00%	0.04%
Alexandria Real Estate Equities Inc	ARE	93.13	174	16,184	0.05%	5.33%	0.00%	11.00%	0.01%
Delta Air Lines Inc	DAL	31.25	643	Excl.	Excl.	1.28%	n/a		n/a
Seagate Technology Holdings PLC	STX	68.25	209	14,277	0.05%	4.10%	0.00%	7.00%	0.00%
United Airlines Holdings Inc	UAL	35.01	327	Excl.	Excl.	n/a	n/a		n/a
News Corp	NWS	21.44	192	Excl.	Excl.	0.93%	n/a		n/a
Centene Corp	CNC	68.98	534	36,849	0.12%	n/a	n/a	10.00%	0.01%
Martin Marietta Materials Inc	MLM	408.94	62	25,274	0.08%	0.72%	0.00%	12.00%	0.01%
Teradyne Inc	TER	83.27	154	12,825	0.04%	0.53%	0.00%	12.50%	0.01%
PayPal Holdings Inc	PYPL	51.80	1,098	56,878	0.18%	n/a	n/a	12.00%	0.02%
Tesla Inc	TSLA	200.84	3,179	Excl.	Excl.	n/a	n/a	26.00%	n/a
Arch Capital Group Ltd	ACGL	86.68	373	Excl.	Excl.	n/a	n/a	21.00%	n/a
Dow Inc	DOW	48.34	703	33,987	0.11%	5.79%	0.01%	7.00%	0.01%
Everest Group Ltd	EG	395.62	43	17,170	0.06%	1.77%	0.00%	10.00%	0.01%
Teledyne Technologies Inc	TDY	374.59	47	17,675	0.06%	n/a	n/a	9.50%	0.01%
News Corp	NWSA	20.68	380	7,850	0.03%	0.97%	0.00%	19.00%	0.00%
Exelon Corp	EXC	38.94	994	Excl.	Excl.	3.70%	n/a		n/a
Global Payments Inc	GPV	106.22	260	27,659	0.09%	0.94%	0.00%	13.50%	0.01%
Crown Castle Inc	CCI	92.98	434	40,353	0.13%	6.73%	0.01%	7.00%	0.01%
Aptiv PLC	APTIV	87.20	283	Excl.	Excl.	n/a	n/a	33.50%	n/a
Align Technology Inc	ALGN	184.59	77	14,127	0.05%	n/a	n/a	17.00%	0.01%
Illumina Inc	ILMN	109.42	158	17,321	0.06%	n/a	n/a	6.50%	0.00%
Kenvue Inc	KVUE	18.60	1,915	Excl.	Excl.	4.30%	n/a		n/a
Targa Resources Corp	TRGP	83.61	224	Excl.	Excl.	2.39%	n/a		n/a
LKQ Corp	LKQ	43.92	268	11,753	0.04%	2.73%	0.00%	13.00%	0.00%
Zoetis Inc	ZTS	157.00	460	72,270	0.23%	0.96%	0.00%	9.00%	0.02%
Equinix Inc	EQIX	729.64	94	68,501	0.22%	2.34%	0.01%	15.00%	0.03%
Digital Realty Trust Inc	DLR	124.36	303	Excl.	Excl.	3.92%	n/a	-3.00%	n/a
Molina Healthcare Inc	MOH	332.95	58	19,411	0.06%	n/a	n/a	11.50%	0.01%
Las Vegas Sands Corp	LVS	47.46	764	Excl.	Excl.	1.69%	n/a		n/a

Notes:

[4] Source: Bloomberg Professional

[5] Source: Bloomberg Professional

[6] Equals [4] x [5]

[7] Equals [6] / Sum of Column [6]

[8] Source: Bloomberg Professional

[9] Equals [7] x [8]

[10] Source: Value Line, as of October 31, 2023

[11] Equals [7] x [10]



CAPITAL ASSET PRICING MODEL - CURRENT RISK-FREE RATE, VALUE LINE BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - ALL COMPANIES  
 $K = R_f + \beta (R_m - R_f)$

		[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	4.84%	0.85	14.27%	9.43%	12.86%
New Jersey Resources Corporation	NJR	4.84%	0.95	14.27%	9.43%	13.80%
NiSource Inc.	NI	4.84%	0.90	14.27%	9.43%	13.33%
Northwest Natural Gas Company	NWN	4.84%	0.80	14.27%	9.43%	12.39%
ONE Gas Inc.	OGS	4.84%	0.80	14.27%	9.43%	12.39%
Spire, Inc.	SR	4.84%	0.85	14.27%	9.43%	12.86%
Median			0.85			12.86%
Mean			0.86			12.94%

Notes:

- [1] Source: Bloomberg Professional, 30-day average as of October 31, 2023  
[2] Source: Value Line Reports  
[3] Source: Exhibit JCN-6, page 1  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE, VALUE LINE BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - ALL COMPANIES  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q1 2024 - Q1 2025)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Atmos Energy Corporation	ATO	4.44%	0.85	14.27%	9.83%	12.80%
New Jersey Resources Corporation	NJR	4.44%	0.95	14.27%	9.83%	13.78%
NiSource Inc.	NI	4.44%	0.90	14.27%	9.83%	13.29%
Northwest Natural Gas Company	NWN	4.44%	0.80	14.27%	9.83%	12.31%
ONE Gas Inc.	OGS	4.44%	0.80	14.27%	9.83%	12.31%
Spire, Inc.	SR	4.44%	0.85	14.27%	9.83%	12.80%
Median			0.85			12.80%
Mean			0.86			12.88%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 11, November 1, 2023 at 2  
[2] Source: Value Line Reports  
[3] Source: Exhibit JCN-6, page 1  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE, VALUE LINE BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - ALL COMPANIES  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Atmos Energy Corporation	ATO	3.80%	0.85	14.27%	10.47%	12.70%
New Jersey Resources Corporation	NJR	3.80%	0.95	14.27%	10.47%	13.75%
NiSource Inc.	NI	3.80%	0.90	14.27%	10.47%	13.23%
Northwest Natural Gas Company	NWN	3.80%	0.80	14.27%	10.47%	12.18%
ONE Gas Inc.	OGS	3.80%	0.80	14.27%	10.47%	12.18%
Spire, Inc.	SR	3.80%	0.85	14.27%	10.47%	12.70%
Median			0.85			12.70%
Mean			0.86			12.79%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14  
[2] Source: Value Line Reports  
[3] Source: Exhibit JCN-6, page 1  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE, BLOOMBERG BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - ALL COMPANIES  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		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)
Company	Ticker					
Atmos Energy Corporation	ATO	4.84%	0.75	14.27%	9.43%	11.92%
New Jersey Resources Corporation	NJR	4.84%	0.81	14.27%	9.43%	12.45%
NiSource Inc.	NI	4.84%	0.81	14.27%	9.43%	12.52%
Northwest Natural Gas Company	NWN	4.84%	0.70	14.27%	9.43%	11.46%
ONE Gas Inc.	OGS	4.84%	0.79	14.27%	9.43%	12.27%
Spire, Inc.	SR	4.84%	0.77	14.27%	9.43%	12.12%
Median			0.78			12.20%
Mean			0.77			12.12%

Notes:

- [1] Source: Bloomberg Professional, 30-day average as of October 31, 2023  
[2] Source: Bloomberg Professional, as of October 31, 2023  
[3] Source: Exhibit JCN-6, page 1  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE, BLOOMBERG BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - ALL COMPANIES  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		Near-term projected 30-year U.S. Treasury bond yield (Q1 2024 - Q1 2025)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Company	Ticker					
Atmos Energy Corporation	ATO	4.44%	0.75	14.27%	9.83%	11.82%
New Jersey Resources Corporation	NJR	4.44%	0.81	14.27%	9.83%	12.37%
NiSource Inc.	NI	4.44%	0.81	14.27%	9.83%	12.45%
Northwest Natural Gas Company	NWN	4.44%	0.70	14.27%	9.83%	11.33%
ONE Gas Inc.	OGS	4.44%	0.79	14.27%	9.83%	12.19%
Spire, Inc.	SR	4.44%	0.77	14.27%	9.83%	12.03%
Median			0.78			12.11%
Mean			0.77			12.03%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 11, November 1, 2023 at 2  
[2] Source: Bloomberg Professional, as of October 31, 2023  
[3] Source: Exhibit JCN-6, page 1  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE, BLOOMBERG BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - ALL COMPANIES  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Company	Ticker					
Atmos Energy Corporation	ATO	3.80%	0.75	14.27%	10.47%	11.66%
New Jersey Resources Corporation	NJR	3.80%	0.81	14.27%	10.47%	12.25%
NiSource Inc.	NI	3.80%	0.81	14.27%	10.47%	12.33%
Northwest Natural Gas Company	NWN	3.80%	0.70	14.27%	10.47%	11.14%
ONE Gas Inc.	OGS	3.80%	0.79	14.27%	10.47%	12.05%
Spire, Inc.	SR	3.80%	0.77	14.27%	10.47%	11.88%
Median			0.78			11.97%
Mean			0.77			11.89%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14  
[2] Source: Bloomberg Professional, as of October 31, 2023  
[3] Source: Exhibit JCN-6, page 1  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE, VALUE LINE BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - FERC METHODOLOGY  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		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)
Company	Ticker					
Atmos Energy Corporation	ATO	4.84%	0.85	12.12%	7.28%	11.03%
New Jersey Resources Corporation	NJR	4.84%	0.95	12.12%	7.28%	11.76%
NiSource Inc.	NI	4.84%	0.90	12.12%	7.28%	11.39%
Northwest Natural Gas Company	NWN	4.84%	0.80	12.12%	7.28%	10.67%
ONE Gas Inc.	OGS	4.84%	0.80	12.12%	7.28%	10.67%
Spire, Inc.	SR	4.84%	0.85	12.12%	7.28%	11.03%
Median			0.85			11.03%
Mean			0.86			11.09%

Notes:

- [1] Source: Bloomberg Professional, 30-day average as of October 31, 2023  
[2] Source: Value Line Reports  
[3] Source: Exhibit JCN-6, page 8  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE, VALUE LINE BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - FERC METHODOLOGY  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		Near-term projected 30-year U.S. Treasury bond yield (Q1 2024 - Q1 2025)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Company	Ticker					
Atmos Energy Corporation	ATO	4.44%	0.85	12.12%	7.68%	10.97%
New Jersey Resources Corporation	NJR	4.44%	0.95	12.12%	7.68%	11.74%
NiSource Inc.	NI	4.44%	0.90	12.12%	7.68%	11.35%
Northwest Natural Gas Company	NWN	4.44%	0.80	12.12%	7.68%	10.58%
ONE Gas Inc.	OGS	4.44%	0.80	12.12%	7.68%	10.58%
Spire, Inc.	SR	4.44%	0.85	12.12%	7.68%	10.97%
Median			0.85			10.97%
Mean			0.86			11.03%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 11, November 1, 2023 at 2  
[2] Source: Value Line Reports  
[3] Source: Exhibit JCN-6, page 8  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE, VALUE LINE BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - FERC METHODOLOGY  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Company	Ticker					
Atmos Energy Corporation	ATO	3.80%	0.85	12.12%	8.32%	10.87%
New Jersey Resources Corporation	NJR	3.80%	0.95	12.12%	8.32%	11.70%
NiSource Inc.	NI	3.80%	0.90	12.12%	8.32%	11.29%
Northwest Natural Gas Company	NWN	3.80%	0.80	12.12%	8.32%	10.46%
ONE Gas Inc.	OGS	3.80%	0.80	12.12%	8.32%	10.46%
Spire, Inc.	SR	3.80%	0.85	12.12%	8.32%	10.87%
Median			0.85			10.87%
Mean			0.86			10.94%

Notes:

- [1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14  
[2] Source: Value Line Reports  
[3] Source: Exhibit JCN-6, page 8  
[4] Equals [3] - [1]  
[5] Equals [1] + [2] x [4]

CAPITAL ASSET PRICING MODEL -- CURRENT RISK-FREE RATE, BLOOMBERG BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - FERC METHODOLOGY  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		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)
Company	Ticker					
Atmos Energy Corporation	ATO	4.84%	0.75	12.12%	7.28%	10.31%
New Jersey Resources Corporation	NJR	4.84%	0.81	12.12%	7.28%	10.71%
NiSource Inc.	NI	4.84%	0.81	12.12%	7.28%	10.77%
Northwest Natural Gas Company	NWN	4.84%	0.70	12.12%	7.28%	9.95%
ONE Gas Inc.	OGS	4.84%	0.79	12.12%	7.28%	10.58%
Spire, Inc.	SR	4.84%	0.77	12.12%	7.28%	10.46%
Median			0.78			10.52%
Mean			0.77			10.46%

Notes:

[1] Source: Bloomberg Professional, 30-day average as of October 31, 2023

[2] Source: Bloomberg Professional, as of October 31, 2023

[3] Source: Exhibit JCN-6, page 8

[4] Equals [3] - [1]

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

CAPITAL ASSET PRICING MODEL -- NEAR-TERM PROJECTED RISK-FREE RATE, BLOOMBERG BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - FERC METHODOLOGY  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		Near-term projected 30-year U.S. Treasury bond yield (Q1 2024 - Q1 2025)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Company	Ticker					
Atmos Energy Corporation	ATO	4.44%	0.75	12.12%	7.68%	10.20%
New Jersey Resources Corporation	NJR	4.44%	0.81	12.12%	7.68%	10.63%
NiSource Inc.	NI	4.44%	0.81	12.12%	7.68%	10.69%
Northwest Natural Gas Company	NWN	4.44%	0.70	12.12%	7.68%	9.83%
ONE Gas Inc.	OGS	4.44%	0.79	12.12%	7.68%	10.49%
Spire, Inc.	SR	4.44%	0.77	12.12%	7.68%	10.36%
Median			0.78			10.43%
Mean			0.77			10.37%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 11, November 1, 2023 at 2

[2] Source: Bloomberg Professional, as of October 31, 2023

[3] Source: Exhibit JCN-6, page 8

[4] Equals [3] - [1]

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

CAPITAL ASSET PRICING MODEL -- LONG-TERM PROJECTED RISK-FREE RATE, BLOOMBERG BETA, AND  
MARKET RISK PREMIUM DERIVED FROM S&P 500 - FERC METHODOLOGY  
 $K = R_f + \beta (R_m - R_f)$

		[1]	[2]	[3]	[4]	[5]
		Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta ( $\beta$ )	Market Return ( $R_m$ )	Market Risk Premium ( $R_m - R_f$ )	ROE (K)
Company	Ticker					
Atmos Energy Corporation	ATO	3.80%	0.75	12.12%	8.32%	10.04%
New Jersey Resources Corporation	NJR	3.80%	0.81	12.12%	8.32%	10.51%
NiSource Inc.	NI	3.80%	0.81	12.12%	8.32%	10.58%
Northwest Natural Gas Company	NWN	3.80%	0.70	12.12%	8.32%	9.63%
ONE Gas Inc.	OGS	3.80%	0.79	12.12%	8.32%	10.36%
Spire, Inc.	SR	3.80%	0.77	12.12%	8.32%	10.22%
Median			0.78			10.29%
Mean			0.77			10.22%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023, at 14

[2] Source: Bloomberg Professional, as of October 31, 2023

[3] Source: Exhibit JCN-6, page 8

[4] Equals [3] - [1]

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

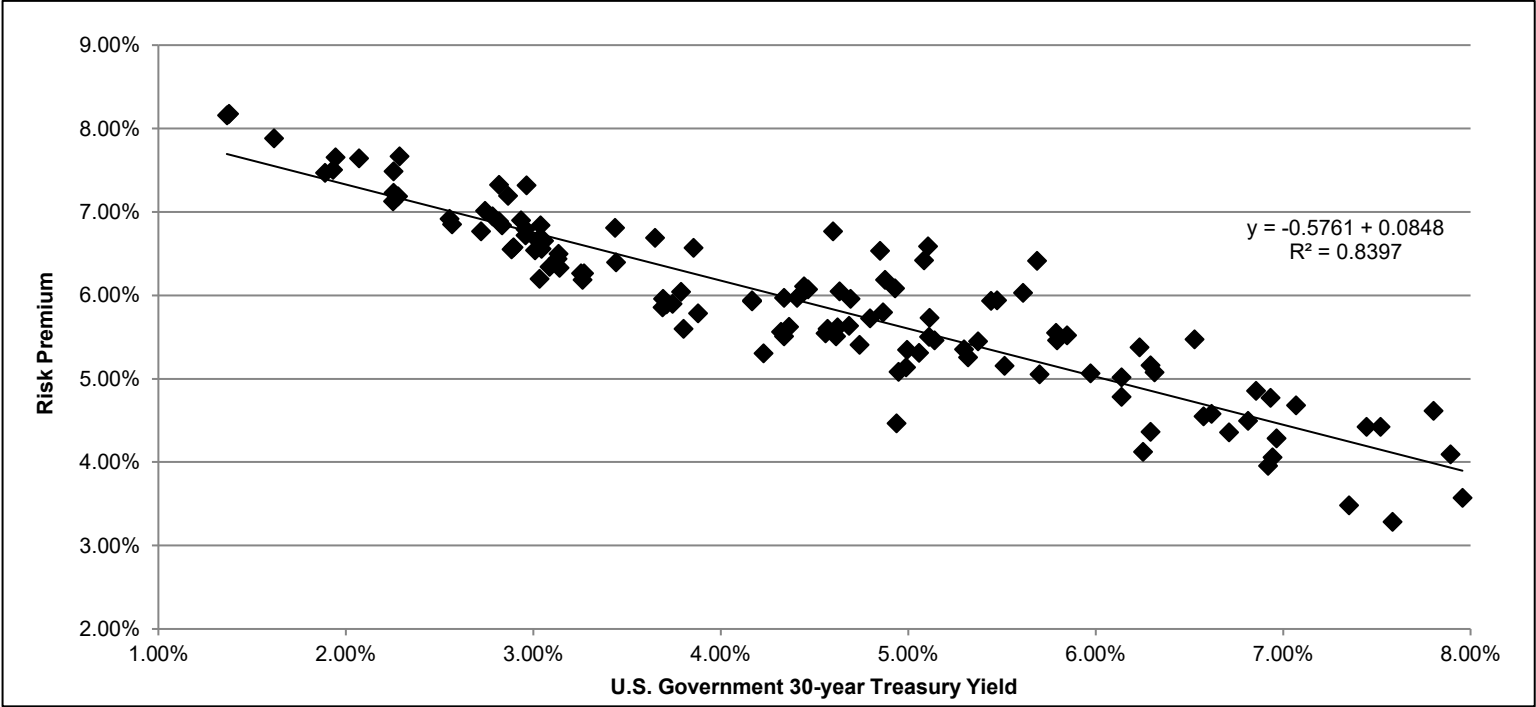
BOND YIELD PLUS RISK PREMIUM ANALYSIS  
Risk Premium -- Natural Gas Utilities (US)

	[1]	[2]	[3]
	Average Authorized Gas ROE	U.S. Govt. 30-year Treasury	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%

BOND YIELD PLUS RISK PREMIUM ANALYSIS  
Risk Premium -- Natural Gas Utilities (US)

	[1]	[2]	[3]
	Average Authorized Gas ROE	U.S. Govt. 30-year Treasury	Risk Premium
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%
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	9.74%	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	9.50%	1.62%	7.88%
2021.1	9.71%	2.07%	7.64%
2021.2	9.48%	2.25%	7.22%
2021.3	9.43%	1.93%	7.50%
2021.4	9.59%	1.94%	7.65%
2022.1	9.38%	2.25%	7.12%
2022.2	9.23%	3.03%	6.19%
2022.3	9.52%	3.26%	6.26%
2022.4	9.66%	3.88%	5.78%
2023.1	9.64%	3.74%	5.89%
2023.2	9.40%	3.80%	5.60%
2023.3	9.53%	4.23%	5.30%
2023.4	9.40%	4.94%	4.46%
AVERAGE	10.38%	4.48%	5.90%
MEDIAN	10.26%	4.51%	5.94%

BOND YIELD PLUS RISK PREMIUM ANALYSIS  
Risk Premium -- Natural Gas Utilities (US)



SUMMARY OUTPUT

Regression Statistics						
Multiple R	0.916359691					
R Square	0.839715083					
Adjusted R Square	0.838401272					
Standard Error	0.004104106					
Observations	124					

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.01076555	0.01076555	639.1446068	2.47509E-50
Residual	122	0.002054929	1.68437E-05		
Total	123	0.012820479			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.084811579	0.001086366	78.06905193	5.2792E-106	0.082661009	0.08696215
X Variable 1	-0.576070271	0.02278641	-25.28130944	2.47509E-50	-0.621178244	-0.5309623

	[7] U.S. Govt. 30-year Treasury	[8] Risk Premium	[9] ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	4.84%	5.69%	10.53%
Blue Chip Near-Term Projected Forecast (Q1 2024 - Q1 2025) [5]	4.44%	5.92%	10.36%
Blue Chip Long-Term Projected Forecast (2025-2029) [6]	3.80%	6.29%	10.09%
AVERAGE			10.33%

Notes:

[1] Source: Regulatory Research Associates, rate cases through October 31, 2023

[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, 30-day average as of October 31, 2023

[5] Source: Blue Chip Financial Forecasts, Vol. 42, No. 10, November 1, 2023 at 2

[6] Source: Blue Chip Financial Forecasts, Vol. 42, No. 6, June 1, 2023 at 14

[7] See notes [4], [5] & [6]

[8] Equals 0.084812 + (-0.576070 x Column [7])

[9] Equals Column [7] + Column [8]

EXPECTED EARNINGS ANALYSIS

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
		Value Line ROE 2026-2028	Value Line Total Capital 2022	Value Line Common Equity Ratio 2022	Total Equity 2022	Value Line Total Capital 2026-2028	Value Line Common Equity Ratio 2026-2028	Total Equity 2026-2028	Compound Annual Growth Rate	Adjustment Factor	Adjusted Return on Common Equity
Atmos Energy Corporation	ATO	10.00%	15,180.00	62.10%	9,427	22,500.00	60.00%	13,500.00	7.45%	1.036	10.36%
New Jersey Resources Corporation	NJR	11.50%	4,302.60	42.20%	1,816	6,250.00	45.00%	2,812.50	9.15%	1.044	12.00%
NiSource Inc.	NI	10.00%	17,099.00	31.60%	5,403	22,500.00	40.00%	9,000.00	10.74%	1.051	10.51%
Northwest Natural Gas Company	NWN	9.00%	2,421.60	48.50%	1,174	2,750.00	50.00%	1,375.00	3.20%	1.016	9.14%
ONE Gas Inc.	OGS	8.50%	5,246.20	49.30%	2,586	7,500.00	49.00%	3,675.00	7.28%	1.035	8.80%
Spire, Inc.	SR	8.00%	5,777.00	44.60%	2,577	8,200.00	45.00%	3,690.00	7.45%	1.036	8.29%
Median											9.75%
Mean											9.85%

Notes:

[1] Source: Value Line Reports

[2] Source: Value Line Reports

[3] Source: Value Line Reports

[4] Equals [2] x [3]

[5] Source: Value Line Reports

[6] Source: Value Line Reports

[6] Source: Value Line Reports

[8] Equals ([7] / [4]) ^ (1/5) - 1

[9] Equals 2 x (1 + [8]) / (2 + [8])

[10] Equals [1] x [9]



FLOTATION COST ADJUSTMENT

Flotation Costs from Inception to Date

									Gross Equity			
Date	Issuing Company	Shares Issued	Market Price	Offering Price	Underwriting Discount	Offering Expense	Net Proceeds	Total Flotation Costs	Issue before Costs	Net Proceeds	Flotation Cost Percentage	
11/16/1949	Northern States Power	1,584,238	\$10.750	\$10.250	\$0.124	\$0.137	\$9.989	\$1,205,605	\$17,030,559	\$15,824,953	7.079%	
6/4/1952	Northern States Power	1,108,966	\$10.500	\$10.500	\$0.098	\$0.162	\$10.240	\$288,331	\$11,644,143	\$11,355,812	2.476%	
4/14/1954	Northern States Power	1,219,856	\$15.250	\$14.000	\$0.060	\$0.124	\$13.816	\$1,749,274	\$18,602,804	\$16,853,530	9.403%	
2/29/1956	Northern States Power	670,920	\$17.825	\$16.750	\$0.050	\$0.221	\$16.479	\$903,058	\$11,959,149	\$11,056,091	7.551%	
7/22/1959	Northern States Power	952,033	\$23.375	\$22.000	\$0.069	\$0.191	\$21.740	\$1,556,574	\$22,253,771	\$20,697,197	6.995%	
7/28/1965	Northern States Power	772,008	\$35.250	\$33.000	\$0.092	\$0.225	\$32.683	\$1,981,745	\$27,213,282	\$25,231,537	7.282%	
1/22/1969	Northern States Power	1,080,811	\$29.000	\$27.000	\$0.119	\$0.187	\$26.694	\$2,492,350	\$31,343,519	\$28,851,169	7.952%	
10/21/1970	Northern States Power	1,729,298	\$23.125	\$21.500	\$0.175	\$0.149	\$21.176	\$3,370,402	\$39,990,016	\$36,619,614	8.428%	
7/26/1972	Northern States Power	1,902,228	\$25.000	\$23.500	\$0.129	\$0.166	\$23.205	\$3,414,499	\$47,555,700	\$44,141,201	7.180%	
10/10/1973	Northern States Power	2,092,451	\$25.825	\$24.500	\$0.128	\$0.153	\$24.219	\$3,360,476	\$54,037,547	\$50,677,071	6.219%	
11/20/1974	Northern States Power	2,300,000	\$17.625	\$17.500	\$0.910	\$0.069	\$16.521	\$2,539,200	\$40,537,500	\$37,998,300	6.264%	
8/14/1975	Northern States Power	1,750,000	\$23.000	\$23.000	\$0.740	\$0.077	\$22.183	\$1,429,750	\$40,250,000	\$38,820,250	3.552%	
6/3/1976	Northern States Power	2,000,000	\$24.000	\$24.000	\$0.720	\$0.064	\$23.216	\$1,568,000	\$48,000,000	\$46,432,000	3.267%	
5/31/1993	Northern States Power	3,041,955	\$44.125	\$43.625	\$1.200	\$0.048	\$42.377	\$5,317,337	\$134,226,264	\$128,908,927	3.961%	
9/23/1997	Northern States Power	4,500,000	\$49.938	\$49.563	\$1.230	\$0.133	\$48.200	\$7,821,000	\$224,721,000	\$216,900,000	3.480%	
9/29/1997	Northern States Power	400,000	\$50.500	\$49.563	\$1.230	\$0.133	\$48.200	\$920,000	\$20,200,000	\$19,280,000	4.554%	
2/25/2002	Xcel Energy, Inc.	20,000,000	\$22.950	\$22.500	\$0.730	\$0.015	\$21.755	\$23,900,000	\$459,000,000	\$435,100,000	5.207%	
9/9/2008	Xcel Energy, Inc.	17,250,000	\$20.860	\$20.200	\$0.100	\$0.006	\$20.094	\$13,218,352	\$359,835,000	\$346,616,648	3.673%	
8/3/2010	Xcel Energy, Inc.	21,850,000	\$22.100	\$21.500	\$0.645	\$0.013	\$20.571	\$33,407,927	\$482,885,000	\$449,477,073	6.918%	
March 2013	Xcel Energy, Inc.	7,757,449	\$29.057	\$29.057	\$0.291	\$0.052	\$28.714	\$2,657,558	\$225,407,642	\$222,750,085	1.179%	
June 2014	Xcel Energy, Inc.	5,693,946	\$30.663	\$30.663	\$0.307	\$0.030	\$30.326	\$1,915,210	\$174,592,340	\$172,677,130	1.097%	
September 2018	Xcel Energy, Inc.	4,733,435	\$47.885	\$47.885	\$0.407	\$0.073	\$47.405	\$2,271,040	\$226,661,287	\$224,390,247	1.002%	
8/29/2019	Xcel Energy, Inc.	9,359,103	\$48.416	\$48.416	\$0.161	\$0.041	\$48.215	\$1,886,029	\$453,132,797	\$451,246,767	0.416%	
11/30/2020	Xcel Energy, Inc.	11,845,000	\$60.865	\$60.865	\$0.665	\$0.025	\$60.175	\$8,168,737	\$720,941,187	\$712,772,450	1.133%	
Nov-Dec 2021	Xcel Energy, Inc.	5,325,674	\$65.625	\$65.625	\$0.558	\$0.038	\$65.029	\$3,175,377	\$349,499,767	\$346,324,389	0.909%	
May 2022	Xcel Energy, Inc.	1,032,571	\$72.634	\$72.634	\$0.617	\$0.046	\$71.971	\$684,896	\$75,000,034	\$74,315,138	0.913%	
June 2022	Xcel Energy, Inc.	1,098,042	\$68.303	\$68.303	\$0.581	\$0.013	\$67.710	\$651,698	\$74,999,936	\$74,348,239	0.869%	
Nov-Dec 2022	Xcel Energy, Inc.	2,170,134	\$69.120	\$69.120	\$0.588	\$0.037	\$68.495	\$1,356,113	\$149,999,763	\$148,643,651	0.904%	
May 2023	Xcel Energy, Inc.	896,275	\$68.950	\$68.950	\$0.586	\$0.000	\$68.364	\$525,286	\$61,798,311	\$61,273,025	0.850%	
Total Public Issuances								\$133,735,822	\$4,603,318,319	\$4,469,582,497	2.905%	
Total Non-Public Issuances (Employee Benefit Plans)								\$0	\$1,797,989,000	\$1,797,989,000	0.000%	
Weighted Average Flotation Costs								Total	\$133,735,822	\$6,401,307,319	\$6,267,571,497	2.089%

The flotation adjustment is derived by dividing the dividend yield by 1-F (where F = flotation costs expressed in percentage terms), or by 0.9791, and adding that result to the constant growth rate to determine the cost of equity. Using the formulas shown previously in my testimony, the Constant Growth DCF calculation is modified as follows to accommodate an adjustment for flotation costs:

Source: Company data.

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

FLOTATION COST ADJUSTMENT - GAS PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
						Expected Dividend Yield						
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Adjusted for Flotation Costs	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Estimate	DCF k(e)	Flotation Adjusted DCF k(e)
Atmos Energy Corporation	ATO	\$ 2.96	\$ 108.89	2.72%	2.82%	2.88%	7.00%	7.50%	7.30%	7.27%	10.08%	10.14%
New Jersey Resources Corporation	NJR	\$ 1.68	\$ 41.60	4.04%	4.15%	4.24%	5.00%	6.00%	6.00%	5.67%	9.82%	9.91%
NiSource Inc.	NI	\$ 1.00	\$ 25.37	3.94%	4.09%	4.18%	9.50%	6.70%	7.00%	7.73%	11.83%	11.91%
Northwest Natural Gas Company	NWN	\$ 1.95	\$ 38.60	5.05%	5.16%	5.27%	6.50%	2.80%	3.70%	4.33%	9.49%	9.60%
ONE Gas Inc.	OGS	\$ 2.60	\$ 67.61	3.85%	3.95%	4.04%	6.50%	5.00%	5.00%	5.50%	9.45%	9.54%
Spire, Inc.	SR	\$ 2.88	\$ 57.02	5.05%	5.20%	5.32%	8.00%	n/a	4.20%	6.10%	11.30%	11.42%
PROXY GROUP MEAN				4.11%	4.23%	4.32%	7.08%	5.60%	5.53%	6.10%	10.33%	10.42%
MEAN												10.42%
UNADJUSTED CONSTANT GROWTH DCF MEAN												10.33%
DIFFERENCE (FLOTATION COST ADJUSTMENT)											[12]	0.09%

[1] Source: Bloomberg Professional  
[2] Source: Bloomberg Professional, equals 30-day average as of October 31, 2023  
[3] Equals [2] / [1]  
[4] Equals [3] x (1 + 0.50 x [9])  
[5] Equals [4] / (1- [Flotation Cost Percentage])  
[6] Source: Value Line  
[7] Source: Yahoo! Finance  
[8] Source: Zacks  
[9] Equals average ([6], [7], [8])  
[10] Equals [4] + [9]  
[11] Equals [5] + [9]  
[12] Equals [11] - [10]

COMPARISON OF NSPM AND PROXY GROUP COMPANIES  
RISK ASSESSMENT

		[1]		[2]		[3]		[4]
Company	Jurisdiction/Service	Test Year	Rate Base	Revenue Decoupling	Capital Cost Recovery Mechanism			
Atmos Energy Corporation	Kansas - Gas	Historical	Year End	Partial	Yes			
	Kentucky - Gas	Fully Forecast	Average	Partial	Yes			
	Louisiana - Gas	Partially Forecast	Average	Partial	No			
	Mississippi - Gas	Fully Forecast	Year End	Partial	Yes			
	Tennessee - Gas	Historical	Average	Partial	No			
	Texas - Gas	Historical	Year End	Partial	Yes			
New Jersey Resources Corporation	New Jersey - Gas	Partially Forecast	Year End	Full	Yes			
	Indiana - Gas	Fully Forecast	Year End	No	Yes			
	Kentucky - Gas	Fully Forecast	Average	Partial	Yes			
	Maryland - Gas	Historical	Average	Partial	Yes			
	Ohio - Gas	Partially Forecast	Year End	No	Yes			
	Pennsylvania - Gas	Fully Forecast	Year End	Partial	Yes			
NiSource Inc.	Virginia - Gas	Fully Forecast	Average	Partial	Yes			
	Oregon - Gas	Fully Forecast	Average	Partial	Yes			
	Washington - Gas	Historical	Average	No	No			
Northwest Natural Gas Company	Kansas - Gas	Historical	Year End	Partial	Yes			
	Oklahoma - Gas	Historical	Year End	Partial	No			
ONE Gas, Inc.	Texas - Gas	Historical	Year End	Partial	Yes			
	Spire Alabama Inc.	Historical	Average	Partial	No			
Spire, Inc.	Spire Gulf Inc.	Historical	Year End	Partial	No			
	Spire Missouri Inc.	Historical	Year End	Partial	Yes			
Proxy Group Operating Company Count	Fully Forecast	7	Year End	12	Full	1	Yes	15
	Partially Forecast	3	Average	9	Partial	17	No	6
	Historical	11	Date Certain	0	No	3		
	Forecast	47.62%	Year End	57.14%	RDM	85.71%	CCRM	71.43%
Northern States Power (Gas)	North Dakota	Fully Forecast	Average	Full	No			

Notes

[1] Source: S&P Global - Market

[2] Source: S&P Global - Market Intelligence Rate Case History (Past Rate Cases), accessed 10/31/2023

[3] - [4] Source: "Adjustment Clauses: A State-by-state Overview," Regulatory Research Associates, June 2022. Operating subsidiaries not covered in this report were excluded from this exhibit. Please note, in the report, NSP ND is marked at \* for full decoupling as it operates under straight fixed-variable gas rates.

<u>2024 Capitalization Structure:</u> (\$000's)	<u>Amount</u> (A)	<u>Percent of Total Capitalization</u> (B)	<u>Cost of Capital</u> (C)	<u>Before Tax Weighted Cost of Capital</u> (D)	<u>After Tax Weighted Cost of Capital</u> (E)	<u>Revenue Requirements</u> (F)
<u>Gas Utility Capital Structure</u>						
Long-Term Debt	\$7,883,270	47.3800%	4.5418%	2.1500%	1.6300%	2.1500%
Direct Borrowings Under Multi-Year Credit Facility	\$0	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
Short-Term Debt	\$19,957	0.1200%	7.7200%	0.0100%	0.0100%	0.0100%
Total Short-Term Debt	\$19,957	0.1200%		0.0100%	0.0100%	0.0100%
Long-Term and Short-Term Debt	\$7,903,227	47.5000%		2.1600%	1.6300%	2.1600%
Preferred Stock	\$0	0.0000%	0.0000%	0.0000%	0.0000%	0.0000%
Net Common Equity	\$8,733,422	52.5000%	10.2000%	5.3600%	5.3600%	7.0900%
Total Equity	\$8,733,422	52.5000%		5.3600%	5.3600%	7.0900%
Total Capitalization	\$16,636,649	100.0000%		7.5200%	6.9900%	9.2500%
Income Tax Rate	24.40%					

All are average balances;  
Short term debt based on 12 month averages,  
Long term debt based on 12 month averages,  
Common equity based on 13 month averages.

Long Term Debt Adjustments:  
None

Common Equity Adjustments:  
Includes Non-Regulated UP&L Subsidiary Adjustment.

Common Equity

YEAR 2024 FORECASTED EQUITY BALANCES

<u>Month</u>	<u>GAAP Common Equity Outstanding</u>	<u>Non-Regulated Subsidiaries*</u>	<u>Regulated Common Equity</u>
<u>FORECASTED YEAR 2024</u>			
2023 Dec	\$8,117,184	\$1,970	\$8,115,214
2024 Jan	\$8,341,753	\$1,970	\$8,339,783
Feb	\$8,547,701	\$1,970	\$8,545,731
Mar	\$8,600,684	\$1,970	\$8,598,714
Apr	\$8,729,439	\$1,970	\$8,727,469
May	\$8,769,908	\$1,970	\$8,767,938
Jun	\$8,712,628	\$1,970	\$8,710,658
Jul	\$8,824,712	\$1,970	\$8,822,742
Aug	\$8,925,816	\$1,970	\$8,923,846
Sep	\$8,894,722	\$1,970	\$8,892,752
Oct	\$8,982,580	\$1,970	\$8,980,610
Nov	\$9,083,607	\$1,970	\$9,081,637
Dec	\$9,029,365	\$1,970	\$9,027,395
13 Month Average	\$8,735,392	\$1,970	\$8,733,422

\* United Power and Land

COMMON EQUITY RATIO [1]

Proxy Group Company	Ticker	2022	2021	2020	2020-2022 Average
Atmos Energy Corporation	ATO	52.91%	51.03%	58.31%	54.09%
New Jersey Resources Corporation	NJR	52.09%	51.75%	55.13%	52.99%
NiSource Inc.	NI	54.17%	54.85%	54.43%	54.48%
Northwest Natural Gas Company	NWN	47.72%	44.08%	41.92%	44.57%
One Gas Inc.	OGS	58.24%	61.09%	60.04%	59.79%
Spire Inc.	SR	47.30%	49.16%	54.34%	50.27%
Proxy Group					
MEAN		52.07%	52.00%	54.03%	52.70%
LOW		47.30%	44.08%	41.92%	44.43%
HIGH		58.24%	61.09%	60.04%	59.79%

COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2022	2021	2020	2020-2022 Average
Atmos Energy Corporation	ATO	52.91%	51.03%	58.31%	54.09%
New Jersey Natural Gas Company	NJR	52.09%	51.75%	55.13%	52.99%
Northwest Natural Gas Company	NWN	47.72%	44.08%	41.92%	44.57%
Columbia Gas of Kentucky, Incorporated	NI	54.91%	53.87%	54.68%	54.49%
Columbia Gas of Maryland, Incorporated	NI	51.96%	55.26%	54.95%	54.06%
Columbia Gas of Ohio, Inc.	NI	50.67%	50.79%	50.45%	50.64%
Columbia Gas of Pennsylvania, Inc.	NI	56.64%	56.05%	55.68%	56.12%
Columbia Gas of Virginia, Incorporated	NI	44.25%	44.52%	43.69%	44.15%
Northern Indiana Public Service Company	NI	56.92%	58.59%	58.01%	57.84%
Kansas Gas Service Company, Inc.	OGS	58.37%	61.37%	60.33%	60.02%
Oklahoma Natural Gas Company	OGS	58.26%	60.99%	59.85%	59.70%
Texas Gas Service Company, Inc.	OGS	58.13%	60.98%	59.99%	59.70%
Spire Alabama Inc.	SR	52.01%	56.67%	64.20%	57.63%
Spire Gulf Inc.	SR	41.35%	41.14%	39.49%	40.66%
Spire Mississippi Inc.	SR	NA	NA	NA	NA
Spire Missouri Inc.	SR	45.49%	46.20%	50.65%	47.45%

Notes:

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

[2] Natural Gas operating subsidiaries where data was unable to be obtained for 2020-2022 were removed from the analysis.

[3] Spire Mississippi was removed from the analysis because it is financed with 100% equity.

LONG-TERM DEBT RATIO [1]

Proxy Group Company	Ticker	2022	2021	2020	2020-2022 Average
Atmos Energy Corporation	ATO	47.09%	48.97%	41.69%	45.91%
New Jersey Resources Corporation	NJR	44.41%	42.01%	44.29%	43.57%
NiSource Inc.	NI	45.83%	45.15%	45.57%	45.52%
Northwest Natural Gas Company	NWN	45.46%	44.85%	46.45%	45.59%
One Gas Inc.	OGS	41.76%	38.91%	39.96%	40.21%
Spire Inc.	SR	39.78%	39.75%	38.60%	39.38%
Proxy Group					
MEAN		44.05%	43.27%	42.76%	43.36%
LOW		39.78%	38.91%	38.60%	39.10%
HIGH		47.09%	48.97%	46.45%	47.50%

LONG-TERM DEBT RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2022	2021	2020	2020-2022 Average
Atmos Energy Corporation	ATO	47.09%	48.97%	41.69%	45.91%
New Jersey Natural Gas Company	NJR	44.41%	42.01%	44.29%	43.57%
Northwest Natural Gas Company	NWN	45.46%	44.85%	46.45%	45.59%
Columbia Gas of Kentucky, Incorporated	NI	45.09%	46.13%	45.32%	45.51%
Columbia Gas of Maryland, Incorporated	NI	48.04%	44.74%	45.05%	45.94%
Columbia Gas of Ohio, Inc.	NI	49.33%	49.21%	49.55%	49.36%
Columbia Gas of Pennsylvania, Inc.	NI	43.36%	43.95%	44.32%	43.88%
Columbia Gas of Virginia, Incorporated	NI	55.75%	55.48%	56.31%	55.85%
Northern Indiana Public Service Company	NI	43.08%	41.41%	41.99%	42.16%
Kansas Gas Service Company, Inc.	OGS	41.63%	38.63%	39.67%	39.98%
Oklahoma Natural Gas Company	OGS	41.74%	39.01%	40.15%	40.30%
Texas Gas Service Company, Inc.	OGS	41.87%	39.02%	40.01%	40.30%
Spire Alabama Inc.	SR	33.01%	40.18%	35.80%	36.33%
Spire Gulf Inc.	SR	38.77%	42.00%	57.90%	46.22%
Spire Mississippi Inc.	SR	NA	NA	NA	NA
Spire Missouri Inc.	SR	42.91%	39.42%	38.72%	40.35%

Notes:

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

[2] Natural Gas operating subsidiaries where data was unable to be obtained for 2020-2022 were removed from the analysis.

[3] Spire Mississippi was removed from the analysis because it is financed with 100% equity.

SHORT-TERM DEBT RATIO [1]

Proxy Group Company	Ticker	2022	2021	2020	2020-2022 Average
Atmos Energy Corporation	ATO	0.00%	0.00%	0.00%	0.00%
New Jersey Resources Corporation	NJR	3.50%	6.25%	0.58%	3.44%
NiSource Inc.	NI	0.00%	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	6.82%	11.07%	11.63%	9.84%
One Gas Inc.	OGS	0.00%	0.00%	0.00%	0.00%
Spire Inc.	SR	12.92%	11.09%	7.05%	10.35%
Proxy Group					
MEAN		3.87%	4.73%	3.21%	3.94%
LOW		0.00%	0.00%	0.00%	0.00%
HIGH		12.92%	11.09%	11.63%	11.88%

SHORT-TERM DEBT RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2022	2021	2020	2020-2022 Average
Atmos Energy Corporation	ATO	0.00%	0.00%	0.00%	0.00%
New Jersey Natural Gas Company	NJR	3.50%	6.25%	0.58%	3.44%
Northwest Natural Gas Company	NWN	6.82%	11.07%	11.63%	9.84%
Columbia Gas of Kentucky, Incorporated	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Maryland, Incorporated	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Ohio, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Pennsylvania, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Virginia, Incorporated	NI	0.00%	0.00%	0.00%	0.00%
Northern Indiana Public Service Company	NI	0.00%	0.00%	0.00%	0.00%
Kansas Gas Service Company, Inc.	OGS	0.00%	0.00%	0.00%	0.00%
Oklahoma Natural Gas Company	OGS	0.00%	0.00%	0.00%	0.00%
Texas Gas Service Company, Inc.	OGS	0.00%	0.00%	0.00%	0.00%
Spire Alabama Inc.	SR	14.98%	3.15%	0.00%	6.04%
Spire Gulf Inc.	SR	19.88%	16.86%	2.61%	13.12%
Spire Mississippi Inc.	SR	NA	NA	NA	NA
Spire Missouri Inc.	SR	11.60%	14.38%	10.63%	12.20%

Notes:

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

[2] Natural Gas operating subsidiaries where data was unable to be obtained for 2020-2022 were removed from the analysis.

[3] Spire Mississippi was removed from the analysis because it is financed with 100% equity.



Balances and Cost of Short-Term Debt

YEAR 2024 FORECASTED SHORT TERM DEBT AND COST

	Month End Short Term Debt NSPM 1/	Average of Daily Balances 2/	Monthly Interest Expense 3/	Monthly Fees Expense 4/	Average Short Term Debt Cost
2024 Jan	\$97,097,027	\$115,504,684	\$505,436	\$59,017	
Feb	\$83,388,967	\$90,242,997	\$356,678	\$53,305	
Mar	\$0	\$41,694,483	\$182,450	\$59,017	
Apr	\$0	\$0	\$0	\$57,113	
May	\$0	\$0	\$0	\$59,017	
Jun	\$0	\$0	\$0	\$72,113	
Jul	\$0	\$0	\$0	\$59,017	
Aug	\$0	\$0	\$0	\$59,017	
Sep	\$0	\$0	\$0	\$57,113	
Oct	\$2,963,915	\$1,481,958	\$4,878	\$59,017	
Nov	\$39,652,858	\$21,308,387	\$67,875	\$57,113	
Dec	\$16,376,419	\$28,014,639	\$92,211	\$59,017	
Total			\$ 1,209,528	\$ 709,875	
Average	\$ 19,956,599	\$24,853,929	4.87%	2.86%	7.72%

1/ Month-end balances.  
Includes commercial paper, utility money pool or direct borrowings under the credit facility.

2/ 12 month average of average daily balances.

3/ Monthly Interest Expense based on weighted average of short term debt outstanding

4/ Ongoing fees for NSP-MN's five year credit facility.  
Credit facility is used as back up for commercial paper and letters of credit.  
Monthly Cost of NSP-MN Unused Portion of the Credit Facility.  
NSPM re-syndicated its credit agreement September 19, 2022.  
Upfront expenses for the five year credit facility are amortized over the life of the facility and are included in the cost of long term debt.

Composite Cost of Long-Term Debt  
(\$000's)

2024 FORECASTED LONG TERM DEBT AND COST  
as of July 2023

											Total Bond Cost							
Description	Coupon Rate	Issue Date	Maturity Date	Amount	Premium or Hedge Gain/(Loss)	Bond Discount	Bond Expense	LRD Expense	(3) Capital Employed	(4) Interest Charge	Premium/ Hedge Amortization	Discount Amortization	Expense Amortization	LRD Amortization	Cost of Capital	Capital Cost %		
First Mortgage Bonds																		
Series due July 1, 2025 (FMB)	7.1250	Jul-95	Jul-25	250,000	-	74	61		249,865	17,813	-	78	63		17,953	7.19%		
Series due March 1, 2028 (FMB)	6.5000	Mar-98	Mar-28	150,000	-	213	178		149,609	9,750	-	59	49		9,858	6.59%		
Series Due July 15, 2035 (FMB)	5.2500	Jul-05	Jul-35	250,000	-	178	1,112		248,710	13,125	-	16	101		13,242	5.32%		
Series Due June 1, 2036 (FMB)	6.2500	May-06	Jun-36	400,000	6,471	555	1,929		403,986	25,000	546	47	162		24,663	6.10%		
Series Due July 1, 2037 (FMB)	6.2000	Jun-07	Jul-37	350,000	-	858	1,872		347,270	21,700	-	66	144		21,911	6.31%		
Series Due November 1, 2039 (FMB)	5.3500	Nov-09	Nov-39	300,000	(1,637)	291	2,121		295,951	16,050	(107)	19	139		16,315	5.51%		
Series Due August 15, 2040 (FMB)	4.8500	Aug-10	Aug-40	250,000	-	379	1,618		248,003	12,125	-	24	101		12,249	4.94%		
Series Due August 15, 2042 (FMB)	3.4000	Aug-12	Aug-42	500,000	(27,073)	2,302	3,781		466,845	17,000	(1,501)	127	209		18,837	4.03%		
Series Due May 15, 2044 (FMB)	4.1250	May-14	May-44	300,000	-	577	2,527		296,896	12,375	-	29	127		12,532	4.22%		
Series Due Aug 15, 2045 (FMB)	4.0000	Aug-15	Aug-45	300,000	-	3,441	2,739		293,820	12,000	-	163	130		12,293	4.18%		
Series Due May 15, 2046 (FMB)	3.6000	May-16	May-46	350,000	-	1,525	3,941		344,534	12,600	-	70	181		12,850	3.73%		
Series Due Sep 15, 2047 (FMB)	3.6000	Sep-17	Sep-47	600,000	-	4,618	6,793	6,465	582,124	21,600	-	199	293	280	22,372	3.84%		
Series Due Mar 1, 2050 (FMB)	2.9000	Sep-19	Mar-50	600,000	-	9,731	7,342		582,927	17,400	-	380	287		18,066	3.10%		
Series Due Jun 1, 2051 (FMB)	2.6000	Jun-20	Jun-51	700,000	-	11,434	8,499		680,067	18,200	-	425	316		18,942	2.79%		
Series Due Apr 1, 2031 (FMB)	2.2500	Mar-21	Apr-31	425,000	-	1,191	3,443		420,366	9,563	-	177	513		10,253	2.44%		
Series Due Apr 1, 2052 (FMB)	3.2000	Mar-21	Apr-52	425,000	-	1,409	5,436		418,156	13,600	-	51	196		13,847	3.31%		
Series Due Jun 1, 2052 (FMB)	4.5000	May-22	Jun-52	500,000	-	3,343	7,053		489,604	22,500	-	120	253		22,873	4.67%		
Series Due May 1, 2053 (FMB)	5.1000	May-23	May-53	800,000	4,600	5,732	10,801		788,068	40,800	160	199	375		41,214	5.23%		
Series Due Mar 1, 2054 (FMB) (1)	6.2500	Mar-24	Mar-54	583,333	-	-	6,155		577,179	36,458	-	-	208		36,667	6.35%		
Other Debt																		
Right of Way Notes	var	var	var	2,332	-	-	-		2,332	-	-	-	-		-	0.00%		
TOTAL DEBT				8,035,665	(17,639)	47,850	77,401	6,465	7,886,311	349,658	(902)	2,249	3,848	280	356,937	4.53%		
Unamortized Loss on Reacquired Debt									(3,041)								702	
Fees on 5-year Credit Facility (2)									-								407	
GRAND TOTAL and COST OF DEBT									7,883,270								358,046	4.54%

(1) NSPM 2024 issuance of \$500M 30 year bond, balance is 10 of 12 months.  
(2) Fees associated with the 5 Year Credit Facility are amortized over the life of the facility and are incorporated into the long-term debt rate.  
(3) Capital Employed is based on the Premium / Discount / Expense Balances representing average declining balances. New and Maturing Debt averaged on number of months in the year.  
(4) Interest Expense is a Straight Interest Expense calculation.

STATE OF NORTH DAKOTA  
BEFORE THE  
PUBLIC SERVICE COMMISSION

NORTHERN STATES POWER COMPANY )  
2024 NATURAL GAS RATE INCREASE )  
APPLICATION )  
)  
)  
)

Case No. PU-23-\_\_\_\_

**AFFIDAVIT OF  
Joshua C. Nowak**

I, the undersigned, being first duly sworn, depose and say that the foregoing is the Direct Testimony of the undersigned, and that such Direct Testimony and the exhibits or schedules sponsored by me to the best of my knowledge, information and belief, are true, correct, accurate and complete, and I hereby adopt said testimony as if given by me in formal hearing, under oath.

  
Joshua C. Nowak

Subscribed and sworn to before me, this 15<sup>th</sup> day of December, 2023.



Notary Public

My Commission Expires:

