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May 31, 2022

VIA ELECTRONIC FILING

Mr. Adam J. Teitzman
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: In re: Petition by Florida City Gas for Base Rate Increase
Docket No. 20220069-GU

Dear Mr. Teitzman:

Enclosed for filing on behalf of Florida City Gas ("FCG") in the above-referenced docket is FCG's Petition for Base Rate Increase, together with supporting testimonies, exhibits, and Minimum Filing Requirements. This filing includes the following documents:

1. Petition for Base Rate Increase
2. Direct Testimony of Kurt S. Howard and Exhibit KSH-1
3. Direct Testimony of Mark Campbell and Exhibits MC-1 through MC-6
4. Direct Testimony of Liz Fuentes and Exhibits LF-1 through LF-6
5. Direct Testimony of Tara DuBose and Exhibits TBD-1 through TBD-6
6. Direct Testimony of Jennifer Nelson and Exhibits JEN-1 through JEN-10
7. Direct Testimony of Ned Allis and Exhibits NWA-1 (2022 Depreciation Study) through NWA-5
8. Minimum Filing Requirements, Schedule A
9. Minimum Filing Requirements, Schedule B
10. Minimum Filing Requirements, Schedule C

11. Minimum Filing Requirements, Schedule D

12. Minimum Filing Requirements, Schedule E

13. Minimum Filing Requirements, Schedule G

14. Minimum Filing Requirements, Schedule H

15. Minimum Filing Requirements, Schedule I

FCG is not seeking interim rate relief and, therefore, is not providing Minimum Filing Requirements, Schedule F. Each of the above-referenced documents are being separately filed in this docket.

Please note that certain Minimum Filing Requirements contain confidential information and data, which has been redacted and will be provided with a Request for Confidential Classification filed under separate cover.

If you or your staff have any question regarding this filing, please contact me at (561) 691-7144.

Respectfully submitted,

Christopher T. Wright
Authorized House Counsel No. 1007055

Enclosed: [Document 6 of 15]

CERTIFICATE OF SERVICE
20220069-GU

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished by electronic mail this 31st day of May 2022 to the following parties:

Ashley Weisenfeld Walt Trierweiler Florida Public Service Commission Office of the General Counsel 2540 Shumard Oak Boulevard Tallahassee, Florida 32399-0850 aweisenf@psc.state.fl.us wtrierwe@psc.state.fl.us ***For Commission Staff***	Office of Public Counsel Richard Gentry Patricia A. Christensen c/o The Florida Legislature 111 West Madison Street, Room 812 Tallahassee, FL 32399-1400 Gentry.richard@leg.state.fl.us christensen.patty@leg.state.fl.us ***For Office of Public Counsel***

s/ Christopher T. Wright
Christopher T. Wright
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Attorney for Florida City Gas

BEFORE THE

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 20220069-GU

FLORIDA CITY GAS

DIRECT TESTIMONY OF JENNIFER E. NELSON

Topics: Cost of Capital

Filed: May 31, 2022

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Jennifer E. Nelson. My business address is 293 Boston Post Road West, Marlborough, Massachusetts, 01752.

Q. By whom are you employed and what is your position?

A. I am employed by Concentric Energy Advisors, Inc. ("Concentric") as an Assistant Vice President.

Q. Please describe your duties and responsibilities in that position.

A. In my role as Assistant Vice President, I am among Concentric's professionals who advise clients and provide expert witness testimony on regulatory and financial matters. As an officer of the firm, I am responsible for ensuring the quality of project deliverables and assist in the development of the firm's consulting staff.

Q. Please describe your educational background and professional experience.

A. I hold a Bachelor of Science degree in Business Economics from Bentley College (now Bentley University) and a Master of Science degree in Resource and Applied Economics from the University of Alaska. I have worked in the energy industry for fourteen years, having served as a consultant and energy/regulatory economist for state government agencies. Since 2013, I have provided consulting services to utility and regulated energy clients on a range of financial and economic issues including rate case support, ratemaking policy, and regulatory strategy issues. Prior to consulting, I was a staff economist at

the Massachusetts Department of Public Utilities, where I worked on regulatory filings related to energy efficiency, renewable power contracts, smart grid and electric grid modernization, and retail choice. I am a member of the Society of Utility and Regulatory Financial Analysts and earned the designation of Certified Rate of Return Analyst upon successful completion of an exam. A summary of my professional and educational background, including a list of my testimony filed before regulatory commissions, is included as Exhibit JEN-1 to my Direct Testimony.

Q. Have you previously testified before the Florida Public Service Commission ("Commission")?

A. No, I have not. However, I have previously filed testimony before regulatory commissions in Arkansas, Kentucky, Maine, New Mexico, New Hampshire, North Carolina, Oklahoma, Texas, Utah, and West Virginia. During my time as a consultant, I have supported the development of expert witness testimony and analyses regarding the Cost of Capital (*i.e.*, Return on Equity ("ROE"), and capital structure) in more than 100 proceedings filed before numerous U.S. state regulatory commissions and the Federal Energy Regulatory Commission ("FERC").

Q. Are you sponsoring or co-sponsoring any exhibits in this case?

A. Yes. I am sponsoring the following exhibits:

- JEN-1: Résumé and Testimony Listing of Jennifer E. Nelson
- JEN-2: Constant Growth DCF Analysis
- JEN-3: Quarterly Growth DCF Analysis

- JEN-4: DCF-based Expected Market Return
- JEN-5: CAPM and Empirical CAPM Analyses
- JEN-6: Bond Yield Plus Risk Premium Analysis
- JEN-7: Small Size Premium Analysis
- JEN-8: Proxy Group Regulatory Risk Comparative Assessment
- JEN-9: Flotation Costs; and
- JEN-10: Capital Structure Analysis

Q. What is the purpose of your Direct Testimony?

A. The purpose of my Direct Testimony is to present evidence and provide the Commission with a recommendation on behalf of Pivotal Utility Holdings, Inc. d/b/a Florida City Gas ("FCG" or the "Company") regarding the Company's ROE in this proceeding and to assess the reasonableness of its requested capital structure. My analyses and conclusions are supported by the data presented in Exhibit JEN-2 through Exhibit JEN-10, which have been prepared by me or under my direction.

II. OVERVIEW AND SUMMARY

Q. What is your conclusion regarding the appropriate cost of equity and capital structure for FCG over the four-year rate plan?

A. Based on my analyses of three widely used market-based financial models, the Company's specific risk profile, and the current capital market environment, I

conclude that an ROE of 10.75 percent is just and reasonable for FCG for the 2023-2026 rate period.

As to the capital structure, I conclude the Company's requested financial capital structure consisting of 59.60 percent common equity and 40.40 percent long-term debt is consistent with regulatory practice and the capital structures from investor supplied sources that fund the regulated natural gas operations of the proxy group. Therefore, I conclude it is reasonable and should be approved.

Q. Please provide a brief overview of the analyses that led to your ROE determination.

A. To develop my ROE range and estimate, I relied on three widely accepted financial modeling approaches: (1) the constant growth and quarterly growth forms of the Discounted Cash Flow ("DCF") model; (2) the traditional and empirical forms of the Capital Asset Pricing Model ("CAPM"); and (3) the Bond Yield Plus Risk Premium approach. The results of those analytical approaches are summarized in Figure 1 below.

Figure 1: Summary of Results[1]

Constant Growth DCF	**Low**	**Mean**	**High**
30-Day Average	8.05%	9.54%	10.38%
90-Day Average	8.25%	9.76%	10.60%
180-Day Average	8.34%	9.85%	10.69%
Quarterly Growth DCF	**Low**	**Mean**	**High**
30-Day Average	8.14%	9.68%	10.55%
90-Day Average	8.35%	9.91%	10.78%
180-Day Average	8.44%	10.00%	10.87%
CAPM		**Current 30-Year Treasury Yield (2.37%)**	**Projected 30-Year Treasury Yield (3.32%)**
Long-Term Average Market Return and 10-year Beta Coefficients			
Proxy Group Average		10.12%	10.33%
Proxy Group Median		10.21%	10.41%
Bloomberg DCF-based Market Return and Value Line Beta Coefficients			
Proxy Group Average		12.80%	12.94%
Proxy Group Median		12.49%	12.66%
Empirical CAPM		**Current 30-Year Treasury Yield (2.37%)**	**Projected 30-Year Treasury Yield (3.32%)**
Long-Term Average Market Return and 10-year Beta Coefficients			
Proxy Group Average		10.67%	10.83%
Proxy Group Median		10.74%	10.89%
Bloomberg DCF-based Market Return and Value Line Beta Coefficients			
Proxy Group Average		13.26%	13.37%
Proxy Group Median		13.03%	13.15%
Bond Yield Plus Risk Premium			
Current 30-Year Treasury Yield (2.37%)		9.73%	
Projected 30-Year Treasury Yield (3.32%)		9.80%	

[1] *See,* Exhibits JEN-3 to JEN-6. DCF model results are the average of the mean and median proxy group results.

In addition to the methodologies noted above, I considered the Company's significantly smaller size relative to the proxy group, the regulatory environment in which it operates, the costs associated with issuing equity ("flotation costs"), and the current economic and capital market environment.

Q. How did you determine your recommendation from the results summarized above?

A. The cost of equity is an opportunity cost that cannot be precisely quantified. Therefore, it must be estimated through the use of various market-based financial models. Since all financial models are subject to various assumptions and constraints (which may become more or less relevant as market conditions change), each provides a different perspective on investors' return requirements under varying market conditions. The use of a variety of financial models, therefore, enables a more robust and comprehensive assessment of the cost of equity.

In keeping with investor and regulatory practice, my recommendation considers the quantitative results produced by each model and their comparability to returns available to other similarly situated natural gas utilities, as well as each model's consistency with, and reflection of, the current volatile capital market environment. Additionally, I considered the Company's risk profile relative to a proxy group of companies that are comparable, but not necessarily identical in risk to FCG. Based on all those considerations, it is my opinion that an ROE of 10.75 percent is a just and reasonable estimate of FCG's cost of equity.

Q. Please briefly summarize recent changes in the capital market environment.

A. The economic and financial markets have experienced tremendous volatility and uncertainty associated with the COVID-19 global pandemic and the recent conflict in the Ukraine, to which the utility sector has not been immune. Specifically, volatility for both utility stocks and the broader market has increased, indicating higher risk for equity investors. In addition, the Federal Reserve has begun tightening its monetary policies, pushing up interest rates. Further, credit spreads between utility and Treasury bonds have widened, and inflation has surged and currently is at the highest rate we have seen in the last 40 years. These economic and financial market indicators suggest higher costs of capital. I discuss these factors in more detail in Section V.

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

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

- Section III – Summarizes the regulatory guidelines relevant to the cost of capital estimation in regulatory proceedings, explains my selection of the proxy group used to develop my analytical results, and describes the analyses on which my ROE determination is based;
- Section IV – Discusses the effects of the Company's significantly smaller size, its regulatory environment and proposed multi-year rate plan, and the costs associated with common stock issuances on the cost of equity;

- Section V – Reviews the current capital market conditions and their impact on the cost of equity;
- Section VI – Provides an assessment of the Company's requested capital structure; and
- Section VII – Summarizes my conclusions and recommendations.

III. COST OF EQUITY ESTIMATION

A. Regulatory Guidelines and Financial Considerations

Q. Before addressing the specific aspects of this proceeding, please explain the cost of capital conceptually.

A. The cost of capital (*i.e.*, the costs of both debt and equity) is the return that investors require to commit capital to a firm. Investors will provide funds to a firm only if the return they *expect* is equal to, or greater than, the return they *require* to accept the risk of investing capital in the firm. Simply, the cost of capital is the expected rate of return prevailing in the capital markets on alternative investments of similar risk.[2] Conceptually, the cost of capital is: (1) forward-looking and reflects an *expected* rate of return; (2) an opportunity cost; (3) determined in the capital markets, and (4) dependent on, and proportional to, the risk of the investment.[3]

[2] Lawrence A. Kolbe, James A. Read, Jr., and George R. Hall, The Cost of Capital – Estimating the Rate of Return for Public Utilities, The MIT Press, Cambridge, MA (1986).

[3] Lawrence A. Kolbe, James A. Read, Jr., and George R. Hall, The Cost of Capital – Estimating the Rate of Return for Public Utilities, The MIT Press, Cambridge, MA (1986).

Because the cost of equity is expectational and premised on the principle of opportunity costs, it is not directly observable. Instead, it must be estimated using market data applied to various financial models that reflect simplified representations of investor behavior and expectations. Further, equity investors have a claim on cash flows only *after* debt holders are paid, and the uncertainty (or risk) associated with those residual cash flows determines the cost of equity. Because equity investors bear the residual risk, they take greater risks and require higher returns than debt investors. In the end, the estimated cost of equity should reflect the return that investors require considering the subject company's specific risk profile and the returns available on comparable investments.

Q. Please summarize the guiding principles used in establishing the cost of capital for a regulated utility.

A. Public utility regulation is rooted in the principle that utilities must be provided an opportunity to earn a fair rate of return sufficient to maintain the confidence of the investment community in the financial integrity of the utility and thus, enable the utility to attract the capital required to provide safe and reliable public utility service for customers at reasonable rates. The U.S. Supreme Court ("Supreme Court") established the guiding principles for establishing a fair return for capital for public utilities in two seminal cases: (1) *Bluefield Water Works and Improvement Co. v. Public Service Comm'n*. ("*Bluefield*");[4] and

[4] *See, Bluefield Water Works and Improvement Co. v. Public Service Comm'n*. 262 U.S. 679, 692 (1923).

(2) *Federal Power Comm'n v. Hope Natural Gas Co.* ("*Hope*").[5] In *Bluefield*, the Supreme Court stated:

> A public utility is entitled to such rates as will permit it to earn a return upon 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; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit, and enable it to raise the money necessary for the proper discharge of its public duties.[6]

In *Hope*, the Supreme Court reiterated the financial integrity and capital attraction principles of the *Bluefield* case:

> From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock… By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.[7]

In summary, the Supreme Court has recognized that the fair rate of return should be: (1) comparable to returns investors expect to earn on other investments of similar risk (the "comparable risk" standard); (2) sufficient to

[5] *See, Federal Power Comm'n v. Hope Natural Gas Co.,* 320 U.S. 591, 603 (1944).

[6] *Bluefield Water Works and Improvement Co. v. Public Service Comm'n.* 262 U.S. 679, 692 (1923).

[7] *Federal Power Comm'n v. Hope Natural Gas Co.,* 320 U.S. 591, 603 (1944).

assure confidence in the company's financial integrity (the "financial integrity" standard); and (3) adequate to maintain and support the company's credit and to attract capital (the "capital attraction" standard). A fair and reasonable return must meet all three of these standards.

Q. Has the Commission also applied the *Hope* and *Bluefield* standards as guidance for setting rates?

A. Yes, it has. For example, in Order No. PSC-09-0283-FOF-EI the Commission stated:

> The statutory principles for determining the appropriate rate of return for a regulated utility are set forth by the U.S. Supreme Court in its Hope and Bluefield decisions. These decisions define the fair and reasonable standards for determining rate of return for regulated enterprises. Specifically, these decisions hold that the authorized return for a public utility should be commensurate with returns on investments in other companies of comparable risk, sufficient to maintain the financial integrity of the company, and sufficient to maintain its ability to attract capital under reasonable terms. While the logic of the legal and economic concepts of a fair rate of return are fairly straight forward, the actual implementation of these concepts is more controversial. Unlike the cost rate on debt that is fixed and known due to its contractual terms, the cost of equity is a forward-looking concept and must be estimated. Financial models have been developed to estimate the investor-required ROE for a company. Market-based approaches such as the Discounted Cash Flow (DCF) model, Capital Asset Pricing Model (CAPM), and ex ante Risk Premium (RP) model are generally recognized as being consistent with the market based standards of a fair return enunciated in the Hope and Bluefield decisions.[8]

Based on those standards, the authorized ROE should provide the Company with the opportunity (which is not a guarantee) to earn a fair and reasonable

[8] *In re: Petition for rate increase by Tampa Electric Company*, Docket 080317-EI, Order No. PSC-09-0283-FOF-EI at 42-43 (F.P.S.C. April 30, 2009).

return and enable efficient access to external capital under a variety of market conditions.

Q. How is the cost of equity estimated in regulatory proceedings?

A. Regulated utilities primarily use long-term capital (*i.e.*, common stock, preferred stock, and long-term debt) to finance their permanent rate base. The rate of return for a regulated utility is calculated as its weighted average cost of capital, in which the costs of the individual sources of capital are weighted by their respective book values. The ROE reflects the cost of raising and retaining equity capital and is estimated using various market-based analytical approaches. However, as noted earlier, although quantitative models are used to estimate the ROE, it cannot be precisely quantified through a strict mathematical exercise. As such, a reasonable and appropriate ROE reflects the financial, economic, and regulatory environment in which the estimate is developed, as well as the subject company's relative risk profile.

Q. What are your conclusions regarding the regulatory principles pertaining to the cost of capital for a public utility?

A. The ratemaking process is based on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the utility must have a reasonable opportunity to recover the return of, and the market-required return on, prudently invested capital. The outcome of the Commission's order in this case, therefore, should provide FCG with the opportunity to earn an ROE that is: (1) adequate to attract capital at reasonable

terms; (2) sufficient to ensure its financial integrity; and (3) commensurate with returns on investments in enterprises having corresponding risks.

Further, as explained in more detail in Section V, the regulatory environment is one of the most important factors considered by both debt and equity investors in their assessments of utility risk. In that respect, the financial community carefully monitors the current and expected financial condition of utility companies, which is significantly influenced by the regulatory decisions and environment in which they operate. Because utilities are capital intensive and investors have many investment alternatives (even within a given market sector), the Company's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions. To the extent FCG is provided a reasonable opportunity to earn its market-based cost of equity, neither customers nor shareholders are disadvantaged.

B. Proxy Group Selection

Q. Why is it necessary to select a group of proxy companies to determine the cost of equity for FCG?

A. Because the ROE is a market-based concept estimated through the use of market data applied to various financial models, and FCG is not a standalone, publicly traded entity, it is necessary to establish a group of companies that are both publicly traded and reasonably comparable to the Company in certain

fundamental respects to serve as its "proxy" in the ROE estimation process. Even if the Company were a publicly traded entity, short-term events could bias its market value during a given period. A significant benefit of using a proxy group is that it moderates the effects of anomalous, temporary events associated with any one company.

Q. Please provide a summary profile of FCG.

A. FCG is a 100 percent rate-regulated natural gas distribution utility that is a wholly owned, direct subsidiary of Florida Power & Light ("FPL"), which in turn is a wholly owned subsidiary of NextEra Energy, Inc. ("NextEra"). As of year-end December 2021, FCG provides natural gas distribution services to approximately 116,000 customers in the Miami-Dade, Broward, St. Lucie, Indian River, Brevard, Palm Beach, Hendry, and Martin Counties of Florida. FCG is not independently rated by the credit rating agencies; NextEra and FPL's current long-term issuer credit ratings are as follows:

Figure 2: Current Credit Ratings[9]

	NextEra	FPL
S&P	A- (Outlook: Stable)	A (Outlook: Stable)
Moody's	Baa1 (Outlook: Stable)	A1 (Outlook: Stable)
Fitch	A- (Outlook: Stable)	A (Outlook: Stable)

For the year ended December 2020, the Company reported a Commission-adjusted net operating income of approximately $12.9 million and a Commission-adjusted net utility plant of $313.3 million.[10] For the year ended

[9] Source: S&P Global Market Intelligence.

[10] Florida City Gas Earnings Surveillance Report, December 2020.

December 2021, the Company reported a Commission-adjusted net operating income of approximately $17.1 million and a Commission-adjusted net utility plant of $338.9 million.[11]

Q. What criteria do you apply to select the proxy group used to derive FCG's ROE?

A. I begin with the ten companies that *Value Line* classifies as Natural Gas Utilities and apply the following screening criteria:

- Because certain models used in my analyses assume that earnings and dividends grow over time, I excluded companies that do not consistently pay quarterly cash dividends, or have cut their dividend in the last two years;
- To ensure that the growth rates used in my analyses are not biased by a single analyst, all the companies in my proxy group are consistently covered by at least two utility industry equity analysts;
- All the companies in my proxy group (or their primary regulated natural gas utility subsidiary) have investment grade senior unsecured bond and/or corporate credit ratings from Standard and Poor's ("S&P") and Moody's Investor's Service ("Moody's);
- To incorporate companies that are primarily regulated natural gas distribution utilities, I included companies with at least 60.00 percent of total net operating income from regulated natural gas utility operations, on average, between 2018-2020; and
- I eliminated companies that have significant merger activity or transactions, or have had any recent financial event that could affect its market data or financial condition.

Q. Do you include NextEra in your analyses?

A. No. NextEra is not classified by *Value Line* as a natural gas utility, nor does it meet my screening criterion of having at least 60.00 percent of net operating

[11] Florida City Gas Earnings Surveillance Report, December 2021.

income from regulated natural gas utility operations. Further, it would involve circular logic to include FCG's ultimate parent company in my analyses.

Q. Which companies meet your screening criteria?

A. The criteria discussed above results in a proxy group of the following six companies:

Figure 3: Proxy Group Screening Results

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

The screening criteria results in a group of natural gas utilities that are comparable (but not identical) to the financial and operational characteristics of FCG. The screening criterion requiring an investment grade credit rating ensures that the proxy companies, like FCG, are in sound financial condition. Additionally, the criterion screening on the percent of net operating income from regulated natural gas operations distinguishes between natural gas utilities that are subject to regulation and those with substantial unregulated operations and exposed to higher risks. In my opinion, these screens collectively reflect key risk factors that investors consider in making investments in natural gas utilities.

However, as shown in Figure 4 below, FCG is significantly smaller than the proxy group in terms of sales volume, number of customers, net operating income, and net utility plant.

Figure 4: Proxy Group Statistics (2020)[12]

	Moody's LT Issuer Rating	Natural Gas Customers	Natural Gas Sales Volume (Mcf)	Gas Operating Income ($000)	Net Utility Plant ($000)
ATO	A1	3,231,422	559,162,677	$691,515	13,148,163
NJR	A1[13]	559,542	84,977,860	$148,290	2,710,872
NI	Baa2	3,198,215	861,193,110	$542,256	15,776,664
NWN	Baa1[14]	768,905	108,040,414	$101,444	2,326,911
OGS	A3	2,223,777	364,662,140	$239,692	4,864,892
SR	Baa2	1,720,363	306,927,400	$238,530	4,974,370
Median	**A3/Baa1**	**1,972,070**	**335,794,770**	**$239,111**	**$4,919,631**
FCG	NR	115,296	12,804,032	$12,886	$313,303

Q. Please explain why the other two major gas utilities in Florida – Peoples Gas System ("Peoples") and Florida Public Utilities Company ("FPUC") – are not included in your proxy group.

A. There are several reasons these companies are not included in my proxy group. Most notably, neither Peoples nor FPUC is publicly traded, and therefore neither have market data that can be applied in the financial models used to estimate the ROE. As such, cost of equity estimates cannot be developed for

[12] Sources: Moody's Investors Service; Florida City Gas Earnings Surveillance Report, December 2020; American Gas Association, Annual Report of Volumes, Revenues, and Customers by Company (2020); S&P Capital IQ; Spire Inc SEC Form 10-K for the year ended September 30, 2020. Customer count and sales volume includes transportation customers and volumes.

[13] New Jersey Resources Corp. is not rated by Moody's; rating is for primary regulated subsidiary New Jersey Natural Gas Company.

[14] Northwest Natural Holding Company is not rated by Moody's; rating is for primary regulated subsidiary Northwest Natural Gas Company.

Peoples or FPUC directly. Moreover, both companies' publicly traded parent company do not meet the screening criteria described earlier. Peoples' publicly traded parent, Emera Inc., is a Canadian corporation that is not classified by *Value Line* as a natural gas utility company, as the majority of Emera Inc.'s primary regulated utility subsidiaries are electric utilities. FPUC's publicly traded parent Chesapeake Utilities is classified by *Value Line* as a natural gas utility; however, its proportion of regulated natural gas utility operating income does not meet my 60 percent threshold.

Q. Does a proxy group of six companies provide a reasonable basis to compare and consider the Company's business and regulatory risks?

A. Yes. The analyses performed in estimating the ROE are more likely to be representative of the subject utility's cost of equity to the extent that the selected proxy companies are fundamentally comparable to the subject utility. Because all analysts use some form of screening process to arrive at a proxy group, by definition, the proxy group is not randomly drawn from a larger population, nor does a larger proxy group necessarily improve the representative nature of the proxy group. In my opinion, including companies whose fundamental comparability may be tenuous at best, simply for the purpose of expanding the number of observations, does not improve the reliability of the results or the conclusions drawn from them.

Developing an appropriate proxy group requires balancing the competing objectives of ensuring that the proxy companies are comparable in risk to the

subject company, while at the same time ensuring a sufficient number of companies in the proxy group. As such, no proxy group will be identical in risk to FCG. Therefore, because the proxy group is not identical in risk to the Company, a relative risk assessment between FCG and the proxy group must be performed to arrive at an appropriate ROE for FCG. Nonetheless, it is my opinion that my proxy group is reasonably comparable to FCG to use as a basis for the ROE estimation process.

C. Cost of Equity Models

Q. What analytical approaches do you use to determine the Company's ROE?

A. As discussed earlier, I rely on the constant growth and quarterly growth forms of the DCF model, the traditional and empirical forms of the CAPM, and the Bond Yield Plus Risk Premium approach. I rely on these models for two reasons. First, the purpose of an ROE analysis is to estimate the return that investors require; therefore, it is important to use models on which investors rely. The models I apply are commonly used by the financial community,[15] as well as in regulatory proceedings. Second, the models focus on different aspects of return requirements, and provide different insights to investors' views of risk and return. Consequently, many finance textbooks recommend using multiple approaches to estimate the cost of equity.[16] As explained earlier,

[15] *See, for example,* Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed., 1994, at 341.

[16] *See, for example,* Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed., 1994, at 341, and Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd Ed., 2000, at 214.

using multiple methods provides a broader and, therefore, more reliable perspective on investors' return requirements.

1. Constant Growth Discounted Cash Flow Model

Q. Please describe the Constant Growth DCF approach.

A. The Constant Growth DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its simplest form, the Constant Growth DCF model expresses the cost of equity as the discount rate that sets the current price equal to expected cash flows:

$$P = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_\infty}{(1+k)^\infty} \qquad [1]$$

Where P represents the current stock price, $D_1 \ldots D_\infty$ represent expected future dividends, and k is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the familiar form:

$$k = \frac{D_0\ (1+g)}{P} + g \qquad [2]$$

Equation [2] is referred to as the "Constant Growth DCF" model, in which the first term is the expected dividend yield, and the second term is the expected long-term annual growth rate in perpetuity.

Q. What assumptions underlie the Constant Growth DCF model?

A. The Constant Growth DCF model assumes: (1) a constant average annual growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant Price/Earnings multiple; and (4) a discount rate greater than the expected growth rate. The model also assumes that the current cost of equity remains constant in perpetuity.

Q. What market data do you use as inputs of your Constant Growth DCF analysis?

A. I calculate the Constant Growth DCF result for each of the proxy companies using the following inputs:

- The average daily closing prices for the 30-, 90-, and 180-trading days ended March 31, 2022, for the term P_0;
- The current quarterly dividend as of March 31, 2022 multiplied by 4, for the term D_0; and
- Long-term earnings per share ("EPS") growth rate projections as of March 31, 2022 reported by Zacks, Yahoo! Finance, and *Value Line*.

Q. Why do you use three averaging periods to calculate an average stock price?

A. I do so to ensure that the model's results are not skewed by anomalous events that may affect stock prices on any given trading day. At the same time, the averaging period should be reasonably reflective of expected capital market conditions. Using 30-, 90-, and 180-trading day averaging periods balances those concerns.

Q. How do you calculate the expected dividend yield over the coming year?

A. Because utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, I calculate the expected dividend yield by applying one-half of the long-term growth rate to the current dividend yield. That adjustment ensures that the

expected dividend yield is, on average, representative of the coming 12-month period.

Q. Why do you rely on projected EPS growth as the appropriate measure of long-term growth in the Constant Growth DCF model?

A. In its Constant Growth form, the DCF model (*i.e.*, as presented in Equation [2] above) assumes a single expected growth rate in perpetuity. Accordingly, one must assume a fixed payout ratio, and the same constant growth rate in EPS, dividends per share, and book value per share to reduce the long-term growth rate to a single measure. As such, dividend growth can only be sustained by earnings growth in the long-term. As noted by Brigham and Houston "[g]rowth in dividends occurs primarily as a result of growth in *earnings per share* (EPS)."[17]

Further, academic studies have clearly and consistently indicated that measures of earnings and cash flow are strongly related to returns, and that analysts' forecasts of growth are superior to other measures of growth in predicting stock prices.[18] To that point, the research of Drs. Vander Weide and Carleton demonstrates that earnings growth projections have a statistically significant

[17] Eugene F. Brigham and Joel F. Houston, Fundamentals of Financial Management (Concise Fourth Edition, Thomson South-Western), at 317 (emphasis added).

[18] *See, e.g.*, Andreas C. Christofi, Petros C. Christofi, Marcus Lori and Donald M. Moliver, *Evaluating Common Stocks Using Value Line's Projected Cash Flows and Implied Growth Rate*, Journal of Investing (Spring 1999); Harris and Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management at 21 (Summer 1992); and Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988); Robert S. Harris, *Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return*, Financial Management (Spring 1986).

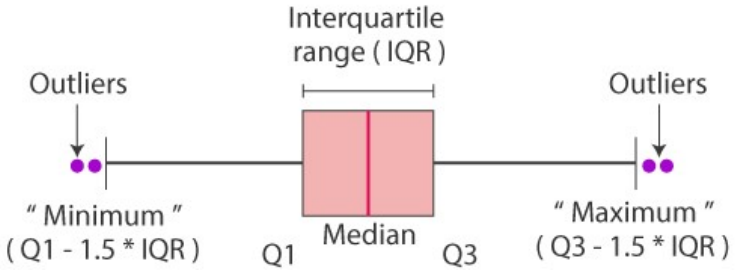
relationship to stock valuation levels, while dividend growth rates do not.[19] Those findings suggest that investors form their investment decisions based on expectations of growth in earnings, not dividends. In addition, the only forward-looking growth rates that are available on a consensus basis are analysts' EPS growth rates. The fact that earnings growth projections are the only widely available estimates of growth further supports the position that earnings growth is the most meaningful measure of growth among the investment community. Consequently, earnings growth, not dividend growth is the appropriate measure of long-term growth in the DCF model.

Q. Do you review the earnings growth rates included in your analysis for outliers?

A. Yes, I use the interquartile range ("IQR") test to test for earnings growth rate outliers. In statistics, the IQR is a measure of statistical dispersion and is defined as the difference between the top of the 3rd quartile and the bottom of the first quartile of the data sample. Values that are more than 1.5x below the bottom of the IQR and 1.5x above the top of the IQR are considered outliers, as illustrated in Figure 5 below.

[19] *See* Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

Figure 5: Interquartile Range Box Plot Outlier Test



The median of all the projected EPS growth rates from Zacks, Yahoo! Finance, and *Value Line* is 6.00 percent. The top of the third quartile is the EPS growth rate of 7.30 percent, and the bottom of the first quartile is the EPS growth rate of 5.00 percent. The IQR, therefore, is 2.30 percent (*i.e.,* 7.30 percent minus 5.00 percent). The low outlier threshold is 1.55 percent, and the high outlier threshold is 10.75 percent.[20] Because all the EPS growth rates fall within 1.55 percent and 10.75 percent, I do not remove any growth rates as outliers.

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

A. For each proxy company, I calculate the low, mean, and high DCF result. For the mean result, I combine the average of the three EPS growth rate estimates listed above with the subject company's expected dividend yield for each proxy company. I calculate the high DCF result by combining the maximum EPS growth rate estimate with the subject company's expected dividend yield. I use the same approach to calculate the low DCF result, using instead the minimum EPS growth rate estimate for each proxy company. I then calculate the mean and median low, mean, and high DCF results for the proxy group. In

[20] 1.55% = 5.00% - (1.5*2.30%); 10.75% = 7.30% + (1.5*2.30%)

developing my ROE recommendation, I rely on the average of the mean and median proxy group Constant Growth DCF results (*see* Figure 6, below, and Exhibit JEN-2). By relying on the average of the mean and median proxy group results, I consider the individual DCF results of each proxy company without giving undue weight to the highest or lowest estimates.

Figure 6: Constant Growth DCF Results[21]

	Low	Mean	High
30-Day Average	8.05%	9.54%	10.38%
90-Day Average	8.25%	9.76%	10.60%
180-Day Average	8.34%	9.85%	10.69%

2. Quarterly Growth DCF Model

Q. Please describe the Quarterly Growth DCF model.

A. As noted earlier, the Constant Growth DCF model is based on several limiting assumptions, one of which is that dividends are paid annually. However, most dividend-paying companies, including utilities, pay dividends on a quarterly (as opposed to an annual) basis. Although the dividend yield adjustment discussed earlier is meant to address that assumption (by increasing the observed dividend yield by one-half of the expected growth rate), it does not fully account for the quarterly receipt and reinvestment of dividends. As a consequence, the Constant Growth DCF model likely understates the Cost of Equity. The Quarterly Growth DCF model specifically incorporates the quarterly payment

[21] Exhibit JEN-2. Average of the mean and median proxy group results.

of dividends, and the associated quarterly compounding of those dividends as they are reinvested at the required ROE. As noted by Dr. Roger Morin:

> Clearly, given that dividends are paid quarterly and that the observed stock price reflects the quarterly nature of dividend payments, the market-required return must recognize quarterly compounding, for the investor receives dividend checks and reinvests the proceeds on a quarterly schedule ... The annual DCF model inherently understates the investors' true return because it assumes all cash flows received by investors are paid annually.[22]

Q. How is the dividend yield portion of the Quarterly DCF model calculated?

A. To more accurately reflect the timing and compounding of quarterly dividends, the model replaces the "*D*" component of the Constant Growth DCF model with the following equation:

$$D = d_1 (1+k)^{0.75} + d_2 (1+k)^{0.50} + d_3 (1+k)^{0.25} + d_4 (1+k)^{0} \quad [3]$$

Where:

d_1, d_2, d_3, d_4 = expected quarterly dividends over the coming year; and

k = the required Return on Equity.

Because the required ROE (k) is a variable in the dividend calculation, the Quarterly Growth DCF model is solved iteratively.

To calculate the expected dividends over the coming year for the proxy companies (*i.e.*, d_1, d_2, d_3, and d_4), I obtained the last four paid quarterly dividends for each company and multiplied them by one plus the growth rate (*i.e.,* $1 + g$). For the P_0 component of the dividend yield, I used the same average

[22] Roger A. Morin, Ph.D., New Regulatory Finance, Public Utility Reports, Inc., at 344 (2006).

stock prices applied in the Constant Growth DCF analysis (*i.e.*, 30-, 90-, and 180-trading day averages ended March 31, 2022) for each proxy company.

Q. What are the results of your Quarterly Growth DCF analysis?

A. My Quarterly Growth DCF results are summarized in Figure 7, below (*see also* Exhibit JEN-3). As with my Constant Growth DCF results, I rely on the average of the mean and median proxy group results.

Figure 7: Quarterly Growth DCF Results[23]

	Low	Mean	High
30-Day Average	8.14%	9.68%	10.55%
90-Day Average	8.35%	9.91%	10.78%
180-Day Average	8.44%	10.00%	10.87%

3. Capital Asset Pricing Model and Empirical Capital Asset Pricing Model

Q. Please describe the general form of the CAPM.

A. The CAPM is a risk premium method 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. As shown in Equation [4], the CAPM is defined by four components, each of which theoretically must be a forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f) \qquad [4]$$

Where:

K_e = the required market ROE for a security;

[23] Exhibit JEN-3. Average of the mean and median proxy group results.

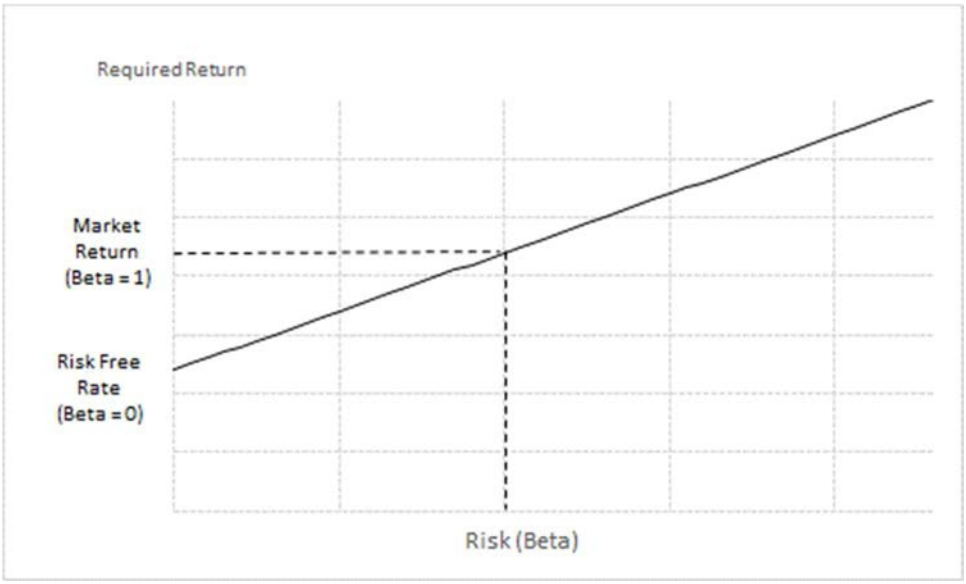
β = the Beta coefficient of that security;

r_f = the risk-free rate of return; and

r_m = the required return on the market as a whole.

Equation [4] describes the Security Market Line ("SML"), or the CAPM risk-return relationship, depicted in Figure 8 below. The intercept is the risk-free rate (r_f) that has a Beta coefficient of zero, and the slope is the expected market risk premium ($r_m - r_f$). As shown in Figure 8, the slope of the line is upward sloping, illustrating the principle that investments of higher risk require a higher return. By definition, r_m, the return on the market, has a Beta coefficient of 1.00.

Figure 8: Security Market Line



The CAPM assumes that all non-market or unsystematic risk, can be eliminated through diversification. The risk that cannot be eliminated through diversification is called market, or systematic risk. Therefore, the CAPM

assumes that investors require compensation only for systematic, or market, risk. Non-diversifiable (or systematic) risk is measured by the Beta coefficient, which is defined as:

$$\beta_j = \frac{\sigma_j}{\sigma_m} \times \rho_{j,m} \quad [5]$$

Where σ_j is the standard deviation of returns for company "j," σ_m is the standard deviation of returns for the broad market (as measured, for example, by the S&P 500 Index), and $\rho_{j,m}$ is the correlation of returns in between company j and the broad market. The Beta coefficient, therefore, represents both relative volatility (*i.e.*, the standard deviation) of returns, and the correlation in returns between the subject company and the overall market. Intuitively, higher Beta coefficients indicate that the subject company's returns have been relatively volatile and have moved in tandem with the overall market.

Q. What risk-free rates do you assume in your CAPM analysis?

A. I applied two estimates of the risk-free rate: (1) the current 30-day average yield on 30-year Treasury bonds (*i.e.*, 2.37 percent)[24] and (2) a projected 30-year Treasury yield (*i.e.*, 3.32 percent).[25]

Q. Why do you rely on the 30-year Treasury yield in the CAPM analysis?

A. In determining the security most relevant to the application of the CAPM, the term (or maturity) of the risk-free security should best match the life of the

[24] Source: Bloomberg Professional Service.

[25] The average of: (1) the average projected 30-year Treasury yield for the six quarters ended Q3 2023 and (2) the long-term projected 30-year Treasury yield for the years 2023-2027 and 2028-2032 reported by *Blue Chip Financial Forecasts. See, Blue Chip Financial Forecasts* Vol. 41, No. 4, April 1, 2022, at 2 and *Blue Chip Financial Forecasts,* Vol. 40, No. 12, December 1, 2021, at 14.

underlying investment.[26] Natural gas utilities are typically long-duration investments and, as such, the 30-year Treasury yield is more suitable for the purpose of calculating the cost of equity.

Q. What Beta coefficients do you use in your CAPM model?

A. I consider two estimates of the Beta coefficient for each proxy company. The first estimate is the current Beta coefficient reported by *Value Line* as of March 31, 2022. *Value Line* calculates the Beta coefficient using weekly returns over a five-year period. The proxy group mean and median Beta coefficients from *Value Line* are 0.85 and 0.83, respectively. *Value Line* adjusts the raw Beta coefficients to reflect the tendency of the Beta coefficient to regress toward the market mean of 1.00.

The second estimate is the adjusted Beta coefficient calculated using weekly return data from Bloomberg over the ten years ended March 31, 2022, rather than the five-year period used by *Value Line*. The proxy group mean and median ten-year Beta coefficients from Bloomberg are 0.78 and 0.79, respectively. As with the *Value Line* Beta coefficients, the raw Bloomberg Beta coefficients are adjusted to reflect the tendency of the Beta coefficient to regress toward the market mean of 1.00.

[26] Source: Morningstar, 2013 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook, at 44.

Q. Are the current *Value Line* Beta coefficients a reasonable reflection of the proxy companies' Beta coefficients in the future during the time rates will be in effect?

A. Yes, I believe so. As explained in Section V below, Beta coefficients for the proxy group and utilities generally have increased since February 2020, indicating higher volatility (and therefore risk) for utility company stocks. However, because *Value Line* uses five years of weekly return data in calculating its Beta coefficients, the market's current reflection of utility stocks' higher risk captures a trend that began five years ago and will remain in the data for at least the next three to five years during the time rates will be in effect. Moreover, *Value Line's* current Beta coefficients are not substantially different from the ten-year Beta coefficients from Bloomberg. Nonetheless, to the extent *Value Line's* current Beta coefficients are considered to be inconsistent with expectations for utility Beta coefficients going forward, the ten-year Beta coefficients provide a longer-term perspective of Beta coefficients for the proxy group.

Q. What estimates of the expected market return do you use to calculate the market risk premium?

A. I apply two estimates of the expected market return. The first calculates the market capitalization-weighted ROE of the S&P 500 Index by applying the Constant Growth DCF model described earlier to each of the companies in the S&P 500 Index. The second considers the long-term, historical arithmetic

average market return of 12.33 percent between 1926 and 2021 reported by Duff & Phelps.[27]

Q. Please more fully explain your forward-looking DCF approach to estimating the market return.

A. As shown in Exhibit JEN-4, I apply the Constant Growth DCF model to each of the S&P 500 Index companies using data from both Bloomberg and *Value Line* to calculate the market capitalization-weighted ROE for the S&P 500 Index. I calculate the expected dividend yield using the same one-half growth rate assumption described earlier and combine that value with *Value Line's* projected earnings growth rate for each of the S&P 500 companies for which *Value Line* provides consensus earnings growth rates. I perform the same analysis using Bloomberg's consensus earnings growth rate projection for each of the S&P 500 companies. The expected market return from *Value Line* and Bloomberg are 16.14 percent and 14.64 percent, respectively. To be conservative, I rely on Bloomberg's market return estimate of 14.64 percent in my CAPM analysis.

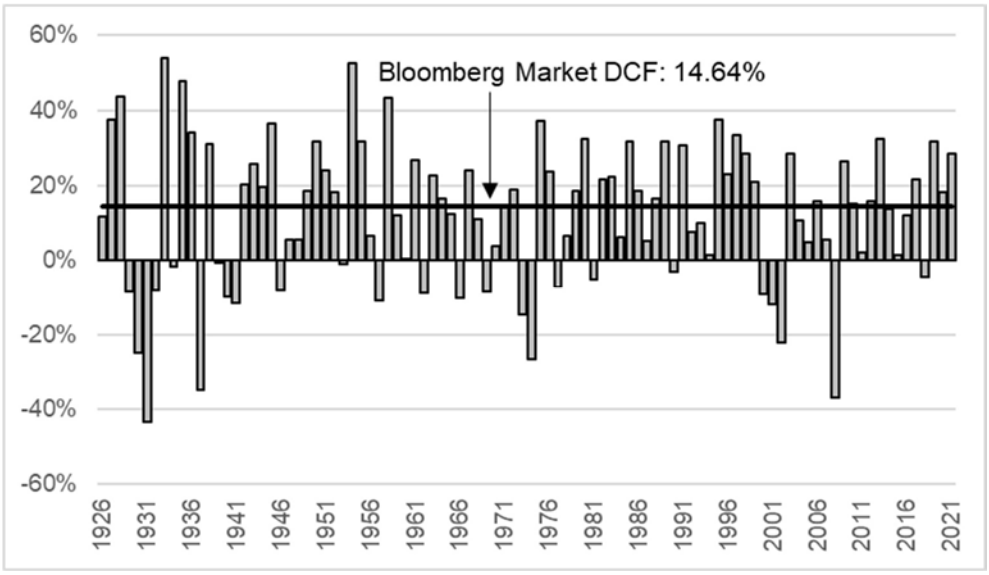
Q. Is the Bloomberg-based market DCF-based estimate of 14.64 percent consistent with actual observed returns on the market?

A. Yes, it is. As shown in Figure 9 below, an expected market required return of 14.64 percent or higher occurred in 48 of the last 96 years (*i.e.,* 50 percent of the time). Additionally, since 2009, the market return has averaged 16.55 percent, and equaled or exceeded 14.64 percent in eight of the last 13 years and

[27] Duff & Phelps, 2022 SBBI Yearbook, at Appendix A-1.

ten of the last 20 years. In other words, an annual market return of 14.64 percent, or higher, has occurred frequently.

Figure 9: Annual Market Return (1926 – 2021)



Q. Why do you also consider the long-term arithmetic average historical return on the market of 12.33 percent as an alternate estimate of the expected market return?

A. My objective is to develop a reasonable estimate of the expected market return during the time rates will be in effect to apply in the CAPM. Because the Cost of Equity is forward looking, any estimate – whether based on historical or projected data – assumes the estimate reflects investors' expectations into the future. Although the 14.64 percent expected market return is highly consistent with historically observed market returns (as shown in Figure 9 above), it is above the long-term arithmetic annual average market return. Therefore, it may be reasonable to expect that over time, the market return will revert to its long-run historical arithmetic average. From that perspective, the application of the

long-run historical arithmetic average market return as an alternate estimate of the expected market return is prospective in nature.

Q. With the risk-free rates and market required return estimates described above, how do you calculate the market risk premium?

A. I consider two estimates of the risk-free rate and two estimates of the expected market return. Combined, those variables produce four estimates of the expected market risk premium, shown below in Figure 10.

Figure 10: Market Risk Premium Estimates

	Current Risk-Free Rate (2.37%)	**Projected Risk-Free Rate (3.32%)**
Bloomberg DCF-based Expected Market Return (14.64%)	12.27%	11.32%
Long-Term Historical Average Market Return (12.33%)	9.96%	9.01%

Q. What are the results of your CAPM analysis?

A. To present a spectrum of CAPM estimates from the variables described above, Exhibit JEN-5 calculates CAPM estimates under two approaches. The first approach applies the most conservative estimates of each variable; specifically, Bloomberg 10-year Beta coefficients and the long-term arithmetic average historical market return, resulting in a low-end range of CAPM estimates. The second approach applies the current *Value Line* Beta coefficients and the DCF-based expected market return from Bloomberg, which provides a high-end range of CAPM estimates. As shown in Figure 11 below, the proxy group

average and median CAPM results suggest an ROE range of 10.12 percent to 12.94 percent (*see* Exhibit JEN-5).

Figure 11: Summary of CAPM Results[28]

	Current 30-Year Treasury Yield (2.37%)	**Projected 30-Year Treasury Yield (3.32%)**
Long-Term Historical Average Market Return and Bloomberg 10-year Beta Coefficient		
Proxy Group Average	10.12%	10.33%
Proxy Group Median	10.21%	10.41%
Bloomberg DCF-Based Expected Market Return and Value Line 5-year Beta Coefficient		
Proxy Group Average	12.80%	12.94%
Proxy Group Median	12.49%	12.66%

Q. Do you consider another form of the CAPM?

A. Yes, I also consider the Empirical CAPM ("ECAPM") approach, which calculates the product of the adjusted Beta coefficient and the Market Risk Premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the Market Risk Premium, without any effect from the Beta coefficient.[29] The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as expressed in Equation [6] below:

$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \quad [6]$$

Where:

k_e = the required market ROE;

[28] Exhibit JEN-5.

[29] *See, e.g.*, Roger A. Morin, Ph.D., New Regulatory Finance, at 189-190 (2006).

β = the adjusted Beta coefficient of an individual security;

r_f = the risk-free rate of return; and

r_m = the required return on the market as a whole.

Q. What is the benefit of the ECAPM approach?

A. The ECAPM addresses the tendency of the CAPM to underestimate the cost of equity for companies with low Beta coefficients, such as regulated utilities. As discussed below, the ECAPM recognizes academic research that indicates that the risk-return relationship is flatter than that estimated by the CAPM, and that the CAPM under-estimates the alpha, or the constant return term.[30]

Numerous tests of the CAPM have measured the extent to which security returns and Beta coefficients are related as predicted by the CAPM. The ECAPM method reflects the finding that the actual SML described by the CAPM formula is not as steeply sloped as the predicted SML.[31] Fama and French state that "[t]he returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low."[32] Similarly, Morin states:

> With few exceptions, the empirical studies agree that . . . low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted. . . .
>
> Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:

[30] *Ibid*., at 191.

[31] *Ibid., at 175.*

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

$$K = R_F + x\,(R_M - R_F) + (1-x)\beta(R_M - R_F)$$

where x is a fraction to be determined empirically. The value of x that best explains the observed relationship Return = 0.0829 + 0.0520 β is between 0.25 and 0.30. If x = 0.25, the equation becomes:

$$K = R_F + 0.25(R_M - R_F) + 0.75\,\beta(R_M - R_F)$$ [33]

Q. Does the application of adjusted Beta coefficients in the ECAPM address the empirical issues with the CAPM?

A. No, it does not. Beta coefficients are adjusted because of their general regression tendency to converge toward 1.00 over time, *i.e.*, over successive calculations. As also noted earlier, numerous studies have determined that at any given point in time, the SML described by the CAPM formula is not as steeply sloped as the predicted SML. To that point, Morin explains:

> Some have argued that the use of the ECAPM is inconsistent with the use of adjusted betas, such as those supplied by Value Line and Bloomberg. This is because the reason for using the ECAPM is to allow for the tendency of betas to regress toward the mean value of 1.00 over time, and, since Value Line betas are already adjusted for such trend, an ECAPM analysis results in double-counting. This argument is erroneous. Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. The ECAPM and the use of adjusted betas comprised two separate features of asset pricing. Even if a company's beta is estimated accurately, the CAPM still understates the return for low-beta stocks. Even if the ECAPM is used, the return for low-beta securities is understated if the betas are understated. Referring back to Figure 6-1, the ECAPM is a return (vertical

[33] Roger A. Morin, Ph.D., New Regulatory Finance, at 175, 190 (2006).

axis) adjustment and not a beta (horizontal axis) adjustment. Both adjustments are necessary. [34]

Therefore, it is appropriate to rely on adjusted Beta coefficients in both the CAPM and ECAPM.

Q. What are the results of your ECAPM analyses?

A. I apply the same market returns, Beta coefficients, and risk-free rates described earlier to the ECAPM formula shown in Equation [6] above. The results of my ECAPM analyses are shown in Exhibit JEN-5 and summarized in Figure 12 below.

Figure 12: Summary of ECAPM Results[35]

	Current 30-Year Treasury Yield (2.37%)	**Projected 30-Year Treasury Yield (3.32%)**
Long-Term Historical Average Market Return and Bloomberg 10-year Beta Coefficient		
Proxy Group Average	10.67%	10.83%
Proxy Group Median	10.74%	10.89%
Bloomberg DCF-Based Expected Market Return and Value Line 5-year Beta Coefficient		
Proxy Group Average	13.26%	13.37%
Proxy Group Median	13.03%	13.15%

4. Bond Yield Plus Risk Premium Approach

Q. Please describe the Bond Yield Plus Risk Premium approach.

A. The Bond Yield Plus Risk Premium approach is based on the basic financial principle of risk and return, which states that equity investors require a premium

[34] *Ibid.*, at 191.

[35] Exhibit JEN-5.

over the return required as a bondholder to account for the incremental residual risk associated with equity ownership. Risk premium approaches, therefore, estimate the cost of equity as the sum of an equity risk premium and the yield on a particular class of bonds.

Q. Please explain how you perform your Bond Yield Plus Risk Premium analysis.

A. I first define the equity risk premium as the difference between the authorized ROE and the then-prevailing level of long-term (*i.e.*, 30-year) Treasury yield. I gather the authorized ROE for 1,226 natural gas utility rate proceedings between January 1, 1980, and March 31, 2022. To reflect the prevailing level of bond yields during the pendency of the proceedings, I calculate the average 30-year Treasury yield over the average period between the filing of the rate case and the date of the final order (approximately 187 days).

Because the data covers several economic cycles, the analysis is helpful in assessing the change in the equity risk premium over time. Prior research, for example, has shown that the equity risk premium is inversely related to the level of bond yields.[36] That analysis is particularly relevant given the relatively low, but increasing, level of current Treasury yields.

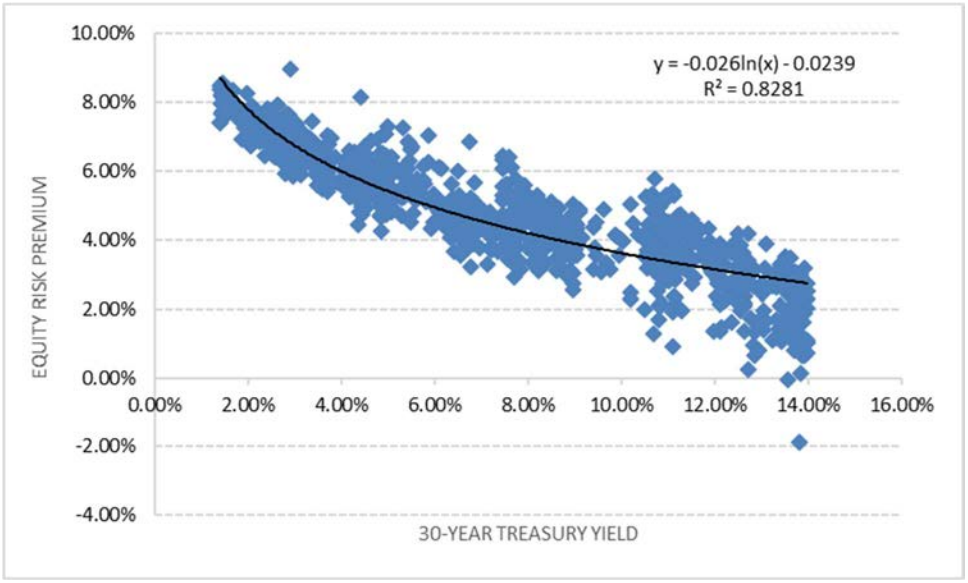
[36] *See*, *for example*, Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, (Summer 1992), at 63-70; Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, Financial Management, (Spring 1985), at 33-45; and Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, Financial Management, (Autumn 1995), at 89-95.

Q. How do you analyze the relationship between interest rates and the Equity Risk Premium?

A. I estimate the relationship between bond yields and the equity risk premium by applying a regression analysis, in which the observed equity risk premium described above is the dependent variable, and the 30-year Treasury yield is the independent variable. To account for the variability in bond yields and authorized ROEs over several decades, I used the semi-log regression, in which the equity risk premium is expressed as a function of the natural log of the 30-year Treasury yield:

$$RP = \alpha + \beta \left(LN \left(T_{30} \right) \right) \quad [7]$$

Figure 13: Equity Risk Premium[37]



As Figure 13 illustrates, the equity risk premium increases as interest rates fall. The finding that the equity risk premium and interest rates are inversely related is supported by published research. For example, Morin notes that:

[37] Exhibit JEN-6.

"[p]ublished studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin (2005), McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates – rising when rates fell and declining when interest rates rose."[38] Based on the regression coefficients in Figure 13, the implied ROE is between 9.73 percent and 9.80 percent (*see* Figure 14 and Exhibit JEN-6).

Figure 14: Summary of Bond Yield Plus Risk Premium Results[39]

	Return on Equity
Current 30-Year Treasury (2.37%)	9.73%
Projected 30-Year Treasury (3.32%)	9.80%

IV. BUSINESS RISKS AND OTHER CONSIDERATIONS

Q. Do you consider additional factors in developing your ROE recommendation for FCG?

A. Yes, I do. As noted earlier, because the proxy group is not identical in risk to FCG, an assessment of the differences in risk between FCG and the proxy group must be undertaken in order to develop an appropriate estimate of the Company's cost of equity. Therefore, I consider FCG's significantly smaller size, the regulatory environment in which it operates, its proposed multi-year

[38] Roger A: Morin, Ph.D., New Regulatory Finance, Public Utilities Reports, Inc., at 128 (2006) [clarification added].

[39] Exhibit JEN-6.

rate plan, and the effect of flotation costs in determining where the Company's cost of equity falls within the range of analytical results.

A. Small Size

Q. Please explain the risk associated with small size.

A. Both the financial and academic communities have long accepted the proposition that the cost of equity for small firms is subject to a "size effect."[40] Although empirical evidence of the size effect often is from studies of industries beyond regulated utilities, utility analysts also have noted the risks associated with small market capitalizations. Specifically, an analyst from Ibbotson Associates noted:

> For small utilities, investors face additional obstacles, such as a smaller customer base, limited financial resources, and a lack of diversification across customers, energy sources, and geography. These obstacles imply a higher investor return.[41]

Small size, therefore, leads to two categories of increased risk for investors: (1) liquidity risk (*i.e.*, the risk of not being able to sell one's shares in a timely manner due to the relatively thin market for the securities); and (2) fundamental business risks.

[40] Mario Levis, *The record on small companies: A review of the evidence*, Journal of Asset Management, March 2002, at 368-397, for a review of literature relating to the size effect.

[41] Michael Annin, *Equity and the Small-Stock Effect*, Public Utilities Fortnightly, October 15, 1995.

Q. How does the comparatively small size of FCG affect its business risks relative to the proxy group of companies?

A. In general, smaller utility companies are less able to withstand adverse events that affect their revenues and expenses. Capital expenditures for system maintenance and replacements put proportionately greater pressure on customer costs, potentially leading to customer attrition or demand reduction. These risks affect the return required by investors for smaller companies.

Q. Is there support in the financial community for the use of a small size premium?

A. Yes. There have been several studies that demonstrate the existence of the size premium. One of the earliest works in this area found that over a period of 40 years "the common stock of small firms had, on average, higher risk-adjusted returns than the common stock of large firms."[42] The author, who referred to that finding as the "size effect," suggested that the CAPM was mis-specified, in that on average, smaller firms had significantly larger risk-adjusted returns than larger firms. The author also concluded that the size effect was "most pronounced for the smallest firms in the sample."[43] Since then, additional empirical research has focused on explaining the size effect as a function of lower trading volume and other factors, but the proposition that Beta coefficients fail to reflect the risks of smaller firms persists.[44]

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[42] R. W. Banz, *The Relationship Between Return and Market Value of Common Stocks*, Journal of Financial Economics, 9, 1981.

[43] *Ibid.*

[44] *See, e.g.,* Mario Levis, *The record on small companies: A review of the evidence*, Journal of Asset Management, March, 2002.

In 1994, Fama and French focused on the issue of whether the CAPM adequately explained security returns and proposed a "three factor" model for expected security returns. Those factors include: (1) the covariance with the market, (2) size, and (3) financial risk as determined by the book-to-market ratio. As explained by Morningstar, Fama and French "found that the returns on stocks are better explained as a function of size and book-to-market value in addition to the single market factor of the CAPM, with the company's size capturing the size effect and its book-to-market ratio capturing the financial distress of a firm."[45]

Q. Is it appropriate to consider the risk associated with FCG's small size even though its ultimate parent is NextEra?

A. Yes, it is. The widely accepted "standalone" principle in the regulatory and financial communities treats each utility subsidiary as its own company. Importantly, the cost of capital depends on the use of that capital, not on its source. In other words, the cost of equity is a function of the risk of the equity investment, not on the source of equity funding (the parent company).

The opportunity cost concept applies regardless of the source of the funding. Parent entities have capital constraints as do other investors and must look at the attractiveness of the expected risk-adjusted return of each investment alternative in their capital budgeting process. When funding is provided by a parent entity, the return still must be sufficient to provide an incentive to

[45] Morningstar, Ibbotson SBBI 2013 Valuation Yearbook, at 109.

allocate equity capital to the subsidiary or business unit rather than other internal or external investment opportunities. That is, the regulated subsidiary must compete for capital with all the parent company's affiliates, as well as with other, similarly situated utility companies. In that respect, investors value corporate entities on a sum-of-the-parts basis and expect each division within the parent company to provide an appropriate risk-adjusted return. Therefore, it is important that the authorized ROE reflect the risks and prospects of FCG's operations and support its financial integrity from a stand-alone perspective.

Q. How does FCG compare in size to the proxy companies?

A. As shown earlier in Figure 4 in Section III above, FCG is substantially smaller than the proxy group on average in terms of number of natural gas customers, sales volume, operating income, and net utility plant. Because FCG is not a separately traded entity, an estimated stand-alone market capitalization for FCG must be calculated. The implied market capitalization of FCG is calculated by multiplying the median market-to-book ratio for the proxy group of 1.88 to the Company's implied total common equity of $291.44 million.[46] The implied market capitalization based on that calculation is approximately $548.53 million. As another perspective of the relative size difference, the proxy group median market capitalization is approximately $4.36 billion, which is approximately 7.94 times FCG's implied market capitalization.

[46] Equity value of FCG is estimated from the proposed test year rate base of approximately $489 million shown in MFR G1-1 (RSAM) and requested investor-supplied equity ratio. *See* Exhibit JEN-7.

Q. How did you estimate the size premium for FCG?

A. In its *Cost of Capital Navigator*, Duff & Phelps presents its calculation of the size premium for deciles of market capitalizations relative to the S&P 500 Index. An additional estimate of the size premium associated with FCG, therefore, is the difference in the Duff & Phelps size risk premiums for the proxy group median market capitalization relative to the implied market capitalization for FCG.

As shown on Exhibit JEN-7, based on recent market data, the median market capitalization of the proxy group was approximately $4.36 billion, which corresponds to the fifth decile of Duff & Phelps's market capitalization data. Based on the Duff & Phelps analysis, the fifth decile has a size premium of 0.89 percent (or 89 basis points). The implied market capitalization for FCG is approximately $548.53 million, which falls within the 9th decile and corresponds to a size premium of 2.10 percent (or 210 basis points). The difference between those size premiums is 121 basis points (2.10 percent – 0.89 percent).

Q. Have you considered the significantly smaller size of FCG in your ROE recommendation?

A. Yes. While I have quantified the small size effect, rather than proposing a specific premium, I have considered FCG's significantly smaller size to determine where FCG's ROE appropriately falls within the range of analytical results.

B. Regulatory Environment

Q. Do you have any preliminary thoughts on the importance of the regulatory environment and access to capital for natural gas utilities such as FCG?

A. Yes, I do. As noted earlier, as a capital-intensive enterprise, the allowed ROE should enable FCG to finance capital expenditures and working capital requirements at reasonable rates and to maintain its financial integrity in a variety of economic and capital market conditions. As discussed throughout my Direct Testimony, a return that is adequate to attract capital at reasonable terms enables the utility to provide safe, reliable service while maintaining its financial soundness to the benefit of customers.

Natural gas utilities are one of the most capital-intensive sectors. On average, natural gas utilities generate less than half as much revenue per dollar of assets as the non-utility U.S. companies covered by *Value Line*.[47] To fund the significant capital expenditures needed to maintain, expand, and modernize existing infrastructure, natural gas utilities require sufficient internally generated cash flow and ongoing access to investor supplied capital. Because natural gas utilities' ratio of cash outflow for plant to net cash flow from operations tends to be above 1.0 (that is, cash spent on plant exceeds net cash flow received from operations), it is critical that regulation provide predictable,

[47] Source: *Value Line,* accessed March 15, 2022.

adequate, and achievable allowed returns that support the financial integrity of the utility.

Q. How does the regulatory environment influence utilities' efficient access to capital?

A. As noted earlier, the regulatory environment is one of the most important factors investors consider when assessing a utility's risk, as it is a significant driver of a utility's earnings and cash flow.[48] Investors and rating agencies understand that a constructive regulatory environment is critical to support utilities' credit and financial integrity, especially during adverse market conditions. Moody's considers a utility's regulatory environment to be so important that 50 percent of the factors that weigh in its ratings determinations are related to the nature of regulation.[49] Among the factors considered by Moody's in assessing the regulatory framework are the predictability and consistency of regulatory actions:

> As the revenues set by the regulator are a primary component of a utility's cash flow, the utility's ability to obtain predictable and supportive treatment within its regulatory framework is one of the most significant factors in assessing a utility's credit quality.
>
> ***
>
> In situations where the regulatory framework is less supportive, or is more contentious, a utility's credit quality can deteriorate rapidly.[50]

[48] *See, e.g*., Moody's Investor Service, Rating Methodology, Regulated Electric and Gas Utilities, at 4 (June 23, 2017).

[49] *See* Moody's Investors Service, Rating Methodology, *Regulated Gas and Electric Utilities* at 4 (June 23, 2017).

[50] Moody's Investors Service, *Regulatory Frameworks – Ratings and Credit Quality for Investor-Owned Utilities* at 2 (June 18, 2010).

Similarly, as S&P notes, "[o]ne significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions where a utility operates."[51] S&P explains that "[w]hen we evaluate U.S utility regulatory environments, we consider financial stability to be of substantial importance. Cash takes precedence in credit analysis. A regulatory jurisdiction that recognizes the significance of cash flow in its decision-making is one that will appeal to creditors."[52]

Consequently, a utility that operates in a less predictable and more challenging regulatory environment is likely to be viewed as a riskier investment, and may result in lower credit ratings, constrained access to capital (particularly in adverse market environments), and higher costs of both debt and equity, all else being equal. From that perspective, customers benefit from a constructive regulatory environment.

Q. Please summarize your review of the Company's regulatory environment and risk relative to the proxy group.

A. The regulatory environment significantly affects both the access to and the cost of capital. Regulatory decisions regarding the authorized ROE and capital structure have direct consequences for the subject utility's internal cash flow generation, and therefore the financial metrics reviewed by ratings agencies in their ratings assessments. Because credit ratings are intended to reflect the

[51] S&P Global Ratings, RatingsDirect, Assessing U.S. Investor-Owned Utility Regulatory Environments at 2 (August 10, 2016).

[52] *Ibid*. at 6.

ability to meet financial obligations as they come due, the ability to generate the cash flows required to meet those obligations (and to provide an additional amount for unexpected events) is of critical importance to both debt and equity investors.[53]

To assess the regulatory environment, I reviewed the key cost recovery mechanisms and ratemaking components of the Company and each of the proxy group operating companies and the jurisdictions in which they operate, including test year, rate base methodology, revenue stabilization mechanisms, and other key cost recovery mechanisms and rate structures (*see* Exhibit JEN-8).

As shown in Exhibit JEN-8:

- 100 percent have a mechanism to recover the cost of gas commodity purchases, like FCG;
- 96 percent have capital and infrastructure replacement cost recovery mechanisms, like FCG;

[53] It is important to note that while credit ratings are important to equity investors, credit ratings are developed from the perspective of debt investors. As noted earlier, equity investors bear residual risk; therefore, the risks that debt holders are concerned with as reflected in credit rating assessments are not equivalent to the risks borne by equity investors.

- Unlike FCG, 88 percent have some form of a revenue stabilization mechanism such as a full or partial decoupling mechanism, or annual rate review mechanism;[54]
- Like the Company, 63 percent are able to recover costs associated with energy efficiency and conservation programs;
- 54 percent use a partially or fully forecast test year like FCG and 46 percent use an average rate base methodology; and
- Only one other proxy company has a multi-year rate plan.[55]

Q. Is FCG proposing any new mechanisms in this proceeding?

A. Yes, I understand the Company is proposing a Reserve Surplus Amortization Mechanism ("RSAM") similar to that approved by the Commission for FPL. As explained by FCG witness Campbell, the RSAM would permit FCG to use a non-cash accounting mechanism to maintain its Commission-adjusted ROE within the ROE range approved in this proceeding, without adjusting rates to customers. This would enable FCG to avoid a rate case if the earned ROE is above or below the approved ROE band. FCG witness Campbell estimates that the proposed RSAM would allow the Company to avoid a rate case through at least the end of 2026.

[54] Annual rate review mechanisms are also referred to as formula rate plans in which the annual earned ROE is compared to a target authorized ROE and rates are adjusted if they fall outside an earnings deadband around the target ROE.

[55] Northwest Natural Gas Company was authorized a two-step rate increase over two years in its 2021 Washington rate case, which did not include a rate case "stay out" provision for the term of the two-year rate plan.

Q. Is the proposed RSAM equivalent to other revenue stabilization mechanisms used by the proxy group natural gas operating companies such as revenue decoupling or annual rate review mechanism?

A. No. While one objective of revenue decoupling and annual rate review mechanisms is to stabilize revenues and customer bills, the difference between the proposed RSAM and other revenue stabilization mechanisms is that the RSAM affects only non-cash earnings and rates to customers are not adjusted up or down, as is the case with revenue decoupling and annual rate review mechanisms. Further, while the RSAM may stabilize the Company's non-cash earnings, it does not affect FCG's cash flows – and therefore its credit metrics – as rates are not adjusted. As discussed below, however, the combination of the Company's current and proposed mechanisms, on balance, render the Company similar in risk to the proxy group.

Q. Do FCG's rate mechanisms reduce its risk?

A. No, they do not. It is important to remember that the assessment of risk is necessarily a comparative exercise. As noted above and shown in Exhibit JEN-8, most of the proxy companies have similar cost recovery mechanisms available to them in the jurisdictions in which they operate. While the specific details of the mechanics of the cost recovery mechanisms may differ from utility to utility and jurisdiction to jurisdiction, their objective is the same: to improve the timeliness of cost recovery and mitigate (but not necessarily eliminate) earnings erosion associated with regulatory lag. Further, 88 percent of the proxy group operating companies have a full or partial decoupling

mechanism, whereas FCG does not. However, because the proposed RSAM would stabilize the Company's non-cash earnings, I conclude the Company's regulatory risk, on balance, is similar to the proxy group.

Q. Are there risks associated with FCG's proposed four-year rate plan?

A. Yes, there are. While FCG's multi-year rate plan benefits customers and the Company by providing customers rate stability and certainty during the term of the four-year rate plan, there are also certain risks associated with the proposed four-year rate plan. In particular, the increasing inflationary and interest rate environment discussed in Section V introduces greater risk to the Company during the rate period. Because the proposed multi-year rate plan limits FCG's ability to request a change in rates due if costs rise, the risks of higher operating and capital costs are borne by shareholders. Further, if any of the inputs to the ROE methods (*e.g.*, growth rates, dividend yields, Beta coefficients, risk premia, or long-term Treasury yields) increase during the rate period, the cost of equity for FCG will increase without a corresponding increase in the authorized ROE. Given the increasing inflationary and interest rate environment, it is reasonable to assume a higher probability of increasing external cost pressures during the rate period.

Q. What are your conclusions regarding the regulatory environment and need to maintain access to capital?

A. The regulatory environment is one of the most important issues considered by both debt and equity investors in assessing the risks and prospects of utility companies. The operating companies within the proxy group have similar cost

recovery and ratemaking mechanisms as FCG, although the Company's multi-year rate plan introduces some incremental risk. Because utilities are capital intensive enterprises, it is essential that the ROE and capital structure authorized in this proceeding enable FCG to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its system, maintain sufficient levels of liquidity to fund unexpected events, and sustain confidence in Florida's regulatory environment among credit rating agencies and investors.

C. Flotation Costs

Q. What are flotation costs?

A. Flotation costs are the costs associated with issuing equity, including out-of-pocket costs for preparing, filing, underwriting, and other costs of issuing equity. These costs reduce the net proceeds a company receives from an equity issuance. As explained below, failing to allow for the recovery of flotation costs inhibits a utility's ability to fully earn its authorized ROE, diminishing its ability to efficiently attract capital.

Q. Why is it important to recognize flotation costs in the authorized ROE?

A. To attract and retain investors, a regulated utility must have a reasonable opportunity to earn a return that is competitive to returns available to other investments of similar risk and compensatory to investors. To the extent a company is denied the opportunity to recover equity issuance costs, actual

returns will fall short of expected (or required) returns, diminishing its ability to attract capital on reasonable terms.

Q. Are flotation costs part of the utility's invested costs or expenses?

A. Flotation costs are invested (*i.e.*, capital) costs of the utility and are reflected on the balance sheet under "paid in capital." They are not expenses; therefore, they are not included on the income statement. Although much of a utility's flotation costs are incurred prior to the test year, they remain part of the cost structure long after they are incurred, even if no new issuances are planned in the near future. To the extent that a company is denied the opportunity to recover prudently incurred flotation costs, actual returns will fall short of expected (or required) returns, thereby diminishing the utility's ability to attract capital on reasonable terms.

Q. Do the DCF and Risk Premium-based models account for the effect of flotation costs?

A. No. The models used to estimate the investor-required return assume no transaction costs (*i.e.*, "friction"); therefore, the costs are not reflected in stock prices or the risk premium. Consequently, an adjustment must be made to the quantitative model results to reflect equity issuance costs.

Q. Has the Commission allowed recovery of flotation costs in prior rate cases?

A. Yes, it has. In its order for FPUC in Docket No. 070304-EI, the Commission noted, "[w]e have traditionally recognized a reasonable adjustment for flotation costs in the determination of the required return on equity."[56]

Q. How do you calculate the effect of flotation costs on the cost of equity?

A. As shown in Exhibit JEN-9, I calculate the weighted average issuance costs for the two most recent equity issuances for each proxy company. I then modify the DCF calculation to adjust the dividend yield to reimburse investors for direct equity issuance costs. As Exhibit JEN-9 shows, a reasonable estimate of flotation costs is approximately nine basis points. As with my analysis of the premium associated with the Company's significantly smaller size, I have not made an explicit adjustment for flotation costs; rather I have considered them in determining my recommended ROE for FCG.

V. CAPITAL MARKET ENVIRONMENT

Q. Do economic conditions influence the required Cost of Capital and required return on common equity?

A. Yes. The required cost of capital, including the ROE, is a function of prevailing and expected economic and capital market conditions. All analytical models used to estimate the investor-required ROE are influenced by current and

[56] *In re: Petition for rate increase by Florida Public Utilities Company*, Docket No. 070304-EI, Order No. PSC-08-0327-FOF-EI, at 37 (F.P.S.C. May 19, 2008).

expected capital market conditions. Because the models are based on simplifying assumptions that may not hold true under specific market circumstances, it is important to assess the reasonableness of any financial model's results in the context of current and expected market data.

As discussed below, there have been dramatic shifts in the capital markets brought about by the global COVID-19 pandemic that disrupted the economic and financial markets beginning in early 2020. In particular, volatility for both utility stocks and the broader market increased, indicating higher risk for equity investors. In addition, the Federal Reserve recently began tightening its monetary policies, pushing up interest rates. Further, credit spreads between utility and Treasury bonds have widened, and inflation is at the highest levels in the last 40 years. All these factors indicate higher capital costs going forward.

Q. Please summarize the changes in capital market conditions since early 2020.

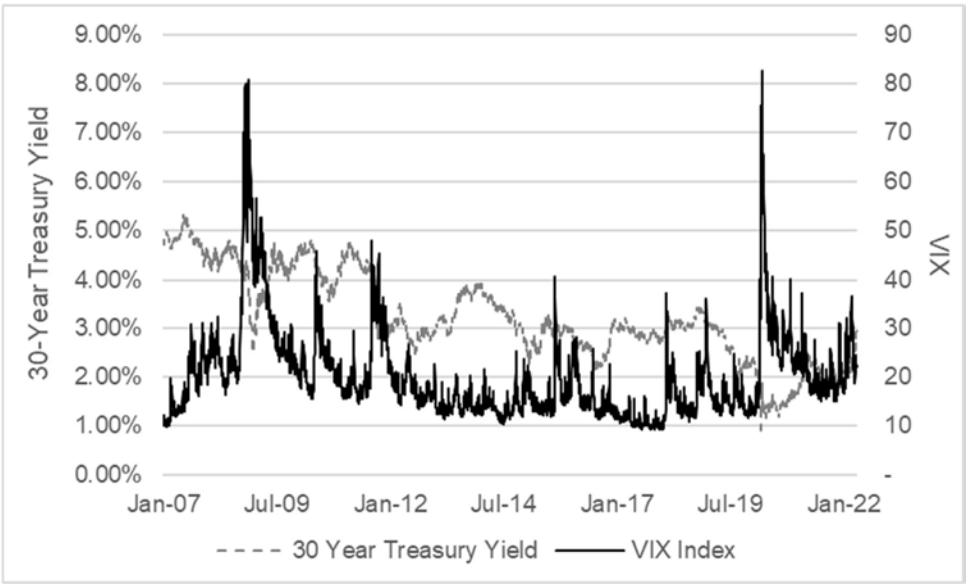
A. The speed and severity of the increase in market risk and the loss in equity market value after the onset of the COVID-19 pandemic cut across all market sectors, including utilities. From February 25 to March 23, 2020, the Standard & Poor's ("S&P") 500 Index lost 28.50 percent in value and the utility sector lost approximately 34.00 percent of its value.[57] At the same time, the Chicago Board Options Exchange ("CBOE") Volatility Index ("VIX"), a measure of

[57] Source: Yahoo! Finance. Utility sector measured by the XLU and Dow Jones Utility Average.

expected market volatility, nearly tripled (from 27.85 on February 25, 2020 to 82.69 on March 16, 2020).[58]

Treasury bond yields also declined rapidly as investors sought the relative safety of government bonds associated with higher market volatility and the Federal Reserve reduced the Federal Funds rate to a target range of 0 percent to 0.25 percent. As shown in Figure 15 below, significant and abrupt increases in volatility tend to be associated with declines in Treasury yields.

Figure 15: 30-Year Treasury Yields vs. VIX[59]



That relationship makes intuitive sense; as investors see increasing risk, their objectives may shift to capital preservation (that is, avoiding a capital loss). A means of doing so is to allocate capital to the relative safety of Treasury

[58] Source: Yahoo! Finance.

[59] Source: Yahoo! Finance.

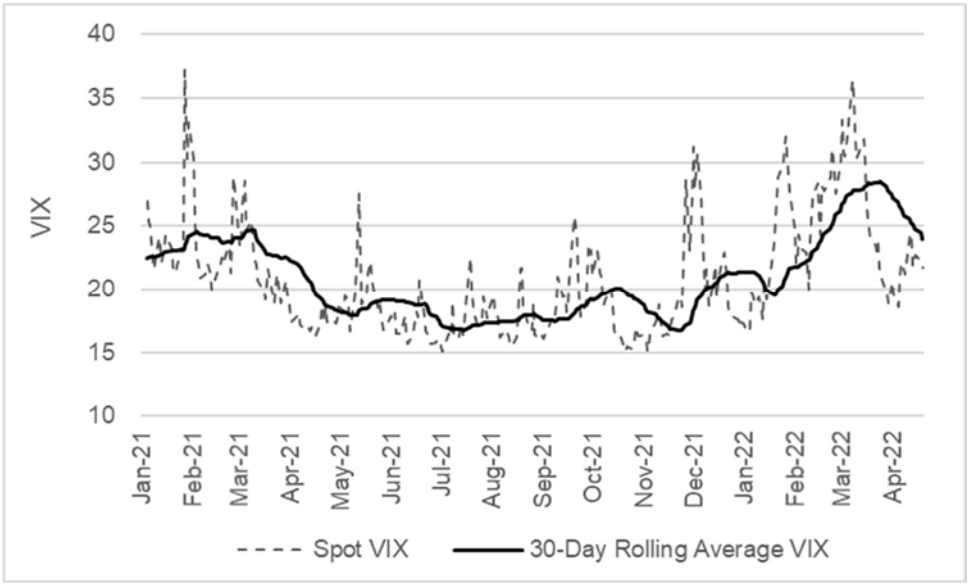
securities, in a "flight to safety." Because Treasury yields are inversely related to Treasury bond prices, as investors bid up the prices of bonds, they bid down the yields. In those instances, the decline in yields does not reflect a reduction in required returns, it reflects an increase in risk aversion and, therefore, an increase in required equity returns as investors require higher returns to compensate them for bearing additional market risk.

Although federal government and central bank actions to support the U.S. economy stabilized the capital markets somewhat, volatility (and, therefore, risk) remains elevated for the market and, in particular, for the utility sector.

Q. Has market volatility remained elevated relative to historical levels in recent months?

A. Yes. A visible and widely reported measure of expected market volatility is the VIX. Because volatility is a measure of risk, increases in the VIX, or in its volatility, are a broad indicator of expected increases in market risk. As Figure 16 below shows, market volatility has been increasing since last November, spurred by inflation worries and the recent conflict in Ukraine.

Figure 16: VIX Index (2021-2022)[60]



A further measure of market uncertainty is the volatility of the VIX itself. That is, we can look to the expected volatility of volatility, as measured by Chicago Board Options Exchange VVIX Index ("VVIX"), which is a traded index of the expected volatility of the VIX. The long-term average VVIX between 2007 and 2022 is approximately 93.43. As Figure 17 below shows, the average VVIX in 2020, 2021, and so far in 2022 has been significantly higher than in previous years, as well as its long-term average.

[60] Source: Yahoo! Finance; data through April 18, 2022.

Figure 17: Annual Average VVIX (2007-2022)[61]

Calendar Year	Average VVIX
2007 - 2019	89.21
2020	118.36
2021	115.32
2022	122.21

Q. Is market volatility expected to remain elevated in the near term?

A. Yes. CBOE's "Term Structure of Volatility" observes market's expectation of future market volatility through use of the S&P 500 Index's implied volatility term structure.[62] As shown in Figure 18 below, the implied volatility is expected to remain approximately 37 percent above long-term historical volatility[63] on average until at least February 2023.

[61] Source: Yahoo! Finance, data through April 18, 2022.

[62] Source: www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data.

[63] The long-term average VIX is 19.53, which, is similar to the long-term standard deviation of annual return on the S&P 500 Index.

Figure 18: CBOE Term Structure of Volatility[64]

Date	Projected VIX
May 2022	22.24
June 2022	24.23
July 2022	25.42
August 2022	26.75
September 2022	27.37
October 2022	27.90
November 2022	28.38
December 2022	28.63
January 2023	28.41
February 2023	28.59

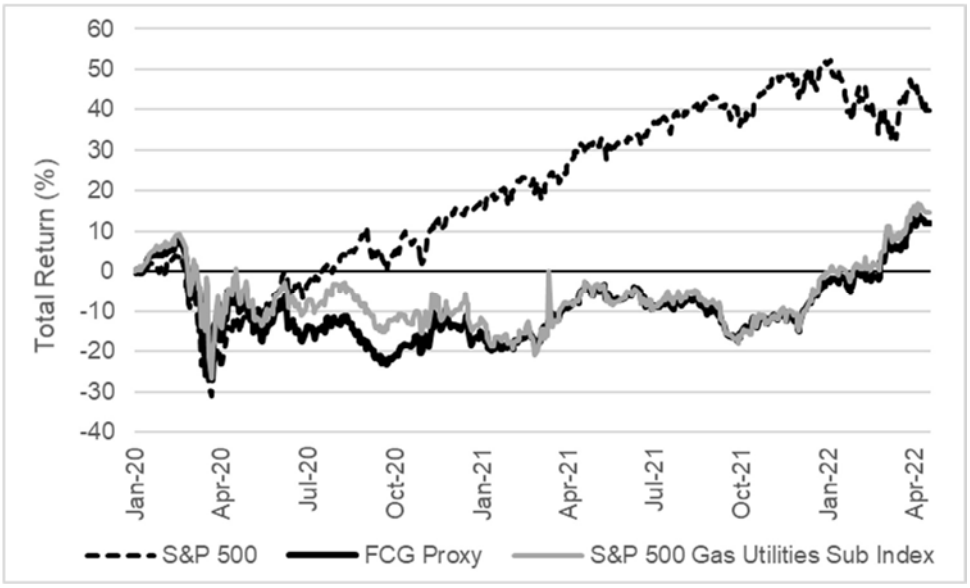
In short, although volatility declined somewhat from its March 2020 highs as the federal government and central bank implemented fiscal and monetary policies to stabilize the U.S. economy, market volatility remains – and is expected to remain – above historical levels.

Q. Have natural gas utility stocks recovered to levels experienced before the onset of the COVID-19 pandemic?

A. Total returns for natural gas utility stocks (as measured by the Proxy Group and the S&P 500 Gas Utilities Sub Index) were negative throughout 2020 and 2021 and did not reach positive territory until February 2022 (see Figure 19 below). Additionally, total returns for natural gas utility stocks significantly underperformed the S&P 500 over the last two years.

[64] Source: http://www.cboe.com/trading-tools/strategy-planning-tools/term-structure-data, as of April 18, 2022.

Figure 19:
Total Return of the S&P 500 Index and Natural Gas Utilities[65]



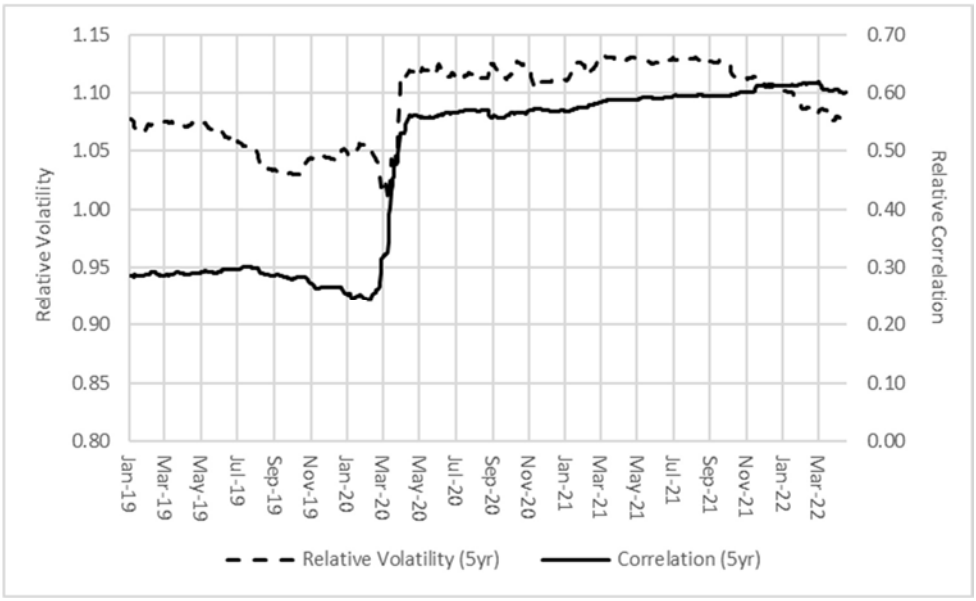
Q. Are there additional measures that indicate the cost of equity has increased for utilities?

A. Yes. As explained in Section III, the Beta coefficient is a measure of a company's risk relative to the overall market. The Beta coefficient is a function of two parameters: (1) relative volatility (the standard deviation of the subject company's returns relative to the standard deviation of the market return); and (2) the correlation between the subject company's returns and the market return.[66] Under the CAPM, higher Beta coefficients indicate an increase in the cost of equity, all else equal. As Figure 20 below demonstrates, both the relative correlation and relative volatility between the utility sector (as measured by the S&P 500 Utilities Index) and the overall market (as measured by the S&P 500 Index) increased substantially since February 2020. Notably, relative volatility

[65] Source: S&P Capital IQ; proxy group calculated as an Index, January 2, 2020 – April 18, 2022.
[66] *See*, Equation [5].

(left axis) has been 1.0 or higher since at least January 2019, indicating the utility sector's higher volatility relative to the S&P 500 Index.

Figure 20: Components of Proxy Group Beta Coefficients[67]



This increase in correlation between returns for utilities and those for the S&P 500 is not surprising. As Morningstar explained, during volatile markets there often is little distinction in returns across assets or portfolios. That is, "correlations go to 1."[68] When that happens, utility stocks lose their defensive quality. The increase in correlation and relative volatility combine to produce increased (adjusted) Beta coefficients. As shown in Figure 21 below, the average *Value Line* and Bloomberg 10-year Beta coefficients for the proxy group increased by approximately 1.5x and 1.1x, respectively, between February 2020 and March 2022.

[67] Source: S&P Global Market Intelligence. Weekly returns calculated over 60 months consistent with *Value Line's* methodology.

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

Figure 21:
Proxy Group Average *Value Line* and Bloomberg Beta Coefficients[69]

	February 2020	March 2022
***Value Line* Average (5-yr)**	0.58	0.85
Bloomberg Average (10-yr)	0.71	0.78

Q. Does your recommendation also consider the current interest rate environment?

A. Yes, it does. As explained earlier, the historically low levels of interest rates observed in 2020 and 2021 were driven in part by investors seeking the relative safety of bonds during volatile markets, combined with extraordinary market support as the Federal Reserve intentionally kept interest rates low and injected $4.6 trillion dollars into the market through asset purchases.[70]

However, as the U.S. economy improved in 2021, and inflation and expectations for tighter monetary policy increased, prevailing interest rates moved higher.[71] As shown in Figure 22 below, the 30-year Treasury bond yield has increased nearly 100 basis points since the Federal Reserve signaled on November 3, 2021, that it would begin tightening monetary policy by tapering its asset purchases.

[69] Sources: *Value Line* and Bloomberg Professional Service as of February 28, 2020 and March 31, 2022.

[70] Source: Federal Reserve Schedule H.1.4 Securities Held Outright between March 2020 and March 2022.

[71] *See, e.g., Blue Chip Financial Forecasts*, Vol. 41, No. 3, March 1, 2022, at 1.

Figure 22: 30-Year Treasury Bond Spot Yield[72]

Because the cost of equity is forward-looking, the salient issue is whether investors see the likelihood of increased interest rates during the period in which the rates set in this proceeding will be in effect. With respect to long-term interest rates, the 50 economists surveyed by *Blue Chip Financial Forecasts* ("*Blue Chip*") expect the 30-year Treasury yield to increase from the current 30-day average of 2.37 percent[73] to 3.40 percent on average over the five-year period 2023-2027.[74]

Q. How have investors' views of the relative riskiness of utility bonds compared to Treasury bonds changed recently?

A. The difference in corporate bond yields and Treasury bond yields is an indication of investors' views of the relative risk of each security. As credit

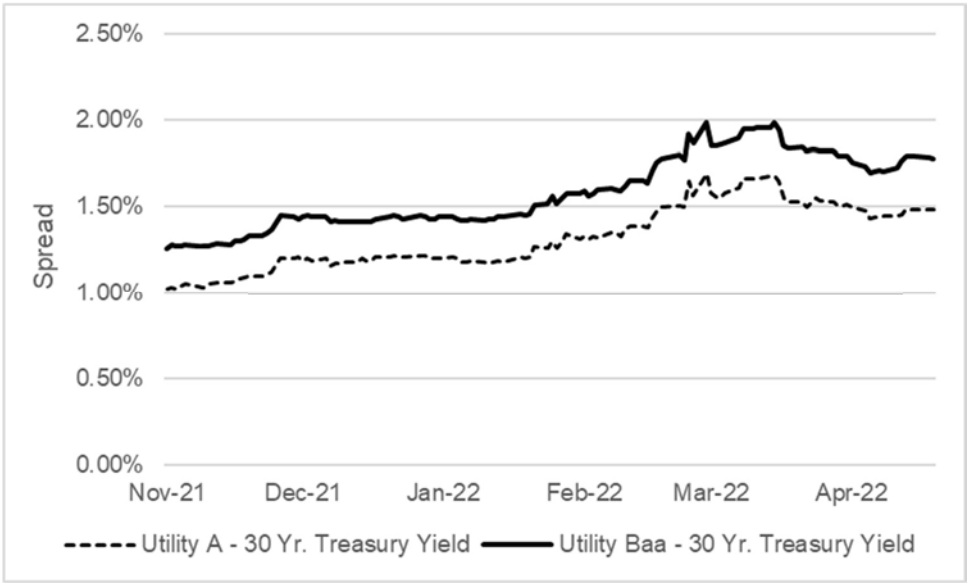
[72] Source: Yahoo! Finance, data as of April 18, 2022.

[73] Source: Bloomberg Professional Service; Exhibit JEN-5.

[74] *See, Blue Chip Financial Forecasts*, Vol. 39 No. 12, December 1, 2021, at 14.

spreads widen, it indicates investors are requiring a higher premium for riskier corporate bonds relative to risk-free securities such as Treasury bonds. As shown in Figure 23, credit spreads between utility bond yields and the 30-year Treasury bond yield have widened since the Federal Reserve's November 2021 meeting when it announced it would begin tapering its asset purchases.

Figure 23: Spread in Utility Bond Yields and the 30-Year Treasury Yield[75]



Q. How have inflation rates changed over the last year?

A. Several government measures of inflation indicate that inflation has increased significantly over the last twelve months. In fact, current inflation rates are *at their highest levels in 40 years*.

[75] Source: Bloomberg Professional Service; data as of April 18, 2022.

Figure 24: Year-over-Year Inflation Rates[76]

	March 2022
Consumer Price Index	8.6%
Producer Price Index	11.5%
Personal Consumption Expenditures Price Index	6.6%

Q. How does higher inflation affect utilities' cost of capital?

A. Higher inflation has several implications for utilities and their cost of capital. First, interest rates and debt costs are sensitive to inflation, as inflation erodes the purchasing power of the future interest payments an investor expects to receive over the duration of the bond. Bonds with longer durations (such as 30-year securities) are more sensitive to inflation risk than shorter duration bonds. As a result, if investors expect increased levels of inflation, they will require higher yields to compensate for the increased risk of inflation which means interest rates and debt costs will increase.

Second, inflation drives up a utility's operating expenses. As expenses rise above levels that are included in the revenue requirement being recovered by rates, the utility's financial profile can be adversely affected, putting pressure on credit metrics.

[76] Sources: U.S. Bureau of Labor Statistics; Federal Reserve Bank of St. Louis, FRED Database.

Q. Are there reasons to believe that high inflation may not be transitory as previously thought?

A. Yes. While supply and demand disruptions brought about by the COVID-19 pandemic and the recovery of the U.S. economy have contributed to inflation, there is evidence to support the position that high inflation may prove to be less transitory in nature than previously thought. For example, shelter makes up the largest share of the CPI (approximately 32.9 percent),[77] and is less subject to short-term disruptions than other components of the CPI. Moreover, there are few substitutes for shelter, and consumers have few options to reduce shelter prices in the short-term.

Q. Please summarize recent changes in monetary policy actions by the Federal Reserve.

A. As noted earlier, to support the economy and financial markets after the onset of the COVID-19 pandemic, the Federal Reserve reduced the target Federal Funds rate to 0 to 0.25 percent and increased its purchases of securities, ultimately injecting nearly $5 trillion of capital into the market. After its November 2021 meeting, the Federal Open Market Committee ("FOMC") announced it would begin tapering its asset purchases. Citing the highly uncertain implications of the Ukraine conflict for the U.S. economy, the FOMC raised the target Federal Funds rate by 25 basis points at its March 2022 meeting, terminated its asset purchases, and announced it expects to begin

[77] Source: U.S. Bureau of Labor Statistics https://www.bls.gov/cpi/tables/relative-importance/2021.htm

reducing its holdings of Treasury securities in the near future[78] According to market data from the CME Group, investors are expecting the FOMC to raise the Federal Funds target rate by 300 basis points over the next year.[79] The implication of higher Federal Funds rates and reductions in the Federal Reserve's security holdings is higher interest rates.

Q. What conclusions do you draw from your review of the current capital market environment and its implications on the Company's cost of equity?

A. In short, over the last two years, the economic and financial market environment has operated under heightened market uncertainty. The recent conflict in Ukraine has added to the uncertainty and volatility in the market. Observable market information makes clear that utility investors now face greater risks, and therefore, require higher returns. While short-term interest rates currently remain low by historical comparison, investors are increasingly faced with inflationary pressures, and the Federal Reserve is unwinding its pandemic response measures. Long-term interest rates have increased substantially since the historic lows of 2020 and are expected to continue to increase. All these factors indicate an increase in the cost of equity.

[78] Federal Reserve press release, March 16, 2022.

[79] CME Group "FedWatch Tool, accessed May 23, 2022. https://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html

VI. CAPITAL STRUCTURE

Q. What is the Company's requested capital structure?

A. As described by FCG witness Campbell, the Company requests a 2023 test year financial capital structure consisting of 59.60 percent common equity and 40.40 percent debt, which is equal to the capital structure of FCG's direct parent.

In Florida, Accumulated Deferred Income Taxes are included in the regulatory capital structure at zero percent cost. Florida also includes customer deposits in the regulatory capital structure. However, I consider only investor-supplied sources of capital in my assessment of the reasonableness of the Company's requested capital structure.

Q. How does the capital structure affect the cost of capital?

A. A company's total risk consists of business risk and financial risk. Business risk includes operating, market, regulatory, and competitive uncertainties, while financial risk is the incremental risk to investors associated with additional leverage, or levels of debt. Therefore, the capital structure indicates a company's financial risk, which represents the risk that a company may not have adequate cash flows to meet its financial obligations and is a function of the percentage of debt (or financial leverage) in its capital structure. As the percentage of debt in the capital structure increases, so do the fixed obligations for the repayment of that debt. Consequently, as the degree of financial leverage increases, the risk of financial distress (*i.e.*, financial risk) also

increases.[80] In essence, even if two firms face the same business risks, a company with meaningfully higher levels of debt in its capital structure is riskier, which increases its costs of both debt and equity.

Q. Why is it appropriate to use the approved capital structure of FCG's parent company for ratemaking purposes?

A. FCG does not issue its own debt or equity. Since 2019, FCG has obtained all of its short-term and long-term capital from its direct parent FPL.[81] As explained in the order approving FPL's FCG's 2021 securities application for calendar year 2022, the sources of capital FCG obtains from FPL include: (1) surplus funds in the FPL treasury; and (2) proceeds from FPL's borrowings under its credit facilities, FPL's debt securities, or FPL's commercial paper issuances.[82] The interest rate on the FCG's debt borrowings from FPL reflects FPL's weighted average borrowing costs.

[80] *See,* Roger A. Morin, Ph.D., New Regulatory Finance, Public Utility Reports, Inc., 2006, at 45-46.

[81] *See In re: Application for authority to issue debt securities during calendar year 2019, pursuant to Section 366.04, F.S., and Chapter 25-8, F.A.C., by Florida City Gas*, Docket No. 20180166-GU, Order No. PSC-2018-0550-FOF-GU (F.P.S.C. Nov. 19, 2018); *In re: Application for authority to issue and sell securities during calendar years 2020 and 2021, pursuant to Section 366.04, F.S., and Chapter 25-8, F.A.C., by Florida Power & Light Company and Florida City Gas*, Docket No. 20190157-EI, Order No. PSC-2019-0472-FOF-EI (F.P.S.C. Nov. 6, 2019); *In re: Application for authority to issue and sell securities during calendar years 2020 and 2021, pursuant to Section 366.04, F.S., and Chapter 25-8, F.A.C., by Florida Power & Light Company and Florida City Gas*, Docket No. 20200188-EI, Order No. PSC-2020-0401-FOF-EI (F.P.S.C. Oct. 26, 2020); and *In re: Application for authority to issue and sell securities during calendar years 2022 and 2023, pursuant to Section 366.04, F.S., and Chapter 25-8, F.A.C., by Florida Power & Light Company and Florida City Gas*, Docket No. 20210127-EI, Order PSC-2021-0409-FOF-EI (F.P.S.C. Nov. 1, 2021).

[82] *In re: Application for authority to issue and sell securities during calendar years 2022 and 2023, pursuant to Section 366.04, F.S., and Chapter 25-8, F.A.C., by Florida Power & Light Company and Florida City Gas*, Docket No. 20210127-EI, Order PSC-2021-0409-FOF-EI at 8 (F.P.S.C. Nov. 1, 2021).

FCG similarly used the capital structure of its parent company in its last rate case in Docket No. 20170179-GU,[83] and the Commission has previously approved the use of a parent company's capital structure where the regulated utility operates as division and/or does not issue debt.[84] Additionally, other regulatory commissions consider whether a company issues its own debt in the capital structure determination. For example, the FERC's policy is to use the operating company's actual capital structure if: (1) it issues its own debt without guarantees; (2) it has its own bond rating; and (3) it has a capital structure within the range of capital structures approved by the FERC.[85] FCG does not issue its own debt, nor does it have its own bond rating.

Finally, as discussed below, the proposed capital structure is within the range of the actual investor-supplied permanent capital ratios that fund the regulated natural gas operations of the proxy group.

Q. Please summarize your analysis of the proxy companies' capital structures.

A. In general, it is important to assess the capital structure relative to industry practice and investor requirements. Although an individual utility's financing requirements are unique, utilities adhere to common financing practices and

[83] *See In re: Petition for rate increase by Florida City Gas*, Docket No. 20170179-GU, FCG Direct Testimony of Michael J. Morley at 17-18 (F.P.S.C. Oct. 23, 2017).
[84] *See, e.g., In re: Petition for increase in rates by Florida Division of Chesapeake Utilities Corporation*, Docket No. 090125-GU, Order No. PSC-10-0029-PAA-GU, (F.P.S.C. Jan. 14, 2010); *In re: Request for Rate Increase by Florida Division of Chesapeake Utilities Corporation*, Docket No. 000108-GU, Order No. PSC-00-2263-FOF-GU (F.P.S.C. Nov. 28, 2000); *In Re: Application for Rate Increase in Lee County by Harbor Utilities Company, Inc.*, Docket No. 921261-WS, Order No. PSC-93-1450-FOF-WS (F.P.S.C. Oct. 5, 1993); *In Re: Application for a Rate Increase in Pinellas County by MID-COUNTY SERVICES, INC.*, Docket No. 921293-SU, Order No. PSC-93-1713-FOF-SU (F.P.S.C. Nov. 30, 1993).
[85] 154 FERC ¶ 61,004, Docket No. ER15-945-001, at Para. 35 (January 6, 2016).

principles due to the similar nature of the assets being financed. As such, the capital structure should be reasonably consistent with industry practice and support the subject utility's financial integrity, thereby enabling access to capital at competitive rates under a variety of economic and financial market conditions.

To assess whether FCG's requested financial capital structure is consistent with industry practice, I calculated the average capital structure (including short-term debt) for each of the proxy group operating companies from 2018 to 2020 (*see* Exhibit JEN-10). The mean and median three-year average equity ratio of the proxy group is 54.78 percent and 55.85 percent, respectively, within a range of 43.54 percent to 61.78 percent.[86] The Company's requested equity ratio of 59.60 percent is within the proxy group range and is, therefore, consistent with industry practice.

Q. What is the basis for using average capital components rather than a point-in-time measurement?

A. Measuring the capital components at a particular point in time may skew the capital structure by the specific circumstances of a particular period. For example, a company may issue debt to fund an acquisition or to ensure liquidity during constrained capital market environments, which may not reflect the company's long-term capital structure objectives. Therefore, it is appropriate to normalize the capital components over a period of time.

[86] Source: S&P Capital IQ.

Q. What is your conclusion regarding the Company's requested capital structure?

A. The requested common equity ratio of 59.60 percent is consistent with the proportion of equity (on an investor-supplied basis) that funds the regulated natural gas operations of the proxy group companies. Further, the use of its direct parent's capital structure is consistent with regulatory precedent regarding utilities that do not issue debt or have their own credit rating. As such, I conclude that a financial capital structure including 59.60 percent common equity and 40.40 percent debt is reasonable and should be approved.

VII. CONCLUSION

Q. What is your conclusion regarding the appropriate ROE and capital structure for FCG?

A. As discussed throughout my testimony, it is important to consider a variety of quantitative and qualitative information in reviewing analytical results and arriving at a reasonable and appropriate ROE determination. In determining my ROE recommendation, I considered (1) the results from three commonly used analytical approaches; (2) the Company's higher risk profile associated with its significantly smaller size; (3) the regulatory environment in which it operates, including the incremental risk associated with its proposed multi-year rate plan, (4) the costs associated with issuing stock; and (5) the current volatile

and uncertain economic and capital market environment. Based on those factors, I conclude that 10.75 percent is a just and reasonable ROE for FCG.

As to the capital structure, a financial capital structure including 59.60 percent common equity and 40.40 percent long-term debt is consistent with the proportions of investor-supplied capital that fund the proxy companies' regulated natural gas operations. Therefore, I conclude the capital structure is reasonable and should be approved.

Q. Does this conclude your Direct Testimony?

A. Yes.

JENNIFER E. NELSON
Assistant Vice President

Ms. Nelson has fourteen years of experience in the energy industry, spanning the oil, natural gas, electric, and renewable energy segments. She has provided expert witness testimony for electric and natural gas utilities regarding the cost of capital and alternative ratemaking proposals. In her time as a consultant, Ms. Nelson has provided research and analysis on a variety of utility regulatory matters including ratemaking and regulatory policy, integrated resource planning, renewable power contracts, natural gas pipeline development, and natural gas utility supply planning issues. Ms. Nelson has extensive experience performing statistical analyses, developing economic and financial models, and providing policy analyses and recommendations.

Prior to joining Concentric, Ms. Nelson was a Director at ScottMadden, Inc., and a managing consultant at Sussex Economic Advisors, LLC. Prior to consulting, she was a staff economist at the Massachusetts Department of Public Utilities and a petroleum economist for the State of Alaska. Ms. Nelson holds a Master of Science degree in Resource and Applied Economics from the University of Alaska and a Bachelor of Science degree in Business Economics from Bentley College.

PROFESSIONAL HISTORY

Concentric Energy Advisors, Inc. (2021 – present)
Assistant Vice President

ScottMadden, Inc. (2016 – 2021)
Director

Sussex Economic Advisors, LLC (2013 – 2016)
Managing Consultant

Massachusetts Department of Public Utilities (2011 – 2013)
Economist, Electric Power Division

State of Alaska (2007 – 2010)
Petroleum Economist

EDUCATION AND RELEVANT TRAINING COURSES

University of Alaska
Master of Science, Resource and Applied Economics

Bentley College
Bachelor of Science, Business Economics
Graduated *magna cum laude*

New Mexico State University
Center for Public Utilities, Regulatory Basics

ISO-New England
Wholesale Energy Markets (WEM-101)

Colorado School of Mines
Petroleum Engineering SuperSchool

REPRESENTATIVE PROJECT EXPERIENCE

Cost of Capital

- Submitted expert testimony on behalf of an electric utility before the Arkansas Public Service Commission, the New Hampshire Public Utilities Commission, the New Mexico Public Regulation Commission, and the Public Utilities Commission of Texas regarding the cost of capital.
- Submitted expert testimony on behalf of a natural gas utility before the North Carolina Utilities Commission and the Public Service Commission of West Virginia regarding the cost of capital.
- Submitted expert testimony on behalf of a water utility before the Kentucky Public Service Commission regarding the appropriate capital structure and cost of debt.
- Supported expert testimony regarding the cost of capital before numerous state utility regulatory commissions and the FERC on behalf of electric and natural gas utilities through state and company-specific research and analysis, financial analysis and modeling, and testimony development.

Alternative Ratemaking Mechanisms

- Submitted expert testimony on behalf of an electric utility and a water utility before the Arkansas Public Service Commission regarding the utility's proposed Formula Rate Plan.
- Submitted expert testimony on behalf of an electric utility before the Oklahoma Corporation Commission regarding the utility's proposed Formula Rate Plan.
- Co-sponsored expert testimony on behalf of a natural gas utility before the Maine Public Utilities Commission regarding the utility's proposed capital investment cost recovery mechanism.
- Supported expert testimony and performed research and analysis on alternative ratemaking frameworks.

Resource and Supply Planning

- Supported expert testimony on the reasonableness of utility resource supply portfolio decisions.
- Assisted in a benchmarking analysis on behalf of a Northeast natural gas utility regarding its supply planning standards and design day demand forecast process.
- Supported the development of a New Hampshire electric utility's Integrated Resource Plan filed with the New Hampshire Public Utility Commission.
- Performed research and financial analysis to evaluate the benefits, costs, and policy options associated with natural gas expansion by Massachusetts natural gas utilities as part of a prepared report for the Massachusetts Department of Energy Resources.
- Developed a dynamic natural gas demand forecast model for in-state use for the State of Alaska, which included forecasting demand from both existing and anticipated natural gas utilities, power consumption, and large commercial operations.
- Conducted research and prepared analyses for a natural gas pipeline Open Season.

Other Regulatory Financial Issues

- Supported expert testimony on the appropriate level of remuneration associated with electric utilities' long-term contract for wind power through financial analysis and modeling, and testimony development.
- Provided research and analytical support estimating financial damages incurred as a result of construction delays for an electric transmission company.
- Prepared a Feasibility Study for an electric cooperative utility supporting a utility-owned solar project.

Mergers & Acquisitions

- Performed buy-side benchmarking and regulatory analysis for a utility acquisition.

DESIGNATIONS AND PROFESSIONAL AFFILIATIONS

Certified Rate of Return Analyst, Society of Utility and Regulatory Financial Analysts

Member, Society of Utility and Regulatory Financial Analysts

AVAILABLE UPON REQUEST

Extensive client and project listings, and specific references.

SPONSOR	DATE	CASE/APPLICANT	DOCKET NO.	SUBJECT
Arkansas Public Service Commission				
Oklahoma Gas & Electric	10/21	Oklahoma Gas & Electric	21-087-U	Formula Rate Plan
Liberty Utilities (Pine Bluff Water)	10/18	Liberty Utilities (Pine Bluff Water)	18-027-U	Formula Rate Plan and tariff
Entergy Arkansas, LLC	11/20	Entergy Arkansas, LLC	16-036-FR	Sponsored testimony evaluating the Return on Equity included in Rider FRP
Kentucky Public Service Commission				
Bluegrass Water Utility Operating Company, LLC	09/20	Bluegrass Water Utility Operating Company, LLC	2020-290	Capital Structure and Cost of Long-Term Debt
Maine Public Utilities Commission				
Unitil Corporation	06/19	Northern Utilities, Inc.	19-00092	Co-sponsored testimony supporting Northern Utilities' proposed CIRA capital tracking mechanism
New Hampshire Public Utilities Commission				
Unitil Energy Systems, Inc.	04/21	Unitil Energy Systems, Inc.	DE 21-030	Cost of Capital
New Mexico Public Regulation Commission				
El Paso Electric Company	07/20	El Paso Electric Company	20-00104-UT	Cost of Capital
North Carolina Utilities Commission				
Public Service Company of North Carolina d/b/a Dominion Energy North Carolina	04/21	Public Service Company of North Carolina d/b/a Dominion Energy North Carolina	G-5, Sub 632	Cost of Capital
Oklahoma Corporation Commission				
Oklahoma Gas & Electric	12/21	Oklahoma Gas & Electric	PUD202100164	Formula Rate Plan
Public Utilities Commission of Texas				
El Paso Electric Company	06/21	El Paso Electric Company	52195	Cost of Capital
Sharyland Utilities L.L.C.	12/20	Sharyland Utilities L.L.C.	51611	Cost of Capital
Utah Public Service Commission				
Dominion Energy Utah	05/22	Dominion Energy Utah	22-057-03	Cost of Capital
Public Service Commission of West Virginia				
Hope Gas, Inc. d/b/a Dominion Energy West Virginia	11/20	Hope Gas, Inc. d/b/a Dominion Energy West Virginia	20-0746-G-42T	Cost of Capital

Constant Growth Discounted Cash Flow Model with Half Year Growth Adjustment
30 Day Average Stock Price

Company	Ticker	[1] Annualized Dividend	[2] Average Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks Earnings Growth	[6] Yahoo! Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
Atmos Energy Corporation	ATO	$2.72	$113.03	2.41%	2.50%	7.30%	7.30%	7.50%	7.37%	9.79%	9.86%	10.00%
New Jersey Resources Corporation	NJR	$1.45	$43.78	3.31%	3.40%	6.00%	6.00%	4.50%	5.50%	7.89%	8.90%	9.41%
NiSource Inc.	NI	$0.94	$29.84	3.15%	3.26%	7.20%	3.52%	10.50%	7.07%	6.73%	10.34%	13.82%
Northwest Natural Holding Company	NWN	$1.93	$52.60	3.67%	3.77%	5.10%	5.90%	6.00%	5.67%	8.86%	9.44%	9.78%
ONE Gas, Inc.	OGS	$2.48	$83.90	2.96%	3.02%	5.00%	2.90%	6.00%	4.63%	5.90%	7.66%	9.04%
Spire Inc.	SR	$2.74	$67.67	4.05%	4.17%	5.30%	4.30%	9.00%	6.20%	8.44%	10.37%	13.23%
Proxy Group Mean				3.26%	3.36%	5.98%	4.99%	7.25%	6.07%	7.93%	9.43%	10.88%
Proxy Group Median				3.23%	3.33%	5.65%	5.10%	6.75%	5.93%	8.16%	9.65%	9.89%
Average of Mean and Median				3.24%	3.34%	5.82%	5.04%	7.00%	6.00%	8.05%	9.54%	10.38%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of 03/31/2022
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [8])
[5] Source: Zacks
[6] Source: Yahoo! Finance
[7] Source: Value Line
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Constant Growth Discounted Cash Flow Model with Half Year Growth Adjustment
90 Day Average Stock Price

Company	Ticker	[1] Annualized Dividend	[2] Average Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks Earnings Growth	[6] Yahoo! Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
Atmos Energy Corporation	ATO	$2.72	$105.55	2.58%	2.67%	7.30%	7.30%	7.50%	7.37%	9.97%	10.04%	10.17%
New Jersey Resources Corporation	NJR	$1.45	$41.00	3.54%	3.63%	6.00%	6.00%	4.50%	5.50%	8.12%	9.13%	9.64%
NiSource Inc.	NI	$0.94	$28.13	3.34%	3.46%	7.20%	3.52%	10.50%	7.07%	6.92%	10.53%	14.02%
Northwest Natural Holding Company	NWN	$1.93	$49.06	3.93%	4.05%	5.10%	5.90%	6.00%	5.67%	9.13%	9.71%	10.05%
ONE Gas, Inc.	OGS	$2.48	$77.79	3.19%	3.26%	5.00%	2.90%	6.00%	4.63%	6.13%	7.90%	9.28%
Spire Inc.	SR	$2.74	$65.30	4.20%	4.33%	5.30%	4.30%	9.00%	6.20%	8.59%	10.53%	13.39%
Proxy Group Mean				3.46%	3.57%	5.98%	4.99%	7.25%	6.07%	8.14%	9.64%	11.09%
Proxy Group Median				3.44%	3.55%	5.65%	5.10%	6.75%	5.93%	8.35%	9.88%	10.11%
Average of Mean and Median				3.45%	3.56%	5.82%	5.04%	7.00%	6.00%	8.25%	9.76%	10.60%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of 03/31/2022
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [8])
[5] Source: Zacks
[6] Source: Yahoo! Finance
[7] Source: Value Line
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Constant Growth Discounted Cash Flow Model with Half Year Growth Adjustment
180 Day Average Stock Price

Company	Ticker	[1] Dividend	[2] Stock	[3] Yield	[4] Dividend	[5] Earnings	[6] Earnings	[7] Earnings	[8] Earnings	[9] ROE	[10] ROE	[11] ROE
Atmos Energy Corporation	ATO	$2.72	$100.24	2.71%	2.81%	7.30%	7.30%	7.50%	7.37%	10.11%	10.18%	10.32%
New Jersey Resources Corporation	NJR	$1.45	$39.32	3.69%	3.79%	6.00%	6.00%	4.50%	5.50%	8.27%	9.29%	9.80%
NiSource Inc.	NI	$0.94	$26.52	3.55%	3.67%	7.20%	3.52%	10.50%	7.07%	7.13%	10.74%	14.23%
Northwest Natural Holding Company	NWN	$1.93	$49.09	3.93%	4.04%	5.10%	5.90%	6.00%	5.67%	9.13%	9.71%	10.05%
ONE Gas, Inc.	OGS	$2.48	$73.74	3.36%	3.44%	5.00%	2.90%	6.00%	4.63%	6.31%	8.07%	9.46%
Spire Inc.	SR	$2.74	$65.64	4.17%	4.30%	5.30%	4.30%	9.00%	6.20%	8.56%	10.50%	13.36%
Proxy Group Mean				3.57%	3.68%	5.98%	4.99%	7.25%	6.07%	8.25%	9.75%	11.20%
Proxy Group Median				3.62%	3.73%	5.65%	5.10%	6.75%	5.93%	8.42%	9.94%	10.18%
Average of Mean and Median				3.59%	3.70%	5.82%	5.04%	7.00%	6.00%	8.34%	9.85%	10.69%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of 03/31/2022
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [8])
[5] Source: Zacks
[6] Source: Yahoo! Finance
[7] Source: Value Line
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Quarterly Growth Discounted Cash Flow Model
30 Day Average Stock Price

Company	Ticker	[1] Dividend 1	[2] Dividend 2	[3] Dividend 3	[4] Dividend 4	[5] Expected Dividend 1	[6] Expected Dividend 2	[7] Expected Dividend 3	[8] Expected Dividend 4	[9] Stock Price	[10] Zacks Earnings Growth	[11] Yahoo! Earnings Growth	[12] Value Line Earnings Growth	[13] Average Earnings Growth	[14] Low ROE	[15] Mean ROE	[16] High ROE
Atmos Energy Corporation	ATO	$0.63	$0.63	$0.68	$0.68	$0.67	$0.67	$0.73	$0.73	$113.03	7.30%	7.30%	7.50%	7.37%	9.87%	9.93%	10.07%
New Jersey Resources Corporation	NJR	$0.33	$0.36	$0.36	$0.36	$0.35	$0.38	$0.38	$0.38	$43.78	6.00%	6.00%	4.50%	5.50%	7.99%	9.03%	9.56%
NiSource Inc.	NI	$0.22	$0.22	$0.24	$0.24	$0.24	$0.24	$0.25	$0.25	$29.84	7.20%	3.52%	10.50%	7.07%	6.75%	10.46%	14.04%
Northwest Natural Holding Company	NWN	$0.480	$0.480	$0.483	$0.483	$0.51	$0.51	$0.51	$0.51	$52.60	5.10%	5.90%	6.00%	5.67%	9.07%	9.67%	10.02%
ONE Gas, Inc.	OGS	$0.58	$0.58	$0.58	$0.62	$0.61	$0.61	$0.61	$0.65	$83.90	5.00%	2.90%	6.00%	4.63%	5.86%	7.66%	9.08%
Spire Inc.	SR	$0.65	$0.65	$0.69	$0.69	$0.69	$0.69	$0.73	$0.73	$67.67	5.30%	4.30%	9.00%	6.20%	8.54%	10.55%	13.51%
Proxy Group Mean											5.98%	4.99%	7.25%	6.07%	8.01%	9.55%	11.05%
Proxy Group Median											5.65%	5.10%	6.75%	5.93%	8.26%	9.80%	10.05%
Averae of Mean and Median															8.14%	9.68%	10.55%

Notes:
[1] Source: Bloomberg Professional Service
[2] Source: Bloomberg Professional Service
[3] Source: Bloomberg Professional Service
[4] Source: Bloomberg Professional Service
[5] Equals Col. [1] x (1 + Col. [13])
[6] Equals Col. [2] x (1 + Col. [13])
[7] Equals Col. [3] x (1 + Col. [13])
[8] Equals Col. [4] x (1 + Col. [13])
[9] Source: Bloomberg Professional, equals indicated number of trading day average as of 03/31/2022
[10] Source: Zacks
[11] Source: Yahoo! Finance
[12] Source: Value Line
[13] Equals Average (Cols. [10], [11], [12])
[14] Implied Low DCF
[15] Implied Mean DCF
[16] Implied High DCF

Quarterly Growth Discounted Cash Flow Model
90 Day Average Stock Price

Company	Ticker	[1] Dividend 1	[2] Dividend 2	[3] Dividend 3	[4] Dividend 4	[5] Expected Dividend 1	[6] Expected Dividend 2	[7] Expected Dividend 3	[8] Expected Dividend 4	[9] Stock Price	[10] Zacks Earnings Growth	[11] Yahoo! Earnings Growth	[12] Value Line Earnings Growth	[13] Average Earnings Growth	[14] Low ROE	[15] Mean ROE	[16] High ROE
Atmos Energy Corporation	ATO	$0.63	$0.63	$0.68	$0.68	$0.67	$0.67	$0.73	$0.73	$105.55	7.30%	7.30%	7.50%	7.37%	10.05%	10.12%	10.26%
New Jersey Resources Corporation	NJR	$0.33	$0.36	$0.36	$0.36	$0.35	$0.38	$0.38	$0.38	$41.00	6.00%	6.00%	4.50%	5.50%	8.23%	9.28%	9.80%
NiSource Inc.	NI	$0.22	$0.22	$0.24	$0.24	$0.24	$0.24	$0.25	$0.25	$28.13	7.20%	3.52%	10.50%	7.07%	6.95%	10.67%	14.26%
Northwest Natural Holding Company	NWN	$0.48	$0.48	$0.48	$0.48	$0.51	$0.51	$0.51	$0.51	$49.06	5.10%	5.90%	6.00%	5.67%	9.37%	9.96%	10.32%
ONE Gas, Inc.	OGS	$0.58	$0.58	$0.58	$0.62	$0.61	$0.61	$0.61	$0.65	$77.79	5.00%	2.90%	6.00%	4.63%	6.09%	7.90%	9.32%
Spire Inc.	SR	$0.65	$0.65	$0.69	$0.69	$0.69	$0.69	$0.73	$0.73	$65.30	5.30%	4.30%	9.00%	6.20%	8.70%	10.71%	13.68%
Proxy Group Mean											5.98%	4.99%	7.25%	6.07%	8.23%	9.77%	11.27%
Proxy Group Median											5.65%	5.10%	6.75%	5.93%	8.46%	10.04%	10.29%
Averae of Mean and Median															8.35%	9.91%	10.78%

Notes:
[1] Source: Bloomberg Professional Service
[2] Source: Bloomberg Professional Service
[3] Source: Bloomberg Professional Service
[4] Source: Bloomberg Professional Service
[5] Equals Col. [1] x (1 + Col. [13])
[6] Equals Col. [2] x (1 + Col. [13])
[7] Equals Col. [3] x (1 + Col. [13])
[8] Equals Col. [4] x (1 + Col. [13])
[9] Source: Bloomberg Professional, equals indicated number of trading day average as of 03/31/2022
[10] Source: Zacks
[11] Source: Yahoo! Finance
[12] Source: Value Line
[13] Equals Average (Cols. [10], [11], [12])
[14] Implied Low DCF
[15] Implied Mean DCF
[16] Implied High DCF

Quarterly Growth Discounted Cash Flow Model
180 Day Average Stock Price

Company	Ticker	[1] Dividend 1	[2] Dividend 2	[3] Dividend 3	[4] Dividend 4	[5] Expected Dividend 1	[6] Expected Dividend 2	[7] Expected Dividend 3	[8] Expected Dividend 4	[9] Stock Price	[10] Zacks Earnings Growth	[11] Yahoo! Earnings Growth	[12] Value Line Earnings Growth	[13] Average Earnings Growth	[14] Low ROE	[15] Mean ROE	[16] High ROE
Atmos Energy Corporation	ATO	$0.63	$0.63	$0.68	$0.68	$0.67	$0.67	$0.73	$0.73	$100.24	7.30%	7.30%	7.50%	7.37%	10.20%	10.26%	10.40%
New Jersey Resources Corporation	NJR	$0.33	$0.36	$0.36	$0.36	$0.35	$0.38	$0.38	$0.38	$39.32	6.00%	6.00%	4.50%	5.50%	8.39%	9.44%	9.97%
NiSource Inc.	NI	$0.22	$0.22	$0.24	$0.24	$0.24	$0.24	$0.25	$0.25	$26.52	7.20%	3.52%	10.50%	7.07%	7.16%	10.89%	14.49%
Northwest Natural Holding Company	NWN	$0.48	$0.48	$0.48	$0.48	$0.51	$0.51	$0.51	$0.51	$49.09	5.10%	5.90%	6.00%	5.67%	9.36%	9.96%	10.31%
ONE Gas, Inc.	OGS	$0.58	$0.58	$0.58	$0.62	$0.61	$0.61	$0.61	$0.65	$73.74	5.00%	2.90%	6.00%	4.63%	6.27%	8.08%	9.51%
Spire Inc.	SR	$0.65	$0.65	$0.69	$0.69	$0.69	$0.69	$0.73	$0.73	$65.64	5.30%	4.30%	9.00%	6.20%	8.68%	10.69%	13.65%
Proxy Group Mean											5.98%	4.99%	7.25%	6.07%	8.34%	9.89%	11.39%
Proxy Group Median											5.65%	5.10%	6.75%	5.93%	8.53%	10.11%	10.36%
Averae of Mean and Median															8.44%	10.00%	10.87%

Notes:
[1] Source: Bloomberg Professional Service
[2] Source: Bloomberg Professional Service
[3] Source: Bloomberg Professional Service
[4] Source: Bloomberg Professional Service
[5] Equals Col. [1] x (1 + Col. [13])
[6] Equals Col. [2] x (1 + Col. [13])
[7] Equals Col. [3] x (1 + Col. [13])
[8] Equals Col. [4] x (1 + Col. [13])
[9] Source: Bloomberg Professional, equals indicated number of trading day average as of 03/31/2022
[10] Source: Zacks
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[12] Source: Value Line
[13] Equals Average (Cols. [10], [11], [12])
[14] Implied Low DCF
[15] Implied Mean DCF
[16] Implied High DCF

Expected Market Return
Market DCF Method - Bloomberg EPS Growth

[1]
S&P 500 Est. Required Market Return
14.64%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Agilent Technologies Inc	A	39,713.95	0.10%	0.63%	10.65%	11.32%	0.0114%
American Airlines Group Inc	AAL	11,847.17	N/A	0.00%	N/A	N/A	N/A
Advance Auto Parts Inc	AAP	12,644.84	0.03%	2.90%	15.84%	18.97%	0.0061%
Apple Inc	AAPL	2,849,537.59	7.22%	0.50%	10.80%	11.33%	0.8183%
AbbVie Inc	ABBV	286,332.46	0.73%	3.48%	-0.88%	2.58%	0.0187%
AmerisourceBergen Corp	ABC	32,355.59	0.08%	1.19%	8.25%	9.48%	0.0078%
ABIOMED Inc	ABMD	15,076.72	N/A	0.00%	N/A	N/A	N/A
Abbott Laboratories	ABT	208,725.73	0.53%	1.59%	7.33%	8.98%	0.0475%
Accenture PLC	ACN	223,392.62	0.57%	1.15%	11.20%	12.41%	0.0703%
Adobe Inc	ADBE	215,280.45	0.55%	0.00%	17.21%	17.21%	0.0939%
Analog Devices Inc	ADI	86,441.17	0.22%	1.84%	11.18%	13.12%	0.0287%
Archer-Daniels-Midland Co	ADM	50,769.17	0.13%	1.77%	1.24%	3.02%	0.0039%
Automatic Data Processing Inc	ADP	95,577.04	0.24%	1.83%	13.45%	15.40%	0.0373%
Autodesk Inc	ADSK	46,579.97	0.12%	0.00%	16.90%	16.90%	0.0199%
Ameren Corp	AEE	24,198.71	0.06%	2.52%	7.70%	10.31%	0.0063%
American Electric Power Co Inc	AEP	50,338.65	0.13%	3.13%	6.12%	9.34%	0.0119%
AES Corp/The	AES	17,172.07	0.04%	2.46%	7.30%	9.85%	0.0043%
Aflac Inc	AFL	41,812.81	N/A	2.48%	N/A	N/A	N/A
American International Group Inc	AIG	50,608.19	0.13%	2.04%	3.97%	6.05%	0.0078%
Assurant Inc	AIZ	10,493.05	0.03%	1.50%	17.67%	19.30%	0.0051%
Arthur J Gallagher & Co	AJG	36,598.60	0.09%	1.17%	13.31%	14.56%	0.0135%
Akamai Technologies Inc	AKAM	19,209.73	0.05%	0.00%	16.30%	16.30%	0.0079%
Albemarle Corp	ALB	25,899.32	0.07%	0.71%	24.28%	25.08%	0.0165%
Align Technology Inc	ALGN	34,354.62	0.09%	0.00%	15.28%	15.28%	0.0133%
Alaska Air Group Inc	ALK	7,314.31	0.02%	0.00%	153.30%	153.30%	0.0284%
Allstate Corp/The	ALL	38,553.70	0.10%	2.45%	3.63%	6.13%	0.0060%
Allegion plc	ALLE	9,685.89	0.02%	1.49%	8.99%	10.55%	0.0026%
Applied Materials Inc	AMAT	116,431.46	0.30%	0.79%	11.44%	12.27%	0.0362%
Amcor PLC	AMCR	17,150.53	0.04%	4.24%	7.61%	12.01%	0.0052%
Advanced Micro Devices Inc	AMD	177,936.09	0.45%	0.00%	19.40%	19.40%	0.0875%
AMETEK Inc	AME	30,787.35	0.08%	0.66%	11.89%	12.59%	0.0098%
Amgen Inc	AMGN	134,700.75	0.34%	3.21%	5.87%	9.17%	0.0313%
Ameriprise Financial Inc	AMP	33,212.91	0.08%	1.50%	14.50%	16.11%	0.0136%
American Tower Corp	AMT	114,527.43	0.29%	2.23%	13.37%	15.75%	0.0457%
Amazon.com Inc	AMZN	1,658,806.00	4.20%	0.00%	18.87%	18.87%	0.7931%
Arista Networks Inc	ANET	42,773.46	0.11%	0.00%	17.19%	17.19%	0.0186%
ANSYS Inc	ANSS	27,643.81	0.07%	0.00%	11.65%	11.65%	0.0082%
Anthem Inc	ANTM	118,533.35	0.30%	1.04%	10.09%	11.18%	0.0336%
Aon PLC	AON	69,666.58	0.18%	0.63%	12.05%	12.71%	0.0224%
A O Smith Corp	AOS	8,372.72	0.02%	1.75%	10.00%	11.84%	0.0025%
APA Corp	APA	14,332.25	0.04%	1.21%	30.75%	32.15%	0.0117%
Air Products and Chemicals Inc	APD	55,409.30	0.14%	2.59%	13.67%	16.44%	0.0231%
Amphenol Corp	APH	45,130.13	0.11%	1.06%	10.14%	11.25%	0.0129%
Aptiv PLC	APTV	32,431.23	0.08%	0.00%	19.67%	19.67%	0.0162%
Alexandria Real Estate Equities Inc	ARE	32,188.53	0.08%	2.29%	-1.93%	0.33%	0.0003%
Atmos Energy Corp	ATO	16,182.77	0.04%	2.28%	7.39%	9.75%	0.0040%
Activision Blizzard Inc	ATVI	62,559.74	0.16%	0.59%	11.60%	12.22%	0.0194%
AvalonBay Communities Inc	AVB	34,710.20	0.09%	2.56%	8.06%	10.72%	0.0094%
Broadcom Inc	AVGO	257,086.38	0.65%	2.60%	5.03%	7.70%	0.0502%
Avery Dennison Corp	AVY	14,327.30	0.04%	1.56%	5.80%	7.41%	0.0027%
American Water Works Co Inc	AWK	30,085.57	0.08%	1.46%	7.75%	9.26%	0.0071%
American Express Co	AXP	141,613.04	0.36%	1.11%	21.12%	22.35%	0.0802%
AutoZone Inc	AZO	40,582.87	0.10%	0.00%	12.27%	12.27%	0.0126%
Boeing Co/The	BA	113,058.73	0.29%	0.00%	80.64%	80.64%	0.2310%
Bank of America Corp	BAC	332,433.32	0.84%	2.04%	3.25%	5.32%	0.0448%
Baxter International Inc	BAX	39,017.90	0.10%	1.44%	12.76%	14.30%	0.0141%
Bath & Body Works Inc	BBWI	11,419.90	0.03%	1.67%	9.26%	11.01%	0.0032%
Best Buy Co Inc	BBY	20,473.23	0.05%	3.87%	7.24%	11.25%	0.0058%
Becton Dickinson and Co	BDX	73,850.80	0.19%	1.34%	7.38%	8.77%	0.0164%
Franklin Resources Inc	BEN	14,019.30	N/A	4.15%	N/A	N/A	N/A
Brown-Forman Corp	BF/B	20,762.46	0.05%	1.13%	8.23%	9.40%	0.0049%
Biogen Inc	BIIB	30,950.41	0.08%	0.00%	-2.40%	-2.40%	-0.0019%
Bio-Rad Laboratories Inc	BIO	14,003.59	0.04%	0.00%	9.10%	9.10%	0.0032%
Bank of New York Mellon Corp/The	BK	40,056.67	0.10%	2.74%	9.45%	12.32%	0.0125%
Booking Holdings Inc	BKNG	96,023.42	0.24%	0.00%	28.35%	28.35%	0.0690%
Baker Hughes Co	BKR	34,711.15	0.09%	1.98%	45.98%	48.41%	0.0426%
BlackRock Inc	BLK	116,185.94	0.29%	2.55%	8.90%	11.57%	0.0341%
Ball Corp	BLL	28,909.08	0.07%	0.89%	7.70%	8.62%	0.0063%
Bristol-Myers Squibb Co	BMY	155,203.58	0.39%	2.96%	4.88%	7.91%	0.0311%
Broadridge Financial Solutions Inc	BR	18,182.72	0.05%	1.64%	12.20%	13.94%	0.0064%
Berkshire Hathaway Inc	BRK/B	454,418.91	1.15%	0.00%	-8.30%	-8.30%	-0.0956%
Brown & Brown Inc	BRO	20,395.75	0.05%	0.57%	9.00%	9.59%	0.0050%
Boston Scientific Corp	BSX	63,310.21	0.16%	0.00%	10.49%	10.49%	0.0168%
BorgWarner Inc	BWA	9,334.95	0.02%	1.75%	29.77%	31.78%	0.0075%
Boston Properties Inc	BXP	20,179.87	0.05%	3.04%	-1.01%	2.02%	0.0010%
Citigroup Inc	C	105,330.11	0.27%	3.82%	2.33%	6.19%	0.0165%
Conagra Brands Inc	CAG	16,103.46	0.04%	3.72%	6.45%	10.29%	0.0042%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Cardinal Health Inc	CAH	15,709.36	0.04%	3.46%	10.67%	14.32%	0.0057%
Carrier Global Corp	CARR	39,127.43	0.10%	1.31%	8.95%	10.32%	0.0102%
Caterpillar Inc	CAT	119,406.56	0.30%	1.99%	11.55%	13.66%	0.0413%
Chubb Ltd	CB	91,170.38	0.23%	1.50%	8.60%	10.16%	0.0235%
Cboe Global Markets Inc	CBOE	12,197.40	N/A	1.68%	N/A	N/A	N/A
CBRE Group Inc	CBRE	30,414.20	0.08%	0.00%	5.40%	5.40%	0.0042%
Crown Castle International Corp	CCI	79,937.34	0.20%	3.19%	10.10%	13.45%	0.0272%
Carnival Corp	CCL	20,011.75	N/A	0.00%	N/A	N/A	N/A
Ceridian HCM Holding Inc	CDAY	10,261.45	0.03%	0.00%	58.30%	58.30%	0.0152%
Cadence Design Systems Inc	CDNS	45,781.72	0.12%	0.00%	15.05%	15.05%	0.0175%
CDW Corp/DE	CDW	24,140.13	0.06%	1.12%	13.10%	14.29%	0.0087%
Celanese Corp	CE	15,434.10	0.04%	1.90%	8.26%	10.24%	0.0040%
Constellation Energy Corp	CEG	18,374.85	N/A	1.00%	N/A	N/A	N/A
Cerner Corp	CERN	27,492.23	N/A	1.15%	N/A	N/A	N/A
CF Industries Holdings Inc	CF	21,551.29	0.05%	1.16%	8.87%	10.08%	0.0055%
Citizens Financial Group Inc	CFG	19,135.74	0.05%	3.44%	0.99%	4.45%	0.0022%
Church & Dwight Co Inc	CHD	24,119.13	0.06%	1.06%	6.77%	7.86%	0.0048%
CH Robinson Worldwide Inc	CHRW	13,855.81	0.04%	2.04%	7.53%	9.65%	0.0034%
Charter Communications Inc	CHTR	104,463.26	0.26%	0.00%	25.32%	25.32%	0.0670%
Cigna Corp	CI	76,903.55	0.19%	1.87%	10.82%	12.79%	0.0249%
Cincinnati Financial Corp	CINF	21,813.29	N/A	2.03%	N/A	N/A	N/A
Colgate-Palmolive Co	CL	63,742.17	0.16%	2.48%	6.13%	8.68%	0.0140%
Clorox Co/The	CLX	17,108.75	0.04%	3.34%	-2.45%	0.85%	0.0004%
Comerica Inc	CMA	11,854.38	0.03%	3.01%	11.22%	14.40%	0.0043%
Comcast Corp	CMCSA	211,803.66	0.54%	2.31%	10.68%	13.11%	0.0704%
CME Group Inc	CME	85,491.40	0.22%	1.68%	6.77%	8.50%	0.0184%
Chipotle Mexican Grill Inc	CMG	44,347.46	0.11%	0.00%	29.20%	29.20%	0.0328%
Cummins Inc	CMI	29,141.00	0.07%	2.83%	8.54%	11.49%	0.0085%
CMS Energy Corp	CMS	20,292.18	0.05%	2.63%	8.00%	10.74%	0.0055%
Centene Corp	CNC	49,072.25	0.12%	0.00%	11.10%	11.10%	0.0138%
CenterPoint Energy Inc	CNP	19,285.80	0.05%	2.22%	4.01%	6.28%	0.0031%
Capital One Financial Corp	COF	53,260.41	0.13%	1.83%	30.92%	33.03%	0.0446%
Cooper Cos Inc/The	COO	20,588.02	0.05%	0.01%	10.90%	10.92%	0.0057%
ConocoPhillips	COP	129,605.10	0.33%	1.84%	8.50%	10.42%	0.0342%
Costco Wholesale Corp	COST	255,230.54	0.65%	0.55%	11.05%	11.62%	0.0752%
Campbell Soup Co	CPB	13,446.95	0.03%	3.32%	2.51%	5.87%	0.0020%
Copart Inc	CPRT	29,798.75	N/A	0.00%	N/A	N/A	N/A
Charles River Laboratories Internationa	CRL	14,425.39	0.04%	0.00%	15.15%	15.15%	0.0055%
salesforce.com Inc	CRM	210,196.80	0.53%	0.00%	16.67%	16.67%	0.0888%
Cisco Systems Inc	CSCO	231,636.41	0.59%	2.73%	6.43%	9.24%	0.0542%
CSX Corp	CSX	81,587.82	0.21%	1.07%	9.60%	10.71%	0.0222%
Cintas Corp	CTAS	43,566.74	0.11%	0.89%	9.23%	10.17%	0.0112%
Catalent Inc	CTLT	19,865.30	0.05%	0.00%	17.25%	17.25%	0.0087%
Coterra Energy Inc	CTRA	21,872.10	0.06%	8.31%	18.65%	27.73%	0.0154%
Cognizant Technology Solutions Corp	CTSH	47,035.05	0.12%	1.20%	12.40%	13.68%	0.0163%
Corteva Inc	CTVA	41,774.97	0.11%	0.97%	11.10%	12.13%	0.0128%
Citrix Systems Inc	CTXS	12,704.62	0.03%	0.00%	10.20%	10.20%	0.0033%
CVS Health Corp	CVS	132,839.14	0.34%	2.17%	7.20%	9.45%	0.0318%
Chevron Corp	CVX	317,120.05	0.80%	3.49%	20.10%	23.94%	0.1924%
Caesars Entertainment Inc	CZR	16,564.56	0.04%	0.00%	-39.81%	-39.81%	-0.0167%
Dominion Energy Inc	D	68,882.97	0.17%	3.14%	6.66%	9.91%	0.0173%
Delta Air Lines Inc	DAL	25,322.03	0.06%	0.00%	135.72%	135.72%	0.0871%
DuPont de Nemours Inc	DD	37,739.70	0.10%	1.79%	10.43%	12.31%	0.0118%
Deere & Co	DE	127,456.48	0.32%	1.01%	15.16%	16.24%	0.0525%
Discover Financial Services	DFS	31,076.67	0.08%	1.82%	35.78%	37.92%	0.0299%
Dollar General Corp	DG	50,952.88	0.13%	0.99%	9.42%	10.45%	0.0135%
Quest Diagnostics Inc	DGX	16,348.61	0.04%	1.93%	-6.42%	-4.55%	-0.0019%
DR Horton Inc	DHI	26,403.21	0.07%	1.21%	18.07%	19.39%	0.0130%
Danaher Corp	DHR	209,993.48	0.53%	0.34%	17.60%	17.97%	0.0956%
Walt Disney Co/The	DIS	249,718.02	0.63%	0.00%	31.03%	31.03%	0.1964%
Discovery Inc	DISCA	4,274.85	0.01%	0.00%	-2.75%	-2.75%	-0.0003%
Discovery Inc	DISCK	8,243.95	0.02%	0.00%	-2.75%	-2.75%	-0.0006%
DISH Network Corp	DISH	9,196.60	0.02%	0.00%	5.40%	5.40%	0.0013%
Digital Realty Trust Inc	DLR	40,337.70	0.10%	3.44%	14.56%	18.26%	0.0187%
Dollar Tree Inc	DLTR	36,051.37	0.09%	0.00%	15.92%	15.92%	0.0145%
Dover Corp	DOV	22,610.23	0.06%	1.27%	14.60%	15.97%	0.0091%
Dow Inc	DOW	46,839.68	0.12%	4.39%	6.30%	10.83%	0.0129%
Domino's Pizza Inc	DPZ	14,665.79	0.04%	1.08%	11.30%	12.45%	0.0046%
Duke Realty Corp	DRE	22,223.51	0.06%	1.93%	1.83%	3.77%	0.0021%
Darden Restaurants Inc	DRI	16,980.91	0.04%	3.31%	15.60%	19.17%	0.0082%
DTE Energy Co	DTE	25,614.63	0.06%	2.68%	5.87%	8.62%	0.0056%
Duke Energy Corp	DUK	85,966.92	0.22%	3.53%	5.45%	9.07%	0.0198%
DaVita Inc	DVA	10,892.49	0.03%	0.00%	10.56%	10.56%	0.0029%
Devon Energy Corp	DVN	39,274.15	0.10%	6.76%	21.26%	28.75%	0.0286%
DXC Technology Co	DXC	7,977.32	0.02%	0.00%	27.18%	27.18%	0.0055%
Dexcom Inc	DXCM	49,824.72	0.13%	0.00%	20.70%	20.70%	0.0261%
Electronic Arts Inc	EA	35,577.40	0.09%	0.54%	9.30%	9.86%	0.0089%
eBay Inc	EBAY	33,641.91	0.09%	1.54%	8.61%	10.22%	0.0087%
Ecolab Inc	ECL	50,548.42	0.13%	1.16%	14.50%	15.74%	0.0202%
Consolidated Edison Inc	ED	33,525.24	0.08%	3.34%	3.53%	6.93%	0.0059%
Equifax Inc	EFX	29,141.72	0.07%	0.66%	14.08%	14.78%	0.0109%
Edison International	EIX	26,693.80	0.07%	3.99%	3.25%	7.31%	0.0049%
Estee Lauder Cos Inc/The	EL	63,293.70	0.16%	0.88%	12.21%	13.14%	0.0211%
Embecta Corp	EMBC	N/A	N/A	0.00%	N/A	N/A	N/A
Eastman Chemical Co	EMN	14,450.14	0.04%	2.71%	18.34%	21.30%	0.0078%
Emerson Electric Co	EMR	58,241.70	0.15%	2.10%	11.17%	13.39%	0.0198%
Enphase Energy Inc	ENPH	27,025.61	0.07%	0.00%	36.20%	36.20%	0.0248%
EOG Resources Inc	EOG	69,795.93	0.18%	2.52%	8.66%	11.28%	0.0200%
EPAM Systems Inc	EPAM	16,870.88	0.04%	0.00%	25.70%	25.70%	0.0110%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Equinix Inc	EQIX	67,280.51	0.17%	1.67%	18.30%	20.13%	0.0343%
Equity Residential	EQR	33,802.46	0.09%	2.78%	10.88%	13.81%	0.0118%
Eversource Energy	ES	30,403.15	0.08%	2.89%	4.89%	7.85%	0.0060%
Essex Property Trust Inc	ESS	22,552.59	0.06%	2.55%	10.45%	13.13%	0.0075%
Eaton Corp PLC	ETN	60,638.74	0.15%	2.13%	12.40%	14.67%	0.0225%
Entergy Corp	ETR	23,760.38	0.06%	3.46%	5.97%	9.54%	0.0057%
Etsy Inc	ETSY	15,787.66	0.04%	0.00%	30.65%	30.65%	0.0123%
Evergy Inc	EVRG	15,512.70	0.04%	3.35%	4.90%	8.33%	0.0033%
Edwards Lifesciences Corp	EW	73,141.44	0.19%	0.00%	14.18%	14.18%	0.0263%
Exelon Corp	EXC	46,683.93	0.12%	2.83%	11.30%	14.29%	0.0169%
Expeditors International of Washingtor	EXPD	17,268.78	0.04%	1.12%	-7.65%	-6.57%	-0.0029%
Expedia Group Inc	EXPE	29,395.70	0.07%	0.00%	32.25%	32.25%	0.0240%
Extra Space Storage Inc	EXR	27,581.86	0.07%	2.92%	5.97%	8.98%	0.0063%
Ford Motor Co	F	66,760.11	0.17%	2.37%	-5.02%	-2.71%	-0.0046%
Diamondback Energy Inc	FANG	24,320.05	0.06%	1.75%	8.07%	9.89%	0.0061%
Fastenal Co	FAST	34,187.91	0.09%	2.09%	9.80%	11.99%	0.0104%
Meta Platforms Inc	FB	513,447.03	1.30%	0.00%	14.50%	14.50%	0.1887%
Fortune Brands Home & Security Inc	FBHS	9,830.74	0.02%	1.51%	8.96%	10.53%	0.0026%
Freeport-McMoRan Inc	FCX	72,360.81	0.18%	1.21%	-14.26%	-13.14%	-0.0241%
FactSet Research Systems Inc	FDS	16,409.57	0.04%	0.76%	12.80%	13.60%	0.0057%
FedEx Corp	FDX	59,971.20	0.15%	1.30%	12.28%	13.65%	0.0207%
FirstEnergy Corp	FE	26,181.61	0.07%	3.40%	3.75%	7.22%	0.0048%
F5 Inc	FFIV	12,691.21	0.03%	0.00%	13.60%	13.60%	0.0044%
Fidelity National Information Services I	FIS	61,215.13	0.16%	1.87%	12.35%	14.34%	0.0222%
Fiserv Inc	FISV	66,132.78	0.17%	0.00%	15.96%	15.96%	0.0267%
Fifth Third Bancorp	FITB	29,425.20	0.07%	2.79%	2.20%	5.02%	0.0037%
FleetCor Technologies Inc	FLT	19,398.54	0.05%	0.00%	16.01%	16.01%	0.0079%
FMC Corp	FMC	16,563.74	0.04%	1.61%	9.23%	10.92%	0.0046%
Fox Corp	FOX	8,964.64	0.02%	1.32%	6.59%	7.96%	0.0018%
Fox Corp	FOXA	12,458.55	0.03%	1.22%	6.59%	7.85%	0.0025%
First Republic Bank/CA	FRC	29,025.63	0.07%	0.54%	12.39%	12.96%	0.0095%
Federal Realty Investment Trust	FRT	9,605.44	0.02%	3.51%	9.06%	12.72%	0.0031%
Fortinet Inc	FTNT	54,956.92	0.14%	0.00%	19.45%	19.45%	0.0271%
Fortive Corp	FTV	21,877.89	0.06%	0.46%	10.63%	11.12%	0.0062%
General Dynamics Corp	GD	67,080.84	0.17%	2.09%	10.29%	12.48%	0.0212%
General Electric Co	GE	100,810.22	0.26%	0.35%	28.83%	29.23%	0.0747%
Gilead Sciences Inc	GILD	74,543.58	0.19%	4.91%	8.02%	13.12%	0.0248%
General Mills Inc	GIS	40,781.80	0.10%	3.01%	6.50%	9.61%	0.0099%
Globe Life Inc	GL	9,977.31	N/A	0.83%	N/A	N/A	N/A
Corning Inc	GLW	31,212.79	0.08%	2.93%	11.45%	14.54%	0.0115%
General Motors Co	GM	63,555.14	0.16%	0.00%	9.96%	9.96%	0.0160%
Generac Holdings Inc	GNRC	18,960.43	0.05%	0.00%	11.10%	11.10%	0.0053%
Alphabet Inc	GOOG	881,576.57	2.23%	0.00%	20.34%	20.34%	0.4545%
Alphabet Inc	GOOGL	836,504.92	2.12%	0.00%	20.34%	20.34%	0.4312%
Genuine Parts Co	GPC	17,888.16	0.05%	2.84%	10.20%	13.19%	0.0060%
Global Payments Inc	GPN	38,584.50	0.10%	0.73%	17.36%	18.15%	0.0178%
Garmin Ltd	GRMN	22,866.47	0.06%	2.46%	8.35%	10.91%	0.0063%
Goldman Sachs Group Inc/The	GS	112,847.66	0.29%	2.42%	-10.03%	-7.72%	-0.0221%
WW Grainger Inc	GWW	26,357.90	0.07%	1.26%	11.40%	12.73%	0.0085%
Halliburton Co	HAL	34,028.92	0.09%	1.27%	42.31%	43.85%	0.0378%
Hasbro Inc	HAS	11,383.60	0.03%	3.42%	5.60%	9.11%	0.0026%
Huntington Bancshares Inc/OH	HBAN	21,123.37	0.05%	4.24%	14.68%	19.24%	0.0103%
HCA Healthcare Inc	HCA	75,691.75	0.19%	0.89%	8.64%	9.57%	0.0184%
Home Depot Inc/The	HD	309,312.66	0.78%	2.54%	5.92%	8.53%	0.0669%
Hess Corp	HES	33,155.21	0.08%	1.40%	47.20%	48.93%	0.0411%
Hartford Financial Services Group Inc/	HIG	23,815.57	0.06%	2.14%	7.00%	9.22%	0.0056%
Huntington Ingalls Industries Inc	HII	7,990.96	0.02%	2.37%	25.20%	27.86%	0.0056%
Hilton Worldwide Holdings Inc	HLT	42,356.55	0.11%	0.00%	37.88%	37.88%	0.0407%
Hologic Inc	HOLX	19,305.10	0.05%	0.00%	-18.45%	-18.45%	-0.0090%
Honeywell International Inc	HON	133,381.09	0.34%	2.01%	10.36%	12.48%	0.0422%
Hewlett Packard Enterprise Co	HPE	21,725.27	0.06%	2.87%	4.63%	7.57%	0.0042%
HP Inc	HPQ	38,237.19	0.10%	2.75%	2.11%	4.90%	0.0047%
Hormel Foods Corp	HRL	28,089.20	0.07%	2.02%	7.26%	9.35%	0.0067%
Henry Schein Inc	HSIC	11,960.11	0.03%	0.00%	14.95%	14.95%	0.0045%
Host Hotels & Resorts Inc	HST	13,875.93	N/A	0.62%	N/A	N/A	N/A
Hershey Co/The	HSY	31,547.39	0.08%	1.66%	8.00%	9.73%	0.0078%
Humana Inc	HUM	55,154.75	0.14%	0.72%	12.63%	13.40%	0.0187%
Howmet Aerospace Inc	HWM	15,055.45	0.04%	0.22%	33.00%	33.26%	0.0127%
International Business Machines Corp	IBM	116,928.29	0.30%	5.05%	13.42%	18.80%	0.0557%
Intercontinental Exchange Inc	ICE	74,044.80	0.19%	1.15%	3.55%	4.72%	0.0089%
IDEXX Laboratories Inc	IDXX	46,089.26	0.12%	0.00%	10.92%	10.92%	0.0127%
IDEX Corp	IEX	14,591.61	0.04%	1.13%	13.00%	14.20%	0.0053%
International Flavors & Fragrances Inc	IFF	33,455.66	0.08%	2.41%	6.62%	9.10%	0.0077%
Illumina Inc	ILMN	54,882.01	0.14%	0.00%	31.79%	31.79%	0.0442%
Incyte Corp	INCY	17,577.63	0.04%	0.00%	35.20%	35.20%	0.0157%
Intel Corp	INTC	202,635.77	0.51%	2.95%	5.96%	8.99%	0.0462%
Intuit Inc	INTU	135,987.32	0.34%	0.57%	17.43%	18.05%	0.0622%
International Paper Co	IP	17,301.08	0.04%	4.01%	16.90%	21.25%	0.0093%
Interpublic Group of Cos Inc/The	IPG	13,965.88	0.04%	3.27%	3.07%	6.39%	0.0023%
IPG Photonics Corp	IPGP	5,810.58	0.01%	0.00%	12.40%	12.40%	0.0018%
IQVIA Holdings Inc	IQV	44,140.76	0.11%	0.00%	17.56%	17.56%	0.0196%
Ingersoll Rand Inc	IR	20,541.19	0.05%	0.16%	14.85%	15.02%	0.0078%
Iron Mountain Inc	IRM	16,059.48	0.04%	4.46%	4.00%	8.55%	0.0035%
Intuitive Surgical Inc	ISRG	108,361.95	0.27%	0.00%	6.17%	6.17%	0.0170%
Gartner Inc	IT	24,477.09	0.06%	0.00%	15.00%	15.00%	0.0093%
Illinois Tool Works Inc	ITW	65,311.86	0.17%	2.33%	10.20%	12.65%	0.0209%
Invesco Ltd	IVZ	10,491.42	0.03%	2.95%	-0.10%	2.85%	0.0008%
Jacobs Engineering Group Inc	J	17,807.39	0.05%	0.67%	13.56%	14.27%	0.0064%
JB Hunt Transport Services Inc	JBHT	21,052.83	0.05%	0.80%	19.43%	20.31%	0.0108%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Johnson Controls International plc	JCI	46,071.25	0.12%	2.14%	14.30%	16.59%	0.0194%
Jack Henry & Associates Inc	JKHY	14,350.17	0.04%	0.99%	15.15%	16.22%	0.0059%
Johnson & Johnson	JNJ	466,046.67	1.18%	2.39%	5.70%	8.16%	0.0964%
Juniper Networks Inc	JNPR	11,986.66	0.03%	2.26%	8.85%	11.21%	0.0034%
JPMorgan Chase & Co	JPM	402,526.92	1.02%	2.93%	0.00%	2.93%	0.0299%
Kellogg Co	K	21,936.66	0.06%	3.60%	3.50%	7.16%	0.0040%
KeyCorp	KEY	20,592.49	0.05%	3.49%	19.12%	22.94%	0.0120%
Keysight Technologies Inc	KEYS	28,746.59	0.07%	0.00%	10.31%	10.31%	0.0075%
Kraft Heinz Co/The	KHC	48,248.57	0.12%	4.06%	4.60%	8.76%	0.0107%
Kimco Realty Corp	KIM	15,262.50	0.04%	3.08%	2.94%	6.06%	0.0023%
KLA Corp	KLAC	55,170.73	0.14%	1.15%	13.28%	14.51%	0.0203%
Kimberly-Clark Corp	KMB	41,496.05	0.11%	3.77%	-1.35%	2.39%	0.0025%
Kinder Morgan Inc	KMI	42,878.14	0.11%	5.71%	5.15%	11.01%	0.0120%
CarMax Inc	KMX	15,598.89	0.04%	0.00%	18.52%	18.52%	0.0073%
Coca-Cola Co/The	KO	268,769.69	0.68%	2.84%	9.69%	12.66%	0.0863%
Kroger Co/The	KR	41,496.18	0.11%	1.46%	10.26%	11.80%	0.0124%
Loews Corp	L	15,971.26	N/A	0.39%	N/A	N/A	N/A
Leidos Holdings Inc	LDOS	14,727.66	0.04%	1.33%	7.17%	8.55%	0.0032%
Lennar Corp	LEN	20,885.53	0.05%	1.85%	15.31%	17.30%	0.0092%
Laboratory Corp of America Holdings	LH	24,625.84	0.06%	0.00%	-6.59%	-6.59%	-0.0041%
L3Harris Technologies Inc	LHX	47,969.62	0.12%	1.80%	4.39%	6.23%	0.0076%
Linde PLC	LIN	162,022.88	0.41%	1.47%	9.77%	11.30%	0.0464%
LKQ Corp	LKQ	12,941.40	0.03%	2.20%	3.80%	6.04%	0.0020%
Eli Lilly & Co	LLY	272,723.61	0.69%	1.37%	15.49%	16.96%	0.1172%
Lockheed Martin Corp	LMT	117,648.11	0.30%	2.54%	4.45%	7.05%	0.0210%
Lincoln National Corp	LNC	11,271.66	0.03%	2.75%	20.79%	23.83%	0.0068%
Alliant Energy Corp	LNT	15,649.93	0.04%	2.74%	5.90%	8.72%	0.0035%
Lowe's Cos Inc	LOW	133,761.02	0.34%	1.58%	18.83%	20.56%	0.0697%
Lam Research Corp	LRCX	74,996.60	0.19%	1.12%	13.35%	14.54%	0.0276%
Lumen Technologies Inc	LUMN	11,533.40	0.03%	8.87%	-10.47%	-2.06%	-0.0006%
Southwest Airlines Co	LUV	27,129.26	0.07%	0.00%	67.14%	67.14%	0.0462%
Las Vegas Sands Corp	LVS	29,696.37	N/A	0.00%	N/A	N/A	N/A
Lamb Weston Holdings Inc	LW	8,699.17	0.02%	1.64%	11.36%	13.08%	0.0029%
LyondellBasell Industries NV	LYB	33,725.99	0.09%	4.40%	8.00%	12.57%	0.0107%
Live Nation Entertainment Inc	LYV	26,425.00	N/A	0.00%	N/A	N/A	N/A
Mastercard Inc	MA	346,561.75	0.88%	0.55%	22.26%	22.87%	0.2009%
Mid-America Apartment Communities I	MAA	24,158.17	N/A	2.08%	N/A	N/A	N/A
Marriott International Inc/MD	MAR	57,514.89	0.15%	0.00%	35.55%	35.55%	0.0518%
Masco Corp	MAS	12,062.72	0.03%	2.20%	12.42%	14.75%	0.0045%
McDonald's Corp	MCD	183,873.70	0.47%	2.23%	8.81%	11.14%	0.0519%
Microchip Technology Inc	MCHP	41,777.16	0.11%	1.35%	17.71%	19.18%	0.0203%
McKesson Corp	MCK	45,857.66	0.12%	0.61%	11.66%	12.31%	0.0143%
Moody's Corp	MCO	62,548.05	0.16%	0.83%	10.00%	10.87%	0.0172%
Mondelez International Inc	MDLZ	87,159.23	0.22%	2.23%	7.81%	10.13%	0.0224%
Medtronic PLC	MDT	148,843.75	0.38%	2.27%	8.19%	10.55%	0.0398%
MetLife Inc	MET	57,986.48	0.15%	2.73%	-0.90%	1.82%	0.0027%
MGM Resorts International	MGM	18,257.87	0.05%	0.02%	-3.65%	-3.63%	-0.0017%
Mohawk Industries Inc	MHK	8,081.82	0.02%	0.00%	12.75%	12.75%	0.0026%
McCormick & Co Inc/MD	MKC	24,972.55	0.06%	1.48%	5.05%	6.57%	0.0042%
MarketAxess Holdings Inc	MKTX	12,871.47	0.03%	0.82%	13.70%	14.58%	0.0048%
Martin Marietta Materials Inc	MLM	24,015.21	0.06%	0.63%	13.15%	13.83%	0.0084%
Marsh & McLennan Cos Inc	MMC	85,681.38	0.22%	1.26%	7.81%	9.11%	0.0198%
3M Co	MMM	84,738.33	0.21%	4.00%	7.67%	11.82%	0.0254%
Monster Beverage Corp	MNST	42,295.78	0.11%	0.00%	11.53%	11.53%	0.0124%
Altria Group Inc	MO	94,951.68	0.24%	6.89%	3.60%	10.61%	0.0255%
Molina Healthcare Inc	MOH	19,573.06	0.05%	0.00%	11.91%	11.91%	0.0059%
Mosaic Co/The	MOS	24,492.55	0.06%	0.68%	-1.75%	-1.08%	-0.0007%
Marathon Petroleum Corp	MPC	47,758.08	0.12%	2.71%	16.58%	19.52%	0.0236%
Monolithic Power Systems Inc	MPWR	22,588.49	0.06%	0.62%	24.50%	25.19%	0.0144%
Merck & Co Inc	MRK	207,400.57	0.53%	3.36%	10.17%	13.70%	0.0720%
Moderna Inc	MRNA	69,424.23	0.18%	0.00%	-97.50%	-97.50%	-0.1715%
Marathon Oil Corp	MRO	18,349.51	0.05%	1.12%	-17.30%	-16.28%	-0.0076%
Morgan Stanley	MS	155,685.53	0.39%	3.20%	3.33%	6.59%	0.0260%
MSCI Inc	MSCI	40,868.05	0.10%	0.83%	13.30%	14.18%	0.0147%
Microsoft Corp	MSFT	2,311,358.76	5.86%	0.80%	12.78%	13.64%	0.7987%
Motorola Solutions Inc	MSI	40,555.91	0.10%	1.30%	11.20%	12.58%	0.0129%
M&T Bank Corp	MTB	21,874.99	0.06%	2.83%	7.54%	10.48%	0.0058%
Match Group Inc	MTCH	31,006.99	0.08%	0.00%	52.23%	52.23%	0.0410%
Mettler-Toledo International Inc	MTD	31,220.85	0.08%	0.00%	18.10%	18.10%	0.0143%
Micron Technology Inc	MU	86,977.19	0.22%	0.51%	20.51%	21.08%	0.0465%
Norwegian Cruise Line Holdings Ltd	NCLH	9,125.84	0.02%	0.00%	153.32%	153.32%	0.0355%
Nasdaq Inc	NDAQ	29,298.22	0.07%	1.21%	10.63%	11.90%	0.0088%
Nordson Corp	NDSN	13,157.24	0.03%	0.90%	11.93%	12.88%	0.0043%
NextEra Energy Inc	NEE	166,264.13	0.42%	2.01%	11.51%	13.64%	0.0575%
Newmont Corp	NEM	62,968.02	0.16%	2.77%	-3.00%	-0.27%	-0.0004%
Netflix Inc	NFLX	166,304.10	0.42%	0.00%	27.97%	27.97%	0.1179%
NiSource Inc	NI	12,891.24	0.03%	2.96%	6.99%	10.05%	0.0033%
NIKE Inc	NKE	171,737.31	0.44%	0.91%	13.37%	14.34%	0.0624%
NortonLifeLock Inc	NLOK	15,441.91	0.04%	1.89%	9.50%	11.47%	0.0045%
Nielsen Holdings PLC	NLSN	9,792.37	N/A	0.88%	N/A	N/A	N/A
Northrop Grumman Corp	NOC	69,811.94	0.18%	1.40%	0.30%	1.70%	0.0030%
ServiceNow Inc	NOW	111,378.00	0.28%	0.00%	36.00%	36.00%	0.1016%
NRG Energy Inc	NRG	9,289.03	0.02%	3.65%	15.62%	19.55%	0.0046%
Norfolk Southern Corp	NSC	68,389.20	0.17%	1.74%	9.75%	11.57%	0.0201%
NetApp Inc	NTAP	18,470.49	0.05%	2.41%	10.73%	13.27%	0.0062%
Northern Trust Corp	NTRS	24,215.08	0.06%	2.40%	10.90%	13.44%	0.0082%
Nucor Corp	NUE	39,898.40	N/A	1.35%	N/A	N/A	N/A
NVIDIA Corp	NVDA	684,878.60	1.74%	0.06%	25.13%	25.20%	0.4373%
NVR Inc	NVR	15,010.03	0.04%	0.00%	26.00%	26.00%	0.0099%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Newell Brands Inc	NWL	8,902.41	0.02%	4.30%	7.00%	11.45%	0.0026%
News Corp	NWS	4,469.84	0.01%	0.89%	14.30%	15.25%	0.0017%
News Corp	NWSA	8,657.86	0.02%	0.90%	14.30%	15.27%	0.0033%
NXP Semiconductors NV	NXPI	48,590.53	0.12%	1.83%	18.60%	20.60%	0.0254%
Realty Income Corp	O	41,434.54	0.11%	4.28%	9.65%	14.13%	0.0148%
Old Dominion Freight Line Inc	ODFL	34,307.58	0.09%	0.40%	12.50%	12.92%	0.0112%
Organon & Co	OGN	8,859.54	0.02%	3.21%	-2.99%	0.17%	0.0000%
ONEOK Inc	OKE	31,516.02	0.08%	5.30%	10.80%	16.38%	0.0131%
Omnicom Group Inc	OMC	17,565.75	0.04%	3.30%	5.73%	9.13%	0.0041%
Oracle Corp	ORCL	220,736.63	0.56%	1.55%	7.97%	9.58%	0.0536%
O'Reilly Automotive Inc	ORLY	45,410.11	0.12%	0.00%	15.02%	15.02%	0.0173%
Otis Worldwide Corp	OTIS	32,700.83	0.08%	1.25%	9.63%	10.94%	0.0091%
Occidental Petroleum Corp	OXY	53,160.22	0.13%	0.92%	5.75%	6.69%	0.0090%
Paramount Global	PARA	22,983.83	0.06%	2.54%	0.49%	3.03%	0.0018%
Paycom Software Inc	PAYC	20,856.93	0.05%	0.00%	25.40%	25.40%	0.0134%
Paychex Inc	PAYX	49,267.99	0.12%	1.93%	9.25%	11.27%	0.0141%
People's United Financial Inc	PBCT	8,589.12	N/A	3.65%	N/A	N/A	N/A
PACCAR Inc	PCAR	30,619.74	0.08%	1.54%	10.95%	12.58%	0.0098%
Healthpeak Properties Inc	PEAK	18,521.04	0.05%	3.50%	11.91%	15.61%	0.0073%
Public Service Enterprise Group Inc	PEG	35,145.46	0.09%	3.09%	5.60%	8.77%	0.0078%
Penn National Gaming Inc	PENN	7,140.26	0.02%	0.00%	16.00%	16.00%	0.0029%
PepsiCo Inc	PEP	231,528.22	0.59%	2.57%	7.35%	10.01%	0.0588%
Pfizer Inc	PFE	292,385.26	0.74%	3.09%	0.59%	3.69%	0.0274%
Principal Financial Group Inc	PFG	19,176.75	0.05%	3.49%	9.14%	12.79%	0.0062%
Procter & Gamble Co/The	PG	366,271.68	0.93%	2.28%	5.99%	8.34%	0.0774%
Progressive Corp/The	PGR	66,670.36	0.17%	0.35%	30.07%	30.47%	0.0515%
Parker-Hannifin Corp	PH	36,456.92	0.09%	1.45%	13.15%	14.70%	0.0136%
PulteGroup Inc	PHM	10,115.71	0.03%	1.43%	24.62%	26.23%	0.0067%
Packaging Corp of America	PKG	14,628.13	0.04%	2.56%	3.00%	5.60%	0.0021%
PerkinElmer Inc	PKI	22,009.35	0.06%	0.16%	4.10%	4.26%	0.0024%
Prologis Inc	PLD	119,454.02	0.30%	1.96%	9.37%	11.41%	0.0346%
Philip Morris International Inc	PM	145,614.70	0.37%	5.32%	6.58%	12.07%	0.0445%
PNC Financial Services Group Inc/The	PNC	77,203.39	0.20%	2.71%	21.40%	24.40%	0.0477%
Pentair PLC	PNR	8,950.02	0.02%	1.55%	10.23%	11.86%	0.0027%
Pinnacle West Capital Corp	PNW	8,819.99	0.02%	4.35%	-4.32%	-0.06%	0.0000%
Pool Corp	POOL	16,967.28	0.04%	0.76%	10.60%	11.40%	0.0049%
PPG Industries Inc	PPG	30,951.92	0.08%	1.80%	11.34%	13.25%	0.0104%
PPL Corp	PPL	21,001.94	0.05%	2.80%	5.20%	8.07%	0.0043%
Prudential Financial Inc	PRU	44,482.26	0.11%	4.06%	-0.16%	3.90%	0.0044%
Public Storage	PSA	68,438.33	0.17%	2.05%	11.38%	13.54%	0.0235%
Phillips 66	PSX	37,878.73	0.10%	4.26%	16.58%	21.19%	0.0203%
PTC Inc	PTC	12,598.07	0.03%	0.00%	12.14%	12.14%	0.0039%
PVH Corp	PVH	5,210.02	N/A	0.20%	N/A	N/A	N/A
Quanta Services Inc	PWR	18,779.43	0.05%	0.21%	13.20%	13.43%	0.0064%
Pioneer Natural Resources Co	PXD	60,728.29	0.15%	6.05%	0.50%	6.56%	0.0101%
PayPal Holdings Inc	PYPL	134,732.83	0.34%	0.00%	19.03%	19.03%	0.0650%
QUALCOMM Inc	QCOM	172,228.14	0.44%	1.78%	15.57%	17.49%	0.0763%
Qorvo Inc	QRVO	13,456.41	0.03%	0.00%	11.82%	11.82%	0.0040%
Royal Caribbean Cruises Ltd	RCL	21,364.15	0.05%	0.00%	-188.41%	-188.41%	-0.1020%
Everest Re Group Ltd	RE	11835.79536	0.03%	2.06%	41.07%	43.54%	0.0131%
Regency Centers Corp	REG	12,225.75	0.03%	3.50%	6.30%	9.92%	0.0031%
Regeneron Pharmaceuticals Inc	REGN	74,532.59	0.19%	0.00%	-3.93%	-3.93%	-0.0074%
Regions Financial Corp	RF	20,860.87	0.05%	3.05%	-1.12%	1.92%	0.0010%
Robert Half International Inc	RHI	12,638.13	0.03%	1.51%	-0.08%	1.43%	0.0005%
Raymond James Financial Inc	RJF	22,817.54	0.06%	1.24%	10.90%	12.20%	0.0071%
Ralph Lauren Corp	RL	5,250.68	0.01%	2.42%	90.30%	93.82%	0.0125%
ResMed Inc	RMD	35,463.21	0.09%	0.69%	15.97%	16.72%	0.0150%
Rockwell Automation Inc	ROK	32,538.37	0.08%	1.60%	10.46%	12.14%	0.0100%
Rollins Inc	ROL	17,260.72	0.04%	1.14%	11.10%	12.30%	0.0054%
Roper Technologies Inc	ROP	49,868.90	0.13%	0.53%	12.40%	12.96%	0.0164%
Ross Stores Inc	ROST	31,741.69	0.08%	1.37%	87.53%	89.50%	0.0720%
Republic Services Inc	RSG	41,841.65	0.11%	1.39%	8.76%	10.21%	0.0108%
Raytheon Technologies Corp	RTX	147,640.85	0.37%	2.06%	13.46%	15.66%	0.0586%
SBA Communications Corp	SBAC	37,168.65	0.09%	0.83%	15.65%	16.54%	0.0156%
Signature Bank/New York NY	SBNY	18,363.38	0.05%	0.76%	12.25%	13.06%	0.0061%
Starbucks Corp	SBUX	104,642.79	0.27%	2.15%	12.61%	14.90%	0.0395%
Charles Schwab Corp/The	SCHW	152,990.70	0.39%	0.95%	21.50%	22.55%	0.0874%
SolarEdge Technologies Inc	SEDG	17,767.42	0.05%	0.00%	27.52%	27.52%	0.0124%
Sealed Air Corp	SEE	9,920.66	0.03%	1.19%	8.79%	10.04%	0.0025%
Sherwin-Williams Co/The	SHW	65,037.99	0.16%	0.96%	12.48%	13.50%	0.0222%
SVB Financial Group	SIVB	32,901.25	0.08%	0.00%	7.00%	7.00%	0.0058%
J M Smucker Co/The	SJM	14,686.30	0.04%	2.92%	1.49%	4.43%	0.0016%
Schlumberger NV	SLB	58,371.81	0.15%	1.21%	35.01%	36.43%	0.0539%
Snap-on Inc	SNA	10,976.13	0.03%	2.76%	6.89%	9.75%	0.0027%
Synopsys Inc	SNPS	51,023.30	0.13%	0.00%	16.41%	16.41%	0.0212%
Southern Co/The	SO	76,846.39	0.19%	3.64%	4.83%	8.56%	0.0167%
Simon Property Group Inc	SPG	43,196.67	0.11%	5.02%	6.57%	11.75%	0.0129%
S&P Global Inc	SPGI	142,343.53	0.36%	0.83%	9.90%	10.77%	0.0389%
Sempra Energy	SRE	53,087.59	0.13%	2.72%	5.65%	8.45%	0.0114%
STERIS PLC	STE	24,207.70	0.06%	0.71%	10.80%	11.55%	0.0071%
State Street Corp	STT	31,891.76	0.08%	2.62%	9.30%	12.04%	0.0097%
Seagate Technology Holdings PLC	STX	19,678.93	0.05%	3.11%	8.18%	11.42%	0.0057%
Constellation Brands Inc	STZ	37,850.56	0.10%	1.32%	8.05%	9.42%	0.0090%
Stanley Black & Decker Inc	SWK	22,843.22	0.06%	2.26%	8.03%	10.38%	0.0060%
Skyworks Solutions Inc	SWKS	21,547.51	0.05%	1.68%	9.94%	11.70%	0.0064%
Synchrony Financial	SYF	18,145.48	0.05%	2.53%	25.50%	28.35%	0.0130%
Stryker Corp	SYK	100,978.10	0.26%	1.04%	11.44%	12.54%	0.0321%
Sysco Corp	SYY	41,433.05	0.10%	2.30%	13.95%	16.41%	0.0172%
AT&T Inc	T	168,786.56	0.43%	4.70%	3.57%	8.35%	0.0357%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Molson Coors Beverage Co	TAP	10,707.97	0.03%	2.85%	4.08%	6.99%	0.0019%
TransDigm Group Inc	TDG	36,135.71	0.09%	0.00%	23.15%	23.15%	0.0212%
Teledyne Technologies Inc	TDY	22,103.01	0.06%	0.00%	9.22%	9.22%	0.0052%
Bio-Techne Corp	TECH	17,013.28	0.04%	0.30%	25.07%	25.40%	0.0110%
TE Connectivity Ltd	TEL	42,643.81	0.11%	1.71%	9.02%	10.80%	0.0117%
Teradyne Inc	TER	19,202.56	0.05%	0.37%	12.64%	13.04%	0.0063%
Truist Financial Corp	TFC	75,353.90	0.19%	3.39%	9.07%	12.61%	0.0241%
Teleflex Inc	TFX	16,642.24	0.04%	0.38%	9.65%	10.05%	0.0042%
Target Corp	TGT	98,134.35	0.25%	1.70%	21.65%	23.53%	0.0585%
TJX Cos Inc/The	TJX	71,195.31	0.18%	1.95%	69.15%	71.77%	0.1295%
Thermo Fisher Scientific Inc	TMO	231,057.55	0.59%	0.20%	8.20%	8.41%	0.0493%
T-Mobile US Inc	TMUS	160,346.37	0.41%	0.00%	20.33%	20.33%	0.0826%
Tapestry Inc	TPR	9,807.23	0.02%	2.69%	13.53%	16.41%	0.0041%
Trimble Inc	TRMB	18,122.72	0.05%	0.00%	10.00%	10.00%	0.0046%
T Rowe Price Group Inc	TROW	34,442.59	0.09%	3.17%	3.32%	6.55%	0.0057%
Travelers Cos Inc/The	TRV	44,129.48	0.11%	1.93%	3.97%	5.94%	0.0066%
Tractor Supply Co	TSCO	26,171.51	0.07%	1.58%	9.10%	10.75%	0.0071%
Tesla Inc	TSLA	1,113,708.22	2.82%	0.00%	36.20%	36.20%	1.0217%
Tyson Foods Inc	TSN	26,212.74	0.07%	2.05%	0.78%	2.84%	0.0019%
Trane Technologies PLC	TT	35,661.25	0.09%	1.76%	8.45%	10.28%	0.0093%
Take-Two Interactive Software Inc	TTWO	17,744.06	0.04%	0.00%	9.90%	9.90%	0.0045%
Twitter Inc	TWTR	30,976.80	0.08%	0.00%	80.00%	80.00%	0.0628%
Texas Instruments Inc	TXN	169,452.40	0.43%	2.51%	8.30%	10.91%	0.0469%
Textron Inc	TXT	16,090.55	0.04%	0.11%	13.88%	13.99%	0.0057%
Tyler Technologies Inc	TYL	18,432.24	0.05%	0.00%	15.80%	15.80%	0.0074%
Under Armour Inc	UA	3,940.07	N/A	0.00%	N/A	N/A	N/A
Under Armour Inc	UAA	3,211.15	N/A	0.00%	N/A	N/A	N/A
United Airlines Holdings Inc	UAL	15,002.61	0.04%	0.00%	307.15%	307.15%	0.1168%
UDR Inc	UDR	18,668.31	0.05%	2.65%	5.67%	8.39%	0.0040%
Universal Health Services Inc	UHS	9,791.66	0.02%	0.55%	7.21%	7.78%	0.0019%
Ulta Beauty Inc	ULTA	20,837.66	0.05%	0.00%	18.13%	18.13%	0.0096%
UnitedHealth Group Inc	UNH	479,830.26	1.22%	1.14%	12.19%	13.40%	0.1629%
Union Pacific Corp	UNP	171,681.61	0.44%	1.73%	9.33%	11.14%	0.0485%
United Parcel Service Inc	UPS	157,293.33	0.40%	2.84%	5.46%	8.37%	0.0334%
United Rentals Inc	URI	25,643.32	0.06%	0.00%	13.76%	13.76%	0.0089%
US Bancorp	USB	78,929.82	0.20%	3.46%	9.31%	12.93%	0.0259%
Visa Inc	V	367,788.69	0.93%	0.68%	18.44%	19.18%	0.1787%
VF Corp	VFC	22,112.97	0.06%	3.52%	29.56%	33.59%	0.0188%
Valero Energy Corp	VLO	41,572.20	0.11%	3.86%	-4.55%	-0.78%	-0.0008%
Vulcan Materials Co	VMC	24,412.63	0.06%	0.87%	24.40%	25.38%	0.0157%
Vornado Realty Trust	VNO	8,688.93	0.02%	4.68%	-14.34%	-10.00%	-0.0022%
Verisk Analytics Inc	VRSK	34,616.17	0.09%	0.58%	8.45%	9.05%	0.0079%
VeriSign Inc	VRSN	24,507.75	0.06%	0.00%	8.80%	8.80%	0.0055%
Vertex Pharmaceuticals Inc	VRTX	66,436.96	0.17%	0.00%	28.98%	28.98%	0.0488%
Ventas Inc	VTR	24,676.15	0.06%	2.91%	14.31%	17.43%	0.0109%
Viatris Inc	VTRS	13,160.19	0.03%	4.41%	0.07%	4.48%	0.0015%
Verizon Communications Inc	VZ	213,837.15	0.54%	5.03%	2.90%	8.00%	0.0433%
Westinghouse Air Brake Technologies	WAB	17,819.34	0.05%	0.62%	10.03%	10.69%	0.0048%
Waters Corp	WAT	18,783.56	0.05%	0.00%	8.52%	8.52%	0.0041%
Walgreens Boots Alliance Inc	WBA	38,671.12	0.10%	4.27%	0.52%	4.80%	0.0047%
Western Digital Corp	WDC	15,536.38	0.04%	0.00%	13.62%	13.62%	0.0054%
WEC Energy Group Inc	WEC	31,483.57	0.08%	2.92%	6.43%	9.44%	0.0075%
Welltower Inc	WELL	43,001.50	0.11%	2.54%	28.97%	31.88%	0.0347%
Wells Fargo & Co	WFC	184,225.00	0.47%	2.06%	8.01%	10.15%	0.0474%
Whirlpool Corp	WHR	10,101.06	0.03%	4.05%	6.16%	10.34%	0.0026%
Waste Management Inc	WM	65,802.86	0.17%	1.64%	11.37%	13.10%	0.0219%
Williams Cos Inc/The	WMB	40,670.43	0.10%	5.09%	8.25%	13.55%	0.0140%
Walmart Inc	WMT	409,795.08	1.04%	1.50%	9.85%	11.43%	0.1187%
W R Berkley Corp	WRB	17,658.74	0.04%	0.52%	8.70%	9.24%	0.0041%
Westrock Co	WRK	12,378.95	0.03%	2.13%	21.30%	23.65%	0.0074%
West Pharmaceutical Services Inc	WST	30,508.36	0.08%	0.18%	8.72%	8.90%	0.0069%
Willis Towers Watson PLC	WTW	27,813.96	0.07%	1.39%	16.00%	17.50%	0.0123%
Weyerhaeuser Co	WY	28,314.14	N/A	1.90%	N/A	N/A	N/A
Wynn Resorts Ltd	WYNN	9,243.30	N/A	0.00%	N/A	N/A	N/A
Xcel Energy Inc	XEL	39,275.92	0.10%	2.70%	6.70%	9.50%	0.0095%
Exxon Mobil Corp	XOM	349,652.36	0.89%	4.26%	20.83%	25.54%	0.2263%
DENTSPLY SIRONA Inc	XRAY	10,708.01	0.03%	1.02%	10.25%	11.32%	0.0031%
Xylem Inc/NY	XYL	15,354.73	0.04%	1.41%	15.70%	17.22%	0.0067%
Yum! Brands Inc	YUM	34,252.92	0.09%	1.92%	10.79%	12.82%	0.0111%
Zimmer Biomet Holdings Inc	ZBH	26,772.28	0.07%	0.75%	5.05%	5.82%	0.0039%
Zebra Technologies Corp	ZBRA	21,959.20	0.06%	0.00%	10.80%	10.80%	0.0060%
Zions Bancorp NA	ZION	9,958.24	0.03%	2.32%	8.93%	11.35%	0.0029%
Zoetis Inc	ZTS	88,976.76	0.23%	0.69%	10.91%	11.64%	0.0262%
		39,460,201.28					14.64%

[1] Equals sum of Col. [7]
[2] Source: Bloomberg Professional
[3] Equals weight in S&P 500 based on market capitalization
[4] Source: Bloomberg Professional
[5] Source: Bloomberg Professional
[6] Equals ([4] x (1 + (0.5 x [5]))) + [5]
[7] Equals Col. [3] x Col. [6]

Expected Market Return
Market DCF Method - *Value Line* EPS Growth

[1]
S&P 500 Est. Required Market Return
16.14%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Agilent Technologies Inc	A	39,713.95	0.11%	0.63%	11.50%	12.17%	0.0130%
American Airlines Group Inc	AAL	11,847.17	N/A	0.00%	NA	N/A	N/A
Advance Auto Parts Inc	AAP	12,644.84	0.03%	2.90%	11.00%	14.06%	0.0048%
Apple Inc	AAPL	2,849,537.59	7.65%	0.50%	14.00%	14.54%	1.1123%
AbbVie Inc	ABBV	286,332.46	0.77%	3.48%	4.50%	8.06%	0.0619%
AmerisourceBergen Corp	ABC	32,355.59	0.09%	1.19%	6.50%	7.73%	0.0067%
ABIOMED Inc	ABMD	15,076.72	0.04%	0.00%	7.50%	7.50%	0.0030%
Abbott Laboratories	ABT	208,725.73	0.56%	1.59%	10.00%	11.67%	0.0654%
Accenture PLC	ACN	223,392.62	0.60%	1.15%	12.00%	13.22%	0.0793%
Adobe Inc	ADBE	215,280.45	0.58%	0.00%	15.50%	15.50%	0.0896%
Analog Devices Inc	ADI	86,441.17	0.23%	1.84%	11.00%	12.94%	0.0300%
Archer-Daniels-Midland Co	ADM	50,769.17	0.14%	1.77%	12.50%	14.38%	0.0196%
Automatic Data Processing Inc	ADP	95,577.04	0.26%	1.83%	9.00%	10.91%	0.0280%
Autodesk Inc	ADSK	46,579.97	0.13%	0.00%	18.00%	18.00%	0.0225%
Ameren Corp	AEE	24,198.71	0.06%	2.52%	6.50%	9.10%	0.0059%
American Electric Power Co Inc	AEP	50,338.65	0.14%	3.13%	6.50%	9.73%	0.0131%
AES Corp/The	AES	17,172.07	0.05%	2.46%	14.00%	16.63%	0.0077%
Aflac Inc	AFL	41,812.81	0.11%	2.48%	9.00%	11.60%	0.0130%
American International Group Inc	AIG	50,608.19	0.14%	2.04%	31.50%	33.86%	0.0460%
Assurant Inc	AIZ	10,493.05	0.03%	1.50%	15.50%	17.11%	0.0048%
Arthur J Gallagher & Co	AJG	36,598.60	0.10%	1.17%	14.50%	15.75%	0.0155%
Akamai Technologies Inc	AKAM	19,209.73	0.05%	0.00%	9.50%	9.50%	0.0049%
Albemarle Corp	ALB	25,899.32	0.07%	0.71%	6.50%	7.24%	0.0050%
Align Technology Inc	ALGN	34,354.62	0.09%	0.00%	17.00%	17.00%	0.0157%
Alaska Air Group Inc	ALK	7,314.31	N/A	0.00%	N/A	N/A	N/A
Allstate Corp/The	ALL	38,553.70	0.10%	2.45%	5.00%	7.52%	0.0078%
Allegion plc	ALLE	9,685.89	0.03%	1.49%	10.50%	12.07%	0.0031%
Applied Materials Inc	AMAT	116,431.46	0.31%	0.79%	14.50%	15.35%	0.0480%
Amcor PLC	AMCR	17,150.53	0.05%	4.24%	15.00%	19.55%	0.0090%
Advanced Micro Devices Inc	AMD	177,936.09	0.48%	0.00%	17.50%	17.50%	0.0836%
AMETEK Inc	AME	30,787.35	0.08%	0.66%	9.00%	9.69%	0.0080%
Amgen Inc	AMGN	134,700.75	0.36%	3.21%	5.50%	8.80%	0.0318%
Ameriprise Financial Inc	AMP	33,212.91	0.09%	1.50%	13.50%	15.11%	0.0135%
American Tower Corp	AMT	114,527.43	0.31%	2.23%	9.00%	11.33%	0.0348%
Amazon.com Inc	AMZN	1,658,806.00	4.45%	0.00%	26.50%	26.50%	1.1802%
Arista Networks Inc	ANET	42,773.46	0.11%	0.00%	4.50%	4.50%	0.0052%
ANSYS Inc	ANSS	27,643.81	0.07%	0.00%	8.50%	8.50%	0.0063%
Anthem Inc	ANTM	118,533.35	0.32%	1.04%	12.50%	13.61%	0.0433%
Aon PLC	AON	69,666.58	0.19%	0.63%	7.00%	7.65%	0.0143%
A O Smith Corp	AOS	8,372.72	0.02%	1.75%	10.00%	11.84%	0.0027%
APA Corp	APA	14,332.25	N/A	1.21%	N/A	N/A	N/A
Air Products and Chemicals Inc	APD	55,409.30	0.15%	2.59%	12.00%	14.75%	0.0219%
Amphenol Corp	APH	45,130.13	0.12%	1.06%	12.00%	13.13%	0.0159%
Aptiv PLC	APTV	32,431.23	0.09%	0.00%	21.50%	21.50%	0.0187%
Alexandria Real Estate Equities Inc	ARE	32,188.53	0.09%	2.29%	9.00%	11.39%	0.0098%
Atmos Energy Corp	ATO	16,182.77	0.04%	2.28%	7.50%	9.86%	0.0043%
Activision Blizzard Inc	ATVI	62,559.74	0.17%	0.59%	15.00%	15.63%	0.0263%
AvalonBay Communities Inc	AVB	34,710.20	0.09%	2.56%	6.50%	9.14%	0.0085%
Broadcom Inc	AVGO	257,086.38	0.69%	2.60%	23.00%	25.90%	0.1788%
Avery Dennison Corp	AVY	14,327.30	0.04%	1.56%	9.00%	10.63%	0.0041%
American Water Works Co Inc	AWK	30,085.57	0.08%	1.46%	8.50%	10.02%	0.0081%
American Express Co	AXP	141,613.04	0.38%	1.11%	12.00%	13.18%	0.0501%
AutoZone Inc	AZO	40,582.87	0.11%	0.00%	16.50%	16.50%	0.0180%
Boeing Co/The	BA	113,058.73	N/A	0.00%	N/A	N/A	N/A
Bank of America Corp	BAC	332,433.32	0.89%	2.04%	7.50%	9.61%	0.0858%
Baxter International Inc	BAX	39,017.90	0.10%	1.44%	9.50%	11.01%	0.0115%
Bath & Body Works Inc	BBWI	11,419.90	0.03%	1.67%	26.00%	27.89%	0.0086%
Best Buy Co Inc	BBY	20,473.23	0.05%	3.87%	8.50%	12.54%	0.0069%
Becton Dickinson and Co	BDX	73,850.80	0.20%	1.34%	6.00%	7.38%	0.0146%
Franklin Resources Inc	BEN	14,019.30	0.04%	4.15%	11.00%	15.38%	0.0058%
Brown-Forman Corp	BF/B	20,762.46	0.06%	1.13%	13.00%	14.20%	0.0079%
Biogen Inc	BIIB	30,950.41	0.08%	0.00%	-10.50%	-10.50%	-0.0087%
Bio-Rad Laboratories Inc	BIO	14,003.59	0.04%	0.00%	9.50%	9.50%	0.0036%
Bank of New York Mellon Corp/The	BK	40,056.67	0.11%	2.74%	5.00%	7.81%	0.0084%
Booking Holdings Inc	BKNG	96,023.42	0.26%	0.00%	14.00%	14.00%	0.0361%
Baker Hughes Co	BKR	34,711.15	N/A	1.98%	N/A	N/A	N/A
BlackRock Inc	BLK	116,185.94	0.31%	2.55%	11.00%	13.69%	0.0427%
Ball Corp	BLL	28,909.08	0.08%	0.89%	21.00%	21.98%	0.0171%
Bristol-Myers Squibb Co	BMY	155,203.58	N/A	2.96%	N/A	N/A	N/A
Broadridge Financial Solutions Inc	BR	18,182.72	0.05%	1.64%	9.00%	10.72%	0.0052%
Berkshire Hathaway Inc	BRK/B	454,418.91	1.22%	0.00%	6.00%	6.00%	0.0732%
Brown & Brown Inc	BRO	20,395.75	0.05%	0.57%	10.50%	11.10%	0.0061%
Boston Scientific Corp	BSX	63,310.21	0.17%	0.00%	16.00%	16.00%	0.0272%
BorgWarner Inc	BWA	9,334.95	0.03%	1.75%	9.50%	11.33%	0.0028%
Boston Properties Inc	BXP	20,179.87	0.05%	3.04%	-1.50%	1.52%	0.0008%
Citigroup Inc	C	105,330.11	0.28%	3.82%	7.00%	10.95%	0.0310%
Conagra Brands Inc	CAG	16,103.46	0.04%	3.72%	4.50%	8.31%	0.0036%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Cardinal Health Inc	CAH	15,709.36	0.04%	3.46%	5.00%	8.55%	0.0036%
Carrier Global Corp	CARR	39,127.43	N/A	1.31%	N/A	N/A	N/A
Caterpillar Inc	CAT	119,406.56	0.32%	1.99%	8.00%	10.07%	0.0323%
Chubb Ltd	CB	91,170.38	0.24%	1.50%	12.50%	14.09%	0.0345%
Cboe Global Markets Inc	CBOE	12,197.40	0.03%	1.68%	12.00%	13.78%	0.0045%
CBRE Group Inc	CBRE	30,414.20	0.08%	0.00%	10.00%	10.00%	0.0082%
Crown Castle International Corp	CCI	79,937.34	0.21%	3.19%	12.00%	15.38%	0.0330%
Carnival Corp	CCL	20,011.75	N/A	0.00%	N/A	N/A	N/A
Ceridian HCM Holding Inc	CDAY	10,261.45	N/A	0.00%	N/A	N/A	N/A
Cadence Design Systems Inc	CDNS	45,781.72	0.12%	0.00%	12.00%	12.00%	0.0148%
CDW Corp/DE	CDW	24,140.13	0.06%	1.12%	11.00%	12.18%	0.0079%
Celanese Corp	CE	15,434.10	0.04%	1.90%	6.50%	8.47%	0.0035%
Constellation Energy Corp	CEG	18,374.85	N/A	1.00%	N/A	N/A	N/A
Cerner Corp	CERN	27,492.23	0.07%	1.15%	9.50%	10.71%	0.0079%
CF Industries Holdings Inc	CF	21,551.29	0.06%	1.16%	19.50%	20.78%	0.0120%
Citizens Financial Group Inc	CFG	19,135.74	0.05%	3.44%	8.50%	12.09%	0.0062%
Church & Dwight Co Inc	CHD	24,119.13	0.06%	1.06%	8.00%	9.10%	0.0059%
CH Robinson Worldwide Inc	CHRW	13,855.81	0.04%	2.04%	9.00%	11.13%	0.0041%
Charter Communications Inc	CHTR	104,463.26	0.28%	0.00%	21.50%	21.50%	0.0603%
Cigna Corp	CI	76,903.55	0.21%	1.87%	10.00%	11.96%	0.0247%
Cincinnati Financial Corp	CINF	21,813.29	0.06%	2.03%	15.00%	17.18%	0.0101%
Colgate-Palmolive Co	CL	63,742.17	0.17%	2.48%	5.00%	7.54%	0.0129%
Clorox Co/The	CLX	17,108.75	0.05%	3.34%	5.00%	8.42%	0.0039%
Comerica Inc	CMA	11,854.38	0.03%	3.01%	6.00%	9.10%	0.0029%
Comcast Corp	CMCSA	211,803.66	0.57%	2.31%	10.50%	12.93%	0.0735%
CME Group Inc	CME	85,491.40	0.23%	1.68%	8.50%	10.25%	0.0235%
Chipotle Mexican Grill Inc	CMG	44,347.46	0.12%	0.00%	20.00%	20.00%	0.0238%
Cummins Inc	CMI	29,141.00	0.08%	2.83%	8.00%	10.94%	0.0086%
CMS Energy Corp	CMS	20,292.18	0.05%	2.63%	6.50%	9.22%	0.0050%
Centene Corp	CNC	49,072.25	0.13%	0.00%	10.00%	10.00%	0.0132%
CenterPoint Energy Inc	CNP	19,285.80	0.05%	2.22%	5.00%	7.27%	0.0038%
Capital One Financial Corp	COF	53,260.41	N/A	1.83%	N/A	N/A	N/A
Cooper Cos Inc/The	COO	20,588.02	0.06%	0.01%	19.00%	19.02%	0.0105%
ConocoPhillips	COP	129,605.10	0.35%	1.84%	16.50%	18.49%	0.0643%
Costco Wholesale Corp	COST	255,230.54	0.69%	0.55%	10.50%	11.08%	0.0759%
Campbell Soup Co	CPB	13,446.95	0.04%	3.32%	5.50%	8.91%	0.0032%
Copart Inc	CPRT	29,798.75	0.08%	0.00%	12.00%	12.00%	0.0096%
Charles River Laboratories Internationa	CRL	14,425.39	0.04%	0.00%	6.50%	6.50%	0.0025%
salesforce.com Inc	CRM	210,196.80	0.56%	0.00%	20.00%	20.00%	0.1129%
Cisco Systems Inc	CSCO	231,636.41	0.62%	2.73%	8.00%	10.84%	0.0674%
CSX Corp	CSX	81,587.82	0.22%	1.07%	10.00%	11.12%	0.0244%
Cintas Corp	CTAS	43,566.74	0.12%	0.89%	13.50%	14.45%	0.0169%
Catalent Inc	CTLT	19,865.30	0.05%	0.00%	21.00%	21.00%	0.0112%
Coterra Energy Inc	CTRA	21,872.10	N/A	8.31%	N/A	N/A	N/A
Cognizant Technology Solutions Corp	CTSH	47,035.05	0.13%	1.20%	7.00%	8.25%	0.0104%
Corteva Inc	CTVA	41,774.97	N/A	0.97%	N/A	N/A	N/A
Citrix Systems Inc	CTXS	12,704.62	0.03%	0.00%	8.00%	8.00%	0.0027%
CVS Health Corp	CVS	132,839.14	0.36%	2.17%	6.00%	8.24%	0.0294%
Chevron Corp	CVX	317,120.05	0.85%	3.49%	25.00%	28.92%	0.2463%
Caesars Entertainment Inc	CZR	16,564.56	N/A	0.00%	N/A	N/A	N/A
Dominion Energy Inc	D	68,882.97	0.18%	3.14%	11.50%	14.82%	0.0274%
Delta Air Lines Inc	DAL	25,322.03	0.07%	0.00%	49.00%	49.00%	0.0333%
DuPont de Nemours Inc	DD	37,739.70	N/A	1.79%	N/A	N/A	N/A
Deere & Co	DE	127,456.48	0.34%	1.01%	21.50%	22.62%	0.0774%
Discover Financial Services	DFS	31,076.67	0.08%	1.82%	16.00%	17.96%	0.0150%
Dollar General Corp	DG	50,952.88	0.14%	0.99%	10.50%	11.54%	0.0158%
Quest Diagnostics Inc	DGX	16,348.61	0.04%	1.93%	7.50%	9.50%	0.0042%
DR Horton Inc	DHI	26,403.21	0.07%	1.21%	11.00%	12.27%	0.0087%
Danaher Corp	DHR	209,993.48	0.56%	0.34%	21.00%	21.38%	0.1205%
Walt Disney Co/The	DIS	249,718.02	0.67%	0.00%	37.50%	37.50%	0.2514%
Discovery Inc	DISCA	4,274.85	0.01%	0.00%	13.50%	13.50%	0.0015%
Discovery Inc	DISCK	8,243.95	N/A	0.00%	N/A	N/A	N/A
DISH Network Corp	DISH	9,196.60	0.02%	0.00%	2.00%	2.00%	0.0005%
Digital Realty Trust Inc	DLR	40,337.70	0.11%	3.44%	-3.50%	-0.12%	-0.0001%
Dollar Tree Inc	DLTR	36,051.37	0.10%	0.00%	10.00%	10.00%	0.0097%
Dover Corp	DOV	22,610.23	0.06%	1.27%	9.00%	10.33%	0.0063%
Dow Inc	DOW	46,839.68	N/A	4.39%	N/A	N/A	N/A
Domino's Pizza Inc	DPZ	14,665.79	0.04%	1.08%	16.50%	17.67%	0.0070%
Duke Realty Corp	DRE	22,223.51	0.06%	1.93%	2.50%	4.45%	0.0027%
Darden Restaurants Inc	DRI	16,980.91	0.05%	3.31%	15.50%	19.07%	0.0087%
DTE Energy Co	DTE	25,614.63	0.07%	2.68%	4.50%	7.24%	0.0050%
Duke Energy Corp	DUK	85,966.92	0.23%	3.53%	7.00%	10.65%	0.0246%
DaVita Inc	DVA	10,892.49	0.03%	0.00%	16.00%	16.00%	0.0047%
Devon Energy Corp	DVN	39,274.15	0.11%	6.76%	29.50%	37.26%	0.0393%
DXC Technology Co	DXC	7,977.32	0.02%	0.00%	6.00%	6.00%	0.0013%
Dexcom Inc	DXCM	49,824.72	0.13%	0.00%	34.00%	34.00%	0.0455%
Electronic Arts Inc	EA	35,577.40	0.10%	0.54%	10.50%	11.07%	0.0106%
eBay Inc	EBAY	33,641.91	0.09%	1.54%	16.50%	18.16%	0.0164%
Ecolab Inc	ECL	50,548.42	0.14%	1.16%	8.00%	9.20%	0.0125%
Consolidated Edison Inc	ED	33,525.24	0.09%	3.34%	3.50%	6.90%	0.0062%
Equifax Inc	EFX	29,141.72	0.08%	0.66%	10.50%	11.19%	0.0088%
Edison International	EIX	26,693.80	N/A	3.99%	N/A	N/A	N/A
Estee Lauder Cos Inc/The	EL	63,293.70	0.17%	0.88%	14.00%	14.94%	0.0254%
Embecta Corp	EMBC	N/A	N/A	0.00%	N/A	N/A	N/A
Eastman Chemical Co	EMN	14,450.14	0.04%	2.71%	8.00%	10.82%	0.0042%
Emerson Electric Co	EMR	58,241.70	0.16%	2.10%	11.50%	13.72%	0.0215%
Enphase Energy Inc	ENPH	27,025.61	0.07%	0.00%	30.00%	30.00%	0.0218%
EOG Resources Inc	EOG	69,795.93	0.19%	2.52%	16.00%	18.72%	0.0351%
EPAM Systems Inc	EPAM	16,870.88	0.05%	0.00%	23.50%	23.50%	0.0106%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Equinix Inc	EQIX	67,280.51	0.18%	1.67%	15.00%	16.80%	0.0303%
Equity Residential	EQR	33,802.46	0.09%	2.78%	-2.00%	0.75%	0.0007%
Eversource Energy	ES	30,403.15	0.08%	2.89%	5.50%	8.47%	0.0069%
Essex Property Trust Inc	ESS	22,552.59	0.06%	2.55%	-2.50%	0.02%	0.0000%
Eaton Corp PLC	ETN	60,638.74	0.16%	2.13%	11.50%	13.76%	0.0224%
Entergy Corp	ETR	23,760.38	0.06%	3.46%	3.00%	6.51%	0.0042%
Etsy Inc	ETSY	15,787.66	0.04%	0.00%	29.00%	29.00%	0.0123%
Evergy Inc	EVRG	15,512.70	0.04%	3.35%	7.50%	10.98%	0.0046%
Edwards Lifesciences Corp	EW	73,141.44	0.20%	0.00%	12.50%	12.50%	0.0245%
Exelon Corp	EXC	46,683.93	N/A	2.83%	N/A	N/A	N/A
Expeditors International of Washingtor	EXPD	17,268.78	0.05%	1.12%	11.50%	12.69%	0.0059%
Expedia Group Inc	EXPE	29,395.70	N/A	0.00%	N/A	N/A	N/A
Extra Space Storage Inc	EXR	27,581.86	0.07%	2.92%	6.00%	9.01%	0.0067%
Ford Motor Co	F	66,760.11	0.18%	2.37%	29.00%	31.71%	0.0568%
Diamondback Energy Inc	FANG	24,320.05	N/A	1.75%	N/A	N/A	N/A
Fastenal Co	FAST	34,187.91	0.09%	2.09%	8.50%	10.68%	0.0098%
Meta Platforms Inc	FB	513,447.03	1.38%	0.00%	21.50%	21.50%	0.2964%
Fortune Brands Home & Security Inc	FBHS	9,830.74	0.03%	1.51%	11.00%	12.59%	0.0033%
Freeport-McMoRan Inc	FCX	72,360.81	0.19%	1.21%	27.00%	28.37%	0.0551%
FactSet Research Systems Inc	FDS	16,409.57	0.04%	0.76%	9.50%	10.29%	0.0045%
FedEx Corp	FDX	59,971.20	0.16%	1.30%	13.00%	14.38%	0.0232%
FirstEnergy Corp	FE	26,181.61	0.07%	3.40%	10.00%	13.57%	0.0095%
F5 Inc	FFIV	12,691.21	0.03%	0.00%	7.00%	7.00%	0.0024%
Fidelity National Information Services I	FIS	61,215.13	0.16%	1.87%	28.00%	30.13%	0.0495%
Fiserv Inc	FISV	66,132.78	0.18%	0.00%	13.00%	13.00%	0.0231%
Fifth Third Bancorp	FITB	29,425.20	0.08%	2.79%	11.50%	14.45%	0.0114%
FleetCor Technologies Inc	FLT	19,398.54	0.05%	0.00%	11.00%	11.00%	0.0057%
FMC Corp	FMC	16,563.74	0.04%	1.61%	10.50%	12.20%	0.0054%
Fox Corp	FOX	8,964.64	N/A	1.32%	N/A	N/A	N/A
Fox Corp	FOXA	12,458.55	0.03%	1.22%	10.50%	11.78%	0.0039%
First Republic Bank/CA	FRC	29,025.63	0.08%	0.54%	13.50%	14.08%	0.0110%
Federal Realty Investment Trust	FRT	9,605.44	0.03%	3.51%	2.50%	6.05%	0.0016%
Fortinet Inc	FTNT	54,956.92	0.15%	0.00%	24.00%	24.00%	0.0354%
Fortive Corp	FTV	21,877.89	0.06%	0.46%	12.00%	12.49%	0.0073%
General Dynamics Corp	GD	67,080.84	0.18%	2.09%	6.00%	8.15%	0.0147%
General Electric Co	GE	100,810.22	0.27%	0.35%	15.00%	15.38%	0.0416%
Gilead Sciences Inc	GILD	74,543.58	0.20%	4.91%	13.50%	18.74%	0.0375%
General Mills Inc	GIS	40,781.80	0.11%	3.01%	3.50%	6.57%	0.0072%
Globe Life Inc	GL	9,977.31	0.03%	0.83%	8.00%	8.86%	0.0024%
Corning Inc	GLW	31,212.79	0.08%	2.93%	20.00%	23.22%	0.0195%
General Motors Co	GM	63,555.14	0.17%	0.00%	12.00%	12.00%	0.0205%
Generac Holdings Inc	GNRC	18,960.43	0.05%	0.00%	23.50%	23.50%	0.0120%
Alphabet Inc	GOOG	881,576.57	2.37%	0.00%	23.50%	23.50%	0.5562%
Alphabet Inc	GOOGL	836,504.92	N/A	0.00%	N/A	N/A	N/A
Genuine Parts Co	GPC	17,888.16	0.05%	2.84%	8.50%	11.46%	0.0055%
Global Payments Inc	GPN	38,584.50	0.10%	0.73%	16.50%	17.29%	0.0179%
Garmin Ltd	GRMN	22,866.47	0.06%	2.46%	10.00%	12.58%	0.0077%
Goldman Sachs Group Inc/The	GS	112,847.66	0.30%	2.42%	8.50%	11.03%	0.0334%
WW Grainger Inc	GWW	26,357.90	0.07%	1.26%	7.00%	8.30%	0.0059%
Halliburton Co	HAL	34,028.92	0.09%	1.27%	9.50%	10.83%	0.0099%
Hasbro Inc	HAS	11,383.60	0.03%	3.42%	11.50%	15.11%	0.0046%
Huntington Bancshares Inc/OH	HBAN	21,123.37	0.06%	4.24%	12.00%	16.50%	0.0094%
HCA Healthcare Inc	HCA	75,691.75	0.20%	0.89%	12.50%	13.45%	0.0273%
Home Depot Inc/The	HD	309,312.66	0.83%	2.54%	10.00%	12.67%	0.1052%
Hess Corp	HES	33,155.21	N/A	1.40%	N/A	N/A	N/A
Hartford Financial Services Group Inc/	HIG	23,815.57	0.06%	2.14%	6.50%	8.71%	0.0056%
Huntington Ingalls Industries Inc	HII	7,990.96	0.02%	2.37%	10.00%	12.48%	0.0027%
Hilton Worldwide Holdings Inc	HLT	42,356.55	N/A	0.00%	N/A	N/A	N/A
Hologic Inc	HOLX	19,305.10	0.05%	0.00%	25.00%	25.00%	0.0130%
Honeywell International Inc	HON	133,381.09	0.36%	2.01%	11.00%	13.13%	0.0470%
Hewlett Packard Enterprise Co	HPE	21,725.27	0.06%	2.87%	6.50%	9.47%	0.0055%
HP Inc	HPQ	38,237.19	0.10%	2.75%	15.50%	18.47%	0.0190%
Hormel Foods Corp	HRL	28,089.20	0.08%	2.02%	6.50%	8.58%	0.0065%
Henry Schein Inc	HSIC	11,960.11	0.03%	0.00%	7.00%	7.00%	0.0022%
Host Hotels & Resorts Inc	HST	13,875.93	0.04%	0.62%	8.50%	9.14%	0.0034%
Hershey Co/The	HSY	31,547.39	0.08%	1.66%	6.00%	7.71%	0.0065%
Humana Inc	HUM	55,154.75	0.15%	0.72%	12.00%	12.77%	0.0189%
Howmet Aerospace Inc	HWM	15,055.45	0.04%	0.22%	12.50%	12.74%	0.0051%
International Business Machines Corp	IBM	116,928.29	0.31%	5.05%	0.50%	5.56%	0.0174%
Intercontinental Exchange Inc	ICE	74,044.80	0.20%	1.15%	8.00%	9.20%	0.0183%
IDEXX Laboratories Inc	IDXX	46,089.26	0.12%	0.00%	14.00%	14.00%	0.0173%
IDEX Corp	IEX	14,591.61	0.04%	1.13%	8.00%	9.17%	0.0036%
International Flavors & Fragrances Inc	IFF	33,455.66	0.09%	2.41%	7.00%	9.49%	0.0085%
Illumina Inc	ILMN	54,882.01	0.15%	0.00%	10.00%	10.00%	0.0147%
Incyte Corp	INCY	17,577.63	0.05%	0.00%	25.50%	25.50%	0.0120%
Intel Corp	INTC	202,635.77	0.54%	2.95%	6.00%	9.03%	0.0492%
Intuit Inc	INTU	135,987.32	0.37%	0.57%	18.50%	19.12%	0.0698%
International Paper Co	IP	17,301.08	0.05%	4.01%	12.50%	16.76%	0.0078%
Interpublic Group of Cos Inc/The	IPG	13,965.88	0.04%	3.27%	12.00%	15.47%	0.0058%
IPG Photonics Corp	IPGP	5,810.58	0.02%	0.00%	17.00%	17.00%	0.0027%
IQVIA Holdings Inc	IQV	44,140.76	0.12%	0.00%	14.50%	14.50%	0.0172%
Ingersoll Rand Inc	IR	20,541.19	N/A	0.16%	N/A	N/A	N/A
Iron Mountain Inc	IRM	16,059.48	0.04%	4.46%	10.00%	14.69%	0.0063%
Intuitive Surgical Inc	ISRG	108,361.95	0.29%	0.00%	13.00%	13.00%	0.0378%
Gartner Inc	IT	24,477.09	0.07%	0.00%	20.50%	20.50%	0.0135%
Illinois Tool Works Inc	ITW	65,311.86	0.18%	2.33%	11.00%	13.46%	0.0236%
Invesco Ltd	IVZ	10,491.42	0.03%	2.95%	15.50%	18.68%	0.0053%
Jacobs Engineering Group Inc	J	17,807.39	0.05%	0.67%	15.00%	15.72%	0.0075%
JB Hunt Transport Services Inc	JBHT	21,052.83	0.06%	0.80%	11.00%	11.84%	0.0067%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Johnson Controls International plc	JCI	46,071.25	0.12%	2.14%	14.00%	16.28%	0.0201%
Jack Henry & Associates Inc	JKHY	14,350.17	0.04%	0.99%	10.50%	11.55%	0.0044%
Johnson & Johnson	JNJ	466,046.67	1.25%	2.39%	8.00%	10.49%	0.1312%
Juniper Networks Inc	JNPR	11,986.66	0.03%	2.26%	9.00%	11.36%	0.0037%
JPMorgan Chase & Co	JPM	402,526.92	1.08%	2.93%	7.50%	10.54%	0.1140%
Kellogg Co	K	21,936.66	0.06%	3.60%	3.50%	7.16%	0.0042%
KeyCorp	KEY	20,592.49	0.06%	3.49%	9.50%	13.15%	0.0073%
Keysight Technologies Inc	KEYS	28,746.59	0.08%	0.00%	13.00%	13.00%	0.0100%
Kraft Heinz Co/The	KHC	48,248.57	0.13%	4.06%	4.00%	8.14%	0.0105%
Kimco Realty Corp	KIM	15,262.50	0.04%	3.08%	8.50%	11.71%	0.0048%
KLA Corp	KLAC	55,170.73	0.15%	1.15%	21.00%	22.27%	0.0330%
Kimberly-Clark Corp	KMB	41,496.05	0.11%	3.77%	5.50%	9.37%	0.0104%
Kinder Morgan Inc	KMI	42,878.14	0.12%	5.71%	19.00%	25.25%	0.0291%
CarMax Inc	KMX	15,598.89	0.04%	0.00%	13.50%	13.50%	0.0057%
Coca-Cola Co/The	KO	268,769.69	0.72%	2.84%	7.00%	9.94%	0.0717%
Kroger Co/The	KR	41,496.18	0.11%	1.46%	6.50%	8.01%	0.0089%
Loews Corp	L	15,971.26	0.04%	0.39%	12.50%	12.91%	0.0055%
Leidos Holdings Inc	LDOS	14,727.66	0.04%	1.33%	8.50%	9.89%	0.0039%
Lennar Corp	LEN	20,885.53	0.06%	1.85%	8.50%	10.43%	0.0058%
Laboratory Corp of America Holdings	LH	24,625.84	0.07%	0.00%	6.00%	6.00%	0.0040%
L3Harris Technologies Inc	LHX	47,969.62	N/A	1.80%	N/A	N/A	N/A
Linde PLC	LIN	162,022.88	N/A	1.47%	N/A	N/A	N/A
LKQ Corp	LKQ	12,941.40	0.03%	2.20%	14.00%	16.36%	0.0057%
Eli Lilly & Co	LLY	272,723.61	0.73%	1.37%	11.50%	12.95%	0.0948%
Lockheed Martin Corp	LMT	117,648.11	0.32%	2.54%	6.50%	9.12%	0.0288%
Lincoln National Corp	LNC	11,271.66	0.03%	2.75%	11.50%	14.41%	0.0044%
Alliant Energy Corp	LNT	15,649.93	0.04%	2.74%	4.50%	7.30%	0.0031%
Lowe's Cos Inc	LOW	133,761.02	0.36%	1.58%	15.50%	17.21%	0.0618%
Lam Research Corp	LRCX	74,996.60	0.20%	1.12%	17.00%	18.21%	0.0367%
Lumen Technologies Inc	LUMN	11,533.40	0.03%	8.87%	3.50%	12.53%	0.0039%
Southwest Airlines Co	LUV	27,129.26	0.07%	0.00%	29.50%	29.50%	0.0215%
Las Vegas Sands Corp	LVS	29,696.37	0.08%	0.00%	17.00%	17.00%	0.0136%
Lamb Weston Holdings Inc	LW	8,699.17	0.02%	1.64%	6.00%	7.68%	0.0018%
LyondellBasell Industries NV	LYB	33,725.99	0.09%	4.40%	5.50%	10.02%	0.0091%
Live Nation Entertainment Inc	LYV	26,425.00	N/A	0.00%	N/A	N/A	N/A
Mastercard Inc	MA	346,561.75	0.93%	0.55%	13.00%	13.58%	0.1264%
Mid-America Apartment Communities I	MAA	24,158.17	0.06%	2.08%	8.50%	10.67%	0.0069%
Marriott International Inc/MD	MAR	57,514.89	0.15%	0.00%	17.50%	17.50%	0.0270%
Masco Corp	MAS	12,062.72	0.03%	2.20%	9.00%	11.29%	0.0037%
McDonald's Corp	MCD	183,873.70	0.49%	2.23%	10.00%	12.34%	0.0609%
Microchip Technology Inc	MCHP	41,777.16	0.11%	1.35%	10.00%	11.41%	0.0128%
McKesson Corp	MCK	45,857.66	0.12%	0.61%	10.00%	10.64%	0.0131%
Moody's Corp	MCO	62,548.05	0.17%	0.83%	9.00%	9.87%	0.0166%
Mondelez International Inc	MDLZ	87,159.23	0.23%	2.23%	8.00%	10.32%	0.0241%
Medtronic PLC	MDT	148,843.75	0.40%	2.27%	8.50%	10.87%	0.0434%
MetLife Inc	MET	57,986.48	0.16%	2.73%	7.50%	10.33%	0.0161%
MGM Resorts International	MGM	18,257.87	0.05%	0.02%	25.00%	25.03%	0.0123%
Mohawk Industries Inc	MHK	8,081.82	0.02%	0.00%	10.50%	10.50%	0.0023%
McCormick & Co Inc/MD	MKC	24,972.55	0.07%	1.48%	6.00%	7.53%	0.0050%
MarketAxess Holdings Inc	MKTX	12,871.47	0.03%	0.82%	14.00%	14.88%	0.0051%
Martin Marietta Materials Inc	MLM	24,015.21	0.06%	0.63%	8.50%	9.16%	0.0059%
Marsh & McLennan Cos Inc	MMC	85,681.38	0.23%	1.26%	12.00%	13.33%	0.0307%
3M Co	MMM	84,738.33	0.23%	4.00%	6.00%	10.12%	0.0230%
Monster Beverage Corp	MNST	42,295.78	0.11%	0.00%	13.00%	13.00%	0.0148%
Altria Group Inc	MO	94,951.68	0.25%	6.89%	5.50%	12.58%	0.0321%
Molina Healthcare Inc	MOH	19,573.06	0.05%	0.00%	11.00%	11.00%	0.0058%
Mosaic Co/The	MOS	24,492.55	0.07%	0.68%	56.50%	57.37%	0.0377%
Marathon Petroleum Corp	MPC	47,758.08	N/A	2.71%	N/A	N/A	N/A
Monolithic Power Systems Inc	MPWR	22,588.49	0.06%	0.62%	18.00%	18.67%	0.0113%
Merck & Co Inc	MRK	207,400.57	0.56%	3.36%	8.00%	11.50%	0.0640%
Moderna Inc	MRNA	69,424.23	N/A	0.00%	N/A	N/A	N/A
Marathon Oil Corp	MRO	18,349.51	N/A	1.12%	N/A	N/A	N/A
Morgan Stanley	MS	155,685.53	0.42%	3.20%	10.50%	13.87%	0.0580%
MSCI Inc	MSCI	40,868.05	0.11%	0.83%	15.50%	16.39%	0.0180%
Microsoft Corp	MSFT	2,311,358.76	6.21%	0.80%	17.50%	18.37%	1.1403%
Motorola Solutions Inc	MSI	40,555.91	0.11%	1.30%	8.00%	9.36%	0.0102%
M&T Bank Corp	MTB	21,874.99	0.06%	2.83%	8.00%	10.95%	0.0064%
Match Group Inc	MTCH	31,006.99	0.08%	0.00%	18.50%	18.50%	0.0154%
Mettler-Toledo International Inc	MTD	31,220.85	0.08%	0.00%	13.50%	13.50%	0.0113%
Micron Technology Inc	MU	86,977.19	0.23%	0.51%	24.00%	24.58%	0.0574%
Norwegian Cruise Line Holdings Ltd	NCLH	9,125.84	N/A	0.00%	N/A	N/A	N/A
Nasdaq Inc	NDAQ	29,298.22	0.08%	1.21%	6.50%	7.75%	0.0061%
Nordson Corp	NDSN	13,157.24	0.04%	0.90%	13.50%	14.46%	0.0051%
NextEra Energy Inc	NEE	166,264.13	0.45%	2.01%	11.00%	13.12%	0.0586%
Newmont Corp	NEM	62,968.02	0.17%	2.77%	9.50%	12.40%	0.0210%
Netflix Inc	NFLX	166,304.10	0.45%	0.00%	23.50%	23.50%	0.1049%
NiSource Inc	NI	12,891.24	0.03%	2.96%	10.50%	13.61%	0.0047%
NIKE Inc	NKE	171,737.31	0.46%	0.91%	27.00%	28.03%	0.1292%
NortonLifeLock Inc	NLOK	15,441.91	0.04%	1.89%	11.00%	12.99%	0.0054%
Nielsen Holdings PLC	NLSN	9,792.37	N/A	0.88%	N/A	N/A	N/A
Northrop Grumman Corp	NOC	69,811.94	0.19%	1.40%	8.50%	9.96%	0.0187%
ServiceNow Inc	NOW	111,378.00	0.30%	0.00%	44.50%	44.50%	0.1331%
NRG Energy Inc	NRG	9,289.03	0.02%	3.65%	-10.50%	-7.04%	-0.0018%
Norfolk Southern Corp	NSC	68,389.20	0.18%	1.74%	10.00%	11.83%	0.0217%
NetApp Inc	NTAP	18,470.49	0.05%	2.41%	8.00%	10.51%	0.0052%
Northern Trust Corp	NTRS	24,215.08	0.07%	2.40%	8.00%	10.50%	0.0068%
Nucor Corp	NUE	39,898.40	0.11%	1.35%	12.00%	13.43%	0.0144%
NVIDIA Corp	NVDA	684,878.60	1.84%	0.06%	21.50%	21.56%	0.3965%
NVR Inc	NVR	15,010.03	0.04%	0.00%	5.50%	5.50%	0.0022%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Newell Brands Inc	NWL	8,902.41	N/A	4.30%	N/A	N/A	N/A
News Corp	NWS	4,469.84	N/A	0.89%	N/A	N/A	N/A
News Corp	NWSA	8,657.86	N/A	0.90%	N/A	N/A	N/A
NXP Semiconductors NV	NXPI	48,590.53	0.13%	1.83%	12.00%	13.94%	0.0182%
Realty Income Corp	O	41,434.54	0.11%	4.28%	3.50%	7.85%	0.0087%
Old Dominion Freight Line Inc	ODFL	34,307.58	0.09%	0.40%	12.00%	12.43%	0.0114%
Organon & Co	OGN	8,859.54	N/A	3.21%	N/A	N/A	N/A
ONEOK Inc	OKE	31,516.02	0.08%	5.30%	12.00%	17.61%	0.0149%
Omnicom Group Inc	OMC	17,565.75	0.05%	3.30%	6.00%	9.40%	0.0044%
Oracle Corp	ORCL	220,736.63	0.59%	1.55%	10.00%	11.62%	0.0689%
O'Reilly Automotive Inc	ORLY	45,410.11	0.12%	0.00%	13.00%	13.00%	0.0158%
Otis Worldwide Corp	OTIS	32,700.83	N/A	1.25%	N/A	N/A	N/A
Occidental Petroleum Corp	OXY	53,160.22	0.14%	0.92%	30.50%	31.56%	0.0450%
Paramount Global	PARA	22,983.83	0.06%	2.54%	7.00%	9.63%	0.0059%
Paycom Software Inc	PAYC	20,856.93	0.06%	0.00%	20.00%	20.00%	0.0112%
Paychex Inc	PAYX	49,267.99	0.13%	1.93%	9.00%	11.02%	0.0146%
People's United Financial Inc	PBCT	8,589.12	0.02%	3.65%	2.50%	6.20%	0.0014%
PACCAR Inc	PCAR	30,619.74	0.08%	1.54%	5.00%	6.58%	0.0054%
Healthpeak Properties Inc	PEAK	18,521.04	0.05%	3.50%	-7.50%	-4.14%	-0.0021%
Public Service Enterprise Group Inc	PEG	35,145.46	0.09%	3.09%	4.00%	7.15%	0.0067%
Penn National Gaming Inc	PENN	7,140.26	0.02%	0.00%	28.00%	28.00%	0.0054%
PepsiCo Inc	PEP	231,528.22	0.62%	2.57%	6.50%	9.15%	0.0569%
Pfizer Inc	PFE	292,385.26	0.79%	3.09%	6.50%	9.69%	0.0761%
Principal Financial Group Inc	PFG	19,176.75	0.05%	3.49%	6.00%	9.59%	0.0049%
Procter & Gamble Co/The	PG	366,271.68	0.98%	2.28%	6.50%	8.85%	0.0870%
Progressive Corp/The	PGR	66,670.36	0.18%	0.35%	4.50%	4.86%	0.0087%
Parker-Hannifin Corp	PH	36,456.92	0.10%	1.45%	13.50%	15.05%	0.0147%
PulteGroup Inc	PHM	10,115.71	0.03%	1.43%	9.50%	11.00%	0.0030%
Packaging Corp of America	PKG	14,628.13	0.04%	2.56%	9.00%	11.68%	0.0046%
PerkinElmer Inc	PKI	22,009.35	0.06%	0.16%	10.00%	10.17%	0.0060%
Prologis Inc	PLD	119,454.02	0.32%	1.96%	6.00%	8.02%	0.0257%
Philip Morris International Inc	PM	145,614.70	0.39%	5.32%	7.00%	12.51%	0.0489%
PNC Financial Services Group Inc/The	PNC	77,203.39	0.21%	2.71%	11.50%	14.37%	0.0298%
Pentair PLC	PNR	8,950.02	0.02%	1.55%	14.00%	15.66%	0.0038%
Pinnacle West Capital Corp	PNW	8,819.99	N/A	4.35%	N/A	N/A	N/A
Pool Corp	POOL	16,967.28	0.05%	0.76%	17.00%	17.82%	0.0081%
PPG Industries Inc	PPG	30,951.92	0.08%	1.80%	10.00%	11.89%	0.0099%
PPL Corp	PPL	21,001.94	N/A	2.80%	N/A	N/A	N/A
Prudential Financial Inc	PRU	44,482.26	0.12%	4.06%	5.50%	9.67%	0.0116%
Public Storage	PSA	68,438.33	0.18%	2.05%	8.00%	10.13%	0.0186%
Phillips 66	PSX	37,878.73	0.10%	4.26%	17.00%	21.62%	0.0220%
PTC Inc	PTC	12,598.07	N/A	0.00%	N/A	N/A	N/A
PVH Corp	PVH	5,210.02	0.01%	0.20%	14.00%	14.21%	0.0020%
Quanta Services Inc	PWR	18,779.43	0.05%	0.21%	16.50%	16.73%	0.0084%
Pioneer Natural Resources Co	PXD	60,728.29	0.16%	6.05%	23.00%	29.74%	0.0485%
PayPal Holdings Inc	PYPL	134,732.83	0.36%	0.00%	16.00%	16.00%	0.0579%
QUALCOMM Inc	QCOM	172,228.14	0.46%	1.78%	19.00%	20.95%	0.0969%
Qorvo Inc	QRVO	13,456.41	0.04%	0.00%	14.50%	14.50%	0.0052%
Royal Caribbean Cruises Ltd	RCL	21,364.15	N/A	0.00%	N/A	N/A	N/A
Everest Re Group Ltd	RE	11,835.80	0.03%	2.06%	11.00%	13.17%	0.0042%
Regency Centers Corp	REG	12,225.75	0.03%	3.50%	12.50%	16.22%	0.0053%
Regeneron Pharmaceuticals Inc	REGN	74,532.59	0.20%	0.00%	12.50%	12.50%	0.0250%
Regions Financial Corp	RF	20,860.87	0.06%	3.05%	10.50%	13.72%	0.0077%
Robert Half International Inc	RHI	12,638.13	0.03%	1.51%	7.50%	9.06%	0.0031%
Raymond James Financial Inc	RJF	22,817.54	0.06%	1.24%	10.50%	11.80%	0.0072%
Ralph Lauren Corp	RL	5,250.68	0.01%	2.42%	12.50%	15.08%	0.0021%
ResMed Inc	RMD	35,463.21	0.10%	0.69%	8.50%	9.22%	0.0088%
Rockwell Automation Inc	ROK	32,538.37	0.09%	1.60%	10.00%	11.68%	0.0102%
Rollins Inc	ROL	17,260.72	0.05%	1.14%	10.50%	11.70%	0.0054%
Roper Technologies Inc	ROP	49,868.90	0.13%	0.53%	8.50%	9.05%	0.0121%
Ross Stores Inc	ROST	31,741.69	0.09%	1.37%	14.00%	15.47%	0.0132%
Republic Services Inc	RSG	41,841.65	0.11%	1.39%	10.50%	11.96%	0.0134%
Raytheon Technologies Corp	RTX	147,640.85	0.40%	2.06%	7.50%	9.64%	0.0382%
SBA Communications Corp	SBAC	37,168.65	0.10%	0.83%	42.50%	43.50%	0.0434%
Signature Bank/New York NY	SBNY	18,363.38	0.05%	0.76%	12.00%	12.81%	0.0063%
Starbucks Corp	SBUX	104,642.79	0.28%	2.15%	16.50%	18.83%	0.0529%
Charles Schwab Corp/The	SCHW	152,990.70	0.41%	0.95%	7.00%	7.98%	0.0328%
SolarEdge Technologies Inc	SEDG	17,767.42	0.05%	0.00%	19.50%	19.50%	0.0093%
Sealed Air Corp	SEE	9,920.66	0.03%	1.19%	13.50%	14.78%	0.0039%
Sherwin-Williams Co/The	SHW	65,037.99	0.17%	0.96%	11.50%	12.52%	0.0219%
SVB Financial Group	SIVB	32,901.25	0.09%	0.00%	5.00%	5.00%	0.0044%
J M Smucker Co/The	SJM	14,686.30	0.04%	2.92%	4.00%	6.98%	0.0028%
Schlumberger NV	SLB	58,371.81	0.16%	1.21%	11.50%	12.78%	0.0200%
Snap-on Inc	SNA	10,976.13	0.03%	2.76%	4.50%	7.33%	0.0022%
Synopsys Inc	SNPS	51,023.30	0.14%	0.00%	14.00%	14.00%	0.0192%
Southern Co/The	SO	76,846.39	0.21%	3.64%	5.50%	9.24%	0.0191%
Simon Property Group Inc	SPG	43,196.67	0.12%	5.02%	2.50%	7.58%	0.0088%
S&P Global Inc	SPGI	142,343.53	0.38%	0.83%	10.50%	11.37%	0.0435%
Sempra Energy	SRE	53,087.59	0.14%	2.72%	10.00%	12.86%	0.0183%
STERIS PLC	STE	24,207.70	0.06%	0.71%	11.50%	12.25%	0.0080%
State Street Corp	STT	31,891.76	0.09%	2.62%	8.00%	10.72%	0.0092%
Seagate Technology Holdings PLC	STX	19,678.93	0.05%	3.11%	16.00%	19.36%	0.0102%
Constellation Brands Inc	STZ	37,850.56	0.10%	1.32%	5.50%	6.86%	0.0070%
Stanley Black & Decker Inc	SWK	22,843.22	0.06%	2.26%	6.00%	8.33%	0.0051%
Skyworks Solutions Inc	SWKS	21,547.51	0.06%	1.68%	15.50%	17.31%	0.0100%
Synchrony Financial	SYF	18,145.48	0.05%	2.53%	9.50%	12.15%	0.0059%
Stryker Corp	SYK	100,978.10	0.27%	1.04%	8.50%	9.58%	0.0260%
Sysco Corp	SYY	41,433.05	0.11%	2.30%	17.50%	20.00%	0.0223%
AT&T Inc	T	168,786.56	0.45%	4.70%	3.00%	7.77%	0.0352%

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term Growth Est.	[6] DCF Result	[7] Weighted DCF Result
Molson Coors Beverage Co	TAP	10,707.97	0.03%	2.85%	41.00%	44.43%	0.0128%
TransDigm Group Inc	TDG	36,135.71	0.10%	0.00%	16.50%	16.50%	0.0160%
Teledyne Technologies Inc	TDY	22,103.01	0.06%	0.00%	14.50%	14.50%	0.0086%
Bio-Techne Corp	TECH	17,013.28	0.05%	0.30%	17.50%	17.82%	0.0081%
TE Connectivity Ltd	TEL	42,643.81	0.11%	1.71%	10.50%	12.30%	0.0141%
Teradyne Inc	TER	19,202.56	0.05%	0.37%	8.50%	8.89%	0.0046%
Truist Financial Corp	TFC	75,353.90	0.20%	3.39%	7.00%	10.50%	0.0213%
Teleflex Inc	TFX	16,642.24	0.04%	0.38%	15.00%	15.41%	0.0069%
Target Corp	TGT	98,134.35	0.26%	1.70%	15.00%	16.82%	0.0443%
TJX Cos Inc/The	TJX	71,195.31	0.19%	1.95%	20.00%	22.14%	0.0423%
Thermo Fisher Scientific Inc	TMO	231,057.55	0.62%	0.20%	15.50%	15.72%	0.0975%
T-Mobile US Inc	TMUS	160,346.37	0.43%	0.00%	7.50%	7.50%	0.0323%
Tapestry Inc	TPR	9,807.23	0.03%	2.69%	10.00%	12.83%	0.0034%
Trimble Inc	TRMB	18,122.72	0.05%	0.00%	10.00%	10.00%	0.0049%
T Rowe Price Group Inc	TROW	34,442.59	0.09%	3.17%	12.00%	15.37%	0.0142%
Travelers Cos Inc/The	TRV	44,129.48	0.12%	1.93%	8.00%	10.00%	0.0119%
Tractor Supply Co	TSCO	26,171.51	0.07%	1.58%	14.50%	16.19%	0.0114%
Tesla Inc	TSLA	1,113,708.22	2.99%	0.00%	51.50%	51.50%	1.5399%
Tyson Foods Inc	TSN	26,212.74	0.07%	2.05%	6.00%	8.11%	0.0057%
Trane Technologies PLC	TT	35,661.25	N/A	1.76%	N/A	N/A	N/A
Take-Two Interactive Software Inc	TTWO	17,744.06	0.05%	0.00%	15.00%	15.00%	0.0071%
Twitter Inc	TWTR	30,976.80	0.08%	0.00%	39.00%	39.00%	0.0324%
Texas Instruments Inc	TXN	169,452.40	0.45%	2.51%	8.50%	11.11%	0.0506%
Textron Inc	TXT	16,090.55	0.04%	0.11%	8.50%	8.61%	0.0037%
Tyler Technologies Inc	TYL	18,432.24	0.05%	0.00%	14.00%	14.00%	0.0069%
Under Armour Inc	UA	3,940.07	N/A	0.00%	N/A	N/A	N/A
Under Armour Inc	UAA	3,211.15	0.01%	0.00%	33.00%	33.00%	0.0028%
United Airlines Holdings Inc	UAL	15,002.61	N/A	0.00%	N/A	N/A	N/A
UDR Inc	UDR	18,668.31	0.05%	2.65%	10.50%	13.29%	0.0067%
Universal Health Services Inc	UHS	9,791.66	0.03%	0.55%	11.00%	11.58%	0.0030%
Ulta Beauty Inc	ULTA	20,837.66	0.06%	0.00%	15.50%	15.50%	0.0087%
UnitedHealth Group Inc	UNH	479,830.26	1.29%	1.14%	12.00%	13.21%	0.1701%
Union Pacific Corp	UNP	171,681.61	0.46%	1.73%	9.00%	10.81%	0.0498%
United Parcel Service Inc	UPS	157,293.33	0.42%	2.84%	11.50%	14.50%	0.0612%
United Rentals Inc	URI	25,643.32	0.07%	0.00%	12.50%	12.50%	0.0086%
US Bancorp	USB	78,929.82	0.21%	3.46%	6.50%	10.07%	0.0213%
Visa Inc	V	367,788.69	0.99%	0.68%	12.00%	12.72%	0.1256%
VF Corp	VFC	22,112.97	0.06%	3.52%	9.50%	13.18%	0.0078%
Valero Energy Corp	VLO	41,572.20	0.11%	3.86%	11.00%	15.07%	0.0168%
Vulcan Materials Co	VMC	24,412.63	0.07%	0.87%	8.50%	9.41%	0.0062%
Vornado Realty Trust	VNO	8,688.93	0.02%	4.68%	-19.00%	-14.77%	-0.0034%
Verisk Analytics Inc	VRSK	34,616.17	0.09%	0.58%	10.50%	11.11%	0.0103%
VeriSign Inc	VRSN	24,507.75	0.07%	0.00%	8.50%	8.50%	0.0056%
Vertex Pharmaceuticals Inc	VRTX	66,436.96	0.18%	0.00%	18.50%	18.50%	0.0330%
Ventas Inc	VTR	24,676.15	0.07%	2.91%	10.50%	13.57%	0.0090%
Viatris Inc	VTRS	13,160.19	N/A	4.41%	N/A	N/A	N/A
Verizon Communications Inc	VZ	213,837.15	0.57%	5.03%	2.50%	7.59%	0.0436%
Westinghouse Air Brake Technologies	WAB	17,819.34	0.05%	0.62%	9.00%	9.65%	0.0046%
Waters Corp	WAT	18,783.56	0.05%	0.00%	6.00%	6.00%	0.0030%
Walgreens Boots Alliance Inc	WBA	38,671.12	0.10%	4.27%	7.50%	11.93%	0.0124%
Western Digital Corp	WDC	15,536.38	0.04%	0.00%	20.50%	20.50%	0.0086%
WEC Energy Group Inc	WEC	31,483.57	0.08%	2.92%	6.00%	9.00%	0.0076%
Welltower Inc	WELL	43,001.50	0.12%	2.54%	3.50%	6.08%	0.0070%
Wells Fargo & Co	WFC	184,225.00	0.49%	2.06%	5.50%	7.62%	0.0377%
Whirlpool Corp	WHR	10,101.06	0.03%	4.05%	9.50%	13.74%	0.0037%
Waste Management Inc	WM	65802.86	0.18%	1.64%	7.50%	9.20%	0.0163%
Williams Cos Inc/The	WMB	40,670.43	0.11%	5.09%	10.00%	15.34%	0.0168%
Walmart Inc	WMT	409,795.08	1.10%	1.50%	7.50%	9.06%	0.0997%
W R Berkley Corp	WRB	17,658.74	0.05%	0.52%	17.50%	18.07%	0.0086%
Westrock Co	WRK	12,378.95	0.03%	2.13%	17.00%	19.31%	0.0064%
West Pharmaceutical Services Inc	WST	30,508.36	0.08%	0.18%	17.00%	17.19%	0.0141%
Willis Towers Watson PLC	WTW	27,813.96	0.07%	1.39%	11.00%	12.46%	0.0093%
Weyerhaeuser Co	WY	28,314.14	0.08%	1.90%	22.00%	24.11%	0.0183%
Wynn Resorts Ltd	WYNN	9,243.30	0.02%	0.00%	27.00%	27.00%	0.0067%
Xcel Energy Inc	XEL	39,275.92	0.11%	2.70%	6.00%	8.78%	0.0093%
Exxon Mobil Corp	XOM	349,652.36	N/A	4.26%	N/A	N/A	N/A
DENTSPLY SIRONA Inc	XRAY	10,708.01	0.03%	1.02%	12.00%	13.08%	0.0038%
Xylem Inc/NY	XYL	15,354.73	0.04%	1.41%	6.50%	7.95%	0.0033%
Yum! Brands Inc	YUM	34,252.92	0.09%	1.92%	10.50%	12.52%	0.0115%
Zimmer Biomet Holdings Inc	ZBH	26,772.28	0.07%	0.75%	7.00%	7.78%	0.0056%
Zebra Technologies Corp	ZBRA	21,959.20	0.06%	0.00%	10.50%	10.50%	0.0062%
Zions Bancorp NA	ZION	9,958.24	0.03%	2.32%	7.50%	9.91%	0.0026%
Zoetis Inc	ZTS	88,976.76	0.24%	0.69%	11.00%	11.73%	0.0280%
		37,246,135.53					16.14%

[1] Equals sum of Col. [7]
[2] Source: Bloomberg Professional
[3] Equals weight in S&P 500 based on market capitalization
[4] Source: Bloomberg Professional
[5] Source: Value Line
[6] Equals ([4] x (1 + (0.5 x [5]))) + [5]
[7] Equals Col. [3] x Col. [6]

Ex Ante Capital Asset Pricing Model and Empirical Capital Asset Pricing Model Results
Using Long-Term Historical Market Required Return and 10-year Bloomberg Beta Coefficients

Company	Ticker	[1] Current 30-Year Treasury Yield	[2] 10-yr Bloomberg Beta Coefficient	[3] Long-Term Average Historical Market Return (1926-2021)	[4] Traditional CAPM	[5] Empirical CAPM
Atmos Energy Corporation	ATO	2.37%	0.74	12.33%	9.79%	10.43%
New Jersey Resources Corporation	NJR	2.37%	0.82	12.33%	10.54%	10.99%
NiSource Inc.	NI	2.37%	0.81	12.33%	10.45%	10.92%
Northwest Natural Holding Company	NWN	2.37%	0.71	12.33%	9.48%	10.20%
ONE Gas, Inc.	OGS	2.37%	0.81	12.33%	10.46%	10.93%
Spire Inc.	SR	2.37%	0.76	12.33%	9.96%	10.55%
				Mean:	10.12%	10.67%
				Median:	10.21%	10.74%
				Average of the Mean and Median:	10.16%	10.70%

Company	Ticker	[6] Projected 30-Year Treasury Yield	[7] 10-yr Bloomberg Beta Coefficient	[8] Long-Term Average Historical Market Return (1926-2021)	[9] Traditional CAPM	[10] Empirical CAPM
Atmos Energy Corporation	ATO	3.32%	0.74	12.33%	10.03%	10.61%
New Jersey Resources Corporation	NJR	3.32%	0.82	12.33%	10.71%	11.12%
NiSource Inc.	NI	3.32%	0.81	12.33%	10.63%	11.05%
Northwest Natural Holding Company	NWN	3.32%	0.71	12.33%	9.75%	10.40%
ONE Gas, Inc.	OGS	3.32%	0.81	12.33%	10.64%	11.06%
Spire Inc.	SR	3.32%	0.76	12.33%	10.19%	10.72%
				Mean:	10.33%	10.83%
				Median:	10.41%	10.89%
				Average of the Mean and Median:	10.37%	10.86%

Notes:
[1] Source: Bloomberg Professional Service; 30-day average
[2] Source: Bloomberg Professional Service
[3] Duff & Phelps, 2022 SBBI Yearbook Appendix A-1.
[4] Equals Col. [1] + (Col. [2] x (Col. [3] - Col. [1]))
[5] Equals Col. [1] + ((0.75 x (Col. [2] x (Col. [3] - Col. [1])) + 0.25 x (Col. [3] - Col. [1]))
[6] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021, at 14; Vol. 41, No. 4, April 1, 2022, at 2
[7] See Note [2]
[8] See Note [3]
[9] See Note [4]
[10] See Note [5]

Ex Ante Capital Asset Pricing Model and Empirical Capital Asset Pricing Model Results
Using Bloomberg-derived Expected Market Required Return and *Value Line* Beta Coefficients

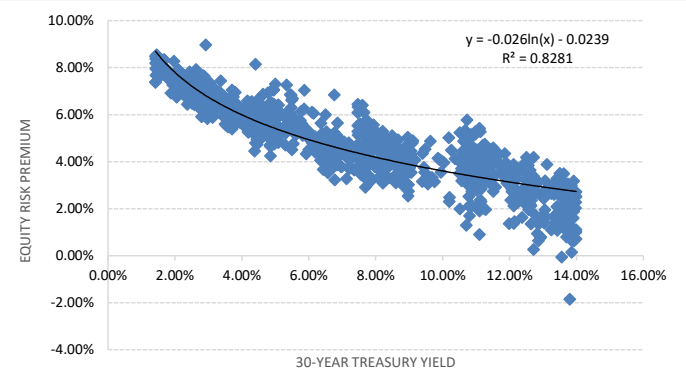
		[1]	[2]	[3]	[4]	[5]
Company	Ticker	Current 30-Year Treasury Yield	Value Line Beta Coefficient	Bloomberg Proj. Market Required Return	Traditional CAPM	Empirical CAPM
Atmos Energy Corporation	ATO	2.37%	0.80	14.64%	12.19%	12.80%
New Jersey Resources Corporation	NJR	2.37%	1.00	14.64%	14.64%	14.64%
NiSource Inc.	NI	2.37%	0.85	14.64%	12.80%	13.26%
Northwest Natural Holding Company	NWN	2.37%	0.80	14.64%	12.19%	12.80%
ONE Gas, Inc.	OGS	2.37%	0.80	14.64%	12.19%	12.80%
Spire Inc.	SR	2.37%	0.85	14.64%	12.80%	13.26%
				Mean:	12.80%	13.26%
				Median:	12.49%	13.03%
				Average of the Mean and Median:	12.65%	13.15%

		[6]	[7]	[8]	[9]	[10]
Company	Ticker	Projected 30-Year Treasury Yield	Value Line Beta Coefficient	Bloomberg Proj. Market Required Return	Traditional CAPM	Empirical CAPM
Atmos Energy Corporation	ATO	3.32%	0.80	14.64%	12.38%	12.94%
New Jersey Resources Corporation	NJR	3.32%	1.00	14.64%	14.64%	14.64%
NiSource Inc.	NI	3.32%	0.85	14.64%	12.94%	13.37%
Northwest Natural Holding Company	NWN	3.32%	0.80	14.64%	12.38%	12.94%
ONE Gas, Inc.	OGS	3.32%	0.80	14.64%	12.38%	12.94%
Spire Inc.	SR	3.32%	0.85	14.64%	12.94%	13.37%
				Mean:	12.94%	13.37%
				Median:	12.66%	13.15%
				Average of the Mean and Median:	12.80%	13.26%

Notes:
[1] Source: Bloomberg Professional Service; 30-day average
[2] Source: Value Line
[3] Exhibit JEN-4, pages 1-6
[4] Equals Col. [1] + (Col. [2] x (Col. [3] - Col. [1]))
[5] Equals Col. [1] + ((0.75 x (Col. [2] x (Col. [3] - Col. [1])) + 0.25 x (Col. [3] - Col. [1]))
[6] Source: Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021, at 14; Vol. 41, No. 4, April 1, 2022, at 2
[7] See Note [2]
[8] See Note [3]
[9] See Note [4]
[10] See Note [5]

Bond Yield Plus Risk Premium

[1]	[2]	[3]	[4]	[5]
Constant	Slope	30-Year Treasury Yield	Risk Premium	Return on Equity
-2.387%	-2.603%			
Current 30-Year Treasury		2.37%	7.35%	9.73%
Projected 30-Year Treasury		3.32%	6.48%	9.80%



Notes:
[1] Constant of regression equation
[2] Slope of regression equation
[3] Sources: Current = Bloomberg Professional,
Projected = Average of near-term and long-term projected 30-year Treasury yield; Blue Chip Financial Forecasts, Vol. 41, No. 4, April 1, 2022, at 2 and Blue Chip Financial Forecasts, Vol. 40, No. 12, December 1, 2021, at 14.
[4] Equals [1] + ln([3]) x [2]
[5] Equals [3] + [4]
[6] Source: S&P Capital IQ
[7] Source: S&P Capital IQ
[8] Source: Bloomberg Professional, equals 187-trading day average (i.e. lag period)
[9] Equals [7] - [8]

Bond Yield Plus Risk Premium

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/3/1980	12.55%	9.40%	3.15%
1/4/1980	13.75%	9.40%	4.35%
1/14/1980	13.20%	9.45%	3.75%
1/18/1980	14.00%	9.48%	4.52%
1/31/1980	12.61%	9.56%	3.05%
2/8/1980	14.50%	9.63%	4.87%
2/14/1980	13.00%	9.68%	3.32%
2/15/1980	13.00%	9.69%	3.31%
2/29/1980	14.00%	9.86%	4.14%
3/5/1980	14.00%	9.91%	4.09%
3/7/1980	13.50%	9.95%	3.55%
3/14/1980	14.00%	10.04%	3.96%
3/27/1980	12.69%	10.21%	2.48%
4/1/1980	14.75%	10.27%	4.48%
4/29/1980	12.50%	10.51%	1.99%
5/7/1980	14.27%	10.56%	3.71%
5/8/1980	13.75%	10.57%	3.18%
5/19/1980	15.50%	10.63%	4.87%
5/27/1980	14.60%	10.66%	3.94%
5/29/1980	16.00%	10.68%	5.32%
6/10/1980	13.78%	10.72%	3.06%
6/25/1980	14.25%	10.74%	3.51%
7/9/1980	14.51%	10.78%	3.73%
7/17/1980	12.90%	10.79%	2.11%
7/18/1980	13.80%	10.80%	3.00%
7/22/1980	14.10%	10.80%	3.30%
7/23/1980	14.19%	10.79%	3.40%
8/1/1980	12.50%	10.80%	1.70%
8/11/1980	14.85%	10.82%	4.03%
8/21/1980	13.03%	10.85%	2.18%
8/28/1980	13.61%	10.88%	2.73%
8/28/1980	14.00%	10.88%	3.12%
9/4/1980	14.00%	10.90%	3.10%
9/24/1980	15.00%	10.99%	4.01%
10/9/1980	14.50%	11.06%	3.44%
10/9/1980	14.50%	11.06%	3.44%
10/24/1980	14.00%	11.09%	2.91%
10/27/1980	15.20%	11.10%	4.10%
10/27/1980	15.20%	11.10%	4.10%
10/28/1980	12.00%	11.10%	0.90%
10/28/1980	13.00%	11.10%	1.90%
10/31/1980	14.50%	11.12%	3.38%
11/4/1980	15.00%	11.12%	3.88%
11/6/1980	14.35%	11.13%	3.22%
11/10/1980	13.25%	11.14%	2.11%
11/17/1980	15.50%	11.14%	4.36%
11/19/1980	13.50%	11.13%	2.37%
12/5/1980	14.60%	11.13%	3.47%
12/8/1980	16.40%	11.13%	5.27%
12/12/1980	15.45%	11.14%	4.31%
12/17/1980	14.20%	11.15%	3.05%
12/17/1980	14.40%	11.15%	3.25%
12/18/1980	14.00%	11.16%	2.84%
12/22/1980	13.45%	11.15%	2.30%
12/26/1980	14.00%	11.14%	2.86%
12/30/1980	14.50%	11.13%	3.37%
12/31/1980	14.56%	11.13%	3.43%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/7/1981	14.30%	11.13%	3.17%
1/12/1981	14.95%	11.14%	3.81%
1/26/1981	15.25%	11.20%	4.05%
1/30/1981	13.25%	11.24%	2.01%
2/11/1981	14.50%	11.34%	3.16%
2/20/1981	14.50%	11.40%	3.10%
3/12/1981	15.65%	11.61%	4.04%
3/25/1981	15.30%	11.75%	3.55%
4/1/1981	15.30%	11.83%	3.47%
4/9/1981	15.00%	11.92%	3.08%
4/29/1981	13.50%	12.13%	1.37%
4/29/1981	14.25%	12.13%	2.12%
4/30/1981	13.60%	12.15%	1.45%
4/30/1981	15.00%	12.15%	2.85%
5/21/1981	14.00%	12.38%	1.62%
6/3/1981	14.67%	12.46%	2.21%
6/22/1981	16.00%	12.58%	3.42%
6/25/1981	14.75%	12.61%	2.14%
7/2/1981	14.00%	12.65%	1.35%
7/10/1981	16.00%	12.70%	3.30%
7/14/1981	16.90%	12.72%	4.18%
7/21/1981	15.78%	12.78%	3.00%
7/27/1981	13.77%	12.83%	0.94%
7/27/1981	15.50%	12.83%	2.67%
7/31/1981	13.50%	12.87%	0.63%
7/31/1981	14.20%	12.87%	1.33%
8/12/1981	13.72%	12.94%	0.78%
8/12/1981	13.72%	12.94%	0.78%
8/12/1981	14.41%	12.94%	1.47%
8/25/1981	15.45%	13.02%	2.43%
8/27/1981	14.43%	13.05%	1.38%
8/28/1981	15.00%	13.06%	1.94%
9/23/1981	14.34%	13.25%	1.09%
9/24/1981	16.25%	13.26%	2.99%
9/29/1981	14.50%	13.31%	1.19%
9/30/1981	15.94%	13.33%	2.61%
10/2/1981	14.80%	13.37%	1.43%
10/12/1981	16.25%	13.43%	2.82%
10/20/1981	15.25%	13.51%	1.74%
10/20/1981	16.50%	13.51%	2.99%
10/20/1981	17.00%	13.51%	3.49%
10/23/1981	15.50%	13.55%	1.95%
10/26/1981	13.50%	13.56%	-0.06%
10/29/1981	16.50%	13.60%	2.90%
11/4/1981	15.33%	13.63%	1.70%
11/6/1981	15.17%	13.64%	1.53%
11/12/1981	15.00%	13.65%	1.35%
11/25/1981	15.25%	13.66%	1.59%
11/25/1981	16.10%	13.66%	2.44%
11/25/1981	16.10%	13.66%	2.44%
11/30/1981	16.75%	13.66%	3.09%
12/1/1981	15.70%	13.66%	2.04%
12/1/1981	16.00%	13.66%	2.34%
12/15/1981	15.81%	13.70%	2.11%
12/17/1981	14.75%	13.71%	1.04%
12/22/1981	15.70%	13.72%	1.98%
12/22/1981	16.00%	13.72%	2.28%
12/30/1981	16.00%	13.75%	2.25%
12/30/1981	16.25%	13.75%	2.50%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/4/1982	15.50%	13.75%	1.75%
1/14/1982	11.95%	13.81%	-1.86%
1/25/1982	16.25%	13.84%	2.41%
1/27/1982	16.84%	13.85%	2.99%
1/31/1982	14.00%	13.86%	0.14%
2/2/1982	16.24%	13.86%	2.38%
2/8/1982	15.50%	13.88%	1.62%
2/9/1982	14.95%	13.88%	1.07%
2/9/1982	15.75%	13.88%	1.87%
2/11/1982	16.00%	13.89%	2.11%
3/1/1982	15.96%	13.91%	2.05%
3/3/1982	15.00%	13.92%	1.08%
3/8/1982	17.10%	13.92%	3.18%
3/26/1982	16.00%	13.97%	2.03%
3/31/1982	16.25%	13.98%	2.27%
4/1/1982	16.50%	13.98%	2.52%
4/6/1982	15.00%	13.99%	1.01%
4/9/1982	16.50%	13.99%	2.51%
4/12/1982	15.10%	13.99%	1.11%
4/12/1982	16.70%	13.99%	2.71%
4/18/1982	14.70%	13.99%	0.71%
4/27/1982	15.00%	13.97%	1.03%
5/10/1982	14.57%	13.94%	0.63%
5/14/1982	15.80%	13.92%	1.88%
5/20/1982	15.82%	13.91%	1.91%
5/21/1982	15.50%	13.90%	1.60%
5/25/1982	16.25%	13.89%	2.36%
6/2/1982	14.50%	13.86%	0.64%
6/7/1982	16.00%	13.85%	2.15%
6/23/1982	15.50%	13.81%	1.69%
6/25/1982	16.50%	13.81%	2.69%
7/1/1982	15.55%	13.79%	1.76%
7/1/1982	16.00%	13.79%	2.21%
7/2/1982	15.10%	13.78%	1.32%
7/13/1982	16.80%	13.75%	3.05%
7/22/1982	14.50%	13.71%	0.79%
7/28/1982	16.10%	13.67%	2.43%
7/30/1982	14.82%	13.66%	1.16%
8/4/1982	15.58%	13.64%	1.94%
8/6/1982	16.50%	13.63%	2.87%
8/11/1982	17.11%	13.62%	3.49%
8/25/1982	16.00%	13.59%	2.41%
8/30/1982	16.25%	13.58%	2.67%
9/3/1982	15.50%	13.57%	1.93%
9/9/1982	16.04%	13.55%	2.49%
9/15/1982	16.04%	13.52%	2.52%
9/17/1982	15.25%	13.51%	1.74%
9/29/1982	14.50%	13.43%	1.07%
9/30/1982	14.74%	13.42%	1.32%
9/30/1982	15.50%	13.42%	2.08%
9/30/1982	16.50%	13.42%	3.08%
9/30/1982	16.70%	13.42%	3.28%
10/1/1982	16.50%	13.40%	3.10%
10/8/1982	15.00%	13.33%	1.67%
10/15/1982	15.90%	13.25%	2.65%
10/19/1982	15.90%	13.22%	2.68%
10/27/1982	17.00%	13.12%	3.88%
10/28/1982	14.75%	13.10%	1.65%
11/2/1982	16.25%	13.07%	3.18%
11/4/1982	15.75%	13.02%	2.73%
11/5/1982	14.73%	13.00%	1.73%
11/17/1982	16.00%	12.86%	3.14%
11/23/1982	15.50%	12.79%	2.71%
11/24/1982	14.50%	12.77%	1.73%
11/24/1982	16.02%	12.77%	3.25%
11/30/1982	12.98%	12.72%	0.26%
11/30/1982	15.50%	12.72%	2.78%
11/30/1982	15.50%	12.72%	2.78%
11/30/1982	15.65%	12.72%	2.93%
11/30/1982	16.00%	12.72%	3.28%
11/30/1982	16.10%	12.72%	3.38%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/3/1982	15.33%	12.68%	2.65%
12/8/1982	15.75%	12.63%	3.12%
12/13/1982	16.00%	12.58%	3.42%
12/14/1982	16.40%	12.56%	3.84%
12/17/1982	16.25%	12.52%	3.73%
12/20/1982	15.00%	12.50%	2.50%
12/21/1982	15.70%	12.49%	3.21%
12/28/1982	15.25%	12.42%	2.83%
12/28/1982	15.25%	12.42%	2.83%
12/29/1982	16.25%	12.40%	3.85%
12/29/1982	16.25%	12.40%	3.85%
1/11/1983	15.90%	12.25%	3.65%
1/12/1983	15.50%	12.24%	3.26%
1/18/1983	15.00%	12.18%	2.82%
1/24/1983	15.50%	12.13%	3.37%
1/24/1983	16.00%	12.13%	3.87%
1/28/1983	14.90%	12.07%	2.83%
1/31/1983	15.00%	12.06%	2.94%
2/10/1983	15.00%	11.97%	3.03%
2/25/1983	15.70%	11.83%	3.87%
3/2/1983	15.25%	11.78%	3.47%
3/16/1983	16.00%	11.61%	4.39%
3/21/1983	14.96%	11.55%	3.41%
3/23/1983	15.40%	11.52%	3.88%
3/23/1983	16.10%	11.52%	4.58%
3/24/1983	15.00%	11.50%	3.50%
4/12/1983	13.25%	11.29%	1.96%
4/29/1983	15.05%	11.08%	3.97%
5/3/1983	15.40%	11.05%	4.35%
5/9/1983	15.50%	10.99%	4.51%
5/19/1983	14.85%	10.89%	3.96%
5/31/1983	14.00%	10.83%	3.17%
6/2/1983	14.50%	10.81%	3.69%
6/7/1983	14.50%	10.79%	3.71%
6/9/1983	14.85%	10.78%	4.07%
6/20/1983	14.15%	10.73%	3.42%
6/20/1983	16.50%	10.73%	5.77%
6/27/1983	14.50%	10.71%	3.79%
6/30/1983	14.80%	10.70%	4.10%
6/30/1983	15.90%	10.70%	5.20%
7/1/1983	14.80%	10.69%	4.11%
7/5/1983	15.00%	10.69%	4.31%
7/8/1983	15.50%	10.69%	4.81%
7/19/1983	15.00%	10.70%	4.30%
7/19/1983	15.10%	10.70%	4.40%
8/18/1983	15.30%	10.81%	4.49%
8/19/1983	15.79%	10.82%	4.97%
8/29/1983	16.00%	10.85%	5.15%
8/31/1983	14.75%	10.87%	3.88%
8/31/1983	15.25%	10.87%	4.38%
9/8/1983	14.75%	10.90%	3.85%
9/16/1983	15.51%	10.93%	4.58%
9/26/1983	14.50%	10.96%	3.54%
9/28/1983	14.25%	10.97%	3.28%
9/30/1983	16.15%	10.98%	5.17%
9/30/1983	16.25%	10.98%	5.27%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
10/1/1983	16.25%	10.98%	5.27%
10/13/1983	15.52%	11.02%	4.50%
10/19/1983	15.20%	11.04%	4.16%
10/26/1983	14.75%	11.07%	3.68%
10/27/1983	14.88%	11.07%	3.81%
10/27/1983	15.33%	11.07%	4.26%
11/9/1983	14.82%	11.10%	3.72%
11/9/1983	16.51%	11.10%	5.41%
11/9/1983	16.51%	11.10%	5.41%
12/1/1983	14.50%	11.17%	3.33%
12/8/1983	15.90%	11.21%	4.69%
12/9/1983	15.30%	11.21%	4.09%
12/12/1983	14.50%	11.22%	3.28%
12/12/1983	15.50%	11.22%	4.28%
12/20/1983	15.40%	11.26%	4.14%
12/20/1983	16.00%	11.26%	4.74%
12/22/1983	15.75%	11.27%	4.48%
12/29/1983	15.00%	11.30%	3.70%
12/30/1983	15.00%	11.30%	3.70%
1/10/1984	15.90%	11.34%	4.56%
1/13/1984	15.50%	11.37%	4.13%
1/18/1984	15.53%	11.39%	4.14%
1/26/1984	15.90%	11.42%	4.48%
2/14/1984	14.25%	11.52%	2.73%
2/28/1984	14.50%	11.59%	2.91%
3/20/1984	16.00%	11.70%	4.30%
3/23/1984	15.50%	11.73%	3.77%
4/9/1984	15.20%	11.81%	3.39%
4/18/1984	16.20%	11.86%	4.34%
4/27/1984	15.85%	11.90%	3.95%
5/15/1984	13.35%	11.99%	1.36%
5/16/1984	15.00%	12.00%	3.00%
5/22/1984	14.40%	12.04%	2.36%
6/13/1984	15.50%	12.19%	3.31%
7/10/1984	16.00%	12.37%	3.63%
8/7/1984	16.69%	12.51%	4.18%
8/9/1984	15.33%	12.52%	2.81%
8/17/1984	14.82%	12.54%	2.28%
8/21/1984	14.64%	12.55%	2.09%
8/27/1984	14.52%	12.57%	1.95%
8/28/1984	14.75%	12.57%	2.18%
8/30/1984	15.60%	12.58%	3.02%
9/12/1984	15.60%	12.60%	3.00%
9/12/1984	15.90%	12.60%	3.30%
9/25/1984	16.25%	12.62%	3.63%
10/2/1984	14.80%	12.63%	2.17%
10/9/1984	14.75%	12.64%	2.11%
10/10/1984	15.50%	12.64%	2.86%
10/18/1984	15.00%	12.65%	2.35%
10/24/1984	15.50%	12.65%	2.85%
11/7/1984	15.00%	12.64%	2.36%
11/20/1984	15.92%	12.63%	3.29%
11/30/1984	15.50%	12.60%	2.90%
12/18/1984	15.00%	12.55%	2.45%
12/20/1984	15.00%	12.54%	2.46%
12/28/1984	15.75%	12.51%	3.24%
12/28/1984	16.25%	12.51%	3.74%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/2/1985	16.00%	12.50%	3.50%
1/31/1985	14.75%	12.37%	2.38%
2/7/1985	14.85%	12.32%	2.53%
2/15/1985	15.00%	12.26%	2.74%
2/20/1985	14.50%	12.24%	2.26%
2/22/1985	14.86%	12.24%	2.62%
3/14/1985	15.50%	12.15%	3.35%
3/28/1985	14.80%	12.08%	2.72%
4/9/1985	15.50%	12.01%	3.49%
4/16/1985	15.70%	11.96%	3.74%
6/10/1985	15.75%	11.58%	4.17%
6/26/1985	14.82%	11.46%	3.36%
7/9/1985	15.00%	11.38%	3.62%
7/26/1985	14.50%	11.26%	3.24%
8/29/1985	14.50%	11.11%	3.39%
8/30/1985	14.38%	11.10%	3.28%
9/12/1985	15.25%	11.07%	4.18%
9/23/1985	15.30%	11.03%	4.27%
9/25/1985	14.50%	11.02%	3.48%
9/26/1985	13.80%	11.01%	2.79%
9/26/1985	14.50%	11.01%	3.49%
10/25/1985	15.25%	10.91%	4.34%
11/8/1985	12.94%	10.85%	2.09%
11/20/1985	14.90%	10.81%	4.09%
11/25/1985	13.30%	10.79%	2.51%
12/6/1985	12.00%	10.71%	1.29%
12/11/1985	14.90%	10.67%	4.23%
12/20/1985	14.88%	10.58%	4.30%
12/20/1985	15.00%	10.58%	4.42%
12/20/1985	15.00%	10.58%	4.42%
12/30/1985	15.75%	10.52%	5.23%
12/31/1985	14.00%	10.51%	3.49%
12/31/1985	14.50%	10.51%	3.99%
1/17/1986	14.50%	10.37%	4.13%
2/11/1986	12.50%	10.20%	2.30%
2/12/1986	15.20%	10.19%	5.01%
3/11/1986	14.00%	9.97%	4.03%
4/2/1986	12.90%	9.76%	3.14%
4/28/1986	13.01%	9.46%	3.55%
5/21/1986	13.25%	9.17%	4.08%
5/28/1986	14.00%	9.11%	4.89%
5/29/1986	13.90%	9.10%	4.80%
6/2/1986	13.00%	9.07%	3.93%
6/11/1986	14.00%	8.96%	5.04%
6/13/1986	13.55%	8.93%	4.62%
6/27/1986	11.88%	8.76%	3.12%
7/14/1986	12.60%	8.57%	4.03%
7/30/1986	13.30%	8.37%	4.93%
8/14/1986	13.50%	8.21%	5.29%
9/5/1986	13.30%	8.01%	5.29%
9/23/1986	12.75%	7.90%	4.85%
10/30/1986	13.00%	7.66%	5.34%
10/31/1986	13.75%	7.65%	6.10%
11/10/1986	14.00%	7.60%	6.40%
11/19/1986	13.75%	7.56%	6.19%
11/25/1986	13.15%	7.54%	5.61%
12/22/1986	13.80%	7.47%	6.33%
12/30/1986	13.90%	7.47%	6.43%
1/20/1987	12.75%	7.47%	5.28%
1/23/1987	13.55%	7.47%	6.08%
1/27/1987	12.16%	7.47%	4.69%
2/13/1987	12.60%	7.47%	5.13%
2/24/1987	12.00%	7.47%	4.53%
3/30/1987	12.20%	7.46%	4.74%
3/31/1987	13.00%	7.47%	5.53%
5/5/1987	12.85%	7.60%	5.25%
5/28/1987	13.50%	7.73%	5.77%
6/15/1987	13.20%	7.81%	5.39%
6/30/1987	12.60%	7.85%	4.75%
7/10/1987	12.90%	7.88%	5.02%
7/27/1987	13.50%	7.94%	5.56%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
8/25/1987	11.40%	8.09%	3.31%
9/18/1987	13.00%	8.28%	4.72%
10/20/1987	12.60%	8.55%	4.05%
10/20/1987	12.98%	8.55%	4.43%
11/12/1987	12.75%	8.68%	4.07%
11/13/1987	12.75%	8.69%	4.06%
11/24/1987	12.50%	8.74%	3.76%
12/8/1987	12.50%	8.82%	3.68%
12/22/1987	12.00%	8.91%	3.09%
12/31/1987	12.85%	8.95%	3.90%
12/31/1987	13.25%	8.95%	4.30%
1/15/1988	13.15%	8.99%	4.16%
1/20/1988	12.75%	8.99%	3.76%
1/29/1988	13.20%	8.99%	4.21%
2/4/1988	12.60%	8.99%	3.61%
3/23/1988	13.00%	8.95%	4.05%
5/27/1988	13.18%	9.02%	4.16%
6/14/1988	13.50%	9.00%	4.50%
6/17/1988	11.72%	8.98%	2.74%
6/24/1988	11.50%	8.97%	2.53%
7/1/1988	12.75%	8.94%	3.81%
7/8/1988	12.00%	8.93%	3.07%
7/18/1988	12.00%	8.90%	3.10%
7/20/1988	13.40%	8.89%	4.51%
8/8/1988	12.74%	8.90%	3.84%
9/20/1988	12.90%	8.93%	3.97%
9/26/1988	12.40%	8.93%	3.47%
9/27/1988	13.65%	8.93%	4.72%
9/30/1988	13.25%	8.94%	4.31%
10/13/1988	13.10%	8.93%	4.17%
10/21/1988	12.80%	8.94%	3.86%
10/25/1988	13.25%	8.94%	4.31%
10/26/1988	13.50%	8.94%	4.56%
10/27/1988	12.95%	8.95%	4.00%
10/28/1988	13.00%	8.95%	4.05%
11/15/1988	12.00%	8.98%	3.02%
11/29/1988	12.75%	9.02%	3.73%
12/19/1988	13.00%	9.05%	3.95%
12/21/1988	12.90%	9.05%	3.85%
12/22/1988	13.50%	9.06%	4.44%
1/26/1989	12.60%	9.06%	3.54%
1/27/1989	13.00%	9.06%	3.94%
2/8/1989	13.37%	9.05%	4.32%
3/8/1989	13.00%	9.04%	3.96%
5/4/1989	13.00%	9.04%	3.96%
6/8/1989	13.50%	8.96%	4.54%
7/19/1989	11.80%	8.84%	2.96%
7/25/1989	12.80%	8.82%	3.98%
7/31/1989	13.00%	8.81%	4.19%
8/14/1989	12.50%	8.76%	3.74%
8/22/1989	12.80%	8.73%	4.07%
8/23/1989	12.90%	8.72%	4.18%
9/21/1989	12.10%	8.62%	3.48%
10/6/1989	13.00%	8.57%	4.43%
10/17/1989	12.41%	8.54%	3.87%
10/18/1989	13.25%	8.54%	4.71%
10/20/1989	12.90%	8.53%	4.37%
10/31/1989	13.60%	8.49%	5.11%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
11/3/1989	12.93%	8.48%	4.45%
11/5/1989	13.20%	8.48%	4.72%
11/9/1989	12.60%	8.45%	4.15%
11/9/1989	13.00%	8.45%	4.55%
11/28/1989	12.75%	8.37%	4.38%
12/7/1989	13.25%	8.32%	4.93%
12/15/1989	13.00%	8.27%	4.73%
12/20/1989	12.90%	8.25%	4.65%
12/21/1989	12.80%	8.25%	4.55%
12/21/1989	12.90%	8.25%	4.65%
12/27/1989	12.50%	8.23%	4.27%
1/9/1990	13.00%	8.19%	4.81%
1/18/1990	12.50%	8.16%	4.34%
1/26/1990	12.10%	8.14%	3.96%
3/21/1990	12.80%	8.15%	4.65%
3/28/1990	13.00%	8.16%	4.84%
4/5/1990	12.20%	8.17%	4.03%
4/12/1990	13.25%	8.19%	5.06%
4/30/1990	12.45%	8.24%	4.21%
5/31/1990	12.40%	8.31%	4.09%
6/15/1990	13.20%	8.33%	4.87%
6/27/1990	12.90%	8.34%	4.56%
6/29/1990	13.25%	8.35%	4.90%
7/6/1990	12.10%	8.36%	3.74%
7/19/1990	11.70%	8.39%	3.31%
8/31/1990	12.50%	8.53%	3.97%
8/31/1990	12.50%	8.53%	3.97%
9/13/1990	12.50%	8.58%	3.92%
9/18/1990	12.75%	8.60%	4.15%
9/20/1990	12.50%	8.61%	3.89%
10/2/1990	13.00%	8.65%	4.35%
10/17/1990	11.90%	8.68%	3.22%
10/31/1990	12.95%	8.70%	4.25%
11/9/1990	13.25%	8.71%	4.54%
11/19/1990	13.00%	8.70%	4.30%
11/21/1990	12.10%	8.70%	3.40%
11/21/1990	12.50%	8.70%	3.80%
11/28/1990	12.75%	8.70%	4.05%
11/29/1990	12.75%	8.70%	4.05%
12/18/1990	13.10%	8.68%	4.42%
12/20/1990	12.50%	8.67%	3.83%
12/21/1990	12.50%	8.67%	3.83%
12/21/1990	13.00%	8.67%	4.33%
12/21/1990	13.60%	8.67%	4.93%
1/3/1991	13.02%	8.66%	4.36%
1/16/1991	13.25%	8.63%	4.62%
1/25/1991	11.70%	8.60%	3.10%
2/15/1991	12.70%	8.56%	4.14%
2/15/1991	12.80%	8.56%	4.24%
4/3/1991	13.00%	8.51%	4.49%
4/30/1991	12.45%	8.47%	3.98%
4/30/1991	13.00%	8.47%	4.53%
6/25/1991	11.70%	8.34%	3.36%
6/28/1991	12.50%	8.33%	4.17%
7/1/1991	11.70%	8.33%	3.37%
7/19/1991	12.10%	8.30%	3.80%
7/19/1991	12.30%	8.30%	4.00%
7/22/1991	12.90%	8.30%	4.60%
8/15/1991	12.25%	8.27%	3.98%
8/29/1991	13.30%	8.26%	5.04%
9/27/1991	12.50%	8.23%	4.27%
9/30/1991	12.40%	8.23%	4.17%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
10/3/1991	11.30%	8.22%	3.08%
10/9/1991	11.70%	8.21%	3.49%
10/15/1991	13.40%	8.20%	5.20%
11/1/1991	12.90%	8.20%	4.70%
11/8/1991	12.75%	8.20%	4.55%
11/26/1991	11.60%	8.18%	3.42%
11/26/1991	12.00%	8.18%	3.82%
11/27/1991	12.70%	8.18%	4.52%
12/6/1991	12.70%	8.16%	4.54%
12/10/1991	11.75%	8.15%	3.60%
12/19/1991	12.60%	8.14%	4.46%
12/19/1991	12.80%	8.14%	4.66%
12/30/1991	12.10%	8.11%	3.99%
1/22/1992	12.84%	8.05%	4.79%
1/31/1992	12.00%	8.03%	3.97%
2/20/1992	13.00%	8.00%	5.00%
2/27/1992	11.75%	7.98%	3.77%
3/18/1992	12.50%	7.94%	4.56%
5/15/1992	12.75%	7.86%	4.89%
6/24/1992	12.20%	7.85%	4.35%
6/29/1992	11.00%	7.85%	3.15%
7/14/1992	12.00%	7.83%	4.17%
7/22/1992	11.20%	7.82%	3.38%
8/10/1992	12.10%	7.79%	4.31%
8/26/1992	12.43%	7.75%	4.68%
9/30/1992	11.60%	7.72%	3.88%
10/6/1992	12.25%	7.72%	4.53%
10/13/1992	12.75%	7.71%	5.04%
10/23/1992	11.65%	7.71%	3.94%
10/28/1992	12.25%	7.71%	4.54%
10/29/1992	12.75%	7.70%	5.05%
10/30/1992	11.40%	7.70%	3.70%
11/9/1992	10.60%	7.70%	2.90%
11/25/1992	11.00%	7.67%	3.33%
11/25/1992	12.00%	7.67%	4.33%
12/3/1992	11.85%	7.66%	4.19%
12/16/1992	11.90%	7.63%	4.27%
12/22/1992	12.30%	7.62%	4.68%
12/22/1992	12.40%	7.62%	4.78%
12/30/1992	12.00%	7.61%	4.39%
12/31/1992	12.00%	7.60%	4.40%
1/12/1993	12.00%	7.58%	4.42%
1/12/1993	12.00%	7.58%	4.42%
2/2/1993	11.40%	7.53%	3.87%
2/22/1993	11.60%	7.47%	4.13%
4/23/1993	11.75%	7.27%	4.48%
5/3/1993	11.50%	7.25%	4.25%
5/3/1993	11.75%	7.25%	4.50%
6/3/1993	12.00%	7.20%	4.80%
6/7/1993	11.50%	7.20%	4.30%
6/22/1993	11.75%	7.16%	4.59%
7/21/1993	11.78%	7.06%	4.72%
7/21/1993	11.90%	7.06%	4.84%
7/23/1993	11.50%	7.05%	4.45%
7/29/1993	11.50%	7.03%	4.47%
8/12/1993	10.75%	6.97%	3.78%
8/24/1993	11.50%	6.91%	4.59%
8/31/1993	11.90%	6.88%	5.02%
9/1/1993	11.25%	6.87%	4.38%
9/1/1993	11.47%	6.87%	4.60%
9/27/1993	10.50%	6.74%	3.76%
9/29/1993	11.00%	6.72%	4.28%
9/30/1993	11.60%	6.71%	4.89%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
10/8/1993	11.50%	6.67%	4.83%
10/14/1993	11.20%	6.65%	4.55%
10/15/1993	11.75%	6.64%	5.11%
10/25/1993	11.55%	6.60%	4.95%
10/28/1993	11.50%	6.58%	4.92%
10/29/1993	10.10%	6.57%	3.53%
10/29/1993	10.20%	6.57%	3.63%
10/29/1993	11.25%	6.57%	4.68%
11/2/1993	10.80%	6.56%	4.24%
11/12/1993	11.80%	6.53%	5.27%
11/23/1993	12.50%	6.50%	6.00%
11/26/1993	11.00%	6.50%	4.50%
12/1/1993	11.45%	6.49%	4.96%
12/16/1993	10.60%	6.45%	4.15%
12/16/1993	11.20%	6.45%	4.75%
12/21/1993	11.30%	6.44%	4.86%
12/22/1993	11.00%	6.44%	4.56%
12/23/1993	10.10%	6.43%	3.67%
1/5/1994	11.50%	6.41%	5.09%
1/10/1994	11.00%	6.40%	4.60%
1/25/1994	12.00%	6.37%	5.63%
2/2/1994	10.40%	6.35%	4.05%
2/9/1994	10.70%	6.33%	4.37%
4/6/1994	11.24%	6.34%	4.90%
4/25/1994	11.00%	6.39%	4.61%
6/16/1994	10.50%	6.64%	3.86%
6/23/1994	10.60%	6.68%	3.92%
7/19/1994	10.70%	6.84%	3.86%
9/29/1994	10.90%	7.21%	3.69%
9/29/1994	11.00%	7.21%	3.79%
10/7/1994	11.87%	7.26%	4.61%
10/18/1994	11.50%	7.32%	4.18%
10/18/1994	11.50%	7.32%	4.18%
10/24/1994	11.00%	7.36%	3.64%
11/22/1994	12.12%	7.53%	4.59%
11/29/1994	11.30%	7.55%	3.75%
12/1/1994	11.00%	7.57%	3.43%
12/8/1994	11.50%	7.59%	3.91%
12/8/1994	11.70%	7.59%	4.11%
12/12/1994	11.82%	7.60%	4.22%
12/14/1994	11.50%	7.61%	3.89%
12/19/1994	11.50%	7.62%	3.88%
4/19/1995	11.00%	7.72%	3.28%
9/11/1995	11.30%	7.16%	4.14%
9/15/1995	10.40%	7.13%	3.27%
9/29/1995	11.50%	7.06%	4.44%
10/13/1995	10.76%	6.98%	3.78%
11/7/1995	12.50%	6.86%	5.64%
11/8/1995	11.10%	6.85%	4.25%
11/8/1995	11.30%	6.85%	4.45%
11/17/1995	10.90%	6.80%	4.10%
11/20/1995	11.40%	6.80%	4.60%
11/27/1995	13.60%	6.76%	6.84%
12/14/1995	11.30%	6.67%	4.63%
12/20/1995	11.60%	6.64%	4.96%
1/31/1996	11.30%	6.45%	4.85%
3/11/1996	11.60%	6.40%	5.20%
4/3/1996	11.13%	6.40%	4.73%
4/15/1996	10.50%	6.40%	4.10%
4/17/1996	10.77%	6.40%	4.37%
4/26/1996	10.60%	6.40%	4.20%
5/10/1996	11.00%	6.40%	4.60%
5/13/1996	11.25%	6.40%	4.85%
7/3/1996	11.25%	6.49%	4.76%
7/22/1996	11.25%	6.54%	4.71%
10/3/1996	10.00%	6.77%	3.23%
10/29/1996	11.30%	6.85%	4.45%
11/26/1996	11.30%	6.86%	4.44%
11/27/1996	11.30%	6.86%	4.44%
11/29/1996	11.00%	6.86%	4.14%
12/12/1996	11.96%	6.85%	5.11%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/17/1996	11.50%	6.85%	4.65%
1/22/1997	11.30%	6.83%	4.47%
1/27/1997	11.25%	6.83%	4.42%
1/31/1997	11.25%	6.83%	4.42%
2/13/1997	11.00%	6.82%	4.18%
2/13/1997	11.80%	6.82%	4.98%
2/20/1997	11.80%	6.81%	4.99%
3/27/1997	10.75%	6.79%	3.96%
4/29/1997	11.70%	6.81%	4.89%
7/17/1997	12.00%	6.77%	5.23%
10/29/1997	10.75%	6.70%	4.05%
10/31/1997	11.25%	6.70%	4.55%
12/24/1997	10.75%	6.53%	4.22%
4/28/1998	10.90%	6.10%	4.80%
4/30/1998	12.20%	6.10%	6.10%
6/30/1998	11.00%	5.94%	5.06%
8/26/1998	10.93%	5.82%	5.11%
9/3/1998	11.40%	5.80%	5.60%
9/15/1998	11.90%	5.77%	6.13%
10/7/1998	11.06%	5.70%	5.36%
10/30/1998	11.40%	5.63%	5.77%
12/10/1998	12.20%	5.51%	6.69%
12/17/1998	12.10%	5.49%	6.61%
2/19/1999	11.15%	5.31%	5.84%
3/1/1999	10.65%	5.31%	5.34%
3/1/1999	10.65%	5.31%	5.34%
6/8/1999	11.25%	5.36%	5.89%
11/12/1999	10.25%	5.92%	4.33%
12/14/1999	10.50%	6.00%	4.50%
1/28/2000	10.71%	6.16%	4.55%
2/17/2000	10.60%	6.20%	4.40%
5/25/2000	10.80%	6.20%	4.60%
6/19/2000	11.05%	6.18%	4.87%
6/22/2000	11.25%	6.18%	5.07%
7/17/2000	11.06%	6.15%	4.91%
7/20/2000	12.20%	6.14%	6.06%
8/11/2000	11.00%	6.11%	4.89%
9/27/2000	11.25%	6.00%	5.25%
9/29/2000	11.16%	5.99%	5.17%
10/5/2000	11.30%	5.98%	5.32%
11/28/2000	12.90%	5.87%	7.03%
11/30/2000	12.10%	5.86%	6.24%
2/5/2001	11.50%	5.75%	5.75%
3/15/2001	11.25%	5.66%	5.59%
5/8/2001	10.75%	5.61%	5.14%
10/24/2001	10.30%	5.54%	4.76%
10/24/2001	11.00%	5.54%	5.46%
1/9/2002	10.00%	5.50%	4.50%
1/30/2002	11.00%	5.47%	5.53%
1/31/2002	11.00%	5.47%	5.53%
4/17/2002	11.50%	5.44%	6.06%
4/29/2002	11.00%	5.44%	5.56%
6/11/2002	11.77%	5.47%	6.30%
6/20/2002	12.30%	5.48%	6.82%
8/28/2002	11.00%	5.49%	5.51%
9/11/2002	11.20%	5.45%	5.75%
9/12/2002	12.30%	5.45%	6.85%
10/28/2002	11.30%	5.34%	5.96%
10/30/2002	10.60%	5.34%	5.26%
11/1/2002	12.60%	5.34%	7.26%
11/7/2002	11.40%	5.33%	6.07%
11/8/2002	10.75%	5.33%	5.42%
11/20/2002	10.00%	5.30%	4.70%
11/20/2002	10.50%	5.30%	5.20%
12/4/2002	10.75%	5.26%	5.49%
12/30/2002	11.20%	5.18%	6.02%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/6/2003	11.25%	5.16%	6.09%
2/28/2003	12.30%	5.00%	7.30%
3/7/2003	9.96%	4.98%	4.98%
3/12/2003	11.40%	4.97%	6.43%
3/20/2003	12.00%	4.95%	7.05%
4/3/2003	12.00%	4.92%	7.08%
5/2/2003	11.40%	4.88%	6.52%
5/15/2003	11.05%	4.87%	6.18%
6/26/2003	11.00%	4.80%	6.20%
7/1/2003	11.00%	4.80%	6.20%
7/29/2003	11.71%	4.78%	6.93%
8/22/2003	10.20%	4.81%	5.39%
9/17/2003	9.90%	4.85%	5.05%
9/25/2003	10.25%	4.85%	5.40%
10/17/2003	10.54%	4.87%	5.67%
10/22/2003	10.46%	4.87%	5.59%
10/22/2003	10.71%	4.87%	5.84%
10/30/2003	11.00%	4.88%	6.12%
10/31/2003	10.20%	4.88%	5.32%
10/31/2003	10.75%	4.88%	5.87%
11/10/2003	10.60%	4.89%	5.71%
12/9/2003	10.50%	4.93%	5.57%
12/18/2003	10.50%	4.94%	5.56%
12/19/2003	12.00%	4.94%	7.06%
12/19/2003	12.00%	4.94%	7.06%
1/13/2004	10.25%	4.95%	5.30%
1/13/2004	12.00%	4.95%	7.05%
2/9/2004	11.25%	4.99%	6.26%
3/16/2004	10.90%	5.05%	5.85%
3/16/2004	10.90%	5.05%	5.85%
5/25/2004	10.00%	5.06%	4.94%
6/2/2004	11.22%	5.07%	6.15%
6/30/2004	10.50%	5.10%	5.40%
7/8/2004	10.00%	5.10%	4.90%
7/22/2004	10.25%	5.10%	5.15%
8/26/2004	10.50%	5.10%	5.40%
8/26/2004	10.50%	5.10%	5.40%
9/9/2004	10.40%	5.10%	5.30%
9/21/2004	10.50%	5.09%	5.41%
9/27/2004	10.30%	5.09%	5.21%
9/27/2004	10.50%	5.09%	5.41%
10/20/2004	10.20%	5.08%	5.12%
11/30/2004	10.60%	5.08%	5.52%
12/8/2004	9.90%	5.09%	4.81%
12/21/2004	11.50%	5.09%	6.41%
12/22/2004	11.50%	5.09%	6.41%
12/28/2004	10.25%	5.09%	5.16%
2/18/2005	10.30%	4.95%	5.35%
3/29/2005	11.00%	4.86%	6.14%
4/13/2005	10.60%	4.83%	5.77%
4/28/2005	11.00%	4.80%	6.20%
5/17/2005	10.00%	4.76%	5.24%
6/8/2005	10.18%	4.71%	5.47%
6/10/2005	10.90%	4.71%	6.19%
7/6/2005	10.50%	4.65%	5.85%
7/19/2005	11.50%	4.63%	6.87%
8/11/2005	10.40%	4.60%	5.80%
9/19/2005	9.45%	4.53%	4.92%
9/30/2005	10.51%	4.52%	5.99%
10/4/2005	9.90%	4.52%	5.38%
10/4/2005	10.75%	4.52%	6.23%
10/14/2005	10.40%	4.51%	5.89%
10/31/2005	10.25%	4.53%	5.72%
11/2/2005	9.70%	4.53%	5.17%
11/30/2005	10.00%	4.53%	5.47%
12/9/2005	9.70%	4.53%	5.17%
12/12/2005	11.00%	4.53%	6.47%
12/20/2005	10.13%	4.52%	5.61%
12/21/2005	10.40%	4.52%	5.88%
12/21/2005	11.00%	4.52%	6.48%
12/22/2005	10.20%	4.52%	5.68%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/22/2005	11.00%	4.52%	6.48%
12/28/2005	10.00%	4.52%	5.48%
1/5/2006	11.00%	4.52%	6.48%
1/25/2006	11.20%	4.52%	6.68%
1/25/2006	11.20%	4.52%	6.68%
2/3/2006	10.50%	4.52%	5.98%
2/15/2006	9.50%	4.53%	4.97%
4/26/2006	10.60%	4.65%	5.95%
7/24/2006	9.60%	4.87%	4.73%
7/24/2006	10.00%	4.87%	5.13%
9/20/2006	11.00%	4.93%	6.07%
9/26/2006	10.75%	4.94%	5.81%
10/20/2006	9.80%	4.96%	4.84%
11/2/2006	9.71%	4.97%	4.74%
11/9/2006	10.00%	4.98%	5.02%
11/21/2006	11.00%	4.98%	6.02%
12/5/2006	10.20%	4.97%	5.23%
1/5/2007	10.40%	4.95%	5.45%
1/9/2007	11.00%	4.94%	6.06%
1/11/2007	10.90%	4.94%	5.96%
1/19/2007	10.80%	4.93%	5.87%
1/26/2007	10.00%	4.92%	5.08%
2/8/2007	10.40%	4.91%	5.49%
3/14/2007	10.10%	4.85%	5.25%
3/20/2007	10.25%	4.84%	5.41%
3/21/2007	11.35%	4.84%	6.51%
3/22/2007	10.50%	4.84%	5.66%
3/29/2007	10.00%	4.83%	5.17%
6/13/2007	10.75%	4.82%	5.93%
6/29/2007	9.53%	4.84%	4.69%
6/29/2007	10.10%	4.84%	5.26%
7/3/2007	10.25%	4.85%	5.40%
7/13/2007	9.50%	4.86%	4.64%
7/24/2007	10.40%	4.87%	5.53%
8/1/2007	10.15%	4.88%	5.27%
8/29/2007	10.50%	4.91%	5.59%
9/10/2007	9.71%	4.92%	4.79%
9/19/2007	10.00%	4.91%	5.09%
9/25/2007	9.70%	4.92%	4.78%
10/8/2007	10.48%	4.92%	5.56%
10/19/2007	10.50%	4.91%	5.59%
10/25/2007	9.65%	4.91%	4.74%
11/15/2007	10.00%	4.89%	5.11%
11/20/2007	9.90%	4.89%	5.01%
11/27/2007	10.00%	4.89%	5.11%
11/29/2007	10.90%	4.88%	6.02%
12/14/2007	10.80%	4.87%	5.93%
12/18/2007	10.40%	4.86%	5.54%
12/19/2007	9.80%	4.86%	4.94%
12/19/2007	9.80%	4.86%	4.94%
12/19/2007	10.20%	4.86%	5.34%
12/21/2007	9.10%	4.86%	4.24%
1/8/2008	10.75%	4.83%	5.92%
1/17/2008	10.75%	4.81%	5.94%
1/17/2008	10.75%	4.81%	5.94%
2/5/2008	9.99%	4.77%	5.22%
2/5/2008	10.19%	4.77%	5.42%
2/13/2008	10.20%	4.76%	5.44%
3/31/2008	10.00%	4.63%	5.37%
5/28/2008	10.50%	4.53%	5.97%
6/24/2008	10.00%	4.52%	5.48%
6/27/2008	10.00%	4.52%	5.48%
7/31/2008	10.70%	4.50%	6.20%
7/31/2008	10.82%	4.50%	6.32%
8/27/2008	10.25%	4.50%	5.75%
9/2/2008	10.25%	4.50%	5.75%
9/19/2008	10.70%	4.48%	6.22%
9/24/2008	10.68%	4.48%	6.20%
9/24/2008	10.68%	4.48%	6.20%
9/24/2008	10.68%	4.48%	6.20%
9/30/2008	10.20%	4.48%	5.72%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
10/3/2008	10.30%	4.48%	5.82%
10/8/2008	10.15%	4.47%	5.68%
10/20/2008	10.06%	4.47%	5.59%
10/24/2008	10.60%	4.46%	6.14%
10/24/2008	10.60%	4.46%	6.14%
11/21/2008	10.50%	4.42%	6.08%
11/21/2008	10.50%	4.42%	6.08%
11/21/2008	10.50%	4.42%	6.08%
11/24/2008	10.50%	4.41%	6.09%
12/3/2008	10.39%	4.38%	6.01%
12/24/2008	10.00%	4.26%	5.74%
12/26/2008	10.10%	4.24%	5.86%
12/29/2008	10.20%	4.23%	5.97%
1/13/2009	10.45%	4.14%	6.31%
2/2/2009	10.05%	4.03%	6.02%
3/9/2009	10.30%	3.89%	6.41%
3/25/2009	10.17%	3.83%	6.34%
4/2/2009	10.75%	3.80%	6.95%
5/5/2009	10.75%	3.71%	7.04%
5/15/2009	10.20%	3.70%	6.50%
5/29/2009	9.54%	3.70%	5.84%
6/3/2009	10.10%	3.70%	6.40%
6/22/2009	10.00%	3.73%	6.27%
6/29/2009	10.21%	3.73%	6.48%
6/30/2009	9.31%	3.74%	5.57%
7/17/2009	9.26%	3.75%	5.51%
7/17/2009	10.50%	3.75%	6.75%
10/16/2009	10.40%	4.09%	6.31%
10/26/2009	10.10%	4.11%	5.99%
10/28/2009	10.15%	4.12%	6.03%
10/28/2009	10.15%	4.12%	6.03%
10/30/2009	9.95%	4.13%	5.82%
11/20/2009	9.45%	4.19%	5.26%
12/14/2009	10.50%	4.25%	6.25%
12/16/2009	10.75%	4.26%	6.49%
12/17/2009	10.30%	4.26%	6.04%
12/18/2009	10.40%	4.27%	6.13%
12/18/2009	10.40%	4.27%	6.13%
12/18/2009	10.50%	4.27%	6.23%
12/22/2009	10.20%	4.28%	5.92%
12/22/2009	10.40%	4.28%	6.12%
12/28/2009	10.85%	4.30%	6.55%
12/29/2009	10.38%	4.30%	6.08%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/11/2010	10.24%	4.34%	5.90%
1/21/2010	10.23%	4.37%	5.86%
1/21/2010	10.33%	4.37%	5.96%
1/26/2010	10.40%	4.37%	6.03%
2/10/2010	10.00%	4.39%	5.61%
2/23/2010	10.50%	4.40%	6.10%
3/9/2010	9.60%	4.40%	5.20%
3/24/2010	10.13%	4.42%	5.71%
3/31/2010	10.70%	4.43%	6.27%
4/1/2010	9.50%	4.43%	5.07%
4/2/2010	10.10%	4.44%	5.66%
4/8/2010	10.35%	4.44%	5.91%
4/29/2010	9.19%	4.46%	4.73%
4/29/2010	9.40%	4.46%	4.94%
4/29/2010	9.40%	4.46%	4.94%
5/17/2010	10.55%	4.46%	6.09%
5/24/2010	10.05%	4.46%	5.59%
6/3/2010	11.00%	4.46%	6.54%
6/16/2010	10.00%	4.46%	5.54%
6/18/2010	10.30%	4.46%	5.84%
8/9/2010	12.55%	4.41%	8.14%
8/17/2010	10.10%	4.40%	5.70%
9/16/2010	9.60%	4.31%	5.29%
9/16/2010	10.00%	4.31%	5.69%
9/16/2010	10.00%	4.31%	5.69%
9/16/2010	10.30%	4.31%	5.99%
10/21/2010	10.40%	4.20%	6.20%
11/2/2010	9.75%	4.17%	5.58%
11/2/2010	9.75%	4.17%	5.58%
11/3/2010	10.75%	4.17%	6.58%
11/19/2010	10.20%	4.14%	6.06%
12/1/2010	10.00%	4.12%	5.88%
12/6/2010	9.56%	4.12%	5.44%
12/6/2010	10.09%	4.12%	5.97%
12/9/2010	10.25%	4.12%	6.13%
12/14/2010	10.33%	4.11%	6.22%
12/17/2010	10.10%	4.11%	5.99%
12/20/2010	10.10%	4.11%	5.99%
12/23/2010	9.92%	4.10%	5.82%
1/6/2011	10.35%	4.09%	6.26%
1/12/2011	10.30%	4.08%	6.22%
1/13/2011	10.30%	4.08%	6.22%
3/10/2011	10.10%	4.16%	5.94%
3/31/2011	9.45%	4.20%	5.25%
4/18/2011	10.05%	4.24%	5.81%
5/26/2011	10.50%	4.32%	6.18%
6/21/2011	10.00%	4.36%	5.64%
6/29/2011	8.83%	4.38%	4.45%
8/1/2011	9.20%	4.41%	4.79%
9/1/2011	10.10%	4.32%	5.78%
11/14/2011	9.60%	3.93%	5.67%
12/13/2011	9.50%	3.76%	5.74%
12/20/2011	10.00%	3.71%	6.29%
12/22/2011	10.40%	3.70%	6.70%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/10/2012	9.06%	3.59%	5.47%
1/10/2012	9.45%	3.59%	5.86%
1/10/2012	9.45%	3.59%	5.86%
1/23/2012	10.20%	3.52%	6.68%
1/31/2012	10.00%	3.48%	6.52%
4/24/2012	9.50%	3.15%	6.35%
4/24/2012	9.75%	3.15%	6.60%
5/7/2012	9.80%	3.13%	6.67%
5/22/2012	9.60%	3.10%	6.50%
5/24/2012	9.70%	3.09%	6.61%
6/7/2012	10.30%	3.06%	7.24%
6/15/2012	10.40%	3.05%	7.35%
6/18/2012	9.60%	3.05%	6.55%
7/2/2012	9.75%	3.04%	6.71%
10/24/2012	10.30%	2.92%	7.38%
10/26/2012	9.50%	2.92%	6.58%
10/31/2012	9.30%	2.91%	6.39%
10/31/2012	9.90%	2.91%	6.99%
10/31/2012	10.00%	2.91%	7.09%
11/1/2012	9.45%	2.91%	6.54%
11/8/2012	10.10%	2.91%	7.19%
11/9/2012	10.30%	2.90%	7.40%
11/26/2012	10.00%	2.88%	7.12%
11/28/2012	10.40%	2.88%	7.52%
11/28/2012	10.50%	2.88%	7.62%
12/4/2012	10.00%	2.87%	7.13%
12/4/2012	10.50%	2.87%	7.63%
12/20/2012	9.50%	2.84%	6.66%
12/20/2012	10.10%	2.84%	7.26%
12/20/2012	10.25%	2.84%	7.41%
12/20/2012	10.30%	2.84%	7.46%
12/20/2012	10.40%	2.84%	7.56%
12/20/2012	10.50%	2.84%	7.66%
12/26/2012	9.80%	2.83%	6.97%
2/22/2013	9.60%	2.86%	6.74%
3/14/2013	9.30%	2.89%	6.41%
3/27/2013	9.80%	2.92%	6.88%
4/23/2013	9.80%	2.96%	6.84%
5/10/2013	9.25%	2.96%	6.29%
6/13/2013	9.40%	3.02%	6.38%
6/18/2013	9.28%	3.02%	6.26%
6/18/2013	9.28%	3.02%	6.26%
6/25/2013	9.80%	3.04%	6.76%
9/23/2013	9.60%	3.33%	6.27%
11/6/2013	10.20%	3.42%	6.78%
11/13/2013	9.84%	3.44%	6.40%
11/14/2013	10.25%	3.45%	6.80%
11/22/2013	9.50%	3.47%	6.03%
12/5/2013	10.20%	3.50%	6.70%
12/13/2013	9.60%	3.52%	6.08%
12/16/2013	9.73%	3.53%	6.20%
12/17/2013	10.00%	3.53%	6.47%
12/18/2013	9.08%	3.54%	5.54%
12/23/2013	9.72%	3.55%	6.17%
12/30/2013	10.00%	3.58%	6.42%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/21/2014	9.65%	3.66%	5.99%
1/22/2014	9.18%	3.66%	5.52%
2/20/2014	9.30%	3.72%	5.58%
2/21/2014	9.85%	3.72%	6.13%
2/28/2014	9.55%	3.73%	5.82%
3/16/2014	9.72%	3.74%	5.98%
4/21/2014	9.50%	3.73%	5.77%
4/22/2014	9.80%	3.73%	6.07%
5/8/2014	9.10%	3.71%	5.39%
5/8/2014	9.59%	3.71%	5.88%
6/6/2014	10.40%	3.66%	6.74%
6/12/2014	10.10%	3.66%	6.44%
6/12/2014	10.10%	3.66%	6.44%
6/12/2014	10.10%	3.66%	6.44%
7/7/2014	9.30%	3.63%	5.67%
7/25/2014	9.30%	3.60%	5.70%
7/31/2014	9.90%	3.59%	6.31%
9/4/2014	9.10%	3.50%	5.60%
9/24/2014	9.35%	3.46%	5.89%
9/30/2014	9.75%	3.44%	6.31%
10/29/2014	10.80%	3.37%	7.43%
11/6/2014	10.20%	3.35%	6.85%
11/14/2014	10.20%	3.33%	6.87%
11/14/2014	10.30%	3.33%	6.97%
11/26/2014	10.20%	3.30%	6.90%
12/3/2014	10.00%	3.28%	6.72%
1/13/2015	10.30%	3.16%	7.14%
1/21/2015	9.05%	3.13%	5.92%
1/21/2015	9.05%	3.13%	5.92%
4/9/2015	9.50%	2.88%	6.62%
5/11/2015	9.80%	2.81%	6.99%
6/17/2015	9.00%	2.79%	6.21%
8/21/2015	9.75%	2.78%	6.97%
10/7/2015	9.55%	2.82%	6.73%
10/13/2015	9.75%	2.83%	6.92%
10/15/2015	9.00%	2.84%	6.16%
10/30/2015	9.80%	2.87%	6.93%
11/19/2015	10.00%	2.90%	7.10%
12/3/2015	10.00%	2.91%	7.09%
12/9/2015	9.60%	2.92%	6.68%
12/11/2015	9.90%	2.93%	6.97%
12/18/2015	9.50%	2.94%	6.56%
1/6/2016	9.50%	2.97%	6.53%
1/6/2016	9.50%	2.97%	6.53%
1/28/2016	9.40%	2.97%	6.43%
2/10/2016	9.60%	2.95%	6.65%
2/16/2016	9.50%	2.94%	6.56%
2/29/2016	9.40%	2.92%	6.48%
4/29/2016	9.80%	2.83%	6.97%
5/5/2016	9.49%	2.82%	6.67%
6/1/2016	9.55%	2.80%	6.75%
6/3/2016	9.65%	2.79%	6.86%
6/15/2016	9.00%	2.77%	6.23%
6/15/2016	9.00%	2.77%	6.23%
9/2/2016	9.50%	2.56%	6.94%
9/23/2016	9.75%	2.51%	7.24%
9/27/2016	9.50%	2.51%	6.99%
9/29/2016	9.11%	2.50%	6.61%
10/13/2016	10.20%	2.48%	7.72%
10/28/2016	9.70%	2.47%	7.23%
11/9/2016	9.80%	2.47%	7.33%
11/18/2016	10.00%	2.49%	7.51%
12/9/2016	10.10%	2.51%	7.59%
12/15/2016	9.00%	2.52%	6.48%
12/15/2016	9.00%	2.52%	6.48%
12/20/2016	9.75%	2.53%	7.22%
12/22/2016	9.50%	2.54%	6.96%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/24/2017	9.00%	2.59%	6.41%
2/21/2017	10.55%	2.63%	7.92%
3/1/2017	9.25%	2.65%	6.60%
4/11/2017	9.50%	2.77%	6.73%
4/20/2017	8.70%	2.79%	5.91%
4/28/2017	9.50%	2.82%	6.68%
5/23/2017	9.60%	2.88%	6.72%
6/6/2017	9.70%	2.91%	6.79%
6/22/2017	9.70%	2.94%	6.76%
6/30/2017	9.60%	2.95%	6.65%
7/20/2017	9.55%	2.97%	6.58%
7/31/2017	10.10%	2.98%	7.12%
9/13/2017	9.40%	2.93%	6.47%
9/19/2017	9.70%	2.92%	6.78%
9/22/2017	11.88%	2.92%	8.96%
9/27/2017	10.20%	2.92%	7.28%
10/20/2017	9.60%	2.90%	6.70%
10/26/2017	10.20%	2.90%	7.30%
10/30/2017	10.05%	2.90%	7.15%
12/5/2017	9.50%	2.86%	6.64%
12/7/2017	9.80%	2.85%	6.95%
12/13/2017	9.25%	2.85%	6.40%
12/28/2017	9.50%	2.84%	6.66%
1/31/2018	9.80%	2.83%	6.97%
2/21/2018	9.80%	2.84%	6.96%
2/21/2018	9.80%	2.84%	6.96%
2/28/2018	9.50%	2.85%	6.65%
3/15/2018	9.00%	2.87%	6.13%
3/26/2018	10.19%	2.88%	7.31%
4/26/2018	9.50%	2.91%	6.59%
4/27/2018	9.30%	2.91%	6.39%
5/2/2018	9.50%	2.91%	6.59%
5/3/2018	9.70%	2.91%	6.79%
5/29/2018	9.40%	2.95%	6.45%
6/6/2018	9.80%	2.96%	6.84%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
6/14/2018	8.80%	2.97%	5.83%
7/16/2018	9.60%	2.98%	6.62%
7/20/2018	9.40%	2.99%	6.41%
8/24/2018	9.28%	3.02%	6.26%
8/28/2018	10.00%	3.03%	6.97%
9/13/2018	10.00%	3.04%	6.96%
9/14/2018	10.00%	3.05%	6.95%
9/19/2018	9.85%	3.05%	6.80%
9/20/2018	9.80%	3.06%	6.74%
9/26/2018	9.40%	3.06%	6.34%
9/26/2018	10.20%	3.06%	7.14%
9/28/2018	9.50%	3.07%	6.43%
9/28/2018	9.50%	3.07%	6.43%
10/5/2018	9.61%	3.08%	6.53%
10/15/2018	9.80%	3.09%	6.71%
10/26/2018	9.40%	3.11%	6.29%
10/29/2018	9.60%	3.11%	6.49%
11/1/2018	9.87%	3.11%	6.76%
11/8/2018	9.70%	3.12%	6.58%
11/8/2018	9.70%	3.12%	6.58%
12/11/2018	9.70%	3.14%	6.56%
12/12/2018	9.30%	3.14%	6.16%
12/13/2018	9.60%	3.14%	6.46%
12/19/2018	9.30%	3.15%	6.15%
12/21/2018	9.35%	3.15%	6.20%
12/24/2018	9.25%	3.15%	6.10%
12/24/2018	9.25%	3.15%	6.10%
1/4/2019	9.80%	3.14%	6.66%
1/18/2019	9.70%	3.14%	6.56%
3/14/2019	9.00%	3.12%	5.88%
3/27/2019	9.70%	3.12%	6.58%
4/30/2019	9.73%	3.11%	6.62%
5/7/2019	9.65%	3.10%	6.55%
5/21/2019	9.80%	3.10%	6.70%
9/4/2019	10.00%	2.75%	7.25%
9/26/2019	9.90%	2.68%	7.22%
10/2/2019	9.73%	2.66%	7.07%
10/2/2019	9.90%	2.66%	7.24%
10/8/2019	9.40%	2.64%	6.76%
10/15/2019	9.70%	2.62%	7.08%
10/21/2019	9.40%	2.60%	6.80%
10/31/2019	9.70%	2.57%	7.13%
10/31/2019	10.00%	2.57%	7.43%
10/31/2019	10.00%	2.57%	7.43%
10/31/2019	10.20%	2.57%	7.63%
11/7/2019	9.35%	2.55%	6.80%
11/13/2019	9.60%	2.54%	7.06%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
11/13/2019	9.60%	2.54%	7.06%
12/6/2019	9.87%	2.46%	7.41%
12/11/2019	9.40%	2.45%	6.95%
12/17/2019	9.75%	2.44%	7.31%
12/18/2019	9.60%	2.44%	7.16%
12/18/2019	9.60%	2.44%	7.16%
12/19/2019	10.05%	2.44%	7.61%
12/19/2019	10.20%	2.44%	7.76%
12/19/2019	10.25%	2.44%	7.81%
12/20/2019	9.20%	2.43%	6.77%
12/26/2019	9.75%	2.42%	7.33%
1/15/2020	9.35%	2.37%	6.98%
1/16/2020	8.80%	2.37%	6.43%
1/24/2020	9.44%	2.35%	7.09%
2/3/2020	9.40%	2.32%	7.08%
2/24/2020	9.10%	2.27%	6.83%
2/25/2020	9.50%	2.26%	7.24%
2/28/2020	9.70%	2.25%	7.45%
3/25/2020	9.40%	2.15%	7.25%
3/26/2020	9.48%	2.14%	7.34%
4/21/2020	9.80%	2.02%	7.78%
5/19/2020	9.20%	1.94%	7.26%
6/16/2020	9.65%	1.86%	7.79%
7/8/2020	9.40%	1.80%	7.60%
8/4/2020	9.50%	1.69%	7.81%
8/20/2020	9.90%	1.64%	8.26%
8/21/2020	9.35%	1.63%	7.72%
9/10/2020	9.90%	1.57%	8.33%
9/23/2020	9.60%	1.52%	8.08%
9/25/2020	9.25%	1.51%	7.74%
9/25/2020	9.25%	1.51%	7.74%
10/4/2020	9.80%	1.49%	8.31%
10/7/2020	9.70%	1.48%	8.22%
10/12/2020	9.20%	1.47%	7.73%
10/16/2020	9.40%	1.46%	7.94%
10/30/2020	9.90%	1.44%	8.46%
11/7/2020	9.60%	1.42%	8.18%
11/19/2020	8.80%	1.42%	7.38%
11/19/2020	8.80%	1.42%	7.38%
11/19/2020	9.90%	1.42%	8.48%
11/24/2020	9.80%	1.42%	8.38%
12/9/2020	9.10%	1.43%	7.67%
12/10/2020	9.40%	1.43%	7.97%
12/16/2020	9.38%	1.44%	7.94%

[6]	[7]	[8]	[9]
Date of Gas Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/16/2020	9.65%	1.44%	8.21%
12/23/2020	10.00%	1.45%	8.55%
1/6/2021	9.40%	1.47%	7.93%
1/6/2021	9.60%	1.47%	8.13%
1/13/2021	9.67%	1.49%	8.18%
1/26/2021	9.50%	1.51%	7.99%
2/16/2021	9.80%	1.56%	8.24%
2/19/2021	9.86%	1.57%	8.29%
2/24/2021	9.25%	1.57%	7.68%
3/25/2021	10.00%	1.67%	8.33%
3/25/2021	10.00%	1.67%	8.33%
3/25/2021	10.00%	1.67%	8.33%
4/9/2021	9.70%	1.74%	7.96%
5/5/2021	9.30%	1.83%	7.47%
5/18/2021	9.40%	1.88%	7.52%
5/19/2021	8.80%	1.88%	6.92%
6/17/2021	10.24%	1.97%	8.27%
6/30/2021	9.43%	2.00%	7.43%
7/27/2021	9.54%	2.04%	7.50%
7/30/2021	9.30%	2.04%	7.26%
8/12/2021	8.80%	2.05%	6.75%
8/12/2021	8.80%	2.05%	6.75%
9/1/2021	9.40%	2.07%	7.33%
9/8/2021	9.67%	2.08%	7.59%
9/9/2021	9.85%	2.08%	7.77%
9/14/2021	9.50%	2.09%	7.41%
9/27/2021	9.40%	2.09%	7.31%
9/29/2021	9.80%	2.10%	7.70%
9/30/2021	9.70%	2.10%	7.60%
10/6/2021	9.70%	2.10%	7.60%
10/27/2021	9.37%	2.12%	7.25%
11/17/2021	9.60%	2.11%	7.49%
11/17/2021	9.80%	2.11%	7.69%
11/18/2021	9.00%	2.10%	6.90%
11/18/2021	9.75%	2.10%	7.65%
11/18/2021	10.00%	2.10%	7.90%
11/18/2021	10.00%	2.10%	7.90%
11/23/2021	9.80%	2.10%	7.70%
11/30/2021	9.40%	2.09%	7.31%
12/3/2021	9.65%	2.08%	7.57%
12/9/2021	9.90%	2.07%	7.83%
12/13/2021	9.20%	2.06%	7.14%
12/28/2021	9.35%	2.03%	7.32%
12/28/2021	9.38%	2.03%	7.35%
12/28/2021	9.60%	2.03%	7.57%
1/3/2022	9.25%	2.02%	7.23%
1/6/2022	9.60%	2.02%	7.58%
1/20/2022	9.00%	2.01%	6.99%
1/21/2022	9.60%	2.01%	7.59%
3/22/2022	9.40%	2.02%	7.38%
3/22/2022	9.40%	2.02%	7.38%
		# of Cases:	1,229

Small Size Premium

	[1] Customers (Mil)	[2] ($Mil)
Florida City Gas Equity	0.116	$291.44
Median Market to Book for Proxy Group		1.88
FCG's Implied Market Capitalization		$548.53

Company Name	Ticker	[3] Customers (Mil)	[4] Market Cap ($Mil)	[5] Market to Book Ratio
Atmos Energy Corporation	ATO	3.23	$15,307.59	1.85
New Jersey Resources Corporation	NJR	0.56	$4,205.63	2.45
NiSource, Inc.	NI	3.20	$12,095.07	2.26
Northwest Natural Holding Company	NWN	0.77	$1,651.77	1.76
ONE Gas, Inc.	OGS	2.22	$4,505.30	1.92
Spire Inc.	SR	1.72	$3,501.80	1.44
MEDIAN		1.97	$4,355.47	1.88
MEAN		1.95	$6,877.86	1.95

Market Capitalization ($Mil) [6]			
Decile	Low	High	Size Premium
2	$ 16,759.390	$ 36,099.221	0.43%
3	$ 8,216.356	$ 16,738.364	0.55%
4	$ 5,019.883	$ 8,212.638	0.54%
5	$ 3,281.009	$ 5,003.747	0.89%
6	$ 2,170.315	$ 3,276.553	1.18%
7	$ 1,306.402	$ 2,164.524	1.34%
8	$ 629.118	$ 1,306.038	1.21%
9	$ 290.002	$ 627.803	2.10%
10	$ 10.588	$ 289.007	4.80%
Proxy Group Median		$ 4,355.467	0.89%
9th Decile Size Premium		$ 548.529	2.10%
Difference from Proxy Group Median			1.21%

Notes:
[1] Source: FCG Test Year Letter
[2] FCG proposed test year rate base in MFR G1-1 (RSAM) mutiplied by the proposed common equity ratio of 59.60%
[3] Source: American Gas Association, 2020 Annual Report of Volumes, Revenues, and Customers by Company
[4] Source: S&P Capital IQ, 30-day average
[5] Source: S&P Capital IQ, 30-day average
[6] Source: Duff & Phelps Cost of Capital Navigator as of December 31, 2021

Proxy Group Regulatory Risk Comparative Assessment

Company	Parent	State	Fuel/ Purchased Power	Decoupling (F/P) [1]	New Capital Investment [2]	Energy Efficiency [3]	Other [4]	Test Year	Rate Base Methodology	Formula-Based Rates / Annual Rate Review Mechanism	Multi-Year Rate Plan	Cost Savings / Earnings Incentives [5]
Atmos Energy	ATO	Colorado	✓		✓	✓		Historical	Average			
Atmos Energy	ATO	Kansas	✓	P	✓		✓	Historical	Year End			✓
Atmos Energy	ATO	Kentucky	✓	P	✓	✓	✓	Fully Forecast	Average			✓
Atmos Energy	ATO	Louisiana	✓	P	✓			Historical	Year End	✓		
Atmos Energy	ATO	Mississippi	✓	P	✓	✓		Partially Forecast	Average	✓		✓
Atmos Energy	ATO	Tennessee	✓	P	✓		✓	Fully Forecast	Average	✓		✓
Atmos Energy	ATO	Texas	✓	P	✓	✓	✓	Historical	Year End	✓		✓
Atmos Energy	ATO	Virginia	✓	P	✓			Partially Forecast	Year End			
New Jersey Natural Gas	NJR	New Jersey	✓	F	✓	✓	✓	Partially Forecast	Year End			✓
Northern Indiana Public Service Co.	NI	Indiana	✓		✓	✓	✓	Fully Forecast	Year End			✓
Columbia Gas of Kentucky Inc	NI	Kentucky	✓	P	✓	✓	✓	Fully Forecast	Average			✓
Columbia Gas of Maryland Inc.	NI	Maryland	✓	P	✓	✓	✓	Partially Forecast	Average			
Columbia Gas of Ohio Inc.	NI	Ohio	NA	F	✓	✓	✓	Partially Forecast	Year End			
Columbia Gas of Pennsylvania Inc.	NI	Pennsylvania	✓	P	✓	✓	✓	Fully Forecast	Year End			✓
Columbia Gas of Virginia Inc.	NI	Virginia	✓	F	✓	✓	✓	Historical	Average			✓
Northwest Natural Gas	NWN	Oregon	✓	P	✓	✓	✓	Fully Forecast	Average			✓
Northwest Natural Gas	NWN	Washington	✓			✓		Historical	Average		✓	
Kansas Gas Service	OGS	Kansas	✓	P	✓		✓	Historical	Year End			✓
Oklahoma Natural Gas	OGS	Oklahoma	✓	P	✓	✓	✓	Historical	Year End	✓		✓
Texas Gas Service	OGS	Texas	✓	P	✓	✓	✓	Historical	Year End	✓		✓
Spire Alabama	SR	Alabama	✓	P	✓		✓	Fully Forecast	Average	✓		✓
Spire Gulf, Inc.	SR	Alabama	✓	P	✓		✓	Fully Forecast	Average	✓		✓
Spire Missouri - East	SR	Missouri	✓	P	✓		✓	Historical	Year End			✓
Spire Missouri - West	SR	Missouri	✓	P	✓		✓	Historical	Year End			✓
		% of Proxy Group	100%	87.50%	95.83%	62.50%	79.17%	54.17%	45.83%	33.33%	4.17%	75.00%
Florida City Gas	NEE	Florida	✓		✓	✓	✓	Fully Forecast	Average		✓	✓

Notes:

A mechanism may cover one or more cost categories; therefore, designations may not indicate separate mechanisms for each category. Ohio LDCs do not have supply obligation for retail customers.

[1] Full or partial decoupling (such as Straight-Fixed Variable rate design, weather normalization clauses, and recovery of lost revenues as a result of Energy Efficiency programs).

[2] Includes recovery of costs related to infrastructure replacement, system integrity/hardening, and other capital expenditures.

[3] Utility-sponsored conservation, energy efficiency, or other demand side management programs.

[4] Pension expenses, bad debt costs, storm costs, transmission/transportation costs, environmental, regulatory fee, government & franchise fees and taxes, economic development, and low income programs.

[5] Includes earnings incentives or sharing mechanisms such as off-system sales/capacity release, gas hedging/sales incentives; energy efficiency program incentives, and other performance incentives

Sources: Company SEC Form 10-Ks; Operating company tariffs; Regulatory Research Associates, *Alternative Ratemaking Frameworks* , May 2020; Regulatory Research Associates, *Adjustment Clauses: A State-by-State Overview, November 2019* .

FLOTATION COST ADJUSTMENT

Company	Date [i]	[1] Shares Issued (000)	[2] Offering Price	[3] Under-writing Discount [ii]	[4] Offering Expense ($000)	[5] Net Proceeds Per Share	[6] Total Flotation Costs ($000)	[7] Gross Equity Issue Before Costs ($000)	[8] Net Proceeds ($000)	[9] Flotation Cost Percentage
Atmos Energy Corporation	11/28/2018	8,059	$ 92.75	$ 0.98	1000	$ 91.65	$ 8,873	$ 747,500	$ 738,627	1.187%
Atmos Energy Corporation	11/28/2017	4,558	$ 88.56	$ 1.77	NA	$ 86.79	$ 8,068	$ 403,692	$ 395,624	1.999%
New Jersey Resources Corporation	12/4/2019	6,545	$ 41.25	$ 1.24	500	$ 39.94	$ 8,600	$ 270,000	$ 261,400	3.185%
NiSource Inc.	9/8/2010	24,265	$ 16.50	$ 0.54	400	$ 15.95	$ 13,411	$ 400,373	$ 386,962	3.350%
NiSource Inc.	11/6/2002	41,400	$ 18.30	$ 0.55	300	$ 17.74	$ 23,029	$ 757,620	$ 734,591	3.040%
Northwest Natural Holding Company	6/4/2019	1,438	$ 67.00	$ 2.18	400	$ 64.54	$ 3,530	$ 96,313	$ 92,782	3.665%
Northwest Natural Holding Company	11/10/2016	1,012	$ 54.63	$ 2.05	250	$ 52.33	$ 2,325	$ 55,286	$ 52,961	4.205%
Spire Inc.	5/7/2018	2,300	$ 68.75	$ 2.11	325	$ 66.50	$ 5,177	$ 158,125	$ 152,948	3.274%
Spire Inc.	5/12/2016	2,185	$ 63.05	$ 2.05	300	$ 60.86	$ 4,777	$ 137,764	$ 132,987	3.468%
Total							$ 77,789.61	$ 3,026,672.12	$ 2,948,882.51	
							WEIGHTED AVERAGE FLOTATION COSTS			2.570% [10]

Notes:
[i] Offering Completion Date
[ii] Underwriting discount was calculated as the market price minus the offering price when not explicitly given in the prospectus.

The flotation cost adjustment is derived by dividing the dividend yield by 1 − F (where F = flotation costs expressed in percentage terms), or by 0.9743, 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:

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

Company	Ticker	[11] Annualized Dividend	[12] Stock Price	[13] Dividend Yield	[14] Expected Dividend Yield	[15] Expected Dividend Yield Adjusted for Flotation Costs	[16] Zacks Earnings Growth	[17] First Call Earnings Growth	[18] Value Line Earnings Growth	[19] Average Earnings Growth	[20] ROE	[21] ROE Adjusted for Flotation Costs
Atmos Energy Corporation	ATO	$2.72	$113.03	2.41%	2.50%	2.56%	7.30%	7.30%	7.50%	7.37%	9.86%	9.93%
New Jersey Resources Corporation	NJR	$1.45	$43.78	3.31%	3.40%	3.49%	6.00%	6.00%	4.50%	5.50%	8.90%	8.99%
NiSource Inc.	NI	$0.94	$29.84	3.15%	3.26%	3.35%	7.20%	3.52%	10.50%	7.07%	10.34%	10.42%
Northwest Natural Holding Company	NWN	$1.93	$52.60	3.67%	3.77%	3.87%	5.10%	5.90%	6.00%	5.67%	9.44%	9.54%
ONE Gas, Inc.	OGS	$2.48	$83.90	2.96%	3.02%	3.10%	5.00%	2.90%	6.00%	4.63%	7.66%	7.74%
Spire Inc.	SR	$2.74	$67.67	4.05%	4.17%	4.28%	5.30%	4.30%	9.00%	6.20%	10.37%	10.48%
Mean											9.43%	9.52%
Flotation Cost Adjustment											[22]	0.09%

Notes:
[1] - [4] Source: SEC Form 424B2 (Prospectus)
[5] Equals [8]/[1]
[6] Equals [4] + ([1] x [3])
[7] Equals [1] x [2]
[8] Equals [7] - [6]
[9] Equals [6] / [7]
[10] Equals average [6] / average [7]
[11] Source: Bloomberg Professional
[12] Source: Bloomberg Professional, equals 30-day average as of 03/31/2022
[13] Equals [11] / [12]
[14] Equals [13] x (1 + 0.5 x [19])
[15] Equals [14] / (1 − Flotation Cost)
[16] Source: Zacks
[17] Source: Yahoo! Finance
[18] Source: Value Line
[19] Equals Average ([16], [17], [18])
[20] Equals [14] + [19]
[21] Equals [15] + [19]
[22] Equals Average ([21]) − Average ([20])

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Flotation Costs
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CAPITAL STRUCTURE ANALYSIS

COMMON EQUITY RATIO [1]

Proxy Group Company	Ticker	2020	2019	2018	Average
Atmos Energy Corporation	ATO	58.31%	57.85%	58.35%	58.17%
New Jersey Resources Corporation	NJR	55.13%	57.55%	58.86%	57.18%
NiSource Inc.	NI	54.43%	54.33%	54.83%	54.53%
Northwest Natural Gas Company	NWN	41.92%	45.77%	42.93%	43.54%
One Gas Inc.	OGS	60.04%	63.28%	62.03%	61.78%
Spire Inc.	SR	52.78%	53.20%	54.53%	53.50%
Proxy Group					
MEAN		53.77%	55.33%	55.25%	54.78%
MEDIAN		54.78%	55.94%	56.59%	55.85%
LOW		41.92%	45.77%	42.93%	43.54%
HIGH		60.04%	63.28%	62.03%	61.78%

COMMON EQUITY RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2020	2019	2018	Average
Atmos Energy Corporation	ATO	58.31%	57.85%	58.35%	58.17%
New Jersey Natural Gas Company	NJR	55.13%	57.55%	58.86%	57.18%
Columbia Gas of Maryland Inc.	NI	54.95%	52.38%	56.70%	54.68%
Columbia Gas of Pennsylvania, Inc.	NI	55.68%	55.59%	55.68%	55.65%
Columbia Gas of Kentucky, Inc.	NI	54.68%	54.23%	54.62%	54.51%
Columbia Gas of Virginia, Inc.	NI	43.69%	42.53%	42.71%	42.98%
Columbia Gas of Ohio, Inc.	NI	50.45%	53.00%	54.40%	52.62%
Northern Indiana Public Service Company	NI	58.01%	56.43%	56.37%	56.94%
Northwest Natural Gas Company	NWN	41.92%	45.77%	42.93%	43.54%
Kansas Gas Service Company, Inc.	OGS	60.33%	63.55%	62.20%	62.03%
Oklahoma Natural Gas Company	OGS	59.85%	63.10%	61.94%	61.63%
Texas Gas Service Company, Inc.	OGS	59.99%	63.23%	61.95%	61.72%
Spire Alabama Inc.	SR	58.95%	60.54%	63.49%	60.99%
Spire Gulf Inc.	SR	39.49%	37.18%	40.08%	38.92%
Spire Mississippi Inc.	SR	38.44%	45.64%	48.88%	44.32%
Spire Missouri Inc.	SR	50.65%	50.45%	50.72%	50.61%
Operating Company					
MEAN		52.53%	53.69%	54.37%	53.53%
MEDIAN		55.04%	54.91%	56.03%	55.16%
LOW		38.44%	37.18%	40.08%	38.92%
HIGH		60.33%	63.55%	63.49%	62.03%

Notes:
Sources: Operating Company FERC Form 2; Annual LDC Reports; S&P Capital IQ

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

CAPITAL STRUCTURE ANALYSIS

LONG-TERM DEBT RATIO [1]

Proxy Group Company	Ticker	2020	2019	2018	Average
Atmos Energy Corporation	ATO	41.69%	41.16%	33.95%	38.93%
New Jersey Resources Corporation	NJR	44.29%	40.21%	36.20%	40.23%
NiSource Inc.	NI	45.57%	45.67%	45.17%	45.47%
Northwest Natural Gas Company	NWN	46.45%	47.27%	44.10%	45.94%
One Gas Inc.	OGS	39.96%	36.72%	37.97%	38.22%
Spire Inc.	SR	37.20%	34.23%	31.04%	34.15%
Proxy Group					
MEAN		42.53%	40.88%	38.07%	40.49%
MEDIAN		42.99%	40.69%	37.09%	39.58%
LOW		37.20%	34.23%	31.04%	34.15%
HIGH		46.45%	47.27%	45.17%	45.94%

LONG-TERM DEBT RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2020	2019	2018	Average
Atmos Energy Corporation	ATO	41.69%	41.16%	33.95%	38.93%
New Jersey Natural Gas Company	NJR	44.29%	40.21%	36.20%	40.23%
Columbia Gas of Maryland Inc.	NI	45.05%	47.62%	43.30%	45.32%
Columbia Gas of Pennsylvania, Inc.	NI	44.32%	44.41%	44.32%	44.35%
Columbia Gas of Kentucky, Inc.	NI	45.32%	45.77%	45.38%	45.49%
Columbia Gas of Virginia, Inc.	NI	56.31%	57.47%	57.29%	57.02%
Columbia Gas of Ohio, Inc.	NI	49.55%	47.00%	45.60%	47.38%
Northern Indiana Public Service Company	NI	41.99%	43.57%	43.63%	43.06%
Northwest Natural Gas Company	NWN	46.45%	47.27%	44.10%	45.94%
Kansas Gas Service Company, Inc.	OGS	39.67%	36.45%	37.80%	37.97%
Oklahoma Natural Gas Company	OGS	40.15%	36.90%	38.06%	38.37%
Texas Gas Service Company, Inc.	OGS	40.01%	36.77%	38.05%	38.28%
Spire Alabama Inc.	SR	32.66%	30.07%	25.33%	29.35%
Spire Gulf Inc.	SR	57.90%	62.82%	48.38%	56.37%
Spire Mississippi Inc.	SR	0.00%	0.00%	0.00%	0.00%
Spire Missouri Inc.	SR	38.72%	34.99%	33.37%	35.69%
Operating Company					
MEAN		41.50%	40.78%	38.42%	40.24%
MEDIAN		43.14%	42.36%	40.68%	41.65%
LOW		0.00%	0.00%	0.00%	0.00%
HIGH		57.90%	62.82%	57.29%	57.02%

Notes:

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

CAPITAL STRUCTURE ANALYSIS

SHORT-TERM DEBT RATIO [1]

Proxy Group Company	Ticker	2020	2019	2018	Average
Atmos Energy Corporation	ATO	0.00%	0.99%	7.70%	2.90%
New Jersey Resources Corporation	NJR	0.58%	2.23%	4.94%	2.59%
NiSource Inc.	NI	0.00%	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	11.63%	6.96%	12.97%	10.52%
One Gas Inc.	OGS	0.00%	0.00%	0.00%	0.00%
Spire Inc.	SR	10.02%	12.58%	14.44%	12.34%
Proxy Group					
MEAN		3.71%	3.79%	6.67%	4.72%
MEDIAN		0.29%	1.61%	6.32%	2.74%
LOW		0.00%	0.00%	0.00%	0.00%
HIGH		11.63%	12.58%	14.44%	12.34%

SHORT-TERM DEBT RATIO - UTILITY OPERATING COMPANIES

Company Name	Ticker	2020	2019	2018	Average
Atmos Energy Corporation	ATO	0.00%	0.99%	7.70%	2.90%
New Jersey Natural Gas Company	NJR	0.58%	2.23%	4.94%	2.59%
Columbia Gas of Maryland 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 Kentucky, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Virginia, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Columbia Gas of Ohio, Inc.	NI	0.00%	0.00%	0.00%	0.00%
Northern Indiana Public Service Company	NI	0.00%	0.00%	0.00%	0.00%
Northwest Natural Gas Company	NWN	11.63%	6.96%	12.97%	10.52%
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	8.40%	9.39%	11.19%	9.66%
Spire Gulf Inc.	SR	2.61%	0.00%	11.53%	4.71%
Spire Mississippi Inc.	SR	61.56%	54.36%	51.12%	55.68%
Spire Missouri Inc.	SR	10.63%	14.56%	15.91%	13.70%
Operating Company					
MEAN		5.96%	5.53%	7.21%	6.23%
MEDIAN		0.00%	0.00%	0.00%	0.00%
LOW		0.00%	0.00%	0.00%	0.00%
HIGH		61.56%	54.36%	51.12%	55.68%

Notes:

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