Exhibit No.
Issue: ROE, Capital Structure, Cost of Debt
Witness: Keith Magee
Type of Exhibit: Direct Testimony
Sponsoring Party: The Empire District Electric Company
Docket No.19-EPDE-223-RTS
Date Testimony Prepared: December 2018

Before the Kansas Corporation Commission

Direct Testimony

Of

Keith Magee

December 2018

DIRECT TESTIMONY
OF
KEITH MAGEE
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
KANSAS CORPORATION COMMISSION
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I. INTRODUCTION

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

A. My name is Keith Magee. I am a Director at ScottMadden, Inc. ("ScottMadden"). My business address is 1900 West Park Drive, Suite 250, Westborough, MA 01581.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?

A. I am submitting this direct testimony ("Direct Testimony") before the Kansas Corporation Commission ("Commission") on behalf of The Empire District Electric Company ("Empire" or the "Company"), an indirect wholly owned subsidiary of Algonquin Power & Utilities Corp. ("APUC").

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL EXPERIENCE.

A. I hold a Bachelor's degree in Economics from Whitman College, and an MBA with a concentration in Finance from the F.W. Olin Graduate School of Business at Babson College. I also hold the professional designation of Chartered Financial Analyst ("CFA") awarded by the CFA Institute, and the professional designation of Certified Rate of Return Analyst ("CRRA") awarded by the Society of Utility and Regulatory Financial Analysts.

As a consultant in the utility and energy industry, I have provided consulting

services on a range of financial and economic issues including areas such as rate case activities (*e.g.*, cost of capital, cost of service, revenue requirement and rate design) and policy and strategy issues (*e.g.*, capital investment related activities). Many of my engagements have included developing cost of capital analyses and testimony. A summary of my professional and educational background is included in Attachment A to my Direct Testimony.

II. PURPOSE AND OVERVIEW OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my Direct Testimony is to present evidence and provide a recommendation regarding the Company's return on equity ("ROE" or "cost of equity") and to assess the reasonableness of the Company's proposed capital structure and cost of debt. My analyses and conclusions are supported by the data presented in Schedules KM-1 through KM-11, which have been prepared by me or under my direction. In addition, I sponsor Section 7, Schedule A, setting forth the capital structure and cost of capital, as noted by Company witness North.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE APPROPRIATE COST OF EQUITY, CAPITAL STRUCTURE AND COST OF DEBT FOR THE COMPANY?

A. My analyses indicate that the Company's cost of equity currently is in the range of 9.90 percent to 10.50 percent. Based on the quantitative and qualitative analyses discussed throughout my Direct Testimony, I recommend that the Commission authorize the Company the opportunity to earn an ROE of 10.20 percent.

With respect to the Company's capital structure, I find Empire's current 51.65

percent common equity and 48.35 percent long-term debt as of June 30, 2018 to be consistent with the capital structures that have been in place over several fiscal years at comparable operating utility companies. In light of the importance of maintaining access to capital, and seeing that it is consistent with similarly situated utility companies, I conclude that a 51.65 percent equity ratio is reasonable and appropriate.

Lastly, I note that the Company's 4.70 percent cost of debt is consistent with the debt cost rates authorized for electric utilities since January 1, 2017. As such, I conclude that the Company's cost of debt is reasonable and appropriate.

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE ANALYSES THAT LED TO YOUR ROE RECOMMENDATION.

A. Because all models are subject to various assumptions and constraints, equity analysts and investors tend use multiple methods to develop their return requirements.[1] My ROE recommendation in this proceeding relies on the results of the constant growth and quarterly growth forms of the discounted cash flow ("DCF") model, the capital asset pricing model ("CAPM"), the bond yield plus risk premium ("Risk Premium") model, and the expected earnings ("Expected Earnings") approach.

My recommendation also takes into consideration the Company's risk and cost profile, in particular: (1) its relatively small size; (2) the regulatory environment in which the Company operates; and (3) direct costs associated with equity issuances. Although I did not make explicit adjustments to my ROE estimates for those factors, I did take them into consideration in determining the range in which the Company's cost of equity likely

[1] *See, e.g.*, 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.

falls. Lastly, I also consider the current capital market environment and the effect of the Tax Cuts and Jobs Act ("TCJA").

Q. WHAT ARE THE KEY FACTORS CONSIDERED IN YOUR ANALYSES AND UPON WHICH YOU BASE YOUR RECOMMENDED ROE?

A. My analyses and recommendations considered the following:

- The United States Supreme Court's *Hope* and *Bluefield* decisions[2] that established the following standards for determining a fair and reasonable allowed ROE: (1) consistency of the allowed return with other businesses having similar risk; (2) adequacy of the return to provide access to capital and support credit quality; (3) an end result of just and reasonable rates;
- The Company's business risks relative to the proxy group of comparable companies, and the implications of those risks in arriving at the appropriate ROE from within the range of results established by the DCF, CAPM, Risk Premium, and Expected Earnings methods (set forth in Table KM-1 below);
- The capital-intensive nature of utility operations, indicating the need to finance large, long-lived investments with internally generated and externally acquired funds, even during periods of capital market distress, both of which depend on the Company's ability to earn a reasonable return on its rate base;
- The effect of current capital market conditions on investors' return requirements; and
- The effect of the TCJA enacted on December 22, 2017.

[2] *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) ("Hope"); *Bluefield Waterworks & Improvement Co., v. Public Service Comm'n of West Virginia*, 262 U.S. 679 (1923) ("Bluefield").

Q. WHAT ARE THE RESULTS OF YOUR ROE ANALYSES?

A. The results of my analyses are summarized in Table KM-1, below.

Table KM-1: Summary of Analytical Results

DCF Analyses	*Proxy Group*		
	Low	*Mean*	*High*
Constant Growth, 30-day Stock Prices	8.20%	9.25%	10.33%
Constant Growth, 90-day Stock Prices	8.19%	9.25%	10.33%
Constant Growth, 180-day Stock Prices	8.31%	9.36%	10.44%
Quarterly Growth, 30-day Stock Prices	8.31%	9.39%	10.51%
Quarterly Growth, 90-day Stock Prices	8.30%	9.38%	10.50%
Quarterly Growth, 180-day Stock Prices	8.42%	9.51%	10.62%
CAPM	*Bloomberg MRP*	*Value Line* MRP	*S&P500 ROCE MRP*
Value Line Beta, Current Risk-Free Rate (3.30%)	10.64%	11.45%	9.52%
Value Line Beta, Projected Risk-Free Rate (3.57%)	10.74%	11.55%	9.62%
Bloomberg Beta, Current Risk-Free Rate (3.30%)	10.71%	11.53%	9.58%
Bloomberg Beta, Projected Risk-Free Rate (3.57%)	10.81%	11.63%	9.68%
Bond Yield Plus Risk Premium	*Low*	*Mid*	*High*
Current and Projected Baa Utility Bond Yields	9.84%	10.12%	10.53%
Expected Earnings Analysis		*Mean*	*Median*
Value Line Projected Return on Book Equity – Proxy Group		10.53%	10.49%
Value Line Projected Return on Book Equity – Electric Universe		10.88%	10.76%

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

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

Section III – Discusses the regulatory guidelines and financial considerations pertinent to the development of the cost of capital;

Section IV – Explains my selection of the proxy group of electric utilities used to develop my analytical results;

Section V – Explains my analyses and the analytical bases for my ROE recommendation;

Section VI – Provides a discussion of specific business risks and other considerations that have a direct bearing on the Company's cost of equity;

Section VII – Highlights the current capital market conditions and their effect on the Company's cost of equity;

Section VIII – Addresses the reasonableness of the Company's capital structure;

Section IX – Briefly discusses the Company's cost of debt; and

Section X – Summarizes my conclusions and recommendations.

III. REGULATORY GUIDELINES AND FINANCIAL CONSIDERATIONS

Q. PLEASE PROVIDE A BRIEF SUMMARY OF THE GUIDELINES ESTABLISHED BY THE UNITED STATES SUPREME COURT (THE "COURT") FOR THE PURPOSE OF DETERMINING THE ROE.

A. The Court established the guiding principles for establishing a fair return for capital in two cases: (1) *Bluefield Water Works and Improvement Co. v. Public Service Comm'n of West Virginia (Bluefield)*; and (2) *Federal Power Comm'n v. Hope Natural Gas Co. (Hope).* In *Bluefield*, the Court stated:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding, risks and uncertainties; 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.[3]

In *Hope*, the Court restated 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.[4]

In summary, the Court found the fair rate of return on equity should be: (1) comparable to returns investors expect to earn on other investments of similar risk; (2) sufficient to assure confidence in the company's financial integrity; and (3) adequate to maintain and support the company's credit and to attract capital. Based on those standards, the authorized ROE should provide the Company with the opportunity to earn a fair and reasonable return on its regulated utility operations and should enable efficient access to external capital under a variety of market conditions.

Q. HAS THE COMMISSION PROVIDED SIMILAR GUIDANCE?

A. Yes. For example, in Docket No. 15-WSEE-115-RTS the Commission noted that:

> In addition to Kansas' own statutes and case law on the subject, the U.S. Supreme Court has established certain principles for the Commission to follow when reviewing rate change applications. *Bluefield Waterworks & Imp. Co. v. Pub. Serv. Comm 'n of W Va.*, 262 U.S. 679 (1923), and *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944), provide what this Commission has referred to as the "capital attraction standard." … These standards taken together

[3] *Bluefield Waterworks & Improvement Co., v. Public Service Comm'n of West Virginia*, 262 U.S. 679 (1923), 692-93.

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

> stand for the general idea that the return provided to a utility's investors should (1) be consistent with other businesses having similar risks and (2) the adequacy of the return for servicing debt and paying dividends be able to support a utility's credit quality, access to capital, and financial integrity.[5]

Q. ASIDE FROM THE STANDARDS ESTABLISHED BY THE COURT AND THE COMMISSION, WHY IS IT IMPORTANT FOR A UTILITY TO BE ALLOWED THE OPPORTUNITY TO EARN A RETURN ADEQUATE TO ATTRACT EQUITY CAPITAL AND MAINTAIN FINANCIAL INTEGRITY?

A. Investors have many options available to them and will only invest in a firm if the expected return justifies the risks taken on in making that investment. Customers have an interest in safe, reliable, and efficient service, which depends on investors' willingness to commit the capital needed to maintain and improve the utility system. In that important sense, investors and customers have a common interest in a financially strong utility that is able to access capital on reasonable terms when and as needed. A return that is adequate to attract capital and maintain financial integrity enables a utility to access capital markets at reasonable terms and continue to make needed investments. To the extent Empire is provided a reasonable opportunity to earn its market-based cost of equity, neither customers nor shareholders should be disadvantaged.

[5] *In the Matter of the Application of Westar Energy, Inc. and Kansas Gas and Electric Company to Make Certain Changes in Their Charges for Electric Service*, Docket No. 15-WSEE-115-RTS, Order on Westar's Application for Rate Change, at 25-26 (Sep. 24, 2015).

IV. PROXY GROUP SELECTION

Q. AS A PRELIMINARY MATTER, WHY IS IT NECESSARY TO SELECT A GROUP OF PROXY COMPANIES TO DETERMINE THE COST OF EQUITY FOR THE COMPANY?

A. Since the ROE is a market-based concept and Empire is not a publicly traded entity, it is necessary to establish a group of comparable publicly-traded companies to serve as its "proxy."

Even if Empire were a publicly traded entity, short-term events could bias its market data (such as market value or reported growth expectations) during a given period of time. A significant benefit of using a proxy group is that it serves to moderate the effects of anomalous, temporary events associated with any one company. In addition, the use of a proxy group is consistent with the *Hope* and *Bluefield* standards that require the allowed return to be commensurate with the returns available to other investments with comparable risks.

Q. DOES THE SELECTION OF A RISK-COMPARABLE PROXY GROUP SUGGEST THAT ANALYTICAL RESULTS WILL BE TIGHTLY CLUSTERED AROUND AVERAGE (I.E., MEAN) RESULTS?

A. No. For example, the constant growth DCF approach, defines the cost of equity as the sum of the expected dividend yield and projected long-term growth. Despite the care taken to ensure risk comparability, market expectations with respect to future risks and growth opportunities will vary from company to company. Even when looking at a single company, growth projections can vary significantly. Therefore, even within a group of similarly situated companies, it is common for analytical results to reflect a

seemingly wide range. Consequently, at issue is how to estimate a Company's ROE from within that range. That determination necessarily must consider a range of both empirical and qualitative information.

Q. PLEASE PROVIDE A SUMMARY PROFILE OF EMPIRE.

A. Empire is a wholly owned subsidiary of Liberty Utilities (Central) Co., which in turn is owned by Liberty Utilities Co. ("LUCo"), which in turn is an indirect wholly owned subsidiary of APUC. Empire provides electric generation, transmission, and distribution services to approximately 172,000 retail electric customers in portions of Arkansas, Kansas, Missouri, and Oklahoma.[6] Approximately 9,700 of those customers are located in Kansas.[7] Empire's current long-term issuer credit rating from Standard & Poor's ("S&P") is BBB (outlook: stable), and its long-term issuer rating from Moody's Investor Service ("Moody's") is Baa1 (outlook: stable).[8]

Q. HOW DID YOU SELECT THE COMPANIES INCLUDED IN YOUR PROXY GROUP?

A. I began with the universe of companies that Value Line classifies as Electric Utilities, which includes a group of 39 domestic U.S. utilities, and applied the following screening criteria:

- Because certain of the models used in my analyses assume that earnings and dividends grow over time, I excluded companies that do not have positive earnings growth estimates or pay consistent quarterly cash dividends;

6 Source: FERC Form 3-Q (Aug. 29, 2018) at 301.
7 Company provided data.
8 Source: S&P Global Market Intelligence.

- To ensure that my analyses are based on consensus growth expectations, I excluded companies that are not covered by at least two utility industry equity analysts;
- To select a proxy group with financial characteristics similar to Empire, I excluded companies that have below investment grade corporate credit ratings and/or senior unsecured bond ratings from S&P or Moody's;
- To select companies who are primarily regulated utilities, I excluded companies with less than 60.00 percent of total operating income from regulated utility operations;
- To select companies whose primary regulated business activity is electric utility service, I excluded companies with less than 60.00 percent of regulated operating income derived from regulated electric utility operations;
- To select companies who have vertically-integrated electric utility operations similar to Empire, I excluded companies who did not own and operate regulated generation, transmission and distribution assets; and
- To ensure the data used in my ROE analyses are not skewed by temporary corporate actions, I eliminated companies that are, or have recently been, party to a merger or other significant corporate event.

Q. WHAT COMPANIES MET THOSE SCREENING CRITERIA?

A. The criteria discussed above resulted in a proxy group of the following 22 companies:

Table KM-2: Proxy Group Screening Results

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power Company	AEP
Avangrid, Inc.	AGR
Black Hills Corporation	BKH
CMS Energy Corporation	CMS
DTE Energy Company	DTE
Duke Energy Corporation	DUK
El Paso Electric Company	EE
Evergy, Inc	EVRG
Hawaiian Electric Industries, Inc.	HE
NextEra Energy, Inc.	NEE
NorthWestern Corporation	NWE
OGE Energy Corp.	OGE
Otter Tail Corporation	OTTR
Pinnacle West Capital Corporation	PNW
PNM Resources, Inc.	PNM
Portland General Electric Company	POR
Southern Company	SO
WEC Energy Group, Inc.	WEC
Xcel Energy, Inc.	XEL

V. COST OF EQUITY ESTIMATION

Q. PLEASE BRIEFLY DISCUSS THE COST OF EQUITY IN THE CONTEXT OF THE REGULATED RATE OF RETURN.

A. Regulated utilities primarily use common stock and long-term debt to finance their permanent property, plant and equipment. The overall rate of return ("ROR") weighs the costs of the individual sources of capital by their respective book values. While the cost

of debt can be directly observed, the cost of equity is market-based and, therefore, must be estimated based on observable market information.

The cost of equity is the rate of return required by equity investors (both new suppliers of capital and existing owners) as compensation given the risk of the Company, and it is based on the economic principle of opportunity cost. Investing in any asset implies a forgone opportunity to invest in alternative assets. For any investment to be attractive, its expected return must be at least equal to the expected return from other investment opportunities with similar risk. Because investments with like risks should offer similar returns, the cost of equity for an investment should equal the return available from investments of comparable risk.

Q. HOW IS THE REQUIRED ROE DETERMINED?

A. Because the cost of equity is not directly observable, it must be estimated by applying market data to quantitative models, adjusted for certain incremental costs and risks. Although a number of financial models have been developed for that purpose, all are subject to limiting assumptions or other constraints. Therefore, multiple approaches are often used to estimate the cost of equity.[9] As discussed throughout my Direct Testimony, that estimation must be based on a comprehensive review of relevant data and information and does not necessarily lend itself to a strict mathematical solution. Consequently, the key consideration in determining the ROE is to ensure that the overall analysis reasonably reflects investors' view of the financial markets in general and the subject company (in the context of the proxy companies) in particular.

[9] *See, e.g.*, 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.

The use of multiple methods, and the consideration given to them, recently was addressed by the Federal Energy Regulatory Commission ("FERC"). In its October 16, 2018 *Order Directing Briefs*, FERC found that although it "previously relied solely on the DCF model to produce the evidentiary zone of reasonableness…", it is "…concerned that relying on that methodology alone will not produce just and reasonable results."[10] As FERC explained, because the cost of equity depends on what the market expects, it is important to understand "how investors analyze and compare their investment opportunities."[11] FERC also explained that, although certain investors may give some weight to the DCF approach, other investors "place greater weight on one or more of the other methods…"[12] Those methods include the CAPM, Risk Premium and Expected Earnings methods, which I have applied in this proceeding.

Q. WHAT METHODS DID YOU USE TO DETERMINE THE COMPANY'S ROE?

A. I have relied on DCF, CAPM, Risk Premium, and Expected Earnings analyses to determine my recommended ROE. While I have performed both constant growth and quarterly DCF analyses, I have relied primarily on the latter analysis in arriving at my ROE recommendation.

A. CONSTANT GROWTH DCF MODEL

Q. IS THE DCF METHODOLOGY WIDELY USED IN REGULATORY PROCEEDINGS?

A. Yes. In my experience, the DCF methodology is widely recognized in regulatory

[10] Federal Energy Regulatory Commission, *Order Directing Briefs*, Docket No. EL11-66-001, *et al*., at para. 30 (Oct. 16, 2018).

[11] *Ibid*., at para. 33.

[12] *Ibid*., at para. 35.

proceedings, as well as in financial literature. Nonetheless, neither the DCF nor any other model should be applied without considerable judgment in the selection of data and the interpretation of results.

Q. PLEASE DESCRIBE THE DCF APPROACH.

A. The DCF approach is based on the theory that a stock's current price represents the present value of its expected future cash flows. A common formulation of the DCF approach, also known as the dividend discount model, can be expressed as follows:

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

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. Under the assumption that cash flows will grow at a constant rate, Equation [1] is a standard present value calculation that can be simplified and rearranged into the familiar form:

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

Equation [2] often 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 its simplest form, the DCF model expresses the cost of equity as the sum of the expected dividend yield and long-term growth rate. In essence, the DCF model assumes that the total return received by investors includes the dividend yield, and the rate of growth. Under the constant growth form of the model, the rate of growth equals the rate of capital appreciation. That is, the model assumes that the investor's return is the sum of the dividend yield and the increase in the stock price.

Q. WHAT ASSUMPTIONS ARE REQUIRED FOR THE CONSTANT GROWTH DCF MODEL?

A. The constant growth DCF model requires the following assumptions: (1) a constant average growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings multiple; and (4) a discount rate greater than the expected growth rate. In addition, the constant growth DCF model assumes that the same return will be required every year, in perpetuity (*see* Equation [1], above).

Q. WHAT MARKET DATA DID YOU USE TO CALCULATE THE DIVIDEND YIELD IN YOUR CONSTANT GROWTH DCF MODEL?

A. The dividend yield is based on the proxy companies' current annualized dividend, and average closing stock price over the 30-, 90-, and 180-trading days ended October 31, 2018.

Q. WHY DID YOU USE THREE AVERAGING PERIODS TO CALCULATE AN AVERAGE STOCK PRICE?

A. I did 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 representative of expected capital market conditions over the long term. In my view, using 30-, 90-, and 180-day averaging periods reasonably balances those concerns.

Q. DID YOU MAKE ANY ADJUSTMENTS TO THE DIVIDEND YIELD TO ACCOUNT FOR PERIODIC GROWTH IN DIVIDENDS?

A. Yes, I did. Since 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, it is appropriate to calculate the expected dividend yield by applying one-half of the long-term growth rate to the current dividend yield.[13] That adjustment ensures that the expected dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the dividends to be paid during that time.

Q. IS IT IMPORTANT TO SELECT APPROPRIATE MEASURES OF LONG-TERM GROWTH IN APPLYING THE DCF MODEL?

A. Yes. In its constant growth form, the DCF model (*i.e.*, as presented in Equation [2] above) assumes a single growth estimate in perpetuity. In order to reduce the long-term growth rate to a single measure, one must assume a constant payout ratio, and that earnings per share, dividends per share, and book value per share all grow at the same, constant rate. Over the long term, however, dividend growth can only be sustained by earnings growth. Consequently, it is important to incorporate measures of long-term earnings growth into the constant growth DCF model.

Q. IS IT COMMON IN PRACTICE TO RELY ON ANALYSTS' FORECASTS AS THE BASIS OF GROWTH RATE PROJECTIONS?

A. Yes. The cost of equity is a forward-looking concept that focuses on investor expectations regarding future returns. The estimation of such returns, therefore, should be based on forward-looking or projected data. Indeed, substantial academic research has

[13] *See* Schedule KM-1.

demonstrated the relationship between analysts' forecasts and investor expectations.[14] In my view, therefore, Value Line, Thomson Reuters I/B/E/S Estimates ("I/B/E/S"), and Zacks Investment Research ("Zacks") (the latter two of which are consensus earnings forecast estimates) provide appropriate sources of earnings growth forecasts.

Q. PLEASE EXPLAIN HOW YOU APPLIED THE CONSTANT GROWTH DCF MODEL.

A. I applied the constant growth DCF model to the proxy group of electric utility companies using the following inputs for the price and dividend terms:

1. The average daily closing prices for the 30-, 90-, and 180-trading days ended October 31, 2018, for the term P_0; and
2. The annualized dividend per share as of October 31, 2018, for the term D_0.

I then calculated my DCF results using each of the following growth terms:

1. The Zacks consensus long-term earnings growth estimates;
2. The I/B/E/S consensus long-term earnings growth estimates;[15] and
3. The Value Line long-term earnings growth estimates.

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

A. I calculated the proxy group mean high DCF result using the highest of the EPS growth estimates (*i.e.*, the Value Line, Zacks, and I/B/E/S estimates) for each proxy group company. The proxy group mean high result then reflects the average of the maximum DCF result for each proxy company. I used a similar approach to calculate the proxy

[14] *See*, for example, Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 298-303; Harris and Marston, "Estimating Shareholder Risk Premia Using Analysts Growth Forecasts", Financial Management, 21 (Summer 1992); Charles F. Phillips, Jr., The Economics of Regulation, Revised Edition, 1969, Richard D. Irwin, Inc., at 285.

[15] As reported by Yahoo Finance.

group mean low results, using instead the lowest of the growth estimates for each proxy group company.

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

A. My constant growth DCF results are summarized in Table KM-3, below (*see also* Schedule KM-1).

Table KM-3: Constant Growth DCF Results[16]

	Mean Low	***Mean***	***Mean High***
30-Day Average	8.20%	9.25%	10.33%
90-Day Average	8.19%	9.25%	10.33%
180-Day Average	8.31%	9.36%	10.44%

B. QUARTERLY GROWTH DCF MODEL

Q. PLEASE BRIEFLY 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. While the adjusted dividend yield 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 reflect 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 investors' expectation of the quarterly payment of dividends, and the associated quarterly compounding of those

[16] DCF results presented in Table KM-3 are unadjusted (*i.e.*, prior to any adjustment for flotation costs).

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.[17]

Q. HOW IS THE DIVIDEND YIELD PORTION OF THE QUARTERLY DCF MODEL CALCULATED?

A. To reflect the timing and compounding of quarterly dividends, the model replaces the *D* component of the constant growth DCF model with the following equation:

$$D = d_1(1 + k)^{.75} + d_2(1+k)^{.50} + d_3(1+k)^{.25} + d_4(1+k)^{0} \quad \text{Equation [3]}$$

where:

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

k = the required Return on Equity.

The structure of the model captures the time value of receiving and reinvesting dividends quarterly rather than receiving an annual end of year payment. Because the required ROE (k) is a variable in the dividend calculation, the quarterly growth DCF model is solved in an iterative fashion.

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 by each company and multiplied them by one plus the growth rate (*i.e.*, $1 + g$). For the P_0 component of the dividends yield, I obtained the closing stock prices over the 30-, 90-,

[17] Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006 at 344.

and 180-trading days ended October 31, 2018 for each company in the proxy group.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR DCF ANALYSES.

A. Table KM-4 (below) presents the results of the quarterly growth DCF analysis (*see* also Schedule KM-2).

Table KM-4: Quarterly Growth DCF Model Results[18]

	Low	***Mean***	***High***
30-Day Average	8.31%	9.39%	10.51%
90-Day Average	8.30%	9.38%	10.50%
180-Day Average	8.42%	9.51%	10.62%

Q. ARE THERE FACTORS THAT SHOULD BE CONSIDERED WHEN DETERMINING THE WEIGHT GIVEN TO THE CONSTANT GROWTH AND QUARTERLY GROWTH DCF MODEL RESULTS IN THE CURRENT CAPITAL MARKET?

A. Yes. As explained in Section VII, the Federal Reserve's monetary policy actions have had a significant effect on market prices of both bonds and stocks. In that respect, the Federal Reserve has become a "market-mover" that has singularly affected the market; this runs counter to the valuation theory underlying traditional cost of equity models which assumes investors are profit-driven (rather than policy-driven), with no single investor having a significant effect on prices. Consequently, the results of those models should be considered in the context of both quantitative and qualitative information.

The constant growth and quarterly growth forms of the DCF model are premised upon specific assumptions, many of which are incompatible with current market

[18] DCF results presented in Table KM-4 are unadjusted (*i.e.*, prior to any adjustment for flotation costs).

conditions. For example, the models assume the Price/Earnings ("P/E") ratio will remain constant, in perpetuity. Because utility sector P/E ratios have expanded to the point that they recently have exceeded their long-term average and are high relative to the market P/E ratio, the DCF models' results should be viewed with caution. Moreover, I do not believe the current equity valuation levels produced by the model are due to lower levels of perceived risk. Rather, it is my view that the valuation levels are related to the "reach for yield" that sometimes occurs during periods of low Treasury yields. As discussed later in my testimony, when utility valuation ratios historically had become "stretched," they subsequently moved back toward their long-term average.

Further, the DCF model assumes that the return estimated today will be the same return required in the future, even though the Federal Reserve only recently has begun its move toward monetary policy normalization. That process of normalization, together with the uncertainty surrounding the "unwinding" of the assets put on the Federal Reserve's balance sheet during its "Quantitative Easing" initiatives introduce a degree of risk, and a likelihood of increasing interest rates, not present in the current market.

Q. WITH THOSE POINTS IN MIND, HOW DID YOU REFLECT THE DCF RESULTS IN YOUR ROE RANGE AND RECOMMENDATION?

A. I first recognized that the model's mean low results are well below a reasonable estimate of the Company's cost of equity. For example, of the 1,404 vertically integrated electric utility rate cases provided by Regulatory Research Associates that disclosed the awarded ROE since 1980, none included an authorized ROE of lower than 9.00 percent. On that basis alone, the low results are highly improbable.

I then considered why the DCF model is producing such low estimates of the

Company's cost of equity. In one sense, relatively low dividend yields should be associated with relatively high growth rates. That is, low dividend yields are the result of relatively high stock prices which, in turn, should be associated with relatively high growth rates. If those relationships do not hold, the model's results should be viewed with some caution.

I also recognize that whereas the DCF model essentially assumes existing capital market conditions will remain constant, Risk Premium-based methods (discussed later in this Section) better reflect the changing capital market environment (*see* Section VII). Because the mean low constant growth and quarterly growth DCF results are far removed from recently authorized returns and the results other ROE models, I concluded that they should be given less weight than other results in determining the Company's ROE.

C. CAPITAL ASSET PRICING MODEL

Q. PLEASE BRIEFLY DESCRIBE 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 bearing the security's market risk (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:

$$k = r_f + \beta(r_m - r_f) \qquad \text{Equation [4]}$$

where:

k = the required market ROE for a security;

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.

In Equation [4], the term (r_m – r_f) represents the market risk premium.[19] According to the theory underlying the CAPM, since unsystematic risk can be diversified away by adding securities to their investment portfolio, investors should be concerned only with systematic or non-diversifiable risk. Non-diversifiable risk is measured by the beta coefficient, which is defined as:

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

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 between the returns of 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 readily affected by the directional movements of the overall market. If a company has a beta coefficient of 1.00, it is considered as risky as the market and its required return equals the expected market return.

Q. WHAT RISK-FREE RATE ASSUMPTION DID YOU INCLUDE IN YOUR CAPM ANALYSIS?

A. In determining the security most relevant to the application of the CAPM, it is important

[19] The market risk premium is defined as the incremental return of the market over the risk-free rate.

to select the term (or maturity) that best matches the life of the underlying investment. Electric utilities typically are long-duration investments and as such, I used the 30-year Treasury bonds as my estimate of the risk-free rate. I relied on both the current 30-day average yield (3.30 percent as of October 31, 2018) and the near-term projected yield reported by Blue Chip Financial Forecast (3.57 percent).[20]

Q. WHY HAVE YOU CONSIDERED A FORWARD-LOOKING RISK-FREE RATE?

A. In general, the cost of capital is a forward-looking concept. The relevant analytical issue in the application of the CAPM is to ensure that all three components of the model (*i.e.*, the risk-free rate, beta, and the MRP) are consistent with current market conditions and investor views.

Since the purpose of this proceeding is to establish the cost of equity for Empire's electric distribution operations on a going-forward basis, it is important to develop a CAPM analysis that reflects investor expectations concerning the risk-free rate. As discussed in more detail in Section VII, the need to consider forward-looking interest rates is particularly important at the current time given that the Federal Reserve has begun to "unwind" its monetary policy actions that were intended to lower Treasury yields in response to the 2008/2009 financial crisis and the ensuing protracted economic recovery.

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

A. I considered two beta coefficients estimates. The first estimate is the average of the beta coefficient reported by Value Line for each proxy company. Value Line calculates the

[20] *See*, Blue Chip Financial Forecasts, Vol. 37, No. 11, Nov. 1, 2018, at 2. The near-term projection reflects the average consensus forecast of the average 30-Year Treasury yield for the coming six quarters.

beta coefficient over a five-year period using the New York Stock Exchange ("NYSE") Index as the market return. The second estimate is the average of the beta coefficient calculated for each proxy company using Bloomberg's beta calculation tool, using five years of daily return data and the S&P 500 Index as the market return. Both of those services adjust their calculated (or raw) beta coefficients to reflect the tendency of the beta coefficient to regress to the market mean of 1.00.[21] The Value Line and Bloomberg proxy group average beta coefficients are 0.62 and 0.62, respectively.[22]

Q. PLEASE DESCRIBE YOUR APPROACH TO ESTIMATING THE MARKET RISK PREMIUM.

A. I considered two approaches. The first approach is based on the market required return, less the 30-year Treasury bond yield. To estimate the market required return, I calculated the market capitalization weighted average total return using the constant growth DCF model. To do so, I relied on data from two sources: (1) Bloomberg and (2) Value Line. For both Bloomberg and Value Line, I calculated the market capitalization weighted expected dividend yield (using the same one-half growth rate assumption described earlier), and combined that amount with the market capitalization weighted projected earnings growth rate to arrive at the average DCF result. I performed that calculation using each of companies in the S&P 500 Index for which Bloomberg and Value Line provided growth estimates. I then subtracted the risk-free rate from that amount to arrive at the market DCF-derived *ex-ante* MRP estimate. The results of those calculations are

[21] The regression tendency of beta coefficients to converge to 1.0 over time is well known and widely discussed in financial literature. (*See, e.g.*, Blume, Marshall E., *On the Assessment of Risk*, The Journal of Finance, Vol. 26, No. 1, March 1971, at 1-10).

[22] *See* Schedule KM-5.

provided in Schedule KM-3.

Because the ROE determined in this proceeding will be applied to the book value of the Company's equity, my second approach considered the S&P 500's average earned return on book value of common equity. For this estimate of the MRP, I first calculated the mean of the rolling five-year average of the market's return on common equity since 1990, and then subtracted the risk-free rate from that amount. As shown in Schedule KM-4, over time the market's five-year average return on book value of equity has fluctuated around approximately 13.35 percent. This approach recognizes that a company's ability to earn a competitive risk-weighted return on its capital investments is an important consideration for investors who are determining where to allocate capital. A company that does not have an opportunity to earn a market competitive risk-adjusted return on its investments will have difficulty attracting long-term equity capital to finance growth over time.

Q. WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?

A. The results of my CAPM analysis are summarized in Table KM-5, below (*see* also Schedule KM-6).

Table KM-5: Summary of CAPM Results

	Bloomberg MRP	***Value Line MRP***	***Earned ROCE MRP***
Value Line Beta, Current Risk-Free Rate (3.30%)	10.64%	11.45%	9.52%
Value Line Beta, Proj. Risk-Free Rate (3.57%)	10.74%	11.55%	9.62%
Bloomberg Beta, Current Risk-Free Rate (3.30%)	10.71%	11.53%	9.58%
Bloomberg Beta, Proj. Risk-Free Rate (3.57%)	10.81%	11.63%	9.68%

D. BOND YIELD PLUS RISK PREMIUM APPROACH

Q. PLEASE GENERALLY DESCRIBE THE BOND YIELD PLUS RISK PREMIUM APPROACH.

A. This approach is based on the basic financial tenet that equity investors bear the residual risk associated with ownership and therefore require a premium over the return they would have earned as a bondholder. That is, because returns to equity holders are more risky than returns to bondholders, equity investors must be compensated for bearing that risk. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. Because the equity risk premium is not directly observable, it typically is estimated using a variety of approaches, some of which incorporate *ex-ante*, or forward-looking, estimates of the cost of equity, and others that consider historical, or *ex-post*, estimates. An alternative approach is to use actual authorized returns for electric utilities to estimate the equity risk premium.

Q. PLEASE EXPLAIN HOW YOU PERFORMED YOUR RISK PREMIUM ANALYSIS.

A. As suggested above, I first defined the equity risk premium as the difference between authorized returns and the then-prevailing level of long-term utility bond rates. I then gathered data from 736 electric utility rate proceedings between the fourth quarter of 1992 and October 31, 2018 and calculated the average authorized ROE for each calendar quarter.[23] Using that data, I calculated the observed risk premium in each quarter as the difference between the average authorized ROE and the average utility Baa bond yield

[23] The period for which data was available. The data covers a number of economic cycles; *see* National Bureau of Economic Research, *U.S. Business Cycle Expansion and Contractions*.

reported by Moody's.

Relative to the long-term historical average, the analytical period includes interest rates and authorized ROEs that are relatively high during one period (*i.e.*, the early 1990s) and that are quite low during another (*i.e.*, the post-Lehman bankruptcy period). To account for the well-documented inverse relationship between interest rates and the risk premium,[24] I conducted a regression analysis in which the observed equity risk premium is the dependent variable, and the average utility Baa bond yield is the independent variable. The form of the equation for the regression analysis was:

$$RP = \alpha + \beta(T) \qquad \text{Equation [6]}$$

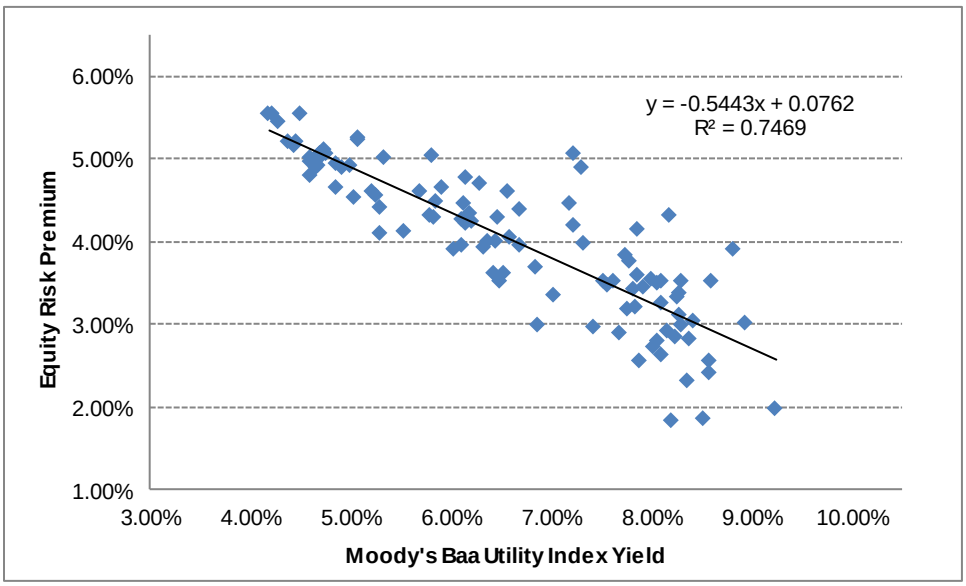
where "RP" is the risk premium (*i.e.*, average authorized ROE less average utility Baa bond yield), "α" is the intercept term, "β" is the slope term and "T" is the average yield on Baa-rated utility bonds.

Q. WHAT WERE THE RESULTS OF YOUR RISK PREMIUM ANALYSIS?

A. As Chart KM-1 illustrates, over time there has been a statistically significant, negative relationship between Baa-rated utility bond yields and the equity risk premium.

[24] *See*, *e.g.*, 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.

Chart KM-1: Equity Risk Premium



Consequently, simply applying the long-term average equity risk premium of 4.02 percent would significantly understate the cost of equity and produce results well below any reasonable estimate. Based on the regression coefficients in Chart KM-1, however, the implied ROE is between 9.84 percent and 10.53 percent (*see* Schedule KM-7, and Table KM-6, below).

Table KM-6: Bond Yield Plus Risk Premium Results[25]

Bond Yield	Return on Equity
Current Baa Utility Bond Yield (4.87%)	9.84%
Near Term Projected Utility Bond Yield (5.50%)	10.12%
Long Term Projected Utility Bond Yield (6.38%)	10.53%

[25] Projected Baa utility bond yields calculated as current yield plus Blue Chip Financial Forecast's projected increase in corporate Baa bond yields. *See*, Blue Chip Financial Forecasts, Vol. 37, No. 11, Nov. 1, 2018, at 2; and, Blue Chip Financial Forecasts, Vol. 37, No. 6, Jun. 1, 2018, at 14.

E. EXPECTED EARNINGS ANALYSIS

Q. PLEASE GENERALLY DESCRIBE THE EXPECTED EARNINGS ANALYSIS.

A. The Expected Earnings analysis calculates the projected returns on book value for the electric industry group as a whole and for the specific firms in the proxy group individually. To implement the model, I used the projected return on common equity for the period 2021-2023 provided in the latest Value Line utility reports. I then adjusted those returns to account for the fact that they show ROE on the basis of book equity at the end of the period, as opposed to ROE on average book equity.

I first considered the expected returns for the proxy group companies, for which the mean and median expected returns were 10.53 percent and 10.49 percent, respectively. I then reviewed the mean and median returns for all electric utilities (note that mergers do not affect book returns on equity as they do the DCF returns on market value), which were 10.88 percent and 10.76 percent, respectively (*see* Schedule KM-8).

Q. WHAT ARE THE ADVANTAGES OF USING THE EXPECTED EARNINGS APPROACH?

A. Whereas most other cost of equity analyses calculate investors' required return on the market value of their investments, the Expected Earnings model is uniquely suited to the task of determining an appropriate return on book value of equity for an electric utility. For example, as noted above, the DCF model depends on market data. The dividend yield, a principal component of the DCF analysis, is a market-derived parameter. Since the DCF model calculates the discount rate that equates the future stream of cash flows to the current market price, it calculates the required return on the market value of the utility's stock (rather than the book value of equity). Similarly, the CAPM relies on

market prices (*e.g.*, risk is based on movements in stock prices, and required risk compensation is often based on expected returns on a market index). In practice, those returns are applied to the book value of the utility's equity to determine the revenue requirement. The market value, except under very rare circumstances, is not equal to the book value. Given this mismatch, it is useful to consider direct measures of the expected return on the book value, versus market value, of utility stocks.

VI. BUSINESS RISKS AND OTHER CONSIDERATIONS

Q. WHAT ADDITIONAL INFORMATION DID YOU CONSIDER IN ASSESSING THE ANALYTICAL RESULTS NOTED ABOVE?

A. Because the analytical methods discussed above provide a range of estimates, there are several additional factors that should be taken into consideration when establishing a reasonable range for the Company's cost of equity. Those factors include: (1) the Company's relatively small size; (2) the regulatory environment in which Empire operates; and (3) flotation costs associated with equity issuances.

A. SMALL SIZE PREMIUM

Q. PLEASE EXPLAIN THE RISK ASSOCIATED WITH SMALL SIZE.

A. The effect of adverse events such as of weather variability, the loss of large customers, or the destruction of demand as a result of general macroeconomic conditions or energy efficiency and energy technology advancements will have a proportionately greater impact on the earnings and cash flow volatility of smaller utilities. Similarly, capital expenditures for non-revenue producing investments such as system maintenance and replacements may put proportionately greater strain on the utilities' financial resources.

Taken together, these risks affect the return required by investors for smaller companies.

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."[26] 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."[27]

Although empirical evidence of the size effect often is based on studies of industries beyond regulated utilities, utility analysts also have noted the risks associated with small market capitalizations. Specifically, an analyst for 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."[28]

Q. HOW DOES EMPIRE COMPARE IN SIZE TO THE PROXY COMPANIES?

A. Empire's Kansas operations are significantly smaller than the proxy group, both in terms of number of customers and annual revenues. Schedule KM-10 estimates the implied market capitalization for Empire (*i.e.*, the implied market capitalization if Empire were a

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[26] *See* 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.

[27] *See* Morningstar, Ibbotson SBBI 2013 Valuation Yearbook, at 109.

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

stand-alone, publicly traded entity). That is, because Empire is not a separately traded entity, an estimated stand-alone market capitalization for Empire must be calculated. The implied market capitalization of Empire is calculated by applying the median market-to-book ratio for the proxy group of 1.89 to the Company's implied total common equity of approximately $40.51 million. The implied market capitalization based on that calculation is $76.42 million, which is less than 1.00 percent of the proxy group median of $12.12 billion.

Q. HOW DID YOU ESTIMATE THE SIZE PREMIUM FOR EMPIRE?

A. Duff and Phelps calculates the size premium for deciles of market capitalizations relative to the S&P 500 Index.[29] The implied market capitalization for Empire's Kansas operations is approximately $76.42 million, which falls within the 10th decile and corresponds to a size premium of 5.37 percent (or 537 basis points). As shown on Schedule KM-10, based on recent market data, the median market capitalization of the proxy group was approximately $12.12 billion, which corresponds to the second decile of Duff & Phelps' market capitalization data. Based on the Duff & Phelps analysis, that decile has a size premium of 0.56 percent (or 56 basis points), which is significantly less than the implied premium for Empire's Kansas operations. The difference between those size premiums is 481 basis points (4.81 percent).[30]

Q. HAVE YOU CONSIDERED EMPIRE'S COMPARATIVELY SMALL SIZE IN YOUR ESTIMATED COST OF EQUITY?

A. Yes. While I have quantified the small size effect, rather than proposing a specific

[29] Duff & Phelps, *Cost of Capital Navigator*, 2018.

[30] 5.37% - 0.56% = 4.81%

premium, I have considered the small size of Empire's Kansas operations in my assessment of business risks in order to determine where, within a reasonable range of returns, Empire's required ROE appropriately falls. In that regard, Empire's comparatively small size further supports my recommended ROE of 10.20 percent.

B. REGULATORY RISK

Q. HOW DOES THE REGULATORY ENVIRONMENT IN WHICH A UTILITY OPERATES AFFECT ITS ACCESS TO AND COST OF CAPITAL?

A. The regulatory environment in which a utility operates can significantly affect both the access to, and the cost of capital in several ways. The proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. In addition, regulatory decisions regarding the authorized ROE and capital structure have direct consequences for the subject utility's internal cash flow generation (sometimes referred to as "Funds from Operations", or FFO). Because credit ratings are intended to reflect the 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 debt investors. Two of the most important metrics used to assess that ability are the ratios of FFO to debt, and FFO to interest expense, both of which are directly affected by regulatory decisions regarding the appropriate rate of return, and capital structure.

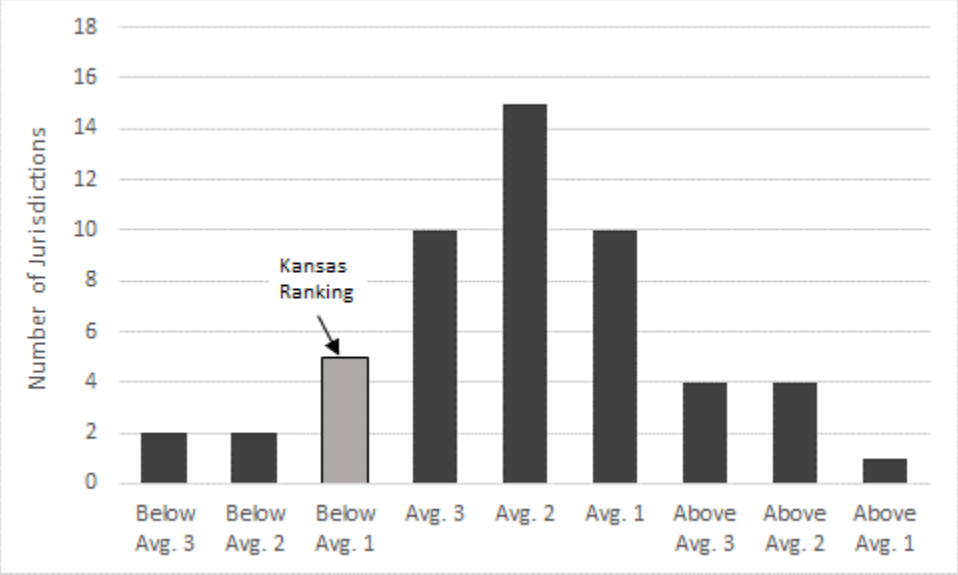
However, investors recognize that an authorized ROE that is reasonable, but subject to earnings attrition due to unfavorable regulatory or economic factors, does not provide any assurance that the utility will have a reasonable opportunity to recover its costs, or to earn a reasonable return. The authorized ROE affects not only the cash flow-

related metrics that measure financial strength, but also provides an indication of the degree of regulatory support, as well as risk associated with a given utility and jurisdiction. Therefore, it is an important measure of regulatory support and financial integrity from several perspectives.

Q. AS A POINT OF REFERENCE, HOW IS THE KANSAS REGULATORY ENVIRONMENT PERCEIVED BY EQUITY INVESTORS?

A. Regulatory Research Associates ("RRA") rates the Kansas regulatory environment as "Below Average / 1" from an investor viewpoint.[31] As shown in Chart KM-2 below, 44 of the 53 regulatory jurisdictions ranked by RRA have a higher rating.

Chart KM-2: RRA Regulatory Environment Rankings[32]



Regarding Kansas regulation, RRA notes:

[31] Source: Regulatory Research Associates, Regulatory Focus, "State Regulatory Evaluations, Assessments of Regulatory Climates for Energy Utilities," November 15, 2017, at 2. RRA rates regulatory jurisdictions from the perspective of investors, and assigns ratings of "Above Average," "Average," or "Below Average." RRA further distinguishes jurisdictions within those respective categories by applying ratings of 1, 2 or 3, with a rating of "1" being the strongest.

[32] RRA commission profile data accessed October 14, 2018.

> Kansas regulation of energy utilities is relatively restrictive from an investor perspective. Although base rate proceedings in Kansas are typically resolved via "black box" settlements that do not specify any rate-of-return parameters, the KCC's most recent equity return authorization, a 9.3% ROE approved in a September 2018 electric rate case decision, is below prevailing industry averages. The KCC generally relies on historical test periods, a situation that can lead to regulatory lag, even with updates for certain known and measurable changes, making it challenging for the utilities to earn their authorized returns. However, state law allows the utilities to file "abbreviated" rate cases within 12 months of a KCC rate order, and abbreviated rate proceedings have been filed on several occasions in recent years. Cost recovery mechanisms are in place for the electric utilities that allow them to timely recover certain costs, as well as energy-efficiency-related lost revenues.[33]

Although the Company remains exposed to regulatory lag associated with the use of historical test years, the Commission allows adjustments for known and measurable changes, and certain regulatory mechanisms to provide more timely recovery of costs.

Q. HOW DOES THE REGULATORY ENVIRONMENT WEIGH IN RATING AGENCIES' CREDIT RATING EVALUATIONS?

A. Based on criteria established by S&P, credit ratings reflect the subject company's "Business Risk" rating, and its "Financial Risk" rating. S&P has noted the regulatory environment is the most heavily weighted factor in the assessment of a regulated utility's business risk profile.[34] There is little question, therefore, that S&P considers the regulatory environment, including the extent to which the presiding regulatory commission is supportive of issues affecting credit quality, to be an important determinant of the subject company's credit profile.

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33 Regulatory Research Associates, *Kansas Corporation Commission Profile*, evaluation updated October 8, 2018.

34 *See* Standard & Poor's Global Ratings, RatingsDirect, *Assessing U.S. Investor-Owned Utility Regulatory Environments*, August 10, 2016, at 2.

Similarly, Moody's considers the nature of regulation, including its effect on cost recovery and cash flow generation, to be of such consequence that it represents one-half of the factors analyzed in arriving at credit ratings.[35] As to the overall regulatory environment, Moody's notes that the regulatory "framework in which a regulated utility operates is typically one of its most significant credit considerations. The regulatory structure and its general framework is a primary consideration that differentiates the industry from most other corporate sectors."[36]

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE REGULATORY RISK FACED BY THE COMPANY, AND HOW THAT RISK WEIGHS IN YOUR ROE RECOMMENDATION?

A. On balance, it appears the Company faces somewhat higher regulatory risks than its peers. Although the Company is recommending several rate mechanisms in this proceeding, they do not fundamentally lower its risk profile relative to the proxy group. Rather, the Company is not able to take advantage of regulatory lag-reducing mechanisms, such as forecast test years and infrastructure cost recovery riders, that are available to many operating utilities.[37] In my view, therefore, the regulatory risks discussed above further support the reasonableness of my ROE recommendation.

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35 *See* Moody's Investors Service, *Rating Methodology: Regulated Electric and Gas Utilities*, June 23, 2017, at 4.

36 *See* Moody's Investors Service, *Special Comment: Regulatory Frameworks – Ratings and Credit Quality for Investor-Owned Utilities*, June 18, 2010, at 1.

37 *See, for example*, Regulatory Research Associates, *Adjustment Clauses: A State-by-State Overview*, September 28, 2018.

C. FLOTATION COSTS

Q. WHAT ARE FLOTATION COSTS?

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

Q. ARE FLOTATION COSTS PART OF THE UTILITY'S INVESTED COSTS OR PART OF THE UTILITY'S EXPENSES?

A. Flotation costs are part of capital costs, which are properly reflected on the balance sheet under "paid in capital" rather than current expenses on the income statement. Flotation costs are incurred over time, just as investments in rate base or debt issuance costs. As a result, the great majority of flotation costs are incurred prior to the test year, but remain part of the cost structure during the test year and beyond.

Q. IS THE NEED TO CONSIDER FLOTATION COSTS ELIMINATED BECAUSE EMPIRE IS A WHOLLY-OWNED SUBSIDIARY OF APUC?

A. No. Although the Company is a wholly-owned subsidiary of APUC, it is appropriate to consider flotation costs because subsidiaries receive equity capital from their parents and provide returns on the capital that roll up to the parent, which is designated to attract and raise capital based on the returns of those subsidiaries. To deny recovery of issuance costs associated with the capital that is invested in the subsidiaries ultimately would penalize the investors that fund the utility operations and would inhibit the utility's ability to obtain new equity capital at a reasonable cost. This is important for companies such as Empire that are planning continued capital expenditures, and for which access to capital to fund required investments is critical.

Q. HOW DID YOU CALCULATE THE FLOTATION COST RECOVERY ADJUSTMENT?

A. I modified the constant growth DCF calculation to provide a dividend yield that would reimburse investors for issuance costs. My flotation cost adjustment recognizes the costs of issuing equity that were incurred by APUC and the proxy companies in their most recent two issuances. As shown in Schedule KM-11, an adjustment of 0.10 percent (*i.e.*, 10 basis points) reasonably represents flotation costs for the Company.

Q. IS THE NEED TO CONSIDER FLOTATION COSTS RECOGNIZED BY THE ACADEMIC AND FINANCIAL COMMUNITIES?

A. Yes. The need to reimburse investors for equity issuance costs is recognized by the academic and financial communities in the same spirit that investors are reimbursed for the costs of issuing debt. For example, Dr. Morin notes that "[t]he costs of issuing [common stock] are just as real as operating and maintenance expenses or costs incurred to build utility plants, and fair regulatory treatment must permit the recovery of these costs."[38] Dr. Morin further notes that "equity capital raised in a given stock issue remains on the utility's common equity account and continues to provide benefits to ratepayers indefinitely."[39] This treatment is consistent with the philosophy of a fair rate of return. As explained by Dr. Shannon Pratt:

> Flotation costs occur when a company issues new stock. The business usually incurs several kinds of flotation or transaction costs, which reduce the actual proceeds received by the business. Some of these are direct out-of-pocket outlays, such as fees paid to underwriters, legal expenses, and prospectus preparation costs. Because of this reduction

[38] Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 321.

[39] *Id.*, at 327.

> in proceeds, the business's required returns must be greater to compensate for the additional costs. Flotation costs can be accounted for either by amortizing the cost, thus reducing the net cash flow to discount, or by incorporating the cost into the cost of equity capital. Since flotation costs typically are not applied to operating cash flow, they must be incorporated into the cost of equity capital.[40]

Similarly, Morningstar has commented on the need to reflect flotation costs in the cost of capital:

> Although the cost of capital estimation techniques set forth later in this book are applicable to rate setting, certain adjustments may be necessary. One such adjustment is for flotation costs (amounts that must be paid to underwriters by the issuer to attract and retain capital).[41]

Q. IN DOCKET NO. 15-KCPE-116-RTS THE COMMISSION DECLINED TO AUTHORIZE THE COMPANY A FLOTATION COST ADJUSTMENT BECAUSE THE COMPANY HAD NOT IDENTIFIED UNRECOVERED COSTS ASSOCIATED WITH THE ISSUANCE OF COMMON EQUITY.42 HAVE YOU IDENTIFIED EQUITY ISSUANCE COSTS FOR THE COMPANY?

A. Yes, I have. My flotation cost adjustment estimate is based on the two most recent open market common equity issuances for APUC, Empire (prior to being acquired) and the proxy companies. As shown in Schedule KM-11, the 2.87 percent proxy group weighted average issuance cost used in my analysis is substantially lower than the approximately 4.50 percent average issuance cost for APUC and Empire.

Importantly, unlike debt, equity has no specific life: it is not extinguished or

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40 Shannon P. Pratt, Roger J. Grabowski, Cost of Capital: Applications and Examples, 4th ed. (John Wiley & Sons, Inc., 2010), page 586.

41 Morningstar, Inc. Ibbotson SBBI 2013 Valuation Yearbook, at 23.

42 *In the Matter of the Application of Westar Energy, Inc. and Kansas Gas and Electric Company to Make Certain Changes in Their Charges for Electric Service*, Docket No. 15-KCPE-116-RTS, Order on KCP&L's Application for Rate Change, at 17 (Sep. 10, 2015).

retired, and remains on the balance sheet indefinitely. Consequently, common equity continues to support the rate base and provide benefits to customers in perpetuity. Because the acquired equity is net of issuance costs, the return on that equity also will be diluted in perpetuity. The method provided in Schedule KM-11 specifically acknowledges the perpetual nature of common stock, and is meant to address the perpetual dilution of the shareholders' investment due to issuance costs.

Q. ARE YOU PROPOSING TO ADJUST YOUR RECOMMENDED ROE BY 10 BASIS POINTS TO REFLECT THE EFFECT OF FLOTATION COSTS ON EMPIRE'S ROE?

A. No. Rather, I have considered the effect of flotation costs, in addition to the Company's other business risks, in determining where the Company's ROE falls within the range of results.

VII. 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. As discussed in Section V, the models used to estimate the cost of equity are meant to reflect, and therefore are influenced by, current and expected capital market conditions. In addition, all analytical models used to estimate the required ROE are based on simplifying assumptions that may not hold true under specific market circumstances. It is therefore important to assess the reasonableness of any financial model's results in the context of observable market data. To the extent that certain ROE estimates are incompatible with such data or inconsistent

with basic financial principles, it is appropriate to consider whether alternative estimation methods are likely to provide more meaningful and reliable results.

Q. PLEASE SUMMARIZE THE EFFECT OF RECENT FEDERAL RESERVE POLICIES ON INTEREST RATES AND THE COST OF CAPITAL.

A. In response to the financial crisis that emerged in 2007, the Federal Reserve pursued a series of accommodative monetary policies intended to increase market liquidity and put "downward pressure on longer-term interest."[43] Beginning in December 2015, however, the Federal Reserve began to normalize monetary policy. Between December 2015 and September 2018, the Federal Reserve increased the Federal Funds rate eight times, raising the target rate from 0.00-0.25 percent to 2.00-2.25 percent.[44] In October 2017 the Federal Reserve also began the process of unwinding its nearly $4.00 trillion in QE asset purchases.[45] While the Federal Reserve has provided general guidance regarding its plan for policy normalization, there remains uncertainty with respect to the eventual timing and approach under which its balance sheet positions will be unwound over time.

As the Federal Reserve has gradually tightened monetary policy, interest rates have begun to increase. Since July 8, 2016 (when the 30-year Treasury yield hit an all-time low of 2.11 percent), short-term and long-term interest rates have increased

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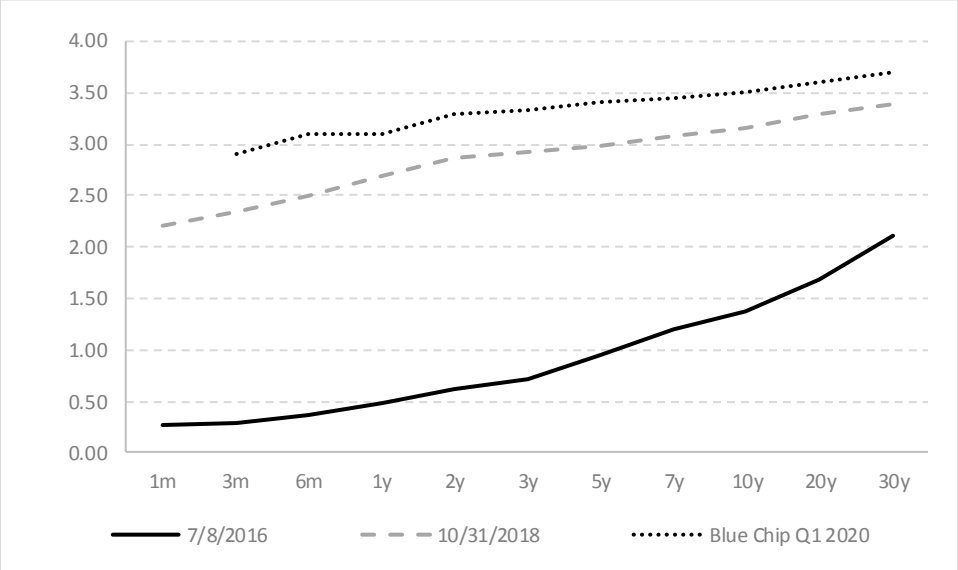
43 *See*, http://www.federalreserve.gov/monetarypolicy/openmarket.htm. Initiatives included lowering the Federal Funds rate to near-zero and large-scale asset purchases. As of the end of 2017, the Federal Reserve held approximately 32 percent of the supply of U.S. government Treasury securities with maturities over ten years (*see* Federal Reserve Bank of New York, *Open Market Operations During 2017*, April 2018, at 24.)

44 *Ibid*. 25 basis point increases were made in December 2016, March, June, and December 2017, and March, June, and September 2018. The Federal Funds target rate is 2.00%-2.25% as of October 31, 2018.

45 *Federal Reserve Press Release* dated September 20, 2017. *See also*: *Federal Reserve Addendum to the Policy Normalization Principles and Plans*, as adopted effective June 13, 2017. The Federal Reserve's initial approach is to reduce the reinvestment of principal payments received from its holdings of Treasury securities by up to $30 billion per month, and from its holdings of mortgage-backed securities by up to $20 billion per month.

significantly (*see* Chart KM-3 below).

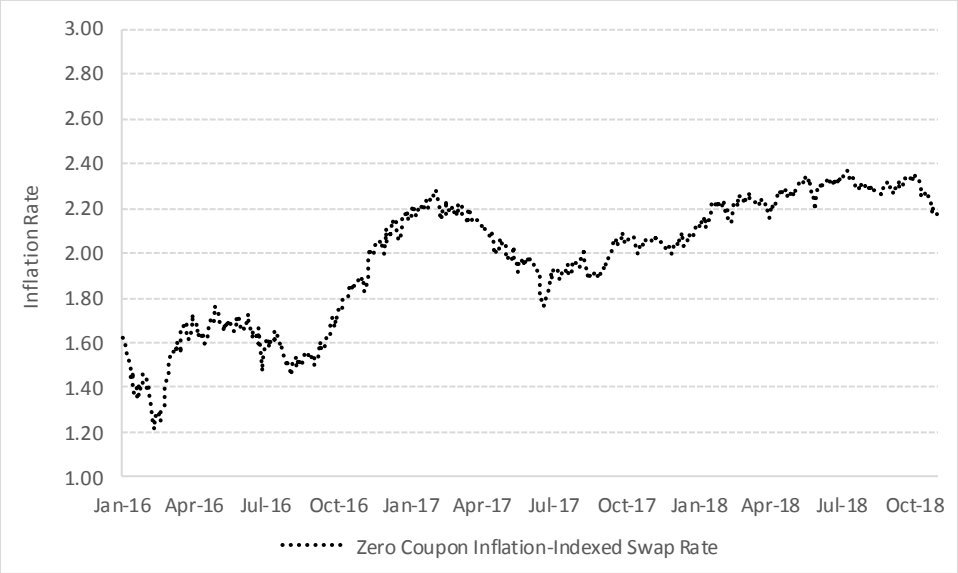
Chart KM-3: Treasury Yield Curve: 7/8/2016, 10/31/2018, and Projected Q1 2020[46]



The significant increase in Treasury yields from July 2016 to October 2018 is highly related to increasing inflation. To that point, leading up to and following the November 2016 Presidential election, expected inflation, as measured by zero-coupon inflation index swaps, also increased. Although forward inflation fell somewhat between February and June 2017, it has increased since that period, such that it is now somewhat above the Federal Reserve's 2.00 percent inflation target (*see* Chart KM-4, below).

46 Sources: Federal Reserve Board Schedule H.15.; Blue Chip Financial Forecasts, Vol. 37, No.11, Nov. 1, 2018, at 2 (3-year, 7-year and 20-year projected Treasury yields interpolated).

Chart KM-4: Five-Year Forward Inflation[47]



The elevated uncertainty associated with the Federal Reserve's policy normalization, and the resulting increase in both interest rates and inflation represent risk for electric utility investors and suggest higher investor return requirements.

Q. DOES MARKET-BASED DATA INDICATE INVESTORS SEE A PROBABILITY OF INCREASING INTEREST RATES?

A. Yes, observable market data demonstrate investors expect interest rates to increase in the near future. Data compiled by CME Group indicates that investors see a near certainty of further Federal Funds rate increases, even after the seven increases between December 14, 2016 and September 26, 2018. As shown in Table KM-7 (below), the market is now anticipating at least one additional rate hike (98.40 percent probability) and possibly two or more (86.70 percent probability) over the next year.

47 Source: Bloomberg Professional.

Table KM-7: Probability of Federal Funds Rate Increases[48]

Target Rate (bps)	Federal Reserve Meeting Date								
	Dec-18	Jan-19	Mar-19	May-19	Jun-19	Jul-19	Sep-19	Oct-19	Dec-19
200-225 (current)	24.2%	23.2%	7.0%	6.3%	2.8%	2.5%	1.7%	1.6%	1.3%
225-250	75.8%	73.6%	38.4%	35.3%	19.4%	17.5%	12.6%	11.7%	10.2%
250-275		3.2%	52.3%	50.9%	42.3%	39.7%	32.5%	30.8%	28.0%
275-300			2.3%	7.3%	31.3%	32.5%	34.8%	34.6%	34.1%
300-325				0.2%	4.1%	7.2%	15.4%	17.0%	19.6%
325-350					0.1%	0.6%	2.7%	3.8%	5.7%
350-375							0.2%	0.4%	0.9%
375-400									0.1%

Similarly, consensus near-term forecasts of the 30-year Treasury yield reported by *Blue Chip Financial Forecast* indicate the market expects long-term rates to rise by another approximately 40 basis points by the first quarter of 2020.[49] Importantly, the potential for rising rates represents risk for utility investors.

Q. HAVE THERE BEEN RECENT PERIODS WHEN UTILITY VALUATION LEVELS WERE HIGH RELATIVE TO BOTH THEIR LONG-TERM AVERAGE AND THE MARKET?

A. Yes. For example, between July and December 2016, the S&P Electric Utility Index lost approximately 9.00 percent of its value.[50] At the same time, the S&P 500 increased by approximately 7.00 percent, indicating that the utility sector under-performed the market by about 16.00 percent. Also during that time, the 30-year Treasury yield increased by approximately 95.00 basis points (an increase of nearly 45.00 percent). The point simply is that as interest rates increased, utility valuations fell. Because (as noted above)

48 Source: http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html, accessed Nov. 9, 2018.
49 *Blue Chip Financial Forecast,* Vol. 37, No. 10, Nov. 1, 2018, at 2.
50 Source: S&P Global Market Intelligence.

investors see the strong likelihood of further interest rate increases, there is a continuing risk of losses in the utility sector.

Q. DOES THE FEDERAL RESERVE'S TIGHTENING OF MONETARY POLICY HAVE OTHER IMPLICATIONS FOR THE ASSESSMENT OF CAPITAL MARKETS?

A. Yes. It is important to recognize that the Federal Reserve's reduction in monetary stimulus is related to expectations of improved economic and financial conditions, and sustained growth in the overall economy. When increasing the Federal Funds rate on September 26, 2018, the Federal Open Market Committee noted the labor market continued to improve and that economic activity, including household spending and business fixed investment, was rising at a strong rate.[51] From that perspective, we would expect to see higher growth estimates for companies in the overall economy, including the utility sector.

Q. DOES YOUR RECOMMENDATION CONSIDER THE INTEREST RATE ENVIRONMENT?

A. Yes, it does. 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. Moreover, increasing interest rates may be seen as an indication of expanding macroeconomic growth, in which case we reasonably could expect the growth rate component of the DCF model to increase. At the same time, sectors that historically have included dividend-paying companies may lose value, if only

[51] *Federal Reserve Press Release* dated September 26, 2018.

on a relative basis, as increasing interest rates provide investors with alternative sources of current income, increasing dividend yields. Those dynamics likely affect other models in different ways, increasing the risk of focusing on a single method. A more reasoned approach is to understand the relationships among capital market and macroeconomic variables, and to consider how those factors may affect different models and their results.

Q. HAVE YOU ALSO CONSIDERED THE EFFECT OF THE TAX CUTS AND JOBS ACT?

A. Yes, I have. On December 22, 2017, the President of the United States signed the TCJA into law. Leading up to and subsequent to the signing of the TCJA, electric utilities underperformed the market, which results in higher dividend yields, as rating agencies and investors re-evaluated utilities relative to other market sectors. To the extent investors now view utilities as less attractive relative to other sectors, investors will require a higher return to remain invested in the proxy companies. As that occurs, the proxy companies' prices will fall, and their dividend yields will increase. Because rating agencies have begun to discuss the consequences of the TCJA for utilities' cash flow, we reasonably can assume equity investors also have begun to recognize those concerns.

Q. WHAT CONCERNS HAVE RATING AGENCIES RAISED AS THEY CONSIDER THE IMPLICATIONS OF THE TCJA FOR UTILITIES' CASH FLOW?

A. The major rating agencies have observed that a reduction in utilities' revenue associated with lower income taxes, the loss of bonus depreciation, and the return of excess accumulated deferred income taxes, may reduce utilities' cash flow and lead to weaker

credit metrics.[52] As Fitch Ratings pointed out: "[a]bsent mitigating strategies on the regulatory front, this is expected to lead to weaker credit metrics and negative rating actions for issuers with limited headroom to absorb the leverage creep."[53] S&P expressed a similar view, noting that the TCJA is "…negative for credit quality because the combination of a lower tax rate and the loss of stimulus provisions related to bonus depreciation or full expensing of capital spending will create headwinds in operating cash-flow generation capabilities as customer rates are lowered in response to the new tax code."[54] Moody's stated the following:

> Tax reform is credit negative for US regulated utilities because the lower 21% statutory tax rate reduces cash collected from customers, while the loss of bonus depreciation reduces tax deferrals, all else being equal. Moody's calculates that the recent changes in tax laws will dilute a utility's ratio of cash flow before changes in working capital to debt by approximately 150 - 250 basis points on average, depending to some degree on the size of the company's capital expenditure programs. From a leverage perspective, Moody's estimates that debt to total capitalization ratios will increase, based on the lower value of deferred tax liabilities.[55]

All three rating agencies, therefore, have observed the negative effects of the TCJA on utilities' cash flow, and the potential consequences for their credit profiles.

Q. HAS MOODY'S RECENTLY UPDATED ITS REVIEW OF THE UTILITY SECTOR?

A. Yes. On June 18, 2018, Moody's changed its outlook on the U.S. regulated utility sector

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52 *See* S&P Global Market Intelligence, *Rating agencies warn tax reform could drag US utility sector credit quality*, January 25, 2018.

53 *See* FitchRatings Special Report, *Tax Reform Impact on the U.S. Utilities, Power & Gas Sector*, January 24, 2018.

54 *See* S&P Global Ratings, *U.S. Tax Reform: For Utilities' Credit Quality, Challenges Abound*, January 24, 2018.

55 *See* Moody's Investors' Service, *Rating Action: Moody's changes outlooks on 25 US regulated utilities primarily impacted by tax reform*, January 19, 2018.

to "negative" from "stable". Moody's explained that its change in outlook "…primarily reflects a degradation in key financial credit ratios, specifically the ratio of cash flow from operations to debt, funds from operations (FFO) to debt and retained cash flow to debt, as well as certain book leverage ratios." [56] The sector's outlook could remain "negative" if cash flow-based metrics continue to decline, or if there emerge signs of a more "contentious" regulatory environment (which, Moody's notes, is not fully reflected in lower authorized returns). Moody's also noted that "[m]anagement teams' defensive efforts and a few initial signs of supportive regulatory responses to tax reform are important first steps in addressing the sector's increased financial risk." Moody's further explained that in its view, "it will take longer than 12 - 18 months for the sector to exhibit a material financial improvement from these actions."[57]

Q. WHAT CONCLUSIONS DO YOU DRAW FROM THE DATA AND INFORMATION DISCUSSED ABOVE?

A. There is little question that the TCJA has increased cash flow-related risks, and the potentially dilutive effects of additional equity issuances, for utilities. Those risks are manifested in the sector's significant underperformance relative to the broad market, and in the comments of financial participants such as Moody's, S&P, and Fitch. Further, because non-regulated companies may benefit from the TCJA in ways utilities cannot, it is reasonable to conclude investors have begun to see utilities as less attractive relative to other industry sectors. In addition, to the extent the TCJA accelerates economic growth and inflation, and increases the potential for widening federal budget deficits, investors

[56] *See* Moody's Investors Service, Announcement: *Moody's changes the US regulated utility sector outlook to negative from stable*, June 18, 2018.

[57] *Ibid.*

may see further reason to expect increasing interest rates.[58] All three effects put upward pressure on the cost of capital for utilities.

Q. WHAT CONCLUSIONS DO YOU DRAW FROM YOUR ANALYSES OF THE CURRENT CAPITAL MARKET ENVIRONMENT, AND HOW DO THOSE CONCLUSIONS AFFECT YOUR ROE RECOMMENDATION?

A. From an analytical perspective, it is important that the inputs and assumptions used to arrive at an ROE determination, including assessments of capital market conditions, are consistent with the conclusion itself. Although all analyses require an element of judgment, the application of that judgment must be made in the context of the quantitative and qualitative information available to the analyst and the capital market environment in which the analyses were undertaken. Because the application of financial models and interpretation of their results often is the subject of differences among analysts in regulatory proceedings, I believe that it is important to review and consider a variety of data points; doing so enables us to put in context both quantitative analyses and the associated recommendations.

Because not all models used to estimate the cost of equity adequately reflect those changing market dynamics, it is important to give appropriate weight to the methods and to their results. Moreover, because those models produce a range of results, it is important to consider the type of data discussed above in determining where the Company's ROE falls within that range. On balance, I believe that the low end of the DCF-based results should be viewed carefully, and that somewhat more weight should be

[58] *Blue Chip Financial Forecasts*, March 1, 2018, at 1.

afforded the risk premium-based methods. I believe that doing so supports my recommended range of 9.90 percent to 10.50 percent, and my ROE recommendation of 10.20 percent.

VIII. CAPITAL STRUCTURE

Q. WHAT IS THE COMPANY'S PROPOSED CAPITAL STRUCTURE?

A. The Company proposes an authorized capital structure consisting of 51.65 percent common equity and 48.35 percent long-term debt based on Empire's capital structure as of June 30, 2018.

Q. HOW DOES THE CAPITAL STRUCTURE AFFECT THE COST OF EQUITY?

A. The capital structure relates to 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. In that regard, as the percentage of debt in the capital structure increases, so do the fixed obligations for the repayment of that debt. To the extent earnings and cash flows become less certain, the ability to meet those fixed obligations also becomes less certain. That is, as the degree of financial leverage increases, the risk of financial distress (*i.e.*, financial risk) also increases; it is for that reason that (in general) credit quality deteriorates and the cost of debt increases with higher levels of debt in the capital structure.

Increased levels of debt tend to concentrate the uncertainty (risk) associated with cash flows remaining after debt payments are made on to equity investors, who do not have the contractual claim on cash flows given to bondholders. Because their risk is increased, equity investors require higher returns as the use of debt increases. Since the

capital structure can affect the subject company's overall level of risk,[59] it is an important consideration in establishing a just and reasonable rate of return.

Q. PLEASE DISCUSS YOUR ANALYSIS OF THE CAPITAL STRUCTURES OF THE PROXY GROUP COMPANIES.

A. I calculated the average operating utility capital structure for each of the proxy group companies over the past eight calendar quarters. As shown in Schedule KM-9, the proxy group had a mean equity ratio of 53.47 percent and a mean long-term debt ratio of 46.53 percent. The common equity ratios range from 46.48 percent to 61.76 percent. Based on that review, it is apparent that the Company's proposed capital structure in this case is consistent with the capital structures of the proxy companies (although near the low-end of the range).

Q. WHAT IS YOUR CONCLUSION REGARDING AN APPROPRIATE CAPITAL STRUCTURE FOR EMPIRE?

A. Considering the range of equity ratios employed by the proxy group companies, I believe Empire's current 51.65 percent equity ratio is reasonable and appropriate.

IX. COST OF DEBT

Q. WHAT IS THE COMPANY'S COST OF DEBT?

A. As shown in Section 7, Schedule 7, the Company's cost of debt of is 4.70 percent.

Q. HAVE YOU ASSESSED THE COMPANY'S COST OF DEBT RELATIVE TO OTHER ELECTRIC UTILITIES?

A. Yes, I calculated the embedded cost of debt for authorized electric utility returns from

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

January 1, 2017 through October 31, 2018. The mean embedded cost of debt over that period was 4.92 percent, and the median was 4.90 percent.[60] Based on that review, I believe the Company's 4.70 percent cost of debt is reasonable and appropriate.

X. CONCLUSIONS AND RECOMMENDATION

Q. WHAT IS YOUR CONCLUSION REGARDING THE COMPANY'S COST OF EQUITY?

A. As discussed earlier in my Direct Testimony, it is prudent and appropriate to consider multiple methodologies to arrive at an ROE recommendation for Empire. Based on my review of the models discussed in Section V (*see* Table KM-8 below), I believe that a rate of return on common equity in the range of 9.90 percent to 10.50 percent represents the range of equity investors' required ROE for investment in electric utilities similar to Empire in today's capital markets. Within that range, it is my view that an ROE of 10.20 percent is reasonable and appropriate. My recommendation takes into consideration a variety of factors such as the capital market environment and the Company's risk profile, including: (1) the Company's relatively small size; (2) the regulatory environment in which Empire operates; and (3) the direct costs associated with equity issuances.

With regard to the Company's capital structure, I conclude Empire's current 51.65 percent common equity is consistent with industry practice and, therefore, is reasonable and appropriate. Lastly, I believe that the Company's 4.70 percent cost of debt, which is consistent with the cost of debt reflected in the overall rate of return for

[60] Excludes limited-issue riders and rate cases from Arkansas, Florida, Indiana and Michigan because those jurisdictions report capital structures that include non-investor supplied financing sources (*e.g.*, deferred taxes), which skews the implied cost of debt calculation.

electric utilities since the beginning of 2017, also is reasonable and appropriate.

Table KM-8: Summary of Analytical Results

DCF Analyses	*Proxy Group*		
	Low	*Mean*	*High*
Constant Growth, 30-day Stock Prices	8.20%	9.25%	10.33%
Constant Growth, 90-day Stock Prices	8.19%	9.25%	10.33%
Constant Growth, 180-day Stock Prices	8.31%	9.36%	10.44%
Quarterly Growth, 30-day Stock Prices	8.31%	9.39%	10.51%
Quarterly Growth, 90-day Stock Prices	8.30%	9.38%	10.50%
Quarterly Growth, 180-day Stock Prices	8.42%	9.51%	10.62%
CAPM	*Bloomberg MRP*	*Value Line* MRP	*S&P500 ROCE MRP*
Value Line Beta, Current Risk-Free Rate (3.30%)	10.64%	11.45%	9.52%
Value Line Beta, Projected Risk-Free Rate (3.57%)	10.74%	11.55%	9.62%
Bloomberg Beta, Current Risk-Free Rate (3.30%)	10.71%	11.53%	9.58%
Bloomberg Beta, Projected Risk-Free Rate (3.57%)	10.81%	11.63%	9.68%
Bond Yield Plus Risk Premium	*Low*	*Mid*	*High*
Current and Projected Baa Utility Bond Yields	9.84%	10.12%	10.53%
Expected Earnings Analysis		*Mean*	*Median*
Value Line Projected Return on Book Equity – Proxy Group		10.53%	10.49%
Value Line Projected Return on Book Equity – Electric Universe		10.88%	10.76%

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Constant Growth Discounted Cash Flow Model
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] I/B/E/S Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.24	$75.63	2.96%	3.05%	6.00%	6.00%	5.00%	5.67%	8.04%	8.71%	9.05%
Alliant Energy Corporation	LNT	$1.34	$43.13	3.11%	3.20%	5.40%	5.20%	6.50%	5.70%	8.39%	8.90%	9.71%
Ameren Corporation	AEE	$1.90	$64.55	2.94%	3.05%	6.50%	6.90%	7.50%	6.97%	9.54%	10.01%	10.55%
American Electric Power Company	AEP	$2.68	$71.92	3.73%	3.82%	5.60%	5.53%	4.50%	5.21%	8.31%	9.03%	9.43%
Avangrid, Inc.	AGR	$1.76	$47.63	3.70%	3.89%	8.70%	9.10%	13.00%	10.27%	12.56%	14.15%	16.94%
Black Hills Corporation	BKH	$2.02	$59.88	3.37%	3.46%	4.50%	4.34%	6.50%	5.11%	7.79%	8.57%	9.98%
CMS Energy Corporation	CMS	$1.43	$49.55	2.89%	2.98%	6.20%	7.08%	7.00%	6.76%	9.18%	9.74%	10.07%
DTE Energy Company	DTE	$3.53	$111.11	3.18%	3.28%	6.00%	5.50%	7.50%	6.33%	8.76%	9.61%	10.80%
Duke Energy Corporation	DUK	$3.71	$81.12	4.57%	4.69%	5.00%	4.40%	5.50%	4.97%	9.07%	9.65%	10.20%
El Paso Electric Company	EE	$1.44	$58.35	2.47%	2.53%	4.70%	4.70%	4.50%	4.63%	7.02%	7.16%	7.23%
Evergy, Inc	EVRG	$1.84	$55.85	3.29%	3.43%	7.70%	9.20%	NMF	8.45%	11.12%	11.88%	12.65%
Hawaiian Electric Industries, Inc.	HE	$1.24	$35.84	3.46%	3.56%	6.60%	8.10%	3.50%	6.07%	7.02%	9.63%	11.70%
NextEra Energy, Inc.	NEE	$4.44	$170.51	2.60%	2.72%	8.40%	9.43%	9.00%	8.94%	11.11%	11.66%	12.16%
NorthWestern Corporation	NWE	$2.20	$59.31	3.71%	3.76%	2.30%	2.42%	3.50%	2.74%	6.05%	6.50%	7.27%
OGE Energy Corp.	OGE	$1.46	$36.76	3.97%	4.03%	5.20%	-2.35%	6.00%	2.95%	1.58%	6.98%	10.09%
Otter Tail Corporation	OTTR	$1.34	$46.74	2.87%	2.99%	NA	9.00%	7.50%	8.25%	10.47%	11.24%	12.00%
Pinnacle West Capital Corporation	PNW	$2.95	$81.74	3.61%	3.69%	4.50%	3.73%	5.00%	4.41%	7.41%	8.10%	8.70%
PNM Resources, Inc.	PNM	$1.06	$39.19	2.71%	2.78%	4.60%	4.95%	7.50%	5.68%	7.37%	8.47%	10.31%
Portland General Electric Company	POR	$1.45	$45.73	3.17%	3.24%	3.10%	5.10%	4.00%	4.07%	6.32%	7.30%	8.35%
Southern Company	SO	$2.40	$44.12	5.44%	5.52%	4.50%	1.37%	3.00%	2.96%	6.85%	8.48%	10.06%
WEC Energy Group, Inc.	WEC	$2.21	$68.27	3.24%	3.32%	4.40%	4.66%	7.00%	5.35%	7.71%	8.68%	10.35%
Xcel Energy Inc.	XEL	$1.52	$48.13	3.16%	3.25%	5.60%	6.49%	5.50%	5.86%	8.75%	9.11%	9.75%
Proxy Group Mean				3.37%	3.46%	5.50%	5.49%	6.14%	5.79%	8.20%	9.25%	10.33%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of October 31, 2018
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [9])
[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
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] I/B/E/S Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.24	$76.54	2.93%	3.01%	6.00%	6.00%	5.00%	5.67%	8.00%	8.68%	9.01%
Alliant Energy Corporation	LNT	$1.34	$43.02	3.12%	3.20%	5.40%	5.20%	6.50%	5.70%	8.40%	8.90%	9.72%
Ameren Corporation	AEE	$1.90	$63.37	3.00%	3.10%	6.50%	6.90%	7.50%	6.97%	9.60%	10.07%	10.61%
American Electric Power Company	AEP	$2.68	$71.39	3.75%	3.85%	5.60%	5.53%	4.50%	5.21%	8.34%	9.06%	9.46%
Avangrid, Inc.	AGR	$1.76	$49.76	3.54%	3.72%	8.70%	9.10%	13.00%	10.27%	12.39%	13.99%	16.77%
Black Hills Corporation	BKH	$2.02	$60.21	3.36%	3.44%	4.50%	4.34%	6.50%	5.11%	7.77%	8.55%	9.96%
CMS Energy Corporation	CMS	$1.43	$48.94	2.92%	3.02%	6.20%	7.08%	7.00%	6.76%	9.21%	9.78%	10.11%
DTE Energy Company	DTE	$3.53	$109.91	3.21%	3.31%	6.00%	5.50%	7.50%	6.33%	8.80%	9.65%	10.83%
Duke Energy Corporation	DUK	$3.71	$80.99	4.58%	4.69%	5.00%	4.40%	5.50%	4.97%	9.08%	9.66%	10.21%
El Paso Electric Company	EE	$1.44	$60.41	2.38%	2.44%	4.70%	4.70%	4.50%	4.63%	6.94%	7.07%	7.14%
Evergy, Inc	EVRG	$1.84	$56.40	3.26%	3.40%	7.70%	9.20%	NMF	8.45%	11.09%	11.85%	12.61%
Hawaiian Electric Industries, Inc.	HE	$1.24	$35.35	3.51%	3.61%	6.60%	8.10%	3.50%	6.07%	7.07%	9.68%	11.75%
NextEra Energy, Inc.	NEE	$4.44	$170.42	2.61%	2.72%	8.40%	9.43%	9.00%	8.94%	11.11%	11.67%	12.16%
NorthWestern Corporation	NWE	$2.20	$59.30	3.71%	3.76%	2.30%	2.42%	3.50%	2.74%	6.05%	6.50%	7.27%
OGE Energy Corp.	OGE	$1.46	$36.47	4.00%	4.06%	5.20%	-2.35%	6.00%	2.95%	1.61%	7.01%	10.12%
Otter Tail Corporation	OTTR	$1.34	$47.85	2.80%	2.92%	NA	9.00%	7.50%	8.25%	10.41%	11.17%	11.93%
Pinnacle West Capital Corporation	PNW	$2.95	$80.91	3.65%	3.73%	4.50%	3.73%	5.00%	4.41%	7.44%	8.14%	8.74%
PNM Resources, Inc.	PNM	$1.06	$39.18	2.71%	2.78%	4.60%	4.95%	7.50%	5.68%	7.37%	8.47%	10.31%
Portland General Electric Company	POR	$1.45	$45.48	3.19%	3.25%	3.10%	5.10%	4.00%	4.07%	6.34%	7.32%	8.37%
Southern Company	SO	$2.40	$45.65	5.26%	5.33%	4.50%	1.37%	3.00%	2.96%	6.66%	8.29%	9.88%
WEC Energy Group, Inc.	WEC	$2.21	$67.10	3.29%	3.38%	4.40%	4.66%	7.00%	5.35%	7.77%	8.73%	10.41%
Xcel Energy Inc.	XEL	$1.52	$47.47	3.20%	3.30%	5.60%	6.49%	5.50%	5.86%	8.79%	9.16%	9.80%
Proxy Group Mean				3.36%	3.46%	5.50%	5.49%	6.14%	5.79%	8.19%	9.25%	10.33%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of October 31, 2018
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [9])
[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
180 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] I/B/E/S Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.24	$74.75	3.00%	3.08%	6.00%	6.00%	5.00%	5.67%	8.07%	8.75%	9.09%
Alliant Energy Corporation	LNT	$1.34	$41.76	3.21%	3.30%	5.40%	5.20%	6.50%	5.70%	8.49%	9.00%	9.81%
Ameren Corporation	AEE	$1.90	$59.93	3.17%	3.28%	6.50%	6.90%	7.50%	6.97%	9.77%	10.25%	10.79%
American Electric Power Company	AEP	$2.68	$69.20	3.87%	3.97%	5.60%	5.53%	4.50%	5.21%	8.46%	9.18%	9.58%
Avangrid, Inc.	AGR	$1.76	$50.31	3.50%	3.68%	8.70%	9.10%	13.00%	10.27%	12.35%	13.94%	16.73%
Black Hills Corporation	BKH	$2.02	$57.65	3.50%	3.59%	4.50%	4.34%	6.50%	5.11%	7.92%	8.71%	10.12%
CMS Energy Corporation	CMS	$1.43	$46.73	3.06%	3.16%	6.20%	7.08%	7.00%	6.76%	9.35%	9.92%	10.25%
DTE Energy Company	DTE	$3.53	$105.87	3.33%	3.44%	6.00%	5.50%	7.50%	6.33%	8.93%	9.77%	10.96%
Duke Energy Corporation	DUK	$3.71	$78.81	4.71%	4.82%	5.00%	4.40%	5.50%	4.97%	9.21%	9.79%	10.34%
El Paso Electric Company	EE	$1.44	$56.50	2.55%	2.61%	4.70%	4.70%	4.50%	4.63%	7.11%	7.24%	7.31%
Evergy, Inc	EVRG	$1.84	$54.31	3.39%	3.53%	7.70%	9.20%	NMF	8.45%	11.22%	11.98%	12.74%
Hawaiian Electric Industries, Inc.	HE	$1.24	$34.59	3.58%	3.69%	6.60%	8.10%	3.50%	6.07%	7.15%	9.76%	11.83%
NextEra Energy, Inc.	NEE	$4.44	$165.02	2.69%	2.81%	8.40%	9.43%	9.00%	8.94%	11.20%	11.75%	12.25%
NorthWestern Corporation	NWE	$2.20	$56.29	3.91%	3.96%	2.30%	2.42%	3.50%	2.74%	6.25%	6.70%	7.48%
OGE Energy Corp.	OGE	$1.46	$34.68	4.21%	4.27%	5.20%	-2.35%	6.00%	2.95%	1.81%	7.22%	10.34%
Otter Tail Corporation	OTTR	$1.34	$45.86	2.92%	3.04%	NA	9.00%	7.50%	8.25%	10.53%	11.29%	12.05%
Pinnacle West Capital Corporation	PNW	$2.95	$79.42	3.71%	3.80%	4.50%	3.73%	5.00%	4.41%	7.51%	8.21%	8.81%
PNM Resources, Inc.	PNM	$1.06	$38.39	2.76%	2.84%	4.60%	4.95%	7.50%	5.68%	7.42%	8.52%	10.36%
Portland General Electric Company	POR	$1.45	$43.08	3.37%	3.43%	3.10%	5.10%	4.00%	4.07%	6.52%	7.50%	8.55%
Southern Company	SO	$2.40	$45.02	5.33%	5.41%	4.50%	1.37%	3.00%	2.96%	6.74%	8.37%	9.95%
WEC Energy Group, Inc.	WEC	$2.21	$64.40	3.43%	3.52%	4.40%	4.66%	7.00%	5.35%	7.91%	8.88%	10.55%
Xcel Energy Inc.	XEL	$1.52	$45.97	3.31%	3.40%	5.60%	6.49%	5.50%	5.86%	8.90%	9.27%	9.90%
Proxy Group Mean				3.48%	3.58%	5.50%	5.49%	6.14%	5.79%	8.31%	9.36%	10.44%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals indicated number of trading day average as of October 31, 2018
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [9])
[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] + [9]
[11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Quarterly Discounted Cash Flow Model
30 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
		---- Last Four Dividends ----				---- Mean Expected Dividends ----											
Company	Ticker	1	2	3	4	1	2	3	4	Stocks Price	Zacks Earnings Growth	I/B/E/S Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	$0.56	$0.56	$0.56	$0.56	$0.59	$0.59	$0.59	$0.59	$75.63	6.00%	6.00%	5.00%	5.67%	8.20%	8.90%	9.25%
Alliant Energy Corporation	LNT	$0.34	$0.34	$0.34	$0.34	$0.35	$0.35	$0.35	$0.35	$43.13	5.40%	5.20%	6.50%	5.70%	8.57%	9.09%	9.93%
Ameren Corporation	AEE	$0.46	$0.46	$0.46	$0.48	$0.49	$0.49	$0.49	$0.51	$64.55	6.50%	6.90%	7.50%	6.97%	9.66%	10.14%	10.70%
American Electric Power Company	AEP	$0.62	$0.62	$0.62	$0.67	$0.65	$0.65	$0.65	$0.70	$71.92	5.60%	5.53%	4.50%	5.21%	8.29%	9.03%	9.44%
Avangrid, Inc.	AGR	$0.43	$0.43	$0.43	$0.44	$0.48	$0.48	$0.48	$0.49	$47.63	8.70%	9.10%	13.00%	10.27%	12.85%	14.50%	17.38%
Black Hills Corporation	BKH	$0.48	$0.48	$0.48	$0.51	$0.50	$0.50	$0.50	$0.53	$59.88	4.50%	4.34%	6.50%	5.11%	7.80%	8.61%	10.06%
CMS Energy Corporation	CMS	$0.36	$0.36	$0.36	$0.36	$0.38	$0.38	$0.38	$0.38	$49.55	6.20%	7.08%	7.00%	6.76%	9.37%	9.95%	10.29%
DTE Energy Company	DTE	$0.88	$0.88	$0.88	$0.88	$0.94	$0.94	$0.94	$0.94	$111.11	6.00%	5.50%	7.50%	6.33%	8.96%	9.83%	11.05%
Duke Energy Corporation	DUK	$0.89	$0.89	$0.93	$0.93	$0.93	$0.93	$0.97	$0.97	$81.12	5.00%	4.40%	5.50%	4.97%	9.23%	9.84%	10.41%
El Paso Electric Company	EE	$0.34	$0.34	$0.36	$0.36	$0.35	$0.35	$0.38	$0.38	$58.35	4.70%	4.70%	4.50%	4.63%	7.05%	7.19%	7.26%
Evergy, Inc	EVRG	$0.40	$0.40	$0.40	$0.46	$0.43	$0.43	$0.43	$0.50	$55.85	7.70%	9.20%	NMF	8.45%	11.03%	11.81%	12.59%
Hawaiian Electric Industries, Inc.	HE	$0.31	$0.31	$0.31	$0.31	$0.33	$0.33	$0.33	$0.33	$35.84	6.60%	8.10%	3.50%	6.07%	7.18%	9.87%	12.00%
NextEra Energy, Inc.	NEE	$1.11	$1.11	$1.11	$1.11	$1.21	$1.21	$1.21	$1.21	$170.51	8.40%	9.43%	9.00%	8.94%	11.34%	11.90%	12.41%
NorthWestern Corporation	NWE	$0.55	$0.55	$0.55	$0.55	$0.57	$0.57	$0.57	$0.57	$59.31	2.30%	2.42%	3.50%	2.74%	6.18%	6.64%	7.44%
OGE Energy Corp.	OGE	$0.33	$0.33	$0.33	$0.37	$0.34	$0.34	$0.34	$0.38	$36.76	5.20%	-2.35%	6.00%	2.95%	1.29%	6.86%	10.07%
Otter Tail Corporation	OTTR	$0.32	$0.34	$0.34	$0.34	$0.35	$0.36	$0.36	$0.36	$46.74	NA	9.00%	7.50%	8.25%	10.67%	11.45%	12.23%
Pinnacle West Capital Corporation	PNW	$0.70	$0.70	$0.70	$0.74	$0.73	$0.73	$0.73	$0.77	$81.74	4.50%	3.73%	5.00%	4.41%	7.41%	8.12%	8.74%
PNM Resources, Inc.	PNM	$0.27	$0.27	$0.27	$0.27	$0.28	$0.28	$0.28	$0.28	$39.19	4.60%	4.95%	7.50%	5.68%	7.51%	8.63%	10.52%
Portland General Electric Company	POR	$0.34	$0.36	$0.36	$0.36	$0.35	$0.38	$0.38	$0.38	$45.73	3.10%	5.10%	4.00%	4.07%	6.39%	7.40%	8.48%
Southern Company	SO	$0.58	$0.60	$0.60	$0.60	$0.60	$0.62	$0.62	$0.62	$44.12	4.50%	1.37%	3.00%	2.96%	6.98%	8.69%	10.35%
WEC Energy Group, Inc.	WEC	$0.55	$0.55	$0.55	$0.55	$0.58	$0.58	$0.58	$0.58	$68.27	4.40%	4.66%	7.00%	5.35%	7.88%	8.88%	10.60%
Xcel Energy Inc.	XEL	$0.36	$0.38	$0.38	$0.38	$0.38	$0.40	$0.40	$0.40	$48.13	5.60%	6.49%	5.50%	5.86%	8.89%	9.27%	9.93%
Proxy Group Mean											5.50%	5.49%	6.14%	5.79%	8.31%	9.39%	10.51%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional
[3] Source: Bloomberg Professional
[4] Source: Bloomberg Professional
[5] Equals Col. [1] x (1 + Col. [14])
[6] Equals Col. [2] x (1 + Col. [14])
[7] Equals Col. [3] x (1 + Col. [14])
[8] Equals Col. [4] x (1 + Col. [14])
[9] Source: Blomberg Professional Service
[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 Discounted Cash Flow Model
90 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
		Last Four Dividends				Mean Expected Dividends				Stocks	Zacks Earnings	I/B/E/S Earnings	Value Line Earnings	Average Earnings	Low	Mean	High
Company	Ticker	1	2	3	4	1	2	3	4	Price	Growth	Growth	Growth	Growth	ROE	ROE	ROE
ALLETE, Inc.	ALE	$0.56	$0.56	$0.56	$0.56	$0.59	$0.59	$0.59	$0.59	$76.54	6.00%	6.00%	5.00%	5.67%	8.17%	8.86%	9.21%
Alliant Energy Corporation	LNT	$0.34	$0.34	$0.34	$0.34	$0.35	$0.35	$0.35	$0.35	$43.02	5.40%	5.20%	6.50%	5.70%	8.58%	9.10%	9.94%
Ameren Corporation	AEE	$0.46	$0.46	$0.46	$0.48	$0.49	$0.49	$0.49	$0.51	$63.37	6.50%	6.90%	7.50%	6.97%	9.71%	10.20%	10.76%
American Electric Power Company	AEP	$0.62	$0.62	$0.62	$0.67	$0.65	$0.65	$0.65	$0.70	$71.39	5.60%	5.53%	4.50%	5.21%	8.31%	9.06%	9.47%
Avangrid, Inc.	AGR	$0.43	$0.43	$0.43	$0.44	$0.48	$0.48	$0.48	$0.49	$49.76	8.70%	9.10%	13.00%	10.27%	12.67%	14.31%	17.19%
Black Hills Corporation	BKH	$0.48	$0.48	$0.48	$0.51	$0.50	$0.50	$0.50	$0.53	$60.21	4.50%	4.34%	6.50%	5.11%	7.78%	8.59%	10.04%
CMS Energy Corporation	CMS	$0.36	$0.36	$0.36	$0.36	$0.38	$0.38	$0.38	$0.38	$48.94	6.20%	7.08%	7.00%	6.76%	9.41%	9.99%	10.33%
DTE Energy Company	DTE	$0.88	$0.88	$0.88	$0.88	$0.94	$0.94	$0.94	$0.94	$109.91	6.00%	5.50%	7.50%	6.33%	9.00%	9.87%	11.09%
Duke Energy Corporation	DUK	$0.89	$0.89	$0.93	$0.93	$0.93	$0.93	$0.97	$0.97	$80.99	5.00%	4.40%	5.50%	4.97%	9.24%	9.85%	10.41%
El Paso Electric Company	EE	$0.34	$0.34	$0.36	$0.36	$0.35	$0.35	$0.38	$0.38	$60.41	4.70%	4.70%	4.50%	4.63%	6.96%	7.10%	7.17%
Evergy, Inc	EVRG	$0.40	$0.40	$0.40	$0.46	$0.43	$0.43	$0.43	$0.50	$56.40	7.70%	9.20%	NMF	8.45%	10.99%	11.77%	12.56%
Hawaiian Electric Industries, Inc.	HE	$0.31	$0.31	$0.31	$0.31	$0.33	$0.33	$0.33	$0.33	$35.35	6.60%	8.10%	3.50%	6.07%	7.23%	9.92%	12.06%
NextEra Energy, Inc.	NEE	$1.11	$1.11	$1.11	$1.11	$1.21	$1.21	$1.21	$1.21	$170.42	8.40%	9.43%	9.00%	8.94%	11.34%	11.91%	12.41%
NorthWestern Corporation	NWE	$0.55	$0.55	$0.55	$0.55	$0.57	$0.57	$0.57	$0.57	$59.30	2.30%	2.42%	3.50%	2.74%	6.18%	6.65%	7.45%
OGE Energy Corp.	OGE	$0.33	$0.33	$0.33	$0.37	$0.34	$0.34	$0.34	$0.38	$36.47	5.20%	-2.35%	6.00%	2.95%	1.32%	6.89%	10.10%
Otter Tail Corporation	OTTR	$0.32	$0.34	$0.34	$0.34	$0.35	$0.36	$0.36	$0.36	$47.85	NA	9.00%	7.50%	8.25%	10.59%	11.37%	12.15%
Pinnacle West Capital Corporation	PNW	$0.70	$0.70	$0.70	$0.74	$0.73	$0.73	$0.73	$0.77	$80.91	4.50%	3.73%	5.00%	4.41%	7.45%	8.16%	8.78%
PNM Resources, Inc.	PNM	$0.27	$0.27	$0.27	$0.27	$0.28	$0.28	$0.28	$0.28	$39.18	4.60%	4.95%	7.50%	5.68%	7.51%	8.63%	10.52%
Portland General Electric Company	POR	$0.34	$0.36	$0.36	$0.36	$0.35	$0.38	$0.38	$0.38	$45.48	3.10%	5.10%	4.00%	4.07%	6.41%	7.42%	8.50%
Southern Company	SO	$0.58	$0.60	$0.60	$0.60	$0.60	$0.62	$0.62	$0.62	$45.65	4.50%	1.37%	3.00%	2.96%	6.79%	8.49%	10.15%
WEC Energy Group, Inc.	WEC	$0.55	$0.55	$0.55	$0.55	$0.58	$0.58	$0.58	$0.58	$67.10	4.40%	4.66%	7.00%	5.35%	7.94%	8.94%	10.66%
Xcel Energy Inc.	XEL	$0.36	$0.38	$0.38	$0.38	$0.38	$0.40	$0.40	$0.40	$47.47	5.60%	6.49%	5.50%	5.86%	8.94%	9.32%	9.98%
Proxy Group Mean											5.50%	5.49%	6.14%	5.79%	8.30%	9.38%	10.50%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional
[3] Source: Bloomberg Professional
[4] Source: Bloomberg Professional
[5] Equals Col. [1] x (1 + Col. [14])
[6] Equals Col. [2] x (1 + Col. [14])
[7] Equals Col. [3] x (1 + Col. [14])
[8] Equals Col. [4] x (1 + Col. [14])
[9] Source: Blomberg Professional Service
[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 Discounted Cash Flow Model
180 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
		Last Four Dividends				Mean Expected Dividends				Stocks	Zacks Earnings	I/B/E/S Earnings	Value Line Earnings	Average Earnings	Low	Mean	High
Company	Ticker	1	2	3	4	1	2	3	4	Price	Growth	Growth	Growth	Growth	ROE	ROE	ROE
ALLETE, Inc.	ALE	$0.56	$0.56	$0.56	$0.56	$0.59	$0.59	$0.59	$0.59	$74.75	6.00%	6.00%	5.00%	5.67%	8.24%	8.94%	9.29%
Alliant Energy Corporation	LNT	$0.34	$0.34	$0.34	$0.34	$0.35	$0.35	$0.35	$0.35	$41.76	5.40%	5.20%	6.50%	5.70%	8.68%	9.21%	10.04%
Ameren Corporation	AEE	$0.46	$0.46	$0.46	$0.48	$0.49	$0.49	$0.49	$0.51	$59.93	6.50%	6.90%	7.50%	6.97%	9.90%	10.39%	10.95%
American Electric Power Company	AEP	$0.62	$0.62	$0.62	$0.67	$0.65	$0.65	$0.65	$0.70	$69.20	5.60%	5.53%	4.50%	5.21%	8.44%	9.18%	9.59%
Avangrid, Inc.	AGR	$0.43	$0.43	$0.43	$0.44	$0.48	$0.48	$0.48	$0.49	$50.31	8.70%	9.10%	13.00%	10.27%	12.62%	14.27%	17.14%
Black Hills Corporation	BKH	$0.48	$0.48	$0.48	$0.51	$0.50	$0.50	$0.50	$0.53	$57.65	4.50%	4.34%	6.50%	5.11%	7.93%	8.74%	10.20%
CMS Energy Corporation	CMS	$0.36	$0.36	$0.36	$0.36	$0.38	$0.38	$0.38	$0.38	$46.73	6.20%	7.08%	7.00%	6.76%	9.56%	10.15%	10.48%
DTE Energy Company	DTE	$0.88	$0.88	$0.88	$0.88	$0.94	$0.94	$0.94	$0.94	$105.87	6.00%	5.50%	7.50%	6.33%	9.14%	10.01%	11.23%
Duke Energy Corporation	DUK	$0.89	$0.89	$0.93	$0.93	$0.93	$0.93	$0.97	$0.97	$78.81	5.00%	4.40%	5.50%	4.97%	9.38%	9.98%	10.55%
El Paso Electric Company	EE	$0.34	$0.34	$0.36	$0.36	$0.35	$0.35	$0.38	$0.38	$56.50	4.70%	4.70%	4.50%	4.63%	7.14%	7.28%	7.34%
Evergy, Inc	EVRG	$0.40	$0.40	$0.40	$0.46	$0.43	$0.43	$0.43	$0.50	$54.31	7.70%	9.20%	NMF	8.45%	11.12%	11.90%	12.69%
Hawaiian Electric Industries, Inc.	HE	$0.31	$0.31	$0.31	$0.31	$0.33	$0.33	$0.33	$0.33	$34.59	6.60%	8.10%	3.50%	6.07%	7.31%	10.01%	12.15%
NextEra Energy, Inc.	NEE	$1.11	$1.11	$1.11	$1.11	$1.21	$1.21	$1.21	$1.21	$165.02	8.40%	9.43%	9.00%	8.94%	11.44%	12.00%	12.51%
NorthWestern Corporation	NWE	$0.55	$0.55	$0.55	$0.55	$0.57	$0.57	$0.57	$0.57	$56.29	2.30%	2.42%	3.50%	2.74%	6.39%	6.86%	7.66%
OGE Energy Corp.	OGE	$0.33	$0.33	$0.33	$0.37	$0.34	$0.34	$0.34	$0.38	$34.68	5.20%	-2.35%	6.00%	2.95%	1.51%	7.10%	10.32%
Otter Tail Corporation	OTTR	$0.32	$0.34	$0.34	$0.34	$0.35	$0.36	$0.36	$0.36	$45.86	NA	9.00%	7.50%	8.25%	10.73%	11.51%	12.29%
Pinnacle West Capital Corporation	PNW	$0.70	$0.70	$0.70	$0.74	$0.73	$0.73	$0.73	$0.77	$79.42	4.50%	3.73%	5.00%	4.41%	7.52%	8.23%	8.85%
PNM Resources, Inc.	PNM	$0.27	$0.27	$0.27	$0.27	$0.28	$0.28	$0.28	$0.28	$38.39	4.60%	4.95%	7.50%	5.68%	7.57%	8.69%	10.58%
Portland General Electric Company	POR	$0.34	$0.36	$0.36	$0.36	$0.35	$0.38	$0.38	$0.38	$43.08	3.10%	5.10%	4.00%	4.07%	6.60%	7.61%	8.69%
Southern Company	SO	$0.58	$0.60	$0.60	$0.60	$0.60	$0.62	$0.62	$0.62	$45.02	4.50%	1.37%	3.00%	2.96%	6.86%	8.57%	10.23%
WEC Energy Group, Inc.	WEC	$0.55	$0.55	$0.55	$0.55	$0.58	$0.58	$0.58	$0.58	$64.40	4.40%	4.66%	7.00%	5.35%	8.09%	9.09%	10.82%
Xcel Energy Inc.	XEL	$0.36	$0.38	$0.38	$0.38	$0.38	$0.40	$0.40	$0.40	$45.97	5.60%	6.49%	5.50%	5.86%	9.06%	9.44%	10.09%
Proxy Group Mean											5.50%	5.49%	6.14%	5.79%	8.42%	9.51%	10.62%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional
[3] Source: Bloomberg Professional
[4] Source: Bloomberg Professional
[5] Equals Col. [1] x (1 + Col. [14])
[6] Equals Col. [2] x (1 + Col. [14])
[7] Equals Col. [3] x (1 + Col. [14])
[8] Equals Col. [4] x (1 + Col. [14])
[9] Source: Blomberg Professional Service
[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

Ex-Ante Market Risk Premium
Market DCF Method Based - Value Line & Bloomberg

	Bloomberg	Value Line
Est. S&P 500 Return [1]:	15.15%	16.47%
Current Risk-Free Rate [2]:	3.30%	3.30%
Near-Term Projected Risk-Free Rate [3]:	3.57%	3.57%
Current Market Risk Premium [4]:	11.85%	13.16%
Near-Term Projected Market Risk Premium [5]:	11.59%	12.90%

		[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
					Bloomberg			Value Line	
Company	Ticker	Market Capitalization ($MM)	Dividend Yield	Growth Rate	DCF Result	Weight in Index	Growth Rate	DCF Result	Weight in Index
Agilent Technologies Inc	A	20,653.08	0.92%	10.35%	11.32%	0.09%	12.00%	12.98%	0.09%
American Airlines Group Inc	AAL	16,157.20	1.21%	14.86%	16.15%	0.07%	1.50%	2.72%	0.07%
Advance Auto Parts Inc	AAP	11,835.22	0.15%	18.46%	18.62%	0.05%	13.00%	13.16%	0.05%
Apple Inc	AAPL	1,057,077.60	1.25%	9.84%	11.15%	4.39%	16.50%	17.85%	4.62%
AbbVie Inc	ABBV	117,886.13	4.93%	10.15%	15.33%	0.49%	14.50%	19.79%	0.52%
AmerisourceBergen Corp	ABC	19,039.38	1.73%	10.01%	11.83%	0.08%	8.50%	10.31%	0.08%
ABIOMED Inc	ABMD	15,312.09	0.00%	N/A	N/A	N/A	27.50%	27.50%	0.07%
Abbott Laboratories	ABT	121,081.60	1.63%	12.23%	13.96%	0.50%	9.50%	11.21%	0.53%
Accenture PLC	ACN	100,766.41	1.83%	10.40%	12.33%	0.42%	10.00%	11.93%	0.44%
Adobe Inc	ADBE	119,963.70	0.00%	19.02%	19.02%	0.50%	27.00%	27.00%	0.52%
Analog Devices Inc	ADI	31,112.49	2.26%	9.53%	11.90%	0.13%	13.00%	15.40%	0.14%
Archer-Daniels-Midland Co	ADM	26,447.59	2.84%	11.40%	14.40%	0.11%	9.00%	11.97%	0.12%
Automatic Data Processing Inc	ADP	63,135.86	1.91%	14.00%	16.04%	0.26%	12.50%	14.53%	0.28%
Alliance Data Systems Corp	ADS	11,328.27	1.11%	13.23%	14.41%	0.05%	15.00%	16.19%	0.05%
Autodesk Inc	ADSK	28,256.20	0.00%	55.23%	55.23%	0.12%	N/A	N/A	N/A
Ameren Corp	AEE	15,760.10	2.89%	8.25%	11.26%	0.07%	7.50%	10.50%	0.07%
American Electric Power Co Inc	AEP	36,174.46	3.43%	5.40%	8.92%	0.15%	4.50%	8.01%	0.16%
AES Corp/VA	AES	9,647.34	3.63%	8.59%	12.37%	0.04%	N/A	N/A	N/A
Aetna Inc	AET	64,956.16	1.01%	10.98%	12.05%	0.27%	10.00%	11.06%	0.28%
Aflac Inc	AFL	32,867.28	2.42%	8.45%	10.98%	0.14%	8.50%	11.03%	0.14%
Allergan PLC	AGN	53,294.55	1.83%	7.25%	9.15%	0.22%	4.50%	6.38%	0.23%
American International Group Inc	AIG	36,683.95	3.10%	11.00%	14.28%	0.15%	52.00%	55.91%	0.16%
Apartment Investment & Management Co	AIV	6,772.41	3.54%	6.20%	9.85%	0.03%	5.50%	9.14%	0.03%
Assurant Inc	AIZ	6,074.47	2.37%	N/A	N/A	N/A	7.50%	9.96%	0.03%
Arthur J Gallagher & Co	AJG	13,592.08	2.22%	10.91%	13.25%	0.06%	17.00%	19.40%	0.06%
Akamai Technologies Inc	AKAM	12,246.71	0.00%	13.67%	13.67%	0.05%	17.00%	17.00%	0.05%
Albemarle Corp	ALB	10,760.39	1.37%	13.03%	14.48%	0.04%	10.00%	11.44%	0.05%
Align Technology Inc	ALGN	17,766.80	0.00%	31.09%	31.09%	0.07%	30.50%	30.50%	0.08%
Alaska Air Group Inc	ALK	7,579.11	2.06%	3.22%	5.31%	0.03%	2.00%	4.08%	0.03%
Allstate Corp/The	ALL	32,970.01	1.88%	7.10%	9.05%	0.14%	12.00%	13.99%	0.14%
Allegion PLC	ALLE	8,149.13	0.92%	11.03%	12.00%	0.03%	10.00%	10.97%	0.04%
Alexion Pharmaceuticals Inc	ALXN	25,002.44	0.00%	16.32%	16.32%	0.10%	26.50%	26.50%	0.11%
Applied Materials Inc	AMAT	32,320.73	1.83%	12.09%	14.04%	0.13%	19.00%	21.01%	0.14%
Advanced Micro Devices Inc	AMD	18,199.21	0.00%	25.45%	25.45%	0.08%	N/A	N/A	N/A
AMETEK Inc	AME	15,555.66	0.83%	11.81%	12.69%	0.06%	10.50%	11.38%	0.07%
Affiliated Managers Group Inc	AMG	6,073.08	1.06%	8.34%	9.44%	0.03%	6.50%	7.59%	0.03%
Amgen Inc	AMGN	122,849.50	2.70%	6.60%	9.40%	0.51%	8.50%	11.32%	0.54%
Ameriprise Financial Inc	AMP	18,050.76	2.78%	11.80%	14.75%	0.07%	16.00%	19.01%	0.08%
American Tower Corp	AMT	68,632.41	2.01%	16.37%	18.55%	0.28%	11.50%	13.63%	0.30%
Amazon.com Inc	AMZN	781,376.76	0.00%	51.86%	51.86%	3.24%	51.00%	51.00%	3.42%
Arista Networks Inc	ANET	17,235.64	0.00%	27.63%	27.63%	0.07%	19.00%	19.00%	0.08%
ANSYS Inc	ANSS	12,606.74	0.00%	13.83%	13.83%	0.05%	12.00%	12.00%	0.06%
Anthem Inc	ANTM	71,274.00	1.09%	12.27%	13.43%	0.30%	17.50%	18.68%	0.31%
Aon PLC	AON	37,615.03	1.00%	9.77%	10.82%	0.16%	9.50%	10.55%	0.16%
AO Smith Corp	AOS	7,767.72	1.63%	10.33%	12.04%	0.03%	12.50%	14.23%	0.03%
Apache Corp	APA	14,469.44	2.64%	0.11%	2.75%	0.06%	N/A	N/A	N/A
Anadarko Petroleum Corp	APC	26,827.74	1.61%	20.62%	22.40%	0.11%	N/A	N/A	N/A
Air Products & Chemicals Inc	APD	33,844.71	2.71%	12.97%	15.85%	0.14%	8.00%	10.82%	0.15%
Amphenol Corp	APH	26,968.78	0.97%	11.87%	12.90%	0.11%	10.00%	11.02%	0.12%
Aptiv PLC	APTV	20,234.67	1.15%	13.07%	14.29%	0.08%	10.00%	11.20%	0.09%
Alexandria Real Estate Equities Inc	ARE	13,142.98	3.02%	6.57%	9.69%	0.05%	N/A	N/A	N/A
Arconic Inc	ARNC	9,818.47	1.20%	15.80%	17.09%	0.04%	N/A	N/A	N/A
Activision Blizzard Inc	ATVI	52,644.31	0.49%	14.50%	15.03%	0.22%	13.50%	14.03%	0.23%
AvalonBay Communities Inc	AVB	24,240.80	3.35%	6.38%	9.83%	0.10%	6.50%	9.96%	0.11%

		[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
					Bloomberg			Value Line	
Broadcom Inc	AVGO	92,401.22	3.13%	13.10%	16.43%	0.38%	44.50%	48.33%	0.40%
Avery Dennison Corp	AVY	7,866.35	2.18%	7.10%	9.36%	0.03%	11.50%	13.81%	0.03%
American Water Works Co Inc	AWK	15,988.41	2.03%	8.22%	10.33%	0.07%	10.00%	12.13%	0.07%
American Express Co	AXP	87,758.32	1.44%	17.30%	18.86%	0.36%	9.00%	10.50%	0.38%
AutoZone Inc	AZO	18,747.02	0.00%	11.91%	11.91%	0.08%	12.50%	12.50%	0.08%
Boeing Co/The	BA	201,519.80	1.95%	15.57%	17.67%	0.84%	18.00%	20.13%	0.88%
Bank of America Corp	BAC	269,890.41	1.96%	14.10%	16.20%	1.12%	13.00%	15.09%	1.18%
Baxter International Inc	BAX	33,396.97	1.16%	12.73%	13.96%	0.14%	13.50%	14.73%	0.15%
BB&T Corp	BBT	37,883.67	3.18%	14.87%	18.28%	0.16%	9.00%	12.32%	0.17%
Best Buy Co Inc	BBY	19,262.96	2.57%	13.94%	16.68%	0.08%	12.00%	14.72%	0.08%
Becton Dickinson and Co	BDX	61,673.40	1.34%	15.23%	16.68%	0.26%	10.00%	11.41%	0.27%
Franklin Resources Inc	BEN	15,832.55	3.44%	10.00%	13.61%	0.07%	7.50%	11.07%	0.07%
Brown-Forman Corp	BF/B	22,302.00	1.42%	9.44%	10.92%	0.09%	15.50%	17.03%	0.10%
Brighthouse Financial Inc	BHF	4,746.99	0.00%	8.77%	8.77%	0.02%	N/A	N/A	N/A
Baker Hughes a GE Co	BHGE	29,357.15	2.35%	54.87%	57.86%	0.12%	N/A	N/A	N/A
Biogen Inc	BIIB	61,305.11	0.00%	5.98%	5.98%	0.25%	6.50%	6.50%	0.27%
Bank of New York Mellon Corp/The	BK	46,798.82	2.18%	7.00%	9.26%	0.19%	9.00%	11.28%	0.20%
Booking Holdings Inc	BKNG	88,990.11	0.00%	13.73%	13.73%	0.37%	13.50%	13.50%	0.39%
BlackRock Inc	BLK	66,053.70	2.91%	8.73%	11.77%	0.27%	11.50%	14.58%	0.29%
Ball Corp	BLL	15,407.26	0.91%	5.60%	6.54%	0.06%	22.00%	23.01%	0.07%
Bristol-Myers Squibb Co	BMY	82,491.33	3.17%	11.16%	14.51%	0.34%	13.50%	16.88%	0.36%
Broadridge Financial Solutions Inc	BR	13,623.63	1.59%	10.00%	11.67%	0.06%	14.00%	15.71%	0.06%
Berkshire Hathaway Inc	BRK/B	506,397.42	0.00%	-5.60%	-5.60%	2.10%	N/A	N/A	N/A
Boston Scientific Corp	BSX	50,010.56	0.00%	22.04%	22.04%	0.21%	17.50%	17.50%	0.22%
BorgWarner Inc	BWA	8,208.03	1.71%	6.56%	8.32%	0.03%	9.00%	10.78%	0.04%
Boston Properties Inc	BXP	18,650.20	2.77%	6.03%	8.88%	0.08%	3.50%	6.32%	0.08%
Citigroup Inc	C	159,862.28	2.34%	13.11%	15.59%	0.66%	8.50%	10.94%	0.70%
CA Inc	CA	18,549.84	2.34%	3.20%	5.58%	0.08%	10.50%	12.97%	0.08%
Conagra Brands Inc	CAG	17,287.23	2.39%	7.85%	10.33%	0.07%	5.50%	7.95%	0.08%
Cardinal Health Inc	CAH	15,173.17	3.86%	23.18%	27.48%	0.06%	11.00%	15.07%	0.07%
Caterpillar Inc	CAT	71,591.75	2.69%	28.03%	31.09%	0.30%	19.00%	21.95%	0.31%
Chubb Ltd	CB	57,559.20	2.33%	10.83%	13.29%	0.24%	9.50%	11.95%	0.25%
Cboe Global Markets Inc	CBOE	12,618.75	1.03%	12.92%	14.02%	0.05%	17.00%	18.12%	0.06%
CBRE Group Inc	CBRE	13,690.47	0.00%	9.75%	9.75%	0.06%	11.50%	11.50%	0.06%
CBS Corp	CBS	21,574.09	1.32%	16.37%	17.79%	0.09%	10.50%	11.89%	0.09%
Crown Castle International Corp	CCI	45,127.10	3.93%	18.23%	22.52%	0.19%	12.00%	16.17%	0.20%
Carnival Corp	CCL	38,772.62	3.43%	12.90%	16.55%	0.16%	12.50%	16.14%	0.17%
Cadence Design Systems Inc	CDNS	12,575.07	0.00%	12.00%	12.00%	0.05%	11.50%	11.50%	0.05%
Celgene Corp	CELG	50,066.43	0.00%	21.49%	21.49%	0.21%	14.50%	14.50%	0.22%
Cerner Corp	CERN	18,873.09	0.00%	11.60%	11.60%	0.08%	9.00%	9.00%	0.08%
CF Industries Holdings Inc	CF	11,213.50	2.50%	15.30%	17.99%	0.05%	47.00%	50.09%	0.05%
Citizens Financial Group Inc	CFG	17,708.41	2.62%	15.49%	18.32%	0.07%	12.50%	15.29%	0.08%
Church & Dwight Co Inc	CHD	14,569.87	1.46%	9.63%	11.16%	0.06%	10.00%	11.54%	0.06%
CH Robinson Worldwide Inc	CHRW	12,334.62	2.10%	10.25%	12.46%	0.05%	10.50%	12.71%	0.05%
Charter Communications Inc	CHTR	81,607.04	0.00%	45.40%	45.40%	0.34%	19.50%	19.50%	0.36%
Cigna Corp	CI	52,033.78	0.02%	13.65%	13.67%	0.22%	13.00%	13.02%	0.23%
Cincinnati Financial Corp	CINF	12,797.69	2.91%	N/A	N/A	N/A	7.00%	10.01%	0.06%
Colgate-Palmolive Co	CL	51,648.90	2.78%	7.37%	10.26%	0.21%	10.50%	13.43%	0.23%
Clorox Co/The	CLX	18,949.95	2.59%	5.43%	8.08%	0.08%	7.50%	10.18%	0.08%
Comerica Inc	CMA	13,538.96	2.26%	19.07%	21.55%	0.06%	18.00%	20.46%	0.06%
Comcast Corp	CMCSA	173,518.11	1.96%	14.60%	16.71%	0.72%	12.50%	14.59%	0.76%
CME Group Inc	CME	62,413.36	3.03%	9.30%	12.47%	0.26%	4.50%	7.59%	0.27%
Chipotle Mexican Grill Inc	CMG	12,791.33	0.00%	19.33%	19.33%	0.05%	18.50%	18.50%	0.06%
Cummins Inc	CMI	21,947.12	3.24%	9.33%	12.72%	0.09%	9.00%	12.38%	0.10%
CMS Energy Corp	CMS	14,030.57	2.88%	6.55%	9.53%	0.06%	7.00%	9.98%	0.06%
Centene Corp	CNC	26,761.91	0.00%	15.77%	15.77%	0.11%	17.00%	17.00%	0.12%
CenterPoint Energy Inc	CNP	13,537.11	4.15%	6.90%	11.20%	0.06%	8.50%	12.83%	0.06%
Capital One Financial Corp	COF	42,301.41	1.79%	16.26%	18.20%	0.18%	9.00%	10.87%	0.18%
Cabot Oil & Gas Corp	COG	10,447.49	1.00%	32.47%	33.63%	0.04%	N/A	N/A	N/A
Rockwell Collins Inc	COL	21,042.10	1.16%	11.60%	12.83%	0.09%	12.50%	13.73%	0.09%
Cooper Cos Inc/The	COO	12,693.27	0.03%	10.80%	10.83%	0.05%	16.50%	16.53%	0.06%
ConocoPhillips	COP	80,471.81	1.65%	6.00%	7.70%	0.33%	N/A	N/A	N/A
Costco Wholesale Corp	COST	100,187.58	1.02%	11.18%	12.26%	0.42%	9.00%	10.07%	0.44%
Coty Inc	COTY	7,920.98	4.82%	13.15%	18.28%	0.03%	7.00%	11.98%	0.03%
Campbell Soup Co	CPB	11,247.55	3.83%	3.46%	7.36%	0.05%	1.00%	4.85%	0.05%
Copart Inc	CPRT	11,440.84	0.00%	10.00%	10.00%	0.05%	15.50%	15.50%	0.05%
salesforce.com Inc	CRM	103,849.51	0.00%	26.28%	26.28%	0.43%	65.00%	65.00%	0.45%
Cisco Systems Inc	CSCO	207,256.01	3.08%	7.18%	10.37%	0.86%	7.50%	10.70%	0.91%
CSX Corp	CSX	58,146.79	1.28%	12.28%	13.64%	0.24%	17.50%	18.89%	0.25%

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Cintas Corp	CTAS	19,441.13	0.96%	12.02%	13.03%	0.08%	13.50%	14.52%	0.08%
CenturyLink Inc	CTL	22,293.74	10.47%	-15.59%	-5.94%	0.09%	2.50%	13.10%	0.10%
Cognizant Technology Solutions Corp	CTSH	39,970.30	1.13%	13.95%	15.16%	0.17%	11.50%	12.69%	0.17%
Citrix Systems Inc	CTXS	13,900.92	0.00%	13.17%	13.17%	0.06%	7.00%	7.00%	0.06%
CVS Health Corp	CVS	73,697.64	2.77%	10.26%	13.17%	0.31%	8.50%	11.38%	0.32%
Chevron Corp	CVX	213,937.82	4.03%	6.65%	10.81%	0.89%	31.00%	35.65%	0.94%
Concho Resources Inc	CXO	27,852.80	0.00%	31.00%	31.00%	0.12%	34.50%	34.50%	0.12%
Dominion Energy Inc	D	46,691.94	4.67%	5.79%	10.60%	0.19%	6.50%	11.33%	0.20%
Delta Air Lines Inc	DAL	37,523.91	2.36%	14.35%	16.87%	0.16%	10.50%	12.98%	0.16%
Deere & Co	DE	43,567.46	1.84%	7.33%	9.24%	0.18%	16.50%	18.49%	0.19%
Discover Financial Services	DFS	23,406.66	2.15%	10.17%	12.43%	0.10%	8.00%	10.24%	0.10%
Dollar General Corp	DG	29,575.22	1.04%	15.26%	16.37%	0.12%	13.00%	14.10%	0.13%
Quest Diagnostics Inc	DGX	12,805.75	2.06%	8.78%	10.93%	0.05%	10.00%	12.16%	0.06%
DR Horton Inc	DHI	13,559.38	1.38%	20.48%	22.00%	0.06%	13.50%	14.98%	0.06%
Danaher Corp	DHR	69,659.52	0.61%	8.82%	9.46%	0.29%	11.00%	11.65%	0.30%
Walt Disney Co/The	DIS	170,780.07	1.47%	12.98%	14.54%	0.71%	9.00%	10.53%	0.75%
Discovery Inc	DISCA	21,615.17	0.00%	4.60%	4.60%	0.09%	17.00%	17.00%	0.09%
DISH Network Corp	DISH	14,371.45	0.00%	-12.71%	-12.71%	0.06%	1.00%	1.00%	0.06%
Digital Realty Trust Inc	DLR	22,160.39	3.91%	19.80%	24.10%	0.09%	6.50%	10.54%	0.10%
Dollar Tree Inc	DLTR	20,054.00	0.00%	11.36%	11.36%	0.08%	17.50%	17.50%	0.09%
Dover Corp	DOV	12,122.20	2.30%	11.70%	14.14%	0.05%	13.00%	15.45%	0.05%
Duke Realty Corp	DRE	9,878.86	2.94%	4.56%	7.56%	0.04%	7.00%	10.04%	0.04%
Darden Restaurants Inc	DRI	13,223.97	2.82%	10.62%	13.59%	0.05%	12.00%	14.99%	0.06%
DTE Energy Co	DTE	20,398.71	3.16%	5.87%	9.12%	0.08%	7.50%	10.78%	0.09%
Duke Energy Corp	DUK	58,861.87	4.40%	5.04%	9.55%	0.24%	5.50%	10.02%	0.26%
DaVita Inc	DVA	11,239.05	0.00%	18.00%	18.00%	0.05%	11.00%	11.00%	0.05%
Devon Energy Corp	DVN	16,485.12	0.97%	14.36%	15.40%	0.07%	23.50%	24.59%	0.07%
DowDuPont Inc	DWDP	124,413.76	3.06%	8.37%	11.56%	0.52%	N/A	N/A	N/A
DXC Technology Co	DXC	20,476.94	1.04%	6.36%	7.44%	0.08%	13.50%	14.62%	0.09%
Electronic Arts Inc	EA	27,732.37	0.00%	15.20%	15.20%	0.12%	11.50%	11.50%	0.12%
eBay Inc	EBAY	27,950.87	0.00%	10.14%	10.14%	0.12%	13.00%	13.00%	0.12%
Ecolab Inc	ECL	44,245.60	1.08%	13.00%	14.15%	0.18%	9.00%	10.13%	0.19%
Consolidated Edison Inc	ED	23,643.83	3.76%	3.60%	7.43%	0.10%	3.00%	6.82%	0.10%
Equifax Inc	EFX	12,231.14	1.54%	6.60%	8.20%	0.05%	8.00%	9.61%	0.05%
Edison International	EIX	22,608.04	3.50%	5.44%	9.04%	0.09%	4.50%	8.08%	0.10%
Estee Lauder Cos Inc/The	EL	49,870.45	1.20%	10.28%	11.54%	0.21%	13.50%	14.78%	0.22%
Eastman Chemical Co	EMN	10,972.30	2.86%	7.40%	10.37%	0.05%	9.50%	12.50%	0.05%
Emerson Electric Co	EMR	42,660.24	2.86%	11.20%	14.21%	0.18%	12.50%	15.54%	0.19%
EOG Resources Inc	EOG	61,013.01	0.75%	12.15%	12.94%	0.25%	N/A	N/A	N/A
Equinix Inc	EQIX	30,112.87	2.39%	19.55%	22.18%	0.12%	25.50%	28.20%	0.13%
Equity Residential	EQR	23,933.90	3.30%	5.73%	9.13%	0.10%	-15.00%	-11.95%	0.10%
EQT Corp	EQT	8,642.85	0.35%	17.50%	17.88%	0.04%	40.50%	40.92%	0.04%
Eversource Energy	ES	20,046.20	3.20%	5.80%	9.09%	0.08%	5.00%	8.28%	0.09%
Express Scripts Holding Co	ESRX	54,677.50	0.00%	5.75%	5.75%	0.23%	13.50%	13.50%	0.24%
Essex Property Trust Inc	ESS	16,567.81	2.95%	5.94%	8.98%	0.07%	0.50%	3.46%	0.07%
E*TRADE Financial Corp	ETFC	12,689.33	0.14%	30.67%	30.83%	0.05%	17.50%	17.65%	0.06%
Eaton Corp PLC	ETN	31,061.78	3.65%	8.92%	12.73%	0.13%	10.00%	13.83%	0.14%
Entergy Corp	ETR	15,182.78	4.28%	0.86%	5.16%	0.06%	2.00%	6.32%	0.07%
Evergy Inc	EVRG	15,211.80	3.35%	8.19%	11.68%	0.06%	N/A	N/A	N/A
Edwards Lifesciences Corp	EW	30,855.67	0.00%	14.00%	14.00%	0.13%	15.00%	15.00%	0.13%
Exelon Corp	EXC	42,316.37	3.16%	4.85%	8.09%	0.18%	8.00%	11.28%	0.18%
Expeditors International of Washington I	EXPD	11,711.86	1.32%	11.60%	13.00%	0.05%	9.50%	10.89%	0.05%
Expedia Group Inc	EXPE	18,685.86	0.97%	14.15%	15.19%	0.08%	21.00%	22.07%	0.08%
Extra Space Storage Inc	EXR	11,393.02	3.70%	5.46%	9.26%	0.05%	5.00%	8.79%	0.05%
Ford Motor Co	F	37,988.98	7.08%	-9.16%	-2.41%	0.16%	2.50%	9.67%	0.17%
Fastenal Co	FAST	14,757.58	2.98%	17.50%	20.74%	0.06%	11.50%	14.65%	0.06%
Facebook Inc	FB	436,852.43	0.00%	24.31%	24.31%	1.81%	26.00%	26.00%	1.91%
Fortune Brands Home & Security Inc	FBHS	6,384.67	1.76%	11.63%	13.50%	0.03%	13.50%	15.38%	0.03%
Freeport-McMoRan Inc	FCX	16,880.88	1.55%	-5.82%	-4.31%	0.07%	N/A	N/A	N/A
FedEx Corp	FDX	58,063.08	1.16%	15.80%	17.05%	0.24%	11.00%	12.22%	0.25%
FirstEnergy Corp	FE	19,066.68	3.86%	-0.35%	3.50%	0.08%	3.00%	6.92%	0.08%
F5 Networks Inc	FFIV	10,554.49	0.00%	10.42%	10.42%	0.04%	11.00%	11.00%	0.05%
Fidelity National Information Services I	FIS	34,091.53	1.21%	4.40%	5.64%	0.14%	16.00%	17.31%	0.15%
Fiserv Inc	FISV	32,110.72	0.00%	11.00%	11.00%	0.13%	10.00%	10.00%	0.14%
Fifth Third Bancorp	FITB	17,850.46	2.73%	4.35%	7.14%	0.07%	7.00%	9.83%	0.08%
Foot Locker Inc	FL	5,416.20	2.92%	4.91%	7.90%	0.02%	6.50%	9.52%	0.02%
FLIR Systems Inc	FLIR	6,406.90	1.37%	N/A	N/A	N/A	13.50%	14.96%	0.03%
Fluor Corp	FLR	6,167.55	1.92%	26.17%	28.34%	0.03%	8.50%	10.50%	0.03%
Flowserve Corp	FLS	6,006.13	1.68%	19.90%	21.74%	0.02%	7.50%	9.24%	0.03%

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FleetCor Technologies Inc	FLT	17,732.36	0.00%	16.50%	16.50%	0.07%	14.50%	14.50%	0.08%
FMC Corp	FMC	10,511.88	0.88%	23.10%	24.09%	0.04%	22.50%	23.48%	0.05%
Twenty-First Century Fox Inc	FOX	84,190.57	1.00%	9.95%	11.00%	0.35%	N/A	N/A	N/A
Federal Realty Investment Trust	FRT	9,162.72	3.27%	5.17%	8.53%	0.04%	3.50%	6.83%	0.04%
TechnipFMC PLC	FTI	11,953.35	1.97%	9.85%	11.91%	0.05%	N/A	N/A	N/A
Fortinet Inc	FTNT	13,899.68	0.00%	19.30%	19.30%	0.06%	38.00%	38.00%	0.06%
Fortive Corp	FTV	24,796.75	0.38%	14.07%	14.48%	0.10%	N/A	N/A	N/A
General Dynamics Corp	GD	51,109.52	2.12%	11.18%	13.42%	0.21%	9.00%	11.22%	0.22%
General Electric Co	GE	87,850.96	4.75%	2.63%	7.45%	0.36%	2.50%	7.31%	0.38%
Gilead Sciences Inc	GILD	88,224.92	3.35%	5.55%	8.99%	0.37%	-6.50%	-3.26%	0.39%
General Mills Inc	GIS	26,114.87	4.53%	6.43%	11.11%	0.11%	3.50%	8.11%	0.11%
Corning Inc	GLW	25,572.75	2.25%	10.36%	12.73%	0.11%	13.50%	15.91%	0.11%
General Motors Co	GM	51,643.26	4.18%	10.78%	15.19%	0.21%	3.50%	7.76%	0.23%
Alphabet Inc	GOOG	753,309.42	0.00%	17.82%	17.82%	3.13%	16.00%	16.00%	3.29%
Genuine Parts Co	GPC	14,370.67	2.91%	5.77%	8.77%	0.06%	9.00%	12.04%	0.06%
Global Payments Inc	GPN	18,072.63	0.04%	15.43%	15.47%	0.07%	11.00%	11.04%	0.08%
Gap Inc/The	GPS	10,502.54	3.55%	10.22%	13.95%	0.04%	7.00%	10.67%	0.05%
Garmin Ltd	GRMN	13,104.80	3.17%	5.98%	9.24%	0.05%	10.50%	13.84%	0.06%
Goldman Sachs Group Inc/The	GS	88,380.57	1.41%	12.07%	13.56%	0.37%	9.00%	10.47%	0.39%
Goodyear Tire & Rubber Co/The	GT	4,906.98	2.56%	N/A	N/A	N/A	12.50%	15.22%	0.02%
WW Grainger Inc	GWW	15,940.32	1.90%	14.77%	16.80%	0.07%	9.50%	11.49%	0.07%
Halliburton Co	HAL	30,381.28	2.08%	59.96%	62.66%	0.13%	N/A	N/A	N/A
Hasbro Inc	HAS	11,641.57	2.73%	7.97%	10.81%	0.05%	8.50%	11.35%	0.05%
Huntington Bancshares Inc/OH	HBAN	15,211.71	3.49%	13.13%	16.85%	0.06%	11.50%	15.19%	0.07%
Hanesbrands Inc	HBI	6,186.30	3.50%	5.04%	8.62%	0.03%	5.50%	9.09%	0.03%
HCA Healthcare Inc	HCA	46,207.52	1.05%	13.58%	14.70%	0.19%	14.00%	15.12%	0.20%
HCP Inc	HCP	12,946.26	5.37%	3.20%	8.65%	0.05%	35.50%	41.83%	0.06%
Home Depot Inc/The	HD	201,231.02	2.32%	13.27%	15.74%	0.83%	12.50%	14.96%	0.88%
Hess Corp	HES	17,202.10	1.81%	-21.64%	-20.02%	0.07%	N/A	N/A	N/A
HollyFrontier Corp	HFC	11,685.51	1.97%	7.38%	9.42%	0.05%	22.00%	24.19%	0.05%
Hartford Financial Services Group Inc/Th	HIG	16,293.74	2.41%	9.50%	12.02%	0.07%	13.00%	15.56%	0.07%
Huntington Ingalls Industries Inc	HII	9,464.20	1.32%	27.50%	29.01%	0.04%	12.50%	13.91%	0.04%
Hilton Worldwide Holdings Inc	HLT	21,106.89	0.85%	11.20%	12.10%	0.09%	9.00%	9.89%	0.09%
Harley-Davidson Inc	HOG	6,365.71	3.89%	8.15%	12.20%	0.03%	9.00%	13.07%	0.03%
Hologic Inc	HOLX	10,610.07	0.00%	2.64%	2.64%	0.04%	24.00%	24.00%	0.05%
Honeywell International Inc	HON	107,208.55	2.10%	14.68%	16.93%	0.44%	10.00%	12.20%	0.47%
Helmerich & Payne Inc	HP	6,786.11	4.51%	122.95%	130.24%	0.03%	56.50%	62.29%	0.03%
Hewlett Packard Enterprise Co	HPE	22,442.64	2.51%	9.09%	11.71%	0.09%	7.50%	10.11%	0.10%
HP Inc	HPQ	38,199.34	2.32%	9.08%	11.50%	0.16%	6.00%	8.39%	0.17%
H&R Block Inc	HRB	5,454.52	3.75%	10.00%	13.94%	0.02%	8.50%	12.41%	0.02%
Hormel Foods Corp	HRL	23,265.27	1.70%	5.00%	6.75%	0.10%	9.50%	11.28%	0.10%
Harris Corp	HRS	17,497.06	1.77%	N/A	N/A	N/A	13.50%	15.38%	0.08%
Henry Schein Inc	HSIC	12,708.25	0.00%	9.96%	9.96%	0.05%	9.00%	9.00%	0.06%
Host Hotels & Resorts Inc	HST	14,173.46	4.34%	2.97%	7.37%	0.06%	2.00%	6.39%	0.06%
Hershey Co/The	HSY	22,480.90	2.58%	8.83%	11.53%	0.09%	7.00%	9.67%	0.10%
Humana Inc	HUM	44,140.77	0.62%	14.00%	14.67%	0.18%	13.50%	14.17%	0.19%
International Business Machines Corp	IBM	104,902.07	5.38%	4.05%	9.54%	0.44%	0.50%	5.90%	0.46%
Intercontinental Exchange Inc	ICE	43,880.75	1.25%	8.82%	10.12%	0.18%	12.00%	13.32%	0.19%
IDEXX Laboratories Inc	IDXX	18,367.68	0.00%	18.89%	18.89%	0.08%	17.00%	17.00%	0.08%
International Flavors & Fragrances Inc	IFF	15,428.54	1.93%	9.20%	11.22%	0.06%	8.50%	10.52%	0.07%
Illumina Inc	ILMN	45,739.05	0.00%	23.86%	23.86%	0.19%	15.00%	15.00%	0.20%
Incyte Corp	INCY	13,794.22	0.00%	52.58%	52.58%	0.06%	N/A	N/A	N/A
IHS Markit Ltd	INFO	20,705.50	0.00%	10.12%	10.12%	0.09%	19.50%	19.50%	0.09%
Intel Corp	INTC	213,960.32	2.42%	10.60%	13.15%	0.89%	12.50%	15.07%	0.94%
Intuit Inc	INTU	54,579.71	0.85%	16.11%	17.03%	0.23%	15.00%	15.91%	0.24%
International Paper Co	IP	18,546.71	4.22%	8.25%	12.64%	0.08%	17.00%	21.58%	0.08%
Interpublic Group of Cos Inc/The	IPG	8,901.58	3.64%	8.53%	12.32%	0.04%	11.50%	15.35%	0.04%
IPG Photonics Corp	IPGP	7,131.37	0.00%	9.24%	9.24%	0.03%	13.00%	13.00%	0.03%
IQVIA Holdings Inc	IQV	24,869.51	0.00%	13.92%	13.92%	0.10%	14.50%	14.50%	0.11%
Ingersoll-Rand PLC	IR	23,568.26	2.05%	11.92%	14.09%	0.10%	12.00%	14.18%	0.10%
Iron Mountain Inc	IRM	8,761.18	7.71%	8.70%	16.75%	0.04%	12.50%	20.69%	0.04%
Intuitive Surgical Inc	ISRG	59,518.89	0.00%	14.34%	14.34%	0.25%	15.00%	15.00%	0.26%
Gartner Inc	IT	13,397.48	0.00%	15.02%	15.02%	0.06%	14.50%	14.50%	0.06%
Illinois Tool Works Inc	ITW	42,780.98	2.69%	9.71%	12.53%	0.18%	11.00%	13.84%	0.19%
Invesco Ltd	IVZ	8,930.10	5.51%	5.32%	10.98%	0.04%	7.50%	13.22%	0.04%
JB Hunt Transport Services Inc	JBHT	12,075.99	0.87%	16.92%	17.86%	0.05%	13.50%	14.42%	0.05%
Johnson Controls International plc	JCI	29,569.76	3.26%	10.30%	13.72%	0.12%	3.00%	6.31%	0.13%
Jacobs Engineering Group Inc	JEC	10,655.58	0.70%	18.33%	19.09%	0.04%	13.00%	13.74%	0.05%
Jefferies Financial Group Inc	JEF	7,156.64	2.10%	N/A	N/A	N/A	21.50%	23.82%	0.03%

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Johnson & Johnson	JNJ	375,450.10	2.56%	7.80%	10.46%	1.56%	11.00%	13.70%	1.64%
Juniper Networks Inc	JNPR	10,092.15	2.45%	11.15%	13.74%	0.04%	4.50%	7.01%	0.04%
JPMorgan Chase & Co	JPM	366,403.59	2.48%	9.10%	11.69%	1.52%	9.50%	12.10%	1.60%
Nordstrom Inc	JWN	11,086.55	2.27%	8.43%	10.79%	0.05%	7.00%	9.35%	0.05%
Kellogg Co	K	22,700.13	3.36%	8.33%	11.83%	0.09%	7.00%	10.48%	0.10%
KeyCorp	KEY	18,782.65	3.12%	17.93%	21.33%	0.08%	12.50%	15.81%	0.08%
Kraft Heinz Co/The	KHC	67,017.90	4.65%	5.27%	10.04%	0.28%	9.50%	14.37%	0.29%
Kimco Realty Corp	KIM	6,780.19	7.01%	5.30%	12.49%	0.03%	-0.50%	6.49%	0.03%
KLA-Tencor Corp	KLAC	14,173.60	3.24%	5.04%	8.36%	0.06%	15.50%	18.99%	0.06%
Kimberly-Clark Corp	KMB	36,119.19	3.84%	5.68%	9.63%	0.15%	10.50%	14.54%	0.16%
Kinder Morgan Inc/DE	KMI	37,563.45	4.64%	12.00%	16.91%	0.16%	57.00%	62.96%	0.16%
CarMax Inc	KMX	11,858.53	0.00%	13.12%	13.12%	0.05%	11.50%	11.50%	0.05%
Coca-Cola Co/The	KO	203,801.89	3.26%	7.70%	11.09%	0.85%	6.50%	9.87%	0.89%
Michael Kors Holdings Ltd	KORS	8,273.92	0.00%	3.66%	3.66%	0.03%	7.50%	7.50%	0.04%
Kroger Co/The	KR	23,731.18	1.81%	7.01%	8.88%	0.10%	5.00%	6.86%	0.10%
Kohl's Corp	KSS	12,625.16	3.26%	7.23%	10.61%	0.05%	10.50%	13.93%	0.06%
Kansas City Southern	KSU	10,369.07	1.42%	6.55%	8.02%	0.04%	12.50%	14.01%	0.05%
Loews Corp	L	14,712.13	0.54%	N/A	N/A	N/A	16.50%	17.08%	0.06%
L Brands Inc	LB	8,917.56	7.42%	9.33%	17.10%	0.04%	-3.50%	3.79%	0.04%
Leggett & Platt Inc	LEG	4,726.13	4.10%	N/A	N/A	N/A	9.00%	13.29%	0.02%
Lennar Corp	LEN	13,923.52	0.37%	19.95%	20.35%	0.06%	12.50%	12.90%	0.06%
Laboratory Corp of America Holdings	LH	16,199.50	0.00%	9.86%	9.86%	0.07%	9.50%	9.50%	0.07%
Linde PLC	LIN	92,356.66	0.00%	N/A	N/A	N/A	N/A	N/A	N/A
LKQ Corp	LKQ	8,677.24	0.00%	13.10%	13.10%	0.04%	13.00%	13.00%	0.04%
L3 Technologies Inc	LLL	14,910.82	1.75%	13.24%	15.10%	0.06%	11.00%	12.84%	0.07%
Eli Lilly & Co	LLY	116,463.24	2.07%	11.44%	13.63%	0.48%	12.00%	14.20%	0.51%
Lockheed Martin Corp	LMT	83,578.49	2.78%	21.72%	24.80%	0.35%	13.00%	15.96%	0.37%
Lincoln National Corp	LNC	13,042.01	2.23%	N/A	N/A	N/A	7.50%	9.81%	0.06%
Alliant Energy Corp	LNT	10,228.08	3.12%	5.78%	8.98%	0.04%	6.50%	9.72%	0.04%
Lowe's Cos Inc	LOW	76,963.97	1.91%	15.22%	17.28%	0.32%	13.00%	15.03%	0.34%
Lam Research Corp	LRCX	21,994.06	2.98%	7.07%	10.15%	0.09%	13.50%	16.69%	0.10%
Southwest Airlines Co	LUV	27,609.25	1.16%	7.23%	8.43%	0.11%	10.00%	11.21%	0.12%
LyondellBasell Industries NV	LYB	34,249.12	4.48%	8.00%	12.66%	0.14%	10.50%	15.22%	0.15%
Macy's Inc	M	10,526.09	4.54%	0.50%	5.05%	0.04%	5.50%	10.16%	0.05%
Mastercard Inc	MA	204,152.47	0.51%	20.48%	21.04%	0.85%	16.00%	16.55%	0.89%
Mid-America Apartment Communities Inc	MAA	11,120.37	3.80%	N/A	N/A	N/A	-4.50%	-0.78%	0.05%
Macerich Co/The	MAC	7,281.05	5.81%	6.76%	12.76%	0.03%	8.00%	14.04%	0.03%
Marriott International Inc/MD	MAR	40,559.44	1.33%	14.35%	15.78%	0.17%	12.50%	13.91%	0.18%
Masco Corp	MAS	9,164.95	1.44%	15.71%	17.27%	0.04%	15.50%	17.06%	0.04%
Mattel Inc	MAT	4,687.15	0.00%	10.00%	10.00%	0.02%	26.50%	26.50%	0.02%
McDonald's Corp	MCD	137,239.09	2.36%	8.69%	11.15%	0.57%	10.00%	12.48%	0.60%
Microchip Technology Inc	MCHP	15,494.99	2.22%	14.05%	16.42%	0.06%	15.00%	17.38%	0.07%
McKesson Corp	MCK	24,375.14	1.21%	5.87%	7.12%	0.10%	10.50%	11.77%	0.11%
Moody's Corp	MCO	27,873.97	1.23%	8.00%	9.28%	0.12%	14.00%	15.31%	0.12%
Mondelez International Inc	MDLZ	61,032.01	2.28%	9.15%	11.53%	0.25%	9.50%	11.89%	0.27%
Medtronic PLC	MDT	121,302.92	2.20%	8.00%	10.29%	0.50%	8.00%	10.29%	0.53%
MetLife Inc	MET	40,977.37	4.03%	13.58%	17.89%	0.17%	6.00%	10.15%	0.18%
MGM Resorts International	MGM	14,192.08	1.80%	2.87%	4.70%	0.06%	32.00%	34.09%	0.06%
Mohawk Industries Inc	MHK	9,305.22	0.00%	5.04%	5.04%	0.04%	7.00%	7.00%	0.04%
McCormick & Co Inc/MD	MKC	18,953.85	1.44%	8.90%	10.40%	0.08%	10.50%	12.02%	0.08%
Martin Marietta Materials Inc	MLM	10,792.69	1.05%	13.95%	15.07%	0.04%	14.50%	15.63%	0.05%
Marsh & McLennan Cos Inc	MMC	42,689.26	2.03%	15.72%	17.91%	0.18%	9.00%	11.12%	0.19%
3M Co	MMM	110,785.95	2.85%	8.65%	11.62%	0.46%	9.50%	12.48%	0.48%
Monster Beverage Corp	MNST	29,200.85	0.00%	17.00%	17.00%	0.12%	14.50%	14.50%	0.13%
Altria Group Inc	MO	122,213.12	4.56%	9.00%	13.76%	0.51%	10.50%	15.30%	0.53%
Mosaic Co/The	MOS	11,926.07	0.32%	7.00%	7.33%	0.05%	9.00%	9.34%	0.05%
Marathon Petroleum Corp	MPC	48,681.28	2.62%	20.50%	23.39%	0.20%	13.50%	16.30%	0.21%
Merck & Co Inc	MRK	195,767.66	2.65%	7.92%	10.68%	0.81%	5.50%	8.23%	0.86%
Marathon Oil Corp	MRO	16,220.26	1.05%	5.00%	6.08%	0.07%	N/A	N/A	N/A
Morgan Stanley	MS	79,667.10	2.42%	13.63%	16.21%	0.33%	11.00%	13.56%	0.35%
MSCI Inc	MSCI	13,358.69	1.26%	13.45%	14.80%	0.06%	22.00%	23.40%	0.06%
Microsoft Corp	MSFT	825,525.37	1.70%	12.27%	14.07%	3.42%	13.50%	15.31%	3.61%
Motorola Solutions Inc	MSI	19,887.42	1.72%	7.45%	9.23%	0.08%	12.00%	13.82%	0.09%
M&T Bank Corp	MTB	23,402.04	2.15%	12.53%	14.81%	0.10%	12.00%	14.27%	0.10%
Mettler-Toledo International Inc	MTD	13,787.43	0.00%	11.10%	11.10%	0.06%	11.00%	11.00%	0.06%
Micron Technology Inc	MU	42,784.11	0.38%	-2.10%	-1.72%	0.18%	25.50%	25.93%	0.19%
Mylan NV	MYL	16,111.48	0.00%	6.07%	6.07%	0.07%	14.00%	14.00%	0.07%
Noble Energy Inc	NBL	12,005.50	1.72%	32.40%	34.40%	0.05%	N/A	N/A	N/A
Norwegian Cruise Line Holdings Ltd	NCLH	9,760.11	0.17%	20.32%	20.51%	0.04%	16.50%	16.68%	0.04%

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Nasdaq Inc	NDAQ	14,264.53	1.98%	9.32%	11.39%	0.06%	9.50%	11.57%	0.06%
NextEra Energy Inc	NEE	82,445.56	2.58%	8.88%	11.57%	0.34%	9.00%	11.69%	0.36%
Newmont Mining Corp	NEM	16,469.85	1.80%	-3.00%	-1.23%	0.07%	6.00%	7.86%	0.07%
Netflix Inc	NFLX	131,601.73	0.00%	41.07%	41.07%	0.55%	47.00%	47.00%	0.58%
Newfield Exploration Co	NFX	4,046.87	0.00%	19.17%	19.17%	0.02%	26.00%	26.00%	0.02%
NiSource Inc	NI	9,206.61	3.05%	5.63%	8.76%	0.04%	18.00%	21.33%	0.04%
NIKE Inc	NKE	119,171.65	1.13%	17.49%	18.72%	0.49%	14.50%	15.71%	0.52%
Nektar Therapeutics	NKTR	6,671.09	0.00%	N/A	N/A	N/A	N/A	N/A	N/A
Nielsen Holdings PLC	NLSN	9,228.29	5.32%	12.00%	17.64%	0.04%	4.00%	9.43%	0.04%
Northrop Grumman Corp	NOC	45,479.68	1.79%	15.26%	17.19%	0.19%	13.00%	14.91%	0.20%
National Oilwell Varco Inc	NOV	14,107.89	0.54%	14.30%	14.88%	0.06%	41.50%	42.16%	0.06%
NRG Energy Inc	NRG	10,981.11	0.33%	46.66%	47.07%	0.05%	N/A	N/A	N/A
Norfolk Southern Corp	NSC	45,707.99	1.78%	10.53%	12.40%	0.19%	13.50%	15.40%	0.20%
NetApp Inc	NTAP	20,349.97	2.04%	14.66%	16.84%	0.08%	19.50%	21.73%	0.09%
Northern Trust Corp	NTRS	20,826.66	2.06%	14.28%	16.49%	0.09%	11.00%	13.18%	0.09%
Nucor Corp	NUE	18,702.23	2.57%	6.25%	8.90%	0.08%	19.50%	22.32%	0.08%
NVIDIA Corp	NVDA	128,184.64	0.29%	10.63%	10.94%	0.53%	23.00%	23.32%	0.56%
Newell Brands Inc	NWL	7,503.30	5.79%	2.76%	8.63%	0.03%	9.50%	15.57%	0.03%
News Corp	NWS	7,743.89	1.57%	26.30%	28.08%	0.03%	N/A	N/A	N/A
Realty Income Corp	O	17,480.91	4.36%	4.15%	8.60%	0.07%	4.50%	8.96%	0.08%
ONEOK Inc	OKE	26,985.31	4.98%	25.37%	30.98%	0.11%	20.50%	25.99%	0.12%
Omnicom Group Inc	OMC	16,655.53	2.45%	6.64%	9.17%	0.07%	7.00%	9.54%	0.07%
Oracle Corp	ORCL	185,037.09	1.52%	7.90%	9.48%	0.77%	8.50%	10.08%	0.81%
O'Reilly Automotive Inc	ORLY	25,770.87	0.00%	15.47%	15.47%	0.11%	11.50%	11.50%	0.11%
Occidental Petroleum Corp	OXY	51,289.87	4.62%	14.30%	19.25%	0.21%	N/A	N/A	N/A
Paychex Inc	PAYX	23,516.28	3.48%	9.67%	13.32%	0.10%	11.00%	14.67%	0.10%
People's United Financial Inc	PBCT	5,901.83	4.46%	2.00%	6.50%	0.02%	10.50%	15.19%	0.03%
PACCAR Inc	PCAR	20,012.06	4.38%	6.38%	10.89%	0.08%	7.50%	12.04%	0.09%
PG&E Corp	PCG	24,207.85	0.23%	5.05%	5.29%	0.10%	7.50%	7.74%	0.11%
Public Service Enterprise Group Inc	PEG	27,006.18	3.37%	7.43%	10.92%	0.11%	4.00%	7.43%	0.12%
PepsiCo Inc	PEP	158,632.01	3.20%	6.78%	10.10%	0.66%	7.50%	10.82%	0.69%
Pfizer Inc	PFE	252,422.44	3.16%	6.18%	9.43%	1.05%	14.00%	17.38%	1.10%
Principal Financial Group Inc	PFG	13,323.09	4.46%	6.50%	11.10%	0.06%	5.00%	9.57%	0.06%
Procter & Gamble Co/The	PG	220,938.09	3.28%	6.64%	10.03%	0.92%	10.50%	13.95%	0.97%
Progressive Corp/The	PGR	40,645.19	1.97%	9.20%	11.26%	0.17%	15.50%	17.62%	0.18%
Parker-Hannifin Corp	PH	20,078.24	1.98%	9.57%	11.63%	0.08%	14.00%	16.11%	0.09%
PulteGroup Inc	PHM	6,900.76	1.47%	21.15%	22.77%	0.03%	15.50%	17.08%	0.03%
Packaging Corp of America	PKG	8,675.85	3.03%	10.00%	13.19%	0.04%	9.50%	12.68%	0.04%
PerkinElmer Inc	PKI	9,576.28	0.33%	16.68%	17.04%	0.04%	12.50%	12.85%	0.04%
Prologis Inc	PLD	40,584.81	2.98%	7.70%	10.79%	0.17%	9.00%	12.11%	0.18%
Philip Morris International Inc	PM	136,906.92	5.10%	8.68%	14.00%	0.57%	8.00%	13.30%	0.60%
PNC Financial Services Group Inc/The	PNC	59,658.21	2.65%	8.94%	11.71%	0.25%	9.50%	12.28%	0.26%
Pentair PLC	PNR	6,970.08	2.16%	11.21%	13.49%	0.03%	5.50%	7.72%	0.03%
Pinnacle West Capital Corp	PNW	9,209.87	3.43%	4.56%	8.06%	0.04%	5.00%	8.52%	0.04%
PPG Industries Inc	PPG	25,209.50	1.78%	7.41%	9.26%	0.10%	4.50%	6.32%	0.11%
PPL Corp	PPL	21,266.95	5.39%	8.10%	13.71%	0.09%	2.00%	7.45%	0.09%
Perrigo Co PLC	PRGO	9,619.33	1.03%	4.00%	5.05%	0.04%	2.50%	3.54%	0.04%
Prudential Financial Inc	PRU	39,106.26	3.84%	6.00%	9.95%	0.16%	6.00%	9.95%	0.17%
Public Storage	PSA	35,826.67	3.91%	4.56%	8.56%	0.15%	7.00%	11.05%	0.16%
Phillips 66	PSX	47,412.91	3.03%	5.50%	8.61%	0.20%	8.00%	11.15%	0.21%
PVH Corp	PVH	9,266.46	0.13%	10.98%	11.12%	0.04%	11.00%	11.14%	0.04%
Quanta Services Inc	PWR	4,657.96	0.00%	16.50%	16.50%	0.02%	19.50%	19.50%	0.02%
Pioneer Natural Resources Co	PXD	25,094.99	0.17%	27.13%	27.33%	0.10%	77.00%	77.24%	0.11%
PayPal Holdings Inc	PYPL	99,175.82	0.00%	20.17%	20.17%	0.41%	17.50%	17.50%	0.43%
QUALCOMM Inc	QCOM	92,392.39	3.78%	10.06%	14.02%	0.38%	7.50%	11.42%	0.40%
Qorvo Inc	QRVO	9,236.04	0.00%	10.16%	10.16%	0.04%	N/A	N/A	N/A
Royal Caribbean Cruises Ltd	RCL	21,888.19	2.40%	13.39%	15.96%	0.09%	11.00%	13.54%	0.10%
Everest Re Group Ltd	RE	8,855.36	2.41%	10.00%	12.53%	0.04%	10.00%	12.53%	0.04%
Regency Centers Corp	REG	10,746.35	3.51%	5.49%	9.09%	0.04%	14.00%	17.75%	0.05%
Regeneron Pharmaceuticals Inc	REGN	36,657.04	0.00%	13.22%	13.22%	0.15%	16.00%	16.00%	0.16%
Regions Financial Corp	RF	18,708.92	2.73%	19.79%	22.79%	0.08%	12.50%	15.41%	0.08%
Robert Half International Inc	RHI	7,411.61	1.85%	15.67%	17.66%	0.03%	8.50%	10.43%	0.03%
Red Hat Inc	RHT	30,301.81	0.00%	18.93%	18.93%	0.13%	18.00%	18.00%	0.13%
Raymond James Financial Inc	RJF	11,169.28	1.62%	14.95%	16.69%	0.05%	15.00%	16.74%	0.05%
Ralph Lauren Corp	RL	10,515.27	1.88%	6.87%	8.82%	0.04%	7.00%	8.95%	0.05%
ResMed Inc	RMD	15,093.57	1.43%	12.15%	13.66%	0.06%	11.00%	12.50%	0.07%
Rockwell Automation Inc	ROK	20,288.95	2.07%	12.34%	14.54%	0.08%	10.00%	12.18%	0.09%
Rollins Inc	ROL	12,918.17	1.28%	10.00%	11.34%	0.05%	12.50%	13.86%	0.06%
Roper Technologies Inc	ROP	29,236.41	0.57%	13.47%	14.07%	0.12%	14.50%	15.11%	0.13%

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Ross Stores Inc	ROST	36,963.20	0.89%	10.43%	11.36%	0.15%	11.50%	12.44%	0.16%
Republic Services Inc	RSG	23,589.79	1.95%	11.50%	13.56%	0.10%	13.50%	15.58%	0.10%
Raytheon Co	RTN	49,812.36	1.97%	14.71%	16.83%	0.21%	11.00%	13.08%	0.22%
SBA Communications Corp	SBAC	18,624.31	0.00%	44.30%	44.30%	0.08%	45.50%	45.50%	0.08%
Starbucks Corp	SBUX	78,612.06	2.21%	14.16%	16.52%	0.33%	15.00%	17.38%	0.34%
SCANA Corp	SCG	5,712.15	2.09%	-2.79%	-0.73%	0.02%	-15.50%	-13.57%	0.02%
Charles Schwab Corp/The	SCHW	62,473.14	0.97%	21.22%	22.29%	0.26%	16.00%	17.04%	0.27%
Sealed Air Corp	SEE	5,139.17	2.02%	3.16%	5.21%	0.02%	19.00%	21.21%	0.02%
Sherwin-Williams Co/The	SHW	36,839.15	0.87%	11.28%	12.20%	0.15%	13.00%	13.93%	0.16%
SVB Financial Group	SIVB	12,632.56	0.00%	8.88%	8.88%	0.05%	21.50%	21.50%	0.06%
JM Smucker Co/The	SJM	12,320.05	3.02%	4.13%	7.21%	0.05%	5.50%	8.60%	0.05%
Schlumberger Ltd	SLB	71,064.35	3.90%	27.57%	32.01%	0.29%	27.50%	31.93%	0.31%
SL Green Realty Corp	SLG	8,365.21	3.57%	5.28%	8.95%	0.03%	6.50%	10.19%	0.04%
Snap-on Inc	SNA	8,647.65	2.26%	7.50%	9.85%	0.04%	8.00%	10.35%	0.04%
Synopsys Inc	SNPS	13,303.09	0.00%	N/A	N/A	N/A	10.50%	10.50%	0.06%
Southern Co/The	SO	45,666.55	5.30%	4.00%	9.41%	0.19%	3.00%	8.38%	0.20%
Simon Property Group Inc	SPG	56,763.55	4.32%	6.22%	10.68%	0.24%	3.00%	7.38%	0.25%
S&P Global Inc	SPGI	45,744.09	1.10%	11.05%	12.21%	0.19%	13.50%	14.67%	0.20%
Stericycle Inc	SRCL	4,291.81	0.11%	10.00%	10.11%	0.02%	8.00%	8.11%	0.02%
Sempra Energy	SRE	29,952.64	3.25%	20.29%	23.87%	0.12%	8.50%	11.89%	0.13%
SunTrust Banks Inc	STI	28,737.51	2.89%	12.43%	15.49%	0.12%	13.50%	16.58%	0.13%
State Street Corp	STT	26,093.08	2.59%	10.94%	13.67%	0.11%	9.50%	12.21%	0.11%
Seagate Technology PLC	STX	11,582.66	6.31%	-1.31%	4.96%	0.05%	8.00%	14.57%	0.05%
Constellation Brands Inc	STZ	37,741.60	1.49%	11.30%	12.87%	0.16%	11.50%	13.07%	0.16%
Stanley Black & Decker Inc	SWK	17,601.52	2.20%	10.77%	13.09%	0.07%	10.00%	12.31%	0.08%
Skyworks Solutions Inc	SWKS	15,528.44	1.55%	12.26%	13.91%	0.06%	13.50%	15.16%	0.07%
Synchrony Financial	SYF	20,756.97	2.48%	6.20%	8.75%	0.09%	10.50%	13.11%	0.09%
Stryker Corp	SYK	60,700.66	1.13%	8.70%	9.88%	0.25%	13.00%	14.21%	0.27%
Symantec Corp	SYMC	11,594.22	1.69%	8.34%	10.10%	0.05%	7.50%	9.25%	0.05%
Sysco Corp	SYY	37,140.77	2.11%	11.37%	13.60%	0.15%	13.00%	15.25%	0.16%
AT&T Inc	T	223,043.60	6.54%	4.85%	11.55%	0.93%	7.00%	13.77%	0.98%
Molson Coors Brewing Co	TAP	13,786.45	2.62%	2.62%	5.27%	0.06%	11.00%	13.76%	0.06%
TransDigm Group Inc	TDG	17,380.63	0.00%	14.28%	14.28%	0.07%	11.00%	11.00%	0.08%
TE Connectivity Ltd	TEL	26,280.76	2.34%	9.25%	11.70%	0.11%	11.00%	13.47%	0.11%
Target Corp	TGT	44,018.73	3.10%	7.15%	10.36%	0.18%	7.50%	10.71%	0.19%
Tiffany & Co	TIF	13,624.35	1.91%	10.53%	12.53%	0.06%	12.00%	14.02%	0.06%
TJX Cos Inc/The	TJX	67,989.83	1.43%	11.10%	12.61%	0.28%	13.00%	14.53%	0.30%
Torchmark Corp	TMK	9,507.03	0.75%	13.70%	14.51%	0.04%	10.00%	10.79%	0.04%
Thermo Fisher Scientific Inc	TMO	94,113.34	0.28%	11.00%	11.30%	0.39%	9.50%	9.79%	0.41%
Tapestry Inc	TPR	12,254.23	3.23%	10.96%	14.37%	0.05%	13.00%	16.44%	0.05%
TripAdvisor Inc	TRIP	7,171.72	0.00%	18.29%	18.29%	0.03%	8.50%	8.50%	0.03%
T Rowe Price Group Inc	TROW	23,341.10	2.87%	11.19%	14.23%	0.10%	11.50%	14.54%	0.10%
Travelers Cos Inc/The	TRV	33,134.42	2.44%	17.75%	20.41%	0.14%	5.50%	8.01%	0.14%
Tractor Supply Co	TSCO	11,192.63	1.31%	14.41%	15.81%	0.05%	10.50%	11.88%	0.05%
Tyson Foods Inc	TSN	23,837.99	1.91%	5.90%	7.87%	0.10%	9.50%	11.50%	0.10%
Total System Services Inc	TSS	16,627.40	0.57%	14.15%	14.76%	0.07%	10.50%	11.10%	0.07%
Take-Two Interactive Software Inc	TTWO	14,669.04	0.00%	10.00%	10.00%	0.06%	29.50%	29.50%	0.06%
Twitter Inc	TWTR	26,453.45	0.00%	45.93%	45.93%	0.11%	N/A	N/A	N/A
Texas Instruments Inc	TXN	90,248.87	2.86%	10.58%	13.59%	0.37%	12.00%	15.03%	0.39%
Textron Inc	TXT	13,030.02	0.15%	14.11%	14.28%	0.05%	15.00%	15.17%	0.06%
Under Armour Inc	UA	9,286.65	0.00%	36.39%	36.39%	0.04%	N/A	N/A	N/A
United Continental Holdings Inc	UAL	23,310.37	0.00%	16.62%	16.62%	0.10%	6.00%	6.00%	0.10%
UDR Inc	UDR	10,518.23	3.29%	5.38%	8.75%	0.04%	-1.50%	1.76%	0.05%
Universal Health Services Inc	UHS	11,347.09	0.29%	10.21%	10.52%	0.05%	11.00%	11.30%	0.05%
Ulta Beauty Inc	ULTA	16,408.17	0.00%	20.50%	20.50%	0.07%	20.00%	20.00%	0.07%
UnitedHealth Group Inc	UNH	251,542.41	1.31%	13.96%	15.36%	1.04%	15.00%	16.41%	1.10%
Unum Group	UNM	7,931.82	2.63%	9.00%	11.75%	0.03%	9.50%	12.26%	0.03%
Union Pacific Corp	UNP	107,733.45	2.06%	10.66%	12.83%	0.45%	13.50%	15.70%	0.47%
United Parcel Service Inc	UPS	91,541.96	3.39%	8.97%	12.51%	0.38%	8.50%	12.03%	0.40%
United Rentals Inc	URI	9,737.99	0.00%	23.52%	23.52%	0.04%	14.00%	14.00%	0.04%
US Bancorp	USB	85,147.83	2.56%	7.25%	9.91%	0.35%	7.50%	10.16%	0.37%
United Technologies Corp	UTX	99,490.25	2.30%	10.49%	12.91%	0.41%	9.00%	11.40%	0.43%
Visa Inc	V	279,146.25	0.73%	18.80%	19.59%	1.16%	14.50%	15.28%	1.22%
Varian Medical Systems Inc	VAR	10,928.02	0.00%	12.05%	12.05%	0.05%	9.50%	9.50%	0.05%
VF Corp	VFC	32,887.31	2.18%	9.36%	11.64%	0.14%	12.00%	14.31%	0.14%
Viacom Inc	VIAB	13,051.16	2.53%	6.68%	9.29%	0.05%	4.00%	6.58%	0.06%
Valero Energy Corp	VLO	38,931.69	3.52%	16.36%	20.16%	0.16%	10.00%	13.69%	0.17%
Vulcan Materials Co	VMC	13,355.32	1.10%	16.49%	17.68%	0.06%	18.00%	19.20%	0.06%
Vornado Realty Trust	VNO	12,954.66	3.71%	4.68%	8.47%	0.05%	-5.50%	-1.90%	0.06%

		[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
					Bloomberg			Value Line	
Verisk Analytics Inc	VRSK	19,728.08	0.00%	11.82%	11.82%	0.08%	9.00%	9.00%	0.09%
VeriSign Inc	VRSN	17,231.43	0.00%	10.50%	10.50%	0.07%	12.00%	12.00%	0.08%
Vertex Pharmaceuticals Inc	VRTX	43,306.86	0.00%	54.43%	54.43%	0.18%	N/A	N/A	N/A
Ventas Inc	VTR	20,689.39	5.47%	2.95%	8.50%	0.09%	3.50%	9.06%	0.09%
Verizon Communications Inc	VZ	235,896.74	4.18%	5.31%	9.60%	0.98%	4.50%	8.77%	1.03%
Waters Corp	WAT	14,618.84	0.00%	9.07%	9.07%	0.06%	10.50%	10.50%	0.06%
Walgreens Boots Alliance Inc	WBA	75,714.85	2.18%	10.05%	12.35%	0.31%	10.50%	12.80%	0.33%
WellCare Health Plans Inc	WCG	13,797.26	0.00%	17.76%	17.76%	0.06%	21.00%	21.00%	0.06%
Western Digital Corp	WDC	12,499.13	4.64%	-3.39%	1.17%	0.05%	8.00%	12.83%	0.05%
WEC Energy Group Inc	WEC	21,582.49	3.23%	3.49%	6.77%	0.09%	7.00%	10.34%	0.09%
Welltower Inc	WELL	24,818.83	5.27%	7.20%	12.65%	0.10%	8.50%	13.99%	0.11%
Wells Fargo & Co	WFC	250,798.47	3.09%	13.41%	16.70%	1.04%	6.00%	9.18%	1.10%
Whirlpool Corp	WHR	7,003.60	4.16%	9.94%	14.30%	0.03%	8.00%	12.32%	0.03%
Willis Towers Watson PLC	WLTW	18,720.96	1.65%	15.35%	17.13%	0.08%	N/A	N/A	N/A
Waste Management Inc	WM	38,145.27	2.08%	11.51%	13.71%	0.16%	10.50%	12.69%	0.17%
Williams Cos Inc/The	WMB	29,450.21	5.59%	-0.80%	4.77%	0.12%	22.50%	28.72%	0.13%
Walmart Inc	WMT	293,693.50	2.10%	6.24%	8.41%	1.22%	7.00%	9.18%	1.28%
WestRock Co	WRK	10,962.18	3.98%	4.25%	8.31%	0.05%	9.50%	13.67%	0.05%
Western Union Co/The	WU	8,068.40	4.17%	4.20%	8.46%	0.03%	7.00%	11.32%	0.04%
Weyerhaeuser Co	WY	19,951.20	5.03%	7.00%	12.20%	0.08%	21.50%	27.07%	0.09%
Wynn Resorts Ltd	WYNN	10,929.58	2.73%	18.30%	21.28%	0.05%	23.00%	26.04%	0.05%
Cimarex Energy Co	XEC	7,577.95	0.76%	72.57%	73.60%	0.03%	39.00%	39.90%	0.03%
Xcel Energy Inc	XEL	25,183.73	3.10%	5.84%	9.03%	0.10%	5.50%	8.69%	0.11%
Xilinx Inc	XLNX	21,602.32	1.69%	8.13%	9.89%	0.09%	9.50%	11.27%	0.09%
Exxon Mobil Corp	XOM	337,350.01	4.06%	11.72%	16.01%	1.40%	18.00%	22.43%	1.47%
DENTSPLY SIRONA Inc	XRAY	7,699.80	1.03%	6.93%	8.00%	0.03%	6.50%	7.57%	0.03%
Xerox Corp	XRX	6,832.66	3.60%	0.60%	4.21%	0.03%	2.50%	6.14%	0.03%
Xylem Inc/NY	XYL	11,785.78	1.28%	15.30%	16.68%	0.05%	15.50%	16.88%	0.05%
Yum! Brands Inc	YUM	28,298.33	1.59%	12.83%	14.53%	0.12%	9.50%	11.17%	0.12%
Zimmer Biomet Holdings Inc	ZBH	23,113.94	0.86%	3.03%	3.90%	0.10%	5.00%	5.88%	0.10%
Zions Bancorp NA	ZION	9,146.65	2.21%	9.48%	11.79%	0.04%	14.50%	16.87%	0.04%
Zoetis Inc	ZTS	43,436.42	0.56%	16.51%	17.11%	0.18%	13.50%	14.09%	0.19%
Total Market Capitalization:		24,330,343			15.15%			16.47%	
W/ Bloomberg Growth Est.:		24,104,260							
W/ Value Line Growth Est.:		22,874,451							

Notes:
[1] Equals sumproduct of Cols. [9] x [10], and Cols. [12] x [13]
[2] Source: Bloomberg Professional
[3] Source: Blue Chip Financial Forecasts, Vol. 37, No. 11, Nov. 1, 2018, at 2.
[4] Equals [1] − [2]
[5] Equals [1] − [3]
[6] Source: Bloomberg Professional
[7] Source: Bloomberg Professional
[8] Source: Bloomberg Professional
[9] Equals ([7] x (1 + (0.5 x [8]))) + [8]
[10] Equals weight in S&P 500 based on market capitalization, excluding N/As
[11] Source: Value Line
[12] Equals ([7] x (1 + (0.5 x [11]))) + [11]
[13] Equals weight in S&P 500 based on market capitalization, excluding N/As

Market Earned Return on Common Equity - Market Risk Premium Estimate

S&P 500 Average Earned ROE [1]:	13.35%
Current Risk-Free Rate [2]:	3.30%
Near-Term Projected Risk-Free Rate [3]:	3.57%
Current Market Risk Premium [4]:	10.05%
Near-Term Projected Market Risk Premium [5]:	9.78%

	Annual Earned ROE	Rolling 5-yr Average
1990	12.43%	
1991	8.10%	
1992	3.49%	
1993	10.15%	
1994	16.21%	10.08%
1995	16.11%	10.81%
1996	17.92%	12.78%
1997	17.07%	15.49%
1998	17.52%	16.97%
1999	18.59%	17.44%
2000	16.02%	17.42%
2001	5.96%	15.03%
2002	2.90%	12.20%
2003	14.66%	11.63%
2004	14.36%	10.78%
2005	16.15%	10.81%
2006	17.73%	13.16%
2007	13.39%	15.26%
2008	4.30%	13.19%
2009	10.64%	12.44%
2010	14.24%	12.06%
2011	14.94%	11.50%
2012	13.62%	11.55%
2013	15.29%	13.75%
2014	14.40%	14.50%
2015	12.22%	14.09%
2016	13.12%	13.73%
2017	13.64%	13.73%
Mean:		13.35%

Notes:

[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional
[3] Source: Blue Chip Financial Forecasts, Vol. 37, No. 11, Nov. 1, 2018, at 2.
[4] Equals Col. [1] - Col. [2]
[5] Equals Col. [1] - Col. [3]

Value Line and Bloomberg Beta Coefficients

Company	Ticker	[1] Value Line	[2] Bloomberg
ALLETE, Inc.	ALE	0.70	0.64
Alliant Energy Corporation	LNT	0.65	0.62
Ameren Corporation	AEE	0.60	0.61
American Electric Power Company	AEP	0.60	0.59
Avangrid, Inc.	AGR	0.30	0.55
Black Hills Corporation	BKH	0.80	0.76
CMS Energy Corporation	CMS	0.55	0.59
DTE Energy Company	DTE	0.60	0.60
Duke Energy Corporation	DUK	0.55	0.54
El Paso Electric Company	EE	0.70	0.66
Evergy, Inc	EVRG	N/A	0.59
Hawaiian Electric Industries, Inc.	HE	0.60	0.64
NextEra Energy, Inc.	NEE	0.60	0.62
NorthWestern Corporation	NWE	0.60	0.64
OGE Energy Corp.	OGE	0.90	0.76
Otter Tail Corporation	OTTR	0.80	0.77
Pinnacle West Capital Corporation	PNW	0.60	0.60
PNM Resources, Inc.	PNM	0.65	0.67
Portland General Electric Company	POR	0.60	0.63
Southern Company	SO	0.50	0.51
WEC Energy Group, Inc.	WEC	0.55	0.58
Xcel Energy Inc.	XEL	0.55	0.57
Mean		0.62	0.62

Notes:
[1] Source: Value Line
[2] Source: Bloomberg Professional beta calculation tool

Capital Asset Pricing Model Results

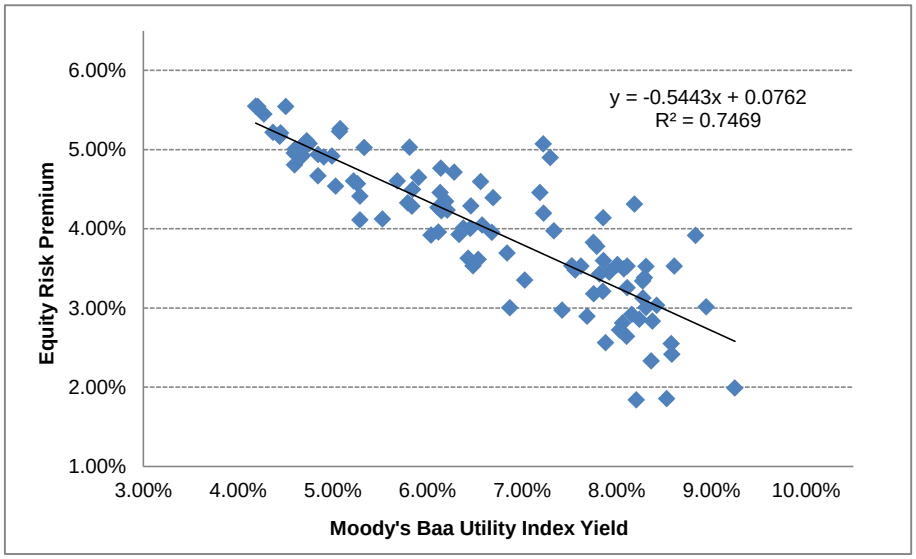
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
						CAPM Results		
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived MRP	Value Line Market DCF Derived MRP	Earned ROE Derived MRP	Bloomberg Market DCF Derived MRP	Value Line Market DCF Derived MRP	Earned ROCE Derived MRP
VALUE LINE BETA COEFFICIENT								
Current 30-Year Treasury (30-day average) [9]	3.30%	0.619	11.85%	13.16%	10.05%	10.64%	11.45%	9.52%
Near-Term Projected Treasury Yield [10]	3.57%	0.619	11.59%	12.90%	9.78%	10.74%	11.55%	9.62%
BLOOMBERG BETA COEFFICIENT								
Current 30-Year Treasury (30-day average) [9]	3.30%	0.625	11.85%	13.16%	10.05%	10.71%	11.53%	9.58%
Near-Term Projected Treasury Yield [10]	3.57%	0.625	11.59%	12.90%	9.78%	10.81%	11.63%	9.68%

Summary of Results	
Mean:	10.62%
Minimum:	9.52%
Maximum:	11.63%

Notes:
[1] *See Notes [9], [10]*
[2] Source: Schedule KM-5
[3] Source: Schedule KM-3
[4] Source: Schedule KM-3
[5] Source: Schedule KM-4
[6] Equals Col. [1] + (Col. [2] x Col. [3])
[7] Equals Col. [1] + (Col. [2] x Col. [4])
[8] Equals Col. [1] + (Col. [2] x Col. [5])
[9] Source: Bloomberg Professional
[10] Source: Blue Chip Financial Forecasts, Vol. 37, No. 11, Nov. 1, 2018, at 2. (6 quarters ending March 2020)

Bond Yield Plus Risk Premium

Scenario	[1] Constant	[2] Slope	[3] Baa Utility Bond Yield	[4] Risk Premium	[5] Return on Equity
Current Utility Bond Yield	7.62%	-0.544	4.87%	4.97%	9.84%
Near-Term Projected Utility Bond Yield	7.62%	-0.544	5.50%	4.63%	10.12%
Long-Term Projected Utility Bond Yield	7.62%	-0.544	6.38%	4.15%	10.53%



Notes:
[1] Constant of regression equation
[2] Slope of regression equation
[3] Projected yields = Current yield + projected change in corporate Baa bond yields
Sources: Current = Bloomberg Professional (30-day average);
Near Term Projected = Blue Chip Financial Forecasts, Vol. 37, No. 11, Nov. 1, 2018, at 2;
Long Term Projected = Blue Chip Financial Forecasts, Vol. 37, No. 6, Jun. 1, 2018, at 14
[4] Equals [1] + [3] x [2]
[5] Equals [3] + [4]

Expected Earnings Analysis - Proxy Group

Company	Ticker	[1] Expected ROE 2021-2023	[2] Projected Common Shares 2018	[3] Projected Common Shares 2021-23	[4] Projected BPS 2018	[5] Projected BPS 2021-23	[6] Book Value Growth Rate	[7] Adjusted ROE
ALLETE, Inc.	ALE	9.00%	51.50	53.50	41.70	47.25	4.16%	9.19%
Alliant Energy Corporation	LNT	11.50%	233.00	235.00	19.00	22.85	4.94%	11.79%
Ameren Corporation	AEE	10.50%	244.00	250.00	31.25	37.75	5.48%	10.80%
American Electric Power Company, Inc.	AEP	10.50%	493.50	516.00	38.65	46.75	6.05%	10.83%
Avangrid, Inc.	AGR	6.00%	309.00	309.00	49.25	53.00	1.85%	6.06%
Black Hills Corporation	BKH	10.00%	59.90	59.90	35.75	42.50	4.42%	10.23%
CMS Energy Corporation	CMS	14.00%	284.00	294.00	16.95	22.50	8.27%	14.60%
DTE Energy Company	DTE	11.00%	182.00	193.00	56.20	69.50	7.01%	11.40%
Duke Energy Corporation	DUK	8.50%	727.00	745.00	60.60	65.50	2.59%	8.61%
El Paso Electric Company	EE	9.00%	40.60	41.00	29.30	34.00	4.04%	9.19%
Evergy, Inc	EVRG	9.50%	257.00	212.00	34.80	38.00	-2.58%	9.38%
Hawaiian Electric Industries, Inc.	HE	9.50%	108.80	113.00	19.90	23.75	5.52%	9.77%
NextEra Energy, Inc.	NEE	13.00%	500.00	535.00	68.70	80.50	5.82%	13.39%
NorthWestern Corporation	NWE	9.00%	50.35	51.00	38.20	43.00	3.33%	9.15%
OGE Energy Corp.	OGE	11.50%	199.70	199.70	19.95	22.75	3.34%	11.70%
Otter Tail Corporation	OTTR	10.50%	40.00	44.00	18.75	24.45	9.44%	11.02%
Pinnacle West Capital Corporation	PNW	10.00%	112.00	113.00	46.25	53.25	3.82%	10.19%
PNM Resources, Inc.	PNM	9.50%	79.65	83.00	22.00	27.25	6.59%	9.82%
Portland General Electric Company	POR	9.00%	89.25	90.00	27.95	31.75	3.45%	9.16%
Southern Company	SO	12.00%	1035.00	1095.00	24.35	29.75	6.63%	12.41%
WEC Energy Group, Inc.	WEC	12.00%	315.60	315.60	31.00	35.50	3.45%	12.21%
Xcel Energy Inc.	XEL	10.50%	516.50	530.00	23.85	28.00	4.77%	10.76%
	Mean:	10.27%					Mean:	10.53%
	Median:	10.25%					Median:	10.49%

Expected Earnings Analysis - Value Line Electric Universe

Company	Ticker	[1] Expected ROE 2021-2023	[2] Projected Common Shares 2018	[3] Projected Common Shares 2021-23	[4] Projected BPS 2018	[5] Projected BPS 2021-23	[6] Book Value Growth Rate	[7] Adjusted ROE
ALLETE, Inc.	ALE	9.00%	51.50	53.50	41.70	47.25	4.16%	9.19%
Alliant Energy Corporation	LNT	11.50%	233.00	235.00	19.00	22.85	4.94%	11.79%
Ameren Corporation	AEE	10.50%	244.00	250.00	31.25	37.75	5.48%	10.80%
American Electric Power Company, Inc.	AEP	10.50%	493.50	516.00	38.65	46.75	6.05%	10.83%
Avangrid, Inc.	AGR	6.00%	309.00	309.00	49.25	53.00	1.85%	6.06%
Avista Corporation	AVA	9.00%	67.50	71.50	27.30	31.00	4.72%	9.22%
Black Hills Corporation	BKH	10.00%	59.90	59.90	35.75	42.50	4.42%	10.23%
CenterPoint Energy, Inc.	CNP	15.00%	432.00	436.00	10.65	12.75	4.84%	15.37%
CMS Energy Corporation	CMS	14.00%	284.00	294.00	16.95	22.50	8.27%	14.60%
Consolidated Edison, Inc.	ED	8.50%	317.00	321.00	51.70	58.00	3.24%	8.64%
Dominion Energy Inc.	D	16.00%	677.00	693.00	29.10	32.25	3.20%	16.26%
DTE Energy Company	DTE	11.00%	182.00	193.00	56.20	69.50	7.01%	11.40%
Duke Energy Corporation	DUK	8.50%	727.00	745.00	60.60	65.50	2.59%	8.61%
Edison International	EIX	13.00%	325.81	325.81	37.00	44.00	4.43%	13.29%
El Paso Electric Company	EE	9.00%	40.60	41.00	29.30	34.00	4.04%	9.19%
Entergy Corporation	ETR	11.50%	183.00	200.00	45.60	57.50	8.35%	12.00%
Evergy, Inc	EVRG	9.50%	257.00	212.00	34.80	38.00	-2.58%	9.38%
Eversource Energy	ES	9.50%	316.89	316.89	36.20	42.00	3.79%	9.68%
Exelon Corporation	EXC	9.50%	967.00	980.00	32.20	39.75	5.76%	9.78%
FirstEnergy Corp.	FE	15.00%	478.00	548.00	12.70	18.25	13.29%	16.07%
Hawaiian Electric Industries, Inc.	HE	9.50%	108.80	113.00	19.90	23.75	5.52%	9.77%
IDACORP, Inc.	IDA	9.00%	50.40	50.40	46.55	53.50	3.54%	9.16%
MGE Energy, Inc.	MGEE	9.50%	35.00	36.00	23.70	34.70	10.78%	10.04%
NextEra Energy, Inc.	NEE	13.00%	500.00	535.00	68.70	80.50	5.82%	13.39%
NorthWestern Corporation	NWE	9.00%	50.35	51.00	38.20	43.00	3.33%	9.15%
OGE Energy Corp.	OGE	11.50%	199.70	199.70	19.95	22.75	3.34%	11.70%
Otter Tail Corporation	OTTR	10.50%	40.00	44.00	18.75	24.45	9.44%	11.02%
PG&E Corporation	PCG	8.50%	520.00	545.00	37.95	52.00	9.47%	8.92%
Pinnacle West Capital Corporation	PNW	10.00%	112.00	113.00	46.25	53.25	3.82%	10.19%
PNM Resources, Inc.	PNM	9.50%	79.65	83.00	22.00	27.25	6.59%	9.82%
Portland General Electric Company	POR	9.00%	89.25	90.00	27.95	31.75	3.45%	9.16%
PPL Corporation	PPL	13.00%	755.00	780.00	17.10	21.00	6.13%	13.41%
Public Service Enterprise Group Incorporate	PEG	11.00%	505.00	505.00	28.70	34.75	4.90%	11.28%
SCANA Corporation	SCG	4.00%	143.00	143.00	37.30	40.00	1.76%	4.04%
Sempra Energy	SRE	12.00%	285.00	307.00	53.85	66.50	7.39%	12.46%
Southern Company	SO	12.00%	1035.00	1095.00	24.35	29.75	6.63%	12.41%
Vectren Corporation	VVC	12.50%	83.50	86.00	23.60	29.05	6.11%	12.89%
WEC Energy Group, Inc.	WEC	12.00%	315.60	315.60	31.00	35.50	3.45%	12.21%
Xcel Energy Inc.	XEL	10.50%	516.50	530.00	23.85	28.00	4.77%	10.76%
	Mean:	10.58%					Mean:	10.88%
	Median:	10.50%					Median:	10.76%

Notes:
[1] Source: Value Line
[2] Source: Value Line
[3] Source: Value Line
[4] Source: Value Line
[5] Source: Value Line
[6] Equals (([3] x [5]) / ([2] x [4]))^(1/4)-1
[7] Equals [1] x (1/(1 - 0.5 x [6]))

Proxy Group Capital Structure

Company	Ticker	% Common Equity 2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	2016Q3	Average
ALLETE, Inc.	ALE	58.84%	63.09%	62.51%	61.03%	60.62%	60.28%	59.02%	59.28%	60.58%
Alliant Energy Corporation	LNT	51.00%	49.74%	49.77%	52.09%	51.23%	50.84%	50.73%	50.68%	50.76%
Ameren Corporation	AEE	52.01%	53.04%	52.65%	53.56%	53.11%	52.77%	52.62%	53.99%	52.97%
American Electric Power Company	AEP	53.53%	54.52%	49.38%	49.16%	49.40%	49.71%	49.90%	49.81%	50.68%
Avangrid, Inc.	AGR	54.93%	56.55%	55.69%	53.88%	53.54%	55.66%	54.95%	56.04%	55.15%
Black Hills Corporation	BKH	53.82%	53.79%	54.40%	54.75%	53.84%	53.20%	52.81%	52.73%	53.67%
CMS Energy Corporation	CMS	52.86%	53.13%	52.25%	53.25%	52.97%	52.10%	51.24%	51.30%	52.39%
DTE Energy Company	DTE	49.23%	51.12%	51.02%	50.50%	50.63%	50.50%	50.50%	50.13%	50.45%
Duke Energy Corporation	DUK	54.94%	54.46%	54.30%	53.78%	54.62%	54.37%	54.66%	54.58%	54.46%
El Paso Electric Company	EE	47.32%	49.46%	49.95%	49.81%	48.01%	47.48%	47.73%	47.73%	48.43%
Evergy, Inc	EVRG	58.51%	58.73%	58.62%	59.41%	58.74%	58.75%	59.28%	59.49%	58.94%
Hawaiian Electric Industries, Inc.	HE	55.78%	57.44%	57.42%	58.11%	57.76%	57.71%	57.70%	58.00%	57.49%
NextEra Energy, Inc.	NEE	60.84%	61.23%	59.93%	63.00%	62.78%	62.05%	62.65%	61.61%	61.76%
NorthWestern Corporation	NWE	48.41%	47.48%	49.89%	48.86%	48.61%	48.61%	48.13%	47.72%	48.46%
OGE Energy Corp.	OGE	54.25%	53.59%	53.36%	53.05%	52.75%	53.46%	56.09%	56.23%	54.10%
Otter Tail Corporation	OTTR	53.11%	52.67%	57.34%	57.24%	55.31%	55.31%	55.06%	54.80%	55.10%
Pinnacle West Capital Corporation	PNW	53.71%	53.18%	53.14%	53.05%	53.32%	53.20%	54.59%	54.70%	53.61%
PNM Resources, Inc.	PNM	46.68%	46.20%	46.06%	47.58%	46.89%	46.38%	46.01%	46.07%	46.48%
Portland General Electric Company	POR	50.29%	50.14%	49.80%	50.17%	50.32%	50.28%	49.82%	49.72%	50.07%
Southern Company	SO	50.31%	49.98%	47.67%	50.14%	49.99%	51.41%	51.10%	49.85%	50.06%
WEC Energy Group, Inc.	WEC	57.72%	61.62%	54.62%	55.82%	55.48%	54.80%	56.26%	56.21%	56.57%
Xcel Energy Inc.	XEL	53.63%	54.15%	53.95%	53.93%	54.37%	54.94%	54.37%	53.45%	54.10%
Mean		53.26%	53.88%	53.35%	53.74%	53.38%	53.35%	53.42%	53.37%	53.47%
Median		53.58%	53.39%	53.25%	53.41%	53.22%	53.20%	53.59%	53.72%	53.64%

Operating Company Capital Structure

		% Common Equity								
Company	Ticker	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	2016Q3	Average
ALLETE (Minnesota Power)	ALE	60.33%	60.38%	60.04%	59.73%	59.16%	58.71%	56.92%	56.90%	59.02%
Superior Water, Light and Power Company	ALE	57.34%	65.80%	64.99%	62.33%	62.08%	61.85%	61.12%	61.65%	62.14%
Interstate Power and Light Company	LNT	50.47%	49.92%	50.31%	51.79%	50.89%	50.23%	50.24%	48.99%	50.35%
Wisconsin Power and Light Company	LNT	51.52%	49.57%	49.23%	52.39%	51.56%	51.45%	51.22%	52.38%	51.16%
Ameren Illinois Company	AEE	52.74%	54.24%	53.38%	54.98%	54.55%	54.09%	53.44%	55.82%	54.15%
Union Electric Company	AEE	51.28%	51.84%	51.92%	52.14%	51.68%	51.45%	51.80%	52.15%	51.78%
AEP Texas Central Company	AEP	N/A	N/A	N/A	N/A	N/A	N/A	46.01%	45.44%	45.73%
AEP Texas North Company	AEP	N/A	N/A	N/A	N/A	N/A	N/A	43.29%	43.17%	43.23%
Appalachian Power Company	AEP	48.93%	49.35%	48.72%	48.30%	47.85%	48.17%	46.89%	46.68%	48.11%
Indiana Michigan Power Company	AEP	44.15%	46.64%	46.33%	46.65%	46.27%	49.54%	49.11%	49.03%	47.21%
Kentucky Power Company	AEP	44.89%	44.40%	43.52%	43.22%	43.30%	43.57%	43.45%	43.52%	43.73%
Kingsport Power Company	AEP	47.69%	47.28%	46.53%	45.88%	50.58%	48.98%	65.24%	65.24%	52.18%
Ohio Power Company	AEP	57.11%	52.91%	58.63%	57.64%	56.72%	56.75%	56.51%	56.08%	56.54%
Public Service Company of Oklahoma	AEP	48.59%	48.10%	48.50%	48.85%	48.26%	48.20%	48.47%	48.52%	48.44%
Southwestern Electric Power Company	AEP	47.91%	47.72%	48.52%	48.66%	48.14%	48.33%	45.95%	46.12%	47.67%
Transource Maryland, LLC	AEP	71.00%	76.00%	N/A	N/A	N/A	N/A	N/A	N/A	73.50%
Transource Pennsylvania, LLC	AEP	70.85%	78.53%	N/A	N/A	N/A	N/A	N/A	N/A	74.69%
Wheeling Power Company	AEP	54.19%	54.27%	54.26%	54.13%	54.10%	54.10%	54.12%	54.31%	54.18%
Central Maine Power Company	AGR	63.53%	64.18%	63.82%	63.97%	63.27%	62.84%	62.39%	61.03%	63.13%
New York State Electric & Gas Corporation	AGR	50.99%	54.51%	53.30%	48.27%	50.24%	49.68%	48.84%	56.35%	51.52%
Rochester Gas and Electric Corporation	AGR	47.77%	50.80%	49.63%	48.94%	48.46%	55.25%	54.30%	54.88%	51.26%
United Illuminating Company	AGR	57.43%	56.70%	56.00%	54.35%	52.17%	54.88%	54.26%	51.90%	54.71%
Black Hills Colorado Electric Utility Company, LP	BKH	54.85%	54.68%	55.69%	54.96%	55.01%	53.08%	52.20%	51.85%	54.04%
Black Hills Power, Inc.	BKH	53.30%	53.22%	53.49%	56.14%	53.26%	53.24%	52.88%	53.13%	53.58%
Cheyenne Light, Fuel and Power Company	BKH	53.32%	53.46%	54.01%	53.16%	53.27%	53.29%	53.35%	53.22%	53.38%
Consumers Energy Company	CMS	52.86%	53.13%	52.25%	53.25%	52.97%	52.10%	51.24%	51.30%	52.39%
DTE Electric Company	DTE	49.23%	51.12%	51.02%	50.50%	50.63%	50.50%	50.50%	50.13%	50.45%
Duke Energy Carolinas, LLC	DUK	52.10%	51.70%	52.98%	53.98%	53.49%	53.32%	52.81%	53.59%	53.00%
Duke Energy Florida, LLC	DUK	48.79%	49.92%	49.25%	49.46%	47.74%	46.95%	50.83%	50.52%	49.18%
Duke Energy Indiana, LLC	DUK	52.64%	52.54%	51.94%	51.71%	51.89%	52.15%	51.59%	51.14%	51.95%
Duke Energy Kentucky, Inc.	DUK	55.79%	53.72%	53.11%	50.69%	55.74%	55.43%	54.74%	54.87%	54.26%
Duke Energy Ohio, Inc.	DUK	67.10%	66.06%	66.24%	65.79%	65.38%	65.36%	66.39%	65.96%	66.03%
Duke Energy Progress, LLC	DUK	53.22%	52.82%	52.27%	51.06%	53.51%	52.99%	51.58%	51.37%	52.35%
El Paso Electric Company	EE	47.32%	49.46%	49.95%	49.81%	48.01%	47.48%	47.73%	47.73%	48.43%
Kansas City Power & Light Company	EVRG	48.88%	49.25%	49.15%	49.42%	48.47%	49.19%	49.61%	49.87%	49.23%
Kansas Gas and Electric Company	EVRG	74.45%	74.29%	74.18%	74.21%	73.69%	73.49%	73.37%	73.33%	73.88%
KCP&L Greater Missouri Operations Company	EVRG	52.03%	52.63%	52.40%	55.14%	54.57%	54.22%	54.47%	55.11%	53.82%
Westar Energy (KPL)	EVRG	58.68%	58.75%	58.74%	58.87%	58.22%	58.10%	59.68%	59.65%	58.84%
Hawaii Electric Light Company, Inc.	HE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hawaiian Electric Company, Inc.	HE	55.78%	57.44%	57.42%	58.11%	57.76%	57.71%	57.70%	58.00%	57.49%
Maui Electric Company, Limited	HE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Florida Power & Light Company	NEE	60.84%	61.23%	59.93%	63.00%	62.78%	62.05%	62.65%	61.61%	61.76%
NorthWestern Corporation	NWE	48.41%	47.48%	49.89%	48.86%	48.61%	48.61%	48.13%	47.72%	48.46%
Oklahoma Gas and Electric Company	OGE	54.25%	53.59%	53.36%	53.05%	52.75%	53.46%	56.09%	56.23%	54.10%
Otter Tail Power Company	OTTR	53.11%	52.67%	57.34%	57.24%	55.31%	55.31%	55.06%	54.80%	55.10%
Arizona Public Service Company	PNW	53.71%	53.18%	53.14%	53.05%	53.32%	53.20%	54.59%	54.70%	53.61%
Public Service Company of New Mexico	PNM	46.68%	46.20%	46.06%	47.58%	46.89%	46.38%	46.01%	46.07%	46.48%
Texas-New Mexico Power Company	PNM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Portland General Electric Company	POR	50.29%	50.14%	49.80%	50.17%	50.32%	50.28%	49.82%	49.72%	50.07%
Alabama Power Company	SO	47.51%	48.86%	47.07%	47.93%	47.25%	47.00%	46.97%	47.29%	47.49%
Georgia Power Company	SO	54.97%	53.81%	50.06%	50.35%	51.55%	50.36%	51.63%	51.71%	51.80%
Gulf Power Company	SO	54.90%	54.27%	54.19%	54.97%	54.41%	58.80%	56.16%	53.63%	55.17%
Mississippi Power Company	SO	43.87%	43.00%	39.34%	47.32%	46.76%	49.50%	49.62%	46.78%	45.77%
Upper Michigan Energy Resources Corporation	WEC	54.53%	70.04%	49.85%	N/A	N/A	N/A	N/A	N/A	58.14%
Wisconsin Electric Power Company	WEC	59.09%	56.47%	55.94%	55.97%	55.76%	55.58%	56.74%	57.27%	56.60%
Wisconsin Public Service Corporation	WEC	59.53%	58.35%	58.06%	55.68%	55.21%	54.02%	55.78%	55.15%	56.47%
Northern States Power Company - MN	XEL	52.61%	52.59%	52.38%	52.22%	52.78%	52.62%	52.31%	52.08%	52.45%
Northern States Power Company - WI	XEL	53.85%	53.79%	53.36%	55.57%	55.22%	55.66%	54.93%	54.89%	54.66%
Public Service Company of Colorado	XEL	54.17%	56.67%	56.50%	55.64%	54.88%	57.00%	56.32%	56.37%	55.94%
Southwestern Public Service Company	XEL	53.88%	53.54%	53.55%	52.29%	54.61%	54.48%	53.93%	50.45%	53.34%
Mean		53.91%	54.60%	53.24%	53.45%	53.29%	53.48%	53.35%	53.28%	53.93%
Median		53.22%	53.18%	52.98%	52.72%	53.12%	53.22%	52.85%	52.75%	53.34%

Source: FERC Form 1 data as reported by S&P Global Market Intelligence

Proxy Group Capital Structure

Company	Ticker	% Long-Term Debt 2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	2016Q3	Average
ALLETE, Inc.	ALE	41.16%	36.91%	37.49%	38.97%	39.38%	39.72%	40.98%	40.72%	39.42%
Alliant Energy Corporation	LNT	49.00%	50.26%	50.23%	47.91%	48.77%	49.16%	49.27%	49.32%	49.24%
Ameren Corporation	AEE	47.99%	46.96%	47.35%	46.44%	46.89%	47.23%	47.38%	46.01%	47.03%
American Electric Power Company	AEP	46.47%	45.48%	50.62%	50.84%	50.60%	50.29%	50.10%	50.19%	49.32%
Avangrid, Inc.	AGR	45.07%	43.45%	44.31%	46.12%	46.46%	44.34%	45.05%	43.96%	44.85%
Black Hills Corporation	BKH	46.18%	46.21%	45.60%	45.25%	46.16%	46.80%	47.19%	47.27%	46.33%
CMS Energy Corporation	CMS	47.14%	46.87%	47.75%	46.75%	47.03%	47.90%	48.76%	48.70%	47.61%
DTE Energy Company	DTE	50.77%	48.88%	48.98%	49.50%	49.37%	49.50%	49.50%	49.87%	49.55%
Duke Energy Corporation	DUK	45.06%	45.54%	45.70%	46.22%	45.38%	45.63%	45.34%	45.42%	45.54%
El Paso Electric Company	EE	52.68%	50.54%	50.05%	50.19%	51.99%	52.52%	52.27%	52.27%	51.57%
Evergy, Inc	EVRG	41.49%	41.27%	41.38%	40.59%	41.26%	41.25%	40.72%	40.51%	41.06%
Hawaiian Electric Industries, Inc.	HE	44.22%	42.56%	42.58%	41.89%	42.24%	42.29%	42.30%	42.00%	42.51%
NextEra Energy, Inc.	NEE	39.16%	38.77%	40.07%	37.00%	37.22%	37.95%	37.35%	38.39%	38.24%
NorthWestern Corporation	NWE	51.59%	52.52%	50.11%	51.14%	51.39%	51.39%	51.87%	52.28%	51.54%
OGE Energy Corp.	OGE	45.75%	46.41%	46.64%	46.95%	47.25%	46.54%	43.91%	43.77%	45.90%
Otter Tail Corporation	OTTR	46.89%	47.33%	42.66%	42.76%	44.69%	44.69%	44.94%	45.20%	44.90%
Pinnacle West Capital Corporation	PNW	46.29%	46.82%	46.86%	46.95%	46.68%	46.80%	45.41%	45.30%	46.39%
PNM Resources, Inc.	PNM	53.32%	53.80%	53.94%	52.42%	53.11%	53.62%	53.99%	53.93%	53.52%
Portland General Electric Company	POR	49.71%	49.86%	50.20%	49.83%	49.68%	49.72%	50.18%	50.28%	49.93%
Southern Company	SO	49.69%	50.02%	52.33%	49.86%	50.01%	48.59%	48.90%	50.15%	49.94%
WEC Energy Group, Inc.	WEC	42.28%	38.38%	45.38%	44.18%	44.52%	45.20%	43.74%	43.79%	43.43%
Xcel Energy Inc.	XEL	46.37%	45.85%	46.05%	46.07%	45.63%	45.06%	45.63%	46.55%	45.90%
Mean		46.74%	46.12%	46.65%	46.26%	46.62%	46.65%	46.58%	46.63%	46.53%
Median		46.42%	46.61%	46.75%	46.59%	46.78%	46.80%	46.41%	46.28%	46.36%

Operating Company Capital Structure

		% Long-Term Debt								
Company	Ticker	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	2017Q1	2016Q4	2016Q3	Average
ALLETE (Minnesota Power)	ALE	39.67%	39.62%	39.96%	40.27%	40.84%	41.29%	43.08%	43.10%	40.98%
Superior Water, Light and Power Company	ALE	42.66%	34.20%	35.01%	37.67%	37.92%	38.15%	38.88%	38.35%	37.86%
Interstate Power and Light Company	LNT	49.53%	50.08%	49.69%	48.21%	49.11%	49.77%	49.76%	51.01%	49.65%
Wisconsin Power and Light Company	LNT	48.48%	50.43%	50.77%	47.61%	48.44%	48.55%	48.78%	47.62%	48.84%
Ameren Illinois Company	AEE	47.26%	45.76%	46.62%	45.02%	45.45%	45.91%	46.56%	44.18%	45.85%
Union Electric Company	AEE	48.72%	48.16%	48.08%	47.86%	48.32%	48.55%	48.20%	47.85%	48.22%
AEP Texas Central Company	AEP	N/A	N/A	N/A	N/A	N/A	N/A	53.99%	54.56%	54.27%
AEP Texas North Company	AEP	N/A	N/A	N/A	N/A	N/A	N/A	56.71%	56.83%	56.77%
Appalachian Power Company	AEP	51.07%	50.65%	51.28%	51.70%	52.15%	51.83%	53.11%	53.32%	51.89%
Indiana Michigan Power Company	AEP	55.85%	53.36%	53.67%	53.35%	53.73%	50.46%	50.89%	50.97%	52.79%
Kentucky Power Company	AEP	55.11%	55.60%	56.48%	56.78%	56.70%	56.43%	56.55%	56.48%	56.27%
Kingsport Power Company	AEP	52.31%	52.72%	53.47%	54.12%	49.42%	51.02%	34.76%	34.76%	47.82%
Ohio Power Company	AEP	42.89%	47.09%	41.37%	42.36%	43.28%	43.25%	43.49%	43.92%	43.46%
Public Service Company of Oklahoma	AEP	51.41%	51.90%	51.50%	51.15%	51.74%	51.80%	51.53%	51.48%	51.56%
Southwestern Electric Power Company	AEP	52.09%	52.28%	51.48%	51.34%	51.86%	51.67%	54.05%	53.88%	52.33%
Transource Maryland, LLC	AEP	29.00%	24.00%	N/A	N/A	N/A	N/A	N/A	N/A	26.50%
Transource Pennsylvania, LLC	AEP	29.15%	21.47%	N/A	N/A	N/A	N/A	N/A	N/A	25.31%
Wheeling Power Company	AEP	45.81%	45.73%	45.74%	45.87%	45.90%	45.90%	45.88%	45.69%	45.82%
Central Maine Power Company	AGR	36.47%	35.82%	36.18%	36.03%	36.73%	37.16%	37.61%	38.97%	36.87%
New York State Electric & Gas Corporation	AGR	49.01%	45.49%	46.70%	51.73%	49.76%	50.32%	51.16%	43.65%	48.48%
Rochester Gas and Electric Corporation	AGR	52.23%	49.20%	50.37%	51.06%	51.54%	44.75%	45.70%	45.12%	48.74%
United Illuminating Company	AGR	42.57%	43.30%	44.00%	45.65%	47.83%	45.12%	45.74%	48.10%	45.29%
Black Hills Colorado Electric Utility Company, LP	BKH	45.15%	45.32%	44.31%	45.04%	44.99%	46.92%	47.80%	48.15%	45.96%
Black Hills Power, Inc.	BKH	46.70%	46.78%	46.51%	43.86%	46.74%	46.76%	47.12%	46.87%	46.42%
Cheyenne Light, Fuel and Power Company	BKH	46.68%	46.54%	45.99%	46.84%	46.73%	46.71%	46.65%	46.78%	46.62%
Consumers Energy Company	CMS	47.14%	46.87%	47.75%	46.75%	47.03%	47.90%	48.76%	48.70%	47.61%
DTE Electric Company	DTE	50.77%	48.88%	48.98%	49.50%	49.37%	49.50%	49.50%	49.87%	49.55%
Duke Energy Carolinas, LLC	DUK	47.90%	48.30%	47.02%	46.02%	46.51%	46.68%	47.19%	46.41%	47.00%
Duke Energy Florida, LLC	DUK	51.21%	50.08%	50.75%	50.54%	52.26%	53.05%	49.17%	49.48%	50.82%
Duke Energy Indiana, LLC	DUK	47.36%	47.46%	48.06%	48.29%	48.11%	47.85%	48.41%	48.86%	48.05%
Duke Energy Kentucky, Inc.	DUK	44.21%	46.28%	46.89%	49.31%	44.26%	44.57%	45.26%	45.13%	45.74%
Duke Energy Ohio, Inc.	DUK	32.90%	33.94%	33.76%	34.21%	34.62%	34.64%	33.61%	34.04%	33.97%
Duke Energy Progress, LLC	DUK	46.78%	47.18%	47.73%	48.94%	46.49%	47.01%	48.42%	48.63%	47.65%
El Paso Electric Company	EE	52.68%	50.54%	50.05%	50.19%	51.99%	52.52%	52.27%	52.27%	51.57%
Kansas City Power & Light Company	EVRG	51.12%	50.75%	50.85%	50.58%	51.53%	50.81%	50.39%	50.13%	50.77%
Kansas Gas and Electric Company	EVRG	25.55%	25.71%	25.82%	25.79%	26.31%	26.51%	26.63%	26.67%	26.12%
KCP&L Greater Missouri Operations Company	EVRG	47.97%	47.37%	47.60%	44.86%	45.43%	45.78%	45.53%	44.89%	46.18%
Westar Energy (KPL)	EVRG	41.32%	41.25%	41.26%	41.13%	41.78%	41.90%	40.32%	40.35%	41.16%
Hawaii Electric Light Company, Inc.	HE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hawaiian Electric Company, Inc.	HE	44.22%	42.56%	42.58%	41.89%	42.24%	42.29%	42.30%	42.00%	42.51%
Maui Electric Company, Limited	HE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Florida Power & Light Company	NEE	39.16%	38.77%	40.07%	37.00%	37.22%	37.95%	37.35%	38.39%	38.24%
NorthWestern Corporation	NWE	51.59%	52.52%	50.11%	51.14%	51.39%	51.39%	51.87%	52.28%	51.54%
Oklahoma Gas and Electric Company	OGE	45.75%	46.41%	46.64%	46.95%	47.25%	46.54%	43.91%	43.77%	45.90%
Otter Tail Power Company	OTTR	46.89%	47.33%	42.66%	42.76%	44.69%	44.69%	44.94%	45.20%	44.90%
Arizona Public Service Company	PNW	46.29%	46.82%	46.86%	46.95%	46.68%	46.80%	45.41%	45.30%	46.39%
Public Service Company of New Mexico	PNM	53.32%	53.80%	53.94%	52.42%	53.11%	53.62%	53.99%	53.93%	53.52%
Texas-New Mexico Power Company	PNM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Portland General Electric Company	POR	49.71%	49.86%	50.20%	49.83%	49.68%	49.72%	50.18%	50.28%	49.93%
Alabama Power Company	SO	52.49%	51.14%	52.93%	52.07%	52.75%	53.00%	53.03%	52.71%	52.51%
Georgia Power Company	SO	45.03%	46.19%	49.94%	49.65%	48.45%	49.64%	48.37%	48.29%	48.20%
Gulf Power Company	SO	45.10%	45.73%	45.81%	45.03%	45.59%	41.20%	43.84%	46.37%	44.83%
Mississippi Power Company	SO	56.13%	57.00%	60.66%	52.68%	53.24%	50.50%	50.38%	53.22%	54.23%
Upper Michigan Energy Resources Corporation	WEC	45.47%	29.96%	50.15%	N/A	N/A	N/A	N/A	N/A	41.86%
Wisconsin Electric Power Company	WEC	40.91%	43.53%	44.06%	44.03%	44.24%	44.42%	43.26%	42.73%	43.40%
Wisconsin Public Service Corporation	WEC	40.47%	41.65%	41.94%	44.32%	44.79%	45.98%	44.22%	44.85%	43.53%
Northern States Power Company - MN	XEL	47.39%	47.41%	47.62%	47.78%	47.22%	47.38%	47.69%	47.92%	47.55%
Northern States Power Company - WI	XEL	46.15%	46.21%	46.64%	44.43%	44.78%	44.34%	45.07%	45.11%	45.34%
Public Service Company of Colorado	XEL	45.83%	43.33%	43.50%	44.36%	45.12%	43.00%	43.68%	43.63%	44.06%
Southwestern Public Service Company	XEL	46.12%	46.46%	46.45%	47.71%	45.39%	45.52%	46.07%	49.55%	46.66%
Mean		46.09%	45.40%	46.76%	46.55%	46.71%	46.52%	46.65%	46.72%	46.07%
Median		46.78%	46.82%	47.02%	47.28%	46.88%	46.78%	47.15%	47.25%	46.66%

Source: FERC Form 1 data as reported by S&P Global Market Intelligence

Small Size Premium

	[1]	[2]
	Customers (Mil)	Equity ($Mil)
Empire Kansas Jurisdiction	0.01	$40.51
Median Market to Book for Comparable Group		1.89
Empire Kansas Implied Market Cap		$76.42

		[3]	[4]	[5]
Company Name	Ticker	Electric Customers (Mil)	Market Cap ($Mil)	Market to Book Ratio
ALLETE, Inc.	ALE	0.16	$3,888.03	1.84
Alliant Energy Corporation	LNT	0.96	$10,196.40	2.32
Ameren Corporation	AEE	2.44	$15,760.95	2.12
American Electric Power Company	AEP	4.36	$35,462.01	1.89
Avangrid, Inc.	AGR	2.23	$14,716.80	0.97
Black Hills Corporation	BKH	0.21	$3,209.13	1.76
CMS Energy Corporation	CMS	1.82	$14,036.17	3.00
DTE Energy Company	DTE	2.18	$20,210.18	2.04
Duke Energy Corporation	DUK	7.55	$57,827.22	1.36
El Paso Electric Company	EE	0.42	$2,374.30	2.09
Evergy, Inc	EVRG	1.57	$14,790.53	1.39
Hawaiian Electric Industries, Inc.	HE	0.46	$3,901.99	1.86
NextEra Energy, Inc.	NEE	4.90	$81,247.38	2.42
NorthWestern Corporation	NWE	0.43	$2,984.60	1.57
OGE Energy Corp.	OGE	0.84	$7,342.08	1.89
Otter Tail Corporation	OTTR	0.13	$1,853.96	2.59
Pinnacle West Capital Corporation	PNW	1.21	$9,153.90	1.82
PNM Resources, Inc.	PNM	0.77	$3,308.51	1.81
Portland General Electric Company	POR	0.87	$4,080.85	1.65
Southern Company	SO	4.62	$45,243.68	1.89
WEC Energy Group, Inc.	WEC	1.60	$21,540.77	2.21
Xcel Energy Inc.	XEL	3.57	$24,664.88	2.09
MEDIAN		1.4	$12,116.29	1.89
MEAN		2.0	$18,081.56	1.94

Notes:
[1] Data provided by Company.
[2] Requested Rate Base x Equity Ratio
[3] Source: S&P Global Market Intelligence; as reported for calendar year 2017
[4] Source: S&P Global Market Intelligence, 30-day average
[5] Source: S&P Global Market Intelligence, 30-day average

Flotation Cost Adjustment

Two most recent open market follow-on common stock issuances per company, if available

Company	Date	Shares Issued	Offering Price	Underwriting Discount	Offering Expense	Net Proceeds Per Share	Total Flotation Costs	Gross Equity Issue Before Costs	Net Proceeds	Flotation Cost Percent
Algonquin Power & Utilities Corp.	11/25/2015	16,508,250	$10.45	$0.4180	$500,000	$10.00	$7,400,449	$172,511,213	$165,110,764	4.290%
Algonquin Power & Utilities Corp.	12/2/2014	10,055,000	$9.95	$0.3980	$700,000	$9.48	$4,701,890	$100,047,250	$95,345,360	4.700%
The Empire District Electric Company	12/10/2007	3,450,000	$23.00	$0.9775	$250,000	$21.95	$3,622,375	$79,350,000	$75,727,625	4.565%
The Empire District Electric Company	6/16/2006	3,795,000	$20.25	$0.8600	$250,000	$19.32	$3,513,700	$76,848,750	$73,335,050	4.572%
ALLETE, Inc.	2/27/2014	3,220,000	$49.75	$1.7413	$450,000	$47.87	$6,056,825	$160,195,000	$154,138,175	3.781%
ALLETE, Inc.	5/25/2001	7,475,000	$23.68	$0.9472	$350,000	$22.69	$7,430,320	$177,008,000	$169,577,680	4.198%
Alliant Energy Corporation	7/1/2003	17,250,000	$19.25	$0.7700	$370,000	$18.46	$13,652,500	$332,062,500	$318,410,000	4.111%
Alliant Energy Corporation	11/8/2001	9,775,000	$28.00	$1.0500	$425,000	$26.91	$10,688,750	$273,700,000	$263,011,250	3.905%
Ameren Corp.	9/9/2009	21,850,000	$25.25	$0.7575	$450,000	$24.47	$17,001,375	$551,712,500	$534,711,125	3.082%
Ameren Corp.	6/30/2004	10,925,000	$42.00	$1.2600	$400,000	$40.70	$14,165,500	$458,850,000	$444,684,500	3.087%
American Electric Power Company, Inc.	4/1/2009	69,000,000	$24.50	$0.7350	$400,000	$23.76	$51,115,000	$1,690,500,000	$1,639,385,000	3.024%
American Electric Power Company, Inc.	2/27/2003	57,500,000	$20.95	$0.6285	$550,000	$20.31	$36,688,750	$1,204,625,000	$1,167,936,250	3.046%
Avangrid, Inc.	9/26/2013	5,750,000	$37.25	$1.3038	$250,000	$35.90	$7,746,563	$214,187,500	$206,440,938	3.617%
Avangrid, Inc.	9/16/2010	20,355,000	$25.75	$1.0944	$325,000	$24.64	$22,601,003	$524,141,250	$501,540,247	4.312%
Black Hills Corporation	11/19/2015	5,980,000	$40.25	$1.4088	$1,200,000	$38.64	$9,624,325	$240,695,000	$231,070,675	3.999%
Black Hills Corporation	11/12/2010	4,600,000	$29.75	$1.0413	$276,650	$28.65	$5,066,400	$136,850,000	$131,783,600	3.702%
CMS Energy Corporation	3/30/2005	23,000,000	$12.25	$0.4288	$325,000	$11.81	$10,187,400	$281,750,000	$271,562,600	3.616%
CMS Energy Corporation	10/7/2004	32,775,000	$9.10	$0.3185	$325,000	$8.77	$10,763,838	$298,252,500	$287,488,663	3.609%
DTE Energy Company	6/19/2002	6,325,000	$43.25	$1.4056	$250,000	$41.80	$9,140,420	$273,556,250	$264,415,830	3.341%
Duke Energy Corporation	3/6/2018	21,275,000	$74.07	$1.7880	$450,000	$72.26	$38,489,700	$1,575,881,800	$1,537,392,100	2.442%
Duke Energy Corporation	3/1/2016	10,637,500	$72.00	$2.1600	$400,000	$69.80	$23,377,000	$765,900,000	$742,523,000	3.052%
Hawaiian Electric Industries, Inc.	3/18/2013	7,000,000	$26.75	$1.0031	$450,000	$25.68	$7,471,840	$187,250,000	$179,778,160	3.990%
Hawaiian Electric Industries, Inc.	12/2/2008	5,000,000	$23.00	$0.8625	$300,000	$22.08	$4,612,500	$115,000,000	$110,387,500	4.011%
NextEra Energy, Inc.	11/1/2016	13,800,000	$124.00	$0.0000	$750,000	$123.95	$750,000	$1,711,200,000	$1,710,450,000	0.044%
NextEra Energy, Inc.	11/18/2013	11,100,000	$88.03	$0.0000	$750,000	$87.96	$750,000	$977,133,000	$976,383,000	0.077%
NorthWestern Corporation	9/29/2015	1,100,000	$51.81	$1.3300	$1,000,000	$49.57	$2,463,000	$56,991,000	$54,528,000	4.322%
NorthWestern Corporation	11/5/2014	7,766,990	$51.50	$1.8025	$1,000,000	$49.57	$14,999,999	$399,999,985	$384,999,986	3.750%
OGE Energy Corp.	8/21/2003	5,324,074	$21.60	$0.7900	$325,000	$20.75	$4,531,018	$114,999,998	$110,468,980	3.940%
Otter Tail Corporation	9/18/2008	5,175,000	$30.00	$1.0875	$400,000	$28.84	$6,027,813	$155,250,000	$149,222,188	3.883%
Otter Tail Corporation	12/7/2004	3,335,000	$25.45	$0.9500	$300,000	$24.41	$3,468,250	$84,875,750	$81,407,500	4.086%
Pinnacle West Capital Corporation	4/8/2010	6,900,000	$38.00	$1.3300	$190,000	$36.64	$9,367,000	$262,200,000	$252,833,000	3.572%
Pinnacle West Capital Corporation	4/27/2005	6,095,000	$42.00	$1.3650	$250,000	$40.59	$8,569,675	$255,990,000	$247,420,325	3.348%
PNM Resources, Inc.	12/6/2006	5,750,000	$30.79	$1.0780	$250,000	$29.67	$6,448,500	$177,042,500	$170,594,000	3.642%
PNM Resources, Inc.	3/23/2005	3,910,000	$26.76	$0.8697	$200,000	$25.84	$3,600,527	$104,631,600	$101,031,073	3.441%
Portland General Electric Company	6/11/2013	12,765,000	$29.50	$0.9588	$600,000	$28.49	$12,838,444	$376,567,500	$363,729,056	3.409%
Portland General Electric Company	3/5/2009	12,477,500	$14.10	$0.4935	$375,000	$13.58	$6,532,646	$175,932,750	$169,400,104	3.713%
Southern Company	8/16/2016	32,500,000	$49.30	$1.6600	$557,000	$47.62	$54,507,000	$1,602,250,000	$1,547,743,000	3.402%
Southern Company	5/5/2016	18,300,000	$48.60	$2.0200	$395,000	$46.56	$37,361,000	$889,380,000	$852,019,000	4.201%
WEC Energy Group, Inc.	11/16/2005	5,290,000	$53.70	$1.7450	$0	$51.96	$9,231,050	$284,073,000	$274,841,950	3.250%
WEC Energy Group, Inc.	11/20/2003	4,025,000	$43.00	$1.5050	$0	$41.50	$6,057,625	$173,075,000	$167,017,375	3.500%
Xcel Energy Inc.	8/3/2010	21,850,000	$21.50	$0.6450	$600,000	$20.83	$14,693,250	$469,775,000	$455,081,750	3.128%
Xcel Energy Inc.	9/9/2008	17,250,000	$20.25	$0.1500	$600,000	$20.07	$3,187,500	$349,312,500	$346,125,000	0.913%
Mean							$12,631,017	$440,751,288		
								WEIGHTED AVERAGE FLOTATION COSTS:		2.87%

Discounted Cash Flow Model Adjustment for Flotation Costs - 30 Day Average Stock Price

Company	Ticker	[1] Expected Dividend Yield	[2] Dividend Yield Adjusted for Flot. Costs
ALLETE, Inc.	ALE	3.05%	3.14%
Alliant Energy Corporation	LNT	3.20%	3.29%
Ameren Corporation	AEE	3.05%	3.14%
American Electric Power Company	AEP	3.82%	3.94%
Avangrid, Inc.	AGR	3.89%	4.00%
Black Hills Corporation	BKH	3.46%	3.56%
CMS Energy Corporation	CMS	2.98%	3.07%
DTE Energy Company	DTE	3.28%	3.37%
Duke Energy Corporation	DUK	4.69%	4.83%
El Paso Electric Company	EE	2.53%	2.60%
Evergy, Inc	EVRG	3.43%	3.54%
Hawaiian Electric Industries, Inc.	HE	3.56%	3.67%
NextEra Energy, Inc.	NEE	2.72%	2.80%
NorthWestern Corporation	NWE	3.76%	3.87%
OGE Energy Corp.	OGE	4.03%	4.15%
Otter Tail Corporation	OTTR	2.99%	3.07%
Pinnacle West Capital Corporation	PNW	3.69%	3.80%
PNM Resources, Inc.	PNM	2.78%	2.86%
Portland General Electric Company	POR	3.24%	3.33%
Southern Company	SO	5.52%	5.68%
WEC Energy Group, Inc.	WEC	3.32%	3.42%
Xcel Energy Inc.	XEL	3.25%	3.35%
PROXY GROUP MEAN		3.46%	3.57%

Dividend Yield Adjusted For Flotation Costs:	3.57%	
Dividend Yield Unadjusted For Flotation Costs:	3.46%	
Difference (Flotation Cost Adjustment):	0.10%	[3]

Notes:

The proxy group DCF result is adjusted for flotation costs by dividing each company's expected dividend yield by (1 - flotation cost). The flotation cost adjustment is derived as the difference between the unadjusted DCF result and the DCF result adjusted for flotation costs.

[1] Source: Schedule KM-1

[2] Equals [1] / (1 - 0.0287)

[3] Equals average [2] - average [1]

AFFIDAVIT OF KEITH MAGEE

COMMONWEALTH OF MASSACHUSETTS)
) ss
COUNTY OF WORCESTER)

On the 3 day of December, 2018, before me appeared Keith Magee, to me personally known, who, being by me first duly sworn, states that he is a Director at ScottMadden, Inc. and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

Keith Magee

Subscribed and sworn to before me this 3rd day of December, 2018.

Notary Public

My commission expires: 11/8/2024