| Exhibit No.: |  |
| ---: | :--- |
| Issues: | Return on Equity |
| Witness: | Robert B. Hevert |
| Sponsoring Party: | Union Electric Company |
| Type of Exhibit: | Rebuttal Testimony |
| File No.: | EC-2014-0223 |
| Date Testimony Prepared: | June 6,2014 |

Filed August 5, 2014 Data Center Missouri Public Service Commission MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. EC-2014-0223

## REBUTTAL TESTIMONY

OF

ROBERT B. HEVERT

ON
BEHALF OF
UNION ELECTRIC COMPANY
d/b/a Ameren Missouri

## Framingham, Massachusetts <br> June 6, 2014



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## Glossary of Frequently Used Terms

| TERM | DESCRIPTION |
| :--- | :--- |
| Beta Coefficient | A component of the CAPM that measures the risk of <br> a given stock relative to the risk of the overall market. |
| Capital Asset Pricing Model | A risk premium-based model used to estimate the <br> Cost of Equity, assuming the stock is added to a well- <br> diversified portfolio. The CAPM assumes that <br> investors are compensated for the time value of <br> money (represented by the Risk Free Rate), and risk <br> (represented by the combination of the Beta <br> Coefficient and the Market Risk Premium). |
| Constant Growth DCF Model | A form of the DCF model that assumes cash flows <br> will grow at a constant rate, in perpetuity. The model <br> simplifies to a form that expresses the ROE as the <br> sum of the expected dividend yield and the expected <br> growth rate. |
| Cost of Equity | The return required by investors to invest in equity <br> securities. The terms "Return on Equity" and "Cost <br> of Equity" are used interchangeably. |
| Discounted Cash Flow ("DCF") Model | A model used to estimate the Cost of Equity based on <br> expected cash flows. The Cost of Equity equals the <br> discount rate that sets the current market price equal <br> to the present value of expected cash flows. |
| Dividend Yield | For a given stock, the current dividend divided by the <br> current market price. |
| Gross Domestic Product ("GDP") | The value of all finished goods and services produced <br> within a country during a given period of time <br> (usually measured annually). GDP includes public <br> and private consumption, government expenditures, <br> investments, and exports less imports. |
| Multi-Stage DCF Model | The expected return on the equity market, taken as a <br> portfolio. |
| Proxy Group | The additional compensation required by investing in <br> the equity market as a portfolio over the Risk-Free <br> rate. The Market Risk Premium is a component of <br> the CAPM. |
| A form of the DCF model in which the rate of growth <br> may change over different stages. |  |
|  | A group of publicly traded companies used as the <br> "proxy" for the subject company (in this case, <br> Ameren Missouri). Proxy companies are sometimes <br> referred to as "Comparable Companies". |

Rebuttal Testimony of Robert B. Hevert

| TERM | DESCRIPTION |
| :--- | :--- |
| Return on Equity ("ROE") | The return required by investors to invest in equity <br> securities. The terms "Return on Equity" and "Cost <br> of Equity" are used interchangeably. |
| Risk Free Rate | The rate of return on an asset with no default risk. |
| Risk Premium | The additional compensation required by investors <br> for taking on additional increments of risk. Risk <br> Premium-based approaches are used in addition to the <br> DCF and CAPM to estimate the Cost of Equity. |
| Sustainable Growth | An estimate of growth based on the percentage of <br> earnings retained, and the expected return on retained <br> earnings. |
| Terminal Growth | The expected rate of growth in the final, or terminal, <br> stage of the Multi-Stage DCF model. |
| Treasury Inflation Protected Securities | Treasury securities that are indexed to inflation. The <br> principal value of TIPS increase with inflation and <br> decrease with deflation, as measured by the <br> Consumer Price Index. |
| ("TIPS") | The return on Treasury securities; the yield on long- <br> term Treasury bonds is considered to be a measure of <br> the Risk Free Rate. |
| Treasury Yield | Electric utilities that own and operate distribution, <br> transmission and generation assets. |
| Vertically Integrated Utilities |  |

## REBUTTAL TESTIMONY

OF

## ROBERT B. HEVERT

FILE NO. EC-2014-0223

## I. INTRODUCTION

Q. Please state your name, affiliation and business address.
A. My name is Robert B. Hevert. I am Managing Partner of Sussex Economic Advisors, LLC. My business address is 161 Worcester Road, Suite 503, Framingham, Massachusetts 01701.
Q. On whose behalf are you submitting this testimony?
A. I am submitting this rebuttal testimony ("Rebuttal Testimony") before the Missouri Public Service Commission ("Commission") on behalf of Union Electric Company d/b/a Ameren Missouri ("Ameren Missouri" or the "Company").
Q. Please describe your educational background.
A. I hold a Bachelor's degree in Business and Economics from the University of Delaware, and an MBA with a concentration in Finance from the University of Massachusetts. I also hold the Chartered Financial Analyst designation.
Q. Please describe your experience in the energy and utility industries.
A. I have worked in regulated industries for over twenty-five years, having served as an executive and manager with consulting firms, a financial officer of a publicly-traded natural gas utility (at the time, Bay State Gas Company), and an analyst at a telecommunications utility. In my role as a consultant, I have advised numerous energy and utility clients on a wide range of financial and economic issues, including corporate and asset-based transactions, asset and
enterprise valuation, transaction due diligence, and strategic matters. As an expert witness, I have provided testimony in approximately 100 proceedings regarding various financial and regulatory matters before numerous state utility regulatory agencies and the Federal Energy Regulatory Commission. A summary of my professional and educational background, including a list of my testimony in prior proceedings, is included in Attachment A to my Rebuttal Testimony.

## II. PURPOSE AND OVERVIEW OF TESTIMONY

## Q. What is the purpose of your Rebuttal Testimony?

A. On behalf of Ameren Missouri, my Rebuttal Testimony responds to Mr. Michael P. Gorman on behalf of the Noranda Aluminum, Inc. ("Noranda") as his direct testimony relates to the Company's return on equity ("ROE"). In addition, my Rebuttal Testimony presents evidence and provides a recommendation regarding the Company's ROE ${ }^{1}$. My analyses and conclusions are supported by the data presented in Schedules RBH-1 through RBH-14, which have been prepared by me or under my direction.

## Q. How is the remainder of your Rebuttal Testimony organized?

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

Section III - Provides a summary of issues regarding Cost of Equity estimation in regulatory proceedings;

Section IV - Provides my response to the Direct Testimony of Mr. Gorman;
Section V - Explains my analyses and the analytical bases for my ROE recommendation;

Section VI - Provides a discussion of specific business risks that have a direct bearing on the Company's Cost of Equity; and

[^0]Section VII - Summarizes my conclusions and recommendations.

## III. SUMMARY OF ISSUES SURROUNDING COST OF EQUITY ESTIMATION IN REGULATORY PROCEEDINGS

Q. Before addressing the specific aspects of this proceeding, please provide an overview of the issues surrounding the Cost of Equity in regulatory proceedings, generally.
A. In very general terms, the Cost of Equity is the return that investors require to make an equity investment in a firm. That is, investors will only provide funds to a firm if the return that they expect is equal to, or greater than, the return that they require. From the firm's perspective, that required return, whether it is provided to debt or equity investors, has a cost. Individually, we speak of the "Cost of Debt" and the "Cost of Equity"; together, they are referred to as the "Cost of Capital."

The Cost of Capital (including the costs of both debt and equity) is based on the economic principle of "opportunity costs." Investing in any asset, whether debt or equity securities, implies a forgone opportunity to invest in alternative assets. For any investment to be sensible, its expected return must be at least equal to the return expected on alternative, comparable investment opportunities. Because investments with like risks should offer similar returns, the opportunity cost of an investment should equal the return available on an investment of comparable risk.

Although both debt and equity have required costs, they are different in certain fundamental ways. Most noticeably, the Cost of Debt is contractually defined and can be directly observed as the interest rate, or yield, on debt securities. The Cost of Equity, on the other hand, is neither directly observable nor a contractual obligation. Rather, equity investors have a claim on the firm's cash flows only after debt holders are paid; the uncertainty (or risk) associated with those residual cash flows determines the Cost of Equity. Because equity
investors bear that "residual risk", they take greater risks and require higher returns than debt holders. In that basic sense, equity and debt investors differ: they invest in different securities, face different risks, and require different returns.

Whereas the Cost of Debt can be directly observed, the Cost of Equity must be estimated, or inferred, based on market data and various financial models. As discussed throughout my Rebuttal Testimony, all of those models are subject to certain assumptions, which may be more or less applicable under differing market conditions. In addition, because the Cost of Equity is premised on opportunity costs, those models typically are applied to a group of "comparable" or "proxy" companies. The choice of models (including their inputs), the selection of proxy companies, and the interpretation of the model results all require the application of judgment. That judgment also should consider data and information that is not necessarily included in the models, themselves. In the end, however, the estimated Cost of Equity should reflect the return that investors require in light of the subject company's risks, and the returns available on comparable investments.
Q. Please now provide a brief summary of the regulatory guidelines established for the purpose of determining the ROE.
A. The United States Supreme Court (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 those cases, the Court recognized that 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.

## Q. Does Missouri precedent provide similar guidance?

A. Yes. In a recent order, the Commission cited the Hope and Bluefield decisions at some length and acknowledged its authority and responsibility to set "just and reasonable" rates for public utility service, stating that:

A "just and reasonable" rate is one that is fair to both the utility and its customers; it is no more than is sufficient to "keep public utility plants in proper repair for effective public service, [and] ...to insure to the investors a reasonable return upon funds invested., ${ }^{2}$

Based on those standards, the authorized ROE should provide the Company with the opportunity to earn a fair and reasonable return and should enable efficient access to external capital under a variety of market conditions.
Q. Why is it important for a utility to be allowed the opportunity to earn a return adequate to attract equity capital at reasonable terms?
A. A return that is adequate to attract capital at reasonable terms enables the utility to provide service while maintaining its financial integrity. As discussed above, and in keeping with the Hope and Bluefield standards, that return should be commensurate with the returns expected elsewhere in the market for investments of equivalent risk. The consequence of the Commission's order in this case, therefore, should be to provide Ameren Missouri with the opportunity to earn a return on equity that is: (1) adequate to attract capital at reasonable terms; (2) sufficient to ensure its financial integrity; and (3) commensurate with returns on investments in enterprises having corresponding risks. To the extent Ameren Missouri is provided a reasonable opportunity to earn its market-based Cost of Equity, neither customers nor shareholders should be disadvantaged. In fact, a return that is adequate to attract capital at

[^1]reasonable terms enables Ameren Missouri to provide safe, reliable electric utility service while maintaining its financial integrity.
Q. How is the Cost of Equity estimated in regulatory proceedings?
A. As noted earlier (and as discussed in more detail throughout my Rebuttal Testimony), the Cost of Equity is estimated by the use of various financial models. By their very nature, those models produce a range of results from which the ROE must be estimated. That estimate must be based on a comprehensive revies of relevant data and information, and does not necessarily lend itself to a strict mathematical solution. 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. Both practitioners and academics, however, recognize that financial models simply are tools to be used in the ROE estimation process, and that strict adherence to any single approach, or to the specific results of any single approach, can lead to flawed or misleading conclusions. That position is consistent with the Hope and Bluefield principle that it is the analytical result, as opposed to the methodology, that is controlling in arriving at ROE determinations. Thus, a reasonable ROE estimate appropriately considers alternative methodologies and the reasonableness of their individual and collective results in the context of observable, relevant market information.
Q. Do the ROE decisions of other jurisdictions provide relevant data points for that purpose?
A. Yes, I believe so. Investors have many options available to them and will allocate their capital based on expected risks and returns associated with those alternatives. While I am not suggesting that the Commission should be bound by decisions of other regulatory
jurisdictions, the regulatory environment is one of the most important factors considered by debt and equity investors in assessing the risks and prospects of utility companies. ROEs awarded by regulatory commissions are important to the financial community's view of the regulatory environment and, therefore, a utility's risk profile. A reasonable ROE, therefore, is important to the financial community's view of the regulatory environment.

## Q. Have you reviewed the returns recently authorized for other vertically integrated electric utilities?

A. Yes, I have. As shown in Exhibit RBH-1, the median authorized return for vertically integrated electric utilities from 2013 through 2014 has been 9.95 percent; the highest return was 10.95 percent. Those returns are well above Mr . Gorman's 9.40 percent recommendation.

## Q. What conclusions do you draw from that data?

A. The regulatory environment, (including authorized returns) is one of the most important issues considered by both debt and equity investors in assessing the risks and prospects of utility companies. As discussed above, the opportunity cost of an investment should equal the return available on an investment of comparable risk. As discussed in Section $V$, it is important to recognize that utilities in Missouri are statutorily restricted from including Construction Work In Progress ("CWIP") in rate base, rely on a historical test year, as opposed to a forecast test year (or other alternative rate plans), and have a very limited ability to implement interim rates. Relative to its peers, therefore, the Company is disadvantaged in its ability to earn its authorized return and generate the cash flows required to fund investments in its system, and support its day-to-day operations. Those factors, in addition to other operating risks discussed in Section V,
suggest a return above the median authorized ROE of 9.95 percent, not 55 basis points below, as Mr. Gorman recommends.

## IV. RESPONSE TO THE DIRECT TESTIMONY OF MR. GORMAN

Q. Please briefly summarize Mr. Gorman's recommendation regarding the

## Company's Cost of Equity.

A. Mr. Gorman recommends an ROE of 9.40 percent, within a recommended range of 8.90 percent to 9.85 percent $^{3}$. Mr. Gorman establishes his ROE recommendation by reference to three versions of Discounted Cash Flow method (ranging from 8.49 percent to 9.02 percent, with a point estimate of 8.90 percent), his Risk Premium estimates (ranging from 9.54 percent to 10.14 percent, with a point estimate of 9.85 percent), and his Capital Asset Pricing Model analyses $(9.18 \text { percent })^{4}$.
Q. What are the principal areas in which you disagree with Mr. Gorman?
A. The principal areas in which I disagree with Mr. Gorman's analyses and conclusions include: (1) the composition of Mr. Gorman's proxy group; (2) the use of a nearterm estimate of Sustainable Growth in the Constant Growth DCF model; (3) the application of the Multi-Stage DCF model; (4) the Market Risk Premium ("MRP") component of the CAPM and, in particular, the expected market return from which the MRP is calculated; and (5) the assumptions and methods underfying Mr. Gorman's Risk Premium analyses.

## A. Composition of Mr. Gorman's Proxy Group

Q. Please describe the screening criteria by which Mr. Gorman developed his proxy group.

[^2]A. Mr. Gorman begins with the universe of Value Line Electric Utility companies, to which he applies four screening criteria:

1. Corporate credit ratings from S\&P between BBB- and A-, and credit ratings from Moody's Investor Service ("Moody's") between Baa3 and A3;
2. A consistent history of quarterly cash dividends;
3. Not subject to merger or acquisition activities; and
4. Classified as "Regulated" by the Edison Electric Institute".

Based on those criteria, Mr. Gorman arrives at a proxy group of 23 companies.

## Q. Do you agree with Mr. Gorman's screening criteria?

A. Not entirely. Although we do have certain criteria in common (for example, we exclude companies that are party to a significant corporate transaction or that do not consistently pay dividends), I do not believe that Mr. Gorman's screens render a group of companies that is sufficiently comparable to Ameren Missouri. For example, Edison International ("EIX") recorded a loss of $\$ 1.7$ billion in 2012 as a result of placing Edison Mission Energy, the subsidiary that owns and operates unregulated electric generating assets (including the Homer City station), into Chapter 11 bankruptcy, and the divestiture of its Homer City assets ${ }^{6}$. As part of its Chapter 11 bankruptcy proceeding, on October 18, 2013 EIX entered into a purchase agreement with NRG Energy for Edison Mission Energy's assets, including the assumption of certain related liabilities ${ }^{7}$. In addition, EIX recorded a $\$ 1.05$ billion loss resulting from an aftertax earnings charge (recorded in the fourth quarter of 2011) relating to the impairment of its Homer City, Fisk, Crawford, and Waukegan power plants, wind-related charges, and other

[^3]expenses ${ }^{8}$. Given the significant nature of those results, it is difficult to assess the degree to which regulated electric utility operations would be expected to contribute to the company's consolidated financial performance in the future. Therefore, I disagree with Mr. Gorman's assessment of EIX as a company that is sufficiently comparable to Ameren Missouri. As discussed in Section V, I have excluded EIX from my final proxy group for this reason.

There are other differences between Ameren Missouri and Mr. Gorman's proxy group that should be considered, as well. For example, Consolidated Edison and UIL Holdings are principally transmission and distribution utilities with significant natural gas operations. In addition, although it occurred after Mr. Gorman filed his testimony, UIL recently agreed to acquire Philadelphia Gas Works for approximately $\$ 1.9$ billion'. Several of the companies in Mr. Gorman's proxy group derive a significant portion of their regulated net income from natural gas operations, while others (such as UNS Energy Corporation) are party to a significant transaction; Schedule RBH-2 summarizes the reasons that I disagree with many [of the companies included in Mr. Gorman's proxy group.

## B. Application of the Constant Growth DCF Model

Q. Do you agree with Mr. Gorman's Constant Growth DCF approach and results?
A. Mr. Gorman's application of the Constant Growth DCF (Analysts' Growth) model is generally consistent with mine (see Section V). For example, we both rely on average stock prices to avoid the effect of anomalous fluctuations in a given day and use projected EPS growth estimates as the growth component of the model. While we use different approaches to calculate the expected dividend yield, I do not believe Mr. Gorman's approach is unreasonable.

[^4]However, I note that some of the results contained in Mr. Gorman's Constant Growth DCF (Analysts' Growth) model are below any reasonable estimate of the Company's Cost of Equity. For example, as shown in Mr. Gorman's Schedule MPG-3, the Constant Growth DCF estimate for EIX is 4.36 percent, which is more than 10 basis points below the current cost of debt, as measured by the Moody's Utility A-Rated Bond Index, a condition that is highly improbable for Ameren Missouri (or, for that matter, any company ${ }^{10}$ ).

Although Mr. Gorman considers both the proxy group average and median results ${ }^{11}$, more than half of the results contained in Mr. Gorman's Constant Growth DCF (Analysts' Growth) are below reasonable estimates of the Company's Cost of Equity. Of the 1,421 electric utility rate cases provided by RRA since 1980 that disclosed the awarded ROE, for example, only three included an authorized ROE below 9.00 percent. In contrast, 14 the 23 results contained in Mr. Gorman's Schedule MPG-3 are below 9.00 percent; nine are below 8.00 percent ${ }^{12}$. Conversely, only six of Mr. Gorman's estimates are as high as 10.00 percent which, as noted above, is the approximate median authorized ROE for vertically integrated electric utilities since January 2013. On that basis alone, Mr. Gorman's mean and median Constant Growth DCF results (Analysts' Growth) model should be given little, if any weight.
Q. Do you agree with Mr. Gorman's Sustainable Growth Constant Growth DCF approach?
A. No, I do not. As a practical matter, 17 of the 23 DCF estimates (that is, nearly 75.00 percent) contained in Mr. Gorman's Schedule MPG-6 (Constant Growth DCF Model Sustainable Growth Rate) are below 9.00 percent. Yet only one estimate is as high as 10.00

[^5]percent. Again, regardless of whether we look to the mean or median, results that are consistently below observable authorized returns must be called into question.

Moreover (and as discussed in more detail below), the Sustainable Growth method assumes that the payout ratio and earned return on common equity will remain constant in perpetuity, an assumption that may not hold true. Further, historical market data and independent research do not support the principal assumption of the Sustainable Growth model, i.e., that increased retention ratios are directly and positively related to future earnings growth, for electric utilities.

In any case, the salient issue in assessing growth rates in the context of the DCF model is whether investors tend to rely on a particular estimate of growth. Prior academic research indicates that, consistent with the approach used in my analyses (as presented later in my Rebuttal Testimony), investors rely on analysts' earnings growth projections in valuing equity securities ${ }^{13}$. While Mr. Gorman may be of the view that analyst growth rates are not sustainable, the relevant issue is whether investors rely on those projections in making their investment decisions.
Q. Are there other concerns with Mr. Gorman's "Sustainable Growth" estimate?
A. Yes. It is important to note that the "Sustainable Growth" model itself requires an estimate of the earned return on common equity and is therefore somewhat circular. By adopting Value Line's earned ROE estimates, Mr. Gorman has effectively pre-supposed the Return on Common Equity projected by Value Line for the proxy group companies. In addition, the use of the "Sustainable Growth" model requires the assumption that the subject company not only

[^6] 303.
maintains its retention ratio and ROE in perpetuity, but also that the components of " $R$ " (i.e., the earned return on common equity) are reasonably stable over time.

In order to assess whether that assumption holds (that is, whether the components of "R" are stable), I used the "DuPont" formula, which decomposes the Return on Common Equity into three components: the Profit Margin (net income/revenues), Asset Turnover (revenues/net plant), and the Equity Multiplier (net plant/equity). As Schedule RBH-3 demonstrates, based on Mr. Gorman's Proxy Group, the product of those three measures is approximately equal (but for rounding) to Value Line's reported Return on Common Equity, on both an historical and projected basis. That analysis also shows that while all three components are expected to change over time, the Equity Multiplier and Asset Turnover ratios are expected to decrease, indicating the expectation that the companies in Mr. Gorman's Proxy Group will finance an increasing amount of their net plant with common equity, while each dollar of additional assets will produce somewhat less revenue.

The decreasing Equity Multiplier (which relates to a greater proportion of equity in the capital structure) is consistent with the general observation that since the 2008 capital market dislocation, most often associated with the Lehman Brothers bankruptcy in September 2008, capital-intensive companies such as utilities have been focused on financial integrity and the ability to access the capital markets during turbulent conditions. Given that the fundamental elements of the " $R$ " component of the "Sustainable Growth" model are expected to change over time, I do not believe it is appropriate to use that model as the estimate constant, perpetual growth.
Q. Are there other reasons why the Sustainable Growth calculation may not accurately reflect long-term growth rates?
A. Yes, there are. The underlying premise of that model is that future earnings will increase as the retention ratio increases. That is, if future growth is modeled as " $\mathrm{B} \times \mathrm{R}$ " (where B is the retention ratio, and R is the earned return on book equity), growth will increase as B increases. There are several reasons, however, why that may not be the case. Management decisions to conserve cash for capital investments, to manage the dividend payout for the purpose of minimizing future dividend reductions or to signal future earnings prospects, can and do influence dividend payout (and therefore earnings retention) decisions in the near-term. Consequently, it is appropriate to determine whether the data relied upon by Mr. Gorman supports the assumption that higher earnings retention ratios necessarily are associated with higher future earnings growth rates.

## Q. Did you perform any analyses to test that assumption?

A. Yes, I did. For each of the companies in Mr. Gorman's Proxy Group, I calculated (in each year of the historical periods) the dividend payout ratio, the retention ratio, and the subsequent five-year earnings growth rate. I then performed a regression analysis in which the dependent variable was the five-year earnings growth rate, and the explanatory variable was the earnings retention ratio. The purpose of that analysis was to determine whether the data source relied upon by Mr. Gorman for his "Sustainable Growth" rate estimates empirically supports the assumption (which, as noted, is central to his Sustainable Growth modeling ${ }^{14}$ ) that higher retention ratios necessarily produce higher earnings growth rates.

## Q. What did that analysis reveal?

A. As shown in Table 1 (below), there was a significant negative relationship between the five-year earnings growth rate and the earnings retention ratio. That is, on a historical basis, earnings growth actually decreases as the retention ratio increases, which is
${ }^{14}$ See Direct Testimony and Schedules of Michael P. Gorman, at 11 .

Rebuttal Testimony of Robert B. Hevert
exactly the opposite of the assumption underlying his model. Those findings clearly call into question the reasonableness of Mr. Gorman's reliance on the Sustainable Growth rate.

Table 1: Regression Results ${ }^{15}$

|  | Coefficient | Standard <br> Error | $t$ Stat |
| :--- | :---: | :---: | :---: |
| Intercept | 0.175 | 0.0258 | 6.765 |
| Retention Ratio | -0.266 | 0.0404 | -6.576 |

## C. Application of the Multi-Stage DCF Model

Q. Do you agree with Mr. Gorman's application of the Multi-Stage DCF model?
A. While I agree that the Multi-Stage DCF approach is a reasonable analytical technique, Mr. Gorman's Multi-Stage DCF model contains several assumptions that produce unreasonably low ROE estimates. In particular, Mr. Gorman's model assumes a perpetual growth rate beginning in the eleventh year of his model (that is, calendar year 2024) based on a Gross Domestic Product ("GDP") growth rate projection that actually ends in 2024 ${ }^{16}$. In addition, Mr. Gorman assumes that all dividends are received at year-end, rather than over the course of the year. Those assumptions have the effect of unreasonably decreasing the DCF result.
Q. How does Mr. Gorman's assumption with regard to the timing of dividend payments affect his Multi-Stage DCF model results?
A. Mr. Gorman notes that quarterly dividends in his Multi-Stage DCF model were "annualized (multiplied by $4^{17}$ )." Considering that Mr. Gorman's proxy companies pay dividends on a quarterly basis, assuming (as Mr. Gorman has done) that the entire dividend is

[^7]paid at the end of that year essentially defers the timing of the quarterly cash flows (that is, the quarterly dividends) until year-end, even though they are paid throughout the year. A more reasonable approach would be to assume that cash flows are received (on average) in the middle of the year, such that half the quarterly dividend payments occur prior to the assumed dividend payment date, and half occur after (i.e., the "mid-year convention"). That approach is consistent with the common practice in the Constant Growth DCF model of accounting for periodic growth in dividends by applying one-half of the expected annual dividend growth rate to calculate the expected dividend yield.
Q. How would the mid-year convention affect Mr. Gorman's Multi-Stage DCF results?
A. Holding all other assumptions constant, simply changing Mr. Gorman's methodology to reflect the mid-year convention increases the mean and median results by approximately 18 and 19 basis points, respectively ${ }^{18}$.
Q. Do you agree with the long-term growth rate in Mr. Gorman's Multi-Stage

## DCF model?

A. No, I do not. The long-term growth rate represents the expected rate of growth, in perpetuity, as of the beginning of the third, or terminal, stage ${ }^{19}$. Mr. Gorman assumes a longterm growth rate of 4.80 percent, which is the approximate average of the five year (2015 2019) and ten year (2020-2024) nominal GDP growth estimates, as reported by Blue Chip ${ }^{20}$. Consequently, Mr. Gorman's long-term GDP growth rate projection, which he applies to years

[^8]eleven through 200 of his model (that is, from year 2024 through 2213), is based on data that includes only year eleven (that is, 2024). That is, despite the fact that the Bhe Chip projection period ends in 2024, Mr. Gorman uses it as the measure of expected perpetual GDP growth beginning in 2024.

Since the Blue Chip forecast is based on data that includes only a single year of Mr. Gorman's terminal stage, I developed an alternative analysis (see Schedule RBH-5). In that analysis, I continue to include the Blue Chip forecast, but only in the period to which it applies. Given that the Blue Chip forecast terminates in 2024, I added a fourth stage, which incorporates an additional estimate of long-term growth beyond the period represented by the Blue Chip forecast. As explained below, the fourth-stage growth rate represents the combination of the long-term historical average real GDP growth rate, and the market's expectation of long-term inflation beginning ten years from now. Limiting the Blue Chip forecast to the period to which it applies, and incorporating the alternative estimate of long-term growth increases his mean and median DCF results by 63 and 62 basis points, respectively.
Q. Are there other benchmarks that put Mr. Gorman's 4.80 percent long-term growth rate in context?
A. Yes, there are. While Mr. Gorman suggests that the reasonableness of his ROE estimates may be viewed in the context of his long-term growth projections, an alternative approach is to assess his long-term growth projections in the context of recently authorized ROEs. Given that Mr. Gorman's Risk Premium approach is premised on the use of authorized returns as a measure of "expectational" data ${ }^{21}$, it would follow that the long-term growth rate assumed in his Multi-Stage DCF model should produce results that are reasonably consistent with current expectations (that is, with recently authorized equity returns).
${ }^{21} \quad$ Ibid., at 33.

Knowing that his average Multi-Stage DCF estimate is 8.82 percent, and that recently authorized equity returns are quite a bit higher (see Schedule RBH-1, and Mr. Gorman's Schedules MPG-10 and 11), it is reasonable to question the terminal growth rate used in Mr. Gorman's Multi-Stage DCF analysis. As shown in Schedule RBH-6, keeping all of Mr. Gorman's data and assumptions constant but for the terminal growth rate, and solving for the growth rate that produces an average ROE of 9.92 percent ${ }^{22}$ produces an implied growth rate of 6.19 percent $^{23}$. That, of course, is substantially above Mr. Gorman's 4.80 percent estimate, although it is generally consistent with (although somewhat higher than) the assumption included in my Multi-Stage analysis (5.70 percent; discussed below) and slightly lower than the long-term geometric average nominal GDP growth rate ( 6.23 percent) ${ }^{24}$.
Q. Is there another approach to calculating the long-term growth rate that produces more reasonable results than Mr. Gorman's 4.80 percent estimate?
A. Yes, there is. As Mr. Gorman points out in footnote 11 of his direct testimony (page 16), nominal GDP growth is the product of real GDP growth and inflation. It is possible to use observable market data regarding nominal and inflation-protected Treasury yields (referred to as "Treasury Inflation Protected Securities" or "TIPS") to calculate the market's forward view of inflation (that is, inflation expected over the long term beginning ten years from now). In particular, the difference between nominal Treasury yields and TIPS yields is commonly considered to be a measure of expected inflation. Because the expected rate of inflation is easily calculated, all that is needed is an estimate of long-term real GDP growth.

[^9]Q. Is there a method that can be used to estimate projected long-term real GDP growth beginning ten years from now?
A. Yes, there is. Historical real GDP growth can be used as a measure of expected real GDP growth in the terminal period. According to data provided by the Bureau of Economic Analysis, over the period 1929 to 2013 the average annual real GDP growth rate was 3.27 percent (on a geometric average basis). Combining real GDP growth with the expected inflation rate of 2.36 percent produces an expected long-term growth rate of 5.70 percent, which is the growth rate I used in my Multi-Stage DCF analysis ${ }^{25}$.
Q. With those points in mind, did you make any additional adjustments to Mr.

## Gorman's analysis?

A. Yes, Schedule RBH-7 provides the incremental results of those adjustments. To ensure that I correctly applied the analysis, I first recreated Mr. Gorman's Multi-Stage model and replicated his results. I then adjusted Mr. Gorman's Internal Rate of Return calculation to reflect the mid-year convention (as explained above). Next, I revised the long-term growth rate used in the final stage of Mr. Gorman's model to the more reasonable estimate of perpetual long-term nominal GDP growth described above. The cumulative effect of those adjustments is to increase his median ROE estimate to 9.92 percent. Although that result remains below a reasonable estimate of the Company's Cost of Equity, it is 52 basis points above Mr. Gorman's 9.40 percent ROE recommendation.
Q. Aside from those adjustments to Mr. Gorman's model, did you provide your own MuIti-Stage DCF analysis?

[^10]A. Yes, I did ${ }^{26}$. As described in Section V, below, I included a form of the MultiStage DCF model that addresses the concerns discussed above.

## D. Application of Capital Asset Pricing Model

## Q. Please summarize Mr. Gorman's CAPM analysis.

A. Mr. Gorman develops a single CAPM estimate of 9.18 percent, which is based on Morningstar's historical Market Risk Premium estimate of 6.70 percent, Blue Chip's projected 30 -year Treasury yield of 4.40 percent (as the risk-free rate), and a 0.71 average proxy group Beta coefficient as reported by Value Line ${ }^{27}$. Mr. Gorman selects the Morningstar historical MRP estimate as an input into his CAPM analysis after determining it falls somewhere within the range of his two MRP estimates. Mr. Gorman's first MRP estimate ( 6.60 percent) is based on the long-term historical (arithmetic) average real market return from 1926 through 2012 as reported by Morningstar, which he then adjusts for current inflation forecasts ${ }^{28}$. Mr. Gorman's second MRP estimate ( 5.70 percent) represents the historical difference between the average return on the S\&P 500, and the average total return on long-term government bonds ${ }^{29}$.
Q. Turning first to the expected total return on the market, do you agree with Mr. Gorman's 10.98 percent estimate?
A. No, I do not. To put Mr. Gorman's estimate in perspective, it is important to understand how often various ranges of total returns actually have occurred from 1926 to 2013. To perform that analysis, I gathered the annual return on Large Company Stocks reported by Morningstar, produced a histogram of those observations, and calculated the probability that a given market return estimate would be observed. The results of that analysis, which are

[^11]presented in Chart 1, demonstrate that returns of 13.00 percent (which is consistent with my analysis, described in Section V) and higher actually occurred quite often.

Chart 1: Frequency Distribution of Observed Market Returns, 1926-2013 ${ }^{30}$


In fact, the 12.31 percent and 13.91 percent estimates, which I rely on in my CAPM analysis (as shown in Schedule RBH-11), represent approximately the 50 th percentile of the actual returns observed from 1926 to 2013 . In other words, of the 88 annual observations, 46 were 12.31 percent or higher and 45 were 13.91 percent or higher. By that measure, my estimate is entirely consistent with historical experience, although Mr. Gorman's estimate is low relative to that standard.
Q. Is Mr. Gorman's use of the historical rate of $S \& P \mathbf{5 0 0}$ total return as a measure of sustainable future market growth consistent with his use of the sustainable growth rate in his DCF analysis?

[^12]A. No, it is not. The Sustainable Growth rate used in Mr. Gorman's DCF analysis is premised upon the assumption that there is a positive relationship between the earnings retention ratio and earnings growth. In that regard, Mr. Gorman states:

The internal growth methodology is tied to the percentage of earnings retained in the company and not paid out as dividends. The earnings retention ratio is 1 minus the dividend payout ratio. As the payout ratio declines, the earnings retention ratio increases. An increased earnings retention ratio will fuel stronger growth because the business funds more investments with retained earnings ${ }^{31}$.

While (as discussed above) I do not agree with Mr. Gorman's use of the Sustainable Growth method, it is helpful to consider the current level of the S\&P 500 earnings retention ratio relative to its historical level. If the current market retention ratio is well above its long-term average, it calls into question whether the market will maintain that level in perpetuity. As shown in Chat 2 (below), data reported by Dr. Robert J. Shiller indicates the S\&P 500 earnings retention has trended upward over time and is currently well above its historical average. Consequently, the Sustainable Growth estimate that Mr. Gorman relied upon suggests that future market growth could outpace historical growth.

[^13]Chart 2: S\&P 500 Annual Earnings Retention Ratio, 1926-2013 ${ }^{32}$

observations. The results of that analysis, which are presented in Chart 3, demonstrate that MRPs of at least 10.31 percent (the upper range of the MRP estimates described below; see Schedule RBH-13) have occurred nearly half of the time.

[^14][^15]Chart 4: Cumulative Probability of Market Risk Premia, 1926-2013 ${ }^{34}$


It also is important to note that the annual average MRP of 6.70 percent is heavily influenced by a small number of years in which the MRP fell because of significant market losses. In 2008, for example, the market lost 37.00 percent, and as a result, MRP in that year was negative 41.45 percent $^{35}$. Because of that large market loss, the long-term average MRP fell from prior periods. In other words, in the year during which market risk and uncertainty were at historically high levels (that is, 2008), the historical average MRP suggested that investors required a significantly lower return on equity investments than they did on Treasury securities. In fact, as shown on Table 2 (below), from 2007 to 2013, the historical average MRP decreased from 7.10 percent to 6.96 percent, while market volatility increased from 17.54 percent to a high of 32.69 percent in 2008 , and eventually fell to 14.23 percent in $2013^{36}$. That is, the effect of the

[^16]2007 to 2009 financial dislocation, in which realized returns fell and volatility increased, was to decrease the long-term average MRP.

Table 2: Historical MRP and Market Volatility

|  | Market Volatility ${ }^{37}$ | Historical MRP $^{38}$ |
| :--- | :---: | :---: |
| 2013 | 14.23 | $6.96 \%$ |
| 2012 | 17.80 | $6.70 \%$ |
| 2011 | 24.20 | $6.60 \%$ |
| 2010 | 22.55 | $6.70 \%$ |
| 2009 | 31.48 | $6.70 \%$ |
| 2008 | 32.69 | $6.50 \%$ |
| 2007 | 17.54 | $7.10 \%$ |

Since 2008, the historical Market Risk Premium has increased even as volatility decreased. The assumption that investors became less risk averse (as manifested in a lower MRP) during periods of increasing market uncertainty (as measured by the volatility of returns in 2008) is counter-intuitive, and in my view, leads to unreliable analytical results.

## E. Application of the Risk Premium Model

Q. Please briefly describe Mr. Gorman's Risk Premium analyses.
A. Mr. Gorman defines the "Risk Premium" as the difference between average annual authorized equity returns for electric utilities, and a measure of long-term interest rates each year from 1986 through 2013. Mr. Gorman's first approach calculates the annual risk premium by reference to the 30 -year Treasury yield, while the second considers the average A-rated utility bond yield ${ }^{39}$. In each case, Mr. Gorman discards the three lowest and three

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highest implied equity risk premia, and establishes the range of Risk Premium estimates based on the next highest (or lowest) estimate. In other words, the lower bound of his Risk Premium range is defined by the fourth-lowest risk premium, regardless of the year in which it occurred. In a similar manner, the upper bound of Mr. Gorman's Risk Premium range is defined by the fourth-highest estimate, regardless of the year in which that observation occurred. Mr. Gorman then applies weights of 30.00 percent and 70.00 percent, respectively, to his lower and upper bound estimates ${ }^{40}$.

As to the period over which he gathers and analyzes his data, Mr. Gorman suggests that his 28 -year horizon is a "generally accepted period to develop a risk premium study using 'expectational' data ${ }^{41}$." Mr. Gorman further notes that "it is reasonable to assume that averages of annual achieved returns over long time periods will generally converge on the investors' expected returns," and concludes that his "risk premium study is based on expectational data, not actual returns, and, thus, need not encompass very long time periods ${ }^{42}$." Based on those assumptions, Mr. Gorman calculates a range of estimates from 8.24 percent to 10.71 percent which, Mr. Gorman suggests, produces a reasonable range of 9.54 percent to 10.14 percent with a (rounded) midpoint of 9.85 percent ${ }^{43}$.
Q. Does Mr. Gorman rely on his Risk Premium model in making his ROE recommendation?

[^18]A. Yes, he does. As noted above, Mr. Gorman develops his ROE estimate (i.e, 9.85 percent) at least in part based on his Risk Premium results ${ }^{44}$.
Q. What are your specific concerns with Mr. Gorman's Risk Premium analyses?
A. I have several concerns with Mr. Gorman's analysis: (1) his method of relying on the fourth lowest and highest risk premium is arbitrary and establishes a range of ROE estimates that are predicated on economic and financial conditions that are far removed from the current market; (2) Mr. Gorman's method and recommendation ignore an important relationship revealed by his own data, i.e., that the Risk Premium has a strong negative correlation to the level of interest rates (whether measured by Treasury or utility bond yields); and (3) the low end of Mr. Gorman's Risk Premium estimates is far lower than any ROE authorized since at least 1986 and as such, has no relevance in estimating the Company's Cost of Equity.
Q. Turning first to the method by which Mr. Gorman selected the bounds of his Risk Premium estimates, have you reviewed the range of data included in his analysis?
A. Yes, I have. Considering first the Treasury yield-based analysis, I plotted the yields and Risk Premia over the 1986 to 2013 period included in Mr. Gorman's analysis. That graph is presented in Chart 5 (below).

[^19]Chart 5: Mr. Gorman's Treasury Yield-Based Risk Premium Data ${ }^{45}$


There are several important points that may be taken from that data. First, the low end of Mr. Gorman's Risk Premium range, 4.41 percent, was observed in 1987 and 1991. It is apparent that a discrete observation from an economic environment 26 years ago has little to do with current market conditions. In fact, a very visible measure of such differences is the fact that in 1987, Treasury yields exceeded the Risk Premium. As Schedule RBH-8 demonstrates, however, since the turn of the Millennium, the opposite has been true; the Risk Premium has consistently exceeded Treasury yields. By that measure alone, it is clear that the low end of Mr. Gorman's range has little, if any, relevance to the current market environment.

As to the high end of his range, Mr. Gorman's convention of discarding the three highest Treasury yield-based Risk Premium estimates has the effect of ignoring observations from 2009, 2012 and 2013; the Utility bond-based estimates exclude 2011, 2012 and 2013. Since 2008, the Federal Reserve has proceeded on a steady path of initiatives designed to lower long-term

[^20] specifically exclude the market conditions that he finds important in other aspects of his analyses ${ }^{47}$. Moreover, the Risk Premium tends to move inversely with changes in interest rates: As interest rates have fallen, the Risk Premium has increased. Mr. Gorman's approach, therefore, removes very recent observations for which the Risk Premium would be relatively high.

I also note that while 2011 and 1987 represented the fourth highest and lowest Treasury yield-based Risk Premium observations, respectively, the second highest and lowest were observed in 2013 and 1994. Certainly 2013 is more current than 2011, and there is no reason of which I am aware to conclude that 1987 is more relevant to the analysis than 1994. Similarly, the second highest and lowest Utility bond-based Risk Premium observations reflect data as of 2013 and 1990, rather than 2005 and 1994 (i.e., the fouth-highest and lowest observations). Here again, 2013 is more current than 2005 and there is no reason to prefer 1994 to 1990.

Combining data from the second highest and lowest (rather than the fourth) return produces an ROE estimate of 9.99 percent relative to the 9.85 percent result that Mr. Gorman reports; the highest and lowest observations produce an ROE estimate of 10.26 percent. In fact, moving from the fourth to the first highest and lowest return would increase the ROE estimate by 42 basis points while an equivalent move downward (i.e., moving from the fourth to the seventh) would decrease the ROE by only 14 basis points. Given the rather subjective nature of the analysis, and in light of the significant skew in results, it is my view that Mr. Gorman's Risk Premium analysis tends to understate the Company's Cost of Equity.

[^21]Q. Please now elaborate on your earlier observation that the Risk Premium has increased as Treasury yields have decreased.
A. As Schedule RBH-8 demonstrates, over Mr. Gorman's study period the Risk Premium has moved inversely to changes in Treasury yields and this relationship is supported by the data contained in Mr. Gorman's Schedules MPG-10 and 11; the correlation between the two is negative 87.67 percent (see Schedule RBH-8). To put that degree of correlation in perspective, if the two were to move in exactly opposite directions, the correlation would be negative 100.00 percent, if they did not move together at all, the correlation would be zero. Because correlation coefficients by definition are between zero and one (either positive or negative), a correlation of negative 87.67 percent indicates a strong tendency for the Equity Risk Premium to increase as interest rates decrease. These findings are supported in academic studies. For example, Dr. Roger Morin notes that:
...[p]ublished studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates - rising when rates fell and declining when interest rates rose ${ }^{48}$.

Turning back to Mr. Gorman's data, a simple linear regression analysis reveals that for every 100 basis point decrease in yields, the Risk Premium increases by approximately 44 basis points (see Schedule RBH-84). That result is consistent with those found by Maddox, Pippert and Sullivan, who determined that the Risk Premium would increase by 37 basis points for every

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100 basis point change in the 30 -year Treasury yield ${ }^{50}$. Citing Harris and Marston, the authors note a similar estimate of 36 basis points ${ }^{51}$.
Q. Have you made any adjustments to Mr. Gorman's analysis to reflect the concerns discussed above?
A. Yes, I have. While I believe that the regression analysis described in Section V is the appropriate method, I have adjusted Mr. Gorman's analysis to reflect the Risk Premium associated with the prevailing level of interest rates. Based on Mr. Gorman's Schedule MPG-10, the average 30 -year Treasury yield in 2012 and 2013 was 3.13 percent; the average Risk Premium during those years was 6.78 percent. Applying the projected 4.15 percent ( 30 -year) Treasury yield to that risk premium produces an ROE estimate of 10.93 percent. Assuming the respective 2012 and 2013 Risk Premium estimates (combined with the projected 4.15 percent Treasury yield) produces a range of 10.62 percent to 11.24 percent. Those estimates, which reflect more recent and relevant data, are well above Mr. Gorman's 9.40 percent ROE estimate.
Q. Have you completed a similar analysis using Mr. Gorman's Utility Bond

## Yield data?

A. Yes, and those results are consistent with my analysis of Mr. Gorman's Treasury yield-based Risk Premium. Here again, it is clear that the Risk Premium has increased as the Utility Bond Yield has decreased. In fact, because the two have been moving steadily in opposite directions, the Risk Premium now is higher than the Bond Yield. Mr. Gorman, however, developed his Risk Premium (and, therefore, his ROE) estimates based on data points that occurred more than 17 years prior to that point of inversion. Even the high end of Mr. Gorman's Risk Premium estimate (which is based on calendar year 2005) is derived from

[^23]data reflecting a period in which the Bond Yield exceeded the Risk Premium and as such, produces an ROE estimate that is incompatible with the current market environment.
Q. Do you have any other observations regarding Mr. Gorman's Risk Premium analysis?
A. Yes, I do. Aside from the shortcomings discussed above, Mr. Gorman's Risk Premium recommendation gives considerable weight to ROE estimates that are well below the lowest return that has ever been authorized. Of the 1,421 electric utility rate authorizations since 1980 for which authorized ROEs were disclosed, the lowest was 8.72 percent $^{52}$. Mr. Gorman, however, gives specific weight to an ROE estimate that is approximately 50 basis points lower, still (that is, the 8.24 percent ROE estimate to which Mr. Gorman gave 30.00 percent weight in his " $A$ " rated utility bond version of the Risk Premium).

Lastly, although Mr. Gorman suggests that he applied weights of 75.00 percent and 25.00 percent to his high and low observations, respectively, it appears that he actually applied weights of 70.00 percent and 30.00 percent. Had he applied the 75.00 percent $/ 25.00$ percent weights, his estimates would have been 10.24 percent for the Treasury yield-based analysis ${ }^{53}$, and 9.64 percent for the Bond yield-based estimate ${ }^{54}$. The midpoint of those two estimates is 9.94 percent, nine basis points above the 9.85 percent estimate provided in Table 2 of Mr . Gorman's testimony.

## V. COST OF EOUITY ESTIMATION

Q. Have you developed your own estimate of Ameren Missouri's cost of equity?
A. Yes, using a proxy group and various analyses similar to those used by Mr. Gorman.

[^24]
## A. Proxy Group Selection

Q. Please provide a summary profile of Ameren Missouri.
A. Ameren Missouri, which is a wholly owned subsidiary of Ameren Corporation, provides electric service to approximately 1.2 million retail customers, and natural gas distribution service to approximately 127,000 retail customers in Missouri ${ }^{55}$. Ameren Corporation's current long-term issuer credit rating from S\&P is BBB+ (outlook: Stable), Baa2 (outlook: Stable) from Moody's, and BBB+ (outlook: Stable) from FitchRatings ("Fitch"). Ameren Missouri currently is rated BBB+ (outlook: Stable) by S\&P, Baal (outlook: Stable) by Moody's, and BBB+ (outlook: Stable) by Fitch ${ }^{56}$.
Q. How did you select the companies included in your proxy group?
A. As did Mr. Gorman, I began with the universe of companies that Value Line classifies as Electric Utilities. However, my screening criteria narrow the proxy group to more closely reflect the operations and risks of Ameren Missouri than Mr. Gorman's group (as noted in Section IV, I do not believe that Mr. Gorman's screens render a group of companies that is sufficiently comparable to Ameren Missouri). More specifically, I applied the following screening criteria to the Value Line Electric Utility universe:

- I excluded companies that do not consistently pay quarterly cash dividends;
- All of the companies in my proxy group have been covered by at least two utility industry equity analysts;
- All of the companies in my proxy group have investment grade senior unsecured bond and/or corporate credit ratings from S\&P;

[^25]- I excluded any companies whose regulated operating income over the three most recently reported fiscal years comprised less than 60.00 percent of the respective totals for that company;
- I excluded any companies whose regulated electric operating income over the three most recently reported fiscal years represented less than 90.00 percent of total regulated operating income; and
- I eliminated companies that are currently known to be party to a merger, or other significant transaction.
Q. Did you include Ameren Corporation in your proxy group?
A. No. In order to avoid the circular logic that would otherwise occur, it has been my consistent practice to exclude the subject company (or its parent) from the proxy group.
Q. What companies met those screening criteria?
A. The criteria discussed above resulted in a proxy group of the following sixteen companies:

Table 3: Proxy Group Screening Results

| Company | Ticker |
| :--- | :---: |
| American Electric Power Company, Inc. | AEP |
| Cleco Corporation | CNL |
| Duke Energy Corporation | DUK |
| Edison International | EIX |
| Empire District Electric Company | EDE |
| Great Plains Energy Inc. | GXP |
| Hawaiian Electric Industries, Inc. | HE |
| IDACORP, Inc. | IDA |
| NextEra Energy, Inc. | NEE |
| Northeast Utilities | NU |
| Otter Tail Corporation | OTTR |
| Pinnacle West Capital Corporation | PNW |
| PNM Resources, Inc. | PNM |
| Portland General Electric Company | POR |
| Southern Company | SO |
| Westar Energy, Inc. | WR |

## Q. Is this your final proxy group?

A. No. I examined the operating profile of each of the sixteen companies that met my initial screens to be certain that none displayed characteristics that were inconsistent with my intent to produce a proxy group that is fundamentally similar to the Company. As a result, I excluded EIX based on recent financial information. As discussed in my response to Mr. Gorman, as part of its Chapter 11 bankruptcy proceeding, EIX entered into a purchase agreement on October 18, 2013 with NRG Energy for Edison Mission Energy's assets including the assumption of certain related liabilities ${ }^{57}$. Given the significant nature of that transaction, it is difficult to assess the degree to which regulated electric utility operations would be expected to

[^26]contribute to the company's consolidated financial performance in the future. Consequently, I excluded EIX from my final proxy group.
Q. Based on the criteria and issues discussed above, what is the composition of your proxy group?
A. The final proxy group is presented in Table 4.

Table 4: Final Proxy Group

| Company | Ticker |
| :--- | :---: |
| American Electric Power Company, Inc. | AEP |
| Cleco Corporation | CNL |
| Duke Energy Corporation | DUK |
| Empire District Electric Company | EDE |
| Great Plains Energy Inc. | GXP |
| Hawaiian Electric Industries, Inc. | HE |
| IDACORP, Inc. | IDA |
| NextEra Energy, Inc. | NEE |
| Northeast Utilities | NU |
| Otter Tail Corporation | OTTR |
| Pinnacle West Capital Corporation | PNW |
| PNM Resources, Inc. | PNM |
| Portland General Electric Company | POR |
| Southern Company | SO |
| Westar Energy, Inc. | WR |

## B. Constant Growth Discounted Cash Flow Model

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

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

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. Equation [1] is a standard present value calculation that can be simplified and rearranged into the familiar form:

$$
k=\frac{D_{0}(1+g)}{P}+g \quad \text { Equation [2] }
$$

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.
Q. What assumptions are inherent in the Constant Growth DCF model?
A. The Constant Growth DCF model assumes: (1) a constant average annual growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price toearnings multiple; and (4) a discount rate greater than the expected growth rate.
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 prices over the 30,90 , and 180 -trading day periods as of April 15 , 2014.
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. 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. Accordingly, in order to reduce the long-term growth rate to a single measure, one must assume a fixed payout ratio, and the same constant growth rate for earnings per share ("EPS"), dividends per share, and book value per

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share. Since dividend growth can only be sustained by earnings growth, the model should incorporate a variety of measures of long-term earnings growth. That can be accomplished by averaging those measures of long-term growth that tend to be least influenced by capital allocation decisions that companies may make in response to near-term changes in the business environment. Since such decisions may directly affect near-term dividend payout ratios, estimates of earnings growth are more indicative of long-term investor expectations than are dividend growth estimates. Therefore, for the purposes of the Constant Growth DCF model, growth in EPS represents the appropriate measure of long-term growth.
Q. Please summarize the findings of academic research on the appropriate measure for estimating equity returns using the DCF model.
A. The relationship between various growth rates and stock valuation metrics has been the subject of much academic research ${ }^{58}$. As noted over 40 years ago by Charles Phillips in The Economics of Regulation:

For many years, it was thought that investors bought utility stocks largely on the basis of dividends. More recently, however, studies indicate that the market is valuing utility stocks with reference to total per share earnings, so that the earnings-price ratio has assumed increased emphasis in rate cases ${ }^{59}$.

Philips' conclusion continues to hold true. Subsequent academic research has clearly and consistently indicated that measures of earnings and cash flow are strongly related to returns, and that analysts' forecasts of growth are superior to other measures of growth in predicting stock

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prices ${ }^{60}$. For example, Vander Weide and Carleton state that, "[our] results...are consistent with the hypothesis that investors use analysts' forecasts, rather than historically oriented growth calculations, in making stock buy-and-sell decisions ${ }^{61}$." Other research specifically notes the importance of analysts' growth estimates in determining the Cost of Equity, and in the valuation of equity securities. Dr. Robert Harris noted that "a growing body of knowledge shows that analysts' earnings forecast are indeed reflected in stock prices." Citing Cragg and Malkiel, Dr. Harris notes that those authors "found that the evaluations of companies that analysts make are the sorts of ones on which market valuation is based ${ }^{62}$." Similarly, Brigham, Shome and Vinson noted that "evidence in the current literature indicates that (i) analysts' forecasts are superior to forecasts based solely on time series data; and (ii) investors do rely on analysts' forecasts ${ }^{63}$."

To that point, the research of Carleton and Vander Weide demonstrates that earnings growth projections have a statistically significant relationship to stock valuation levels, while dividend growth rates do not ${ }^{64}$. Those findings suggest that investors form their investment decisions based on expectations of growth in earnings, not dividends. Consequently, earnings growth not dividend growth is the appropriate estimate for the purpose of the Constant Growth DCF model.

[^28]Q. Please summarize your inputs to the Constant Growth DCF model.
A. I applied the DCF model to the proxy group of integrated electric utility companies using the following inputs for the price and dividend terms:

The average daily closing prices for the 30 -trading days, 90 -trading days, and 180 -trading days ended April 15, 2014, for the term $\mathrm{P}_{0}$; and

The annualized dividend per share as of April 15, 2014, for the term D0.
I then calculated my DCF results using each of the following growth terms:

- The Zacks consensus long-term earnings growth estimates;
- The First Call consensus long-term earnings growth estimates; and
- The Value Line long-term earnings growth estimates.
Q. How did you calculate the mean high and mean low DCF results?
A. For each proxy company, I calculated the high DCF result by combining the maximum EPS growth rate estimate as reported by Value Line, Zacks, and First Call with the subject company's dividend yield. The mean high result simply is the average of those estimates. I used the same approach to calculate the low DCF result, using instead the minimum of the Value Line, Zacks, and First Call estimate for each proxy company, and calculating the average result for those estimates.
Q. What are the results of your Constant Growth DCF analysis?
A. My Constant Growth DCF results are summarized in Table 5, below (see also Schedule RBH-9).

Table 5: Constant Growth DCF Results

|  | Mean Low | Mean | Mean High |
| :--- | :---: | :---: | :---: |
| 30-Day Average | $8.17 \%$ | $9.48 \%$ | $10.79 \%$ |
| 90-Day Average | $8.28 \%$ | $9.59 \%$ | $10.90 \%$ |
| 180-Day Average | $8.35 \%$ | $9.67 \%$ | $10.98 \%$ |

## C. Multi-Stage DCF Model

Q. What other forms of the DCF model have you used?
A. In order to address certain limiting assumptions underlying the Constant Growth form of the DCF model, I also considered the Multi-Stage (three-stage) DCF Model. The MultiStage model, which is an extension of the Constant Growth form, enables the analyst to specify growth rates over three distinct stages. As with the Constant Growth form of the DCF model, the Multi-Stage form defines the Cost of Equity as the discount rate that sets the current price equal to the discounted value of future cash flows. Unlike the Constant Growth form, however, the Multi-Stage model must be solved in an iterative fashion. As noted earlier, the Multi-Stage model described below addresses several of the shortcomings contained in Mr. Gorman's approach.
Q. Please generally describe the structure of your Multi-Stage model.
A. The model sets the subject company's stock price equal to the present value of future cash flows received over three "stages". In the first two stages, "cash flows" are defined as projected dividends. In the third stage, "cash flows" equal both dividends and the expected price at which the stock will be sold at the end of the period (i.e., the "terminal price"). I calculated the terminal price based on the Gordon model, which defines the price as the expected dividend divided by the difference between the Cost of Equity (i.e., the discount rate) and the long-term expected growth rate. In essence, the terminal price is defined by the present value of
the remaining "cash flows" in perpetuity. In each of the three stages, the dividend is the product of the projected earnings per share and the expected dividend payout ratio. A summary description of the model is provided in Table 6 (below).

Table 6: Multi-Stage DCF Structure

| Stage | 0 | 1 | 2 | 3 |
| :---: | :---: | :---: | :---: | :---: |
| Cash Flow Component | Initial Stock Price | Expected Dividend | Expected Dividend | Expected <br> Dividend + <br> Terminal <br> Value |
| Inputs | Stock Price <br> Earnings Per <br> Share (EPS) <br> Dividends <br> Per Share <br> (DPS) | Expected EPS <br> Expected DPS | Expected EPS <br> Expected DPS | Expected <br> EPS <br> Expected <br> DPS <br> Terminal <br> Value |
| Assumptions | $30-, 90$-, and 180-day average stock price | EPS Growth Rate Payout Ratio | Growth Rate Change Payout Ratio Change | Long-term Growth Rate Long-term Payout Ratio |

Q. What are the analytical benefits of your three-stage model?
A. The principal benefits relate to the flexibility provided by the model's formulation. Since the model provides the ability to specify near, intermediate and long-term growth rates, for example, it avoids the sometimes limiting assumption that the subject company will grow at the same, constant rate in perpetuity. In addition, by calculating the dividend as the product of earnings and the payout ratio, the model enables analysts to reflect assumptions regarding the timing and extent of changes in the payout ratio to reflect, for example, increases or decreases in expected capital spending, or transition from current payout levels to long-term expected levels. In that regard, because the model relies on multiple sources of earnings growth
rate assumptions, it is not limited to a single source, such as Value Line, for all inputs, and mitigates the potential bias associated with relying on a single source of growth estimates ${ }^{65}$.

The model also enables the analyst to assess the reasonableness of the inputs and results by reference to certain market-based metrics. For example, the stock price estimate can be divided by the expected earnings per share in the final year to calculate an average Price to Earnings ("P/E") ratio. Similarly, the terminal P/E ratio can be divided by the terminal growth rate to develop a Price to Earnings Growth ("PEG") ratio. To the extent that either the projected P/E or PEG ratios are inconsistent with either historical or expected levels, it may indicate incorrect or inconsistent assumptions within the balance of the model.

## Q. Please summarize your inputs to the Multi-Stage DCF model.

A. I applied the Multi-Stage model to the proxy group described earlier in my Rebuttal Testimony. My assumptions with respect to the various model inputs are described in Table 7 (below).

[^29]Table 7: Multi-Stage DCF Model Assumptions

| Stage | Initial | First | Transition | Terminal |
| :--- | :--- | :--- | :--- | :--- |
|  | Stock Price <br> 180-, <br> average and <br> price as of <br> April 15, <br> 2014 |  |  |  |
| Earnings <br> Growth | 2012 actual <br> EPS escalated <br> by Period 1 <br> growth rate | EPS growth <br> as average of <br> (1) Value <br> Line; (2) <br> Zacks; and <br> (3) First Call | Transition to <br> Long-term <br> GDP growth | Long-term <br> GDP growth |
| Payout Ratio | Value Line <br> company- <br> specific | Value Line <br> company- <br> specific | Transition to <br> long-term <br> industry <br> payout ratio | Long-term <br> expected <br> payout ratio |
| Terminal <br> Value |  |  | Expected <br> dividend in <br> final year <br> divided by <br> solved Cost <br> of Equity less <br> long-term <br> growth rate |  |

## Q. How did you calculate the long-term GDP growth rate?

A. The long-term growth rate of 5.70 percent is based on the real GDP growth rate of 3.27 percent from 1929 through $2013^{66}$, and an inflation rate of 2.36 percent ${ }^{67}$. The GDP growth rate is calculated as the compound growth rate in the chain-weighted GDP for the period from 1929 through 2013. The rate of inflation of 2.36 percent is a compound annual forward rate starting in ten years (i.e., 2024, which is the beginning of the terminal period) and is based on the 30 -day average projected inflation based on the spread between yields on long-term nominal

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Treasury Securities and long-term Treasury Inflation Protected Securities, known as the "TIPS spread".

In essence, my real GDP growth rate projection is based on the assumption that absent specific knowledge to the contrary, it is reasonable to assume that over time, real GDP growth will revert to its long-term mean. Moreover, since estimating the Cost of Equity is a marketbased exercise, it is important to reflect the sentiments and expectations of investors to the extent possible. In that important respect, the TIPS spread represents the collective views of investors regarding long-term inflation expectations. Equally important, by using forward yields we are able to infer the level of long-term inflation expected by investors as of the terminal period of the Multi-Stage model (that is, ten years in the future).

## Q. What were your specific assumptions with respect to the payout ratio?

A. As noted in Table 7, for the first two periods, I relied on the first year and longterm projected payout ratios reported by Value Line ${ }^{68}$ for each of the proxy companies. I then assumed that by the end of the second period (i.e., the end of year 10 ), the payout ratio will converge to the historical industry average ratio of 67.05 percent ${ }^{69}$.

## Q. What are the results of your Multi-Stage DCF analysis?

A. Table 8 (below; see also Schedule $\mathrm{RBH}-10$ ) presents the Multi-Stage DCF analysis results. Using the Gordon model to calculate the terminal stock price, the Multi-Stage DCF analysis produces a range of results from 9.55 percent to 10.59 percent.

[^31]Table 8: Multi-Stage DCF Model Results

|  | Mean Low | Mean | Mean High |
| :---: | :---: | :---: | :---: |
| 30-Day Average | $9.55 \%$ | $9.92 \%$ | $10.35 \%$ |
| 90-Day Average | $9.67 \%$ | $10.05 \%$ | $10.49 \%$ |
| 180-Day Average | $9.75 \%$ | $10.14 \%$ | $10.59 \%$ |

Q. Did you undertake any additional analyses to support your recommendation?
A. Yes. As noted earlier, I also applied the CAPM and Risk Premium approaches.

## D. CAPM Analysis

Q. Please briefly describe the general form of the CAPM analysis.
A. The CAPM analysis is a risk premium method that estimates the Cost of Equity for a given security as a function of a risk-free return plus a risk premium (to compensate investors for the non-diversifiable or "systematic" risk of that security). As shown in Equation [3], the CAPM is defined by four components, each of which theoretically must be a forwardlooking estimate:

$$
k=r_{f}+\beta\left(r_{m}-r_{f}\right) \quad \text { Equation [3] }
$$

where:

$$
\begin{aligned}
& k=\text { the required market ROE for a security; } \\
& \beta=\text { the Beta coefficient of that security; } \\
& r_{f}=\text { the risk-free rate of return; and } \\
& r_{m}=\text { the required return on the market as a whole. }
\end{aligned}
$$

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In Equation [4], the term $\left(r_{m}-r_{f}\right)$ represents the Market Risk Premium ${ }^{70}$. 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:

$$
\beta_{j}=\frac{\sigma_{j}}{\sigma_{m}} \times \rho_{j, m} \quad \text { Equation [4] }
$$

Where $\sigma_{j}$ is the standard deviation of returns for company " $j, \sigma_{m}$ is the standard deviation of returns for the broad market (as measured, for example, by the S\&P 500 Index), and $\rho_{j, m}$ is the correlation of returns in between company $j$ and the broad market. The Beta coefficient therefore represents both relative volatility (i.e., the standard deviation) of returns, and the correlation in returns between the subject company and the overall market.

Intuitively, higher Beta coefficients indicate that the subject company's returns have been relatively volatile, and have moved in tandem with the overall market. Consequently, if a company has a Beta coefficient of 1.00 , it is as risky as the market and does not provide any diversification benefit.
Q. What assumptions did you include in your CAPM analysis?
A. Since utility assets represent long duration investments, I used two different measures of the risk-free rate: (1) the current 30-day average yield on 30-year Treasury bonds (i.e., 3.60 percent); and (2) the projected 30 -year Treasury yield (i.e., 4.15 percent).
Q. Why have you relied upon the 30-year Treasury yield for your CAPM analysis?

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A. In determining the security most relevant to the application of the CAPM, it is important 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, the 30 -year Treasury yield is more suitable for the purpose of calculating the Cost of Equity.

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

A. For the reasons discussed in my response to Mr. Gorman, I did not use a historical average; rather, I developed forward-looking (ex-ante) estimates of the Market Risk Premium.
Q. Please describe your ex-ante approach to estimating the Market Risk

## Premium.

A. The approach is based on the market required return, less the current 30 -year Treasury yield. To estimate the market required return, I calculated the market capitalization weighted average ROE based on the Constant Growth DCF model. To do so, I relied on data from two sources: (1) Bloomberg; and (2) Value Line. With respect to Bloomberg-derived growth estimates, I calculated the expected dividend yield (using the same one-half growth rate assumption described earlier), and combined that amount with the projected earnings growth rate to arrive at the market capitalization weighted average DCF result. I performed that calculation for each of the S\&P 500 companies for which Bloomberg provided consensus growth rates. I then subtracted the current 30 -year Treasury yield from that amount to arrive at the market DCFderived ex-ante market risk premium estimate. In the case of Value Line, I performed the same calculation, again using all companies for which five-year earnings growth rates were available. The results of those calculations are provided in Schedule RBH-11.
Q. How did you apply your expected Market Risk Premium and risk-free rate estimates?

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|  | Bloomberg Derived Market Risk Premium | Value Line Derived Market Risk Premium |
| :---: | :---: | :---: |
| Average Bloomberg Beta Coefficient |  |  |
| Current 30-Year Treasury (3.60\%) | 11.50\% | 10.27\% |
| Near Term Projected 30-Year Treasury (4.15\%) | 12.05\% | 10.82\% |
| Average Value Line Beta Coefficient |  |  |
| Current 30-Year Treasury (3.60\%) | 11.53\% | 10.29\% |
| Near Term Projected 30-Year Treasury (4.15\%) | 12.08\% | 10.84\% |

A. I relied on the ex-ante Market Risk Premia discussed above, together with the current and near-term projected 30 -year Treasury yields as inputs to my CAPM analyses.
Q. What Beta coefficient did you use in your CAPM model?
A. As shown in Schedule RBH-12, I considered the Beta coefficients reported by two sources: Bloomberg and Value Line. For each source, I employed the average of the reported Beta coefficient for each proxy group company. While both of those services adjust their calculated (or "raw") Beta coefficients to reflect the tendency of the Beta coefficient to regress to the market mean of 1.00 , Value Line calculates the Beta coefficient over a five-year period, while Bloomberg's calculation is based on two years of data.
Q. What are the results of your CAPM analysis?
A. As shown in Table 9 the CAPM analyses suggest an ROE range of 10.27 percent to 12.08 percent (see also Schedule RBH-13).

Table 9: Summary of CAPM Results

## E. 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, since 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. As noted in my discussion of the CAPM, since 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 Bond Yield Plus Risk Premium analysis.
A. As suggested above, I first defined the Risk Premium as the difference between the authorized ROE and the then-prevailing level of long-term (i.e., 30 -year) Treasury yield. I then gathered data for over 1,421 electric utility rate proceedings between January, 1980 and April 15, 2014. In addition to the authorized ROE, I also calculated the average period between the filing of the case and the date of the final order (the "lag period"). In order to reflect the prevailing level of interest rates during the pendency of the proceedings, I calculated the average 30 -year Treasury yield over the average lag period (approximately 201 days).

Because the data cover a number of economic cycles, the analysis also may be used to assess the stability of the Equity Risk Premium. Prior research, for example, has shown that the

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Equity Risk Premium is inversely related to the level of interest rates. That analysis is particularly relevant given the relatively low, but increasing level of current Treasury yields.
Q. How did you model the relationship between interest rates and the Equity

## Risk Premium?

A. The basic method used was regression analysis, in which the observed Equity Risk Premium is the dependent variable, and the average 30 -year Treasury yield is the independent variable. Relative to the long-term historical average, the analytical period includes interest rates and authorized ROEs that are quite high during one period (i.e., the 1980s) and that are quite low during another (i.e., the post-Lehman bankruptcy period). To account for that variability, I used the semi-log regression, in which the Equity Risk Premium is expressed as a function of the natural $\log$ of the 30 -year Treasury yield:

$$
R P=\alpha+\beta\left(\operatorname{LN}\left(T_{30}\right)\right) \text { Equation [5] }
$$

As shown on Chart 6 (below), the semi-log form is useful when measuring an absolute change in the dependent variable (in this case, the Risk Premium) relative to a proportional change in the independent variable (the 30-year Treasury yield).

## Chart 6: Equity Risk Premium



As Chart 6 illustrates, over time there has been a statistically significant, negative relationship between the 30 -year Treasury yield and the Equity Risk Premium. Consequently, simply applying the long-term average Equity Risk Premium of 4.43 percent would significantly understate the Cost of Equity and produce results well below any reasonable estimate. Based on the regression coefficients in Chart 6, however, the implied ROE is between 10.20 percent and 10.77 percent (see Schedule RBH-14).

## VI. OTHER CONSIDERATIONS

Q. Do the mean DCF, CAPM, and Risk Premium results for the proxy group provide an appropriate estimate of the Cost of Equity for Ameren Missouri?
A. No, the mean results do not necessarily provide an appropriate estimate of the Company's Cost of Equity. In my view, there are additional factors that must be taken into

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consideration when determining where the Company's cost of equity falls within the range of results. Those factors include the regulatory environment in which the company operates. Those risk factors, which are discussed below, should be considered with respect to their overall effect on the Company's risk profile and therefore its cost of equity.

## A. Regulatory Environment

Q. How does the regulatory enviromment in which a utility operates affect its access to and cost of capital?
A. The regulatory environment can significantly affect both the access to, and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory enviromment. As noted by Moody's, "Broadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation ${ }^{71}$." Investors recognize that a reasonable allowed ROE that is subject to earnings attrition due to unfavorable regulatory or economic factors does not provide any assurance that the utility will actually recover its costs or earn a reasonable return.

Further, Moody's acknowledges that timely cost recovery is an important determinant of credit quality, stating that "A utility operating in a regulatory framework that, by statute or practice, allows the regulator to arbitrarily prevent the utility from recovering its costs or earning a reasonable return on prudently incurred investments... will receive a much lower [rating] score ${ }^{72}$."

[^33]Q. Please explain how credit rating agencies consider regulatory risk in establishing a company's credit rating.
A. While both S\&P and Moody's consider regulatory risk in establishing credit ratings, Moody's has published a report quantifying the importance of this metric. Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4) financial strength, liquidity, and key financial metrics. Of those criteria, regulatory framework and the ability to recover costs and earn returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent weighting in the overall assessment of business and financial risk for regulated utilities ${ }^{73}$. 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, and risk, associated with a given utility and jurisdiction. It is, therefore, an important measure of financial integrity from several perspectives.
Q. Are there specific issues relating to Missouri that are a consideration for equity investors?
A. Yes, I believe so. As noted in an April 2013 report by Regulatory Research Associates, Missouri is one of only five states that legally prohibit utilities from including Construction Work in Progress in the rate base ${ }^{74}$. As a consequence, the Company's ability to maintain its cash flow is disadvantaged relative to others that either have the ability to include CWIP in rate base during general rate cases (and therefore earn a cash return on that investment), or are provided a more timely cash return through adjustment clauses. As discussed in my response to Mr. Gorman, when the revenue per dollar of assets decreases, the earned return on

[^34]common equity also will decrease. Because net income is a principal element of cash flow, the dilution in earnings resulting from not receiving a cash return on CWIP diminishes the Company's financial profile and increases its relative risk.

In addition, Missouri utilities set rates based on an historical test year; with limited "known and measurable" changes". In contrast, other utilities, including utilities in the proxy group, have the ability to recover rate base additions through forecast test years or alternative rate plans. As Regulatory Research Associates has noted, "[s]uch rate changes provide for improved cash flow and possibly earnings through reduced regulatory $\operatorname{lag}^{76}$." As with the inability to include CWIP in its rate base, because it is subject to the regulatory lag otherwise mitigated by forecast test years or alternative rate plans, Ameren Missouri's ability to generate earnings and cash flow is disadvantaged relative to its peers.

The same holds true regarding the Company's inability to implement interim rates. As RRA points out, the Commission "may authorize an interim increase, subject to refund, if a company can demonstrate an emergency, or a near emergency situation." RRA concludes that as a result, interim increases have rarely been sought or authorized" in Missouri ${ }^{77}$. Because interim rates are unlikely, the Company's cash flow position is diluted as it invests in its rate base.

The inability to include CWIP in rate base, the use of an historical test year, and the inability to implement interim rates are particularly relevant in light of the Company's plan to invest over $\$ 3$ billion in its regulated operations from 2014 to 2015. In 2014 alone, Ameren

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Missouri expects to invest $\$ 756$ million, which will contribute to the expected negative free cash flow at the parent level ${ }^{78}$.
Q. What are your conclusions regarding the regulatory and the Company's risk profile?
A. The regulatory environment is one of the most important issues considered by both debt and equity investors in assessing the risks and prospects of utility companies. From the perspective of debt investors, the authorized return should enable the Company to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its system, and maintain sufficient levels of liquidity to fund unexpected events. This financial liquidity must be derived not only from internally generated funds, but also by efficient access to capital markets. Moreover, because investors have many investment alternatives, even within a given market sector, the Company's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions.

From the perspective of Ameren Corporation, the parent holding company of Ameren Missouri, the authorized return must be sufficient to provide an incentive to allocate equity capital to Ameren Missouri in order to fund capital investments that will assure the Company's ability to continue to provide safe and reliable service. From the perspective of equity investors, the authorized return must be adequate to provide a risk-comparable return on the equity portion of the Company's capital investments. Since equity investors are the residual claimants on the Company's cash flows (which is to say that the equity return is subordinate to interest payments), they are particularly concerned with regulatory uncertainty and its effect on future cash flows.

[^36]Because of the regulatory lag created by the inability to include CWIP in the rate base, the use of historical test periods, and the inability to implement interim rates, Ameren Missouri is at a disadvantage in terms of its ability to earn its authorized return. Mr. Gorman's 9.40 percent ROE recommendation would only diminish the Company's ability to earn a reasonable return. In light of those risks, I believe that an ROE of 10.40 percent is reasonable and appropriate.

## B. Generation Portfolio

## Q. Please provide an overview of the Company's generation portfolio.

A. Ameren Missouri's operations are heavily dependent on coal-fired generation, representing more than 75.00 percent of its 2013 net generation. The Company's remaining generation portfolio is largely dependent on a single nuclear plant, which represented approximately 20.00 percent of the Ameren Missouri's 2013 net generation ${ }^{79}$.
Q. Please briefly describe the risks associated with the ownership of coal-fired generating resources.
A. In general, capital-intensive generation assets such as coal-fired plants face risks associated with capital recovery in the event of market structure changes or plant failure, or replacement cost recovery in the event of extended or unplanned outages. Federal environmental regulations creating emissions control requirements have been issued in recent years. Compliance with new regulations can require substantial capital investment, or add operational costs. In fact, a report by Staff of the Missouri Public Service Commission estimated that known Environmental Protection Agency ("EPA") regulations, which primarily affect coal-fired generating plants, would cost state electric utilities and their customers in the range of

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approximately $\$ 2.23$ billion to $\$ 2.47$ billion from 2012 to $2022^{80}$. The report also highlighted the level of uncertainty regarding emerging environmental regulations and the potential consequences. The need to respond to environmental regulations makes it particularly important that Ameren Missouri maintains reasonable access to the capital markets.

More recently, the risks and potential costs associated with coal-fired generating plants have been highlighted in the EPA's proposed carbon dioxide reduction rule. Introduced on June 2, 2014, the rule proposes to reduce carbon dioxide emissions in the year 2030 by 30 percent from their 2005 levels. Under the EPA's "Clean Power Plan", carbon dioxide reduction targets are proposed on a state-by-state basis, with four "pathways" to meet those goals. While states can choose their own path to compliance, they must submit their plans to the EPA for approval by June $2016^{31}$. Regardless of the path chosen, the uncertainty associated with the potential costs, and the recovery of those costs, is a consideration for companies such as Ameren Missouri, for which coal-fired generation represents a large share of its portfolio.
Q. Do you have any other observations regarding the Company's generation

## portfolio?

A. Yes. As opposed to other owners of nuclear generating facilities, Ameren is the owner of a single nuclear plant. As a single asset owner, the Company does not have the benefit of diverse operations, or the scale economies that could result in lower marginal costs or higher capacity factors. In that regard, Ameren may be exposed to somewhat higher risk than companies that own and operate nuclear fleets, or those that operate no nuclear plants at all.

[^38]
## VII. CONCLUSIONS AND RECOMMENDATION

## Q. What is your conclusion regarding the Company's Cost of Equity?

A. For the reasons discussed in Section IV, I strongly disagree with Mr. Gorman's 9.40 percent ROE recommendation. Not only is that estimate well below the prevailing authorized return available to other vertically integrated electric utilities, it is the result of analyses that are flawed in several fundamental respects. Correcting for those flaws significantly raises Mr. Gorman's results, demonstrating that his 9.40 percent ROE recommendation is unreasonable and fails to reflect Ameren Missouri's Cost of Equity.

As discussed earlier in Section V, I have performed several analyses in response to Mr. Gorman's testimony. In light of those results, and taking into consideration other relevant and observable market data, I believe that ROE in the range of 10.20 percent to 10.60 percent represents the range of returns required by equity investors under current and expected market conditions. Within that range, it is my view that an ROE of 10.40 percent is reasonable and appropriate.

Table 10a: Summary of DCF Results

| Constant Growth DCF | Low | Mean | High |
| :--- | :---: | :---: | :---: |
| 30-Day Average | $8.17 \%$ | $9.48 \%$ | $10.79 \%$ |
| 90-Day Average | $8.28 \%$ | $9.59 \%$ | $10.90 \%$ |
| 180-Day Average | $8.35 \%$ | $9.67 \%$ | $10.98 \%$ |
| Multi-Stage DCF | Low | Meall | High |
| 30-Day Average | $9.55 \%$ | $9.92 \%$ | $10.35 \%$ |
| 90-Day Average | $9.67 \%$ | $10.05 \%$ | $10.49 \%$ |
| 180-Day Average | $9.75 \%$ | $10.14 \%$ | $10.59 \%$ |

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Table 10b: Summary of Risk Premium and Other Analytical Results

| CAPM Results |  | Bloomberg <br> Derived <br> Market Risk <br> Premium | Value Line <br> Derived <br> Market Risk <br> Premium |
| :---: | :---: | :---: | :---: |
| Average Bloomberg Beta Coefficient |  |  |  |
| Current 30-Year Treasury (3.60\%) |  | 11.50\% | 10.27\% |
| Near Term Projected 30-Year Trea | (4.15\%) | 12.05\% | 10.82\% |
| Average Value Line Beta Coefficient |  |  |  |
| Current 30-Year Treasury (3.60\%) |  | 11.53\% | 10.29\% |
| Near Term Projected 30-Year Trea | (4.15\%) | 12.08\% | 10.84\% |
|  |  |  |  |
|  | Low | Mid | High |
| Bond Yield Plus Risk Premium | 10.20\% | 10.34\% | 10.77\% |

2
3
4
Q. Does this conclude your Rebuttal Testimony?
A. Yes, it does.

2013-2014 Reported Authorized Returns on Equity, Vertically Integrated Electric Utility Rate Cases

| State | Docket | Utility | Decision Date | Authorized ROE |
| :---: | :---: | :---: | :---: | :---: |
| MO | C-ER-2012-0174 | Kansas City Power \& Light | 1/9/2013 | 9.70\% |
| MO | C-ER-2012-0175 | KCP\&L Greater Missouri Op Co | 1/9/2013 | 9.70\% |
| IN | Ca-44075 | Indiana Michigan Power Co. | 2/13/2013 | 10.20\% |
| LA | D-U-32220 | Southwestern Electric Power Co | 2/27/2013 | 10.00\% |
| MS | D-2013-UN-0014 | Mississippi Power Co. | 3/5/2013 | 9.70\% |
| ID | C-AVU-E-12-08 | Avista Corp. | 3/27/2013 | 9.80\% |
| OH | C-12-1682-EL-AIR | Duke Energy Ohio Inc. | 5/1/2013 | 9.84\% |
| MI | C-U-17087 | Consumers Energy Co. | 5/15/2013 | 10.30\% |
| NC | D-E-2, Sub 1023 | Duke Energy Progress Inc. | 5/30/2013 | 10.20\% |
| HI | D-2011-0092 | Maui Electric Company Ltd | 5/31/2013 | 9.00\% |
| AZ | D-E-01933A-12-0291 | Tucson Electric Power Co. | 6/11/2013 | 10.00\% |
| WA | D-UE-130137 | Puget Sound Energy Inc. | 6/25/2013 | 9.80\% |
| MN | D-E-002/GR-12-961 | Northern States Power Co. - MN | 8/8/2013 | 9.83\% |
| FL | D-130040-El | Tampa Electric Co. | 9/11/2013 | 10.25\% |
| SC | D-2013-59-E | Duke Energy Carolinas LI.C | 9/11/2013 | 10.20\% |
| NC | D-E-7, Sub 1026 | Duke Energy Carolinas LLC | 9/24/2013 | 10.20\% |
| TX | D-40443 | Southwestern Electric Power Co | 10/3/2013 | 9.65\% |
| WI | D-6690-UR-122 (Elec) | Wisconsin Public Service Corp. | 11/6/2013 | 10.20\% |
| KS | D-13-WSEE-629-RTS | Westar Energy Inc. | 11/21/2013 | 10.00\% |
| VA | C-PUE-2013-00020 | Virginia Electric \& Power Co. | 11/26/2013 | 10.00\% |
| FL | D-130140-EI | Gulf Power Co. | 12/3/2013 | 10.25\% |
| WA | D-UE-130043 | PacifiCorp | 12/4/2013 | 9.50\% |
| WI | D-4220-UR-119 (Elec) | Northern States Power Co - Wi | 12/5/2013 | 10.20\% |
| OR | D-UE-262 | Portland General Electric Co. | 12/9/2013 | 9.75\% |
| LA | D.U-32707 | Entergy Gulf States LA LLC | 12/16/2013 | 9.95\% |
| LA | D-U-32708 | Entergy Louisiana LLC | 12/16/2013 | 9.95\% |
| NV | D-13-06002 | Sierra Pacific Power Co. | 12/16/2013 | 10.12\% |
| AZ | D-E-04204A-12-0504 | UNS Electric Inc. | 12/17/2013 | 9.50\% |
| GA | D-36989 | Georgia Power Co. | 12/17/2013 | 10.95\% |
| OR | D-UE-263 | PacifiCorp | 12/18/2013 | 9.80\% |
| MI | C-U-17274 | Upper Peninsula Power Co. | 12/19/2013 | 10.15\% |
| AR | D-13-028-U | Entergy Arkansas Inc. | 12/30/2013 | 9.30\% |
| ND | C-PU-12-813 | Northern States Power Co. - MN | 2/26/2014 | 9.75\% |
| NH | D-DE-13-063 | Liberty Utilities Granite St | 3/17/2014 | 9.55\% |
| NM | C-12-00350-UT | Southwestern Public Service Co | 3/26/2014 | 9.96\% |
| Average |  |  |  | 9.92\% |
| Median |  |  |  | 9.95\% |
| Minimum |  |  |  | 9.00\% |
| Maximum |  |  |  | 10.95\% |

Source: Regulatory Research Associates. Excludes ROEs for tllinois formula rate plans, Virginia and West Virginia rate riders and Transmission-only.
Note: Confirmed all companies are vertically integrated with Regulatory Research Associates, Electric Industry
Restructuring: Tier Redefinition and Update, August, 1 2012. "Tier 1" restructuring states considered T\&D.

Proxy Group Comparison

| Companies | Ticker | Hevert Proxy Group | Gorman <br> Proxy Group |
| :---: | :---: | :---: | :---: |
| ALLETE, Inc. | ALE | [1] | $\checkmark$ |
| Ameren Corporation | AEE | [1], [2] | $\checkmark$ |
| American Electric Power Company | AEP | $\checkmark$ | $\checkmark$ |
| Black Hills Corporation | BKH | [1] | $\checkmark$ |
| Cleco Corporation | CNL | $\checkmark$ | $\downarrow$ |
| CMS Energy Corporation | CMS | [1] | $\checkmark$ |
| Consolidated Edison, Inc. | ED | [1] | $\checkmark$ |
| DTE Energy Corporation | DTE | [1] | $\downarrow$ |
| Duke Energy Corporation | DUK | $\checkmark$ | $\checkmark$ |
| Edison International | EIX | [3] | $\checkmark$ |
| El Paso Electric Company | EE | [4] | $\checkmark$ |
| Empire District Electric Company | EDE | $\checkmark$ | $\checkmark$ |
| Great Plains Energy Inc. | GXP | $\checkmark$ | $\checkmark$ |
| Hawaiian Electric Industries, Inc. | HE | $\downarrow$ |  |
| IDACORP, Inc. | IDA | $\checkmark$ | $\checkmark$ |
| NextEra Energy, Inc. | NEE | $\checkmark$ |  |
| Northeast Utilities | NU | $\checkmark$ | $\checkmark$ |
| Otter Tail Corporation | OTTR | $\checkmark$ |  |
| PG\&E Corporation | PCG | [1], [5] | $\downarrow$ |
| Pinnacle West Capital Corporation | PNW | $\checkmark$ | $\checkmark$ |
| PNM Resources | PNM | $\checkmark$ |  |
| Portland General Electric Co. | POR | $\downarrow$ | $\checkmark$ |
| Southern Company | SO | $\checkmark$ | $\checkmark$ |
| UIL Holdings Corporation | UIL | [1], [5] | $\checkmark$ |
| UNS Energy Corporation | UNS | [5] |  |
| Westar Energy, Inc. | WR | $\checkmark$ | $\checkmark$ |
| Wisconsin Energy Corporation | WEC | [1] | $\downarrow$ |
| Xcel Energy, Inc. | XEL. | [1] | $\checkmark$ |

$\sqrt{ }$ Included in proxy group
[1] Removed for having less than $90.00 \%$ of regulated net income from electric operations
[2] In order to avoid the circular logic that otherwise would occur, it has been my consistent practice to exclude the subject company (or its parent) from the proxy group.
[3] Removed for significant losses associated with unregulated electric generating assets. In addition, on October 18, 2013, EIX entered into a purchase agreement with NRG Energy for Edison Mission Energy's assets
[4] Removed for inconsistent quarterly cash dividends payments
[5] Removed due to known merger, or other significant transaction

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| 以も¢ | － | YOP | Trbsio | 上¢5\％ | R＇（9）N1 | ［8，en |  | EごらFitra | e．tus | बएँ | ［20］50 |  | Ruzid |  | fixper | F\％ |  |  |  |
| 4 atascos | ${ }^{308}$ | Arba | いです | 9 9， | finsy | 7rod | wurgay | 59．64S | Praten | －Fibl | $18: 1$ |  |  |  |  |  |  |  |  |
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| Company |  | Rotontion Ratio and Earnings Growth |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1998 | 1888 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2008 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| $\overline{\text { ALLETE, inc. }}$ | Earninga por Shoro [7] |  |  |  |  |  |  | 1.85 | 2.21 | 2.08 | 2.38 | 2.54 | 1.89 | 2.75 | 2.75 | 3.05 | 3.29 |
|  | Dividondes por Share [2] |  |  |  |  |  |  | 1.02 | 1.05 | 1.15 | 1.27 | 1.40 | 1.50 | 1.58 | 1.70 | 1.80 | 1.88 |
|  | Payout Rato [3] |  |  |  |  |  |  | 55.14\% | 47.51\% | 55.33\% | 47.21\% | 55.12\% | 78.37\% | 57.45\% | 81.82\% | 50.02\% | 57.14\% |
|  | Earrings Growth [4] |  |  |  |  |  |  | N/A | 19.46\% | -6.73\% | 30.58\% | -5.58\% | -25,56\% | 45.50\% | 0.00\% | 10.81\% | 7.87\% |
|  | Avorngo Earninga Growth [5] |  |  |  |  |  |  |  | 7.63\% | 8.98\% | 5.05\% | 7.74\% | N/A | N/A | N/A | N/A | N/A |
| Amoron Carporation | Earnings por Sharo [1] | 2.82 | 2.81 | 3.33 | 3.41 | 2.68 | 3.14 | 2.82 | 3.13 | 2,66 | 2.98 | 2.88 | 2.78 | 2.77 | 2.47 | 2.41 | 2.08 |
|  | Dividonds por Share [2] | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 2.54 | 1.54 | 1.54 | 1.58 | 1.80 | 1.50 |
|  | Payout Ratio [3] | 80.07\% | 90.39\% | 762.2\% | 74.49\% | 95.44\% | 80.80\% | 90.07\% | 81.15\% | 85.49\% | 85.23\% | 88, $19 \%$ | 55.40\% | 55.60\% | 83.16\% | 56.39\% | 76.56\% |
|  | Earnings Growth [4] | N/A | -0.35\% | 18.51\% | 2.40\% | -21.08\% | 18.05\% | -10.19\% | 10.99\% | -15.02\% | 12.03\% | 3.36\% | -3.47\% | -0.38\% | -10.83\% | -2.43\% | -13.28\% |
|  | Avorrag Earnings Growth [5] | 3.32\% | 1.35\% | -0.15\% | -3.63\% | 3.17\% | -1.11\% | 0.24\% | -2.03\% | -1.20\% | 4.09\% | -6.07\% | N/A | N/A | N/A | N/A | N/A |
| Amoricon Elactric Powor Company, the. | Earmings por Shoro [1] | 2.81 | 2.69 | 1.04 | 3.27 | 2.86 | 2.53 | 2.61 | 2.64 | 2.86 | 2.86 | 2.99 | 2.97 | 2.50 | 3.13 | 2.98 | 3.18 |
|  | Dividends por Share [2] | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 1.65 | 1.40 | 1.42 | 1.50 | 1.58 | 1.64 | 1.64 | 1.71 | 1.85 | 1.85 | 1.95 |
|  | Payout Ratic [3] | 85.41\% | 89.22\% | 230.77\% | 73.38\% | 83.92\% | 65.22\% | 53.64\% | 53.79\% | 52.45\% | 55.24\% | 54.95\% | 55.22\% | 65.77\% | 58.11\% | 63.08\% | 81.32\% |
|  | Earings Growth [4] | N/A | 4.27\% | -51.34\% | 214.42\% | -12.54\% | -11.54\% | 3.16\% | 7.15\% | 8.33\% | 0.00\% | 4.55\% | -0.67\% | -12.46\% | 20.38\% | -4.79\% | 6.71\% |
|  | Avorng Ennalmag Growth [5] | 24.85\% | 20.43\% | 38.93\% | -2.29\% | 0.22\% | 3.44\% | 2.87\% | -0.05\% | 2.36\% | 1.40\% | 1.84\% | N/A | N/A | N/A | N/A | N/A |
| Black Hille Corporation | Earrings por Sharo [1] | 1.60 | 1.70 | 2.37 | 3.42 | 2.33 | 1.84 | 1.74 | 2.13 | 2.21 | 2.58 | 0.18 | 2.32 | 1.65 | 1.01 | 1.97 | 2.73 |
|  | Dividonds por Sharo [2] | 1.00 | 1.04 | 1.08 | 1.12 | 1.16 | 1.20 | 1.24 | 1.28 | 1.32 | 1.37 | 1.40 | 1.42 | 1.44 | 1.45 | 1.48 | 1.52 |
|  | Payout Ratio [3] | 82.50\% | 61.18\% | 45.57\% | 32.75\% | 48.78\% | 65.22\% | 71.26\% | 80.83\% | 59.73\% | 51.12\% | 777.78\% | 81.21\% | 83.75\% | 144.55\% | 75.13\% | 55.27\% |
|  | Earninge Growth $[4]$ | NA | 6.25\% | 38.41\% | 44.30\% | -31.87\% | -21.03\% | -5.43\% | 21.26\% | 4.74\% | 21.27\% | -93.28\% | 1188.89\% | -28.45\% | -38.18\% | 95.05\% | 38.58\% |
|  | Averrgo Earringa Growth (5) | 7.41\% | 5.08\% | 1.45\% | -6,47\% | 4.13\% | -10.29\% | 228.58\% | 218.63\% | 200.85\% | 224.51\% | 251.10\% | N/A | N/A | N/A | N/A | N/A |
| Cloco Corporation | Earnings por Share [1] | 1.12 | 1.19 | 1.46 | 1.51 | 1.52 | 1.25 | 1.32 | 1.42 | 1.36 | 1.32 | 1.70 | 1.76 | 2.29 | 2.59 | 2.70 | 2.65 |
|  | Dividonds por Share [2] | 0.83 | 0.83 | 0.85 | 0.87 | 0.80 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.98 | 1.12 | 1.30 | 1.43 |
|  | Payout Ratio [3] | 72.32\% | 69.75\% | 58.22\% | 57.82\% | 59.21\% | 71.43\% | 88.78\% | 63,38\% | 66.18\% | 68.18\% | 52.04\% | 51.14\% | 42.79\% | 43.24\% | 48.15\% | 53.09\% |
|  | Earainga Growth [4] | N/A | 825\% | 22.68\% | 3.42\% | 0.66\% | -17.11\% | 4.76\% | 7.58\% | 4.23\% | -2.94\% | 28.79\% | 3.53\% | 30.11\% | 13.10\% | 4.25\% | -1.85\% |
|  | Avorano Eartinga Growth (5) | 3.18\% | 2.88\% | -0.14\% | -1.87\% | -2.39\% | 8.79\% | 6.55\% | 11.05\% | 14.52\% | 15.96\% | 8.83\% | N/A | N/A | N/A. | N/ | NA |
| CMS Enoray Corporation | Eorninge por Share [1] | 2.24 | 2.85 | 2.53 | 1,27 | N/A | N/A | 0.74 | 1.10 | 0.64 | 0.84 | 1.23 | 0.83 | 1.33 | 1.45 | 1,53 | 1,65 |
|  | D\|vidonds por Shoro [2] | 7.26 | 1.38 | 1.45 | 1,46 | 1.09 | N/A | N/A | N/A | N/A | 0.20 | 0.36 | 0.50 | 0.88 | 0.84 | 0.96 | 1.02 |
|  | Payout Rato [3] | 56.25\% | 48.77\% | 57.73\% | 114.96\% | N/A | N/A | N/A | N/A | N/A | 31.25\% | 29.27\% | 53.78\% | 48.62\% | 57.83\% | 82.75\% | 61.45\% |
|  | Earrings Growth 14] | NA | 2723\% | -11.23\% | -4.80\% | N/A | N/A | N/A | 48,65\% | -41.82\% | 0.00\% | 82.19\% | -24.39\% | 43.01\% | 9.02\% | 5.52\% | 8.50\% |
|  | Avorago Earringa Crowth (5) | N/A | N/A | N/A | N/A | N/A | N/A | 14.83\% | 13.80\% | 23.87\% | 25.07\% | 8.33\% | N/A | N/A | N/A | N/A | N/A |
| Consolidatod Edison, inc. | Earninge per Share [1] | 3.04 | 3.13 | 2.74 | 321 | 3.13 | 2.83 | 2.32 | 2.88 | 2.95 | 3.48 | ${ }^{3} 36$ | 3.14 | 3.47 | 3.57 | 3.86 | 3.80 |
|  | Dividends por Sharo [2] | 2.12 | 2.14 | 2.18 | 2.20 | 2.22 | 2.24 | 2.26 | 2.28 | 2,30 | 2.32 | 2.34 | 2,36 | 2.38 | 2.40 | 2.42 | 2.46 |
|  | Payout Ratio [3] | 68.74\% | 68.37\% | 79.56\% | 68.54\% | 70.93\% | 79.15\% | 87.41\% | 76.25\% | 77.97\% | 66.67\% | 59,64\% | 75.18\% | 68.59\% | 67.23\% | 62.80\% | 64.74\% |
|  | Earringo Growth [4] | N/ | 2.96\% | -12.45\% | 17.15\% | -2.49\% | -9.58\% | -18.02\% | 28.88\% | -1.34\% | 17.97\% | -3.45\% | -6.55\% | 10.51\% | 2.88\% | 8.12\% | -1.55\% |
|  | Avorago Earringa Growth [5] | -0.88\% | -5.08\% | 3.19\% | -0.51\% | 3.58\% | 4.81\% | 7.10\% | 3.43\% | 4.27\% | 2.30\% | 2.68\% | N/A | N/A | N/A | N/A | N/A |
| DTE Enoray Company | Earsinge por Shato [1] | 3.05 | 3.33 | 3.27 | 2.15 | ${ }^{3.83}$ | 2.85 | 2.55 | 3.27 | 2.45 | 2.86 | 2.73 | 3.24 | 3.74 | 3.57 | 3.88 | 3.76 |
|  | Dividends per Share [2] | 2.06 | 2.06 | 2.08 | 2.00 | 2.08 | 2.06 | 2.06 | 2.05 | 2.08 | 2.12 | 2.12 | 2.12 | 2.18 | 2.32 | 2.42 | 2.59 |
|  | Payout Rato [3] | 67.54\% | 61.85\% | 63.00\% | 85.81\% | 53.79\% | 72.28\% | 80.78\% | 63.00\% | 84,80\% | 79.70\% | 77.66\% | 65.43\% | 58.28\% | 63.2\% | 62.37\% | 68.88\% |
|  | Earings Growth [4] | N/A | 9.18\% | -1.80\% | -34.25\% | 78.14\% | -25.59\% | -10.53\% | 28.24\% | -25.08\% | 8.57\% | 2.63\% | 18.68\% | 15.43\% | -1.97\% | 5.72\% | -3.09\% |
|  | Avorngo Earmings Growth [S] | 5.14\% | 1.19\% | 7.20\% | 9.04\% | 4.88\% | 0.77\% | 8.81\% | 4.05\% | 8. $89 \%$ | 8.12\% | 6.87\% | N/A | N/A | N/A | N/A | N/A |
| Duko Enorgy Corporation | Eorninge por Share [1] | N/A | N/A | N/A | N/A | N/A | N/A | N/A | NA | 2.78 | 3.80 | 3.03 | ${ }^{3.39}$ | 4.02 | 4.14 | 3.71 | 4.05 |
|  | Dividends por Sharo [2] | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/ | N/A | 2.58 | 2.70 | 2.82 | 2.91 | 2.87 | 3.03 | 3.08 |
|  | Pryout Ratio [3] | N/A | N/A | N/A | N/A | N/A | N/A | N/A | NA | N/A | 71.87\% | 89.17\% | 83.19\% | 72.39\% | 71.74\% | 81.c7\% | 70.30\% |
|  | Earnings Growth [4] | N/A | N/A | N/A | N/A | N/A | N/A | N/A | NA | N/A | 30.43\% | -15.83\% | 11.88\% | 18.58\% | 2.30\% | -10,30\% | 8.76\% |
|  | Avorago Earninge Growth 5 S. | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 8.61\% | 1.45\% | 8.45\% | N/A | N/A | N/A | N/A | N/A |
| Ediomintornational | Earnings por Sharo [7] | ${ }^{1.86}$ | 2.03 | N/A | 1.30 | 1.82 | 2.38 | 0.69 | 3.34 | 3.28 | 3.32 | 3.68 | 3.24 | 3.35 | 3.23 | 4.55 | 3.65 |
|  | Dividends por Sharo [2] | 1.04 | 1.08 | 0.83 | N/A | N/ | N/A | 0.80 | 1.02 | 3.10 | 1.18 | 1.23 | 1.25 | t.27 | 1.29 | 1.31 | 1.37 |
|  | Payout Rotio [3] | 55.81\% | 53.20\% | NA | N/A | NA | N/A | 115.94\% | 30.54\% | 33.54\% | 35.54\% | 33.42\% | 38.56\% | 37.01\% | 38,84\% | 26.79\% | 37.53\% |
|  | Eornings Growth [4] | N/A | 8.14\% | NA | N/A | 40.00\% | 30.77\% | -71.01\% | 384.06\% | -1.50\% | 1.22\% | 10.84\% | -11.88\% | 3.40\% | -3.58\% | 40.77\% | -18.78\% |
|  | Avorago Enrnings Growth (5) | N/A | N/A | N/A | 78.40\% | 68.65\% | 54.68\% | 75.47\% | 0.34\% | -0.02\% | 7.81\% | 1.78\% | N/A | N/A | N/A | N/A | N/A |
| El Pase Eloctric Company | Earings por Sharo [1] | 0.70 | 0.56 | 1.09 | 1.27 | 0.57 | 0.64 | 0.69 | 0.76 | 7.27 | 1.63 | 1.73 | 7.50 | 2.07 | 2.48 | 2.26 | 2.30 |
|  | Dividends por Stare [2] | N/A | N/A | NA | N/A | NA | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 0.60 | 0.87 | 1.05 |
|  | Payout Ratio [3] | N/A | N/A | NA | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 26.61\% | 42.92\% | 45.65\% |
|  | Earringe Growth [4] | NIA | 22,86\% | 26.74\% | 16.51\% | -55.12\% | 1228\% | 7.81\% | 10.14\% | 87.11\% | 28.35\% | ع.13\% | -13.29\% | 38.00\% | 19.81\% | -8.87\% | 1.77\% |
|  | Avotngo Eatringaz Growth [5] | 4.66\% | 1.85\% | -1.67\% | 8.45\% | 25.14\% | 23.91\% | 19.69\% | 25.28\% | 15.80\% | 8.35\% | 7.48\% | N/A | N/A | $\mathrm{N} / \mathrm{A}$ | N/A | N/A |
| Emplo District Elictric | Earnings por Sharo [1] | 1.53 | 1.13 | 1.35 | 0.59 | 1.19 | 1.29 | 0.36 | 0.92 | 1.41 | 1.09 | 1.17 | 1.18 | 1.17 | 1.31 | 1.32 | $1.48{ }^{-}$ |
|  | Dividonds por Shore [2] | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 128 | 1.28 | 1.28 | 1.28 | 1.28 | 1.28 | 0.64 | 1.00 | 1.01 |
|  | Payout Ratio [3] | 83.66\% | 113.27\% | 94.81\% | 218.85\% | 107.56\% | 89.22\% | 148.84\% | 138.13\% | 90.78\% | 117.43\% | 109.40\% | 108,47\% | 100.40\% | 48.95\% | 75.78\% | 68.24\% |
|  | Earsings Growth [4] | N/A | -26.14\% | 19.47\% | . $56.30 \%$ | 101.69\% | 8.40\% | -33.33\% | 6.88\% | 5326\% | -22.70\% | 7.34\% | 0.85\% | -0.85\% | 11.97\% | 0.76\% | 12.12\% |
|  | Averngo Earminga Growth [5] | 9.43\% | 7.99\% | 5.48\% | 27.40\% | 2.52\% | 2.31\% | 9.15\% | 7.58\% | -0.08\% | 4.02\% | 4.87\% | N/A | N/A | N/A | N/A | N/A |
| Groot Plana Enorgy lic. | Earringa por Sharo [1] | ${ }^{1.89}$ | 1.28 | 2.05 | 1.53 | 2.04 | 2.27 | 2.48 | 2.18 | 1.82 | 1.88 | 1.15 | 1.03 | 1.53 | 7.25 | 1.35 | 1.62 |
|  | Oividends por Sharo [2] | 1.64 | 1.66 | 1.56 | 1.66 | 1.66 | 1.86 | 1.68 | 1.56 | 1.56 | 1.58 | 1.66 | 0.83 | 0.83 | 0.84 | 0.86 | 0.88 |
|  | Payout Ratio [3] | 86.77\% | 131.75\% | 80,98\% | 104.40\% | 81.37\% | 73.13\% | 87.48\% | 76.15\% | 102.47\% | 39.25\% | 143.10\% | 80.58\% | 54.25\% | 67.20\% | 63.70\% | 54.32\% |
|  | Earangs Growth [4] | N/A | .33.33\% | 62.70\% | -22.44\% | 28.30\% | 11.27\% | 8.37\% | -11.38\% | -25.68\% | 14.81\% | -37.63\% | -11.21\% | 48.54\% | -18.30\% | 8.00\% | 20.00\% |
|  | Avorgoo Entalgge Growth [5] | 8.30\% | 17.84\% | 2.85\% | 2.18\% | -0.5\%\% | -10.30\% | - $4.22 \%$ | -2.23\% | .0.76\% | -2.12\% | 9.41\% | N/A | N/A | N/A | N/A | N/A |
| DACORP, Inc. | Earsinge por Sharo [1] | 2.37 | 2.43 | 3.50 | 3.35 | ${ }^{1.83}$ | 0.96 | 1.30 | 1.75 | 2.35 | ${ }^{1.86}$ | 2.98 | 2.64 | 2.95 | 3.35 | 3.37 | 3.50 |
|  | D\|lydonds por Sharo R] | 1.85 | 1.86 | 1.86 | 1.86 | 1.86 | 1.70 | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 | 1.20 | 1.37 | 1.57 |
|  | Payout Ratio [3] | 78.48\% | 76.54\% | 53.14\% | 55.52\% | 114.11\% | 177.08\% | 53.15\% | 68.57\% | 51.05\% | 84.52\% | 53,05\% | 45.45\% | 40.68\% | 35.77\% | 40.65\% | 44.86\% |
|  | Earrings Growth [4] | N/A | 2.53\% | 44.03\% | -4.28\% | -51.34\% | -41.10\% | 87.92\% | -7.89\% | 34.29\% | -20.85\% | 17.20\% | 21.10\% | 11.74\% | 13,80\% | 0.30\% | 3.80\% |
|  | Avorane Eatingan Growth [5] | -10.03\% | 9.04\% | -1.34\% | 8.37\% | 12.47\% | 24.13\% | 8.77\% | 12.70\% | 8.62\% | . $12.85 \%$ | N/A | N/A | N/A | N/A | N/A | N/A |



Adjustment of Mr. Gorman's Multi-Stage DCF Model
Add Fourth Stage to Reflect Blue Chip Forecast Period - Mr. Hevert's Long-Term Growth Rate

|  |  | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Annualized | First-Stage |  |  | -Stage |  |  | Third-Stage | Fourth-Stage | Multi-Stage |
| Company | Ticker | Stock Price | Dividend | Growth | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Growth | Growth | Growth DCF |
| ALLETE, Inc. | ALE | \$49.64 | \$1.90 | 6.00\% | 5.80\% | 5.60\% | 5.40\% | 5.20\% | 5,00\% | 4.80\% | 5.70\% | 9.73\% |
| Ameren Corporation | AEE | \$46.52 | \$2.00 | 4.30\% | 4.38\% | 4.47\% | 4.55\% | 4.63\% | 4.72\% | 4.80\% | 5.70\% | 9.77\% |
| American Electric Power Company, Inc. | AEP | \$36.01 | \$1.60 | 3.27\% | 3.53\% | 3.78\% | 4.04\% | 4.29\% | 4.55\% | 4.80\% | 5.70\% | 9.64\% |
| Black Hills Corporation | BKH | \$51.41 | \$1.52 | 4.00\% | 4.13\% | 4.27\% | 4.40\% | 4.53\% | 4.67\% | 4.80\% | 5.70\% | 8.42\% |
| Cleco Corporation | CNL | \$46.19 | \$1.45 | 5.36\% | 5.27\% | 5.17\% | 5.08\% | 4.99\% | 4.89\% | 4.80\% | 5.70\% | 8.87\% |
| CMS Energy Corporation | CMS | \$26.94 | \$1.02 | 6.09\% | 5.88\% | 5.66\% | 5.45\% | 5.23\% | 5.02\% | 4.80\% | 5.70\% | 9.71\% |
| Consolidated Edison, Inc. | ED | \$56.02 | \$2.46 | 1.93\% | 2.41\% | 2.89\% | 3.37\% | 3.84\% | 4.32\% | 4.80\% | 5.70\% | 9.27\% |
| DTE Energy Company | DTE | \$67.41 | \$2.62 | 5.41\% | 5.31\% | 5.21\% | 5.11\% | 5.00\% | 4.90\% | 4.80\% | 5.70\% | 9.65\% |
| Duke Energy Corporation | DUK | \$70.08 | \$3.12 | 3.56\% | 3.77\% | 3.97\% | 4.18\% | 4.39\% | 4.59\% | 4.80\% | 5.70\% | 9.73\% |
| Edison International | EIX | \$47.05 | \$1.35 | 1.45\% | 2.01\% | 2.57\% | 3.13\% | 3.68\% | 4.24\% | 4.80\% | 5.70\% | 7.89\% |
| E! Paso Electric Company | EE | \$34.95 | \$1.06 | 3.15\% | 3.43\% | 3.70\% | 3.98\% | 4.25\% | 4.53\% | 4.80\% | 5.70\% | 8.33\% |
| Empire District Electric Company | EDE | \$22.58 | \$1.02 | 3.00\% | 3.30\% | 3.60\% | 3.90\% | 4.20\% | 4.50\% | 4.80\% | 5.70\% | 9.64\% |
| Great Plains Energy Inc. | GXP | \$23.89 | \$0.92 | 6.90\% | 6.55\% | 6.20\% | 5.85\% | 5.50\% | 5.15\% | 4.80\% | 5.70\% | 9.99\% |
| IDACORP, Inc. | IDA | \$51.56 | \$1.72 | 4.00\% | 4.13\% | 4.27\% | 4.40\% | 4.53\% | 4.67\% | 4.80\% | 5.70\% | 8.78\% |
| Northeast Utiiities | NU | \$42.01 | \$1.47 | 7.45\% | 7.01\% | 6.57\% | 6.13\% | 5.68\% | 5.24\% | 4.80\% | 5.70\% | 9.74\% |
| PG\&E Corporation | PCG | \$40.89 | \$1.82 | 1.11\% | 1.73\% | 2.34\% | 2.96\% | 3.57\% | 4.19\% | 4.80\% | 5.70\% | 9.12\% |
| Pinnacle West Capital Corporation | PNW | \$54.37 | \$2.27 | 4.18\% | 4.28\% | 4.39\% | 4.49\% | 4.59\% | 4.70\% | 4.80\% | 5.70\% | 9.62\% |
| Portiand General Electric Company | POR | \$29.49 | \$1.10 | 6.17\% | 5.94\% | 5.71\% | 5.49\% | 5.26\% | 5.03\% | 4.80\% | 5.70\% | 9.67\% |
| Southern Company | So | \$41.23 | \$2.03 | 3.67\% | 3,86\% | 4.05\% | 4.24\% | 4.42\% | 4.61\% | 4.80\% | 5.70\% | 10.20\% |
| UIL Holdings Corporation | UIL | \$38.00 | \$1.73 | 7.32\% | 6.90\% | 6.48\% | 6.06\% | 5.64\% | 5.22\% | 4.80\% | 5.70\% | 10.90\% |
| Westar Energy, Inc. | WR | \$31.81 | \$1.36 | 3.40\% | 3.63\% | 3.87\% | 4.10\% | 4.33\% | 4.57\% | 4.80\% | 5.70\% | 9.52\% |
| Wisconsin Energy Corporation | WEC | \$41.54 | \$1.53 | 5.51\% | 5.39\% | 5.27\% | 5.16\% | 5.04\% | 4.92\% | 4.80\% | 5.70\% | 9.46\% |
| Xcel Energy Inc. | XEL | \$28.25 | \$1.12 | 4.92\% | 4.90\% | 4.88\% | 4.86\% | 4.84\% | 4.82\% | 4.80\% | 5.70\% | 9.60\% |
| Mean |  |  |  | 4.44\% | 4.50\% | 4.56\% | 4.62\% | 4.68\% | 4.74\% | 4.80\% | 5.70\% | 9.45\% |
| Median |  |  |  | 4.18\% | 4.28\% | 4.39\% | 4.49\% | 4.59\% | 4.70\% | 4.80\% | 5.70\% | 9.64\% |

Notes:
[1] 13-week average stock price; Source: Schedule MPG-8
[2] Source: Schedule MPG-8
[3] Source: Schedule MPG-8
[4] Equals [3] $+([9]-[3]) / 6$
[5] Equals [4] + ([9] - [3])/6
[6] Equals [5] + ([9]-[3])/6
[7] Equals [6] $+([9]-[3]) / 6$
[8] Equals [7] $+(99]-[3]) / 6$
[9] Source: Schedule MPG-8
10] Source: Schedule RBH-10
[11] 1RR based on stock price ([1]) and 200 years of projected dividends

Mr. Gorman's Multi-Stage DCF Growth Mode!
Implied Growth Rate to Produce Average Authorized ROE as DCF Result

| Company | Ticker | $\frac{[1]}{\text { Stock Price }}$ | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Annualized Dividend | First-Stage Growth | Second-Stage Growth |  |  |  |  | Third-Stage Growth | Multi-Stage Growth DCF |
|  |  |  |  |  | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 |  |  |
| Allete, Inc. | AlE | \$49.64 | \$1.90 | 6.00\% | 6.03\% | 6.06\% | 8.10\% | 6.13\% | 6.16\% | 6.19\% | 10.21\% |
| Ameren Corporation | AEE | \$46.52 | \$2.00 | 4,30\% | 4.62\% | 4.93\% | 5.25\% | 5.56\% | 5.88\% | 6.19\% | 10.25\% |
| American Electric Power Company, Inc. | AEP | \$36.01 | \$1.50 | 3.27\% | 3.76\% | 4.24\% | 4.73\% | 5.22\% | 5.71\% | 6.19\% | 10.12\% |
| Black Hills Corporation | BKH | \$51.41 | \$1.52 | 4.00\% | 4.37\% | 4.73\% | 5.10\% | 5.46\% | 5.83\% | 6.13\% | 8.90\% |
| Cleco Corporation | CNL | \$46.19 | \$1.45 | 5.36\% | 5.50\% | 5.64\% | 5.78\% | 5.92\% | 6.05\% | 6.19\% | 9.35\% |
| CMS Energy Corporation | CMS | \$26.94 | \$1.02 | 6.09\% | 6.11\% | 6.12\% | 6.14\% | 6.16\% | 6.18\% | 6.19\% | 10.19\% |
| Consolidated Edison, lnc. | ED | \$56.02 | \$2.46 | 1.93\% | 2.64\% | 3.35\% | 4.06\% | 4.77\% | 5,48\% | 6.19\% | 9.74\% |
| DTE Energy Company | DTE | \$67.41 | \$2.62 | 5.41\% | 5.54\% | 5.67\% | 5.80\% | 5.93\% | 6.06\% | 6.19\% | 10.12\% |
| Duke Energy Corporation | DUK | \$70.08 | \$3.12 | 3.56\% | 4.00\% | 4.44\% | 4.88\% | 5.32\% | 5.76\% | 6.19\% | 10.20\% |
| Edison International | EIX | \$47.05 | \$1.35 | 1.45\% | 2.24\% | 3.03\% | 3.82\% | 4.61\% | 5.40\% | 6.13\% | 8.38\% |
| El Paso Electric Company | EE | \$34.95 | \$1.06 | 3.15\% | 3.66\% | 4.16\% | 4.67\% | 5.18\% | 5.69\% | 6.19\% | 8.81\% |
| Empire District Electric Company | EDE | \$22.58 | \$1.02 | 3.00\% | 3.53\% | 4.06\% | 4.60\% | 5.13\% | 5.66\% | 6.19\% | 10.11\% |
| Great Plains Energy lnc. | GXP | \$23.89 | \$0.92 | 6.90\% | 6.78\% | 6.66\% | 6.55\% | 6.43\% | 6.31\% | 6.19\% | 10.47\% |
| 1DACORP, Inc. | IDA | \$51.56 | \$1.72 | 4.00\% | 4.37\% | 4.73\% | 5.10\% | 5.46\% | 5.83\% | 6.19\% | 9.26\% |
| Northeast Utilities | NU | \$42.01 | \$1.47 | 7.45\% | 7.24\% | 7.03\% | 6.82\% | 6.61\% | 6.40\% | 6.19\% | 10.21\% |
| PG\&E Corporation | PCG | \$40.89 | \$1.82 | 1.11\% | 1.96\% | 2.80\% | 3.55\% | 4.50\% | 5.35\% | 5.19\% | 9.60\% |
| Pinnacle West Capital Corporation | PNW | \$54.37 | \$2.27 | 4.18\% | 4.52\% | 4.85\% | 5.19\% | 5.52\% | 5.86\% | 6.19\% | 10.10\% |
| Portland General Electric Company | POR | \$29.49 | \$1.10 | 6.17\% | 6.17\% | 6.18\% | 6.18\% | 6.19\% | 6.19\% | 6.19\% | 10.15\% |
| Southern Company | SO | \$41.23 | \$2.03 | 3.67\% | 4.09\% | 4.51\% | 4.93\% | 5.35\% | 5.77\% | 6.19\% | 10.67\% |
| UIL Holdings Corporation | UIL | \$38.00 | \$1.73 | 7.32\% | 7.13\% | 6.94\% | 6.76\% | 6.57\% | 6.38\% | 6.19\% | 11.37\% |
| Westar Energy, Inc. | WR | \$31.81 | \$1.36 | 3.40\% | 3.87\% | 4.33\% | 4.80\% | 5.26\% | 5.73\% | 6.19\% | 10.00\% |
| Wisconsin Energy Corporation | WEC | \$41.54 | \$1.53 | 5.51\% | 5.62\% | 5.74\% | 5.85\% | 5.97\% | 6.08\% | 6.19\% | 9,94\% |
| Xcel Energy Inc. | XEL | \$28.25 | \$1.12 | 4.92\% | 5.13\% | 5.34\% | 5.56\% | 5.77\% | 5.98\% | 6.19\% | 10.08\% |
| MEAN |  |  |  | 4.44\% | 4.73\% | 5.03\% | 5.32\% | 5.61\% | 5.90\% | 6.19\% | 9.92\% |
| MEDIAN |  |  |  | 4.18\% | 4.52\% | 4.85\% | 5.19\% | 5.52\% | 5.86\% | 6.19\% | 10.11\% |

Notes:

1) 13-week average stock price; Source: Schedule MPG-8

2] Source: Schedule MPG-8
[3] Source: Schedule MPG-8
[4] Equals [3] $+([9]-[3]) / 5$
[5] Equals [4] $+([9]-[3]) / 6$
[6] Equals [5] $+([9]-[3]) / 6$
(7] Equals [6] + ( $[9]-[3]) / 6$
[8] Equals [7] $+([9]-[3]) / 6$
9] Implicit Growth Rate
[10] IRR based on stock price ([11) and 200 years of projected dividends

Step-By-Step Adjustment of Mr. Gorman's Multi-Stage DCF Mode
Re-Creation of Schedule MPG-8


Notes:
11 13-week average stock price; Source: Schedule MPG-8
[2] Source: Schedule MPG-8
[2] Source: Schedule MPG-8
[4] Equals [3] $+([9]-[31) / 6$
[5] Equals [4] $+([9]-[31) / 6$
[6] Equals [5] + ([9] - [3])/6
[7] Equals [6] + ([9] - [3])/6
[8] Equals [7] $+([9]-[3]) / 6$
[1. Source: Schedule MPG-8
10] IRR based on stock price ([1]) and 200 years of projected dividends

Step-By-Step Adjustment of Mr. Gorman's Multi-Stage DCF Model
Step 1: Adjust The IRR Calculation To Reflect The Mid-Year Convention

|  |  | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Annualized | First-Stage |  |  | -Stage |  |  | Third-Stage | Multi-Stage |
| Company | Ticker | Stock Price | Dividend | Growth | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Growth | Growth DCF |
| ALLETE, Inc. | ALE | \$49.64 | \$1.90 | 6.00\% | 5.80\% | 5.60\% | 5.40\% | 5.20\% | 5.00\% | 4.80\% | 9.31\% |
| Ameren Corporation | AEE | \$46.52 | \$200 | 4.30\% | 4.38\% | 4.47\% | 4.55\% | 4.63\% | 4.72\% | 4.80\% | 9.36\% |
| American Electric Power Company, Inc. | AEP | \$36.01 | \$1.60 | 3.27\% | 3.53\% | 3.78\% | 4.04\% | 4.29\% | 4.55\% | 4.80\% | 9.22\% |
| Black Hills Corporation | BKH | \$51.41 | \$1.52 | 4.00\% | 4.13\% | 4.27\% | 4.40\% | 4.53\% | 4.67\% | 4.80\% | 7.84\% |
| Cleco Corporation | CNL | \$46.19 | \$1.45 | 5.36\% | 5.27\% | 5.17\% | 5.08\% | 4.99\% | 4.89\% | 4.80\% | 8.34\% |
| CMS Energy Corporation | CMS | \$26.94 | \$1.02 | 6.09\% | 5.88\% | 5.66\% | 5.45\% | 5.23\% | 5.02\% | 4.80\% | 9.29\% |
| Consolidated Edison, Inc. | ED | \$56.02 | \$2.46 | 1.93\% | 2.41\% | 2.89\% | 3.37\% | 3.84\% | 4.32\% | 4.80\% | 8.79\% |
| DTE Energy Company | DTE | \$67.41 | \$2.62 | 5.41\% | 5.31\% | 5.21\% | 5.11\% | 5.00\% | 4.90\% | 4.80\% | 9.22\% |
| Duke Energy Corporation | DUK | \$70.08 | \$3.12 | 3.56\% | 3.77\% | 3.97\% | 4.18\% | 4.39\% | 4.59\% | 4.80\% | 9.31\% |
| Edison International | EIX | \$47.05 | \$1.35 | 1.45\% | 2.01\% | 2.57\% | 3.13\% | 3.68\% | 4.24\% | 4.80\% | 7.26\% |
| El Paso Electric Company | EE | \$34.95 | \$1.06 | 3.15\% | 3.43\% | 3.70\% | 3.98\% | 4.25\% | 4.53\% | 4.80\% | 7.75\% |
| Empire District Electric Company | EDE | \$22.58 | \$1.02 | 3.00\% | 3.30\% | 3.60\% | 3.90\% | 4.20\% | 4.50\% | 4.80\% | 9.21\% |
| Great Plains Energy Inc. | GXP | \$23.89 | \$0.92 | 6.90\% | 6.55\% | 6.20\% | 5.85\% | 5.50\% | 5.15\% | 4.80\% | 9.60\% |
| IDACORP, Inc. | IDA | \$51.56 | \$1.72 | 4.00\% | 4.13\% | 4.27\% | 4.40\% | 4.53\% | 4.67\% | 4.80\% | 8.25\% |
| Northeast Utilities | NU | \$42.01 | \$1.47 | 7.45\% | 7.01\% | 6.57\% | 6.13\% | 5.68\% | 5.24\% | 4.80\% | 9.31\% |
| PG\&E Corporation | PCG | \$40.89 | \$1.82 | 1.11\% | 1.73\% | 2,34\% | 2.96\% | 3.57\% | 4.19\% | 4.80\% | 8.63\% |
| Pinnacle West Capital Corporation | PNW | \$54.37 | \$2.27 | 4.18\% | 4.28\% | 4.39\% | 4.49\% | 4.59\% | 4.70\% | 4.80\% | 9.19\% |
| Portland General Electric Company | POR | \$29.49 | \$1.10 | 6.17\% | 5.94\% | 5.71\% | 5.49\% | 5.26\% | 5.03\% | 4.80\% | 9.24\% |
| Southern Company | SO | \$41.23 | \$2.03 | 3.67\% | 3.86\% | 4.05\% | 4.24\% | 4.42\% | 4.61\% | 4.80\% | 9,84\% |
| UIL Holdings Corporation | UIL | \$38.00 | \$1.73 | 7.32\% | 6.90\% | 6.48\% | 8.06\% | 5.64\% | 5.22\% | 4.80\% | 10.53\% |
| Westar Energy, Inc. | WR | \$31.81 | \$1.36 | 3.40\% | 3.63\% | 3.87\% | 4.10\% | 4.33\% | 4.57\% | 4.80\% | 9.08\% |
| Wisconsin Energy Corporation | WEC | \$41.54 | \$1.53 | 5.51\% | 5.39\% | 5.27\% | 5.16\% | 5.04\% | 4.92\% | 4.80\% | 9.01\% |
| Xcel Energy Inc. | XEL | \$28.25 | \$1.12 | 4.92\% | 4.90\% | 4.88\% | 4.86\% | 4.84\% | 4.82\% | 4.80\% | 9.17\% |
| Mean |  |  |  | 4.44\% | 4.50\% | 4.56\% | 4.82\% | 4.68\% | 4.74\% | 4.80\% | 8.99\% |
| Median |  |  |  | 4.18\% | 4.28\% | 4.39\% | 4.49\% | 4.59\% | 4.70\% | 4.80\% | 9.21\% |
| Notes: |  |  |  |  |  |  |  |  |  |  |  |
| [1] 13-week average stock price; Source: Schedule MPG-8 |  |  |  |  |  |  |  |  |  |  |  |
| [2] Source: Schedule MPG-8 |  |  |  |  |  |  |  |  |  |  |  |
| [3] Source: Schedule MPG-8 |  |  |  |  |  |  |  |  |  |  |  |
| [4] Equals [3] + ([9] - [3])/6 |  |  |  |  |  |  |  |  |  |  |  |
| [5] Equals [4] + ([9] - [3])/6 |  |  |  |  |  |  |  |  |  |  |  |
| [6] Equals [5] + ([9] - [3])/6 |  |  |  |  |  |  |  |  |  |  |  |
| [7] Equals [6] + ([9] - [3])/6 |  |  |  |  |  |  |  |  |  |  |  |
| [8] Equals [7] + ([9] - [3])/6 |  |  |  |  |  |  |  |  |  |  |  |
| [9] Source: Schedule MPG-8 |  |  |  |  |  |  |  |  |  |  |  |
| [10] IRR based on stock price ([1]) and 200 | years of | ected divide | ds using the | mid-year con | ntion |  |  |  |  |  |  |

Step-By-Step Adjustment of Mr. Gorman's Multi-Stage DCF Model
Step 2: Correct Long-Term Growth Estimate

| Company | Ticker | $\frac{[1]}{\text { Stock Price }}$ | $\frac{[2]}{\text { Annualized }} \begin{gathered} \text { Dividend } \end{gathered}$ | $\frac{[3]}{\substack{\text { First-Stage } \\ \text { Growth }}}$ | [4] | [5] | [6] | 171 | [8] | $\frac{[9]}{\substack{\text { Third-Stage } \\ \text { Growth }}}$ | [10] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Second-Stage Growth |  |  |  |  |  | Muiti-Stage |
|  |  |  |  |  | Year6 | Year 7 | Year 8 | Year 9 | Year 10 |  | Growth DCF |
| ALLETE, Inc. | ALE | \$49.64 | \$1.90 | 6.00\% | 5.95\% | 5.90\% | 5.85\% | 5.80\% | 5.75\% | 5.70\% | 10.02\% |
| Ameren Corporation | AEE | \$46.52 | \$2.00 | 4.30\% | 4.53\% | 4.77\% | 5.00\% | 5.24\% | 5.47\% | 5.70\% | 10.07\% |
| American Electric Power Company, Inc. | AEP | \$36.01 | \$1.60 | 3.27\% | 3.68\% | 4.08\% | 4.49\% | 4.89\% | 5.30\% | 5.70\% | 9.93\% |
| Black Hills Corporation | BKH | \$51.41 | \$1.52 | 4.00\% | 4.28\% | 4.57\% | 4.85\% | 5.14\% | 5.42\% | 5.70\% | B.60\% |
| Cleco Corporation | CNL | \$46.19 | \$1.45 | 5.35\% | 5.42\% | 5.47\% | 5.53\% | 5.59\% | 5.65\% | 5.70\% | 9.08\% |
| CMS Energy Corporation | CMS | \$26,94 | \$1.02 | 6.09\% | 6.03\% | 5.96\% | 5.90\% | 5.83\% | 5.77\% | 5.70\% | 10.00\% |
| Consolidated Edison, Inc. | ED | \$56.02 | \$2.46 | 1.93\% | 2.56\% | 3.19\% | 3.82\% | 4.45\% | 5.08\% | 5.70\% | 9.52\% |
| DTE Energy Company | DTE | \$67.41 | \$2.52 | 5.41\% | 5.46\% | 5.51\% | 5.56\% | 5.61\% | 5.66\% | 5.70\% | 9.93\% |
| Duke Energy Corporation | DUK | \$70.08 | \$3.12 | 3.56\% | 3.92\% | 4.27\% | 4.63\% | 4.99\% | 5.35\% | 5.70\% | 10.02\% |
| Edison International | EIX | \$47.05 | \$1.35 | 1.45\% | 2.16\% | 2.87\% | 3.58\% | 4.29\% | 5.00\% | 5.70\% | 8.05\% |
| El Paso Electric Company | EE | \$34.95 | \$1.05 | 3.15\% | 3.58\% | 4.00\% | 4.43\% | 4.85\% | 5.28\% | 5.70\% | 8.51\% |
| Empire District Electric Company | EDE | \$22.58 | \$1.02 | 3.00\% | 3.45\% | 3.90\% | 4.35\% | 4.80\% | 5.25\% | 5.70\% | 9.92\% |
| Great Plains Energy Inc. | GXP | \$23.89 | \$0.92 | 6.90\% | 6.70\% | 6.50\% | 6.30\% | 6.10\% | 5.90\% | 5.70\% | 10.30\% |
| IDACORP, Inc. | IDA | \$51.56 | \$1.72 | 4.00\% | 4.28\% | 4.57\% | 4.85\% | 5.14\% | 5.42\% | 5.70\% | 8.99\% |
| Northeast Utilities | NU | \$42.01 | \$1.47 | 7.45\% | 7.16\% | 6.87\% | 6.58\% | 6.29\% | 6.00\% | 5.70\% | 10.02\% |
| PG\&E Corporation | PCG | \$40.89 | \$1.82 | 1.11\% | 1.88\% | 2.64\% | 3.41\% | 4.17\% | 4.94\% | 5.70\% | 9.36\% |
| Pinnacle West Capital Corporation | PNW | \$54.37 | \$2.27 | 4.18\% | 4.43\% | 4.69\% | 4.94\% | 5.20\% | 5.45\% | 5.70\% | 9.90\% |
| Portland General Electric Company | POR | \$29.49 | \$1.10 | 6.17\% | 6.09\% | 6.01\% | 5.94\% | 5.86\% | 5.78\% | 5.70\% | 9.95\% |
| Southern Company | So | \$41.23 | \$2.03 | 3.67\% | 4.01\% | 4.35\% | 4.69\% | 5.03\% | 5.37\% | 5.70\% | 10.53\% |
| UIL Holdings Corporation | UIL | \$38.00 | \$1.73 | 7.32\% | 7.05\% | 6.78\% | 6.51\% | 6.24\% | 5.97\% | 5.70\% | 11.29\% |
| Westar Energy. Inc. | WR | \$31.81 | \$1.36 | 3.40\% | 3.78\% | 4.17\% | 4.55\% | 4.94\% | 5.32\% | 5.70\% | 9.79\% |
| Wisconsin Energy Corporation | WEC | \$41.54 | \$1.53 | 5.51\% | 5.54\% | 5.57\% | 5.61\% | 5.64\% | 5.67\% | 5.70\% | 9.73\% |
| Xcel Energy Inc. | XEL | \$28.25 | \$1.12 | 4.92\% | 5.05\% | 5.18\% | 5.31\% | 5.44\% | 5.57\% | 5.70\% | 9.88\% |
| Mean |  |  |  | 4.44\% | 4.65\% | 4.86\% | 5.07\% | 5.28\% | 5.49\% | 5.70\% | 9.71\% |
| Median |  |  |  | 4.18\% | 4.43\% | 4.69\% | 4.94\% | 5.20\% | 5.45\% | 5.70\% | 9.92\% |

Notes:
1] 13-week average stock price; Source: Schedule MPG-8
2] Source: Schedule MPG-8
[3] Source: Schedule MPG-8
4] Equals [3] $+([9]-[3]) / 6$
(5] Equals [4] $+([9]-[3]) / 6$
[6] Equals [5] $+([9]-[3]) / 6$
7] Equals $[6]+([9]-[3]) / 6$
8] Equals $[7]+(9]-[3]) / 6$
9] Source: Schedule RBH-10
[10] IRR based on stock price ([1]) and 200 years of projected dividends using the mid-year convention

Analysis Using R'G. Gorman's Equity Risk Premium Data

| Year | Authorized Electric Returns | 30-Year <br> Treasury Yield | Irroicated Risk Premim |
| :---: | :---: | :---: | :---: |
| 1983 | 13.93\% | 7.80\% | 6.13\% |
| 1987 | 12.99\% | 8.58\% | 4.41\% |
| 1988 | 12.79\% | 8.96\% | 3.83\% |
| 1989 | 12.97\% | 8.45\% | 4.52\% |
| 1990 | 12.70\% | 8.61\% | 4.09\% |
| 1991 | 12.55\% | 8.14\% | 4.41\% |
| 1992 | 12.09\% | 7.67\% | 4.42\% |
| 1993 | 11.41\% | 6.60\% | 4.81\% |
| 1994 | 11.34\% | 7.37\% | 3.97\% |
| 1995 | 11.55\% | 6.88\% | 4.67\% |
| 1996 | 11.39\% | 6.70\% | 4.69\% |
| 1997 | 11.40\% | 6.61\% | 4.79\% |
| 1998 | 11.66\% | 5.58\% | 6.08\% |
| 1999 | 10.77\% | 5.87\% | 4.90\% |
| 2000 | 11.43\% | 5.94\% | 5.49\% |
| 2001 | 11.09\% | 5.49\% | 5.60\% |
| 2002 | 11.16\% | 5.43\% | 5.73\% |
| 2003 | 10.97\% | 4.96\% | 6.01\% |
| 2004 | 10.75\% | 5.05\% | 5.70\% |
| 2005 | 10.54\% | 4.65\% | 5.89\% |
| 2006 | 10.36\% | 4.99\% | 5.37\% |
| 2007 | 10.35\% | 4.83\% | 5.53\% |
| 2008 | 10.46\% | 4.28\% | 6.18\% |
| 2009 | 10.48\% | 4.07\% | 6.41\% |
| 2010 | 10.34\% | 4.25\% | 6.09\% |
| 2011 | 10.22\% | 3.91\% | 6.31\% |
| 2012 | 10.01\% | 2.92\% | 7.09\% |
| 2013 | 9.80\% | 3.33\% | 6.47\% |
| Average | 11.34\% | 6.00\% | 5.34\% |

Source: Schedue PMPG-10

Correlation: -0.8767


SUMAMARY OUTPUT

| Regression Statistics |  |
| :--- | ---: |
| Rouliple R | 0.87672601 |
| R Square | 0.7686485 |
| Adjusted R Square | 0.75975036 |
| Standard Error | 0.00428427 |
| Observations | 28 |

ANOVA

|  | df | SS | MS | $F$ | Significance $F$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Regression | 1 | 0.00158556 | 0.00158555 | 86.38310319 | 9.51474E-10 |  |  |  |
| Residual | 26 | 0.00047723 | 1.83548E-05 |  |  |  |  |  |
| Total | 27 | 0.00206279 |  |  |  |  |  |  |
|  | Coefficients | lamdard Efror | $t$ Slat | P-value | Lower 95\% | Upper 95\% | Lower 95.0\% | Upper 95.0\%\% |
| Intercept | 0.08006446 | 0.00297777 | 26.88735365 | 1.67615E-20 | 0.07394356 | 0.0861854 | 0.07394356 | 0.08618536 |
| 30-Year Treasury Yiald | -0.4441474 | 0.04778732 | -9.294251083 | $9.51474 \mathrm{E}-10$ | -0.54237565 | -0.3459191 | -0.54237565 | -0.34591914 |

Analysis Using M. Gorman's Equity Risk Premim Data

| Year | Authorized Electric Returns | Average A Rated Ulity Bond Yieid | Indicated Risk Premium |
| :---: | :---: | :---: | :---: |
| 1986 | 13.93\% | 9.58\% | 4.35\% |
| 1987 | 12.99\% | 10.10\% | 2.89\% |
| 1988 | 12.79\% | 10.49\% | 2.30\% |
| 1989 | 12.97\% | 9.77\% | 3.20\% |
| 1990 | 12.70\% | 9.86\% | 2.84\% |
| 1991 | 12.55\% | 9.36\% | 3.19\% |
| 1992 | 12.09\% | 8.69\% | 3.40\% |
| 1993 | 11.41\% | 7.59\% | 3.82\% |
| 1994 | 11.34\% | 8.31\% | 3.03\% |
| 1995 | 11.55\% | 7.89\% | 3.66\% |
| 1996 | 11.39\% | 7.75\% | 3.64\% |
| 1997 | 11.40\% | 7.60\% | 3.80\% |
| 1998 | 11.66\% | 7.04\% | 4.62\% |
| 1999 | 10.77\% | 7.62\% | 3.15\% |
| 2000 | 11.43\% | 8.24\% | 3.19\% |
| 2001 | 11.09\% | 7.76\% | 3.33\% |
| 2002 | 11.16\% | 7.37\% | 3.79\% |
| 2003 | 10.97\% | 6.58\% | 4.39\% |
| 2004 | 10.75\% | 6.16\% | 4.59\% |
| 2005 | 10.54\% | 5.65\% | 4.89\% |
| 2006 | 10.35\% | 6.07\% | $4.29 \%$ |
| 2007 | 10.36\% | 6.07\% | 4.29\% |
| 2008 | 10.46\% | 6.53\% | 3.93\% |
| 2009 | 10.48\% | 6.04\% | 4.44\% |
| 2010 | 10.34\% | 5.46\% | 4.88\% |
| 2011 | 10.22\% | 5.04\% | 5.18\% |
| 2012 | 10.01\% | 4.13\% | 5.88\% |
| 2013 | 9.80\% | 4.38\% | 5.42\% |
| Average | 11.34\% | 7.40\% | 3.94\% |



## SURMARY OUTPUT

| Regression Statistics |  |
| :--- | ---: |
| Putiple R | 0.89065729 |
| R Square | 0.79327041 |
| Acjusted R Square | 0.78531927 |
| Standard Error | 0.00399289 |
| Observations | 28 |


| ANOVA | df |  | SS | MS | F | Significance $F$ |
| :--- | ---: | ---: | ---: | :---: | :---: | :---: |
|  | 1 | 0.00159062 | 0.001590625 | 99.76815764 | $2.17192 \mathrm{E}-10$ |  |
| Regression | 26 | 0.00041452 | $1.59432 \mathrm{E}-05$ |  |  |  |
| Residual | 27 | 0.00200515 |  |  |  |  |
| Total |  |  |  |  |  |  |


|  | Coefficients | tandard Error | $t$ Stat | $P$-value | Lower 95\% | Upper 95\% | Loner 95.0\% | Upper 95.0\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| intercept | 0.07207712 | 0.0033556 | 21.47962665 | 4.50559E-18 | 0.06517958 | 0.0789747 | 0.06517958 | 0.07897467 |
| A Rated UtB Bond Yie!d | -0.4414648 | 0.04419775 | -9.988401155 | 2.17192E-10 | -0.5323146 | -0.3506151 | -0.5323146 | -0.35061506 |



| SUPAMARY OUTPUT |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Regression Statistics |  |  |  |  |  |  |  |  |
| Prutiple R | 0.89761412 |  |  |  |  |  |  |  |
| R Square | 0.80571111 |  |  |  |  |  |  |  |
| Adjusted R Square | 0.790168 |  |  |  |  |  |  |  |
| Standard Error | 0.00400388 |  |  |  |  |  |  |  |
| Observations | 28 |  |  |  |  |  |  |  |
| ANOVA |  |  |  |  |  |  |  |  |
|  | df | SS | MS | $F$ | Significance $F$ |  |  |  |
| Regression | 2 | 0.00166201 | 0.000831005 | 51.83718471 | 1.27526E-09 |  |  |  |
| Resioual | 25 | 0.00040078 | 1.60311E-05 |  |  |  |  |  |
| Total | 27 | 0.00206279 |  |  |  |  |  |  |
|  | Coefficients 5 | tandard Errof | $t$ Stat | P-value | Lower 95\% | Upper 95\% | Lower 95.0\% | Upper $95.0 \%$ |
| Intercept | 0.07397465 | 0.00393966 | 18.77691919 | 2.97929E-16 | 0.065860769 | 0.0320885 | 0.06585077 | 0.08208853 |
| 30-Year Treasury Yield | -0.4350801 | 0.04485244 | -9.700254174 | $5.90466 \mathrm{E}-10$ | -0.5274554 | -0.3427047 | -0.5274554 | -0.34270474 |
| Credit Spread | 0.39579554 | 0.18124116 | 2.183806071 | 0.038570978 | 0.022522389 | 0.7690687 | 0.02252239 | 0.7690689 |

Mr. Gorman's Projected Treasury Yield: $4.40 \%$
䧄. Gorman's Cursent Ulßty Bord Yield: $5.21 \%$


Source: Schedues MPG-10, MPG-11 and MPG-13 Note: Differences due to rounding

## Autoregression

| Output Created |  | 03-JUN-2014 15:04:48 |
| :---: | :---: | :---: |
| Comments |  |  |
| fnput | Active Dataset | OataSet1 |
|  | FRter | <none> |
|  | Weight | <none> |
|  | Spst Fin | <none> |
|  | N of Rows in Working Data Fike | 28 |
| Missing Vabe Handing | Defintion of Aissing | User-defined missing values are treated as missing |
|  | Cases Used | Cases with missing values that successiveiy occur at the beginning or end of the series are skipped. Al other cases may not contan any missing va'ue. |
| Syntax |  | areg var0000 1 with var00002 Imethod=PW. |
| Resources | Processor Tirns | 00:00.00.00 |
|  | Elapsed Tata | 00.00 .00 .02 |
| Use | From | Fust observation |
|  | To | Last observation |
| Predat | From | First observaton follosing the use period |
|  | To | Lastobservaton |
| The Series Settings (TSET) | Amount of Output | PRINT = DEFAULT |
|  | Saving New Variables | MENNAR = CURRENT |
|  | Maximum Nurnber of Lags in |  |
|  | Autocorrelaton or Parbal Autocorrelation Prots | MAXAUTO $=16$ |
|  | Naximum Number of Lags in CrossCorrelation Prots | HXCROSS $=7$ |
|  | Maximum Number of New Variabjes | MAXREWVAR $=60$ |
|  | Generated Per Procedure |  |
|  | Procedure | HXPREDICT $=1000$ |
|  | Treatment of User-Missing Vakues | LUSSING = EXCLUDE |
|  | Confiderre interval Percentage Va'ue | $\mathrm{CH}=95$ |
|  | Tokerance for Enfering Variables in | TOLER $=.0001$ |
|  | Regression Equations | TOLER $=.0001$ |
|  | Waxmumlterative Parameter Change | CNVERGE $=.001$ |
|  | Method of Ca'cutation Sid. Errors for | ACFSE $=1 N D$ |
|  | Length of Seasonal Period | Unspecifed |
|  | Variate Whose Va'wes Label | Unspecifed |
|  | Observations in Piots | Unspecifed |
|  | Equations lncluds | CONSTAITT |
| Variables Created or Modried | FT\# ${ }^{1}$ | Fit for VAR00001 from AREG, MOD_5 |
|  | ERR\#1 | Error for VARO000 1 from AREG, MOD_5 |
|  | LCLU | $95 \%$ LCL for VAR00001 from AREG, MOD_5 |
|  | UCl\#1 | $95 \%$ UCL for VAR00001 from AREG, MOD_5 |
|  | SEP ${ }^{\text {P }} 1$ | SE of Fil for VAR00001 from AREG, MOD 5 |



| Baxinem Parameter Change | .001 |
| :--- | ---: |
| Number of Iteratons Equal to | 10 |


| Case Processing Summary |  |
| :---: | :---: |
| Series Lengh | 28 |
| Wifurber of Cases Skifped Due At the Begining of the Series to Missing Vawes <br> At the End of the Series | 0 |
| Number of Cases with Missing Vatues within the Series | 0 |
| Number of Forecasted Cases | 0 |
| Number of Now Cases Added to the Current Working Fie | 0 |


| Rho (AR1) |  | AUTO |
| :---: | :---: | :---: |
| Regression Coefficients | Treasury 30 Y | AUTO* |
| Constant |  | AUTO ${ }^{\text {a }}$ |

## Iteration 0

| Autocorrelation Coefficient |
| :--- |
| Rho (AR1) Sid. Etror |
| The Prais-Wasten estimation method is used. |


| R | R Square |  | Adyusted R Square | Estmate | Curbewhatson |
| :---: | :---: | :---: | :---: | :---: | :---: |
| . 877 |  | .769 | 760 | 004 | 1.241 |
| The Prais-Wrasten estimation method is used. |  |  |  |  |  |
| ANOVA |  |  |  |  |  |
|  | Sum of Squares |  | of | Mean Square |  |
| Regression |  | 002 | ${ }^{1}$ | .002 |  |
| Residual |  | 000 | 26. | 0001 |  |

Regression Coefficients

|  | Unstandardized Coefficients |  | Coefficients | $t$ | Sig |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | Std. Erior | Beta |  |  |
| $\begin{aligned} & \text { Treasurzoy } \\ & \text { (Constant) } \end{aligned}$ | .444 .090 | . 048 | -. 877 | -9.294 20.887 | .000 .000 |

The Prais-Wasten estimation metrod is used.
Iteration History

| Iteration History |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Rho (AR1) |  | Durbin-Watson. | htean Squared Errors |
|  | Value | Std. Estor |  |  |
| 0 | . 115 | . 189 | 9.470 | . 000 |
| 1 | . 118 | . 199 | 1.477 | . 000 |
| $2^{2}$ | . 118 | . 199 | 1.477 | .000 |

The Prais-Wnsten estrmation mathod is used.
a. The estimation teminated at this iteraton, because all the parameter estimates changed by less than .00 .

## Final Iteratīon 2

| Rho (AR1) | Sid. Error |
| :---: | :---: |
| 118 | 199 |


| R | R Square | Adjusled R Square | Estriate | Dutbs-Watson |
| :---: | :---: | :---: | :---: | :---: |
| . 856 | 734 | 712 | 004 | 1.477 |


| AnOVA |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Sum of Squares | df | Mean Square |
| Regression | 001 | 1 | 001 |
| Residual | 000 | 25 | 000 |


|  | Unstandardzed Cosfficients |  |  | Coefficients | t | Sig |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | B |  | Std. Error | Beta |  |  |  |
| Treasury 30 Y |  | . 447 | . 054 | -85 | -8.206 |  | . 000 |
| (Constant) |  | .080 | . 0.03 |  | 23.923 |  | . 000 |

The Prais-Wnsten estimation method is used.

## Autoregression

|  | Notes |  |
| :---: | :---: | :---: |
| Output Crealed Comments nnut |  | 03-JUN-2014 15:07:12 |
|  |  |  |
|  | Active Datasel | DataSeil |
|  | Fitter | cnones |
|  | Weight | snone> |
|  | Spit Fio | <none> |
|  | N of Rows in Working Data Fie | 28 |
| Wissing Vake Handing | Defrition of Missing | User-defined missing values are treated as missing. |
|  | Cases Used | Cases with missing valest that successively oceur at the beginning or end of the series are shopped. All other cases may not contain any missing value. |
| Symax |  | areg var00001 with var00002 imethod=PW. |
| Resources | Processor Time | 00.00.00.00 |
|  | Elapsed Time | 00:00.00.01 |
| Use | From | First observation |
|  | To | Lastobservation |
| Predict | From | Frst observation following the use periad |
|  | To | Lastobservation |
| Time Serias Selfings (TSET) | Amount of Output | PRINT = DEFAULT |
|  | Saving Iew Variables | REWVAR = CURRENT |
|  | Maximum Number of Lags in |  |
|  | Autocorretation or Partial Autocorrelation Prots | MXAUTO $=16$ |
|  | Waxinum Number of Lags in Cross- | MXCROSS $=7$ |
|  | Correlation Prots | Mxcross = 7 |
|  | haxamum Number of Nén Vanabies Generated Per Procedure | MXISEWVAR $=60$ |
|  | Haximum Number of New Cases Per | $1 \mathrm{XXPREDKCT}=1000$ |
|  | Pracedure |  |
|  | Treatmant of User-Missing Values | MISSING = EXCLUDE |
|  | Conndence interval Percentage Vatue | $\mathrm{C} 3 \mathrm{~N}=95$ |
|  | Tolerance for Entering Variables in | TOLER $=0001$ |
|  | Regression Equations | TOLER = 0001 |
|  | Maximum tierative Parameter Change | CIVVERGE $=.001$ |
|  | Method of Calculating Sto. Errors for | ACFSE $=$ PRD |
|  | Length of Seasonal Period | Unspecifed |
|  | Variable Wrose Va'ues Label |  |
|  | Observations in Piots | Unspecireo |
|  | Equations meiede | Constallt |
| Variables Created or hodtied | FITY | Fit for VAR00001 from AREG, MOD_6 |
|  | ERR* 1 | Error for VAR00001 from AREG، MOD_6 |
|  | LCL\# | $95 \%$ LCL for VAR00001 from AREG, MOD_6 |
|  | UCLI | $95 \%$ UCL for VAR00001 fromAREG, MOD_6 |
|  | SEP\#1 | SE of Fit for VAR0000) from AREG, MOD 6 |


| Model Description |  |  |
| :---: | :---: | :---: |
| Model Name |  | MOD_6 |
| Dependent Series |  | RiskPremam |
| Indepenjent Series | 1 | UistyABonoYie's |
| Constant |  | Included |
| AR |  | 1 |

Iteration Termination Criteria

| Iferation Termination Criteria |  |
| :--- | ---: |
| Waximum Paramefer Change |  |
| Number of Iferatons Equal to |  |


|  |  |
| :---: | :---: |
| Sefies Length | 28 |
| Number of Cases Skipped Due At the Beginning of the Series <br> to Missing Vatues At the End of the Series |  |
| Number of Cases with Missing Values within the Series | 0 |
| Wumber of Forecasted Cases | 0 |
| Wumber of New Cases Adsed to the Current Working Fie |  |


| Rho (ART) <br> Regression Coefficients Constant |  | AUTO |
| :---: | :---: | :---: |
|  | UtityABondrield | AUTO ${ }^{\text {a }}$ |
|  |  | AUTO ${ }^{\text {a }}$ |

a. The prior parameter value is invald and is reset to 0.1.

## Iteration 0

| Autocorrelation Coefficient |  |  |  |
| :---: | :---: | :---: | :---: |
| Rtho (AR1) | Sid. Error |  |  |
|  | 0 | 004 |  |


| R | R Square | Adjusted R Square | Estinale | Durbin-Watson |
| :---: | :---: | :---: | :---: | :---: |
| 891 | . 793 | 785 | 004 | 1.252 |


| ANOVA |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Sum of Squares | di | Rean Square |
| Regression | . 002 | 1 | . 002 |
| Residual | . 00 | 26 | . 000 |

The Prais-Wnsten estimation mathod is used.

Regression Coelficients

|  | Unstandardized Coefficients |  | Coefficients | $t$ | Sig |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | B | Sid. Error | Beta |  |  |
| Utizty AB endivield | -. 441 | 044 | -.891 | -9.988 | .000 |
| (Constant) | . 072 | 003 |  | 21.480 | . 000 |

The Prais-Wnsten estimation mathod is used

|  | Rto (AR1) |  | Durbin-Watson | Mean Squared Errors |
| :---: | :---: | :---: | :---: | :---: |
|  | Value | Sld. Eriol |  |  |
| 0 | . 144 | .198 | 1.521 | . 000 |
| 1 | . 149 | . 198 | 1.531 | . 000 |
| $2^{8}$ | . 150 | . 193 | 1.532 | . 000 |

a. The estanation teminated at this k̈eration, because all the parameter estimates changed try less than . 00 :

Final Iteration 2


| 8 | RSquare | Adyutedr Square | Estmate | Durbeh-Watson |
| :---: | :---: | :---: | :---: | :---: |
| . 868 | . 754 | . 734 | 004 | 1.532 |


| ASOVA |  |  |  |
| :---: | :---: | :---: | :---: |
|  | Sum of Squares | df | Mean Square |
| Regression Reskidual | .009 .000 | 1 25 | .001 .000 |

The Prais-Westen estimation method is used.

Regression Coefficients


Constant Growth Discounted Cash Flow Mode 30 Day Average Stock Price

|  |  | 111 | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | 111. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Annualized Dividend | Average Stock Price | Dividend Yield | Expected Dividend Yield | Zacks Earnings Growth | First Call Earnings Growth | Value Line Earnings Growth | Average Earnings Growth | $\begin{aligned} & \text { Low } \\ & \text { ROE } \\ & \hline \end{aligned}$ | Mean ROE | $\begin{aligned} & \text { High } \\ & \text { ROE } \end{aligned}$ |
| American Electric Power Company, Inc. | AEP | \$2.00 | \$50.06 | 3.99\% | 4.08\% | 4.30\% | 4.23\% | 4.50\% | 4.34\% | 8.31\% | 8.42\% | 8.58\% |
| Cleco Corporation | CNL | \$1.45 | \$49.74 | 2.92\% | 3.01\% | 8.00\% | 8.00\% | 4.50\% | 6.83\% | 7.48\% | 9.85\% | 11.03\% |
| Duke Energy Corporation | DUK | \$3.12 | \$70.52 | 4.42\% | 4.51\% | 3.90\% | 3.92\% | 4.00\% | 3.94\% | 8.41\% | 8.45\% | 8.51\% |
| Empire District Electric Company | EDE | \$1.02 | \$23.98 | 4.25\% | 4.32\% | 3.00\% | 3.00\% | 4.00\% | 3.33\% | 7.32\% | 7.66\% | 8.34\% |
| Great Plains Energy Inc. | GXP | \$0.92 | \$26.49 | 3.47\% | 3.57\% | 5.20\% | 5.17\% | 6.00\% | 5.46\% | 8.73\% | 9.02\% | 9.58\% |
| Hawaiian Electric Industries, Inc. | HE | \$1.24 | \$24.77 | 5.01\% | 5.12\% | 6.00\% | 4.20\% | 3.50\% | 4.57\% | 8.59\% | 9.69\% | 11.16\% |
| IDACORP, Inc. | IDA | \$1.72 | \$55.09 | 3.12\% | 3.17\% | 4.00\% | 4.00\% | 2.00\% | 3.33\% | 5.15\% | 6.51\% | 7.18\% |
| NextEra Energy, Inc. | NEE | \$2.90 | \$94.11 | 3.08\% | 3.17\% | 6.10\% | 6.48\% | 4.50\% | 5.59\% | 7.55\% | 8.86\% | 9.66\% |
| Northeast Utilities | NU | \$1.57 | \$44.77 | 3.51\% | 3.64\% | 7.80\% | 6.28\% | 8.00\% | 7.36\% | 9.90\% | 11.00\% | 11.65\% |
| Otter Tail Corporation | OTTR | \$1.21 | \$30.39 | 3.98\% | 4.19\% | NA | 6.00\% | 15.00\% | 10.50\% | 10.10\% | 14.69\% | 19.28\% |
| Pinnacle West Capital Corporation | PNW | \$2.27 | \$54.61 | 4.16\% | 4.24\% | 4.60\% | 4.13\% | 4.00\% | 4.24\% | 8.24\% | 8.49\% | 8.85\% |
| PNM Resources, Inc. | PNM | \$0.74 | \$26.78 | 2.76\% | 2.89\% | 7.60\% | 8.20\% | 12.00\% | 9.27\% | 10.47\% | 12.16\% | 14.93\% |
| Portland General Electric Company | POR | \$1.10 | \$32,09 | 3.43\% | 3.55\% | 6.60\% | 10.89\% | 3.50\% | 7.00\% | 6.99\% | 10.54\% | 14.50\% |
| Southern Company | SO | \$2.03 | \$43.39 | 4.68\% | 4.76\% | 3.70\% | 3.55\% | 3.50\% | 3.58\% | 8.26\% | 8.35\% | 8.47\% |
| Westar Energy, Inc. | WR | \$1.40 | \$34,64 | 4.04\% | 4.13\% | 4.30\% | 2.80\% | 6.00\% | 4.37\% | 6.90\% | 8.50\% | 10.16\% |
| PROXY GROUP MEAN |  |  |  | 3.79\% | 3.89\% | 5.36\% | 5.39\% | 5.67\% | 5.59\% | 8.17\% | 9.48\% | 10.79\% |
| PROXY GROUP MEDIAN |  |  |  | 3.98\% | 4.08\% | 4.90\% | 4.23\% | 4.50\% | 4.57\% | 8.26\% | 8.86\% | 9.66\% |

## Notes:

[1] Source: Bloomberg Professional Service
[2] Source: Bloomberg Professional Service, equals 30-trading day average as of April 15, 2014
[3] Equals [1]/[2]
[4] Equals [3] $\times(1+0.5 \times[8])$
[5] Source: Zacks
[6] Source: Yahool Finance
71 Source. Value Fin
[8] Equals Average([5], [6], [7])
[9] Equals [3] $\times(1+0.5 \times \operatorname{Minimum}([5],[6],[7]))+\operatorname{Minimum}([5],[6],[7])$
[10] Equals [4] $+[8$
[11] Equals [3] $\times(1+0.5 \times$ Maximum([5], [6], [7])) $+\operatorname{Maximum}([5],[6],[7]$

Constant Growth Discounted Cash Flow Model
30 Day Average Stock Price

|  |  | [1] | [2] | [3] | [4] | [5] | [6] | [7] | [8] | [9] | [10] | [11] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Annualized Dividend | Average Stock Price | Dividend Yield | Expected Dividend Yield | Zacks Earnings Growth | First Call Earnings Growh | Value Line Earnings Growh | Average Earnings Growth | $\begin{aligned} & \text { Low } \\ & \text { ROE } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { Mean } \\ & \text { ROE } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { High } \\ & \text { ROE } \\ & \hline \end{aligned}$ |
| American Electric Power Company, Inc. | AEP | \$2.00 | \$48.45 | 4.13\% | 4.22\% | 4.30\% | 4.23\% | 4.50\% | 4.34\% | 8.45\% | 8.56\% | 8.72\% |
| Cleco Corporation | CNL | \$1.45 | \$48.20 | 3.01\% | 3.11\% | 8.00\% | 8.00\% | 4.50\% | 6.83\% | 7.58\% | 9.94\% | 11.13\% |
| Duke Energy Corporation | DUK | \$3.12 | \$69.79 | 4.47\% | 4.56\% | 3.90\% | 3.92\% | 4.00\% | 3.94\% | 8.46\% | 8.50\% | 8.56\% |
| Empire District Electric Company | EDE | \$1.02 | \$23.23 | 4.39\% | 4.46\% | 3.00\% | 3.00\% | 4.00\% | 3.33\% | 7.46\% | 7.80\% | 8.48\% |
| Great Plains Energy Inc. | GXP | \$0.92 | \$25.25 | 3.64\% | 3.74\% | 5.20\% | 5.17\% | 6.00\% | 5.46\% | 8.91\% | 9.20\% | 9.75\% |
| Hawaiian Electric Industries, Inc. | HE | \$1.24 | \$25.45 | 4.87\% | 4.98\% | 6.00\% | 4.20\% | 3.50\% | 4.57\% | 8.46\% | 9.55\% | 11.02\% |
| IDACORP, Inc. | IDA | \$1.72 | \$53.48 | 3,22\% | 3.27\% | 4.00\% | 4.00\% | 2.00\% | 3.33\% | 5.25\% | 6.60\% | 7.28\% |
| NextEra Energy, Inc. | NEE | \$2.90 | \$89.87 | 3.23\% | 3.32\% | 6.10\% | 6.48\% | 4.50\% | 5.69\% | 7.80\% | 9.01\% | 9.81\% |
| Northeast Utilities | NU | \$1.57 | \$43.49 | 3.61\% | 3.74\% | 7.80\% | 6.28\% | 8.00\% | 7.36\% | 10.00\% | 11.10\% | 11.75\% |
| Otter Tail Corporation | OTTR | \$1.21 | \$29.45 | 4.11\% | 4.32\% | NA | 6.00\% | 15.00\% | 10.50\% | 10.23\% | 14.82\% | 19.42\% |
| Pinnacle West Capital Corporation | PNW | \$2.27 | \$53.65 | 4.23\% | 4.32\% | 4.60\% | 4.13\% | 4.00\% | 4.24\% | 8.32\% | 8.56\% | 8.93\% |
| PNM Resources, Inc. | PNM | \$0.74 | \$25.19 | 2.94\% | 3.07\% | 7.60\% | 8.20\% | 12.00\% | 9.27\% | 10.65\% | 12.34\% | 15.11\% |
| Portiand General Electric Company | POR | \$1.10 | \$30.80 | 3.57\% | 3.70\% | 6.60\% | 10.89\% | 3.50\% | 7.00\% | 7.13\% | 10.68\% | 14.66\% |
| Southern Company | SO | \$2.03 | \$41.96 | 4.84\% | 4.92\% | 3.70\% | 3.55\% | 3.50\% | 3.58\% | 8.42\% | 8.51\% | 8.63\% |
| Westar Energy, Inc. | WR | \$1.40 | \$33.44 | 4.19\% | 4.28\% | 4.30\% | 2.80\% | 6.00\% | 4.37\% | 7.05\% | 8.64\% | 10.31\% |
| PROXY GROUP MEAN |  |  |  | 3.90\% | 4.00\% | 5.36\% | 5.39\% | 5.67\% | 5.59\% | 8.28\% | 9.59\% | 10.90\% |
| PROXY GROUP MEDIAN |  |  |  | 4.11\% | 4.22\% | 4.90\% | 4.23\% | 4.50\% | 4.57\% | 8.42\% | 9.01\% | 9.81\% |

Notes:
1] Source: Bloomberg Professional Service
[2] Source: Bloomberg Professional Service, equals 90-trading day average as of April 15, 2014
[3] Equals [1] / [2]
[4] Equals [3] $\times(1+0.5 \times[8])$
[5] Source: Zacks
[6] Source: Yahool Finance
7] Source: Value Line
7] Source: Value Line
[8] Equals Average([5], [6]. [7])
[9] Equals [3] $\times(1+0.5 \times$ Minimum $([5],[6],[7]))+$ Minimum $([5],[6]$, [7] $)$
[10] Equals [4] $+[8]$
[11] Equals [3] $\times(1+0.5 \times$ Maximum $([5],[6],[7]))+\operatorname{Maximum}([5],[6],[7])$

Constant Growth Discounted Cash Flow Modei
180 Day Average Stock Price

|  |  | [1] | [2] | [3] | [4] | [5] | [6] | (7) | [8] | [9] | [10] | [11] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Annualized Dividend | Average Stock Price | $\begin{gathered} \text { Dividend } \\ \text { Yield } \\ \hline \end{gathered}$ | Expected Dividend Yield | Zacks Earnings Growth | First Call Earnings Growth | Value Line Earnings Growth | Average Earnings Growth | $\begin{aligned} & \text { LOW } \\ & \text { ROE } \end{aligned}$ | $\begin{aligned} & \text { Mean } \\ & \text { ROE } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { High } \\ & \text { ROE } \end{aligned}$ |
| American Electric Power Company, Inc. | AEP | \$2.00 | \$46.69 | 4.28\% | 4.38\% | 4.30\% | 4.23\% | 4.50\% | 4.34\% | 8.60\% | 8.72\% | 8.88\% |
| Cleco Corporation | CNL | \$1.45 | \$47.08 | 3.08\% | 3.19\% | 8.00\% | 8.00\% | 4.50\% | 6.83\% | 7.65\% | 10.02\% | 11.20\% |
| Duke Energy Corporation | DUK | \$3.12 | \$69.39 | 4.50\% | 4.58\% | 3.90\% | 3.92\% | 4.00\% | 3.94\% | 8.48\% | 8.52\% | 8.59\% |
| Empire District Electric Company | EDE | \$1.02 | \$22.71 | 4.48\% | 4.57\% | 3.00\% | 3.00\% | 4.00\% | 3.33\% | 7.56\% | 7.90\% | 8.58\% |
| Great Plains Energy Inc. | GXP | \$0.92 | \$24.16 | 3.81\% | 3.91\% | 5.20\% | 5.17\% | 6.00\% | 5.46\% | 9.08\% | 9.37\% | 9,92\% |
| Hawailan Electric Industries, Inc. | HE | \$1.24 | \$25.58 | 4.85\% | 4.96\% | 6.00\% | 4.20\% | 3.50\% | 4.57\% | 8.43\% | 9.52\% | 10.99\% |
| IDACORP, Inc. | IDA | \$1.72 | \$51.73 | 3.32\% | 3.38\% | 4.00\% | 4.00\% | 2.00\% | 3.33\% | 5.36\% | 6.71\% | 7.39\% |
| NextEra Energy, Inc. | NEE | \$2.90 | \$86.64 | 3.35\% | 3.44\% | 6.10\% | 6.48\% | 4.50\% | 5.69\% | 7.92\% | 9.14\% | 9.94\% |
| Northeast Utilities | NU | \$1.57 | \$42.73 | 3.67\% | 3.81\% | 7.80\% | 6.28\% | 8.00\% | 7.36\% | 10.07\% | 11.17\% | 11.82\% |
| Otter Tail Corporation | OTTR | \$1.21 | \$29.04 | 4.17\% | 4.39\% | NA | 6.00\% | 15.00\% | 10.50\% | 10.29\% | 14.83\% | 19.48\% |
| Pinnacle West Capital Corporation | PNW | \$2.27 | \$54.52 | 4.16\% | 4.25\% | 4.60\% | 4.13\% | 4.00\% | 4.24\% | 8.25\% | 8.50\% | 8.86\% |
| PNM Resources, Inc. | PNM | \$0.74 | \$24.08 | 3.07\% | 3.22\% | 7.60\% | 8.20\% | 12,00\% | 9.27\% | 10.79\% | 12.48\% | 15.26\% |
| Portiand General Electric Company | POR | \$1.10 | \$29.98 | 3.67\% | 3.80\% | 6.60\% | 10.89\% | 3.50\% | 7.00\% | 7.23\% | 10.79\% | 14.76\% |
| Southern Company | SO | \$2.03 | \$41.92 | 4.84\% | 4.93\% | 3.70\% | 3.55\% | 3.50\% | 3.58\% | 8.43\% | 8.51\% | 8.63\% |
| Westar Energy, Inc. | WR | \$1.40 | \$32.49 | 4.31\% | 4.40\% | 4.30\% | 2.80\% | 6.00\% | 4.37\% | 7.17\% | 8.77\% | 10.44\% |
| PROXY GROUP MEAN |  |  |  | 3.97\% | 4.08\% | 5.36\% | 5.39\% | 5.67\% | 5.59\% | 8.35\% | 9.67\% | 10.38\% |
| PROXY GROUP MEDIAN |  |  |  | 4.16\% | 4.25\% | 4.90\% | 4.23\% | 4.50\% | 4.57\% | 8.43\% | 9.14\% | 9.94\% |

Notes
11 Source: Bloomberg Professional Service
[2] Source: Bloomberg Professional Service, equals 180-trading day average as of April 15, 2014
[3] Equals [1]/ [2]
[4] Equals [3] $\times(1+0.5 \times[8])$
[5] Source: Zacks
[6] Source: Yahool Finance
(7] Source: Value Line
[8] Equals Average([5], [6], [7])
[9] Equals [3] $\times(1+0.5 \times$ Minimum([5], [6], [7])) + Minimum([5], [6], [7])
$[10]$ Equals $[4]+[8]$
$[11]$ Equals $[3] \times(1+0.5 \times$ Maximum $([5],[6],[7]))+\operatorname{Maximum}([5],[6],[7])$

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| tiles | ¢ 5 ts | 2tts | cols | ๕\％を\＄ | ¢9\％s | ¢¢ร | L＇ES | Ests | 2925 | 2975 | ters | でで | 63＇zs | L6＇LS | 9L3S | LS＇1s | $\forall 01$ | 이＇dұож\％ |
| 60＇iss | Os Cs | \％̌ZS | とZZS | いで | cots | 26.5 | 58 IS | 81．15 | H＇LS | 99\％15 | cris | cs＇1s | Is Is | gtis | げき | Leis | 3 H |  |
| $2515 \$$ | 912S | tozs | ¢615 | 2815 | Et＇Ls | ¢9＇15 | H＇1s | St＇is | LEIS | OEIS | $\varepsilon \mathrm{L}$ LS | 91．15 | 5015 | 5505 | 2805 | 8205 | dxe |  |
| 68゙15\＄ | 21.15 | 8915 | 6s＇15 | Osis | 2tis | te＇ts | 9215 | 61．15 | \＆15 | Quls | tols | 0015 | 8505 | 9605 | t60s | 8605 | F0］ | Suedion Stwra mapso zedura |
| 821555 | tess | Stis | 69\％ | をがった | Ozts | EGEs | OLES | 6ress | cics | E1－を | L62s | v22s | 2825 | 00 zs | 2625 | ¢625 | y\％ | unendioj 16 mug axa |
| L9265s | 18 ts | ssits | 18.5 | cots | ¢8¢ | 29Es | 0 O¢S | 50es | 6125 | ¢925 | Sczs | ¢128 | 8515 | 8815 | 6915 | $99^{\prime} 15$ | 20 | wozexdion 0395 |
| Ltyots | cets | H1\％s | CSCS | 89¢5 | 8785 | LZ¢ | L0\％s | 632 s | \＆Lzs | 8 ss 2s | St2s | ceで | ¢ 2 CS | St2s | LOZS | 6615 | $\mathrm{CHJ}^{2}$ |  |
| $\begin{aligned} & \text { men } \\ & \text { maxum } \end{aligned}$ | 2208 | L282 | 9208 | çz | p202 | EZOZ | 2202 | 1202 | OZOZ | 610 | 8102 | 408 | 9102 | Sioz | toz | ع10z |  | hrediw |
| ह9\％ | ［29］ | T9］ | 6F1 | （69］ | 1691 | ［LS］ | ｜F宀⿱二⿺卜丿 | （5） | ｜t＋G］ | Es！ | 129 | ｜scs | fosi | ［61］ | ［8］ | ［（1）］ |  |  |


| \％5929 | \％50＜9 | 8／50 49 | \％0929 | 4200 19 | \％ 50.69 | \％\％ 59 | \％ 6017 | 82089 | \％／1029 | \％10＇19 | 9.0009 | \％SL＇EG | 90929 | Fras | 500＇59 | 85 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \％99019 | \％90＇29 | \％9024 | \％ $90<19$ | \％5929 | \％92：49 | \％97＇89 | \％ 2169 | 499＇69 | \％ssiot | \＄ $5 \times 1 / 2$ | 9，00 2 | \％sizl | \％osel | sise 12 | \％00＇st | Os | fueduro urumos |
| \％ 5022 | \％ $90 \% 19$ | \％900 19 | \％99129 | \％90＇29 | \％ 275 | Y88 ¢9 | \％1Ez9 | cielec | spals | \％ss＇Ls | 500993 | \％0885 | $\%$ \％0］ 5 | \％08を9 | \％ 20099 | yod |  |
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| \％／50＇ 29 | \％9019 | \％93） 29 | \％csil9 | \％$\% 508$ | \％：0599 | \％scto | $459 ¢$ | \％Sざて9 | Yocts | \％S109 | $\%$ \％005 | \％0099 | \％008L | \％0008 | 45018 | บШо |  |
| \％so 29 | \％ $50<9$ | \％，9049 | \％cils | \％ 5019 | \％SL＇c9 | \％stry | \％ | ¢58319 | \％ 5909 | ¢8EZ65 | \％0089 | \％ct8s | \％058 | \％SL＇ss | \％006s | ON | ¢7\％ |
| 45019 | \％s0t29 | \％50249 | \％ 29029 | 9350\％ 29 | \％0659 | \％sit ${ }^{\text {c }}$ | \％09＇¢9 | \％ 5 ¢ 279 | \％9¢19 | \％S109 | \＄10069 | \％，cils | \％oss | \％şss | 400 ＋5 | 3 N | cul \％rave ergen |
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| Y¢0゙29 | \％ 5029 | \％95＇s | \％ 5012 | \％5019 | \％$/ 6089$ | \％ 20.69 | \％ 5002 | 5201L | \％ 30 ZL | \％10¢ | 4 00072 | \％00＇st | \＄ 50092 | \％002L | \％ 50081 | 34 |  |
| $5 \mathrm{sc02} 9$ | \％ 9029 | ¢5024 | \％$/ 80812$ | \％99029 | \％0659 | \％SL＇99 | \％6099 | \％S7＇99 | \％0899 | \％S199 | $\%$ coss | \％sZを9 | yosios | \％SL2 | \％005s | $0 \times 0$ |  |
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| \％50 29 | \％ 5029 | \％c0 19 | 48919 | \％ 5024 | 1／21959 | \％8179 | \％tL29 | \％1E＇59 | \％1869 | \％triss | \％ 00419 | \％くてらs | socss | \％SL＇ts | \％00） 5 | 7\％ | 10yendion cos |
| \％9024 | \％5049 | \％90529 | \％99029 | 4290 29 | \％ 210 | 42939 | \％1859 | \％\％¢ ${ }^{\text {co }}$ | ¢91＇t9 | \％S5c9 | \％60\％ | \％sて ¢¢ | \％osics | \％sLe9 | $\%$ \％${ }^{(1)}$ | dEY |  |
| 8202 | LZOZ | 9202 | groz | －202 | 8202 | 2202 | 1208 | 0202 | 6102 | 8102 | L102 | 9102 | Gioz | toz | ع10z | 5）811 | गLedim |



| $69+5$ | Etrs | OZts | $\stackrel{1685}{ }$ | SLEs | Cses | Lets | ozes | coss | ¢6てs | 82 Cs | 9925 | Csiss | 6tzs | ¢22s | 5Z28 | Stizs | 4\％ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 975 | 2195 | 63 ts | 295 | Lets | tits | ¢6＇¢S | － | LSES | Et¢ | $08 ¢$ | 81 ＇s\＄ | 20\％s | 1525 | 9325 | L17S | 1925 | OS | Kuedwap Unitncs |
| tos\％ | LLtS | csts | $L Z$ ts | tots | 28＇s | 09 ¢5 | $0 \mathrm{OFS}^{\text {c }}$ | $61 \% 5$ | coss | 1825 | 2925 | cyes | EZZS | 낭 | cozs | 2815 | yod |  |
| 20ts | 6fis | 8Lを | Cs¢s | どを | acss | 10¢5 | 1925 | 29\％s | てが「 | とでS | tozs | 28＇15 | H215 | 98.15 | ¢tis | 181s | find | wis soormiay wid |
| scls | 5125 | 9L＇Ss |  | ¢0．95 | 20ss | ¢tiss | 91＇5s | 1655 | 69 ps | 6tos | 1どヶ | Es ${ }^{\text {\％}}$ | 96 ¢S | 08 cs | çes | dest | Pird |  |
| CLES | zsis | ¢¢¢S | Sles | sas 2 | 2925 | c97s | くけてs | どでs | O1＇zs | 16.15 | cits | ＜915 | でじら | 82 IS | 9315 | cois | 8110 |  |
| tzss | 9f＇ts | 69 \％ | が巾 | $02+5$ | 16¢5 | SLES | ¢c¢ | 18 ES | OLEs | 6325 | 0LZS | 1s zs | ¢2\％ | \＆LZ\＄ | cozs | $65^{\prime} 18$ | nN | Sthan |
| 10315 | 17015 | 1665 | LE6 | 1885 | 6888 | E6LS | lsils | 0125 | 2ぐs | 989 | 10 Ss | 695 | ¢85s | $605 \$$ | c8\％ | 9sis | 콘 |  |
| 9LSS | 6895 | toss | zLS\＄ | 1ヶ¢5 | 25＇ss | 93 7\％ | ¢9ts | ¢がす | 92 ts | 0sts | L6¢S | tass | てぐES | 09 cs | 85 ¢ | LEES | $\forall{ }^{1}$ |  |
| てL¢S | て¢を§ | ¢ $¢$ を | SIEs | ¢\％ CS | 282\＄ | L9ZS | tsis | ちゃで | Oとてs | OZZs | 0175 | 102s | 2615 | talis | $92 / 5$ | 8915 | З ${ }^{\text {¢ }}$ |  |
| 12 ¢S | tots | 83 ZS | zLZS | 8s zs | がて | 18て\＄ | 812S | L02s | 9515 | 9915 | 9 Cl 5 | 29.15 | gs＇15 | 0 Cl 15 | では | seis | dxs |  |
| c92s | Gizs | LEZ ${ }^{\text {S }}$ | tezs | 212s | 002\＄ | $00^{\prime} 15$ | 18.5 | ti＇ls | 2915 | 1915 | gis | osis | 97 ＇15 | 1tis | $9{ }^{\text {chis }}$ | て¢＇1§ | 701 |  |
| 18.25 | 68.15 | 6695 | 1955 | OCS | 2655 | 2958 | 20゙S | OS＇s | c3ts | ¢9ts | 0 O\％ | ¢ど紟 | 2F\％ | 10 ts | 93 ¢S | Hes | ym |  |
| 85.25 | $625 \$$ | ¢\％ 95 | E）S | ciss | bris | 11．58 | －3＇ts | Sits | 2 Cts | 10 ts | 9185 | て¢¢5 | 6とを\％ | 80¢ 5 | 8935 | 0L2s | 30 | aryendios 030 |
| $6{ }^{6} 95$ | ＋1．95 | csss | 65iss | 61.58 | 1655 | 99.5 | ¢t＇ts | 12 ts | 20 ＇ts | S8es | 69 ct | Es¢ | $68 \Sigma \$$ | 七2¢ | HEs |  | dsy |  |
| 8202 | 1202 | 9202 | SZOZ | 5208 | عzoz | 2202 | 12 z | 02\％ | 6102 | 8102 | 4102 | 9102 | Stoz | \＄102 | \＆10z | 2108 | Bx－1 |  |
| Ю¢ | （82） | 127 | ［2］ | ［9］ | Tsic | $1+21$ | ｜ह2］ | ［27］ | IIV］ | 1021 | 1611 | ［8ิ1］ | LH | ［s］ | ［ss］ | 1711 |  | 2 x <br>  |
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|  |  |  |  | けと | Et＇61 | $\% 1801$ | x ${ }^{3}$ |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | \＆5て | 1021 | $\% 256$ | บeati |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  | 98 | LZSI | \％901 | 6（3） | \％5949 | 9.0009 | \％ 00 ç | \％019 | \％LE＇${ }^{\text {c }}$ | \％009 |  | 90\％ | 590゙S | 8\％ | 万4 \％ |
|  |  |  |  | 05 C | 2S91 | \％es6 | 60 （4） | 4350 49 | \％ovzl | $\% \times 0094$ | \％0Ls | 9\％sic | \％ose | \％css | \％OLC | 6どts | OS | Hagduss uatros |
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|  |  |  |  | 6¢ $\varepsilon$ | 9861 | \％986 | cocs | \％ $590 \%$ | $\% 00 \% 9$ | \％0092 | \％ols | $\% 16 \varepsilon$ | \％ 200 | \％26\％ | \％06\％ | zsols | \％ |  |
|  |  |  |  |  | 6953 | $4: z C O 1$ | coics | \％ $50 \% 19$ | \％ 0024 | \＄100ts | \％0Ls | \％¢89 | \％ost | $\% 008$ | 5，008 | －16ts | 7以 | unyendro 0．30 |
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|  |  |  |  | $\frac{\text { Frumbl merump }}{\text {［E］}}$ |  | Logres | 2xgasy | cseymoded |  |  |  |  |  |  |  | Hows |  |  |
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|  |  |  |  |  |  |  |  | zext fitid <br>  <br>  |  |  |  |  |  |  |  |  |  |  |



|  | 81815 | 292s | くもてら | だzs | しててS | sozs | \＆6＇ts | 28.15 | 1215 | ¢9／s | Ssis | 87 is | 1t15 | tris | 830 0 | coos | （tst | 841 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | §8 ¢5\＄ | がを\％ | ¢ว¢ร | を0¢§ | 1625 | 8L2S | 29ZS | 1925 | 87 ¢ | 1ヶ2\＄ | だで | ez ${ }^{\text {cs }}$ | \＆zzs | －125 | Csis | cosos | （6を施） | os | RuEduzo utarras |
|  | cs zLs | いってき | 8でS | gizs | 5025 | 6915 | ctis | 29 is | Is＇s | Lis | 2eis | tcis | 9 cis | 9 g is | ¢605 | coos | （60＜を\＄） | yod |  |
|  | $2 \mathrm{St9s}$ | sezs | とて5 | 0125 | Gsis | zais | 5915 | 0 O is | ceis | に15 | cols | 9505 | 6805 | esos | 2 cos | 0005 | （91923） | 1 l d |  |
|  | ELZ2IS | 0 Ofs | Hits | $02+5$ | ¢o＇es | t－Es | zses | ¢ ¢ ¢ | S1¢ | cors | 5328 | \＆LzS | 0925 | crizs | 4915 | coos | （ 19058 ） | A4td |  |
|  | 22¢3s | 9915 | 2515 | 8） 15 | Ofis | oriss | 1215 | $81 / 15$ | to＇1s | 1605 | $00^{\circ} \mathrm{O}$ | caios | 2805 | 1605 | Le＇0s | cosis | （ $680 \sim$ cis $)$ | ㅂ10 |  |
|  | 91＇E015 | sots | 692s | ELZS | ¢5 己S | $00^{\text {ciss }}$ | \％てS | cozs | usis | SLIS | 1915 | 6がしs | ofis | ¢¢15 | 2805 | 0005 | （ 12 好 ${ }^{\text {c }}$ | ก： | coxinnkeagio |
|  | cetizs | 18 ss | coss | H2S\＄ | 0\％゙らs | 20 ¢s | $29+5$ | cets | L0 35 | 18 ES | Less | çes | pies | 战でs | 28.15 | colos | （15：05） | 33：1 |  |
|  | Estzis | t8¢5 | ¢9\％S | ¢ $\dagger$ ¢S | ç§S | ¢0¢s | sszs | c9 ${ }^{\text {cs }}$ | gszs | －${ }^{\text {chs }}$ | 5cis | LZZS | E02s | $00^{15}$ | い＇15 | 0005 | （60 5s ${ }^{\text {c }}$ ） | $\forall{ }^{\text {B }}$ |  |
|  | coess | 9125 | 502s | 5615 | ¢8＇5s | 9L＇5 | 63 is | t921s | Esis | ts＇ss | 1515 | ¢tis | Stis | で15 | csios | 0005 | （ぐもで） | 캐 |  |
|  | 16655 | 6515 | 63 ＇5s | 82.15 | 6915 | Esis | Giss | 2tis | 58.15 | 12 IS | 1215 | sils | to is | csos | 2905 | 0003 | （6† $9 \%$ ） | $0 \times 0$ | H4／5pus ruckleas |
|  | zoscs | ¢9 is | tsis | stis | 8cits | ceis | čis | 93＇ss | 31／5 | gots | 2015 | 8505 | 1605 | ssos | L90s | 000 S | （हб́¢Z5） | 309 |  |
|  | 2tosts | tots | 29ts | 2゙ずら | 81.15 | 2fts | 69 ¢ 5 | ¢tes | 6 6 ¢ | 21¢5 | 2625 | ¢8てs | S925 | 69 2\＄ | ¢＇zs | 0005 | （2S0＜3） | $\mathrm{y}_{1}$ |  |
|  | 950115 | LE＇S | L9\％s | 82¢5 | oz¢5 | Stis | \＄27s | csis | Lezs | 02 zs | sozs | 2515 | 1815 | 1215 | 11＇s | 0005 |  | －${ }^{\text {a }}$ | uoperdios con |
|  | 69Zus | 80ts | cies | spes | ¢が¢ | tzes | to 5 S | Lazs | 1225 | gizs | をヶてら | 1285 | でこう | H2． | 57is | 000 O | （900 Cs $)^{\text {）}}$ | dyy |  |
|  | 82006／9 | LZOU9 | 920039 | 52\％ícs | \＄20609 | EZAUEM | 22009 | 12009 | 02069 | 65029 | 8100\％ | 10689 | s100\％ |  | मแहス | 71／\％ | $\begin{gathered} 10510 \\ \text { Hext } \end{gathered}$ | －${ }^{\text {a }}$ 1 | रणЕすいす |
|  | Cos］ | 164 | ［82） | L2］ | 19］ | TGI | （t） | ［1］ | ［2i］ | T12 | 101 | （69） | Eg | ［29］ | F9］ | 199 | 1 |  |  |
| SLS | 9275 | 2925 | Ltis | EEてS | 128 | 9025 | 86．15 | 2815 | 1215 | cals | 5975 | $8{ }^{\circ} 15$ | 1 155 | fris | 8715 | C215 |  | ¢ |  |
| 66s | 19\％s | ガと今 | czes | ¢¢¢ | 1625 | 8Lで | 192s | 252s | 8 ¢ 2 S | 1＊25 | がで | 8てZ\＄ | ezzs | 8375 | でてら | 202s |  | 0 S | Anedung ungros |
| 025 | cszs | strs | 9てZ今 | 9125 | 502s | 8915 | 9L1＇S | 2915 | 1sis | $1+15$ | 2es5 | 5215 | 9 ccs | 9 cts | LELS | ezis |  | 4 HO | RuEd |
| 298 | ¢ヵてら | sezs | ž2s | 0125 | Efis | zis | 5915 | 0sics | Scis | cris | Evis | csios | c30s | 2805 | 9205 | 0Les |  | sidd |  |
| cils | 265 | 0 －${ }^{\text {¢ }}$ | tr＇ts | 02 ts | ¢riss | tLes | 29Es | cees | siss | 00¢5 | 5325 | ELZS | 0925 | ¢がてs | LEZS | 9225 |  | mbd | usprodmo mde |
| 90s | cits | gris | Lsis | 8 t ＇15 | $0{ }^{\text {ofis }}$ | ceils | 1215 | Elis | 50 IS | 2605 | 0505 | cyos | 2805 | 16.05 | t60s | 2605 |  | บцо |  |
| Est | zess | goes | 6325 | \＆して | 8¢25 | O\％で | zzzs | 9325 | 00＇ss | SLIS | 1915 | 6515 | がい | ¢¢15 | scis | 6155 |  | ON | sepan Fiempand |
| 80zs | tiss | LE＇ss | 0095 | 12SS |  | zoss | 29\％s | 965 | 10 ＇s | $18 \% 5$ | Ls＇\＆s | Sces | Hes | tozs | Stzs | 4925 |  | 33N |  |
| OZIS | $90 \pm 5$ | vacs | ¢9¢\％ | ¢¢¢S | ¢EES | ¢0¢S | S925 | 6925 | 9sts | Dis | Sczs | LCZS | cozs | Csis | zeis | ss＇ss |  | $\forall \square$ | \％4＇dצOJYO |
| OSS | EZZS | 912s | cozs | tols | E8， 15 | 91.15 | 6915 | t3＇15 | $65^{\prime} 1 \$$ | tris | 1515 | 8515 | 5\％15 | でしく | 6 F 18 | geis |  | 3 H |  |
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| 158 | ELIS | cols | H91s | 5tis | 88.55 | 0 c is | ¢ 15 | 9115 | 115 | 9015 | 20＇15 | \％ 50 | 260 S | S50s | ＋60s | 2005 |  | 76 | Areduos |
| 1515 | zess | tots | L9ts | でずす | 81.55 | 2S¢§ | 69 ¢s | 87 ¢\％ | ¢ZEs | でEs | 2625 | ¢8て5 | ¢325 | 6325 | 16 2\＄ | ¢625 |  | y |  |
| 013 | 65 Es | 12 ss | LS¢ 5 | \％¢¢ | 0zes | 932s | \＄22s | Sizs | LEてS | cozs | cuzs | 26.15 | 1815 | 1215 | 1918 | cs＇ts |  | $7 \%$ | waymiojosan |
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| $\lambda_{1}$ | 8202 | 1202 | 908 | szoz | \＄20 | \＆てZ | 20\％ | 1202 | 0202 | 6102 | 9302 | 402 | 9102 | sloz | bloz | EL̇z |  | म－9， | 人uecriom |
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| 15695 | 8゙£ | OZES | 20¢s | 9925 | 12ZS | OS Cs | oezs | 2tてs | to 15 | L2］s | 2915 | 2\％15 | ¢tis | $0 \pm 15$ | 9038 | 2¢15 | YOd |  |
| 2sess | ¢8 z | 89 を\％ | \＆¢ ${ }^{\text {¢ }}$ |  | LZ 25 | 2025 | g3＇s | 69＇s | zsis | çis | 61＇15 | 5015 | 5605 | 9305 | 6LOS | acos | mod |  |
| 939515 | 105s | 62＇ts | Ects | 6zts | 90ヶ8 | 18 ¢s | 6ces | 6¢¢S | 12¢§ | t0\％ 85 | 6975 | 92ZS | 292s | os 25 | ¢¢て§ | 92 2s | Mss | uçerdoj feidejpen epeurtd |
| \＆ 295 | osts | 9¢ZS | をटて§ | 15 CS | 0025 | 9315 | U2Ss | 2935 | ¢fじ | 62 IS | Stis | 2015 | ¢0＇Ls | cols | c0is | 1015 | צ110 |  |
| 28.65 | 1585 | 2¢¢ | H6s | 2625 | 18 zs | 1925 | 2625 | ¢ 2 ¢ | ¢0\％s | 8315 | u＇is | 9sis | Stils | 261s | 2zss | cals | nd | Sezen keaqron |
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| LS CSS | osts | Sezs | \＆ZZS | H2\％ | cozs | 26ils | ssis | 82＇ts | 1215 | g9is | 0915 | ssils | 1 c 15 | Stis | 1715 | くど15 | 34 | \％ 5 ＇S |
| 8155 | 912\＄ | tozs | 8615 | 2815 | ELIS | ¢915 | tsis | 5415 | LE＇15 | cris | ¢ 215 | 91＇15 | 90 IS | 960s | 2805 | eLOS | $0 \times 0$ |  |
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| 16 tols | cets | H＇ts |  | toges | ¢tes | LZES | 108s | 2325 | cizs | 8325 | 5725 | 28てS | \＆ZZs | SI2s． | 10zs | 6 6sis | ［ff |  |
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| Evsols | Obts | L1t5 | 1685 | EL＇$\frac{1}{}$ | \＆s＇ts | 18 ES | H＇Es | ¢52S | 9 Cl ¢ | 1925 | Ltizs | ＋Cを | szzs | 912S | L02s | 6515 | dJy |  |
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Ex-Ante Market Risk Premium
Market DCF Method Based - Bloomberg

| $[1]$ | $[2]$ | [3] |
| :---: | :---: | :---: |
| S\&P 500 | Current 30-Year |  |
| Est. Requised | Treasury (30-day | Inplied Market |
| Market Return | average) | Risk Premium |
| $13.91 \%$ | $3.60 \%$ | $10.31 \%$ |


|  |  | [4] | [5] | [6] | [7] | (8) | 19] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capilalization | Weight in Index | Estimated Dividend Yield | Long-Term Growth Est. | DCF Resuit | Weighted DCF Result |
| AGILENT TECHNOLOGIES INC | A | 17,707.96 | 0.10\% | 0.91\% | 8.85\% | 9.80\% | 0.0100\% |
| ALCOA INC | AA | 15,282.85 | 0.09\% | 0.92\% | 5.00\% | 5.94\% | 0.0053\% |
| APPLE INC | AAPL | 462,005.70 | 2.67\% | 2.44\% | 16.49\% | 19.14\% | 0.5112\% |
| ABBVIE INC | ABBV | 76,386.96 | 0.44\% | 3.48\% | 2.50\% | 6.02\% | 0.0266\% |
| AMERISOURCEBERGEN CORP | ABC | 14,719.30 | 0.09\% | 1.47\% | 13.65\% | 15.22\% | 0.0129\% |
| ABBOTT LABORATORIES | ABT | $58,590.38$ | 0.34\% | 2.32\% | 11.81\% | 14.27\% | 0.0483\% |
| ACELTD | ACE | 33,834.64 | 0.20\% | 2.54\% | 7.83\% | 10.46\% | 0.0205\% |
| ACCENTURE PLC-CL A | $A C N$ | 53,126.22 | 0.31\% | 2.36\% | 10.50\% | 12.98\% | 0.0399\% |
| ACTAVIS PLC | ACT | 33,841.49 | 0.20\% | 0.00\% | 14.01\% | 14.01\% | 0.0274\% |
| ADOBE SYSTEMS INC | ADBE | 30,909.06 | 0.18\% | 0.00\% | 15.70\% | 15.70\% | 0.0281\% |
| ANALOG DEVICES INC | ADI | 16,620.23 | 0.10\% | 2.70\% | 10.88\% | 13.73\% | 0.0132\% |
| ARCHER-DANIELS-MIDLAND CO | ADM | 29,030.68 | 0.17\% | 1.98\% | 7.45\% | 9.50\% | 0.0159\% |
| AUTOMATIC DATA PROCESSING | ADP | 36,175.46 | 0.21\% | 2.39\% | 10.33\% | 12.85\% | 0.0269\% |
| ALLANCE DATA SYSTEMS CORP | ADS | 13,684.50 | 0.08\% | 0.00\% | 14.26\% | 14.26\% | 0.0113\% |
| AUTODESK INC | ADSK | 10,636.80 | 0.06\% | 0.00\% | 11.27\% | 11.27\% | 0.0069\% |
| ADT CORPITHE | ADT | 5,488.30 | 0.03\% | 1.86\% | 8.00\% | 9.94\% | 0.0032\% |
| AMEREN CORPORATION | AEE | 10,130.00 | 0.06\% | 3.91\% | 6.57\% | 10.60\% | 0.0062\% |
| AMERICAN ELECTRIC POWER | AEP | 25,522.77 | 0.15\% | 3.88\% | 5.23\% | 9.21\% | 0.0136\% |
| AES CORP | AES | 10,373.88 | 0.06\% | 1.40\% | 6.82\% | 8.26\% | 0.0050\% |
| AETNA INC | AET | 25,980.20 | 0.15\% | 1.26\% | 10.20\% | 11.53\% | 0.0173\% |
| AFLAC INC | AFL | 28,028.27 | 0.16\% | 2.44\% | 10.11\% | 12.68\% | 0.0205\% |
| ALLERGAN INC | AGN | 38,226.13 | 0.22\% | 0.16\% | 14.64\% | 14.81\% | 0.0327\% |
| AMERICAN INTERNATIONAL GROUP | AIG | 72,220.37 | 0.42\% | 0.99\% | 12.40\% | 13.45\% | 0.0562\% |
| APARTMENT INVT \& MGMT CO - A | AlV | 4,270,48 | 0.02\% | 3.62\% | 7.28\% | 11.02\% | 0.0027\% |
| ASSURANT INC | AIZ | 4,577,99 | 0.03\% | 1.68\% | 3.40\% | 5.11\% | 0.0014\% |
| AKAMAI TECHNOLOGIES INC | AKAM | 9,570.84 | 0.06\% | 0.00\% | 14.50\% | 14.50\% | 0.0080\% |
| ALLSTATE CORP | ALL. | 24,791.46 | 0.14\% | 1.94\% | 9.68\% | 11.72\% | 0.0168\% |
| ALLEGION PLC | ALIE | 4,820.57 | N/A | 30.34\% | N/A | N/A | N/A |
| ALTERA CORP | ALTR | 10,737.15 | 0.06\% | 1.73\% | 11.88\% | 13.72\% | 0.0085\% |
| ALEXION PHARMACEUTICALS INC | ALXN | 28,768.49 | 0.17\% | 0.00\% | 39.48\% | 39.48\% | 0.0557\% |
| APPLIED MATERIALS INC | AMAT | 22,840.75 | 0.13\% | 2.08\% | 20.06\% | 22.35\% | 0.0295\% |
| AMETEK INC | AME | 12,447.72 | 0.07\% | 0.52\% | 15.00\% | 15.55\% | 0.0112\% |
| AMGEN INC | AMGN | 86,906.04 | 0.50\% | 2.11\% | 8.01\% | 10.20\% | 0.0513\% |
| AMERIPRISE FINANCLAL INC | AMP | 19,699,85 | 0.11\% | 2.20\% | 13.00\% | 15.34\% | 0.0175\% |
| ABSERICAN TOWER CORP | AMT | 32,317.29 | 0.19\% | 1.61\% | 23.42\% | 25.21\% | 0.0471\% |
| AMAZON.COM INC | AMAZN | 145,442.03 | 0.84\% | 0.00\% | 42.42\% | 42.42\% | 0.3567\% |
| AUTONATION INC | AN | 6,337.76 | N/A | N/A | 13.44\% | N/A | N/A |
| AON PLC | AON | 24,464.41 | 0.14\% | 0.90\% | 13.18\% | 14.14\% | 0.0200\% |
| APACHE CORP | APA | 32,813.72 | 0.19\% | 1.11\% | 9.55\% | 10.71\% | 0.0203\% |
| ANADARKO PETROLEUM CORP | APC | 50,152.79 | 0.29\% | 0.67\% | 18.23\% | 18.97\% | 0.0550\% |
| AIR PRODUCTS \& CHEMICALS INC | APD | 24,619.67 | 0.14\% | 2.51\% | 8.70\% | 11.32\% | 0.0161\% |
| AMPHENOL CORP-CL A | APH | 14,453.11 | 0.08\% | 0.87\% | 8.71\% | 9.61\% | 0.0080\% |
| AIRGAS INC | ARG | 7,817.02 | 0.05\% | 1.78\% | 12.71\% | $14.61 \%$ | 0.0066\% |
| ALLEGHENY TECHNOLOGIES INC | ATI | 4.414 .03 | 0.03\% | 1.77\% | 20.65\% | 22.60\% | 0.0058\% |
| AVALONBAY COMMUNITIES INC | AVB | 17,433.63 | 0.10\% | 3.26\% | 8.58\% | 11.98\% | 0.0121\% |
| AVON PRODUCTS INC | AVP | 6,351.11 | 0.04\% | 1.68\% | 11.22\% | 12.99\% | 0.0048\% |
| AVERY DENNISON CORP | AVY | $4,755.54$ | 0.03\% | 2.32\% | 10.45\% | 12.89\% | 0.0035\% |
| AMERICAN EXPRESS CO | AXP | 91,423.36 | 0.53\% | 1.15\% | 11.27\% | 12.48\% | 0.0680\% |
| AUTOZONE INC | $A \geq O$ | 17,267.58 | 0.10\% | 0.00\% | 14.96\% | 14.96\% | 0.0149\% |
| BOEING COITHE | BA | 91,596.60 | 0.53\% | 2.35\% | 10.60\% | 13.08\% | 0.0692\% |
| BANK OF AkERICA CORP | $B A C$ | 172,558.55 | 1.00\% | 1.06\% | 9.50\% | 10.61\% | 0.1059\% |
| BAXTER INTERNATIONAL INC | BAX | 39,683.06 | 0.23\% | 2.78\% | 9.59\% | 12.49\% | 0.0287\% |
| BED BATH \& BEYOND INC | BBEY | 13,689.09 | 0.08\% | 0.00\% | 12.08\% | 12.08\% | 0.0096\% |
| BB\&T CORP | BBT | 27,844.25 | 0.16\% | 2.46\% | 6.91\% | 9.45\% | 0.0152\% |
| BEST BUY CO INC | BBY | 8,676.09 | 0.05\% | 2.78\% | 11.04\% | 13.97\% | 0.0070\% |
| CR BARD INC | BCR | 10,793.70 | 0.06\% | 0.64\% | 10.44\% | 11.11\% | 0.0069\% |
| BECTON DICKINSON AND CO | BDX | 21,958.09 | 0.13\% | 1.90\% | 9.60\% | 11.60\% | 0.0147\% |
| BEAM INC | BEAM | 13,772.49 | 0.08\% | 1.16\% | 8.40\% | 9.61\% | 0.0077\% |
| FRANKLIN RESOURCESINC | BEN | 32,740.87 | 0.19\% | 0.92\% | 13.88\% | 14.87\% | 0.0282\% |
| BROWN-FORMAN CORP-CLASS B | BFJB | 18,467.55 | 0.11\% | 1.26\% | 9.40\% | 10.71\% | 0.0114\% |
| BAKER HUGHES INC | BHI | 28,491.26 | 0.16\% | 0.92\% | 17.73\% | 18.73\% | 0.0309\% |
| BIOGEN IDEC INC | BIIB | 67,488.10 | 0.39\% | 0.00\% | 19.76\% | 19.76\% | 0.0771\% |
| BANK OF NEW YORK MELLON CORP | BK | 37,740.43 | 0.22\% | 1.99\% | 12.83\% | 14.95\% | 0.0326\% |
| BLACKROCK INC | BLK | 51,379.26 | 0.30\% | 2.58\% | 13.45\% | 16.20\% | 0.0481\% |
| BALL CORP | BLL | 7,779.54 | 0.04\% | 0.97\% | 10.07\% | 11.08\% | 0.0050\% |
| BEAMS COMPANY | BMS | 4,037.03 | 0.02\% | 2.68\% | 6.93\% | 9.71\% | 0.0023\% |


|  |  | (4) | (5) | (6) | 171 | [8] | [9] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capitalization | Weight in Index |  | Long-Term Growth Est. | DCF Result | Weighted DCF Result |
| BRISTOL-MYERS SQUIBB CO | BMY | 79,491.70 | 0.46\% | 2.99\% | 13.92\% | 17.12\% | 0.0787\% |
| BROADCOM CORP-CLA | BRCM | 16,801.44 | 0.10\% | 1.61\% | 10.13\% | 11.82\% | 0.0115\% |
| BERKSHIRE HATHAWAY INC-CL B | BRK/B | 305,193.22 | N/A | N/A | N/A | N/A | N/A |
| BOSTON SCIENTIFIC CORP | BSX | 17,668.34 | 0.10\% | 0.00\% | 9.90\% | 9.90\% | 0.0101\% |
| PEABODY ENERGY CORP | BTU | 4,574.56 | 0.03\% | 2.06\% | 12.00\% | 14.19\% | 0.0038\% |
| BORGWARNER INC | BWA | 13,913,83 | 0.08\% | 0.60\% | 13.83\% | 14.47\% | 0.0146\% |
| BOSTON PROPERTIES INC | BXP | 17,870.94 | 0.10\% | 3.09\% | 5.62\% | 8.79\% | 0.0091\% |
| Citigroup inc | C | 146,756.12 | 0.85\% | 0.11\% | 9.10\% | 9.22\% | 0.0782\% |
| CAINC | CA | 13,406.18 | 0.03\% | 3.35\% | 5.87\% | 9.32\% | 0.0072\% |
| CONAGRA FOODS $\operatorname{INC}$ | CAG | 13,000.98 | 0.88\% | 3.23\% | 9.87\% | 13.26\% | 0.0100\% |
| CARDINAL HEALTH INC | CAH | 23,045.54 | 0.13\% | 1.80\% | 11.00\% | 12.90\% | 0.0172\% |
| CAMERON INTERNATIONAL CORP | CAM | 13,226.46 | 0.08\% | 0.00\% | 16.00\% | 16.00\% | 0.0122\% |
| CATERPILLARINC | CAT | 65,376,79 | 0.38\% | 2.40\% | 10.35\% | 12.87\% | 0.0487\% |
| CHUBB CORP | CB | 22,086.69 | 0.13\% | 2.11\% | 9.00\% | 11.20\% | 0.0143\% |
| CBRE GROUP INC - A | CBG | 8,861.90 | N/A | N/A | 10.95\% | N/A | N/A |
| CBS CORP-CLASS B NON VOTING | CBS | 34,053.66 | 0.20\% | 0.88\% | 15.83\% | 16.78\% | 0.0330\% |
| COCA.COLA ENTERPRISES | CCE | 11,293.83 | 0.07\% | 2.20\% | 9.97\% | 12.28\% | 0.0080\% |
| CROWN CASTLE INTL CORP | CCl | 24,534.00 | 0.14\% | 1.95\% | 18.00\% | 20.12\% | 0.0285\% |
| CARNIVAL CORP | CCL | 28,193.75 | 0.16\% | 2.75\% | 16.06\% | 19.03\% | 0.0310\% |
| CELGENE CORP | CELG | 56,777,85 | 0.33\% | 0.00\% | 25.56\% | 25.56\% | 0.0839\% |
| CERNER CORP | CERN | 18,530.08 | 0.11\% | 0.00\% | 18.14\% | 18.14\% | 0.0194\% |
| CF INDUSTRIES HOLDINGS INC | CF | 12,867.97 | 0.07\% | 1.66\% | 7.04\% | 8.76\% | 0.0065\% |
| CAREFUSION CORP | CFN | 8,054.04 | 0.05\% | 0.00\% | 11.24\% | 11.24\% | 0.0052\% |
| CHESAPEAKE ENERGY CORP | CHK | 18,100.99 | 0.10\% | 1.31\% | 5.00\% | 6.34\% | 0.0066\% |
| C.H. ROBINSON WORLDWIDE INC | CHRW | 8,191.58 | 0.05\% | 2.70\% | 13.18\% | 16.06\% | 0.0076\% |
| CIGNA CORP | Cl | 20,989,97 | 0.12\% | 0.05\% | 10.27\% | 10.33\% | 0.0125\% |
| CINCINNATI FINANCIAL CORP | CINF | 7,875.25 | N/A | 3.58\% | N/A | N/A | N/A |
| COLGATE-PALMOLIVE CO | CL | 60,838.68 | 0.35\% | 2.19\% | 9.27\% | 11.56\% | 0.0407\% |
| CLOROX COMPANY | CLX | 11,676.67 | 0.07\% | 3.16\% | 7.78\% | 11.06\% | 0.0075\% |
| COMERICA INC | CMA | 8,845.89 | 0.05\% | 1.60\% | 8.10\% | 9.76\% | 0.0050\% |
| COMCAST CORP-CLASS A | CMCSA | 125,375.35 | 0.72\% | 1.86\% | 11.98\% | 13.95\% | 0.1011\% |
| CME GROUPINC | CME | 22,756.79 | 0.13\% | 4.51\% | 14.49\% | 19.32\% | 0.0254\% |
| CHIPOTLE MEXICAN GRILL INC | CMG | 16,804.95 | 0.10\% | 0.00\% | 21.13\% | 21.13\% | 0.0205\% |
| CUMMINS INC | CM1 | 26,066.71 | 0.15\% | 1.90\% | 13.91\% | 15.94\% | 0.0240\% |
| CMS ENERGY CORP | CMS | 8,046.15 | 0.05\% | 3.60\% | 6.30\% | 10.02\% | 0.0047\% |
| CENTERPOINT ENERGY INC | CNP | 10,490.47 | 0.06\% | 3.88\% | 4.97\% | 8.95\% | 0.0054\% |
| CONSOL ENERGY INC | CNX | 9,406.84 | 0.05\% | 0.70\% | 12.00\% | 12.75\% | 0.0069\% |
| CAPITAL ONE FINANCIAL CORP | COF | 42,681.86 | 0.25\% | 1.63\% | 7.75\% | 9.44\% | 0.0233\% |
| CABOT OLL \& GAS CORP | COG | 13,757.99 | 0.08\% | 0.24\% | 35.00\% | 35.29\% | 0.0281\% |
| COACH INC | COH | 13,562.61 | 0.08\% | 2.77\% | 9.91\% | 12.82\% | 0.0101\% |
| ROCKWELL COLLINS INC | COL | 10,485.33 | 0.06\% | 1.62\% | 9.70\% | 11.40\% | 0.0069\% |
| CONOCOPHILLIPS | COP | 89,537.69 | 0.52\% | 3.84\% | 7.50\% | 11.48\% | 0.0594\% |
| COSTCO WHOLESALE CORP | COST | 49,292.68 | 0.29\% | 1.14\% | 11.30\% | 12.50\% | 0.0356\% |
| COVIDEN PLC | cov | 31,507.17 | 0.18\% | 1.78\% | 9.02\% | 10.88\% | 0.0198\% |
| CAMPBELL SOUP CO | CPB | 13,858.19 | 0.08\% | 2.81\% | 5.57\% | 8.46\% | 0.0068\% |
| SALESFORCESCOM INC | CRM | 33,695.82 | 0.19\% | 0.00\% | 28.80\% | 28.80\% | 0.0561\% |
| COMPUTER SCIENCES CORP | CSC | 8,750.29 | 0.05\% | 1.33\% | 12.40\% | 13.81\% | 0.0070\% |
| CISCO SYSTEMS INC | Csco | 117,912.82 | 0.68\% | 3.15\% | 10.14\% | 13.44\% | 0.0917\% |
| CSXCORP | CSX | 28,442.40 | 0.16\% | 2.24\% | 12.70\% | 15.09\% | 0.0248\% |
| CINTAS CORP | CTAS | 6,771.65 | 0.04\% | 1.37\% | 10.96\% | 12.41\% | 0.0049\% |
| CENTURYLINK INC | CTL | 19,679.38 | 0.11\% | 6.34\% | 1.30\% | 7.68\% | 0.0087\% |
| COGNIZANT TECH SOLUTIONS-A | CTSH | 29,690.88 | 0.17\% | 0.00\% | 16.18\% | 16.18\% | 0.0278\% |
| CITRIX SYSTEMS INC | CTXS | 10,173.68 | 0.06\% | 0.00\% | 14.13\% | 14.13\% | 0.0083\% |
| CABLEVISION SYSTEMS-NY GRP-A | CVC | 4,315.79 | 0.02\% | 3.75\% | -1.43\% | 2.30\% | 0.0006\% |
| CVS CAREMARK CORP | cys | 87,284.83 | 0.50\% | 1.38\% | 14.13\% | 15.60\% | 0.0787\% |
| CHEVRON CORP | cux | 229,010.71 | 1.32\% | 3.46\% | 4.60\% | 8.14\% | 0.1077\% |
| DOMINION RESOURCES INCNA | D | 41,043.80 | 0.24\% | 3.40\% | 6.14\% | 9.64\% | 0.0229\% |
| DELTA AIR LINES INC | DAL | 27,103.68 | 0.16\% | 0.82\% | -0.64\% | 0.18\% | 0.0003\% |
| DU PONT (E.1.) DE NEMOURS | DD | 61,298.83 | 0.35\% | 2.83\% | 7.30\% | 10.23\% | 0.0363\% |
| DEERE\&CO | DE | 34,138.25 | 0.20\% | 2.23\% | 6.58\% | 8.89\% | 0.0175\% |
| DISCOVER FINANCLAL SERVICES | DFS | 26,060.87 | 0.15\% | 1.67\% | 11.25\% | 13.01\% | 0.0196\% |
| DOLLAR GENERAL CORP | DG | 17,039.22 | 0.10\% | 0.00\% | 13.91\% | 13.91\% | 0.0137\% |
| QUEST DIAGNOSTICS INC | DGX | 8,667.32 | 0.05\% | 2.20\% | 9.16\% | 11.46\% | 0.0057\% |
| DR HORTONINC | DHI | 7,014.96 | 0.04\% | 0.65\% | 6.90\% | 7.58\% | 0.0031\% |
| DANAKER CORP | DHR | 51,049.68 | 0.30\% | 0.42\% | 11.28\% | 11.72\% | 0.0346\% |
| WALT DISNEY COITHE | Dis | 136,064.91 | 0.79\% | 1.10\% | 11.19\% | 12.35\% | 0.0972\% |
| DISCOVERY COMMUNICATIONS-A | DISCA | 26,200.46 | 0.15\% | 0.00\% | 20.02\% | 20.02\% | 0.0303\% |
| DELPHI AUTOMOTVE PLC | DLPH | 20,091.96 | 0.12\% | 1.45\% | 13.73\% | 15.28\% | 0.0178\% |
| DOLLAR TREE INC | DLTR | 10.461.79 | N/A | N/A | 16.04\% | N/A | N/A |
| DUN\&BRADSTREET CORP | DNB | 3,783.48 | 0.02\% | 1.72\% | 8.95\% | 10.75\% | 0.0024\% |
| DENBURY RESOURCES INC | DNR | 5,832.74 | 0.03\% | 1.08\% | 10.80\% | 11.94\% | 0.0040\% |
| DIAMOND OFFSHORE DRILLING | DO | 6,558.10 | 0.04\% | 7.32\% | 20.00\% | 28.06\% | 0.0106\% |
| DOVER CORP | DOV | 13,934.64 | 0.08\% | 1.87\% | 13.08\% | 15.07\% | 0.0121\% |
| DOWCHEMICAL COTHE | Dow | 57,535.20 | 0.33\% | 2.90\% | 6.69\% | 9.68\% | 0.0322\% |
| DR PEPPER SNAPPLE GROUP INC | DPS | 10,259.98 | 0.06\% | 3.16\% | 6.79\% | 10.03\% | 0.0060\% |
| DARDEN RESTAURANTS INC | DRI | 6,385.40 | 0.04\% | 4.55\% | 7.46\% | 12.18\% | 0.0045\% |
| DTE ENERGY COMPANY | DTE | 13,602.15 | 0.08\% | 3.52\% | 5.42\% | 9.04\% | 0.0071\% |


|  |  | 14) | (5) | (6) | 171 | [8] | (9) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capitalization | Weight in Index | Estimated Dividend Yield | $\begin{aligned} & \text { Long- Jerm } \\ & \text { Growth Est. } \end{aligned}$ | DCF Result | Weighted DCF Result |
| DIRECTV | Drv | 38,210.78 | 0.22\% | 0.00\% | 10.88\% | 10.88\% | 0.0240\% |
| DUKE ENERGY CORP | duk | 51,473.39 | 0.30\% | 4.36\% | 4.68\% | 9.13\% | 0.0272\% |
| DAVITA HEALTHCARE PARTNERS I | DVA | 14,585.01 | 0.08\% | 0.00\% | 12.32\% | 12.32\% | 0.0104\% |
| DEVON ENERGY CORPORATION | DVN | 27,980.23 | 0.16\% | 1.30\% | 5.83\% | 7.17\% | 0.0116\% |
| ELECTRONIC ARTS INC | EA | 8,502.90 | 0.05\% | 0.00\% | 17.68\% | 17.68\% | 0.0087\% |
| EBAY INC | EBAY | 68,406.43 | 0.40\% | 0.00\% | 14.66\% | 14.66\% | 0.0580\% |
| ecolab inc | ECL | 31,719.36 | 0.18\% | 1.01\% | 13.38\% | 14.46\% | 0.0265\% |
| CONSOLIDATED EDISON INC | ED | 16,751.03 | 0.10\% | 4.37\% | 3.46\% | 7.90\% | 0.0077\% |
| EQUIFAXINC | EFX | 8,060.03 | 0.05\% | 1.55\% | 20.30\% | 22.01\% | 0.0103\% |
| EDISON INTERNATIONAL | EIX | 18,554.95 | 0.11\% | 2.53\% | 3.01\% | 5.59\% | 0.0060\% |
| estee lauder companies-CLA | EL | 27,467.09 | 0.16\% | 1.10\% | 12.33\% | 13.50\% | 0.0214\% |
| EMC CORP/MA | EmC | 54,530.05 | 0.32\% | 1.53\% | 12.00\% | 13.63\% | 0.0430\% |
| EASTMAN CHEMICAL CO | EMN | 13,038.03 | 0.08\% | 1.59\% | 7.70\% | 9.35\% | 0.0070\% |
| EmERSON ELECTRIC CO | EMR | 46,783.71 | 0.27\% | 2.59\% | 8.85\% | 11.55\% | 0.0312\% |
| EOG RESOURCES INC | EOG | 55,231.91 | 0.32\% | 0.45\% | 19.22\% | 19.71\% | 0.0629\% |
| EQUITY RESIDENTIAL | EQR | 20,946.20 | 0.12\% | 3.45\% | 7.43\% | 11.00\% | 0.0133\% |
| EQT CORP | EQT | 15,629.40 | 0.09\% | 0.12\% | 30.00\% | 30.14\% | 0.0272\% |
| EXPRESS SCRIPTS HOLDING CO | ESRX | 57,100.98 | 0.33\% | 0.00\% | 14.55\% | 14.55\% | 0.0480\% |
| ESSEX PROPERTY TRUSTINC | Ess | 10,288.28 | 0.06\% | 2.97\% | 7.36\% | 10.44\% | 0.0062\% |
| ENSCO PLC-CLA | ESV | 11,865.33 | 0.07\% | 5.69\% | 15.97\% | 22.11\% | 0.0152\% |
| E*TRADE FINANCIAL CORP | ETFC | 5,872.65 | 0.03\% | 0.00\% | 40.00\% | 40.00\% | 0.0136\% |
| EATON CORP PLC | ETN | 34,216.92 | 0.20\% | 2.65\% | 11.52\% | 14.32\% | 0.0283\% |
| ENTERGY CORP | ETR | 12,923.72 | 0.07\% | 4.62\% | 0.78\% | 5.41\% | 0.0040\% |
| EDWARDS LIFESCIENCES CORP | EW | 8,479.75 | 0.05\% | 0.00\% | 14.76\% | 14.76\% | 0.0072\% |
| EXELON CORP | EXC | 30,903.49 | 0.18\% | 3.45\% | 2.64\% | 6.13\% | 0.0110\% |
| EXPEDITORS INTL. WASHINC | EXPD | 7,909.90 | 0.05\% | 1.67\% | 11.90\% | 13.67\% | 0.0063\% |
| EXPEDIA INC | EXPE | 9,244.63 | 0.05\% | 0.85\% | 19.00\% | 19.93\% | 0.0107\% |
| FORD MOTOR CO | F | 62,479.88 | 0.36\% | 2.98\% | 9.68\% | 12.80\% | 0.0463\% |
| FASTENAL CO | FAST | 14,860.95 | 0.09\% | 2.07\% | 16.50\% | 18.75\% | 0.0161\% |
| FACEBOOK INC-A | FB | 153,260.38 | 0.89\% | 0.00\% | 31.50\% | 31.50\% | 0.2792\% |
| FREEPORT-MCMORAN COPPER | FCX | 34,278.18 | 0.20\% | 3.79\% | 7.00\% | 10.92\% | 0.0216\% |
| FAMILY DOLLAR STORES | FDO | 6,476.65 | 0.04\% | 1.96\% | 6.89\% | 8.91\% | 0.0033\% |
| FEDEX CORP | FDX | 39,058.40 | 0.23\% | 0.46\% | 14.10\% | 14.59\% | 0.0329\% |
| FIRSTENERGY CORP | FE | 14,286.17 | 0.08\% | 4.23\% | 4.67\% | 9.00\% | 0.0074\% |
| F5 NETWORKS INC | FFiv | 8,127.52 | 0.05\% | 0.00\% | 16.07\% | 16.07\% | 0.0076\% |
| FIDELITY NATIONAL INFORMATIO | FIS | 15,158.38 | 0.09\% | 1.76\% | 12.00\% | 13.87\% | 0.0122\% |
| FISERVINC | FISV | 14,304.69 | 0.08\% | 0.00\% | 9.45\% | 9.45\% | 0.0078\% |
| FIFTH THIRD BANCORP | Fitb | 18,418.91 | 0.11\% | 2.36\% | 17.60\% | 20.17\% | 0.0215\% |
| FLIR SYSTEMS INC | FLIR | 4,944.83 | 0.03\% | 1.21\% | 12.50\% | 13.79\% | 0.0039\% |
| FLUOR CORP | FLR | 12,131.04 | 0.07\% | 1.02\% | 12.60\% | 13.69\% | 0.0096\% |
| FLOWSERVE CORP | FiS | 10,480.34 | 0.06\% | 0.81\% | 14.87\% | 15.74\% | 0.0095\% |
| FMC CORP | FMC | 10,037.79 | 0.06\% | 0.75\% | 10.00\% | 10.79\% | 0.0063\% |
| FOSSiL GROUP INC | FOSL | 5,756,78 | 0.03\% | 0.00\% | 15.20\% | 15.20\% | 0.0051\% |
| TWENTY-FIRST CENTURY FOX-A | FOXA | 71,516.47 | 0.41\% | 0.80\% | 17.01\% | 17.87\% | 0.0739\% |
| FOREST LABORATORIES INC | FRX | 23,936.69 | 0.14\% | 0.00\% | 41.78\% | 41.78\% | 0.0578\% |
| FiRST SOLAR INC | FSLR | 6,645.32 | 0.04\% | 0.00\% | -0.85\% | -0.85\% | -0.0003\% |
| FMC TECHNOLOGIES INC | FTI | 12,653.49 | 0.07\% | 0.00\% | 19.30\% | 19.30\% | 0.0141\% |
| FRONTIER COMMUNICATIONS CORP | FTR | 5,662.73 | 0.03\% | 7.08\% | 3.00\% | 10.19\% | 0.0033\% |
| AGE RESOURCES INC | GAS | 6,150.88 | 0.04\% | 3.77\% | 5.50\% | 9.37\% | 0.0033\% |
| GANNETT CO | GCl | 5,904.50 | 0.03\% | 3.60\% | 7.50\% | 11.24\% | 0.0038\% |
| GENERAL DYNAMICS CORP | GD | 36,714.10 | 0.21\% | 2.28\% | 6.96\% | 9.31\% | 0.0198\% |
| GENERAL ELECTRIC CO | GE | 258,845,52 | 1.50\% | 3.49\% | 9.02\% | 12.66\% | 0.1895\% |
| GENERAL GROWTH PROPERTIES | GGP | 19,829,93 | 0.11\% | 2.56\% | 8.32\% | 10.98\% | 0.0126\% |
| GRAHAM HOLDINGS CO-CLASS B | GHC | 4,890.52 | N/A | N/A | N/A | N/A | N/A |
| GILEAD SCIENCES INC | GILD | 104,835.47 | 0.61\% | 0.00\% | 25.71\% | 25.71\% | 0.1559\% |
| general mills inc | GIS | 31,492.73 | 0.18\% | 2.99\% | 8.02\% | 11.13\% | 0.0203\% |
| CORNING INC | GLW | 28,581.96 | 0.17\% | 2.10\% | 12.35\% | 14.58\% | 0.0241\% |
| GENERAL MOTORS CO | GM | 53,035.34 | 0.31\% | 3.19\% | 15.73\% | 19.18\% | 0.0588\% |
| KEURIG GREEN MOUNTAIN INC | GMCR | 15,757.34 | 0.09\% | 1.03\% | 19.00\% | 20.12\% | 0.0183\% |
| GAMESTOP CORP-CLASS A | GIME | 4,779.43 | 0.03\% | 3.18\% | 12.63\% | 16.01\% | 0.0044\% |
| GENWORTH FINANCIAL INC-CLA | GNW | 7,980.21 | 0.05\% | 0.00\% | 5.00\% | 5.00\% | 0.0023\% |
| GOOGLE INC-CLC | GOOG | 364,964.49 | 2.11\% | 0.00\% | 19.53\% | 19.53\% | 0.4121\% |
| GOOGLE INC-CLA | GOOGL | 364,964.49 | 2.11\% | 0.00\% | 19.53\% | 19.53\% | 0.4121\% |
| GENUINE PARTS CO | GPC | 13,097.56 | 0.08\% | 2.70\% | 7.88\% | 10.69\% | 0.0081\% |
| gap inc/the | GPS | 17,144.34 | 0.10\% | 2.22\% | 13.11\% | 15.48\% | 0.0153\% |
| GARMIN LTD | GRMN | 10,817.17 | 0.06\% | 3.41\% | 5.71\% | 9.22\% | 0.0058\% |
| GOLDMAN SACHS GROUP INC | GS | 71,901.41 | 0.42\% | 1.49\% | 7.60\% | 9.14\% | 0.0380\% |
| GOODYEAR TIRE \& RUBBER CO | GT | 6,461.32 | 0.04\% | 0.79\% | 8.95\% | 9.77\% | 0.0036\% |
| WW GRAINGER INC | gWw | 17,218.45 | 0.10\% | 1.59\% | 13.68\% | 15.38\% | 0.0153\% |
| halliburton co | HAL | 50,626.21 | 0.29\% | 1.04\% | 20.42\% | 21.56\% | 0.0631\% |
| HARMAN INTERNATIONAL | HAR | 7,049.98 | 0.04\% | 1.15\% | 15.00\% | 16.24\% | 0.0066\% |
| HASBRO INC | HAS | 6,976.94 | 0.04\% | 3.20\% | 10.00\% | 13.36\% | 0.0054\% |
| HUNTINGTON BANCSHARES INC | HBAN | 7.972 .67 | 0.05\% | 2.28\% | 5.65\% | 8.00\% | 0.0037\% |
| HUDSON CITY BANCORP INC | HCBK | 5,183.79 | N/A | 1.63\% | N/A | N/A | N/A |
| HEALTH CARE REIT INC | HCN | 18,243.60 | 0.11\% | 5.07\% | 5.60\% | 10.80\% | 0.0114\% |
| HCP INC | HCP | 18,885.11 | 0.11\% | 5.29\% | 4.06\% | 9.46\% | 0.0103\% |
| HOME DEPOT INC | HD | 103,824.89 | 0.60\% | 2.49\% | 15.95\% | 18.64\% | 0.1119\% |


|  |  | [4] | [5] | [6] | (7) | [8) | 19) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capitalization | Weight in Index | Estimated Dividend Yield | Long-Term Growth Est. | DCF Result | Weighted DCF Result |
| HESS CORP | HES | 27,130.82 | 0.16\% | 1.17\% | 6.31\% | 7.52\% | 0.0118\% |
| HARTFORD FINANCIAL SVCS GRP | HIG | 15,396.63 | 0.09\% | 1.88\% | 9.00\% | 10.97\% | 0.0098\% |
| HARLEY-DAVIDSONINC | HOG | 14,382.16 | 0.08\% | 1.48\% | 12.28\% | 13.85\% | 0.0115\% |
| HONEYWELL INTERNATIONAL INC | HON | 71,716.61 | 0.41\% | 1.99\% | 10.08\% | 12.17\% | 0.0505\% |
| STARWOOD HOTELS \& RESORTS | HOT | 14,549.80 | 0.08\% | 1.87\% | 11.40\% | 13.38\% | 0.0113\% |
| HELMERICH \& PAYNE | HP | 11,708.38 | 0.07\% | 2.09\% | 7.75\% | 9.92\% | 0.0067\% |
| HEWLETT-PACKARD CO | HPQ | 61,382.96 | 0.35\% | 1.86\% | 5.71\% | 7.63\% | 0.0271\% |
| H\&R BLOCK INC | HRB | 7,721.96 | 0.04\% | 2.84\% | 11.00\% | 14.00\% | 0.0062\% |
| HORMEL FOODS CORP | HRL | 12,497.30 | 0.07\% | 1.68\% | 9.80\% | 11.56\% | 0.0084\% |
| HARRIS CORP | HRS | 7,526.09 | 0.04\% | 2.39\% | 3.00\% | 5.42\% | 0.0024\% |
| HOSPIRA INC | HSP | 7,247.83 | 0.04\% | 0.00\% | 11.88\% | 11.88\% | 0.0050\% |
| HOST HOTELS \& RESORTS INC | HST | 15,492.69 | 0.09\% | 2.96\% | 6.00\% | 9.05\% | 0.0081\% |
| HERSHEY COITHE | HSY | 22,270.86 | 0.13\% | 2.01\% | 9.33\% | 11.44\% | 0.0147\% |
| HUMANA INC | HUM | 16,965.36 | 0.10\% | 1.03\% | 9.95\% | 11.03\% | 0.0108\% |
| INTL. BUSINESS MACHINES CORP | IBM | 205,164.96 | 1.19\% | 2.04\% | 9.76\% | 11.90\% | 0.1411\% |
| INTERCONTINENTALEXCHANGE GRO | SCE | 22,301.94 | 0.13\% | 1.34\% | 19.81\% | 21.29\% | 0.0275\% |
| INTL. FLAVORS \& FRAGRANCES | IFF | 7,571.84 | 0.04\% | 1.79\% | 6.50\% | 8.34\% | 0.0037\% |
| INTL GAME TECHNOLOGY | IGT | 3,414.33 | 0.02\% | 3.05\% | 14.00\% | 17.26\% | 0.0034\% |
| INTEL CORP | INTC | 133,145.78 | 0.77\% | 3.32\% | 5.86\% | 9.28\% | 0.0715\% |
| INTUIT INC | INTU | 20,891.56 | 0.12\% | 1.00\% | 14.50\% | 15.57\% | 0.0188\% |
| INTERNATIONAL PAPER CO | IP | 19,703.90 | 0.11\% | 3.16\% | 8.67\% | 11.97\% | 0.0136\% |
| INTERPUBLIC GROUP OF COS INC | IPG | 6,926.89 | 0.04\% | 2.27\% | 8.63\% | 11.00\% | 0.0044\% |
| INGERSOLL-RAND PLC | IR | 15,450.44 | 0.09\% | 1.83\% | 12.07\% | 14.01\% | 0.0125\% |
| IRON MOUNTAIN INC | IRM | 5,041.64 | 0.03\% | 5.04\% | 13.50\% | 18.88\% | 0.0055\% |
| INTUITIVE SURGICAL INC | ISRG | 15,989.19 | N/A | NA | 8.45\% | N/A | N/A |
| ILLINOIS TOOL WORKS | ITW | 34,495.02 | 0.20\% | 2.02\% | 17.24\% | 19.43\% | 0.0388\% |
| INVESCO LTD | IVZ | 14,943.79 | 0.09\% | 2.87\% | 13.67\% | 16.74\% | 0.0145\% |
| JABIL CIRCUIT INC | JBL | 3,526.75 | 0.02\% | 1.87\% | 6.17\% | 8.09\% | 0.0017\% |
| JOHNSON CONTROLS INC | JCl | 30,518.74 | 0.18\% | 1.88\% | 13.45\% | 15.46\% | 0.0273\% |
| JACOBS ENGINEERING GROUP INC | JEC | 8,191.26 | 0.05\% | 0.00\% | 14.33\% | 14.33\% | 0.0068\% |
| JOHNSON \& JOHNSON | SNJ | 280,569.74 | 1.62\% | 2.84\% | 7.11\% | 10.05\% | 0.1630\% |
| JUNIPER NETWORKS INC | JNPR | 11,781.45 | 0.07\% | 0.36\% | 10.90\% | 11.28\% | 0.0077\% |
| JOY Global inc | JOY | 6,080.28 | 0.04\% | 1.15\% | 15.00\% | 16.24\% | 0.0057\% |
| JPMORGAN CHASE \& CO | JPM | 207,423.03 | 1.20\% | 2.89\% | 4.05\% | 7.00\% | 0.0840\% |
| NORDSTROM INC | JWN | 11,567.46 | 0.07\% | 2.04\% | 10.44\% | 12.59\% | 0.0084\% |
| KEllogg co | K | 23,422.91 | 0.14\% | 2.90\% | 7.00\% | 10.00\% | 0.0135\% |
| KEYCORP | KEY | 11,834.85 | 0.07\% | 1.97\% | 5.20\% | 7.22\% | 0.0049\% |
| KIMCO REALTY CORP | Kim | 9,092.44 | 0.05\% | 4.06\% | 3.83\% | 7.97\% | 0.0042\% |
| KLA-TENCOR CORPORATION | KLAC | 11,019.08 | 0.06\% | 2.71\% | 16.44\% | 19.38\% | 0.0123\% |
| KIMBERLY-CLARK CORP | KMB | 41,863.53 | 0.24\% | 3.03\% | 7.46\% | 10.60\% | 0.0256\% |
| KINDER MORGAN INC | KMI | 33,817.57 | N/A | 5.23\% | N/A | N/A | N/A |
| CARMAXINC | KMX | 9,681.21 | N/A | N/A | 14.51\% | N/A | N/A |
| COCA-COLA COITHE | ко | 177,028.79 | 1.02\% | 2.95\% | 7.13\% | 10.19\% | 0.1043\% |
| MICHAEL KORS HOLDINGS LTD | KORS | 18,224.94 | 0.11\% | 0.00\% | 23.88\% | 23.88\% | 0.0252\% |
| KROGER CO | KR | 22,483.90 | 0.13\% | 1.56\% | 10.18\% | 11.83\% | 0.0154\% |
| KRAFT FOODS GROUP INC | KRFT | 33,472.26 | 0.19\% | 3.82\% | 9.65\% | 13.65\% | 0.0264\% |
| KOHLS CORP | KSS | 11,351.79 | 0.07\% | 2.86\% | 9.77\% | 12.77\% | 0.0084\% |
| KANSAS CITY SOUTHERN | KSU | 10,941.16 | 0.06\% | 1.04\% | 16.50\% | 17.62\% | 0.0111\% |
| LOEWS CORP | L | 16,955.94 | N/A | 0.57\% | N/A | N/A | N/A |
| L BRANOS INC | LB | 15,755.50 | 0.09\% | 3.14\% | 11.44\% | 14.76\% | 0.0134\% |
| LEGGETT \& PLATT INC | LEG | 4,506.73 | 0.03\% | 3.69\% | 15.00\% | 18.97\% | 0.0049\% |
| LENNAR CORP-A | LEN | 7,729.00 | 0.04\% | 0.36\% | 7.55\% | 7.92\% | 0.0035\% |
| LABORATORY CRP OF AMER HLDGS | LH | 8,634.43 | 0.05\% | 0.00\% | 10.27\% | 10.27\% | 0.0051\% |
| L-3 COMMUNICATIONS HOLDINGS | LLL | 10,077.89 | 0.06\% | 1.95\% | 3.65\% | 5.63\% | 0.0033\% |
| LINEAR TECHNOLOGY CORP | LLTC | 11,118.95 | 0.06\% | 2.24\% | 10.05\% | 12.40\% | 0.0080\% |
| ELI LILLY \& CO | LLY | 66,535.98 | 0.38\% | 3.30\% | 1.40\% | 4.72\% | 0.0182\% |
| LEGG MASON INC | LM | 5,310.86 | 0.03\% | 1.14\% | 20.35\% | 21.61\% | 0.0066\% |
| LOCKHEED MARTIN CORP | LMT | 50,589.91 | 0.29\% | 3.48\% | 7.46\% | 11.07\% | 0.0324\% |
| LINCOLN NATIONAL CORP | LNC | 12,167.33 | 0.07\% | 1.39\% | 10.18\% | 11.64\% | 0.0082\% |
| LORILLARDINC | LO | 19,163.64 | 0.11\% | 4.64\% | 10.80\% | 15.69\% | 0.0174\% |
| LOWE'S COS INC | LOW | 47,587.05 | 0.28\% | 1.64\% | 16.59\% | 18.36\% | 0.0505\% |
| LAM RESEARCH CORP | LRCX | 8,500.31 | 0.05\% | 0.00\% | 27.26\% | 27.26\% | 0.0134\% |
| LSI CORP | LSI | 6,186.29 | N/A | 0.54\% | N/A | NA | N/A |
| LEUCADIA NATIONAL CORP | LUK | 9,375,50 | N/A | N/A | N/A | NA | N/A |
| SOUTHWEST AIRLINES CO | LUV | 15,973.24 | 0.09\% | 0.67\% | 15.26\% | 15.98\% | 0.0148\% |
| LYONDELLBASELL INDU-CL A | LYB | 48,623.38 | 0.28\% | 2.28\% | 6.50\% | 8.85\% | 0.0249\% |
| MACYSINC | M | 21,248.30 | 0.12\% | 1.83\% | 10.62\% | 12.54\% | 0.0154\% |
| MASTERCARD INC-CLASS A | MA | 85,608,92 | 0.50\% | 0.58\% | 17.72\% | 18.35\% | 0.0908\% |
| MACERICH COITHE | MAC | 9,135.96 | 0.05\% | 3.87\% | 5.73\% | 9.71\% | 0.0051\% |
| MARRIOTT INTERNATIONAL -CL A | MAR | 16,619.55 | 0.10\% | 1.25\% | 12.68\% | 14.01\% | 0.0135\% |
| MASCO CORP | MAS | 7,672.32 | 0.04\% | 1.45\% | 13.63\% | 15.17\% | 0.0067\% |
| MATTEL INC | MAT | 13,067.00 | 0.08\% | 3.92\% | 10.00\% | 14.12\% | 0.0107\% |
| MCDONALO'S CORP | MCD | 99,716.90 | 0.58\% | 3.29\% | 8.96\% | 12.39\% | 0.0714\% |
| MICROCHIP TECHNOLOGY INC | MCHP | 9,393.17 | 0.05\% | 2.95\% | 12.35\% | 15.49\% | 0.0084\% |
| MCKESSON CORP | MCK | 38,732.64 | 0.22\% | 0.54\% | 14.38\% | 14.97\% | 0.0335\% |
| MOODY'S CORP | MCO | 16,158.20 | 0.09\% | 1.49\% | 13.50\% | 15.09\% | 0.0141\% |
| MONDELEZ INTERNATIONAL INC-A | MDLZ | 58,201.79 | 0.34\% | 1.72\% | 12.29\% | 14.12\% | 0.0475\% |


|  |  | (4) | [5] | [6] | [7] | [8] | [9] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capitalization | Weight in Index | Estimated Dividend Yield | Long-Term Growth Est. | DCF Result | Weighted DCF Result |
| MEDTRONIC INC | MDT | 58,097.30 | 0.34\% | 1.93\% | 7.16\% | 9.15\% | 0.0307\% |
| METLIFE INC | MET | 56,202.18 | 0.32\% | 2.49\% | 7.70\% | 10.28\% | 0.0334\% |
| MCGRAW HILL FINANCIAL INC | MHFI | 20,080.18 | 0.12\% | 1.64\% | 12.50\% | 14.24\% | 0.0165\% |
| MOHAWK INDUSTRIES INC | МНК | 9,823.27 | N/A | N/A | 40.00\% | N/A | N/A |
| MEAD JOHNSON NUTRITION CO | MAN | 16,612.33 | 0.10\% | 1.84\% | 10.80\% | 12.74\% | 0.0122\% |
| MCCORMICK \& CO-NON VTG SHRS | PSKC | 9,260.04 | 0.05\% | 2.10\% | 6.30\% | 8.46\% | 0.0045\% |
| MARSH \& MCLENNAN COS | MMC | 26,254.50 | 0.15\% | 2.22\% | 11.43\% | 13.78\% | 0.0209\% |
| 3 ACO | M MM | 88,205.53 | 0.51\% | 2.56\% | 9.90\% | 12.59\% | 0.0642\% |
| MONSTER BEVERAGE CORP | MNST | 10,658.44 | 0.06\% | 0.00\% | 15.33\% | 15.33\% | 0.0094\% |
| ALTRIA GROUP INC | MO | 75,960.77 | 0.44\% | 5.26\% | 7.07\% | 12.52\% | 0.0550\% |
| MONSANTO CO | MON | 57,989.02 | 0.34\% | 1.52\% | 13.50\% | 15.12\% | 0.0507\% |
| MOSAIC COITHE | MOS | 19,292.40 | 0.11\% | 2.10\% | 1.67\% | 3.78\% | 0.0042\% |
| MARATHON PETROLEUM CORP | MPC | 25,355.43 | 0.15\% | 1.99\% | 11.26\% | 13.36\% | 0.0196\% |
| MERCK \& CO. INC. | MRK | 164,206.57 | 0.95\% | 3.12\% | 3.53\% | 6.70\% | 0.0636\% |
| MARATHON OIL CORP | MRO | 25,020.31 | 0.14\% | 2.13\% | 9.00\% | 11.22\% | 0.0162\% |
| MORGAN STANLEY | MS | 58,285,67 | 0.34\% | 1.06\% | 16.64\% | 17.79\% | 0.0599\% |
| MICROSOFT CORP | MSFT | 329,953.77 | 1.91\% | 2.70\% | 9.04\% | 11.86\% | 0.2263\% |
| MOTOROLA SOLUTIONS INC | MSI | 16,101,36 | 0.09\% | 2.08\% | 7.00\% | 9.15\% | 0.0085\% |
| M \& T BANK CORP | MTB | 15,790.33 | 0.09\% | 2.33\% | 6.72\% | 9.13\% | 0.0083\% |
| MICRON TECHNOLOGY INC | MU | 23,730.31 | 0.14\% | 0.00\% | 10.94\% | 10.94\% | 0.0150\% |
| MURPHY OIL CORP | MUR | 11,053.21 | 0.06\% | 2.10\% | 10.77\% | 12.98\% | 0.0083\% |
| MEADWESTVACO CORP | MWV | 6,365.19 | 0.04\% | 4.14\% | 8.55\% | 12.87\% | 0.0047\% |
| MYLANINC | MYL | 17,193.52 | 0.10\% | 0.00\% | 12.39\% | 12.39\% | 0.0123\% |
| NOBLE ENERGY INC | NBL | 25,912.76 | 0.15\% | 0.79\% | 13.17\% | 14.01\% | 0.0210\% |
| NABORS INOUSTRIES LTD | NBR | 7,089.52 | 0.04\% | 0.67\% | 22.00\% | 22.74\% | 0.0093\% |
| NASDAQ OMX GROUP/THE | NDAQ | 5,801.38 | 0.03\% | 1.66\% | 12.77\% | 14.54\% | 0.0049\% |
| NOBLE CORP PLC | NE | 7,827.48 | 0.05\% | 4.98\% | 13.67\% | 18.99\% | 0.0086\% |
| NEXTERA ENERGY INC | NEE | 42,408.17 | 0.25\% | 2.96\% | 6.42\% | 9.47\% | 0.0232\% |
| NEWHONT MINING CORP | NEM | 11,870.54 | 0.07\% | 1.66\% | -2.30\% | -0.66\% | -0.0005\% |
| NETFLIX INC | NFLX | 19,513.31 | 0.11\% | 0.00\% | 36.20\% | 36.20\% | 0.0408\% |
| NEWFIELD EXPLORATION CO | NFX | 4,466.75 | 0.03\% | 0.00\% | 11.00\% | 11.00\% | 0.0028\% |
| NISOURCE INC | NI | 11,202.26 | 0.06\% | 2.88\% | 5.45\% | 8.41\% | 0.0054\% |
| NIKE INC -CL B | NKE | 63,471.87 | 0.37\% | 1.27\% | 12.73\% | 14.08\% | 0.0517\% |
| NIELSEN HOLDINGS NV | NLSN | 16,509.21 | 0.10\% | 1.90\% | 15.33\% | 17.38\% | 0.0166\% |
| NORTHROP GRUMMAN CORP | NOC | 25,667.49 | 0.15\% | 2.14\% | 7.01\% | 9.23\% | 0.0137\% |
| NATIONAL OHLWELL VARCO INC | NOV | 34,612.66 | 0.20\% | 1.70\% | 11.13\% | 12.93\% | 0.0259\% |
| NRG ENERGY ${ }^{\text {N }}$ C | NRG | 10,526.52 | 0.06\% | 1.64\% | 75.85\% | 78.11\% | 0.0475\% |
| NORFOLK SOUTHERN CORP | NSC | 29,264.98 | 0.17\% | 2.29\% | 14.36\% | 16.82\% | 0.0285\% |
| NETAPP INC | NTAP | 12,255.53 | 0.07\% | 1.62\% | 13.00\% | 14.72\% | 0.0104\% |
| NORTHERN TRUST CORP | NTRS | 14,150.78 | 0.08\% | 2.18\% | 13,54\% | 15.86\% | 0.0130\% |
| NORTHEAST UTILITIES | NU | 14,619.98 | 0.08\% | 3.39\% | 6.70\% | 10.21\% | 0.0086\% |
| NUCOR CORP | NUE | 16,458.03 | 0.10\% | 2.87\% | 7.33\% | 10.30\% | 0.0098\% |
| NVIDIA CORP | NVDA | 10,282.29 | 0.06\% | 1.83\% | 9.98\% | 11.90\% | 0.0071\% |
| NEWELL RUBBERMAID INC | NWL | 8,057.83 | 0.05\% | 2.20\% | 9.88\% | 12.19\% | 0.0057\% |
| NEWS CORP - CLASS A | NWSA | 9,561.17 | 0.06\% | 0.81\% | 6.00\% | 6.84\% | 0.0038\% |
| OWENS-HLLINOIS INC | Ol | 5,446.96 | 0.03\% | 0.00\% | 9.90\% | 9.90\% | 0.0031\% |
| ONEOK INC | OKE | 12,349.29 | 0.07\% | 3.86\% | 18.05\% | 22.26\% | 0.0159\% |
| OMNICOM GROUP | OMC | 18,033.89 | 0.10\% | 2.42\% | 8.00\% | 10.52\% | 0.0110\% |
| ORACLE CORP | ORCL | 177,151.54 | 1.02\% | 1.20\% | 10.10\% | 11.36\% | 0.1164\% |
| O'REILLY AUTOMOTIVE INC | ORLY | 15,199.01 | 0.09\% | 0.00\% | 15.80\% | 15.80\% | 0.0139\% |
| OCCIDENTAL PETROLEUM CORP | OXY | 74,981.29 | 0.43\% | 3.02\% | $6.21 \%$ | 9.32\% | 0.0404\% |
| PAYCHEXINC | PAYX | 14,796.91 | 0.09\% | 3.37\% | 9.14\% | 12.66\% | 0.0108\% |
| PEOPLE'S UNITED FINANCIAL. | PBCT | 4,600.74 | 0.03\% | 4.40\% | 13.45\% | 18.15\% | 0.0048\% |
| PITNEY BOWES INC | PBI | 4,982.17 | 0.03\% | 3.05\% | 13.00\% | 16.25\% | 0.0047\% |
| PACCAR INC | PCAR | 22,892.18 | 0.13\% | 2.33\% | 11.00\% | 13.46\% | 0.0178\% |
| PG\&ECORP | PCG | 20,930.53 | 0.12\% | 4.06\% | 5.91\% | 10.09\% | 0.0122\% |
| PLUM CREEK TIMBER CO | PCL | 7,331.73 | 0.04\% | 4.29\% | 5.00\% | 9.40\% | 0.0040\% |
| PRICELINE GROUP INCTHE | PCLN | 60,993.51 | 0.35\% | 0.00\% | 23.12\% | 23.12\% | 0.0815\% |
| PRECISION CASTPARTS CORP | PCP | 35,814.62 | 0.21\% | 0.05\% | 13.50\% | 13.55\% | 0.0281\% |
| PATTERSON COS INC | PDCO | 4,299.26 | 0.02\% | 1.64\% | 9.76\% | 11.48\% | 0.0029\% |
| PUBLIC SERVICE ENTERPRISE GP | PEG | 20,039.07 | 0.12\% | 3.74\% | 3.67\% | 7.47\% | 0.0087\% |
| PEPSICOINC | PEP | 128,974.49 | 0.75\% | 3.02\% | 7.71\% | 10.85\% | 0.0809\% |
| PETSMARTINC | PETM | 6,571.39 | 0.04\% | 1.25\% | 12.95\% | 14.28\% | 0.0054\% |
| PFEZERINC | PFE | 191,102.58 | 1.10\% | 3.48\% | 4.33\% | 7.88\% | 0.0871\% |
| PRINCIPAL FINANCIAL GROUP | PFG | 13,045.79 | 0.08\% | 2.60\% | 11.50\% | 14.25\% | 0.0108\% |
| PROCTER \& GAMBLE COITHE | PG | 219,190.24 | 1.27\% | 3.03\% | 8.66\% | 11.82\% | 0.1498\% |
| PROGRESSIVE CORP | PGR | 14,161.84 | 0.08\% | 3.16\% | 8.25\% | 11.54\% | 0.0095\% |
| PARKER HANNIFIN CORP | PH | 18,084.85 | 0.10\% | 1.51\% | 10.95\% | 12.54\% | 0.0131\% |
| PULTEGROUP INC | PHM | 7.123.98 | 0.04\% | 1.20\% | 17.75\% | 19.06\% | 0.0079\% |
| PERKINELMERINC | PKI | 4,968.94 | 0.03\% | 0.64\% | 12.83\% | 13.50\% | 0.0039\% |
| PROLOGIS INC | PLD | 20,340.80 | 0.12\% | 3.13\% | 5.31\% | 8.52\% | 0.0100\% |
| PALL CORP | PLL. | 9,356.19 | 0.05\% | 1.23\% | 11.23\% | 12.52\% | 0.0068\% |
| PHILIP MORRIS INTERNATIONAL | PM | 133,354.72 | 0.77\% | 4.39\% | 8.12\% | 12.69\% | 0.0979\% |
| PNC FINANCIAL SERVICES GROUP | PNC | 43,873.41 | 0.25\% | 2.30\% | 7.70\% | 10.09\% | 0.0256\% |
| PENTAIR LTD-REGISTERED | PNR | 15,179.11 | 0.09\% | 1.36\% | 15.50\% | 16.97\% | 0.0149\% |
| PINNACLE WEST CAPITAL | PNW | 6,138.89 | 0.04\% | 4.14\% | 4.39\% | 8.62\% | 0.0031\% |
| PEPCO HOLDINGS INC | POM | 5,362.70 | 0.03\% | 5.05\% | 6.37\% | 11.58\% | 0.0036\% |


|  |  | [4] | [5] | [6] | 17) | [8] | [9] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Markel Capitalization | Weight in Index | Estimaled Dividend Yieid | Long-Term Growh Est. | DCF Result | Weighted DCF Result |
| PPG INDUSTRIES INC | PPG | 26,144.47 | 0.15\% | 1.34\% | 7.68\% | 9.07\% | 0.0137\% |
| PPL CORPORATION | PPL | 20,952.56 | 0.12\% | 4.49\% | 3.56\% | 8.13\% | 0.0099\% |
| PERRIGO CO PLC | PRGO | 18,843.69 | 0.11\% | 0.27\% | 15.05\% | 15.34\% | 0.0167\% |
| PRUDENTIAL FINANCIAL INC | PRU | 36,396,43 | 0.21\% | 2.64\% | 10.67\% | 13.45\% | 0.0283\% |
| PUBLIC STORAGE | PSA | 29,415,43 | 0.17\% | 3.32\% | 4.94\% | 8.34\% | 0.0142\% |
| PHILLIPS 66 | PSX | 44,627.16 | 0.26\% | 2.05\% | 6.53\% | 8.65\% | 0.0223\% |
| PVH CORP | PVH | 10,024.81 | 0.06\% | 0.12\% | 12.71\% | 12.84\% | 0.0074\% |
| QUANTA SERVICES INC | PWR | 7,515.84 | N/A | NA | 11.30\% | N/A | N/A |
| PRAXAIR INC | PX | 37,910.19 | 0.22\% | 2.01\% | 9.59\% | 11.69\% | 0.0256\% |
| PIONEER NATURAL RESOURCES CO | PXD | 27,975.93 | 0.16\% | 0.03\% | 36.98\% | 37.02\% | 0.0599\% |
| QUALCOMM INC | QCOM | 134,423.94 | 0.78\% | 1.83\% | 13.57\% | 15.52\% | 0.1207\% |
| QEP RESOURCES INC | QEP | 5,634.61 | 0.03\% | 0.26\% | 15.00\% | 15.27\% | 0.0050\% |
| RYDER SYSTEM INC | R | 4,194.78 | 0.02\% | 1.71\% | 13.00\% | 14.82\% | 0.0036\% |
| REYNOLDS AMERICAN INC | RAd | 29,221.89 | 0.17\% | 4.94\% | 6.58\% | 11.68\% | 0.0197\% |
| ROWAN COMPANIES PLC-A | RDC | 3,812.26 | 0.02\% | 0.79\% | 18.15\% | 19.01\% | 0.0042\% |
| REGENERON PHARMACEUTICALS | REGN | 28,640.52 | 0.17\% | 0.00\% | 28.83\% | 28.83\% | 0.0477\% |
| REGIONS FINANCIAL CORP | RF | 14,157.57 | 0.08\% | 1.76\% | 7.96\% | 9.80\% | 0.0080\% |
| ROBERT HALF INTL INC | RHI | 5,527.92 | 0.03\% | 1.73\% | 17.11\% | 18.98\% | 0.0061\% |
| RED HAT INC | RHT | 9,495.87 | 0.05\% | 0.00\% | 16.48\% | 16.48\% | 0.009\% |
| TRANSOCEANLTD | RIG | 15,018.27 | 0.09\% | 6.92\% | 15.50\% | 22.95\% | 0.0199\% |
| RALPH LAUREN CORP | RL | 14,033.48 | 0.08\% | 1.10\% | 12.57\% | 13.73\% | 0.0111\% |
| ROCKWELL AUTOMATION INC | ROK | 16,990.99 | 0.10\% | 1.84\% | 10.73\% | 12.67\% | 0.0124\% |
| ROPER INDUSTRIES INC | ROP | 12,840.68 | 0.07\% | 0.61\% | 15.00\% | 15.65\% | 0.0116\% |
| ROSS STORES INC | ROST | 14,686.33 | 0.08\% | 1.10\% | 11.60\% | 12.76\% | 0.0108\% |
| RANGE RESOURCES CORP | RRC | 14,630.27 | 0.08\% | 0.18\% | 25.50\% | 25.70\% | 0.0217\% |
| REPUBLIC SERVICES INC | RSG | 12,328.77 | 0.07\% | 3.05\% | 4.30\% | 7.42\% | 0.0053\% |
| RAYTHEON COMPANY | RTN | 30,796.72 | 0.18\% | 2.43\% | 9.61\% | 12.16\% | 0.0217\% |
| STARBUCKS CORP | SBUX | 52,073.95 | 0.30\% | 1.55\% | 17.95\% | 19.64\% | 0.0591\% |
| SCANA CORP | SCG | 7,452.51 | 0.04\% | 3.95\% | 5.00\% | 9.05\% | 0.0039\% |
| SCHWAB (CHARLES) CORP | SCHW | 33,954,92 | 0.20\% | 0.92\% | 21.80\% | 22.82\% | 0.0448\% |
| SPECTRA ENERGY CORP | SE | 26,002.65 | 0.15\% | 3.48\% | 5.50\% | 9.07\% | 0.0136\% |
| SEALED AIR CORP | SEE | 6,827.62 | 0.04\% | 1.59\% | 12.47\% | 14.16\% | 0.0056\% |
| SHERWN-WLLIAMS COITHE | SHW | 19,177.95 | 0.11\% | 1.13\% | 13.50\% | 14.71\% | 0.0163\% |
| SIGMA-ALDRICH | StAL | 11,036.48 | 0.06\% | 0.98\% | 7.13\% | 8.14\% | 0.0052\% |
| JM SMUCKER COITHE | S.JM | 9,858.74 | 0.06\% | 2.44\% | 7.03\% | 9.56\% | 0.0054\% |
| SCHLUMBERGER LTD | SLB | 130,787.74 | 0.76\% | 1.51\% | 14.86\% | 16.49\% | 0.1247\% |
| SLM CORP | SLM | 10,657.44 | N/A | 2.56\% | N/A | N/A | N/A |
| SNAP-ONINC | SNA | 6,444.36 | 0.04\% | 1.53\% | 7.25\% | 8.84\% | 0.0033\% |
| SANDISK CORP | SNDK | 16,989.73 | 0.10\% | 1.19\% | 7.25\% | 8.49\% | 0.0083\% |
| SCRIPPS NETWORKS INTER-CL A | SNI | 10,678.02 | 0.06\% | 1.09\% | 12.05\% | 13.21\% | 0.0082\% |
| SOUTHERN COITHE | SO | 40,339,49 | 0.23\% | 4.61\% | 4.05\% | 8.75\% | 0.0204\% |
| SIMON PROPERTY GROUP INC | SPG | 53,409.04 | 0.31\% | 2.99\% | 6.80\% | 9.89\% | 0.0306\% |
| STAPLESINC | SPLS | 7,815.29 | 0.05\% | 4.06\% | 5.64\% | 9.81\% | 0.0044\% |
| STERICYCLEINC | SRCL | 9,353.19 | N/A | N/A | 16.00\% | N/A | N/A |
| SEMPRA ENERGY | SRE | 23,742.93 | 0.14\% | 2.72\% | 6.86\% | 9.66\% | 0.0133\% |
| SUNTRUST BANKS INC | STI | 20,338.92 | 0.12\% | 1.71\% | 7.88\% | 9.65\% | 0.0114\% |
| ST JUDE MEDICAL INC | STJ | 17,948.36 | 0.10\% | 1.72\% | 10.86\% | 12.67\% | 0.0132\% |
| STATE STREET CORP | STT | 27,752.30 | 0.16\% | 1.82\% | 12.20\% | 14.13\% | 0.0227\% |
| SEAGATE TECHNOLOGY | STX | 18,042.08 | 0.10\% | 3.03\% | 7.80\% | 10.95\% | 0.0114\% |
| CONSTELLATION BRANDS INC-A | STZ | 14,811.62 | 0.09\% | 0.00\% | 18.51\% | 18.51\% | 0.0159\% |
| STANEEY BLACK \& DECKER INC | SWK | 12,493.50 | 0.07\% | 2.54\% | 9.07\% | 11.73\% | 0.0085\% |
| SOUTHWESTERN ENERGY CO | SWN | 16,724,20 | 0.10\% | 0.00\% | 18.30\% | 18.30\% | 0.0177\% |
| SAFEWAY INC | SWY | 7,873.96 | 0.05\% | 2.38\% | 10.46\% | 12.97\% | 0.0059\% |
| STRYKER CORP | SYK | 30,093.37 | 0.17\% | 1.50\% | 9.10\% | 10.67\% | 0.0186\% |
| SYMANTEC CORP | SYMC | 14,356.67 | 0.08\% | 2.89\% | 7.68\% | 10.68\% | 0.0089\% |
| SYSCO CORP | SYY | 20,918.44 | 0.12\% | 3.26\% | 9.00\% | 12.40\% | 0.0150\% |
| AT\&TINC | T | 185,780.39 | 1.07\% | 5.18\% | 4.75\% | 10.05\% | 0.1080\% |
| MOLSON COORS BREWING CO-B | TAP | 10,534.94 | 0.06\% | 2.55\% | 5.80\% | 8.42\% | 0.0051\% |
| TERADATA CORP | TDC | 7,463.73 | 0.04\% | 0.00\% | 11.36\% | 11.36\% | 0.0049\% |
| TECO ENERGY INC | TE | 3,971.16 | 0.02\% | 4.88\% | 4.50\% | 9.49\% | 0.0022\% |
| INTEGRYS ENERGY GROUP INC | TEG | 4,915.33 | 0.03\% | 4.42\% | 5.00\% | 9.54\% | 0.0027\% |
| TE CONNECTIVITY LTD | TEL | 24,498.40 | 0.14\% | 1.73\% | 9.40\% | 11.21\% | 0.0159\% |
| TARGET CORP | TGT | 37,661.23 | 0.22\% | 3.00\% | 10.60\% | 13.76\% | 0.0300\% |
| TENET HEALTHCARE CORP | THC | 3,848.26 | 0.02\% | 0.00\% | 12.87\% | 12.87\% | 0.0029\% |
| TIFFANY \& CO | TIF | 11,084.54 | 0.06\% | 1.71\% | 14.24\% | 16.08\% | 0.0103\% |
| TJX COMPANES INC | TJX | 41,292.13 | 0.24\% | 1.13\% | 10.81\% | 12.00\% | 0.0286\% |
| TORCHMARK CORP | TMK | 6,822.25 | 0.04\% | 0.96\% | 8.50\% | 9.50\% | 0.0037\% |
| THERMO FISHER SCIENTIFIC INC | TMO | 46,935.09 | 0.27\% | 0.53\% | 13.71\% | 14.27\% | 0.0387\% |
| TRIPADVISOR INC | TRIP | 11,833.80 | N/A | N/A | 24.50\% | N/A | N/A |
| T ROWE PRICE GROUP INC | TROW | 20,810.16 | 0.12\% | 2.13\% | 12.75\% | 15.01\% | 0.0181\% |
| TRAVELERS COS INCITHE | TRV | 29,843.43 | 0.17\% | 2.40\% | 8.33\% | 10.83\% | 0.0187\% |
| TRACTOR SUPPLY COMPANY | TSCO | 9,255.37 | 0.05\% | 0.81\% | 16.98\% | 17.86\% | 0.0096\% |
| TYSON FOODS INC-CLA | TSN | 14,441.73 | 0.08\% | 0.67\% | 8.00\% | 8.70\% | 0.0073\% |
| TESORO CORP | TSO | 6,713.90 | 0.04\% | 2.05\% | 97.61\% | 100.67\% | 0.0391\% |
| TOTAL SYSTEM SERVICES INC | TSS | 5,442.25 | 0.03\% | 1.38\% | 11.14\% | 12.60\% | 0.0040\% |
| TIME WARNER CABLE | TWC | 37,214.53 | 0.22\% | 2.23\% | 12.05\% | 14.41\% | 0.0310\% |
| TIME WARNER INC | TWX | 56,487.60 | 0.33\% | 2.00\% | 12.56\% | 14.68\% | 0.0480\% |


|  |  | [4] | (5) | [6] | [7) | [8] | 19) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capilalization | Weight in Index | Estimated Dividend Yield | Long-Term Growth Est. | DCF Resuit | Weighted DCF Result |
| TEXAS INSTRUMENTS INC | TXN | 49,667.84 | 0.29\% | 2.61\% | 10.00\% | 12.74\% | 0.0366\% |
| TEXTRONINC | TXT | 10,500.89 | 0.06\% | 0.27\% | 16.77\% | 17.06\% | 0.0104\% |
| TYCO INTERNATIONAL LTD | TYC | 18,835.82 | 0.11\% | 1.63\% | 10.50\% | 12.22\% | 0.0133\% |
| UNITEDHEALTH GROUP INC | UNH | 78,650.64 | 0.45\% | 1.44\% | 10.40\% | 11.91\% | 0.0542\% |
| UNUM GROUP | UNM | 8,585.98 | 0.05\% | 1.87\% | 9.00\% | 10.96\% | 0.0054\% |
| UNION PACIFIC CORP | UNP | 84,089.50 | 0.49\% | 1.88\% | 17.52\% | 19.57\% | 0.0952\% |
| UNITED PARCEL SERVICE-CL B | UPS | 88,054.57 | 0.51\% | 2.77\% | 10.18\% | 13.09\% | 0.0666\% |
| URBAN OUTFITTERSINC | UREN | 5,214.31 | 0.03\% | 0.00\% | 16.74\% | 16.74\% | 0.0050\% |
| US BANCORP | USB | 74,640.47 | 0.43\% | 2.29\% | 7.50\% | 9.87\% | 0.0426\% |
| UNITED TECHNOLOGIES CORP | UTX | 106,160.87 | 0.61\% | 2.08\% | 11.24\% | 13.43\% | 0.0824\% |
| VISA INC-CLASS A SHARES | V | 129,226.17 | 0.75\% | 0.78\% | 17.64\% | 18.48\% | 0.1381\% |
| VARLAN MEDICAL SYSTEMS INC | VAR | 8,497.56 | 0.05\% | 0.00\% | 11.00\% | 11.00\% | 0.0054\% |
| VF CORP | VFC | 26,056.56 | 0.15\% | 1.82\% | 12.23\% | 14.16\% | 0.0213\% |
| VIACOM INC-CLASS B | VIAB | 36,028.55 | 0.21\% | 1.50\% | 10.86\% | 12.44\% | 0.0259\% |
| VALERO ENERGY CORP | VLO | 28,537.04 | 0.17\% | 1.84\% | 8.36\% | 10.28\% | 0.0170\% |
| VULCAN MATERLALS CO | VMC | 8,319.60 | 0.05\% | 0.16\% | 6.67\% | 6.83\% | 0.0033\% |
| VORNADO REALTY TRUST | VNO | 18,588.60 | 0.11\% | 2.97\% | 10.59\% | 13.72\% | 0.0147\% |
| VERISIGN INC | VRSN | 6,567.54 | 0.04\% | 0.00\% | 12.50\% | 12.50\% | 0.0047\% |
| VERTEX PHARMACEUTICALS INC | VRTX | 14,934.12 | 0.09\% | 0.00\% | 22.00\% | 22.00\% | 0.0190\% |
| VENTAS INC | VIR | 19,425.63 | 0.11\% | 4.44\% | 3.95\% | 8.47\% | 0.0095\% |
| VERIZON COMMUNICATIONS INC | VZ | 194,248.80 | 1.12\% | 4.57\% | 5.52\% | 10.21\% | 0.1147\% |
| WALGREEN CO | WAG | 62,995,40 | 0.36\% | 1.89\% | 14.00\% | 16.03\% | 0.0584\% |
| WATERS CORP | WAT | 9,294.34 | 0.05\% | 0.00\% | 10.53\% | 10.53\% | 0.0057\% |
| WESTERN DIGITAL CORP | WDC | 21,114.70 | 0.12\% | 1.22\% | 5.59\% | 6.84\% | 0.0084\% |
| WISCONSIN ENERGY CORP | WEC | 10,857.19 | 0.06\% | 3.25\% | 4.67\% | 8.00\% | 0.0050\% |
| WELLS FARGO \& CO | WFC | 256,860.85 | 1.49\% | 2.70\% | 12.92\% | 15.79\% | 0.2345\% |
| WHOLE FOODS MARKET INC | WFM | 18,187.47 | 0.11\% | 0.98\% | 16.50\% | 17.56\% | 0.0185\% |
| WHIRLPOOL CORP | WHR | 11,735.32 | 0.07\% | 1.74\% | 21.02\% | 22.94\% | 0.0156\% |
| WINDSTREAM HOLDINGS INC | WIN | 5,297.67 | 0.03\% | 11.38\% | -2.50\% | 8.73\% | 0.0027\% |
| WELLPOINT INC | WLP | 27,169.04 | 0.16\% | 1.81\% | 9.26\% | 11.16\% | 0.0175\% |
| WASTE MANAGEMENT INC | WM | 19,258.95 | 0.11\% | 3.61\% | 6.33\% | 10.06\% | 0.0112\% |
| WILLIAMS COS INC | WMB | 27,896,53 | 0.16\% | 4.28\% | 11.50\% | 16.03\% | 0.0259\% |
| WAL-MART STORES INC | WMT | 248,259.00 | 1.44\% | 2.62\% | 8.62\% | 11.35\% | 0.1629\% |
| WESTERN UNION CO | WU | 8,486,96 | 0.05\% | 3.65\% | 8.80\% | 12.61\% | 0.0062\% |
| WEYERHAEUSER CO | Wr | 16,207.11 | 0.09\% | 3.18\% | 5.50\% | 8.77\% | 0.0082\% |
| WYNDHAM WORLDWDE CORP | WYN | 8,988.46 | N/A | 1.99\% | N/A | N/A | N/A |
| WYNN RESORTS LTD | WYNN | 20,536.99 | 0.12\% | 2.47\% | 15.57\% | 18.23\% | 0.0216\% |
| UNITED STATES STEEL. CORP | X | 3,921.03 | 0.02\% | 0.74\% | 6.00\% | 6.76\% | 0.0015\% |
| XCEL ENERGY INC | XEL | 15,742.73 | 0.09\% | 3.71\% | 4.75\% | 8.55\% | 0.0078\% |
| XL GROUP PLC | XL | 8,669.70 | 0.05\% | 1.90\% | 9.61\% | 11.59\% | 0.0058\% |
| XILINX INC | XLNX | 13,836.42 | 0.08\% | 1.73\% | 10.25\% | 12.07\% | 0.0097\% |
| EXXON MOBGL CORP | XOM | 425,343.57 | 2.46\% | 2.67\% | 12.04\% | 14.87\% | 0.3658\% |
| DENTSPLY INTERNATIONAL INC | XRAY | 6,330.37 | 0.04\% | 0.59\% | 10.37\% | 10.99\% | 0.0040\% |
| XEROX CORP | XRX | 13,217.39 | 0.08\% | 1.63\% | 10.00\% | 11.71\% | 0.0089\% |
| XYLEM INC | XYL | 6,456.74 | 0.04\% | 1.46\% | 6.00\% | 7.51\% | 0.0028\% |
| YAHOO! INC | YHOO | 34,531.31 | 0.20\% | 0.00\% | 12.37\% | 12.37\% | 0.0247\% |
| YUM! BRANDS INC | YUM | 33,353.28 | 0.19\% | 2.01\% | 12.44\% | 14.58\% | 0.0281\% |
| ZIONS BANCORPORATION | ZION | 5,468.46 | 0.03\% | 0.67\% | 7.67\% | 8.36\% | 0.0026\% |
| ZIMMER HOLDINGS INC | ZMH | 15,611.87 | 0.09\% | 0.88\% | 10.67\% | 11.60\% | 0.0105\% |
| ZOETISINC | ZTS | 14,295.83 | 0.08\% | 1.05\% | 12.20\% | 13.31\% | 0.0110\% |
| Total Ma | ilalizatio | 17,294,635.59 |  |  |  |  | 13.91\% |
| Notes: |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| [2] Source: Bloomberg Professional |  |  |  |  |  |  |  |
| [3] Equals [1] - [2] |  |  |  |  |  |  |  |
| [4] Source: Biooniberg Professional |  |  |  |  |  |  |  |
| [5] Equals weight in S\&P 500 based on market capitalization |  |  |  |  |  |  |  |
| [6] Source: Bloomberg Professional |  |  |  |  |  |  |  |
| [7] Source: Bloomberg Professional |  |  |  |  |  |  |  |
| [8] Equals ( $[6] \times(1+(0.5 \times[7]))+[7]$ |  |  |  |  |  |  |  |
| [9] Equals Col. [5] $\times \mathrm{Col}$. [8] |  |  |  |  |  |  |  |

Ex-Ante Market Risk Premúm Market DCF Method Based - Value Line

| $[1]$ | $[2]$ | $[3]$ |
| :---: | :---: | :---: |
| S\&P 500 | Current 30-Year |  |
| EsL. Required | Treasury (30-day | Implied Market |
| Market Relum | average) | Risk Premium |
| $12.31 \%$ | $3.60 \%$ | $8.71 \%$ |


|  |  | 14] | [5] | [6] | [7]. | 18) | [9] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capitalization | Weight in Index | Estimated Dividend Yield | Long-Term Growth Est. | DCF Result | Weighted DCF Result |
| AGILENT TECHNOLOGIES INC | A | 18,431.46 | 0.11\% | 0.96\% | 7.50\% | 8.50\% | 0.0091\% |
| ALCOA INC | AA | 15,903.52 | 0.09\% | 0.88\% | 17.00\% | 17.95\% | 0.0166\% |
| APPLE INC | AAPL | 506,704.70 | 2.94\% | 2.15\% | 12.50\% | 14.78\% | 0.4350\% |
| ABBVIE INC | ABBV | 78,288.59 | 0.45\% | 3.41\% | 0.00\% | 3.41\% | 0.0155\% |
| A AERISOURCEBERGEN CORP | $A B C$ | 14,956.63 | 0.09\% | 1.45\% | 13.50\% | 15.05\% | 0.0131\% |
| ABBOTT LABORATORIES | ABT | 59,419.89 | 0.35\% | 2.29\% | -4.00\% | -1.76\% | -0.0061\% |
| ACE LTD | ACE | 34,727.84 | 0.20\% | 2.47\% | 9.00\% | 11.58\% | 0.0234\% |
| ACCENTURE PLC-CL A | CAM | 15,477.93 | 0.09\% | 0.00\% | 16.00\% | 16.00\% | 0.0144\% |
| ACTAVIS PLC | ACT | 27,071.37 | 0.16\% | 0.00\% | 24.50\% | 24.50\% | 0.0385\% |
| ADOBE SYSTEMS INC | ADBE | 31,515.23 | 0.18\% | 0.00\% | 12.00\% | 12.00\% | 0.0220\% |
| ANALOG DEVICES INC | ADI | 16,782.70 | 0.10\% | 2.76\% | 11.00\% | 13.91\% | 0.0136\% |
| ARCHER-DANIELS-PIIDLAND CO | ADM | 29,411.17 | 0.17\% | 2.15\% | 9.00\% | 11.25\% | 0.0192\% |
| AUTOMATIC DATA PROCESSING | ADP | 36,884.87 | 0.21\% | 2.58\% | 9.00\% | 11.70\% | 0.0251\% |
| ALLIANCE DATA SYSTEMS CORP | ADS | 11,743.11 | 0.07\% | 0.00\% | 15.00\% | 15.00\% | 0.0102\% |
| AUTODESK INC | ADSK | 10,765.63 | 0.06\% | 0.00\% | 8.00\% | 8.00\% | 0.0050\% |
| ADT CORP/THE | ADT | 5,430.11 | 0.03\% | 2.70\% | 0.00\% | 2.70\% | 0.0009\% |
| AMEREN CORPORATION | AEE | 9,977.11 | 0.06\% | 3.92\% | 2.50\% | 6.47\% | 0.0037\% |
| AMERICAN ELECTRIC POWER | AEP | 25,525.37 | 0.15\% | 3.90\% | 4.50\% | 8.49\% | 0.0126\% |
| AES CORP | AES | 10,445.33 | 0.06\% | 1.38\% | 10.50\% | 11.95\% | 0.0072\% |
| AETNA INC | AET | 26,426.11 | 0.15\% | 1.23\% | 10.50\% | 11.79\% | 0.0181\% |
| AFLAC INC | AFL | 28,557.11 | 0.17\% | 2.45\% | 7.50\% | 10.04\% | 0.0167\% |
| ALLERGAN INC | AGN | 49,584.13 | 0.29\% | 0.12\% | 13.50\% | 13.63\% | 0.0392\% |
| A ${ }^{\text {A }}$ ARICAN INTERNATIONAL GROUP | AIG | 77,283.28 | 0.45\% | 0.95\% | 0.00\% | 0.95\% | 0.0043\% |
| APARTMENT INVT \& MGMT CO-A | AIV | - | 0.00\% | 3.41\% | 0.00\% | 3.41\% | 0.0000\% |
| ASSURANT INC | AIZ | 4,924.84 | 0.03\% | 1.49\% | 7.50\% | 9.05\% | 0.0026\% |
| AKAMAI TECHNOLOGIES INC | AKAld | 9,527.24 | 0.06\% | 0.00\% | 13.50\% | 13.50\% | 0.0075\% |
| ALLSTATE CORP | ALL. | 25,323.60 | 0.15\% | 1.99\% | 16.00\% | 18.15\% | 0.0267\% |
| ALLEGION PLC | ALLE | 4,964.36 | 0.03\% | 0.62\% | 0.00\% | 0.62\% | 0.0002\% |
| ALTERA CORP | ALTR | 10,962.53 | 0.06\% | 1.76\% | 0.00\% | 1.76\% | 0.0011\% |
| ALEXION PHARMACEUTICALS INC | ALXN | 30,727.11 | 0.18\% | 0.00\% | 31.50\% | 31.50\% | 0.0562\% |
| APPLIED MATERIALS INC | AMAT | 23,457.07 | 0.14\% | 2.07\% | 17.00\% | 19.25\% | 0.0262\% |
| AMETEK INC | AME | 12,707.58 | 0.07\% | 0.46\% | 10.50\% | 10.98\% | 0.0081\% |
| AMGEN INC | AMGN | 85,813.11 | 0.50\% | 2.18\% | 8.50\% | 10.77\% | 0.0537\% |
| AMERIPRISE FINANCIAL INC | AMP | 20,666.05 | 0.12\% | 1.97\% | 13.50\% | 15.60\% | 0.0187\% |
| AMERICAN TOWER CORP | AMT | 32,967.26 | 0.19\% | 1.58\% | 16.50\% | 18.21\% | 0.0349\% |
| AMAZON.COMINC | AMZN | 154,414.70 | 0.90\% | 0.00\% | 45.00\% | 45.00\% | 0.4035\% |
| AUTONATION INC | AN | 6,364.02 | 0.04\% | 0.00\% | 12.50\% | 12.50\% | 0.0046\% |
| AON PLC | $A O N$ | 24,743.14 | 0.14\% | 0.85\% | 15.50\% | 16.42\% | 0.0236\% |
| APACHE CORP | APA | 34,836.21 | 0.20\% | 1.14\% | 8.00\% | 9.19\% | 0.0186\% |
| ANADARKO PETROLEUM CORP | APC | 50,468.21 | 0.29\% | 0.72\% | 74.50\% | 75.49\% | 0.2212\% |
| AIR PRODUCTS \& CHEMICALS INC | APD | 25,072.55 | 0.15\% | 2.60\% | 9.00\% | 11.72\% | $0.0171 \%$ |
| AMPHENOL CORP-CL. A | APH | 15,238.40 | 0.09\% | 0.83\% | 8.00\% | 8.86\% | 0.0078\% |
| AIRGAS INC | ARG | 7.963 .20 | 0.05\% | 2.04\% | 13.50\% | 15.68\% | 0.0072\% |
| ALLEGHENY TECHNOLOGIES INC | ATI | 4,314.60 | 0.03\% | 1.77\% | 17.50\% | 19.42\% | 0.0049\% |
| AVALONBAY COMMANITIES INC | AVB | - | 0.00\% | 3.54\% | 0.00\% | 3.54\% | 0.0000\% |
| AVON PRODUCTS INC | AVP | $6,486.81$ | 0.04\% | 1.61\% | $36.50 \%$ | 38.40\% | 0.0145\% |
| AVERY DENNISON CORP | AV' | 4,765.00 | 0.03\% | 2.49\% | 10.00\% | 12.61\% | 0.0035\% |
| AMERICAN EXPRESS CO | AXP | 93,004.24 | 0.54\% | 1.16\% | 10.00\% | 11.22\% | 0.0606\% |
| AUTOZONE INC | AZO | 17,540.73 | 0.10\% | 0.00\% | 12.00\% | 12.00\% | 0.0122\% |
| BOEING CO/THE | BA | 97,057.35 | 0.56\% | 2.30\% | 11.00\% | 13.43\% | 0.0757\% |
| BANK OF AMERICA CORP | BAC | 174,564.80 | 1.01\% | 0.73\% | 0.00\% | 0.73\% | 0.0074\% |
| BAXIER INTERNATIONAL INC | BAX | 39,262.45 | 0.23\% | 2.71\% | 8.00\% | 10.82\% | 0.0247\% |
| BED BATH \& BEYOND INC | BBBY | 13,129.84 | 0.08\% | 0.00\% | 8.50\% | 8.50\% | 0.0065\% |
| BB\&T CORP | BBT | 26,717.30 | 0.16\% | 2.65\% | 11.50\% | 14.30\% | 0.0222\% |
| BEST BUY COINC | BBY | 8,387.91 | 0.05\% | 2.98\% | 5.50\% | 8.56\% | 0.0042\% |
| CR BARD INC | BCR | 10,549,11 | 0.06\% | 0.62\% | 8.00\% | 8.64\% | 0.0053\% |
| BECTON DICKINSON AND CO | BDX | 22,012.11 | 0.13\% | 1.91\% | 8.00\% | 9.99\% | 0.0128\% |
| BEAM INC | BEAB | 13,652.42 | 0.08\% | 1.08\% | 11.50\% | 12.64\% | 0.0100\% |
| FRANKLIN RESOURCES INC | BEN | 33,981.14 | 0.20\% | 0.93\% | 9.50\% | 10.47\% | 0.0207\% |
| BROWN-FORMAN CORP-CLASS B | BF/B | 18,895.63 | 0.11\% | 1.33\% | 10.00\% | 11.40\% | 0.0125\% |
| BAKER HUGHES INC | BHI | 30,559.26 | 0.18\% | 0.86\% | 13.00\% | 13.92\% | 0.0247\% |
| BIOGEN IDEC INC | BIIB | 69,644.75 | 0.40\% | 0.00\% | 14.50\% | 14.50\% | 0.0586\% |
| BANK OF NEW YORK MELLON CORP | BK | 38,613.28 | 0.22\% | 2.02\% | 10.00\% | 12.12\% | 0.0272\% |
| BLACKROCKINC | BLK | $51,436.87$ | 0.30\% | 2.54\% | 9.00\% | 11.65\% | 0.0348\% |
| BALL CORP | BLL | 7,873.34 | 0.05\% | 0.94\% | 12.00\% | 13.00\% | 0.0059\% |
| BEMIS COMPANY | BMS | 4,140.20 | 0.02\% | 2.68\% | 8.00\% | 10.79\% | 0.0026\% |


|  |  | 14 | [5] | [6] | (7) | [8] | [9] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capitalization | Weight in Index | Estimated Dividend Yield | Long-Term Growth Est. | DCF Result | Weighted DCF Resuit |
| BRISTOL-MYERS SQUIBB CO | BMY | 83,496.14 | 0.48\% | 2.84\% | 8.50\% | 11.46\% | 0.0556\% |
| BROADCOM CORP-CL A | BRCM | 18,092.34 | 0.11\% | 1.54\% | 2.50\% | 4.06\% | 0.0043\% |
| BERKSHIRE HATHAWAY INC-CL B | BRK/B | - | 0.00\% | 0.00\% | 0.00\% | 0.00\% | 0.0000\% |
| BOSTON SCIENTIFIC CORP | BSX | 18,408.99 | 0.11\% | 0.00\% | 10.50\% | 10.50\% | 0.0112\% |
| PEABODY ENERGY CORP | BTU | 4,813.23 | 0.03\% | 1.91\% | 4.00\% | 5.95\% | 0.0017\% |
| BORGWARNER INC | BWA | 14,506.70 | 0.08\% | 0.78\% | 14.00\% | 14.83\% | 0.0125\% |
| BOSTON PROPERTIES INC | BXP | - | 0.00\% | 2.24\% | 0.00\% | 2.24\% | 0.0000\% |
| CITIGROUP INC | C | 146,584,90 | 0.85\% | 0.79\% | 14.00\% | 14.85\% | 0.1264\% |
| CAINC | CA | 13,547.71 | 0.08\% | 3.27\% | 5.00\% | 8.35\% | 0.0066\% |
| CONAGRA FOODS INC | CAG | 13,080,98 | 0.08\% | 3.22\% | 10.00\% | 13.38\% | 0.0102\% |
| CARDINAL HEALTH INC | CAH | 23,533.23 | 0.14\% | 1.92\% | 12.00\% | 14.04\% | 0.0192\% |
| CAMERON INTERNATIONAL CORP | CAM | 15,477.93 | 0.09\% | 0.00\% | 16.00\% | 16.00\% | 0.0144\% |
| CATERPLLLARINC | CAT | 66,995.45 | 0.39\% | 2.28\% | 5.50\% | 7.84\% | 0.0305\% |
| CHUBB CORP | CB | 22,777.11 | 0.13\% | 2.18\% | 8.50\% | 10.77\% | 0.0142\% |
| CBRE GROUP INC - A | CBG | 8,742.82 | 0.05\% | 0.00\% | 12.00\% | 12.00\% | 0.0061\% |
| CBS CORP-CLASS 8 NON VOTING | CBS | 34,576.13 | 0.20\% | 0.82\% | 13.00\% | 13.87\% | 0.0279\% |
| COCA-COLA ENTERPRISES | CCE | 11,980,84 | 0.07\% | 2.19\% | 10.00\% | 12.30\% | 0.0086\% |
| CROWN CASTLE INTL CORP | CCl | 21,441.07 | 0.12\% | 1.90\% | 27.00\% | 29.16\% | 0.0363\% |
| CARNIVAL CORP | CCL | 29,658.09 | 0.17\% | 2.62\% | 5.00\% | 7.69\% | 0.0132\% |
| CELGENE CORP | CELG | 57,870.13 | 0.34\% | 0.00\% | 14.00\% | 14.00\% | 0.0470\% |
| CERNER CORP | CERN | 17,981.63 | 0.10\% | 0.00\% | 15.00\% | 15.00\% | 0.0157\% |
| CF INDUSTRIES HOLDINGS INC | CF | 13,419.72 | 0.08\% | 1.77\% | 4.50\% | 6.31\% | 0.0049\% |
| CAREFUSION CORP | CFN | 8,000.48 | 0.05\% | 0.00\% | 13.00\% | 13.00\% | 0.0060\% |
| CHESAPEAKE ENERGY CORP | CHK | 18,939.82 | 0.11\% | 1.20\% | 7.00\% | 8.24\% | 0.0091\% |
| C.H. ROBINSON WORLDWIDE INC | CHRW | 8,680.70 | 0.05\% | 2.46\% | 7.00\% | 9.55\% | 0.0048\% |
| CIGNA CORP | Cl | 22,198.45 | 0.13\% | 0.05\% | 9.00\% | 9.05\% | 0.0117\% |
| CINCINNATI FINANCIAL. CORP | CINF | 8,152.44 | 0.05\% | 3.54\% | 12.50\% | 16.26\% | 0.0077\% |
| COLGATE-PALMOLIVE CO | CL | 61,112.01 | 0.35\% | 2.23\% | 10.50\% | 12.85\% | 0.0456\% |
| CLOROX COMPANY | CLX | 11,572.86 | 0.07\% | 3.32\% | 10.50\% | 13.99\% | 0.0094\% |
| COMERICA INC | CMA | 8,931.50 | 0.05\% | 1.65\% | 11.00\% | 12.74\% | 0.0066\% |
| COMCAST CORP-CLASS A | CMCSA | 133,551.90 | 0.78\% | 1.75\% | 12.00\% | 13.86\% | 0.1074\% |
| CME GROUP INC | CME | 24,024.61 | 0.14\% | 2.65\% | 8.50\% | 11.26\% | 0.0157\% |
| CHIPOTLE MEXICAN GRILL INC | CMG | 15,780.27 | 0.09\% | 0.00\% | 16.50\% | 16.50\% | 0.0151\% |
| CUMMANS INC | CMI | 27,740.07 | 0.16\% | 1.68\% | 8.50\% | 10.25\% | 0.0165\% |
| CMS ENERGY CORP | CMS | 7,969.70 | 0.05\% | 3.67\% | 6.50\% | 10.29\% | 0.0048\% |
| CENTERPOINT ENERGY INC | CNP | 10,536.24 | 0.06\% | 3.91\% | 2.50\% | 6.46\% | 0.0040\% |
| CONSOL ENERGYINC | CNX | 9,880.27 | 0.06\% | 0.58\% | 4.00\% | 4.59\% | 0.0026\% |
| CAPITAL ONE FINANCIAL CORP | COF | 43,521.11 | 0.25\% | 1.61\% | 4.00\% | 5.64\% | 0.0143\% |
| CABOT OIL \& GAS CORP | COG | 15,991.07 | 0.09\% | 0.26\% | 33.00\% | 33.30\% | 0.0309\% |
| COACHINC | COH | 138,776.00 | 0.81\% | 2.70\% | 5.00\% | 7.77\% | 0.0626\% |
| ROCKWELL COLLINS INC | COL | 10,536.48 | 0.06\% | 1.54\% | 7.00\% | 8.59\% | 0.0053\% |
| CONOCOPHILLIPS | COP | 91,320.20 | 0.53\% | 3.71\% | 3.50\% | 7.27\% | 0.0386\% |
| COSTCO WHOLESALE CORP | $\operatorname{cost}$ | 50,600.32 | 0.29\% | 1.15\% | 10.50\% | 11.71\% | 0.0344\% |
| COVIDIEN PLC | cov | 31,942.72 | 0.19\% | 1.80\% | 7.50\% | 9.37\% | 0.0174\% |
| CAMPBELL SOUP CO | CPB | 13,999.44 | 0.08\% | 2.79\% | 6.00\% | 8.87\% | 0.0072\% |
| SALESFORCE.COM INC | CRM | 33,002.19 | 0.19\% | 0.00\% | 0.00\% | 0.00\% | 0.0000\% |
| COMPUTER SCIENCES CORP | CSC | 8,645.74 | 0.05\% | 1.35\% | 7.00\% | 8.40\% | 0.0042\% |
| CISCO SYSTEMS INC | $\csc 0$ | 121,106.00 | 0.70\% | 3.26\% | 5.50\% | 8.85\% | 0.0622\% |
| CSX CORP | csx | 28,523.88 | 0.17\% | 2.25\% | 9.00\% | 11.35\% | 0.0188\% |
| CINTAS CORP | CTAS | 6,971.48 | 0.04\% | 1.33\% | 12.00\% | 13.41\% | 0.0054\% |
| CENTURYLINK INC | CTL | 20,552.80 | 0.12\% | 6.24\% | 6.50\% | 12.94\% | 0.0154\% |
| COGNIZANT TECH SOLUTIONS-A | CTSH | 29,813.59 | 0.17\% | 0.00\% | 19.50\% | 19.50\% | 0.0338\% |
| CITRIX SYSTEMS INC | CTXS | 11,233.74 | 0.07\% | 0.00\% | 12.50\% | 12.50\% | 0.0082\% |
| CABLEVISION SYSTEMS-NY GRP-A | cVC | 4,452.45 | 0.03\% | 3.61\% | 19.00\% | 22.95\% | 0.0059\% |
| CVS CAREMARK CORP | cVs | 87,976.29 | 0.51\% | 1.51\% | 11.00\% | 12.59\% | 0.0643\% |
| CHEVRON CORP | cVx | 239,050.40 | 1.39\% | 3.22\% | 4.50\% | 7.79\% | 0.1082\% |
| DOMINION RESOURCES INCNA | D | 41,588.88 | 0.24\% | 3.40\% | 5.00\% | 8.49\% | 0.0205\% |
| DELTA AIR LINES INC | DAL | 31,257.23 | 0.18\% | 0.65\% | 11.50\% | 12.19\% | 0.0221\% |
| DU PONT (E.I.) DE NEMOURS | DD | 61,586.64 | 0.36\% | 2.80\% | 8.50\% | 11.42\% | 0.0408\% |
| DEERE \& CO | DE | 34,711.23 | 0.20\% | 2.17\% | 6.00\% | 8.24\% | 0.0166\% |
| DISCOVER FINANCIAL SERVICES | DFS | 26,932.11 | 0.16\% | 1.71\% | 8.50\% | 10.28\% | 0.0161\% |
| DOLLAR GENERAL CORP | DG | 17,536.48 | 0.10\% | 0.00\% | 14.50\% | 14.50\% | 0.0148\% |
| QUEST DIAGNOSTICS INC | DGX | 8,290.08 | 0.05\% | 2.29\% | 6.50\% | 8.86\% | 0.0043\% |
| DR HORTON INC | DHI | 7,482.37 | 0.04\% | 0.65\% | 25.50\% | 26.23\% | 0.0114\% |
| DANARER CORP | DHR | 51,527.53 | 0.30\% | 0.54\% | 12.00\% | 12.57\% | 0.0376\% |
| WALT DISNEY COITHE | DIS | 135,303.00 | 0.79\% | 1.08\% | 11.50\% | 12.64\% | 0.0993\% |
| DISCOVERY COMMUNICATIONS-A | DISCA | 23,854.60 | 0.14\% | 0.00\% | 15.00\% | 15.00\% | 0.0208\% |
| DELPHI AUTOMOTIVE PLC | DLPH | 20,938.62 | 0.12\% | 1.46\% | 12.00\% | 13.55\% | 0.0165\% |
| DOLLAR TREE INC | DLTR | 10,702.10 | 0.06\% | 0.00\% | 14.50\% | 14.50\% | 0.0090\% |
| DUN \& BRADSTREET CORP | DNB | 4,029.31 | 0.02\% | 1.67\% | 6.00\% | 7.72\% | 0.0018\% |
| DENBURY RESOURCES INC | DNR | 6,260.44 | 0.04\% | 1.45\% | 11.50\% | 13.03\% | 0.0047\% |
| DIAMOND OFFSHORE DRILLING | DO | 7,186.72 | 0.04\% | 6.77\% | 6.50\% | 13.49\% | 0.0056\% |
| DOVER CORP | DOV | 14,349.60 | 0.08\% | 1.74\% | 6.00\% | 7.79\% | 0.0065\% |
| DOW CHEMACAL COITHE | DOW | 59,748,06 | 0.35\% | 3.01\% | 14.50\% | 17.73\% | 0.0615\% |
| DR PEPPER SNAPPLE GROUP INC | DPS | 10,655,23 | 0.06\% | 3.08\% | 6.50\% | 9.68\% | 0.0060\% |
| DARDEN RESTAURANTS INC | DRI | 6,610.96 | 0.04\% | 4.39\% | 7.00\% | 11.54\% | 0.0044\% |
| DTE ENERGY COMPANY | DTE | 13,639.89 | 0.08\% | 3.58\% | 5.00\% | 8.67\% | 0.0069\% |


|  |  | [4) | (5) | [6] | 17) | [8] | [9] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Tikker | Market Capitalization | Weight in Index | $\begin{aligned} & \text { Estimated } \\ & \text { Dividend Yield } \end{aligned}$ | Long-Term Growh Est. | DCF Result | Weighted DCF Result |
| DiRECTV | OTV | 40,891.53 | 0.24\% | 0.00\% | 14.50\% | 14.50\% | 0.0344\% |
| DUKE ENERGY CORP | DUK | 51,580.36 | 0.30\% | 4.31\% | 4.00\% | 8.40\% | 0.0251\% |
| DAVITA HEALTHCARE PARTNERS I | DVA | 14,789.25 | 0.09\% | 0.00\% | 11.00\% | 11.00\% | 0.0094\% |
| DEVON ENERGY CORPORATION | DVN | 29,195.46 | 0.17\% | 1.34\% | 6.50\% | 7.88\% | 0.0134\% |
| ELECTRONIC ARTS INC | EA | 8,682.90 | 0.05\% | 0.00\% | 15.00\% | 15.00\% | 0.0076\% |
| Ebay INC | EbAY | 70,962.95 | 0.41\% | 0.00\% | 14.50\% | 14.50\% | 0.0597\% |
| ECOLABINC | ECL | 31,908.37 | 0.19\% | 1.07\% | 11.50\% | 12.63\% | 0.0234\% |
| CONSOLIDATED EDISON INC | ED | 16,685.18 | 0.10\% | 4.46\% | 1.50\% | 5.99\% | 0.0058\% |
| Equifaxinc | EFX | 8,393.22 | 0.05\% | 1.45\% | 10.00\% | 11.52\% | 0.0056\% |
| EDISON INTERNATIONAL | EXX | 18,486.52 | 0.11\% | 2.59\% | 2.50\% | 5.12\% | 0.0055\% |
| ester lauder companies-CLA | EL | 27,967.39 | 0.16\% | 1.11\% | 11.50\% | 12.67\% | 0.0206\% |
| EMC CORPIMA | EMC | 51,530.20 | 0.30\% | 1.80\% | 9.00\% | 10.88\% | 0.0326\% |
| EASTMAN CHEMICAL CO | EMN | 13,434.30 | 0.08\% | 1.60\% | 13.00\% | 14.70\% | 0.0115\% |
| EMERSON ELECTRIC CO | EMR | 48,954.96 | 0.28\% | 2.48\% | 6.50\% | 9.06\% | 0.0258\% |
| EOG RESOURCES INC | EOG | 56,483.31 | 0.33\% | 0.48\% | 21.50\% | 22.03\% | 0.0723\% |
| EQUITY RESIDENTIAL | EQR | - | 0.00\% | 3.42\% | 0.00\% | 3.42\% | 0.0000\% |
| EQT CORP | EQT | 16,302.95 | 0.09\% | 0.11\% | 15.50\% | 15.62\% | 0.0148\% |
| EXPRESS SCRIPTS HOLOING CO | ESRX | 57,558.72 | 0.33\% | 0.00\% | 12.50\% | 12.50\% | 0.0418\% |
| ESSEX PROPERTY TRUSTINC | ESS | N/A | N/A | N/A | N/A | N/A | N/ |
| ENSCO PLC-CLA | ESV | 12,025.49 | 0.07\% | 5.83\% | 17.00\% | 23.33\% | 0.0163\% |
| E*TRADE FINANCIAL. CORP | ETFC | 6,508.81 | 0.04\% | 0.00\% | 0.00\% | 0.00\% | 0.0000\% |
| EATON CORP PLC | ETN | 35,613.50 | 0.21\% | 2.62\% | 9.00\% | 11.74\% | 0.0243\% |
| ENTERGY CORP | ETR | 12,739.18 | 0.07\% | 4.65\% | -2.50\% | 2.09\% | 0.0015\% |
| EDWARDS LIFESCIENCES CORP | EW | 8,781.54 | 0.05\% | 0.00\% | 13.50\% | 13.50\% | 0.0069\% |
| EXELON CORP | ExC | 30,857.08 | 0.18\% | 3.44\% | -5.00\% | -1.65\% | -0.0029\% |
| EXPEDITORS INTL. WASH ING | EXPD | 8,343.53 | 0.05\% | 1.48\% | 6.50\% | 8.03\% | 0.0039\% |
| EXPEDIA INC | EXPE | 9,514.46 | 0.06\% | 0.83\% | 7.50\% | 8.36\% | 0.0046\% |
| FORD MOTOR CO | F | 64,373.20 | 0.37\% | 3.06\% | 8.00\% | 11.18\% | 0.0418\% |
| FASTENAL CO | fast | 14,816.37 | 0.09\% | 2.00\% | 12.00\% | 14.12\% | 0.0121\% |
| FACEBOOK INC-A | FB | 155,035.90 | 0.90\% | 0.00\% | 0.00\% | 0.00\% | 0.0000\% |
| FREEPORT-MCMORAN COPPER | FCX | 35,219.34 | 0.20\% | 3.77\% | 6.00\% | 9.88\% | 0.0202\% |
| FAMILY DOLLAR STORES | FDO | 6,493.60 | 0.04\% | 2.17\% | 5.50\% | 7.73\% | 0.0029\% |
| FEDEX CORP | FDX | 40,213.81 | 0.23\% | 0.44\% | 9.00\% | 9.46\% | 0.0221\% |
| FIRSTENERGY CORP | FE | 14,294,62 | 0.08\% | 4.21\% | 2.00\% | 6.25\% | 0.0052\% |
| F5 NETWORKS INC | FFIV | 8,058.72 | 0.05\% | 0.00\% | 12.00\% | 12.00\% | 0.0056\% |
| FIDELITY NATIONAL. INFORMATIO | FIS | 15,297,31 | 0.09\% | 1.83\% | 10.00\% | 11.92\% | 0.0106\% |
| FISERV INC | FiSV | 14,654.86 | 0.09\% | 0.00\% | 10.00\% | 10.00\% | 0.0085\% |
| FIFTH THIRD BANCORP | FITB | 17,987.06 | 0.10\% | 2.47\% | 10.00\% | 12.59\% | 0.0132\% |
| FLIR SYSTEMS INC | FLIR | 5,235.68 | 0.03\% | 1.10\% | 11.00\% | 12.16\% | 0.0037\% |
| FLUOR CORP | FLR | 12,406.20 | 0.07\% | 1.09\% | 7.00\% | 8.13\% | 0.0059\% |
| FLOWSERVE CORP | FLS | 10,144.58 | 0.06\% | 0.87\% | 12.00\% | 12.92\% | 0.0076\% |
| FMC CORP | FMC | 10,076.67 | 0.06\% | 0.79\% | 12.00\% | 12.84\% | 0.0075\% |
| FOSSIL GROUP INC | FOSL | 5,948.95 | 0.03\% | 0.00\% | 13.00\% | 13.00\% | 0.0045\% |
| TWENTY-FIRST CENTURY FOX-A | FOXA | 74,574.86 | 0.43\% | 0.79\% | 11.00\% | 11.83\% | 0.0512\% |
| FOREST LABORATORIES INC | FRX | 24,687.02 | 0.14\% | 0.00\% | 10.00\% | 10.00\% | 0.0143\% |
| FIRST SOLARINC | FSLR | 7,022.31 | 0.04\% | 0.00\% | -2.00\% | -2.00\% | -0.0008\% |
| FMC TECHNOLOGIES INC | FT1 | 13,532.14 | 0.08\% | 0.00\% | 20.50\% | 20.50\% | 0.0161\% |
| FRONTIER COMMUNICATIONS CORP | FTR | 5,807.19 | 0.03\% | 6.89\% | 13.50\% | 20.86\% | 0.0070\% |
| AGL RESOURCES INC | GAS | 6,194.07 | 0.04\% | 3.76\% | 9.00\% | 12.93\% | 0.0047\% |
| GANNETTCO | GCl | 6,235.36 | 0.04\% | 2.92\% | 6.50\% | 9.51\% | 0.0034\% |
| GENERAL DYNAMICS CORP | GD | 39,022.65 | 0.23\% | 2.25\% | 3.00\% | 5.28\% | 0.0120\% |
| GENERAL ELECTRIC CO | GE | 266,210.90 | 1.55\% | 3.33\% | 10.50\% | 14.00\% | 0.2165\% |
| GENERAL GROWTH PROPERTIES | GGP |  | 0.00\% | 2.46\% | 0.00\% | 2.46\% | 0.0000\% |
| GRAHAB HOLDINGS CO-CLASS B | GHC | 5,109.56 | 0.03\% | 1.47\% | 10.50\% | 12.05\% | 0.0036\% |
| GILEAD SCIENCES INC | GILD | 113,640.80 | 0.66\% | 0.00\% | 13.00\% | 13.00\% | 0.0358\% |
| GENERAL MILLS INC | GIS | 32,307.37 | 0.19\% | 3.13\% | 6.50\% | 9.73\% | 0.0183\% |
| CORNING INC | GLW | 29,644.81 | 0.17\% | 1.89\% | 6.50\% | 8.45\% | 0.0145\% |
| GENERAL MOTORS CO | GM | 47,838.00 | 0.28\% | 3.51\% | 9.50\% | 13.18\% | 0.0366\% |
| KEURIG GREEN MOUNTAIN INC | GMCR | 13,995.89 | 0.08\% | 1.06\% | 19.00\% | 20.16\% | 0.0164\% |
| GAMESTOP CORP-CLASS A | GME | 4,672.40 | 0.03\% | 3.41\% | 12.00\% | 15.61\% | 0.0042\% |
| GENWORTH FINANCIAL INC-CLA | GNW | 8,677.35 | 0.05\% | 0.00\% | 20.00\% | 20.00\% | 0.0101\% |
| GOOGLE INC-CL C | G00G | 350,971.80 | 2.04\% | 0.00\% | 14.50\% | 14.50\% | 0.2955\% |
| GOOGLE INC-CLA | GOOGL | NA | N/A | N/A | N/A | N/A | N/A |
| GENUINE PARTS CO | GPC | 13,310.20 | 0.08\% | 2.67\% | 9.00\% | 11.79\% | 0.0091\% |
| GAP INC/THE | GPS | 17,475.08 | 0.10\% | 2.31\% | 12.50\% | 14.95\% | 0.0152\% |
| GARMINLTD | GRMN | 10,828.87 | 0.06\% | 3.46\% | 1.50\% | 4.99\% | 0.0031\% |
| GOLDMAN SACHS GROUP INC | GS | 71,796.85 | 0.42\% | 1.37\% | 13.00\% | 14.46\% | 0.0603\% |
| GOODYEAR TIRE \& RUBBER CO | GT | 6,986.64 | 0.04\% | 0.71\% | 11.50\% | 12.25\% | 0.0050\% |
| WW GRAINGER INC | gWw | 17,373.31 | 0.10\% | 1.47\% | 12.50\% | 14.06\% | 0.0142\% |
| halliburton CO | HAL | 53,903.01 | 0.31\% | 0.95\% | 11.50\% | 12.50\% | 0.0391\% |
| HARMAN INTERNATIONAL | HAR | 7,588.01 | 0.04\% | 1.07\% | 19.50\% | 20.67\% | 0.0091\% |
| HASBRO INC | HAS | 7,134,65 | 0.04\% | 3.13\% | 7.00\% | 10.24\% | 0.0042\% |
| HUNTINGTON BANCSHARES INC | HBAN | 7,752.89 | 0.05\% | 2.14\% | 6.00\% | 8.20\% | 0.0037\% |
| HUDSON CITY BANCORP INC | HCBK | 5,268,34 | 0.03\% | 1.61\% | 0.00\% | 1.61\% | 0.0005\% |
| heatit care reit inc | HCN | - | 0.00\% | 5.20\% | 0.00\% | 5.20\% | 0.0000\% |
| HCP INC | HCP |  | 0.00\% | 5.38\% | 0.00\% | 5.38\% | 0.0000\% |
| HOME DEPOT INC | HD | 112,316.20 | 0.65\% | 2.36\% | 14.50\% | 17.03\% | 0.1111\% |


|  |  | 14) | [5] | [6] | 17) | [8] | 19] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capitalization | Weight in Index | Estimaled Dividend Yield | Long-Term Growth Est. | DCF Resuli | Weighted DCF Result |
| HESS CORP | HES | 29,937.09 | 0.17\% | 1.13\% | -1.00\% | 0.12\% | 0.0002\% |
| HARTFORD FINANCIAL SVCS GRP | HIG | 15,634.47 | 0.09\% | 1.72\% | 11.00\% | 12.81\% | 0.0116\% |
| HARLEY-DAVIDSON INC | HOG | 15,755.66 | 0.09\% | 1.54\% | 16.00\% | 17.66\% | 0.0162\% |
| HONEYWELL INTERNATIONAL INC | HON | 73,323.53 | 0.43\% | 1.92\% | 9.50\% | 11.51\% | 0.0490\% |
| STARWOOD HOTELS \& RESORTS | HOT | 14,618.71 | 0.08\% | 1.84\% | 14.00\% | 15.97\% | 0.0136\% |
| HELMERICH \& PAYNE | HP | 11,498.76 | 0.07\% | 2.34\% | 10.00\% | 12.46\% | 0.0083\% |
| HEWLETT-PACKARD CO | HPQ | 60,768.00 | 0.35\% | 2.00\% | 0.00\% | 2.00\% | 0.0071\% |
| H\&R BLOCK INC | HRB | 7,669.85 | 0.04\% | 3.40\% | 9.00\% | 12.55\% | 0.0056\% |
| HORMEL FOODS CORP | HRL | 12,562.92 | 0.07\% | 1.77\% | 11.00\% | 12.87\% | 0.0094\% |
| HARRIS CORP | KRS | 7.696.83 | 0.04\% | 2.45\% | 1.50\% | 3.97\% | 0.0018\% |
| HOSPIRA INC | HSP | 7,279.78 | 0.04\% | 0.00\% | 7.00\% | 7.00\% | 0.0030\% |
| HOST HOTELS \& RESORTS INC | HST | - | 0.00\% | 2.94\% | 0.00\% | 2.94\% | 0.0000\% |
| HERSHEY COITHE | HSY | 21,489.76 | 0.12\% | 2.08\% | 11.50\% | 13.70\% | 0.0171\% |
| HUMANA INC | HUM | 16,761.98 | 0.10\% | 0.99\% | 7.50\% | 8.53\% | 0.0083\% |
| INTL BUSINESS MACHINES CORP | IBM | 200,566.10 | 1.16\% | 2.10\% | 7.50\% | 9.68\% | 0.1127\% |
| INTERCONTINENTALEXCHANGE GRO | ICE | 23,663.55 | 0.14\% | 1.26\% | 18.50\% | 19.88\% | 0.0273\% |
| INTL. FLAVORS \& FRAGRANCES | IFF | 7.786.82 | 0.05\% | 1.69\% | 7.00\% | 8.75\% | 0.0040\% |
| INTL GAME TECHNOLOGY | IGT | 3,158.76 | 0.02\% | 3.48\% | 13.00\% | 16.71\% | 0.0031\% |
| INTEL CORP | INTC | 132,867.30 | 0.77\% | 3.36\% | 6.00\% | 9.46\% | 0.0730\% |
| INTUIT INC | INTU | 21,025.32 | 0.12\% | 1.03\% | 11.00\% | 12.09\% | 0.0148\% |
| INTERNATIONAL PAPER CO | IP | 20,071.27 | 0.12\% | 3.04\% | 12.00\% | 15.22\% | 0.0177\% |
| INTERPUBLIC GROUP OF COS INC | IPG | 7,200.97 | 0.04\% | 2.20\% | 13.50\% | 15.85\% | 0.0066\% |
| INGERSOLL-RAND PLC | IR | 16,570.89 | 0.10\% | 1.68\% | 12.50\% | 14.29\% | 0.0137\% |
| IRON MOUNTAIN INC | IRM | 5,371.15 | 0.03\% | 3.85\% | 5.50\% | 9.46\% | 0.0029\% |
| INTUITIVE SURGICAL INC | ISRG | 14,147.29 | 0.08\% | 0.00\% | 9.00\% | 9.00\% | 0.0074\% |
| ILLINOIS TOOL WORKS | ITW | 37,996.89 | 0.22\% | 1.96\% | 10.50\% | 12.56\% | 0.0277\% |
| INVESCO LTD | IVZ | 15,680.42 | 0.09\% | 2.54\% | 17.00\% | 19.76\% | 0.0180\% |
| JABIL CIRCUIT INC | JBL | 3,660.37 | 0.02\% | 1.78\% | 3.00\% | 4.81\% | 0.0010\% |
| JOHNSON CONTROLS INC | JCI | 30,392.56 | 0.18\% | 1.92\% | 12.00\% | 14.04\% | 0.0248\% |
| JACOBS ENGINEERING GROUP INC | JEC | 8,354.78 | 0.05\% | 0.00\% | 12.00\% | 12.00\% | 0.0058\% |
| JOHNSON \& JOHNSON | JNJ | 281,953.10 | 1.64\% | 2.64\% | 6.50\% | 9.23\% | 0.1510\% |
| JUNIPER NETWORKS INC | JNPR | 12,498.85 | 0.07\% | 1.19\% | 16.50\% | 17.79\% | 0.0129\% |
| JOY GLOBAL INC | JOY | 6,116.31 | 0.04\% | 1.15\% | 2.00\% | 3.16\% | 0.0011\% |
| JPMORGAN CHASE \& CO | JPM | 211,202.00 | 1.23\% | 2.85\% | 8.00\% | 10.96\% | 0.1345\% |
| NORDSTROM INC | JWN | 11,984.20 | 0.07\% | 2.18\% | 8.50\% | 10.77\% | 0.0075\% |
| KELLOGG CO | K | 24,137,15 | 0.14\% | 2.80\% | 6.50\% | 9.39\% | 0.0132\% |
| KEYCORP | KEY | 12,131.66 | 0.07\% | 1.76\% | 8.50\% | 10.33\% | 0.0073\% |
| KIMCO REALTY CORP | KIM | , | 0.00\% | 4.06\% | 0.00\% | 4.06\% | 0.0000\% |
| KLA-TENCOR CORPORATION | KLAC | 11,283.93 | 0.07\% | 2.66\% | 6.00\% | 8.74\% | 0.0057\% |
| KIMBERLY-CLARK CORP | KMB | 41,126.12 | 0.24\% | 3.08\% | 8.50\% | 11.71\% | 0.0280\% |
| KINDER MORGAN INC | KPı | 34,713.20 | 0.20\% | 4.99\% | 15.00\% | 20.36\% | 0.0410\% |
| CARMAX INC | KMX | 9,719.35 | 0.06\% | 0.00\% | 10.00\% | 10.00\% | 0.0056\% |
| COCA-COLA COTTHE | KO | 179,161.40 | 1.04\% | 3.07\% | 6.50\% | 9.67\% | 0.1006\% |
| MICHAEL KORS HOLDINGS LTD | KORS | 18,599.64 | 0.11\% | 0.00\% | 29.50\% | 29.50\% | 0.0319\% |
| KROGER CO | KR | 23,037.80 | 0.13\% | 1.57\% | 9.50\% | 11.14\% | 0.0149\% |
| KRAFT FOODS GROUP INC | KRFT | 33,883.98 | 0.20\% | 3.70\% | 0.00\% | 3.70\% | 0.0073\% |
| KOHLS CORP | KSS | 11,548.03 | 0.07\% | 2.92\% | 7.50\% | 10.53\% | 0.0071\% |
| KANSAS CITY SOUTHERN | KSU | 11,127.38 | 0.06\% | 1.11\% | 14.00\% | 15.19\% | 0.0098\% |
| LOEWS CORP | L | 17,205.26 | 0.10\% | 0.56\% | 13.00\% | 13.60\% | 0.0136\% |
| L BRANDS INC | LB | 15,786.75 | 0.09\% | 2.51\% | 8.50\% | 11.12\% | 0.0102\% |
| LEGGETT \& PLATT INC | LEG | 4,703.36 | 0.03\% | 3.56\% | 12.50\% | 16.28\% | 0.0044\% |
| LENNAR CORP-A | LEN | 8,076.52 | 0.05\% | 0.41\% | 27.00\% | 27.47\% | 0.0129\% |
| LABORATORY CRP OF AMER HLDGS | LH | 8,605.99 | 0.05\% | 0.00\% | 5.00\% | 5.00\% | 0.0025\% |
| L-3 COMMUNICATIONS HOLDINGS | LLIL | 9,997.74 | 0.06\% | 2.06\% | 4.00\% | 6.10\% | 0.0035\% |
| LINEAR TECHNOLOGY CORP | LLTC | 10,991.77 | 0.06\% | 2.31\% | 6.50\% | 8.89\% | 0.0057\% |
| ELILILLY \& CO | LLY | 63,386.14 | 0.37\% | 3.34\% | -2.50\% | 0.80\% | 0.0029\% |
| LEGG MASON INC | LM | 5,553.75 | 0.03\% | 1.11\% | 14.50\% | 15.69\% | 0.0051\% |
| LOCKHEED MARTIN CORP | LMT | 51,237.78 | 0.30\% | 3.46\% | 7.50\% | 11.09\% | 0.0330\% |
| LINCOLN NATIONAL. CORP | LNC | 12,768.86 | 0.07\% | 1.40\% | 8.00\% | 9.46\% | 0.0070\% |
| LORILLARD INC | LO | 19,948.14 | 0.12\% | 4.55\% | 11.00\% | 15.80\% | 0.0183\% |
| LOWE'S COS INC | LOW | 49,518.00 | 0.29\% | 1.53\% | 15.00\% | 16.64\% | 0.0479\% |
| LAM RESEARCH CORP | LRCX | 9,447.97 | 0.05\% | 0.00\% | 13.50\% | 13.50\% | 0.0074\% |
| LSI CORP | LSI | 6,050.52 | 0.04\% | 0.00\% | 26.50\% | 26.50\% | 0.0093\% |
| LEUCADIA NATIONAL CORP | LUK | N/A | N/A | N/A | N/A | N/A | N/A |
| SOUTHWEST AIRLINES CO | LUV | 16,909.39 | 0.10\% | 0.66\% | 17.00\% | 17.72\% | 0.0174\% |
| LYONDELLBASELL INDU-CLA | LYB | 48,662.93 | 0.28\% | 2.75\% | 12.00\% | 14.92\% | 0.0421\% |
| MACY'S INC | M | 21,390.32 | 0.12\% | 1.98\% | 14.00\% | 16.12\% | 0.0200\% |
| MASTERCARD INC-CLASS A | MA | 89,497.93 | 0.52\% | 0.59\% | 15.00\% | 15.63\% | 0.0813\% |
| MACERICH COTHE | MAC |  | 0.00\% | 3.86\% | 0.00\% | 3.86\% | 0.0000\% |
| MARRIOTT INTERNATIONAL -CL A | MAR | 17,577.15 | 0.10\% | 1.18\% | 14.00\% | 15.26\% | 0.0156\% |
| MASCO CORP | MAS | 7,846.28 | 0.05\% | 1.34\% | 33.50\% | 35.06\% | 0.0160\% |
| MATTEL INC | MAT | 12,822.50 | 0.07\% | 4.03\% | 9.50\% | 13.72\% | 0.0102\% |
| MCDONALD'S CORP | MCD | 98,881.53 | 0.57\% | 3.25\% | 7.00\% | 10.36\% | 0.0595\% |
| MICROCHIP TECHNOLOGY INC | MCHP | 9,635.27 | 0.06\% | 2.93\% | 9.00\% | 12.06\% | 0.0067\% |
| MCKESSON CORP | MCK | 39,227.28 | 0.23\% | 0.56\% | 14.00\% | 14.60\% | 0.0333\% |
| MOODYS CORP | MCO | 17.132.71 | 0.10\% | 1.41\% | 12.50\% | 14.00\% | 0.0139\% |
| MONDELEZ INTERNATIONAL INC-A | MDLZ | 60,200.48 | 0.35\% | 1.59\% | 7.50\% | 9.15\% | 0.0320\% |


|  |  | (4) | [5] | [6] | [7] | [8] | [9] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capitalization | Weight in Index | Estimated Dividend Yield | Long-Term Growh Est. | DCF Result | Weighted DCF Result |
| MEDTRONIC INC | MDT | 58,240.82 | 0.34\% | 2.02\% | 6.50\% | 8.59\% | 0.0290\% |
| METLIFE INC | MET | 58,289.45 | 0.34\% | 2.70\% | 7.50\% | 10.30\% | 0.0349\% |
| MCGRAW HILL FINANCIAL INC | M HFI | 20,578.09 | 0.12\% | 1.58\% | 0.00\% | 1.58\% | 0.0019\% |
| MOHAWK INDUSTRIES INC | 8 ${ }_{\text {HK }}$ | 10,003.05 | 0.06\% | 0.00\% | 15.50\% | 15.50\% | 0.0090\% |
| MEAD JOHNSON NUTRITION CO | MJN | 18,243.90 | 0.11\% | 1.70\% | 11.00\% | 12.79\% | 0.0136\% |
| MCCORMICK \& CO-NON VTG SHRS | MKC | 9,303.34 | 0.05\% | 2.16\% | 7.50\% | 9.74\% | 0.0053\% |
| MARSH \& MCLENNAN COS | MMC | 26,529.50 | 0.15\% | 2.06\% | 13.00\% | 15.19\% | 0.0234\% |
| 3 MCO | MMM | 90,639.39 | 0.53\% | 2.50\% | 9.00\% | 11.61\% | 0.0611\% |
| MONSTER BEVERAGE CORP | MNST | 11,135.37 | 0.06\% | 0.00\% | 14.50\% | 14.50\% | 0.0094\% |
| ALTRIA GROUP INC | MO | 76,549.59 | 0.44\% | 5.00\% | 10.50\% | 15.76\% | 0.0701\% |
| MONSANTO CO | MON | 58,005.17 | 0.34\% | 1.56\% | 13.50\% | 15.17\% | 0.0511\% |
| MOSAIC COITHE | MOS | 20,782.88 | 0.12\% | 2.46\% | 6.00\% | 8.53\% | 0.0103\% |
| MARATHON PETROLEUM CORP | ${ }^{\text {MPC }}$ | 26,949.78 | 0.16\% | 1.92\% | 0.00\% | 1.92\% | 0.0030\% |
| MERCK \& CO. INC. | MRK | 168,368.00 | 0.98\% | 3.06\% | 2.00\% | 5.09\% | 0.0498\% |
| MARATHON OIL CORP | MRO | 25,320.48 | 0.15\% | 2.09\% | 0.00\% | 2.09\% | 0.0031\% |
| MORGAN STANLEY | MS | 60,174.21 | 0.35\% | 1.29\% | 30.00\% | 31.48\% | 0.1100\% |
| MICROSOFT CORP | MSFT | 330,838.00 | 1.92\% | 2.81\% | 8.50\% | 11.43\% | 0.2196\% |
| MOTOROLA SOLUTIONS INC | MSI | 16,033.50 | 0.09\% | 2.11\% | 8.00\% | 10.19\% | 0.0095\% |
| M \& T BANK CORP | MTB | 16,007.92 | 0.09\% | 2.28\% | 7.00\% | 9.36\% | 0.0087\% |
| MICRON TECHNOLOGY INC | MU | 27,991.20 | 0.16\% | 0.00\% | 80.50\% | 80.50\% | 0.1308\% |
| MURPHY OIL CORP | MUR | 12,601.39 | 0.07\% | 1.93\% | 9.00\% | 11.02\% | 0.0081\% |
| MEADWESTVACO CORP | MWV | 6,696.87 | 0.04\% | 2.61\% | 11.00\% | 13.75\% | 0.0053\% |
| MYLANINC | MYL | 19,270.30 | 0.11\% | 0.00\% | 14.00\% | 14.00\% | 0.0157\% |
| NOBLE ENERGY INC | NBL | 27,154.16 | 0.16\% | 0.96\% | 17.00\% | 18.04\% | 0.0284\% |
| NABORS INDUSTRIES LTTD | NBR | 7,305.65 | 0.04\% | 0.65\% | 16.50\% | 17.20\% | 0.0073\% |
| NASDAQ OMX GROUPITHE | NDAQ | 6,142.58 | 0.04\% | 1.65\% | 8.50\% | 10.22\% | 0.0036\% |
| NOBLE CORP PLC | NE | 8,055.21 | 0.05\% | 4.72\% | 19.50\% | 24.68\% | 0.0115\% |
| NEXTERA ENERGY INC | NEE | 42,060.15 | 0.24\% | 3.00\% | 4.50\% | 7.57\% | 0.0185\% |
| NEWMONT MINING CORP | NEM | 12,694.02 | 0.07\% | 0.39\% | -17.50\% | -17.14\% | -0.0126\% |
| NETFLIX INC | NFLX | 20,508.98 | 0.12\% | 0.00\% | 20.50\% | 20.50\% | 0.0244\% |
| NEWFIELD EXPLORATION CO | NFX | 4,387.24 | 0.03\% | 0.00\% | -1.00\% | -1.00\% | -0.0003\% |
| NISOURCE INC | NI | 11,251.52 | 0.07\% | 2.79\% | 10.50\% | 13.44\% | 0.0088\% |
| NIKE INC -CL B | NKE | 64,656.59 | 0.38\% | 1.31\% | 12.50\% | 13.89\% | 0.0522\% |
| NIELSEN HOLDINGS NV | NLSN | 17,396.12 | 0.10\% | 1.74\% | 0.00\% | 1.74\% | 0.0018\% |
| NORTHROP GRUMMAN CORP | NOC | 25,830.71 | 0.15\% | 2.05\% | 5.00\% | 7.10\% | 0.0107\% |
| NATIONAL OIL WELL VARCO INC | NOV | 35,449.35 | 0.21\% | 1.26\% | 11.50\% | 12.83\% | 0.0264\% |
| NRG ENERGY INC | NRG | 10,660.09 | 0.06\% | 1.70\% | 7.00\% | 8.76\% | 0.0054\% |
| NORFOLK SOUTHERN CORP | NSC | 29,377.39 | 0.17\% | 2.27\% | 8.50\% | 10.87\% | 0.0185\% |
| NETAPP INC | NTAP | 11,868.58 | 0.07\% | 1.68\% | 9.50\% | 11.26\% | 0.0078\% |
| NORTHERN TRUST CORP | NTRS | 14,396.33 | 0.08\% | 2.19\% | 9.50\% | 11.79\% | 0.0099\% |
| NORTHEAST UTILITIES | NU | 14,641. 28 | 0.09\% | 3.38\% | 8.00\% | 11.52\% | 0.0098\% |
| NUCOR CORP | NUE | 16,390.71 | 0.10\% | 2.87\% | 22.00\% | 25.19\% | 0.0240\% |
| NVIIA CORP | NVDA | 10,949.98 | 0.06\% | 1.77\% | 6.50\% | 8.33\% | 0.0053\% |
| NEWELL RUBBERMAID INC | NWL | 8,444.37 | 0.05\% | 1.98\% | 12.50\% | 14.60\% | 0.0072\% |
| NEWS CORP - CLASS A | NWSA | N/A | N/A | N/A | N/A | N/A | N/A |
| OWENS-LLLINOIS INC | OI | 5,338.38 | 0.03\% | 0.00\% | 8.50\% | 8.50\% | 0.0026\% |
| ONEOK INC | OKE | 12,830.18 | 0.07\% | 3.76\% | 10.00\% | 13.95\% | 0.0104\% |
| OMNICOM GROUP | OMC | 18,064.95 | 0.10\% | 2.29\% | 11.50\% | 13.92\% | 0.0146\% |
| ORACLE CORP | ORCL | 178,199.30 | 1.03\% | 1.21\% | 9.00\% | 10.26\% | 0.1062\% |
| O'REILLY AUTOMOTIVE INC | ORLY | 16,134.25 | 0.09\% | 0.00\% | 12.00\% | 12.00\% | 0.0112\% |
| OCCIDENTAL PETROLEUM CORP | OXY | 78,300.57 | 0.45\% | 3.00\% | 3.50\% | 6.55\% | 0.0298\% |
| PAYCHEXINC | PAYX | 14,884.20 | 0.09\% | 3.62\% | 8.00\% | 11.76\% | 0.0102\% |
| PEOPLE'S UNITED FINANCIAL | PBCT | 4,463.78 | 0.03\% | 4.54\% | 14.00\% | 18.86\% | 0.0049\% |
| PITNEY BOWES INC | PBI | 5,157.13 | 0.03\% | 2.94\% | 2.00\% | 4.97\% | 0.0015\% |
| paccar inc | PCAR | 23,473.29 | 0.14\% | 2.56\% | 12.50\% | 15.22\% | 0.0207\% |
| PG\&ECORP | PCG | 20,504.48 | 0.12\% | 4.05\% | 5.00\% | 9.15\% | 0.0109\% |
| PLUM CREEX TIMBER CO | PCL | 7,602.15 | 0.04\% | 4.10\% | 12.50\% | 16.86\% | 0.0074\% |
| PRICELINE GROUP INCITHE | PCLN | 62,141.55 | 0.36\% | 0.00\% | 25.50\% | 25.50\% | 0.0920\% |
| PRECISION CASTPARTS CORP | PCP | 37,204.25 | 0.22\% | 0.05\% | 13.00\% | 13.05\% | 0.0282\% |
| PATTERSON COS INC | PDCO | 4,138.23 | 0.02\% | 1.96\% | 11.50\% | 13.57\% | 0.0033\% |
| PUBLIC SERVICE ENTERPRISE GP | PEG | 20,117.93 | 0.12\% | 3.72\% | -0.50\% | 3.21\% | 0.0038\% |
| PEPSICO INC | PEP | 130,760.10 | 0.76\% | 3.06\% | 8.50\% | 11.69\% | 0.0888\% |
| PETSMART INC | PETM | 6,806.49 | 0.04\% | 1.20\% | 11.50\% | 12.77\% | 0.0050\% |
| PFIZERINC | PFE | 199,033.70 | 1.16\% | 3.39\% | 10.50\% | 14.07\% | 0.1626\% |
| PRINCIPAL FINANCIAL GROUP | PFG | 13,163.78 | 0.08\% | 2.50\% | 9.50\% | 12.12\% | 0.0093\% |
| PROCTER \& GAMBLE COTHE | PG | 220,030.80 | 1.28\% | 3.17\% | 7.50\% | 10.79\% | 0.1378\% |
| PROGRESSIVE CORP | PGR | 14,263.45 | 0.08\% | 2.05\% | 14.00\% | 16.19\% | 0.0134\% |
| PARKER HANNIFIN CORP | PH | 18,560.47 | 0.11\% | 1.54\% | 6.50\% | 8.09\% | 0.0087\% |
| PULTEGROUP INC | PHM | 7,240.87 | 0.04\% | 1.05\% | 31.50\% | 32.72\% | 0.0138\% |
| PERKINELMERINC | PKI | 4,990.46 | 0.03\% | 0.63\% | 8.50\% | 9.16\% | 0.0027\% |
| PROLOGIS INC | PLD | - | 0.00\% | 3.25\% | 0.00\% | 3.25\% | 0.0000\% |
| PALL CORP | PLL. | 9,229.88 | 0.05\% | 1.31\% | 10.50\% | 11.88\% | 0.0064\% |
| PHILIP MORRIS INTERNATIONAL | PM | 132,665.80 | 0.77\% | 4.50\% | 7.50\% | 12.17\% | 0.0937\% |
| PNC FINANCIAL SERVICES GROUP | PNC | 44,826.32 | 0.26\% | 2.28\% | 7.00\% | 9.36\% | 0.0244\% |
| PENTAIR LTD-REGISTERED | PNR | 14,571.50 | 0.08\% | 1.34\% | 16.50\% | 17.95\% | 0.0152\% |
| PINNACLE WEST CAPITAL | PNW | 6,188.87 | 0.04\% | 4.13\% | 4.00\% | 8.21\% | 0.0030\% |
| PEPCO HOLDINGS INC | POM | 5,353.85 | 0.03\% | 5.04\% | 5.50\% | 10.68\% | 0.0033\% |


|  |  | [4] | 15) | [6] | [7] | [8] | 19] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market Capitalization | Weight in Index | Estimated Dividend Yield | Long-Term Growth Est. | DCF Result | Weighted DCF Resuif |
| PPG INDUSTRIES INC | PPG | 27,624.70 | 0.16\% | 1.38\% | 13.00\% | 14.47\% | 0.0232\% |
| PPL CORPORATION | PPL | 21,046.42 | 0.12\% | 4.46\% | 0.00\% | 4.46\% | 0.0055\% |
| PERRIGO CO PLC | PRGO | 19,747.49 | 0.11\% | 0.28\% | 13.50\% | 13.80\% | 0.0158\% |
| PRUDENTIAL FINANCIAL INC | PRU | 37,765.02 | 0.22\% | 2.63\% | 10.00\% | 12.76\% | 0.0280\% |
| PUBLIC STORAGE | PSA | - | 0.00\% | 3.26\% | 0.00\% | 3.26\% | 0.0000\% |
| PHILLIPS 66 | PSX | 49,503.69 | 0.29\% | 1.93\% | 0.00\% | 1.93\% | 0.0055\% |
| PVH CORP | PVH | 9,937.98 | 0.06\% | 0.12\% | 10.50\% | 10.63\% | 0.0061\% |
| QUANTA SERVICES INC | PWR | 7,630.16 | 0.04\% | 0.00\% | 19.50\% | 19.50\% | 0.0086\% |
| PRAXAIR INC | PX | 38,458.52 | 0.22\% | 2.05\% | 10.50\% | 12.66\% | 0.0283\% |
| PIONEER NATURAL RESOURCES CO | PXD | 28,143.16 | 0.16\% | 0.04\% | 23.00\% | 23.04\% | 0.0377\% |
| QUALCOMM INC | QCOM | 131,366.70 | 0.76\% | 2.16\% | 9.50\% | 11.76\% | 0.0897\% |
| QEP RESOURCES INC | QEP | 5,769.87 | 0.03\% | 0.34\% | 11.50\% | 11.86\% | 0.0040\% |
| RYDER SYSTEM ${ }^{\text {NC }}$ | R | 4,371.53 | 0.03\% | 1.64\% | 14.50\% | 16.26\% | 0.0041\% |
| REYNOLDS AMERICAN INC | RAl | 29,017.20 | 0.17\% | 4.97\% | 9.50\% | 14.71\% | 0.0248\% |
| ROWAN COMPANIES PLC-A | RDC | 3,909.74 | 0.02\% | 0.00\% | 23.00\% | 23.00\% | 0.0052\% |
| REGENERON PHARMACEUTICALS | REGN | 28,658.13 | 0.17\% | 0.00\% | 35.50\% | 35.50\% | 0.0591\% |
| REGIONS FINANCIAL CORP | RF | 14,204.29 | 0.08\% | 1.16\% | 72.50\% | 74.08\% | 0.0611\% |
| ROBERT HALF INTL INC | RHI | 6,060.88 | 0.04\% | 1.66\% | 12.00\% | 13.76\% | 0.0048\% |
| RED HAT INC | RHT | 9,406.13 | 0.05\% | 0.00\% | 14.50\% | 14.50\% | 0.0079\% |
| TRANSOCEANLTD | RIG | 15,550.91 | 0.09\% | 5.19\% | 13.50\% | 19.04\% | 0.0172\% |
| RALPH LAUREN CORP | RL. | 13,853.05 | 0.08\% | 1.16\% | 9.00\% | 10.21\% | 0.0082\% |
| ROCKWELL AUTOMATION INC | ROK | 17,714.01 | 0.10\% | 1.82\% | 8.50\% | 10.40\% | 0.0107\% |
| ROPER INDUSTRIES INC | ROP | 13,111.33 | 0.08\% | 0.61\% | 11.00\% | 11.64\% | 0.0089\% |
| ROSS STORES INC | ROST | 14,604.33 | 0.08\% | 1.21\% | 9.00\% | 10.26\% | 0.0087\% |
| RANGE RESOURCES CORP | RRC | 15,291.54 | 0.09\% | 0.17\% | 38.00\% | 38.20\% | 0.0339\% |
| REPUBLIC SERVICES INC | RSG | 12,510.00 | 0.07\% | 3.11\% | 8.50\% | 11.74\% | 0.0085\% |
| RAYTHEON COMPANY | RTN | 30,166.84 | 0.18\% | 2.52\% | 9.50\% | 12.14\% | 0.0213\% |
| STARBUCKS CORP | SBUX | 53,779.58 | 0.31\% | 1.58\% | 18.50\% | 20.23\% | 0.0632\% |
| SCANA CORP | SCG | 7,410.96 | 0.04\% | 4.00\% | 5.00\% | 9.10\% | 0.0039\% |
| SCHWAB (CHARLES) CORP | SCHW | 35,132.64 | 0.20\% | 0.89\% | 10.50\% | 11.44\% | 0.0233\% |
| SPECTRA ENERGY CORP | SE | 26,190.30 | 0.15\% | 3.48\% | 3.00\% | 6.53\% | 0.0099\% |
| SEALED AIR CORP | SEE | 6,533.17 | 0.04\% | 1.57\% | 19.50\% | 21.22\% | 0.0081\% |
| SHERWIN-WILLIAMS COTHE | SHW | 20,129.94 | 0.12\% | 1.14\% | 15.50\% | 16.73\% | 0.0196\% |
| SIGMA-ALDRICH | SLAL | 11,345.42 | 0.07\% | 0.97\% | 7.50\% | 8.51\% | 0.0056\% |
| JM SMUCKER CO/THE | SJM | 10,139.72 | 0.06\% | 2.45\% | 7.50\% | 10.04\% | 0.0059\% |
| SCHLUMBERGER LTD | SLB | 133,086.20 | 0.77\% | 1.57\% | 15.00\% | 16.69\% | 0.1290\% |
| SLM CORP | SLM | 11,614.92 | 0.07\% | 0.00\% | 8.50\% | 8.50\% | 0.0057\% |
| SNAP-ONINC | SNA | 6,817.11 | 0.04\% | 1.50\% | 9.00\% | 10.57\% | 0.0042\% |
| SANDISK CORP | SNDK | 19,210.94 | 0.11\% | 1.06\% | 11.50\% | 12.62\% | 0.0141\% |
| SCRIPPS NETWORKS ${ }^{\text {NTER-CL }}$ A | SNI | 10,979.07 | 0.06\% | 1.07\% | 9.00\% | 10.12\% | 0.0065\% |
| SOUTHERN COTHE | SO | 40,522.09 | 0.24\% | 4.60\% | 3.50\% | 8.18\% | 0.0192\% |
| SIMON PROPERTY GROUP INC | SPG | - | 0.00\% | 3.04\% | 0.00\% | 3.04\% | 0.0000\% |
| STAPLES INC | SPLS | 7,506.14 | 0.05\% | 3.96\% | -1.50\% | 2.43\% | 0.0011\% |
| STERICYCLE INC | SRCl | 9,692.62 | 0.06\% | 0.00\% | 11.50\% | 11.50\% | 0.0055\% |
| SEMPRA ENERGY | SRE | 23,759.16 | 0.14\% | 2.76\% | 6.00\% | 8.84\% | 0.0122\% |
| SUNTRUST BANKS INC | ST] | 20,717.90 | 0.12\% | 2.06\% | 26.00\% | 28.33\% | 0.0341\% |
| St Jude medical inc | STJ | 18,053.39 | 0.10\% | 1.73\% | 8.50\% | 10.30\% | 0.0108\% |
| STATE STREET CORP | STT | 28,535.23 | 0.17\% | 1.70\% | 10.00\% | 11.79\% | 0.0195\% |
| SEAGATE TECHNOLOGY | STX | 17,717.89 | 0.10\% | 3.19\% | 6.50\% | 9.79\% | 0.0101\% |
| CONSTELLATION BRANDS INC-A | STZ | 15,102.25 | 0.09\% | 0.00\% | 16.50\% | 16.50\% | 0.0145\% |
| STANLEY BLACK \& DECKER INC | SWK | 13,308.81 | 0.08\% | 2.34\% | 10.00\% | 12.46\% | 0.0096\% |
| SOUTHWESTERN ENERGY CO | SWN | 17.071.61 | 0.10\% | 0.00\% | 11.00\% | 11.00\% | 0.0109\% |
| SAFEWAY INC | SWY | 7,828.00 | 0.05\% | 2.65\% | 8.50\% | 11.26\% | 0.0051\% |
| STRYKER CORP | SYK | 29,471.20 | 0.17\% | 1.57\% | 7.50\% | 9.13\% | 0.0156\% |
| SYMANTEC CORP | SYMC | 14,225.27 | 0.08\% | 2.92\% | 15.00\% | 18.14\% | 0.0150\% |
| SYSCO CORP | SYY | 21,267.97 | 0.12\% | 3.19\% | 8.50\% | 11.83\% | 0.0146\% |
| AT\&TINC | T | 180,307.90 | 1.05\% | 5.36\% | 7.00\% | 12.55\% | 0.1314\% |
| MOLSON COORS BREWING CO - B | TAP | 11,325.64 | 0.07\% | 2.51\% | 8.50\% | 11.12\% | 0.0073\% |
| TERADATA CORP | TDC | 7,327.80 | 0.04\% | 0.00\% | 13.00\% | 13.00\% | 0.0055\% |
| TECO ENERGY INC | TE | 3,941,82 | 0.02\% | 4.85\% | 2.00\% | 6.90\% | 0.0016\% |
| INTEGRYS ENERGY GROUP INC | TEG | 4,808.81 | 0.03\% | 4.49\% | 3.50\% | 8.07\% | 0.0023\% |
| TE CONNECTIVITY LTD | TEL | 24,954.19 | 0.14\% | 1.65\% | 8.50\% | 10.22\% | 0.0148\% |
| TARGET CORP | TGT | 38,821.59 | 0.23\% | 3.06\% | 5.50\% | 8.64\% | 0.0195\% |
| TENET HEALTHCARE CORP | THC | 4,093.26 | 0.02\% | 0.00\% | 28.00\% | 28.00\% | 0.0067\% |
| TIFFANY \& CO | TIF | 11,338.93 | 0.07\% | 1.63\% | 12.50\% | 14.23\% | 0.0094\% |
| TJX COMPANIES INC | TJX | 41,427.29 | 0.24\% | 1.20\% | 12.50\% | 13.78\% | 0.0331\% |
| TORCHMARK CORP | TMK | 7,090.08 | 0.04\% | 0.96\% | 5.50\% | 6.49\% | 0.0027\% |
| THERMO FISHER SCIENTIFIC INC | TMO | 41,694.53 | 0.24\% | 0.52\% | 11.00\% | 11.55\% | 0.0280\% |
| TRIPADVISOR INC | TRIP | 11,861.59 | 0.07\% | 0.00\% | 0.00\% | 0.00\% | 0.0000\% |
| TROWE PRICE GROUP INC | TROW | 21,344.55 | 0.12\% | 2.15\% | 12.50\% | 14.78\% | 0.0183\% |
| TRAVELERS COS INCTTHE | TRV | 31,316.56 | 0.18\% | 2.48\% | 9.50\% | 12.10\% | 0.0220\% |
| TRACTOR SUPPLY COMPANY | TSCO | 9,313.53 | 0.05\% | 0.96\% | 16.00\% | 17.04\% | 0.0092\% |
| TYSON FOODS INC-CL A | TSN | 14,462.11 | 0.08\% | 0.71\% | 12.00\% | 12.75\% | 0.0107\% |
| TESORO CORP | TSO | 7,296.67 | 0.04\% | 1.85\% | 15.50\% | 17.49\% | 0.0074\% |
| TOTAL SYSTEM SERVICES INC | TSS | 5,591.92 | 0.03\% | 1.36\% | 9.50\% | 10.92\% | 0.0035\% |
| TIME WARNER CABLE | TWC | 39,719.16 | 0.23\% | 2.14\% | 10.00\% | 12.25\% | 0.0282\% |
| TIME WARNER INC | TWX | 58,747.80 | 0.34\% | 1.94\% | 12.50\% | 14.56\% | 0.0497\% |


|  |  | 141 | [5] | [6] | [7] | [8] | [9] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Company | Ticker | Market <br> Capitalization | Weight in tndex | Estimated Dividend Yield | Long-Term Growth Est. | DCF Result | Weighted DCF Result |
| TEXAS INSTRUMENTS INC | TXN | 53,220.06 | 0.31\% | 2.48\% | 8.00\% | 10.58\% | 0.0327\% |
| TEXTRON INC | TXT | 11,206.21 | 0.07\% | 0.28\% | 17.00\% | 17.30\% | 0.0113\% |
| TYCO INTERNATIONAL LTD | TYC | 19,416.60 | 0.11\% | 1.71\% | 15.00\% | 16.84\% | 0.0190\% |
| UNITEDHEALTH GROUP INC | UNH | 75,670.91 | 0.44\% | 1.46\% | 10.00\% | 11.53\% | 0.0507\% |
| UNUM GROUP | UNM | 8,699.26 | 0.05\% | 1.73\% | 7.50\% | 9.29\% | 0.0047\% |
| UNION PACIFIC CORP | UNP | $86,333.88$ | 0.50\% | 1.91\% | 11.00\% | 13.02\% | 0.0652\% |
| UNITED PARCEL SERVICE-CL B | UPS | 91,735.20 | 0.53\% | 2.72\% | 7.50\% | 10.32\% | 0.0550\% |
| URBAN OUTFITEERS INC | URBN | 5,297.55 | 0.03\% | 0.00\% | 14.50\% | 14.50\% | 0.0045\% |
| US BANCORP | USB | 74,176.01 | 0.43\% | 2.31\% | 5.50\% | 7.87\% | 0.0339\% |
| UNITED TECHNOLOGIES CORP | UTX | 109,067.30 | 0.63\% | 1.98\% | 9.50\% | 11.57\% | 0.0733\% |
| VISA INC-CLASS A SHARES | $V$ | 162,494.40 | 0.94\% | 0.80\% | 18.50\% | 19.37\% | 0.1828\% |
| VARIAN MEDICAL SYSTEMS INC | VAR | 8,292.58 | 0.05\% | 0.00\% | 6.00\% | 6.00\% | 0.0029\% |
| VF CORP | VFC | 26,467.03 | 0.15\% | 1.75\% | 11.50\% | 13.35\% | 0.0205\% |
| VIACOBINC-CLASS B | VIAB | 37,287.18 | 0.22\% | 1.41\% | 13.50\% | 15.01\% | 0.0325\% |
| VALERO ENERGY CORP | V.O | 30,628.89 | 0.18\% | 1.77\% | 15.00\% | 16.90\% | 0.0301\% |
| VULCAN MATERLALS CO | VMC | 8,519.30 | 0.05\% | 0.31\% | 0.00\% | 0.31\% | 0.0002\% |
| VORNADO REALTY TRUST | VNO | 18,895.59 | 0.11\% | 2.91\% | 6.50\% | 9.50\% | 0.0104\% |
| VERISIGNINC | VRSN | 6,585.91 | 0.04\% | 0.00\% | 21.00\% | 21.00\% | 0.0080\% |
| VERTEX PHARMACEUTICALS INC | VRTX | 15,472.09 | 0.09\% | 0.00\% | 0.00\% | 0.00\% | 0.0000\% |
| VENTAS INC | VTR | - | 0.00\% | 4.51\% | 0.00\% | 4.51\% | 0.0000\% |
| VERIZON COMMUNICATIONS INC | VZ | 132,441.80 | 0.77\% | 4.58\% | 10.50\% | 15.32\% | 0.1178\% |
| WALGREEN CO | WAG | 64,340.99 | 0.37\% | 1.87\% | 10.50\% | 12.47\% | 0.0466\% |
| WATERS CORP | WAT | 9,677.73 | 0.06\% | 0.00\% | 7.00\% | 7.00\% | 0.0039\% |
| WESTERN DIGITAL CORP | WDC | 21,282.60 | 0.12\% | 1.34\% | 6.00\% | 7.38\% | 0.0091\% |
| WISCONSIN ENERGY CORP | WEC | 10,791.95 | 0.06\% | 3.33\% | 6.00\% | 9.43\% | 0.0059\% |
| WELLS FARGO \& CO | WFC | 260, 100.60 | 1.51\% | 2.43\% | 8.00\% | 10.53\% | 0.1500\% |
| WHOLE FOODS MARKET INC | WFM | 18,974.34 | 0.11\% | 1.06\% | 15.50\% | 16.64\% | 0.0183\% |
| WHIRLPOOL CORP | WHR | 12,218.14 | 0.07\% | 1.94\% | 10.50\% | 12.54\% | 0.0089\% |
| WINDSTREAM HOLDINGS INC | WN | 5,358.94 | 0.03\% | 11.12\% | 4.00\% | 15.34\% | 0.0048\% |
| WELLPOINTINC | WLP | 27,268.59 | 0.16\% | 1.81\% | 6.50\% | 8.37\% | 0.0133\% |
| WASTE MANAGEMENT INC | WM | 20,100.53 | 0.12\% | 3.50\% | 6.50\% | 10.11\% | 0.0118\% |
| WILLIAMS COS INC | WMB | 28,228.39 | 0.16\% | 4.23\% | 8.00\% | 12.40\% | 0.0203\% |
| WAL-MART STORES INC | WMT | 253,881.00 | 1.47\% | 2.45\% | 7.50\% | 10.04\% | 0.1480\% |
| WESTERN UNION CO | WU | 8,730.28 | 0.05\% | 3.16\% | 5.00\% | 8.24\% | 0.0042\% |
| WEYERHAEUSER CO | WY | 16,771.17 | 0.10\% | 3.06\% | 17.00\% | 20.32\% | 0.0198\% |
| WYNDHAM WORLDWDE CORP | WYN | 9,590.60 | 0.06\% | 1.87\% | 13.50\% | 15.50\% | 0.0086\% |
| WYNN RESORTS LTD | WYNN | 21,458.99 | 0.12\% | 2.35\% | 14.00\% | 16.51\% | 0.0206\% |
| UNITED STATES STEEL CORP | X | 3,973.76 | 0.02\% | 0.73\% | 0.00\% | 0.73\% | 0.0002\% |
| XCEL ENERGY INC | XEL | 15,686.09 | 0.09\% | 3.87\% | 5.50\% | 9.48\% | 0.0086\% |
| XL GROUP PLC | XL | 9,423.42 | 0.05\% | 2.03\% | 16.00\% | 18.19\% | 0.0100\% |
| XILINXINC | XLNX | 12,701.39 | 0.07\% | 2.43\% | 8.50\% | 11.03\% | 0.0081\% |
| EXXON MOBIL CORP | XOM | 433,543.30 | 2.52\% | 2.64\% | 6.00\% | 8.72\% | 0.2195\% |
| DENTSPLY INTERNATIONAL INC | XRAY | 6,359.18 | 0.04\% | 0.60\% | 8.50\% | 9.13\% | 0.0034\% |
| XEROX CORP | XRX | 14,247.96 | 0.08\% | 2.09\% | 6.00\% | 8.15\% | 0.0067\% |
| XYLEMINC | XYL. | 6,608.68 | 0.04\% | 1.43\% | 10.50\% | 12.01\% | 0.0046\% |
| YAHOOL INC | YHOO | 35,700.20 | 0.21\% | 0.00\% | 10.00\% | 10.00\% | 0.0207\% |
| YUM! BRANDS INC | YUM | 34,017.97 | 0.20\% | 2.05\% | 9.50\% | 11.65\% | 0.0230\% |
| ZIONS BANCORPORATION | ZION | 5,385.18 | 0.03\% | 0.55\% | 0.00\% | 0.55\% | 0.0002\% |
| ZIMMER HOLDINGS INC | 2M ${ }_{\text {H }}$ | 17,385.88 | 0.10\% | 0.88\% | 9.50\% | 10.42\% | 0.0105\% |
| ZOETIS INC | ZTS | 14,945.18 | 0.09\% | 0.97\% | 0.00\% | 0.97\% | 0.0008\% |
| Total Market Capitalization: |  | 17,221,275.51 |  |  |  |  | 12.31\% |
|  |  |  |  |  |  |  |  |
| Notes: |  |  |  |  |  |  |  |
| [2] Source: Bloomberg Professional |  |  |  |  |  |  |  |
| [3] Equals [1]-12] |  |  |  |  |  |  |  |
| 14] Source: Value Line |  |  |  |  |  |  |  |
| [5] Equals weight in S\&P 500 based on market capitalization |  |  |  |  |  |  |  |
| [6] Source: Value Line |  |  |  |  |  |  |  |
| [7] Source: Value Line |  |  |  |  |  |  |  |
| [8] Equals ([6] $\times(1+(0.5 \times[7]))+[7]$ |  |  |  |  |  |  |  |
| [9] Equals Col. [5] $\times$ Col. [8] |  |  |  |  |  |  |  |

Bloomberg, Value Line, and Calculated Beta Coefficients

|  |  | [1] | [2] |
| :---: | :---: | :---: | :---: |
| Company | Ticker | Bloomberg | Value Line |
| American Electric Power Company, Inc. | AEP | 0.755 | 0.70 |
| Cleco Corporation | CNL | 0.761 | 0.70 |
| Duke Energy Corporation | DUK | 0.642 | 0.70 |
| Empire District Electric Company | EDE | 0.720 | 0.75 |
| Great Plains Energy Inc. | GXP | 0.843 | 0.90 |
| Hawaiian Electric Industries, Inc. | HE | 0.782 | 0.80 |
| IDACORP, Inc. | IDA | 0.880 | 0.75 |
| NextEra Energy, Inc. | NEE | 0.717 | 0.75 |
| Northeast Utilities | NU | 0.736 | 0.75 |
| Otter Tail Corporation | OTTR | 0.898 | 0.95 |
| Pinnacle West Capital Corporation | PNW | 0.815 | 0.75 |
| PNM Resources, Inc. | PNM | 0.826 | 0.95 |
| Portland General Electric Company | POR | 0.830 | 0.75 |
| Southern Company | SO | 0.612 | 0.60 |
| UniSource Energy Corporation | UNS | 0.696 | 0.70 |
| Westar Energy, Inc. | WR | 0.749 | 0.80 |
| Mean |  | 0.766 | 0.77 |

Notes:
[1] Source: Bloomberg Professional Service
[2] Source: Value Line

Capital Asset Pricing Model Results
Bloomberg and Value Line Derived Market Risk Premium


Notes:
[1] See Notes [9] and [10]
[2] Source: Schedule RBH-12
[3] Source: Schedule RBH-13
[4] Source: Schedule RBH-13
[5] Equals Col. [1] + (Col. [2] $\times$ Col. [3])
[6] Equals Col. [1] $+(\mathrm{Col} .[2] \times \mathrm{Col} .[4])$
[7] Source: Bloomberg Professional
[81 Source: Blue Chip Financial Forecasts, Vol. 33, No. 4, April 1, 2014, at 2


Notes:
[1] Constant of regression equation
[2] Slope of regression equation
[3] Source: Current = Bloomberg Professional,
Near Term Projected = Blue Chip Financial Forecasts, Vol. 33, No. 4, April 1, 2014, at 2,
Long Term Projected = Blue Chip Financial Forecasts, Vol. 32, No. 12, December 1, 2013, at 14
[4] Equals [1] $+\ln ([2]) \times[3]$
[5] Equals [3] + [4]
[6] Source: SNL Financial
[7] Source: SNL Financial (excludes Virginia Generation Riders)
[8] Source: Bloomberg Professional, equals 201-trading day average (i.e. lag period) as of April 15th, 2014 [9] Equals [7] - [8]

| [6] | [7] | [8] <br> Average <br> 30-Year | [9] |
| :---: | :---: | :---: | :---: |
| Date of <br> Electric Rate <br> Case |  | Return on <br> Equity | Treasury <br> Yield |
| $01 / 01 / 1980$ | $14.50 \%$ | $9.36 \%$ | Risk <br> Premium |
| $01 / 07 / 1980$ | $14.39 \%$ | $9.38 \%$ | $5.01 \%$ |
| $01 / 09 / 1980$ | $15.00 \%$ | $9.40 \%$ | $5.60 \%$ |
| $01 / 14 / 1980$ | $15.17 \%$ | $9.42 \%$ | $5.75 \%$ |
| $01 / 17 / 1980$ | $13.93 \%$ | $9.44 \%$ | $4.49 \%$ |
| $01 / 23 / 1980$ | $15.50 \%$ | $9.47 \%$ | $6.03 \%$ |
| $01 / 30 / 1980$ | $13.86 \%$ | $9.52 \%$ | $4.34 \%$ |
| $01 / 31 / 1980$ | $12.61 \%$ | $9.53 \%$ | $3.08 \%$ |
| $02 / 06 / 1980$ | $13.71 \%$ | $9.58 \%$ | $4.13 \%$ |
| $02 / 13 / 1980$ | $12.80 \%$ | $9.63 \%$ | $3.17 \%$ |
| $02 / 14 / 1980$ | $13.00 \%$ | $9.65 \%$ | $3.35 \%$ |
| $02 / 19 / 1980$ | $13.50 \%$ | $9.68 \%$ | $3.82 \%$ |
| $02 / 27 / 1980$ | $13.75 \%$ | $9.78 \%$ | $3.97 \%$ |
| $02 / 29 / 1980$ | $13.75 \%$ | $9.81 \%$ | $3.94 \%$ |
| $02 / 29 / 1980$ | $14.00 \%$ | $9.81 \%$ | $4.19 \%$ |
| $02 / 29 / 1980$ | $14.77 \%$ | $9.81 \%$ | $4.96 \%$ |
| $03 / 07 / 1980$ | $12.70 \%$ | $9.89 \%$ | $2.81 \%$ |
| $03 / 14 / 1980$ | $13.50 \%$ | $9.97 \%$ | $3.53 \%$ |
| $03 / 26 / 1980$ | $14.16 \%$ | $10.10 \%$ | $4.06 \%$ |
| $03 / 27 / 1980$ | $14.24 \%$ | $10.12 \%$ | $4.12 \%$ |
| $03 / 28 / 1980$ | $14.50 \%$ | $10.13 \%$ | $4.37 \%$ |
| $04 / 11 / 1980$ | $12.75 \%$ | $10.27 \%$ | $2.48 \%$ |
| $04 / 14 / 1980$ | $13.85 \%$ | $10.29 \%$ | $3.56 \%$ |


| [6] | [7] | [8] | [9] |
| :---: | :---: | :---: | :---: |
|  |  | Average 30-Year |  |
| Date of |  |  |  |  |
| Electric Rate | Return on | Treastry | Risk |
| Case | Equity | Yield | Premium |
| 04/16/1980 | 15.50\% | 10.31\% | 5.19\% |
| 04/22/1980 | 13.25\% | 10.35\% | 2.90\% |
| 04/22/1980 | 13.90\% | 10.35\% | 3.55\% |
| 04/24/1980 | 16.80\% | 10.38\% | 6.43\% |
| 04/29/1980 | 15.50\% | 10.41\% | 5.09\% |
| 0510\%/1980 | 13.70\% | 10.45\% | 3.25\% |
| 05107/1980 | 15.00\% | 10.45\% | 4.55\% |
| 05108/1980 | 13.75\% | 10.46\% | 3.29\% |
| 05/09/1980 | 14.35\% | 10.47\% | 3.88\% |
| 05/13/1980 | 13.60\% | 10.48\% | 3.12\% |
| 05/15/1980 | 13.25\% | 10.49\% | 2.76\% |
| 05/19/1980 | 13.75\% | 10.51\% | 3.24\% |
| 05127/1980 | 13.62\% | 10.54\% | 3.08\% |
| 05127/1980 | 14.60\% | 10.54\% | 4.06\% |
| 05/2911980 | 16.00\% | 10.56\% | 5.44\% |
| 05130/1980 | 13.80\% | 10.56\% | 3.24\% |
| 0610211980 | 15.63\% | 10.57\% | 5.06\% |
| 06\%0911980 | 15.90\% | 10.60\% | 5.30\% |
| 0\%/10/1980 | 13.78\% | 10.60\% | 3.18\% |
| 06/12/1980 | 14.25\% | 10.61\% | 3.64\% |
| 06/19/1980 | 13.40\% | 10.62\% | 2.78\% |
| 0613011980 | 13.00\% | 10.65\% | 2.35\% |
| 06130/1980 | 13.40\% | 10.65\% | 2.75\% |
| 07/0911980 | 14.75\% | 10.67\% | 4.08\% |
| 07/10/1980 | 15.00\% | 10.68\% | 4.32\% |
| 07/15/1980 | 15.80\% | 10.70\% | 5.10\% |
| 07/18/1980 | 13.80\% | 10.71\% | 3.09\% |
| 07/221980 | 14.10\% | 10.72\% | 3.38\% |
| 07/24/1980 | 15.00\% | 10.73\% | 4.27\% |
| 07/25/1980 | 13.48\% | 10.73\% | 2.75\% |
| 07/31/1980 | 14.58\% | 10.75\% | 3.83\% |
| 08/08/1980 | 13.50\% | 10.78\% | 2.72\% |
| 08108/1980 | 14.00\% | 10.78\% | 3.22\% |
| 0810811980 | 15.45\% | 10.78\% | 4.67\% |
| $08111 / 1980$ | 14.85\% | 10.78\% | 4.07\% |
| 08/14/1980 | 14.00\% | 10.79\% | 3.21\% |
| 08/14/1980 | 16.25\% | 10.79\% | 5.46\% |
| 08/2511980 | 13.75\% | 10.82\% | 2.93\% |
| 08127/1980 | 13.80\% | 10.83\% | 2.97\% |
| 08/291980 | 12.50\% | 10.84\% | 1.66\% |
| 091151980 | 13.50\% | 10.88\% | 2.62\% |
| 09/15/1980 | 13.93\% | 10.88\% | 3.05\% |
| 09/15/1980 | 15.80\% | 10.88\% | 4.92\% |
| 09124/1980 | 12.50\% | 10.93\% | 1.57\% |
| 09/24/1980 | 15.00\% | 10.93\% | 4.07\% |
| $09 / 2611980$ | 13.75\% | 10.94\% | 2.81\% |
| 09/301980 | 14.10\% | 10.96\% | 3.14\% |
| 091301980 | 14.20\% | 10.96\% | 3.24\% |
| 10/01/1980 | 13.90\% | 10.97\% | 2.93\% |
| 10/031980 | 15.50\% | 10.98\% | 4.52\% |
| 10107/1980 | 12.50\% | 10.99\% | 1.51\% |
| 10109/1980 | 13.25\% | 11.00\% | 2.25\% |
| 10/09/1980 | 14.50\% | 11.00\% | 3.50\% |
| 10/09/1980 | 14.50\% | $11.00 \%$ | 3.50\% |
| 10/16/1980 | 16.10\% | 11.02\% | 5.08\% |
| 1017/1980 | 14.50\% | 11.03\% | 3.47\% |
| 10/31/1980 | 13.75\% | 11.11\% | 2.64\% |
| 10/31/1980 | 14.25\% | 11.11\% | 3.14\% |
| 11/04/1980 | 15.00\% | 11.12\% | 3.88\% |
| 11/05/1980 | 13.75\% | 11.12\% | 2.63\% |
| 11/051980 | 14.00\% | 11.12\% | 2.88\% |
| 11/081980 | 13.75\% | 11.14\% | 2.61\% |
| 11/101980 | 14.85\% | 11.15\% | 3.70\% |
| 11/17/1980 | 14.00\% | 11.18\% | 2.82\% |
| 1/1/18/1980 | 14.00\% | 11.19\% | 2.81\% |
| 11/19/1980 | 13.00\% | 11.19\% | 1.81\% |
| 11/24/1980 | 14.00\% | 11.21\% | 2.79\% |
| 11/2011980 | 14.00\% | 11.21\% | 2.79\% |
| 12/08/1980 | 14.15\% | 11.22\% | 2.93\% |
| 12108/1980 | 15.10\% | 11.22\% | 3.88\% |
| 12/09/1980 | 15.35\% | 11.22\% | 4.13\% |
| 12/12/9980 | 15.45\% | 11.23\% | 4.22\% |
| 1217/1980 | 13.25\% | 11.23\% | 2.02\% |
| 12/18/1980 | 15.80\% | 11.23\% | 4.57\% |
| 12/19/1980 | 14.50\% | 11.23\% | 3.27\% |
| 12/19/1980 | 14.64\% | 11.23\% | 3.41\% |
| 12/22/1980 | 13.45\% | 11.23\% | 2.22\% |
| 12/221980 | 15.00\% | 11.23\% | 3.77\% |
| 12/30/1980 | 14.50\% | 11.22\% | 3.28\% |


| [6] | [7] | ${ }^{[8]}$ | [9] |
| :---: | :---: | :---: | :---: |
|  |  | erag |  |
| Date of |  | 30-Year |  |
| Electric Rate | Return on | Treasury | Risk |
| Case | Equity | Yield | Premium |
| 12/30/1980 | 14.95\% | 11.22\% | 3.73\% |
| 12/31/1980 | 13.39\% | 11.22\% | 2.17\% |
| 01/02/1981 | 15.25\% | 11.22\% | 4.03\% |
| 01/07/1981 | 14.30\% | 11.21\% | 3.09\% |
| 01/19/1981 | 15.25\% | 11.20\% | 4.05\% |
| 01/23/1981 | 13.10\% | 11.20\% | 1.90\% |
| 01/23/1981 | 14.40\% | 11.20\% | 3.20\% |
| 01/26/1981 | 15.25\% | 11.20\% | 4.05\% |
| 01/27/1981 | 15.00\% | 11.21\% | 3.79\% |
| $01 / 31 / 1981$ | 13.47\% | 11.22\% | 225\% |
| 02/03/1981 | 15.25\% | 11.23\% | 4.02\% |
| 021051981 | 15.75\% | 11.25\% | 4.50\% |
| 02/11/1981 | 15.60\% | 11.28\% | 4.32\% |
| 021201981 | 15.25\% | 11.33\% | 3.92\% |
| 03/11/1981 | 15.40\% | 11.49\% | 3.91\% |
| 03/12/1981 | 14.51\% | 11.50\% | 3.01\% |
| 03/121981 | 16.00\% | 11.50\% | 4.50\% |
| 03/13/1981 | 13.02\% | 11.52\% | 1.50\% |
| 03/181981 | 16.19\% | 11.55\% | 4.64\% |
| 03/19/1981 | 13.75\% | 11.56\% | 2.19\% |
| 03/23/1981 | 14.30\% | 11.58\% | 2.72\% |
| 03/25/1981 | 15.30\% | 11.60\% | 3.70\% |
| 04101/1981 | 14.53\% | 11.68\% | 2.85\% |
| 04/031981 | 19.10\% | 11.71\% | 7.39\% |
| 04/09/1981 | 15.00\% | 11.78\% | 3.22\% |
| 04/0911981 | 15.30\% | 11.78\% | 3.52\% |
| 04/091981 | 16.50\% | 11.78\% | 4.72\% |
| 04/09/1981 | 17.00\% | 11.78\% | 5.22\% |
| 04/10/1981 | 13.75\% | 11.80\% | 1.95\% |
| 04/131981 | 13.57\% | 11.82\% | 1.75\% |
| 04/151981 | $15.30 \%$ | 11.85\% | 3.45\% |
| 04/16/1981 | 13.50\% | 11.87\% | 1.63\% |
| $04 / 17 / 1981$ | 14.10\% | 11.87\% | 2.23\% |
| 04/21/1981 | 14.00\% | 11.90\% | 2.10\% |
| 04/21/1981 | 16.80\% | 11.90\% | 4.90\% |
| 04/24/1981 | 16.00\% | 11.95\% | 4.05\% |
| 04/27/1981 | 12.50\% | 11.97\% | 0.53\% |
| 04/27/1981 | 13.61\% | 11.97\% | 1.64\% |
| 04/29/1981 | 13.65\% | 12.00\% | 1.65\% |
| 04/3011981 | 13.50\% | 12.02\% | 1.48\% |
| 05/04/1981 | 16.22\% | 12.05\% | 4.17\% |
| 05/0511981 | 14.40\% | 12.07\% | 2.33\% |
| 05/07/1981 | 16.25\% | 12.11\% | 4.14\% |
| 05/07/1981 | 16.27\% | 12.11\% | 4.16\% |
| 0510311981 | 13.00\% | 12.13\% | 0.87\% |
| 05/0811981 | 16.00\% | 12.13\% | 3.87\% |
| 0512/1981 | 13.50\% | 12.16\% | 1.34\% |
| 0511519981 | 15.75\% | 12.22\% | 3.53\% |
| 05/18/1981 | 14.88\% | 12.23\% | 2.65\% |
| 0520/1981 | 16.00\% | 12.26\% | 3.74\% |
| 05/21/1981 | 14.00\% | 12.27\% | 1.73\% |
| 05/28/1981 | 14.90\% | 12.30\% | 2.60\% |
| 05127/1981 | 15.00\% | 12.31\% | 2.69\% |
| 05/29/1981 | 15.50\% | 12.34\% | 3.16\% |
| $08101 / 1981$ | 16.50\% | 12.35\% | 4.15\% |
| 06/03/1981 | 14.67\% | 12.37\% | 2.30\% |
| 06/05/1981 | 13.00\% | 12.39\% | 0.61\% |
| 06/10/1981 | 16.75\% | 12.42\% | 4.33\% |
| 06/17/1981 | 14.40\% | 12.46\% | 1.94\% |
| $06 / 181981$ | 16.33\% | 12.47\% | 3.86\% |
| 0612511981 | 14.75\% | 12.51\% | 2.24\% |
| $06 / 26 / 1981$ | 16.00\% | 12.52\% | 3.48\% |
| 06/3011981 | 15.25\% | 12.54\% | 2.71\% |
| 07/01/1981 | 15.50\% | 12.56\% | 2.94\% |
| 07/01/1981 | 17.50\% | 12.56\% | 4.94\% |
| 07/10/1981 | 16.00\% | 12.62\% | 3.38\% |
| 07/14/1981 | 16.90\% | 12.64\% | 4.26\% |
| 07/1514981 | 16.00\% | 12.65\% | 3.35\% |
| 07/17/1981 | 15.00\% | 12.67\% | 2.33\% |
| 07/2011981 | 15.00\% | 12.68\% | 2.32\% |
| 07/21/1981 | 14.00\% | 12.69\% | 1.31\% |
| 07/28/1981 | 13.48\% | 12.74\% | 0.74\% |
| 07/31/1981 | 13.50\% | 12.78\% | 0.72\% |
| 07/31/1981 | 15.00\% | 12.78\% | 2.22\% |
| 07/31/1981 | 16.00\% | 12.78\% | 3.22\% |
| 0810511981 | 15.71\% | 12.83\% | 2.88\% |
| 08/30/1981 | 14.50\% | 12.87\% | 1.63\% |
| 08/1/1981 | 15.00\% | 12.88\% | 2.12\% |
| 08120/1981 | 13.50\% | 12.95\% | 0.55\% |


| [6] | [7] | [8] | [9] |
| :---: | :---: | :---: | :---: |
|  |  | Averago |  |
| Date of |  | 30-Year |  |
| Electric Rate | R | Treasury | Risk |
| Case | Equåty | Yield | Premium |
| 08120/1981 | 16.50\% | 12.95\% | 3.55\% |
| 08/24/1981 | 15.00\% | 12.97\% | 2.03\% |
| 08/28/1981 | 15.00\% | 13.01\% | 1.99\% |
| 09103/1981 | 14.50\% | 13.05\% | 1.45\% |
| 09/10/1981 | 14.50\% | 13.11\% | 1.39\% |
| 09/11/1981 | 16.00\% | 13.12\% | 2.88\% |
| 09/16/1981 | 16.00\% | 13.15\% | 2.85\% |
| 09/17/1981 | 16.50\% | 13.16\% | 3.34\% |
| $09 / 231981$ | 15.85\% | 13.20\% | 2.65\% |
| 097281981 | 15.50\% | 13.23\% | 2.27\% |
| 101091981 | 15.75\% | 13.33\% | 2.42\% |
| 1015/1981 | 16.25\% | 13.37\% | 2.88\% |
| 10/16/1981 | 15.50\% | 13.38\% | 2.12\% |
| 10/16/1981 | 16.50\% | 13.38\% | 3.12\% |
| 10/19/1981 | 14.25\% | 13.39\% | 0.86\% |
| 10ㅏㅇㅣ1981 | 15.25\% | 13.41\% | 1.84\% |
| 10/20/1981 | 17.00\% | 13.41\% | 3.59\% |
| 1023/1981 | 16.00\% | 13.45\% | 2.55\% |
| 10127/1981 | 10.00\% | 13.48\% | -3.48\% |
| 10/29/1981 | 14.75\% | 13.51\% | 1.24\% |
| 10129/1981 | 16.50\% | $13.51 \%$ | 2.99\% |
| 11/03/1981 | 15.17\% | 13.53\% | 1.64\% |
| 11/0511981 | 16.60\% | 13.55\% | 3.05\% |
| 11/06/1981 | 15.17\% | 13.56\% | 1.61\% |
| 11/24/1981 | 15.50\% | 13.61\% | 1.89\% |
| 11/2519981 | 15.25\% | 13.61\% | 1.64\% |
| 11/25/1981 | 15.35\% | 13.61\% | 1.74\% |
| 11/25/1981 | 16.10\% | 13.61\% | 2.49\% |
| 11/251981 | 16.10\% | 13.61\% | 2.49\% |
| 12/01/1981 | 15.70\% | 13.61\% | 2.09\% |
| 12/01/1981 | 16.00\% | 13.61\% | 2.39\% |
| 12\%1/1981 | 16.49\% | 13.61\% | 2.88\% |
| 12/01/1981 | 16.50\% | 13.61\% | 2.89\% |
| 1210411981 | 16.00\% | 13.61\% | 2.39\% |
| 12/11/1981 | 16.25\% | 13.63\% | 2.62\% |
| 12/14/1981 | 14.00\% | 13.63\% | 0.37\% |
| 12/15/1981 | 15.81\% | 13.63\% | 2.18\% |
| 12/15/1981 | 16.00\% | 13.63\% | 2.37\% |
| 12/16/1981 | 15.25\% | 13.63\% | 1.62\% |
| 12/17/1981 | 16.50\% | 13.63\% | 2.87\% |
| 12/18/1981 | 15.45\% | 13.63\% | 1.82\% |
| 12/301981 | 14.25\% | 13.67\% | 0.58\% |
| 12/30/1981 | 16.00\% | 13.67\% | 2.33\% |
| 12/30/1981 | 16.25\% | 13.67\% | 2.58\% |
| 12/31/1981 | 16.15\% | 13.67\% | 2.48\% |
| 01/04/1982 | 15.50\% | 13.67\% | 1.83\% |
| 01/11/1982 | 14.50\% | 13.72\% | 0.78\% |
| 01/11/1982 | 17.00\% | 13.72\% | 3.28\% |
| 01/131982 | 14.75\% | 13.74\% | 1.01\% |
| 01/14/1982 | 15.75\% | 13.75\% | 2.00\% |
| 01/151982 | 15.00\% | 13.76\% | 1.24\% |
| 01/151982 | 16.50\% | 13.76\% | 2.74\% |
| 01/22/1982 | 16.25\% | 13.79\% | 2.46\% |
| 01/27/1982 | 16.84\% | 13.81\% | 3.03\% |
| 01/28/1982 | 13.00\% | 13.81\% | -0.81\% |
| 01/29/1982 | 15.50\% | 13.82\% | 1.68\% |
| 02/01/1982 | 15.85\% | 13.82\% | 2.03\% |
| 02/03/1982 | 16.44\% | 13.84\% | 2.60\% |
| 02/08/1982 | 15.50\% | 13.86\% | 1.64\% |
| 02/11/1982 | 16.00\% | 13.88\% | 2.12\% |
| 02/11/1982 | 16.20\% | 13.88\% | 2.32\% |
| 02/17/1982 | 15.00\% | 13.89\% | 1.11\% |
| 02/19/1982 | 15.17\% | 13.89\% | 1.28\% |
| 02/26/1982 | 15.25\% | 13.89\% | 1.36\% |
| 03/01/1982 | 15.03\% | 13.89\% | 1.14\% |
| 03/01/1982 | 16.00\% | 13.89\% | 2.11\% |
| 03/031982 | 15.00\% | 13.88\% | 1.12\% |
| 03/03/1982 | 15.00\% | 13.88\% | 1.12\% |
| 03/081982 | 17.10\% | 13.88\% | 3.22\% |
| 03/12/1982 | 16.25\% | 13.88\% | 2.37\% |
| 03/17/1982 | 17.30\% | 13.88\% | 3.42\% |
| $03+2211982$ | 15.10\% | 13.89\% | 1.25\% |
| 03/27/1982 | 15.40\% | 13.89\% | 1.51\% |
| 03/30/1982 | 15.50\% | 13.90\% | 1.60\% |
| 03/31/1982 | 17.00\% | 13.91\% | 3.09\% |
| 04/01/1982 | 14.70\% | 13.91\% | 0.79\% |
| 04/01/1982 | 16.50\% | 13.91\% | 2.59\% |
| 04/02/1982 | 15.50\% | 13.91\% | 1.59\% |
| 04/05/1982 | 15.50\% | 13.92\% | 1.58\% |


| [6] | [7] | [8] | [9] |
| :---: | :---: | :---: | :---: |
|  |  | - |  |
| Date of |  | 30-Year |  |
| Efectric Rate | Return on | Treasury |  |
| Case | Equity | Yield | Premium |
| 04/08/1982 | 16.40\% | 13.93\% | 2.47\% |
| 04/13/1982 | 14.50\% | 13.94\% | 0.56\% |
| 04/23/1982 | 15.75\% | 13.94\% | 1.81\% |
| 04/27/1982 | 15.00\% | 13.94\% | 1.06\% |
| $04 / 2811982$ | 15.75\% | 13.94\% | 1.81\% |
| 04/30/1982 | 14.70\% | 13.94\% | 0.76\% |
| 04/3011982 | 15.50\% | 13.94\% | 1.56\% |
| 05/03/1982 | 16.60\% | 13.94\% | 2.66\% |
| 05/04/1982 | 16.00\% | 13.94\% | 2.06\% |
| 05/14/1982 | 15.50\% | 13.92\% | 1.58\% |
| 05/18/1982 | 15.42\% | 13.92\% | 1.50\% |
| 05119/1982 | 14.69\% | 13.92\% | 0.77\% |
| 05/20/1982 | 15.00\% | 13.91\% | 1.09\% |
| 0512011982 | 15.10\% | 13.91\% | 1.19\% |
| 05/201982 | 15.50\% | 13.91\% | 1.59\% |
| 05/20/1982 | 16.30\% | $13.91 \%$ | 2.39\% |
| 05/21/1982 | 17.75\% | 13.91\% | 3.84\% |
| 05/27/1982 | 15.00\% | 13.89\% | 1.11\% |
| 05/28/1982 | 15.50\% | 13.89\% | 1.61\% |
| 05/28/1982 | 17.00\% | 13.89\% | 3.11\% |
| 06101/1982 | 13.75\% | 13.89\% | -0.14\% |
| $0661 / 1982$ | 16.60\% | 13.89\% | 2.71\% |
| 06/09/1982 | 17.86\% | 13.88\% | 3.98\% |
| 06/14/1982 | 15.75\% | 13.88\% | 1.87\% |
| 06/151982 | 14.85\% | 13.88\% | 0.97\% |
| $06 / 18 / 1982$ | 15.50\% | 13.87\% | 1.63\% |
| $05 / 21 / 1982$ | 14.90\% | 13.87\% | 1.03\% |
| 06/23/1982 | 16.00\% | 13.86\% | 2.14\% |
| 06/23/1982 | 16.17\% | 13.86\% | 2.31\% |
| 06/24/1982 | 14.85\% | 13.86\% | 0.99\% |
| 06125/1982 | 14.70\% | 13.86\% | 0.84\% |
| 07/01/1982 | 16.00\% | 13.84\% | 2.16\% |
| 07/02/1982 | 15.62\% | $13.84 \%$ | 1.78\% |
| 07/0211982 | 17.00\% | 13.84\% | 3.16\% |
| 07/131982 | 14.00\% | 13.82\% | 0.18\% |
| 07/13/1982 | 16.80\% | 13.82\% | 2.98\% |
| 07/14/1982 | 15.76\% | 13.82\% | 1.94\% |
| 07/14/1982 | 16.02\% | 13.82\% | 2.20\% |
| 07/19/1982 | 16.50\% | 13.80\% | 2.70\% |
| 07/221982 | 14.50\% | 13.77\% | 0.73\% |
| 07/221982 | 17.00\% | 13.77\% | 3.23\% |
| 07/27/1982 | 16.75\% | 13.75\% | 3.00\% |
| 07/29/1982 | 16.50\% | 13.74\% | 2.76\% |
| 08/11/1982 | 17.50\% | 13.68\% | 3.82\% |
| 08/1841982 | 17.07\% | 13.63\% | 3.44\% |
| 08/20/1982 | 15.73\% | 13.60\% | 2.13\% |
| 08/25/1982 | 16.00\% | 13.57\% | 2.43\% |
| 08/28/1982 | 15.50\% | 13.56\% | 1.94\% |
| 08/30/1982 | 15.00\% | 13.55\% | 1.45\% |
| 09/03/1982 | 16.20\% | 13.53\% | 2.67\% |
| 091031982 | 15.00\% | 13.52\% | 1.48\% |
| 09/15/1982 | 13.08\% | 13.50\% | -0.42\% |
| 09/15/1982 | 16.25\% | 13.50\% | 2.75\% |
| 09/16/1982 | 16.00\% | 13.50\% | 2.50\% |
| 09/17/1982 | 15.25\% | 13.50\% | 1.75\% |
| 09/23/1982 | 17.17\% | 13.47\% | 3.70\% |
| $09 / 24 / 1982$ | 14.50\% | 13.46\% | 1.04\% |
| 09/27/1982 | 15.25\% | 13.46\% | 1.79\% |
| 10101/1982 | 15.50\% | 13.42\% | 2.08\% |
| 10/15/1982 | 15.90\% | 13.32\% | 2.58\% |
| 10/22/1982 | 15.75\% | 13.24\% | 2.51\% |
| 10122/1982 | 17.15\% | 13.24\% | 3.91\% |
| 101291982 | 15.54\% | 13.16\% | 2.38\% |
| 11/01/1982 | 15.50\% | 13.15\% | 2.35\% |
| 11/031982 | 17.20\% | 13.13\% | 4.07\% |
| 11/04/1982 | 16.25\% | 13.11\% | 3.14\% |
| 11/05/1982 | 16.20\% | 13.09\% | 3.11\% |
| 11/09/1982 | 16.00\% | 13.05\% | 2.95\% |
| 11/23/1982 | 15.50\% | 12.89\% | 2.61\% |
| 11/231982 | 15.85\% | 12.89\% | 2.90\% |
| 11/30/1982 | 16.50\% | 12.81\% | 3.69\% |
| 12/01/1982 | 17.04\% | 12.79\% | 4.25\% |
| 1210641982 | 15.00\% | 12.73\% | $227 \%$ |
| 12106/1982 | 16.35\% | 12.73\% | 3.62\% |
| 12/10/1982 | 15.50\% | 12.66\% | 2.84\% |
| 12/13/1982 | 16.00\% | 12.65\% | 3.35\% |
| 12/14/1982 | 15.30\% | 12.63\% | 2.67\% |
| 12/14/1982 | 16.40\% | 12.63\% | 3.77\% |
| 12/20/1982 | 16.00\% | 12.57\% | 3.43\% |


| [6] | [7] | [8] | [9] |
| :---: | :---: | :---: | :---: |
|  |  | Average |  |
| Date of |  | 30-Year |  |
| Electric Rate | Return on | Treasury | Risk |
| Case | Equaty | Yield | Psemium |
| 12/21/1982 | 14.75\% | 12.56\% | 2.19\% |
| 12/21/1982 | 15.85\% | 12.56\% | 3.29\% |
| 12/22/1982 | 16.25\% | 12.54\% | 3.71\% |
| 121221982 | 16.58\% | 12.54\% | 4.04\% |
| $12 / 22 / 1982$ | 16.75\% | 12.54\% | 4.21\% |
| 12/29/1982 | 14.90\% | 12.48\% | 2.42\% |
| 12/29/1982 | 16.25\% | 12.48\% | 3.77\% |
| 12/30/1982 | 16.00\% | 12.47\% | 3.53\% |
| 12/301982 | 16.35\% | 12.47\% | 3.88\% |
| 12/30/1982 | 16.77\% | 12.47\% | 4.30\% |
| 01/051983 | 17.33\% | 12.40\% | 4.93\% |
| 01/11/1983 | 15.90\% | 12.34\% | 3.56\% |
| 01/12/1983 | 14.63\% | 12.33\% | 2.30\% |
| 01/12/1983 | 15.50\% | 12.33\% | 3.17\% |
| 01/2011983 | 17.75\% | 12.24\% | 5.51\% |
| 01/21/1983 | 15.00\% | 12.22\% | 2.78\% |
| 01/24/1983 | 14.50\% | 12.21\% | 2.29\% |
| 01/24/1983 | 15.50\% | 12.21\% | 3.29\% |
| 01/25/1983 | 15.85\% | 12.19\% | 3.66\% |
| 01/27/1983 | 16.14\% | 12.17\% | 3.97\% |
| 02/01/1983 | 18.50\% | 12.13\% | 6.37\% |
| $02 / 04 / 1983$ | 14.00\% | 12.10\% | 1.90\% |
| 02/10/1983 | 15.00\% | 12.06\% | 2.94\% |
| 02/21/1983 | 15.50\% | 11.98\% | 3.52\% |
| 021221983 | 15.50\% | 11.97\% | 3.53\% |
| 02/23/1983 | 15.10\% | 11.96\% | 3.14\% |
| 02/23/1983 | 16.00\% | 11.96\% | 4.04\% |
| 03/02/1983 | 15.25\% | 11.89\% | 3.36\% |
| 031091983 | 15.20\% | 11.82\% | 3.38\% |
| 03/151983 | 13.00\% | 11.77\% | 1.23\% |
| 03/18/1983 | 15.25\% | 11.73\% | 3.52\% |
| 03/23/1983 | 15.40\% | 11.69\% | 3.71\% |
| 03/24/1983 | 15.00\% | 11.67\% | 3.33\% |
| 03/29/1983 | 15.50\% | 11.63\% | 3.87\% |
| 03/30/1983 | 16.71\% | 11.61\% | 5.10\% |
| 03/31/1983 | 15.00\% | 11.59\% | 3.41\% |
| 04/04/1983 | 15.20\% | 11.58\% | 3.62\% |
| 04/081983 | 15.50\% | 11.51\% | 3.99\% |
| 04/11/1983 | 14.81\% | 11.49\% | 3.32\% |
| 04/19/1983 | 14.50\% | 11.38\% | 3.12\% |
| 04/2011983 | 16.00\% | 11.36\% | 4.64\% |
| 04129/1983 | 16.00\% | 11.24\% | 4.76\% |
| 05101/1983 | 14.50\% | 11.24\% | 3.26\% |
| 0510911983 | 15.50\% | 11.15\% | 4.35\% |
| 0511/1983 | 16.46\% | 11.12\% | 5.34\% |
| 05/12/1983 | 14.14\% | 11.11\% | 3.03\% |
| 05/18/1983 | 15.00\% | 11.05\% | 3.95\% |
| 05/23/1983 | 14.90\% | 11.01\% | 3.89\% |
| 05/23/1983 | 15.50\% | 11.01\% | 4.49\% |
| 051251983 | 15.50\% | 10.98\% | 4.52\% |
| 05/27/1983 | 15.00\% | 10.90\% | 4.04\% |
| 05/31/1983 | 14.00\% | 10.95\% | 3.05\% |
| 05/31/1983 | $15.50 \%$ | 10.95\% | 4.55\% |
| 06/02/1983 | 14.50\% | 10.93\% | 3.57\% |
| 03/17/1983 | 15.03\% | 10.84\% | 4.19\% |
| 07/01/1983 | 14.80\% | 10.78\% | 4.02\% |
| 07/01/1983 | 14.90\% | 10.78\% | 4.12\% |
| 07/08/1983 | 16.25\% | 10.76\% | 5.49\% |
| 07/13/1983 | 13.20\% | 10.75\% | 2.45\% |
| 07/1911983 | 15.00\% | 10.74\% | 4.26\% |
| 07/19/1983 | 15.10\% | 10.74\% | 4.36\% |
| 07/25/1983 | 16.25\% | 10.73\% | 5.52\% |
| 07/281983 | 15.90\% | 10.74\% | 5.16\% |
| 081031983 | 16.34\% | 10.75\% | 5.59\% |
| $08103 / 1983$ | 16.50\% | 10.75\% | 5.75\% |
| 08/19/1983 | 15.00\% | 10.80\% | 4.20\% |
| 08122/1983 | 15.50\% | 10.80\% | 4.70\% |
| 0812211983 | 16.40\% | 10.80\% | 5.60\% |
| 08/31/1983 | 14.75\% | 10.84\% | 3.91\% |
| $09 / 07 / 1983$ | 75.00\% | 10.86\% | 4.14\% |
| 09/14/1983 | 15.78\% | 10.89\% | 4.89\% |
| 09/16/1983 | 15.00\% | 10.90\% | 4.10\% |
| $09 / 19 / 1983$ | 14.50\% | 10.91\% | 3.59\% |
| 09120/1983 | 16.50\% | 10.91\% | 5.59\% |
| 09/28/1983 | 14.50\% | 10.94\% | 3.56\% |
| 091291983 | 15.50\% | 10.95\% | 4.55\% |
| 09/30/1983 | 15.25\% | 10.95\% | 4.30\% |
| 09/3011983 | 16.15\% | 10.95\% | 5.20\% |
| 10/04/1983 | 14.80\% | 10.96\% | 3.84\% |



| [6] | [7] | [8] | [9] |
| :---: | :---: | :---: | :---: |
|  |  | Average 30-Year |  |
| Date of |  |  |  |  |
| Electric Rate | Return on | Treastry | Risk |
| Case | Equity | Yield | Premium |
| 09/17/1984 | 17.38\% | 12.56\% | 4.82\% |
| 09/26/1984 | 14.50\% | 12.57\% | 1.93\% |
| 03/28/1984 | 15.00\% | 12.57\% | 2.43\% |
| 091281984 | 16.25\% | 12.57\% | 3.68\% |
| 10109/1984 | 14.75\% | 12.58\% | 2.17\% |
| 10/12/1984 | 15.60\% | 12.59\% | 3.01\% |
| 10122/1984 | 15.00\% | 12.59\% | 2.41\% |
| 10126/1984 | 16.40\% | 12.58\% | 3.82\% |
| 10/31/1984 | 16.25\% | 12.58\% | 367\% |
| 11/07/1984 | 15.60\% | 12.58\% | 3.02\% |
| 1110911984 | 16.00\% | 12.58\% | 3.42\% |
| 11/14/1984 | 15.75\% | 12.58\% | 3.17\% |
| 11/20/1984 | 15.25\% | 12.58\% | 2.67\% |
| 11/20/1984 | 15.92\% | 12.58\% | 3.34\% |
| 11/23/1984 | 15.00\% | 12.58\% | 2.42\% |
| 11/28/1984 | 16.15\% | 12.57\% | 3.58\% |
| 12/031984 | 15.80\% | 12.56\% | 3.24\% |
| 12/04/9984 | 16.50\% | 12.56\% | 3.94\% |
| 12/18/1984 | 16.40\% | 12.53\% | 3.87\% |
| 12/19/1984 | 14.75\% | 12.53\% | 2.22\% |
| 1219/1984 | 15.00\% | 12.53\% | 2.47\% |
| 121201984 | 16.00\% | 12.53\% | 3.47\% |
| 12/28/1984 | 16.00\% | 12.50\% | 3.50\% |
| 01/03/1985 | 14.75\% | 12.49\% | 2.26\% |
| 01/10/1985 | 15.75\% | 12.47\% | 3.28\% |
| 01/11/1985 | 16.30\% | 12.46\% | 3.84\% |
| 01/23/1985 | 15.80\% | 12.43\% | 3.37\% |
| 01/24/1985 | 15.82\% | 12.43\% | 3.39\% |
| 01/25/1985 | 16.75\% | 12.42\% | 4.33\% |
| 01/301985 | 14.90\% | 12.40\% | 2.50\% |
| 01/31/1985 | 14.75\% | 12.39\% | 2.36\% |
| 021081985 | 14.47\% | 12.35\% | 2.12\% |
| 03/01/1985 | 13.84\% | 12.31\% | 1.53\% |
| 03/08/1985 | 16.85\% | 12.28\% | 4.57\% |
| 03/14/1985 | 15.50\% | 12.25\% | 3.25\% |
| 031451985 | 15.62\% | 12.25\% | 3.37\% |
| 03/29/1985 | 15.62\% | 12.17\% | 3.45\% |
| 04103/1985 | 14.60\% | 12.14\% | 2.46\% |
| 04/091985 | 15.50\% | 12.11\% | 3.39\% |
| 04/16/1985 | 15.70\% | 12.06\% | 3.64\% |
| 04/2211985 | 14.00\% | 12.02\% | 1.98\% |
| 04128/4985 | 15.50\% | 11.98\% | 3.52\% |
| 04/2911985 | 15.00\% | 11.97\% | 3.03\% |
| 05/021985 | 14.68\% | 11.94\% | 2.74\% |
| 05/08/1985 | 15.62\% | 11.89\% | 3.73\% |
| 05/101985 | 16.50\% | 11.87\% | 4.63\% |
| 05129/1985 | 14.61\% | 11.73\% | 2.88\% |
| 05131/1985 | 16.00\% | 11.71\% | 4.29\% |
| $06 / 18 / 1985$ | 15.50\% | 11.61\% | 3.89\% |
| 07/09/1985 | 15.00\% | 11.45\% | 3.55\% |
| 07/16/1985 | 14.50\% | $11.39 \%$ | 3.11\% |
| 07/26/1985 | 14.50\% | 11.33\% | 3.17\% |
| 081021985 | 14.80\% | 11.29\% | 3.51\% |
| 08107/1985 | 15.00\% | 11.27\% | 3.73\% |
| 08/28/1985 | 14.25\% | 11.15\% | 3. $10 \%$ |
| 08/28/1985 | 15.50\% | 11.15\% | 4.35\% |
| 08/2911985 | 14.50\% | 11.15\% | 3.35\% |
| 09/0911985 | 14.60\% | 11.11\% | 3.49\% |
| 09/0911985 | 14.90\% | 11.11\% | 3.79\% |
| 09/17/1985 | 14.90\% | 11.08\% | 3.82\% |
| 09123/1985 | 15.00\% | 11.06\% | 3.94\% |
| 09127/1985 | 15.50\% | 11.05\% | 4.45\% |
| 09/27/1985 | 15.80\% | 11.05\% | 4.75\% |
| 10/021985 | 14.00\% | 11.03\% | 2.97\% |
| 10/02/1985 | 14.75\% | $11.03 \%$ | 3.72\% |
| 10103/1985 | 15.25\% | 11.03\% | 422\% |
| 10/24/1985 | 15.40\% | 10.96\% | 4.44\% |
| 10/24/1985 | 15.82\% | 10.96\% | 4.86\% |
| 10124/1985 | 15.85\% | 10.95\% | 4.89\% |
| 10/28/1985 | 16.00\% | 10.95\% | 5.05\% |
| 10/29/1985 | 16.65\% | 10.94\% | 5.71\% |
| 10131/1985 | 15.06\% | 10.93\% | 4.13\% |
| 11/04/1985 | $14.50 \%$ | 10.92\% | 3.58\% |
| 11/07/1985 | 15.50\% | 10.90\% | 4.60\% |
| 11/08/1985 | 14.30\% | 10.89\% | 3.41\% |
| 12/12/1985 | 14.75\% | 10.73\% | 4.02\% |
| 121819985 | 15.00\% | 10.69\% | 4.31\% |
| 12/20/1985 | 14.50\% | 10.67\% | 3.83\% |
| 12120/1985 | 14.50\% | 10.67\% | 3.83\% |


| $[6]$ Date of | [7] | [8] <br> Average 30-Year | [9] |
| :---: | :---: | :---: | :---: |
| Electric Rate Case | Return on Equity | Treasury Yield | Risk Premium |
| 12/20/1985 | 15.00\% | 10.67\% | 4.33\% |
| 01/24/1986 | 15.40\% | 10.41\% | 4.99\% |
| 01/31/1986 | 15.00\% | 10.35\% | 4.65\% |
| 02/05/1986 | 15.00\% | 10.32\% | 4.68\% |
| 02f051986 | 15.75\% | 10.32\% | 5.43\% |
| 021101986 | 13.30\% | 10.29\% | 3.01\% |
| 02/11/1986 | 12.50\% | 10.28\% | 2.22\% |
| 02/14/1986 | 14.40\% | 10.24\% | 4.16\% |
| 02/18/1986 | 16.00\% | 10.23\% | 5.77\% |
| 02/24/1986 | 14.50\% | 10.18\% | 4.32\% |
| 02/26/1986 | 14.00\% | 10.15\% | 3.85\% |
| 03/05/1986 | 14.90\% | 10.08\% | 4.82\% |
| 03/11/1986 | 14.50\% | 10.02\% | 4.48\% |
| 0312/1986 | $13.50 \%$ | 10.00\% | 3.50\% |
| 03/27/1986 | 14.10\% | 9.86\% | 4.24\% |
| 03/31/1986 | 13.50\% | 9.84\% | 3.66\% |
| 04/01/1986 | 14.00\% | 9.83\% | 4.17\% |
| 04/0211986 | 15.50\% | 9.81\% | 5.69\% |
| 04/04/1986 | 15.00\% | 9.78\% | 5.22\% |
| 04/14/1986 | 13.40\% | 9.69\% | 3.71\% |
| 04/23/1986 | 15.00\% | 9.57\% | 5.43\% |
| 051161986 | $14.50 \%$ | 9.32\% | 5.18\% |
| 0511@1986 | 14.50\% | 9.32\% | 5.18\% |
| 05/2911986 | 13.90\% | $9.19 \%$ | 4.71\% |
| 05/301986 | 15.10\% | 9.18\% | 5.92\% |
| 06/02/1986 | 12.81\% | 9.17\% | 3.64\% |
| 06/11/1986 | 14.00\% | 9.07\% | 4.93\% |
| $05 / 24 / 1985$ | 16.63\% | 8.94\% | 7.69\% |
| $06126 / 1986$ | 12.00\% | 8.91\% | 3.09\% |
| $00 / 26 / 1986$ | 14.75\% | 8.91\% | 5.84\% |
| 06/30/1986 | 13.00\% | 8.87\% | 4.13\% |
| 07/10/1986 | 14.34\% | 8.75\% | 5.59\% |
| 07/11/1986 | 12.75\% | 8.73\% | 4.02\% |
| 07/14/1986 | 12.60\% | 8.71\% | 3.89\% |
| 07/17/1986 | 12.40\% | 8.66\% | 3.74\% |
| 07/251986 | 14.25\% | 8.57\% | 5.68\% |
| 08/0041986 | 13.50\% | 8.44\% | 5.05\% |
| $08 / 14 / 1986$ | 13.50\% | 8.35\% | 5.15\% |
| 09/16/1986 | 12.75\% | 8.06\% | 4.69\% |
| 09/19/1986 | 13.25\% | 8.03\% | 5.22\% |
| 10101/1986 | 14.00\% | 7.95\% | 6.05\% |
| 10/03/1986 | 13.40\% | 7.93\% | 5.47\% |
| 10/31/1986 | 13.50\% | 7.77\% | 5.73\% |
| 11/0519986 | 13.00\% | 7.75\% | 5.25\% |
| 12/03/1986 | 12.90\% | 7.58\% | 5.32\% |
| 12/04/1986 | 14.44\% | 7.58\% | 6.86\% |
| 12/16/1986 | 13.60\% | 7.52\% | 6.08\% |
| 12/22/1986 | 13.80\% | $7.51 \%$ | 6.29\% |
| 12/301986 | 13.00\% | 7.49\% | 5.51\% |
| 01/02/1987 | 13.00\% | 7.49\% | 5.51\% |
| 01/12/1987 | 12.40\% | 7.47\% | 4.93\% |
| 01/27/1987 | 12.71\% | 7.46\% | 5.25\% |
| 03/02/1987 | 12.47\% | 7.47\% | 5.00\% |
| 03/03/1987 | 13.60\% | 7.47\% | 6.13\% |
| 03/04/1987 | 12.38\% | 7.47\% | 4.91\% |
| 03/101987 | 13.50\% | 7.47\% | 6.03\% |
| 03/\{31987 | 13.00\% | 7.47\% | 5.53\% |
| 03/31/1987 | 13.00\% | 7.46\% | 5.54\% |
| 04/06/1987 | 13.00\% | 7.47\% | 5.53\% |
| 04/14/1987 | 12.50\% | 7.49\% | 5.01\% |
| 04/1611987 | 14.50\% | 7.50\% | 7.00\% |
| 04/27/1987 | 12.00\% | 7.54\% | 4.46\% |
| 05105/1987 | 12.85\% | 7.58\% | 5.27\% |
| 05/12/1987 | 12.65\% | 7.62\% | 5.03\% |
| 05/28/1987 | 13.50\% | 7.70\% | 5.80\% |
| 06/15/1987 | 13.20\% | 7.78\% | 5.42\% |
| 0612911987 | 15.00\% | 7.83\% | 7.17\% |
| 06/30/1987 | 12.50\% | 7.84\% | 4.66\% |
| 07/08/1987 | 12.00\% | 7.86\% | 4.14\% |
| 07/1/1987 | 12.90\% | 7.86\% | 5.04\% |
| 07/1511987 | 13.50\% | 7.88\% | 5.62\% |
| 07/16/1987 | 13.50\% | 7.88\% | 5.62\% |
| 07/16/1987 | 15.00\% | 7.88\% | 7.12\% |
| 0712711987 | 13.00\% | 7.92\% | 5.08\% |
| 07/27/1987 | 13.40\% | 7.92\% | 5.48\% |
| 07/27/1987 | 13.50\% | 7.92\% | 5.58\% |
| 07/31/1987 | 12.93\% | 7.95\% | 5.03\% |
| 08/2841987 | 12.63\% | 8.06\% | 4.57\% |
| 08/26/1987 | 12.75\% | 8.06\% | 4.69\% |


| [6] | [7] | $[8]$ | [9] |
| :---: | :---: | :---: | :---: |
| ate of |  | Average 30-Year |  |
| Electric Rate | Returnon | Treasury | Risk |
| Case | Equity | Yield | Premium |
| 08/27/1987 | 13.25\% | 8.06\% | 5.19\% |
| 09109/1987 | 13.00\% | 8.14\% | 4.86\% |
| 09/30/1987 | 12.75\% | 8.31\% | 4.44\% |
| 09/3011987 | 13.00\% | 8.31\% | 4.69\% |
| 1010211987 | 11.50\% | 8.33\% | 3.17\% |
| 1011511987 | 13.00\% | 8.43\% | 4.57\% |
| 11/02/1987 | 13.00\% | 8.55\% | 4.45\% |
| 11/19/1987 | 13.00\% | 8.64\% | 4.36\% |
| 11/30/1987 | 12.00\% | 8.68\% | 3.32\% |
| 12/03/1987 | 14.20\% | 8.70\% | 5.50\% |
| 12/15/1987 | 13.25\% | 8.77\% | 4.48\% |
| 12/16/1987 | 13.50\% | 8.78\% | $4.72 \%$ |
| 12/16/1987 | 13.72\% | 8.78\% | 4.94\% |
| 12/17/1987 | 11.75\% | 8.79\% | 2.96\% |
| 12/18/1987 | 13.50\% | 8.80\% | 4.70\% |
| 12121/1987 | 12.01\% | 8.81\% | 3.20\% |
| $12 / 2211987$ | 12.00\% | 8.81\% | 3.19\% |
| $12 / 22 / 1987$ | 12.00\% | 8.81\% | 3.19\% |
| $12 / 22 / 1987$ | 12.75\% | 8.81\% | 3.94\% |
| $12 / 221987$ | 13.00\% | 8.81\% | 4.19\% |
| 01/2014988 | 13.80\% | 8.94\% | 4.86\% |
| 01/261988 | 13.90\% | 8.95\% | 4.95\% |
| 01/2911988 | 13.20\% | 8.96\% | 4.24\% |
| 02/04/1988 | 12.60\% | 8.96\% | 3.64\% |
| 03/0111988 | 11.56\% | 8.94\% | 2.62\% |
| 03/2311988 | 12.87\% | 8.92\% | 3.95\% |
| 03/24/1988 | 11.24\% | 8.92\% | 2.32\% |
| 03/3011988 | 12.72\% | 8.92\% | 3.80\% |
| 04/01/1988 | 12.50\% | 8.92\% | 3.58\% |
| 04/07/1988 | 13.25\% | 8.93\% | 4.32\% |
| 04/251988 | 10.9\% | 8.96\% | 2.00\% |
| 051031988 | 12.91\% | 8.97\% | 3.94\% |
| 05/11/1988 | 13.50\% | 8.99\% | 4.51\% |
| 05/16/1988 | 13.00\% | 8.99\% | 4.01\% |
| 0613011988 | 12.75\% | 9.00\% | 3.75\% |
| 07/01/1988 | 12.75\% | 8.99\% | 3.76\% |
| 07/2011988 | 13.40\% | 8.96\% | 4.44\% |
| 08/051988 | 12.75\% | 8.92\% | 3.83\% |
| 08/23/1988 | 11.70\% | 8.93\% | 2.77\% |
| 08/2911988 | 12.75\% | 8.94\% | 3.81\% |
| $08 / 30 / 1988$ | 13.50\% | 8.94\% | 4.56\% |
| $09 / 081988$ | 12.60\% | 8.95\% | 3.65\% |
| 10/13/1988 | 13.10\% | 8.93\% | 4.17\% |
| 12/19/1988 | 13.00\% | 9.02\% | 3.98\% |
| 1212011988 | 12.25\% | 9.02\% | 3.23\% |
| 1212011988 | 13.00\% | 9.02\% | 3.98\% |
| 12/21/1988 | 12.90\% | 9.02\% | 3.88\% |
| 12/27/1988 | 13.00\% | 9.03\% | 3.97\% |
| 12/28/1988 | 13.10\% | 9.03\% | 4.07\% |
| 12/30/1988 | 13.40\% | 9.04\% | 4.36\% |
| 01/27/1989 | 13.00\% | 9.05\% | 3.95\% |
| 01/31/1989 | 13.00\% | 9.05\% | 3.95\% |
| 02/17/1989 | 13.00\% | 9.05\% | 3.95\% |
| 02/20/1989 | 12.40\% | 9.05\% | 3.35\% |
| 03/01/1989 | 12.76\% | 9.05\% | 3.71\% |
| 03108/1989 | 13.00\% | 9.05\% | 3.95\% |
| 03/30/1989 | 14.00\% | 9.05\% | 4.95\% |
| 04/051989 | 14.20\% | 9.05\% | 5.15\% |
| 04/18/1989 | 13.00\% | 9.05\% | 3.95\% |
| 0510511989 | 12.40\% | 9.05\% | 3.35\% |
| 05/02/1989 | 13.20\% | 9.00\% | 4.20\% |
| 0610811989 | 13.50\% | 8.98\% | 4.52\% |
| $06 / 27 / 1989$ | 13.25\% | 8.91\% | 4.34\% |
| 06/3011989 | 13.00\% | 8.90\% | 4.10\% |
| 08/14/1989 | 12.50\% | 8.77\% | 3.73\% |
| 09/281989 | 12.25\% | 8.63\% | 3.62\% |
| 10/24/1989 | 12.50\% | 8.54\% | 3.96\% |
| 11/09/1989 | $13.00 \%$ | 8.49\% | 4.51\% |
| 12/151989 | 13.00\% | 8.34\% | 4.65\% |
| 12/2011989 | 12.90\% | 8.32\% | 4.58\% |
| 12/21/1989 | 12.90\% | 8.31\% | 4.59\% |
| 12127/1989 | 12.50\% | 8.29\% | 4.21\% |
| $12 / 27 / 1989$ | 13.00\% | 8.29\% | 4.71\% |
| 01/10/1990 | 12.80\% | 8.24\% | 4.56\% |
| 01/11/1990 | 12.90\% | 8.24\% | 4.66\% |
| 01/1711990 | 12.80\% | 8.22\% | 4.58\% |
| 01/2611990 | 12.00\% | 8.20\% | 3.80\% |
| 02109/1990 | 12.10\% | 8.17\% | 3.93\% |
| 02/24/1990 | 12.86\% | 8.15\% | 4.71\% |




| [6] | [7] | [8] <br> Average | [9] |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Date of | Return on | 30-Year | Risk |
| Electric Rate |  | Treasury |  |
| Case | Equity | Yield | Premium |
| 05/10/1994 | 11.75\% | 6.45\% | 5.30\% |
| 051131994 | 10.50\% | 6.46\% | 4.0 |
| 08103/1994 | 11.00\% | 6.54\% | 4.46\% |
| 06/27/1994 | 11.40\% | 6.65\% | 4.75\% |
| 08051994 | 12.75\% | 6.88\% | 5.87\% |
| 10/31/1994 | 10.00\% | 7.33\% | 2.67\% |
| 11/09/1994 | 10.85\% | 7.39\% | 3.46\% |
| 11/09/1994 | 10.85\% | 7.39\% | .46\% |
| 11/18/1994 | 11.20\% | 7.45\% | 3.75 |
| 11/22/1994 | 11.60\% | 7.47\% | 4.13\% |
| 11/28/1994 | 11.06\% | 7.49\% | 3.57\% |
| 12/081994 | 11.50\% | 7.54\% | 3.96\% |
| 12/08/1994 | 11.70\% | 7.54\% | 4.16\% |
| 12/14/1994 | 10.95\% | 7.56\% | 3.39\% |
| 12/151994 | 11.50\% | 7.57\% | 3.93\% |
| 1219/1994 | 11.50\% | 7.58\% | 3.92\% |
| 1212811994 | 12.15\% | 7.61\% | 4.54\% |
| 01/0911995 | 12.28\% | 7.64\% | 4.64\% |
| 01/31/1995 | 11.00\% | 7.69\% | 3.31\% |
| 021101995 | 12.60\% | 7.70\% | 4.90\% |
| 02117/1995 | 11.90\% | 7.70\% | 4.20\% |
| 03109/1995 | 11.50\% | 7.71\% | 3.79\% |
| 03/2011995 | 12.00\% | 7.72\% | 4.28\% |
| $03 / 231995$ | 12.81\% | 7.72\% | 5.09\% |
| 03/29/1995 | 11.60\% | 7.72\% | 3.88\% |
| 04/08/1995 | 11.10\% | 7.71\% | 3.39\% |
| 04/07/1995 | 11.00\% | 7.71\% | 3.29\% |
| 04/19/1995 | 11.00\% | 7.70\% | 3.30\% |
| 05112/995 | 11.63\% | 7.68\% | 3.95\% |
| 05/251995 | 11.20\% | 7.65\% | 3.55\% |
| 06/09/1995 | 11.25\% | 7.60\% | 3.65\% |
| 06/21/1995 | 12.25\% | 7.56\% | 4.69\% |
| 0613011995 | 11.10\% | 7.52\% | 3.58\% |
| 09/11/1995 | 11.30\% | 7.20\% | 4.10\% |
| 09/27/1995 | 11.30\% | 7.12\% | 4.18\% |
| 09/27/1995 | 11.50\% | 7.12\% | 4.38\% |
| 09/27/1995 | 11.75\% | 7.12\% | 4.63\% |
| 09/29/1995 | 11.00\% | 7.11\% | 3.89\% |
| 11/09/1995 | 11.38\% | 6.90\% | 4.48\% |
| 11/09/1995 | 12.36\% | 6.90\% | 5.46\% |
| 11/17/1995 | 11.00\% | 6.86\% | 4.14\% |
| 12/04/1995 | 11.35\% | 6.78\% | 4.57\% |
| 121111995 | 11.40\% | 6.74\% | 4.66\% |
| 121201995 | 11.60\% | 6.70\% | 4.90\% |
| 12127/1995 | 12.00\% | 6.66\% | 5.34\% |
| 0205/1996 | 12.25\% | 6.48\% | 5.77\% |
| 03/291996 | 10.67\% | 6.42\% | 4.25\% |
| 4103/1996 | 11.00\% | 6.42\% | 4.58\% |
| 04/11/1996 | 12.59\% | 6.43\% | 6.16\% |
| 04/11/1996 | 12.59\% | 6.43\% | 6.16\% |
| 04/24/1996 | 11.25\% | 6.43\% | 4.82\% |
| 04/30/1996 | 11.00\% | 6.43\% | 4.57\% |
| 05/13/1996 | 11.00\% | 6.44\% | 4.56\% |
| 051231996 | 11.25\% | 6.43\% | 4.82\% |
| 06/2511996 | 11.25\% | 6.48\% | 4.77\% |
| $06127 / 1996$ | 11.20\% | 6.48\% | 4.72\% |
| 08412/1996 | 10.40\% | 6.57\% | 3.83\% |
| 09/27/1996 | 11.00\% | 6.71\% | 4.29\% |
| 1016/1996 | 12.25\% | 6.76\% | 5.49\% |
| 11/05/1996 | 11.00\% | 6.81\% | 4.19\% |
| 11/26/1996 | 11.30\% | 6.83\% | 4.47\% |
| 12/18/1996 | 11.75\% | 6.83\% | 4.92\% |
| 12131/1996 | 11.50\% | 6.83\% | 4.67\% |
| 01/0311997 | 10.70\% | 6.83\% | 3.87\% |
| 021131997 | 11.80\% | 6.82\% | 4.98\% |
| 0212041997 | 11.80\% | 6.82\% | 4.98\% |
| 03/31/1997 | 10.02\% | 6.80\% | 3.22\% |
| 04/02/1997 | 11.65\% | 6.80\% | 4.85\% |
| 04/281997 | 11.50\% | 6.81\% | 4.69\% |
| 041291997 | 11.70\% | 6.81\% | 4.89\% |
| 07/17/1997 | 12.00\% | 6.77\% | 5.23\% |
| 12112/1997 | 11.00\% | 6.60\% | 4.40\% |
| 12123/1997 | 11.12\% | 6.57\% | 4.55\% |
| 021021998 | 12.75\% | 6.39\% | 6.36\% |
| 03/021998 | 11.25\% | 6.29\% | 4.96\% |
| 03/06/1998 | 10.75\% | 6.27\% | 4.48\% |
| 03/2011998 | 10.50\% | 6.22\% | 4.28\% |
| 04/30/1998 | 12.20\% | 6.12\% | 6.08\% |
| 07/1011998 | 11.40\% | 5.94\% | 5.46\% |





| [6] | [7] | [8] | [8] |
| :---: | :---: | :---: | :---: |
|  |  | Average |  |
| Date of |  | 30-Year |  |
| Electric Rate | Return on | Treastry |  |
| Case | Equity | Yield | Premium |
| 11/25/2009 | 10.75\% | 4.16\% | 6.59\% |
| 11/302009 | 10.35\% | 4.17\% | 6.18\% |
| 12103/2009 | 10.50\% | 4.18\% | 6.32\% |
| 12107/2009 | 10.70\% | 4.18\% | 6.52\% |
| 12/16/2009 | 10.90\% | 4.21\% | 6.69\% |
| 12/16/2009 | 11.00\% | 4.21\% | 6.79\% |
| 12/18/2009 | 10.40\% | 4.22\% | 6.18\% |
| 12/18/2009 | 10.40\% | 4.22\% | 6.18\% |
| 12/22/2009 | 10.20\% | 4.23\% | 5.97\% |
| 12/22/2009 | 10.40\% | 4.23\% | 6.17\% |
| 12/22/2009 | 10.40\% | 4.23\% | 6.17\% |
| 12/30/2009 | 10.00\% | 4.26\% | 5.74\% |
| 01/04/2010 | 10.80\% | 4.28\% | 6.52\% |
| 01/11/2010 | 11.00\% | 4.30\% | 6.70\% |
| 01/262010 | 10.13\% | 4.35\% | 5.78\% |
| 01/2712010 | 10.40\% | 4.35\% | 6.05\% |
| 0112712010 | 10.40\% | 4.35\% | 6.05\% |
| 01/27/2010 | 10.70\% | 4.35\% | 6.35\% |
| 02109/2010 | 9.80\% | 4.38\% | 5.42\% |
| 02/18/2010 | 10.60\% | 4.40\% | 6.20\% |
| 02/24/2010 | 10.18\% | 4.41\% | 5.77\% |
| 0310212010 | 9.63\% | 4.41\% | 5.22\% |
| 03/04/2010 | 10.50\% | 4.41\% | 6.09\% |
| 03105/2010 | 10.50\% | 4.41\% | 6.09\% |
| 03/11/2010 | 11.90\% | 4.42\% | 7.48\% |
| 03/17/2010 | 10.00\% | 4.41\% | 5.59\% |
| 03/25/2010 | 10.15\% | 4.42\% | 5.73\% |
| 04/02/2010 | 10.10\% | 4.43\% | 5.67\% |
| 04/27/2010 | 10.00\% | 4.46\% | 5.54\% |
| 04/29/2010 | 9.90\% | 4.46\% | 5.44\% |
| 04/29/2010 | 10.06\% | 4.46\% | 5.60\% |
| 04/29/2010 | 10.26\% | 4.46\% | 5.80\% |
| 05112/2010 | 10.30\% | 4.45\% | 5.85\% |
| 05112/2010 | 10.30\% | 4.45\% | 5.85\% |
| $05128 / 2010$ | 10.10\% | 4.44\% | 5.66\% |
| 05128/2010 | 10.20\% | 4.44\% | 5.76\% |
| 0610712010 | 10.30\% | 4.44\% | 5.86\% |
| 06/16/2010 | 10.00\% | 4.44\% | 5.56\% |
| 06/28/2010 | 9.67\% | 4.43\% | 5.24\% |
| 06/28/2010 | 10.50\% | 4.43\% | 6.07\% |
| 06/30/2010 | 9.40\% | 4.43\% | 4.97\% |
| 07/01/2010 | 10.25\% | 4.43\% | 5.82\% |
| 07/15/2010 | 10.53\% | 4.43\% | 6.10\% |
| 07/15/2010 | 10.70\% | 4.43\% | 6.27\% |
| 07/30/2010 | 10.70\% | $4.41 \%$ | 6.23\% |
| 08104/2010 | 10.50\% | 4.41\% | 6.09\% |
| 08/06/2010 | 9.83\% | 4.41\% | 5.42\% |
| 08/25/2010 | 9.90\% | 4.37\% | 5.53\% |
| 097032010 | 10.60\% | 4.35\% | 6.25\% |
| 09/14/2010 | 10.70\% | 4.33\% | 6.37\% |
| 09/16/2010 | 10.00\% | 4.33\% | 5.67\% |
| 09/16/2010 | 10.00\% | 4.33\% | 5.67\% |
| 09/3012010 | 9.75\% | 4.29\% | 5.46\% |
| 09/30/2010 | 11.00\% | $4.29 \%$ | 6.71\% |
| 10144/2010 | 10.35\% | 4.24\% | 6.11\% |
| 10/28/2010 | 10.70\% | 4.21\% | 6.49\% |
| 11/02/2010 | 10.38\% | 4.20\% | 6.18\% |
| 11/04/2010 | 10.70\% | 4.20\% | 6.50\% |
| 11/19/2010 | 10.20\% | 4.18\% | 6.02\% |
| 11/22/2010 | 10.00\% | 4.18\% | 5.82\% |
| 12/01/2010 | 10.13\% | 4.16\% | 5.97\% |
| $12 / 08 / 2010$ | 9.86\% | 4.15\% | 5.71\% |
| 12/09/2010 | 10.25\% | 4.15\% | 6.10\% |
| 12113/2010 | 10.70\% | 4.15\% | 6.55\% |
| 12/14/2010 | 10.13\% | 4.15\% | 5.98\% |
| 12/15/2010 | 10.44\% | 4.15\% | 6.29\% |
| 121712010 | 10.00\% | 4.15\% | 5.85\% |
| 1212012010 | 10.60\% | 4.15\% | 6.45\% |
| 12/21/2010 | 10.30\% | 4.14\% | 6.16\% |
| 12127/2010 | 9.90\% | 4.14\% | 5.76\% |
| 12/29/2010 | 11.15\% | 4.14\% | 7.01\% |
| 01/05/2011 | 10.15\% | 4.13\% | 6.02\% |
| 01/12/2011 | 10.30\% | 4.12\% | 6.18\% |
| 01/13/2011 | 10.30\% | 4.12\% | 6.18\% |
| 01/18/2011 | 10.00\% | 4.12\% | 5.88\% |
| 01/20/2011 | 9.30\% | 4.12\% | 5.18\% |
| 01/20/2011 | 10.13\% | 4.12\% | 6.01\% |
| 01/31/2011 | 9.60\% | 4.12\% | 5.48\% |
| $02 / 032011$ | 10.00\% | 4.12\% | 5.88\% |


| [6] | [7] | [8] | [ 3 ] |
| :---: | :---: | :---: | :---: |
|  |  | Average |  |
| ate of |  | 30-Year |  |
| Electric Rate | Return on | Treasury |  |
| Case | Equity | Yield | Premium |
| 02/25/2011 | 10.00\% | 4.14\% | 5.86\% |
| $03 / 25 / 2011$ | 9.80\% | 4.18\% | 5.62\% |
| 03/30/2011 | 10.00\% | 4.18\% | 5.82\% |
| 04/12/2011 | 10.00\% | 4.21\% | 5.79\% |
| 04/25/2011 | 10.74\% | 4.23\% | 6.51\% |
| 04/26/2011 | 9.67\% | 4.23\% | 5.44\% |
| 04/27/2011 | 10.40\% | 4.24\% | 6.16\% |
| 05104/2011 | 10.00\% | 4.24\% | 5.76\% |
| 05104/2011 | 10.00\% | 4.24\% | 5.76\% |
| 05/24/2014 | 10.50\% | 4.27\% | 6.23\% |
| 06108/2014 | 10.75\% | 4.30\% | 6.45\% |
| De/16/2011 | 9.20\% | 4.32\% | 4.88\% |
| 06/17/2011 | 9.95\% | 4.32\% | 5.63\% |
| 07/13/2011 | 10.20\% | 4.36\% | 5.84\% |
| 08/01/2011 | 9.20\% | 4.39\% | 4.81\% |
| $08 / 03 / 2011$ | 10.00\% | 4.38\% | 5.62\% |
| 08/11/2011 | 10.00\% | 4.38\% | 5.62\% |
| $08 / 12 / 2011$ | 10.35\% | 4.37\% | 5.98\% |
| 08/19/2011 | 10.25\% | 4.36\% | 5.89\% |
| 0910212011 | 12.88\% | 4.32\% | 8.56\% |
| 0912212011 | 10.00\% | 4.24\% | 5.76\% |
| 10/12r2011 | 10.30\% | 4.14\% | 6.16\% |
| 1012012011 | 10.50\% | 4.10\% | 6.40\% |
| 11/302019 | 10.90\% | 3.87\% | 7.03\% |
| 11/30/2011 | 10.90\% | 3.87\% | 7.03\% |
| 12/14/2011 | 10.00\% | 3.80\% | 6.20\% |
| 12/14/2011 | 10.30\% | 3.80\% | 6.50\% |
| $12 / 2012011$ | 10.20\% | 3.76\% | 6.44\% |
| 12/21/2011 | 10.20\% | 3.76\% | 6.44\% |
| $12 / 22 / 2011$ | 9.90\% | 3.75\% | 6.15\% |
| 12/22/2011 | 10.40\% | 3.75\% | 6.65\% |
| $12 / 23 / 2011$ | 10.19\% | 3.74\% | 6.45\% |
| 01/25/2012 | 10.50\% | $3.57 \%$ | 6.93\% |
| 01/27/2012 | 10.50\% | 3.56\% | 6.94\% |
| 02/15/2012 | 10.20\% | 3.47\% | 6.73\% |
| 02/23/2012 | 9.90\% | 3.44\% | 6.46\% |
| 02/2712012 | 10.25\% | 3.43\% | 6.82\% |
| 02/2912012 | 10.40\% | 3.41\% | 6.99\% |
| 03/29/2012 | 10.37\% | 3.32\% | 7.05\% |
| 04/04/2012 | 10.00\% | 3.30\% | 6.70\% |
| 0412612012 | 10.00\% | 3.21\% | 6.79\% |
| 0510212012 | 10.00\% | 3.18\% | 6.82\% |
| 05107/2012 | 9.80\% | 3.17\% | 6.63\% |
| $05 / 15 / 2012$ | 10.00\% | 3.14\% | 6.86\% |
| 05/29/2012 | 10.05\% | 3.11\% | 6.94\% |
| $06107 / 2012$ | 10.30\% | 3.08\% | 7.22\% |
| $00 / 14 / 2012$ | 9.40\% | 3.06\% | 6.34\% |
| 06/15/2012 | 10.40\% | 3.06\% | 7.34\% |
| $06 / 18 / 2012$ | 9.60\% | 3.06\% | 6.54\% |
| 06/19/2012 | 9.25\% | 3.05\% | 6.20\% |
| 06/26/2012 | 10.10\% | 3.04\% | 7.06\% |
| 06/29/2012 | 10.00\% | 3.04\% | 6.96\% |
| 07/09/2012 | 10.20\% | 3.03\% | 7.17\% |
| 07/16/2012 | 9.80\% | 3.02\% | 6.78\% |
| 07/20/2012 | 9.31\% | 3.01\% | 6.30\% |
| 07/20/2012 | 9.81\% | 3.01\% | 6.80\% |
| 09/13/2012 | 9.80\% | 2.94\% | 6.86\% |
| 09/19/2012 | 9.80\% | 2.94\% | 6.86\% |
| 09/19/2012 | 10.05\% | 2.94\% | 7.11\% |
| 09/2612012 | 9.50\% | 2.94\% | 6.56\% |
| 1011212012 | 9.60\% | 2.93\% | 6.67\% |
| 10/23/2012 | 9.75\% | 2.93\% | 6.82\% |
| 10/24/2012 | 10.30\% | 2.93\% | 7.37\% |
| 11/09/2012 | 10.30\% | 2.92\% | 7.38\% |
| $11 / 28 / 2012$ | 10.40\% | 2.90\% | 7.50\% |
| 11/29/2012 | 9.75\% | 2.90\% | 6.85\% |
| 11/29/2012 | 9.88\% | 2.90\% | 6.98\% |
| $12 / 05 / 2012$ | 9.71\% | 2.89\% | 6.82\% |
| $12 / 0512012$ | 10.40\% | 2.89\% | 7.51\% |
| 12/12/2012 | 9.80\% | 2.88\% | 6.92\% |
| 12/13/2012 | 9.50\% | 2.88\% | 6.62\% |
| 12/13/2012 | 10.50\% | 2.88\% | 7.62\% |
| 12/14/2012 | 10.40\% | 2.88\% | 7.52\% |
| 12/19/2012 | 9.71\% | 2.88\% | 6.83\% |
| 12/19/2012 | 10.25\% | 2.88\% | 7.37\% |
| 12/20/2012 | 9.50\% | 2.87\% | 6.63\% |
| 12/20/2012 | 9.80\% | 2.87\% | 6.93\% |
| 122012012 | 10.25\% | 2.87\% | 7.38\% |
| 12/20/2012 | 10.25\% | 2.87\% | 7.38\% |


| [6] | [7] | [8] | [9] |
| :---: | :---: | :---: | :---: |
|  |  | Average |  |
| Date of |  | 30-Year |  |
| Electric Rate | Retum on | Treasury | Risk |
| Case | Equity | Yield | Premium |
| 12/20/2012 | 10.30\% | 2.87\% | 7.43\% |
| 12/20/2012 | 10.40\% | 2.87\% | 7.53\% |
| 12/20/2012 | 10.45\% | 2.87\% | 7.58\% |
| 12/21/2012 | 10.20\% | 2.87\% | 7.33\% |
| 12/26/2012 | 9.80\% | 2.86\% | 6.94\% |
| 01/09/2013 | 9.70\% | 2.85\% | 6.85\% |
| 01/09/2013 | 9.70\% | 2.85\% | 6.85\% |
| $01 / 092013$ | 9.70\% | 2.85\% | 6.85\% |
| 01/16/2013 | 9.60\% | 2.84\% | 6.76\% |
| 01/16/2013 | 9.60\% | 2.84\% | 6.76\% |
| 02/13/2013 | 10.20\% | 2.84\% | 7.36\% |
| 02/22/2013 | 9.75\% | 2.85\% | 6.90\% |
| 02/27/2013 | 10.00\% | 2.86\% | 7.14\% |
| 03/05/2013 | 9.70\% | 2.86\% | 6.84\% |
| 03/14/2013 | 9.30\% | 2.8.8\% | 6.42\% |
| 03/27/2013 | 9.80\% | 2.90\% | 6.90\% |
| 05101/2013 | 9.84\% | 2.94\% | 6.90\% |
| 05/15/2013 | 10.30\% | 2.96\% | 7.34\% |
| 05/30/2013 | 10.20\% | 2.98\% | 7.22\% |
| 05/31/2013 | 9.00\% | 2.98\% | 6.02\% |
| 06/11/2013 | 10.00\% | 3.00\% | 7.00\% |
| 06121/2013 | 9.75\% | 3.02\% | 6.73\% |
| 06/25/2013 | 9.80\% | 3.03\% | 6.77\% |
| 07/12/2013 | 9.36\% | 3.08\% | 6.28\% |
| $08 / 0842013$ | 9.83\% | 3.14\% | 6.69\% |
| 08/14/2013 | 9.15\% | 3.16\% | 5.99\% |
| 09/11/2013 | 10.20\% | 3.26\% | 6.94\% |
| 09/11/2013 | 10.25\% | 3.26\% | 6.99\% |
| 09/24/2013 | 10.20\% | 3.31\% | 6.89\% |
| 10/03/2013 | 9.65\% | 3.33\% | 6.32\% |
| 10/07/2013 | 10.00\% | 3.34\% | 6.66\% |
| 11/06/2013 | 10.20\% | 3.41\% | 6.79\% |
| 11/21/2013 | 10.00\% | 3.44\% | 6.56\% |
| 11/2/2013 | 10.00\% | 3.45\% | 6.55\% |
| 12/03/2013 | 10.25\% | 3.47\% | 6.78\% |
| $12104 / 2013$ | 9.50\% | 3.47\% | 6.03\% |
| $12105 / 2013$ | 10.20\% | 3.48\% | 6.72\% |
| 12109/2013 | 8.72\% | 3.48\% | 5.24\% |
| 12109/2013 | 9.75\% | 3.48\% | 6.27\% |
| 12/13/2013 | 9.75\% | 3.50\% | 6.25\% |
| 12/16/2013 | 9.95\% | 3.50\% | 6.45\% |
| 12/16/2013 | 9.95\% | 3.50\% | 6.45\% |
| 12/16/2013 | 10.12\% | 3.50\% | 6.62\% |
| 12/17/2013 | 9.50\% | 3.51\% | 5.99\% |
| 12/17/2013 | 10.95\% | 3.51\% | 7.44\% |
| 12/!8/2013 | 8.72\% | 3.51\% | 5.21\% |
| $12 / 18 / 2013$ | 9.80\% | 3.51\% | 6.29\% |
| $12 / 192013$ | 10.15\% | 3.51\% | 6.64\% |
| $12 / 3012013$ | 9.30\% | 3.54\% | 5.76\% |
| 02/202014 | 9.20\% | 3.68\% | 5.52\% |
| 02/282014 | 9.75\% | 3.69\% | 6.06\% |
| 03/17/2014 | 9.55\% | 3.72\% | 5.83\% |
| $03 / 2812014$ | 9.40\% | 3.73\% | 5.67\% |
| $03 / 262014$ | 9.96\% | 3.73\% | 6.23\% |
| 04/0212014 | 9.70\% | 3.73\% | 5.97\% |
|  |  | Average Count | $\begin{gathered} 4.43 \% \\ 1,421 \end{gathered}$ |

## BEFORE THE PUBLIC SERVICE COMMISSION OF THE STATE OF MISSOURI

Noranda Aluminum, Inc. et al.
Complainants, v.

Union Electric Company, d/b/a Ameren Missouri

Respondent.
)

File No. EC-2014-0223

## AFFIDAVIT OF ROBERT B. HEVERT

## COMMONWEALTH OF MASSACHUSETTS )

Robert B. Hevert, being first duly sworn on his oath, states:

1. My name is Robert B. Hevert and my office is located in Framingham, Massachusetts and I am Managing Partner of Sussex Economic Advisors, LLC.
2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 62 pages and Schedules) RBH-1 thru RBH-14, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.


Robert B. Hevert
Subscribed and sworn to before me this $\qquad$ day,of June, 2014.



[^0]:    1 Throughout my Rebuttal Testimony, I interchangeably use the terms "ROE" and "Cost of Equity."

[^1]:    2 In the Matter of Missouri Gas Energy and its Tariff Filing to Implement a General Rate Increase for Natural Gas Service, Report and Order, Missouri Public Service Commission, Case No. GR-2009-0355, February 10, 2010, at 7.

[^2]:    3 See Direct Testimony and Schedules of Michael P. Gorman, at 2 and 30.
    4 Ibid., at 18, 24, 29, 30.

[^3]:    Ibid., at 5.
    See, Edison International, SEC Form 10-K for the fiscal year ended December 31, 2012, at 35.
    See, NRG Energy, Inc., SEC Form 8-K, October 18, 2013, at 2.

[^4]:    ${ }^{8}$ See, Edison International, SEC Form 10-K for the fiscal year ended December 31, 2012, at 35-36.
    ${ }^{9}$ See, UIL Holdings Corporation, SEC Form 8-K, March 2, 2014.

[^5]:    ${ }^{10}$ The 30 -day average for the Moody's Utility A-Rated Bond Index is 4.49 percent through April 15, 2014.
    ${ }^{11}$ See Direct Testimony and Schedules of Michael P. Gorman, at 18.
    ${ }^{12}$ I note that the average DCF result including only results within the range of observed authorized returns since 1980 is 10.02 percent.

[^6]:    ${ }^{13}$ See, for example, Roger A. Morin, PhD, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 298-

[^7]:    15 See also Schedule RBH-4.
    16 See Direct Testimony and Schedules of Michael P. Gorman, at 16 and Schedule MPG-8; see also and Blue Chip Financial Forecasts, December 1, 2013 at 14.
    17 libid., at 8.

[^8]:    18 See Schedule RBH-7.
    19 See Direct Testimony and Schedules of Michael P. Gorman, at 14.
    20 Ibid., at 16-17 and Schedule MPG-8. Mr. Gorman calculates his nominal GDP growth rates based on separate Blue Chip consensus forecasts for real GDP growth and growth in the GDP Chained Price Index for the periods 2015-2019 and 2020-2024. At page 29 of his Direct Testimony, Mr. Gorman points to the EIA Anmual Energy Outlook, which projects real GDP growth in the range of 2.00 percent to 2.90 percent for the years through 2040, and Congressional Budget Office projections of real GDP growth from 2.20 percent to 2.60 percent over the coming five to ten years.

[^9]:    ${ }^{22} 9.92$ percent represents the 2013 average authorized return for vertically integrated electric utilities, as reported by Regulatory Research Associates.
    ${ }^{23}$ See Schedule RBH-6.
    ${ }^{24}$ Source: Bureau of Economic Analysis.

[^10]:    ${ }^{25} \quad[(1.0236) \times(1.0327)]-1=.0570$.

[^11]:    See Schedule RBH-10.
    See Direct Testimony and Schedules of Michael P. Gorman, at 25-29 and Schedule MPG-15.
    lbid., at 27.
    lbid., at 27-28.

[^12]:    ${ }^{30}$ See Morningstar, Inc., 2014 Ibbotson Stocks. Bonds, Bills and Intlation Classic Yearbook, at 196-197.

[^13]:    ${ }^{31}$ Direct Testimony and Schedules of Michael P. Gorman, at 11.

[^14]:    32 Source: http://www.econ.yale.edu/~shiller/data.htm.

[^15]:    ${ }^{33}$ See Morningstar, Inc., 2014 lbbotson Stocks. Bonds. Bills and Inflation Classic Yearbook at 196-197, 208.

[^16]:    ${ }^{34} \quad$ Ibid.
    ${ }_{35}$ Ibid., at 196-197, 208.
    ${ }^{36}$ See Morningstar, Inc., 2013 Ibbotson Stocks. Bonds. Bills and Inflation Valuation Yearbook, at 142-143 and Bloomberg Professional. Please note that the long-term average market volatility is approximately 20.13 percent.

[^17]:    ${ }^{37}$ Bloomberg Professional Service. Market Volatility equals the average VIX for a given year.
    ${ }^{38}$ See Morningstar, Inc., 2014 Ibbotson SBBI Market Report, Table 10, at 16; See Morningstar, Inc., 2013 Ibbotson Stocks. Bonds. Bills and Inflation Valuation Yearbook, at 142-143. Historical MRP equals total return on large company stocks less income return on long-term government securities.
    ${ }^{39}$ See Direct Testimony and Schedules of Michael P. Gorman, Schedules MPG-10 and 11.

[^18]:    40 lbid., at 23-24. I note that Mr. Gorman states "I propose to provide $75 \%$ weight to the high-end of my risk premium estimates and $25 \%$ to the low-end of my risk premium estimates." However, footnotes 15 and 16 indicate that Mr. Gorman provided 70 percent weight to the high-end of his risk premium estimates and 30 percent to the low-end of his risk premium estimates.

    Ibid.
    Ibid., at 23-24. See also Schedule RBH-8.

[^19]:    ${ }^{44}$ See Direct Testimony and Schedules of Michael P. Gorman, at 30.

[^20]:    45 Source: Direct Testimony and Schedules of Michael P. Gorman, Schedule MPG-10. See also Schedule RBH-8.

[^21]:    ${ }^{46}$ See, also, Federal Reserve Press Release dated June 19, 2013.
    ${ }^{47}$ See, for example, Direct Testimony and Schedules of Michael P. Gorman, at 6-8.

[^22]:    48 Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc. (2006), at 128 [clarification added].
    49
    Adjusting for serial correlation does not materially affect the results; see Schedule RBH-8.

[^23]:    so See Farris M. Maddox, Doma T. Pippert, and Rodney N. Sullivan, An Empirical Study of Ex Ante Risk Premiums for the Electric Ufility Industry, Financial Management, Vol. 24, No. 3, Autumn 1995, at 93.
    ${ }^{51}$ Ibid.

[^24]:    52 Source: Regulatory Research Associates; see, also Schedule RBH-14.
    $(75 \% \times 10.71 \%)+(25 \% \times 8.81 \%)=10.24 \%$
    $(75 \% \times 10.10 \%)+(25 \% \times 8.24 \%)=9.64 \%$

[^25]:    ss See, Ameren Missouri, Facts About Ameren Missouri.
    ${ }^{56}$ Source: SNL Financial

[^26]:    ${ }^{57}$ See, NRG Energy, Inc., SEC Form 8-K, October 18, 2013, at 2.

[^27]:    58 See, for example, Harris, Robert, Using Analysts' Grow'h Forecasts to Estimate Shareholder Required Rate of Return, Financial Management, Spring 1986.
    59 Charles F. Phillips, Jr., The Economics of Regulation, Revised Edition, 1969, Richard D. Irwin, Inc., at 285.

[^28]:    60 See, for example, Christofi, Christofi, Lori and Moliver, Evaluating Common Stocks Using Value Line's Projected Cash Flows and Implied Growth Rate, Journal of Investing (Spring 1999); Harris and Marston, Estimating Shareholder Risk Premia Using Analysts' Growih Forecasts, Financial Management, 21 (Summer 1992); and Vander Weide and Carleton, Investor Growth Expectations: Analysts vs. History, The Journal of Portfolio Management, Spring 1988.
    ${ }^{61}$ Vander Weide and Carleton, Investor Growth Expectations: Analysts vs. History, The Joumal of Portfolio Management, Spring 1988.
    62 Robert S. Harris, Using Analysts' Growth Forecasts to Estimate Shareholder Required Rate of Return, Financial Management, Spring 1986.
    ${ }^{63}$ 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.
    ${ }^{64}$ See Vander Weide and Carleton, Investor Grow'h Expectations: Analysts ws. History, The Journal of Portfolio Management, Spring 1988.

[^29]:    65 See, for example, Harris and Marston, Estimating Shareholder. Risk Premia Using Analysts' Growth Forecasts, Financial Management, 21 (Summer 1992).

[^30]:    ${ }_{6}^{66}$ See Bureau of Economic Analysis, March 27, 2014 update.
    ${ }^{67}$ See Board of Governors of the Federal Reserve System, Table H. 15 Selected Interest Rates.

[^31]:    ${ }^{68}$ As reported in the Value Line Investment Survey as "All Div'ds to Net Prof." Source: Bloomberg Professional

[^32]:    70 The Market Risk Premium is defined as the incremental return of the market over the risk-free rate.

[^33]:    ${ }^{71}$ Moody's Investors Service, Rating Methodology, Regulated Electric and Gas Utilities, December 23, 2013, at 9. 72 Ibid , at 10.

[^34]:    73 Ibid., at 6.
    74 Regulatory Research Associates, Construction Work in Progress; Getting acquainted with an old issue, April 22, 2013, at 2

[^35]:    75 Source: Regulatory Research Associates, Missouri Public Service Commission Profile.
    76 Regulatory Research Associates, Alternative Regulation/meentive Plans, A State-by-State Review, November 2013, at 1.
    77 Regulatory Research Associates, Missouri Public Service Commission Profile.

[^36]:    78 Ameren, Barclay's Power and Utility Credit Conference, June 2014 at 20-21.

[^37]:    79 Source: SNL Financial.

[^38]:    ${ }^{\text {so }}$ See, Missouri Public Service Commission, Updated Staff Report on The Cost of Compliance with Federal Environmental Regulations, December 19, 2013 at 23. The report includes cost estimates for Ameren Missouri, Great Plains and Kansas City Power \& Light, and Empire District Electric Company.
    ${ }^{81}$ Regulatory Research Associates, UPDATE: EPA proposes $30 \%$ reduction in greenhouse gas emissions from power sector, June 2, 2014.

