STATE OF NEW JERSEY
BOARD OF PUBLIC UTILITIES

I/M/O THE PETITION OF ATLANTIC	**)**	
CITY ELECTRIC COMPANY FOR	**)**	
APPROVAL OF AN INFRASTRUCTURE	**)**	**BPU DOCKET NO. EO18020196**
INVESTMENT PROGRAM, AND	**)**	
RELATED COST RECOVERY	**)**	
MECHANISM, PURSUANT TO	**)**	
N.J.A.C. 14:3-2A.1 *et. seq.*	**)**	

DIRECT TESTIMONY OF MARLON F. GRIFFING, PH.D. ON BEHALF OF THE DIVISION OF RATE COUNSEL

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I. INTRODUCTION

Q. Please state your name, occupation and business address.

A. My name is Dr. Marlon F. Griffing. I am a Senior Consultant with the economic consulting firm of PCMG & Associates Inc. ("PCMG"). My business address is 22 Brookes Drive, Gaithersburg, MD 20785.

Q. Please describe PCMG.

A. PCMG was founded in 2015 to conduct research on a consulting basis into the rates, revenues, costs and economic performance of regulated firms and industries. The firm has a professional staff of five economists, accountants, engineers and cost analysts. Most of its work involves the development, preparation, and presentation of expert witness testimony before federal and state regulatory agencies.

Q. Have you prepared a summary of your qualifications and experience?

A. Yes. Exhibit MFG-1 is a summary of my qualifications, experience, and testimony given before state regulatory agencies regarding cost of capital.

Q. For whom are you appearing in this proceeding before the New Jersey Board of Public Utilities ("the Board")?

A. I am appearing on behalf of the New Jersey Division of Rate Counsel ("Rate Counsel".

Q. What are your responsibilities in this Board proceeding?

A. My responsibility is to determine a fair rate of return on common equity capital and a fair overall rate of return for Atlantic City Electric Company's ("ACE" or "the Company") proposed Infrastructure Investment Program ("IIP").

Q. Please state your recommendations regarding the return on equity and the rate of return for projects approved for the Company's IIP.

A. I recommend a return on equity ("ROE") of 8.50 percent for the Company's approved IIP projects. When this number is included in the calculation of the rate of return ("ROR"), the result is a weighted-average cost of capital of 6.66 percent for ACE.

Q. How is your testimony organized?

A. My testimony is organized as follows.

- First, I discuss the background of ACE's IIP, including goals underlying the Board's decision to enable utilities to petition for IIPs, the mechanics of the IIP, and the IIP recovery mechanism.
- Second, I discuss how the ACE IIP recovery mechanism promotes the goal of accelerating utility investment in the construction, installation, and rehabilitation of non-revenue-producing plant and facilities that enhance safety, reliability, and/or resiliency.
- Third, I discuss the effect of a clause recovery mechanism like an IIP on the risk a utility faces.

- Fourth, I review how the Board dealt with the matter of clause recovery, risk, and return on equity in a prior docket.
- Fifth, I conduct a ROE analysis relying primarily on the discounted cash flow (DCF) model, but checking my results against capital asset pricing model (CAPM) results and recent ROE awards to electric utilities by U.S. regulatory commissions.
- Sixth, I evaluate the appropriate adjustment to the ROE found in the preceding analysis for the risk difference between ACE's capital expenditures subject to normal regulated cost-recovery mechanisms and those capital expenditures subject to the IIP recovery mechanism.
- Seventh, I find a cost of long-term debt for the ACE IIP.
- Eighth, I analyze the appropriate capital structure for the ACE IIP.
- Ninth, I find the ROR for the ACE IIP using my recommended ROE and cost of long-term debt as inputs into my recommended capital structure.
- Tenth, I respond to ACE witness Kevin M. McGowan's ROR proposal for the ACE IIP.

II. ACE IIP BACKGROUND

Q. Please describe ACE's ownership structure.

A. ACE is a wholly owned subsidiary of Pepco Holdings LLC (PHI), a limited liability company organized and existing under the laws of the State of Delaware. PHI is, in turn, a wholly owned subsidiary of PH Holdco LLC (PHLLC), a limited liability company organized and existing under the laws of the State of Delaware.

PHLLC is, in turn, 99.9% owned by Exelon Energy Delivery Company, LLC (EEDC), a limited liability company organized and existing under the laws of the State of Delaware. EEDC is, in turn, a limited liability company wholly owned by Exelon Corporation (Exelon), as a result of the merger of Exelon and Pepco Holdings, Inc. (the Merger), which closed on March 23, 2016.

Q. What is an Infrastructure Investment Program?

A. An IIP is a rate recovery mechanism created to encourage and support necessary accelerated construction, installation, and rehabilitation of utility plant and equipment that enhance safety, reliability, and/or resiliency. The Board enabled utilities to apply for an IIP when it implemented regulations governing IIPs pursuant to N.J.A.C. 14:3-2A.1.

Q. When did the Board enable IIPs?

A. The regulations were implemented January 16, 2018.

Q. Please summarize how an IIP works.

A. New Jersey regulated utilities must petition the Board to establish an IIP. In the same petition, a utility, following the IIP rules, requests approval from the Board of projects to be placed into its IIP. The projects must be related to safety, reliability, and/or resiliency; non-revenue producing; and specifically identified by the utility. Furthermore, the utility must propose within the petition annual baseline spending levels based, in part, upon historical capital expenditures and projected capital expenditures by the utility. The approved annual baseline expenditure amounts are recovered by a utility in the normal course within the utility's next base rate case. Only the dollar amounts of projects that exceed the Board-approved annual baseline spending levels are eligible for the IIP recovery mechanism.

Q. How long is an IIP in effect?

A. The regulations approved by the Board allow a utility to petition for an IIP extending for five years.

Q. Please describe ACE's proposed IIP recovery mechanism.

A. The ACE petition requests that $338.2 million of capital expenditure projects be approved for the ACE IIP over the period 2019-2023. The Company forecasts that spending on eligible projects will occur from 2019-2022, with closings on projects to occur through 2023. ACE proposes to make eight semi-annual filings for recovery of the expenditures for eligible projects constructed and placed into service in the six months immediately prior to the cost-recovery filing during this period. The first of the filings is proposed for August 1, 2019. Approved expenditures will be placed in ACE's proposed Tariff Rider IIP. Rate adjustments for ratepayers will take effect 60 days after each semi-annual filing. The adjustments will include a return on investment at a rate set in this proceeding.

III. ACCELERATED RECOVERY AND RISK

Q. Why has the Board created the opportunity for ACE, and other New Jersey regulated utilities, to petition for an IIP?

A. The goal of the Board in establishing the IIP opportunity for utilities is to advance the construction and active service dates of utility infrastructure that addresses system safety, reliability, and resiliency. The carrot for the utilities under the program is the accelerated recovery for capital expenditure projects that they may not otherwise undertake in the normal course of business. Ordinarily, construction and active service would come at a later date, with recovery being made through a base rate case.

Q. What is "accelerated recovery?"

A. "Accelerated recovery" in the context of an IIP means that utilities can begin to recover expenditures on approved projects more quickly than the utility would under a traditional rate regulation regime.

Q. How would accelerated recovery occur under the ACE IIP?

A. Under the ACE IIP, the Company could begin recovery of the expenditures on approved capital projects as soon as the spending on the projects passes through the steps of one of the Rider IIP semi-annual filings. Since a project might go into service as early as the first day of the six months covered by a filing period, filings occur one month after the conclusion of a period, and the adjustments for the expenditures on a filing do not go into effect until 60 days after a filing, the lag between an IIP project going into service and recovery of the expenditure on the a project beginning can range from 3 to 9 months.[1] In traditional utility regulation, recovery for such capital expenditures does not begin until the conclusion of the utility's next rate case. In the traditional rate case setting, this interval between a project going into service and recovery of its costs beginning may be 1-2 years if a utility is filing annual rate cases, longer if the rate cases are filed less frequently.[2] Hence, the recovery of the expenditures is "accelerated" by nine or more months.

Q. Is it your position that accelerated recovery eliminates all risk for ACE projects included in its IIP?

A. No. ACE must still successfully execute the approved projects in its IIP. It is still subject to disallowances for cost overruns or imprudently incurred costs. However, substantial risk is eliminated.

Q. How does the accelerated recovery associated with the ACE IIP affect the risk of ACE IIP projects relative to the risk of the Company's projects covered by traditional rate regulation.

A. Accelerated recovery reduces the risk for ACE IIP projects relative to the risk for the Company's projects covered by traditional rate regulation. The timing of the cost recovery is shortened; plus, unlike costs included in traditional rates, which can be lost if actual sales volumes fall short of forecasted volumes, the Company receives dollar-for-dollar recovery for all prudently incurred program costs

[1] McGowan Direct at 15, lines 6-18.
[2] Exhibit MFG-2, Data Request RCR-ROR-7, Response of Kevin M. McGowan to Part b.

because the approved amounts remain in the Rider IIP, where they can be recovered in ensuing years. A final point is, projects included in the IIP have already been approved by the Board when they undergo a prudence review in the Company's next basic rate case. Hence, the chance that a project's costs will be disallowed are diminished. For all these reasons, the risk associated with the ACE IIP projects is less than the risk for the Company's traditional rate projects.

Q. Do other parties agree with your assessment that the ACE IIP projects have lower risk relative other ACE capital projects?

A. Yes. Moody's Investors Service stated in a March 14, 2018 Ratings Action raising the outlook for ACE from stable to positive that:

> "[ACE's] last two rate cases one in 2016 and one in 2017 were both settled in an expedient manner, an indication of more positive working relationship with the regulators and stakeholders. The December 2017 approval of the IIP will allow for requested rate changes in distribution rate cases to be put into effect a relatively short nine months after the initial filing. Although the implementation of the IIP will still require negotiation with commission staff and stakeholders, we consider its approval by the NJBPU to be a significant credit positive."[3]

Further, on August 2, 2018, Standard & Poor's revised its outlook on Exelon and its subsidiaries, including ACE, to positive from stable, stating:

> "The positive outlook reflects our expectation that Exelon will continue to reduce its business risk while maintaining

[3] Exhibit MFG-3, Pages 1-3, Moody's Investor's Service, "Ratings Action: Moody's revises Atlantic City Electric's outlook to positive; affirms existing ratings" March 14, 2018.

> financial measures that are consistently in the higher half of the range for its financial risk profile."[4]

Q. Please elaborate on the announcements by the two credit ratings agencies.

A. Moody's explicitly mentions the nine-month waiting period of the ACE IIP as a factor in Moody's assessment that the IIP is a credit positive. Meanwhile, Standard & Poor's cites Exelon continuing to reduce its business risk as a reason for its upward revision of Exelon's, and ACE's, outlooks.

Q. What is Exelon's opinion of cost recovery through formula and tracker mechanisms, like the ACE IIP?

A. Exelon included a slide in its May 2018 Investor Meetings presentation that touts the expectation that about 70 percent of Exelon's rate base growth over the next four years will be recovered through existing formula and tracker mechanisms.[5] Exelon is trying to create a favorable impression of the Company with the audience at investor meetings, so the inclusion of the slide suggests that Exelon believes tracker mechanisms are a preferred procedure for cost recovery. The slide content indicates that Exelon agrees with Moody's that the ACE IIP will be a credit positive for ACE and Exelon.

[4] Exhibit MFG-4, Pages 1-2, S&P Global Ratings, "Exelon Corp. And Subsidiaries Outlooks Revised to Positive, Ratings Affirmed On Expectation For Reduced Business Risk," August 2, 2018.
[5] Exhibit MFG-5, Exelon, "May 2018 Investor Meetings," Slide 11.

IV. BOARD TREATMENT OF A CLAUSE RECOVERY MECHANISM IN A PRIOR DOCKET

Q. Please describe the Public Service Electric & Gas ("PSE&G") Energy Strong program in Board Docket Nos. EO13020155 and GO13020156.

A. PSE&G petitioned the Board to enable the company to bolster its electric and gas infrastructure. The proposed mechanism was the Energy Strong program, under which approved infrastructure expenditures would be recovered through a semi-annual cost recovery mechanism.

Q. Was the PSE&G Energy Strong program approved by the Board prior to when the IIP regulation was enacted?

A. Yes. PSE&G's Energy Strong Program was approved May 21, 2014. I recommend that the Board treat the ACE IIP in this docket as it did the Energy Strong program in the previous docket for the purpose of setting the cost of capital because the programs are quite alike. The nature of the infrastructure covered by the two programs differs, but the features of the programs, not least the clause recovery mechanisms, are comparable.

Q. How did the Board treat the ROE for the PSE&G Energy Strong recovery clause?

A. The Board Order regarding Energy Strong approved a stipulation agreed to by the parties. In the Order the Board stated that it was persuaded a reduced rate of return from that approved in a previous base rate case was reasonable. The Board stated that the reduced rate was justified by the recovery of the program's costs from ratepayers on a more contemporaneous basis, which reduces the risk for recovering capital invested between base rate cases.[6]

Q. What ROE did the Board approve for the Energy Strong program?

A. The Board approved a 9.75 percent ROE for common equity and a 4.60 percent long-term cost of debt. The ROE from PSE&G's previous rate case was 10.3 percent. The debt cost also departed from the rate determined in the prior PSE&G base rate case. The stipulated debt cost percentage reflected an updated cost of debt at a date (March 31, 2014) close to the date of the Order (May 21, 2014).[7]

Q. What capital structure did the Board approve for the Energy Strong program?

A. The capital structure ratios approved in the Energy Strong stipulation were those approved in the most recent PSE&G base rate case.[8]

V. FINDING THE APPROPRIATE ROE FOR THE ACE IIP

Q. What is your approach to calculating an ROE for the ACE IIP?

A. I first perform an ROE analysis to find an appropriate ROE for ACE as if the Company was engaged in a base rate case. When I have completed that analysis, I

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[6] Exhibit MFG-6, Dockets No. EO13020155 and EO13020156, *"In the Matter of the Petition of Public Service Electric and Gas Company for Approval of the Energy Strong Program,"* Order Approving Stipulation of Settlement, page 7.
[7] Exhibit MFG-7, Dockets No. EO13020155 and EO13020156, *"In the Matter of the Petition of Public Service Electric and Gas Company for Approval of the Energy Strong Program,"* Stipulation, page 24.
[8] *Id.*

will make an adjustment to accommodate the fact that ACE is requesting an ROE for its IIP, not for all its regulated operations.

Q. What analyses do you perform to calculate the unadjusted ROE for ACE?

A. I perform DCF analyses, then check those result against the results of CAPM analyses and recent ROEs awarded by U.S. regulatory commissions to electric utilities.

Q. What adjustment do you make for the relatively lower risk of the ACE IIP compared with the risk for the Company in a base rate case?

A. Once I find a ROE for ACE, I look to the PSE&G stipulation for guidance as to the appropriate magnitude of adjustment to make to my initial ROE. I will explain that adjustment after I have completed the standard ACE ROE analysis.

VI. ROE Analysis

Q. What standards do you apply to your ACE ROE analysis?

A. My standards are unchanged from those I apply in any base rate case.

Q. What are those standards?

A. Two United States Supreme Court (Court) cases are the basis for rate of return regulation in the United States. They are the *Bluefield Water Works (Bluefield)*[9]

[9] *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia,* 262 U.S. 679 (1923).

and the *Hope Natural Gas (Hope)*[10] cases. In *Hope,* the Court established the following standards for the return on equity that must be allowed a regulated public utility to provide for a "reasonable return":

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

It can be seen from this excerpt that there are essentially three standards for determining an appropriate return on equity from the standpoint of the equity owners of a regulated utility. The first is the "comparable earnings" standard; i.e., that the earnings must be "commensurate with the returns on investments in other enterprises having corresponding risks." The second is that earnings must be sufficient to assure "confidence in the financial integrity of the enterprise," and the third is that they must allow the utility to attract capital.

Q. Does setting an allowed rate of return mean that the utility will earn that return?

A. No. There is no guarantee that the utility will earn the allowed rate of return. The utility has the reasonable *opportunity* to earn the allowed rate of return; in practice the utility may earn more or less than this return, depending on whether and how its management responds to technological and market developments, among other matters.

[10] *Federal Power Commission v. Hope Natural Gas Co.,* 320 U.S. 591 (1944).
[11]Id.

Q. What should the Board consider in setting an appropriate rate of return?

A. The Board should look to current market conditions as it balances investor and consumer interests. The rate of return should reflect the condition of the capital markets in which ACE must compete with other firms for funding. Historically allowed rates and historical performances are not appropriate inputs in this forward-looking approach. This statement does not mean that historical rates and performance are irrelevant. They are factors because they affect investors' views of a company's prospects and, therefore, the investors' willingness to purchase its common-equity shares.

Q. Please explain how the methods you have used to determine the cost of common equity capital for the Company reflect current market conditions.

A. I used a market-oriented approach to determine the common-equity cost for the Company. I analyzed the equity return that investors currently expect to receive from investing in companies with risks similar to the Company. Many factors influence these investor expectations, among them: past performance of the companies, estimates of how the companies will perform in the future, possible technological change, tax rates, and predicted general economic conditions. As investors decide where to place their funds among the investment options available to them, they weigh the information they have. Then they decide how to pay to acquire common-equity shares, or to turn to the other side of the question, what price will lead them to sell the shares. Either way, the factors are reflected in current prices in capital markets. Thus, my analysis is forward-looking because it relies on investors' current assessment of what is likely to happen with their investments.

Q. How do you know what equity rate of return the Company must offer to investors to be an attractive opportunity?

A. No one knows with certainty what specific rate of return the Company must offer to investors that is just sufficient to make the Company an attractive opportunity. However, various methods based on finance theory have been derived for reliably estimating what investors currently think that rate is. I have used the Discounted Cash Flow (DCF) method, which is widely used in utility general rate cases, and is a method relied on by the NJBPU in determining rate of return. I use other methods and recently authorized returns for other electric distribution operating companies as checks on the reasonableness of the DCF outcome.

Q. Please summarize the DCF method.

A. The DCF method uses the current dividend yield and the expected growth rate of this yield to determine a required rate of return on an investment opportunity. The required rate of return from a DCF analysis is derived from a formula for determining the net present value, or price, of a share of stock. There are variations of the DCF, but the constant-growth form I have selected assumes that dividends (D) are received at the end of each year, the annual growth rate of dividends (g) is constant to infinity, and the discount rate for dividends (k) is constant to infinity. The equation form of this constant-growth DCF model is:

$$k = \frac{D_1}{P_0} + g$$

Where:

- D_1 is the annual dividend one year from the present,
- P_0 is the current price of a stock share,
- g is the expected growth rate of the dividend, and
- k is the discount rate and also the fair rate of return for equity.

Q. What information is used to develop values for the various terms in the DCF equation?

A. The annual dividend one year from now is derived by applying the growth-rate estimate (g) to the actual current annual dividend (D_0).

Q. Does your equity rate of return analysis use information specific to ACE?

A. No. ACE is an operating subsidiary of Exelon. ACE is not publicly traded and, therefore, no common-equity share price information is available for performing a direct DCF analysis on the Company.

Q. Does your equity rate of return analysis use information for Exelon?

A. No. Exelon does trade publicly and has a positive record of making dividend payments. However, I prefer to exclude the company or its parent company upon which ROE analysis is being performed from the analysis to avoid circularity in the calculations. If the pool of peer companies for forming a proxy group for the ROE examination is small, I will consider keeping a company in its own ROE analysis. In this case, there is a large set of electric utilities to draw upon, so I have excluded Exelon from the ROE analysis.

Q. How do you use the DCF analysis to estimate the Company's required rate of return?

A. I perform a DCF analysis on a group of electric utilities comparable to ACE that are publicly traded and have similar investment risk, as discussed below. The estimated rates of return for members of this group form the basis for my estimate of a fair rate of return for the Company. I note that ACE is a distribution company, whereas most electric utilities, including most of those that I include in my ROE analyses are vertically-integrated electric companies with regulated generation facilities. Experts consider vertically-integrated electric utilities to have greater risk than companies like ACE without regulated generation. Therefore, the ROE from my analyses may be biased upward relative to ACE.

VII. SELECTING THE COMPARISON GROUP

Q. Please discuss your choice of the Comparison Group.

A. I set out to find a group of companies that are, from the perspective of investors, similar to the Company. Thus, I wanted firms that are electric utilities that represent approximately the same investment risk as does the Company.

Q. Please describe how you found suitable candidate companies for the Comparison Group.

A. I looked at Value Line, a widely used investor service, for companies that Value Line classifies as part of the Electric Utility Industry. The June 15, 2018 (Central); July 27, 2018 (West); and August 17, 2018 (East) editions of Value Line's Investment Survey include 41 companies in this category.[12]

Q. How did you use this information in your selection process?

A. I applied screens to the initial set of Value Line Electric Utility companies to ensure that the companies included in my Comparison Group were similar in risk to the risk of the Company.

Q. Please list the criteria you applied in the selection of the Comparison Group.

A. I applied the following screens to the initial set of Electric Utility companies:

1. U.S.-based firm in the continental 48 states;
2. shares publicly traded on a stock exchange;
3. have a record of paying dividends for three years without skipping or reducing the dividend amount;
4. not expected to sell, merge into or be acquired by another company, or be engaged in an unusual regulatory proceeding;

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[12] Exelon is one of the companies in the initial set of 41 companies. I excluded the company from my analysis, however as discussed earlier in my testimony.

5. more than 75 percent of the three-year average of operating revenues, operating income or net income be derived from regulated electric utility operations;

6. S&P investment-grade credit rating of BBB- and better; and

7. have positive growth-rate projections from expert analysts.

Q. What is the purpose of applying the criterion that the companies be based in the United States?

A. I sought companies that face a business environment similar to that in which the Company operates. The Company's operating utility in this case is in New Jersey and subject to state regulation, statutes, and rules that are similar to those in the rest of the United States. The states of Alaska and Hawaii, although having regulation schemes similar to those of the other states, have business environments—due to their geography—that are substantially different from the business environment in the rest of the country. Therefore, I have limited candidates for the Comparison Group to companies based in the 48 continental U.S. states.

For example, Hawaiian Electric Industries ("HEI") is excluded because it has several service areas that are not connected to each other or to other power networks. Therefore, the service areas cannot share power and must maintain above-average reserve margins, causing higher operating costs for the company. HEI also generated 69 percent of its energy from fuel oil imports in 2017. It is vulnerable to delays in fuel deliveries to a degree not seen in other electric utilities. Fortis, Inc. is a Canadian company and excluded because of the scope of its operations in Canada.[13]

Q. What purpose is served by requiring that the companies be publicly traded?

A. The primary analytical tool that I use for finding a company's ROE, the DCF model, requires information about common equity share prices, dividends, and growth-rate projections. The requirement that companies be publicly traded ensures that their common-equity share prices are available. All companies in the Value Line Electric Utilities Industry list are publicly traded.[14]

Q. What purpose is served by requiring that the companies have a record of paying dividends for three years?

A. The DCF model requires dividends as an input. If a company is not paying dividends or has a record of cutting dividends, then its DCF analysis is not reliable. Avangrid, Inc. does not have a long record of dividends paid in its current form of organization. Therefore, it is excluded.[15]

Q. Why is it important that companies involved in sales, mergers, or acquisitions, be excluded from your analysis?

A. The share prices of companies involved in sales, mergers or acquisitions can be volatile. Extreme increases in the share prices of distribution companies that are part of sales, mergers, or acquisitions drive down the ROE results in DCF analysis,

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[13] Exhibit MFG-8.
[14] *Id.*
[15] *Id.*

while extreme decreases in the share prices drive up the ROE results. Neither outcome yields meaningful DCF results. Therefore, it is appropriate to exclude such companies from the analysis.

Q. Are any companies in the initial set involved in sales, mergers, or acquisitions?

A. Yes. Avista Corporation has agreed to be acquired by HydroOne (a Canadian company and not part of the initial group); Dominion Resources has announced it intends to acquire SCANA Corporation, and CenterPoint Energy is acquiring Vectren.[16] Furthermore, Great Plains Energy and Westar Energy completed a merger on June 4, 2018. A new holding company, Evergy, Inc. was created.[17] Value Line is not yet following Evergy. Therefore, I have dropped Avista, CenterPoint, Dominion, Great Plains, SCANA, Vectren, and Westar from further consideration.

Q. Are any companies in the initial set facing unusual operating conditions?

A. Yes. Edison International and Pacific Gas & Electric (PG&E) experienced wildfires across broad parts of their service territories in the fall of 2017. The two companies face liability exposure due to the wildfires. There is risk that the two California utilities will have to absorb the liabilities. The California Public Utilities Commission ruled that SDG&E, the utility serving San Diego, had to absorb $379 million related to 2007 wildfires.[18] The California Legislature

[16] *Id*.
[17] Exhibit MFG-9. S&P Global, *"Westar, Great Plains complete merger of equals, form Evergy,"* June 4, 2018.
[18] Exhibit MFG-10.

approved a bill allowing utilities to charge ratepayers for some wildfire-related costs, but did not address the issue of wildfire liability on August 31, 2018.[19] PG&E suspended its dividend payments on December 20, 2017 in response to the exposure.[20] Therefore, I have dropped these two firms from further consideration.

Q. Please explain the purpose of your criterion that 75 percent or more of a company's three-year average of net income, net operating income, or net revenues be derived from regulated electricity operations.

A. This criterion identifies whether the companies also are engaged predominantly in regulated electric operations. Setting 75 percent as the standard for inclusion in the Comparison Group ensures that the firms are operating in a similar risk environment to ACE.

Q. What is the outcome of your application of this screen?

A. Entergy, Black Hills Energy, FirstEnergy Corp., Unitil Corporation, Sempra, NextEra, MGE Energy, PPL Corporation, WEC Energy Group, DTE Energy, and PSE&G Inc. do not meet the 75 percent threshold. The highest three-year average among this group is the 69.6 percent of PSE&G Inc. Allete, Inc., at 74.2 percent, also strictly does not meet the screen. However, the three-year average percentage for Eversource Energy, the next highest company, is 75.5 percent. The 1.3 percent difference between these two electric utilities in the three-year

[19] Exhibit MFG-11.
[20] Exhibit MFG-12.

average percentage of net income derived from regulated electricity operations is relatively small. Therefore, I elected to keep Allete in the group.[21]

Q. What is the purpose of using the S&P credit rating as a screen?

A. S&P's experts incorporate financial risk and business risk into a firm's credit rating. Within these risk categories, S&P assesses such factors for public utilities as competitive advantage, operating efficiency, and scale, scope, and diversity. This last set of factors includes the effects of a utility's markets, service territories, and customer diversity on the company's cash-flow stability, and in turn on its risk level. After considering all the factors, S&P assigns a credit rating to a company. If companies have identical or similar credit ratings as determined by expert analysts, then their relative risks are similar. As S&P states:

> Creditworthiness is a multi-faceted phenomenon. Although there is no "formula" for combining the various facets, our credit ratings attempt to condense their combined effects into rating symbols along a simple, one-dimensional scale. Indeed, as discussed below, the relative importance of the various factors may change in different situations. [22]

Q. Do the remaining companies have investment-grade S&P credit ratings?

A. Yes. The remaining 18 companies all have S&P credit ratings between BBB and A+. No companies are eliminated because of this screen.

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[21] Exhibit MFG-13.

[22] *General Criteria: Understanding Standard & Poor's Rating Definitions,* second paragraph of "Key Attributes of Standard & Poor's Credit Ratings."
Available at the Standard & Poor's website: https://www.standardandpoors.com/en_US/web/guest/article/-/view/sourceId/5435305. Accessing the publication may require free registration.

Q. Does ACE have an investment-grade S&P credit rating?

A. Yes. ACE has an S&P credit rating of BBB+, which is separate from Exelon's credit rating. I use ACE'S credit rating as a basis for comparing the Company with the Comparison Group companies.

Q. Is it a matter for concern that most companies in the Comparison Group do not have S&P credit ratings identical to the ACE credit rating?

A. No. In my application of the screen I balance the goal of having companies with risk similar to that of the operating company with the goal of having a reasonable number of companies in the Comparison Group. In the instant analysis, five companies have S&P credit ratings of BBB, four companies have credit ratings of BBB+, eight companies have credit ratings of A-, and one company has a credit rating of A+.[23] These companies and ACE have similar credit ratings and, therefore, similar risks.

Q. You require that electric utilities have positive growth-rate projections to be included in the Comparison Group. What purpose does this screen serve?

A. DCF analysis performed on them is not meaningful if the growth-rate projections are missing or negative. All 18 remaining companies have positive growth-rate projections. Otter Tail Corp. does not have a growth-rate estimate from Zacks, but it does have positive growth-rate estimates from the other two sources.[24]

[23] Exhibit MFG-14.

[24] Exhibit MFG-18, Schedule 1.

Therefore, Otter Tail is included in the analysis, along with the other 17 companies.

Q. Please describe the Comparison Group after your screening.

A. The full Comparison Group is composed of 18 Electric Utility firms.[25] Using this Comparison Group, I will develop estimates of ACE's ROE.

VIII. DCF OVERVIEW

Q. What is the purpose of a DCF analysis?

A. The purpose of this analysis is to estimate an appropriate, forward-looking rate of return on equity for the total regulated operations of ACE. The DCF analysis requires a determination of expected growth rates and dividend yields in order to estimate this return.

Q. Do you use historical growth rates in your analysis?

A. No. The conditions necessary for historical growth rates to be good indicators of future growth rates are rarely satisfied. Most utilities' returns on equity and payout ratios have not remained constant over time. Further, growth in book value has occurred not only due to retained earnings, but also due to the issuance of new shares of common stock. Consequently, past growth rates of earnings, dividends, and book equity are frequently unequal. Moreover, an industry may face a changed business environment, thereby making the past a poor basis for projecting the future. Historical growth rates can differ significantly from

[25] Exhibit MFG-15.

forward-looking projected growth rates due to such factors as inflation rates, tax rates, the role of an industry in the economy, and the regulatory environment. In view of these limitations of using historical growth rates, I base my estimated growth rates on projected growth rates as provided by "Zacks Investment Research," a respected investor services company, Yahoo! Finance, and the Value Line "Investment Survey." The Zacks and Yahoo! Finance growth rates are available at the companies' websites. Value Line is a subscription service, but its growth-rate estimates are widely available in public libraries.

Q. Please discuss the dividend yields used in your DCF analysis.

A. To estimate the required rate of return on equity capital today, I estimate the expected dividend yield, D_1/P_0 where P_0 is the price of a share of common equity today and D_1 is the dividend in the next period. The use of this dividend yield assumes that dividends are distributed at the end of each period (year). This version is known as the constant-growth DCF model. Since the current equity price per share incorporates all market information considered relevant by investors, generally speaking, non-recent historical prices should be avoided in calculating the dividend yield. However, since share prices are volatile in the short run, it is desirable to use a period of time long enough to avoid short-term aberrations in the capital market.

Q. What period do you use to establish average common equity share prices for the companies in the Comparison Group?

A. I use the trading period of July 23-August 17, 2018 to find average common equity share prices. This four-week period is long enough to dampen any short-term aberrations in the capital market. It is also close to the September 4, 2018 date of this Testimony, thus making the results timely. I used closing prices for the Comparison Group member companies obtained at Yahoo! Finance.[26]

IX. DCF ANALYSIS FOR THE COMPARISON GROUP

Q. Please discuss the required rate of return for the Comparison Group.

A. To estimate the required rate of return for the group, I estimate the expected growth rate, g, and the expected dividend yield, D_1/P_0.

Q. Please discuss the expected growth rate for the Comparison Group.

A. As noted above, it is appropriate in this proceeding to use only the forecasted growth rates to estimate the expected growth rate to be used in the DCF analysis. Zacks and Yahoo! Finance provide five-year growth-rate projections for EPS and Value Line provides five-year growth rate projections for EPS, DPS, and BPS. To maintain consistency across the sources, I used only the EPS estimates from Value Line.

Q. What information did you use from Zacks?

A. I used the Zacks EPS five-year growth projections available August 19, 2018 for the individual firms in the Comparison Group. See MFG Workpapers, pages 1-18.

[26] Exhibit MFG-16, pages 1-5.

Q. What information did you use from Yahoo! Finance?

A. I used the Yahoo! Finance EPS five-year growth projections available August 19, 2018 for the individual firms in the Comparison Group. See MFG Workpapers. pages 19-36.

Q. What information did you use from Value Line?

A. I used the Value Line EPS five-year growth projections for the individual firms in the Comparison Group as reported by Value Line in its Central (June 15, 2018), West (July 27, 2018), and East (August 17, 2018) issues. See MFG Workpapers. pages 37-54.

Q. How do you combine the Zacks, Yahoo! Finance, and Value Line estimates?

A. I weighted the Zacks, Yahoo! Finance, and Value Line EPS values equally to find my best estimate of the expected growth rate for each company in the Comparison Group.

Q. Please discuss your calculation of the expected dividend yield for the Comparison Group.

A. The appropriate dividend to use in the constant-growth DCF model is the annual dividend rate at the beginning of the next period (year). I begin my estimation of the expected dividend yield by finding the dividends that each Comparison Group member company is currently paying as reported by Value Line in its Central (June 15, 2018), West (July 27, 2018), and East (August 17, 2018) issues and by

Zacks on August 19, 2018. I multiply the Value Line dividends by four to calculate the annualized dividend one year from now, whereas the Zacks dividends reported are for one year.[27] I use the greater of these two options in my DCF analysis.[28] The dividends from the two sources are the same for all the companies.

Q. Please continue.

A. Next, I adjust the annualized dividends for expected growth. The dividends of all the companies in the Comparison Group are expected to increase over the next year. I apply a full year's growth rate for a firm to the annualized dividend and add the product to the annualized dividend yield to transform it into the expected dividend yield. The equation for this operation is:

$$D_1 = \frac{D_0}{P_0}(1 + g)$$

Applying this equation to the dividend yield for each company yields the D_1 values that I use in my estimates.[29]

Q. Please discuss flotation adjustments.

A. When companies issue equity, the price paid by investors for the new shares is higher than the revenues per share received by the company. The difference is issuance, or flotation, costs. These costs are the fees and expenses the company

[27] Exhibit MFG-17.
[28] Exhibit MFG-18, Schedule 1.
[29] *Id.*

must pay as part of the issuance. The return on equity must be adjusted to recognize this difference, or a company will be denied the reasonable opportunity to earn its required rate of return.

Q. Have you made a flotation adjustment for the Company?

A. No. ACE did not present any information regarding flotation costs or about any future issuances of stock.

Q. What ROE did you find for the Comparison Group?

A. The Comparison Group has a mean growth rate of 5.00 percent and a mean expected dividend yield of 3.47 percent. The combination of these two components yields an ROE of 8.47 percent. The respective median values are 5.20 percent growth, 3.37 percent dividend yield, and with an ROE of 8.82 percent.[30]

Q. Did you adjust the Comparison Group at this point of your analysis?

A. Yes. After adding the growth-rate estimates and the dividend-yield estimates for each company to obtain the individual ROEs, I examined the ROEs for reasonableness. ACE has 10-Year First Mortgage Bonds paying 3.50 percent to 4.35 percent.[31] Common equity returns for companies in the Comparison Group must exceed the bond return plus compensation for the added risk associated with

[30] *Id.*
[31] O'Donnell Direct Testimony, Schedule (EMDO)-1, Page 3 of 4, *In the Matter of Atlantic City Electric Co. for Approval of Amendments to Its Tariff to Provide for an Increase in Rates and Charges for Electric Service Pursuant to NJSA 48:2-21 and NJSA 48:2-21.1, and for Other Appropriate Relief (2018)*, Docket No. ER18060638.

equity in order to attract investors. When 250 basis points are added to the highest ACE bond interest rate of 4.35 percent, the result is a return of 6.85 percent. This percentage is my reference point for checking the reasonableness of Comparison Group member companies' returns.

Q. Did any of the Comparison Group members' ROEs fail to exceed the 6.85 percent standard?

A. Yes. IdaCorp, Inc.'s ROE is 5.61 percent, NorthWestern Corporation's ROE is 6.54 percent, and Portland General Electric's ROE is 6.77 percent. Therefore, I chose to exclude them from further analysis for ACE's ROE. The exclusions leave 15 companies in the Comparison Group. [32]

Q. What is the final constant-growth DCF ROE for the Comparison Group?

A. The 15-member Comparison Group has a final mean ROE of 8.90 percent. The median ROE for the group is 9.01 percent.[33]

Q. Did you conduct another DCF analysis for the Comparison Group?

A. Yes. I conducted a multistage DCF analysis. A multistage analysis assumes that the growth rate for companies in a proxy group will not continue at the current growth rate. In my analysis, I assumed that the long-term growth rate would be equal to the long-term forecast for nominal gross domestic product (GDP) growth of 4.0 percent for 2018-2028 published by the Congressional Budget Office

[32] Exhibit MFG-18, Schedule 2.
[33] Exhibit MFG-18, Schedule 3.

(CBO) [34] or to the 4.3 percent Reference Case forecast for 2018-2050 published by the U.S. Energy Information Administration (EIA).[35]

Q. Please explain your multistage analysis?

A. I calculated DCF ROEs for the Comparison Group of 15 companies with 4.00 percent and 4.30 percent substituted for the mean of the growth-rate forecasts from Zacks, Yahoo! Finance, and Value Line. I then blended the two growth rates for each company, weighting the analysts' growth projections two-thirds and the GDP growth-rate forecasts of the respective federal agencies one-third.[36]

Q. What are the ROE results for your multistage analyses?

A. The results are a mean ROE of 8.41 percent with the CBO forecast and a mean ROE of 8.51 percent with the EIA forecast. The medians are 8.56 percent and 8.66 percent.[37] The average of the means is 8.46 percent, while the average of the medians is 8.61 percent.

Q. Have you adjusted your ROE to accommodate other factors?

A. No. The DCF model incorporates factors that affect investors' view of the world and does not require ad hoc adjustments. The share price of common equity is the mechanism through which these influences are translated. For example, if investors are optimistic about the economy in general or about a specific

[34] Exhibit MFG-18. Schedule 4.
[35] Exhibit MFG-18, Schedule 5.
[36] Exhibit MFG-18, Schedule 6, Morin, Roger, *New Regulatory Finance*, Public Utilities Reports, Inc., Vienna, Virginia (2006), page 309.
[37] Exhibit MFG-18, Schedule 7.

company, the share price of that company will be higher, all other things being equal. Or, to cite a recent event, if the federal income tax and depreciation rates are changed, as they have been in the United States, the views of investors about the effect of the changes on utilities earnings prospects also will be reflected in the price. Either case affects the ROE of the company. Other factors that are incorporated into share prices are interest-rate expectations, market volatility, and leverage of companies. Investors will ask for common equity prices that compensate them for the degree of risk that they believe these factors create.

Q. Please summarize the results of your DCF analysis.

A. The results of my constant-growth DCF ROE analysis are presented below.

Constant-Growth DCF ROE Analysis

Parameter	ROE
Mean	8.90%
Median	9.01%

The results for my two multistage DCF analyses are shown below.

Multistage DCF ROE Analysis

Long-Term Forecast	Mean ROE	Median ROE
CBO	8.41%	8.56 %
EIA	8.51%	8.66%
Means	8.46%	8.61%

X. REASONABLENESS CHECK AND RECOMMENDED ROE

Q. Have you checked the reasonableness of your DCF ROE estimate?

A. Yes. I checked the reasonableness of my DCF analyses' outcomes by performing

CAPM analyses. I also compared the DCF ROEs with recent ROEs authorized in fully litigated electric rate cases across the 48 contiguous states.

1. CAPM Analysis

Q. Have you checked the reasonableness of your ROE estimate?

A. Yes. I performed a Capital Asset Pricing Model (CAPM) analysis for the companies in the Comparison Group. I also conducted empirical CAPM (ECAPM) analyses on the same companies. The ECAPM is a version of the CAPM modified to adjust for identified shortcomings in the CAPM.

Q. Please discuss the CAPM method.

A. The basic premise of the CAPM method is that any risk which is company-specific can be diversified away by investors. Therefore, the only risk that matters is the systematic risk of the stock. This systematic risk is measured by beta (β). In its simplest form, the CAPM assumes the following form:

$$k = r + \beta\,(k_m - r), \text{ where:}$$

k is the required rate of return for the stock in question;
β is beta, the measure of systematic risk;
r is the rate of return on a riskless asset; and
k_m is the required rate of return on the broad market portfolio.

Q. What are the strengths and weaknesses of the CAPM method?

A. The CAPM is theoretically sound, but its application raises some issues. The analysis using CAPM selects a riskless asset, beta, and market risk premium. The ROE analysis can vary considerably depending on the analyst’s choices for these variables. Thus, what at first may seem like a model that is straightforward depends heavily on the particular input values used by an analyst.

Q. Are you recommending rejecting CAPM?

A. No. I use the CAPM, but only to check the reasonableness of my DCF analysis, which is a more reliable method of measuring equity return. Because of the CAPM's extensive requirement for judgment in selecting each of the inputs, I question its value in directly estimating a return on equity.

Q. Please explain the calculation of a CAPM ROE.

A. First, the analyst must select the rate of return for a riskless asset. Short-term assets such as 90-day Treasury Bills are considered to be virtually riskless; the default risk is next to nothing and the inflation risk is negligible. Equity investors, however, typically have a longer planning horizon than the 90-day maturity of these instruments, so the return on these bills is not suitable for this CAPM process. Long-Term Treasury bonds, on the other hand, match the planning horizon and have yields that are closer to common equity returns. Therefore, I use the yield on the 30-Year Treasury Bond as my risk-free asset.

Q. Which security do you use as the riskless asset in your CAPM analysis?

A. I use the average yield on a 30-year Treasury bond for July 23-August 17, 2018 as my riskless asset rate. This average yield is 3.08 percent.[38]

[38] Exhibit MFG-19, Schedule 1.

Q. What value do you use for beta (β)?

A. I use the betas for each company in the Comparison Group provided in their respective issues of the Value Line *Investment Survey*. The average beta for the 15 companies in the Comparison Group is 0.67. [39] For context, a beta of 1 indicates that a company's share price will move with the market, while a beta higher than 1 indicates that a stock will be more volatile than the market, and a beta lower than 1 indicates that a stock will be less volatile than the market.

Q. What else is involved in your calculation?

A. I need to calculate a market rate of return. The term within parentheses in the CAPM equation often is called the "market risk premium." I calculated the market rate of return, and hence, the market risk premium ("MRP") three ways.

Q. Please identify the three MRPs you calculated.

A. I use dividend yield and EPS growth estimates data from Value Line to find two of the MRPs. In both approaches, I start from the Value Line Universe of 1,700 stocks, then apply screens to eliminate some of the companies. In effect, these approaches are performing a constant-growth analysis on a very large group of companies, which represent the market. They are both forward-looking. The third approach is historical, using long-term averages for the broad market return and for the return to long-term government bonds. This historical approach is not my

[39] Exhibit MFG-19, Schedule 2.

preferred method of analysis. However, the particular inputs are well-recognized, as is the source for the inputs.

Q. Please explain how you use Value Line dividend yield and EPS growth-rate information to find MRPs.

A. I draw data from Value Line regarding the dividend yield and growth rates for the broad economy (1,700 stocks in the "Value Line Universe"). On August 19, 2018, I downloaded the dividend yields and EPS forecasts for these companies. Recall that in order to perform a DCF analysis, companies need to be paying dividend yields and to have positive EPS forecasts. After eliminating companies that either are not paying dividends or have negative EPS forecasts, I was left with a set of 1,019 companies, to which I applied the DCF model.[40]

Q. Describe your second Value Line-based approach.

A. I took that data set one step further for the second Value Line-based approach. Recall that on my DCF analysis for ACE I removed all electric companies that did not achieve a 6.85 percent ROE from my DCF ROE analysis. Relying on the same logic that these companies do not represent realistic investment alternatives for investors, I removed all such companies from the reduced Value Line data set. At the other end of the returns, I removed all companies from the set with ROEs greater than 13.3 percent. The rationale underlying this upper threshold is that high growth rates are not sustainable in the long run; the Federal Energy Regulatory Commission ("FERC") has selected the 13.3 percent as the value to be

[40] Exhibit MFG-19, Schedule 3.

applied in cases it hears. When these screens are applied, the set of remaining companies numbers 472. I applied the DCF model to these companies.

Q. What are the market-return results for these two screened sets of companies?

A. For the larger set of dividend-paying companies, the mean dividend yield is 2.74 percent and the mean EPS growth rate is 12.71 percent. The sum of these elements produces an expected market return of 15.45 percent. For the smaller set with lower and upper return thresholds, the mean dividend yield is 2.51 percent and the mean EPS growth rate is 8.25 percent, which sum to an expected market return of 10.76 percent.[41]

Q. What is the ROE result for the two screened sets?

A. The MRP is calculated by subtracting the yield on the 30-year Treasury Bond from the market rate of return. The result of this operation for the large set is 12.37 percent. This value is multiplied by the average beta (0.67) for the Comparison Group and added to the risk-free rate to find the CAPM ROE for ACE. The result for the dividend-paying set is a ROE of 11.37 percent. For the smaller set, the MRP is 7.68 percent and the ROE result is 8.23 percent.[42]

Q. Please describe the historical approach inputs and their application.

A. The source of inputs for the historical CAPM approach is the *2018 Stocks, Bonds,*

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[41] Exhibit MFG-19, Schedule 4.
[42] Exhibit MFG-19, Schedule 9.

Bills, and Inflation Yearbook ("SBBI"). This publication, now produced by Duff & Phelps, is a fixture among financial-information sources. The relevant data for the CAPM process are the arithmetic mean return on Large-Cap Stocks and the arithmetic mean income return on Long-Term Government Bonds over the period 1926-2017. When a historical approach is used it is good practice to use the mean return from a long period like that covered in *SBBI*. A long period captures a larger sample of inflation rates, interest rates, and business cycle activity, meaning it is likely to be an unbiased mean.

Q. What is the ROE result for the historical approach?

A. The historical-approach MRP is calculated by subtracting the return for Long-Term Government Bonds[43] from the return on Large-Cap Stocks.[44] This operation for the large set is 12.10 percent – 5.00 percent = 7.10 percent. This value is multiplied by the average beta (0.67) for the Comparison Group and added to the current risk-free rate to find the CAPM ROE for ACE. The result is 7.84 percent.[45]

Q. What is the mean ROE of your three CAPM approaches?

A. The mean ROE of three approaches is 9.14 percent. I note, however, that one of the approaches, finding a CAPM ROE using a set of dividend-paying companies without regard for whether their ROEs are sustainable in the long run more than 300 basis points higher than the range for the other two approaches. An

[43] Exhibit MFG-19, Schedule 5.
[44] Exhibit MFG-19, Schedule 6.
[45] Exhibit MFG-19, Schedule 9.

explanation for this large difference is that the MRP for the dividend-paying approach 12.37 percent is well above historical estimates of the MRP of 5.00 to 7.00 percent.[46] The MRP at a given time can exceed the historical range, but there is nothing to suggest that currently it is 500 basis points above this range. These large differences in the CAPM results illustrate how the analyst's selection of inputs, in this case in the MRP, greatly influences the CAPM outcome. As a reminder, this influence is why I use the CAPM only as a check on my DCF results.

2. ECAPM Analysis

Q. Have you performed additional CAPM analyses?

A. Yes. There is evidence that the simple CAPM underestimates the ROE for companies with betas less than 1 and overestimates the ROE for companies with betas greater than 1. The ECAPM has been developed to address this issue.

Q. How does the ECAPM deal with the under/over-estimation of ROE?

A. There are different versions of the ECAPM, but what they have in common is that by adding an adjustment factor to the elements of the CAPM equation, they increase its intercept and reduce its slope. This operation has the effect of increasing the CAPM ROE by decreasing amounts as beta approaches 1.

[46] Exhibit MRG-19, Schedule 7, Morin, pages 157-159.

Q. Please explain the ECAPM that you use in your analysis?

A. The ECAPM that I use includes an adjustment factor "x," as shown in the following modified CAPM equation below.

$$k = r + x\,(k_m - r) + (1\text{-}x)\,ß\,(k_m - r)$$

The x-term multiplied by the market risk premium increases the intercept (the risk-free rate), while the term (1 –x) decreases the slope of the equation.

Q. How is the value of x determined?

A. The value of x is determined empirically. The suggested value for x is 0.25.[47] I analyzed scenarios where the intercept value of the equation is more in line with current risk-free rates than it is the approximately 8 percent intercept presented. This analysis confirmed that a value for x of 0.25 is appropriate. Please note that x itself is not a percentage.

Q. What result do you get for your ECAPM analyses?

A. Using the same inputs for the risk-free rate, the MRP, and beta as I did in my CAPM analysis, I obtained ECAPM ROEs of 12.39 percent, 8.86 percent, and 8.42 percent for my three approaches.[48] The mean of these three values is 9.89 percent. As noted in the CAPM discussion above, the Value Line dividend-

[47] Exhibit MFG-19, Schedule 8, Morin, pages 190-191.
[48] Exhibit MFG-19, Schedule 9.

paying approach ROE value greatly exceeds the ROE values for the other two approaches, due to an improbable MRP.

Q. Please summarize your CAPM/ECAPM results.

A. My CAPM and ECAPM results are presented in the following table.

CAPM/ECAPM ROE Analysis

Approach	**CAPM**	**ECAPM**
Value Line Dividend-Paying	11.37%	12.39%
Value Line Dividend Paying Trimmed	8.23%	8.86%
Historical	7.84%	8.42%
Mean	9.14%	9.89%

3. Authorized ROEs Comparison

Q. Please explain which authorized ROE you used to check the reasonableness of your DCF ROEs.

A. I collected a set of 2018 authorized ROEs from U.S. electric rate cases from SNL's Regulatory Research Associates (RRA) past rate cases.[49]

Q. How do you use this set of authorized ROEs?

A. I use the recent authorized ROEs as a basis for evaluating the reasonableness of my DCF ROE results. I do not use it as a substitute for that analysis.

Q. Why are authorized ROEs not a good substitute for current, forward-looking DCF analysis?

[49] Downloaded August 25, 2018 from: https://platform.mi.spglobal.com/web/client?auth=inherit#industry/pastRateCases?Type=1

A. Recently authorized ROEs reflect the results of rate cases conducted in a variety of environments and at different times. Test years, conditions in capital markets, general economic indicators such as inflation rates, and so forth for previous rate cases can be different and become outdated when compared with these factors for a current rate case. Therefore, recently authorized ROEs should serve only to establish whether a current ROE result is reasonably close to what has happened, not be a substitute for forward-looking analysis based on current conditions.

Q. Please describe the set of authorized ROEs you collected.

A. From January to June of 2018, there have been eight fully litigated electric rate cases in which authorized ROEs have been reported. In 2017, there were 18 such cases, while in 2016 there were 17 such cases.[50] I rejected outcomes of settled cases because settlements can reflect tradeoffs parties make to reach agreement. Thus, an authorized ROE in a settled case may reflect compromise rather than strictly analysis.

Q. Please discuss the means, medians, and ranges of the authorized ROEs for 2018, 2017, and 2016.

A. The following table summarizes the authorized ROE results for all fully litigated cases in 2018, 2017, and 2016.

[50] *See* Ex. MFG-20, Schedule 1.

Year	No. of Cases	Mean ROE	Median ROE	ROE Range
2018	8	9.52	9.30	9.25-10.00
2017	18	9.49	9.50	8.40-10.10
2016	17	9.43	9.50	8.64-10.00

The low ends of the ranges in 2016 (8.64 percent) and 2017 (8.40 percent) are awards from the Illinois Commerce Commission and are determined by formula. Thus, they are not the product of the same kind of ROE analysis as other cases in this dataset. Nevertheless, they represent actual ROE awards. If they are removed, the low ends of the ranges become 9.00 percent in 2016 and 9.20 percent in 2017.

Q. Please discuss the means, medians, and ranges of the authorized ROEs for distribution cases in 2018, 2017, and 2016.

A. The following table summarizes the authorized ROE results for all distribution fully litigated cases in 2018, 2017, and 2016.

Year	No. of Cases	Mean ROE	Median ROE	ROE Range
2018	1	9.35	9.35	9.35
2017	8	9.34	9.50	8.40-10.00
2016	7	9.25	9.25	8.64-9.75

There has been only one fully litigated, distribution-only case (9.35 percent award) through January-June of 2018, not a meaningful sample size. The 2016 distribution cases mean and median are 18 and 25 basis points lower, respectively, than same parameters for the full set of cases. The 2017 mean is 15 basis points lower than the full set mean, while the median is identical. The low ends of the ranges are 9.10 percent and 9.30 percent, 10 basis points higher than the values for the full sets.

Q. What conclusions do you draw from the set of recently awarded electric rate case ROEs?

A. The data from the set of recent electric rate case awarded ROEs indicates that the mean and median ROE awards were nearly the same in 2016 and 2017, with the four parameter values falling between 9.43 percent and 9.50 percent. For the partial 2018 set the mean is 9.52 percent and the median is 9.30 percent. The lowest non-formula award over the 2½ years was 9.00 percent. This information indicates that recommended ROEs within the range of 9.00-9.50 percent would be consistent with lower range of recent ROE awards.

Q. If the mean and median values among recently awarded ROEs fall around about 9.50 percent, should not your recommended ROE also be in that range?

A. Not necessarily. When I compare the result of my ROE analysis with the set of recently awarded ROEs, I am checking that result for reasonableness, not looking for a floor or ceiling for my recommendation. As long as my analysis produces an ROE range that is not severely out of line with recent ROEs, then it is reasonable to follow where my analysis takes the issue. It is important to note, that a recommended ROE can fall outside the range of recent ROEs and be reasonable. If this fact is not recognized then ROEs would not budge outside a narrow band, no matter whether changing economic conditions caused ROE analyses to yield outcomes different from recently prevailing ROEs.

XI. RECOMMENDED ROE

Q. Please summarize the results of your ROE analyses.

A. The information for the DCF model analyses and the CAPM and ECAPM approaches are presented in the following table.

ROE Analyses Results

Approach	Mean	Median
Constant-Growth DCF	8.91%	9.01%
Multi-Stage DCF	8.46%	8.61%
CAPM	9.14%	NA
ECAPM	9.89%	NA

Q. What is your recommended ROE for the Company?

A. Treating this docket as if it is a base rate case, my recommended ROE for ACE for a base rate case is 9.00 percent. As noted previously, however, this docket is about ACE's IIP. Therefore, once I have explained how I arrived at this recommended ROE for ACE, I will recommend and explain my ROE for the ACE IIP.

Q. Please explain how you determined that this ROE is the appropriate base rate case recommendation for the Company.

A. My preferred method of ROE analysis is the constant-growth DCF model. The outcomes of that analysis, 8.90 percent mean and 9.01 percent median values, support a ROE of about 9.00 percent. There is nothing in my CAPM/ECAPM results or the survey of the recent electric base rate case ROE awards to cause me to recommend a different value. The means of CAPM/ECAPM results are 9.14 percent and 9.89 percent. As noted, I give the results of these two methods less weight than I do DCF results. I find that 9.00 percent, therefore, is consistent with the CAPM/ECAPM results. I have already explained that the 9.00 percent recommendation is consistent with the lower part of the range of recent ROE awards.

XII. ADJUSTMENT FOR RELATIVELY LOWER RISK OF THE ACE IIP

Q. What adjustment do you recommend to the ACE IIP ROE to address the relatively lower risk of the infrastructure program?

A. I recommend a reduction in the ROE result discussed of 50 basis points, to 8.50 percent, for the relatively lower risk of the ACE IIP compared with the rest of the Company’s operations.

Q. Please discuss how you determined that this adjustment is appropriate.

A. I rely on two factors in making the adjustment: (a) the low end of the range of my ROE analyses; and (b) the adjustment adopted by the Board in the Stipulation in the PSE&G Energy Strong docket.

Q. What is the range of your ROE analyses?

A. The range of my ROE analyses results is 8.46 percent to 9.89 percent (presented in the table above). The lower end of the range is the mean of my multi-stage DCF analysis. Given the relatively lower risk for ACE's IIP versus the remainder of ACE's operations, it is natural to look at values less than the 9.00 percent ROE that I ordinarily would recommend for ACE.

Q. What adjustment did the Board make to the ROE for PSE&G's Energy Strong program?

A. The Board reduced the ROE for the Energy Strong program from 10.30 percent to 9.75 percent, a reduction of 55 basis points. In the Order approving the Stipulation of Settlement, the Board stated:

> "The Board is also persuaded that the reduced return on common equity from that approved in the Company's Base Rate Case is reasonable in light of the recovery of costs from ratepayers on a more contemporaneous basis which reduces the risk of recovery of capital invested during the time between rate cases."[51]

[51] Order Approving Stipulation of Settlement, *In the Matter of the Petition of Public Service Electric and Gas Company for Approval of the Energy Strong Program,* Docket Nos. EO13020155 and GO13020156.

Therefore, a reduction of 50 basis points in the ACE ROE in this docket in which more contemporaneous recovery of costs is a major feature of the IIP follows the reasoning of this earlier decision.[52]

Q. Why should the reduction be from the recommended 9.00 percent produced by your ROE analysis rather than from the Company's 9.60 percent ROE awarded in its previous rate case?

A. The reduction in the ROE applied to the IIP should be from the Company's current cost of capital, not an ROE that is not in keeping with current economic conditions. My current ROE analysis shows that an ROE of 9.00 percent is supported by the current market conditions in which ACE operates. If the reduction for the relatively lower risk of the IIP is applied to the current ACE ROE of 9.60 percent, the Board soon could find itself in the position of having an ROE for the ACE IIP, which has less risk than the rest of ACE's operations, that is higher than the ROE awarded to ACE for its higher risk regulated operations in ACE's recently filed base rate case (Docket No. ER18060638).

Q. How could the Board resolve this conundrum?

A. The Board can approve an adjustment, my recommendation is 50 basis points, for the ACE IIP and set the ACE IIP ROE in this docket. The Board can include as part the Order in this docket that, upon conclusion of ACE's recently filed base rate case, the same adjustment should be applied to the ROE awarded to ACE to re-set the ROE for ACE's IIP. This procedure would prevent the possibility of

[52] Exhibit MFG-20, Schedule 2.

the ROE for the lower-risk ACE IIP projects being higher than the ROE for the company as a whole.

XIII. RECOMMENDED CAPITAL STRUCTURE AND OVERALL RATE OF RETURN

Q. What cost of long-term debt should be applied to the ACE IIP?

A. The cost of long-term debt that should be applied to the ACE IIP is the cost of long-term debt requested by the Company in its recently filed base rate case. This cost is 4.79 percent. It represents the up-to-date identified embedded cost of long-term debt for ACE. In this regard, it is like the ROE analysis that I perform on the Company in this docket. For consistency, both should be adopted for the ACE IIP.

Q. Did the Board use a current cost of long-term debt in the PSE&G Energy Strong docket?

A. Yes. The 4.60 percent cost of long-term debt adopted in the PSE&G Energy Strong docket was a cost determined after the Energy Strong docket was filed, but prior to the date of the Order. It was also lower than the 6.10 percent long-term debt cost that PSE&G requested.

Q. What capital structure did the Board approve in the PSE&G Energy Strong docket?

A. As noted earlier, the Board approved in the Energy Strong stipulation the capital structure ratios approved in the most recent PSE&G base rate case.

Q. What capital structure should be applied to the ACE IIP?

A. The capital structure approved by the Board in the most recent ACE base rate case was 49.53 percent long-term debt and 50.47 percent common equity. I recommend that the Board follow its actions in the earlier docket involving clause recovery of costs and adopt this capital structure in this docket.

Q. What is your recommendation regarding the overall rate of return (ROR) for the ACE IIP?

A. My recommended overall rate of return for the ACE IIP is 6.66 percent. I multiply my recommended long-term debt and common-equity ratios by their appropriate cost rates to find the ROR. The sum of these weighted costs is the overall rate of return on capital.[53]

XIV. RESPONSE TO THE TESTIMONY OF ACE WITNESS KEVIN M. MCGOWAN

Q. Please summarize ACE witness Kevin M. McGowan's position regarding the appropriate ROE for the ACE IIP.

A. Mr. McGowan recommends that the Board apply the 7.60 percent ROR awarded to the Company in its most recently approved base rate case to the ACE IIP. In making this recommendation, Mr. McGowan is indirectly recommending that the Board adopt the 9.60 percent ROE and 5.56 percent long-term debt cost approved

[53] Exhibit MFG-20, Schedule 3.

in that base rate case. These costs are part of the calculation of the ROR of 7.60 percent.[54]

Q. What is Mr. McGowan's position regarding the risk of the ACE IIP projects relative to the Company's other capital projects?

A. Mr. McGowan states that the construction, operational, and recovery risks associated with the ACE IIP projects are very similar to the risk of the capital projects that would be recovered through a traditional base rate case. He states that the ACE IIP program does not carry a lower level of risk.[55]

Q. Do you agree with Mr. McGowan?

A. No. I have shown earlier in this testimony that the recovery risk for the ACE IIP capital projects is not similar to the recovery risk for other ACE capital projects. The period at which the Company begins to receive recovery for the projects is shorter than under traditional base rate recovery. The reduction in the recovery period varies given that the IIP proposes to make semi-annual filings for project cost recovery. Moody's approvingly characterizes the recovery period as a "relatively short nine months." Nine months is the maximum recovery lag under the proposed ACE IIP, with three months being the minimum. Mr. McGowan notes that traditional base rate case recovery can take up to 1-2 years to begin.

[54] McGowan Direct at 19, lines 5-7.
[55] Id., at lines 7-10.

Q. Are there other aspects of the ACE IIP that reduce the Company's recovery risk?

A. Yes. Not only does recovery for the ACE IIP begin sooner than for other capital projects, but recovery of these amounts is dollar-for-dollar. The costs of capital projects approved under the ACE IIP are placed into the Rider IIP account when the periods associated with the semi-annual reports have been completed. Under the ACE IIP clause, amounts in the rider continue to be recovered regardless of the volume of Company sales. If sales fall short of projections, the Rider IIP balance carries forward and is recovered on succeeding years. In contrast, other ACE capital project costs can go unrecovered if actual sales fall short of projected sales. Moreover, the risk for ACE that a project approved under the IIP will not be approved later for inclusion in the rate base because it is imprudent is diminished.

XV. SUMMARY

Q. What should the Board recognize about the risk associated with the ACE IIP?

A. The Board should recognize that the recovery lag for ACE IIP projects is shorter than for other ACE capital expenditures, thus reducing the recovery risk. Recovery under the clause is also dollar-for-dollar, which is not true for recovery of other capital projects. Finally, the likelihood that recovery will be denied because a project is deemed imprudent is diminished because ACE capital expenditures have to be approved for inclusion in the IIP. Recovery for an IIP project can still be denied later if its execution is poor, but the project, having received approval once, is unlikely to be ruled imprudent later.

Q. What is your recommended return on equity and overall cost of capital?

A. I recommend a ROE of 8.50 percent and a ROR of 6.66 percent.

Q. Does this conclude your testimony?

A. Yes.

EXHIBITS MFG-1 TO MFG-20

PCMG and Associates

Marlon Griffing, Ph.D

Education

Ph.D., M.A., B.A., Economics, University of Nebraska-Lincoln

Position

Senior Consultant – PCMG and Associates	2015 – present
Senior Consultant – Snavely King Majoros and Associates	2013 – 2014
Utilities Financial Analyst – Minnesota Department of Commerce	2003 – 2013
Independent Consultant	2003
Senior Consultant – QSI Consulting	2000 – 2002
Economic Analyst – Nebraska Public Service Commission	1998 – 2000

Professional Experience

Dr. Griffing holds bachelors, masters, and doctoral degrees in economics. Dr. Griffing is well versed in microeconomics, cost/benefit analysis and econometric analysis. He has over 18 years' experience as an expert witness and consultant, addressing the cost of capital, capital structure, and rate design of natural-gas, electric, and water utilities in general rate cases; reliability and supply adequacy for natural-gas, electricity and oil-pipeline companies in certificate of need cases; and competitive-environment issues for telecommunications utilities. While at the Minnesota Department of Commerce, Dr. Griffing testified on cost of capital and rate design, and managed testimony in two oil-pipeline certificate-of-need cases. Prior to that service, he arbitrated a telecommunications dispute filed with the Nebraska Public Service Commission. Dr. Griffing has appeared over 30 times before the regulatory agencies of Arkansas, Maine, Minnesota, Nebraska, New Jersey, New Mexico, North Dakota, Pennsylvania, and South Dakota.

Cost of Capital Appearances

1. In Re: The Matter of the Application of Maryland American Water Co. for Authority to Increase Rates and Charges (2018) – (Appearance: Cost of capital on behalf of the Maryland Office of the People's Counsel)
   Maryland Public Service Commission – Case No. 9487

2. In the Matter of Petition of Atlantic City Electric Co. for Approval of Amendments to Its Tariff to Provide for an Increase in Rates and Charges for Electric Service and for Other Appropriate Relief (2018) - (Appearance: return on equity, cost of capital on behalf of the New Jersey Division of Rate Counsel)
   New Jersey Board of Public Utilities Docket No. ER18060638

3. In the Matter of Petition of SUEZ Water New Jersey, Inc. for Approval of an Increase in Rates for Water/Sewer Service and Other Tariff Changes (2018) - (Appearance: return on equity, cost of capital on behalf of the New Jersey Division of Rate Counsel)
   New Jersey Board of Public Utilities Docket No. WR18050593

4. In Re: The Matter of the Application of Columbia Gas of Maryland, Inc. for Authority to Increase Rates and Charges (Appearance: Cost of Capital on behalf of the Maryland Office of the People's Counsel)
   Maryland Public Service Commission – Case No. 9480

5. In Re: The Matter of the Columbia Gas of Pennsylvania for a General Rate Increase in Distribution Gas Service (Appearance: Cost of Capital on behalf of the Pennsylvania Office of Consumer Advocate)
   Pennsylvania Public Utility Commission – Docket No. R-2018-2647577

6. In the Matter of the Application of Black Hills Energy Arkansas, Inc. for Approval of a General Tariff Change in Rates and Tariffs (2018) - (Appearance: return on equity, cost of capital on behalf of the Office of the Arkansas Attorney General)
   Arkansas Public Service Commission Docket 17-071-U

7. In the Matter of the Petition of Atlantic City Electric Company for Approval of an Infrastructure Investment Program and Related Cost Recovery Mechanism (2018) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
   New Jersey Board of Public Utilities Docket No. EO18020196

8. In the Matter of the Application of Oklahoma Gas and Electric Company for an Order of the Commission Authorizing Applicant to Modify Its Rates, Charges, and Tariffs for Retail Electric Service in Oklahoma (2017) - (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)
   Oklahoma Commerce Commission Cause No. PUD 201700496

9. Application of Fayson Lake Water Company for the Approval of an Increase in Rates and Other Appropriate Relief (2017) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
   New Jersey Board of Public Utilities Docket No. WR17101041

10. Petition of Middlesex Water Company for Approval of an Increase in its Rates for Water Service and Other Tariff Changes, and an Order Authorizing Special Accounting Treatment of Income Tax Refund Proceeds and Future Income Tax Deductions (2017) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
    New Jersey Board of Public Utilities Docket No. WR17101049

11. In the Matter of the Petition of New Jersey-American Water Company, Inc. for Approval of an Increased Tariff Rates and Charges for Water and Sewer Service, Change in Depreciation Rates, and Other Tariff Modifications (2017) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
    New Jersey Board of Public Utilities Docket No. WR17090985

12. In re: Montana-Dakota Utilities Co., Application to Increase Natural Gas Rates (2017) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the North Dakota Public Service Commission Staff)
    ND Public Service Commission Case No. PU-17-295

13. In the Matter of the Petition of Andover Utility Company, Inc. for Approval of an Increase in Rates for Wastewater Service (2017) – (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the New Jersey Division of Rate Counsel)
    New Jersey Board of Public Utilities Docket No. WR17070726

14. In the Matter of the Application of Application of Public Service Company of Oklahoma, An Oklahoma Corporation, for An Adjustment in Its Rates and Charges and the Electric Service Rules, Regulations and Conditions for Service in the State of Oklahoma (2017) - (Appearance: return on equity, cost of capital on behalf of the Office of the Oklahoma Attorney General)
    Oklahoma Commerce Commission Cause No. PUD 201700151

15. In the Matter of Petition of SUEZ Water Arlington Hills Inc. for Approval of an Increase in Rates for Wastewater Services and other Tariff Changes (2016-2017) - (Appearance: return on equity, cost of capital on behalf of the New Jersey Division of Rate Counsel)
    New Jersey Board of Public Utilities Docket No. WR16050510

16. In the Matter of Request by Emera Maine for Approval of a Rate Change (2016) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Maine Office of the Public Advocate)
    Maine Public Utilities Commission Docket No. 15-00360

17. ENMAX Energy Corporation (EEC) Regulated Rate Option Non-Energy Tariff Application (2015-2016) - (Analysis: cost of capital, risk element identification on behalf of the Alberta Utilities Consumer Advocate)
    Alberta Utilities Commission Proceeding 20480

18. Pennsylvania Public Utilities Commission vs. West Penn Power Co., Pennsylvania Electric Co., Pennsylvania Power Co., and Metropolitan Edison Co. (2014-2015) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return behalf of the Office of the Pennsylvania Consumer Advocate)
    PA Docket Nos. R-2014-2428742-R-2014-2428745

19. In the Matter of the Application of Minnesota Energy Resources Corporation for Authority to Increase Rates for Natural Gas Service in Minnesota (2010-2012) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    MN Docket No. G007,011/GR-10-977

20. In the Matter of the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Utility Service in Minnesota (2010-2011) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    MN Docket No. E017/GR-10-239

21. In the Matter of the Petition of Northern States Power Company, a Minnesota Corporation, for Authority to Increase Rates for Natural Gas Service in Minnesota (2009-2010) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    MN Docket No. G002/GR-09-1153

22. In the Matter of an Application by CenterPoint Energy Resources Corp., D/B/A CenterPoint Minnesota Gas to Increase Natural Gas Rates in Minnesota (2008-2009) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    MN Docket No. G008/GR-08-1075

23. In the Matter of Minnesota Energy Resources Corporation's Application for Authority to Increase Natural Gas Rates in Minnesota (2008-2009) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    MN Docket No. G007,011/GR-08-835

24. In the Matter of the Petition of Northern States Power Company, a Minnesota Corporation and Wholly Owned Subsidiary of Xcel Energy Inc., for Authority to Increase Rates for Natural Gas Service in Minnesota (2006-2007) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    MN Docket No. G002/GR-06-1429

25. In the Matter of the Application of CenterPoint Energy Resources Corp., D/B/A CenterPoint Energy Minnesota Gas, for Authority to Increase Natural Gas Rates in Minnesota (2005-2006) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    MN Docket No. G008/GR-05-1380

26. In the Matter of a Petition by Interstate Power and Light Company for Authority to Increase Electric Rates in Minnesota (2005) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    MN Docket No. E001/GR-05-748

27. In the Matter of the Petition of Northern States Power Company dba Xcel Energy Request for General Rate Increase (2004-2005) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    MN Docket No. G002/GR-04-1511

28. In the Matter of the Petition of Great Plains Natural Gas Company's Request for General Rate Increase (2004-2005) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    MN Docket No. G004/GR-04-1487

29. In the Matter of the Petition of CenterPoint Energy Minnegasco, A Division of CenterPoint Resources Corp. for Authority to Increase Natural Gas Rates in Minnesota (2004-2005) - (Appearance: cost of equity, cost of debt, capital structure, overall rate of return on behalf of the Minnesota Department of Commerce)
    Docket No. G008/GR-04-901

In the Matter of Petition of Atlantic City Electric Company for
Approval of an Infrastructure Investment Program, and Related Cost Recovery Mechanism,
Pursuant to N.J.A.C. 14:3-2A.1 *et seq.*

BPU Docket No.: EO18020196

Response to DRC Data Requests – Set 2

07/11/18

Question No: RCR-ROR-7
See page 4, lines 6-8 of the Direct Testimony of Kevin M. McGowan.
Mr. McGowan states that ACE seeks approval of the ACE IIP to improve the timing of recovery of eligible capital investments.
a. Please define "improve the timing of recovery of investments." Explain how ACE expects the IIP will improve the timing of its recovery of investments.
b. Please contrast the recovery of other investments made by ACE through other New Jersey Board of Public Utilities-approved programs/riders or through base rates with the proposed recovery of investments under the ACE IIP with regard to timing.
c. Is it Mr. McGowan's position that improved timing of recovery of investments does not reduce risk for ACE? Please provide in electronic form any testimony or other academic support upon which Mr. McGowan relies in determining his position.

RESPONSE:

a) *See* Company Witness McGowan's Direct Testimony on page 15, lines 6 through 18. As stated in Witness McGowan's Direct Testimony, the IIP will improve the timing of ACE's recovery of investments by allowing the Company to recover the assets 6 - 9 months after they are placed in service. This mechanism significantly reduces the lag the Company has been experiencing with filing a traditional base rate case and allows the Company to earn a ROE that is closer to its authorized ROE.

b) The IIP is seeking recovery of specific capital projects that fall into five categories: Targeted Reliability Improvement; Distribution Automation/Telecommunications; Infrastructure Renewal; Emergency; and Facilities that will be placed in service over a four year period. This mechanism is structured with the idea of recovering assets that are placed into service on a semi-annual basis, and therefore recovery would begin 3 - 9 months after the assets are placed into service. The recently approved cost recovery mechanism, referred to as the PowerAhead program, focuses on projects that are specifically geared towards improving the storm resiliency of distribution infrastructure and lessen outage restoration times. This mechanism will allow the Company to recover assets that are placed into service on a semi-annual basis, and therefore recovery would begin months after the assets are placed into service. These two mechanisms vary from a traditional rate case in terms of timing. The timing of recovery of investments through a traditional base rate case depends on many factors, including the timing of the filing, the test period selected, and the adjustments requested in the case. However, recovery of investment through a base rate case is still based on actual assets placed in service, and therefore recovery would begin several months, even up to 1 - 2 years after, the assets are placed into service.

c) The position of Witness McGowan is that recovery under the IIP does not reduce risk that would warrant an ROE reduction. Recovery risk still remains, as the IIP does not eliminate the permanent unrecoverable cost for the Company, since there is still a 6 - 9 month lag from when the assets are placed into service to when they are recovered in rates. In addition, if the Company does not meet the minimum threshold amount during the semi-annual reporting period, recovery of those assets would be deferred until the next semi-annual reporting period, thus increasing the regulatory lag on those assets to 12 - 15 months.

MOODY'S
INVESTORS SERVICE

Rating Action: Moody's revises Atlantic City Electric's outlook to positive; affirms existing ratings

14 Mar 2018

New York, March 14, 2018 -- Moody's Investors Service, ("Moody's") today revised the outlook of Atlantic City Electric Company (ACE) to positive from stable. At the same time, we affirmed ACE's Issuer Rating of Baa2, senior secured rating of A3 and short-term rating for commercial paper of P-2.

Outlook Actions:

..Issuer: Atlantic City Electric Company

....Outlook, Changed To Positive From Stable

Affirmations:

..Issuer: Atlantic City Electric Company

....Commercial Paper, Affirmed P-2

....Issuer Rating, Affirmed Baa2

....Senior Secured First Mortgage Bonds, Affirmed A3

..Issuer: Salem (County of) NJ, Pollution Ctrl Fin Auth

....Senior Secured Revenue Bonds, Affirmed A3

RATINGS RATIONALE

The positive outlook is prompted by the ACE's improving regulatory environment in New Jersey, including the New Jersey Board of Public Utility's (NJBPU) recent approval of rulemaking for a new Infrastructure Investment Program (IIP). The Company has recently filed for recovery of $338 million of capital over the next four years under the IIP regulations, which is approximately 50% of distribution capital expenditures, and if approved by the NJBPU will improve earned returns and reduce regulatory lag.

The affirmation of ACE's existing ratings reflects its low business risk profile associated with transmission and distribution (T&D) operations and financial metrics that are adequate for the rating. Even though ACE operates in an economically depressed territory and had historically experienced a poor regulatory relationship, the local economy is showing signs of recovery and improving regulatory recovery should lead to stronger financial metrics going forward.

The utility's last two rate cases -- one in 2016 and one in 2017 -- were both settled in an expedient manner, an indication of more positive working relationship with the regulators and stakeholders. The December 2017 approval of the IIP will allow for requested rate changes in distribution rate cases to be put into effect a relatively short nine months after the initial filing. Although the implementation of the IIP will still require negotiation with commission staff and stakeholders, we consider its approval by the NJBPU to be a significant credit positive.

The IIP tracker will cover safety and reliability projects and could provide recovery for about 50% of distribution capital expenditures. According to the company, its realized return on equity (ROE) for both 2016 and 2017 was 5.6%, well below the authorized levels. The IIP could significantly reduce the regulatory lag, improve its ROE and credit metrics.

ACE's service territory is economically weak relative to the rest of the country but has improved in the last twelve to eighteen months. According to ACE, the unemployment rate in the service territory fell to 7.2% in 2017, from 7.5% in 2016 and 8.1% in 2015. Residential customer count grew modestly in 2017 but the overall demand for grid electricity however continues on a downward trajectory with normalized demand falling 4.5%

in 2017, due to rooftop solar installations and energy efficiency measures.

ACE's cash flow from operations pre-working capital to debt (CFO Pre-WC/D) has been 17% for both 2016 and 2017 and will improve slowly with improving fundamentals, starting in 2019. We generally expect ACE's earnings to improve but partially offset by the negative effects of tax reform on cash flows and the declining cash flow from pass-through payments associated stranded cost recovery.

Liquidity

We consider ACE's liquidity to be adequate. At December 31, 2017, ACE had a minimal cash balance but access to a revolving credit facility with aggregate bank commitments of $300 million that expires in May 2021. The revolving credit could be increased to $350 million or decreased, subject to intermediate holding company Pepco Holdings, LLC's (Baa2 stable) group limit of $900 million. At year-end 2017, there were no draws on the facility but it supported $108 million of outstanding commercial paper.

Drawings under the shared syndicated credit facility are not subject to a material adverse change re-certification at time of borrowings, but the facility does include a financial covenant requiring each borrower to maintain an interest coverage ratio above 2.0 to 1. ACE's coverage ratiowas well in compliance at the year-end 2017.

ACE has a significant free cash flow deficit because its large capital expenditure program. The company generates about $250 million to $350 million of cash flow from operations but has about $300 million to $350 million of capital expenditures. We expect the deficits to be funded with debt issuance.

ACE's upcoming debt maturities include a $250 million first mortgage bond issuance due November 2018 and another $200 million one in April 2021. ACE also has $108 million of short-term debt, all of which is in the form of commercial papers.

Outlook

ACE's positive outlook is supported by the improving regulatory environment, including approval of rulemaking for a new capital investment rider, which should reduce regulatory lag, enhance ROE and improve financial metrics going forward. It also reflects signs of recovery in the local economy.

Factors that Could Lead to an Upgrade

We could upgrade ACE's rating by one notch, to Baa1.over the next 12 to 18 months if the regulatory environment continues to improve, the IIP is implemented in an investor friendly manner, and financial metrics improve, including CFO pre-working capital to debt of in the high teens on a sustained basis.

Factors that Could Lead to an Downgrade

We may stabilize the outlook should the IIP implementation fails to realize tangible benefits in terms of reduced regulatory lag, improved ROE, and higher financial metrics. We could also take negative rating action should the utility's CFO pre-WC to debt ratio falls to the low-teen's range for an extended period of time.

The principal methodology used in these ratings was Regulated Electric and Gas Utilities published in June 2017. Please see the Rating Methodologies page on www.moodys.com for a copy of this methodology.

REGULATORY DISCLOSURES

For ratings issued on a program, series or category/class of debt, this announcement provides certain regulatory disclosures in relation to each rating of a subsequently issued bond or note of the same series or category/class of debt or pursuant to a program for which the ratings are derived exclusively from existing ratings in accordance with Moody's rating practices. For ratings issued on a support provider, this announcement provides certain regulatory disclosures in relation to the credit rating action on the support provider and in relation to each particular credit rating action for securities that derive their credit ratings from the support provider's credit rating. For provisional ratings, this announcement provides certain regulatory disclosures in relation to the provisional rating assigned, and in relation to a definitive rating that may be assigned subsequent to the final issuance of the debt, in each case where the transaction structure and terms have not changed prior to the assignment of the definitive rating in a manner that would have affected the rating. For further information please see the ratings tab on the issuer/entity page for the respective issuer on www.moodys.com.

For any affected securities or rated entities receiving direct credit support from the primary entity(ies) of this credit rating action, and whose ratings may change as a result of this credit rating action, the associated regulatory disclosures will be those of the guarantor entity. Exceptions to this approach exist for the following disclosures, if applicable to jurisdiction: Ancillary Services, Disclosure to rated entity, Disclosure from rated entity.

Regulatory disclosures contained in this press release apply to the credit rating and, if applicable, the related rating outlook or rating review.

Please see www.moodys.com for any updates on changes to the lead rating analyst and to the Moody's legal entity that has issued the rating.

Please see the ratings tab on the issuer/entity page on www.moodys.com for additional regulatory disclosures for each credit rating.

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MOODY'S
INVESTORS SERVICE

S&P Global
Ratings

Exelon Corp. And Subsidiaries Outlooks Revised To Positive, Ratings Affirmed On Expectation For Reduced Business Risk

02-Aug-2018 14:10 EDT
View Analyst Contact Information

Exelon's second quarter financial results and the quality of the company's cash flow continue to gradually improve reflecting solid management of regulatory risk, growth of its lower risk regulated utilities, and the stability of the zero emission credits (ZECs).
We are revising our outlooks on Exelon Corp. and its subsidiaries to positive from stable and are affirming all of our ratings on the companies.
The positive outlook reflects our expectation for reduced businesses risk, which is consistent with the rising proportion of Exelon's cash flow that it generates from its lower-risk utility operations, and less volatile ZECs. In addition, we expect the company's financial measures to consistently remain in the higher half of the range for our current assessment of its financial risk profile, including a funds from operations (FFO)-to-debt ratio of about 19%.

NEW YORK (S&P Global Ratings) Aug. 2, 2018--S&P Global Ratings today revised its outlooks on Exelon Corp. and its subsidiaries Commonwealth Edison Co. (ComEd), PECO Energy Co. (PECO), Exelon Generation Co. LLC (ExGen), Pepco Holdings LLC (PHI), Potomac Electric Power Co. (Pepco), Atlantic City Electric Co. (ACE), Delmarva Power & Light Co. (Delmarva), and Baltimore Gas and Electric Co. (BGE) to positive from stable and affirmed all of its ratings on the companies.

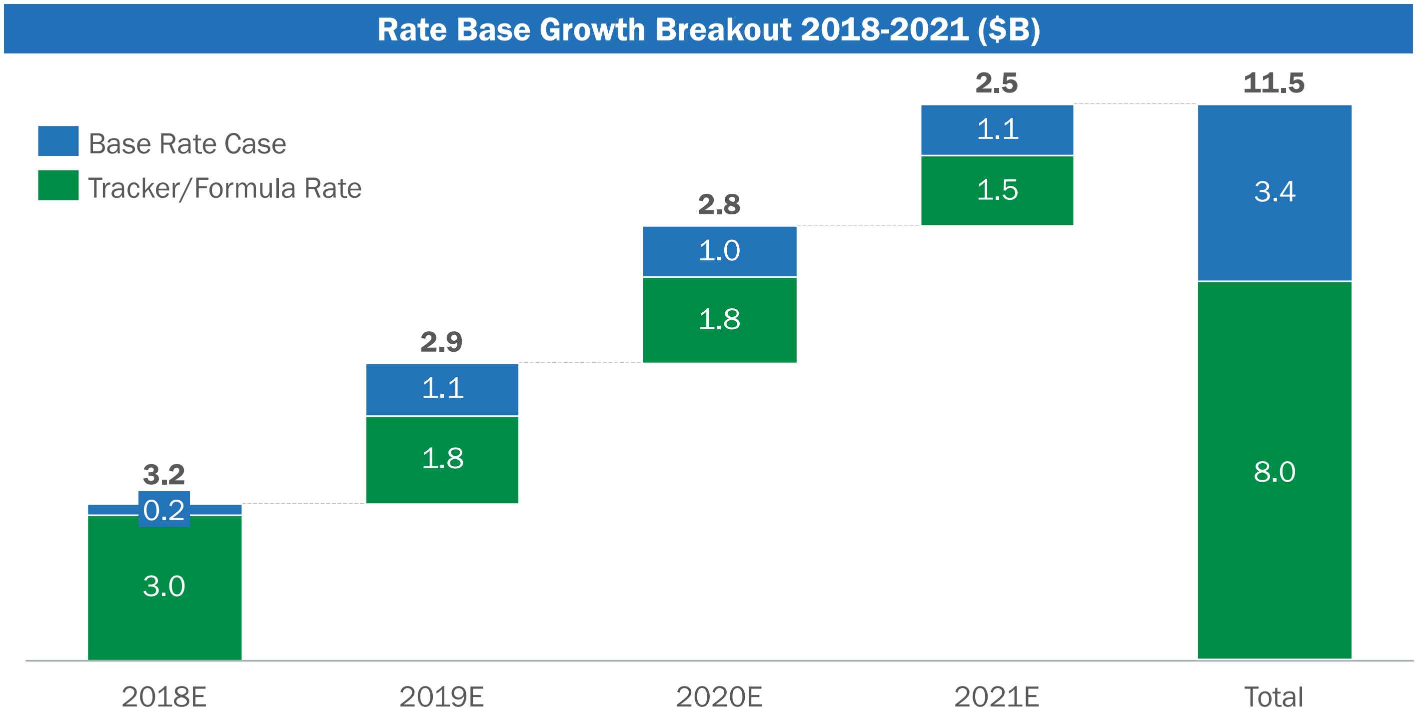
The positive outlook reflects our expectation that Exelon will continue to gradually reduce its business risk while maintaining financial measures that are consistently in the higher half of the range for its financial risk profile category. Exelon's second-quarter results were in line with these expectations.

The positive outlook reflects our expectation for reduced businesses risk, which is consistent with the rising proportion of Exelon's cash flow that it generates from its lower-risk utility operations, and less volatile ZECs. Overall, we expect that these components will reflect about 75% of consolidated EBITDA. In addition, we expect the company's financial measures to consistently remain in the higher half of the range for our current assessment of its financial risk profile, reflecting a funds from operations (FFO)-to-debt ratio of about 19%.

We could affirm our ratings on Exelon and revise the outlook to stable over the next 12-18 months if the company's financial performance weakens, reflecting FFO-to-debt consistently below 19%. We could also affirm the ratings and revise the outlook to stable if Exelon's management of regulatory risk weakens or if its regulated utilities and ZECs do not consistently account for about 75% of its consolidated EBITDA.

We could raise our rating on Exelon and its subsidiaries by one notch within the next few quarters if the company's lower-risk regulated utilities and ZECs consistently account for about 75% of its consolidated EBITDA, it continues to effectively manage its regulatory risk, and it maintains its current financial performance, reflecting an FFO-to-debt ratio of about 19%.

Mechanisms Cover Bulk of Rate Base Growth



Of the approximately $11.5 billion of rate base growth Exelon Utilities forecasts over the next 4 years, ~70% will be recovered through existing formula and tracker mechanisms

Note: Numbers may not add due to rounding

Exelon.

However, the Board was concerned with the size of the proposed Energy Strong program, the uncertainty surrounding costs, and risks to reliability during certain phases of construction that could expose customers to the significant risk of cost overruns and degradation in reliability.

Additionally, the Board was concerned with the Company's cost estimates for many of the proposed hardening measures, as well as with the length of the program as proposed, and with the lack of any metrics for evaluation of the Company's performance under the Energy Strong program.

The Board is persuaded that the Energy Strong Program, as modified by the terms of the Stipulation, addresses these concerns. A three-year gas and electric infrastructure program, rather than the five-year program as proposed, strikes a more appropriate balance between cost and risk. As detailed below, the Stipulation recommends that the program investment level be capped at $1 billion, with electric programs capped at $600 million and gas programs capped at $400 million.

The Board agrees that "hardening" is required of certain of the Company's switching and substations along with acceleration of certain investments in other areas of the electric system to help with overall reliability and to improve storm response measures. Likewise, the Board agrees that certain investments in the Company's gas system, if properly executed, should mitigate potential damage to the system from Major Storms and other water intrusion events. These investments include replacement of utilization pressure cast iron mains and associated services with higher pressure plastic or cathodically protected steel mains and services in areas that were flooded during the 2011 and 2012 Major Storms.

With respect to cost recovery, the Board is persuaded that the mechanism proposed in the Stipulation allows the Company rate recovery for all expenditures related to facilities that have been placed in service, but on a provisional basis, subject to refund. These costs will be subject to review in the base rate case that the Company has committed to file by November 1, 2017.

Therefore, the Board believes the cost recovery mechanism adopted in the Stipulation strikes a more effective balance between giving the Company a reasonable opportunity to earn its allowed rate of return over the life of its investment while still protecting ratepayers from paying more than is reasonably necessary. First, no rates will be charged to customers until the facilities for which the rates are being charged are in service. This contrasts with the original proposal calling for contemporaneous recovery. Second, there will be no deferred cost recovery allowed so that the Company will not book returns between the time the plant goes into service and the rates go into effect. The stipulation permits the Company to place rates into effect annually with respect to investments in gas infrastructure and every six months with respect to electric infrastructure. The shorter period for rate adjustments for electric investments reflects the greater investments and the fact that certain of the electric investments such as the raising of substations, are considered "lumpy" in that the dollars invested do not typically follow a smooth path—e.g., x amount per month. Because the Stipulation does not provide for deferred cost accounting, it is appropriate to include rate relief on a more frequent basis.

The Board is also persuaded that the reduced return on common equity from that approved by the Board in the Company's 2009 Base Rate Case is reasonable in light of the recovery of costs from ratepayers on a more contemporaneous basis which reduces the risk of recovery of capital invested during the time between rate cases. The metrics and reporting requirements provide a means to maintain accountability and oversight of the execution of the modified Energy Strong Program.

its current policies and practices with regard to capitalizing costs, including overheads.

Net Investment - Is equal to the Energy Strong Investment Costs that have been placed into service less the associated accumulated depreciation less accumulated deferred income taxes.

WACC –Although PSE&G's Board-authorized return on equity ("ROE") is 10.3%, Public Service agrees that the return on the incremental investments undertaken in Energy Strong Program at issue in this proceeding shall be at a weighted average cost of capital including a 9.75% return on common equity and a 4.60% cost of debt (the Company's Long-term debt as of March 31, 2014). The portion of debt and equity in the capital structure shall be as determined in the Company's 2009 Base Rate Case (Equity: 51.2%, Debt: 48.8%). This results in a WACC of 7.24% at current tax rates.

The rate base roll-ins will be calculated using the following formula:

Revenue Requirement = ((Energy Strong Rate Base * After Tax WACC) + Depreciation Expense (net of tax) + Tax Adjustments)* Revenue Factor

i. Energy Strong Rate Base – The Energy Strong Rate Base will be calculated as Plant in Service, including CWIP transferred into service and associated AFUDC, less accumulated depreciation and less associated accumulated deferred income taxes. AFUDC will be calculated using the same methodology used for current distribution assets consistent with the Company's AFUDC policy, and as permitted by FERC Order 561, which includes compounding AFUDC on a semi-annual basis.

ii. Depreciation Expense – Depreciation expense will be calculated as the Energy Strong Investment Costs by asset class multiplied by the associated depreciation rate applied to the same asset in current base rates and then calculated net of tax.

iii. Tax Adjustments - Includes the effects of any flow through items and any tax law changes codified by the Internal Revenue Service, the State of New Jersey or any other taxing authority.

iv. Revenue Factor – The Revenue Factor adjusts the Revenue Requirement Net of Tax for federal and state income taxes and the costs associated with the BPU and Rate Counsel (RC) Annual Assessments and Gas Revenue Uncollectibles. The then-current statutory state and federal income tax rates and the then-current BPU/RC Assessment rates will be utilized. The percentage used to calculate the gas uncollectible expense is based upon the percentage determined in the Company's latest base rate case.

ROE and ROR Analysis for Atlantic City Electric Co. | **Docket No. EO18020196**
Comparison Group Selection | **Exhibit MFG-8**
Value Line Electric Utilities
Electric Utilities (Central), June 15, 2018; Electric Utilities (West), July 27, 2018; Electric Utilities (East), August 17, 2018

Company	**Ticker**	**Exchange**	**Paying Dividend Five Years**	**Merger or Acquisition, Other**	**Foreign company or operating outside 48 contiguous states**
ALLETE, Inc.	ALE	NYSE	Yes		
Alliant Energy Corporation	LNT	NYSE	Yes		
Ameren Corporation	AEE	NYSE	Yes		
American Electric Power Co., Inc.	AEP	NYSE	Yes		
Avangrid, Inc.	AGR	NYSE	**No****		
Avista Corporation	AVA	NYSE	Yes	Target of Hydro One ***	
Black Hills Corporation	BKH	NYSE	Yes		
CenterPoint Energy, Inc.	CNP	NYSE	Yes	Acquiring Vectren*****	
CMS Energy Corporation	CMS	NYSE	Yes		
Consolidated Edison, Inc.	ED	NYSE	Yes		
Dominion Resources, Inc.	D	NYSE	Yes	Acquiring SCANA****	
DTE Energy Company	DTE	NYSE	Yes		
Duke Energy Corporation	DUK	NYSE	Yes		
Edison International	EIX	NYSE	Yes	Company faces liability exposure for 2017 wildfires.	
El Paso Electric Company	EE	NYSE	Yes		
Entergy Corporation	ETR	NYSE	Yes		
Eversource Energy	ES	NYSE	Yes		
Exelon Corporation	EXC	NYSE	Yes		
FirstEnergy Corp.	FE	NYSE	Yes		
Fortis Inc.	FTS	TSX	Yes		Canadian company with U.S. assets*
Hawaiian Electric Industries, Inc.	HE	NYSE	Yes		Operates in Hawaii*
IDACORP, Inc.	IDA	NYSE	Yes		
MGE Energy, Inc.	MGEE	NASDAQ	Yes		
NextEra Energy, Inc.	NEE	NYSE	Yes		
NorthWestern Corporation	NWE	NYSE	Yes		
OGE Energy Corp.	OGE	NYSE	Yes		
Otter Tail Corporation	OTTR	NASDAQ	Yes		
PG&E Corporation	PCG	NYSE	**Suspended December 20, 2017**	Company faces liability exposure for 2017 wildfires. Dividend suspension related to liability exposure.	
Pinnacle West Capital Corporation	PNW	NYSE	Yes		
PNM Resources, Inc.	PNM	NYSE	Yes		
Portland General Electric Company	POR	NYSE	Yes		
PPL Corporation	PPL	NYSE	Yes		
Public Service Enterprise Group Inc	PEG	NYSE	Yes		
SCANA Corporation	SCG	NYSE	Yes*****	Dominion acquiring SCANA****	
Sempra Energy	SRE	NYSE	Yes		
Southern Company	SO	NYSE	Yes		
Unitil Corporation	UTL	Amex	Yes		
Vectren Corporation	VVC	NYSE	Yes	CenterPoint acquiring Vectren*****	
WEC Energy Group, Inc.	WEC	NYSE	Yes		
Westar Energy, Inc.	WR	NYSE	Yes	Merger with Great Plains Energy completed. New holding company Evergy	
Xcel Energy Inc.	XEL	NYSE	Yes		

Exelon is eliminated because it is the parent company of ACE.

Company eliminated because it has not yet paid dividends for three years.

Companies eliminated because of proposed merger/acquisition.

Companies eliminated because of not having main operations in contiguous 48 states.

Companies eliminated because of unusual liability exposure due to wildfires.

*See Workpapers 48 States for Exhibit MFG-8

*****-Dominion acquiring SCANA.

**See Workpapers Mergers, Dividends for Exhibit MFG-

*****-CenterPoint acquiring Vectren

***-Washington UTC agreement in principle

S&P Global

Westar, Great Plains complete merger of equals, form Evergy

Monday, June 4, 2018 3:52 PM CT

By Usman Khalid

The $15 billion stock-for-stock merger of Midwest electric utilities Westar Energy Inc. and Great Plains Energy Inc. completed June 4 to create new holding company Evergy Inc.

According to the merger agreement between the two companies, Westar Energy shareholders received one validly issued, fully paid and nonassessable common share of the new holding company against one Westar share. One Great Plains Energy share was converted into the right to convert into 0.5981 of an Evergy common share.

After approvals from the regulators of their respective service areas in Kansas and Missouri, the merger closed with Westar shareholders owning approximately 52.5% and Great Plains Energy shareholders owning approximately 47.5% of the combined company. The new company will become a member of the S&P 500 index and trade on the NYSE under the symbol EVRG beginning June 5. The two predecessor companies were members of the S&P MidCap 400 index.

The new company will be headquartered in Kansas City, Mo., with operational headquarters there and in Topeka, Kan.

Following the merger, Mollie Carter, Charles Chandler IV, Richard Hawley, Anthony Isaac, Sandra Lawrence, Mark Ruelle and Carl Soderstrom Jr. from the Westar board of directors were appointed to the new company's board. They were joined by Terry Bassham, Gary Forsee, Scott Grimes, Thomas Hyde, Ann Murtlow, Sandra Price and John Sherman from the Great Plains board of directors.

The top management includes Terry Bassham from Great Plains as president and CEO; Jerl Banning from Westar as senior vice president and chief people officer; Kevin Bryant from Great Plains as executive vice president and COO; Steven Busser from Great Plains as vice president and risk management and controller; Charles Caisley from Great Plains as senior vice president of marketing and public affairs and chief customer officer; Gregory Greenwood from Westar as executive vice president of strategy and chief administrative officer; Heather Humphrey from Great Plains as senior vice president and general counsel and corporate secretary; and Anthony Somma from Westar as executive vice president and CFO.

Both companies filed a revised merger plan after Great Plains had extended an offer to acquire the neighboring Westar in a $12.2 billion buyout that included $3.6 billion of assumed debt, but the Kansas Corporation Commission struck the deal down on the basis that it was not in the best public interest.

News > **Environment & Science**

3

Wildfires: Utility blocked from charging customers for wildfire costs

(Kent Porter/The Press Democrat via AP)
Gordon Easter and finance Gail Hale embrace as they return to their home on Hopper Lane in Coffey Park, Friday Oct. 20, 2017 in Santa Rosa, Calif.

By **PAUL ROGERS** | progers@bayareanewsgroup.com | Bay Area News Group
PUBLISHED: November 30, 2017 at 10:13 am | UPDATED: December 1, 2017 at 3:28 am

In a closely watched decision that could impact whether PG&E customers are on the hook for billions in costs related to the Napa-Sonoma fires if the utility is found at fault, the California Public Utilities Commission on Thursday denied a request from San Diego Gas & Electric to charge its ratepayers $379 million after investigators found its power lines sparked three huge fires in 2007.

By a 5-0 vote, the commissioners said that the San Diego utility had not operated its electrical system in a “reasonable and prudent” manner when the fires began, as state law requires.

As a result, the commissioners ruled, San Diego Gas & Electric’s shareholders, not its customers, must absorb the costs.

“There’s no dispute that each of the fires was caused by SDG&E facilities,” said Commissioner Liane Randolph. “And in each instance we find that SDG&E did not meet its burden to show that it acted as a prudent manager.”

Over the past three months, California’s three largest utilities — PG&E, San Diego Gas & Electric and Southern California Edison — have lobbied the commission furiously to allow the San Diego utility to pass along the costs to its customers. With climate change and more people moving into fire-prone areas, the utilities say, it’s becoming more difficult for them to find enough insurance to cover the risk.

They have also noted that courts have found that utilities can be held liable if their power lines, transformers or other equipment cause wildfires that can burn thousands of homes and kill dozens of people, even if they were not negligent, a legal concept known as “inverse condemnation.”

On Thursday, San Diego Gas & Electric said the fires weren’t its fault.

“SDG&E strongly disagrees with today’s decision. The CPUC got it wrong,” said Lee Schavrien, the utility’s senior vice president and chief regulatory officer. “The 2007 wildfires were a natural disaster fueled by extreme conditions, including the worst Santa Ana wind event this region has ever seen.”

But consumer groups and some elected officials have argued that letting utilities pass along the costs of wildfires caused by power lines to their customers increases the likelihood of wildfires because the monopolies would be less likely to spend money to improve safety, to properly maintain their lines and to shut off electricity during extreme conditions.

“I am relieved that the CPUC made the right decision to shield ratepayers from being burdened with the costs of the 2007 San Diego wildfires that were caused because San Diego Gas & Electric didn’t reasonably manage its power lines,” said state Sen. Jerry Hill, D-San Mateo.

Hill, chairman of a key state Senate subcommittee on gas, electricity and transportation safety, said Thursday's decision is important in the wake of October's devastating Napa and Sonoma County wildfires.

"If the commission had sided with the utility companies, it could have set a dangerous precedent for the future of disaster cost recovery," Hill said.

In this Oct. 9 file photo, a firefighter sprays a hose into a Keysight Technologies building in Santa Rosa. (AP Photo/Jeff Chiu)

In one of the worst disasters in modern California history, a series of fires that began Oct. 8 in Napa, Sonoma, Mendocino and other Northern California counties burned more than 245,000 acres, destroyed 8,900 homes and killed 44 people.

Cal Fire has not yet determined how the blazes started, but agency investigators are looking at whether power lines owned by PG&E were at fault for some of the fires, which were spread by windy conditions. The utility has told investors it faces massive liabilities if it is found to have caused the fires.

According to a review of emergency radio traffic by the Bay Area News Group, dispatchers sent fire crews to at least 10 different locations across Sonoma County over a 90-minute period starting at 9:22 pm on Oct. 8 — the time the first fires were reported — to respond to 911 calls and other reports of sparking wires, exploding transformers and problems with the county's electrical system amid high winds.

"Extreme weather and catastrophic wildfires pose real risks to our entire state," PG&E said in a statement Thursday after the PUC's decision. "To address these growing risks and those posed by the impacts of climate change, we must work together to find the right solutions. Wildfires and the way they are treated currently have real-world and potentially long-term impacts on the operations, risk management and financial standing of every energy company in the state."

PG&E's share price has fallen 22 percent since the October fires. It has $800 million in liability insurance to cover the fires, but on Monday in a regulatory filing it noted that state Insurance Commissioner Dave Jones estimated four weeks ago that the insured losses from the California wildfires so far total $3 billion.

"The estimate does not account for uninsured losses, interest, attorneys' fees, fire suppression costs, evacuation costs, medical expenses, personal injury and wrongful death damages or other costs," PG&E said in the documents filed with the Securities and Exchange Commission.

An aerial view from Oct. 14, 2017 shows the devastation of the Coffey Park neighborhood after a wildfire swept through it in Santa Rosa, Calif. (AP Photo/Marcio Jose Sanchez,) (AP Photo/Marcio Jose Sanchez)

The San Diego fires a decade ago were massive.

The Witch and Guejito fires in October 2007 combined to burn 197,000 acres. They killed two people, injured 40 firefighters and destroyed 1,141 homes and 239 vehicles. The Rice fire that same month burned 9,472 acres and destroyed 206 homes. It was caused by a dead tree limb falling on power lines.

The PUC ruled that San Diego Gas & Electric did not trim back trees as required by state law in the Rice fire — and that the utility was at fault in the other two. In the Witch fire, the power line that caused the fire shorted three times in three hours, investigators found, creating sparks, and it took the utility more than six hours to turn off its electricity.

After the fires, the utility faced $5.6 billion in legal claims. It settled approximately 2,500 lawsuits from people who suffered damages, bringing its costs down to $2.4 billion. The $379 million it sought to charge ratepayers are costs not covered by its insurance.

In August, two PUC administrative law judges disagreed with the utility's claim that the fires were beyond its control. The judges, S. Pat Tsen and Sasha Goldberg, concluded that the utility "did not reasonably manage and operate its facilities" and thus could not pass along costs to ratepayers.

PUC commissioners agreed Thursday, upholding their ruling, although PUC President Michael Picker called it "a close call" and said the state Legislature should pass a law to allow the commission to divide up liability when there are multiple causes in fires sparked by power lines.

"The result here is quite clear. We can't apply a standard that provides an incentive for a utility to act imprudently or unreasonably," said Commissioner Cliff Rechtschaffen. "That would send precisely the wrong signals to the utilities."

Calif. lawmakers send wildfire bill to governor as regional grid bill dies

Saturday, September 1, 2018 3:32 PM CT

By Garrett Hering

It was a split decision for two marquee measures on the last day of California's 2017-2018 legislative session.

Just ahead of an Aug. 31 midnight deadline, lawmakers passed a proposal, Senate Bill 901, intended to reduce the growing risk of wildfires in the state and limit fire-related costs for utilities and their customers. Meanwhile, legislation that would have enabled the California ISO to transition into a regional transmission organization for the western United States failed to come up for a floor vote as time lapsed.

Ratepayer advocacy groups blasted the wildfire bill as a bailout for PG&E Corp. utility Pacific Gas and Electric Co. and Edison International's Southern California Edison Co., which are at the center of investigations and lawsuits over their roles in igniting some of the state's worst-ever wildfires in 2017.

But bill backers and a legislative analysis highlighted the measure's ratepayer protection aspects.

"Make no mistake – Senate Bill 901 is necessary," Sen. Bill Dodd, a Napa Valley Democrat who introduced the legislation in 2018 after fires scorched California's wine country in October 2017, said in a news release. "Without it, ratepayers will be left holding the bag and communities will needlessly suffer."

"We have worked hard to make sure we do the right thing in our response to the devastating wildfires that ravaged our state and to protect ourselves from future catastrophes," Assemblymember Chris Holden added in an emailed statement. "Senate Bill 901 provides comprehensive safety solutions to protect ratepayers, make our electric system safer, and stabilize the utilities."

'A common-sense solution'

The measure authorizes the California Public Utilities Commission to issue financing orders to support the issuance of "recovery bonds to finance costs, in excess of insurance proceeds, incurred... by an electrical corporation, excluding fines and penalties, related to wildfires." The financing, which applies to 2017 and future fires, would be underpinned by asset-backed securities in the form of dedicated fees on utility bills.

"The bonds could help reduce bill shock by allowing the payments of the expenses (plus interest) to be spread over a longer time period," legislative analysts William Craven and Nidia Bautista wrote. Without the recovery bonds, utilities could face higher borrowing costs or even bankruptcy, Dodd said, echoing concerns voiced by PG&E.

The bill also authorizes spending $200 million each year through the 2023-2024 fiscal year from the state's greenhouse gas reduction fund to improve forest health and prevent future fires.

The Senate approved the bill on a bipartisan 29-4 vote, while the Assembly passed the measure with a 49-14 margin.

Gov. Jerry Brown, who encouraged lawmakers to address issues related to utilities' fire liabilities, is expected to sign the bill. The measure, however, did not address the thorny legal issue of utility liability for wildfires caused by their electrical equipment, even if the utilities were in compliance with state laws. In June, PG&E Corp. CEO Geisha Williams said she saw no upper limit to the the company's fire liabilities. A bill that proposed to reform the issue of liability failed earlier in August.

In an email, a PG&E official nevertheless praised the bill's passage as "a common-sense solution that puts the needs of wildfire victims first, better equips California to prevent and respond to wildfires, protects electric customers and preserves progress toward California's clean energy goals." The utility called for "ongoing investment in climate resiliency and clean energy, and to combat the devastating threat that extreme weather and climate change pose to our state's shared energy future."

Clock expires on regional grid bill – again

For the second consecutive year, time ran out on Assembly Bill 813, an initiative backed by Gov. Brown, the California ISO and numerous clean energy and environmental groups, to transition the grid operator into a multi-state regional transmission organization for the West.

The proposal stumbled in part due to ongoing fears over federal intervention, the loss of state control over the ISO and doubts over favorable cost analyses of regionalization. Among the opponents were California's municipal utilities, including the Los Angeles Department of Water and Power, the Sierra Club and ratepayer advocates.

A spokesman for the Natural Resources Defense Council, which backed the bill, called it a "temporary setback" and said proponents "will keep pushing for changes to the fragmented western grid." While the western energy imbalance market has already created an expanding real-time energy market, with benefits totaling more than $400 million, a fully integrated western power grid would be even more beneficial, supporters said.

The proposal could "reduce Californians' utility bills by up to $1.5 billion annually per year, and boost renewable energy production to meet the state's climate and clean energy goals," the NRDC spokesman said.

PG&E Corporation

Dividend Payments

On December 20, 2017, the Board of Directors of PG&E Corporation determined to suspend the quarterly cash dividend on the Corporation's common stock, beginning with the fourth quarter of 2017, citing uncertainty related to causes and potential liabilities associated with the extraordinary October 2017 Northern California wildfires.

In addition, the Board of Directors of the Corporation's utility subsidiary, Pacific Gas and Electric Company, determined to suspend the dividend on the utility's preferred stock, beginning with the three-month period ending Jan. 31, 2018, citing the same uncertainty.

No causes have yet been identified for any of the unprecedented wildfires, which continue to be the subject of ongoing investigations.

However, California is one of the only states in the country in which courts have applied inverse condemnation to events caused by utility equipment. This means that if a utility's equipment is found to have been a substantial cause of the damage in an event such as a wildfire – even if the utility has followed established inspection and safety rules – the utility may still be liable for property damages and attorneys' fees associated with that event.

"After extensive consideration and in light of the uncertainty associated with the causes and potential liabilities associated with these wildfires as well as state policy uncertainties, the PG&E boards determined that suspending the common and preferred stock dividends is prudent with respect to cash conservation and is in the best long-term interests of the companies, our customers and our shareholders," said PG&E Corporation Chair of the Board Richard C. Kelly.

"We fully recognize the importance of dividends and intend to revisit the issue as we get more clarity. In the meantime, PG&E is committed to working with state policymakers to address the negative investment environment that strict liability under inverse condemnation is creating for California's utilities. This ultimately hurts our customers and the state. The company also remains committed to supporting recovery and rebuilding efforts by those communities that were impacted by these devastating fires," he said.

Dividend and Stock Split History

		PAYMENT DATE		
Year	**January**	**April**	**July**	**October**
2018	-			
Dividends were suspended on December 20, 2017.				
2017	$.490	$.490	$.530	$.530
2016	$.455	$.455	$.490	$.490
2015	$.455	$.455	$.455	$.455
2014	$.455	$.455	$.455	$.455
2013	$.455	$.455	$.455	$.455
2012	$.455	$.455	$.455	$.455
2011	$.455	$.455	$.455	$.455
2010	$.420	$.455	$.455	$.455

ROE and ROR Analysis for Atlantic City Electric Co.
Comparison Group Selection
From Company 2016 10Ks

Docket No. EO18020196
Exhibit MFG-13
Amounts in thousands of dollars (000)

		Regulated Electricity Income*,**, ***			Company Income*,**,***			Electricity as % of Company*,**, ***				
Name	**SIC Code**	**2017**	**2016**	**2015**	**2017**	**2016**	**2015**	**2017**	**2016**	**2015**	**Average % Electricity**	**Source: 2017 10K Pages**
Entergy Corporation*	4911	773,148	1,151,133	1,114,516	425,353	(564,503)	(156,734)	181.8%	-203.9%	-711.1%	-244.4%	P. 2, 8
Black Hills Energy**	4911	110,082	85,827	77,579	191,270	82,631	(32,110)	57.6%	103.9%	-241.6%	-26.7%	P. 119-121
FirstEnergy Corp.*	4911	1,252,000	976,100	916,000	(1,724,000)	(6,177,000)	578,000	-72.6%	-15.8%	158.5%	23.4%	P. 57
Unitil Corporation*	4931	11,900	11,100	8,700	29,000	27,100	26,300	41.0%	41.0%	33.1%	38.4%	P. 61
Sempra***	4932	4,476,000	4,253,000	4,219,000	11,207,000	10,183,000	10,231,000	39.9%	41.8%	41.2%	41.0%	P. F-146
NextEra Energy*	4911	1,880,000	1,727,000	1,648,000	5,320,000	3,005,000	2,762,000	35.3%	57.5%	59.7%	50.8%	P. 108, P. 112
MGE Energy, Inc.*	4900	47,272	46,129	41,000	97,606	75,650	71,343	48.4%	61.0%	57.5%	55.6%	P. 101
PPL Corporation*,#	4911	645,000	736,000	578,000	1,128,000	1,902,000	682,000	57.2%	38.7%	84.8%	60.2%	P. 46
WEC Energy Group, Inc. **##	4931	1,065,900	1,027,000	884,200	1,785,200	1,682,100	1,250,500	59.7%	61.1%	70.7%	63.8%	P. 117, P. 118, P. 119
DTE Energy Company*	4911	606,000	622,000	542,000	1,134,000	868,000	727,000	53.4%	71.7%	74.6%	66.6%	P. 136-137
PSEG Inc. *	4931	973,000	889,000	787,000	1,574,000	887,000	1,679,000	61.8%	100.2%	46.9%	69.6%	P. 54
ALLETE, Inc.* ###	4931	128,400	135,500	131,600	172,200	155,800	141,500	74.6%	87.0%	93.0%	74.2%	P. 35, 37, 38, 42, 76, 139
Eversource Energy*	4911	751,002	685,031	700,408	995,515	949,821	886,004	75.4%	72.1%	79.1%	75.5%	P. 71, P. 75, P. 81
Consolidated Edison, Inc.**	4931	1,962,000	1,942,000	1,901,000	2,610,000	2,575,000	2,427,000	75.2%	75.4%	78.3%	76.3%	P. 146-147
Otter Tail Corp.*	4911	49,446	49,829	48,370	72,439	62,321	59,345	68.3%	80.0%	81.5%	76.6%	P . 78
OGE Energy Corp. *	4911	305,500	284,100	268,900	619,000	338,200	271,300	49.4%	84.0%	99.1%	77.5%	P. 122-123
Ameren Corporation*	4931	454,000	483,000	475,000	523,000	653,000	579,000	86.8%	74.0%	82.0%	80.9%	P. 145-146
NorthWestern Corporation*	4931	129,709	140,823	117,102	162,703	164,172	151,209	79.7%	85.8%	77.4%	81.0%	P. F-44
CMS Energy Corporation*	4931	455,000	458,000	437,000	460,000	551,000	523,000	98.9%	83.1%	83.6%	88.5%	P. 60
American Electric Power Co.**,####	4911	1,795,300	1,735,400	1,445,300	1,928,900	1,818,500	1,768,600	93.1%	95.4%	81.7%	90.1%	P. 262-264
Duke Energy**	4931	3,210,000	3,040,000	2,819,000	3,970,000	3,215,000	2,944,000	80.9%	94.6%	95.8%	90.4%	P. 142-143
Xcel Energy Inc.*	4931	1,066,000	1,066,758	921,403	1,148,000	1,123,379	984,485	92.9%	95.0%	93.6%	93.8%	P. 153 P. 155
Alliant Energy Corporation**	4931	586,500	571,900	514,100	653,400	537,000	577,000	89.8%	106.5%	89.1%	95.1%	P. 111-112
IDACORP, Inc., Utility Ops*	4911	206,347	189,242	190,983	212,419	198,088	194,475	97.1%	95.5%	98.2%	97.0%	P. 76, 82
El Paso Electric*	4911	98,261	96,768	81,918	98,261	96,768	81,918	100.0%	100.0%	100.0%	100.0%	P. 27
Portland General Electric Company*	4911	187,000	193,000	172,000	187,000	193,000	172,000	100.0%	100.0%	100.0%	100.0%	P. 66
Pinnacle West Capital Corporation*	4911	491,000	443,000	439,000	488,456	442,034	437,257	100.5%	100.2%	100.4%	100.4%	P. 47, P. 61, P. 64
Southern Co.**	4911	878,000	2,671,000	2,401,000	842,000	2,448,000	2,367,000	104.3%	109.1%	101.4%	104.9%	P. II-150
PNM Resources, Inc.*	4911	122,972	133,610	41,370	95,419	131,896	31,078	128.9%	101.3%	133.1%	121.1%	P. B-38/B39

*-Indicates percentage of Net Income
**-Indicates percentage of Operating Income
***-Indicates percentage of Operating Revenues

#-Overstated, Kentucky Regulated includes LGE&E gas income and earnings from operations in the United Kingdom.
##-Overstated, includes Gas Operations in Wisconsin
###-Reflects adjustment for gas and water customers, 12.5% of total customers
####-Excludes $1,198 million generating loss in 2016; excludes $283.7 million income from discontinued operations in 2015

See Exhibit MFG-13 Regulated % Workpapers.

Companies eliminated due to percentage of regulated electricity operating revenue, operating income, or net income falling below designated threshold.

ROE and ROR Analysis for Atlantic City Electric Co. **Docket No. EO18020196**
Comparison Group Selection **Exhibit MFG-14**
SNL Global Market Intelligence Database, March 18, 2018

Company	Ticker	S&P Issuer Credit Rating
ALLETE, Inc.	ALE	BBB+
Alliant Energy Corporation	LNT	A-
Ameren Corporation	AEE	BBB+
American Electric Power	AEP	A-
CMS Energy Corporation	CMS	BBB+
Consolidated Edison, Inc.	ED	A-
Duke Energy	DUK	A-
El Paso Electric	EE	BBB
Eversource Energy	ES	A+
IDACORP, Inc.	IDA	BBB
NorthWestern Corporation	NWE	BBB
OGE Energy Corp.	OGE	A-
Otter Tail Corp.	OTTR	BBB
Pinnacle West Capital Corporatio	PNW	A-
PNM Resources, Inc.	PNM	BBB+
Portland General Electric Compa	POR	BBB
Southern Co.	SO	A-
Xcel Energy Inc.	XEL	A-
ACE		BBB+

Company	S&P Issuer Credit Rating
Eversource Energy	A+
Xcel Energy Inc.	A-
Southern Co.	A-
Pinnacle West Capital C	A-
OGE Energy Corp.	A-
Duke Energy	A-
Consolidated Edison, In	A-
American Electric Powe	A-
Alliant Energy Corporat	A-
ACE	**BBB+**
PNM Resources, Inc.	BBB+
CMS Energy Corporatio	BBB+
Ameren Corporation	BBB+
ALLETE, Inc.	BBB+
Portland General Electri	BBB
Otter Tail Corp.	BBB
NorthWestern Corporat	BBB
IDACORP, Inc.	BBB
El Paso Electric	BBB

Company	Ticker
ALLETE, Inc.	ALE
Alliant Energy Corporation	LNT
Ameren Corporation	AEE
American Electric Power	AEP
CMS Energy Corporation	CMS
Consolidated Edison, Inc.	ED
Duke Energy	DUK
El Paso Electric	EE
Eversource Energy	ES
IDACORP, Inc.	IDA
NorthWestern Corporation	NWE
OGE Energy Corp.	OGE
Otter Tail Corp.	OTTR
Pinnacle West Capital Corporation	PNW
PNM Resources, Inc.	PNM
Portland General Electric Company	POR
Southern Co.	SO
Xcel Energy Inc.	XEL

ROE and ROR for Atlantic City Electric
Common Equity Share Prices
July 23, 2018-August 17, 2018
Yahoo! Finance August 19, 2018

Allete (ALE)		Alliant Energy (LNT)		Ameren (AEE)		American Electric Power (AEP)	
Date	Close	Date	Close	Date	Close	Date	Close
7/23/2018	$ 77.20	7/23/2018	$ 42.18	7/23/2018	$ 60.93	7/23/2018	$ 69.44
7/24/2018	$ 77.06	7/24/2018	$ 42.19	7/24/2018	$ 61.00	7/24/2018	$ 69.06
7/25/2018	$ 76.99	7/25/2018	$ 42.12	7/25/2018	$ 61.36	7/25/2018	$ 69.38
7/26/2018	$ 78.17	7/26/2018	$ 43.06	7/26/2018	$ 62.15	7/26/2018	$ 71.04
7/27/2018	$ 77.16	7/27/2018	$ 42.94	7/27/2018	$ 61.94	7/27/2018	$ 71.14
7/30/2018	$ 76.56	7/30/2018	$ 42.31	7/30/2018	$ 61.42	7/30/2018	$ 70.40
7/31/2018	$ 77.53	7/31/2018	$ 42.97	7/31/2018	$ 62.06	7/31/2018	$ 71.14
8/1/2018	$ 76.39	8/1/2018	$ 42.37	8/1/2018	$ 61.36	8/1/2018	$ 70.30
8/2/2018	$ 76.00	8/2/2018	$ 42.47	8/2/2018	$ 61.77	8/2/2018	$ 70.49
8/3/2018	$ 75.78	8/3/2018	$ 42.76	8/3/2018	$ 62.45	8/3/2018	$ 71.18
8/6/2018	$ 76.58	8/6/2018	$ 42.91	8/6/2018	$ 62.57	8/6/2018	$ 71.27
8/7/2018	$ 76.67	8/7/2018	$ 42.59	8/7/2018	$ 62.59	8/7/2018	$ 71.24
8/8/2018	$ 77.04	8/8/2018	$ 42.47	8/8/2018	$ 62.60	8/8/2018	$ 70.93
8/9/2018	$ 77.59	8/9/2018	$ 42.78	8/9/2018	$ 62.83	8/9/2018	$ 70.98
8/10/2018	$ 77.24	8/10/2018	$ 42.72	8/10/2018	$ 62.78	8/10/2018	$ 70.85
8/13/2018	$ 77.57	8/13/2018	$ 42.72	8/13/2018	$ 62.99	8/13/2018	$ 70.94
8/14/2018	$ 78.02	8/14/2018	$ 42.73	8/14/2018	$ 63.10	8/14/2018	$ 71.02
8/15/2018	$ 77.83	8/15/2018	$ 43.02	8/15/2018	$ 63.61	8/15/2018	$ 71.77
8/16/2018	$ 78.63	8/16/2018	$ 43.44	8/16/2018	$ 64.45	8/16/2018	$ 72.34
8/17/2018	$ 78.96	8/17/2018	$ 43.59	8/17/2018	$ 64.76	8/17/2018	$ 72.50
Mean	$ 77.25		$ 42.72		$ 62.44		$ 70.87

ROE and ROR for Atlantic City Electric
Common Equity Share Prices
July 23, 2018-August 17, 2018
Yahoo! Finance August 19, 2018

CMS Energy (CMS)		Consolidated Edison, Inc. (ED)		Duke Energy (DUK)		El Paso Electric Company (EE)	
Date	Close	Date	Close	Date	Close	Date	Close
7/23/2018	$ 47.09	7/23/2018	$ 77.46	7/23/2018	$ 79.97	7/23/2018	$ 60.75
7/24/2018	$ 47.41	7/24/2018	$ 77.61	7/24/2018	$ 79.89	7/24/2018	$ 61.00
7/25/2018	$ 47.88	7/25/2018	$ 77.39	7/25/2018	$ 80.18	7/25/2018	$ 60.70
7/26/2018	$ 48.14	7/26/2018	$ 78.30	7/26/2018	$ 81.14	7/26/2018	$ 61.45
7/27/2018	$ 48.12	7/27/2018	$ 78.55	7/27/2018	$ 81.09	7/27/2018	$ 61.15
7/30/2018	$ 47.64	7/30/2018	$ 78.16	7/30/2018	$ 80.77	7/30/2018	$ 61.55
7/31/2018	$ 48.34	7/31/2018	$ 78.93	7/31/2018	$ 81.62	7/31/2018	$ 62.30
8/1/2018	$ 47.86	8/1/2018	$ 77.78	8/1/2018	$ 81.05	8/1/2018	$ 62.20
8/2/2018	$ 47.83	8/2/2018	$ 78.19	8/2/2018	$ 80.45	8/2/2018	$ 61.90
8/3/2018	$ 48.36	8/3/2018	$ 79.11	8/3/2018	$ 81.55	8/3/2018	$ 61.70
8/6/2018	$ 48.33	8/6/2018	$ 78.93	8/6/2018	$ 81.12	8/6/2018	$ 62.45
8/7/2018	$ 48.16	8/7/2018	$ 78.52	8/7/2018	$ 80.88	8/7/2018	$ 62.55
8/8/2018	$ 48.21	8/8/2018	$ 78.51	8/8/2018	$ 80.43	8/8/2018	$ 62.85
8/9/2018	$ 48.45	8/9/2018	$ 78.95	8/9/2018	$ 80.81	8/9/2018	$ 63.75
8/10/2018	$ 48.37	8/10/2018	$ 78.67	8/10/2018	$ 80.89	8/10/2018	$ 63.35
8/13/2018	$ 48.66	8/13/2018	$ 79.05	8/13/2018	$ 80.94	8/13/2018	$ 63.35
8/14/2018	$ 48.80	8/14/2018	$ 78.52	8/14/2018	$ 81.22	8/14/2018	$ 63.45
8/15/2018	$ 49.45	8/15/2018	$ 79.79	8/15/2018	$ 81.86	8/15/2018	$ 62.60
8/16/2018	$ 49.88	8/16/2018	$ 80.71	8/16/2018	$ 81.79	8/16/2018	$ 63.10
8/17/2018	$ 49.89	8/17/2018	$ 81.17	8/17/2018	$ 82.28	8/17/2018	$ 63.90
Mean	$ 48.34		$ 78.72		$ 81.00		$ 62.30

ROE and ROR for Atlantic City Electric
Common Equity Share Prices
July 23, 2018-August 17, 2018
Yahoo! Finance August 19, 2018

Eversource Energy (ES)			IDACORP, Inc. (IDA)			NorthWestern Corp. (NWE)			OGE Energy (OGE)		
Date		Close	Date		Close	Date		Close	Date		Close
7/23/2018	$	58.46	7/23/2018	$	93.16	7/23/2018	$	58.87	7/23/2018	$	35.71
7/24/2018	$	58.82	7/24/2018	$	93.37	7/24/2018	$	58.93	7/24/2018	$	35.76
7/25/2018	$	59.34	7/25/2018	$	93.63	7/25/2018	$	59.22	7/25/2018	$	35.94
7/26/2018	$	60.36	7/26/2018	$	94.95	7/26/2018	$	59.35	7/26/2018	$	36.17
7/27/2018	$	60.08	7/27/2018	$	94.17	7/27/2018	$	58.91	7/27/2018	$	36.17
7/30/2018	$	59.76	7/30/2018	$	93.33	7/30/2018	$	58.42	7/30/2018	$	35.95
7/31/2018	$	60.72	7/31/2018	$	94.24	7/31/2018	$	59.33	7/31/2018	$	36.24
8/1/2018	$	59.74	8/1/2018	$	92.90	8/1/2018	$	58.23	8/1/2018	$	35.90
8/2/2018	$	60.00	8/2/2018	$	94.25	8/2/2018	$	58.80	8/2/2018	$	36.12
8/3/2018	$	60.93	8/3/2018	$	94.12	8/3/2018	$	59.36	8/3/2018	$	36.23
8/6/2018	$	61.09	8/6/2018	$	95.17	8/6/2018	$	59.51	8/6/2018	$	36.36
8/7/2018	$	60.99	8/7/2018	$	95.17	8/7/2018	$	59.16	8/7/2018	$	36.36
8/8/2018	$	60.95	8/8/2018	$	95.49	8/8/2018	$	59.13	8/8/2018	$	36.31
8/9/2018	$	61.14	8/9/2018	$	96.66	8/9/2018	$	59.51	8/9/2018	$	36.88
8/10/2018	$	61.35	8/10/2018	$	96.20	8/10/2018	$	59.31	8/10/2018	$	36.89
8/13/2018	$	61.75	8/13/2018	$	96.44	8/13/2018	$	59.67	8/13/2018	$	36.59
8/14/2018	$	61.80	8/14/2018	$	96.64	8/14/2018	$	60.02	8/14/2018	$	36.92
8/15/2018	$	62.34	8/15/2018	$	97.23	8/15/2018	$	60.46	8/15/2018	$	36.96
8/16/2018	$	62.99	8/16/2018	$	98.42	8/16/2018	$	61.32	8/16/2018	$	37.54
8/17/2018	$	63.24	8/17/2018	$	98.91	8/17/2018	$	61.89	8/17/2018	$	37.56
	$	60.79		$	95.22	Mean	$	59.47		$	36.43

ROE and ROR for Atlantic City Electric
Common Equity Share Prices
July 23, 2018-August 17, 2018
Yahoo! Finance August 19, 2018

Otter Tail Corporation (OTTR)		Pinnacle West Capital Corp. (PNW)		PNM Resources, Inc. (PNM)		Portland General Elec. Co. (POR)	
Date	Close	Date	Close	Date	Close	Date	Close
7/23/2018	$ 47.90	7/23/2018	$ 79.16	7/23/2018	$ 37.95	7/23/2018	$ 44.35
7/24/2018	$ 47.75	7/24/2018	$ 78.98	7/24/2018	$ 37.85	7/24/2018	$ 44.48
7/25/2018	$ 47.90	7/25/2018	$ 79.75	7/25/2018	$ 38.10	7/25/2018	$ 44.81
7/26/2018	$ 48.75	7/26/2018	$ 80.96	7/26/2018	$ 38.45	7/26/2018	$ 45.33
7/27/2018	$ 47.95	7/27/2018	$ 80.66	7/27/2018	$ 38.30	7/27/2018	$ 44.83
7/30/2018	$ 47.60	7/30/2018	$ 80.25	7/30/2018	$ 38.10	7/30/2018	$ 44.97
7/31/2018	$ 48.40	7/31/2018	$ 80.43	7/31/2018	$ 39.35	7/31/2018	$ 45.36
8/1/2018	$ 47.85	8/1/2018	$ 79.58	8/1/2018	$ 38.85	8/1/2018	$ 44.75
8/2/2018	$ 48.20	8/2/2018	$ 80.05	8/2/2018	$ 39.70	8/2/2018	$ 45.27
8/3/2018	$ 48.30	8/3/2018	$ 80.32	8/3/2018	$ 39.60	8/3/2018	$ 45.62
8/6/2018	$ 48.65	8/6/2018	$ 81.13	8/6/2018	$ 39.90	8/6/2018	$ 45.88
8/7/2018	$ 48.50	8/7/2018	$ 80.89	8/7/2018	$ 39.75	8/7/2018	$ 45.75
8/8/2018	$ 48.25	8/8/2018	$ 80.88	8/8/2018	$ 39.70	8/8/2018	$ 45.84
8/9/2018	$ 48.55	8/9/2018	$ 81.31	8/9/2018	$ 39.95	8/9/2018	$ 46.23
8/10/2018	$ 48.45	8/10/2018	$ 81.30	8/10/2018	$ 39.80	8/10/2018	$ 45.70
8/13/2018	$ 48.50	8/13/2018	$ 81.21	8/13/2018	$ 39.80	8/13/2018	$ 45.74
8/14/2018	$ 48.80	8/14/2018	$ 81.37	8/14/2018	$ 40.10	8/14/2018	$ 46.22
8/15/2018	$ 48.50	8/15/2018	$ 82.10	8/15/2018	$ 39.95	8/15/2018	$ 46.64
8/16/2018	$ 49.30	8/16/2018	$ 81.70	8/16/2018	$ 40.35	8/16/2018	$ 47.27
8/17/2018	$ 49.50	8/17/2018	$ 82.27	8/17/2018	$ 40.65	8/17/2018	$ 47.37
	$ 48.38	Mean	$ 80.72	Mean	$ 39.31		$ 45.62

ROE and ROR for Atlantic City Electric
Common Equity Share Prices
July 23, 2018-August 17, 2018
Yahoo! Finance August 19, 2018

Southern Co. (SO)		Xcel Energy Inc. (XEL)	
Date	Close	Date	Close
7/23/2018	$ 47.36	7/23/2018	$ 45.28
7/24/2018	$ 47.54	7/24/2018	$ 45.54
7/25/2018	$ 47.55	7/25/2018	$ 45.69
7/26/2018	$ 48.08	7/26/2018	$ 46.88
7/27/2018	$ 47.97	7/27/2018	$ 46.59
7/30/2018	$ 47.91	7/30/2018	$ 46.29
7/31/2018	$ 48.60	7/31/2018	$ 46.86
8/1/2018	$ 48.08	8/1/2018	$ 46.39
8/2/2018	$ 48.47	8/2/2018	$ 46.60
8/3/2018	$ 48.93	8/3/2018	$ 47.18
8/6/2018	$ 48.99	8/6/2018	$ 47.28
8/7/2018	$ 49.08	8/7/2018	$ 47.20
8/8/2018	$ 46.88	8/8/2018	$ 47.32
8/9/2018	$ 46.81	8/9/2018	$ 47.64
8/10/2018	$ 46.13	8/10/2018	$ 47.53
8/13/2018	$ 46.40	8/13/2018	$ 47.53
8/14/2018	$ 46.72	8/14/2018	$ 47.46
8/15/2018	$ 47.15	8/15/2018	$ 47.90
8/16/2018	$ 47.50	8/16/2018	$ 48.17
8/17/2018	$ 46.97	8/17/2018	$ 48.29
	$ 47.66	Mean	$ 46.98

ROE and ROR Analysis for Atlantic City Electric Co.
Comparison Group
Annual Dividends

Docket No. EO18020196
Exhibit MFG-17

Name	**Value Line Reports: Central June 15, 2018; West July 27, 2018; East August 17, 2018** Value Line	**Zacks Reports August 19, 2018** Zacks	**Highest Dividend**
ALLETE, Inc.	$ 2.24	$ 2.24	$ 2.24
Alliant Energy Corporation	$ 1.34	$ 1.34	$ 1.34
Ameren Corporation	$ 1.83	$ 1.83	$ 1.83
American Electric Power, PSO	$ 2.48	$ 2.48	$ 2.48
CMS Energy Corporation	$ 1.43	$ 1.43	$ 1.43
Consolidated Edison, Inc.	$ 2.86	$ 2.86	$ 2.86
Duke Energy	$ 3.71	$ 3.71	$ 3.71
El Paso Electric	$ 1.44	$ 1.44	$ 1.44
Eversource Energy	$ 2.02	$ 2.02	$ 2.02
IDACORP, Inc.	$ 2.36	$ 2.36	$ 2.36
NorthWestern Corporation	$ 2.20	$ 2.20	$ 2.20
OGE Energy	$ 1.33	$ 1.33	$ 1.33
Otter Tail Corp.	$ 1.34	$ 1.34	$ 1.34
Pinnacle West Capital Corporation	$ 2.78	$ 2.78	$ 2.78
PNM Resources, Inc.	$ 1.06	$ 1.06	$ 1.06
Portland General Electric Company	$ 1.45	$ 1.45	$ 1.45
Southern Co.	$ 2.40	$ 2.40	$ 2.40
Xcel Energy Inc.	$ 1.52	$ 1.52	$ 1.52

ROE and ROR Analysis for Atlantic City Electric Co. **Docket No. EO18020196**
Comparison Group **Exhibit MFG-18, Schedule 1**
Common Equity Share Prices: July 23-August 17, 2018
DCF with Zacks, Yahoo! Finance, and Value Line EPS
Growth-Rate Estimates: June 2018-August 2018

	A	B	C	D
Company Name	**Zacks EPS Growth Rate (%)**	**Yahoo! Finance EPS Growth Rates (%)**	**Value Line EPS Growth Rates (%)**	**Zacks-Yahoo! Finance-Value Line Mean Growth Rate (%)**
ALLETE, Inc.*	6.00%	6.00%	5.00%	5.67%
Alliant Energy Corporation*	5.49%	5.75%	6.50%	5.91%
Ameren Corporation*	6.61%	6.60%	7.50%	6.90%
American Electric Power *	5.59%	5.59%	4.50%	5.23%
CMS Energy Corporation*	6.18%	6.97%	7.00%	6.72%
Consolidated Edison, Inc.***	3.00%	3.38%	3.00%	3.13%
Duke Energy***	4.64%	4.13%	5.50%	4.76%
El Paso Electric**	4.67%	4.70%	4.50%	4.62%
Eversource Energy***	5.93%	5.80%	5.00%	5.58%
IDACORP, Inc.**	2.78%	3.40%	3.00%	3.06%
NorthWestern Corporation**	2.27%	2.45%	3.50%	2.74%
OGE Energy*	4.82%	4.70%	6.00%	5.17%
Otter Tail Corp.*	NA	9.00%	7.50%	8.25%
Pinnacle West Capital Corp.**	4.47%	3.72%	5.00%	4.40%
PNM Resources, Inc.**	4.64%	4.45%	7.50%	5.53%
Portland General Electric**	3.13%	3.30%	4.00%	3.48%
Southern Co.***	4.50%	2.10%	3.00%	3.20%
Xcel Energy Inc.**	5.78%	5.95%	5.50%	5.74%
			Mean	5.00%
			Median	5.20%

	E	F	G	H	I
Company Name	**Average of Closing Prices**	**Annualized Dividend**	**Dividend Yield (Rate/Price)**	**Expected Dividend Yield**	**Mean Required Rate of Return on Equity**
ALLETE, Inc.*	$ 77.25	$ 2.24	2.90%	3.06%	8.73%
Alliant Energy Corporation*	$ 42.72	$ 1.34	3.14%	3.32%	9.24%
Ameren Corporation*	$ 62.44	$ 1.83	2.93%	3.13%	10.04%
American Electric Power *	$ 70.87	$ 2.48	3.50%	3.68%	8.91%
CMS Energy Corporation*	$ 48.34	$ 1.43	2.96%	3.16%	9.87%
Consolidated Edison, Inc.***	$ 78.72	$ 2.86	3.63%	3.75%	6.87%
Duke Energy***	$ 81.00	$ 3.71	4.58%	4.80%	9.55%
El Paso Electric**	$ 62.30	$ 1.44	2.31%	2.42%	7.04%
Eversource Energy***	$ 60.79	$ 2.02	3.32%	3.51%	9.08%
IDACORP, Inc.**	$ 95.22	$ 2.36	2.48%	2.55%	5.61%
NorthWestern Corporation**	$ 59.47	$ 2.20	3.70%	3.80%	6.54%
OGE Energy*	$ 36.43	$ 1.33	3.65%	3.84%	9.01%
Otter Tail Corp.*	$ 48.38	$ 1.34	2.77%	3.00%	11.25%
Pinnacle West Capital Corp.**	$ 80.72	$ 2.78	3.44%	3.60%	7.99%
PNM Resources, Inc.**	$ 39.31	$ 1.06	2.70%	2.85%	8.38%
Portland General Electric**	$ 45.62	$ 1.45	3.18%	3.29%	6.77%
Southern Co.***	$ 47.66	$ 2.40	5.04%	5.20%	8.40%
Xcel Energy Inc.**	$ 46.98	$ 1.52	3.24%	3.42%	9.16%
Mean			3.30%	3.47%	8.47%
Median			3.21%	3.37%	8.82%

A: Zacks website, August 19, 2018. See Exhibit MFG-18, Sch 1 Workpapers.
B: Yahoo! Finance website; August 19, 2018. See Exhibit MFG-18, Sch 1 Workpapers.
C: Value Line Electric Utilities (Central), June 15, 2018*; Electric Utilities (West), July 27, 2018**; Electric Utilities (East), August 17, 2018***; and Zacks Report, August 19, 2018. See Exhibit MFG-18, Sch 1 Workpapers.
E: Yahoo! Finance website: July 23-August 17, 2018 (20 trading days). See MFG-16, Pages 1-5.
F: Higher of Value Line Electric Utilities (Central), June 15, 2018*; Electric Utilities (West), July 27, 2018**; Electric Utilities (East), August 17, 2018***; and Zacks Report, August 19, 2018. See Exhibit MFG-17.

D: (A + B + C)/3 G: F/E H: G*(1+D) I: D + I

ROE and ROR Analysis for Atlantic City Electric Co. **Docket No. EO18020196**
Final Comparison Group **Exhibit MFG-18, Schedule 2**
Comparison Group ROEs versus ACE Bond Yield plus 250 basis points

Analysis Method

Comparison Group Company ROEs were compared with the interest rates of recent Atlantic City Electric Co. bonds. ACE issued 10-year bonds on April 1, 2011; August 25, 2014; and December 8, 2015. The April 1, 2011 bond had an interest rate of 4.35 percent. The August 25, 2014 bond has an interest rate of 3.375 percent. The December 8, 2015 bond has an interest rate of 3.50 percent. See O'Donnell Direct Testimony, Schedule (EMDO)-1, Page 3 of 4, ACE Basic Rate Case, Docket no. ER18060638. Taking the highest of these three interest rates, and adding 250 basis points produces an interest rate of 6.85 percent. The DCF ROE results for the companies in the Comparison Group are compared to this standard.

Company Name	Mean Required Rate of Return on Equity	Is ROE > 6.85%	Final Group-- Company Name	Mean Required Rate of Return on Equity
ALLETE, Inc.	8.73%	Yes	ALLETE, Inc.	8.73%
Alliant Energy Corporation	9.24%	Yes	Alliant Energy Corporation	9.24%
Ameren Corporation	10.04%	Yes	Ameren Corporation	10.04%
American Electric Power, PSO	8.91%	Yes	American Electric Power, PSO	8.91%
CMS Energy Corporation	9.87%	Yes	CMS Energy Corporation	9.87%
Consolidated Edison, Inc.	6.87%	Yes	Consolidated Edison, Inc.	6.87%
Duke Energy	9.55%	Yes	Duke Energy	9.55%
El Paso Electric	7.04%	Yes	El Paso Electric	7.04%
Eversource Energy	9.08%	Yes	Eversource Energy	9.08%
IDACORP, Inc.	5.61%	No	IDACORP, Inc.	Excluded
NorthWestern Corporation	6.54%	No	NorthWestern Corporation	Excluded
OGE Energy	9.01%	Yes	OGE Energy	9.01%
Otter Tail Corp.	11.25%	Yes	Otter Tail Corp.	11.25%
Pinnacle West Capital Corporation	7.99%	Yes	Pinnacle West Capital Corporation	7.99%
PNM Resources, Inc.	8.38%	Yes	PNM Resources, Inc.	8.38%
Portland General Electric Company	6.77%	No	Portland General Electric Company	Excluded
Southern Co.	8.40%	Yes	Southern Co.	8.40%
Xcel Energy Inc.	9.16%	Yes	Xcel Energy Inc.	9.16%

IDACORP, NorthWestern Corp., and Portland General Electric are eliminated from the analysis because their ROEs are less than 6.85%.

ROE and ROR Analysis for Atlantic City Electric Co. **Docket No. EO18020196**
Comparison Group **Exhibit MFG-18, Schedule 3**
Common Equity Share Prices: July 23-August 17, 2018
DCF with Value Line Dividends and Zacks, Yahoo! Finance, and
Value Line EPS Growth-Rate Estimates: June-August 2018

	A	B	C	D
Company Name	**Zacks EPS Growth Rate (%)**	**Yahoo! Finance EPS Growth Rates (%)**	**Value Line EPS Growth Rates (%)**	**Zacks-Yahoo! Finance-Value Line Mean Growth Rate (%)**
ALLETE, Inc.*	6.00%	6.00%	5.00%	5.67%
Alliant Energy Corporation*	5.49%	5.75%	6.50%	5.91%
Ameren Corporation*	6.61%	6.60%	7.50%	6.90%
American Electric Power *	5.59%	5.59%	4.50%	5.23%
CMS Energy Corporation*	6.18%	6.97%	7.00%	6.72%
Consolidated Edison, Inc.***	3.00%	3.38%	3.00%	3.13%
Duke Energy***	4.64%	4.13%	5.50%	4.76%
El Paso Electric**	4.67%	4.70%	4.50%	4.62%
Eversource Energy***	5.93%	5.80%	5.00%	5.58%
OGE Energy*	4.82%	4.70%	6.00%	5.17%
Otter Tail Corp.*	NA	9.00%	7.50%	8.25%
Pinnacle West Capital Corp.**	4.47%	3.72%	5.00%	4.40%
PNM Resources, Inc.**	4.64%	4.45%	7.50%	5.53%
Southern Co.***	4.50%	2.10%	3.00%	3.20%
Xcel Energy Inc.**	5.78%	5.95%	5.50%	5.74%
			Mean	5.39%

	E	F	G	H	I
Company Name	**Average of Closing Prices**	**Annualized Dividend**	**Dividend Yield (Rate/Price)**	**Expected Dividend Yield**	**Mean Required Rate of Return on Equity**
ALLETE, Inc.*	$ 77.25	$ 2.24	2.90%	3.06%	8.73%
Alliant Energy Corporation*	$ 42.72	$ 1.34	3.14%	3.32%	9.24%
Ameren Corporation*	$ 62.44	$ 1.83	2.93%	3.13%	10.04%
American Electric Power *	$ 70.87	$ 2.48	3.50%	3.68%	8.91%
CMS Energy Corporation*	$ 48.34	$ 1.43	2.96%	3.16%	9.87%
Consolidated Edison, Inc.***	$ 78.72	$ 2.86	3.63%	3.75%	6.87%
Duke Energy***	$ 81.00	$ 3.71	4.58%	4.80%	9.55%
El Paso Electric**	$ 62.30	$ 1.44	2.31%	2.42%	7.04%
Eversource Energy***	$ 60.79	$ 2.02	3.32%	3.51%	9.08%
OGE Energy*	$ 36.43	$ 1.33	3.65%	3.84%	9.01%
Otter Tail Corp.*	$ 48.38	$ 1.34	2.77%	3.00%	11.25%
Pinnacle West Capital Corp.**	$ 80.72	$ 2.78	3.44%	3.60%	7.99%
PNM Resources, Inc.**	$ 39.31	$ 1.06	2.70%	2.85%	8.38%
Southern Co.***	$ 47.66	$ 2.40	5.04%	5.20%	8.40%
Xcel Energy Inc.**	$ 46.98	$ 1.52	3.24%	3.42%	9.16%
Mean			3.34%	3.52%	8.90%
Median					9.01%

A: Zacks website, August 19, 2018. See Exhibit MFG-18, Sch 1 Workpapers.
B: Yahoo! Finance website; August 19, 2018. See Exhibit MFG-18, Sch 1 Workpapers.
C: Value Line Electric Utilities (Central), June 15, 2018*; Electric Utilities (West), July 27, 2018**; Electric Utilities (East), August 17, 2018***; and Zacks Report, August 19, 2018. See Exhibit MFG-18, Sch 1 Workpapers.
E: Yahoo! Finance website: July 23-August 17, 2018 (20 trading days). See MFG-16, Pages 1-5.
F: Higher of Value Line Electric Utilities (Central), June 15, 2018*; Electric Utilities (West), July 27, 2018**; Electric Utilities (East), August 17, 2018***; and Zacks Report, August 19, 2018. See Exhibit MFG-17.

D: (A + B + C)/3 G: F/E H: G*(1+D) I: D + I

Table 3.

Comparison of CBO's Current and Previous Economic Projections for Calendar Years 2018 to 2028

	2018	2019	2020	Annual Average 2018–2022	Annual Average 2023–2028	Annual Average Total, 2018–2028
	Percentage Change From Fourth Quarter to Fourth Quarter					
Real GDP[a]						
August 2018	3.1	2.4	1.7	2.1	1.7	1.9
April 2018	3.3	2.4	1.8	2.1	1.7	1.9
Nominal GDP						
August 2018	5.1	4.7	3.9	4.2	3.9	4.0
April 2018	5.2	4.5	3.9	4.2	3.9	4.0
PCE Price Index						
August 2018	2.2	2.0	2.1	2.1	2.0	2.0
April 2018	1.8	2.0	2.1	2.0	2.0	2.0
Core PCE Price Index[b]						
August 2018	2.1	2.1	2.2	2.1	2.0	2.0
April 2018	1.9	2.1	2.2	2.1	2.0	2.0
Consumer Price Index[c]						
August 2018	2.5	2.3	2.5	2.5	2.4	2.4
April 2018	2.0	2.3	2.5	2.4	2.4	2.4
Core Consumer Price Index[b]						
August 2018	2.3	2.6	2.7	2.5	2.4	2.4
April 2018	2.3	2.5	2.6	2.5	2.4	2.4
GDP Price Index						
August 2018	2.0	2.2	2.2	2.1	2.1	2.1
April 2018	1.8	2.1	2.1	2.1	2.1	2.1
Employment Cost Index[d]						
August 2018	3.4	3.6	3.6	3.5	3.1	3.3
April 2018	3.1	3.6	3.6	3.4	3.2	3.3
Real Potential GDP[a]						
August 2018	2.0	2.1	2.1	2.0	1.8	1.9
April 2018	2.0	2.1	2.1	2.0	1.8	1.9

Continued

suggest a stronger economic outlook for 2018, a similar outlook for 2019, and a weaker outlook for 2020 and the longer term (see Figure 3).[17] The Federal Reserve reports three sets of forecasts: a median, a range, and a central tendency. The range is based on the highest and lowest forecasts made by the members of the Board of Governors of the Federal Reserve System and the presidents of the Federal Reserve Banks; the central tendency is the range formed by removing the three highest and three lowest projections. For 2018, CBO's projections of real GDP growth, interest rates, and inflation are either above or near the top of the full range of Federal Reserve forecasts, and its projection of the unemployment rate is near the bottom of the full range. For 2019, by contrast, the agency's projections of real GDP growth, interest rates, inflation, and unemployment are largely within the central tendency, whereas for 2020 and the longer term, CBO's projections are somewhat weaker than those of Federal Reserve officials.

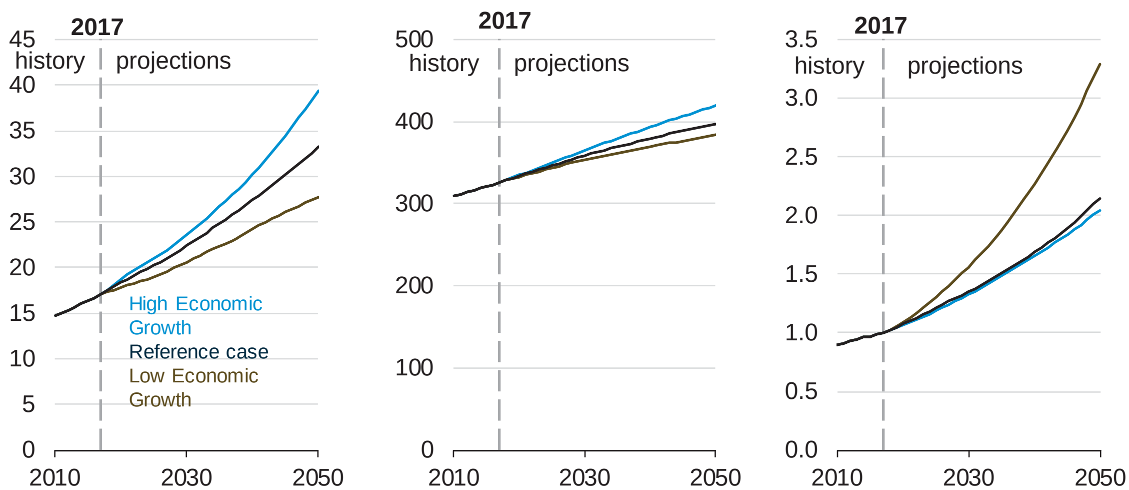
17. Board of Governors of the Federal Reserve System, "Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents Under Their Individual Assessments of Projected Appropriate Monetary Policy, June 2018" (June 13, 2018), https://go.usa.gov/xUNqg (PDF, 119 KB).

Different macroeconomic assumptions address the energy implications of the uncertainty—

Gross domestic product
trillion 2009 dollars

Population
millions

Price index (2017 = 1.0)
GDP chain-type price index



—inherent in future economic growth trends

- The Reference, High Economic Growth, and Low Economic Growth cases illustrate three possible paths for U.S. economic growth. The High Economic Growth case assumes higher annual growth and lower annual inflation rates (2.6% and 2.2%, respectively) than in the Reference case (2.0% and 2.3%, respectively), while the Low Economic Growth case assumes lower annual growth and higher annual inflation rates (1.5% and 3.7%, respectively) than in the Reference case.

- In general, higher economic growth (as measured by gross domestic product) leads to greater investment, increased consumption of goods and services, more trade, and greater energy consumption.

- Differences among the cases reflect different expectations for growth in population, labor force, capital stock, and productivity. These changes affect growth rates in household formation, industrial activity, and amounts of travel, as well as investment decisions about energy production.

- All three economic growth cases assume smooth economic growth and do not anticipate business cycles or large economic shocks.

growth than to insert a constant growth rate into the plain vanilla DCF equation. The practical challenge is to establish a reasonable growth path for future dividends. As previously discussed, an excellent starting point is security analysts' earnings growth forecasts (available from IBES, Zacks, Reuters, First Call) as a proxy for dividend forecasts. These forecasts are typically for the next five years. From the standpoint of the DCF model that extends into perpetuity, this forecasting horizon may be too short. For example, it is quite possible that a company's dividends can grow faster than the general economy for five years, but it is quite implausible for such growth to continue into perpetuity. The two-stage DCF model is based on the premise that investors expect the growth rate for the utilities to be equal to the company-specific growth rates for the next 5 years, let us say, (Stage 1 Growth), and to converge to an expected steady-state long-run rate of growth from year 6 onward (Stage 2 Growth). For example, it is quite plausible that near-term DCF growth estimates for a given company are unduly high and unsustainable over long periods, and that such growth rates are expected to decline toward a lower long-run level over time. Another example of this situation is that of companies that operate in a relatively undeveloped industry (e.g. wholesale power generation) or companies that are experiencing very high growth rates. Here again, the assumption of a constant perpetual growth rate may not be reasonable.

Blended Growth Approach

One way to account for the two stages of growth is to modify the single-stage DCF model by specifying the growth rate as a weighted average of short-term and long-term growth rates. The blended growth rate is calculated as a weighted average giving two-thirds weight to the analysts' five-year growth projections (Zacks, IBES, etc.) and one-third to historical long-term growth of the economy as a whole and/or the long-range projections of growth in Gross Domestic Product (GDP) projected for the very long term. FERC has adopted such a method in the past for determining the return on equity for gas and oil utilities.

To illustrate, two-stage DCF estimates for a group of widely traded dividend-paying diversified natural gas producers are shown on Table 9-5. Column 1 shows the spot dividend yield for each company, Column 2 shows the analyst consensus growth forecast for the next five years for each company, and column 3 shows the long-range GDP forecast of 6.5% for the U.S. economy at that time. Column 4 computes the weighed average growth, giving 2/3 weight to column 1 and 1/3 weight to column 2. Averages are shown at the bottom of the table. Adding the average blended growth rate of 9.02% to the average expected dividend yield of 2.83% shown at the bottom of Column 6 produces an estimate of equity costs of 11.85% for the group, unadjusted for flotation costs. Allowance for flotation costs to the results of Column 7 brings the return on equity estimate to 12.00%, shown in Column 7. Note

ROE and ROR Analysis for Atlantic City Electric Co. **Docket No. EO18020196**
Comparison Group **Exhibit MFG-18, Schedule 7**
Common Equity Share Prices: July 23-August 17, 2018
DCF with Value Line Dividends and Zacks, Yahoo! Finance,
and Value Line EPS Growth-Rate Estimates: June-August 2018

	A	B	C	D	E	F	G	H
Company Name	**Zacks EPS Growth Rate (%)**	**Yahoo! Finance EPS Growth Rates (%)**	**Value Line EPS Growth Rates (%)**	**Zacks-Yahoo! Finance-Value Line Mean Growth Rate (%)**	**Average of Closing Prices**	**Annualized Dividend**	**Dividend Yield (Rate/Price)**	**Expected Dividend Yield**
ALLETE, Inc.*	6.00%	6.00%	5.00%	5.67%	$ 77.25	$ 2.24	2.90%	3.06%
Alliant Energy Corporation*	5.49%	5.75%	6.50%	5.91%	$ 42.72	$ 1.34	3.14%	3.32%
Ameren Corporation*	6.61%	6.60%	7.50%	6.90%	$ 62.44	$ 1.83	2.93%	3.13%
American Electric Power *	5.59%	5.59%	4.50%	5.23%	$ 70.87	$ 2.48	3.50%	3.68%
CMS Energy Corporation*	6.18%	6.97%	7.00%	6.72%	$ 48.34	$ 1.43	2.96%	3.16%
Consolidated Edison, Inc.***	3.00%	3.38%	3.00%	3.13%	$ 78.72	$ 2.86	3.63%	3.75%
Duke Energy***	4.64%	4.13%	5.50%	4.76%	$ 81.00	$ 3.71	4.58%	4.80%
El Paso Electric**	4.67%	4.70%	4.50%	4.62%	$ 62.30	$ 1.44	2.31%	2.42%
Eversource Energy***	5.93%	5.80%	5.00%	5.58%	$ 60.79	$ 2.02	3.32%	3.51%
OGE Energy*	4.82%	4.70%	6.00%	5.17%	$ 36.43	$ 1.33	3.65%	3.84%
Otter Tail Corp.*	NA	9.00%	7.50%	8.25%	$ 48.38	$ 1.34	2.77%	3.00%
Pinnacle West Capital Corp.**	4.47%	3.72%	5.00%	4.40%	$ 80.72	$ 2.78	3.44%	3.60%
PNM Resources, Inc.**	4.64%	4.45%	7.50%	5.53%	$ 39.31	$ 1.06	2.70%	2.85%
Southern Co.***	4.50%	2.10%	3.00%	3.20%	$ 47.66	$ 2.40	5.04%	5.20%
Xcel Energy Inc.**	5.78%	5.95%	5.50%	5.74%	$ 46.98	$ 1.52	3.24%	3.42%
			Mean	5.39%			3.34%	3.52%

	I	J	K	L	M	N		
Company Name	**Long-Run Projected EPS Growth Rate = 4.0%**	**Weighted Projected Growth Rate, 4.0%**	**Weighted Cost of Equity, Long-Run Rate = 4.0%**	**Long-Run Projected EPS Growth Rate = 4.3%**	**Weighted Projected Growth Rate, 4.3%**	**Weighted Cost of Equity, Long-Run Rate = 4.3%**		
ALLETE, Inc.*	4.00%	5.11%	8.18%	4.30%	5.21%	8.28%		
Alliant Energy Corporation*	4.00%	5.28%	8.60%	4.30%	5.38%	8.70%		
Ameren Corporation*	4.00%	5.94%	9.07%	4.30%	6.04%	9.17%		
American Electric Power *	4.00%	4.82%	8.50%	4.30%	4.92%	8.60%		
CMS Energy Corporation*	4.00%	5.81%	8.97%	4.30%	5.91%	9.07%		
Consolidated Edison, Inc.***	4.00%	3.42%	7.16%	4.30%	3.52%	7.26%		
Duke Energy***	4.00%	4.50%	9.30%	4.30%	4.60%	9.40%		
El Paso Electric**	4.00%	4.42%	6.83%	4.30%	4.52%	6.93%		
Eversource Energy***	4.00%	5.05%	8.56%	4.30%	5.15%	8.66%		
OGE Energy*	4.00%	4.78%	8.62%	4.30%	4.88%	8.72%		
Otter Tail Corp.*	4.00%	4.78%	7.78%	4.30%	4.88%	7.88%		
Pinnacle West Capital Corp.**	4.00%	6.83%	10.43%	4.30%	6.93%	10.53%		
PNM Resources, Inc.**	4.00%	4.26%	7.11%	4.30%	4.36%	7.21%		
Southern Co.***	4.00%	5.02%	10.22%	4.30%	5.12%	10.32%		
Xcel Energy Inc.**	4.00%	3.47%	6.89%	4.30%	3.57%	6.99%		
								Overall
		Mean	8.41%		Mean	8.51%	Mean	8.46%
		Median	8.56%		Median	8.66%	Median	8.61%

A: Zacks website, August 19, 2018. See Exhibit MFG-18, Sch 1 Workpapers.

B: Yahoo! Finance website; August 19, 2018. See Exhibit MFG-18, Sch 1 Workpapers.

C: Value Line Electric Utilities (Central), June 15, 2018*; Electric Utilities (West), July 27, 2018**; Electric Utilities (East), August 17, 2018***; and Zacks Report, August 19, 2018. See Exhibit MFG-18, Sch 1 Workpapers.

E: Yahoo! Finance website: July 23-August 17, 2018 (20 trading days). See MFG-16, Pages 1-5.

F: Higher of Value Line Electric Utilities (Central), June 15, 2018*; Electric Utilities (West), July 27, 2018**; Electric Utilities (East), August 17, 2018***; and Zacks Report, August 19, 2018. See Exhibit MFG-17.

I: Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2018 to 2028,* Table 3, August 2018, www.cbo.gov/publication/52801. See Exhibit MFG-18, Schedule 4.

L: Energy Information Administration, *Annual Energy Outlook 2018, Macroeconomic Indicators* (Real GDP Growth + GDP Chain-Type Index Increase 2018-2050), https://www.eia.gov/analysis/projection-data.php#annualproj. See Exhibit MFG-18, Schedule 5.

D: = (A + B + C)/3 H: = G*(1+(0.5*J)) J: = 2/3*D + 1/3*J M: = 2/3*D + 1/3*M
G: = F/E K: = H + J N: = H + M

ROE and ROR Analysis for Atlantic City Electric Co.
CAPM Analysis
Risk-Free Rate

Docket No. EO18020196
Exhibit MFG-19, Schedule 1

Daily Treasury Yield Curve Rates

July 23-August 17, 2018

Date	1 mo	3 mo	6 mo	1 yr	2 yr	3 yr	5 yr	7 yr	10 yr	20 yr	30 yr
7/23/2018	1.88	1.99	2.19	2.42	2.64	2.72	2.83	2.92	2.96	3.04	3.10
7/24/2018	1.92	2.02	2.19	2.42	2.63	2.74	2.83	2.91	2.95	3.02	3.08
7/25/2018	1.90	2.01	2.20	2.42	2.66	2.74	2.82	2.90	2.94	3.00	3.06
7/26/2018	1.89	1.99	2.19	2.41	2.69	2.78	2.86	2.95	2.98	3.05	3.10
7/27/2018	1.90	2.00	2.20	2.43	2.67	2.76	2.84	2.92	2.96	3.03	3.09
7/30/2018	1.91	2.04	2.21	2.43	2.66	2.77	2.85	2.94	2.98	3.05	3.11
7/31/2018	1.94	2.03	2.21	2.44	2.67	2.77	2.85	2.92	2.96	3.03	3.08
8/1/2018	1.93	2.03	2.22	2.45	2.67	2.78	2.87	2.96	3.00	3.07	3.13
8/2/2018	1.89	2.02	2.22	2.45	2.66	2.76	2.85	2.93	2.98	3.06	3.12
8/3/2018	1.90	2.01	2.23	2.43	2.63	2.74	2.82	2.91	2.95	3.03	3.09
8/6/2018	1.92	2.05	2.23	2.44	2.64	2.73	2.80	2.89	2.94	3.02	3.08
8/7/2018	1.96	2.06	2.23	2.45	2.68	2.76	2.84	2.92	2.98	3.06	3.12
8/8/2018	1.93	2.06	2.24	2.44	2.68	2.77	2.83	2.92	2.96	3.05	3.12
8/9/2018	1.91	2.06	2.25	2.44	2.64	2.74	2.80	2.89	2.93	3.01	3.08
8/10/2018	1.92	2.05	2.23	2.42	2.61	2.68	2.75	2.82	2.87	2.96	3.03
8/13/2018	1.93	2.06	2.22	2.42	2.61	2.68	2.75	2.82	2.88	2.97	3.05
8/14/2018	1.96	2.08	2.25	2.44	2.63	2.71	2.77	2.84	2.89	2.98	3.06
8/15/2018	1.96	2.07	2.23	2.45	2.61	2.68	2.73	2.81	2.86	2.95	3.03
8/16/2018	1.96	2.07	2.24	2.45	2.63	2.70	2.75	2.82	2.87	2.95	3.03
8/17/2018	1.95	2.05	2.24	2.44	2.61	2.68	2.75	2.82	2.87	2.95	3.03
										Mean	3.08

Source: https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2018

ROE and ROR Analysis for Atlantic City Electric Co. **Docket No. EO18020196**
CAPM Analysis **Exhibit MFG-19, Schedule 2**
Beta calculation for Comparison Group

Company Name	Value Line Betas--Comparison Group
ALLETE, Inc.	0.75
Alliant Energy Corporation	0.70
Ameren Corporation	0.65
American Electric Power, PSO	0.65
CMS Energy Corporation	0.65
Consolidated Edison, Inc.	0.45
Duke Energy	0.55
El Paso Electric	0.75
Eversource Energy	0.60
OGE Energy	0.95
Otter Tail Corp.	0.85
Pinnacle West Capital Corporation	0.65
PNM Resources, Inc.	0.75
Southern Co.	0.50
Xcel Energy Inc.	0.60
Mean	0.67

C = B * (1 + A), D = A + C

DCF Analysis

A and B: Value Line Stock Screener, August 19, 2018

Company Name	A Projected EPS Growth 3- to 5-Year	B Dividend Yield	C Adjusted Dividend Yield	D DCF ROE
Essex Property Trust Inc	0.50%	3.06%	3.07%	3.57%
Prologis	1.00%	2.85%	2.88%	3.88%
Greenbrier Companies Inc	2.50%	1.74%	1.78%	4.28%
Dover Corp	2.00%	2.29%	2.33%	4.33%
Perrigo Company Plc Ireland	3.50%	1.04%	1.08%	4.58%
Amer. Airlines	3.50%	1.06%	1.10%	4.60%
Viacom Inc	2.00%	2.60%	2.66%	4.66%
Barrick Gold Corporation	3.50%	1.20%	1.24%	4.74%
International Business Machines Corp	0.50%	4.30%	4.32%	4.82%
Ingles Markets Incorporated	3.00%	1.95%	2.01%	5.01%
Dillards Inc	4.50%	0.54%	0.56%	5.06%
Sanderson Farms Inc	4.00%	1.18%	1.22%	5.22%
Tootsie Roll	4.00%	1.19%	1.23%	5.23%
IDACORP Inc	3.00%	2.39%	2.46%	5.46%
Fluor Corp	4.00%	1.48%	1.54%	5.54%
GATX Corp	3.50%	2.12%	2.19%	5.69%
Johnson Ctrls. Int'l plc	3.00%	2.72%	2.80%	5.80%
Zimmer Biomet Hldgs.	5.00%	0.78%	0.81%	5.81%
NewMarket Corporation	4.00%	1.78%	1.85%	5.85%
Minerals Technologies Inc	5.50%	0.30%	0.32%	5.82%
George Weston Ltd	4.00%	1.85%	1.92%	5.92%
Park Electrochemical Corp	4.00%	1.88%	1.95%	5.95%
Cooper Tire and Rubber Co	4.50%	1.41%	1.48%	5.98%
Boston Properties Inc	3.50%	2.42%	2.51%	6.01%
Culp Inc	4.50%	1.42%	1.49%	5.99%
Allergan plc	4.50%	1.55%	1.62%	6.12%
Hawaiian Holdings Inc	5.00%	1.12%	1.18%	6.18%
CME Group Inc	4.50%	1.65%	1.73%	6.23%
Lincoln Electric Holdings Inc	4.50%	1.67%	1.74%	6.24%
Entergy Corp	2.00%	4.17%	4.26%	6.26%
Warrior Met Coal Inc	5.50%	0.86%	0.91%	6.41%
Alaska Air Group	4.50%	1.97%	2.06%	6.56%
Consolidated Edison Inc	3.00%	3.52%	3.63%	6.63%
Federal Realty Investment Trust	3.50%	3.15%	3.26%	6.76%
Wyndham Destinations	3.00%	3.65%	3.76%	6.76%
Cal Maine Foods Inc	6.00%	0.71%	0.75%	6.75%
El Paso Electric Co	4.50%	2.25%	2.36%	6.86%
Ormat Technologies Inc	6.00%	0.78%	0.83%	6.83%
Kroger Co	5.00%	1.79%	1.88%	6.88%
Campbell Soup Co	3.50%	3.33%	3.45%	6.95%
FirstEnergy Corp	3.00%	3.86%	3.98%	6.98%
Avista Corp	4.00%	2.89%	3.00%	7.00%
Hawaiian Electric Industries Inc	3.50%	3.47%	3.59%	7.09%
NorthWestern Corporation	3.50%	3.56%	3.68%	7.18%
Portland General Electric Company	4.00%	3.06%	3.18%	7.18%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Allegiant Travel Company	5.00%	2.06%	2.17%	7.17%
Juniper Networks Inc	4.50%	2.60%	2.71%	7.21%
TEGNA Inc.	4.50%	2.61%	2.73%	7.23%
Capital One Financial Corporation	5.50%	1.61%	1.70%	7.20%
Andeavor	5.50%	1.63%	1.72%	7.22%
Cogeco Communic.	4.50%	2.68%	2.80%	7.30%
GlaxoSmithKline PLC	2.00%	5.24%	5.34%	7.34%
US Bancorp	5.00%	2.25%	2.36%	7.36%
Conagra Brands	5.00%	2.27%	2.38%	7.38%
CoreCivic Inc.	0.50%	6.81%	6.84%	7.34%
Verizon Communications Inc	3.00%	4.31%	4.44%	7.44%
Connecticut Water Services Inc	5.50%	1.81%	1.91%	7.41%
Affiliated Managers Group Inc	6.50%	0.82%	0.87%	7.37%
Public Service Enterprise Group Inc	4.00%	3.35%	3.48%	7.48%
L Brands Inc	0.00%	7.37%	7.37%	7.37%
Forest City Realty	4.50%	2.87%	3.00%	7.50%
Tribune Media Co.	4.50%	2.88%	3.01%	7.51%
Science Applications International Corp.	6.00%	1.39%	1.48%	7.48%
Dentsply Sirona	6.50%	0.91%	0.96%	7.46%
Dun and Bradstreet Corp	6.00%	1.47%	1.56%	7.56%
Simon Property Group Inc	3.00%	4.48%	4.62%	7.62%
PPL Corporation	2.00%	5.49%	5.60%	7.60%
Elbit Systems Ltd	6.00%	1.51%	1.60%	7.60%
Advanced Drainage Systems Inc	6.50%	1.02%	1.09%	7.59%
Walmart Inc.	5.50%	2.13%	2.24%	7.74%
MSC Industrial Direct Co Inc	5.00%	2.66%	2.80%	7.80%
Xerox Corp	4.00%	3.71%	3.86%	7.86%
Torchmark Cap Tr III	7.00%	0.73%	0.78%	7.78%
Green Plains Inc	5.00%	2.76%	2.90%	7.90%
Convergys Corp	6.00%	1.79%	1.90%	7.90%
SJW Group	6.00%	1.81%	1.92%	7.92%
American States Water Co	6.00%	1.82%	1.93%	7.93%
Group 1 Automotive Inc	6.50%	1.33%	1.42%	7.92%
Toyota Motor Corporation	3.00%	4.83%	4.97%	7.97%
Allete Inc	5.00%	2.84%	2.98%	7.98%
Sturm Ruger and Co	6.00%	1.84%	1.95%	7.95%
Ralph Lauren Corporation	6.00%	1.85%	1.96%	7.96%
The Travelers Companies Inc	5.50%	2.36%	2.49%	7.99%
American Electric Power Company Inc	4.50%	3.42%	3.57%	8.07%
Popular Inc	6.00%	1.95%	2.06%	8.06%
Apartment Investment and Management Co.	4.50%	3.46%	3.62%	8.12%
Edison International	4.50%	3.46%	3.62%	8.12%
Capitol Federal Financial Inc	5.50%	2.54%	2.68%	8.18%
Voya Financial	8.00%	0.08%	0.09%	8.09%
Southern Co	3.00%	5.11%	5.26%	8.26%
Pentair Inc	6.50%	1.64%	1.74%	8.24%
Eversource Energy	5.00%	3.19%	3.35%	8.35%
Fidelity Nat'l Info.	7.00%	1.20%	1.28%	8.28%
Qualcomm Inc	4.50%	3.75%	3.92%	8.42%
WD 40 Co	7.00%	1.26%	1.35%	8.35%
HP Inc.	6.00%	2.27%	2.41%	8.41%
Merck and Co Inc	5.50%	2.78%	2.93%	8.43%
Leidos Holdings Inc	6.50%	1.79%	1.90%	8.40%
Insteel Industries Inc	8.00%	0.30%	0.32%	8.32%
Pinnacle West Capital Corp	5.00%	3.38%	3.55%	8.55%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Jones Lang LaSalle	8.00%	0.53%	0.58%	8.58%
Avnet Inc	7.00%	1.60%	1.71%	8.71%
Methode Electronics	7.50%	1.10%	1.18%	8.68%
Embraer SA	7.00%	1.60%	1.71%	8.71%
Extra Space Storage	5.00%	3.61%	3.79%	8.79%
Choice Hotels International Inc	7.50%	1.12%	1.21%	8.71%
Flushing Financial Corp	5.50%	3.13%	3.31%	8.81%
Xcel Energy Inc	5.50%	3.15%	3.32%	8.82%
General Mills Inc	4.50%	4.15%	4.34%	8.84%
Reinsurance Group of America Inc	7.00%	1.67%	1.79%	8.79%
Hanesbrands Inc	5.50%	3.26%	3.44%	8.94%
Ford Motor Company	2.50%	6.28%	6.44%	8.94%
Principal Financial Group Inc	5.00%	3.81%	4.00%	9.00%
AptarGroup Inc	7.50%	1.32%	1.42%	8.92%
Shaw Communications Inc (Class B)	4.50%	4.36%	4.55%	9.05%
Valvoline Inc.	7.50%	1.36%	1.46%	8.96%
Ingredion Incorporated	6.50%	2.36%	2.51%	9.01%
Hexcel Corporation	8.00%	0.88%	0.95%	8.95%
Sensient Technologies Corp	7.00%	1.90%	2.03%	9.03%
Wells Fargo and Company	6.00%	2.92%	3.10%	9.10%
Fifth Third Bancorp	6.50%	2.43%	2.58%	9.08%
Luxottica Group Spa	7.00%	1.94%	2.07%	9.07%
Robert Half International Inc	7.50%	1.46%	1.56%	9.06%
Rockwell Collins Inc	8.00%	0.96%	1.04%	9.04%
NN Inc	7.50%	1.48%	1.59%	9.09%
Flowserve Corp	7.50%	1.48%	1.59%	9.09%
Realty Income Corporation	4.50%	4.49%	4.69%	9.19%
Park National Corp	5.50%	3.49%	3.68%	9.18%
Caseys General Stores Inc	8.00%	1.01%	1.09%	9.09%
Vectren Corp	6.50%	2.52%	2.68%	9.18%
Western Union Company	5.00%	4.02%	4.22%	9.22%
Stepan Company	8.00%	1.02%	1.10%	9.10%
Symantec Corp	7.50%	1.54%	1.66%	9.16%
Telephone and Data Systems Inc New	7.00%	2.09%	2.24%	9.24%
Korn Ferry International	8.50%	0.60%	0.66%	9.16%
Estee Lauder Companies Inc	8.00%	1.12%	1.21%	9.21%
Prudential Financial Inc	5.50%	3.64%	3.84%	9.34%
Standex International Corp	8.50%	0.66%	0.72%	9.22%
Cato Corp	3.50%	5.67%	5.86%	9.36%
PACCAR Inc	7.50%	1.67%	1.79%	9.29%
Equifax Inc	8.00%	1.17%	1.27%	9.27%
Millicom International Cellular S A	7.00%	2.20%	2.35%	9.35%
BT Group PLC	2.00%	7.23%	7.38%	9.38%
UniFirst Corp	9.00%	0.24%	0.26%	9.26%
PPG Industries Inc	7.50%	1.77%	1.90%	9.40%
ONE Gas Inc.	7.00%	2.30%	2.46%	9.46%
Quad/Graphics Inc.	4.00%	5.30%	5.51%	9.51%
Benchmark Electronics Inc	7.00%	2.34%	2.50%	9.50%
Nielsen Hldgs. plc	4.00%	5.35%	5.57%	9.57%
UGI Corp	7.50%	1.88%	2.02%	9.52%
Sonoco Products	6.50%	2.95%	3.14%	9.64%
JM Smucker Company	6.50%	2.97%	3.16%	9.66%
Amphenol Corp	8.50%	0.98%	1.06%	9.56%
Nordstrom Inc	7.00%	2.50%	2.68%	9.68%
Gildan Activewear	8.00%	1.50%	1.62%	9.62%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
MGE Energy Inc	7.50%	2.02%	2.17%	9.67%
Lincoln National Capital VI	7.50%	2.02%	2.17%	9.67%
Power Financial	4.00%	5.53%	5.75%	9.75%
Xilinx Inc	7.50%	2.03%	2.18%	9.68%
Amdocs Ltd	8.00%	1.53%	1.65%	9.65%
OGE Energy Corp	6.00%	3.54%	3.75%	9.75%
Cabot Corp	7.50%	2.05%	2.20%	9.70%
Atmos Energy Corp	7.50%	2.06%	2.21%	9.71%
SL Green Realty Corporation	6.50%	3.07%	3.27%	9.77%
Cheesecake Factory Inc	7.00%	2.57%	2.75%	9.75%
Alliant Energy Corp	6.50%	3.07%	3.27%	9.77%
Fresh Del Monte Produce Inc	8.00%	1.57%	1.70%	9.70%
Sun Life Fin'l Svcs.	6.00%	3.58%	3.80%	9.80%
Sonic Automotive Inc	8.50%	1.10%	1.19%	9.69%
Black Hills Corp	6.50%	3.10%	3.30%	9.80%
Assurant Inc	7.50%	2.13%	2.29%	9.79%
Bank of Montreal	6.00%	3.63%	3.85%	9.85%
Actuant Corp	9.50%	0.14%	0.15%	9.65%
Stantec Inc.	8.00%	1.66%	1.79%	9.79%
Forrester Research Inc	8.00%	1.66%	1.79%	9.79%
MetLife Inc	6.00%	3.66%	3.88%	9.88%
Macys Inc	5.50%	4.19%	4.42%	9.92%
Avalonbay Communities Inc	6.50%	3.21%	3.42%	9.92%
Thomson Reuters Corp	6.50%	3.23%	3.44%	9.94%
Duke Realty Corporation	7.00%	2.76%	2.96%	9.96%
DSW Inc	6.00%	3.78%	4.00%	10.00%
Navient Corporation	5.00%	4.79%	5.03%	10.03%
Ventas Inc	4.50%	5.30%	5.53%	10.03%
Thermo Fisher Scientific Inc	9.50%	0.30%	0.32%	9.82%
Cincinnati Financial Corp	7.00%	2.80%	2.99%	9.99%
Commerce Bancshares Inc	8.50%	1.32%	1.43%	9.93%
Aqua America Inc	7.50%	2.32%	2.50%	10.00%
Hershey Company	7.00%	2.85%	3.05%	10.05%
Coca Cola Company	6.50%	3.35%	3.57%	10.07%
CMS Energy Corp	7.00%	2.87%	3.07%	10.07%
Celanese Corp	8.00%	1.87%	2.02%	10.02%
Stanley Black and Decker Inc	8.00%	1.87%	2.02%	10.02%
ResMed Inc	8.50%	1.39%	1.50%	10.00%
Middlesex Water Co	8.00%	1.89%	2.04%	10.04%
Williams Sonoma	7.00%	2.90%	3.10%	10.10%
General Electric Company	6.00%	3.90%	4.14%	10.14%
EMCOR Group Inc	9.50%	0.41%	0.45%	9.95%
Novo Nordisk	7.50%	2.41%	2.59%	10.09%
Dicks Sporting Goods Inc	7.50%	2.42%	2.60%	10.10%
WPP PLC	5.00%	4.92%	5.17%	10.17%
Tower International	8.50%	1.44%	1.57%	10.07%
Nestle SA	7.00%	2.95%	3.15%	10.15%
Forward Air Corp	9.00%	0.95%	1.03%	10.03%
Columbia Sportswear Company	9.00%	0.97%	1.06%	10.06%
Duke Energy Corp New	5.50%	4.51%	4.76%	10.26%
WW Grainger Inc	8.50%	1.52%	1.65%	10.15%
Kellogg Company	7.00%	3.04%	3.25%	10.25%
Discover Financial Services	8.00%	2.05%	2.22%	10.22%
Oracle Corp	8.50%	1.57%	1.71%	10.21%
Target Corp	7.00%	3.08%	3.30%	10.30%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Gap Inc	7.00%	3.10%	3.32%	10.32%
DTE Energy Company	7.00%	3.11%	3.32%	10.32%
PNM Resources Inc	7.50%	2.61%	2.80%	10.30%
Ecolab Inc	9.00%	1.11%	1.21%	10.21%
Herman Miller Inc	8.00%	2.12%	2.29%	10.29%
Northrop Grumman Corp Holding Co	8.50%	1.63%	1.77%	10.27%
Selective Insurance Group Inc	9.00%	1.13%	1.23%	10.23%
Seagate Technology	5.50%	4.64%	4.90%	10.40%
Archer Daniels Midland Company	7.50%	2.65%	2.85%	10.35%
Innospec Inc	9.00%	1.16%	1.26%	10.26%
Metro Inc	8.50%	1.67%	1.82%	10.32%
Kelly Services Inc	9.00%	1.19%	1.30%	10.30%
STERIS plc	9.00%	1.19%	1.30%	10.30%
Kohls Corporation	7.00%	3.19%	3.42%	10.42%
Otter Tail Corp	7.50%	2.71%	2.91%	10.41%
Medtronic plc	8.00%	2.21%	2.38%	10.38%
Foot Locker Inc	7.50%	2.72%	2.93%	10.43%
Russel Metals Inc	5.00%	5.23%	5.49%	10.49%
AmerisourceBergen Corp	8.50%	1.73%	1.88%	10.38%
Chesapeake Utilities	8.50%	1.73%	1.88%	10.38%
American Financial Group	9.00%	1.24%	1.35%	10.35%
WEC Energy Group	7.00%	3.24%	3.46%	10.46%
J and J Snack Foods Corp	9.00%	1.24%	1.35%	10.35%
Garmin Ltd	7.00%	3.24%	3.47%	10.47%
Newmont Mining Corp Holding Co	8.50%	1.75%	1.90%	10.40%
Sanofi	6.00%	4.26%	4.51%	10.51%
Caleres Inc.	9.50%	0.77%	0.84%	10.34%
ManpowerGroup	8.00%	2.29%	2.47%	10.47%
Phibro Animal Health	9.50%	0.81%	0.89%	10.39%
Franklin Resources Inc	7.50%	2.81%	3.02%	10.52%
Ameren Corp	7.50%	2.83%	3.04%	10.54%
Mosaic Company New	10.00%	0.34%	0.37%	10.37%
Regal Beloit Corp	9.00%	1.36%	1.48%	10.48%
American Express Company	9.00%	1.36%	1.48%	10.48%
Goldman Sachs Group Inc	9.00%	1.37%	1.49%	10.49%
Canadian Imperial Bank of Commerce	6.00%	4.37%	4.64%	10.64%
Cisco Systems Inc	7.50%	2.88%	3.09%	10.59%
Teradyne Inc	9.50%	0.92%	1.00%	10.50%
General Dynamics Corporation	8.50%	1.92%	2.08%	10.58%
MGP Ingredients	10.00%	0.43%	0.47%	10.47%
Spire Inc.	7.50%	2.93%	3.15%	10.65%
Wabtec Corp	10.00%	0.44%	0.48%	10.48%
Oxford Industries Inc	9.00%	1.45%	1.58%	10.58%
CTS Corporation	10.00%	0.46%	0.51%	10.51%
Bruker Corporation	10.00%	0.47%	0.51%	10.51%
Allegion Plc	9.50%	0.97%	1.06%	10.56%
Diageo Plc	8.00%	2.48%	2.68%	10.68%
Acco Brands Corporation	8.50%	1.99%	2.16%	10.66%
Walt Disney Co	9.00%	1.49%	1.63%	10.63%
Omnicom Group Inc	7.00%	3.50%	3.74%	10.74%
BorgWarner Inc	9.00%	1.50%	1.64%	10.64%
Church and Dwight Co Inc	9.00%	1.52%	1.66%	10.66%
Weis Markets	8.00%	2.53%	2.73%	10.73%
Papa Johns International Inc	8.50%	2.05%	2.22%	10.72%
Maiden Hldgs. Ltd.	5.50%	5.06%	5.34%	10.84%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Applied Industrial Technologies Inc	9.00%	1.57%	1.71%	10.71%
Wiley John and Sons Inc (Class A)	8.50%	2.07%	2.25%	10.75%
Saputo Inc.	9.00%	1.57%	1.72%	10.72%
Public Storage	7.00%	3.58%	3.83%	10.83%
Clorox Co	8.00%	2.60%	2.81%	10.81%
Lancaster Colony Corporation	9.00%	1.60%	1.75%	10.75%
Aon PLC	9.50%	1.12%	1.22%	10.72%
Honda Motor Co Ltd	7.50%	3.12%	3.35%	10.85%
Royal Bank of Canada	7.00%	3.66%	3.91%	10.91%
Huntington Ingalls Industries Inc	9.50%	1.17%	1.28%	10.78%
Amgen Inc	8.00%	2.68%	2.89%	10.89%
International Flavors and Fragrances Inc	8.50%	2.21%	2.40%	10.90%
CVS Caremark Corporation	8.00%	2.71%	2.93%	10.93%
Expeditors International of Washington Inc	9.50%	1.22%	1.33%	10.83%
Kaman Corporation	9.50%	1.22%	1.33%	10.83%
AFLAC Inc	8.50%	2.22%	2.41%	10.91%
PepsiCo Inc	7.50%	3.23%	3.47%	10.97%
Phillips 66	8.00%	2.77%	2.99%	10.99%
Penske Automotive Group Inc	8.00%	2.78%	3.00%	11.00%
Eastman Chemical Co	8.50%	2.29%	2.49%	10.99%
Provident Financial Services Inc	7.50%	3.30%	3.55%	11.05%
Lithia Motors Inc	9.50%	1.34%	1.47%	10.97%
Nasdaq Inc.	9.00%	1.89%	2.06%	11.06%
GEO Group (The)	3.50%	7.41%	7.67%	11.17%
SAP AE	9.50%	1.42%	1.55%	11.05%
Xperi Corp.	6.00%	4.92%	5.22%	11.22%
Aptiv PLC	10.00%	0.95%	1.04%	11.04%
Matthews International Corp	9.50%	1.46%	1.60%	11.10%
American Eagle Outfitters Inc	9.00%	1.97%	2.15%	11.15%
Marsh and McLennan Companies Inc	9.00%	1.98%	2.15%	11.15%
Bemis Co Inc	8.50%	2.49%	2.70%	11.20%
RPM International Inc	9.00%	2.00%	2.18%	11.18%
Aetna Inc	10.00%	1.01%	1.11%	11.11%
Costco Wholesale Corporation	10.00%	1.01%	1.11%	11.11%
Global Payments Inc	11.00%	0.03%	0.04%	11.04%
LyondellBasell Industries NV	7.50%	3.54%	3.80%	11.30%
Total System Services	10.50%	0.55%	0.61%	11.11%
Crane Co	9.50%	1.57%	1.71%	11.21%
United Technologies Corporation	9.00%	2.08%	2.27%	11.27%
Citigroup Inc	8.50%	2.58%	2.80%	11.30%
Daimler AG	4.00%	7.09%	7.38%	11.38%
Exelon Corp	8.00%	3.10%	3.35%	11.35%
PVH Corp	11.00%	0.10%	0.11%	11.11%
Whirlpool Corp	7.50%	3.62%	3.89%	11.39%
PolyOne Corp.	9.50%	1.62%	1.78%	11.28%
j2 Global Inc	9.00%	2.13%	2.32%	11.32%
Old National Bancorp	8.50%	2.63%	2.86%	11.36%
Interface Inc	10.00%	1.14%	1.25%	11.25%
SNC-Lavalin Group	9.00%	2.14%	2.33%	11.33%
Air Products and Chemicals Inc	8.50%	2.64%	2.87%	11.37%
Dominion Energy	6.50%	4.66%	4.96%	11.46%
Bank of New York Mellon Corporation	9.00%	2.17%	2.36%	11.36%
York Water Company	9.00%	2.17%	2.37%	11.37%
Becton Dickinson and Company	10.00%	1.19%	1.30%	11.30%
Core Mark Holding Co Inc	10.00%	1.19%	1.31%	11.31%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Enbridge Inc	5.50%	5.71%	6.02%	11.52%
Woodward Inc	10.50%	0.71%	0.79%	11.29%
Yum Brands Inc	9.50%	1.72%	1.88%	11.38%
Abbott Laboratories	9.50%	1.73%	1.90%	11.40%
AMETEK Inc.	10.50%	0.73%	0.81%	11.31%
Digital Realty Trust Inc	8.00%	3.26%	3.52%	11.52%
Haverty Furniture Companies Inc	8.00%	3.27%	3.53%	11.53%
Apogee Enterprises Inc	10.00%	1.27%	1.40%	11.40%
MAXIMUS Inc	11.00%	0.28%	0.31%	11.31%
Briggs and Stratton Corp	8.50%	2.78%	3.02%	11.52%
Quest Diagnostics Inc	9.50%	1.80%	1.97%	11.47%
Universal Health `B'	11.00%	0.31%	0.35%	11.35%
Lennar Corp	11.00%	0.32%	0.35%	11.35%
PriceSmart	10.50%	0.82%	0.90%	11.40%
Gentex Corp	9.50%	1.82%	1.99%	11.49%
California Water Service Group	9.50%	1.83%	2.00%	11.50%
Neenah Inc.	9.50%	1.83%	2.00%	11.50%
Packaging Corp	8.50%	2.83%	3.07%	11.57%
Cullen Frost Bankers Inc	9.00%	2.35%	2.56%	11.56%
Spectrum Brands Holdings Inc.	9.50%	1.86%	2.04%	11.54%
Snap on Inc	9.50%	1.87%	2.05%	11.55%
Unum Group	8.50%	2.89%	3.13%	11.63%
Plantronics Inc	10.50%	0.90%	0.99%	11.49%
Albemarle Corp	10.00%	1.40%	1.54%	11.54%
Honeywell International Inc	9.50%	1.92%	2.10%	11.60%
East West Bancorp Inc	10.00%	1.42%	1.57%	11.57%
Franco Nevada Corp	10.00%	1.44%	1.58%	11.58%
Synnex Corp	10.00%	1.44%	1.58%	11.58%
Hormel Foods Corporation	9.50%	1.94%	2.13%	11.63%
Brinker International Inc	8.00%	3.46%	3.73%	11.73%
Universal Forest Products Inc	10.50%	0.97%	1.07%	11.57%
Signature Bank	11.00%	0.48%	0.53%	11.53%
United Parcel Service	8.50%	2.99%	3.24%	11.74%
Flowers Foods Inc	8.00%	3.49%	3.77%	11.77%
La Z Boy Inc	10.00%	1.51%	1.66%	11.66%
Sinclair Broadcast Group Inc	9.00%	2.51%	2.73%	11.73%
China Mobile (ADR)	5.50%	6.02%	6.35%	11.85%
NextEra Energy Inc	9.00%	2.54%	2.76%	11.76%
Spirit Aerosystems Holdings Inc	11.00%	0.55%	0.61%	11.61%
AT&T	5.50%	6.06%	6.39%	11.89%
International Speedway Corporation	10.50%	1.06%	1.17%	11.67%
Canadian National Railway Co	10.00%	1.57%	1.72%	11.72%
BCE Inc	6.00%	5.57%	5.90%	11.90%
Southwest Gas	9.00%	2.57%	2.80%	11.80%
Accenture Plc New	10.00%	1.61%	1.77%	11.77%
Movado Group	10.00%	1.61%	1.77%	11.77%
IDEX Corporation	10.50%	1.13%	1.25%	11.75%
Danaher Corp	11.00%	0.64%	0.70%	11.70%
McCormick and Co	10.00%	1.65%	1.81%	11.81%
Viad Corp New	11.00%	0.66%	0.73%	11.73%
Bassett Furniture Industries Inc	9.50%	2.17%	2.37%	11.87%
Canadian Tire 'A'	9.50%	2.17%	2.38%	11.88%
Chubb Ltd.	9.50%	2.18%	2.38%	11.88%
Cummins Inc	8.50%	3.18%	3.45%	11.95%
Fastenal Co	9.00%	2.69%	2.93%	11.93%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Shenandoah Telecommunications Co	11.00%	0.69%	0.77%	11.77%
CenturyLink Inc	2.50%	9.20%	9.43%	11.93%
McKesson Corp	10.50%	1.21%	1.33%	11.83%
State Street Corporation	9.50%	2.21%	2.42%	11.92%
CSG Systems International Inc	9.50%	2.22%	2.43%	11.93%
Bank of Nova Scotia	7.50%	4.24%	4.55%	12.05%
Ryder System Inc	9.00%	2.78%	3.03%	12.03%
Investors Bancorp Inc	9.00%	2.79%	3.04%	12.04%
Matson Inc	9.50%	2.32%	2.54%	12.04%
New Jersey Resources Corp	9.50%	2.32%	2.54%	12.04%
Jacobs Engineering Group Inc	11.00%	0.84%	0.93%	11.93%
CBS Corp	10.50%	1.35%	1.50%	12.00%
Bank of Hawaii	9.00%	2.86%	3.12%	12.12%
ITT Inc.	11.00%	0.88%	0.97%	11.97%
Valero Energy Corporation	9.00%	2.88%	3.14%	12.14%
Fortis Inc	8.00%	3.90%	4.22%	12.22%
Toronto Dominion Bank	8.50%	3.41%	3.69%	12.19%
Genuine Parts Co	9.00%	2.91%	3.17%	12.17%
GameStop Corp Holding Company	2.00%	9.92%	10.11%	12.11%
Tyson Foods	10.00%	1.92%	2.12%	12.12%
Mondelez International Inc	9.50%	2.44%	2.67%	12.17%
Pinnacle Foods Inc	10.00%	1.95%	2.15%	12.15%
Hubbell Inc.	9.50%	2.50%	2.74%	12.24%
Universal Corp	7.00%	5.03%	5.38%	12.38%
Conmed Corp	11.00%	1.03%	1.14%	12.14%
Jack Henry and Associates Inc	11.00%	1.03%	1.15%	12.15%
American Water Works	10.00%	2.03%	2.24%	12.24%
Tractor Supply Co	10.50%	1.54%	1.70%	12.20%
FedEx Corp	11.00%	1.05%	1.17%	12.17%
Teleflex Inc	11.50%	0.57%	0.64%	12.14%
TTEC Holdings	10.00%	2.08%	2.29%	12.29%
BB and T Corporation	9.00%	3.09%	3.37%	12.37%
Praxair Inc	10.00%	2.12%	2.33%	12.33%
Rockwell Automation Inc	10.00%	2.12%	2.33%	12.33%
PNC Financial Services Group Inc	9.50%	2.63%	2.88%	12.38%
Monro Inc.	11.00%	1.14%	1.26%	12.26%
HEICO Corp	12.00%	0.15%	0.17%	12.17%
3M Company	9.50%	2.66%	2.91%	12.41%
First Republic Bank	11.50%	0.69%	0.77%	12.27%
Stage Stores Inc	2.50%	9.71%	9.95%	12.45%
Houlihan Lokey	10.00%	2.25%	2.48%	12.48%
Eaton Corp New	9.00%	3.26%	3.55%	12.55%
Jack in the Box Inc	10.50%	1.77%	1.95%	12.45%
Nokia Corp	8.00%	4.27%	4.61%	12.61%
Carlisle Companies Inc	11.00%	1.28%	1.42%	12.42%
National Bank of Canada	8.50%	3.78%	4.10%	12.60%
H and R Block Inc	8.50%	3.79%	4.11%	12.61%
JP Morgan Chase and Co	9.50%	2.79%	3.05%	12.55%
Lamar Advertising Company	7.50%	4.81%	5.17%	12.67%
Grace (W.R.) & Co.	11.00%	1.36%	1.51%	12.51%
Everest Re Group Ltd	10.00%	2.38%	2.62%	12.62%
Enersys	11.50%	0.89%	0.99%	12.49%
CH Robinson Worldwide Inc	10.50%	1.89%	2.09%	12.59%
Invesco Ltd	7.50%	4.90%	5.27%	12.77%
Leggett and Platt Inc	9.00%	3.41%	3.71%	12.71%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Village Super Market Inc	9.00%	3.41%	3.72%	12.72%
Eagle Materials Inc	12.00%	0.42%	0.47%	12.47%
CenterPoint Energy Inc	8.50%	3.92%	4.26%	12.76%
National Presto Industries Inc	8.00%	4.43%	4.78%	12.78%
Procter and Gamble Co	9.00%	3.43%	3.74%	12.74%
Piper Jaffray Companies	10.50%	1.93%	2.13%	12.63%
Constellation Brands	11.00%	1.45%	1.61%	12.61%
Scholastic Corporation	11.00%	1.45%	1.61%	12.61%
Silgan Holdings Inc	11.00%	1.47%	1.63%	12.63%
Canadian Pacific Railway Inc	11.50%	0.97%	1.08%	12.58%
CDW Corp.	11.50%	0.98%	1.09%	12.59%
MB Financial	10.50%	1.98%	2.19%	12.69%
Franklin Electric Co Inc	11.50%	0.98%	1.09%	12.59%
Ross Stores Inc	11.50%	0.98%	1.09%	12.59%
Genpact Limited	11.50%	0.98%	1.10%	12.60%
Harley Davidson Inc	9.00%	3.50%	3.82%	12.82%
Fidelity Nat'l Fin'l	9.50%	3.01%	3.29%	12.79%
McDonalds Corp	10.00%	2.51%	2.76%	12.76%
US Ecology Inc	11.50%	1.02%	1.13%	12.63%
Cigna Corporation	12.50%	0.02%	0.02%	12.52%
L3 Technologies	11.00%	1.52%	1.69%	12.69%
CAE Inc	11.00%	1.52%	1.69%	12.69%
Waste Management	10.50%	2.04%	2.25%	12.75%
Deluxe Corp	10.50%	2.05%	2.27%	12.77%
Cognizant Technology Solutions Corp	11.50%	1.06%	1.18%	12.68%
FLIR Systems Inc	11.50%	1.06%	1.19%	12.69%
Sempra Energy	9.50%	3.06%	3.36%	12.86%
Southwest Airlines Co	11.50%	1.07%	1.20%	12.70%
Hillenbrand Inc	11.00%	1.60%	1.77%	12.77%
WestRock Co.	9.50%	3.11%	3.40%	12.90%
SpartanNash Company	9.00%	3.62%	3.95%	12.95%
RLI Corp	11.50%	1.13%	1.26%	12.76%
Dine Brands Global	9.50%	3.14%	3.44%	12.94%
Brady Corp	10.50%	2.17%	2.40%	12.90%
Natural Resource Partners Ltd	7.00%	5.68%	6.08%	13.08%
Raytheon Co	11.00%	1.74%	1.93%	12.93%
Aarons Inc	12.50%	0.24%	0.27%	12.77%
WR Berkley Corp	12.00%	0.78%	0.87%	12.87%
Sherwin Williams	12.00%	0.78%	0.87%	12.87%
Carriage Services Inc	11.50%	1.28%	1.43%	12.93%
Telus Corp	8.50%	4.29%	4.66%	13.16%
Intercontinental Exch.	11.50%	1.30%	1.45%	12.95%
Twenty-First Century Fox 'B'	12.00%	0.80%	0.90%	12.90%
TCF Financial Corporation	10.50%	2.32%	2.57%	13.07%
Marriott Vacations	11.50%	1.33%	1.48%	12.98%
PerkinElmer Inc	12.50%	0.33%	0.37%	12.87%
Eaton Vance Corp	10.50%	2.34%	2.58%	13.08%
CA Inc	10.50%	2.34%	2.58%	13.08%
South Jersey Industries Inc	9.50%	3.37%	3.69%	13.19%
TE Connectivity Ltd	11.00%	1.89%	2.10%	13.10%
Scotts Miracle Gro Company	10.00%	2.91%	3.21%	13.21%
Agilent Technologies	12.00%	0.92%	1.03%	13.03%
Douglas Dynamics Inc	10.50%	2.44%	2.70%	13.20%
Wheaton Precious Met.	11.00%	1.95%	2.17%	13.17%
Curtiss Wright Corp	12.50%	0.45%	0.51%	13.01%

C = B * (1 + A), D = A + C	A	B	C	D
BOK Financial Corporation	11.00%	2.00%	2.22%	13.22%
Global Brass & Copper	12.00%	1.01%	1.13%	13.13%
Walgreens Boots	10.50%	2.52%	2.78%	13.28%
Delta Air Lines Inc	10.50%	2.52%	2.78%	13.28%
Aramark	12.00%	1.03%	1.16%	13.16%
Northern Trust Corp	11.00%	2.04%	2.27%	13.27%
Royal Caribbean Cruises Ltd	11.00%	2.07%	2.30%	13.30%
Washington Federal Inc	11.00%	2.08%	2.30%	13.30%
Lear Corp	11.50%	1.62%	1.80%	13.30%
Macerich Co	8.00%	5.12%	5.53%	13.53%
D R Horton Inc	12.00%	1.13%	1.26%	13.26%
Eli Lilly and Co	11.00%	2.13%	2.37%	13.37%
BlackRock Inc	10.50%	2.64%	2.92%	13.42%
Union Pacific Corp	11.00%	2.14%	2.38%	13.38%
Advance Auto Parts	13.00%	0.15%	0.17%	13.17%
Standard Motor Products Inc	11.50%	1.66%	1.85%	13.35%
FactSet Research Systems Inc	12.00%	1.16%	1.30%	13.30%
Cenovus Energy Inc	11.50%	1.67%	1.86%	13.36%
AstraZeneca PLC	9.50%	3.67%	4.02%	13.52%
Gen'l Motors	9.00%	4.18%	4.55%	13.55%
Associated Banc Corp	11.00%	2.20%	2.44%	13.44%
Welltower Inc.	8.00%	5.22%	5.63%	13.63%
Morningstar Inc	12.50%	0.73%	0.82%	13.32%
Commercial Metals Company	11.00%	2.24%	2.49%	13.49%
Interpublic Group of Companies Inc	9.50%	3.76%	4.11%	13.61%
ParkOhio Holdings Corp	12.00%	1.26%	1.41%	13.41%
Synchrony Financial	10.50%	2.77%	3.06%	13.56%
Encompass Health	12.00%	1.34%	1.50%	13.50%
Norfolk Southern Corp	11.50%	1.84%	2.05%	13.55%
Wintrust Financial Corporation	12.50%	0.84%	0.95%	13.45%
Cognex Corporation	13.00%	0.34%	0.39%	13.39%
Old Dominion Freight Line Inc	13.00%	0.35%	0.40%	13.40%
Meridian Bioscience	10.00%	3.36%	3.69%	13.69%
Acuity Brands Inc	13.00%	0.36%	0.41%	13.41%
Chemed Corporation	13.00%	0.38%	0.43%	13.43%
Entravision Communications Corp	9.50%	3.88%	4.25%	13.75%
News Corp	12.00%	1.38%	1.55%	13.55%
Harris Corporation	12.00%	1.39%	1.55%	13.55%
Magellan Midstream Partners LP	8.00%	5.39%	5.82%	13.82%
Spectra Energy Part.	5.50%	7.93%	8.36%	13.86%
Fortune Brands Home and Security Inc	12.00%	1.46%	1.63%	13.63%
Rollins Inc	12.50%	0.98%	1.10%	13.60%
Morgan Stanley	11.00%	2.48%	2.75%	13.75%
Colgate Palmolive Co	11.00%	2.49%	2.76%	13.76%
Watts Water Technologies Inc	12.50%	1.01%	1.14%	13.64%
Booz Allen Hamilton Holding Corporation	12.00%	1.53%	1.71%	13.71%
American Tower Corporation	11.50%	2.04%	2.27%	13.77%
Las Vegas Sands Corp	9.00%	4.56%	4.96%	13.96%
Hasbro Inc	11.00%	2.56%	2.84%	13.84%
HCA Holdings Inc	12.50%	1.06%	1.20%	13.70%
Hyster-Yale Materials	11.50%	2.06%	2.30%	13.80%
Wabash National	12.00%	1.59%	1.78%	13.78%
Kraft Heinz Co.	9.50%	4.10%	4.49%	13.99%
Humana Inc	13.00%	0.62%	0.70%	13.70%
Ingersoll Rand Plc	11.50%	2.12%	2.37%	13.87%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Pool Corporation	12.50%	1.13%	1.27%	13.77%
Graco Inc	12.50%	1.14%	1.28%	13.78%
Badger Meter Inc	12.50%	1.14%	1.28%	13.78%
Carters Inc	12.00%	1.65%	1.85%	13.85%
Siemens AG	10.00%	3.65%	4.02%	14.02%
Erie Indemnity Company	11.00%	2.66%	2.95%	13.95%
WP Carey Inc	7.50%	6.16%	6.62%	14.12%
Manulife Financial Corporation	10.00%	3.66%	4.02%	14.02%
BJs Restaurants Inc	13.00%	0.66%	0.74%	13.74%
Johnson and Johnson	11.00%	2.68%	2.97%	13.97%
Motorola Solutions Inc	12.00%	1.69%	1.89%	13.89%
Tiffany and Co	12.00%	1.71%	1.92%	13.92%
Ferrari N.V.	13.00%	0.72%	0.81%	13.81%
Kansas City Southern	12.50%	1.25%	1.40%	13.90%
HNI Corporation	11.00%	2.75%	3.05%	14.05%
Texas Instruments Incorporated	11.50%	2.26%	2.52%	14.02%
Rogers Communications Inc (Class B)	11.00%	2.76%	3.07%	14.07%
Newell Brands	9.50%	4.28%	4.69%	14.19%
Pitney Bowes Inc	4.50%	9.28%	9.70%	14.20%
Moog Inc (Class A)	12.50%	1.29%	1.45%	13.95%
Twenty First Century Fox Inc	13.00%	0.79%	0.90%	13.90%
Tenneco Inc	11.50%	2.31%	2.58%	14.08%
M&T Bank Corporation	12.00%	1.81%	2.03%	14.03%
AVX Corp	11.50%	2.33%	2.60%	14.10%
Nu Skin Enterprises Inc	12.00%	1.83%	2.05%	14.05%
Wolverine World Wide	13.00%	0.84%	0.95%	13.95%
Hill Rom Holdings	13.00%	0.84%	0.95%	13.95%
Allstate Corporation	12.00%	1.84%	2.06%	14.06%
Kimberly Clark Corp	10.50%	3.35%	3.70%	14.20%
Martin Marietta Materials Inc	13.00%	0.87%	0.98%	13.98%
Watsco Inc	10.50%	3.37%	3.73%	14.23%
Stifel Financial Corp	13.00%	0.89%	1.00%	14.00%
Molson Coors Brewing Company	11.50%	2.39%	2.67%	14.17%
Steven Madden Ltd	12.50%	1.41%	1.58%	14.08%
T Rowe Price Group Inc	11.50%	2.42%	2.70%	14.20%
Automatic Data Proccessing Inc	12.00%	1.94%	2.17%	14.17%
BancorpSouth Bank	12.00%	1.97%	2.20%	14.20%
Activision Blizzard Inc	13.50%	0.49%	0.56%	14.06%
SS&C Techn. Hldgs	13.50%	0.50%	0.57%	14.07%
Brown and Brown Inc	13.00%	1.01%	1.14%	14.14%
V F Corp	12.00%	2.01%	2.25%	14.25%
Cinemark Holdings Inc	10.50%	3.51%	3.88%	14.38%
Cable One	13.00%	1.02%	1.15%	14.15%
Childrens Place Inc	12.50%	1.52%	1.71%	14.21%
Novartis AG	10.50%	3.54%	3.91%	14.41%
Nordson Corp	13.00%	1.04%	1.17%	14.17%
Zoetis Inc	13.50%	0.55%	0.63%	14.13%
ManTech International Corporation	12.50%	1.56%	1.76%	14.26%
Donaldson Co	12.50%	1.57%	1.76%	14.26%
Dollar General Corporation	13.00%	1.09%	1.23%	14.23%
Paychex Inc	11.00%	3.10%	3.44%	14.44%
Stryker Corp	13.00%	1.11%	1.25%	14.25%
Home Depot Inc	12.00%	2.11%	2.36%	14.36%
First Midwest Bancorp Inc	12.50%	1.62%	1.83%	14.33%
PBF Energy	11.50%	2.63%	2.93%	14.43%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Brunswick Corp	13.00%	1.17%	1.32%	14.32%
Tetra Tech	13.50%	0.68%	0.78%	14.28%
Unilever PLC	11.00%	3.19%	3.54%	14.54%
Loblaw Cos. Ltd.	12.50%	1.70%	1.91%	14.41%
AO Smith Corp	13.00%	1.23%	1.39%	14.39%
Peoples United Financial Inc	10.50%	3.74%	4.13%	14.63%
Cintas Corp	13.50%	0.76%	0.86%	14.36%
Taiwan Semiconductor Manufacturing Co Ltd	11.00%	3.27%	3.63%	14.63%
J B Hunt Transport Services Inc	13.50%	0.79%	0.89%	14.39%
Littelfuse Inc	13.50%	0.79%	0.89%	14.39%
Best Buy Company	12.00%	2.29%	2.57%	14.57%
Barrett Business Serv.	13.00%	1.32%	1.50%	14.50%
Sonic Corp	12.50%	1.84%	2.07%	14.57%
Apple Inc	13.00%	1.34%	1.52%	14.52%
Illinois Tool Works Inc	11.50%	2.87%	3.20%	14.70%
DXC Technology	13.50%	0.87%	0.99%	14.49%
Telecom Corp of New Zealand Ltd	6.50%	7.89%	8.40%	14.90%
Heartland Express Inc	14.00%	0.40%	0.46%	14.46%
Dunkin Brands Group Inc	12.50%	1.92%	2.16%	14.66%
Avery Dennison Corp	12.50%	1.95%	2.19%	14.69%
Ryman Hospitality Properties Inc	10.50%	3.95%	4.36%	14.86%
Huntington Bancshares Inc	11.00%	3.48%	3.86%	14.86%
Big Lots Inc	12.00%	2.50%	2.80%	14.80%
Vishay Intertechnology	13.00%	1.51%	1.70%	14.70%
Roper Tech.	14.00%	0.55%	0.63%	14.63%
Baxter International Inc	13.50%	1.06%	1.20%	14.70%
TJX Companies Inc	13.00%	1.56%	1.76%	14.76%
First Horizon National Corporation	12.00%	2.57%	2.88%	14.88%
Superior Industries International	13.00%	1.59%	1.80%	14.80%
Emerson Electric Co	12.00%	2.59%	2.90%	14.90%
Lazard Ltd	11.00%	3.59%	3.99%	14.99%
Western Digital Corporation	11.50%	3.10%	3.45%	14.95%
Darden Restaurants Inc	12.00%	2.64%	2.95%	14.95%
Ali. Couche-Tard	14.00%	0.64%	0.72%	14.72%
Comcast Corporation	12.50%	2.14%	2.40%	14.90%
Lennox International Inc	13.50%	1.15%	1.31%	14.81%
Hanover Insurance Group Inc	13.00%	1.66%	1.88%	14.88%
Greif Inc	11.50%	3.17%	3.53%	15.03%
Cardinal Health Inc	11.00%	3.67%	4.07%	15.07%
CSX Corporation	13.50%	1.19%	1.36%	14.86%
Northwest Bancshares Inc	11.00%	3.71%	4.12%	15.12%
BGC Partners	8.50%	6.24%	6.77%	15.27%
Mueller Industries Inc	13.50%	1.26%	1.43%	14.93%
Hyatt Hotels Corporation	14.00%	0.77%	0.87%	14.87%
Fresenius Medical ADR	13.50%	1.28%	1.45%	14.95%
Deutsche Telekom AG	10.00%	4.82%	5.30%	15.30%
Goodyear Tire and Rubber Company	12.50%	2.33%	2.62%	15.12%
AMC Entertainment Hldgs.	10.50%	4.36%	4.82%	15.32%
Philip Morris International Inc	9.50%	5.36%	5.87%	15.37%
Brookfield Asset Management Inc	13.50%	1.36%	1.55%	15.05%
Power Integrations Inc	14.00%	0.89%	1.01%	15.01%
ATN International	14.00%	0.93%	1.05%	15.05%
Dolby Laboratories Inc	14.00%	0.93%	1.06%	15.06%
Barnes Group Inc	14.00%	0.95%	1.08%	15.08%
Bank of America Corporation	13.00%	1.95%	2.21%	15.21%

C = B * (1 + A), D = A + C	A	B	C	D
Lowes Companies Inc	13.00%	1.96%	2.21%	15.21%
Columbus McKinnon Corp	14.50%	0.50%	0.57%	15.07%
Moodys Corp	14.00%	1.03%	1.17%	15.17%
Analog Devices Inc	13.00%	2.03%	2.29%	15.29%
Intel Corporation	12.50%	2.55%	2.87%	15.37%
Microsoft Corporation	13.50%	1.56%	1.77%	15.27%
AllianceBernstein Holding LP	6.00%	9.08%	9.62%	15.62%
Altria Group Inc	10.50%	4.59%	5.07%	15.57%
Visa Inc	14.50%	0.59%	0.68%	15.18%
Graphic Packaging	13.00%	2.12%	2.39%	15.39%
Textron Inc	15.00%	0.12%	0.14%	15.14%
Citizens Fin'l Group	12.50%	2.65%	2.99%	15.49%
SkyWest Inc	14.50%	0.66%	0.75%	15.25%
West Fraser Timber	14.50%	0.66%	0.75%	15.25%
Skyworks Solutions Inc	13.50%	1.66%	1.88%	15.38%
Boyd Gaming Corp	14.50%	0.67%	0.77%	15.27%
Bunge Ltd	12.00%	3.17%	3.55%	15.55%
Federated Investors Inc	10.50%	4.68%	5.17%	15.67%
Corning Inc	13.00%	2.18%	2.46%	15.46%
Materion Corporation	14.50%	0.68%	0.78%	15.28%
GasLog Ltd	11.50%	3.68%	4.10%	15.60%
Bio-Techne Corp.	14.50%	0.71%	0.81%	15.31%
Compass Minerals International Inc	10.50%	4.71%	5.20%	15.70%
Schweitzer Mauduit International Inc	11.00%	4.23%	4.69%	15.69%
Cracker Barrel Old Country Store Inc	12.00%	3.29%	3.68%	15.68%
Hartford Financial Services Group Inc	13.00%	2.31%	2.61%	15.61%
Raymond James Financial Inc	14.00%	1.31%	1.50%	15.50%
Regions Financial Corporation	12.50%	2.87%	3.23%	15.73%
Marathon Petroleum Corporation	13.00%	2.39%	2.70%	15.70%
Magna International Inc	13.00%	2.42%	2.73%	15.73%
Plains All American Pipeline	11.00%	4.43%	4.92%	15.92%
Graham Holdings Company	14.50%	0.94%	1.07%	15.57%
Broadridge Fin'l	14.00%	1.46%	1.66%	15.66%
Lockheed Martin Corp	13.00%	2.46%	2.78%	15.78%
S&P Global	14.50%	0.99%	1.13%	15.63%
SEI Investments Company	14.50%	0.99%	1.14%	15.64%
Dana Inc.	13.50%	2.00%	2.27%	15.77%
Republic Services Inc	13.50%	2.01%	2.29%	15.79%
CNA Financial Corporation	12.50%	3.07%	3.46%	15.96%
Service Corp International Inc	14.00%	1.63%	1.86%	15.86%
KeyCorp	12.50%	3.15%	3.54%	16.04%
Autoliv Inc	13.00%	2.68%	3.03%	16.03%
Crown Castle International Corporation	12.00%	3.69%	4.13%	16.13%
Koninklijke Philips NV	13.50%	2.19%	2.49%	15.99%
Simpson Manufacturing Co Inc	14.50%	1.20%	1.38%	15.88%
Mueller Water Products Inc	14.00%	1.70%	1.94%	15.94%
Intuit Inc	15.00%	0.75%	0.86%	15.86%
Resources Connection Inc	12.50%	3.25%	3.66%	16.16%
Parker Hannifin Corp	14.00%	1.79%	2.04%	16.04%
Ethan Allen Interiors Inc	12.50%	3.30%	3.71%	16.21%
Carnival Corp	12.50%	3.30%	3.71%	16.21%
Chemical Financial Corporation	13.50%	2.35%	2.66%	16.16%
Gorman Rupp Co	14.50%	1.35%	1.55%	16.05%
Linamar Corp	15.00%	0.87%	1.00%	16.00%
UnitedHealth Group	14.50%	1.37%	1.57%	16.07%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Emera Inc.	10.50%	5.39%	5.96%	16.46%
Steelcase Inc	12.00%	3.90%	4.37%	16.37%
HollyFrontier Corporation	14.00%	1.92%	2.19%	16.19%
Sysco Corp	14.00%	1.92%	2.19%	16.19%
Calavo Growers Inc	15.00%	0.94%	1.08%	16.08%
Webster Financial Corporation	14.00%	1.96%	2.23%	16.23%
Alliance Data Systems	15.00%	0.96%	1.10%	16.10%
Nike Inc	15.00%	1.00%	1.15%	16.15%
Apollo Global Mgmt	10.50%	5.52%	6.10%	16.60%
Marcus Corp	14.50%	1.57%	1.80%	16.30%
Valmont Industries	15.00%	1.07%	1.23%	16.23%
Hancock Whitney Corp.	14.00%	2.08%	2.37%	16.37%
Sony Corporation	15.50%	0.62%	0.71%	16.21%
Bristol Myers Squibb Co	13.50%	2.63%	2.98%	16.48%
Infosys Limited	12.00%	4.15%	4.65%	16.65%
Interactive Brokers	15.50%	0.65%	0.76%	16.26%
SunTrust Banks Inc	13.50%	2.71%	3.08%	16.58%
Polaris Industries Inc	14.00%	2.22%	2.53%	16.53%
Mobile Mini	14.00%	2.25%	2.56%	16.56%
Meredith Corp	12.00%	4.30%	4.82%	16.82%
Speedway Motorsports Inc	13.00%	3.33%	3.77%	16.77%
Toro Co	15.00%	1.34%	1.54%	16.54%
Rayonier Advanced Mat.	15.00%	1.34%	1.54%	16.54%
Timken Co	14.00%	2.35%	2.68%	16.68%
Oshkosh Corporation	15.00%	1.36%	1.56%	16.56%
Capstar Financial Holdings Inc	15.50%	0.91%	1.05%	16.55%
ESCO Technologies Inc	16.00%	0.47%	0.55%	16.55%
AVANGRID Inc.	13.00%	3.49%	3.94%	16.94%
Mastercard Incorporated	16.00%	0.49%	0.57%	16.57%
AGCO Corp	15.50%	1.00%	1.16%	16.66%
LPL Financial Holdings Inc	15.00%	1.51%	1.73%	16.73%
BWX Technologies	15.50%	1.02%	1.17%	16.67%
MSA Safety	15.00%	1.52%	1.74%	16.74%
West Pharmaceutical Services Inc	16.00%	0.52%	0.60%	16.60%
Cooper Companies Inc	16.50%	0.02%	0.03%	16.53%
Huntsman Corporation	14.50%	2.06%	2.36%	16.86%
Maxim Integrated Products Inc	13.50%	3.07%	3.48%	16.98%
H B Fuller Co	15.50%	1.08%	1.24%	16.74%
Masco Corp	15.50%	1.08%	1.25%	16.75%
Xylem Inc	15.50%	1.11%	1.29%	16.79%
Tapestry Inc.	14.00%	2.63%	2.99%	16.99%
Rush Enterprises 'A'	15.50%	1.13%	1.31%	16.81%
Anthem Inc.	15.50%	1.14%	1.31%	16.81%
Jabil Inc.	15.50%	1.16%	1.34%	16.84%
Zions Bancorporation	14.50%	2.23%	2.56%	17.06%
Annaly Capital Management Inc	5.50%	11.24%	11.85%	17.35%
Microchip Technology Inc	15.00%	1.75%	2.02%	17.02%
Toll Brothers	15.50%	1.28%	1.48%	16.98%
Belden Inc	16.50%	0.29%	0.34%	16.84%
Lindsay Corporation	15.50%	1.36%	1.57%	17.07%
Kadant Inc	16.00%	0.89%	1.03%	17.03%
MarketAxess Holdings	16.00%	0.89%	1.03%	17.03%
B and G Foods Inc	11.00%	5.94%	6.59%	17.59%
Owens Corning Inc	15.50%	1.44%	1.66%	17.16%
Computer Programs and Systems Inc	15.50%	1.48%	1.70%	17.20%

C = B * (1 + A), D = A + C	A	B	C	D
Loews Corporation	16.50%	0.50%	0.58%	17.08%
Charles Schwab Corporation	16.00%	1.02%	1.19%	17.19%
Worthington Industries	15.00%	2.04%	2.34%	17.34%
Winnebago Industries Inc	16.00%	1.07%	1.24%	17.24%
FirstCash Inc.	16.00%	1.09%	1.27%	17.27%
Altra Industrial Motion Corporation	15.50%	1.64%	1.89%	17.39%
Janus Henderson plc	12.00%	5.16%	5.78%	17.78%
KapStone Paper	16.00%	1.16%	1.35%	17.35%
Brown Forman Corp (Class B)	16.00%	1.18%	1.37%	17.37%
Progressive Corp.	15.50%	1.70%	1.96%	17.46%
Pfizer Inc	14.00%	3.23%	3.68%	17.68%
Argo Group Int'l	15.50%	1.76%	2.03%	17.53%
AAON Inc	16.50%	0.78%	0.91%	17.41%
PulteGroup Inc	16.00%	1.28%	1.49%	17.49%
Inter Parfums Inc	16.00%	1.31%	1.52%	17.52%
AmeriGas Partners LP	8.00%	9.31%	10.06%	18.06%
MTS Systems Corp	15.00%	2.32%	2.66%	17.66%
Bloomin Brands Inc	15.50%	1.85%	2.13%	17.63%
Alliance Resource Partners LP	7.00%	10.35%	11.07%	18.07%
Medifast Inc.	16.50%	0.91%	1.06%	17.56%
Deere and Co	15.50%	1.96%	2.27%	17.77%
Griffon Corporation	16.00%	1.53%	1.78%	17.78%
Citi Trends Inc	16.50%	1.06%	1.24%	17.74%
Open Text Corp	16.00%	1.56%	1.81%	17.81%
First Commonwealth Financial Corp	15.50%	2.11%	2.43%	17.93%
Thor Industries	16.00%	1.61%	1.86%	17.86%
Knoll Inc.	15.00%	2.63%	3.03%	18.03%
Maple Leaf Foods	16.00%	1.66%	1.93%	17.93%
DCP Midstream LP	10.50%	7.19%	7.94%	18.44%
Starbucks Corporation	15.00%	2.69%	3.09%	18.09%
ABM Industries Inc	15.50%	2.20%	2.54%	18.04%
Kforce Inc.	16.00%	1.70%	1.97%	17.97%
Cedar Fair LP	11.00%	6.72%	7.46%	18.46%
KAR Auction Svcs.	15.50%	2.23%	2.57%	18.07%
MDU Resources Group Inc	15.00%	2.74%	3.15%	18.15%
Anheuser Busch Inbev SA NV	13.50%	4.28%	4.86%	18.36%
Kulicke and Soffa Industries Inc	16.00%	1.86%	2.16%	18.16%
Methanex Corp	16.00%	1.87%	2.17%	18.17%
Healthcare Services Group Inc	16.00%	1.88%	2.18%	18.18%
Albany International Corp	17.00%	0.88%	1.03%	18.03%
Rio Tinto Plc	11.50%	6.39%	7.12%	18.62%
Balchem Corp.	17.50%	0.40%	0.47%	17.97%
Iron Mountain Inc	11.50%	6.44%	7.18%	18.68%
Domtar Corporation	14.50%	3.44%	3.94%	18.44%
Enterprise Products Partners LP	12.00%	5.97%	6.69%	18.69%
EQT Midstream Part.	10.00%	7.97%	8.77%	18.77%
Werner Enterprises Inc	17.00%	0.98%	1.15%	18.15%
Coca Cola Bottling Company	17.50%	0.57%	0.67%	18.17%
Tile Shop Holdings Inc	15.50%	2.58%	2.98%	18.48%
TransAlta Corp	16.00%	2.09%	2.42%	18.42%
Telefonica SA	12.50%	5.64%	6.34%	18.84%
KLA Tencor Corporation	15.50%	2.67%	3.08%	18.58%
Spartan Motors Inc	17.50%	0.70%	0.82%	18.32%
Federal Signal Corp	17.00%	1.21%	1.42%	18.42%
Cboe Global Markets	17.00%	1.30%	1.52%	18.52%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Chicos FAS Inc	15.00%	3.38%	3.88%	18.88%
AbbVie Inc	14.50%	3.89%	4.45%	18.95%
American Vanguard Corporation	18.00%	0.41%	0.48%	18.48%
Patterson Companies Inc	14.00%	4.42%	5.04%	19.04%
ILG Inc.	16.50%	2.02%	2.35%	18.85%
Kennametal Inc	16.50%	2.04%	2.38%	18.88%
Old Republic International Corp	15.00%	3.55%	4.09%	19.09%
Ameriprise Financial Inc	16.00%	2.58%	2.99%	18.99%
Tupperware Brands	10.50%	8.13%	8.98%	19.48%
KMG Chemicals	18.50%	0.16%	0.18%	18.68%
HSBC Holdings PLC	13.00%	5.68%	6.42%	19.42%
Canon Inc	14.00%	4.78%	5.44%	19.44%
M D C Holdings Inc	15.00%	3.82%	4.40%	19.40%
Marriott International Inc	17.50%	1.32%	1.56%	19.06%
Energy Transfer Part.	9.00%	9.86%	10.74%	19.74%
Petmed Express Inc	16.00%	2.87%	3.32%	19.32%
Comerica Inc	16.50%	2.42%	2.82%	19.32%
Astec Industries Inc	18.00%	0.94%	1.11%	19.11%
Vulcan Materials	18.00%	1.02%	1.20%	19.20%
Westlake Chemical Corp	18.00%	1.05%	1.23%	19.23%
NutriSystem Inc	16.50%	2.57%	2.99%	19.49%
Coty Inc	15.00%	4.09%	4.71%	19.71%
Tennant Co	18.00%	1.10%	1.29%	19.29%
Cantel Medical Corp	19.00%	0.18%	0.21%	19.21%
ADTRAN Inc	17.00%	2.20%	2.58%	19.58%
Marvell Technology Group Ltd	18.00%	1.21%	1.43%	19.43%
Arthur J Gallagher and Company	17.00%	2.27%	2.66%	19.66%
Cubic Corp	19.00%	0.36%	0.43%	19.43%
Entegris Inc.	18.50%	0.86%	1.02%	19.52%
Regency Centers Corporation	16.00%	3.40%	3.95%	19.95%
TD Ameritrade Holding Corporation	18.00%	1.41%	1.67%	19.67%
Logitech International SA	18.00%	1.44%	1.70%	19.70%
NetApp Inc	17.50%	1.97%	2.32%	19.82%
Boise Cascade	19.00%	0.61%	0.73%	19.73%
Waste Connections	19.00%	0.70%	0.83%	19.83%
Buckeye Partners LP	6.00%	13.72%	14.54%	20.54%
Reliance Steel and Aluminum Co	17.50%	2.26%	2.65%	20.15%
Dominos Pizza Inc	19.00%	0.77%	0.92%	19.92%
Energy Transfer Equity	13.00%	6.81%	7.69%	20.69%
Cabot Microelectronics Corp	18.50%	1.47%	1.74%	20.24%
Caterpillar Inc	17.50%	2.47%	2.90%	20.40%
Boeing Co	18.00%	1.98%	2.33%	20.33%
Vail Resorts	18.00%	1.99%	2.35%	20.35%
LCI Industries	17.50%	2.54%	2.99%	20.49%
National Instruments Corp	18.00%	2.05%	2.42%	20.42%
Wingstop Inc.	19.50%	0.57%	0.68%	20.18%
ABB Ltd	16.50%	3.58%	4.17%	20.67%
Kimball Int'l	18.50%	1.59%	1.89%	20.39%
Blackstone Group LP	12.50%	7.62%	8.58%	21.08%
Insperity Inc	19.50%	0.71%	0.85%	20.35%
Sabre Corp.	18.00%	2.23%	2.63%	20.63%
Sealed Air	19.00%	1.64%	1.96%	20.96%
International Paper Co	17.00%	3.66%	4.28%	21.28%
Callaway Golf Co	20.50%	0.18%	0.21%	20.71%
Realogy Holdings	19.00%	1.70%	2.02%	21.02%

C = B * (1 + A), D = A + C	A	B	C	D
Transmission Holdings Inc	19.50%	1.25%	1.50%	21.00%
Brinks Company	20.00%	0.78%	0.93%	20.93%
Energizer Holdings	19.00%	1.80%	2.15%	21.15%
Nisource Inc	18.00%	2.83%	3.33%	21.33%
Aircastle Limited	15.50%	5.35%	6.17%	21.67%
CIT Group Inc	19.00%	1.85%	2.20%	21.20%
Healthcare Realty Trust Inc	17.00%	3.90%	4.56%	21.56%
KB Home	20.50%	0.42%	0.51%	21.01%
CDK Global Inc.	20.00%	0.97%	1.16%	21.16%
Synovus Financial Corporation New	19.00%	1.98%	2.35%	21.35%
New Media Investment	12.00%	9.37%	10.50%	22.50%
Big 5 Sporting Goods	11.50%	10.26%	11.44%	22.94%
Applied Materials Inc	20.00%	1.83%	2.19%	22.19%
Restaurant Brands Int'l	19.00%	2.92%	3.48%	22.48%
Nucor Corporation	19.50%	2.44%	2.91%	22.41%
Expedia Group	21.00%	0.98%	1.18%	22.18%
Guess? Inc.	18.00%	3.98%	4.70%	22.70%
Core Laboratories	20.00%	2.00%	2.40%	22.40%
Texas Roadhouse Inc	20.50%	1.51%	1.82%	22.32%
Six Flags Entertainment Corporation	17.50%	4.63%	5.43%	22.93%
Ashland Global Hldgs.	21.00%	1.18%	1.43%	22.43%
Exxon Mobil Corp	18.00%	4.19%	4.95%	22.95%
Mercury General Corp	17.50%	4.73%	5.56%	23.06%
NVIDIA Corp	22.00%	0.25%	0.30%	22.30%
New York Community Bancorp Inc	16.00%	6.27%	7.27%	23.27%
Hospitality Properties Trust	15.00%	7.35%	8.45%	23.45%
MKS Instruments	21.50%	0.90%	1.09%	22.59%
Terex Corp	21.50%	1.04%	1.27%	22.77%
Teck Resources 'B'	22.00%	0.67%	0.82%	22.82%
KKR & Co.	20.00%	2.68%	3.21%	23.21%
ArcBest Corporation	22.00%	0.70%	0.85%	22.85%
Western Gas Part.	15.50%	7.27%	8.40%	23.90%
PotlatchDeltic Corp.	19.50%	3.35%	4.01%	23.51%
Brooks Automation Inc	21.50%	1.38%	1.67%	23.17%
Total SA	18.00%	4.92%	5.81%	23.81%
Pembina Pipeline	18.00%	4.94%	5.82%	23.82%
Primoris Services	22.00%	0.95%	1.15%	23.15%
Ball Corp	22.00%	0.98%	1.20%	23.20%
Churchill Downs Inc	22.50%	0.55%	0.67%	23.17%
Comtech Telecommunications Corp	22.00%	1.12%	1.37%	23.37%
Jefferies Fin'l Group	21.00%	2.13%	2.58%	23.58%
Louisiana Pacific Corp	21.50%	1.72%	2.09%	23.59%
FMC Corp	22.50%	0.78%	0.96%	23.46%
MSCI Inc	22.00%	1.34%	1.63%	23.63%
Monolithic Power Sys.	22.50%	0.85%	1.04%	23.54%
Vodafone Group	15.50%	7.87%	9.09%	24.59%
ONEOK Inc	18.50%	4.89%	5.79%	24.29%
Owens and Minor Inc	17.00%	6.55%	7.66%	24.66%
Renaissancere Holdings Ltd	23.00%	1.01%	1.24%	24.24%
Olin Corp	21.50%	2.69%	3.27%	24.77%
EnPro Industries Inc	23.00%	1.28%	1.57%	24.57%
Royal Gold Inc	23.00%	1.28%	1.58%	24.58%
Legg Mason Inc	20.00%	4.33%	5.19%	25.19%
Consolidated Water	22.00%	2.46%	3.01%	25.01%
Lam Research Corp	22.00%	2.59%	3.16%	25.16%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Trinseo SA	22.50%	2.13%	2.61%	25.11%
Granite Construction Inc	23.50%	1.18%	1.46%	24.96%
Agnico Eagle Mines Ltd	23.50%	1.24%	1.53%	25.03%
Raven Industries Inc	23.50%	1.33%	1.64%	25.14%
Andeavor Logistics LP	16.50%	8.40%	9.79%	26.29%
Copa Holdings SA	21.00%	4.08%	4.93%	25.93%
Weyerhaeuser Company	21.50%	3.59%	4.36%	25.86%
Greenhill & Co.	24.50%	0.66%	0.82%	25.32%
Vale S.A. ADR	20.00%	5.21%	6.26%	26.26%
Enable Midstream Part.	18.00%	7.37%	8.70%	26.70%
Lions Gate 'A'	24.00%	1.57%	1.94%	25.94%
Universal Display Corp	25.50%	0.21%	0.26%	25.76%
Nexstar Media Group	24.00%	1.91%	2.37%	26.37%
America Movil SAB de CV	24.00%	1.96%	2.43%	26.43%
Office Depot Inc	23.00%	3.09%	3.80%	26.80%
Cypress Semiconductor Corporation	23.50%	2.75%	3.39%	26.89%
Wendys Company	24.50%	1.85%	2.30%	26.80%
MGM Resorts International	25.00%	1.68%	2.10%	27.10%
Southern Copper Corp	23.50%	3.19%	3.93%	27.43%
Brookfield Infrastruc.	22.00%	4.69%	5.72%	27.72%
Royal Dutch Shell Plc (Class B)	21.00%	5.77%	6.98%	27.98%
Quaker Chemical Corporation	26.00%	0.86%	1.08%	27.08%
Abercrombie and Fitch Co	24.00%	2.90%	3.59%	27.59%
CVR Energy	18.50%	8.41%	9.97%	28.47%
Williams Companies Inc	22.50%	4.46%	5.47%	27.97%
Kemper Corporation	26.50%	1.22%	1.54%	28.04%
Imperial Oil Limited	26.00%	1.88%	2.37%	28.37%
Equinix Inc	26.00%	2.08%	2.62%	28.62%
Gladstone Captial Corporation	19.50%	8.58%	10.25%	29.75%
Phillips 66 Partners	22.50%	5.60%	6.86%	29.36%
Axis Capital Holdings Ltd	25.50%	2.78%	3.49%	28.99%
TiVo Corp.	22.50%	5.90%	7.23%	29.73%
Delek US Holdings	26.50%	2.02%	2.56%	29.06%
Glatfelter	25.50%	3.15%	3.96%	29.46%
MPLX LP	22.00%	6.73%	8.21%	30.21%
Wynn Resorts Ltd	27.00%	2.11%	2.68%	29.68%
Tredegar Corp	27.50%	2.02%	2.58%	30.08%
Posco	26.50%	3.09%	3.91%	30.41%
CVR Refining LP	15.50%	14.16%	16.35%	31.85%
Devon Energy Corp	29.00%	0.79%	1.02%	30.02%
Carpenter Technology Corp	29.00%	1.41%	1.82%	30.82%
AmTrust Financial Svcs.	26.00%	4.70%	5.92%	31.92%
Steel Dynamics Inc	29.00%	1.72%	2.21%	31.21%
Schlumberger Ltd	28.00%	3.18%	4.07%	32.07%
STMicroelectronics	30.00%	1.23%	1.60%	31.60%
Int'l Game Tech. PLC	27.50%	3.97%	5.06%	32.56%
Daktronics Inc	28.50%	3.17%	4.07%	32.57%
National CineMedia Inc	24.00%	7.70%	9.55%	33.55%
Extended Stay America	27.50%	4.23%	5.40%	32.90%
World Wrestling Entertainment	31.50%	0.60%	0.79%	32.29%
Sirius XM Holdings Inc	31.50%	0.63%	0.83%	32.33%
Northland Power Inc	27.00%	5.28%	6.71%	33.71%
Haynes International Inc	30.50%	2.31%	3.02%	33.52%
Suburban Propane	23.00%	9.86%	12.13%	35.13%
Covanta Holding Corporation	27.50%	5.73%	7.31%	34.81%

C = B * (1 + A), D = A + C	A	B	C	D
Northwest Natural Gas Co	30.50%	2.90%	3.79%	34.29%
World Fuel Services Corporation	32.50%	0.93%	1.23%	33.73%
Melco Resorts & Entert.	31.00%	2.63%	3.44%	34.44%
EOG Resources Inc	33.00%	0.77%	1.02%	34.02%
Pan American Silver Corp	33.00%	0.89%	1.18%	34.18%
Atento S.A.	28.50%	5.64%	7.25%	35.75%
Gannett Co.	28.50%	6.24%	8.02%	36.52%
Tenaris S.A. ADS	31.50%	4.17%	5.48%	36.98%
Carlyle Group L.P.	30.00%	5.91%	7.68%	37.68%
Myers Industries Inc	33.50%	2.46%	3.28%	36.78%
Barnes and Noble Inc	26.00%	10.00%	12.60%	38.60%
Black Stone Minerals	29.00%	7.31%	9.43%	38.43%
AngloGold Ashanti Ltd	37.00%	0.80%	1.10%	38.10%
AEGON Insurance Group	32.50%	5.39%	7.14%	39.64%
Range Resources	38.00%	0.54%	0.74%	38.74%
Chemours Co. (The)	36.50%	2.32%	3.17%	39.67%
Quanex Corp	38.00%	0.94%	1.30%	39.30%
Goldcorp Inc	38.50%	0.75%	1.03%	39.53%
Cimarex Energy Co	38.50%	0.78%	1.08%	39.58%
Crawford and Company (Class B)	37.50%	2.34%	3.22%	40.72%
Enbridge Energy Part.	28.50%	12.14%	15.60%	44.10%
EQT Corporation	40.50%	0.24%	0.34%	40.84%
Investment Technology Group Inc	39.50%	1.27%	1.76%	41.26%
HCP Inc	35.50%	5.44%	7.37%	42.87%
National Oilwell Varco Inc	41.50%	0.46%	0.65%	42.15%
New York Times Co	41.50%	0.69%	0.98%	42.48%
XL Group Ltd.	42.00%	1.55%	2.19%	44.19%
Aspen Insurance Holdings Limited	43.00%	2.63%	3.76%	46.76%
Broadcom Inc.	44.50%	3.35%	4.83%	49.33%
CF Industries Holdings Inc	47.00%	2.53%	3.71%	50.71%
Encana Corporation	49.50%	0.48%	0.71%	50.21%
Finning Int'l	50.00%	2.60%	3.90%	53.90%
Mack Cali Realty Corporation	49.00%	3.69%	5.49%	54.49%
American International Group Inc	52.00%	2.43%	3.70%	55.70%
Apollo Investment Corporation	50.00%	10.55%	15.82%	65.82%
Heidrick and Struggles International Inc	59.50%	1.25%	1.99%	61.49%
Transcanada Corporation	56.50%	4.76%	7.45%	63.95%
U.S. Silica Holdings	62.00%	1.07%	1.74%	63.74%
Liberty Property Trust	82.50%	3.59%	6.56%	89.06%
Average	12.71%	2.45%	2.74%	15.45%

C = B * (1 + A), D = A + C **A** **B** **C** **D**

DCF Analysis
A and B: Value Line Stock Screener, August 19, 2018

Company Name	Projected EPS Growth 3- to 5-Year	Dividend Yield	Adjusted Dividend Yield	DCF ROE
FirstEnergy Corp	3.00%	3.86%	3.98%	6.98%
Avista Corp	4.00%	2.89%	3.00%	7.00%
Hawaiian Electric Industries Inc	3.50%	3.47%	3.59%	7.09%
NorthWestern Corporation	3.50%	3.56%	3.68%	7.18%
Portland General Electric Company	4.00%	3.06%	3.18%	7.18%
Allegiant Travel Company	5.00%	2.06%	2.17%	7.17%
Juniper Networks Inc	4.50%	2.60%	2.71%	7.21%
TEGNA Inc.	4.50%	2.61%	2.73%	7.23%
Capital One Financial Corporation	5.50%	1.61%	1.70%	7.20%
Andeavor	5.50%	1.63%	1.72%	7.22%
Cogeco Communic.	4.50%	2.68%	2.80%	7.30%
GlaxoSmithKline PLC	2.00%	5.24%	5.34%	7.34%
US Bancorp	5.00%	2.25%	2.36%	7.36%
Conagra Brands	5.00%	2.27%	2.38%	7.38%
CoreCivic Inc.	0.50%	6.81%	6.84%	7.34%
Verizon Communications Inc	3.00%	4.31%	4.44%	7.44%
Connecticut Water Services Inc	5.50%	1.81%	1.91%	7.41%
Affiliated Managers Group Inc	6.50%	0.82%	0.87%	7.37%
Public Service Enterprise Group Inc	4.00%	3.35%	3.48%	7.48%
L Brands Inc	0.00%	7.37%	7.37%	7.37%
Forest City Realty	4.50%	2.87%	3.00%	7.50%
Tribune Media Co.	4.50%	2.88%	3.01%	7.51%
Science Applications International Corporation	6.00%	1.39%	1.48%	7.48%
Dentsply Sirona	6.50%	0.91%	0.96%	7.46%
Dun and Bradstreet Corp	6.00%	1.47%	1.56%	7.56%
Simon Property Group Inc	3.00%	4.48%	4.62%	7.62%
PPL Corporation	2.00%	5.49%	5.60%	7.60%
Elbit Systems Ltd	6.00%	1.51%	1.60%	7.60%
Advanced Drainage Systems Inc	6.50%	1.02%	1.09%	7.59%
Walmart Inc.	5.50%	2.13%	2.24%	7.74%
MSC Industrial Direct Co Inc	5.00%	2.66%	2.80%	7.80%
Xerox Corp	4.00%	3.71%	3.86%	7.86%
Torchmark Cap Tr III	7.00%	0.73%	0.78%	7.78%
Green Plains Inc	5.00%	2.76%	2.90%	7.90%
Convergys Corp	6.00%	1.79%	1.90%	7.90%
SJW Group	6.00%	1.81%	1.92%	7.92%
American States Water Co	6.00%	1.82%	1.93%	7.93%
Group 1 Automotive Inc	6.50%	1.33%	1.42%	7.92%
Toyota Motor Corporation	3.00%	4.83%	4.97%	7.97%
Allete Inc	5.00%	2.84%	2.98%	7.98%
Sturm Ruger and Co	6.00%	1.84%	1.95%	7.95%
Ralph Lauren Corporation	6.00%	1.85%	1.96%	7.96%
The Travelers Companies Inc	5.50%	2.36%	2.49%	7.99%
American Electric Power Company Inc	4.50%	3.42%	3.57%	8.07%
Popular Inc	6.00%	1.95%	2.06%	8.06%
Apartment Investment and Management Compar	4.50%	3.46%	3.62%	8.12%
Edison International	4.50%	3.46%	3.62%	8.12%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Capitol Federal Financial Inc	5.50%	2.54%	2.68%	8.18%
Voya Financial	8.00%	0.08%	0.09%	8.09%
Southern Co	3.00%	5.11%	5.26%	8.26%
Pentair Inc	6.50%	1.64%	1.74%	8.24%
Eversource Energy	5.00%	3.19%	3.35%	8.35%
Fidelity Nat'l Info.	7.00%	1.20%	1.28%	8.28%
Qualcomm Inc	4.50%	3.75%	3.92%	8.42%
WD 40 Co	7.00%	1.26%	1.35%	8.35%
HP Inc.	6.00%	2.27%	2.41%	8.41%
Merck and Co Inc	5.50%	2.78%	2.93%	8.43%
Leidos Holdings Inc	6.50%	1.79%	1.90%	8.40%
Insteel Industries Inc	8.00%	0.30%	0.32%	8.32%
Pinnacle West Capital Corp	5.00%	3.38%	3.55%	8.55%
Jones Lang LaSalle	8.00%	0.53%	0.58%	8.58%
Avnet Inc	7.00%	1.60%	1.71%	8.71%
Methode Electronics	7.50%	1.10%	1.18%	8.68%
Embraer SA	7.00%	1.60%	1.71%	8.71%
Extra Space Storage	5.00%	3.61%	3.79%	8.79%
Choice Hotels International Inc	7.50%	1.12%	1.21%	8.71%
Flushing Financial Corp	5.50%	3.13%	3.31%	8.81%
Xcel Energy Inc	5.50%	3.15%	3.32%	8.82%
General Mills Inc	4.50%	4.15%	4.34%	8.84%
Reinsurance Group of America Inc	7.00%	1.67%	1.79%	8.79%
Hanesbrands Inc	5.50%	3.26%	3.44%	8.94%
Ford Motor Company	2.50%	6.28%	6.44%	8.94%
Principal Financial Group Inc	5.00%	3.81%	4.00%	9.00%
AptarGroup Inc	7.50%	1.32%	1.42%	8.92%
Shaw Communications Inc (Class B)	4.50%	4.36%	4.55%	9.05%
Valvoline Inc.	7.50%	1.36%	1.46%	8.96%
Ingredion Incorporated	6.50%	2.36%	2.51%	9.01%
Hexcel Corporation	8.00%	0.88%	0.95%	8.95%
Sensient Technologies Corp	7.00%	1.90%	2.03%	9.03%
Wells Fargo and Company	6.00%	2.92%	3.10%	9.10%
Fifth Third Bancorp	6.50%	2.43%	2.58%	9.08%
Luxottica Group Spa	7.00%	1.94%	2.07%	9.07%
Robert Half International Inc	7.50%	1.46%	1.56%	9.06%
Rockwell Collins Inc	8.00%	0.96%	1.04%	9.04%
NN Inc	7.50%	1.48%	1.59%	9.09%
Flowserve Corp	7.50%	1.48%	1.59%	9.09%
Realty Income Corporation	4.50%	4.49%	4.69%	9.19%
Park National Corp	5.50%	3.49%	3.68%	9.18%
Caseys General Stores Inc	8.00%	1.01%	1.09%	9.09%
Vectren Corp	6.50%	2.52%	2.68%	9.18%
Western Union Company	5.00%	4.02%	4.22%	9.22%
Stepan Company	8.00%	1.02%	1.10%	9.10%
Symantec Corp	7.50%	1.54%	1.66%	9.16%
Telephone and Data Systems Inc New	7.00%	2.09%	2.24%	9.24%
Korn Ferry International	8.50%	0.60%	0.66%	9.16%
Estee Lauder Companies Inc	8.00%	1.12%	1.21%	9.21%
Prudential Financial Inc	5.50%	3.64%	3.84%	9.34%
Standex International Corp	8.50%	0.66%	0.72%	9.22%
Cato Corp	3.50%	5.67%	5.86%	9.36%
PACCAR Inc	7.50%	1.67%	1.79%	9.29%
Equifax Inc	8.00%	1.17%	1.27%	9.27%
Millicom International Cellular S A	7.00%	2.20%	2.35%	9.35%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
BT Group PLC	2.00%	7.23%	7.38%	9.38%
UniFirst Corp	9.00%	0.24%	0.26%	9.26%
PPG Industries Inc	7.50%	1.77%	1.90%	9.40%
ONE Gas Inc.	7.00%	2.30%	2.46%	9.46%
Quad/Graphics Inc.	4.00%	5.30%	5.51%	9.51%
Benchmark Electronics Inc	7.00%	2.34%	2.50%	9.50%
Nielsen Hldgs. plc	4.00%	5.35%	5.57%	9.57%
UGI Corp	7.50%	1.88%	2.02%	9.52%
Sonoco Products	6.50%	2.95%	3.14%	9.64%
JM Smucker Company	6.50%	2.97%	3.16%	9.66%
Amphenol Corp	8.50%	0.98%	1.06%	9.56%
Nordstrom Inc	7.00%	2.50%	2.68%	9.68%
Gildan Activewear	8.00%	1.50%	1.62%	9.62%
MGE Energy Inc	7.50%	2.02%	2.17%	9.67%
Lincoln National Capital VI	7.50%	2.02%	2.17%	9.67%
Power Financial	4.00%	5.53%	5.75%	9.75%
Xilinx Inc	7.50%	2.03%	2.18%	9.68%
Amdocs Ltd	8.00%	1.53%	1.65%	9.65%
OGE Energy Corp	6.00%	3.54%	3.75%	9.75%
Cabot Corp	7.50%	2.05%	2.20%	9.70%
Atmos Energy Corp	7.50%	2.06%	2.21%	9.71%
SL Green Realty Corporation	6.50%	3.07%	3.27%	9.77%
Cheesecake Factory Inc	7.00%	2.57%	2.75%	9.75%
Alliant Energy Corp	6.50%	3.07%	3.27%	9.77%
Fresh Del Monte Produce Inc	8.00%	1.57%	1.70%	9.70%
Sun Life Fin'l Svcs.	6.00%	3.58%	3.80%	9.80%
Sonic Automotive Inc	8.50%	1.10%	1.19%	9.69%
Black Hills Corp	6.50%	3.10%	3.30%	9.80%
Assurant Inc	7.50%	2.13%	2.29%	9.79%
Bank of Montreal	6.00%	3.63%	3.85%	9.85%
Actuant Corp	9.50%	0.14%	0.15%	9.65%
Stantec Inc.	8.00%	1.66%	1.79%	9.79%
Forrester Research Inc	8.00%	1.66%	1.79%	9.79%
MetLife Inc	6.00%	3.66%	3.88%	9.88%
Macys Inc	5.50%	4.19%	4.42%	9.92%
Avalonbay Communities Inc	6.50%	3.21%	3.42%	9.92%
Thomson Reuters Corp	6.50%	3.23%	3.44%	9.94%
Duke Realty Corporation	7.00%	2.76%	2.96%	9.96%
DSW Inc	6.00%	3.78%	4.00%	10.00%
Navient Corporation	5.00%	4.79%	5.03%	10.03%
Ventas Inc	4.50%	5.30%	5.53%	10.03%
Thermo Fisher Scientific Inc	9.50%	0.30%	0.32%	9.82%
Cincinnati Financial Corp	7.00%	2.80%	2.99%	9.99%
Commerce Bancshares Inc	8.50%	1.32%	1.43%	9.93%
Aqua America Inc	7.50%	2.32%	2.50%	10.00%
Hershey Company	7.00%	2.85%	3.05%	10.05%
Coca Cola Company	6.50%	3.35%	3.57%	10.07%
CMS Energy Corp	7.00%	2.87%	3.07%	10.07%
Celanese Corp	8.00%	1.87%	2.02%	10.02%
Stanley Black and Decker Inc	8.00%	1.87%	2.02%	10.02%
ResMed Inc	8.50%	1.39%	1.50%	10.00%
Middlesex Water Co	8.00%	1.89%	2.04%	10.04%
Williams Sonoma	7.00%	2.90%	3.10%	10.10%
General Electric Company	6.00%	3.90%	4.14%	10.14%
EMCOR Group Inc	9.50%	0.41%	0.45%	9.95%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Novo Nordisk	7.50%	2.41%	2.59%	10.09%
Dicks Sporting Goods Inc	7.50%	2.42%	2.60%	10.10%
WPP PLC	5.00%	4.92%	5.17%	10.17%
Tower International	8.50%	1.44%	1.57%	10.07%
Nestle SA	7.00%	2.95%	3.15%	10.15%
Forward Air Corp	9.00%	0.95%	1.03%	10.03%
Columbia Sportswear Company	9.00%	0.97%	1.06%	10.06%
Duke Energy Corp New	5.50%	4.51%	4.76%	10.26%
WW Grainger Inc	8.50%	1.52%	1.65%	10.15%
Kellogg Company	7.00%	3.04%	3.25%	10.25%
Discover Financial Services	8.00%	2.05%	2.22%	10.22%
Oracle Corp	8.50%	1.57%	1.71%	10.21%
Target Corp	7.00%	3.08%	3.30%	10.30%
Gap Inc	7.00%	3.10%	3.32%	10.32%
DTE Energy Company	7.00%	3.11%	3.32%	10.32%
PNM Resources Inc	7.50%	2.61%	2.80%	10.30%
Ecolab Inc	9.00%	1.11%	1.21%	10.21%
Herman Miller Inc	8.00%	2.12%	2.29%	10.29%
Northrop Grumman Corp Holding Co	8.50%	1.63%	1.77%	10.27%
Selective Insurance Group Inc	9.00%	1.13%	1.23%	10.23%
Seagate Technology	5.50%	4.64%	4.90%	10.40%
Archer Daniels Midland Company	7.50%	2.65%	2.85%	10.35%
Innospec Inc	9.00%	1.16%	1.26%	10.26%
Metro Inc	8.50%	1.67%	1.82%	10.32%
Kelly Services Inc	9.00%	1.19%	1.30%	10.30%
STERIS plc	9.00%	1.19%	1.30%	10.30%
Kohls Corporation	7.00%	3.19%	3.42%	10.42%
Otter Tail Corp	7.50%	2.71%	2.91%	10.41%
Medtronic plc	8.00%	2.21%	2.38%	10.38%
Foot Locker Inc	7.50%	2.72%	2.93%	10.43%
Russel Metals Inc	5.00%	5.23%	5.49%	10.49%
AmerisourceBergen Corp	8.50%	1.73%	1.88%	10.38%
Chesapeake Utilities	8.50%	1.73%	1.88%	10.38%
American Financial Group	9.00%	1.24%	1.35%	10.35%
WEC Energy Group	7.00%	3.24%	3.46%	10.46%
J and J Snack Foods Corp	9.00%	1.24%	1.35%	10.35%
Garmin Ltd	7.00%	3.24%	3.47%	10.47%
Newmont Mining Corp Holding Co	8.50%	1.75%	1.90%	10.40%
Sanofi	6.00%	4.26%	4.51%	10.51%
Caleres Inc.	9.50%	0.77%	0.84%	10.34%
ManpowerGroup	8.00%	2.29%	2.47%	10.47%
Phibro Animal Health	9.50%	0.81%	0.89%	10.39%
Franklin Resources Inc	7.50%	2.81%	3.02%	10.52%
Ameren Corp	7.50%	2.83%	3.04%	10.54%
Mosaic Company New	10.00%	0.34%	0.37%	10.37%
Regal Beloit Corp	9.00%	1.36%	1.48%	10.48%
American Express Company	9.00%	1.36%	1.48%	10.48%
Goldman Sachs Group Inc	9.00%	1.37%	1.49%	10.49%
Canadian Imperial Bank of Commerce	6.00%	4.37%	4.64%	10.64%
Cisco Systems Inc	7.50%	2.88%	3.09%	10.59%
Teradyne Inc	9.50%	0.92%	1.00%	10.50%
General Dynamics Corporation	8.50%	1.92%	2.08%	10.58%
MGP Ingredients	10.00%	0.43%	0.47%	10.47%
Spire Inc.	7.50%	2.93%	3.15%	10.65%
Wabtec Corp	10.00%	0.44%	0.48%	10.48%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Oxford Industries Inc	9.00%	1.45%	1.58%	10.58%
CTS Corporation	10.00%	0.46%	0.51%	10.51%
Bruker Corporation	10.00%	0.47%	0.51%	10.51%
Allegion Plc	9.50%	0.97%	1.06%	10.56%
Diageo Plc	8.00%	2.48%	2.68%	10.68%
Acco Brands Corporation	8.50%	1.99%	2.16%	10.66%
Walt Disney Co	9.00%	1.49%	1.63%	10.63%
Omnicom Group Inc	7.00%	3.50%	3.74%	10.74%
BorgWarner Inc	9.00%	1.50%	1.64%	10.64%
Church and Dwight Co Inc	9.00%	1.52%	1.66%	10.66%
Weis Markets	8.00%	2.53%	2.73%	10.73%
Papa Johns International Inc	8.50%	2.05%	2.22%	10.72%
Maiden Hldgs. Ltd.	5.50%	5.06%	5.34%	10.84%
Applied Industrial Technologies Inc	9.00%	1.57%	1.71%	10.71%
Wiley John and Sons Inc (Class A)	8.50%	2.07%	2.25%	10.75%
Saputo Inc.	9.00%	1.57%	1.72%	10.72%
Public Storage	7.00%	3.58%	3.83%	10.83%
Clorox Co	8.00%	2.60%	2.81%	10.81%
Lancaster Colony Corporation	9.00%	1.60%	1.75%	10.75%
Aon PLC	9.50%	1.12%	1.22%	10.72%
Honda Motor Co Ltd	7.50%	3.12%	3.35%	10.85%
Royal Bank of Canada	7.00%	3.66%	3.91%	10.91%
Huntington Ingalls Industries Inc	9.50%	1.17%	1.28%	10.78%
Amgen Inc	8.00%	2.68%	2.89%	10.89%
International Flavors and Fragrances Inc	8.50%	2.21%	2.40%	10.90%
CVS Caremark Corporation	8.00%	2.71%	2.93%	10.93%
Expeditors International of Washington Inc	9.50%	1.22%	1.33%	10.83%
Kaman Corporation	9.50%	1.22%	1.33%	10.83%
AFLAC Inc	8.50%	2.22%	2.41%	10.91%
PepsiCo Inc	7.50%	3.23%	3.47%	10.97%
Phillips 66	8.00%	2.77%	2.99%	10.99%
Penske Automotive Group Inc	8.00%	2.78%	3.00%	11.00%
Eastman Chemical Co	8.50%	2.29%	2.49%	10.99%
Provident Financial Services Inc	7.50%	3.30%	3.55%	11.05%
Lithia Motors Inc	9.50%	1.34%	1.47%	10.97%
Nasdaq Inc.	9.00%	1.89%	2.06%	11.06%
GEO Group (The)	3.50%	7.41%	7.67%	11.17%
SAP AE	9.50%	1.42%	1.55%	11.05%
Xperi Corp.	6.00%	4.92%	5.22%	11.22%
Aptiv PLC	10.00%	0.95%	1.04%	11.04%
Matthews International Corp	9.50%	1.46%	1.60%	11.10%
American Eagle Outfitters Inc	9.00%	1.97%	2.15%	11.15%
Marsh and McLennan Companies Inc	9.00%	1.98%	2.15%	11.15%
Bemis Co Inc	8.50%	2.49%	2.70%	11.20%
RPM International Inc	9.00%	2.00%	2.18%	11.18%
Aetna Inc	10.00%	1.01%	1.11%	11.11%
Costco Wholesale Corporation	10.00%	1.01%	1.11%	11.11%
Global Payments Inc	11.00%	0.03%	0.04%	11.04%
LyondellBasell Industries NV	7.50%	3.54%	3.80%	11.30%
Total System Services	10.50%	0.55%	0.61%	11.11%
Crane Co	9.50%	1.57%	1.71%	11.21%
United Technologies Corporation	9.00%	2.08%	2.27%	11.27%
Citigroup Inc	8.50%	2.58%	2.80%	11.30%
Daimler AG	4.00%	7.09%	7.38%	11.38%
Exelon Corp	8.00%	3.10%	3.35%	11.35%

C = B * (1 + A), D = A + C	A	B	C	D
PVH Corp	11.00%	0.10%	0.11%	11.11%
Whirlpool Corp	7.50%	3.62%	3.89%	11.39%
PolyOne Corp.	9.50%	1.62%	1.78%	11.28%
j2 Global Inc	9.00%	2.13%	2.32%	11.32%
Old National Bancorp	8.50%	2.63%	2.86%	11.36%
Interface Inc	10.00%	1.14%	1.25%	11.25%
SNC-Lavalin Group	9.00%	2.14%	2.33%	11.33%
Air Products and Chemicals Inc	8.50%	2.64%	2.87%	11.37%
Dominion Energy	6.50%	4.66%	4.96%	11.46%
Bank of New York Mellon Corporation	9.00%	2.17%	2.36%	11.36%
York Water Company	9.00%	2.17%	2.37%	11.37%
Becton Dickinson and Company	10.00%	1.19%	1.30%	11.30%
Core Mark Holding Co Inc	10.00%	1.19%	1.31%	11.31%
Enbridge Inc	5.50%	5.71%	6.02%	11.52%
Woodward Inc	10.50%	0.71%	0.79%	11.29%
Yum Brands Inc	9.50%	1.72%	1.88%	11.38%
Abbott Laboratories	9.50%	1.73%	1.90%	11.40%
AMETEK Inc.	10.50%	0.73%	0.81%	11.31%
Digital Realty Trust Inc	8.00%	3.26%	3.52%	11.52%
Haverty Furniture Companies Inc	8.00%	3.27%	3.53%	11.53%
Apogee Enterprises Inc	10.00%	1.27%	1.40%	11.40%
MAXIMUS Inc	11.00%	0.28%	0.31%	11.31%
Briggs and Stratton Corp	8.50%	2.78%	3.02%	11.52%
Quest Diagnostics Inc	9.50%	1.80%	1.97%	11.47%
Universal Health `B'	11.00%	0.31%	0.35%	11.35%
Lennar Corp	11.00%	0.32%	0.35%	11.35%
PriceSmart	10.50%	0.82%	0.90%	11.40%
Gentex Corp	9.50%	1.82%	1.99%	11.49%
California Water Service Group	9.50%	1.83%	2.00%	11.50%
Neenah Inc.	9.50%	1.83%	2.00%	11.50%
Packaging Corp	8.50%	2.83%	3.07%	11.57%
Cullen Frost Bankers Inc	9.00%	2.35%	2.56%	11.56%
Spectrum Brands Holdings Inc.	9.50%	1.86%	2.04%	11.54%
Snap on Inc	9.50%	1.87%	2.05%	11.55%
Unum Group	8.50%	2.89%	3.13%	11.63%
Plantronics Inc	10.50%	0.90%	0.99%	11.49%
Albemarle Corp	10.00%	1.40%	1.54%	11.54%
Honeywell International Inc	9.50%	1.92%	2.10%	11.60%
East West Bancorp Inc	10.00%	1.42%	1.57%	11.57%
Franco Nevada Corp	10.00%	1.44%	1.58%	11.58%
Synnex Corp	10.00%	1.44%	1.58%	11.58%
Hormel Foods Corporation	9.50%	1.94%	2.13%	11.63%
Brinker International Inc	8.00%	3.46%	3.73%	11.73%
Universal Forest Products Inc	10.50%	0.97%	1.07%	11.57%
Signature Bank	11.00%	0.48%	0.53%	11.53%
United Parcel Service	8.50%	2.99%	3.24%	11.74%
Flowers Foods Inc	8.00%	3.49%	3.77%	11.77%
La Z Boy Inc	10.00%	1.51%	1.66%	11.66%
Sinclair Broadcast Group Inc	9.00%	2.51%	2.73%	11.73%
China Mobile (ADR)	5.50%	6.02%	6.35%	11.85%
NextEra Energy Inc	9.00%	2.54%	2.76%	11.76%
Spirit Aerosystems Holdings Inc	11.00%	0.55%	0.61%	11.61%
AT&T	5.50%	6.06%	6.39%	11.89%
International Speedway Corporation	10.50%	1.06%	1.17%	11.67%
Canadian National Railway Co	10.00%	1.57%	1.72%	11.72%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
BCE Inc	6.00%	5.57%	5.90%	11.90%
Southwest Gas	9.00%	2.57%	2.80%	11.80%
Accenture Plc New	10.00%	1.61%	1.77%	11.77%
Movado Group	10.00%	1.61%	1.77%	11.77%
IDEX Corporation	10.50%	1.13%	1.25%	11.75%
Danaher Corp	11.00%	0.64%	0.70%	11.70%
McCormick and Co	10.00%	1.65%	1.81%	11.81%
Viad Corp New	11.00%	0.66%	0.73%	11.73%
Bassett Furniture Industries Inc	9.50%	2.17%	2.37%	11.87%
Canadian Tire 'A'	9.50%	2.17%	2.38%	11.88%
Chubb Ltd.	9.50%	2.18%	2.38%	11.88%
Cummins Inc	8.50%	3.18%	3.45%	11.95%
Fastenal Co	9.00%	2.69%	2.93%	11.93%
Shenandoah Telecommunications Co	11.00%	0.69%	0.77%	11.77%
CenturyLink Inc	2.50%	9.20%	9.43%	11.93%
McKesson Corp	10.50%	1.21%	1.33%	11.83%
State Street Corporation	9.50%	2.21%	2.42%	11.92%
CSG Systems International Inc	9.50%	2.22%	2.43%	11.93%
Bank of Nova Scotia	7.50%	4.24%	4.55%	12.05%
Ryder System Inc	9.00%	2.78%	3.03%	12.03%
Investors Bancorp Inc	9.00%	2.79%	3.04%	12.04%
Matson Inc	9.50%	2.32%	2.54%	12.04%
New Jersey Resources Corp	9.50%	2.32%	2.54%	12.04%
Jacobs Engineering Group Inc	11.00%	0.84%	0.93%	11.93%
CBS Corp	10.50%	1.35%	1.50%	12.00%
Bank of Hawaii	9.00%	2.86%	3.12%	12.12%
ITT Inc.	11.00%	0.88%	0.97%	11.97%
Valero Energy Corporation	9.00%	2.88%	3.14%	12.14%
Fortis Inc	8.00%	3.90%	4.22%	12.22%
Toronto Dominion Bank	8.50%	3.41%	3.69%	12.19%
Genuine Parts Co	9.00%	2.91%	3.17%	12.17%
GameStop Corp Holding Company	2.00%	9.92%	10.11%	12.11%
Tyson Foods	10.00%	1.92%	2.12%	12.12%
Mondelez International Inc	9.50%	2.44%	2.67%	12.17%
Pinnacle Foods Inc	10.00%	1.95%	2.15%	12.15%
Hubbell Inc.	9.50%	2.50%	2.74%	12.24%
Universal Corp	7.00%	5.03%	5.38%	12.38%
Conmed Corp	11.00%	1.03%	1.14%	12.14%
Jack Henry and Associates Inc	11.00%	1.03%	1.15%	12.15%
American Water Works	10.00%	2.03%	2.24%	12.24%
Tractor Supply Co	10.50%	1.54%	1.70%	12.20%
FedEx Corp	11.00%	1.05%	1.17%	12.17%
Teleflex Inc	11.50%	0.57%	0.64%	12.14%
TTEC Holdings	10.00%	2.08%	2.29%	12.29%
BB and T Corporation	9.00%	3.09%	3.37%	12.37%
Praxair Inc	10.00%	2.12%	2.33%	12.33%
Rockwell Automation Inc	10.00%	2.12%	2.33%	12.33%
PNC Financial Services Group Inc	9.50%	2.63%	2.88%	12.38%
Monro Inc.	11.00%	1.14%	1.26%	12.26%
HEICO Corp	12.00%	0.15%	0.17%	12.17%
3M Company	9.50%	2.66%	2.91%	12.41%
First Republic Bank	11.50%	0.69%	0.77%	12.27%
Stage Stores Inc	2.50%	9.71%	9.95%	12.45%
Houlihan Lokey	10.00%	2.25%	2.48%	12.48%
Eaton Corp New	9.00%	3.26%	3.55%	12.55%

C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Jack in the Box Inc	10.50%	1.77%	1.95%	12.45%
Nokia Corp	8.00%	4.27%	4.61%	12.61%
Carlisle Companies Inc	11.00%	1.28%	1.42%	12.42%
National Bank of Canada	8.50%	3.78%	4.10%	12.60%
H and R Block Inc	8.50%	3.79%	4.11%	12.61%
JP Morgan Chase and Co	9.50%	2.79%	3.05%	12.55%
Lamar Advertising Company	7.50%	4.81%	5.17%	12.67%
Grace (W.R.) & Co.	11.00%	1.36%	1.51%	12.51%
Everest Re Group Ltd	10.00%	2.38%	2.62%	12.62%
Enersys	11.50%	0.89%	0.99%	12.49%
CH Robinson Worldwide Inc	10.50%	1.89%	2.09%	12.59%
Invesco Ltd	7.50%	4.90%	5.27%	12.77%
Leggett and Platt Inc	9.00%	3.41%	3.71%	12.71%
Village Super Market Inc	9.00%	3.41%	3.72%	12.72%
Eagle Materials Inc	12.00%	0.42%	0.47%	12.47%
CenterPoint Energy Inc	8.50%	3.92%	4.26%	12.76%
National Presto Industries Inc	8.00%	4.43%	4.78%	12.78%
Procter and Gamble Co	9.00%	3.43%	3.74%	12.74%
Piper Jaffray Companies	10.50%	1.93%	2.13%	12.63%
Constellation Brands	11.00%	1.45%	1.61%	12.61%
Scholastic Corporation	11.00%	1.45%	1.61%	12.61%
Silgan Holdings Inc	11.00%	1.47%	1.63%	12.63%
Canadian Pacific Railway Inc	11.50%	0.97%	1.08%	12.58%
CDW Corp.	11.50%	0.98%	1.09%	12.59%
MB Financial	10.50%	1.98%	2.19%	12.69%
Franklin Electric Co Inc	11.50%	0.98%	1.09%	12.59%
Ross Stores Inc	11.50%	0.98%	1.09%	12.59%
Genpact Limited	11.50%	0.98%	1.10%	12.60%
Harley Davidson Inc	9.00%	3.50%	3.82%	12.82%
Fidelity Nat'l Fin'l	9.50%	3.01%	3.29%	12.79%
McDonalds Corp	10.00%	2.51%	2.76%	12.76%
US Ecology Inc	11.50%	1.02%	1.13%	12.63%
Cigna Corporation	12.50%	0.02%	0.02%	12.52%
L3 Technologies	11.00%	1.52%	1.69%	12.69%
CAE Inc	11.00%	1.52%	1.69%	12.69%
Waste Management	10.50%	2.04%	2.25%	12.75%
Deluxe Corp	10.50%	2.05%	2.27%	12.77%
Cognizant Technology Solutions Corp	11.50%	1.06%	1.18%	12.68%
FLIR Systems Inc	11.50%	1.06%	1.19%	12.69%
Sempra Energy	9.50%	3.06%	3.36%	12.86%
Southwest Airlines Co	11.50%	1.07%	1.20%	12.70%
Hillenbrand Inc	11.00%	1.60%	1.77%	12.77%
WestRock Co.	9.50%	3.11%	3.40%	12.90%
SpartanNash Company	9.00%	3.62%	3.95%	12.95%
RLI Corp	11.50%	1.13%	1.26%	12.76%
Dine Brands Global	9.50%	3.14%	3.44%	12.94%
Brady Corp	10.50%	2.17%	2.40%	12.90%
Natural Resource Partners Ltd	7.00%	5.68%	6.08%	13.08%
Raytheon Co	11.00%	1.74%	1.93%	12.93%
Aarons Inc	12.50%	0.24%	0.27%	12.77%
WR Berkley Corp	12.00%	0.78%	0.87%	12.87%
Sherwin Williams	12.00%	0.78%	0.87%	12.87%
Carriage Services Inc	11.50%	1.28%	1.43%	12.93%
Telus Corp	8.50%	4.29%	4.66%	13.16%
Intercontinental Exch.	11.50%	1.30%	1.45%	12.95%

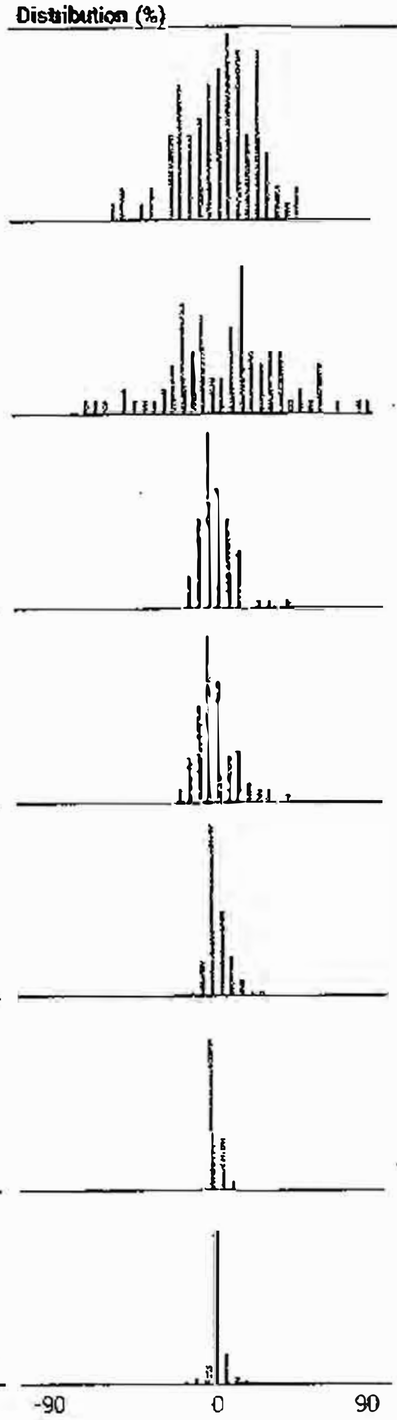
C = B * (1 + A), D = A + C	**A**	**B**	**C**	**D**
Twenty-First Century Fox 'B'	12.00%	0.80%	0.90%	12.90%
TCF Financial Corporation	10.50%	2.32%	2.57%	13.07%
Marriott Vacations	11.50%	1.33%	1.48%	12.98%
PerkinElmer Inc	12.50%	0.33%	0.37%	12.87%
Eaton Vance Corp	10.50%	2.34%	2.58%	13.08%
CA Inc	10.50%	2.34%	2.58%	13.08%
South Jersey Industries Inc	9.50%	3.37%	3.69%	13.19%
TE Connectivity Ltd	11.00%	1.89%	2.10%	13.10%
Scotts Miracle Gro Company	10.00%	2.91%	3.21%	13.21%
Agilent Technologies	12.00%	0.92%	1.03%	13.03%
Douglas Dynamics Inc	10.50%	2.44%	2.70%	13.20%
Wheaton Precious Met.	11.00%	1.95%	2.17%	13.17%
Curtiss Wright Corp	12.50%	0.45%	0.51%	13.01%
BOK Financial Corporation	11.00%	2.00%	2.22%	13.22%
Global Brass & Copper	12.00%	1.01%	1.13%	13.13%
Walgreens Boots	10.50%	2.52%	2.78%	13.28%
Delta Air Lines Inc	10.50%	2.52%	2.78%	13.28%
Aramark	12.00%	1.03%	1.16%	13.16%
Northern Trust Corp	11.00%	2.04%	2.27%	13.27%
Royal Caribbean Cruises Ltd	11.00%	2.07%	2.30%	13.30%
Washington Federal Inc	11.00%	2.08%	2.30%	13.30%
Lear Corp	11.50%	1.62%	1.80%	13.30%
Macerich Co	8.00%	5.12%	5.53%	13.53%
D R Horton Inc	12.00%	1.13%	1.26%	13.26%
Eli Lilly and Co	11.00%	2.13%	2.37%	13.37%
BlackRock Inc	10.50%	2.64%	2.92%	13.42%
Union Pacific Corp	11.00%	2.14%	2.38%	13.38%
Advance Auto Parts	13.00%	0.15%	0.17%	13.17%
Standard Motor Products Inc	11.50%	1.66%	1.85%	13.35%
FactSet Research Systems Inc	12.00%	1.16%	1.30%	13.30%
Cenovus Energy Inc	11.50%	1.67%	1.86%	13.36%
AstraZeneca PLC	9.50%	3.67%	4.02%	13.52%
Gen'l Motors	9.00%	4.18%	4.55%	13.55%
Associated Banc Corp	11.00%	2.20%	2.44%	13.44%
Welltower Inc.	8.00%	5.22%	5.63%	13.63%
Morningstar Inc	12.50%	0.73%	0.82%	13.32%
Commercial Metals Company	11.00%	2.24%	2.49%	13.49%
Interpublic Group of Companies Inc	9.50%	3.76%	4.11%	13.61%
ParkOhio Holdings Corp	12.00%	1.26%	1.41%	13.41%
Synchrony Financial	10.50%	2.77%	3.06%	13.56%
Average	8.25%	2.34%	2.51%	10.76%

Year	Capital Appreciation	Income Return	Reinvestment Return	Total Return
1926	3.91	3.73	0.13	7.77
1927	5.40	3.41	0.12	8.93
1928	-3.12	3.22	0.01	0.10
1929	-0.20	3.47	0.15	3.42
1930	1.28	3.32	0.05	4.66
1931	-8.46	3.33	-0.17	-5.31
1932	12.94	3.69	0.22	16.84
1933	-3.14	3.12	-0.05	-0.07
1934	6.76	3.18	0.09	10.03
1935	2.14	2.81	0.03	4.98
1936	4.64	2.77	0.10	7.52
1937	-2.48	2.66	0.05	0.23
1938	2.83	2.64	0.06	5.53
1939	3.48	2.40	0.06	5.94
1940	3.77	2.23	0.09	6.09
1941	-1.01	1.94	0.00	0.93
1942	0.74	2.46	0.02	3.22
1943	-0.37	2.44	0.02	2.08
1944	0.32	2.46	0.03	2.81
1945	8.27	2.34	0.12	10.73
1946	-2.15	2.04	0.01	-0.10
1947	-4.70	2.13	-0.06	-2.62
1948	0.96	2.40	0.04	3.40
1949	4.15	2.25	0.06	6.45
1950	-2.06	2.12	0.00	0.06
1951	-6.27	2.38	-0.04	-3.93
1952	-1.48	2.66	-0.02	1.16
1953	0.67	2.84	0.12	3.64
1954	4.35	2.79	0.05	7.19
1955	-4.07	2.75	0.03	-1.29
1956	-8.46	2.99	-0.12	-5.59
1957	3.82	3.44	0.20	7.46
1958	-9.23	3.27	-0.14	-6.09
1959	-6.20	4.01	-0.07	-2.26
1960	9.29	4.26	0.23	13.78
1961	-2.86	3.83	0.00	0.97
1962	2.78	4.00	0.11	6.89
1963	-2.70	3.89	0.02	1.21
1964	-0.72	4.15	0.07	3.51
1965	-3.45	4.19	-0.04	0.71
1966	-1.06	4.49	0.22	3.65
1967	-13.55	4.59	-0.23	-9.18
1968	-5.51	5.50	-0.25	-0.26
1969	-10.83	5.95	-0.19	-5.07
1970	4.84	6.74	0.52	12.11
1971	6.61	6.32	0.31	13.23
1972	-0.35	5.87	0.17	5.69
1973	-7.70	6.51	0.08	-1.11
1974	-3.45	7.27	0.54	4.35
1975	0.73	7.99	0.47	9.20

Year	Capital Appreciation	Income Return	Reinvestment Return	Total Return
1976	8.07	7.89	0.80	16.75
1977	-7.86	7.14	0.04	-0.69
1978	-9.05	7.90	-0.03	-1.18
1979	-9.84	8.86	-0.25	-1.23
1980	-14.00	9.97	0.08	-3.95
1981	-10.33	11.55	0.64	1.86
1982	23.95	13.50	2.91	40.36
1983	-9.82	10.38	0.09	0.65
1984	2.32	11.74	1.42	15.48
1985	17.84	11.25	1.88	30.97
1986	14.99	8.98	0.56	24.53
1987	-10.69	7.92	0.06	-2.71
1988	0.36	8.97	0.34	9.67
1989	8.62	8.81	0.68	18.11
1990	-2.61	8.19	0.61	6.18
1991	10.10	8.22	0.98	19.30
1992	0.34	7.26	0.45	8.05
1993	10.71	7.17	0.35	18.24
1994	-14.29	6.59	-0.08	-7.77
1995	23.04	7.60	1.03	31.67
1996	-7.37	6.18	0.26	-0.93
1997	8.51	6.64	0.71	15.85
1998	6.89	5.83	0.34	13.06
1999	-14.35	5.57	-0.19	-8.96
2000	23.04	7.60	1.03	31.67
2001	-1.89	5.53	0.06	3.70
2002	11.69	5.59	0.56	17.84
2003	-3.36	4.80	0.01	1.45
2004	3.26	5.02	0.23	8.51
2005	3.02	4.69	0.10	7.81
2006	-3.64	4.68	0.15	1.19
2007	4.69	4.86	0.33	9.88
2008	20.50	4.45	0.93	25.87
2009	-18.25	3.47	-0.12	-14.90
2010	5.89	4.25	0.00	10.14
2011	22.62	3.82	0.66	27.10
2012	0.95	2.46	0.03	3.43
2013	-15.70	2.88	0.04	-12.78
2014	20.93	3.41	0.37	24.71
2015	-3.11	2.47	-0.02	-0.65
2016	-0.40	2.30	-0.14	1.75
2017	3.51	2.67	0.06	6.24
Average	0.8520	5.0033	0.2302	6.0854

Exhibit 2.3: Basic Series, Summary Statistics of Annual Total Returns (%)
1926–2017

Series	Geometric Mean (%)	Arithmetic Mean (%)	Standard Deviation (%)	Distribution (%)
Large-Cap Stocks	10.2	12.1	19.8	
Small-Cap Stocks*	12.1	16.5	31.7	
Long-term Corp Bonds	6.1	6.4	8.3	
Long-term Gov't Bonds	5.5	6.0	9.9	
Inter-term Gov't Bonds	5.1	5.2	5.6	
U.S. Treasury Bills	3.4	3.4	3.1	
Inflation	2.9	3.0	4.[illegible]	



*The 1933 small-cap stocks total return was 142.9% and is not shown here.

risk premium for the next year, the arithmetic average is the best unbiased estimate of the premium.

Length of Historical Period

To estimate the MRP, one should rely on returns realized over long time periods rather than returns realized over more recent time periods because realized returns can be substantially different from prospective returns anticipated by investors, especially when measured over short time periods. But over very long periods, investor expectations coincide with realizations; otherwise, investors would never invest any money. A risk premium study should consider the longest possible period for which data are available. Short-run periods during which investors earned a lower risk premium than they expected are offset by short-run periods during which investors earned a higher risk premium than they expected. Moreover, the use of the entire study period in estimating the appropriate market risk premium minimizes subjective judgment and encompasses many diverse regimes of inflation, interest rate cycles, and economic cycles. There is no compelling reason to weigh recent returns more heavily than distant returns because of the random behavior of the market risk premium.

From a statistical viewpoint, to the extent that the historical equity risk premium estimated follows what is known in statistics as a random walk, one should expect the equity risk premium to remain at its historical mean. The best estimate of the future risk premium is the historical mean. Since, as discussed in Chapter 4, there is little evidence that the MRP has changed over time, it is reasonable to assume that these quantities will remain stable in the future. Clearly, the accuracy of the realized risk premium as an estimator of the prospective risk premium is enhanced by increasing the number of years used to estimate it. By analogy, one cannot predict with any reasonable degree of accuracy the result of a single, or even a few, flips of a balanced coin. But one can predict with a good deal of confidence that approximately 50 heads will appear in 100 tosses of the coin. Under these circumstances, it is most appropriate to estimate future experience from long-run evidence of investment performance.

Historical Market Risk Premium: U.S. Capital Markets

Ibbotson Associates' annual valuation yearbook is a primary source of data on U.S. capital market returns. This annual publication compiles monthly returns to various asset classes from 1926 to date. From Ibbotson Associates (2005), a broad market sample of U.S. common stocks outperformed long-term U.S. government bonds by 6.6% over the 1924–2004 period. The historical market risk premium over the income component of long-term Treasury bonds rather than over the total return is 7.2%. Ibbotson Associates recommend the use of the latter as a more reliable estimate of the historical market risk premium. This is because the income component of total bond return (i.e. coupon rate) is a far better estimate of expected return than the total return (i.e. coupon rate + capital gain), as realized capital gains/losses are largely unanticipated by investors. This is not the case with total returns, which can be biased by unanticipated capital losses due to adverse interest rate movements. Bond income returns are a valid measure of expectation, whereas historical bond total returns are biased estimates of the expected return.[10] Stocks do not have an easily observable measure of expected return comparable to a bond's yield to maturity, and therefore total stock returns must be employed.

Dimson, Marsh and Staunton (2002) compile historical rates of return on stocks and bonds for the 1900–2000 period for U.S. capital markets. Brealey, Myers, and Allen (2006) update the results to 2003. Since 1900, Treasury bills have provided an average return of 4.1% while common stocks provided an average return of 11.7%, inferring a risk premium of 11.7% − 4.1% = 7.6% over the return on Treasury bills.

It has been common practice to assume that this historical result provides an adequate basis for the expected MRP. In their best-selling aforementioned textbook, Brealey, Myers, and Allen (2006) review the current state of the research and state:

> We have no official position on the exact market risk premium, but we believe a range of 6 to 8.5 percent is reasonable for the United States. We are most comfortable with figures toward the upper end of the range.

Because they are referring to the premium over Treasury Bills which is about 1.5% greater than the premium over bonds according to Ibbotson (2005), this implied that they would look to the upper end of a range of 4.5% to 7% for the MRP.

Some authors, Siegel (1999) for example, have examined historical data over even longer time series, including data prior to 1926, some dating back to 1802. An obvious question is whether data on capital market behavior from

[10] The income return represents the truly risk-free portion of the bond return. Interest rates generally rose over the 1926–2004 period, causing capital losses on the long-term bond historical series. This negative return is due to the risk of unanticipated changes in interest rates. Any anticipated changes in interest rates are already incorporated into the bond yield by market participants. Thus, the total return on the bond series does not represent the risk-free rate of return. The income component better represents the risk-free rate because an investor can hold a bond to maturity and is certain of obtaining the income return and return of principal with no capital loss.

the 19th century are relevant for estimating return in the 21st century. The major concern with the Siegel data for a period beginning in 1802 is the reliability of the data. The stock market of the early 1800s was severely limited, embryonic in scope, with very few issues trading, and few industries represented. Dividend data were unavailable over most of this early period and stock prices were based on wide bid-ask spreads rather than on actual transaction prices. The difficulties inherent in stock market data prior to the Great Depression are discussed by Schwert (1990).

Booth (1999) examines both nominal and real equity risk premiums from 1871 to 1997. He concludes that the real equity return has been about 9% over this period. He suggests adding the expected inflation rate to this number to estimate the expected return on equity. For example, if the expected inflation rate is 3%, the market return on equity is 9% + 3% = 12%. If the risk-free rate is 5%, the market risk premium is therefore 12% − 5% = 7%.

Market Risk Premium: International Capital Markets

Dimson, Marsh, and Staunton (2002) report on returns over the period 1900 to 2000 for twelve countries, representing 90% of today's world market capitalization. They report an average risk premium over long-term bond returns over all countries of 5.6%, with the U.S. at 7.0%. The premium was generally higher for the second half century than for the first. For example, the U.S. had 5% in the first half, compared to 7.5% in the second half.

The Hatch-White (1988) compilation of historical returns on Canadian securities from 1950 to 1987 shows that a broad market sample of common stocks outperformed long-term Canada bonds by 6.9%, or close to 7%. The annual update to the Canadian Institute of Actuaries study,[11] *Report on Canadian Economic Statistics 1924–2004*, shows that the average observed aggregate risk premium between stocks and long-term government bonds over a very long period is equal to 5.2%. Of course, the historical market risk premium over the income component of long-term bonds rather than over the total return is presumably higher, probably some 60 basis points higher if we rely on the U.S. studies over the same period, but is unreported in that study.

Prospective Market Risk Premium

A second approach to estimate the MRP is prospective in nature and consists of applying the DCF model to a representative market index, such as the Standard & Poor's 500 Index, Value Line Composite, or the New York Stock Exchange Index. For reasons of consistency, the market index employed

[11] Annual updates are available on the Canadian Institute of Actuaries Web site.

TABLE 6-2
EMPIRICAL EVIDENCE ON THE ALPHA FACTOR

Author	Range of alpha
Fischer (1993)	−3.6% to 3.6%
Fischer, Jensen and Scholes (1972)	−9.61% to 12.24%
Fama and McBeth (1972)	4.08% to 9.36%
Fama and French (1992)	10.08% to 13.56%
Litzenberger and Ramaswamy (1979)	5.32% to 8.17%
Litzenberger, Ramaswamy and Sosin (1980)	1.63% to 5.04%
Pettengill, Sundaram and Mathur (1995)	4.6%
Morin (1989)	2.0%

For an alpha in the range of 1%–2% and for reasonable values of the market risk premium and the risk-free rate, Equation 6-5 reduces to the following more pragmatic form:

$$K = R_F + 0.25\ (R_M - R_F) + 0.75\ \beta(R_M - R_F) \qquad (6\text{-}6)$$

Over reasonable values of the risk-free rate and the market risk premium, Equation 6-6 produces results that are indistinguishable from the ECAPM of Equation 6-5.[12]

An alpha range of 1%–2% is somewhat lower than that estimated empirically. The use of a lower value for alpha leads to a lower estimate of the cost of capital for low-beta stocks such as regulated utilities. This is because the use of a long-term risk-free rate rather than a short-term risk-free rate already incorporates some of the desired effect of using the ECAPM. That is, the

[12] Typical of the empirical evidence on the validity of the CAPM is a study by Morin (1989) who found that the relationship between the expected return on a security and beta over the period 1926–1984 was given by:

$$\text{Return} = 0.0829 + 0.0520\ \beta$$

Given that the risk-free rate over the estimation period was approximately 6% and that the market risk premium was 8% during the period of study, the intercept of the observed relationship between return and beta exceeds the risk-free rate by about 2%, or 1/4 of 8%, and that the slope of the relationship is close to 3/4 of 8%. Therefore, the empirical evidence suggests that the expected return on a security is related to its risk by the following approximation:

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

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

$$K = R_F + 0.25(R_M - R_F) + 0.75\beta(R_M - R_F)$$

long-term risk-free rate version of the CAPM has a higher intercept and a flatter slope than the short-term risk-free version which has been tested. Thus, it is reasonable to apply a conservative alpha adjustment. Moreover, the lowering of the tax burden on capital gains and dividend income enacted in 2002 may have decreased the required return for taxable investors, steepening the slope of the ECAPM risk-return trade-off and bring it closer to the CAPM predicted returns.[13]

To illustrate the application of the ECAPM, assume a risk-free rate of 5%, a market risk premium of 7%, and a beta of 0.80. The Empirical CAPM equation (6-6) above yields a cost of equity estimate of 11.0% as follows:

$$K = 5\% + 0.25\ (12\% - 5\%) + 0.75 \times 0.80\ (12\% - 5\%)$$
$$= 5.0\% + 1.8\% + 4.2\%$$
$$= 11.0\%$$

As an alternative to specifying alpha, see Example 6-1.

Some have argued that the use of the ECAPM is inconsistent with the use of adjusted betas, such as those supplied by Value Line and Bloomberg. This is because the reason for using the ECAPM is to allow for the tendency of betas to regress toward the mean value of 1.00 over time, and, since Value Line betas are already adjusted for such trend, an ECAPM analysis results in double-counting. This argument is erroneous. Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. The ECAPM and the use of adjusted betas comprised two separate features of asset pricing. Even if a company's beta is estimated accurately, the CAPM still understates the return for low-beta stocks. Even if the ECAPM is used, the return for low-beta securities is understated if the betas are understated. Referring back to Figure 6-1, the ECAPM is a return (vertical axis) adjustment and not a beta (horizontal axis) adjustment. Both adjustments are necessary. Moreover, recall from Chapter 3 that the use of adjusted betas compensates for interest rate sensitivity of utility stocks not captured by unadjusted betas.

[13] The lowering of the tax burden on capital gains and dividend income has no impact as far as non-taxable institutional investors (pension funds, 401K, and mutual funds) are concerned, and such investors engage in very large amounts of trading on security markets. It is quite plausible that taxable retail investors are relatively inactive traders and that large non-taxable investors have a substantial influence on capital markets.

ROE and ROR Analysis for Atlantic City Electric Co.
Capital Asset Pricing Model (CAPM) Analysis
Calculation of ROE

Docket No. EO18020196
Exhibit MFG-19, Schedule 9

CAPM calculation

$k = r + \beta (k_m - r)$

Where:
- k = required rate of return for the specific stock
- β = beta, the systematic or stock-specific risk
- r = rate of return on a riskless asset
- k_m = required rate of return in the market portfolio

r =	3.08%	30-Year Treasury Bill July 23-August 17, 2018 average, Exhibit MFG-19, Schedule 1
β =	0.67	Mean of Value Line betas, Exhibit MFG-19, Schedule 2

Forward-Looking Analyses

	Value Line Universe DCF Analysis Non-dividend-paying stocks eliminated Exhibit MFG-19, Schedule 3	**Value Line Universe Adjusted** Stocks with ROE <6.85% and > 13.3% eliminated Exhibit MFG-19, Schedule 4
(1) Dividend yield	2.74%	2.51%
(2) 3-5 years EPS Growth Rate	12.71%	8.25%
(3) Value Line forecast result	15.45%	10.76%
(4) Market risk premium (3) - r	12.37%	7.68%

Historical Analysis

Source: 2018 SBBI Yearbook (Duff & Phelps).

Exhibit MFG-19, Schedules 5-6	
Arithmetic mean of total returns for large company stocks (1926-2017)	12.10%
Less: Arithmetic mean of income returns for 30-Year Treasury Bonds (1926-2017)	5.00%
Historical market risk premium	7.10%

Forward-Looking Analyses

	Value Line Universe DCF Analysis		**Value Line Universe Adjusted**		**Historical Analysis**	
	r =	3.08%	r =	3.08%	r =	3.08%
	$(k_m - r)$	12.37%	$(k_m - r)$	7.68%	$(k_m - r)$	7.10%
	$\beta * (k_m - r)$	8.29%	$\beta * (k_m - r)$	5.15%	$\beta * (k_m - r)$	4.76%
CAPM ROE	k =	11.37%	k =	8.23%	k =	7.84%
			CAPM ROEs Mean	9.14%		

Empirical CAPM (ECAPM) calculations**

$k = r + x * (k_m - r) + (1 - x) * \beta * (k_m - r)$

Where: x = 0.25

Forward-Looking Analyses

	Value Line Universe DCF Analysis		**Value Line Universe Adjusted**		**Historical Analysis**	
	β =	0.67	β =	0.67	β =	0.67
	r =	3.08%	r =	3.08%	r =	3.08%
	$x * (k_m - r)$	3.09%	$x * (k_m - r)$	1.92%	$x * (k_m - r)$	1.78%
	$(1 - x) * \beta * (k_m - r)$	6.22%	$(1 - x) * \beta * (k_m - r)$	3.86%	$(1 - x) * \beta * (k_m - r)$	3.57%
ECAPM ROE	k =	12.39%	k =	8.86%	k =	8.42%
			ECAPM ROEs Mean	9.89%		

**-See Pages 190-191, Morin, Roger, *New Regulatory Finance* (2006), Public Utilities Reports, Inc., Vienna, Virginia, Exhibit MFG-19, Schedule 6

ROE and ROR Analysis for Atlantic City Electric Co. — **Docket No. EO18020196**

Summary of Authorized ROEs in Fully Litigated Electric Rate Cases, January 1, 2016-June 28, 2018 — **Exhibit MFG-20, Schedule 1**

Source: SNL Regulatory Research Associates Past Rate Cases; https://platform.mi.spglobal.com/web/client?auth=inherit#industry/pastRateCases?Type=1

State	Company	Docket	Rate Case Service Type	Case Type	Date Filed	Date of Decision	Decision Type	Return on Original Cost Rate (%)	Return on Equity (%)	Rate Case Test Year End Date
2018										
Maine	Emera Maine	D-2017-00198	Electric	Distribution	10/2/2017	6/28/2018	Fully Litigated	7.18	9.35	12/2016
Washington	Avista Corp.	D-UE-170485	Electric	Vertically Integrated	5/26/2017	4/26/2018	Fully Litigated	7.50	9.50	12/2016
Michigan	DTE Electric Co.	C-U-18255	Electric	Vertically Integrated	4/19/2017	4/18/2018	Fully Litigated	5.34	10.00	10/2018
Kentucky	Duke Energy Kentucky Inc.	C-2017-00321	Electric	Vertically Integrated	9/1/2017	4/13/2018	Fully Litigated	6.83	9.73	03/2019
Michigan	Indiana Michigan Power Co.	C-U-18370	Electric	Vertically Integrated	5/15/2017	4/12/2018	Fully Litigated	5.76	9.90	12/2018
Michigan	Consumers Energy Co.	C-U-18322	Electric	Vertically Integrated	3/31/2017	3/29/2018	Fully Litigated	5.89	10.00	09/2018
Minnesota	ALLETE (Minnesota Power)	D-E-015/GR-16-66	Electric	Vertically Integrated	11/2/2016	3/12/2018	Fully Litigated	7.06	9.25	12/2017
Oklahoma	Public Service Co. of OK	Ca-PUD201700151	Electric	Vertically Integrated	6/30/2017	1/31/2018	Fully Litigated	6.88	9.30	12/2016
								Mean	**9.63**	9.35
								Median	**9.62**	9.35
								Range	**9.25-10.00**	9.35
									All, n = 8	**Distribution, n = 1**
2017										
Nevada	Nevada Power Co.	D-17-06003	Electric	Vertically Integrated	6/5/2017	12/29/2017	Fully Litigated	7.95	9.40	12/2016
Texas	Southwestern Electric Power Co	D-46449	Electric	Vertically Integrated	12/16/2016	12/14/2017	Fully Litigated	7.18	9.60	06/2016
Wisconsin	Northern States Power Co - WI	D-4220-UR-123 (Elec)	Electric	Vertically Integrated	5/4/2017	12/7/2017	Fully Litigated	7.56	9.80	12/2018
Illinois	Ameren Illinois	D-17-0197	Electric	Distribution	4/13/2017	12/6/2017	Fully Litigated	7.04	8.40	12/2016
Illinois	Commonwealth Edison Co.	D-17-0196	Electric	Distribution	4/13/2017	12/6/2017	Fully Litigated	6.47	8.40	12/2016
Massachusetts	NSTAR Electric Co.	DPU 17-05 (NSTAR)	Electric	Distribution	1/17/2017	11/30/2017	Fully Litigated	7.33	10.00	06/2016
Massachusetts	Western Massachusetts Electric	DPU 17-05 (WMECO)	Electric	Distribution	1/17/2017	11/30/2017	Fully Litigated	7.26	10.00	06/2016
Maryland	Potomac Electric Power Co.	C-9443	Electric	Distribution	3/24/2017	10/20/2017	Fully Litigated	7.43	9.50	04/2017
Hawaii	Maui Electric Company Ltd	D-2014-0318	Electric	Vertically Integrated	12/30/2014	8/4/2017	Fully Litigated	NA	NA	NA
District of Columbia	Potomac Electric Power Co.	FC-1139	Electric	Distribution	6/30/2016	7/24/2017	Fully Litigated	7.46	9.50	03/2016
Missouri	Kansas City Power & Light	C-ER-2016-0285	Electric	Vertically Integrated	7/1/2016	5/3/2017	Fully Litigated	7.43	9.50	12/2015
Missouri	Kansas City Power & Light	C-ER-2016-0073	Electric	Vertically Integrated	7/1/2016	5/3/2017	Fully Litigated	8.46	9.20	12/2015
Oklahoma	OGE	PUD201500273	Electric	Vertically Integrated	12/18/2015	3/20/2017	Fully Litigated	7.69	9.50	06/01/15
Minnesota	Otter Tail	GR-15-1033	Electric	Vertically Integrated	2/16/2016	3/2/2017	Fully Litigated	7.51	9.41	12/2016
Michigan	Consumers Energy Co.	C-U-17990	Electric	Vertically Integrated	3/1/2016	2/28/2017	Fully Litigated	5.94	10.10	08/2017
Maryland	Delmarva Power & Light Co.	C-9424	Electric	Distribution	7/20/2016	2/15/2017	Fully Litigated	6.74	9.60	03/2016
Maryland	Delmarva Power & Light Co.	C-9425	Electric	Distribution	7/20/2016	2/15/2017	Fully Litigated	7.77	9.30	03/2017
Michigan	DTE Electric Co.	C-U-18014	Electric	Vertically Integrated	2/1/2016	1/31/2017	Fully Litigated	5.55	10.10	07/2017
								Mean	**9.49**	9.34
								Median	**9.50**	9.50
								Range	**8.40-10.10**	8.40-10.00
									All, n = 18	**Distribution, n = 8**
2016										
Colorado	Black Hills Colorado Electric	D-16AL-0326E	Electric	Vertically Integrated	5/3/2016	12/19/2016	Fully Litigated	7.43	9.37	12/2015
Maine	Emera Maine	2015-00360	Electric			12/19/2016	Fully Litigated	7.45	9.00	12/14/17
Connecticut	United Illuminating Co.	D-16-06-04	Electric	Distribution	7/1/2016	12/14/2016	Fully Litigated	7.08	9.10	12/2015
Connecticut	United Illuminating Co.	D-16-06-05	Electric	Distribution	7/1/2016	12/14/2016	Fully Litigated	8.12	9.25	12/2015
Illinois	Ameren Illinois	D-16-0262	Electric	Distribution	4/15/2016	12/6/2016	Fully Litigated	7.28	8.64	12/2015
Illinois	Commonwealth Edison Co.	D-16-0259	Electric	Distribution	4/13/2016	12/6/2016	Fully Litigated	6.71	8.64	12/2015
Maryland	Potomac Electric Power Co.	C-9418	Electric	Distribution	4/19/2016	11/15/2016	Fully Litigated	7.49	9.55	12/2015
Oklahoma	Public Service Co. of OK	Ca-PUD201500208	Electric	Vertically Integrated	7/1/2015	11/10/2016	Fully Litigated	6.94	9.50	01/2015
Wisconsin	Madison Gas and Electric Co.	D-3270-UR-121 (Elec)	Electric	Vertically Integrated	4/8/2016	11/9/2016	Fully Litigated	7.89	9.80	12/2017
Massachusetts	Massachusetts Electric Company					9/1/3016		7.58	9.90	06/15/17
New Mexico	Public Service Co. of NM	C-15-00261-UT	Electric	Vertically Integrated	8/27/2015	9/28/2016	Fully Litigated	7.71	9.58	09/2016
Michigan	Upper Peninsula Power Company					9/8/2016	Fully Litigated	7.47	10.00	12/16/17
Washington	PacifiCorp					9/1/2016	Fully Litigated	7.30	9.50	06/15/17
Arizona	UNS Electric					8/18/2016	Fully Litigated	7.22	9.50	12/14/17
New Mexico	El Paso Electric Co.	C-15-00127-UT	Electric	Vertically Integrated	5/11/2015	6/8/2016	Fully Litigated	7.67	9.48	12/2014
Maryland	Baltimore Gas and Electric Co.	C-9406 (elec)	Electric	Distribution	11/6/2015	6/3/2016	Fully Litigated	7.28	9.75	11/2015
Massachusetts	Fitchburg Gas & Electric Light	DPU 15-80	Electric	Distribution	6/16/2015	4/29/2016	Fully Litigated	8.46	9.80	12/2014
								Mean	**9.43**	9.25
								Median	**9.50**	9.25
								Range	**8.64-10.00**	8.64-9.75
									All, n = 17	**Distribution, n = 7**

ROE and ROR Analysis for Atlantic City Electric Co.
Summary of ROE Analyses and Recommended ROE

Docket No. EO18020196
Exhibit MFG-20, Schedule 2

Analysis	No. of Companies	ROE	Exhibit
Constant-Growth DCF	15	9.01	MFG-18, Sch 3
Multi-stage DCF Mean	15	8.46	MFG-18, Sch 7
CAPM	15	9.14	MFG-19, Sch 9
ECAPM	15	9.89	MFG-19, Sch 9
Analyses Recommended ROE		9.00	
Adjustment for ACE IIP's relatively lower risk		0.50	
Recommended ROE for ACE IIP		8.50	

	ACE Request			Rate Counsel Recommendation		
	Ratio	**Cost**	**WACC**	**Ratio**	**Cost**	**WACC**
Long-Term Debt	49.53%	5.56%	2.75%	49.53%	4.79%	2.37%
Common Equity	50.47%	9.60%	4.85%	50.47%	8.50%	4.29%
	100%			100%		
Overall Rate of Return			7.60%			6.66%

The recommended common equity cost of 8.50 percent is based on the ROE analysis performed in Exhibits MFG-18, Schedules 1-7 and MFG-19, Schedules 1-9, the results of which are summarized in Exhibit MFG 20, Schedule 2. This analysis is augmented by the summary of authorized ROEs in recent fully litigated electric rate cases reported in SNL Regulatory Research Associates *Regulatory Focus* and presented in Exhibit MFG-20, Schedule 1.