BEFORE THE CORPORATION COMMISSION OF OKLAHOMA

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	))))))	CAUSE NO. PUD 201500273

Rebuttal Testimony

Of

Robert B. Hevert

on behalf of

Oklahoma Gas and Electric Company

April 11, 2016

TABLE OF CONTENTS

I. INTRODUCTION

Q. Are you the same Robert B. Hevert who previously provided Direct Testimony in this proceeding?

A. Yes, I provided Direct Testimony on behalf of Oklahoma Gas and Electric Company, Inc. ("OG&E", or the "Company"), which is a wholly owned subsidiary of OGE Energy Corp.

Q. What is the purpose of your Rebuttal Testimony?

A. The purpose of my Rebuttal Testimony is to respond to the Responsive Testimonies of Mr. David J. Garrett on behalf of the Public Utility Division ("PUD") of the Oklahoma Corporation Commission ("Staff"); Mr. J. Bertram Solomon on behalf of the Oklahoma Attorney General ("OAG"); Mr. Christopher C. Walters on behalf of the Federal Executive Agencies ("FEA"); and Mr. David C. Parcell on behalf of Oklahoma Industrial Energy Consumers ("OIEC") (referred to herein, collectively, as the "Opposing ROE Witnesses") as their testimony relates the Company's Cost of Equity, and capital structure. My Rebuttal Testimony also provides a series of updated calculations and analytical results regarding the Company's Cost of Equity,[1] together with several additional analyses that respond to issues raised by the Opposing ROE Witnesses in their Responsive Testimony.[2]

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1 Also referred to herein as the Return on Equity, or ROE.

2 *See* Exhibits RBH-1R - 31R.

Q. Have you prepared any Rebuttal Exhibits?

A. Yes. My analyses and conclusions are supported by the data presented in Exhibits RBH-1R through RBH-31R, which have been prepared by me or under my direction.

Q. What are your conclusions regarding the appropriate Cost of Equity and capital structure for OG&E?

A. The updated analyses discussed throughout my Rebuttal Testimony continue to support a Return on Equity ("ROE") within a range of 10.25 percent to 10.75 percent. As to the Company's requested capital structure, which includes 53.31 percent common equity and 46.69 percent long-term debt, I conclude it is reasonable relative to the Company's peers.

Q. Please provide a summary overview of the recommendations contained in your Rebuttal Testimony.

A. In my Direct Testimony I recommended an ROE range of 10.25 percent to 10.75 percent. As my Direct Testimony discussed, my ROE recommendation considers a variety of factors, including capital market conditions in general and certain risks faced by OG&E. Because the application of financial models and the interpretation of their results are often sources of disagreement among analysts in regulatory proceedings, I believe it is important to review and consider a variety of data points; doing so enables us to put in context both quantitative analyses and the associated recommendations. As such, I have updated many of the analyses contained in my Direct Testimony, and I have provided several new analyses in response to issues raised by the Opposing ROE Witnesses.

Although the range of results for certain models has changed since late 2015, the capital markets have been quite volatile, with fluctuating interest rates, heightened equity market

volatility, and increasing utility dividend yields suggesting increasing capital costs. On balance, I believe OG&E's Cost of Equity continues to remain in the range of 10.25 percent to 10.75 percent. As to OG&E's capital structure, I continue to believe its proposed 53.31 percent common equity is reasonable.

Q. Please summarize your review of recent capital market trends, and how those trends affect the Company's Cost of Equity.

A. As discussed in more detail below, there are observable trends that suggest increasing Costs of Equity: (1) widespread expectations for increases in interest rates; (2) an increasing degree of equity market volatility; and (3) widening credit spreads on utility bonds.

Turning first to expectations of rising interest rates, approximately 50 economists surveyed by *Blue Chip Financial Forecast* see the 30-year Treasury yield increasing to 4.00 percent by 2017.[3] Those projections are supported by the fact that investors recently have been willing to pay up to twice the premium for the option to sell the TLT, an exchange-traded index of long-term Government bonds in January 2018 (with an exercise price approximately equal to the current price) than they have been willing to pay for the option to buy those bonds.[4] Because the prices of bonds move inversely to interest rates,[5] TLT option prices indicate that investors believe it is more likely that long-term interest rates will increase over the coming two years, than it is likely that they will decrease.

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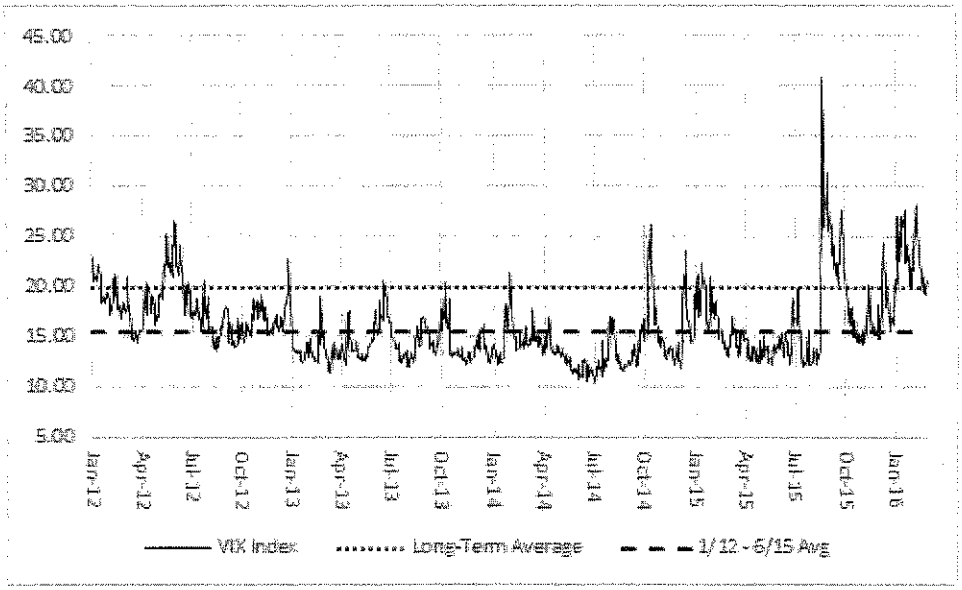
3 *See,* Blue Chip Financial Forecast, Vol. 34 No. 12, December 1, 2015, at 14.
4 Source: http://www.nasdaq.com/symbol/tlt/option-chain?dateindex=7
5 That is, as interest rates move up (down), bond prices move down (up).

Regarding equity market volatility, one measure of the expected market volatility, or risk, is the Chicago Board Options Exchange Volatility Index (known as the "VIX"). The VIX is a highly visible, and often-reported barometer of investor risk sentiments that measures expected near-term volatility as measured by the S&P 500 Index.[6] As shown on Chart 1, the VIX has averaged approximately 19.84 since 1990. That average is quite close to the long-term standard deviation of annual returns on the S&P 500, which has been 20.55 percent.[7]

Chart 1: VIX Daily Levels and Long-Term Average[8]



As Chart 1 also demonstrates, the VIX remained at relatively low levels from 2012 through 2015 (which, as discussed below, appears to be a consequence of Federal Reserve monetary policy). Beginning in the latter half of 2015, however, volatility returned, frequently exceeding its historical average. Of particular interest is that

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6 Although the VIX is not presented as a percentage, it should be understood as such. That is, if the VIX stood at 20.00, it would be interpreted as an expected annualized standard deviation in annual returns on the market index of 20.00 percent over the coming 30 trading days.

7 Source: Bloomberg Professional.

8 Source: Bloomberg Professional.

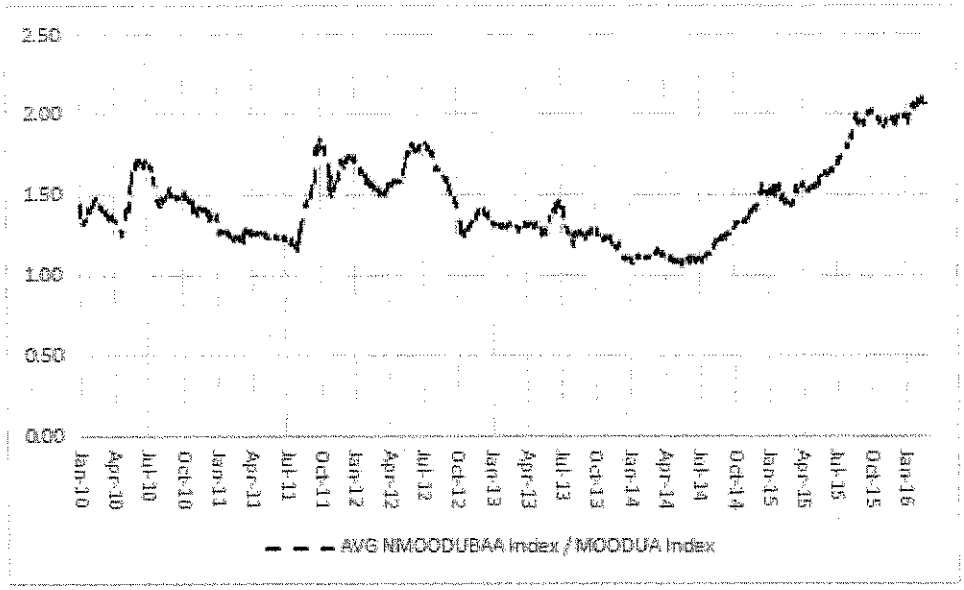
volatility fell during the Federal Reserve's policy of Quantitative Easing, and began to rise as the Federal Reserve began the process of policy "normalization".

The important analytical issue is recognizing that the premium required by investors over Treasury yields (the Equity Risk Premium) increases with market volatility. Because that is the case, and given that volatility now exceeds the levels observed during the Federal Reserve's Quantitative Easing initiative, we reasonably can conclude that there is upward pressure on the Cost of Equity that had not been present in the recent past.

In a similar fashion, "credit spreads", which reflect the incremental return required by debt investors to take on the default risk associated with securities of differing credit quality, have increased significantly over the past year. As Chart 2 (below) demonstrates, the average credit spread on A and Baa-rated utility bonds recently has increased, such that it currently exceeds the levels seen from 2010 through 2014. By way of example, the average credit spread from October 2015 through February 2016 was 201 basis points; during 2012 (the year in which the Company received its currently authorized return) the average credit spread was 157 basis points.[9] Like increases in equity market volatility, expanding credit spreads are an observable indicator that investors have increased their return requirements.

[9] The credit spread was calculated as the difference between average of the Moody's A-rated and Baa-rated utility bond yields and the 30-year Treasury yield.

Chart 2: Moody's Utility Bond Index Baa-A Credit Spread[10]



Lastly, we cannot infer from the current level of Treasury yields that the Cost of Equity is correspondingly low. Even in more stable market environments, when volatility and credit spreads are not as high as they currently are, interest rates and the Equity Risk Premium move in opposite directions. The consequence of that relationship is that interest rates and the Cost of Equity do not move in lock-step. When we consider the increasing levels of market volatility and utility bond credit spreads, and when we recognize that low Treasury yields sometimes are the consequence of Federal policy and capital preservation, it is difficult to assume that the Cost of Equity has fallen, as the Opposing ROE Witnesses suggest.

[10] Source: Bloomberg Professional.

Q. What conclusions do you draw from those analyses?

A. First, these data clearly demonstrate that the current capital market is experiencing increasing volatility and instability. Given that: (1) Federal monetary policy has begun a process of "normalization"; (2) equity market volatility recently has increased and is expected to remain elevated[11]; (3) market data indicate expectations for increasing interest rates into 2018 and beyond; and (4) credit spreads have widened, I believe that my 10.25 percent to 10.75 percent ROE range, and the Company's requested 10.25 percent request reasonably reflect the current and expected capital market environment.

Those data also indicate that we should be very careful in reviewing and interpreting certain model results. Because the Cost of Equity increases with market uncertainty, it is difficult to give considerable weight to models that assume, as the Constant Growth DCF method does, that unusually low ROE estimates will represent investors' required return every year, in perpetuity. Rather, it is important to understand the relative strengths and weaknesses of the various methods, and to keep in mind the *Hope* and *Bluefield* finding that is the reasonableness of the result reached, rather than the method employed, that is controlling.

Q. Please now provide an overview of your response to the ROE recommendations made by the Opposing ROE Witnesses.

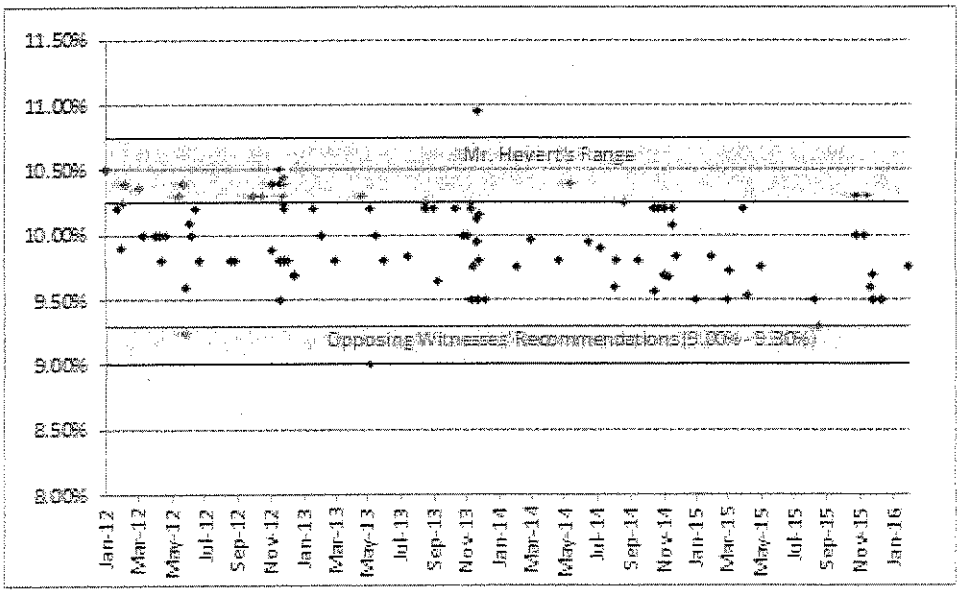
A. It is important to keep in mind that no one financial model is more reliable than others at all times and under all market conditions; at times, certain model results simply do not make sense. Determining the Cost of Equity therefore is not always a strict mathematical

[11] http://www.cboe.com/data/volatilityindexes/volatilityindexes.aspx, accessed April 6, 2016.

exercise. Rather, it requires reasoned judgment in vetting the models and assumptions used by various analysts, and in assessing the reasonableness of their recommendations.

The Opposing ROE Witnesses have given significant weight to the Discounted Cash Flow ("DCF") approach, even though their models produce ROE estimates that are 100 basis points, and more, below the returns authorized for other electric utilities. In light of those unduly low estimates, it is not surprising that their recommendations fall within a range that is far below the returns authorized for electric utilities in other jurisdictions. As a point of reference, the Opposing ROE Witnesses' recommendations fall in the bottom two percent of authorized ROEs for vertically integrated utilities since the beginning of 2012. Even the highest of the three recommendations (9.30 percent) is below 105 of the 108 ROEs authorized for vertically integrated electric utilities during that period (*see* Chart 3, below).

Chart 3: Authorized Returns and ROE Recommendations



Even if we were to look only at the 38 cases decided from 2014 through 2015, only one was as low as 9.30 percent. Even with that single 9.30 percent observation, the average authorized return was 9.84 percent. In twelve of those 38 cases, the authorized ROE was 10.00 percent, or higher.

The fact that the Opposing ROE Witnesses' recommendations are similar does not mean that their approaches are appropriate or that their conclusions are sound. For the reasons discussed throughout the balance of my Rebuttal Testimony, it is my view that if adopted, their recommendations would increase the Company's regulatory and financial risk, diminish its ability to compete for capital, and have the counter-productive effect of increasing OG&E's overall cost of capital, ultimately to the detriment of its customers.

Lastly, modest changes to certain of the Opposing ROE Witnesses' analyses produce estimates that range from 9.80 percent to 9.83 percent. Although I find those ranges still to be low estimates of the Company's Cost of Equity, they are in the range of recently authorized returns for vertically integrated electric utilities.

Q. Please now provide an overview of your response to the ROE recommendations made by the Opposing ROE Witnesses.

A. Although there are many areas in which I disagree with their methods and conclusions, there are certain issues that commonly serve to reduce the Opposing ROE Witnesses' recommendations:

Application of Discounted Cash Flow methods. As a general matter, DCF-based methods define the Cost of Equity as the discount rate that sets the current market price of a stock equal to the present value of the cash flows expected from owning that stock. In calculating expected cash flows, the Opposing ROE Witnesses rely on growth rates that are inappropriately low, or that are constrained by what they may consider to be "sustainable" levels of perpetual growth. Regardless of how they develop their models, DCF estimates below 9.00 percent[12] fail to meet the *Hope* and *Bluefield* "end result" standard, and should be given no weight in determining the Company's ROE.

Application of Risk Premium Models. Risk Premium methods are based on the financial principle that equity investors assume greater risk than do debt investors and, therefore, require higher returns. The measure of that incremental return is the "Equity Risk Premium," or the difference between the required return on debt and the required Return on Equity. It is important to recognize that the Equity Risk Premium is not constant over time. Rather, as interest rates fall, the Equity Risk Premium increases, even when we consider additional measures of market risk. By not properly reflecting that well-documented relationship, certain of the Opposing ROE Witnesses have under-estimated OG&E's Cost of Equity.

Application of the Capital Asset Pricing Model ("CAPM"). The CAPM, which also is a risk premium-based method, assumes that investors must be compensated for the time value of money and for taking on additional risk. The time value of money is measured

[12] Responsive Testimony of J. Bertram Solomon, Exhibit JBS-1, Page 1 of 6. Please note that I am not suggesting that 9.00 percent represents the floor of a reasonable range.

by long-term Treasury yields; compensation for additional risk is measured by the stock's Beta coefficient and the expected Market Risk Premium. The Market Risk Premium, which weighs heavily in CAPM estimates, reflects the additional return that investors expect to receive by investing in the market as a whole over the return they would receive by investing only in long-term Treasury bonds. Certain of the Opposing ROE Witnesses have developed Market Risk Premium ("MRP") estimates based on historical market returns and interest rates, and have assumed relationships between those two variables that do not reasonably reflect current or expected market conditions. As a result, their ROE estimates are unreasonably low.

Proposed Capital Structure. Certain of the Opposing ROE Witnesses suggest that the Company's capital is "suboptimal", and that assessing its proposal relative to those in place at other electric utilities is of limited value. Those arguments are based on analyses that greatly over-simplify the factors, constraints, and objectives that are critically important in establishing the target capital structure for a capital-intensive utility such as OG&E. In fact, the Company's proposal is consistent with industry practice, and will contribute to the financial stability needed to maintain access to external capital at reasonable cost rates.

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

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

Section II – Contains my response to Staff Witness Garrett;

Section III – Contains my response to OAG Witness Solomon;

Section IV – Contains my response to FEA Witness Walters;

Section V – Contains my response to OIEC Witness Parcell;

Section VI – Provides my updated analyses; and

Section VII – Summarizes my conclusions and recommendations.

II. RESPONSE TO THE TESTIMONY OF MR. GARRETT

Q. Please provide a brief summary of Mr. Garrett's analyses and recommendations regarding the Company's Cost of Equity, capital structure, and cost of debt.

A. Although Mr. Garrett makes clear that he believes the Company's true Cost of Equity is 6.20 percent, he recommends a range of 8.75 to 9.25 percent, with a specific recommendation of 9.25 percent.[13] Mr. Garrett estimates the Cost of Equity using the quarterly DCF model, and the CAPM. Applying those methods to a group of nineteen companies, Mr. Garrett develops ROE estimates of 6.56 percent and 5.85 percent, respectively.[14]

As to the Company's capital structure, relying on his CAPM analysis and making certain assumptions regarding changes in the cost of debt and equity under different financial leverage ratios, Mr. Garrett concludes that the "optimal" capital structure includes 40.00 percent equity and 60.00 percent debt. However, Mr. Garrett recommends the

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13 Responsive Testimony of David J. Garrett, at 117 and Exhibit DG 1-2. Mr. Garrett specifically argues the models he applies estimate the "true cost of equity"; the average of his models is 6.20 percent (*see* Responsive Testimony of David J. Garrett, at 14 and 75).

14 *Ibid.*, at 75 and Exhibit DG-1-18.

Commission adopt the Company's proposed capital structure in this case, but impute a capital structure in future cases.[15]

Q. Before responding more fully to Mr. Garrett, please address the five "key points" he summarizes on page 116 of his Responsive Testimony.

A. My summary responses to Mr. Garrett's five key points are as follows:

1. "Basing the awarded rate of return for OG&E on orders and settlements from other jurisdictions fails to comply with the Supreme Court's standards governing this issue; instead, the awarded rate of return should be based on the Company's cost of capital."[16]

Mr. Garrett's assertion that authorized returns in other jurisdictions have no place in estimating the Company's Cost of Equity, or in assessing the ROE recommendations made by witnesses in this proceeding, is misplaced. There is no question that authorized returns represent important data to investors; for that very reason Mr. Garrett's proxy companies report the prevailing authorized ROEs in their SEC Forms 10-K. It would be surprising if investors did not review that data, and equally surprising if they did not frame their return requirements, at least in part, by reference to it. As a matter of common reasoning, it makes little sense for an investor to commit capital to a utility authorized to earn Mr. Garrett's 6.20 percent ROE when the same dollar could be invested in a comparable risk utility authorized to earn 10.00 percent, or more. In that very intuitive sense, authorized returns matter to investors.

Having provided testimony in approximately 150 proceedings in nearly 40 jurisdictions, I can say that the methods used to estimate the Cost of Equity are the same types of market-based models at issue in this case, and that regulatory commissions rely on those models in establishing authorized returns. Although I may not always agree with the final decision, I understand and respect that regulators work hard to balance the interests of investors and ratepayers, and that they do so by evaluating market-based estimates of the Cost of Equity. Authorized returns therefore are based the methods and data used by investors, reflect regulators' objectives of balancing investors interests with those of ratepayers and, therefore, are relevant data points.

Mr. Garrett's argument distills to the fundamental position that 6.20 percent is the "true" ROE in theory and in practice, and that regulatory commissions have been consistently and materially incorrect in setting authorized returns. As my Rebuttal Testimony demonstrates, the approximately 400 basis point difference between Mr. Garrett's 6.20

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15 *Ibid.*, at 116-117.

16 *Ibid.*, at 116.

percent estimate and authorized returns is explained by his misapplication of methods, not by a fundamental misunderstanding of issues on the part of regulators.

2. **"When the awarded rate of return exceeds the cost of capital, it results in an inappropriate transfer of excess wealth from customers to shareholders."**[17]

Because Mr. Garrett believes that the true Cost of Equity for a utility such as OG&E is 6.20 percent, he believes that authorized returns in the range of 9.80 percent to 10.20 percent and higher are excessive, and represent a wealth transfer from ratepayers to investors (and the IRS). But, if the Company were authorized a return of 6.20 percent, I believe it would be viewed by the financial community as confiscatory, and would represent an extraordinary departure from this Commission's practice, and the practice of other regulatory commissions.

Even if the Commission were to adopt Mr. Garrett's proposed 9.25 percent ROE for the sake of "gradualism", the intent of that decision, and its implications for the Company's financial and regulatory risk would not be lost on the market. The inevitable result would be a loss in value to the Company's debt and equity investors. Although the temporary effect may be a transfer of wealth from investors to ratepayers, over time the costs of both debt and equity would increase, increasing the cost of service to ratepayers. Mr. Garrett's recommendation, then, would be both inappropriate and costly.

3. **"The Company's cost of equity must lie between a 'floor' and a 'ceiling,' where the floor is the risk-free rate and the ceiling is the required return on the market portfolio; currently, the floor is about three percent and the ceiling is about eight percent."**[18]

The relevant issue is not whether there is a floor or a ceiling on the returns required by equity investors. Rather, the relevant issue is how they are measured and where they lie. Mr. Garrett argues that the required return can be as low as the risk-free rate.[19] That would be the case if the Company's equity had no more risk than U.S. Treasury securities. But of course it has more risk. Other than noting that a security with some risk should have a higher return than a security with no risk, Mr. Garrett's presentation of 3.00 percent as a measure of the required return has little practical meaning.

Mr. Garrett's 8.00 percent ceiling, which represents his view of the required return on the overall market, once again argues that because they have authorized returns well above 8.00 percent, regulators have been very wrong when it comes to determining the Cost of

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17 *Ibid.*

18 *Ibid.*

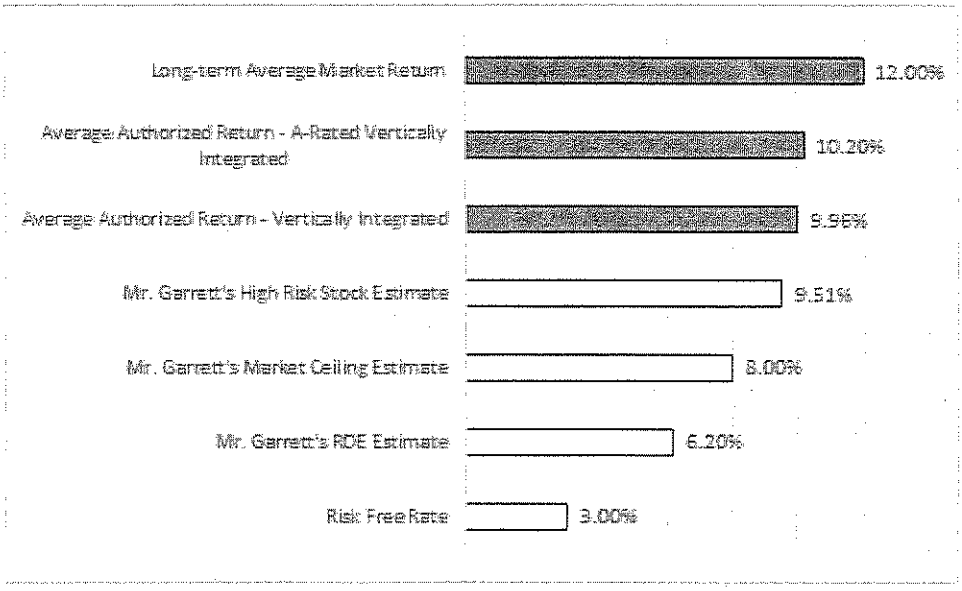
19 Figure 1 on page 10 of Mr. Garrett's testimony includes the Risk Free Rate in the "Required Return Comparison".

Equity. Like his 3.00 percent floor, Mr. Garrett's 8.00 percent ceiling lacks a practical foundation, and provides little insight to the returns required by equity investors.

Mr. Garrett summarizes his view of the return floor and ceiling in Figure 1 (page 10) of his testimony. It is important to note that but for the Risk Free Rate (that is, the "floor"), the data points in his Figure 1 are based on Mr. Garrett's estimates. Observable data indicate how far removed those estimates are from actual market experience.

As Chart 4, below, demonstrates, Mr. Garrett's 8.00 percent estimate of the market return is approximately 200 basis points below the returns authorized for vertically integrated electric utilities, and 400 basis points below the long-term average market return. Even his estimate of the return required for "High-Risk Stocks", 9.51 percent, is below the average authorized return for vertically integrated electric utilities, and well below the long-term average market return.

Chart 4: Return Comparisons[20]



Quite simply, none of Mr. Garrett's require return estimates can be reconciled with actual market experience.

4. "The models I used in this case indicate the Company's cost of equity is about 6.2 percent."[21]

[20] Market return data is provided by Morningstar, Inc.; authorized returns are provided by Regulatory Research Associates. *See* also Direct Testimony of Donald R. Rowlett Exhibit DRR-2.

[21] Responsive Testimony of David J. Garrett, at 116.

It is not the models that produce an estimate of 6.20 percent. Rather, it is Mr. Garrett's misapplication of those models that produce his unreasonably low Cost of Equity estimate. The same models with more reasonable inputs produce far more reasonable results.

5. "When assessing the proper capital structure, it is not appropriate to merely consider the capital structures of other regulated utilities or the Company's test-year capital structure; OG&E's optimal capital structure consists of about 60 percent debt and 40 percent equity."[22]

The factors considered and analyses undertaken by experienced professionals in determining utility capital structure policy far exceed the simplistic analysis presented in Mr. Garrett's testimony. That is the case even though Mr. Garrett considers his approach to be "objective"[23] and his recommendation to be "optimal".

Mr. Garrett ignores the fact that utilities are capital-intensive enterprises that must access the external capital markets when and as needed. Utilities do not have the options to defer investments or to delay seeking external capital, even though such options are available to non-regulated companies. Further, utilities must match their long-lived assets with long-duration securities. Doing otherwise would expose ratepayers to undue interest rate risk. There are numerous other practical constraints that affect utility financing practice that may not apply to industry sectors such as Restaurants and Dining, one of the sectors that Mr. Garrett uses as a point of comparison. It therefore is entirely appropriate to look to other utilities as a measure of industry practice and reasonableness. It is fundamentally misplaced, on the other hand, to conclude that OG&E should capitalize itself in the same manner as restaurants, or retail distributors.[24]

Q. Are Mr. Garrett's analytical results and recommendation reasonable measures of the Company's Cost of Equity?

A. No, they are not. Estimates as low as 5.85 percent have little practical value in determining the Company's ROE, and highlight the inherent risk of not questioning the applicability of models and the reasonableness of their underlying assumptions relative to observable benchmarks. For example, Mr. Garrett reviewed quarterly average authorized

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22 *Ibid.*
23 *Ibid.*, at 11.
24 See Exhibit DG 1-21

ROEs, which ranged from 9.40 percent to 10.37 percent in 2015.[25] Even the highest of Mr. Garrett's ROE estimates, however, falls far below those levels.[26] Mr. Garrett's 9.25 percent ROE recommendation, which exceeds his highest analytical result and far exceeds the 6.20 percent return that he finds most likely represents the true Cost of Equity, is considerably below that range.

Q. Please summarize the key areas in which you disagree with Mr. Garrett's ROE and capital structure analyses and conclusions.

A. The principal areas in which I disagree with Mr. Garrett include: (1) the growth rate assumptions used in his DCF analyses; (2) the relevance and application of the Multi-Stage form of the DCF Model; (3) application of the CAPM; (4) Mr. Garrett's application of the Comparable Earnings Model ("CEM"); (5) the relevance and interpretation of the Bond Yield Plus Risk Premium approach; (6) the effect of certain business risks on OG&E's Cost of Equity; (7) the relevance of flotation costs in determining the Company's Cost of Equity; and (8) the reasonableness of the Company's requested capital structure. Each of those points is discussed in more detail, below.

A. Application of the Constant Growth and Quarterly DCF Models

Q. Please briefly describe Mr. Garrett's Constant Growth DCF analyses and results.

A. Mr. Garrett applies a Quarterly form of the Constant Growth DCF Model, which produces an average ROE estimate of 6.56 percent. For the dividend yield component, Mr. Garrett relies on recently announced quarterly dividend payments, and 30-day

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25 *Ibid.*, at Exhibit DG-1-16.

26 All 38 of Mr. Garrett's DCF and CAPM estimates fall below the low end of the 9.40 percent to 10.37 percent range of authorized ROEs for electric utilities since January 2015 presented in Exhibits DG-1-7, DG-1-14 and DG-1-16.

average stock prices as of January 20, 2016. To estimate expected growth, Mr. Garrett looks to three measures, including: (1) historical dividend and earnings growth over the past ten years; (2) historical dividend and earnings growth by Value Line; and (3) a measure of "Fundamental Growth" calculated as the earnings retention ratio multiplied by the earned Return on Common Equity.[27]

Q. Have you also reviewed Mr. Garrett's Quarterly DCF model calculations?

A. Yes, I have. It appears that Mr. Garrett's model does not fully account for the quarterly compounding of dividends. Although I disagree with his approach, the difference (on average) is only about six basis points. Of greater concern are Mr. Garrett's assumed growth rates.

Q. What are your specific concerns with the growth rates on which Mr. Garrett's DCF analyses rely?

A. First, all of Mr. Garrett's average growth rates are 3.00 percent, or less as he capped his "estimates for short-term projected growth and fundamental growth for the proxy group at 3.0 percent".[28] By reference to the Federal Reserve's target inflation rate of 2.00 percent, Mr. Garrett's model assumes that his proxy companies will grow at real rates of 1.00 percent, or less, in perpetuity. In my experience, it is unlikely that an investor would be willing to take on equity risk in exchange for growth only modestly in excess of expected inflation. Under those conditions, it is highly likely that debt securities, with a higher yield and considerably less risk of capital loss (if held to maturity) would be

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27 Responsive Testimony of David J. Garrett, at 39-51 and DG-1-7.
28 *Ibid.*, at 50. *See*, also Exhibit DG-1-6.

preferred to equity (with a lower yield, higher volatility, and little prospect of meaningful capital appreciation).

As to specific growth rate estimates, but for negative estimates I agree with Mr. Garrett's use of projected earnings growth estimates from Value Line (which are also used in my DCF analyses). I disagree, however, with his use of historical Dividends Per Share ("DPS") growth and Earnings Per Share ("EPS") growth, projected DPS growth, and with his "Fundamental Growth" estimate.

Q. Why do you disagree with Mr. Garrett's use of historical growth rates?

A. The growth component of the Constant Growth DCF model is a forward-looking measure. To the extent historical growth influences investors' expectations of future growth, it already will be reflected in analysts' consensus earnings estimates.

Q. Do you agree with Mr. Garrett's use of dividend growth rates?

A. No, I do not. It is important to recognize that earnings growth is the fundamental driver of the ability to pay dividends. As noted in my Direct Testimony, to reduce growth to a single measure we assume a fixed payout ratio, and a constant growth rate for EPS, DPS and Book Value Per Share.[29] Exhibit RBH-9R illustrates that under the strict assumptions of the Constant Growth DCF model, earnings, dividends, book value, and stock prices all grow at the same, constant rate in perpetuity. Because earnings are the fundamental driver of dividends, and knowing that investors tend to value common equity on the basis of Price/Earnings ("P/E") ratios, the Cost of Equity is a function of the

[29] *See* Direct Testimony of Robert B. Hevert, at 18.

expected growth in earnings, not dividends. DPS growth also is not an appropriate measure of long-term growth when temporary fluctuations in payout ratios cause dividend growth to be disconnected from earnings growth.

Q. Is it your position that measures of "Fundamental Growth" should never be used in DCF analyses?

A. No, it is not. Rather, like other aspects of financial analyses, the model should be viewed in the context of its underlying assumptions relative to the instant circumstances. For the reasons discussed below, in this instance I do not believe the model provides a reasonable estimate of perpetual growth.

Q. Please summarize your concerns with Mr. Garrett's Fundamental Growth rate estimate.

A. Mr. Garrett's estimate assumes that growth is a function of two factors: (1) the Return on Equity; and (2) the Retention Ratio. That is, the model assumes that growth will increase as the proportion of earnings not paid in dividends increases. There are several reasons, however, why that may not be the case. Management decisions to conserve cash for capital investments, to manage the dividend payout for the purpose of minimizing future dividend reductions, or to signal future earnings prospects can and do influence dividend payout (and therefore earnings retention) decisions in the near-term. Consequently, it is important to determine whether the data underlying Mr. Garrett's Fundamental Growth estimate supports the assumption that higher earnings retention ratios necessarily are associated with higher growth.

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

A. Yes, I did. Mr. Garrett's estimate relies on data provided by Value Line, which provides historical and projected information regarding both EPS, and DPS. For each company that had a consistent history of dividend payments, I calculated (in each year of the historical period) the dividend payout ratio, the retention ratio, and the subsequent five-year average earnings growth rate. I then performed a regression analysis in which the dependent variable was the five-year earnings growth rate, and the explanatory variable was the earnings retention ratio. The purpose of that analysis was to determine whether the data on which Mr. Garrett's model relies empirically supports the assumption that higher retention ratios necessarily produce higher growth rates.

Q. What did that analysis reveal?

A. As shown in Table 1 below (*see* also Exhibit RBH-10R), there was a statistically significant, but negative relationship between the five-year average earnings growth rate and the earnings retention ratio. That is, based on Mr. Garrett's data source, earnings growth decreased as the retention ratio increased. Mr. Garrett's position, however, is that growth should increase as the retention ratio increased (that is, his position is that the coefficient would be positive). The results presented in Table 1 indicate that the fundamental premise of Mr. Garrett's Fundamental Growth model is inconsistent with actual experience and as such, its application in this instance is highly questionable.

Table 1: Regression Results - Retention Ratio / Earnings Growth[30]

	Coefficient	Standard Error	t-Statistic[31]
Intercept	0.208	0.028	7.429
Retention Ratio	-0.304	0.049	-6.206

Q. Are there other concerns with Mr. Garrett's Fundamental Growth estimate?

A. Yes. Whereas Mr. Garrett's Fundamental Growth calculation relies on historical earned returns, the appropriate measure is forward-looking. Using Value Line's projected Return on Common Equity for the period 2018-2020, and adjusting those returns to reflect average shares outstanding (rather than end of year shares outstanding) produces a median earned Return on Common Equity of 10.02 percent.[32] That expected return is 346 basis points above Mr. Garrett's DCF results, but only six basis points removed from the 9.96 percent average authorized ROE for vertically integrated utilities.[33]

Q. Have the Return on Common Equity and Retention Ratio components of the Fundamental Growth rate model been stable over time?

A. No, they have not. Recall that the Constant Growth DCF model assumes that the growth rate will remain unchanged in perpetuity. At issue, then, is whether the components of Fundamental Growth (that is, the retention ratio, or "B" and the earned return on common equity, or "R") are likely to remain constant. Chart 5 (below) illustrates the historical fluctuation in the average Return on Equity, and Retention Ratio for Mr. Garrett's proxy

30 *See* also Exhibit RBH-10R.

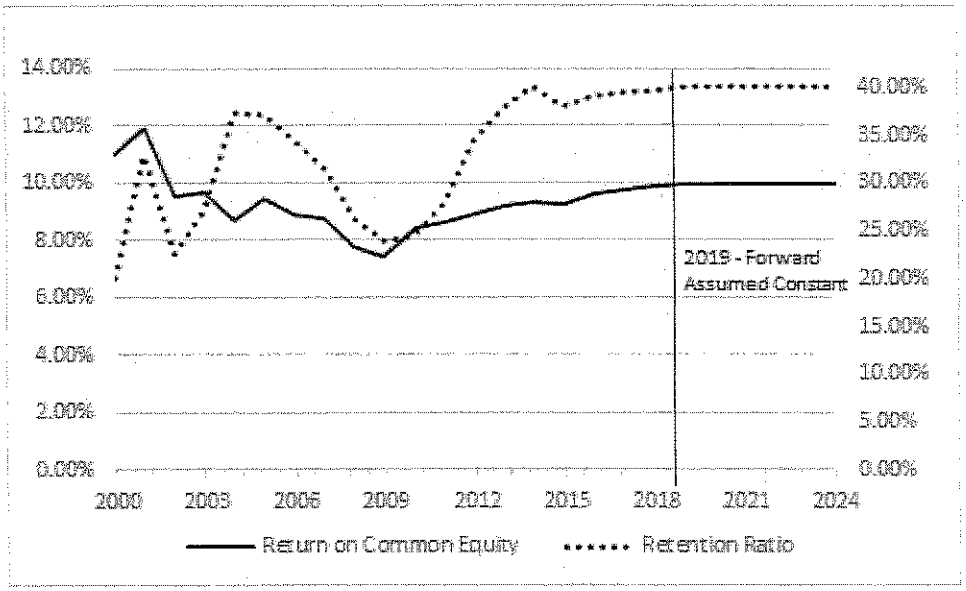
31 The t-statistic is the ratio of the coefficient to the standard error. In general, a t-statistic of 2.00 or greater indicates that the coefficient is statistically significant, *i.e.*, it is highly likely to be the result of more than random chance.

32 *See* Exhibit RBH-15R.

33 *See* Chart 3.

group. As that chart demonstrates, the assumption that the two (in particular, the Retention Ratio) will remain constant in perpetuity (at Value Line's 2019 forecast) is inconsistent with historical experience.

Chart 5: Return on Equity and Retention Ratio Over Time[34]



To further understand the instability of the Fundamental Growth estimate, it is helpful to understand the model's constituent parts. The Return on Common Equity (that is, the "R" component) can be decomposed into three elements: (1) Net Margin (Net Income Available to Common Equity/Operating Revenues); (2) Asset Turnover (Operating Revenues/Assets); and (3) Equity Multiplier (Assets/Average Common Equity).[35] Looking at only one element, Net Margin, it becomes clear that the determinants of the Return on Common Equity (and, therefore, Sustainable Growth) have varied considerably in recent years.

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34 Value Line. Chart is based on average annual results for Mr. Garrett's proxy group.

35 This approach to decomposing the earned return on common equity often is referred to as the "DuPont" method. *See*, for example, Cohen, Zinbarg and Zeikel, Investment Analysis and Portfolio Management, Richard D. Irwin, Inc., 1987, at 393 – 395.

It is not surprising that the Net Margin would vary over time. There are a number of factors, including (but not limited to) operating expenses, operating leverage, productivity, financing decisions, and inflation that fall between operating revenue and net income and that can vary over time. Mr. Garrett has implicitly assumed that those factors will remain constant in perpetuity. He has not explained, however, why operating expenses will remain at a constant proportion of revenue, productivity will remain constant, operating leverage will remain constant, or why investors would assume that the numerous factors affecting the Net Margin will not change.

Exhibit RBH-7 to my Direct Testimony demonstrates similar instability in Asset Turnover, which has fallen considerably in recent years. The reduction in Asset Turnover points out that fewer dollars of revenue have been produced by each dollar of assets, an outcome that is not surprising in an industry with increasing capital investment.

Lastly, we only have to review the transcripts of earnings conference calls to realize that analysts focus on issues relating to operating expenses, required capital investments, rate relief, and other factors that affect the Return on Common Equity and, therefore, the Fundamental Growth estimate.[36] In short, Mr. Garrett's assumption that Fundamental Growth is an appropriate estimate of constant, perpetual growth in this proceeding is

[36] *See* for example, Thomson Reuters Street Events, *Edited Transcript, DUK – Q4 2015 Duke Energy Corp Earnings Call*, February 18, 2016 (also note Duke provides a 70% to 75% target payout ratio, and notes 4%-6% long-term growth guidance); Thomson Reuters Street Events, *Edited Transcript, WEC- Q4 2015 Wisconsin Energy Corp Earnings Call,* February 4, 2016 (also note Wisconsin Energy Corp provides a 65% to 70% target payout ratio and a 5% to 7% earnings growth estimate).

contrary to historical data, and at odds with practical market experience. Given the strong statistical results of my analyses and the corroborating research discussed above, I strongly disagree with Mr. Garrett's reliance on the Fundamental Growth approach.

Q. Are Value Line's projections for the proxy companies' growth in Earnings Per Share consistent with Mr. Garrett's Fundamental Growth estimate?

A. No, they are not. As shown in Exhibit RBH-11R, for the years 2016, and 2018-2020, I calculated the Fundamental Growth rate using Value Line's projected financial metrics for each company in Mr. Garrett's proxy group. I then compared those estimates to Value Line's expected earnings growth for each company (that is, I considered whether a given company's Fundamental Growth explained its projected growth in earnings from 2015 to 2016, and from 2016 to the 2018-2020 projection period). As shown in Exhibit RBH-11R, Value Line frequently projects actual earnings growth in excess of the growth rate indicated by the Fundamental Growth formula. Consequently, the assumption that the Fundamental Growth estimate accurately reflects expected growth may be too limiting.

Q. Aside from those concerns, do you agree with Mr. Garrett's specification of the Fundamental Growth rate?

A. No, I do not. Mr. Garrett's Fundamental Growth model is the simplest form of the "Sustainable Growth" model, which includes growth associated with common stock issuances. If Mr. Garrett is going to consider a form of Sustainable Growth, he should use the "BR + SV" form of the model, which reflects growth both from internally generated funds *(i.e.,* the "BR" term that represents Mr. Garrett's Fundamental Growth

model) and from issuances of equity *(i.e.,* the "SV" term). The "SV" term is represented as:

[(M/B) -1] x Common Shares growth rate Equation [1]

where:

M/B = the Market-to-Book ratio Equation [2]

In that form, the "SV" term reflects an element of growth as the product of (1) the growth in shares outstanding, and (2) that portion of the market-to-book ratio that exceeds unity.[37]

Q. Have you conducted any analyses to determine which measures of growth are statistically related to the proxy companies' stock valuation levels?

A. Yes, I have. Because the DCF method assumes that stock valuation levels positively related to growth, my analyses are based on a methodological approach used by Professors Carleton and Vander Weide, who conducted a comparison of the predictive capability of historical growth estimates and analysts' forecasts on the valuation levels of sixty-five utility companies.[38] I structured the analysis to assess whether investors use earnings, dividend, book value, or Fundamental Growth rates (either the "B x R" or "BR+SV" forms) when valuing electric utility stocks.[39] In particular, my analysis examined the statistical relationship between the P/E ratios of the universe of Value Line electric utility companies, and the projected Earnings Per Share, dividend per share, Book

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37 *See*, Roger Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 306.

38 James H. Vander Weide and Willard T. Carleton, *Investor Growth Expectations: Analysts vs. history*, The Journal of Portfolio Management, Spring1988.

39 As discussed in my response to Mr. Parcell, book value per share growth was included as an explanatory variable in response to Mr. Parcell's use of that measure.

Value Per Share reported by Value Line, and Fundamental Growth rates calculated using Value Line data. If those growth rates are not related to stock valuation levels, it calls into question their use in the DCF model.

To determine which, if any, of those growth rates are statistically related to utility stock valuations, I performed a series of regression analyses in which the projected growth rates were explanatory variables and the P/E ratio was the dependent variable. The results of those analyses are presented in Table 2, below.

Table 2: Regression Results- Price to Earnings and Growth Rates[40]

	Intercept	Coefficient	Standard Error	T-Statistic	F-Statistic
Scenario 1- Projected EPS	15.757	55.181	21.582	2.557	6.537
Scenario 2- Projected DPS	19.069	-11.137	19.138	-0.582	0.337
Scenario 3- Projected BVPS	17.184	29.062	31.438	0.924	0.855
Scenario 4- BxR Fundamental Growth	19.610	-26.082	28.648	-0.910	0.829
Scenario 5- BR+SV Fundamental Growth	19.496	-20.100	24.754	-0.848	0.720
Scenario 6-	17.474				1.462
Projected EPS		55.160	22.346	2.468	
Projected DPS		-2.112	21.806	-0.097	
Projected BVPS		-9.063	43.986	-0.206	
BxR Fundamental Growth		-40.088	107.180	-0.374	
BR+SV Fundamental Growth		5.153	88.960	0.579	

40 *See, also*, Exhibit RBH-12R.

In the first set of analyses (Scenarios 1-5), I considered each growth rate separately (*i.e.*, I performed five separate regressions with P/E as the dependent variable and projected EPS, DPS, BVPS and two forms of Fundamental Growth, respectively, as the independent variable). I also performed a single regression analysis that included all five variables as potential explanatory variables (Scenario 6). I then reviewed the T- and F-Statistics to determine whether the variables and equations were statistically significant.[41]

Q. What did those analyses reveal?

A. As shown in Exhibit RBH-12R, the results demonstrate that the only statistically significant growth rate was the projected EPS growth. That is, neither DPS or BVPS growth rates, nor either form of Fundamental Growth were related to valuation levels. Consequently, projected EPS growth rates are the appropriate measure of growth for the purpose of the DCF models.

Q. What conclusions did you draw from those analyses?

A. Because my analyses demonstrate that only EPS growth has a meaningful and statistically significant level of explanatory value with respect to the Value Line universe of electric utilities' stock valuations, I conclude that investors consider expected EPS growth rates, not expected DPS, BVPS or Fundamental Growth rates, in establishing market prices for those companies.

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[41] In general, a T-Statistic of 2.00 or greater indicates that the variable is likely to be different than zero, or "statistically significant." The F-Statistic is used to determine whether the model as a whole has statistically significant predictive capability.

Q. What would be the result of Mr. Garrett's DCF analysis if you included only the Value Line EPS growth rate projection?

A. As shown in Exhibit RBH-30R, the average DCF result is 9.60 percent.

B. Relevance and Application of the Multi-Stage Form of the DCF Model

Q. What concerns does Mr. Garrett express regarding your Multi-Stage DCF model?

A. Mr. Garrett argues that it is unnecessary to use the Multi-Stage DCF model because utilities have high payout ratios and are "mature, well-established firms." He then suggests that the Multi-Stage DCF model produces results that are "unreasonably high."[42]

Q. What is the benefit of using a Multi-Stage DCF model to estimate OG&E's ROE?

A. As discussed in my Direct Testimony, the Multi-Stage form of the DCF model allows the analyst to reflect assumptions regarding the timing and extent of changes in the payout ratio to reflect, for example, increases or decreases in expected capital spending, or transition from current payout levels to long-term expected levels.[43] That flexibility is particularly important given the utility industry's current capital investment cycle and recently elevated levels of capital expenditures which have been driven by the need to meet future infrastructure requirements including, for example, compliance with environmental regulations, integration of renewables, increased use of energy efficiency, application of smart grid technologies, and system-hardening.[44] Although Mr. Garrett reasons that relatively high payout ratios are a sign that utilities are mature firms, he fails

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42 Responsive Testimony of David J. Garrett, at 100-101.

43 *See* Direct Testimony of Robert B. Hevert, at 24.

44 See Capital Expenditure Update: Capital Spending at All-Time High in 2015, Regulatory Research Associates, May 12, 2015, at 1.

to reconcile that position with the recent variability in utility payout ratios shown in Chart 5 (above).

C. Application of the CAPM

Q. Please summarize Mr. Garrett's CAPM analysis and results.

A. Mr. Garrett's CAPM estimate relies on a risk-free rate of 2.77 percent, an average Market Risk Premium of 5.62 percent, and Beta coefficients as reported by Value Line, along with Mr. Garrett's calculated Beta coefficients. His assumed Beta coefficients reflect "raw" Beta coefficients derived from five years of weekly stock returns regressed against the S&P 500 Index, adjusted using the "Vasicek" method. With those inputs, Mr. Garrett's CAPM analysis produces an ROE estimate of 5.85 percent.[45]

Q. Do you agree with Mr. Garrett's CAPM analysis?

A. No, I do not. In particular, I disagree with Mr. Garrett's sole reliance on historical Treasury yields to estimate the risk-free rate, his approach to calculating Beta coefficients, and the various methods he uses to estimate the Market Risk Premium. Just as important as our methodological differences, however, is our difference regarding the reasonableness and reliability of an analysis that produces an ROE estimates of 5.85 percent. As noted earlier, there are no market data of which I am aware that rationalize such a low estimate of the Company's Cost of Equity.

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[45] Responsive Testimony of David J. Garrett, at 70 and Exhibit DG-1-14.

Q. Turning to the risk-free rate component of the CAPM, do you agree with Mr. Garrett's use of the average 30-year Treasury yield?

A. Although I agree it is appropriate to consider the current average 30-year Treasury yield, because the Cost of Equity is forward-looking it also is important to reflect forward-looking expectations of the risk-free rate. For that reason, I relied on both the current 30-day average 30-year Treasury yield and the projected near-term 30-year Treasury yield as reported by *Blue Chip Financial Forecast*.[46]

Q. Please briefly describe the Beta coefficients on which Mr. Garrett's analysis relies.

A. As noted earlier, Mr. Garrett relied on Beta coefficients provided by Value Line, together with Beta coefficients that he calculated, himself. Value Line Beta coefficients are calculated over five years based on weekly changes in the New York Stock Exchange Composite Index (as the market index), and are adjusted based on the "Blume" method.[47] Although Mr. Garrett's calculation also reflects weekly returns over five years, he relied on the S&P 500 as the market index, and applied the "Vasicek" adjustment to his "raw" Beta coefficients.[48]

Q. Do you have any concerns with Mr. Garrett's Beta coefficients?

A. Although I agree with Mr. Garrett's use Value Line Beta coefficients (I use them in my own analysis), I believe his calculated Beta coefficients are unduly low. In particular, Mr. Garrett's average calculated Beta coefficient, including the Vasicek adjustment, is 0.3320. That estimate is significantly lower than the 0.763 average Beta coefficient

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46 *See,* Direct Testimony of Robert B. Hevert, at 30 and Exhibit RBH-5.

47 As noted in my Direct Testimony at pages 30 and 31, Beta coefficients reflect the relationship between the returns of the subject security, and the return on the market. *See,* Value Line, Using Beta, http://www.valueline.com/Tools/Educational_Articles/Stocks/Using_Beta.aspx.

48 Responsive Testimony of David J. Garrett, at 45.

reported by Value Line and, due to the Vasicek adjustment is nearly equal to (although somewhat lower than) his average raw Beta coefficient (*i.e.,* 0.3371).

Q. Is it surprising that Mr. Garrett's adjusted Beta coefficients are not very different than his raw Beta coefficients?

A. No, it is not. As a practical matter, because the Vasicek adjustment moves each company's Beta coefficient to the peer group average, and it is the peer companies are intended to be comparable to each other, it is not surprising that the adjustment is small. As a technical matter, the Vasicek adjustment looks to an industry or peer group, and assumes that Beta coefficients with higher standard errors (that is, higher variation) should have higher adjustments than those with lower standard errors (that is, lower variations).[49] In that sense, a proxy group selected from a sample of companies within a highly defined sector, such as electric utilities, may be assumed to have reasonably consistent levels of variations in their raw Beta coefficients. Consequently, the average adjustment can be expected to be small. That is what we find with Mr. Garrett's results: the average difference between the raw and adjusted Beta coefficient is (negative) 0.0051. When applied to Mr. Garrett's 5.62 percent Market Risk Premium, the effect on the CAPM estimate is only three basis points.

Although the Vasicek method adjusts Beta coefficients toward the proxy group average, it does not account for the tendency of low-Beta coefficients to understate expected risk. That tendency was discussed in Marshall Blume's 1971 paper, *On the Assessment of*

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[49] Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook, at 78.

Risk, which reviewed the behavior of Beta coefficients as measures of risk,[50] and concluded that Beta coefficients tended to drift toward the market mean (*i.e.,* 1.00) over time.[51] Blume's paper is widely read in the profession, and is the basis of the Beta coefficient adjustments made by Value Line and Bloomberg. By correcting for the tendency led revert toward the market mean, Blume's adjustment tends to produce "considerably more accurate assessments of the future values of risk."[52]

Q. Those issues aside, what is the practical implication of Mr. Garrett's estimated Beta coefficients?

A. The implication is that they produce Cost of Equity estimates that are far too low to have practical meaning. One means of viewing the consequence of his calculated Beta coefficients is "CAPM Graph" included as Figure 8 (page 70) of Mr. Garrett's testimony. There, Mr. Garrett shows that with an average Beta coefficient of 0.5476, the CAPM estimate is 5.85 percent. As low as it is, that CAPM result assumes an average Beta coefficient reflecting both the Value Line estimate (*i.e.*, 0.763) and Mr. Garrett's estimate (*i.e.*, 0.332). If we were to use only Mr. Garrett's Beta coefficients and leave his Risk Free Rate, and Market Risk Premium estimates constant, the CAPM estimate would be 4.64 percent.[53] To put that estimate in perspective, Mr. Garrett's Exhibit DG 1-19 indicates that the interest rate on A3/A- debt is 4.52 percent. According to Mr. Garrett's estimates, then, investors would require essentially the same marginal return on equity

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50 *See* Blume, Marshall E., *On the Assessment of Risk*, The Journal of Finance, Vol. 26, No. 1, March 1971, at 1-10.

51 *Ibid.*, at 10.

52 *Ibid.*

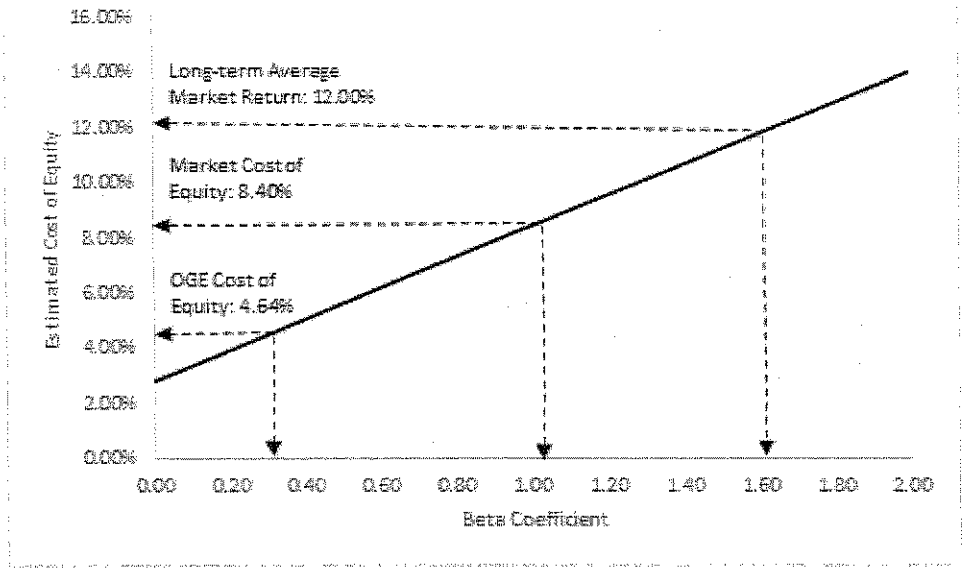
53 Equals 2.77% + (.332 x 5.62%).

that they would require on A-rated utility debt. That is, there would be essentially no equity risk premium.

The notion that there would be no equity risk premium is entirely contrary to risk/return trade-off that is so elemental to financial theory and practice. The contractual obligations and security provided by debt obviously makes it less risky than equity. The implication of Mr. Garrett's estimates - that investors would be indifferent to risk differences – therefore has no practical or theoretical value in determining the Company's Cost of Equity.

Related implications of Mr. Garrett's estimates are equally concerning. For example, it assumes a required market return of 8.40 percent when the long-term average has been 12.00 percent. The model therefore assumes that the long-term average market return has a Beta coefficient of approximately 1.64. According to the basic assumptions underlying the CAPM, the market Beta coefficient is 1.00, not 1.64 and as such, Mr. Garrett's conclusion is quite flawed. Those observations go back to a point that is common to so many of Mr. Garrett's analyses: His estimates cannot be reconciled with relevant, observable data.

Chart 6: Mr. Garrett's Modified CAPM Graph



Q. Turning now to the Market Risk Premium, how did Mr. Garrett derive his estimate?

A. Mr. Garrett estimates the MRP by taking the weighted average of: (1) a 5.20 percent average historical MRP; (2) a 5.01 percent average survey estimate of MRP; and (3) a 5.99 percent "Implied Equity Risk Premium" calculation.[54] Mr. Garrett applies weights of 10.00 percent, 30.00 percent, and 60.00 percent, respectively, to those approaches. Mr. Garrett's 5.20 percent historical MRP estimate is the average of the arithmetic (6.00 percent) and geometric (4.40 percent) means reported by Ibbotson; his 5.01 percent average survey estimate is based on the results of a survey by Graham and Harvey (4.51 percent), and a survey by the IESE Business School (5.50 percent); and his Implied Equity Risk Premium estimate is based on a two-stage DCF model applied to the S&P 500, using historical cash yield (dividends and buybacks) and historical earnings growth.

[54] Responsive Testimony of David J. Garrett, at 69.

Based on those calculations and assumptions, Mr. Garrett concludes that an MRP of 5.62 percent MRP is appropriate.

Q. Do you have any concerns with Mr. Garrett's use of historical data in estimating the MRP?

A. Yes, I do. The Market Risk Premium represents the additional return required by equity investors to assume the risks of owning the "market portfolio" of equity relative to long-term Treasury securities. As with other elements of Cost of Equity analyses, the MRP is meant to be a forward-looking parameter. Relying on the historical MRP therefore may produce results that are not consistent with investor sentiment and current conditions in capital markets. For example, Morningstar (the source of Mr. Garrett's historical MRP estimates) observes:

> It is important to note that the expected equity risk premium, as it is used in discount rates and cost of capital analysis, is a forward-looking concept. That is, the equity risk premium that is used in the discount rate should be reflective of what investors think the risk premium will be going forward.[55]

The relevant analytical issue in the application of the CAPM is to ensure that all three components of the model (*i.e.,* the risk-free rate, Beta, and the MRP) are consistent with current market conditions and investor perceptions.

Q. What is the difference between the geometric and arithmetic average risk premium?

A. Although I do not endorse the use of the historical MRP, the arithmetic average best reflects the uncertainty associated with returns from year to year. The arithmetic mean is the simple average of single period rates of return, whereas the geometric mean is the

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55 Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook, at 53.

compound rate that equates a beginning value to its ending value. The important distinction between the two methods is that the arithmetic mean assumes that each periodic return is an independent observation, and reflects uncertainty by the variation among those observations. Although geometric means provide a standardized basis of review of historical performance across investments or investment managers, they do not reflect forward-looking uncertainty.

Since there is no uncertainty with respect to past returns, the use of geometric averages is appropriate when comparing investment performance on a retrospective basis. On a prospective basis, however, uncertainty exists and should be taken into consideration when developing return expectations and requirements. That is why investors and researchers commonly use the arithmetic mean when estimating the risk premium over historical periods for the purpose of estimating equity cost rates. Moreover, investment risk, or volatility, typically is measured on the basis of the standard deviation of returns. The standard deviation, in turn, is a function of the arithmetic, as opposed to the geometric mean. In that regard, the raw Beta coefficients that Mr. Garrett calculated are a function of the standard deviation of returns.[56] In any case, Morningstar notes that:

> The arithmetic average equity risk premium can be demonstrated to be the most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of the stock market returns and the riskless rates is the relevant number.[57]

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56 *See* Direct Testimony of Robert B. Hevert, at 31.

57 Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook, at 56.

Similarly, an article reviewing literature on the topic noted the following rationale for using the arithmetic mean:

> Note that the arithmetic mean, not the geometric mean is the relevant value for this purpose. The quantity desired is the rate of return that investors expect over the next year for the random annual rate of return on the market. The arithmetic mean, or simple average, is the unbiased measure of the expected value of repeated observations of a random variable, not the geometric mean.... [The] geometric mean underestimates the expected annual rate of return.[58]

Q. Putting aside the issue of whether it is more appropriate to use the geometric or arithmetic mean, do you have any concerns with method by which Mr. Garrett derived his historical MRP estimates?

A. Yes, I do. Mr. Garrett's historical MRP estimates are derived using the observed difference in the total returns on stocks and bonds. According to Morningstar, however, the historical MRP is appropriately calculated by subtracting the *income only* portion of the government bond return from the total return on large company stocks:

> Another point to keep in mind when calculating the equity risk premium is that the income return on the appropriate-horizon Treasury security, rather than the total return, is used in the calculation. The total return is comprised of three return components: the income return, the capital appreciation return, and the reinvestment return...The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.[59]

By subtracting the total return on government bonds from the total return on stocks, Mr. Garrett has understated the historical MRP by approximately 100 basis points (using the arithmetic mean).[60] Based on Mr. Garrett's average Beta coefficient of 0.548, the effect on his CAPM estimate would be approximately 55 basis points. Even that correction,

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58 Ian Cooper, *Arithmetic versus geometric mean estimators: Setting discount rates for capital budgeting*, European Financial Management 2.2, (1996): 158.

59 Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook, at 55.

60 Morningstar, Inc., 2015 Ibbotson Stocks, Bonds, Bills, and Inflation Classic Yearbook, at 91.

however, produces results that are far too low to be reasonable estimates of the Company's Cost of Equity.

Q. Do you have additional concerns with Mr. Garrett's use of a historical Market Risk Premium?

A. Yes, I do. If Mr. Garrett chooses to use the historical market return in his CAPM analysis, it would be reasonable to consider the historical risk-free rate as well. Morningstar reports a 5.00 percent arithmetic average income-only return on long-term bonds from 1926-2015.[61] Combining that risk-free rate with the 6.90 percent arithmetic average historical MRP (*i.e.*, the difference between the 12.00 percent arithmetic average earned return on stocks and the 5.00 percent average income-only return on bonds), and the 0.548 average Beta coefficients used in Mr. Garrett's CAPM analysis produces a result of 8.78 percent (more than 300 basis points higher than Mr. Garrett's CAPM estimate). Using only the Value Line average Beta coefficient of 0.763, the result would be 10.26 percent, which falls within my recommended range.

Q. Do the surveys referenced by Mr. Garrett provide reasonable MRP estimates for the purpose of estimating OG&E's Cost of Equity?

A. No, they do not. For example, the Graham and Harvey survey suggests an expected return on the overall market of 6.63 percent based on a risk-free rate of 2.12 percent and an MRP of 4.51 percent.[62] Combining those CAPM component estimates with Mr. Garrett's average Beta coefficient estimate of 0.548 would produce a Cost of Equity estimate of 4.59 percent, which is 103 basis points below the Company's cost of debt

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61 Morningstar SBBI Presentation, Morningstar Stocks, Bonds, Bills, and Inflation, 1926-2015.

62 Graham and Harvey, *The Equity Risk Premium in 2015*, at 3.

(which Mr. Garrett accepted), and approximately 500 basis below the average authorized ROE for vertically integrated electric utilities. Moreover, because Mr. Garrett recognizes that utility stocks tend to be somewhat less risky than the broad market,[63] if the Graham and Harvey survey results are meaningful, Mr. Garrett's ROE recommendation would be no more than 6.63 percent. That is not the case; his recommendation exceeds the Graham and Harvey estimate by 262 basis points.

As shown in Table 3 below, the Graham and Harvey survey respondents have provided forecasts that are disconnected from actual market results, and significantly underestimate actual market returns. Although there is less historical data available to assess the IESE Business School survey, it also appears to provide relatively low results relative to actual market returns.

63 *See*, for example, Responsive Testimony of David J. Garrett, at 23-24.

Table 3: S&P 500 Market Return: Accuracy of Survey Estimates[64]

	Actual	Graham-Harvey Estimate	IESE Business School Estimate
2015	1.38%	6.07%	N/A
2014	13.69%	5.00%	N/A
2013	32.39%	3.40%	7.90%
2012	16.00%	4.00%	N/A
2011	2.11%	5.30%	N/A
2010	15.06%	6.28%	N/A
Average:	13.44%	5.01%	N/A

Q. Do any of the surveys cited by Mr. Garrett provide support for your approach to estimating the current MRP?

A. Yes. A study by Pablo Fernandez et al, *Discount Rate (Risk-Free Rate and Market Risk Premium) used for 41 countries in 2015: a survey,* discusses how the required Equity Risk Premium is commonly calculated using the Constant Growth DCF approach. That study states:

> [t]he [implied equity premium] is the implicit [required equity premium] used in the valuation of a stock (or market index) that matches the current market price. The most widely used model to calculate the [implied equity premium] is the dividend discount model: the current price (P_0) is the present value of expected dividends discounted at the required rate of return (Ke). If d_1 is the dividend per share expected to be received in year 1, and g the expected long term growth rate in Dividends Per Share:
>
> P0 = d1 / (Ke – g), which implies:

64 Morningstar SBBI Presentation, Morningstar Stocks, Bonds, Bills, and Inflation, 1926-2015; http://www.cfosurvey.org (1-year return estimates as of fourth quarter of the previous year); Pablo Fernandez, Alberto Ortiz and Isabel F. Acin, *Discount Rate (Risk-Free Rate and Market Risk Premium) used for 41 countries in 2015: a survey*, April 23, 2015.

[implied equity premium] = d1/P0 + g - Rf[65]

As discussed in my Direct Testimony, I calculated the *ex-ante* MRP in a similar manner, using a market capitalization weighted Constant Growth DCF calculation on the individual companies in the S&P 500 Index.[66]

Q. Please now describe the method by which Mr. Garrett calculated his third estimate, the Implied Market Risk Premium.

A. As Mr. Garrett points out, his method essentially develops the internal rate of return that sets equal the current value of the market index to the projected value of cash flows associated with owning the market index. Mr. Garrett notes that Dr. Damodaran (a professor at the Stern School of Business) "promotes the implied ERP method."[67] Although there are some differences between the two, Mr. Garrett's approach is quite similar to that which Dr. Damodaran makes available on his website.[68]

The fundamental construct of Mr. Garrett's model is a two-stage form of the DCF approach, which calculates the present value of cash flows over the five-year initial period, together with the terminal price (based on the Gordon Model[69]), to be received in the last (*i.e.,* fifth) year. The model's principal inputs reflect the following assumptions:

- Over the coming five years, the S&P 500 Index (the Index) will appreciate at a rate equal to the compound growth rate in "Operating Earnings" from 2010 through 2014;

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65 Pablo Fernandez, Alberto Ortiz and Isabel F. Acin, *Discount Rate (Risk-Free Rate and Market Risk Premium) used for 41 countries in 2015: a survey*, April 23, 2015, at 13.
66 *See* Direct Testimony of Robert B. Hevert, at 29-30.
67 Responsive Testimony of David J. Garrett, at 68.
68 *See*, http://pages.stern.nyu.edu/~adamodar
69 *See*, Responsive Testimony of David J. Garrett, at 65.

- Cash flows associated with owning the Index will be equal to the historical average Earnings, Dividends, and Buyback yields, applied to the projected Index value each year; and
- Beginning in the year 2020, the Index will appreciate, in perpetuity, at a rate equal to the 30-day average yield on 30-year Treasury securities, as of February 16, 2016.[70]

As discussed below, reasonable changes to those assumptions produce expected market returns that are far more consistent with historical experience than Mr. Garrett's 9.03 percent projection and, therefore, produce more reasonable ROE estimates.

Q. Do you have any other observations regarding Mr. Garrett's assumed first-stage growth rate?

A. Yes. Although Mr. Garrett's model is intended to be a forward-looking measure of the Implied Risk Premium, his first-stage growth rate is based on historical data. An alternative approach would be to use projected earnings growth rates for the companies in the Index, and calculate the market capitalization weighted average; that method would be consistent with the analysts' consensus growth rates included in Mr. Garrett's Constant Growth DCF model. One method of doing so is to apply the weighted average growth rates included in the expected market return component of the CAPM analysis provided in my Direct Testimony. The average of the two sources of growth (*i.e.*, Bloomberg and Value Line) is 10.59 percent. Substituting that estimate for Mr. Garrett's

[70] Responsive Testimony of David J. Garrett, at 65-68; *See*, also, Mr. Garrett's "D. Garrett Cost of Capital Workpapers". The model also assumes that all payments are received at year-end, rather than during the course of the year. That assumption also tends to under-state the Implied Risk Premium.

first-stage growth produces an expected market return of 9.93 percent, and an Implied Equity Risk Premium of 7.16 percent.[71]

Q. Why did the Implied Equity Risk Premium increase by only 90 basis points (from 6.26 percent to 7.16 percent) when the first-stage growth rate increased by 333 basis points (from 7.26 percent to 10.59 percent)?

A. Because Mr. Garrett's model assumes that the first stage lasts for five years (and the terminal stage is perpetual), the results are quite sensitive to changes in the assumed terminal growth rate. To put that effect in perspective, the terminal value (which is directly related to the terminal growth rate) represents approximately 75.00 percent of the "Intrinsic Value".[72]

Q. How did Mr. Garrett develop his assumed terminal growth rate?

A. Before discussing his method, it is important to recall that the terminal growth rate represents investors' expectations of the rate at which the broad stock market will grow, in perpetuity, beginning in 2020. Mr. Garrett assumes that terminal growth is best measured by the average yield on thirty-year Treasury securities over the thirty days ended February 16, 2016. That is, Mr. Garrett assumes that a sensible measure of expected growth beginning in 2020, and extending indefinitely into the future, is the average thirty-year Treasury yield during February 2016.

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71 *See,* Exhibit RBH-14R.

72 *See,* Exhibit RBH-14R. Please note that regardless of the assumed first and terminal-stage growth rates, the terminal stage consistently represents approximately 75.00 percent of the Intrinsic Value.

Q. Do you agree with Mr. Garrett's assumption?

A. No, I do not. I recognize that Mr. Garrett followed the approach described in Dr. Damodaran's method. But it is important to recognize that Dr. Damodaran refers to that as a "default" assumption.[73] In terms of historical experience, which Mr. Garrett finds relevant since he applied some weight to the historical MRP, over the long-term the broad economy has grown at a long-term compound average growth rate of approximately 6.20 percent.[74] Considered from another perspective, Morningstar reports the long-term rate of capital appreciation on Large Company stocks to be 7.70 percent.[75]

Although he believes that historical data has some relevance, Mr. Garrett has not explained why growth beginning five years in the future, and extending in perpetuity, will be less than one-half of long-term historical growth. Moreover, assuming long-term inflation will be approximately 2.00 percent,[76] Mr. Garrett assumes that real growth will be approximately 0.75 percent, again in perpetuity.[77] That is, Mr. Garrett assumes that in the long run real growth will be less than one-third of historical real growth. Nowhere in his testimony, however, has Mr. Garrett explained the fundamental, systemic changes that would so dramatically reduce long-term economic growth.

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73 In his model, Dr. Damodaran suggests that the assumed terminal growth rate could be lower, still.

74 Source: Bureau of Economic Analysis. Data includes the years 1929 to 2014.

75 Morningstar SBBI Presentation, Morningstar Stocks, Bonds, Bills, and Inflation, 1926-2015.

76 For example, in line with the Federal Reserve's target rate of inflation.

77 0.75% = [(1.0277/1.02)-1]. Please note that the long-term historical average rate of inflation, measured by the difference between real and nominal GDP growth, has been approximately 2.90 percent, which would imply perpetual negative real growth.

Q. Are there other reasons why the 30-day average Treasury yield as of February 16, 2016 may not be a reasonable estimate of expected long-term growth as of 2020?

A. Yes. Even if we assume that, fundamentally, the current 30-year Treasury yield is a meaningful estimate of future expected long-term growth, it is important to keep in mind that the value of (and therefore, the yield on) Treasury securities continues to be influenced by the Federal Reserve's monetary policy. As noted in my Direct Testimony, securities (including Treasury bonds) bought by the Federal Reserve increased from slightly more than 3.00 percent of Growth Domestic Product ("GDP") in 2008, to over 23.00 percent of GDP in 2015.[78] The policy of Quantitative Easing under which those securities were acquired by the Federal Reserve was meant to put downward pressure on long-term interest rates.[79]

Although the Federal Reserve suspended its purchases of long-dated securities, it still holds over $4 trillion of those assets on its balance sheet[80], and continues to put downward pressure on interest rates. As the Federal Reserve proceeds with policy "normalization" its balance sheet will be unwound, creating a fundamentally different market environment than currently exists. Mr. Garrett's approach, however, assumes that the economic and capital market conditions underlying the 30-year Treasury yield in February 2016 are fundamentally connected to economic conditions beginning in 2020, and extending indefinitely. Again, nowhere has Mr. Garrett explained why that might be a reasonable assumption.

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78 Direct Testimony of Robert B. Hevert, at 49.

79 *Ibid.* Although the Federal Reserve has begun its process of price normalization, it has not yet unwound the practices put on its balance sheet as a result of Quantitative Easing.

80 Federal Reserve Statistical Release, H.4.1, March 31, 2016.

Lastly, if Mr. Garrett chooses to establish his long-term growth estimate by reference to long-term Treasury yields, he could instead look to the projected 30-year Treasury yield as of the year 2020. That yield, as provided by Blue Chip Financial Forecasts, is 4.80 percent.[81]

Q. Have you adjusted Mr. Garrett's Implied Equity Risk Premium model to reflect changes to the concerns discussed above?

A. Yes, I have. As shown in Exhibit RBH-14R, I adjusted Mr. Garrett's Implied Equity Risk Premium by (1) changing the first-stage growth rate to reflect analysts' earnings growth rate assumptions for the S&P 500 Index; (2) changing the terminal growth rate to 4.80 percent (that is, equal to the *Blue Chip* projected 30-year Treasury yield as of 2020); and (3) changing both the first-stage growth rate and the terminal growth rate.[82] The cumulative effect of those changes is to increase the expected market return from 9.03 percent to 11.50 percent; the Implied Equity Risk Premium increased from 6.26 percent to 8.73 percent (*see* Table 4, below). Lastly, assuming that the future growth in the Index will equal the long-term historical average capital appreciation rate,[83] the expected market return and Implied Risk Premium increase to 13.02 percent, and 10.25 percent, respectively.

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81 *Blue Chip Financial Forecast*, December 1, 2015, at 14.

82 Please note that changing the terminal growth required a change to Mr. Garrett's calculation of the terminal value. My change, however, is consistent with the formula provided in Dr. Damodaran's model.

83 That is, the rate of growth in the value of the overall stock market.

Table 4: Adjustments to

Mr. Garrett's Implied Risk Premium Calculation[84]

	Market Return	Implied Equity Risk Premium
As Filed	9.03%	6.26%
First Stage Growth at Analysts' Projections	9.93%	7.16%
Long-Term Growth at Blue Chip Projected Treasury Yield	11.50%	8.73%
Long-Term Growth at Historical Capital Appreciation Rate	13.02%	10.25%

Q. Please briefly summarize your response to Mr. Garrett's Implied Equity Risk Premium calculation.

A. Mr. Garrett's calculation, which represents 60.00 percent of his Market Risk Premium estimate, is premised on rather tenuous assumptions. A small set of very reasonable adjustments to Mr. Garrett's model produces a market return estimate that is far more consistent with the historical experience that he considers relevant.

Q. At pages 97 and 98 of his testimony, Mr. Garrett criticizes your method of calculating the expected market return by pointing to a handful of instances in which the actual growth rate fell below the projected growth rate. What is your response to Mr. Garrett on that point?

A. The fact that actual growth rates differed from projections for ten specific companies from a group of 500 is not the principal issue.[85] The salient points are twofold: (1) investors rely on analysts' growth rate projections to frame their investment decisions;

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84 *See* Exhibit RBH-14R.

85 Mr. Garrett's sample was ten of 500 companies.

and (2) because we are estimating the market return, it is the expected return on 500 companies that matters.

As to the first point, Mr. Garrett has not shown that investors do not rely on analysts' projections; he certainly has not shown that they would find his 8.00 percent expected market return more reliable than the cumulative estimates of the many analysts that follow the companies comprising the S&P 500. Regarding the second point, Mr. Garrett fails to point out that the expected market return derived from the full analysis of 500 companies was 12.77 percent.[86] According to Morningstar, the average annual total return on large company stocks from 2011 to 2015 was 13.11 percent.[87] If anything, the approach somewhat under-estimated the total market return. But that 34 basis point difference (13.11 percent less 12.77 percent) is considerably smaller than the 511 basis point under-estimation implied by Mr. Garrett's 8.00 percent expected market return.

Q. Given that Mr. Garrett finds your approach to be "inferior" to his methods,[88] and knowing that he relies on historical data in other aspects of his analyses, have you considered the reasonableness of your and Mr. Garrett's Market Risk Premium estimates relative to historical experience?

A. Yes, I have. I first gathered the annual Market Risk Premia reported by Morningstar, and produced a histogram of the observations (recall that Mr. Garrett includes historical data among the methods he uses to estimate the Market Risk Premium). The results of that analysis, which are presented in Chart 7, demonstrate that MRPs of at least 10.32 percent

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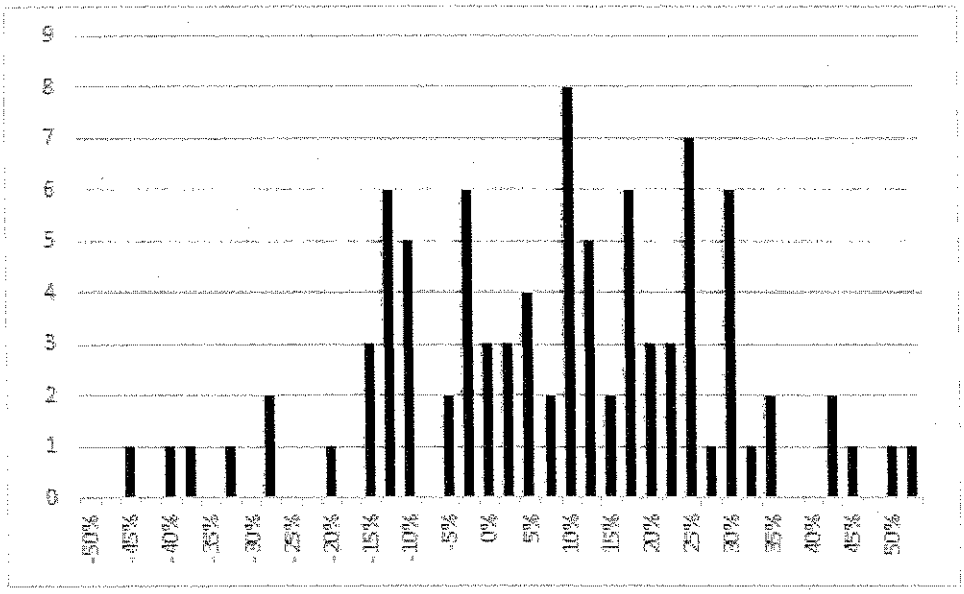
86 Cause No. PUD 201100087, Direct Testimony of Robert B. Hevert, Exhibit RBH-4, Page 2 of 7.
87 *Morningstar Stocks, Bonds, Bills, and Inflation 1926-2015*; Morningstar SBBI Appendix A Tables.
88 Responsive Testimony of David J. Garrett, at 102.

(the high end of the range of the MRP estimates in my Direct Testimony) will occur approximately half of the time. Mr. Garrett's estimate, however, occurred quite infrequently.

Chart 7: Frequency Distribution of Observed Market Risk Premia, 1926 - 2015



Q. What are your conclusions regarding Mr. Garrett's CAPM analysis?

A. In my view, Mr. Garrett's view that his 5.85 percent CAPM result has any analytical meaning is misplaced on its face, but more importantly points out the difficulty in applying financial models without giving due consideration to the reasonableness of the inputs, assumptions, and results.

Lastly, correcting Mr. Garrett's CAPM analysis to use the Revised Market Risk Premium estimates from Table 4 (above) and only the Value Line Beta coefficients, results in a mean estimate of 10.05 percent.[89]

D. Application of the Comparable Earnings Model

Q. Please briefly summarize Mr. Garrett's Comparable Earnings Model.

A. Although Mr. Garrett acknowledges that the Comparable Earnings Model can be used on the same proxy group of utility companies as applied in the DCF and CAPM analyses, he concludes that the only fundamentally sound way to conduct the analysis would be to consider the actual returns of a group of comparable unregulated firms.[90] However, Mr. Garret concludes that this is "infeasible" because competitive firms "are much more risky than utilities."[91] Mr. Garrett then observes that there are "more than 3,600 riskier firms [relative to utilities] around the country with an average return on equity of less than 2.0 percent."[92]

Q. What is your response to Mr. Garrett's observation that certain industries have earned 2.00 percent, or less, on their equity even though they face greater risks than the Company?

A. Mr. Garrett points to those results, which are included in his Exhibit DG 1-17, to conclude that "the shareholders of these firms have assumed more risk than the Company's shareholders, but have nonetheless received smaller returns." There are, however, important observations that Mr. Garrett does not make. For example, Mr.

89 Exhibit RBH-31R.
90 Responsive Testimony of David J. Garrett, at 71.
91 *Ibid.*, at 73.
92 *Ibid.*, at 74 [clarification added].

Garrett fails to point out that many firms earned returns well in excess of 10.00 percent, which is the highest return he includes in Exhibit DG 1-17. In fact, of the 96 "Industries" included in the data underlying Exhibit DG 1-17, 60 had returns greater than 10.00 percent, and 21 Industries had returns greater than 20.00 percent.[93] Mr. Garrett's presentation therefore seems to be rather one-sided.

Looking to the market as a whole, from 1990 through 2015 the average annual return on common equity for the firms in the S&P 500 was 13.03 percent. That average is equal to the average expected market return presented in Exhibit RBH-4R to my Rebuttal Testimony. As such, do not agree that Mr. Garrett's Exhibit DG 1-17 indicates that my recommended ROE is inconsistent with market data.

Q. Do you agree with Mr. Garrett's application of the Comparable Earnings Model?

A. No, I do not. Achieved historical accounting-based returns over the past five years do not provide a reasonable measure of forward-looking, investor-required returns. Since Mr. Garrett chose not to rely on his Comparable Earnings Model's estimate, it appears that he, too, questions the model's relevance in this proceeding. Nonetheless, if the point of Mr. Garrett's analysis is to provide a review of comparable returns available to companies with similar risk profiles, it is instructive to look at the most recently authorized ROEs for the operating electric utilities owned by Mr. Garrett's proxy companies. As shown in Exhibit RBH-16R, the average allowed ROE is 10.06 percent.

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93 Source: http://www.stern.nyu.edu/~adamodar/New_Home_Page/datafile/variable.htm

E. Bond Yield Plus Risk Premium Analysis

Q. Does Mr. Garrett agree with your application of the Bond Yield Plus Risk Premium analysis?

A. No, he does not. Mr. Garrett defines the Equity Risk Premium as "the expected return on the market less the risk-free rate."[94] Mr. Garrett disagrees with the use of authorized returns in the Bond Yield Plus Risk Premium analysis because he believes they "do not affect the [equity risk premium]." Mr. Garrett further argues that the Equity Risk Premium "is a function of market-driven forces," and cannot be "influenced by the decisions of a utility commission" or "by the decisions of any single company."[95]

Q. What is your response to Mr. Garrett on those points?

A. I disagree. As an initial matter, Mr. Garrett incorrectly equates the Market Risk Premium with the Equity Risk Premium. As we have applied it in our CAPM analyses, the Market Risk Premium is the difference between the expected market return and the risk-free rate. The Equity Risk Premium, on the other hand, represents the difference between the return on a specific security and a benchmark bond yield. As noted in my Direct Testimony, risk premium approaches differ from the CAPM in that they estimate the Cost of Equity as the sum of the Equity Risk Premium and the yield on a particular class of bond.[96] If the Market Risk Premium were used for that purpose, the result would be the estimated market return, not market-required Return on Equity for a given company (such as OG&E). As such, whereas it is appropriate to calculate the Market Risk Premium for use

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94 Responsive Testimony of David J. Garrett, at 107.
95 *Ibid.*, at 107-108.
96 Direct Testimony of Robert B. Hevert, at 31.

in the CAPM, it would be inappropriate to do so in the Bond Yield Plus Risk Premium approach.

Second, as noted earlier, authorized returns reflect the same type of market-based analyses that are at issue in this proceeding. Given that authorized returns are publicly available, it is difficult to imagine that such data is not reflected, at least to some degree, in investors' return expectations and requirements. Consequently, it is reasonable to assume that over time, authorized returns are a reasonable (although not the only) measure of investor-required returns. Therefore, I continue to rely on the Bond Yield Plus Risk Premium analysis.

F. Business Risk

Q. Do you agree with Mr. Garrett's position that firm-specific risks should not be considered when determining the Company's required return?

A. No, I do not. Mr. Garrett's position is based on his observation that the CAPM assumes that investors are only compensated for the non-diversifiable or "systematic risk". Although I agree with that observation, it is important to recognize that an underlying assumption of the CAPM is that investors are risk-averse and require additional compensation for increased risk. It also is the case that like other methods, the CAPM produces a range of results. To the extent that investors consider factors such as the need to fund substantial future capital expenditures in framing their return requirements, I believe those risks should be taken into account when determining where the required ROE falls within the range of empirical estimates.

Q. Do you agree with Mr. Garrett's position that the mean Beta coefficient is a sufficient measure of business risk that there is no need for qualitative assessments?[97]

A. No, I do not. For example, the Beta coefficients included in Mr. Garrett's CAPM analysis range from 0.198 to 0.850.[98] That range implies a 367 basis point difference in Mr. Garrett's CAPM-based Cost of Equity estimates.[99] It also is instructive to review the adjusted R-squared associated with the Beta regression analyses provided in Mr. Garrett's Exhibit DG-1-10.[100] Those values range from -0.007 to 0.167, and average 0.061 indicating that on average, factors other than the market return (the one variable in the Beta calculation) explain more than 90.00 percent of Mr. Garrett's (raw) Beta coefficients.

Q. What is your response to Mr. Garrett's observation that as defensive firms, utilities "are relatively insulated from market conditions"?[101]

A. If Mr. Garrett's point is that in general, utilities are lower-Beta securities than the overall market, I agree. It is important to bear in mind, however, that not even low-Beta securities such as regulated utilities are unaffected by market conditions. From the beginning of 2008 until the recent financial crisis' market low on March 9, 2009, for example, the overall market lost approximately 53.25 percent of its value, and Mr.

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97 Responsive Testimony of David J. Garrett, at 108-109.

98 *Ibid.*, at Exhibit DG-1-14.

99 The Equity Risk Premium = Beta x MRP. 0.198 x 5.62% = 1.11%; 0.850 x 5.62% = 4.78%; 4.78% - 1.11% = 3.67%.

100 R-squared is a measure of the degree to which the variation in the dependent variable is explained by variation in the independent variable.

101 Responsive Testimony of David J. Garrett, at 33-34.

Garrett's proxy group (measured as an index) lost 44.85 percent of its value.[102] Although less than the market as a whole, the defensive nature of utilities did not shield the group from losing value; a nearly 45.00 percent annual loss is significant by any measure.

In a similar vein, in late 2008 when market volatility spiked (the VIX moved toward 60.00 and higher from its historical average of approximately 20.00), the correlation in returns between Mr. Garrett's proxy group and the overall market exceeded 90.00 percent.[103] That is, during that period of heightened market instability, the "defensive" nature of utility stocks did not differentiate them from the market.

G. Flotation Costs

Q. Did Mr. Garrett address the issue of flotation costs in his testimony?

A. Yes. Mr. Garrett reasons that flotation costs for stock issuances are not out-of-pocket costs, and that investors have already accounted for flotation costs when making a decision to invest in a company's shares at a given market price. As such, he does not believe it is appropriate to reflect flotation costs in the ROE.

Q. What is your response to Mr. Garrett regarding the need to recover flotation costs?

A. As to Mr. Garrett's observation that underwriter fees are not "out-of-pocket" expenses,[104] I view that to be a distinction without a meaningful difference. Whether paid directly or indirectly via an underwriting discount, the cost results in net proceeds that are less than the gross proceeds. The salient point is that issuance costs were incurred when raising

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102 Source: SNL Financial.
103 *Ibid.*
104 Responsive Testimony of David J. Garrett, at 113.

equity capital. Absent a recovery of those costs, the ROE should be adjusted to reflect that deficiency (which will persist in perpetuity).

I have provided an illustrative example of the effect of flotation costs on the ROE in Exhibit RBH-17R.[105] As shown in that exhibit, due to the effect of flotation costs, an authorized return of 10.39 percent would be required to realize an ROE of 10.25 percent (*i.e.*, a 14 basis point flotation cost adjustment). If flotation costs are not recovered, the growth rate falls and the ROE decreases to 10.11 percent (*i.e.*, below the required return).[106]

Q. Is the fact that investors are aware of equity issuance costs when they decide to purchase stock relevant to the determination of the appropriate compensation for those costs?[107]

A. No, it is not. Although Mr. Garrett suggests that current prices account for flotation costs, he has provided no explanation as to how market prices compensate shareholders for flotation costs or any analyses to support his position. The point is that common stock is closely analogous to long-term debt, both in the sense that its purpose is to provide funding for long-term investments that are part of rate base, and that it remains a part of the utility's operations for long periods of time. Flotation costs are a legitimate part of the costs of the utility each year after the issuance of common stock, just as the

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105 This example is based on an analysis performed by Dr. Roger Morin. *See*, Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 330-332.

106 Exhibit RBH-17R is provided for illustrative purposes only. I have not relied on the results of the analysis in determining my recommended ROE and range.

107 Responsive Testimony of David J. Garrett, at 114.

issuance expenses of long-term debt are legitimate parts of the utility's costs in succeeding years.

H. Capital Structure

Q. Please provide a brief overview of Mr. Garrett's analyses and conclusions regarding the Company's capital structure.

A. Mr. Garrett believes that, based on his "extensive, technical, and objective analysis to estimate the Company's optimal capital structure", the Company's capital structure should include approximately 40.00 percent equity, and 60.00 percent debt.[108] Mr. Garrett argues that based on his analyses, the Weighted Average Cost of Capital ("WACC") for utilities such as OG&E is minimized when the capital structure includes 62.00 percent debt.[109] Nonetheless, Mr. Garrett recommends the Company's requested equity ratio of 53.31 percent in this case.[110]

Q. Before addressing his analysis of the "optimal" capital structure, do you agree with Mr. Garrett's conclusion that a 53.31 percent equity ratio is unreasonable?

A. No, I do not. One reasonable means of assessing the Company's proposed capital structure is to consider observable and relevant benchmarks such as the capital structures in place at the proxy companies, or the equity ratios authorized for similar utilities.[111] As noted in my Direct Testimony, the proposed 53.31 percent equity ratio is consistent with the range of equity ratios in place at the electric operating utility subsidiaries held within

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108 *Ibid.*, at 115.
109 *Ibid.*, at 90.
110 *Ibid.*, at 118.
111 As Mr. Garrett notes, regulatory commissions "have a duty to impute a proper capital structure." Responsive Testimony of David J. Garrett, at 84.

the proxy group.[112] Consequently, I believe the Company's proposed 53.31 percent equity ratio is reasonable. Mr. Garrett's "optimal" capital structure, on the other hand, would significantly increase the Company's financial risk relative to its peers.

Q. Please briefly explain the concept of "financial risk", and how it relates to the capital structure.

A. In general, "financial risk" represents the risk that a company may not have adequate cash flows to meet its financial obligations, and is a function of the percentage of debt (or financial leverage) in its capital structure. In that regard, as the percentage of debt in the capital structure increases, so do the fixed obligations for the repayment of that debt. Consequently, as the degree of financial leverage increases, the risk of financial distress (*i.e.,* financial risk) also increases. Since the capital structure can affect the subject company's overall level of risk, it is an important consideration in establishing a just and reasonable Return on Equity.

Q. Is financial risk, and the implications of that risk, well understood by the financial community?

A. Yes, it is. As part of its rating methodology, Moody's assigns a 40.00 percent weight to measures of financial strength and liquidity.[113] Specifically, Moody's notes:

> Financial strength, including the ability to service debt and provide a return to shareholders, is necessary for a utility to attract capital at a reasonable cost in order to invest in its generation, transmission and distribution assets, so that the utility can fulfill its service obligations at a reasonable cost to rate-payers.[114]

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112 *See* Direct Testimony of Robert B. Hevert, at 55.

113 *See, Rating Methodology, Regulated Electric and Gas Utilities,* Moody's Investors Service, December 23, 2013, at 6.

114 *Ibid.*, at 22.

Similarly, S&P considers both business and financial risk in determining a company's credit rating. S&P assesses a company's financial risk using the following criteria:

> The financial risk profile is the outcome of decisions that management makes in the context of its business risk profile and its financial risk tolerances. This includes decisions about the manner in which management seeks funding for the company and how it constructs its balance sheet. It also reflects the relationship of the cash flows the organization can achieve, given its business risk profile, to the company's financial obligations. The criteria use cash flow/leverage analysis to determine a corporate issuer's financial risk profile assessment.[115]

Q. Did Mr. Garrett review actual capital structures for utilities such as OG&E?

A. No, he did not. He concludes that such a review is "oversimplified and insufficient" because: (1) utilities do not have a financial incentive to operate at the optimal capital structure; (2) the optimal capital structure is unique to each firm; and (3) the actual capital structures may not have been approved by the presiding regulatory commission. Mr. Garrett reasons that comparisons to the practices of similarly situated utilities – such as the proxy companies – therefore are inappropriate, and that his own analysis is the better alternative.[116] In effect, Mr. Garrett has substituted his judgment for those of the experienced professionals who raise capital for utility companies.

Q. Before turning to his particular analysis, what is your response to Mr. Garrett's position that the actual capital structures in place at other utilities are of limited value in assessing OG&E's proposed capital structure?

A. I disagree. In my practical experience raising capital for a publicly traded utility, companies are financed in light of the risks and funding requirements associated with their operations. Although no one utility is a perfect substitute for another, they do share

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115 *Corporate Methodology*, Standard & Poor's, November 19, 2013, at 3.
116 Responsive Testimony of David J. Garrett, at 83-85.

certain characteristics that influence their capitalization. Because vertically integrated electric utilities finance similar types of assets (electric generation, transmission and distribution infrastructure), and must do so regardless of prevailing market conditions, it is reasonable to expect those companies to have very comparable financing practices.

A common utility financing practice, sometimes referred to as "maturity matching", involves matching the lives of the assets being financed with the maturity of the securities issued to finance those assets. In practice, the weighted average maturity of outstanding long-term capital is matched with the expected life of the underlying assets, such that the income produced from the assets over its life can cover the debt service payments used to finance the asset. As noted by Brigham and Houston, "[t]his strategy minimizes the risk that the firm will be unable to pay off its maturing obligations."[117]

A variant to maturity matching calls for matching the duration of assets being funded with the weighted average duration of the financing securities. As with maturity matching, failure to do so exposes the company and its customers to significant interest rate and refinancing risk. Because common equity is perpetual, it has a relatively long duration.[118] Exhibit RBH-18R demonstrates that for Mr. Garrett's proxy group, the average equity duration is approximately 27.93 years. Because the duration of debt

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117 Brigham, Eugene F. and Joel F. Houston, Fundamentals of Financial Management, Concise 4th Ed., Thomson South-Western, 2004, at 574.

118 In finance, "duration" (whether for bonds or equity) typically refers to the present value weighted time to receive the security's cash flows. In terms of its practical application, duration is a measure of the percentage change in the market price of a given security in response to a change in the implied long-term return of that security. A common financing practice is to match the weighted average duration of the securities in the capital structure with the duration of the assets being financed. *See* Cohen, Zinbarg and Zeikel, Investment Analysis and Portfolio Management, Irwin, 5th, Ed., 1987, at 450-452.

typically is less than that of common equity, it is important to have a meaningful proportion of equity in the capital structure to extend the duration of the capital structure. Mr. Garrett's proposed "optimal" capital structure, however, would shorten the average duration, frustrate the ability to match durations, and increase the Company's financing, and financial, risk.

Given the long-lived nature of utility assets, and in light of their need to access capital when and as needed, it is not surprising that vertically integrated electric utilities are financed in a similar manner. Nor is it surprising that authorized equity ratios exceed Mr. Garrett's view of what is "optimal", or that Moody's considers utility equity ratios of 40.00 percent to be associated with below investment grade credits. Aside from his observation that no two utilities are identical, Mr. Garrett has provided no reason why the Company should so radically depart form the common and prudent financing practices in place among its peers, and expose its investors and ratepayers to significantly greater financial, and financing risk.

Q. In your view, is an "optimal" capital structure defined only by reference to minimizing financing costs?

A. No. In my experience, capital structure optimization recognizes that there are numerous constraints associated with financing decisions and understands that financing costs go beyond coupon rates. As a practical matter, financing constraints are dynamic in nature, in that they continually change in response to market conditions. A very visible example would be the reaction of utilities to the credit constraints experienced during the 2008 market downturn. As Mr. Garrett is aware, the U.S. capital markets experienced

significant turmoil in 2008 and 2009, and those companies without preexisting and/or contractually obligated sources of liquidity faced either onerous financing terms, or the potential of not being able to access funds at all. Had those companies maintained a 60.00 percent debt ratio, it is not clear that they would have been able to draw on the credit facilities needed to maintain financial liquidity, or issue the long-term securities needed to fund rate base additions.

In summary, the definition and realization of an "optimal" capital structure is far more complex than Mr. Garrett's method assumes. But, because other utilities face the same requirements and constraints, it is reasonable to assume that we can observe the industry-standard view of optimality in the context of actual capital structures.

Q. Please briefly summarize the analysis by which Mr. Garrett developed his "optimal" capital structure.

A. Mr. Garrett's analysis focuses on the effect of increased proportions of debt on both the Cost of Equity and the cost of debt. His analysis is intended to find the point at which the after-tax Weighted Average Cost of Capital is minimized. To do so, Mr. Garrett relies on (1) the Cost of Equity calculated using the Hamada Equation to adjust the Beta coefficient of the CAPM, and (2) a cost of debt estimated by mapping bond ratings to *pro forma* EBIT/Interest coverage ratios.[119] Importantly, Mr. Garrett calculates EBIT/Interest coverage ratios using the Company's current cost of debt, rather than the implied incremental cost of debt.

[119] Responsive Testimony of David J. Garrett, at 85-90. EBIT = Earnings Before Interest and Taxes. The interest rates were based on adding credit spreads (based on January 2015 market data reported by Dr. Damodaran) to the risk-free rate.

Q. Do you have any concerns with Mr. Garrett's analysis?

A. Yes, I have several concerns with Mr. Garrett's approach, and with his assumptions. First, Mr. Garrett's analysis assumes changes in bond ratings (and, therefore, debt costs) associated with changes in the capital structure can be estimated based solely on the basis of *pro forma* EBIT/Interest coverage ratios. Neither Moody's nor S&P, however, uses that metric when assigning credit ratings. Nor do they give significant weight to interest coverage ratios (*i.e.*, ratios with interest as a denominator) in general.[120]

Second, Mr. Garrett's *pro forma* estimate relies on OG&E's current cost of debt to calculate the EBIT/Interest ratio. That is, Mr. Garrett assumes the cost of debt does not significantly increase with increases in financial leverage, because the coupon rate on current debt (which is fixed for the term of the debt security) does not immediately change.[121] Because it largely ignores the fact that higher leverage will lead to incrementally higher interest payments when the Company refinances debt, Mr. Garrett's result is not the hypothetical minimal WACC.[122] In essence, Mr. Garrett's analysis suggests that because the Company has an embedded cost of debt based on the bond rating associated with its historical capital structure, it can benefit in the near-term by adding debt to its balance sheet.

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120 Moody's assigns 7.5% weight to interest coverage ratios; *see* Moody's Investor Service, *Rating Methodology: Regulated Electric and Gas Utilities*, December 23, 2013, at 24. S&P's does not include interest based metrics in the core credit ratios, although FFO/cash interest and EBITDA/interest are used as supplementary ratios, *see* Standard and Poor's, *Corporate Methodology* November 2013, at 335.

121 Because the price of traded debt will fall as it is seem as increasingly risky, the yield on that debt will increase.

122 Mr. Garrett's approach also ignores potential financial harm to existing bond holders from the use of increased leverage. Increased financial leverage would lead to incrementally higher financial risk and therefore a higher required return (yield-to-maturity) which would decrease the value of the Company's current bonds (the value of bonds are inversely related to their required return).

Q. Are the bond ratings Mr. Garrett assigns based on his *pro forma* EBIT/Interest coverage ratio calculations consistent with Moody's rating assignments for the assumed debt ratios?

A. No, they are not. As shown in Table 5, Moody's reports benchmark rating guidelines for debt to capitalization ratios as follows:[123]

Table 5: Moody's Debt/Capitalization Rating Assignment Ranges

Rating:	AAA	Aa	A	Baa	Ba	B	Caa
Standard Grid	<25%	25-35%	35-45%	45-55%	55-65%	65-75%	≥75%
Low Business Risk Grid	<29%	29-40%	40-50%	50-59%	59-67%	67-75%	≥75%

Mr. Garrett's analysis assumes a 60.00 percent debt ratio would be associated with a Baa rating. However, Moody's rating guidelines indicate that a 60.00 percent debt ratio would indicate credit ratings of Ba (that is, two letter grades lower than the Company's current rating), depending on the risk rating assigned to the utility. Importantly, that rating is below investment grade. That assumption directly contradicts Mr. Garrett's screening criterion requiring proxy companies to have an investment grade rating from Moody's.[124]

123 *See* Moody's Investor Service, *Rating Methodology: Regulated Electric and Gas Utilities*, December 23, 2013, at 24.

124 Responsive Testimony of David J. Garrett, at 18.

Q. Have you estimated the effect of adjusting the bond ratings in Mr. Garrett's analysis to reflect the ratings provided in Moody's guidelines?

A. Yes, I have. Using the workpaper Mr. Garrett provided for Exhibit DG-1-19, I replaced the interest rate coverage ratio analysis with a direct bond rating assignment using the Moody's credit rating guidelines for debt capitalization in Table 5 (above). I then found the corresponding interest rate for each bond rating using the table Mr. Garrett provided in his exhibit.[125] As shown in Exhibit RBH-19R, that analysis results in an optimal capital structure of 45.00 percent to 50.00 percent debt and 50.00 percent to 55.00 percent equity. As also shown in Exhibit RBH-19R, making additional adjustments to correct Mr. Garrett's after-tax cost of debt calculation and updating his Equity Risk Premium to 10.35 percent (the average of my updated *ex-ante* MRP estimates) suggests an optimal capital structure of approximately 60.00 percent equity and 40.00 percent debt.

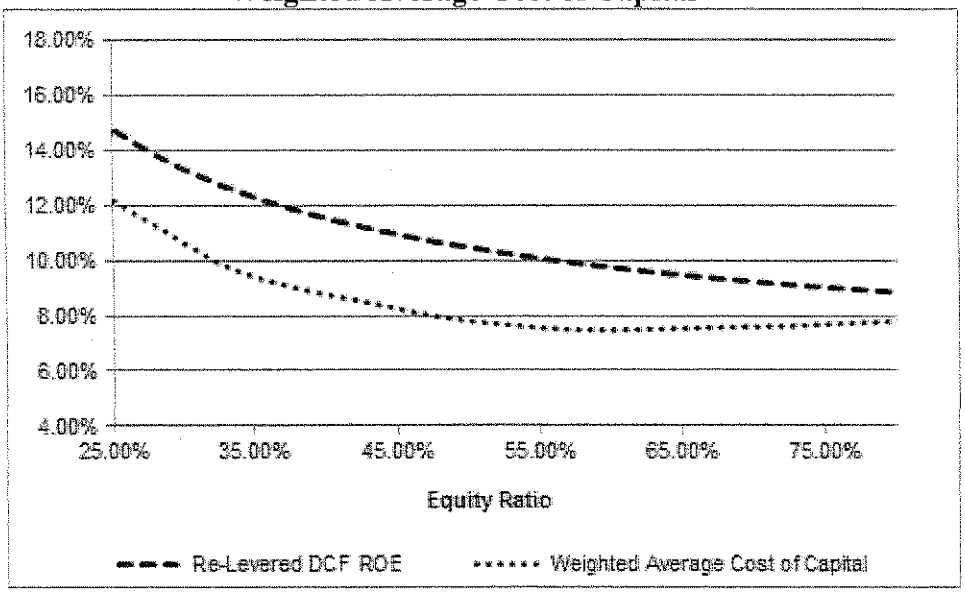
Q. Have you performed an alternative analysis to estimate the effect of increasing financial leverage on the Company's Weighted Average Cost of Capital?

A. Yes, I performed an additional analysis using the Modigliani-Miller approach, which adjusts DCF model results for changes in financial leverage. To limit the scope of differences between the two approaches, I relied on the interest rate table provided in Exhibit DG-1-19, and assumed that rates transition in a linear fashion between credit ratings. As shown in Chart 8 below (*see* also Exhibit RBH-20R), the results of my analysis indicate the equity ratio that produces the lowest overall weighted cost of capital is approximately 58.00 percent, which is far more in line with industry practice. It also is

[125] When a debt ratio was on the border of two ratings categories, I included both ratings (e.g., a 45.00 percent debt ratio equals a A/Baa rating) and used the average of the two corresponding the interest rates.

generally consistent with the results of Mr. Garrett's approach after updating bond rating assignments and the MRP estimate.

Chart 8: Leverage Effect, the Cost of Equity and the Weighted Average Cost of Capital[126]



Please note that although the Modigliani-Miller and Hamada adjustments may be used to generally measure the magnitude of the effect of incremental increases in leverage on the Cost of Equity, it is important to recognize the complexity and the dynamic nature of the relationship. It also is important to keep in mind, as discussed earlier, that an "optimal" capital structure must consider numerous constraints associated with financing decisions. Nonetheless, the analytical results are consistent with the proposition that the financial leverage (that is the capital structure) and the Cost of Equity are inextricably related: As financial leverage continues, so does the Cost of Equity.

126 *See* Exhibit RBH-20R.

I. Cost of Debt

Q. Please briefly summarize Mr. Garrett's position regarding the Company's Cost of Debt.

A. Mr. Garrett compares the Company's embedded Cost of Debt to both Public Service of Oklahoma ("PSO"), and to the marginal cost of debt associated with A1/A+ rated companies across all industry sectors. Based on those analyses, Mr. Garrett asserts that OG&E's Cost of Debt is "remarkably high".[127]

Q. Do you agree with Mr. Garrett's assertion?

A. No, Mr. Garrett's assertion is misplaced in at least two fundamental respects. First, in Case No. PUD 201500208 I pointed out that in evaluating the Cost of Debt, I "reviewed the prevailing yield on Bloomberg Fair Value Curves for A-rated and BBB-rated utility debt concurrent with the date of issuance of the Company's debt instruments."[128] I did so to assess whether the coupon rate at issuance was consistent with the market, at the time of issuance. Because the two companies (PSO and OG&E) issued debt at different times and for different maturities, it is inappropriate to compare one to the other. As noted above, the appropriate basis of comparison is the coupon rate relative to the market at the time of issuance.

As noted in its response to Attorney General Data Request 25-11, the Company asked me to provide a similar analysis of OG&E's debt. As the Attachment to the Company's response demonstrated (AG 25-11_Att), OG&E's weighted average rate is 5.71 percent,

127 Responsive Testimony of David J. Garrett, at 79.
128 Case No. PUD 201500208, Direct Testimony of Robert B. Hevert, at 64.

which falls somewhat below the midpoint of the Moody's Utility A and Baa yields.[129] On that basis, I conclude that the Company's Cost of Debt is reasonable.

Mr. Garrett argues that the Company's Cost of Debt should only be about 3.87 percent, based on data presented in Exhibit DG 1-19 to his testimony. There are two basic reasons that Mr. Garrett is incorrect. First, even if that 3.87 percent were a reasonable estimate of the Company's marginal Cost of Debt, we are concerned with its embedded Cost of Debt. That is, Mr. Garrett inappropriately compares the interest rate in the current market to yields that prevailed, in some cases, nearly 20 years ago. As discussed above, the proper comparison is the coupon rate on debt issued 20 years ago to the rates that prevailed 20 years ago, not the rates that prevail today.

Second, Mr. Garrett's 3.87 percent marginal cost of debt is based on a spreadsheet indicating that the credit spread for A1/A+ rated "large manufacturing", "smaller and riskier", and "financial service" firms is 110 basis points.[130] But, the credit spreads for Baa and A-rated utilities is considerably higher; from January through February 2016, the average was about 205 basis points.[131]

In summary, Mr. Garrett's conclusions are misplaced because (1) he inappropriately compares a marginal cost rate with an embedded cost rate, and (2) his marginal cost rate is disconnected from debt costs for utilities. Consequently, I strongly disagree with his

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129 PSO's weighted average yield also fell with the range of the Moody's Utility A and Baa yields. *See,* Cause No. PUD 201500208, Direct Testimony of Robert B. Hevert, EXHIBIT RBH-11.

130 http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datacurrent.html#capstru

131 Source: Bloomberg Professional.

conclusion that the Company's Cost of Debt is too high. Rather, it is very consistent with the market Cost of Debt at the time of issuance.

III. RESPONSE TO THE TESTIMONY OF MR. SOLOMON

Q. Please briefly summarize Mr. Solomon's testimony and recommendations are they relate to the Company's overall Cost of Capital.

A. Mr. Solomon recommends an ROE of 9.25 percent, based primarily on his "Two-Stage DCF" results (*i.e.*, 6.77 percent to 9.64 percent). Mr. Solomon argues that his 9.25 percent ROE recommendation is reasonable in light of his review of current economic and capital market environment, the results of his DCF analyses, and his "critical review" of the information and analyses contained in my Direct Testimony.[132] Lastly, Mr. Solomon recommends a capital structure consisting of 50.00 percent long-term debt and 50.00 percent common equity, rather than the Company's proposed 53.31 percent long-term debt, and 46.69 percent common equity. [133]

Q. What are the principal areas in which you disagree with Mr. Solomon?

A. Although there are several specific areas in which I disagree with Mr. Solomon's specific analyses, I also have general concerns with his approach, conclusions, and eventual recommendation. First, regardless of how he arrived at his recommendation, Mr. Solomon's 9.25 percent ROE falls in the bottom 2nd percentile of returns authorized for vertically integrated electric utilities from January 1, 2013 through February 29, 2016. In fact, it is some 64 basis points below the average authorized return over that period.

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132 Responsive Testimony of J. Bertram Solomon, at 39.
133 *Ibid.*

Despite that disparity, nowhere in his testimony does Mr. Solomon explain why the Company is so less risky than its peers, or how it is that capital market conditions are now so accommodating that OG&E's return should be set 64 basis points below those available to the utilities with whom it must compete for capital.

Second, Mr. Solomon's recommendation is based on a single method, the "Two-Stage" DCF model. As discussed below, despite its name, the "Two-Stage" model takes the form of the Constant Growth DCF method, and is susceptible to the same shortcomings discussed in my Direct and Rebuttal Testimonies. Mr. Solomon's reluctance to consider alternative methods in developing his ROE recommendation runs counter to both regulatory and industry practice, and indicates that his recommendation should be viewed with considerable caution.

Lastly, despite acknowledging that the principal regulatory standards for setting the Return on Equity speak to the ability to maintain financial integrity and attract capital, Mr. Solomon fails to reasonably consider the implications of an authorized return that falls far below those available to other utilities for those standards. Nowhere does he consider the practical effect of the diminished cash flow, and heightened regulatory risk that would result if his unduly low recommendation were to be adopted by the Commission.

Beyond those general concerns, the specific areas in which I disagree with Mr. Solomon include: (1) the composition and selection of the companies included in our respective

proxy groups; (2) the importance of using multiple methods to estimate the Cost of Equity; (3) the application of the "Two Stage" DCF approach for determining the Company's Return no Equity; (4) the application of the Multi-Stage DCF model; (5) the application and conclusions drawn from the Capital Asset Pricing Model; and (6) the application and conclusions drawn from the Bond Yield Plus Risk Premium approach.

A. Proxy Group Selection and Composition

Q. Please summarize the method by which Mr. Solomon developed his proxy group.

A. Mr. Solomon began with the Value Line universe of electric utilities, and included companies that:

1. Were within one or two ratings "notches" (by Moody's, and Standard & Poor's) of OG&E's current corporate credit rating;
2. Had consensus Earnings Per Share growth rates by IBES;
3. Were not involved in "major merger or acquisition" activity during his study period;
4. Paid dividends throughout his study period; and
5. Had DCF results that "pass threshold tests of economic logic and are not outliers."

Based on those criteria, Mr. Solomon developed a set of fourteen proxy companies.[134]

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

A. Not entirely. Although we have certain criteria in common (for example, we both exclude companies that are party to a significant corporate transaction or that do not pay dividends), I do not believe that Mr. Solomon's criteria render a group of companies that is sufficiently comparable to OG&E. Exhibit RBH-21R summarizes Mr. Solomon's (as

[134] *Ibid.*, at 35-36.

well as the other Opposing ROE Witnesses') proxy companies relative to each of the criteria discussed in my Direct Testimony.

The principal difference between our approaches relates to our views regarding credit ratings; Mr. Solomon limits his group to companies within one or two ratings notch of OG&E, whereas my criterion excludes companies with below investment grade ratings. As Mr. Solomon notes, his criterion eliminated 34 of 44 potential companies. He argues that approach and those results are sensible, because "[r]estricting proxy companies to those within one or two credit rating notches of those assigned to OG&E provides an objective way to assure that the companies are seen as comparable in risk to OG&E because the credit ratings of S&P and Moody's are relied on by investors, and their rating evaluations are specifically designed to differentiate between risks of individual companies and consider a broad range of variables affecting both the business risk and financial risk of the companies."[135]

The critical distinction from the perspective of equity holders, however, is whether a given company is above or below investment grade. Although credit ratings are measures of total risk, differences in ratings notches are more relevant to debt investors than to equity investors. Mr. Solomon's view that such differences should be used as a proxy for differences in the Cost of Equity fails to recognize the senior position that debt holders have relative to equity holders, and the investment horizon considered by equity holders. A long-term issuer credit rating is an opinion regarding the subject company's

[135] *Ibid.*, at 36.

overall financial capacity to pay its financial obligations as they come due and payable. The claims of equity holders, on the other hand, are subordinate to the claims of debt holders, and are perpetual in life.

Whereas bondholders may take comfort in the probability that the subject company will be able to meet its near-term financial obligations (and thus have higher credit ratings), equity holders bear the residual risk of insufficient or volatile cash flows over the long-term. For that fundamental reason, it is not clear that there is a direct relationship between credit notches and the Cost of Equity. In essence, Mr. Solomon's approach assumes that the risks of owning common equity directly correspond to the risks of owning bonds. The two have similar considerations, but only to a point.

In any case, Mr. Solomon's analytical results do not support his views that differences in rating matches correspond to differences in the Cost of Equity. For example, Mr. Solomon's highest ROE estimate (*i.e.*, 9.56 percent) and his lowest estimate (*i.e.*, 5.32 percent) both are associated with BBB+ rated companies.[136] That is, within one ratings notch Mr. Solomon's estimated Cost of Equity varies by 424 basis points.

Q. Do you agree with Mr. Solomon's approach to excluding certain companies from his final group based on their DCF results?

A. Although I agree that some results do not make sense, I disagree with Mr. Solomon's criterion, and with his conclusion that having applied that screen, his DCF results meet a

[136] Responsive Testimony of J. Bertram Solomon, Exhibit JBS-1, Page 1 of 5.

test of economic reasonableness. I respond more fully to that specific issue later in this section.

Q. Why is it appropriate to exclude companies that are not vertically integrated electric utilities, such as Consolidated Edison?

A. As discussed in my Direct Testimony, companies that own and operate coal-fired electric generating plants face significant regulatory risk and potential capital investment needs.[137] Distribution-only electric utilities do not face similar challenges.

Q. What are your conclusions regarding the composition of Mr. Solomon's proxy group?

A. In my view, Mr. Solomon's analytical results are based on a group of companies whose fundamental comparability to OG&E is quite tenuous. The basis of his conclusions, therefore, also is tenuous. Nonetheless, differences in proxy group composition do not explain Mr. Solomon's unduly low 9.25 percent ROE recommendation. Rather, the flaws in his analytical approach are the main determinant of the differences in our results.

B. Use of Multiple Methodologies

Q. Why is it important to consider multiple analytical methods when estimating the Cost of Equity?

A. As discussed in my Direct Testimony, the Cost of Equity is estimated by the use of various financial models. By their very nature, those models produce a range of results from which the ROE is determined. That determination must be based on a

[137] *See,* Direct Testimony of Robert B. Hevert, at 35.

comprehensive review of relevant data and information; it does not necessarily lend itself to a strict mathematical or formulaic solution. The key consideration in determining the ROE is to ensure that the overall analysis reasonably reflects investors' view of the financial markets in general, and the subject company (in the context of the proxy companies) in particular.

It also is important to recognize that no single model is more reliable than all others under all market conditions. It therefore is both prudent and appropriate to use multiple methods to mitigate the effects of assumptions and inputs associated with any single approach. In that regard, practitioners and academics alike recognize that financial models are tools to be used in the ROE estimation process, and that strict adherence to any single approach, or to the results of any single approach, can lead to flawed or misleading conclusions. Consequently, many finance texts recommend using multiple approaches to estimate the Cost of Equity.[138] That position is consistent with the *Hope* and *Bluefield* principle that it is the analytical result, rather than the methodology employed that is controlling in arriving at ROE determinations. A reasonable ROE estimate therefore appropriately considers alternative methodologies and the reasonableness of their individual and collective results in the context of observable, relevant market information.

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138 *See*, e.g., Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 12th Ed., 2008, at 346, and Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd ed., 2000, at 214.

Q. In your experience, do state regulatory commissions rely on a single method, as Mr. Solomon has done?

A. No, they do not. Rather, like the investors that establish the market-required rate of return, regulatory agencies consider a broad range of information and methods. Although some regulatory commissions may give more or less weight to certain approaches, as a general matter they understand that market conditions affect the reliability and efficacy of different models and their results, that different models convey different, and often highly relevant information, and that because the Cost of Equity is unobservable, it is important to consider a wide range of information and analytical results in determining the authorized Return on Equity.[139]

Q. Has Mr. Solomon explained why he chose to rely exclusively on the FERC Two-Stage DCF Model?

A. Yes, Mr. Solomon states that "[t]he most exhaustive investigation into the best method to use in determining investors' required rates of return for investing in the common stocks of electric utilities by any regulatory commission that [he is] aware of was conducted by the FERC in the mid-1980s."[140] Mr. Solomon further states that, based on its review of comments from a number of parties, "FERC determined that the method used to estimate investors' required rate of return should be forward-looking and market-oriented and that the DCF method best meets these standards."[141] In support of his position, Mr. Solomon cites a portion of FERC Order 489, which was rendered in 1988.

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139 *See*, for example, Public Service Commission of Missouri, File No. GR-2014-0152, Report and Order dated December 3, 2014, at 19 – 25.

140 Responsive Testimony of J. Bertram Solomon, at 28.

141 *Ibid.*

Q. Is the DCF method discussed in FERC Order 489 directly relevant to calculating the Company's ROE in this proceeding?

A. No, it is not. The proceeding cited by Mr. Solomon, the *Generic Determination of Rate of Return on Common Equity for Public Utilities,* is nearly 30 years old, and explored the general guidelines for establishing an industry-wide Cost of Equity estimation technique, at that time. In addition to the Two-Stage method, the Order in that proceeding discussed the screening criteria FERC would consider, and the application of the "Sustainable Growth" method.[142] Since then, FERC has acknowledged that changing market conditions call for the use of models in addition to the Two-Stage DCF approach.

Lastly, Mr. Solomon questions the reliability of approaches such as the Capital Asset Pricing Model,[143] and suggests that its components have been the subject of "significant controversy among academicians as well as practitioners..."[144] Mr. Solomon therefore relies exclusively on the Two-Stage form of the Constant Growth DCF model.

Q. Turning to your last point, has FERC noted that the DCF method itself has been subject to controversy?

A. Yes, it has. In Opinion No. 531, FERC observed that "[w]hile the DCF model has been employed for decades, it has nonetheless continued to generate controversy."[145]

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142 *See*, Federal Energy Regulatory Commission, Generic Determination of Rate of Return on Common Equity for Public Utilities, Order No. 489, at ¶ 43 to ¶ 100.

143 Responsive Testimony of J. Bertram Solomon, at 26.

144 *Ibid.*, at 20.

145 *Martha Coakley v. Bangor Hydro-Electric Company,* Opinion No. 531, 147 FERC ¶ 61,234 (2014) (referred to herein as "*FERC Opinion No. 531*"), at P 16.

Q. Is the "Two-Stage" DCF method actually a multi-stage model?

A. No, it is not. As discussed below, the "Two-Stage" model simply refers to the fact that the growth rate component reflects the weighted average of analysts' earnings growth rate projections, and projected growth rates of nominal Gross Domestic Product. In fact, FERC has referred to the model as the "Two-Step, Constant Growth DCF Methodology."[146] Because it essentially is the Constant Growth DCF model, the Two-Step model favored by Mr. Solomon is subject to the same shortcomings discussed in my Direct Testimony.[147]

Q. Has FERC considered alternative methods of estimating the Cost of Equity in more recent cases?

A. Yes, it has. In Opinion No. 531, FERC stated:

> We are concerned that capital market conditions in the record are anomalous, thereby making it more difficult to determine the return necessary for public utilities to attract capital. In these circumstances, we have less confidence that the midpoint of the zone of reasonableness established in this proceeding accurately reflects the equity returns necessary to meet the Hope and Bluefield capital attraction standards. We find it is necessary and reasonable to consider additional record evidence, including evidence of alternative benchmark methodologies and state commission-approved ROEs, to gain insight into the potential impacts of these unusual capital market conditions on the appropriateness of using the resulting midpoint.[148]

FERC noted that although it was not departing from its practice of depending on the DCF approach, it would consider other methods in determining where the ROE should be set within the range of DCF results. In that respect, FERC found "the risk premium analysis,

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146 *See, FERC Opinion No. 531*, at P 13.
147 Direct Testimony of Robert B. Hevert, at 21-24.
148 FERC Opinion No. 531, at P 145-146.

the CAPM, and expected earnings analyses" to be "informative."[149] Consequently, I disagree with Mr. Solomon that it is reasonable to rely on the Two-Stage DCF model as the sole method of determining the Company's ROE.

C. Application of the Two-Stage DCF Model

Q. Please briefly describe the "Two-Stage DCF" model on which Mr. Solomon relies.

A. As noted above, although Mr. Solomon refers to it as a "two-stage" model, the form that Mr. Solomon adopts essentially is the Constant Growth DCF model with one difference: the growth rate is calculated by weighting analysts' earnings growth projections by two-thirds, and estimates of long-term Gross Domestic Product ("GDP") growth by one-third.[150]

Q. Before turning to issues regarding methodology, do you have any observations regarding Mr. Solomon's results, and his interpretation of those results?

A. Yes, I do. Mr. Solomon notes that excluding Edison International produces a range of estimates from 6.77 percent to 9.64 percent and calculates the mean (8.45 percent) and median (8.37 percent) results.[151] From there, Mr. Solomon concludes that the proper ROE is 8.90 percent based on the Company's proposed capital structure, and 9.25 percent based on his proposed capital structure. Although Mr. Solomon's ROE recommendation is not tied to a specific calculation, it is clear that Mr. Solomon gave considerable weight to DCF estimates that are far below 9.00 percent, and therefore below any return ever authorized for a vertically integrated electric utility.

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149 *Ibid.*, at P 146.
150 Responsive Testimony of J. Bertram Solomon, at 37.
151 *Ibid.*, at 38-39, Exhibit JBS-1, Page 1 of 6.

Q. Does the test of "economic logic" that Mr. Solomon applied in assessing his results suggest that his results are reasonable?

A. No, it does not. Mr. Solomon believes that a proper threshold for eliminating low-end DCF results is a 100 basis point premium over the average of the Moody's A/Baa Utility Bond Index yield (i.e., 4.88 percent). He reasons that having eliminated Edison International's DCF result (*i.e.,* 5.32 percent) because it fell below the 5.88 percent threshold, his final range of results (6.77 percent to 9.64 percent) is a sound measure of the Company's Cost of Equity. I disagree. In my view, it is not reasonable to assume that an ROE threshold (5.88 percent) that is at least 300 basis points below the lowest ROE ever authorized for a vertically integrated utility reasonably reflects the returns required by equity investors in a company such as OG&E. Mr. Solomon's range includes seven (of ten) estimates that fall below 9.00 percent, in some cases more than 200 basis points below. Moreover, the Equity Risk Premium, which Mr. Solomon's 100 basis point threshold presumably is meant to reflect, is not static. Rather, it is inversely related to interest rates; as interest rates fall, the Equity Risk Premium increases.

D. Multi-Stage DCF Model

Q. Please briefly summarize Mr. Solomon's position regarding your Multi-Stage DCF model.

A. Mr. Solomon first raises the general concern that he views the model to be "more speculative and less helpful" than the Constant Growth, or "Two-Stage" forms of the DCF model.[152] In particular, Mr. Solomon suggests that the long-term growth

[152] *Ibid.*, at 29.

component (that is, the 5.22 percent nominal GDP growth rate assumed in the terminal period) is over-stated, and that the dividend growth rate is "inflated" by virtue of the expected increase in payout ratios. As to the GDP growth rate, Mr. Solomon points to the Federal Reserve's March 2016 meeting projections, which suggest a median expected real GDP growth rate of 2.00 percent, and to testimony filed by FERC staff, which included an assumed nominal GDP growth rate of 4.35 percent. Regarding changing payout ratios, Mr. Solomon asserts that I have provided "no independent forecasts of such expected reversion to historical payout ratios"[153]

Q. Are there any benchmarks that may help assess the reasonableness of your GDP growth rate?

A. Yes, there are. For example, my long-term growth projection may be assessed in the context of authorized ROEs. The average authorized ROE since the beginning of 2012 (*i.e.,* January 2012 through February 29, 2016) for vertically integrates electric utilities was 9.96 percent. In the context of Mr. Solomon's Two-Stage DCF model, that return includes income from dividends (*i.e.,* the dividend yield) and expected growth (*i.e.,* capital appreciation). Assuming Mr. Solomon's proxy group average dividend yield of 3.77 percent, the 2012-2015 average reported authorized ROE of 9.96 percent provided in Exhibit RBH-22R implies an expected long-term growth rate of 6.08 percent.[154] Based on the two-thirds/one-third weighting that Mr. Solomon applied to develop his "Composite" growth rate, the implied nominal GDP growth rate is 8.79 percent. Taken

153 *Ibid.*, at 32-33.
154 *See* Exhibit RBH-22R.

from that perspective, Mr. Solomon's concern with my assumed 5.22 percent growth rate is misplaced.

Q. What is your response to Mr. Solomon's position that the Federal Reserve Board Members and Bank Presidents' 2.00 percent projected real GDP growth rate indicates that your long-term GDP growth rate is too high?

A. Mr. Solomon seems to suggest that the "longer-run" projections contained in the Federal Reserve's economic projections apply to the terminal stage in the Multi-Stage model which, as noted earlier, actually begins ten years in the future. They do not. As the Federal Reserve explains:

> The longer-run projections, which are shown on the far right side of the charts, are the rates of growth, unemployment, and inflation to which a policymaker expects the economy to converge over time—maybe in five or six years—in the absence of further shocks and under appropriate monetary policy.[155]

Consequently, the projections that Mr. Solomon cites relate to the first stage, not to the terminal stage. By referring to the Federal Reserve's projections, Mr. Solomon appears to assume that the growth rate beginning in early 2016 and extending through (perhaps) 2022 also would apply from 2025 through perpetuity. Mr. Solomon has not explained why that would be the case.

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155 *Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of projected appropriate monetary policy*, March 2016, at 4.

Q. What is your response to Mr. Solomon's position that it is improper for you to assume that over time, the proxy companies' payout ratios will revert to their long-term average of approximately 67.00 percent?

A. Although he may disagree with the assumption, several of Mr. Solomon's proxy companies recently have discussed target payout ratios that are highly consistent with my 67.30 percent assumption. For example, in March 2016 investor relations presentations, Alliant Energy, Consolidated Edison, Vectren, Wisconsin Energy, and Xcel Energy all noted target payout ratios in the range of 60.00 percent to 70.00 percent. Consequently, I disagree with Mr. Solomon's position that a long-term payout ratio of approximately 67.00 percent is unreasonable.

E. Capital Asset Pricing Model

Q. Please briefly summarize Mr. Solomon's position regarding the Capital Asset Pricing Model.

A. Although Mr. Solomon agrees that the "risk/return principle underlying the risk premium theory and its CAPM offspring is valid from an academic perspective", he concludes that the approach is "fraught with problems of practical application as a reliable means of determining an allowable ROE."[156] Mr. Solomon reasons that if the Market Risk Premium component relies on historical data, it is "inherently backward-looking rather than forward looking."[157] On the other hand, Mr. Solomon is concerned that forward-looking methods, such as those included in my Direct Testimony, are applied to "a broad market basket of stocks, when the DCF method can simply be applied directly to a

156 Responsive Testimony of J. Bertram Solomon, at 16.
157 *Ibid.*, at 17.

relatively small group of comparable-risk stocks."[158] Mr. Solomon also notes his concern with alternative assumptions and their effect on the CAPM results, referring to those analyses as "various arithmetic machinations."[159]

Mr. Solomon suggests that the CAPM is not reliable because the Market Risk Premium is "volatile over time."[160] Pointing to the long-term historical Market Risk Premium, Mr. Solomon asserts that because the estimates included in my analyses are higher than the long-term average, they are inflated.[161] Lastly, Mr. Solomon suggests that my *ex-ante* Market Risk Premium did not "deter" me from using historical data in my Bond Yield Plus Risk Premium analysis,[162] even though there is no practical or theoretical reason why I would be "deterred". That, and Mr. Solomon's other observations regarding the CAPM, are discussed in more detail below.

Q. As a preliminary matter, do you agree with Mr. Solomon that the CAPM is unreliable for the purpose of determining the Company's ROE?[163]

A. No, I do not. Because the ROE set in this proceeding should reflect the return required by investors, the methods reviewed in this proceeding likewise should reflect the methods used by investors. Mr. Solomon has provided no evidence that the CAPM is not a method used by investors, and he certainly has not demonstrated that investors confine themselves to his Two-Stage DCF model. Nor has Mr. Solomon has demonstrated that

158 *Ibid.*, at 17.
159 *Ibid.*, at 20.
160 *Ibid.*, at 17.
161 *Ibid.*, at 18. As discussed later in my Rebuttal Testimony, Mr. Solomon fails to consider the variability of the historical Market Risk Premium, as reported by Morningstar. Had he done so, Mr. Solomon would have seen that my MRP estimates are statistically indistinguishable from the long-term average.
162 *Ibid.*, at 18.
163 *Ibid.*, at 16.

regulatory commissions consistently avoid the CAPM because of the "controversies" that concern him. Consequently, I disagree that the Commission should depart from industry practice and rely on a single method.

Q. In your view, is the CAPM consistent with the regulatory framework understood by investors?

A. Yes, it is. Mr. Solomon and I both refer to the *Hope* case, which found that "the return to the equity investor should be commensurate with returns on investments in other enterprises have corresponding risk."[164] That is, the *Hope* standard speaks directly to the issue of comparable risk, which may be measured by the Beta coefficient of the CAPM As Mr. Solomon also points out, the *Hope* and *Bluefield* standards include principles relating to both financial integrity and capital attraction. Because the CAPM is based on the financial principle of relative risk, it reflects the return required to attract capital. Given the capital-intensive nature of utilities that return also reflects the return required for the subject company to maintain its financial integrity.

Q. Please briefly explain the Beta coefficient and explain why it is an important concept in finance.

A. As explained in my Direct Testimony, the Beta coefficient is a measure of non-diversifiable, or "systematic" risk.[165] Non-diversifiable risk is a component of Modern Portfolio Theory, the central theme of which is that rational investors make investment

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164 Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591, 603 (1944). Referring to the *Hope* and *Bluefield* standards, Mr. Solomon notes the following at page 12 of his testimony: "These standards recognize that ratemaking involves a balancing of investor and consumer interests and that the equity investor's interest is served if the return to the equity owner is comparable to the returns on investments in other enterprises having similar risks."

165 *See* Direct Testimony of Robert B. Hevert, at 28.

decisions reflecting the inherent aversion to taking on additional risk without being compensated by additional returns. In the context of Modern Portfolio Theory, risk is defined as the uncertainty, or variability, of returns. Modern Portfolio Theory was advanced by recognizing that total risk may be separated into two distinct components: non-diversifiable risk, which is that portion of risk that can be attributed to the market as a whole; and non-systematic (or diversifiable) risk, which is attributable to the idiosyncratic nature of the subject company, itself. As noted above, non-diversifiable risk is measured by the Beta coefficient within the CAPM structure. Mr. Solomon's position dismisses the relevance of non-diversifiable risk and the CAPM, both of which are important concepts in the theory and practice of finance.

Q. Turning now to the application of the CAPM, what components of the model concern Mr. Solomon?

A. Mr. Solomon does not seem to object to the risk-free rate component, nor does he object to the Beta coefficients used in my analysis,[166] other than to note that whereas my Market Risk Premium is based on forward-looking data, the Beta coefficients are calculated from historical data. As to the latter point, the approach in both practice and theory is to calculate Beta coefficients based on historical returns. Although the holding period (*e.g.*, one day, one week, one month, etc.), index (*e.g.*, S&P 500, New York Stock Exchange, etc.), and calculation period (*e.g.*, one year, two years, five years, etc.) may vary, by

166 At page 20 of his testimony, Mr. Solomon discusses what he considers to be controversies in the application of the CAPM, including the tenor of the Risk Free Rate. Mr. Solomon also includes a list of issues regarding the historical Market Risk Premium, including whether total returns on income-only returns on government bonds should be used, whether the arithmetic or geometric return should be used, and the time period used to calculate returns. As Mr. Solomon recognizes, however, my CAPM analysis does not include an historical Market Risk Premium. Mr. Solomon does not explain, however, why those issues are relevant to my testimony. Please note that I have addressed those points in my response to Mr. Parcell.

necessity, all reflect historical data.[167] Because I use Beta coefficients adjusted by the Blume method, (as noted earlier) they also have a forward-looking element. That being the case, it is not clear why Mr. Solomon feels that my use of Beta coefficients is improper.

Q. Is the use of a forward-looking Market Risk Premium estimate, as you have included in your CAPM analyses, consistent with practice and theory?

A. Yes, it is. For example, in their published article *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*,[168] Professors Harris and Marston, use the Constant Growth DCF model to estimate the expected market return. I also use the Constant Growth DCF model to estimate the expected market return in my CAPM analysis.[169] That article also explained that as interest rates fall, the Equity Risk Premium increases (an issue that I discuss later in my response to Mr. Solomon).

Q. What alternative measures does Mr. Solomon suggest?

A. Mr. Solomon suggests four sources of Market Risk Premium data: the Morningstar long-term average of 6.00 percent; the American Appraisal Risk Premium Quarterly estimate of 6.00 percent; the Damodaran "Implied Premium" of 5.00 percent to 6.00 percent; and Duff & Phelps estimate of 5.50 percent.[170]

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167 Moreover, as discussed in my response to Mr. Garrett, the Value Line and Bloomberg Beta coefficients that I rely on use a forward looking adjustment (e.g. the Blume adjustment) to reflect the tendency of Beta coefficients to revert toward 1.00 over time.

168 Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecast,* Financial Management, 1992, at 64.

169 *See* Direct Testimony of Robert B. Hevert, at 29-30.

170 Responsive Testimony of J. Bertram Solomon, at 18-19.

Q. Do you have any observations regarding Mr. Solomon's reference to the Damodaran Implied Risk Premium?

A. Yes, I do. First, as discussed in my response to Mr. Garrett, Professor Damodaran's Implied Risk Premium is calculated using a two-stage dividend discount model; the second stage calculates the expected price, five years in the future, of the S&P 500 Index. As with my Multi-Stage DCF model, the expected price is based on the Gordon Model, which essentially is a re-formulation of the Constant Growth DCF model. As also discussed in my response to Mr. Garrett, because the terminal value is calculated five years in the future (as opposed to fifteen years forward in my Multi-Stage model), the Implied Risk Premium estimate is very sensitive to the assumed terminal growth rate.

The basic spreadsheet containing Professor Damodaran's calculation assumes that the terminal growth rate is equal to the long-term Treasury yield which, at the time I accessed the website was 1.74 percent. To put that assumption in context, at page 6 of his testimony Mr. Solomon refers to the Federal Reserve's 2.00 percent inflation rate target. A long-term growth rate of 1.74 percent, then, means that the market will grow at a real rate of less than zero in perpetuity. That is, the 1.74 percent terminal growth rate assumes that investors would invest in the market in exchange for a real capital appreciation rate of less than zero. I do not believe that it is reasonable to assume that investors would invest equity knowing that they would essentially lose value every year, in perpetuity.

The Damodaran calculation allows the user to change the assumed terminal growth rate. As noted earlier, that change has a large effect on the calculated Implied Risk Premium. For example, the default assumptions in Professor Damodaran's spreadsheet produce an Implied Risk Premium of 6.51 percent.[171] Changing the terminal growth assumption to the 4.35 percent (that is, the nominal GDP growth rate that Mr. Solomon discusses at page 32 of his testimony) increases the Implied Risk Premium by 195 basis points, to 8.46 percent. If we assume a long-term growth rate of 5.22 percent (that is, the long-term growth rate included in the Multi-Stage DCF model discussed in my Direct Testimony) increased the Implied Risk Premium to 9.13 percent. Although somewhat lower than my forward-looking estimates, when combined with the assumed long-term Treasury bond yield of 1.74 percent, the Implied Risk Premium produces an expected market return of 10.87 percent.

Q. Is the range of Market Risk Premium estimates that Mr. Solomon believes are appropriate for the CAPM consistent with his ROE recommendation in this proceeding?

A. No, it is not. As noted above, of the various estimates that Mr. Solomon suggests, the highest is 6.00 percent (based on Morningstar's historical data series through 2014 and the American Appraisal Risk Premium Quarterly estimate). Adding Mr. Solomon's 2.90 percent risk-free rate[172] indicates an expected market return of 8.90 percent, which is 35 basis points *below* his ROE recommendation. Mr. Solomon's other Market Risk

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171 http://pages.stern.nyu.edu/~adamodar/, accessed March 31, 2016.

172 Mr. Solomon accepts my risk-free rate, *see* Responsive Testimony of J. Bertram Solomon, at 18.

Premium estimates also produce expected market returns *below* his 9.25 percent ROE recommendation (*see* Table 6, below)

Table 6: Implied Market Returns Based on Mr. Solomon's MRP Estimates

Source	Market Risk Premium	Risk Free Rate	Expected Market Return	Mr. Solomon's proposed ROE	Difference
Morningstar 2014 Historical	6.00%	2.90%	8.90%	9.25%	-0.35%
American Appraisal	6.00%	2.90%	8.90%	9.25%	-0.35%
Damodaran	5.50%	2.90%	8.40%	9.25%	-0.85%
Duff & Phelps	5.50%	2.90%	8.40%	9.25%	-0.85%

Those results simply do not make sense. Because the Beta coefficients used in Mr. Solomon's analyses are less than 1.00, it follows that his ROE recommendation should be less than his expected market return. As Table 6 demonstrates, that is not the case. In essence, Mr. Solomon's results assume that investors would receive a higher return on an investment with lower risk than the market; that assumption violates the fundamental risk/return relationship (that is, higher risk is compensated with higher returns). The fact that Mr. Solomon's estimates violate that fundamental relationship clearly demonstrates that his criticisms of my CAPM analyses are misplaced, and that the basis of his 9.25 percent ROE recommendation is an unreliable estimate of the Company's Cost of Equity.

Q. Turning to Mr. Solomon's review of historical MRP data, do you agree that your estimates are inflated relative to long-term history?

A. No, I do not. Mr. Solomon points to the long-term average,[173] but fails to note that over time, the data was quite variable. In fact, when measured based on the income-only return, the arithmetic average MRP was 7.00 percent, and the standard deviation was 20.17 percent.[174] Thus, even if we were to consider the standard error (rather than the standard deviation), my forward-looking MRP estimates are statistically indistinguishable from the long-term average.

Lastly, the long-term average market return provided by Morningstar (through 2014) is 12.07 percent. As shown in Table 6 (above), Mr. Solomon's estimates assume market returns in the range of 8.40 percent to 8.90 percent. That is, even the highest of Mr. Solomon's market return estimates is 317 basis points below the long-term average that forms the basis of the historical MRP estimate. Putting aside the fact that his ROE recommendation generally exceeds his expected market return (which as explained above, is highly implausible), Mr. Solomon has not explained why the expected market return looking forward will be so far below the long-term average. Here again, Mr. Solomon's 9.25 percent recommendation is disconnected from the data that underlie his analyses.

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173 Please note that I address issues relating to the method of calculating the long-term average in my response to Mr. Parcell.

174 Source: Morningstar, Inc., Ibbotson Stocks, Bonds, Bills and Inflation 2015 Classic Yearbook, at 196-197, 208-209.

F. Bond Yield Plus Risk Premium Approach

Q. Please briefly summarize Mr. Solomon's criticism of your Bond Yield Plus Risk Premium analysis.

A. Mr. Solomon appears to have four concerns. First, he argues that because it includes only one explanatory variable, other factors may affect risk premium. Second, Mr. Solomon suggests the model over estimates the ROE and as such, it would be proper to adjust the results downward by some 54 basis points. He argues that doing so would produce a range of 7.38 percent to 9.51 percent, which would support his 9.25 percent ROE recommendation. Mr. Solomon then suggests that the analysis is backward-looking, and "devoid of any direct equity market input."[175] Lastly, Mr. Solomon refers to individual returns recently authorized for electric utilities, suggesting that those observations invalidate the model's usefulness.

Q. What is your response to Mr. Solomon's view that because it includes a single explanatory variable, the model does not capture other important factors?

A. Mr. Solomon observes, but does not respond to one of the principal findings of the analysis, which is that that the Equity Risk Premium is inversely related to interest rates. That finding is particularly important when interest rates remain at unusually low levels. Still, Mr. Solomon suggests that other factors may be at play and that by not reflecting those factors, the model's results may be unreliable. He does not, however, suggest what those variables may be, or how they may interact with the premium that equity investors

[175] Responsive Testimony of J. Bertram Solomon, at 23.

require over long-term Treasury yields. I therefore undertook a series of additional analysis to address that concern.

To address the prospect that the relative risk of equity and debt would affect the relationship between interest rates and the Equity Risk Premium, I first calculated the "credit spread", or the difference between the Moody's A-Utility Bond yield and the 30-Year Treasury yield. To reflect the risk of equity investments, I calculated the average annual market volatility as measured by the VIX since 1990, the first year for which data was available. I then performed a regression analysis in which the Equity Risk Premium is the dependent variable, and credit spreads, Treasury yields, and the VIX were the explanatory variables. There were three principal findings from those analyses (*see* Exhibit RBH-23R):

1. The two additional variables CREDIT SPREADS AND VIX do not negate the statistically significant inverse relationship between Treasury yields and the Equity Risk Premium.
2. There is a high degree of correlation between credit spreads and the VIX, indicating that the two move closely together. That is, the "relative risk" of the two is not a meaningful factor.
3. Based on the current, near-term projected, and long-term projected Treasury yields of the expected ROE falls in the range of 9.86 percent to 10.52 percent. Those results overlap with my recommended range, are consistent with the results of my updated Bond Yield Plus Risk Premium analysis (*see* Exhibit RBH-7R),

and are far more consistent with recently authorized returns than is Mr. Solomon's 9.25 percent ROE recommendation.

I also note that none of the additional variables added significantly to the explanatory value of the regression equations.

Q. What is your response to Mr. Solomon's argument that because the model over-estimated a single instance, its results are unreliable?[176]

A. I disagree with Mr. Solomon's approach and conclusion. As Mr. Solomon recognizes, the model is based on over 1,400 observations. BY DEFINITION…As a result of the regression method, the average error (*i.e.,* the average difference between the observed ROE and the estimated ROE) is zero. Although it is the case that some estimates may exceed the observed ROE, others will fall below.

As to the 9.00 percent return noted by Mr. Solomon, that case was for a distribution-only utility in New York,[177] a jurisdiction that typically has authorized ROEs considerably below those of vertically integrated utilities in other states. In fact, of the fourteen cases decided in 2013, four were for distribution-only utilities, and three of those were in New York. Nonetheless, if we were to use the data and regression coefficients cited by Mr. Solomon, the expected return for the Company's last case is 10.06 percent, 14 basis points below the actual authorized return of 10.20 percent. Limiting the data in the analysis to vertically integrated utilities only, and adding variables for broad market volatility (that is, the VIX) and credit spreads, the predicted value for the Company's last

176 Responsive Testimony of J. Bertram Solomon, at 22-23.
177 Orange and Rockland Utilities; Docket C-14-E-0493.

case is 10.17 percent, only three basis points removed from the actual order (*see,* Exhibit RBH-23R). Consequently, I do not agree with Mr. Solomon's view that the model is prone to over-estimate returns.

G. Capital Structure

Q. Please provide an overview of Mr. Solomon's analyses and conclusions regarding the Company's capital structure.

A. Mr. Solomon believes that, based on a Memorandum of Understanding ("MOU") accepted by the Commission and attached to the Commission's March 1, 1996 Final Order No. 399818 in Cause No. PUD 950000148, the Company's capital structure should include 50.00 percent equity, and 50.00 percent debt.[178] Mr. Solomon concludes that his proposed capital structure is appropriate based on the MOU's use of the term "balanced capital structure," which Mr. Solomon interprets to mean "equal or offsetting weight".[179]

Q. Do you agree with Mr. Solomon's interpretation of the definition of a "balanced capital structure"?

A. No, I do not. In my view, the term "balanced" speaks to balancing the factors that must be considered in managing the capital structure, not simply a 50/50 capital structure. As discussed in my response to Mr. Garrett, capital structure optimization recognizes that there are numerous constraints associated with financing decisions, and that financing constraints are dynamic in nature, continually changing in response to market conditions. Nonetheless, managing toward the optimal capital structure is in the best interest of both

178 Responsive Testimony of J. Bertram Solomon, at 10.
179 *Ibid.*, at 11.

ratepayers and investors as both seek to minimize costs over the long run. As such, there is no incentive to request a capital structure other than the Company's "optimal" capital structure. An "optimal" capital structure, therefore, balances numerous dynamic objectives and constraints. In my view, Mr. Solomon's position that a "balanced capital structure" by definition includes 50.00 percent equity and 50.00 percent debt oversimplifies a far more complex analysis.

IV. RESPONSE TO THE TESTIMONY OF MR. WALTERS

Q. Please briefly summarize Mr. Walters' recommendation regarding the Company's Cost of Equity.

A. Mr. Walters recommends an ROE of 9.30 percent, within a range of 9.00 to 9.60 percent.[180] Mr. Walters establishes his recommended ROE by reference to: (1) his Constant Growth DCF model, using both consensus analyst growth rates and a sustainable growth rate (with median and average results ranging from 8.59 percent to 9.23 percent);[181] (2) his multi-stage DCF method (with median and mean results of 8.16 percent and 8.17 percent, respectively);[182] (3) his Risk Premium estimates (ranging 9.50 percent to 9.65 percent, with a point estimate of 9.60 percent);[183] and (4) his Capital Asset Pricing Model analyses (ranging from 8.11 percent to 9.64 percent, with a point estimate of 9.30 percent).[184] In particular, Mr. Walters' 9.30 percent recommendation

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180 *See* Responsive Testimony and Exhibits of Christopher C. Walters, at 43.
181 *Ibid.*, at 31.
182 *Ibid.*
183 *Ibid.*, at 37.
184 *Ibid.*, at 42.

represents the midpoint of his selected DCF estimate (9.00 percent), and his Risk Premium estimate (9.60 percent)[185].

Q. How does Mr. Walters' recommendation compare with recently authorized returns for other vertically integrated electric utilities?

A. As noted earlier, between January 1, 2012 and February 29, 2016, there were 108 cases in which ROEs were authorized for vertically integrated electric utilities. Across those 108 cases, the average authorized return was 9.96 percent (the median was 10.00 percent); Mr. Walters' 9.30 percent recommendation is below 105 of those 108 cases. In fact, As Chart 9 demonstrates (the shaded area represents Mr. Walters' range; the solid line represents his 9.30 percent ROE recommendation), Mr. Walters' 9.30 percent recommendation is below approximately two-thirds of electric distribution cases, including those whose ROEs are set by formula.[186]

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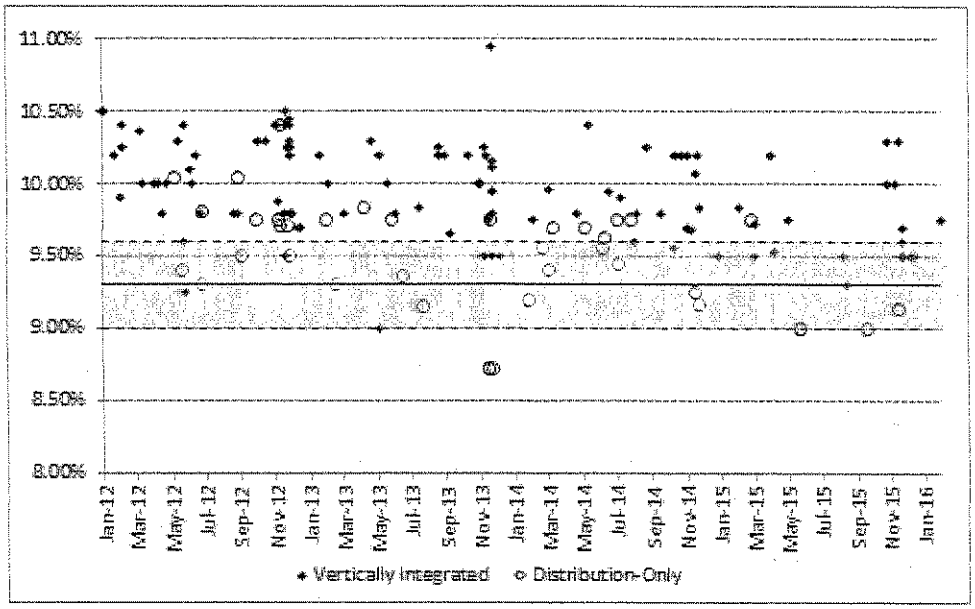
185 *Ibid.*, at 43.

186 The two observations that fall below the shaded area represent the Illinois formula rate filings for distribution-only electric utilities. In subsequent cases the formula-based returns increased to 9.25 percent.

Chart 9: Authorized ROEs 2012 – 2016[187]



Q. What are the implications of those findings for Mr. Walters' recommendation?

A. Mr. Walters appears to believe that OG&E is far less risky than its peers – so much so that its Cost of Equity is below nearly all returns authorized since 2012. Based on the analyses discussed above, however, that does not appear to be the case.

Q. What are the principal analytical areas in which you disagree with Mr. Walters?

A. The principal areas in which I disagree with Mr. Walters include:

1. The application of the Constant Growth DCF model, and interpretation of its results;
2. The Market Risk Premium component of his CAPM analysis, in particular the expected market return from which the MRP is calculated;
3. The assumptions and methods underlying Mr. Walters' Risk Premium analyses; and

187 Source: Regulatory Research Associates.

4. Mr. Walters' assessment of the Company's relative risk.

A. Constant Growth DCF Model

Q. As a preliminary matter, does Mr. Walters give his Constant Growth DCF results any weight in arriving at his 9.30 percent ROE recommendation?

A. Yes, as noted earlier, Mr. Walters' 9.30 percent recommendation represents the midpoint of his 9.00 percent to 9.60 percent recommended range. The bottom end of that range (9.00 percent) is based on Mr. Walters' Constant Growth DCF median result of 9.00 percent.[188]

To arrive at his DCF estimate, Mr. Walters discards his Multi-Stage DCF results (8.16 percent to 8.17 percent), in favor of his Constant Growth DCF results based on analysts' growth rate projections (8.95 percent to 9.23 percent) and his Constant Growth DCF model results based on the "Sustainable Growth" method (8.59 percent to 8.69 percent).[189] Because Mr. Walters does not rely on his Multi-Stage DCF model results, I will not comment on his application of that method in my Rebuttal Testimony.

Q. Do you have any concerns with the Constant Growth DCF model in general, and the weight that Mr. Walters applies to those results in particular?

A. Yes, I do. The Constant Growth DCF model is based on several underlying assumptions that combine to establish an inverse relationship between expected growth and the dividend yield. That is, as expected growth increases, the price would increase and the dividend yield would decrease. Conversely, as expected growth decreases, the price

188 Responsive Testimony and Exhibits of Christopher C. Walters, at 43, Table 5.
189 *Ibid.*, at 31-32.

would decrease and the dividend yield would increase. However, as discussed in my Direct Testimony,[190] the proxy companies have experienced P/E ratios that are high by historical standards, but growth rates that are relatively low, a relationship that runs counter to the Constant Growth DCF model's fundamental assumptions.

Mr. Walters acknowledges that unsustainable expansions in P/E ratios create analytical concerns that should be addressed in determining the Cost of Equity. At page 42 of his direct testimony, Mr. Walters discusses the Market Risk Premium component of his Capital Asset Pricing Model, and explains that Morningstar found an "abnormal expansion" of P/E ratios relative to earnings and dividend growth. That is, Morningstar found that because higher P/E ratios during the 1980 to 2001 period were not explained by higher growth in earnings or dividends, their analyses required adjustment.[191] That adjustment included reflecting three-year average P/E ratios, rather than relying on the current year, because "[t]he three-year average is more reflective of the long-term trend than the year-by-year numbers."[192] Morningstar, therefore, recognized that abnormally high P/E ratios will produce questionable analytical results, and the long-term trend is important.

The same conditions hold here. The utility sector recently has undergone an "abnormal expansion" in P/E ratios. Whereas Morningstar recognized and adjusted its analyses to

190 *See* Direct Testimony of Robert B. Hevert, at 52.
191 *See* Responsive Testimony and Exhibits of Christopher C. Walters at 42; Morningstar Inc., Ibbotson SBBI 2014 Classic Yearbook at 156 - 157.
192 Morningstar Inc., Ibbotson Stocks, Bonds, Bills, and Inflation 2014 Classic Yearbook at 157.

reflect the abnormal expansion in P/E ratios, Mr. Walters' DCF analyses, and his interpretation of their results, does not.

If Mr. Walters believes that the current level of P/E ratios will remain constant over time that assumption may be reflected in the Multi-Stage DCF analysis by calculating the terminal value by reference to current P/E ratios.[193] My updated Multi-Stage DCF analyses address Mr. Walter's concern by calculating the terminal value by reference to the current 30-day average proxy group P/E ratio (*see* Exhibit RBH-3R).

Q. Please summarize your concerns with Mr. Walters' use of a sustainable long-term growth in his DCF analysis.

A. Although we agree that it is appropriate to rely on analyst earnings growth estimates in applying the Constant Growth DCF model, Mr. Walters asserts that those estimates should be limited to what he considers to be a reasonable estimate of long-term "sustainable" growth. In that regard, because they are higher than the five- and ten-year nominal GDP growth estimates from Blue Chip *Economic Indicators*, Mr. Walters concludes that the mean analyst consensus earnings growth estimates in my Constant Growth DCF analysis produce elevated estimates of the Cost of Equity.[194] Aside from his focus on the Blue Chip forecasts, Mr. Walters suggests that the growth estimates included in my analyses could not be sustained by the proxy group companies' current earnings retention ratios.[195]

193 *See* Exhibit RBH-3R.
194 *See* Responsive Testimony and Exhibits of Christopher C. Walters at 49.
195 *Ibid.*, at 23 and 47.

As noted in my response to Mr. Garrett, prior academic research (as well as the analyses presented in my Rebuttal Testimony) indicates that investors rely on analysts' earnings growth projections. Those analyses demonstrate Value Line's "Retained to Common Equity", which is the product of the expected Return on Common Equity and the expected Retention Ratio (which are the two variables included in Mr. Walters' assessment of what may constitute "sustainable growth" on page 23 of his direct testimony) have no statistically significant ability to explain valuation levels (as measured by the P/E ratio, which Mr. Walters presents in his Exhibit CCW-19). Although Mr. Walters may be of the view that analyst growth rates are not sustainable, the relevant issue is whether investors rely on those projections in making their investment decisions. Given the empirical evidence supporting the use of analysts' earnings growth projections, I disagree with Mr. Walters' conclusion that his view of sustainable growth is the more relevant measure of investor expectations.

B. Application of Capital Asset Pricing Model

Q. Please briefly summarize Mr. Walters' CAPM analysis and results.

A. Mr. Walters' two CAPM estimates (9.64 and 8.11 percent) are based on two measures of principally historical Market Risk Premium estimates, Blue Chip's projected 30-year Treasury yield of 3.50 percent as the risk-free rate, and an average Beta coefficient of 0.77, as reported by Value Line.[196] In developing his 9.30 percent CAPM estimate, Mr. Walters applies 75.00 percent and 25.00 percent weights to his 9.64 percent and 8.11

[196] *Ibid.*, at 42 and Exhibit CCW-16.

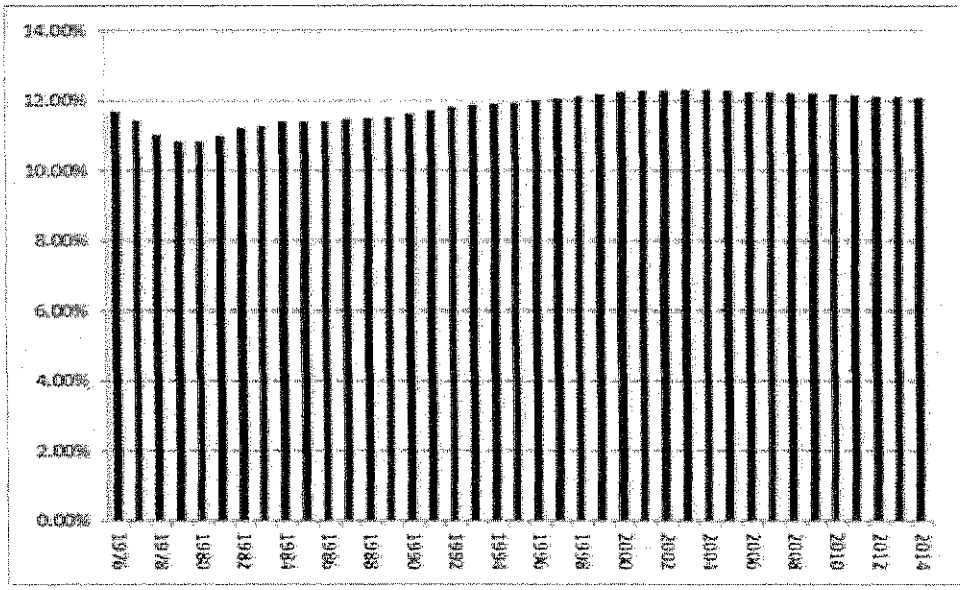
percent CAPM results, respectively.[197] Mr. Walters' analyses assume Market Risk Premium estimates of 8.00 percent (based on the long-term historical arithmetic average real market return from 1926 through 2014 as reported by Morningstar, adjusted for current inflation forecasts), and 6.00 percent (based on the historical difference between the average return on the S&P 500 and the average total return on long-term government bonds).[198] Combining those Market Risk Premium estimates with his projected long-term risk-free rate, Mr. Walters develops expected market returns in the range of 9.50 to 11.50 percent.[199]

Q. Turning first to the expected total market return, do you agree with Mr. Walters' 9.50 and 11.50 percent estimates?

A. No, I do not. A helpful perspective on the historical market return is the rolling 50-year average annual market return. As Mr. Walters points out, from 1926 through 2014 the arithmetic average market return was 12.10 percent.[200] His 9.50 percent estimate, however, is more than 200 basis points below the long-term average market return. Over time, the fifty-year rolling average return has also been in the range of approximately 12.00 percent (*see* Chart 10, below).

197 *Ibid.*, at 42.
198 *Ibid.*, at 40.
199 Mr. Walters' Market risk premium of 6.00%/8.00% percent plus his projected risk-free rate of 3.50% equals an estimated market return of 9.50%/11.50%. *See* Responsive Testimony and Exhibits of Christopher C. Walters, at 40; Exhibit CCW-16.
200 Responsive Testimony and Exhibits of Christopher C. Walters at 40.

Chart 10: 50-Year Rolling Average Market Return (1976 – 2015)[201]



Taken from that perspective, Mr. Walters' 9.50 percent expected market return is well below the long-term market experience.

C. Application of the Risk Premium Model

Q. Please briefly describe Mr. Walters' Risk Premium analyses.

A. Mr. Walters defines the "Risk Premium" as the difference between average annual authorized equity returns for electric utilities, and a measure of long-term interest rates each year from 1986 through September 2015.[202] Mr. Walters' first approach calculates the annual risk premium by reference to the 30-year Treasury yield, and his second approach considers the average A-rated utility bond yield.[203] In each case, Mr. Walters establishes his risk premium estimate by reference to five-year and ten-year year rolling averages. The lower and upper bounds of Mr. Walters' Risk Premium range are defined

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201 Source: Morningstar, Inc., 2016 SBBI Appendix A Tables

202 Responsive Testimony and Exhibits of Christopher C. Walters at 32.

203 *Ibid.*, at 32-33, Exhibit CCW-11 and CCW-12.

by the lowest and highest rolling average, respectively, regardless of the year in which those observations occurred.[204]

Regarding the period over which he gathers and analyzes his data, Mr. Walters suggests that his 30-year horizon is a "generally accepted period to develop a risk premium study using 'expectational' data."[205] Mr. Walters further states that "it is reasonable to assume that averages of annual achieved returns over long time periods will generally converge on the investors' expected returns," and concludes that his "risk premium study is based on expectational data, not actual investment returns, and, thus, need not encompass a very long historical time period."[206] Based on those assumptions, Mr. Walters calculates a range of estimates of 7.72 percent to 10.27 percent. Mr. Walters then gives 75.00 percent weight to the high end of his results, and 25.00 percent to the low end, producing a range of 9.50 percent to 9.65 percent, with a midpoint rounded to 9.60 percent.[207]

Q. Do you have any general observations regarding Mr. Walters' Risk Premium estimates and how they weigh in his overall ROE recommendation?

A. Yes, I do. In assessing his DCF analyses, Mr. Walters does not give any weight to three of his six results, which ranged from 8.16 to 8.59 percent.[208] In his Risk Premium analysis, however, Mr. Walters retained ROE estimates that were as much as 87 basis points *below* the DCF estimates that he eliminated. Despite their low levels, Mr. Walters gave those estimates (7.72 and 7.75 percent) weights of 12.50 percent in aggregate. Mr.

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204 *Ibid.*, at 37; Exhibit CCW-11 and CCW-12.
205 *Ibid.*, at 34.
206 *Ibid.*, at 34-35.
207 *Ibid.*, at 37.
208 *Ibid.*, at 31.

Walters offers no explanation as to why he would exclude DCF estimates of 8.59 percent and lower, yet include Risk Premium estimates of 7.72 percent and 7.75 percent.

Q. What are your specific concerns with Mr. Walters' Risk Premium analysis?

A. I have three concerns with his analysis: (1) Mr. Walters' method understates the required Risk Premium in the current market because it ignores an important relationship confirmed by his own data, *i.e.,* that the Risk Premium is inversely related to the level of interest rates (whether measured by Treasury or utility bond yields);[209] (2) the low end of Mr. Walters' Risk Premium estimates is far lower than any ROE authorized since at least 1986 and as such, has no relevance in estimating the Company's Cost of Equity; and (3) Mr. Walters suggests that a Market/Book ("M/B") of 1.00 is a relevant benchmark for assessing authorized ROEs.[210]

Q. Turning first to the issue of Market/Book ratios, as discussed on page 33 of his direct testimony, do you agree with Mr. Walters that M/B ratios should be used to assess the reasonableness of ROE recommendations?

A. Although Mr. Walters frames his discussions in the context of authorized returns that "were sufficient to support market prices that at least exceeded book value,"[211] he does not suggest whether the Market/Book ratio should exceed some level, or even explain the extent of the relationship between authorized returns and Market/Book ratios. As discussed below, I do not believe that M/B ratios should serve as a measure of the sufficiency of authorized returns.

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209 *Ibid.*, at 58-59.
210 *Ibid.*, at 33.
211 *Ibid.*, at 33.

As also discussed in my response to Mr. Parcell, the M/B ratio equals the market value (or stock price) per share, divided by the total common equity (or the book equity) per share. Book value per share is an accounting construct, which reflects historical costs. In contrast, market value per share (*i.e.,* the stock price) is forward-looking, and a function of many variables, including (but not limited to) expected earnings and cash flow growth, expected payout ratios, measures of "earnings quality", the regulatory climate, the equity ratio, expected capital expenditures, and the earned return on common equity.[212]

In the context of rate-setting, the M/B ratio sometimes is discussed relative to the Constant Growth DCF model. Under certain restrictive assumptions, that model can be rewritten to express the M/B ratio as follows:

$$\frac{M}{B} = \frac{ROE - G}{k_e - G} \quad \text{Equation [3]}$$

where ROE is the return on book equity, k_e is the risk-adjusted discount rate, and G is the long-term growth rate in dividends per share. Taking Equation [3] at face value, if M/B exceeds unity, then ROE exceeds k_e. Branch *et al.* point out that M/B is generally greater than or equal to one because the value of the firm as a going concern (price per share) generally exceeds the liquidation value (book value per share) and "...firms having going

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212 *See*, for example, Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 366. Please note that Dr. Morin cites several academic articles that address the various factors that affect the M/B ratio for utilities. In addition, the notion that book values should be set at a value approaching unity by regulatory commissions has been refuted for many years. As noted by Stewart Myers in 1972: "In short, a straightforward application of the cost of capital to a book value rate base does not automatically imply that market and book values will be equal. This is an obvious but important point. If straightforward approaches did imply equality of market and book values, then there would be no need to estimate the cost of capital. It would suffice to lower (raise) allowed earnings whenever markets were above (below) book." Stewart C. Myers, *The Application of Finance Theory to Public Utility Rate Cases*, The Bell Journal of Economics and Management Science, Vol. 3, No. 1 (Spring 1972), at 76.

concern values greater than their liquidation values (most firms) and firms having finite prices (all firms) should have $ROE > k_e > G$."[213]

Any inferences drawn as to the relationship among M/B, *ROE*, and k_e from Equation [3] rely on the acceptance of all assumptions of the Constant Growth DCF model. Equally important, Equation [3] can only be solved from the Constant Growth DCF model if we further assume: (1) a constant dividend payout ratio in perpetuity; (2) no stock issuances or repurchases; and (3) that the firm is in a steady state, in which the book equity growth rate equals the dividend growth rate. Taken together, those assumptions are quite restrictive, and call into question a definitive linkage between M/B, *ROE*, and k_e.

As Dr. Morin states, it is rarely the case in cost of service-based regulation that M/B ratios equal 1.00:

> The third and perhaps most important reason for caution and skepticism is that application of the DCF model produces estimates of common equity cost that are consistent with investors' expected return only when stock price and book value are reasonably similar, that is, when the M/B is close to unity. As shown below, application of the standard DCF model to utility stocks *understates* the investor's expected return when the market-to-book (M/B) ratio of a given stock exceeds unity. This was particularly relevant in the capital market environment of the 1990s and 2000s whose utility stocks are trading at M/B ratios well above unity and have been for nearly two decades. The converse is also true, that is, the DCF model overstates the investor's return when the stock's M/B ratio is less than unity. The reason for the distortion is that the DCF market return is applied to a book value rate base by the regulator, that is, a utility's earnings are limited to earnings on a book value rate base.[214]

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213 Ben Branch, Anurag Sharma, Chetan Chawla, and Feng Tu; "An Updated Model of Price-to-Book," Journal of Applied Finance, November 1, 2014, at 78.

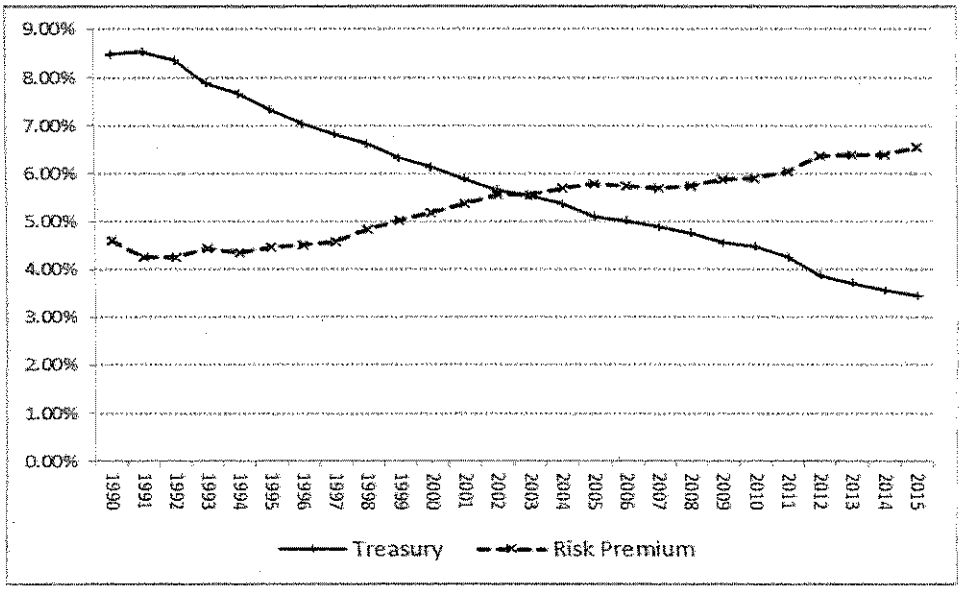
214 Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 434. [emphasis added]

As such, I do not agree that authorized returns should be viewed in the context of Market/Book ratios.

Q. Have you reviewed Mr. Walters' Risk Premium analyses?

A. Yes, I have. Considering first the Treasury yield-based analysis, I plotted the yields and Risk Premia over the 1986 to 2015 period included in Mr. Walters' analysis. That graph, which is presented in Chart 11 (below), clearly indicates the inverse relationship between interest rates and the Equity Risk Premium.

Chart 11: Mr. Walters' Treasury Yield-Based Risk Premium Data[215]



There are several other points made clear in Chart 11. First, the low end of Mr. Walters' Risk Premium range, 4.25 percent, was observed in the five-year period ending 1991. There is little question that Risk Premium estimates associated with economic environments 25 years ago have little to do with current market conditions. A very visible measure of such differences is the fact that by 2003, Treasury yields exceeded the

215 Source: Responsive Testimony and Exhibits of Christopher C. Walters, Exhibit CCW-12; based on five-year rolling average.

Risk Premium (on a five-year average basis). As Chart 11 (*see also* Exhibit RBH-24R) demonstrates, however, since then the opposite has been true – the Risk Premium has consistently exceeded Treasury yields. By that measure alone, it is clear that the low end of Mr. Walters' range has little, if any, relevance to the current market environment.

The high end of Mr. Walters' range, 6.55 percent, occurred more recently and more frequently. In fact, Exhibit CCW-11 indicates that his Equity Risk Premium averaged approximately 6.65 percent from 2012 through 2015. Adding that 6.65 percent Equity Risk Premium to Mr. Walters' projected Treasury yield of 3.50 percent produces an ROE estimate of 10.15 percent, which is far more consistent with my recommendation (it is only ten basis points below the low end of my recommended range), and with the returns recently authorized for vertically integrated electric utilities.

Q. Has the Risk Premium increased as Treasury yields have decreased?

A. Yes. The relationship between the five-year average Equity Risk Premium and Treasury yields is very clear. A simple linear regression demonstrates that the two are highly related, with a Coefficient of Determination (R-Square) of approximately 95.00 percent. That is, Mr. Walters' data demonstrate that changes in Treasury yields account for 95.00 percent of the change in the Equity Risk Premium (*see* Chart 12, below).[216]

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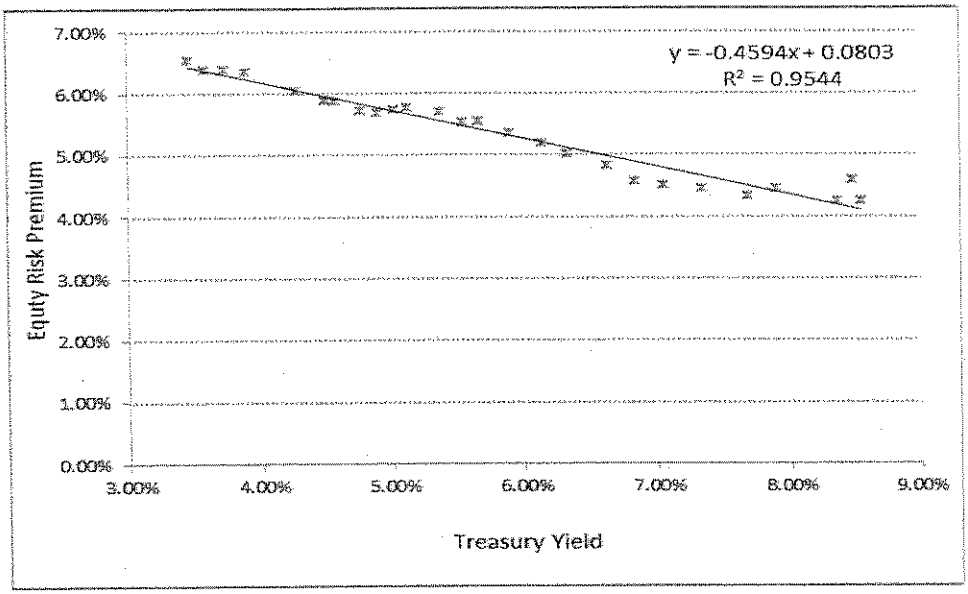
216 Those findings are supported in academic studies. For example, Dr. Roger Morin notes that: "… [p]ublished studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates - rising when rates fell and declining when interest rates rose." Roger A: Morin, New Regulatory Finance, Public Utilities Reports, Inc. 2006, at 128 [clarification added]

Chart 12: Treasury Yield vs. Equity Risk Premium (Five-Year Rolling Average)[217]



Turning back to Mr. Walters' data, a simple linear regression analysis using annual (rather than the rolling average data) demonstrates that for every 100 basis point decrease in Treasury yields, the Equity Risk Premium increases by approximately 43 basis points (*see* Exhibit RBH-25R).[218] Similarly, the Equity Risk Premium increases approximately 39 basis points for every 100 basis point decrease in utility bond yields. Those results are consistent with those reported by Maddox, Pippert, and Sullivan, who determined that the Risk Premium would increase by 37 basis points for every 100 basis point change in the 30-year Treasury yield.[219]

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217 Source: Exhibit CCW-11.

218 Serial correlation is not present or is inconclusive.

219 *See* Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, Financial Management, Vol. 24, No. 3, Autumn 1995, at 93.

Q. Did you perform any analysis to address Mr. Walters' concern that the assumption of an inverse relationship between interest rates and the Equity Risk Premium is too "simplistic" because it does not account for changing perceptions of risk?[220]

A. Yes. As shown in Exhibit RBH-25R, I have found that accounting for changing risk perceptions by incorporating the credit spread (taken from Mr. Walters' exhibits) does not change the sign, statistical significance, or the magnitude of the slope coefficient of a regression analysis of interest rates (the independent variable) and the Equity Risk Premium (the dependent variable). In short, including Mr. Walters' credit spreads does not change the finding that interest rates and the Equity Risk Premium are inversely related.[221]

Q. Have you modified Mr. Walters' analysis to account for the inverse relationship between interest rates and the Equity Risk Premium?

A. Yes, I have. Using the data provided in Exhibits CCW-11 and CCW-12, I performed two regression analyses, the first using Mr. Walters' Treasury yield data, and the second using his Utility Bond data. In each case the Equity Risk Premium was the dependent variable, and interest rates (alternately, Treasury yields and Utility Bond yields) were the explanatory variables. I then alternately relied on (1) Mr. Walters' 3.50 percent projected Treasury yield and (2) an estimated projected utility bond yield of 4.77 percent (calculated by adding Mr. Walters' 2015 credit spread estimate of 1.27 percent to the 3.50 percent projected Treasury yield). The results of those analyses are provided in Table 7, below.

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220 Responsive Testimony and Exhibits of Christopher C. Walters at 58.
221 *See* Exhibit RBH-25R.

Table 7: Revised Equity Risk Premium Results[222]

	Treasury Yield	Bond Yield
Projected Yield	3.50%	4.77%
Intercept	7.94%	8.24%
Treasury Yield Coefficient	-43.49%	-39.33%
Estimated Risk Premium	6.42%	6.36
Estimated ROE	9.92%	11.14%
Midpoint Result	10.53%	

As Table 7 demonstrates, the analysis produces an ROE estimate of 10.53 percent, which is within my recommended range.

Q. What are your conclusions regarding Mr. Walters' Risk Premium analysis?

A. Mr. Walters' approach relies on data from markets that are fundamentally disconnected from the current environment. As opposed to Mr. Walters' approach, methods such as my Bond Yield Plus Risk Premium approach -- which have support in published literature[223] and which reflect the finding that interest rates and the Equity Risk Premium move in opposite directions -- produce far more reliable estimates of the Company's Cost of Equity. Doing so produces an average ROE estimate of 10.53 percent, which is consistent with my ROE recommended range (*see* Exhibit RBH-24R).

222 *See* Exhibit RBH-25R

223 *See* Direct Testimony of Robert B. Hevert, at 32-33.

D. OG&E's Relative Risk

Q. Please briefly summarize Mr. Walters' assessment of the Company's overall business risk.

A. Mr. Walters summarizes certain rating agency reports and concludes that utilities in general are seen as a low-risk sector, with "strong access to capital".[224] Adopting an ROE as low as Mr. Walters' recommendation (which is 50 basis points below the average authorized for vertically integrated electric utilities in 2014 and 2015), however, would have the opposite effect of increasing the Company's regulatory risk and its cost of capital. As discussed earlier, between 2014 and 2015 there was only one authorized return for a vertically integrated electric utility as low as Mr. Walters' 9.30 percent recommendation (*see* Chart 3 above).

Q. Do the Company's current credit ratings distinguish it from other utilities?[225]

A. No, they do not. As S&P notes, the vast majority of utility ratings fall within the BBB to A- range.[226] The Company's current A- rating is within that range. If Mr. Walters' point is that utilities in general are viewed as less risky than the overall market, I agree. In fact, the Beta coefficients included in my CAPM analysis are less than 1.00, indicating less systematic risk than the overall market. That does not mean, however, that the return required for equity investments in vertically integrated electric utilities such as OG&E should be lower than the returns authorized for other vertically-integrated electric utilities around the country, as Mr. Walters' 9.30 percent ROE recommendation suggests.

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224 Responsive Testimony and Exhibits of Christopher C. Walters, at 5.
225 *Ibid.* at 10.
226 Standard & Poor's RatingsDirect, *Industry Report Card: The Outlook For U.S. Regulated Utilities Remains Stable On Increasing Capital Spending And Robust Financial Performance*, December 16, 2014 at 6.

E. *Financial Integrity*

Q. Please briefly summarize Mr. Walters' assessment of his recommendation as it affects measures of the Company's financial integrity.

A. Mr. Walters evaluates the reasonableness of his ROE recommendation by calculating the *pro forma* effect that his recommended ROE would have on two of the Company's key financial ratios, with the goal of determining whether those ratios would fall within S&P's guideline ranges for an investment grade rating.[227] In Exhibit CCW-17, Mr. Walters develops *pro forma* ratios of Debt to EBITDA, and Funds From Operations ("FFO") to Total Debt, assuming the Company's retail cost of service and his recommended 9.30 percent ROE. (Note that Mr. Walters' analysis implicitly assumes that the Company actually will earn the entirety of its authorized ROE on a going-forward basis.) Mr. Walters concludes that his *pro forma* analysis demonstrates that his recommended ROE of 9.30 percent will support an "investment grade bond rating."[228]

Q. Do you agree with Mr. Walters' analysis and conclusion?

A. No, I do not. First, simply maintaining an "investment grade" rating is an inappropriate standard. According to Standard & Poor's, only six of 221 utilities have had below investment grade ratings.[229] OG&E must compete for capital within the utility sector in the first instance, and with companies beyond utilities overall. If Mr. Walters is of the view that simply maintaining an investment grade rating is sufficient for that purpose, I disagree. In my practical experience raising capital for a regulated utility, I can say

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227 *See* Responsive Testimony and Exhibits of Christopher C. Walters, at 44-45.

228 *Ibid.*, at 43.

229 *See* Standard & Poor's RatingsDirect, The Outlook for U.S. Regulated Utilities Remains Stable on Increasing Capital Spending and Robust Financial Performance, December 16, 2014 at 7-20.

firsthand that the competition for capital can be acute. Based on that practical experience, I also can say that Mr. Walters' "investment grade" standard may expose the Company, and its ratepayers, to the risk of limited capital access, and higher costs of capital.

That fundamental concern aside, a wide range of ROE outcomes create *pro forma* coverage ratios that fall within S&P's guidelines for the Company's current rating. As shown in Exhibit RBH-26R, using Mr. Walters' analysis, an ROE of 4.00 percent creates coverage ratios that also fall within the benchmark range for OG&E's current credit rating. There is little question that 4.00 percent is an unrealistic estimate of the Company's Cost of Equity.

That Mr. Walters' 9.30 percent ROE produces *pro forma* ratios that fall within the same ratings band as a 4.00 percent ROE puts into doubt the conclusion that his recommendation would support the Company's financial integrity and ability to attract capital. As noted earlier, there are factors beyond *pro forma* coverage ratios that weigh in rating determinations. In fact, Moody's financial ratios account for only 40.00 percent of the total rating determination; of that 40.00 percent, no two ratios account for more than 25.00 percent of the total.[230] On the other hand, 50.00 percent of Moody's ratings

230 *See, Rating Methodology, Regulated Electric and Gas Utilities,* Moody's Investors Service, December 23, 2013, at 6.

factors relate to the regulatory environment.[231] Mr. Walters' ROE recommendation -- which is far below the national average return for vertically integrated electric utilities -- would put pressure on OG&E's credit profile, potentially increasing its cost of capital. In summary, Mr. Walters' analysis is overly simplified, and relying on its results would lead to an incorrect conclusion.

F. Response to Mr. Walters' Criticisms

Q. Please summarize Mr. Walters' criticisms of your Cost of Equity analyses.

A. Mr. Walters asserts my estimated ROE is overstated and should be rejected because (1) my constant growth DCF results are based on excessive, unsustainable growth rates; (2) my Multi-Stage DCF is based on an unrealistic GDP growth estimate and unsustainable payout ratio assumptions; (3) my CAPM is based on inflated estimates of the Market Risk Premiums; and (4) my Bond Yield Plus Risk Premium is based on inflated utility Equity Risk Premiums.[232] I respond to each of those assertions in turn, below.

Q. Do you agree with Mr. Walters' assertion that the growth rates used in your Constant Growth DCF analysis are "excessive" and "unsustainable"?

A. No, I do not. Although Mr. Walters argues that the average consensus growth rate in my Constant Growth DCF model (5.50 percent) is "very optimistic", he concludes that my

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231 *Ibid.* Also, see page 9 for Moody's discussion of the importance of the regulatory environment: "For rate-regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations. The regulatory environment is comprised of two rating factors - the Regulatory Framework and its corollary factor, the Ability to Recover Costs and Earn Returns. Broadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation. The Ability to Recover Costs and Earn Returns relates more directly to the actual decisions, including their timeliness and the rate-setting outcomes."

232 *See* Responsive Testimony and Exhibits of Christopher C. Walters, at 47.

mean Constant Growth DCF results are reasonable.[233] Even though Mr. Walters believes that my Constant Growth DCF results should be considered "very high estimates" of the Company's Cost of Equity, those estimates are well below the prevailing level of authorized returns, a benchmark that Mr. Walters appears to believe is relevant given that his Risk Premium method is predicated on authorized ROEs.

Q. Please respond to Mr. Walters' assertion your long-term growth rate is inconsistent with other consensus estimates of long-term GDP growth.

A. The long-term growth rate in my multi-stage DCF analysis reflects growth expectations beginning ten years in the future, whereas Mr. Walters' consensus GDP projections are only five or ten year projections. Because there are no consensus forecasts that begin in ten years, it is reasonable to assume that real growth will revert to its long-term average over time. Morningstar, a source on which Mr. Walters relies for Market Risk Premium estimates, describes an approach for calculating the long-term growth estimate that is similar to that which is included in my model.[234] As with my approach, Morningstar's method combines the historical average real GDP growth rate with a measure of inflation calculated using the TIPS spread. Moreover, the terminal growth rate is intended to reflect expected growth in perpetuity and as such, the term of even the longest GDP forecast considered by Mr. Walters does not reflect the expected, perpetual nature of the terminal growth assumed in the DCF model.

233 *Ibid.*, at 49; Table 6 at 55.
234 *See*, Ibbotson SBBI 2013 Valuation Yearbook, Morningstar, Inc., at 50-52.

In his Multi-Stage DCF analysis, Mr. Walters cites to projections from the Energy Information Administration ("EIA"), Congressional Budget Office ("CBO"), and other sources including the Social Security Administration ("SSA"), and suggests that the terminal growth rate in my Multi-Stage DCF analysis is too high.[235] In the case of the SSA forecast, however, my long-term growth estimate falls well within the range of the "cases" that the SSA has produced.[236] In addition, Mr. Walters' 4.20 percent long-term sustainable growth rate conflicts with market measures cited elsewhere in his testimony. For example, Mr. Walters does not consider the use of long-term historical data for the purpose of developing his terminal growth rate, yet he relies on long-term historical data for the purposes of his CAPM analyses. According to Morningstar (which provides the data Mr. Walters relies on to estimate the historical Market Risk Premia), the arithmetic average historical capital appreciation rate is 7.78 percent, which is substantially higher than Mr. Walters' 4.20 percent estimate of long-term GDP growth.[237] Aside from the inconsistency with his other analyses, Mr. Walters' low growth rate has the effect of producing unduly low DCF estimates.

To assess whether my 5.22 percent nominal GDP growth estimate, is reasonable within the context of historical observations, consistent with Mr. Walters, I calculated the

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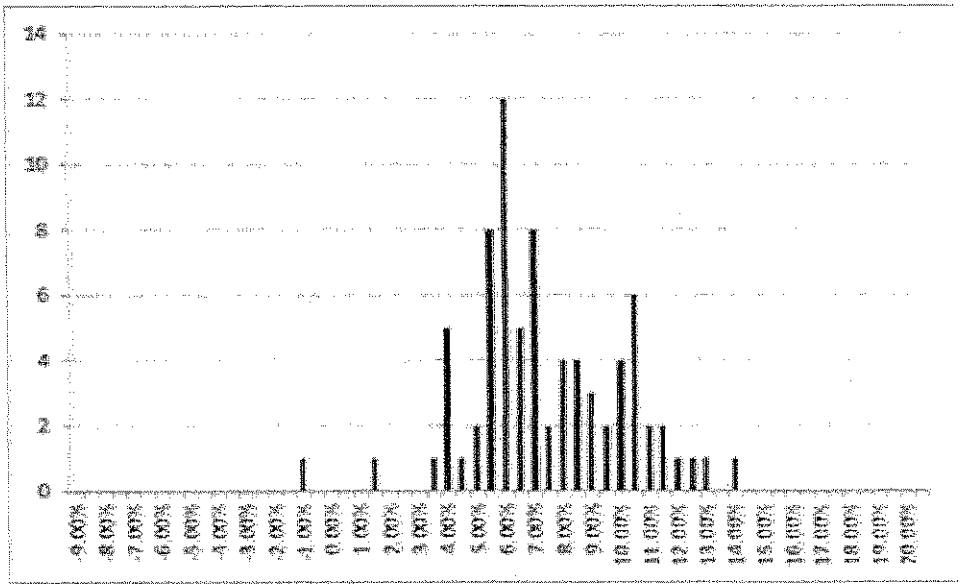
235 *See* Responsive Testimony and Exhibits of Christopher C. Walters, at 29, 52.

236 Tables V.B.1 and V.B.2 of the 2015 *Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds* includes "Low Cost" scenario assumptions of 3.10 percent and 2.70 percent for the GDP Price Index, and Real GDP Growth, respectively, over the period 2025 through 2085. Combined, those projections indicate nominal GDP growth of approximately 5.90 percent.

237 Morningstar, Ibbotson SBBI 2015 Classic Yearbook, Market Results for Stocks, Bonds, Bill and Inflation 1926-2014, at 200-201. Even if we were to consider the geometric mean, the historical capital appreciation rate exceeds Mr. Walter's 4.20 percent estimate; Mr. Walter notes on page 27 of his testimony that the long-term geometric average growth rate is 5.90 percent.

average five- and ten-year annual GDP growth rates from 1929 to 2015, an 87-year period. I then arranged that data in histograms to provide a perspective of how frequently various levels of GDP growth have occurred. As Chart 13 demonstrates, average annual GDP growth as low as 4.20 percent has been observed very infrequently. In fact, average annual GDP growth *exceeded* 4.20 percent in 68 of 77 ten-year periods.

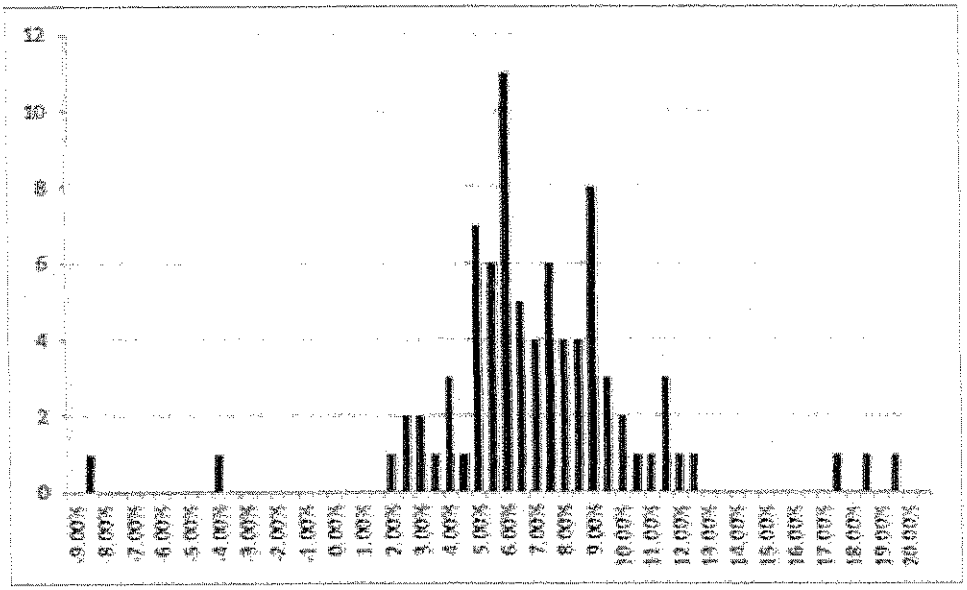
Chart 13: Average Annual GDP Growth Measured over Ten-Year Periods[238]



I also calculated average GDP growth over five year periods. In that case, average annual GDP growth rate was greater than 4.20 percent in 71 of 82 periods (*see* Chart 14).

238 Source: Bureau of Economic Analysis.

Chart 14: Average Annual GDP Growth Measured over Five-Year Periods[239]



Q. Have you performed an additional Multi-Stage DCF analysis in response to Mr. Walters' criticism of your long-term growth rate assumption?

A. Yes. I performed a Multi-Stage DCF analysis in which the terminal value is based on the proxy group average P/E ratio of 18.97. The results of that analysis are reported in table 9 (*see also* Exhibit RBH-3R) and confirm the reasonableness of my original DCF analysis.

Q. What is your response to Mr. Walters' assertion that your payout ratio assumption is "unreasonable"?

A. Mr. Walters argues that there is "no reason" to expect the dividend payout ratio of the proxy group to increase or change between growth stages of the model.[240] However, as noted in my Direct Testimony there are several reasons why management may adjust dividend payments in the near term, such as increases or decreases in expected capital

239 *Ibid.*
240 Responsive Testimony and Exhibits of Christopher C. Walters, at 53.

spending.[241] Over the long term, it is reasonable to assume that payout ratios will converge to the industry average; that is, the analysis assumes that short-term trends in the payout ratio will not continue in perpetuity. As discussed in my response to Mr. Solomon above, that assumption is consistent with the target payout ratios provided by proxy group companies in their investor relations presentations.

Q. Please summarize Mr. Walters' criticisms of your CAPM analysis.

A. Mr. Walters' concern with my CAPM analysis lies primarily with my Market Risk Premium estimates.[242] In particular, Mr. Walters states that "virtually all historical data shows that Mr. Hevert's 13.22% and 12.65% projected returns on the market are excessive."[243] Mr. Walters is incorrect. My market return estimates are consistent with Mr. Parcell's Comparable Earnings analysis as noted below.[244] In fact, the 12.65 percent and 13.22 percent estimates represent the 48th percentile of the actual returns observed from 1926 to 2014. In other words, of the 89 annual observations, 46 were 12.65 percent or higher.[245] Moreover, given the historical volatility in market returns (as noted by Morningstar, the long-term standard deviation is 20.07 percent), my total return estimates are statistically indistinguishable from the long-term arithmetic average of 12.10 percent.[246]

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241 Direct Testimony of Robert B. Hevert, at 24.
242 Responsive Testimony and Exhibits of Christopher C. Walters, at 55.
243 *Ibid.*, at 57.
244 *See* Direct Testimony of David C. Parcell, at 29, Exhibit DCP-1, Schedule 16.
245 *See* Morningstar, Inc., 2015 Ibbotson Stocks, Bonds, Bills and Inflation Classic Yearbook, at 91; Exhibit RBH-27R.
246 *Ibid.* Even if we were to look at the standard error, my estimate is well within one standard error of the long-term average.

Mr. Walters further asserts that the Market Risk Premia estimated from my projected market returns are "inflated and not reliable."[247] As discussed in my response to Mr. Solomon, I performed an analysis of annual Market Risk Premia reported by Morningstar, and produced a histogram of the observations (recall that Mr. Walters includes historical data among the methods he uses to estimate the Market Risk Premium). The results of that analysis demonstrate that MRPs equivalent to my estimate will occur approximately half of the time. Mr. Walters' estimates of 6.00 percent and 8.00 percent, however, occurred quite infrequently.

Q. Please summarize Mr. Walters' criticisms of your Bond Yield Plus Risk Premium analysis.

A. Mr. Walters' concern with my Bond Yield Plus Risk Premium analysis is my "contention" of a "simplistic inverse relationship" between the Equity Risk Premium and interest rates is not supported by academic research.[248] Mr. Walters further argues that the relevant factor explaining changes in the Equity Risk Premiums is the change to equity risk relative to debt risk, not changes in interest rates, alone. He concludes that my analysis ignores such risk differentials.

Q. What is your response to Mr. Walters' critiques?

A. First, regarding the inverse relationship between the Equity Risk Premium and interest rates, in my Direct Testimony I cited several published studies that support my findings.[249] Moreover, as explained above, Mr. Walters' own data clearly demonstrate

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247 Responsive Testimony and Exhibits of Christopher C. Walters, at 56.
248 *Ibid.*, at 58.
249 Direct Testimony of Robert B. Hevert, at 33.

that the Equity Risk Premium moves inversely to interest rates (both Treasury Yields and Utility Bond Yields). Mr. Walters may disagree with the premise, but the empirical results are conclusive, even when based on his data.

Q. Did you perform any additional analyses to address Mr. Walters' concern regarding the effect of expected market volatility and other interest rate environments on your results?

A. Yes, I did. Although for the reasons discussed above I continue to believe the model is properly specified, I performed an additional analysis to specifically include the effect of equity market volatility and incremental changes in interest rates. The results of those analyses are discussed in my response to Mr. Solomon. In both instances, the statistically significant inverse relationship between Treasury yields and the Risk Premium remains, and the resulting ROE estimates are generally consistent with those of my original Bond Yield Plus Risk Premium analysis.

V. RESPONSE TO THE TESTIMONY OF MR. PARCELL

Q. Please provide a brief summary of Mr. Parcell's direct testimony and recommendations.

A. Mr. Parcell applies three models to estimate the Company's Cost of Equity: (1) the Constant Growth DCF model; (2) the CAPM; and (3) the Comparable Earnings Model ("CEM"). To establish his recommendation, Mr. Parcell excludes his CAPM results, which range from 6.70 percent to 7.00 percent, and defines his ROE range (8.85 percent

to 9.50 percent) by reference to the mid-point of his respective DCF and CEM estimates.[250]

Q. What are the specific areas in which you disagree with Mr. Parcell's analyses and recommendations?

A. The principal areas in which I disagree with Mr. Parcell include: (1) the growth rates used in his Constant Growth DCF analysis; (2) the application of the CAPM; and (3) Mr. Parcell's application of the CEM.

A. DCF Growth Rates

Q. Please summarize the growth rates that Mr. Parcell relies on in his Constant Growth DCF analysis.

A. Mr. Parcell considers five measures of growth: (1) historical, five year average earnings retention growth rates from Value Line for 2011-2015; (2) five-year average historical growth in EPS, DPS and BVPS from Value Line; (3) projected earnings retention growth for 2016, 2017, and 2018-2020 from Value Line; (4) projected EPS, DPS and BVPS growth rates from Value Line for years 2012-2014 to 2018-2020; and (5) five-year projections of EPS growth as reported by First Call.[251]

Q. Please summarize the differences between you and Mr. Parcell regarding the growth rates in your respective Constant Growth DCF analyses.

A. As discussed throughout my Direct and Rebuttal Testimonies, it is my view that analysts' earnings projections are the relevant measure of growth. Mr. Parcell's analysis, on the

250 *See* Direct Testimony and Exhibits of David C. Parcell at 2-3, 30-31.
251 *Ibid.*, at 23.

other hand, includes both historical and projected growth in DPS, BVPS, and EPS, as well as historical and projected measures of Sustainable Growth. For the reasons discussed below, I disagree with Mr. Parcell's use of historical data, and with his use of projected DPS, BVPS, and Sustainable Growth rates.

Q. Why do you disagree with Mr. Parcell's position that dividend or book value growth rates are appropriate inputs to the Constant Growth DCF model?

A. As discussed in my response to Mr. Garrett, over the long term, dividend growth can only be sustained by earnings growth.[252] The use of earnings growth estimates is also supported by the fundamental assumptions underlying the Constant Growth DCF model, which state that earnings, dividends and stock prices all grow at the same rate, and that the payout, M/B, and P/E ratios all remain constant, in perpetuity. Further, Value Line is the only service that provides DPS and BVPS growth rates. Whereas services such as Zacks and First Call survey multiple analysts to arrive at their consensus growth estimates, Value Line projections reflect the view of a single analyst. Because they reflect multiple perspectives, consensus estimates are less likely to be biased in one direction or another than a projection that reflects the views of a single analyst.

Q. Does Mr. Parcell agree with the terminal growth rate in your Multi-Stage DCF analysis?

A. No. Mr. Parcell states that there is a disconnect in my use of the long-term historical average GDP to calculate the terminal growth rate and the use of projected EPS growth

252 *See, also,* Direct Testimony of Robert B. Hevert, at 19-20.

rates in the Constant Growth DCF model.[253] As explained in response to Mr. Solomon, the long-term growth rate reflects growth expectations beginning ten years in the future. It is an entirely different application than the use of analysts' growth rate projections in the Constant Growth DCF model, which call for projections at the present. Because there are no consensus forecasts that begin in ten years, it is reasonable to assume that real growth will revert to its long-term average over time. Despite his arguments against the long-term historical average real GDP growth rate, Mr. Parcell did not provide any analyses to suggest that real GDP growth is serially correlated, and not mean reverting.[254]

In addition, Mr. Parcell cites to projections from the SSA[255] and EIA and suggests that terminal growth rate in my Multi-Stage DCF analysis is too high.[256] As discussed in my response to Mr. Solomon and Mr. Walters, within the context of authorized returns, the long-term growth rate in my Multi-Stage DCF analysis is reasonable. As stated in my response to Mr. Solomon, assuming Mr. Solomon's proxy group average dividend yield of 3.77 percent, the 2012-2015 average reported authorized ROE of 9.96 percent provided in Exhibit RBH-22R implies an expected long-term growth rate of 6.08 percent, which is 86 basis points above my long-term growth rate of 5.22 percent. From that

253 Direct Testimony and Exhibits of David C. Parcell, at 36-37.

254 Serial correlation refers to time-series studies when the errors associated with a given time period are related to errors in future time periods. When time series data are not serially correlated, the arithmetic average represents a reasonable estimate of future results. The geometric average real growth rate used in my calculation is somewhat lower than the arithmetic average and, therefore, is somewhat conservative.

255 Tables V.B.1 and V.B.2 of the 2015 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND FEDERAL DISABILITY INSURANCE TRUST FUNDS includes "Low Cost" scenario assumptions of 3.10% and 2.70% for the GDP Price Index, and Real GDP Growth, respectively, over the period 2025 through 2085. Combined, those projections indicate nominal GDP growth of approximately 5.90%.

256 *See* Direct Testimony and Exhibits of David C. Parcell, at 36-38.

perspective as well, the terminal growth rate of 5.22 percent is a reasonable measure of nominal GDP growth as of the terminal period.

B. Application of the CAPM

Q. Please summarize Mr. Parcell's CAPM analysis.

A. Mr. Parcell's CAPM analyses rely on the three-month average yield on 20-year Treasury securities from December 2015 through February 2016 (as the measure of the risk-free rate), Value Line Beta coefficients, and three estimates of the MRP including: (1) the average difference between the earned equity return on the S&P 500 less the 20-year Treasury yield from 1978 to 2014; (2) the arithmetic average difference between the total return on the S&P 500 and the total return on long-term government bonds (20-year Treasury securities based on data from Morningstar); and (3) the geometric average difference between the total return on the S&P 500 and the total return on long-term government bonds, also based on data from Morningstar. Mr. Parcell concludes that the Cost of Equity for OG&E, based on his CAPM results, is between 6.70 percent and 7.00 percent.[257]

Q. Do you agree with Mr. Parcell's application of the CAPM?

A. No, I do not. In particular, I disagree with Mr. Parcell's assumption regarding the risk-free rate component of the model, and with his estimated Market Risk Premium.

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257 *See* Direct Testimony and Exhibits of David C. Parcell, at 25-27.

Q. Does Mr. Parcell rely on his CAPM analysis in determining his recommended ROE?

A. No, he does not. It appears that Mr. Parcell does not believe his CAPM results provide a reasonable estimate of OG&E's ROE. In that regard I agree with Mr. Parcell. As discussed below in detail, however, adjusting his analysis produces results that are far more reasonable and fairly consistent with those in my updated CAPM analyses.[258]

Q. Why is the 30-year Treasury yield the most appropriate measure of the risk-free rate component of the CAPM?

A. The principal difference between Mr. Parcell's estimates of the risk-free rate and mine is the term of the assumed Treasury security. The maturity of the risk-free security should approximate the life of the underlying investment. Since the 30-year Treasury bond is the longest duration risk-free security, it is the appropriate security for that purpose. Since OG&E's assets are long-lived and as such it is appropriate to use yields on long-term Treasury bonds as the risk-free rate component of the CAPM.

Q. Does Mr. Parcell agree with your selection of the risk-free rate in your CAPM and Bond Yield Plus Risk Premium analyses?

A. No, he does not. Mr. Parcell states the current yield represents a better measure of the risk-free rate than the forward-looking yield in my Direct Testimony.[259]

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258 *See* Exhibit RBH-28R.

259 Direct Testimony and Exhibits of David C. Parcell, at 39.

Q. Do you agree with Mr. Parcell in that regard?

A. No, I do not. As Mr. Parcell notes on page 5 of his direct testimony, "the cost of capital is an opportunity cost and is prospective-looking, which dictates that it must be estimated."[260] Mr. Parcell also uses several measures of expected growth in his DCF analyses. The use of projected yields in my CAPM and Risk Premium analyses are consistent with that approach.

Q. Please summarize Mr. Parcell's critique of the *ex-ante* MRP estimates included in your CAPM analysis.

A. Mr. Parcell states that the "use of U.S. Treasury securities as the baseline for the market risk premium is improper at this time due to the effects of the Federal Reserve's quantitative easing on U.S. Treasury yields."[261]

Q. What is your response to Mr. Parcell on that point?

A. If Mr. Parcell is concerned about the use of current long-term Treasury yields due to the lingering effects of the Federal Reserve's Quantitative Easing program, it would be appropriate to consider forward-looking measures of the risk-free rate, as I have done in my CAPM analysis. In addition to the current 30-day average of the 30-year Treasury yield, I have also incorporated a near-term projection of the 30-year Treasury yield from *Blue Chip Financial Forecasts.* And, if Mr. Parcell believes it reasonable to use the long-term historical average market return in his MRP calculation, it also would be reasonable to consider the long-term historical risk-free rate (*i.e.,* the 5.10 percent arithmetic average income-only return on long-term bonds from 1926-2014 reported by

260 *Ibid.*, at 5.
261 *Ibid.*, at 39.

Morningstar). Combining that risk-free rate with the 12.10 percent arithmetic average historical market return used by Mr. Parcell and the 0.79 average Beta coefficient for Mr. Parcell's proxy group (*see* Exhibit DCP-1, Schedule 14) produces a CAPM result of 10.63 percent.[262]

Q. Do you agree with Mr. Parcell's use of the total return on long-term government bonds in his calculation of the historical MRP?

A. No, I do not. As discussed in my response to Mr. Garrett, the MRP should reflect the difference between the arithmetic average return on large company stocks and the income-only return on long-term government bonds.[263] Mr. Parcell, however, relies on the difference between the total return on those two asset classes, implying an MRP of 4.40 percent to 6.00 percent in 2014.[264]

Q. Do you agree with Mr. Parcell's use of the geometric mean risk premiums to derive his MRP estimate of 4.40 percent?

A. No. As also discussed in my response to Mr. Garrett, the important distinction between the arithmetic and geometric averages is that the arithmetic mean assumes that each periodic return is an independent observation and, therefore, incorporates uncertainty into the calculation of the long-term average. The geometric mean, by contrast, is a backward-looking calculation that essentially equates a beginning value to an ending value over a specific period of time. Geometric averages, therefore, provide a

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262 5.10% + 0.79 x (12.10% - 5.10%) = 10.63%. Note, for the reasons discussed in my response to Mr. Garrett, I believe *ex-ante* CAPM analyses better reflect current market return requirements.

263 Ibbotson Classic Yearbook, at 91.

264 *See* Direct Testimony and Exhibits of David C. Parcell, at 26-27.

standardized basis of review of historical performance across investments or investment managers; they do not, however, reflect forward-looking uncertainty.

Q. Do you agree with Mr. Parcell's calculation of the MRP based on the historical earned Return on Common Equity?

A. No, I do not. First, it is difficult to reconcile the data in his analysis with actual market experience. For example, Mr. Parcell's analysis assumes that in 2008, investors earned a positive return of 3.03 percent.[265] In 2008, the market actually lost 37.00 percent of its value; only the year 1931 experienced a greater loss.[266]

Mr. Parcell's analysis also ignores the well-established inverse relationship between the MRP and interest rates.[267] As demonstrated in Exhibit RBH-28R, the data contained in Mr. Parcell's Exhibit DCP-1, Schedule 13 produce a statistically significant negative relationship between the MRP and the 20-year Treasury yield. Consequently, if Mr. Parcell chooses to use the current 20-year Treasury bond yield, which remains below the 7.00 percent average over that time, he should recognize that the MRP would be considerably higher than 5.75 percent.[268] Exhibit RBH-28R further demonstrates that taking into consideration the inverse relationship between the MRP and interest rates (via both a simple linear regression analysis and a semi-log regression analysis) suggests an

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265 *See* Direct Testimony and Exhibits of David C. Parcell, at Exhibit DCP-1, Schedule 13.

266 Morningstar, Inc., 2015 Ibbotson Classic Yearbook, Table A-1 at 196-197.

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

268 *See* Direct Testimony and Exhibits of David C. Parcell, at 26.

MRP of 11.13 percent to 12.49 percent, respectively, using Mr. Parcell's 2.43 percent risk-free rate. Those are well above the 5.75 percent MRP included in Mr. Parcell's 6.70 percent to 7.00 percent CAPM range, and produce CAPM estimates of 10.89 percent to 11.93 percent (based on my proxy group).

Q. What would be the result if you applied your average Market Risk Premium estimate to Mr. Parcell's CAPM analysis?

A. Keeping all else constant, the average CAPM results are 10.60 percent and 10.30 percent for Mr. Parcell's and my proxy group, respectively.[269] The average of the two is 10.45 percent.

C. Comparable Earnings Method

Q. Please describe Mr. Parcell's application of the CEM analysis.

A. Mr. Parcell's Comparable Earnings analysis examines realized Return on Common Equity ("ROCE") for several groups of companies (our respective proxy groups, and the S&P 500 companies) and evaluates investor acceptance of those returns by reference to the resulting M/B ratio.[270] Mr. Parcell reasons that his results indicate historical returns of 9.10 percent to 9.60 percent have been adequate to produce M/B ratios of 135.00 percent to 148.00 percent. His review of S&P 500 companies, which Mr. Parcell considers to be representative of the competitive sector of the economy, indicate average earned returns from 12.40 percent to 13.60 percent[271], with M/B ratios ranging from

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269 2.43% +(.79 x 10.35%) = 10.60%. 2.43% + (.76 x 10.35%) = 10.30%. *See*, Exhibit DCP-1, Schedule 14.

270 *See* Direct Testimony and Exhibits of David C. Parcell, at 27-30.

271 As noted in my response to Mr. Walters, Mr. Parcell's earned returns for S&P 500 are consistent with the projected returns in my CAPM analysis.

220.00 percent to 275.00 percent.[272] Lastly, Mr. Parcell compares the risk levels of the utility industry with those of the competitive sector, by considering such metrics as the Value Line Safety Rank, Value Line Beta Coefficient, Value Line Financial Strength, and S&P Stock Rank.[273]

Based on his Comparable Earnings analysis, Mr. Parcell concludes that "the cost of equity for the proxy utilities is no more than 9.0 percent to 10.0 percent."[274] Mr. Parcell further concludes that "the fact that M/B substantially exceed 100 percent indicates that historic and prospective ROEs of over 10 percent reflect earnings levels that are well above the cost of equity for those regulated companies."[275]

Q. Do you agree with Mr. Parcell's Comparable Earnings analysis?

A. No, I do not. With respect to the structure of his analysis, I disagree with Mr. Parcell's assumption that the earned ROCE (the "Return on Average Common Equity" presented in Exhibit DCP-1, Schedule 15, page 1 of 2) is the sole determinant of the M/B ratio. Even if that assumption were correct, Mr. Parcell provides no empirical basis regarding the relationship between M/B ratios and the earned ROCE. Nor, for that matter, does Mr. Parcell provide an empirical basis for his determination regarding the appropriate M/B ratio. Rather, Mr. Parcell suggests that M/B ratios of 130.00 percent and greater indicate excessive earnings levels, but provides no evidence to support that position.[276] Because Mr. Parcell's analysis is highly subjective, his assumptions and conclusions (as

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272 *See* Direct Testimony and Exhibits of David C. Parcell, at 29.
273 *Ibid.*, Exhibit DCP-1, Schedule 17.
274 *Ibid.*, at 30.
275 *Ibid.*
276 *Ibid.*

presented) cannot be replicated, verified, or falsified. Given that the CEM analysis defines the upper end of Mr. Parcell's ROE range, the subjective nature of his conclusions have a significant effect on his ROE recommendation (*i.e.,* 9.00 percent).

Q. As a practical matter, would a rational investor invest in utility stocks if they believed that regulatory commissions would set rates in an effort to move the M/B ratio toward unity?

A. No. Mr. Parcell suggests that "[o]ne objective of a fair cost of equity is the maintenance of stock prices at or above book value."[277] If an investor purchased a utility stock at the long-term average M/B ratio of approximately 138.00 percent (*i.e.,* Mr. Parcell's proxy group average from 2002-2015 as calculated based on the annual median results for Mr. Parcell's proxy group in Exhibit DCP-1, Schedule 15), that investor would incur a loss of approximately 28.00 percent if the M/B ratio fell to 100.00 percent or 20.00 percent if the M/B ratio fell to 111.00 percent (*i.e.,* a level that presumably is not "significantly above one").[278] Such a result would certainly impede the ability to attract the capital required to support its operations.

That example points out a substantial shortcoming of Mr. Parcell's analysis: Although he suggests that the current level of M/B ratios indicates returns that exceed the Cost of Equity, he fails to identify the ratio that would set the required Return on Equity equal to the earned Return on Common Equity. It is not surprising that Mr. Parcell has not done

277 *Ibid.*, at 28.

278 Relying on the median 2015 M/B ratio for Mr. Parcell's proxy group in 2015 of 157.00 percent, the resulting loss in value would be approximately 36.00 percent and 29.00 percent based on a decline in the M/B ratio to 100.00 percent and 111.00, respectively. As discussed below, 111.00 percent reflects a 10.00 percent factor for dilution and flotation costs.

so since, as discussed below, there are a number of variables beyond the earned ROE that affect the M/B ratio. Because the data presented by Mr. Parcell focuses on only one of those factors (*i.e.*, the earned return on equity), they produce empirical results that are highly inconsistent with authorized returns in other jurisdictions.

Lastly, like the P/E ratio, the M/B ratio is used in practice as a measure of relative value. That is, it is used by investors to assess the market value of a given company's equity relative to the value of other, comparable companies. Mr. Parcell's approach, on the other hand, looks at the M/B ratio as a measure of absolute value. In light of the theoretical and practical concerns discussed above, I disagree with Mr. Parcell's position that M/B ratios above 100.00 percent indicate that authorized ROEs exceed investors' return requirements.

Q. How does Mr. Parcell reflect the relationship between M/B ratios and the Return on Common Equity in his CEM analysis?

A. Mr. Parcell first compares the historical earned returns on book equity with historical M/B ratios for our respective proxy groups,[279] and he concludes that historical earned returns on book equity support M/B ratios from 135.00 percent to 148.00 percent.[280] Mr. Parcell then considers the historical earned returns on book equity and concurrent M/B ratios for the S&P 500 (for the years 2002 through 2014), together with a comparison of the risk levels for both the S&P 500 and our respective proxy groups. Based on those observations, Mr. Parcell concludes that the "competitive sector" (*i.e.*, the S&P 500) is

279 *See* Direct Testimony and Exhibits of David C. Parcell, at 28.
280 *Ibid.*, at 29.

more risky than the proxy companies and has historical earned returns and M/B ratios that exceed those of the proxy groups.[281]

Q. Did Mr. Parcell consider variables other than the earned return on equity in arriving at his Cost of Equity estimate?

A. No. Mr. Parcell considers differences in the level of risk between the proxy group and the S&P 500 to arrive at his conclusion that unregulated companies are relatively more risky than regulated companies. That point is not in dispute. Beyond that, Mr. Parcell does not consider any other variables that may affect M/B ratios.

Q. What are the implications of his failure to do so?

A. By failing to consider other variables, Mr. Parcell's CEM analysis assumes that the only factor that has a "direct relationship" to the M/B ratio is the earned ROE.[282] If that were the case, the relationship between earned returns and the M/B ratio could be estimated via linear regression analysis. Using the data contained in Mr. Parcell's Exhibit DCP-1, Schedule 15, I developed a simple linear regression, in which the M/B ratio is the dependent variable, and the ROCE is the sole explanatory variable.[283]

Q. Please briefly describe how your regression analysis is structured.

A. My first analysis is focused on the average equity returns and M/B ratios presented in Mr. Parcell's Exhibit DCP-1, Schedule 15.[284] For Mr. Parcell's proxy group, I performed a linear regression analysis in which the M/B ratio was modeled as a function of the

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281 *Ibid.*, at 29-30.
282 *Ibid.*, at 30.
283 *See* Exhibit RBH-29R.
284 Because Mr. Parcell did not provide projected Market-to-Book ratios, my analysis necessarily was based on historical data.

ROCE. In that case, the regression equation was statistically significant at the 95.00 percent confidence level. I then used the regression coefficients to determine the ROCE that would be associated with various levels of M/B ratios.

Q. On what basis did you select the range of M/B ratios?

A. Although Mr. Parcell did not specify what he would consider to be the optimal ratio, he did note that an objective of setting the ROE would be to "attract new equity capital without dilution."[285] Since dilution would be a function of both equity issuance costs and the market pressure associated with new shares, the M/B ratio should exceed 100.00 percent in an amount sufficient to reflect those costs. Assuming a dilution cost of 10.00 percent (reflecting both direct costs and market pressure) would be quite reasonable, if not conservative.[286] Based on a 10.00 percent dilution rate, the adjusted M/B ratio would be approximately 111.00 percent.[287]

Using the regression coefficients (*see* Exhibit RBH-29R), I then calculated the ROE that would correspond to an M/B ratio of 111.00 percent for my proxy group. The resulting ROE for my proxy group is approximately 6.32 percent, which is well below any reasonable measure and is only 123 basis points above the Baa-rated utility bond yield (in 2015) presented in Mr. Parcell's Exhibit DCP-1, Schedule 2, page 4. As such, those results have no relevance to the determination of OG&E's Cost of Equity.

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285 Direct Testimony and Exhibits of David C. Parcell, at 28.
286 *See* Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 323-327.
287 Equals (1/(1-dilution costs)).

Q. Did you perform similar analyses to determine the M/B ratio that would be associated with OG&E's recommended ROE?

A. Yes, I did. Based on my proxy group, I calculated the M/B ratios that correspond to an ROE of 10.25 percent. Using the data in Exhibit DCP-1, Schedule 15, I then calculated the percentile in which the implied M/B ratio fell within the historical observations. The results of those analyses are presented in Table 8 (below).

Table 8: Implied Market-to-Book Ratios at 10.25 Percent ROE[288]

Proxy Group	Implied Market-to-Book Ratio	Relative Rank (Percentile)	Implied ROE
Parcell Proxy Group	148.71%	60.30%	10.25%
Hevert Proxy Group	150.00%	65.30%	10.25%

Those results indicate that, even if we assume that the only factor affecting the M/B ratio is the ROE, the Company's requested ROE would produce an M/B ratio well within the range of its peers.

Q. What are your conclusions regarding Mr. Parcell's CEM results?

A. My principal conclusion is that Mr. Parcell's CEM results under-estimates OG&E's Cost of Equity. Based on the data presented in Exhibit DCP-1, Schedule 15, the lower end of my recommended range (*i.e.*, 10.25 percent to 10.75 percent) is a more reasonable estimate.

[288] *See* Exhibit RBH-29R.

VI. UPDATED AND REVISED ANALYSES

Q. Have you updated the analyses presented in your Direct Testimony?

A. Yes. I have updated the Constant Growth DCF, Multi-Stage DCF, CAPM, and Risk Premium analyses presented in my Direct Testimony with data as of February 29, 2016.

Q. Please summarize your updated Constant Growth DCF and Multi-Stage DCF analyses.

A. I have continued to use projected earnings growth rates from Zacks, First Call, and Value Line in developing my Constant Growth and Multi-Stage DCF models. The results are shown in Table 9 (below); *see also*, Exhibit RBH-1R, to Exhibit RBH-3R.

Table 9: Discounted Cash Flow Model Results

	Low Growth Rate	**Mean Growth Rate**	**High Growth Rate**
Mean Constant Growth DCF Results			
30-Day Average	8.61%	9.27%	9.85%
90-Day Average	8.75%	9.40%	9.98%
180-Day Average	8.89%	9.54%	10.12%
Mean Multi-Stage DCF Results			
	Low Growth Rate	**Mean Growth Rate**	**High Growth Rate**
30-Day Average	9.33%	9.52%	9.70%
90-Day Average	9.48%	9.67%	9.86%
180-Day Average	9.63%	9.83%	10.02%
Mean Multi-Stage DCF Results – Terminal P/E at 18.97			
	Low Growth Rate	**Mean Growth Rate**	**High Growth Rate**
30-Day Average	9.67%	10.12%	10.53%
90-Day Average	10.03%	10.48%	10.89%
180-Day Average	10.39%	10.84%	11.25%

Q. Please summarize your updated CAPM analysis.

A. I have continued to use the same inputs used in my Direct Testimony, updated through February 29, 2016. For the risk-free rate, I continue to refer alternately to (1) the 30-day average of the 30-year Treasury yield; and (2) a consensus forecast of the average 30-year Treasury yield for the coming six quarters. Likewise, I continue to rely on published Beta coefficients from Bloomberg and Value Line, and the *ex-ante* market risk premia described in my Direct Testimony (*i.e.*, the expected return on the S&P 500 Index less the current 30-year Treasury yield).

Q. What are your updated CAPM results?

A. As shown in Table 10 (below; see also, Exhibit RBH-6R), based upon updated market information, my CAPM analyses produce a range of ROE estimates from 8.44 percent to 11.66 percent.

Table 10: CAPM Results

	Bloomberg Derived Market Risk Premium	**Value Line Derived Market Risk Premium**
Bloomberg Beta Coefficient		
Current 30-Year Treasury (2.68%)	9.01%	8.44%
Near Term Projected 30-Year Treasury (3.35%)	9.68%	9.11%
Value Line Beta Coefficient		
Current 30-Year Treasury (2.68%)	10.99%	10.26%
Near Term Projected 30-Year Treasury (3.35%)	11.66%	10.93%

Q. Please summarize your updated Risk Premium analysis.

A. My updated Risk Premium analysis includes authorized ROEs as reported by Regulatory Research Associates through February 29, 2016. For the purpose of calculating the expected risk premium and ROE, I have used the current and projected 30-year Treasury yield. As shown in Table 11 (below; see also, Exhibit RBH-7R), my updated results range from 10.04 percent to 10.47 percent.

Table 11: Summary of Bond Yield Plus Risk Premium Results

Assumed Treasury Yield	Implied ROE
Current 30-Year Treasury (2.68%)	10.04%
Near Term Projected 30-Year Treasury (3.35%)	10.08%
Long Term Projected 30-Year Treasury (4.65%)	10.47%

Q. Please now summarize the effect of reasonable, if not conservative, changes to the Opposing ROE Witnesses' analyses.

A. As shown in Table 12, making changes to only a portion of the Opposing ROE Witnesses' estimates increases their estimates to a far more reasonable range. As Table 12 indicates, even including certain of their results, the average ROE estimate is in the range of 9.78 percent to 9.83 percent, an increase of approximately 55 basis points over the Opposing ROE Witnesses' recommended ROEs. Although I continue to disagree with several of the Opposing ROE Witnesses' approaches, making only a few reasonable corrections and modifications to certain fundamentally flawed assumptions in their analyses increases the estimates to within the range of recently authorized returns for vertically integrated electric utilities.

Table 12: Summary of Revised Analyses[289]

REVISION	RESULT
Mr. Garrett's Analyses:	
Revised CAPM Estimate	10.05%
Revised DCF Estimate	9.60%
Average	9.83%
Mr. Walters' Analyses:	
DCF Estimate (Consensus Growth Rates Only)	9.23%
CAPM Estimate (8.00 percent Market Risk Premium)	9.64%
Revised Risk Premium Estimate	10.53%
Average	9.80%
Mr. Parcell's Analyses:	
DCF Estimate (First Call EPS Growth)	9.10%
Revised CAPM Estimate	10.45%
Average	9.78%

VII. CONCLUSION AND RECOMMENDATION

Q. What are your overall conclusions and recommendations?

A. Based on the analyses discussed throughout my Rebuttal Testimony, I conclude that the reasonable range of ROE estimates is from 10.25 percent to 10.75 percent. The results of the updated DCF, CAPM, and Bond Yield Plus Risk Premium analyses, along with my analyses of capital market data, authorized returns in other regulatory jurisdictions, and assessment of rating agency concerns and criteria support the reasonableness of my range of ROE estimates and my recommendation. Lastly, I conclude that OG&E's proposed capital structure, which consists of 53.31 percent common equity and 46.69 percent long-term debt, is reasonable.

[289] *See* Exhibits RBH-30R - 31R.

Q. Does this conclude your Rebuttal Testimony?

A. Yes, it does.

Constant Growth Discounted Cash Flow Model
30 Day Average Stock Price

Company	Ticker	[1] Annualized Dividend	[2] Average Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks Earnings Growth	[6] First Call Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.08	$52.33	3.98%	4.10%	6.00%	6.00%	6.50%	6.17%	10.09%	10.26%	10.60%
Alliant Energy Corporation	LNT	$2.35	$66.08	3.56%	3.67%	6.10%	6.65%	6.00%	6.25%	9.66%	9.92%	10.32%
Ameren Corporation	AEE	$1.70	$45.26	3.76%	3.87%	6.10%	5.60%	7.00%	6.23%	9.46%	10.11%	10.89%
American Electric Power Company, Inc.	AEP	$2.24	$61.04	3.67%	3.76%	4.80%	4.55%	5.00%	4.78%	8.30%	8.54%	8.76%
Avista Corporation	AVA	$1.37	$37.05	3.70%	3.79%	5.00%	5.00%	5.00%	5.00%	8.79%	8.79%	8.79%
CMS Energy Corporation	CMS	$1.24	$38.68	3.21%	3.31%	6.40%	7.21%	5.50%	6.37%	8.79%	9.68%	10.53%
DTE Energy Company	DTE	$2.92	$84.19	3.47%	3.56%	5.40%	4.91%	5.00%	5.10%	8.46%	8.66%	8.96%
Great Plains Energy Inc.	GXP	$1.05	$28.25	3.72%	3.83%	5.80%	6.87%	5.00%	5.89%	8.81%	9.72%	10.71%
IDACORP, Inc.	IDA	$2.04	$69.52	2.93%	2.98%	4.00%	4.00%	1.00%	3.00%	3.95%	5.98%	6.99%
NorthWestern Corporation	NWE	$2.00	$56.66	3.53%	3.63%	5.00%	5.58%	6.50%	5.69%	8.62%	9.32%	10.14%
Otter Tail Corporation	OTTR	$1.25	$27.22	4.59%	4.76%	NA	6.00%	9.00%	7.50%	10.73%	12.26%	13.80%
Pinnacle West Capital Corporation	PNW	$2.50	$67.12	3.72%	3.80%	4.40%	4.14%	4.00%	4.18%	7.80%	7.98%	8.21%
PNM Resources, Inc.	PNM	$0.88	$31.50	2.79%	2.91%	7.70%	9.30%	9.00%	8.67%	10.60%	11.58%	12.22%
Portland General Electric Company	POR	$1.20	$38.45	3.12%	3.21%	5.80%	5.73%	6.00%	5.84%	8.94%	9.06%	9.21%
SCANA Corporation	SCG	$2.30	$63.78	3.61%	3.70%	5.30%	5.40%	4.50%	5.07%	8.19%	8.76%	9.10%
Westar Energy, Inc.	WR	$1.52	$43.93	3.46%	3.55%	3.60%	5.27%	6.00%	4.96%	7.12%	8.50%	9.56%
Xcel Energy Inc.	XEL	$1.36	$38.51	3.53%	3.62%	5.00%	4.84%	4.50%	4.78%	8.11%	8.40%	8.62%
PROXY GROUP MEAN				3.55%	3.65%	5.40%	5.71%	5.62%	5.62%	8.61%	9.27%	9.85%
PROXY GROUP MEDIAN				3.56%	3.67%	5.35%	5.58%	5.50%	5.69%	8.79%	9.06%	9.56%

Notes:
[1] Source: Bloomberg Professional
[2] Source: Bloomberg Professional, equals 30-trading day average as of February 29, 2016
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [8])
[5] Source: Zacks
[6] Source: Yahoo! Finance
[7] Source: Value Line
[8] Equals Average([5], [6], [7])
[9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Constant Growth Discounted Cash Flow Model
90 Day Average Stock Price

Company	Ticker	[1] Annualized Dividend	[2] Average Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks Earnings Growth	[6] First Call Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.08	$51.12	4.07%	4.19%	6.00%	6.00%	6.50%	6.17%	10.19%	10.36%	10.70%
Alliant Energy Corporation	LNT	$2.35	$62.43	3.76%	3.88%	6.10%	6.65%	6.00%	6.25%	9.88%	10.13%	10.54%
Ameren Corporation	AEE	$1.70	$44.05	3.86%	3.98%	6.10%	5.60%	7.00%	6.23%	9.57%	10.21%	10.99%
American Electric Power Company, Inc.	AEP	$2.24	$58.22	3.85%	3.94%	4.80%	4.55%	5.00%	4.78%	8.49%	8.72%	8.94%
Avista Corporation	AVA	$1.37	$35.37	3.87%	3.97%	5.00%	5.00%	5.00%	5.00%	8.97%	8.97%	8.97%
CMS Energy Corporation	CMS	$1.24	$36.68	3.38%	3.49%	6.40%	7.21%	5.50%	6.37%	8.97%	9.86%	10.71%
DTE Energy Company	DTE	$2.92	$81.77	3.57%	3.66%	5.40%	4.91%	5.00%	5.10%	8.57%	8.77%	9.07%
Great Plains Energy Inc.	GXP	$1.05	$27.45	3.83%	3.94%	5.80%	6.87%	5.00%	5.89%	8.92%	9.83%	10.83%
IDACORP, Inc.	IDA	$2.04	$68.22	2.99%	3.04%	4.00%	4.00%	1.00%	3.00%	4.01%	6.04%	7.05%
NorthWestern Corporation	NWE	$2.00	$55.01	3.64%	3.74%	5.00%	5.58%	6.50%	5.69%	8.73%	9.43%	10.25%
Otter Tail Corporation	OTTR	$1.25	$26.89	4.65%	4.82%	NA	6.00%	9.00%	7.50%	10.79%	12.32%	13.86%
Pinnacle West Capital Corporation	PNW	$2.50	$64.76	3.86%	3.94%	4.40%	4.14%	4.00%	4.18%	7.94%	8.12%	8.35%
PNM Resources, Inc.	PNM	$0.88	$29.89	2.94%	3.07%	7.70%	9.30%	9.00%	8.67%	10.76%	11.74%	12.38%
Portland General Electric Company	POR	$1.20	$37.25	3.22%	3.32%	5.80%	5.73%	6.00%	5.84%	9.04%	9.16%	9.32%
SCANA Corporation	SCG	$2.30	$60.87	3.78%	3.87%	5.30%	5.40%	4.50%	5.07%	8.36%	8.94%	9.28%
Westar Energy, Inc.	WR	$1.52	$42.28	3.59%	3.68%	3.60%	5.27%	6.00%	4.96%	7.26%	8.64%	9.70%
Xcel Energy Inc.	XEL	$1.36	$36.71	3.70%	3.79%	5.00%	4.84%	4.50%	4.78%	8.29%	8.57%	8.80%
PROXY GROUP MEAN				3.68%	3.78%	5.40%	5.71%	5.62%	5.62%	8.75%	9.40%	9.98%
PROXY GROUP MEDIAN				3.76%	3.87%	5.35%	5.58%	5.50%	5.69%	8.92%	9.16%	9.70%

Notes:
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[5] Source: Zacks
[6] Source: Yahoo! Finance
[7] Source: Value Line
[8] Equals Average([5], [6], [7])
[9] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7])) + Minimum([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7])) + Maximum([5], [6], [7])

Constant Growth Discounted Cash Flow Model
180 Day Average Stock Price

Company	Ticker	[1] Annualized Dividend	[2] Average Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Zacks Earnings Growth	[6] First Call Earnings Growth	[7] Value Line Earnings Growth	[8] Average Earnings Growth	[9] Low ROE	[10] Mean ROE	[11] High ROE
ALLETE, Inc.	ALE	$2.08	$49.98	4.16%	4.29%	6.00%	6.00%	6.50%	6.17%	10.29%	10.46%	10.80%
Alliant Energy Corporation	LNT	$2.35	$60.63	3.88%	4.00%	6.10%	6.65%	6.00%	6.25%	9.99%	10.25%	10.65%
Ameren Corporation	AEE	$1.70	$42.20	4.03%	4.15%	6.10%	5.60%	7.00%	6.23%	9.74%	10.39%	11.17%
American Electric Power Company, Inc.	AEP	$2.24	$56.85	3.94%	4.03%	4.80%	4.55%	5.00%	4.78%	8.58%	8.82%	9.04%
Avista Corporation	AVA	$1.37	$33.71	4.06%	4.17%	5.00%	5.00%	5.00%	5.00%	9.17%	9.17%	9.17%
CMS Energy Corporation	CMS	$1.24	$35.23	3.52%	3.63%	6.40%	7.21%	5.50%	6.37%	9.12%	10.00%	10.86%
DTE Energy Company	DTE	$2.92	$80.11	3.65%	3.74%	5.40%	4.91%	5.00%	5.10%	8.64%	8.84%	9.14%
Great Plains Energy Inc.	GXP	$1.05	$26.57	3.95%	4.07%	5.80%	6.87%	5.00%	5.89%	9.05%	9.96%	10.96%
IDACORP, Inc.	IDA	$2.04	$64.44	3.17%	3.21%	4.00%	4.00%	1.00%	3.00%	4.18%	6.21%	7.23%
NorthWestern Corporation	NWE	$2.00	$53.60	3.73%	3.84%	5.00%	5.58%	6.50%	5.69%	8.82%	9.53%	10.35%
Otter Tail Corporation	OTTR	$1.25	$26.76	4.67%	4.85%	NA	6.00%	9.00%	7.50%	10.81%	12.35%	13.88%
Pinnacle West Capital Corporation	PNW	$2.50	$62.88	3.98%	4.06%	4.40%	4.14%	4.00%	4.18%	8.06%	8.24%	8.46%
PNM Resources, Inc.	PNM	$0.88	$28.06	3.14%	3.27%	7.70%	9.30%	9.00%	8.67%	10.96%	11.94%	12.58%
Portland General Electric Company	POR	$1.20	$36.28	3.31%	3.40%	5.80%	5.73%	6.00%	5.84%	9.13%	9.25%	9.41%
SCANA Corporation	SCG	$2.30	$57.25	4.02%	4.12%	5.30%	5.40%	4.50%	5.07%	8.61%	9.19%	9.53%
Westar Energy, Inc.	WR	$1.52	$39.60	3.84%	3.93%	3.60%	5.27%	6.00%	4.96%	7.51%	8.89%	9.95%
Xcel Energy Inc.	XEL	$1.36	$35.36	3.85%	3.94%	5.00%	4.84%	4.50%	4.78%	8.43%	8.72%	8.94%
PROXY GROUP MEAN				3.82%	3.92%	5.40%	5.71%	5.62%	5.62%	8.89%	9.54%	10.12%
PROXY GROUP MEDIAN				3.88%	4.00%	5.35%	5.58%	5.50%	5.69%	9.05%	9.25%	9.95%

Notes:
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