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October 16, 2013

Ann Cole
Commission Clerk and
Administrative Services
Room 100, Easley Building
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Re: Docket Nos. 130140-EI, 130151-EI, & 130092-EI

Dear Ms. Cole:

Today the Office of Public Counsel's Testimony and Exhibits of J. Randall Woolridge are being submitted via the Florida Public Service Commission's web based electronic filing system.

Yours truly,

Joseph A. McGlothlin
Associate Public Counsel

JAM:bsr

cc: All parties of record
Suzanne Brownless
Martha Barrera
Martha Brown
Charles Murphy
Caroline Klancke

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for rate increase by Gulf Power Company	DOCKET NO. 130140-EI
In re: 2013 depreciation and dismantlement study by Gulf Power Company	DOCKET NO. 130151-EI
In re: Petition of Gulf Power Company to include the Plant Daniel Bromine and ACI Project, the Plant Crist Transmission Upgrades Project, and the Plant Smith Transmission Upgrades Project in the Company's program, and approve the costs associated with these compliance strategies for recovery through the ECRC.	DOCKET NO. 130092-EI FILED: October 16, 2013

DIRECT TESTIMONY

OF

J. RANDALL WOOLRIDGE

ON BEHALF OF THE CITIZENS OF THE STATE OF FLORIDA

TABLE OF CONTENTS

LIST OF EXHIBITS

DIRECT TESTIMONY

OF

J. RANDALL WOOLRIDGE

On Behalf of the Office of Public Counsel

Before the

Florida Public Service Commission

Docket Nos. 130140-EI, 130151-EI, 130092-EI

I. IDENTIFICATION OF WITNESS AND PURPOSE OF TESTIMONY

Q. PLEASE STATE YOUR FULL NAME, ADDRESS, AND OCCUPATION.

A. My name is J. Randall Woolridge, and my business address is 120 Haymaker Circle, State College, PA 16801. I am a Professor of Finance and the Goldman, Sachs & Co. and Frank P. Smeal Endowed University Fellow in Business Administration at the University Park Campus of the Pennsylvania State University. I am also the Director of the Smeal College Trading Room and President of the Nittany Lion Fund, LLC. My résumé and a summary of my educational background, research, and related business experience is provided in Exhibit JRW-16, Appendix A.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I have been asked by the Florida Office of Public Counsel ("OPC") to provide an opinion as to the appropriate cost of capital for Gulf Power Company ("Gulf Power", "Gulf", or "Company") and to evaluate Gulf's rate of return testimony in this proceeding.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. First, I will review my cost of capital recommendation for Gulf Power and review the primary differences between Gulf Power's rate of return position and OPC's position. Second, I provide an assessment of capital costs in today's capital markets. Third, I discuss my proxy group of electric utility companies for estimating the cost of capital for Gulf Power. Fourth, I present my recommendations for the Company's capital structure. Fifth, I discuss the concept of cost of equity capital, and then estimate the equity cost rate for Gulf Power. Finally, I critique the Company's rate of return analysis and testimony. A table of contents is provided just after the title page.

II. CAPITAL COSTS IN TODAY'S MARKETS

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS REGARDING THE APPROPRIATE RATE OF RETURN FOR GULF POWER.

A. I initially show that, whereas interest rates have increased in the past year, they are still at historically low levels. I have adopted the Company's proposed capital structure and senior capital cost rates. To estimate an equity cost rate for Gulf Power, I have applied the Discounted Cash Flow Model ("DCF") and the Capital Asset Pricing Model ("CAPM") to my Electric Proxy Group as well as to Gulf Power witness Dr. James H. Vander Weide's proxy group of companies ("Vander Weide Proxy Group"). In recognition of the current economic environment, I have employed equity cost rate inputs, as well as an overall equity cost rate at the current high ranges. My recommendation is that the appropriate equity cost rate for Gulf, with its proposed capitalization that includes a common equity ratio of 47.46%, is

9.0%. My overall rate of return or cost of capital for Gulf Power is summarized in Exhibit JRW-1.

Q. PLEASE SUMMARIZE THE PRIMARY ISSUES REGARDING RATE OF RETURN IN THIS PROCEEDING.

A. Gulf Power witness Mr. R. Scott Teel provides the Company's proposed capital structure and long-term debt cost rate, and Dr. Vander Weide recommends a common equity cost rate for Gulf Power. The Company's recommended capital structure from investors' sources includes 1.83% short-term debt, 45.46% long-term debt, 5.25% preferred stock, and 47.46% common equity. I demonstrate that Gulf's proposed capital structure includes a common equity ratio which is in line with the common equity ratios in the capital structures of both my Electric Proxy Group as well as the Vander Weide Proxy Group. Gulf Power uses short-term and long-term debt cost rates of 0.82% and 4.96%, a preferred stock cost rate of 6.0% and an equity cost rate of 11.5%.

I have adopted the Company's proposed capital structure and senior capital cost rates. I have recommended an equity cost rate of 9.0% for Gulf Power. As indicated above, I have employed equity cost rate inputs, as well as an overall equity cost rate, at the current high ranges to account for the current economic environment. Dr. Vander Weide's proposed common equity cost rate is 11.5%. Both Dr. Vander Weide and I have applied the DCF and the CAPM approaches to a proxy group of publicly-held companies. Dr. Vander Weide employs a proxy group of 30 electric utilities. I have applied the DCF and CAPM approaches to his proxy group, as well as my Electric Proxy Group, which includes 33 electric utilities. Dr. Vander Weide

has also used a Risk Premium ("RP") approach to estimate an equity cost rate for Gulf Power. In his DCF approach, Dr. Vander Weide uses a quarterly DCF model and relies exclusively on the projected earnings per share ("EPS") growth rates of Wall Street analysts. I provide empirical evidence that demonstrates that the long-term earnings growth rates of Wall Street analysts are overly optimistic and upwardly-biased. Consequently, in developing a DCF growth rate, I have used 13 different measures of growth, including three measures of analysts' long-term EPS growth rate projections, historic (5-year and 10-year) and projected growth rates in dividends, book value, and earnings per share, and prospective sustainable growth.

The RP and CAPM approaches require estimates of the base interest rate and the equity risk premium. In both approaches, Dr. Vander Weide's base interest rate is above current market rates. However, the major area of disagreement involves our significantly different views on the alternative approaches to measuring the equity risk premium, as well as the magnitude of the equity risk premium. Dr. Vander Weide's equity risk premiums are excessive and do not reflect current market fundamentals. As I highlight in my testimony, there are three methodologies for estimating an equity risk premium – historic returns, surveys, and expected return models. Dr. Vander Weide uses a historical equity risk premium based on historic stock and bond returns. He also calculates an expected risk premium in which he applies the DCF approach to the S&P 500 and public utility stocks. I provide evidence that risk premiums based on historic stock and bond returns are subject to empirical errors which result in upwardly biased measures of expected equity risk premiums. I demonstrate that Dr. Vander Weide's projected equity risk premiums, which use analysts' EPS growth rate projections, include unrealistic assumptions

regarding future economic and earnings growth and stock returns. Finally, I demonstrate that Dr. Vander Weide's market and equity risk premiums are well above the market and equity risk premiums used in the real world of finance.

Finally, Dr. Vander Weide makes two unwarranted adjustments in developing an equity cost rate. In his DCF, RP, and CAPM approaches, Dr. Vander Weide makes an unnecessary adjustment for flotation costs. This serves to inflate his DCF equity cost rate. In addition, Dr. Vander Weide makes an overall financial risk or leverage adjustment to his equity cost rate estimate. This adjustment is based on the leverage difference between the market value capital structures of his proxy group and Gulf Power's book value capital structure, which is used for ratemaking purposes. The adjustment increases his equity cost rate estimate by 70 basis points. In my testimony, I discuss why this adjustment is not appropriate and highlight the fact that it produces illogical results.

I also focus on two other issues that are highly significant in this proceeding: (1) Has the increase in interest rates over the past year resulted in a meaningful increase in equity cost rates for electric utilities? (2) Does Gulf deserve a higher ROE because the Company has a capital structure with a lower common equity ratio than other Florida utilities?

To address the first issue, I evaluate the relationship between 10-year Treasury yields and authorized ROEs for electric utility companies. I show that 10-year Treasury yields declined from 3.5% in early 2011 to 1.5% at mid-year 2012. However, over that same time period, authorized ROEs for electric companies only declined from 10.25% to 10.0%. As such, authorized ROEs for electric utility companies did not decline nearly as much as interest rates and, thus, never really

reflected the extremely low interest rate environment in 2012. Therefore, just because interest rates have increased over the past year does not necessarily mean that there has been a meaningful increase in electric utility equity cost rates.

On the second issue, Gulf witness Mr. R. Scott Teel has cited Commission decisions involving Florida Power & Light ("FP&L"), Progress Energy Florida ("Progress"), and Tampa Electric Company ("Tampa Electric") and noted that Gulf has a lower common equity ratio than those approved by the Commission in recent cases for these utilities. Based on this observation, Mr. Teel argues that Gulf deserves a financial risk adjustment to reflect Gulf's lower common equity ratio and higher financial risk compared to these utilities. Dr. Vander Weide includes a "financial risk adjustment" of 70 basis points in his 11.5% recommendation. However, Dr. Vander Weide's financial risk adjustment is not based on the relative business and financial risks of these Florida utilities, but on the market value capital structures of the proxy electric companies relative to Gulf's book value ratemaking capital structure.

I used bond ratings as a measure of risk in comparing the riskiness of Gulf relative to the proxy groups and the other Florida utilities. With respect to the common equity ratio and degree of financial risk, I show that Gulf's common equity ratio is in line with the common equity ratios of other electric utilities but below those approved for the other Florida utilities. With respect to bond ratings, I show that Gulf's 'A' bond rating is on par or above the bond ratings of other electric utilities as well as other Florida utilities. In fact, despite a lower common equity ratio, Gulf has a better bond rating than any of the other Florida utilities. This demonstrates that Gulf's lower common equity ratio does not result in a higher degree of overall

investment risk and, therefore, no 'financial risk adjustment' is necessary or warranted.

Overall, with respect to the differences between Gulf and OPC on the rate of return for the Company, the most significant areas of disagreement in measuring Gulf Power's cost of capital are: (1) the computation of the dividend yield in the quarterly DCF model; (2) Dr. Vander Weide's exclusive use of the projected growth rates of Wall Street analysts to measure expected DCF growth; (3) the base interest rate and the market or equity risk premium in the RP and CAPM approaches; (4) Dr. Vander Weide's unwarranted flotation cost adjustments to his equity cost rate results; and (5) an erroneous leverage adjustment based on the market value capital structures of his proxy group.

Q. PLEASE DISCUSS CAPITAL COSTS IN U.S. MARKETS.

A. Long-term capital cost rates for U.S. corporations are a function of the required returns on risk-free securities plus a risk premium. The risk-free rate of interest is the yield on long-term U.S Treasury bonds. The yields on 10-year U.S. Treasury bonds from 1953 to the present are provided on Panel A of Exhibit JRW-2. These yields peaked in the early 1980s and have generally declined since that time. These yields have fallen to historically low levels in recent years due to the financial crisis. In 2008, Treasury yields declined to below 3.0% as a result of the mortgage and subprime market credit crisis, the turmoil in the financial sector, the monetary stimulus provided by the Federal Reserve, and the slowdown in the economy. From 2008 until 2011, these rates fluctuated between 2.5% and 3.5%. In 2012, the yields on 10-year Treasuries declined from 2.5% to below 2.0% as the Federal Reserve

continued to support a low interest rate environment and economic uncertainties persisted. In recent months, these yields have increased to the 2.7% range as the economy has improved and investors have speculated that the Federal Reserve's aggressive monetary policy in the form of its $85 billion per month bond buying program will be coming to an end in the coming months.

Panel B on Exhibit JRW-2 shows the differences in yields between ten-year Treasuries and Moody's Baa-rated bonds since the year 2000. This differential primarily reflects the additional risk required by bond investors for the risk associated with investing in corporate bonds as opposed to obligations of the U.S. Treasury. The difference also reflects, to some degree, yield curve changes over time. The Baa rating is the lowest of the investment grade bond ratings for corporate bonds. The yield differential hovered in the 2.0% to 3.5% range until 2005, declined to 1.5% until late 2007, and then increased significantly in response to the financial crisis. This differential peaked at 6.0% at the height of the financial crisis in early 2009 due to tightening in credit markets, which increased corporate bond yields, and the "flight to quality," which decreased Treasury yields. The differential subsequently declined, and has been in the 2.5% to 3.5% range over the past four years.

The risk premium is the return premium required by investors to purchase riskier securities. The risk premium required by investors to buy corporate bonds is observable based on yield differentials in the markets. The market risk premium is the return premium required to purchase stocks as opposed to bonds. The market or equity risk premium is not readily observable in the markets (as are bond risk premiums) since expected stock market returns are not readily observable. As a result, equity risk premiums must be estimated using market data. There are

alternative methodologies to estimate the equity risk premium, and these alternative approaches and equity risk premium results are subject to much debate. One way to estimate the equity risk premium is to compare the mean returns on bonds and stocks over long historical periods. Measured in this manner, the equity risk premium has been in the 5% to 7% range. However, studies by leading academics indicate that the forward-looking equity risk premium is actually in the 4.0% to 6.0% range. These lower equity risk premium results are in line with the findings of equity risk premium surveys of CFOs, academics, analysts, companies, and financial forecasters.

Q. PLEASE DISCUSS INTEREST RATES AND THE FINANCIAL CRISIS.

A. The yields on Treasury securities decreased significantly at the onset of the financial crisis and have remained at historically low levels. These yields have declined to levels not seen since the 1950s. The decline in interest rates reflects several factors, including: (1) the "flight to quality" in the credit markets as investors sought out low risk investments during the financial crisis; (2) the very aggressive monetary actions of the Federal Reserve, which have been aimed at restoring liquidity and faith in the financial system as well as maintaining low interest rates to boost economic growth; and (3) the continuing slow recovery from the recession.

Panel A of Exhibit JRW-3 provides the yields on A-rated public utility bonds. These yields peaked in November 2008 at 7.75% and henceforth declined significantly. They hovered in the 4.0% area for most of the past year, until increasing to the 4.75% range in the past six months. Panel B of Exhibit JRW-3 provides the yield spreads between long-term A-rated public utility bonds relative to the yields on 20-year Treasury bonds. These yield spreads increased dramatically in

the third quarter of 2008 during the peak of the financial crisis and have decreased significantly since that time. For example, the yield spreads between 20-year U.S. Treasury bonds and A-rated utility bonds peaked at 3.4% in November 2008, declined to about 1.5% in the summer of 2012, and have since remained in that range.

Q. PLEASE DISCUSS THE FEDERAL RESERVE'S MONETARY POLICY AND INTEREST RATES.

A. On September 13, 2012, the Federal Reserve released its policy statement relating to Quantitative Easing III ("QE3"). In the statement, the Federal Reserve announced that it intended to expand and extend its purchasing of long-term securities to about $85 billion per month.[1] The Federal Open Market Committee ("FOMC") also indicated that it intends to keep the target rate for the federal funds rate between 0 to 1/4 percent through at least mid-2015. In addition, on December 12, 2012, the Federal Reserve reiterated its continuation of its bond buying program and tied future monetary policy moves to unemployment rates and the level of interest rates. Specifically, the FOMC decided to keep the target range for the federal funds rate at 0 to 1/4 percent and anticipates that this exceptionally low range for the federal funds rate will be appropriate at least as long as the unemployment rate remains above 6.5%.[2] Subsequently, at its monthly FOMC meetings during 2013, the Federal Reserve has voted to continue its bond buying program policy and to stick with its plan to keep interest rates at historically low levels until the unemployment rate falls

[1] Board of Governors of the Federal Reserve System, "Statement Regarding Transactions in Agency Mortgage-Backed Securities and Treasury Securities," September 13, 2012.

[2] Board of Governors of the Federal Reserve System, FOMC Statement," December 12, 2012.

to 6.5%. In its monthly policy statement, the Federal Reserve has acknowledged that the U.S. job market has improved, and that consumer spending and business investment have increased and the housing market has improved. However, there is still concern about the labor market and how long it will take to reduce the unemployment rate to the target level of 6.5%.

Beginning in May of this year, speculation has risen in the markets that the Federal Reserve's bond buying program will be reduced or eliminated. This speculation has been fueled by more positive economic data on jobs and the economy, as well as by statements from FOMC members indicating that QE3 could be reduced later this calendar year. The markets have reacted very quickly to the news. The yields on 30-year Treasury bonds, which were about 3.0% in the first week of May, increased to 3.8% in mid-August. These rates have subsequently declined to 3.7% in response to the outcome of the FOMC's September 2013 meeting.

Q. WHAT GUIDANCE DID THE FEDERAL RESERVE PROVIDE IN ITS SEPTEMBER MONETARY POLICY UPDATE?

A. In its press release following the FOMC September 17-18, 2013 policy meetings, the Federal Reserve announced that the bond buying program, which is known as QE3, will continue. In addition, and even more importantly, the Federal Reserve indicated that, to meet certain economic targets on unemployment and inflation, "highly accommodative" monetary policy will be required. The FOMC's statement included

the following on this matter:[3]

> To support continued progress toward maximum employment and price stability, the Committee today reaffirmed its view that a highly accommodative stance of monetary policy will remain appropriate for a considerable time after the asset purchase program ends and the economic recovery strengthens. In particular, the Committee decided to keep the target range for the federal funds rate at 0 to 1/4 percent and currently anticipates that this exceptionally low range for the federal funds rate will be appropriate at least as long as the unemployment rate remains above 6-1/2 percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored. In determining how long to maintain a highly accommodative stance of monetary policy, the Committee will also consider other information, including additional measures of labor market conditions, indicators of inflation pressures and inflation expectations, and readings on financial developments. When the Committee decides to begin to remove policy accommodation, it will take a balanced approach consistent with its longer-run goals of maximum employment and inflation of 2 percent.

Q. OVERALL, WHAT DOES YOUR REVIEW OF THE CAPITAL MARKET CONDITIONS INDICATE ABOUT THE EQUITY COST RATE FOR UTILITIES TODAY?

A. The market data suggests that capital costs for utilities remain at historically low levels despite the increase in interest rates over the past year. Interest rates have risen as the economy has continued its slow recovery and investors have speculated that QE3 will come to an end. Current interest rates reflect these two factors as well as the Federal Reserve guidance on monetary policy and the economy. If investors believed that interest rates were going to increase significantly over the next year, they would not be buying bonds today at current interest rates.

[3] Board of Governors of the Federal Reserve System, FOMC Statement," September 17-18, 2013.

III. PROXY GROUP SELECTION

Q. PLEASE DESCRIBE YOUR APPROACH TO DEVELOPING A FAIR RATE OF RETURN RECOMMENDATION FOR GULF POWER.

A. To develop a fair rate of return recommendation for Gulf Power, I evaluated the return requirements of investors on the common stock of a proxy group of publicly-held electric utility companies ("Electric Proxy Group"). In addition, I have also applied the DCF and CAPM equity cost rate approaches to the Vander Weide Proxy Group.

Q. PLEASE DESCRIBE YOUR PROXY GROUP OF COMPANIES.

A. The Electric Proxy Group consists of 33 electric utility companies. The selection criteria include the following:

1. Listed as Electric Utility by *Value Line Investment Survey* and listed as an Electric Utility or Combination Electric & Gas company in *AUS Utilities Report*;
2. At least 50% of their revenues from regulated electric operations, as reported by *AUS Utilities Report;*
3. An investment grade bond rating, as reported by *AUS Utilities Report;*
4. Has paid a cash dividend for the past three years, with no cuts or omissions;
5. Not involved in an acquisition of another utility, and/or was not the target of an acquisition, in the past six months; and
6. Analysts' long-term EPS growth rate forecasts available from Yahoo, Reuters, and/or Zacks.

Summary financial statistics for the proxy group are listed on page 1 of Exhibit

JRW-4.[4] The median operating revenues and net plant for the Electric Proxy Group are $4,398.0M and $10,309.6M, respectively. The group receives 84% of its revenues from regulated electric operations, has an A-/BBB+ bond rating from Standard & Poor's (S&P), a current common equity ratio of 46.5%, and an earned return on common equity of 9.5%.

Q. PLEASE DESCRIBE THE VANDER WEIDE PROXY GROUP.

A. Summary financial statistics for Dr. Vander Weide's Proxy Group of 30 electric utility companies is provided on page 2 of Exhibit JRW-4. The median operating revenues and net plant for the Vander Weide Proxy Group are $4,442.5M and $9,218.5M, respectively. The group receives 80% of its revenues from regulated electric operations, has an A-/BBB+ bond rating from S&P, a current common equity ratio of 45.2%, and a current earned return on common equity of 9.2%.

Q. HOW DOES THE INVESTMENT RISK OF GULF POWER COMPARE TO THAT OF YOUR ELECTRIC PROXY GROUP AND THE VANDER WEIDE PROXY GROUP?

A. I believe that bond ratings provide a reasonable measure of investment risk for utilities. S&P and Moody's have given 'A' and A3/Baa ratings to the senior secured bonds of Gulf Power and its parent company, The Southern Company ("Southern" or "Southern Company"). My Electric Proxy Group has S&P and Moody's bond ratings of A-/BBB+ and A3, respectively. The Vander Weide Proxy Group has S&P and

[4] In my testimony, I present financial results using both mean and medians as measures of central tendency. However, due to outliers among means, I have used the median as a measure of central tendency.

Moody's bond ratings of A-/BBB+ and A3/Baa1, respectively. These ratings suggest that Gulf's investment risk level, as measured by bond ratings, is at least comparable to – if not better than – the average of the two groups.

In addition, on pages 3 and 4 of Exhibit JRW-4, I have assessed the riskiness of Gulf's parent, Southern Company, relative to the Electric and Vander Weide Proxy Groups using four different risk measures published by *Value Line*. These measures include Beta, Financial Strength, Safety, and Stock Price Stability. Whereas Southern Company's Beta of 0.55 is below the median Betas of the two groups (0.70 and 0.75, respectively), the other risk measures indicate that Southern is similar in risk to the two proxy groups.

IV. CAPITAL STRUCTURE RATIOS AND RETURN ON EQUITY

Q. WHAT IS GULF POWER'S CURRENT CAPITAL STRUCTURE FOR RATEMAKING PURPOSES?

A. Gulf Power's recommended capital structure for ratemaking purposes includes 1.47% short-term debt, 36.36% long-term debt, 4.20% preferred stock, 37.96% common equity, 1.11% customer deposits, 18.80% deferred taxes, and 0.10% investment tax credit. Gulf Power's recommended capital structure for investor sources includes 1.83% short-term debt, 45.46% long-term debt, 5.25% preferred stock, and 47.46% common equity. This is summarized in Exhibit JRW-5.

Q. WHAT CAPITAL STRUCTURE ARE YOU EMPLOYING FOR GULF POWER?

A. I am using the Company's recommended capital structure.

Q. HOW DOES GULF POWER'S RECOMMENDED COMMON EQUITY RATIO COMPARE TO THAT OF ITS PARENT, SOUTHERN COMPANY, AS WELL AS THAT OF YOUR ELECTRIC PROXY GROUP AND THE VANDER WEIDE PROXY GROUP?

A. The common equity ratios for Southern Company and my Electric Proxy Group and the Vander Weide Proxy Group are provided on pages 1 and 2 of Exhibit JRW-4. As reported in AUS Utilities Report, the common equity ratio for Southern is 45.3%, and the medians of my Electric Proxy Group and the Vander Weide Proxy Group are 46.5% and 45.2%, respectively. These ratios show that Gulf Power's proposed common equity ratio is a little higher, but still in line with the common equity ratios of Southern, my Electric Proxy Group, and the Vander Weide Proxy Group.

Q. WHAT SENIOR CAPITAL COST RATES HAVE BEEN USED BY GULF POWER?

A. The Company uses projected short-term and long-term debt cost rates of 0.82% and 4.96% and a preferred stock cost rate of 6.00%.

V. THE COST OF COMMON EQUITY CAPITAL

A. OVERVIEW

Q. WHY MUST AN OVERALL COST OF CAPITAL OR FAIR RATE OF RETURN BE ESTABLISHED FOR A PUBLIC UTILITY?

A. In a competitive industry, the return on a firm's common equity capital is determined through the competitive market for its goods and services. Due to the capital requirements needed to provide utility services and to the economic benefit to society

from avoiding duplication of these services, some public utilities are monopolies. Because of the lack of competition and the essential nature of their services, it is not appropriate to permit monopoly utilities to set their own prices. Thus, regulation seeks to establish prices that are fair to consumers and, at the same time, sufficient to meet the operating and capital costs of the utility (i.e., provide an adequate return on capital to attract investors).

Q. PLEASE PROVIDE AN OVERVIEW OF THE COST OF CAPITAL IN THE CONTEXT OF THE THEORY OF THE FIRM.

A. The total cost of operating a business includes the cost of capital. The cost of common equity capital is the expected return on a firm's common stock that the marginal investor would deem sufficient to compensate for risk and the time value of money. In equilibrium, the expected and required rates of return on a company's common stock are equal.

Normative economic models of the firm, developed under very restrictive assumptions, provide insight into the relationship between firm performance or profitability, capital costs, and the value of the firm. Under the economist's ideal model of perfect competition, where entry and exit are costless, products are undifferentiated, and there are increasing marginal costs of production, firms produce up to the point where price equals marginal cost. Over time, a long-run equilibrium is established where price equals average cost, including the firm's capital costs. In equilibrium, total revenues equal total costs, and because capital costs represent investors' required return on the firm's capital, actual returns equal required returns, and the market value must equal the book value of the firm's securities.

In the real world, firms can achieve competitive advantage due to product market imperfections. Most notably, companies can gain competitive advantage through product differentiation (adding real or perceived value to products) and by achieving economies of scale (decreasing marginal costs of production). Competitive advantage allows firms to price products above average cost and thereby earn accounting profits greater than those required to cover capital costs. When these profits are in excess of that required by investors, or when a firm earns a return on equity in excess of its cost of equity, investors respond by valuing the firm's equity in excess of its book value.

James M. McTaggart, founder of the international management consulting firm Marakon Associates, described this essential relationship between the return on equity, the cost of equity, and the market-to-book ratio in the following manner:[5]

> Fundamentally, the value of a company is determined by the cash flow it generates over time for its owners, and the minimum acceptable rate of return required by capital investors. This "cost of equity capital" is used to discount the expected equity cash flow, converting it to a present value. The cash flow is, in turn, produced by the interaction of a company's return on equity and the annual rate of equity growth. High return on equity (ROE) companies in low-growth markets, such as Kellogg, are prodigious generators of cash flow, while low ROE companies in high-growth markets, such as Texas Instruments, barely generate enough cash flow to finance growth.
>
> A company's ROE over time, relative to its cost of equity, also determines whether it is worth more or less than its book value. If its ROE is consistently greater than the cost of equity capital (the investor's minimum acceptable return), the business is economically profitable and its market value will exceed book value. If, however, the business earns an ROE consistently

[5] James M. McTaggart, "The Ultimate Poison Pill: Closing the Value Gap," *Commentary* (Spring 1988), p. 2.

> less than its cost of equity, it is economically unprofitable and its market value will be less than book value.

As such, the relationship between a firm's return on equity, cost of equity, and market-to-book ratio is relatively straightforward. A firm that earns a return on equity above its cost of equity will see its common stock sell at a price above its book value. Conversely, a firm that earns a return on equity below its cost of equity will see its common stock sell at a price below its book value.

Q. PLEASE PROVIDE ADDITIONAL INSIGHTS INTO THE RELATIONSHIP BETWEEN RETURN ON EQUITY AND MARKET-TO-BOOK RATIOS.

A. This relationship is discussed in a classic Harvard Business School case study entitled "A Note on Value Drivers." On page 2 of that case study, the author describes the relationship very succinctly:[6]

> For a given industry, more profitable firms – those able to generate higher returns per dollar of equity ("ROE") – should have higher market-to-book ratios. Conversely, firms which are unable to generate returns in excess of their cost of equity ("K") should sell for less than book value.

Profitability	*Value*
If ROE > K	*then Market/Book > 1*
If ROE = K	*then Market/Book =1*
If ROE < K	*then Market/Book < 1*

To assess the relationship by industry, as suggested above, I performed a regression study between estimated return on equity ("ROE") and market-to-book ratios using natural gas distribution, electric utility, and water utility companies. I used all companies in these three industries that are covered by *Value Line* and have

[6] Benjamin Esty, "A Note on Value Drivers," Harvard Business School, Case No. 9-297-082, April 7, 1997.

estimated ROE and market-to-book ratio data. The results are presented in Panels A-C of Exhibit JRW-6. The average R-squares for the electric, gas, and water companies are 0.52, 0.71, and 0.77, respectively.[7] This demonstrates the strong positive relationship between ROEs and market-to-book ratios for public utilities.

Q. WHAT ECONOMIC FACTORS HAVE AFFECTED THE COST OF EQUITY CAPITAL FOR PUBLIC UTILITIES?

A. Exhibit JRW-7 provides indicators of public utility equity cost rates over the past decade. Page 1 shows the yields on long-term 'A' rated public utility bonds. These yields peaked in the early 2000s at over 8.0%, declined to about 5.5% in 2005, and rose to 6.0% in 2006 and 2007. They stayed in that 6.0% range until the third quarter of 2008 when they spiked to almost 7.5% during the financial crisis. They hovered in the 4.0% area earlier in the year, but have increased to the 4.75% range in the past six months.

Page 2 of Exhibit JRW-7 provides the dividend yields for the Electric Proxy Group over the past decade. The dividend yields for the Electric Proxy Group generally declined slightly over the decade until 2007. They increased in 2008 and 2009 in response to the financial crisis, but declined in the last three years and now are about 4.2%.

Average earned returns on common equity and market-to-book ratios for the Electric Proxy Group are on page 3 of Exhibit JRW-7. The average earned returns on common equity for the Electric Proxy Group were in the 9.0%-12.0% range over the

[7] R-square measures the percent of variation in one variable (e.g., market-to-book ratios) explained by another variable (e.g., expected ROE). R-squares vary between zero and 1.0, with values closer to 1.0 indicating a higher relationship between two variables.

past decade, and have hovered in the 10.0% range for the past three years. The average market-to-book ratio for the group has been in the 1.20X to 1.80X during the decade. The average declined to about 1.20X in 2009, but has since increased to 1.40X as of 2012.

Q. WHAT FACTORS DETERMINE INVESTORS' EXPECTED OR REQUIRED RATE OF RETURN ON EQUITY?

A. The expected or required rate of return on common stock is a function of market-wide as well as company-specific factors. The most important market factor is the time value of money as indicated by the level of interest rates in the economy. Common stock investor requirements generally increase and decrease with like changes in interest rates. The perceived risk of a firm is the predominant factor that influences investor return requirements on a company-specific basis. A firm's investment risk is often separated into business and financial risk. Business risk encompasses all factors that affect a firm's operating revenues and expenses. Financial risk results from incurring fixed obligations in the form of debt in financing its assets.

Q. HOW DOES THE INVESTMENT RISK OF UTILITIES COMPARE WITH THAT OF OTHER INDUSTRIES?

A. Due to the essential nature of their service as well as their regulated status, public utilities are exposed to a lesser degree of business risk than other, non-regulated businesses. The relatively low level of business risk allows public utilities to meet much of their capital requirements through borrowing in the financial markets,

thereby incurring greater than average financial risk. Nonetheless, the overall investment risk of public utilities is below most other industries.

Exhibit JRW-8 provides an assessment of investment risk for 99 industries as measured by beta, which according to modern capital market theory, is the only relevant measure of investment risk. These betas come from the *Value Line Investment Survey* and are compiled annually by Aswath Damodaran of New York University.[8] The study shows that the investment risk of utilities is very low. The average betas for electric, water, and gas utility companies are 0.73, 0.66, and 0.66, respectively. These are well below the *Value Line* average of 1.15. As such, the cost of equity for utilities is among the lowest of all industries in the U.S.

Q. HOW CAN THE EXPECTED OR REQUIRED RATE OF RETURN ON COMMON EQUITY CAPITAL BE DETERMINED?

A. The costs of debt and preferred stock are normally based on historical or book values and can be determined with a great degree of accuracy. The cost of common equity capital, however, cannot be determined precisely and must instead be estimated from market data and informed judgment. This return to the stockholder should be commensurate with returns on investments in other enterprises having comparable risks.

According to valuation principles, the present value of an asset equals the discounted value of its expected future cash flows. Investors discount these expected cash flows at their required rate of return that, as noted above, reflects the time value of money and the perceived riskiness of the expected future cash flows. As such, the

[8] *Available* at http://www.stern.nyu.edu/~adamodar.

cost of common equity is the rate at which investors discount expected cash flows associated with common stock ownership.

Models have been developed to ascertain the cost of common equity capital for a firm. Each model, however, has been developed using restrictive economic assumptions. Consequently, judgment is required in selecting appropriate financial valuation models to estimate a firm's cost of common equity capital, in determining the data inputs for these models, and in interpreting the models' results. All of these decisions must take into consideration the firm involved as well as current conditions in the economy and the financial markets.

Q. HOW DO YOU PLAN TO ESTIMATE THE COST OF EQUITY CAPITAL FOR THE COMPANY?

A. I rely primarily on the discounted cash flow ("DCF") model to estimate the cost of equity capital. Given the investment valuation process and the relative stability of the utility business, I believe that the DCF model provides the best measure of equity cost rates for public utilities. It is my experience that this Commission has traditionally relied on the DCF model. I have also performed a capital asset pricing model ("CAPM") study; however, I give these results less weight because I believe that risk premium studies, of which the CAPM is one form, provide a less reliable indication of equity cost rates for public utilities.

B. DCF ANALYSIS

Q. PLEASE DESCRIBE THE THEORY BEHIND THE TRADITIONAL DCF MODEL.

A. According to the DCF model, the current stock price is equal to the discounted value of all future dividends that investors expect to receive from investment in the firm. As such, stockholders' returns ultimately result from current as well as future dividends. As owners of a corporation, common stockholders are entitled to a *pro rata* share of the firm's earnings. The DCF model presumes that earnings that are not paid out in the form of dividends are reinvested in the firm so as to provide for future growth in earnings and dividends. The rate at which investors discount future dividends, which reflects the timing and riskiness of the expected cash flows, is interpreted as the market's expected or required return on the common stock. Therefore, this discount rate represents the cost of common equity. Algebraically, the DCF model can be expressed as:

$$P = \frac{D_1}{(1+k)^1} + \frac{D_2}{(1+k)^2} + \ldots \frac{D_n}{(1+k)^n}$$

where P is the current stock price, D_n is the dividend in year n, and k is the cost of common equity.

Q. IS THE DCF MODEL CONSISTENT WITH VALUATION TECHNIQUES EMPLOYED BY INVESTMENT FIRMS?

A. Yes. Virtually all investment firms use some form of the DCF model as a valuation technique. One common application for investment firms is called the three-stage DCF or dividend discount model ("DDM"). The stages in a three-stage DCF model are presented in Exhibit JRW-9, Page 1 of 2. This model presumes that a company's dividend payout progresses initially through a growth stage, then proceeds through a

transition stage, and finally assumes a maturity (or steady-state) stage. The dividend-payment stage of a firm depends on the profitability of its internal investments which, in turn, is largely a function of the life cycle of the product or service.

1. Growth stage: Characterized by rapidly expanding sales, high profit margins, and an abnormally high growth in earnings per share. Because of highly profitable expected investment opportunities, the payout ratio is low. Competitors are attracted by the unusually high earnings, leading to a decline in the growth rate.

2. Transition stage: In later years, increased competition reduces profit margins and earnings growth slows. With fewer new investment opportunities, the company begins to pay out a larger percentage of earnings.

3. Maturity (steady-state) stage: Eventually, the company reaches a position where its new investment opportunities offer, on average, only slightly attractive ROEs. At that time, its earnings growth rate, payout ratio, and ROE stabilize for the remainder of its life. The constant-growth DCF model is appropriate when a firm is in the maturity stage of the life cycle.

In using this model to estimate a firm's cost of equity capital, dividends are projected into the future using the different growth rates in the alternative stages, and then the equity cost rate is the discount rate that equates the present value of the future dividends to the current stock price.

Q. HOW DO YOU ESTIMATE STOCKHOLDERS' EXPECTED OR REQUIRED RATE OF RETURN USING THE DCF MODEL?

A. Under certain assumptions, including a constant and infinite expected growth rate, and constant dividend/earnings and price/earnings ratios, the DCF model can be simplified to the following:

$$P = \frac{D_1}{k - g}$$

where D_1 represents the expected dividend over the coming year and g is the expected growth rate of dividends. This is known as the constant-growth version of the DCF model. To use the constant-growth DCF model to estimate a firm's cost of equity, one solves for k in the above expression to obtain the following:

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

Q. IN YOUR OPINION, IS THE CONSTANT-GROWTH DCF MODEL APPROPRIATE FOR PUBLIC UTILITIES?

A. Yes. The economics of the public utility business indicate that the industry is in the steady-state or constant-growth stage of a three-stage DCF. The economics include the relative stability of the utility business, the maturity of the demand for public utility services, and the regulated status of public utilities (especially the fact that their returns on investment are effectively set through the ratemaking process). The DCF valuation procedure for companies in this stage is the constant-growth DCF. In the constant-growth version of the DCF model, the current dividend payment and stock price are directly observable. However, the primary problem and controversy in applying the DCF model to estimate equity cost rates entails estimating investors' expected dividend growth rate.

Q. WHAT FACTORS SHOULD ONE CONSIDER WHEN APPLYING THE DCF METHODOLOGY?

A. One should be sensitive to several factors when using the DCF model to estimate a firm's cost of equity capital. In general, one must recognize the assumptions under which the DCF model was developed in estimating its components (the dividend yield and the expected growth rate). The dividend yield can be measured precisely at any point in time, but tends to vary somewhat over time. Estimation of expected growth is considerably more difficult. One must consider recent firm performance, in conjunction with current economic developments and other information available to investors, to accurately estimate investors' expectations.

Q. WHAT DIVIDEND YIELDS HAVE YOU REVIEWED?

A. In light of the increase in interest rates over the past year, I have calculated the dividend yields for the companies in the two proxy groups in several different ways: (1) I computed the monthly dividend yields for the past six months; and (2) I calculated dividend yields using the current annual dividend and the 30-day, 60-day, and 90-day average stock prices. The dividend yields using both approaches are provided on pages 2 and 3 of Exhibit JRW-10 for the electric and Vander Weide proxy groups, respectively. For both groups, the mean and median dividend yields are presented in the table at the bottom of pages 2 and 3. For both groups, using the different dividend yield calculation approaches, the mean and median dividend yields range from 3.8% to 4.1%. Given these results, and in recognition of the higher recent interest rates, I am using a dividend yield of 4.1% for both groups.

Q. PLEASE DISCUSS THE APPROPRIATE ADJUSTMENT TO THE SPOT DIVIDEND YIELD.

A. According to the traditional DCF model, the dividend yield term relates to the dividend yield over the coming period. As indicated by Professor Myron Gordon, who is commonly associated with the development of the DCF model for popular use, this is obtained by: (1) multiplying the expected dividend over the coming quarter by 4, and (2) dividing this dividend by the current stock price to determine the appropriate dividend yield for a firm that pays dividends on a quarterly basis.[9]

In applying the DCF model, some analysts adjust the current dividend for growth over the coming year as opposed to the coming quarter. This can be complicated, because firms tend to announce changes in dividends at different times during the year. As such, the dividend yield computed based on presumed growth over the coming quarter as opposed to the coming year can be quite different. Consequently, it is common for analysts to adjust the dividend yield by some fraction of the long-term expected growth rate.

Q. GIVEN THIS DISCUSSION, WHAT ADJUSTMENT FACTOR WILL YOU USE FOR YOUR DIVIDEND YIELD?

A. I will adjust the dividend yield by one-half (1/2) the expected growth so as to reflect growth over the coming year. This is the approach employed by the Federal Energy

[9] *Petition for Modification of Prescribed Rate of Return*, Federal Communications Commission, Docket No. 79-05, Direct Testimony of Myron J. Gordon and Lawrence I. Gould at 62 (April 1980).

Regulatory Commission ("FERC").[10] The DCF equity cost rate ("K") is computed as:

$$K = [(D/P) * (1 + 0.5g)] + g$$

Q. PLEASE DISCUSS THE GROWTH RATE COMPONENT OF THE DCF MODEL.

A. There is much debate as to the proper methodology to employ in estimating the growth component of the DCF model. By definition, this component is investors' expectation of the long-term dividend growth rate. Presumably, investors use some combination of historical and/or projected growth rates for earnings and dividends per share and for internal or book value growth to assess long-term potential.

Q. WHAT GROWTH DATA HAVE YOU REVIEWED FOR THE PROXY GROUPS?

A. I have analyzed a number of measures of growth for companies in the proxy groups. I reviewed *Value Line's* historical and projected growth rate estimates for earnings per share ("EPS"), dividends per share ("DPS"), and book value per share ("BVPS"). In addition, I utilized the average EPS growth rate forecasts of Wall Street analysts as provided by Yahoo, Reuters and Zacks. These services solicit five-year earnings growth rate projections from securities analysts and compile and publish the means and medians of these forecasts. Finally, I also assessed prospective growth as

[10] Opinion No. 414-A, *Transcontinental Gas Pipe Line Corp.*, 84 FERC ¶61,084 (1998).

measured by prospective earnings retention rates and earned returns on common equity.

Q. PLEASE DISCUSS HISTORICAL GROWTH IN EARNINGS AND DIVIDENDS AS WELL AS INTERNAL GROWTH.

A. Historical growth rates for EPS, DPS, and BVPS are readily available to investors and are presumably an important ingredient in forming expectations concerning future growth. However, one must use historical growth numbers as measures of investors' expectations with caution. In some cases, past growth may not reflect future growth potential. Also, employing a single growth rate number (for example, for five or ten years) is unlikely to accurately measure investors' expectations, due to the sensitivity of a single growth rate figure to fluctuations in individual firm performance as well as overall economic fluctuations (i.e., business cycles). However, one must appraise the context in which the growth rate is being employed. According to the conventional DCF model, the expected return on a security is equal to the sum of the dividend yield and the expected long-term growth in dividends. Therefore, to best estimate the cost of common equity capital using the conventional DCF model, one must look to long-term growth rate expectations.

Internally generated growth is a function of the percentage of earnings retained within the firm (the earnings retention rate) and the rate of return earned on those earnings (the return on equity). The internal growth rate is computed as the retention rate times the return on equity. Internal growth is significant in determining long-run earnings and, therefore, dividends. Investors recognize the importance of

internally generated growth and pay premiums for stocks of companies that retain earnings and earn high returns on internal investments.

Q. PLEASE DISCUSS THE SERVICES THAT PROVIDE ANALYSTS' EPS FORECASTS.

A. Analysts' EPS forecasts for companies are collected and published by a number of different investment information services, including Institutional Brokers Estimate System ("I/B/E/S"), Bloomberg, FactSet, Zacks, First Call and Reuters, among others. Thompson Reuters publishes analysts' EPS forecasts under different product names, including I/B/E/S, First Call, and Reuters. Bloomberg, FactSet, and Zacks publish their own set of analysts' EPS forecasts for companies. These services do not reveal: (1) the analysts who are solicited for forecasts; or (2) the identity of the analysts who actually provide the EPS forecasts that are used in the compilations published by the services. I/B/E/S, Bloomberg, FactSet, and First Call are fee-based services. These services usually provide detailed reports and other data in addition to analysts' EPS forecasts. Thompson Reuters and Zacks do provide limited EPS forecasts data free-of-charge on the internet. Yahoo finance (http://finance.yahoo.com) lists Thompson Reuters as the source of its summary EPS forecasts. The Reuters website (www.reuters.com) also publishes EPS forecasts from Thompson Reuters, but with more detail. Zacks (www.zacks.com) publishes its summary forecasts on its website. Zack's estimates are also available on other websites, such as msn.money (http://money.msn.com).

Q. PLEASE PROVIDE AN EXAMPLE OF THESE EPS FORECASTS.

A. The following example provides the EPS forecasts compiled by Reuters for Alliant Energy Corp. (stock symbol "LNT"). The figures are provided on page 2 of Exhibit JRW-9. The top line shows that four analysts have provided EPS estimates for the quarter ending December 30, 2013. The mean, high and low estimates are $0.52, $0.58, and $0.44, respectively. The second line shows the quarterly EPS estimates for the quarter ending March 31, 2014 of $0.66 (mean), $0.66 (high), and $0.66 (low). Lines three and four show the annual EPS estimates for the fiscal years ending December 2013 of $3.13 (mean), $3.20 (high), and $3.08 (low); and December 2014 of $3.31 (mean), $3.35 (high), and $3.25 (low). The quarterly and annual EPS forecasts in lines 1-4 are expressed in dollars and cents. As in the LNT case shown here, it is common for more analysts to provide estimates of annual EPS as opposed to quarterly EPS. The bottom line shows the projected long-term EPS growth rate, which is expressed as a percentage. For LNT, two analysts have provided long-term EPS growth rate forecasts, with mean, high and low growth rates of 5.40%, 6.00%, and 4.80%. respectively.

Q. WHICH OF THESE EPS FORECASTS IS USED IN DEVELOPING A DCF GROWTH RATE?

A. The DCF growth rate is the long-term projected growth rate in EPS, DPS, and BVPS. Therefore, in developing an equity cost rate using the DCF model, the projected long-term growth rate is the projection used in the DCF model.

Q. WHY DO YOU NOT RELY EXCLUSIVELY ON THE EPS FORECASTS OF WALL STREET ANALYSTS IN ARRIVING AT A DCF GROWTH RATE FOR THE PROXY GROUP?

A. There are several issues with using the EPS growth rate forecasts of Wall Street analysts as DCF growth rates. First, the appropriate growth rate in the DCF model is the dividend growth rate, not the earnings growth rate. Nonetheless, over the very long term, dividend and earnings will have to grow at a similar growth rate. Therefore, consideration must be given to other indicators of growth, including prospective dividend growth, internal growth, as well as projected earnings growth. Second, a recent study by Lacina, Lee, and Xu (2011) has shown that analysts' long-term earnings growth rate forecasts are not more accurate at forecasting future earnings than naïve random walk forecasts of future earnings.[11] Employing data over a twenty-year period, these authors demonstrate that using the most recent year's EPS figure to forecast EPS in the next 3-5 years proved to be just as accurate as using the EPS estimates from analysts' long-term earnings growth rate forecasts. In the authors' opinion, these results indicate that analysts' long-term earnings growth rate forecasts should be used with caution as inputs for valuation and cost of capital purposes. Finally, and most significantly, it is well known that the long-term EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased. This has been demonstrated in a number of academic studies over the years. This issue is discussed at length in Exhibit JRW-16, Appendix B of this testimony. Hence, using these growth rates as a DCF growth rate will provide an

[11] M. Lacina, B. Lee & Z. Xu, *Advances in Business and Management Forecasting (Vol. 8),* Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101.

overstated equity cost rate. On this issue, a study by Easton and Sommers (2007) found that optimism in analysts' growth rate forecasts leads to an upward bias in estimates of the cost of equity capital of almost 3.0 percentage points.[12]

Q. IS IT YOUR OPINION THAT STOCK PRICES REFLECT THE UPWARD BIAS IN THE EPS GROWTH RATE FORECASTS?

A. Yes, I do believe that investors are well aware of the bias in analysts' EPS growth rate forecasts, and therefore, stock prices reflect the upward bias.

Q. HOW DOES THAT AFFECT THE USE OF THESE FORECASTS IN A DCF EQUITY COST RATE STUDY?

A. According to the DCF model, the equity cost rate is a function of the dividend yield and expected growth rate. Since stock prices reflect the bias, it would affect the dividend yield. In addition, the DCF growth rate needs to be adjusted downward from the projected EPS growth rate to reflect the upward bias.

Q. PLEASE DISCUSS THE HISTORICAL GROWTH OF THE COMPANIES IN THE PROXY GROUPS, AS PROVIDED BY *VALUE LINE.*

A. Pages 4 and 5 of Exhibit JRW-10 provide the 5- and 10- year historical growth rates for the companies in the two proxy groups, as published in the *Value Line Investment Survey.* As shown on page 4 of Exhibit JRW-10, the historical growth measures in EPS, DPS, and BVPS for my Electric Proxy Group, as measured by the medians,

[12] Peter D. Easton & Gregory A. Sommers, *Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts*, 45 J. ACCT. RES. 983–1015 (2007).

range from 2.0% to 4.5%, with an average of 3.3%. For the Vander Weide Proxy Group on page 5 of Exhibit JRW-10, the historical growth measures in EPS, DPS, and BVPS, as measured by the medians, range from 2.5% to 4.3%, with an average of 3.4%.

Q. PLEASE SUMMARIZE *VALUE LINE'S* PROJECTED GROWTH RATES FOR THE COMPANIES IN THE PROXY GROUPS.

A. *Value Line's* projections of EPS, DPS and BVPS growth for the companies in the proxy groups are shown on pages 6 and 7 of Exhibit JRW-10. As stated above, due to the presence of outliers, the medians are used in the analysis. For the Electric Proxy Group, as shown on page 6 of Exhibit JRW-10, the medians range from 3.5% to 4.5%, with an average of 4.0%. For the Vander Weide Proxy Group, as shown on page 7 of Exhibit JRW-10, the medians range from 3.8% to 5.0%, with an average of 4.3%.

Also provided on pages 6 and 7 of Exhibit JRW-10 are the prospective sustainable growth rates for the companies in the two proxy groups as measured by *Value Line*'s average projected retention rate and return on shareholders' equity. As noted above, sustainable growth is a significant and a primary driver of long-run earnings growth. For my Electric Proxy Group and the Vander Weide Proxy Group, the median prospective sustainable growth rates are 3.9% and 4.0%, respectively.

Q. PLEASE ASSESS GROWTH FOR THE PROXY GROUPS AS MEASURED BY ANALYSTS' FORECASTS OF EXPECTED 5-YEAR EPS GROWTH.

A. Yahoo, Zacks, and Reuters collect, summarize, and publish Wall Street analysts'

long-term EPS growth rate forecasts for the companies in the proxy groups. These forecasts are provided for the companies in the proxy groups on pages 8 and 9 of Exhibit JRW-10. The median of analysts' projected EPS growth rates for the Electric and Vander Weide Proxy Groups are 4.6% and 4.8%, respectively. Since there is considerable overlap in analyst coverage between the three services, and not all of the companies have forecasts from the different services, I have averaged the expected five-year EPS growth rates from the three services for each company to arrive at an expected EPS growth rate by company.

Q. PLEASE SUMMARIZE YOUR ANALYSIS OF THE HISTORICAL AND PROSPECTIVE GROWTH OF THE PROXY GROUPS.

A. Page 10 of Exhibit JRW-10 shows the summary DCF growth rate indicators for the proxy groups.

The historical growth rate indicators for my Electric Proxy Group imply a baseline growth rate of 3.3%. The average of the projected EPS, DPS, and BVPS growth rates from *Value Line* is 4.0%, and *Value Line*'s projected sustainable growth rate is 3.9%. The high end of the range for the Electric Proxy Group is 4.6%, which is the projected EPS growth rate of Wall Street analysts. The range for the projected growth rate indicators is 3.9% to 4.6%. Normally, I would consider this range and give more weight to the projected EPS growth rate of Wall Street analysis. However, given the higher interest rates of recent months, I will use the high end of the range (4.6%) as the DCF growth rate for the Electric Proxy Group.

I will use a similar approach for the Vander Weide Proxy Group. The historical growth rate indicators for this group suggest a growth rate of 3.4%. *Value*

Line's average projected EPS, DPS, and BVPS growth rate for the group is 4.3%, and *Value Line*'s projected sustainable growth rate is 4.0%. The average projected EPS growth rate of Wall Street analysts for the group is 4.8%. The growth rate indicators for this group are slightly higher than those for the Electric Proxy Group. The range for the projected growth rate indicators is 4.0% to 4.8%. Given the higher interest rates of recent months, I will use the high end of this range (4.8%) as the DCF growth rate for the Vander Weide Proxy Group.

Q. BASED ON THE ABOVE ANALYSIS, WHAT ARE YOUR INDICATED COMMON EQUITY COST RATES FROM THE DCF MODEL FOR THE GROUP?

A. My DCF-derived equity cost rates for the groups are summarized on page 1 of Exhibit JRW-10. The results for my Electric Proxy Group is the 4.1% dividend yield, times the 1 and ½ growth adjustment of 1.023, plus the DCF growth rate of 4.60%, which results in an equity cost rate of 8.8%. The results for the Vander Weide Proxy Group include a dividend yield of 4.1%, times the 1 and ½ growth adjustment of 1.024, plus the DCF growth rate of 4.80%, which results in an equity cost rate of 9.0%.

C. CAPITAL ASSET PRICING MODEL

Q. PLEASE DISCUSS THE CAPITAL ASSET PRICING MODEL ("CAPM").

A. The CAPM is a risk premium approach to gauging a firm's cost of equity capital. According to the risk premium approach, the cost of equity is the sum of the interest rate on a risk-free bond (R_f) and a risk premium (RP), as in the following:

$$k = R_f + RP$$

The yield on long-term Treasury securities is normally used as R_f. Risk premiums are measured in different ways. The CAPM is a theory of the risk and expected returns of common stocks. In the CAPM, two types of risk are associated with a stock: firm-specific risk or unsystematic risk, and market or systematic risk, which is measured by a firm's beta. The only risk that investors receive a return for bearing is systematic risk.

According to the CAPM, the expected return on a company's stock, which is also the equity cost rate (K), is equal to:

$$K = (R_f) + ß * [E(R_m) - (R_f)]$$

Where:

- *K* represents the estimated rate of return on the stock;
- $E(R_m)$ represents the expected return on the overall stock market. Frequently, the 'market' refers to the S&P 500;
- (R_f) represents the risk-free rate of interest;
- $[E(R_m) - (R_f)]$ represents the expected equity or market risk premium—the excess return that an investor expects to receive above the risk-free rate for investing in risky stocks; and
- *Beta*—(ß) is a measure of the systematic risk of an asset.

To estimate the required return or cost of equity using the CAPM requires three inputs: the risk-free rate of interest (R_f), the beta (ß), and the expected equity or market risk premium $[E(R_m) - (R_f)]$. R_f is the easiest of the inputs to measure – it is represented by the yield on long-term Treasury bonds. ß, the measure of systematic risk, is a little more difficult to measure because there are different opinions about what adjustments, if any, should be made to historical betas due to their tendency to

regress to 1.0 over time. And finally, an even more difficult input to measure is the expected equity or market risk premium ($E(R_m)$ - (R_f)). I will discuss each of these inputs below.

Q. PLEASE DISCUSS EXHIBIT JRW-11.

A. Exhibit JRW-11 provides the summary results for my CAPM study. Page 1 shows the results, and the following pages contain the supporting data.

Q. PLEASE DISCUSS THE RISK-FREE INTEREST RATE.

A. The yield on long-term U.S. Treasury bonds has usually been viewed as the risk-free rate of interest in the CAPM. The yield on long-term U.S. Treasury bonds, in turn, has been considered to be the yield on U.S. Treasury bonds with 30-year maturities.

Q. WHAT RISK-FREE INTEREST RATE ARE YOU USING IN YOUR CAPM?

A. As shown on page 2 of Exhibit JRW-11, the yield on 30-year Treasury bonds has been in the 2.5% to 4.0% range over the 2012–2013 time period. These rates are currently in the 3.75% range. Given the recent range of yields and the higher recent interest rates, I will use 4.0% as the risk-free rate, or R_f, in my CAPM.

Q. WHAT BETAS ARE YOU EMPLOYING IN YOUR CAPM?

A. Beta (ß) is a measure of the systematic risk of a stock. The market, usually taken to be the S&P 500, has a beta of 1.0. The beta of a stock with the same price movement as the market also has a beta of 1.0. A stock whose price movement is greater than that of the market, such as a technology stock, is riskier than the market and has a

beta greater than 1.0. A stock with below average price movement, such as that of a regulated public utility, is less risky than the market and has a beta less than 1.0. Estimating a stock's beta involves running a linear regression of a stock's return on the market return.

As shown on page 3 of Exhibit JRW-11, the slope of the regression line is the stock's ß. A steeper line indicates that the stock is more sensitive to the return on the overall market. This means that the stock has a higher ß and greater-than-average market risk. A less steep line indicates a lower ß and less market risk.

Several online investment information services, such as Yahoo and Reuters, provide estimates of stock betas. Usually these services report different betas for the same stock. The differences are usually due to: (1) the time period over which the ß is measured; and (2) any adjustments that are made to reflect the fact that betas tend to regress to 1.0 over time. In estimating an equity cost rate for the proxy group, I am using the betas for the companies as provided in the *Value Line Investment Survey.* As shown on page 3 of Exhibit JRW-11, the median beta for the companies in the Electric and Vander Weide Proxy Groups are 0.70 and 0.75, respectively.

Q. PLEASE DISCUSS THE ALTERNATIVE VIEWS REGARDING THE EQUITY RISK PREMIUM.

A. The equity or market risk premium - $(E(R_m) - R_f)$ - is equal to the expected return on the stock market (e.g., the expected return on the S&P 500, $E(R_m)$ minus the risk-free rate of interest (R_f)). The equity premium is the difference in the expected total return between investing in equities and investing in "safe" fixed-income assets, such as long-term government bonds. However, while the equity risk premium is easy to

define conceptually, it is difficult to measure because it requires an estimate of the expected return on the market.

Q. PLEASE DISCUSS THE ALTERNATIVE APPROACHES TO ESTIMATING THE EQUITY RISK PREMIUM.

A. Page 4 of Exhibit JRW-11 highlights the primary approaches to, and issues in, estimating the expected equity risk premium. The traditional way to measure the equity risk premium was to use the difference between historical average stock and bond returns. In this case, historical stock and bond returns, also called ex post returns, were used as the measures of the market's expected return (known as the ex ante or forward-looking expected return). This type of historical evaluation of stock and bond returns is often called the "Ibbotson approach" after Professor Roger Ibbotson, who popularized this method of using historical financial market returns as measures of expected returns. Most historical assessments of the equity risk premium suggest an equity risk premium range of 5% to 7% above the rate on long-term U.S. Treasury bonds. However, this can be a problem because: (1) ex post returns are not the same as ex ante expectations; (2) market risk premiums can change over time, increasing when investors become more risk-averse and decreasing when investors become less risk-averse; and (3) market conditions can change such that ex post historical returns are poor estimates of ex ante expectations.

The use of historical returns as market expectations has been criticized in numerous academic studies as discussed later in my testimony. The general theme of these studies is that the large equity risk premium discovered in historical stock and bond returns cannot be justified by the fundamental data. These studies, which fall

under the category "Ex Ante Models and Market Data," compute ex ante expected returns using market data to arrive at an expected equity risk premium. These studies have also been called "Puzzle Research" after the famous study by Mehra and Prescott in which the authors first questioned the magnitude of historical equity risk premiums relative to fundamentals.[13]

In addition, there are a number of surveys of financial professionals regarding the equity risk premium. There have been several published surveys of academics on the equity risk premium. *CFO Magazine* conducts a quarterly survey of CFOs, which includes questions regarding their views on the current expected returns on stocks and bonds. Usually, over 300 CFOs participate in the survey.[14] Questions regarding expected stock and bond returns are also included in the Federal Reserve Bank of Philadelphia's annual survey of financial forecasters, which is published as the *Survey of Professional Forecasters*.[15] This survey of professional economists has been published for almost 50 years. In addition, Pablo Fernandez conducts occasional surveys of financial analysts and companies regarding the equity risk premiums they use in their investment and financial decision-making.[16]

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[13] Rajnish Mehra & Edward C. Prescott, *The Equity Premium: A Puzzle*, J. MONETARY ECON. 145 (1985).

[14] *See,* www.cfosurvey.org.

[15] Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters,* (February 15, 2013). The *Survey of Professional Forecasters* was formerly conducted by the American Statistical Association ("ASA") and the National Bureau of Economic Research ("NBER") and was known as the ASA/NBER survey. The survey, which began in 1968, is conducted each quarter. The Federal Reserve Bank of Philadelphia, in cooperation with the NBER, assumed responsibility for the survey in June 1990.

[16] Pablo Fernandez, Javier Auirreamalloa, and Javier Corres, "Market Risk Premium and Risk Free Rate used for 51 countries in 2013: a survey with 6,237 answers," June 26, 2013.

Q. PLEASE PROVIDE A SUMMARY OF THE EQUITY RISK PREMIUM STUDIES.

A. Derrig and Orr (2003), Fernandez (2007), and Song (2007) have completed the most comprehensive reviews to date of the research on the equity risk premium.[17] Derrig and Orr's study evaluated the various approaches to estimating equity risk premiums, as well as the issues with the alternative approaches and summarized the findings of the published research on the equity risk premium. Fernandez examined four alternative measures of the equity risk premium – historical, expected, required, and implied. He also reviewed the major studies of the equity risk premium and presented the summary equity risk premium results. Song provides an annotated bibliography and highlights the alternative approaches to estimating the equity risk summary.

Page 5 of Exhibit JRW-11 provides a summary of the results of the primary risk premium studies reviewed by Derrig and Orr, Fernandez, and Song, as well as other more recent studies of the equity risk premium. In developing page 5 of Exhibit JRW-11, I have categorized the studies as discussed on page 4 of Exhibit JRW-11. I have also included the results of the "Building Blocks" approach to estimating the equity risk premium, including a study I performed, which is presented in Exhibit JRW-16, Appendix C1 of this testimony. The Building Blocks approach is a hybrid approach employing elements of both historical and *ex ante* models.

[17] *See* Richard Derrig & Elisha Orr, "Equity Risk Premium: Expectations Great and Small," Working Paper (version 3.0), Automobile Insurers Bureau of Massachusetts, (August 28, 2003); Pablo Fernandez, "Equity Premium: Historical, Expected, Required, and Implied," IESE Business School Working Paper, (2007); Zhiyi Song, "The Equity Risk Premium: An Annotated Bibliography," CFA Institute, (2007).

Q. PLEASE DISCUSS PAGE 5 OF EXHIBIT JRW-11.

A. Page 5 of JRW-11 provides a summary of the results of the equity risk premium studies that I have reviewed. These include the results of: (1) the various studies of the historical risk premium, (2) *ex ante* equity risk premium studies, (3) equity risk premium surveys of CFOs, Financial Forecasters, analysts, companies and academics, and (4) the Building Block approaches to the equity risk premium. There are results reported for over 30 studies and the median equity risk premium is 4.39%.

Q. PLEASE HIGHLIGHT THE RESULTS OF THE MORE RECENT RISK PREMIUM STUDIES AND SURVEYS.

A. The studies cited on page 5 of Exhibit JRW-11 include all equity risk premium studies and surveys I could identify that were published over the past decade and that provided an equity risk premium estimate. Most of these studies were published prior to the financial crisis of the past two years. In addition, some of these studies were published in the early 2000s at the market peak. It should be noted that many of these studies (as indicated) used data over long periods of time (as long as fifty years of data) and so were not estimating an equity risk premium as of a specific point in time (e.g., the year 2001). To assess the effect of the earlier studies on the equity risk premium, I have reconstructed page 5 of Exhibit JRW-11 on page 6 of Exhibit JRW-11; however, I have eliminated all studies dated before January 2, 2010. The median for this subset of studies is 4.51%.

Q. GIVEN THESE RESULTS, WHAT MARKET OR EQUITY RISK PREMIUM ARE YOU USING IN YOUR CAPM?

A. Much of the data indicates that the market risk premium is in the 4.0% to 6.0% range. I use the midpoint of this range, 5.0%, as the market or equity risk premium.

Q. IS YOUR *EX ANTE* EQUITY RISK PREMIUM CONSISTENT WITH THE EQUITY RISK PREMIUMS USED BY CFOS?

A. Yes. In the June 2013 CFO survey conducted by *CFO Magazine* and Duke University, the expected 10-year equity risk premium was 4.2%.

Q. IS YOUR *EX ANTE* EQUITY RISK PREMIUM CONSISTENT WITH THE EQUITY RISK PREMIUMS OF PROFESSIONAL FORECASTERS?

A. It is higher, and so more favorable to Gulf Power. The financial forecasters in the previously referenced Federal Reserve Bank of Philadelphia survey project both stock and bond returns. In the February 2013 survey, the median long-term expected stock and bond returns were 6.13% and 3.83%, respectively. This provides an *ex ante* equity risk premium of 2.30% (6.13%-3.83%).

Q. IS YOUR *EX ANTE* EQUITY RISK PREMIUM CONSISTENT WITH THE EQUITY RISK PREMIUMS OF FINANCIAL ANALYSTS AND COMPANIES?

A. Yes. Pablo Fernandez recently published the results of a 2013 survey of academics, financial analysts and companies.[18] This survey included over 6,000 responses. The median equity risk premium employed by U.S. analysts and companies was 5.7%.

[18] Pablo Fernandez, Javier Auirreamalloa, and Javier Corres, "Market Risk Premium Used in 51 Countries in 2013: A survey with 6,237 Answers," June 26, 2013.

Q. WHAT EQUITY COST RATE IS INDICATED BY YOUR CAPM ANALYSIS?

A. The results of my CAPM study for the proxy groups are summarized on page 1 of Exhibit JRW-11. For the Electric Proxy Group, the risk-free rate of 4.00% plus the product of the beta of 0.70 times the equity risk premium of 5.00% results in a 7.5% equity cost rate. For the Vander Weide Proxy Group, the risk-free rate of 4.00% plus the product of the beta of 0.75 times the equity risk premium of 5.00% results in a 7.8% equity cost rate.

D. EQUITY COST RATE SUMMARY

Q. PLEASE SUMMARIZE YOUR EQUITY COST RATE STUDY.

A. My DCF analyses for the Electric and Vander Weide Proxy Groups indicate equity cost rates of 8.8% and 9.0%, respectively. My CAPM analyses for the Electric and Vander Weide Proxy Groups indicate equity cost rates of 7.5% and 7.8%, respectively.

Q. GIVEN THESE RESULTS, WHAT IS YOUR ESTIMATED EQUITY COST RATE FOR THE GROUPS?

A. Given these results, I conclude that the appropriate equity cost rate for companies in my Electric Group and the Vander Weide Proxy Group is in the 7.5% to 9.0% range. However, since I rely primarily on the DCF model, and given the recent upward movement in interest rates, I am using the upper end of the range as the equity cost rate. Therefore, I conclude that the appropriate equity cost rate as determined by the companies in the proxy groups is 9.0%.

Q. GIVEN THIS RANGE, WHAT IS YOUR RECOMMENDED ROE FOR GULF POWER?

A. I am recommending 9.0% as the equity cost rate for Gulf Power. This recommendation takes into account the relative riskiness of Gulf as indicated by the bond ratings of Gulf and the companies in the two proxy groups. In addition, I believe that this equity cost rate and the relative risk assessment also supports the use of the 9.0% ROE recommendation with the Company's proposed capital structure from investor-provided capital, which includes a common equity ratio of 47.46%.

Q. IS THERE A NEED TO ADJUST GULF'S COST OF EQUITY RECOMMENDATION BASED ON THE COMPANY'S PROPOSED CAPITAL STRUCTURE?

A. No. Gulf witness Mr. Teel cites commission decisions involving Florida Power & Light ("FP&L"), Progress Energy Florida ("Progress"), and Tampa Electric Company ("Tampa Electric") and notes that Gulf has a lower common equity ratio and higher financial risk than other Florida utilities. In particular, he cites the Commission-approved equity ratios of 59.1% for FP&L in 2010, 50.3% for Progress in 2010, and 54% for Tampa Electric in 2009. Dr. Vander Weide has included a "financial risk adjustment" of 70 basis points in his 11.5% recommendation. However, Dr. Vander Weide's financial risk adjustment is not based on the relative business and financial risks of these Florida utilities, but on the market value capital structures of the proxy electric companies relative to Gulf's book value ratemaking capital structure. As indicated in Gulf's response to Citizens' Interrogatory No. 68, Dr. Vander Weide has proposed his market value–book value financial risk adjustment in almost 100 rate

cases over the 2006-2013 time period; however, he cannot cite one regulatory agency that has made a financial risk adjustment based on his apples-to-oranges, market value–book value analysis.

Q. ARE THERE ANY OTHER REASONS WHY THERE IS NO NEED TO PROVIDE AN ADDITIONAL RETURN BASED ON THE COMPANY'S PROPOSED CAPITAL STRUCTURE AND COMMON EQUITY RATIO?

A. Yes. Bond ratings provide a comprehensive and objective measure of investment risk, and I have used bond ratings as a measure of risk in comparing the riskiness of Gulf relative to the proxy groups. In a similar manner, bond ratings can be used to assess the investment risk of Gulf and the other Florida utilities. In Exhibit JRW-12, I have provided a copy of S&P's summary bond ratings for Gulf, Tampa Electric, FP&L, and Progress. The local long-term bond ratings for the Florida utilities are: Gulf 'A', FP&L 'A-', Tampa Electric 'BBB+', and Progress 'BBB+'. These ratings show that, despite its lower common equity ratio, Gulf has a better bond rating than any of the other Florida utilities. This demonstrates that Gulf's lower common equity ratio does not result in a higher degree of overall investment risk and, therefore, no 'financial risk adjustment' is necessary or warranted.

Q. PLEASE DISCUSS THE RECENT INCREASE IN INTEREST RATES.

A. As previously noted, interest rates have increased over the past year, and in particular over the past six months. For example, 10-year Treasury yields have increased from 1.50% in July 2012 to about 2.70% currently. The very low rates in 2012 were largely attributable to slow economic growth and QE3. As the economy has

improved, speculation began in May 2013 that QE3 would be scaled back. This speculation, and the prospect of a better economy, has led to the increase in rates.

Q. DOES THE INCREASE IN INTEREST RATES OVER THE PAST YEAR INDICATE THAT EQUITY COST RATES HAVE INCREASED FOR ELECTRIC UTILITIES?

A. No, not necessarily. To address this issue, I have evaluated the relationship between 10-year Treasury yields and authorized ROEs for electric utility companies. Panel A of Exhibit JRW-13 shows the authorized ROEs for electric utility distribution companies and 10-year Treasury yields on a quarterly basis from 2005-2013. The graph shows that authorized ROEs for electric utility companies gradually declined from the 10.5% range to about 9.75% over that time frame.[19] The yields on 10-year Treasury bonds were in the 4.0% to 5.0% range in the 2005-2006 time frame, decreased to 1.5% in mid-2012, and have since increased to 2.7%. In looking at the relationship between the two, it is significant to note that when 10-year Treasury yields declined from 3.5% in early 2011 to 1.5% as of mid-year 2012, authorized ROEs for electric companies only declined from about 10.25% to 10.0%. The key point is that authorized ROEs for electric utility companies did not decline nearly as much as interest rates. Hence, the authorized ROEs for electric companies did not drop to the levels indicated by the very low interest rates in 2012. These authorized ROEs only dipped below 10.0% in 2013.

This is a little more evident in Panel B of Exhibit JRW-13, which plots the

[19] The authorized ROEs exclude the authorized ROEs in Virginia which include generation adders. See *Regulatory Focus*, Regulatory Research Associates, July 2013.

difference between authorized ROEs for electric companies and 10-year Treasury yields on a quarterly basis from 2005-2013. The difference has generally increased over time, and was in the 6.0% to 7.0% range prior to a dip in Treasury yields in 2011. The difference spiked to over 8.0% in 2011 and 2012, and has decreased to the 7.0% range in 2013 in response to the higher Treasury yields and slightly lower authorized ROEs.

Q. PLEASE INDICATE WHY A 9.0% RETURN IS APPROPRIATE FOR GULF POWER AT THIS TIME.

A. There are several reasons why a 9.0% return on equity is appropriate for the Company in this case. First, as shown in Exhibit JRW-8, the electric utility industry is one of the lowest risk industries in the U.S. as measured by beta. As such, the cost of equity capital for this industry is amongst the lowest in the U.S., according to the CAPM. Second, as shown in Exhibit JRW-2, capital costs for utilities, as indicated by long-term bond yields, are still at historically low levels, even given the increase in these rates over the past year. Third, while the markets have recovered significantly over the past four years, the growth in the economy is tepid and unemployment is still at 7.3%. The slow economic growth is a major reason that interest rates and inflation are at relatively low levels, and hence the expected returns on financial assets remain low. Therefore, in my opinion, a 9.0% return is appropriate for a regulated electric utility.

VI. CRITIQUE OF GULF POWER'S RATE OF RETURN TESTIMONY

Q. PLEASE SUMMARIZE DR. VANDER WEIDE'S RATE OF RETURN RECOMMENDATION FOR GULF POWER.

A. Gulf Power witness Mr. Teel provides the Company's proposed capital structure and long-term debt cost rate, and Dr. Vander Weide recommends a common equity cost rate for Gulf Power. The Company's rate of return recommendation is summarized on page 1 of Exhibit JRW-14. Gulf Power's recommended capital structure from investor sources includes 1.83% short-term debt, 45.46% long-term debt, 5.25% preferred stock, and 47.46% common equity. Gulf Power uses short-term and long-term debt cost rates of 0.82% and 4.96%, a preferred stock cost rate of 6.00% and an equity cost rate of 11.50%.

Q. WHAT ISSUES DO YOU HAVE WITH THE COMPANY'S COST OF CAPITAL POSITION?

A. The primary areas of disagreement in measuring Gulf Power's cost of capital are: (1) the dividend yield in the quarterly DCF model; (2) the exclusive use of the projected growth rates of Wall Street analysts to measure expected DCF growth; (3) the base interest rate as well as the market or equity risk premium in the RP and CAPM approaches; (4) an unwarranted flotation cost adjustment to Dr. Vander Weide's equity cost rate results; and (5) an erroneous financial risk or leverage adjustment based on the market value capital structures of Dr. Vander Weide's Proxy Group. These issues are addressed below.

Q. PLEASE REVIEW DR. VANDER WEIDE'S EQUITY COST RATE APPROACHES.

A. Dr. Vander Weide uses an electric utility proxy group and employs DCF, CAPM, and RP equity cost rate approaches. Dr. Vander Weide's equity cost rate estimates for Gulf Power are summarized in Panel A of page 2 of Exhibit JRW-14. Based on these figures, he concludes that the appropriate equity cost rate for the Company is 11.5%.

A. DCF APPROACH

Q. PLEASE SUMMARIZE DR. VANDER WEIDE'S DCF ESTIMATES.

A. On pages 22-32 of his testimony and his Exhibit No.___(JVW-1), Schedule 1, Dr. Vander Weide develops an equity cost rate by applying a DCF model to his group of electric utility companies. In the traditional DCF approach, the equity cost rate is the sum of the dividend yield and expected growth. Dr. Vander Weide makes adjustments to the dividend yield to reflect the quarterly payment of dividends. He uses one measure of DCF expected growth - the projected EPS growth rate forecasts from Wall Street analysts as provided by I/B/E/S. Dr. Vander Weide's DCF results are provided in Panel B of page 2 of Exhibit JRW-14. Based on these figures, Dr. Vander Weide claims that the DCF equity cost rate for the Vander Weide Proxy Group is 10.4%.

Q. PLEASE DISCUSS THE ADJUSTMENT TO THE DIVIDEND YIELD TO REFLECT THE QUARTERLY PAYMENT OF DIVIDENDS.

A. In Exhibit__(JVW-2), Appendix 2, Dr. Vander Weide discusses his quarterly DCF model. Dr. Vander Weide's approach compounds the quarterly dividend payment over

the year to compute the dividend yield. This compounding process results in an overstated dividend yield.

There are several issues with the quarterly adjustment process. First, as discussed earlier in my testimony, the appropriate dividend yield adjustment for growth in the DCF model is the expected dividend for the next quarter multiplied by four. The quarterly adjustment procedure is inconsistent with this approach. The quarterly model includes an adjustment to reflect the time value of money. Each quarterly dividend is compounded to the end of the year using the long-term growth rate as the compounding factor. As such, this approach presumes that investors require additional compensation during the coming year because their dividends are paid out quarterly instead of being all paid in a lump sum. The error in this logic and approach is that the investor receives the money from each quarterly dividend and has the option to reinvest it as he or she chooses. This reinvestment generates its own compounding; however, it is outside of the dividend payments of the issuing company. Dr. Vander Weide's approach serves to duplicate this compounding process, thereby inflating the return to the investor.

Finally, as previously discussed, the appropriate growth rate adjustment to the dividend yield in the DCF model is complicated because companies change their quarterly dividend payments at different times during the year. This means that it is not appropriate to make a full-year adjustment to the dividend yield. Therefore, I have adjusted the dividend yields for the companies in the proxy groups by 1/2 the expected growth rate. This is consistent with the approach used by FERC.

Q. PLEASE CRITIQUE DR. VANDER WEIDE'S DCF GROWTH RATE MEASURES.

A. Dr. Vander Weide uses the projected EPS growth rate forecasts of Wall Street analysts as compiled by I/B/E/S in estimating his DCF growth rate. His market-value weighted average for the group is 5.6%.

Q. PLEASE DISCUSS THE PRIMARY ERROR IN DR. VANDER WEIDE'S DCF GROWTH RATE ANALYSIS.

A. The primary issue is that Dr. Vander Weide relied exclusively on the long-term EPS growth rate forecasts of Wall Street analysts in developing a DCF growth rate. This is an error. These growth rate forecasts are overly optimistic and upwardly biased. The results of academic research on Wall Street analysts' EPS growth rate forecasts are unambiguous on this issue.

Q. WHY IS IT ERRONEOUS TO RELY EXCLUSIVELY ON THE EPS FORECASTS OF WALL STREET ANALYSTS IN ARRIVING AT A DCF GROWTH RATE?

A. A very significant issue with Dr. Vander Weide's DCF analysis is his sole reliance on the EPS growth rate forecasts of Wall Street analysts. There are several issues with using these forecasts as DCF growth rates. First, the relevant cash flows are dividends in the DCF model. Therefore, the appropriate growth rate in the DCF model is the dividend growth rate, not the earnings growth rate. Hence, in my opinion, consideration must be given to other indicators of growth, including prospective dividend growth, internal growth, as well as projected earnings growth.

Second, and most significantly and as previously noted, it is well known that the long-term EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased. This has been demonstrated in a number of academic studies over the years. In addition, I demonstrate that *Value Line*'s EPS growth rate forecasts are consistently too high. Hence, using these growth rates as a DCF growth rate will provide an overstated equity cost rate.

Q. PLEASE DISCUSS DR. VANDER WEIDE'S RELIANCE ON THE PROJECTED GROWTH RATES OF WALL STREET ANALYSTS.

A. It seems highly unlikely that investors today would rely excessively on the EPS growth rate forecasts of Wall Street analysts and ignore other growth rate measures in arriving at expected growth. As I previously indicated, the appropriate growth rate in the DCF model is the dividend growth rate, not the earnings growth rate. Hence, consideration must be given to other indicators of growth, including historic growth prospective dividend growth, internal growth, as well as projected earnings growth. In addition, as previously noted, a study by Lacina, Lee, and Xu (2011) has shown that Wall Street analysts' long-term earnings growth rate forecasts are not more accurate at forecasting future earnings than naïve random walk forecasts of future earnings. As such, the weight given to analysts' projected EPS growth rate should be limited. Finally, and most significantly, it is well-known that the long-term EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased. Thus, using these growth rates as a DCF growth rate produces an overstated equity cost rate.

Q. DR. VANDER WEIDE HAS DEFENDED THE USE OF ANALYSTS' EPS FORECASTS IN HIS DCF MODEL BY CITING A STUDY HE PUBLISHED WITH DR. WILLARD CARLETON. PLEASE DISCUSS DR. VANDER WEIDE'S STUDY.

A. Dr. Vander Weide cites the study on page 28 of his testimony. In the study, Dr. Vander Weide performs a linear regression of a company's stock price to earnings ratio (P/E) on the dividend yield payout ratio (D/E), alternative measures of growth (g), and four measures of risk (beta, covariance, R-squared, and the standard deviation of analysts' growth rate projections). He performed the study for three one-year periods – 1981, 1982, and 1983 – and he used a sample of approximately 65 companies. His results indicated that regressions measuring growth as analysts' forecasted EPS growth were more statistically significant than those using various historic measures of growth. Consequently, he concluded that analysts' growth rates are superior measures of expected growth.

Q. PLEASE CRITIQUE DR. VANDER WEIDE'S STUDY.

A. Before highlighting the errors in the study, it is important to note that the study was published more than 20 years ago, it used a sample of only 65 companies, and evaluated a three-year time period (1981-83) that was over 25 years ago. Since that time, many more exhaustive studies have been performed using significantly larger data bases and, from these studies, much has been learned about Wall Street analysts and their stock recommendations and earnings forecasts. Nonetheless, there are several errors that invalidate the results of the study.

Q. PLEASE DESCRIBE THE ERRORS IN DR. VANDER WEIDE'S STUDY.

A. The primary error in the study is that his regression model is misspecified. As a result, he cannot conclude whether one growth rate measure is better than the other. The misspecification results from the fact that Dr. Vander Weide did not actually employ a modified version of the DCF model. Instead, he used a "linear approximation." He used the approximation so that he did not have to measure k, or the investors' required return, directly. Instead, he used some proxy variables for risk. The error in this approach is that there can be an interaction between growth (g) and investors' required return (k), which could lead him to conclude that one growth rate measure is superior to others. Furthermore, due to this problem, analysts' EPS forecasts could be upwardly biased and still appear to provide better measures of expected growth.

There are other errors in the study that further invalidate the results. Dr. Vander Weide does not use both historic and analysts' projections growth rate measures in the same regression to assess if both historic and forecasts should be used together to measure expected growth. In addition, he did not perform any tests to determine if the difference between historic and projected growth measures is statistically significant. Without such tests, he cannot make any conclusions about the superiority of one measure versus the other.

B. RISK PREMIUM ("RP") APPROACH

Q. PLEASE REVIEW DR. VANDER WEIDE'S RP ANALYSIS.

A. On pages 32-40 of his testimony and in Exhibit No. ___(JVW-1), Schedules 2-5, Dr. Vander Weide develops an equity cost rate using expected (ex ante) and historical (ex

post) RP models. Dr. Vander Weide's RP results are provided in Panels C and D of page 2 of Exhibit JRW-14. In his ex ante RP approach, Dr. Vander Weide computes an expected stock return by applying the DCF model to the S&P utilities and the S&P 500. He uses the EPS growth rate forecasts of Wall Street analysts as his growth rate. He then subtracts the yield on 'A' rated utility bonds. In his historic RP model, Dr. Vander Weide's computes a historical risk premium as the difference in the arithmetic mean stock and bond returns. The stock returns are computed for different time periods for several different indexes, including S&P and Moody's electric utility indexes as well as the S&P 500. Both his ex ante and ex post RP studies include an adjustment for flotation costs. His ex ante and ex post RP studies provide equity cost rates of 11.2% and 10.8%, respectively.

Q. WHAT ARE THE ERRORS IN DR. VANDER WEIDE'S RP ANALYSES?

A. The errors in Dr. Vander Weide's RP equity cost rate approaches include: (1) an inflated base interest rate; (2) excessive risk premiums in both the ex ante and ex post RP studies; and (3) the inclusion of flotation costs. The flotation cost issue is addressed later in my testimony. The other two issues are discussed below.

Q. PLEASE DISCUSS THE BASE YIELD OF DR. VANDER WEIDE'S RISK PREMIUM ANALYSES.

A. The base yield in Dr. Vander Weide's RP analyses is the projected yield on 'A' rated utility bonds. There are two issues with his projected 6.55% 'A' rated utility bond yield. First, the yield is well above current market rates. As shown in Exhibit JRW-3, the current yield on long-term, 'A' rated public utility bonds is about 4.75%.

Second, Dr. Vander Weide's base yield is erroneous and inflates the required return on equity in two ways. To begin, long-term bonds are subject to interest rate risk, a risk which does not affect common stockholders since dividend payments (unlike bond interest payments) are not fixed but tend to increase over time. In addition, the base yield in Dr. Vander Weide's risk premium study is subject to credit risk, since it is not default risk-free like a U.S. Treasury obligation. As a result, its yield-to-maturity includes a premium for default risk and, therefore, is above its expected return. Hence, using such a bond's yield-to-maturity as a base yield results in an overstatement of investors' return expectations.

Q. DR. VANDER WEIDE EMPLOYS A DCF-BASED EX ANTE RISK PREMIUM APPROACH. PLEASE DISCUSS THE ERRORS IN THIS APPROACH.

A. Dr. Vander Weide computes a DCF-based equity risk premium in Exhibit__(JVW-1), Schedule 2. Dr. Vander Weide estimates an expected return using the DCF model and subtracts a concurrent measure of interest rates. The expected return is computed for utilities using the DCF model with analysts' EPS growth rate forecasts for the growth rate. Then, Dr. Vander Weide employs 'A' rated utility yields as a measure of interest rates. From the results of his study, he concludes that an appropriate ex ante risk premium is 4.62%.

The primary error in this approach is the DCF-based or ex ante risk premium. This ex ante risk premium uses the EPS growth rate forecasts of Wall Street analysts as the one and only measure of growth in the DCF model. This issue was previously addressed. In short, as I discuss and demonstrate in Exhibit JRW-16, Appendix B,

analysts' EPS growth rate forecasts are upwardly biased estimates of actual EPS growth for companies in general, as well as for electric utilities.

Q. PLEASE REVIEW DR. VANDER WEIDE'S EX POST OR HISTORIC RP STUDY.

A. Dr. Vander Weide performs an ex-post or historical RP study that appears in Exhibit__(JVW-1), Schedules 3 and 4. This study involves an assessment of the historical differences between S&P Public Utility Index and the S&P 500 stock returns and public utility bond returns over various time periods between the years 1937-2012. From the results of his study, Dr. Vander Weide concludes that an appropriate risk premium is 4.35%.

Q. PLEASE ADDRESS THE ISSUES INVOLVED IN USING HISTORICAL STOCK AND BOND RETURNS TO COMPUTE A FORWARD-LOOKING OR EX ANTE RISK PREMIUM.

A. Using the historical relationship between stock and bond returns to measure an ex ante equity risk premium is erroneous and, especially in this case, overstates the true market equity risk premium. The equity risk premium is based on expectations of the future. When past market conditions vary significantly from the present, historic data does not provide a realistic or accurate barometer of expectations of the future. In addition, there are a myriad of empirical problems, which result in historical market returns producing inflated estimates of expected risk premiums. Among the errors are the U.S. stock market survivorship bias (the "Peso Problem"), the company survivorship bias (only successful companies survive – poor companies do not

survive), and unattainable return bias (the Ibbotson procedure presumes monthly portfolio rebalancing). The errors associated with computing an expected equity risk premium using historical stock and bond returns are addressed at length earlier and in Exhibit JRW-16, Appendix D of this testimony.

C. CAPM APPROACH

Q. PLEASE DISCUSS DR. VANDER WEIDE'S CAPM.

A. On pages 40-49 of his testimony and in Exhibit No. ___(JVW-1), Schedules 6-8, Dr. Vander Weide develops an equity cost rate using the CAPM and two different market risk premium approaches. Dr. Vander Weide's CAPM results are provided in Panels E and F of page 2 of Exhibit JRW-14. Dr. Vander Weide estimates equity cost rates of 10.7% using his expected CAPM approach and 10.4% using his historical CAPM approach. He elects to not recommend the use of the CAPM results due to the notion that the CAPM underestimates the equity cost rate for companies such as utilities that have betas less than 1.0.

Q. WHAT ARE THE ERRORS IN DR. VANDER WEIDE'S CAPM ANALYSIS?

A. There are three flaws with Dr. Vander Weide's CAPM analysis: (1) his risk-free rate of interest of 5.25%; (2) the historic and expected market risk premiums; and (3) the flotation cost adjustment. The flotation cost adjustment is discussed later in my testimony. The other issues are addressed below.

Q. PLEASE DISCUSS DR. VANDER WEIDE'S RISK-FREE RATE OF INTEREST IN HIS CAPM.

A. Dr. Vander Weide uses a risk-free rate of interest of 5.25% in his CAPM. This is well in excess of the current yield on long-term Treasury bonds, which is about 3.7%.

Q. PLEASE ADDRESS THE PROBLEMS WITH DR. VANDER WEIDE'S HISTORIC CAPM.

A. Dr. Vander Weide's historical CAPM uses an equity risk premium of 6.7%, which is based on the difference between the arithmetic mean stock and bond income returns over the 1926-2012 period. The errors associated with computing an expected equity risk premium using historical stock and bond returns are addressed at length in Exhibit JRW-16, Appendix D of this testimony. In addition to the issues discussed in Appendix D, Dr. Vander Weide has compounded the error by using the bond income return and not the actual bond return. By omitting the price change component of the bond return, he has magnified the historic risk premium by not matching the returns on stock with the actual returns on bonds.

Q. PLEASE REVIEW THE ERRORS IN DR. VANDER WEIDE'S EQUITY OR MARKET RISK PREMIUM IN HIS EXPECTED CAPM APPROACH.

A. Dr. Vander Weide develops an expected equity risk premium for his CAPM of 7.40% in Exhibit No.__(JVW-1), Schedule 8 by applying the DCF model to the S&P 500. Dr. Vander Weide estimates an expected market return of 12.4% using a dividend yield of 2.1% and an expected DCF growth rate of 10.3%. The most significant error with this approach is that the expected DCF growth rate is the projected 5-year EPS growth rate for the companies in the S&P 500 as reported by I/B/E/S. As explained below, this produces an overstated expected market return and equity risk premium.

Q. PLEASE REVIEW DR. VANDER WEIDE'S EQUITY OR MARKET RISK PREMIUM IN HIS CAPM APPROACH.

A. The primary problem with Dr. Vander Weide's CAPM analysis is the size of the market or equity risk premium. Dr. Vander Weide develops an expected market risk premium of 7.40% by: (1) applying the DCF model to the S&P 500 to get an expected market return; and (2) subtracting the risk-free rate of interest. The expected EPS growth rate is the average of the expected EPS growth rates from I/B/E/S. The primary error in this approach is his expected DCF growth rate. As previously discussed, the expected EPS growth rates of Wall Street analysts are upwardly biased. Therefore, as explained below, this produces an overstated expected market return and equity risk premium.

Q. BEYOND YOUR PREVIOUS DISCUSSION OF THE UPWARD BIAS IN WALL STREET ANALYSTS' EPS GROWTH RATE FORECASTS, WHAT OTHER EVIDENCE CAN YOU PROVIDE TO DEMONSTRATE THAT DR. VANDER WEIDE'S S&P 500 GROWTH RATE IS EXCESSIVE?

A. A long-term EPS growth rate of 10.3% is not consistent with historic, as well as projected, economic and earnings growth in the U.S for several reasons: (1) Dr. Vander Weide's projected EPS growth rate of 10.3% is more than 50% above the long-term EPS and economic growth, as measured by GDP; (2) more recent trends in GDP growth, as well as projections of GDP growth, suggest slower economic and earnings growth in the future; and (3) over time, EPS growth tends to lag behind GDP growth.

The long-term economic, earnings, and dividend growth rate in the U.S. has only been in the 5% to 7% range. I performed a study of the growth in nominal GDP, S&P 500 stock price appreciation, and S&P 500 EPS and DPS growth since 1960. The results are provided on page 1 of Exhibit JRW-15, and a summary is provided for 1960 to present: nominal GDP of 6.74%; S&P 500 stock price of 6.35%; S&P 500 EPS of 6.96%; S&P 500 DPS of 5.39%; with an average of 6.36%. The results are presented graphically on page 2 of Exhibit JRW-15. In sum, the historical long-run growth rates for nominal GDP, S&P 500, S&P 500 EPS, and S&P 500 DPS are in the 5% to 7% range. By comparison, Dr. Vander Weide's long-run EPS growth rate projection of 10.3% is vastly overstated. These estimates suggest that companies in the U.S. would be expected to: (1) increase their growth rate of EPS by over 50% in the future and (2) maintain that growth indefinitely in an economy that is expected to grow at about one-half of his projected growth rates.

Q. DO MORE RECENT DATA SUGGEST THAT THE U.S. ECONOMY GROWTH IS FASTER OR SLOWER THAN THE LONG-TERM DATA?

A. The more recent trends suggest lower future economic growth than the long-term historic GDP growth. The historic GDP growth rates for 10, 20, 30, 40 and 50 years, as presented in Panel A of page 3 of Exhibit JRW-15, clearly suggest that nominal GDP growth in recent decades has slowed to the 4.0% to 5.0% area.

Q. WHAT LEVEL OF GDP GROWTH IS FORECASTED BY ECONOMISTS AND GOVERNMENT AGENCIES?

A. As shown in Panel B of page 3 of Exhibit JRW-15, forecasts of annual GDP growth from the Congressional Budget Office (4.6%), the *Survey of Professional Forecasters* (4.8%), and the Energy Information Administration (4.5%) suggest that GDP growth in the range of 4.0% to 5.0% is more appropriate today for the U.S. economy.

Q. WHY IS GDP GROWTH RELEVANT IN YOUR DISCUSSION OF DR. VANDER WEIDE'S USE OF THE LONG-TERM EPS GROWTH RATES IN DEVELOPING A MARKET RISK PREMIUM FOR HIS CAPM?

A. Because, as indicated in recent research, the long-term earnings growth rates of companies are limited to the growth rate in GDP.

Q. PLEASE HIGHLIGHT THE RECENT RESEARCH ON THE LINK BETWEEN ECONOMIC AND EARNINGS GROWTH AND EQUITY RETURNS.

A. Brad Cornell of the California Institute of Technology recently published a study on GDP growth, earnings growth, and equity returns. He finds that long-term EPS growth in the U.S. is directly related to GDP growth, with GDP growth providing an upward limit on EPS growth. In addition, he finds that long-term stock returns are determined by long-term earnings growth. He concludes with the following observations:[20]

> The long-run performance of equity investments is fundamentally linked to growth in earnings. Earnings growth, in turn, depends on growth in real GDP. This article demonstrates that both theoretical research and empirical research in development economics suggest

[20] Bradford Cornell, "Economic Growth and Equity Investing," *Financial Analysts Journal* (January- February, 2010), p. 63.

> relatively strict limits on future growth. In particular, real GDP growth in excess of 3 percent in the long run is highly unlikely in the developed world. In light of ongoing dilution in earnings per share, this finding implies that investors should anticipate real returns on U.S. common stocks to average no more than about 4–5 percent in real terms.

Given current inflation in the 2% to 3% range, the results imply nominal expected stock market returns in the 7% to 8% range. As such, Dr. Vander Weide's projected earnings growth rates and implied expected stock market returns and equity risk premiums are not indicative of the realities of the U.S. economy and stock market. As such, his expected CAPM equity cost rate is significantly overstated.

Q. PLEASE PROVIDE A SUMMARY ASSESSMENT OF DR. VANDER WEIDE'S PROJECTED EQUITY RISK PREMIUM DERIVED FROM EXPECTED MARKET RETURNS.

A. Dr. Vander Weide's market risk premium derived from his DCF application to the S&P 500 is inflated due to errors and bias in his study. Investment banks, consulting firms, and CFOs use the equity risk premium concept every day in making financing, investment, and valuation decisions. On this issue, the opinions of CFOs and financial forecasters are especially relevant. CFOs deal with capital markets on an ongoing basis since they must continually assess and evaluate capital costs for their companies. They are well aware of the historical stock and bond return studies of Ibbotson. The CFOs in the June 2013 *CFO Magazine* – Duke University Survey of over almost 350 CFOs anticipate an expected return on the S&P 500 of 6.7% over the next 10 years. In addition, the financial forecasters in the February 2013 Federal Reserve Bank of Philadelphia survey expect an annual market return of 6.15% over

the next 10 years. As such, with a more realistic equity or market risk premium, the appropriate equity cost rate for a public utility should be in the 8.0% to 9.0% range, and not in the 10.0% to 11.0% range.

D. FLOTATION COSTS

Q. PLEASE DISCUSS DR. VANDER WEIDE'S ADJUSTMENT FOR FLOTATION COSTS.

A. Dr. Vander Weide claims that an upward adjustment to the equity cost rate is warranted for flotation costs. This adjustment factor is erroneous for several reasons. First, he has not identified any actual flotation costs for the Company. Therefore, Gulf Power is requesting annual revenues in the form of a higher return on equity for flotation costs that have not been identified. Second, it is commonly argued that a flotation cost adjustment (such as that used by the Company) is necessary to prevent the dilution of the existing shareholders. In this case, Dr. Vander Weide justifies a flotation cost adjustment by referring to bonds and the manner in which issuance costs are recovered by including the amortization of bond flotation costs in annual financing costs. However, this is incorrect for several reasons:

(1) If an equity flotation cost adjustment is similar to a debt flotation cost adjustment, the fact that the market-to-book ratios for electric utility companies are over 1.5X actually suggests that there should be a flotation cost reduction (and not an increase) to the equity cost rate. This is because when (a) a bond is issued at a price in excess of face or book value, and (b) the difference between market price and the book value is greater than the flotation or issuance costs, the cost of that debt is lower than the coupon rate of the debt. The amount by which market values of electric

utility companies are in excess of book values is much greater than flotation costs. Hence, if common stock flotation costs were exactly like bond flotation costs, and one was making an explicit flotation cost adjustment to the cost of common equity, the adjustment would be downward;

(2) If a flotation cost adjustment is needed to prevent dilution of existing stockholders' investment, then the reduction of the book value of stockholder investment associated with flotation costs can occur only when a company's stock is selling at a market price at/or below its book value. As noted above, electric utility companies are selling at market prices well in excess of book value. Hence, when new shares are sold, existing shareholders realize an increase in the book value per share of their investment, not a decrease;

(3) Flotation costs consist primarily of the underwriting spread or fee and not out-of-pocket expenses. On a per-share basis, the underwriting spread is the difference between the price the investment banker receives from investors and the price the investment banker pays to the company. Therefore, these are not expenses that must be recovered through the regulatory process. Furthermore, the underwriting spread is known to the investors who are buying the new issue of stock, and who are well aware of the difference between the price they are paying to buy the stock and the price that the Company is receiving. The offering price which they pay is what matters when investors decide to buy a stock based on its expected return and risk prospects. Therefore, the company is not entitled to an adjustment to the allowed return to account for those costs; and

(4) Flotation costs, in the form of the underwriting spread, are a form of a transaction cost in the market. They represent the difference between the price paid

by investors and the amount received by the issuing company. Whereas the Company believes that it should be compensated for these transaction costs, it has not accounted for other market transaction costs in determining its cost of equity. Most notably, brokerage fees that investors pay when they buy shares in the open market are another market transaction cost. Brokerage fees increase the effective stock price paid by investors to buy shares. If the Company had included these brokerage fees or transaction costs in its DCF analysis, the higher effective stock prices paid for stocks would lead to lower dividend yields and equity cost rates. This would result in a downward adjustment to their DCF equity cost rate.

E. LEVERAGE ADJUSTMENT

Q. PLEASE REVIEW DR. VANDER WEIDE'S LEVERAGE ADJUSTMENT.

A. Dr. Vander Weide has added a leverage adjustment of 70 basis points to the estimated equity cost rates that he estimated using the DCF, RP, and CAPM approaches. Dr. Vander Weide claims that this is needed since (1) market values are greater than book values for utilities and (2) the overall rate of return is applied to a book value capitalization in the ratemaking process. This adjustment is unwarranted for the following reasons:

(1) The market value of a firm's equity exceeds the book value of equity when the firm is expected to earn more on the book value of investment than investors require. This relationship is described very succinctly in the Harvard Business School case study that I quote earlier in my testimony.[21] As such, the reason that market values exceed book values is that the company is earning a return on equity in excess of its cost of

[21] See pages 19-20.

equity;

(2) Despite Dr. Vander Weide's contention that this represents a leverage adjustment, there is actually no change in leverage. Consequently, there is no need for a leverage adjustment since there is no change in leverage. Therefore, the Company's financial statements and fixed financial obligations remain the same;

(3) Financial publications and investment firms report capitalizations on a book value and not a market value basis;

(4) Dr. Vander Weide has presented his leverage adjustment in almost 100 rate cases over many years before various regulatory commissions. In Gulf's response to Citizens' Interrogatory No. 68, Dr. Vander Weide indicated that he had been recommending the leverage adjustment to his cost of equity since the early 1990s. However, he could not identify any proceeding in which he has testified where the regulatory commission had adopted his leverage adjustment;

(5) As I previously noted, Gulf's common equity ratio and financial leverage is in line with the common equity ratios and financial leverage of other electric utilities; and

(6) Gulf's bond ratings suggest that the Company's investment risk is at or below that of other electric utilities, including those that operate in Florida.

Q. PLEASE EXPLAIN WHY YOU BELIEVE THAT REGULATORY COMMISSIONS HAVE REJECTED DR. VANDER WEIDE'S LEVERAGE ADJUSTMENT?

A. I believe that Dr. Vander Weide's leverage adjustment has been rejected by regulatory commissions because it increases the ROEs for utilities that have high returns on common equity and decreases the ROEs for utilities that have low returns

on common equity.

In the graphs presented in Exhibit JRW-6, I have demonstrated that there is a strong positive relationship between expected returns on common equity and market-to-book ratios for public utilities. Hence, in the context of Dr. Vander Weide's leverage adjustment, this means that: (1) for a utility with a relatively high market-to-book ratio (e.g., 2.5) and ROE (e.g., 12.0%), the leverage adjustment will increase the estimated equity cost rate, while (2) for a utility with a relatively low market-to-book ratio (e.g., 0.5) and ROE (e.g., 5.0%), the leverage adjustment will decrease the estimated equity cost rate. Therefore, the adjustment will result in even higher market-to-book ratios for utilities with relatively high ROEs and even lower market-to-book ratios for utilities with relatively low ROEs.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing Direct Testimony of J. Randall Woolridge has been furnished by U.S. Mail and/or hand delivery to the following parties on this 16th day of October, 2013, to the following:

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Exhibit JRW-1
Gulf Power Company
OPC's Recommended Cost of Capital

Weighted Average Cost of Capital - Regulatory Capital Structure

Capital	Capitalization Amounts	Capitalization Ratios	Cost Rate	Weighted Cost Rate
Short-Term Debt	$ 27,615	1.47%	0.82%	0.01%
Long-Term Debt	$ 685,025	36.36%	4.96%	1.80%
Preferred Stock	$ 79,085	4.20%	6.00%	0.25%
Common Equity	$ 715,221	37.96%	9.00%	3.42%
Customer Deposits	$ 20,943	1.11%	2.30%	0.03%
Deferred Taxes	$ 379,918	20.17%	0.00%	0.00%
FASB 109 Deferred Taxes	$ (25,718)	-1.37%	0.00%	0.00%
Investment Credit - Weighted Cost	$ 1,812	0.10%	6.86%	0.01%
Totals	$ 1,883,901	100.00%		5.52%

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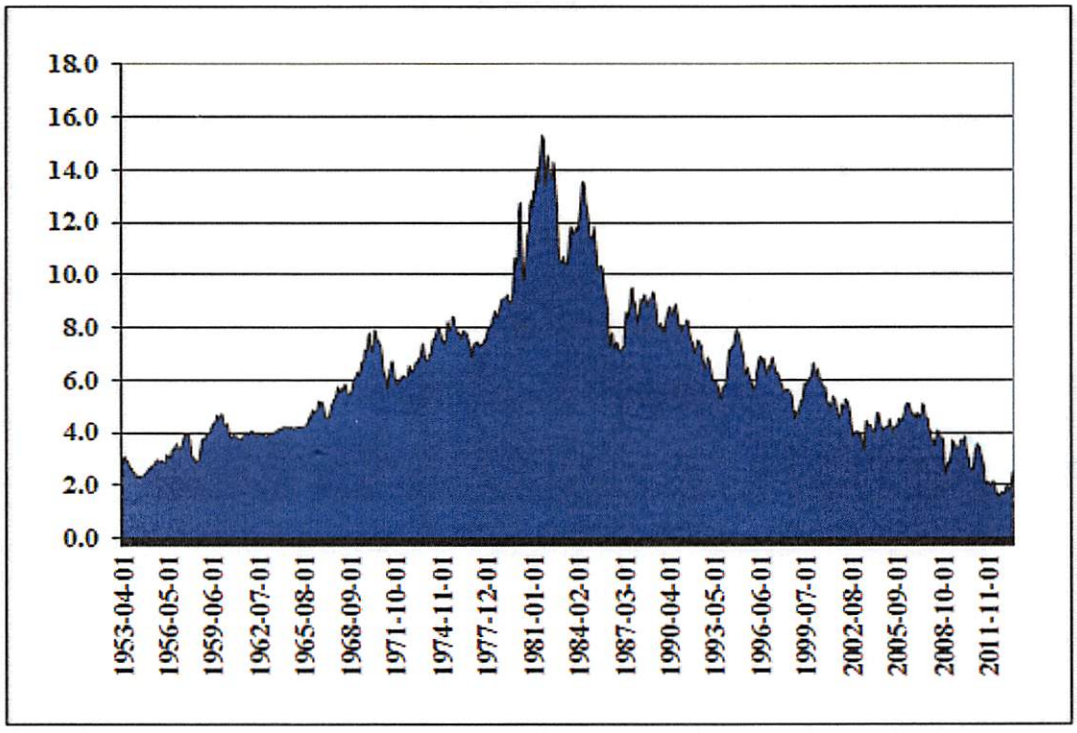
Panel B - OPC's Recommended Capitalization Ratios for Gulf Power - Investor-Provided Capital

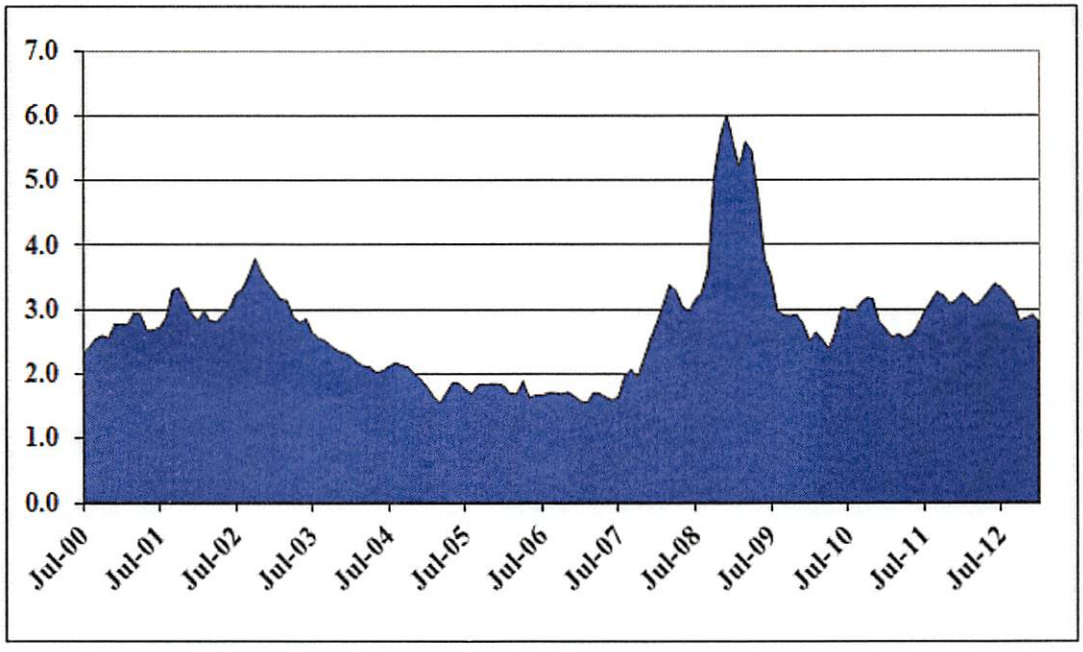
Capital	Capitalization Amounts	Capitalization Ratios	Cost Rate	Weighted Cost Rate
Short-Term Debt	$ 27,615	1.83%	0.82%	0.02%
Long-Term Debt	$ 685,025	45.46%	4.96%	2.25%
Preferred Stock	$ 79,085	5.25%	6.00%	0.31%
Common Equity	$ 715,221	47.46%	9.00%	4.27%
	$ 1,506,946	100.00%		6.86%

Exhibit JRW-2

Panel A
10-Year Treasury Yields
1953-Present

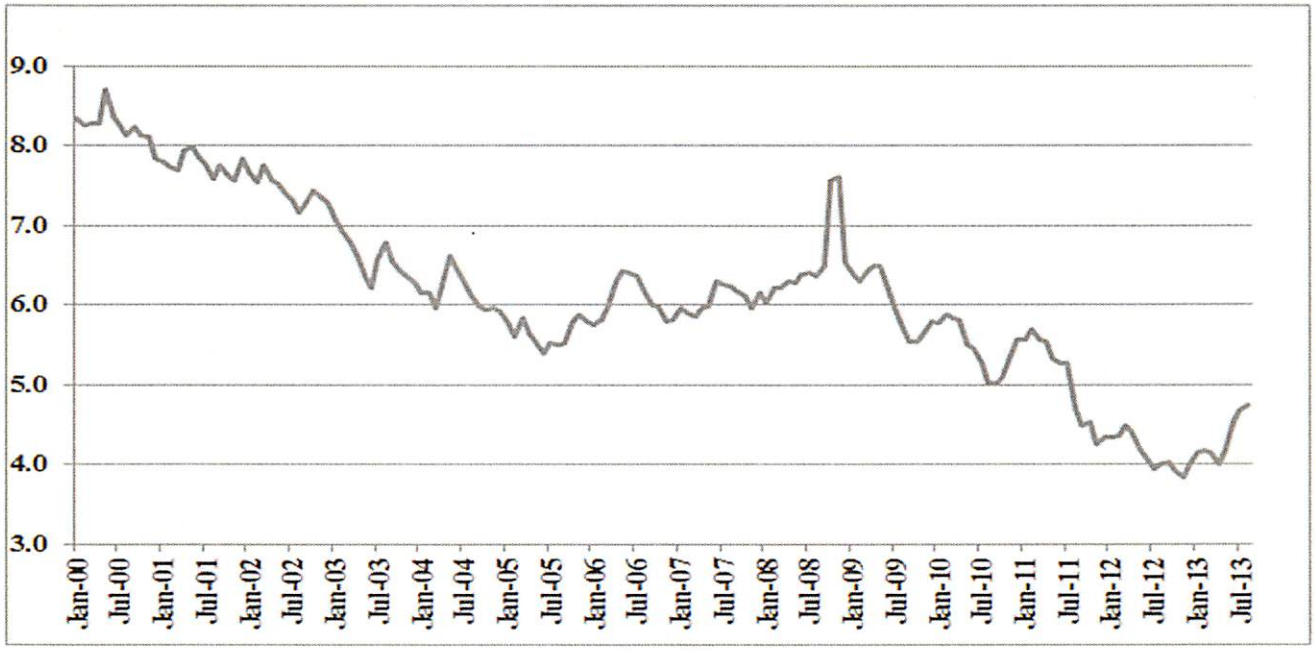


Panel B
Long-Term Moody's Baa Yields Minus 10-Year Treasury Yields
2000-Present



Source: Federal Reserve Bank of St. Louis, FRED Database.

Exhibit JRW-3
Panel A
Long-Term, 'A' Rated Public Utility Yields



Panel B
Long-Term, 'A' Rated Public Utility Yields Minus 20-Year Treasury Yields

Source: Mergent Bond Record

Exhibit JRW-4
Gulf Power Company
Summary Financial Statistics

Electric Proxy Group

Company	Operating Revenue ($mil)	Percent Elec Revenue	Percent Gas Revenue	Net Plant ($mil)	Market Cap ($mil)	S&P Bond Rating	Moody's Bond Rating	Pre-Tax Interest Coverage	Primary Service Area	Common Equity Ratio	Return on Equity	Market to Book Ratio
ALLETE, Inc. (NYSE-ALE)	1,004.2	91		2,397.2	1.9	A-	A2	4.0	MN, WI	53.1	8.8	1.53
Alliant Energy Corporation (NYSE-LNT)	3,216.1	82	14	8,027.2	5.6	A-	A3	3.7	WS,IA	48.5	10.9	1.66
Ameren Corporation (NYSE-AEE)	6,388.0	84	16	15,601.0	8.1	BBB+/BBB	Baa1/Baa2	2.9	IL,MO	50.2	NM	1.27
American Electric Power Co. (NYSE-AEP)	15,177.0	90		39,425.0	20.8	BBB/BBB-	Baa2	3.2	10 States	44.8	7.9	1.34
Avista Corporation (NYSE-AVA)	1,586.1	63	30	3,104.2	1.6	A-	A3	2.9	WA,OR,ID	45.9	7.1	1.25
Black Hills Corporation (NYSE-BKH)	1,226.2	51	41	2,831.9	2.2	BBB	Baa1/Baa2	3.0	CO,SD,WY,MT	49.4	11.2	1.73
Cleco Corporation (NYSE-CNL)	1,035.6	95		3,042.2	2.7	BBB/BBB-	Baa2/Baa3	3.8	LA	53.3	10.4	1.80
CMS Energy Corporation (NYSE-CMS)	6,562.0	64	33	11,916.0	7.1	BBB+/BBB	Baa1	3.1	MI	30.3	13.6	2.14
Consolidated Edison, Inc. (NYSE-ED)	12,341.0	71	14	27,056.0	16.4	A-/BBB+	A3/Baa1	4.0	NY,PA	49.0	8.6	1.38
DTE Energy Company (NYSE-DTE)	9,258.0	57	16	15,190.0	11.8	A-/BBB+	A2/A3	3.3	MI	48.8	8.8	1.56
Duke Energy Corporation (NYSE-DUK)	24,194.0	84	2	68,877.0	46.8	BBB+	A3/Baa1	2.8	NC,SC,FL,OH,KY	49.2	6.4	1.17
Edison International (NYSE-EIX)	11,810.0	97		29,301.0	15.2	BBB+	A3	5.1	CA	43.3	NM	1.62
FirstEnergy Corporation (ASE-FE)	14,604.0	51		33,091.0	15.2	BBB	Baa2	2.2	OH,PA,NJ,WV,MD,NY	38.3	2.3	1.19
Great Plains Energy Incorporated (NYSE-GXP)	2,369.1	100		7,581.2	3.5	BBB	Baa2	2.9	MO,KS	45.6	7.2	1.02
Hawaiian Electric Industries, Inc. (NYSE-HE)	3,286.7	92		3,701.9	2.5	BBB-	Baa2	4.2	HI	47.8	8.5	1.55
IDACORP, Inc. (NYSE-IDA)	1,153.7	100		3,587.2	2.5	A-	A2	3.5	ID	50.7	10.7	1.37
MGE Energy, Inc. (NYSE-MGEE)	570.4	70	29	1,123.3	1.3	AA-	Aa2	7.0	WI	61.5	12.2	2.13
Nextera Energy (NYSE-NEE)	14,330.0	71		50,460.0	34.7	A-/BBB+	Aa3	3.3	FL	37.0	10.7	2.09
Northeast Utilities (NYSE-NU)	7,176.4	87	11	16,931.4	13.0	A-	Baa1	3.8	CT,NH,MA	50.2	8.5	1.38
NorthWestern Corporation (NYSE-NWE)	1,089.8	75	25	2,532.4	1.7	A-	A2	2.5	SD,MT,NE	46.5	11.3	1.69
Otter Tail Corporation (NDQ-OTTR)	728.3	86		1072.8	0.9	BBB-	Baa3	2.9	ND,SD,MN	54.5	5.1	1.67
Pepco Holdings, Inc. (NYSE-POM)	4,515.0	94	4	9,253.0	4.8	A-/BBB+	Baa1/Baa2	3.7	DC,MD,VA,NJ	44.6	NM	1.12
PG&E Corporation (NYSE-PCG)	15,254.0	80	15	39,067.0	18.9	BBB/BBB-	A3/Baa1	2.6	CA	49.0	6.9	1.36
Pinnacle West Capital Corp. (NYSE-PNW)	3,405.1	100		10,309.6	6.0	BBB	Baa1	4.4	AZ	52.9	10.8	1.49
PNM Resources, Inc. (NYSE-PNM)	1,378.4	100		3,807.4	1.8	BBB	Baa3	2.4	NM,TX	44.7	6.5	1.10
Portland General Electric Company (NYSE-POR)	1,789.0	100		4,532.0	2.2	A-	A2	2.8	OR	50.3	5.4	1.25
PPL Corporation (NYSE-PPL)	11,532.0	59		30,600.0	18.1	A-	A2	2.9	PA,KY	34.4	14	1.65
SCANA Corporation (NYSE-SCG)	4,487.0	56	18	11,348.0	6.8	BBB+	Baa1/Baa2	3.2	SC,NC,GA	43.9	10.9	1.50
Southern Company (NYSE-SO)	16,895.0	95		49,317.0	36.8	A	A3/Baa1	5.3	GA,AL,FL,MS	45.3	9.2	1.96
UNS Energy Corp. (NYSE-UNS)	1,473.1	91	9	3,367.4	1.9	BBB-	Baa2	3.0	AZ	36.9	9.8	1.78
Westar Energy, Inc. (NYSE-WR)	2,335.3	100		7,557.3	4.0	A-	A3	3.5	KS	44.9	10.6	1.36
Wisconsin Energy Corporation (NYSE-WEC)	4,398.0	74	24	10,704.5	9.3	A-/BBB+	A2/A3	4.0	WI	45.0	13.2	2.20
Xcel Energy Inc. (NYSE-XEL)	10,637.2	83	11	24,813.4	13.8	A-	A3	3.6	MN,WI,ND,SD,MI	44.8	10.9	1.48
Mean	6,582.0	82	18	16,712.9	10.3	A-/BBB+	A3	3.5		46.5	9.3	1.54
Median	4,398.0	84	16	10,309.6	6.0	A-/BBB+	A3	3.3		46.5	9.5	1.50
Southern Company (NYSE-SO)	16,895.0	95		49,317.0	36.8	A	A3/Baa1	4.8	GA,AL,FL,MS	45.3	9.2	1.96

Data Source: *AUS Utility Reports*, September, 2013; Pre-Tax Interest Coverage and Primary Service Territory are from *Value Line Investment Survey*, 2013.

Exhibit JRW-4
Gulf Power Company
Summary Financial Statistics

Vander Weide Proxy Group

Company	Operating Revenue ($mil)	Percent Elec Revenue	Percent Gas Revenue	Net Plant ($mil)	Market Cap ($mil)	S&P Bond Rating	Moody's Bond Rating	Pre-Tax Interest Coverage	Primary Service Area	Common Equity Ratio	Return on Equity	Market to Book Ratio
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Alliant Energy Corporation (NYSE-LNT)	3,216.1	82	14	8,027.2	5.6	A-	A3	3.7	WS,IA	48.5	10.9	1.66
American Electric Power Co. (NYSE-AEP)	15,177.0	90		39,425.0	20.8	BBB/BBB-	Baa2	3.2	10 States	44.8	7.9	1.34
Black Hills Corporation (NYSE-BKH)	1,226.2	51	41	2,831.9	2.2	BBB	Baa1/Baa2	3.0	CO,SD,WY,MT	49.4	11.2	1.73
CenterPoint Energy (NYSE-CNP)	8,125.0	29	39	9,184.0	9.8	A-/BBB+	Baa1/Baa2	2.7	TX,LA,MS,AR,OK,MN	32.8	4.5	2.34
CMS Energy Corporation (NYSE-CMS)	6,562.0	64	33	11,916.0	7.1	BBB+/BBB	Baa1	3.1	MI	30.3	13.6	2.14
Dominion Resources, Inc. (NYSE-D)	13,081.0	43	2	31,554.0	33.2	A-	Baa1/Baa2	3.5	VA,NC,WV,OH	32.9	2.2	3.02
DTE Energy Company (NYSE-DTE)	9,258.0	57	16	15,190.0	11.8	A-/BBB+	A2/A3	3.3	MI	48.8	8.8	1.56
Duke Energy Corporation (NYSE-DUK)	24,194.0	84	2	68,877.0	46.8	BBB+	A3/Baa1	2.8	NC,SC,FL,OH,KY	49.2	6.4	1.17
Entergy Corporation (NYSE-ETR)	10,746.9	77	1	27,572.1	11.3	BBB+/BBB	Baa2	3.1	LA,MS,AR	40.0	10.4	1.21
Great Plains Energy Incorporated (NYSE-GXP)	2,369.1	100		7,581.2	3.5	BBB	Baa2	2.9	MO,KS	45.6	7.2	1.02
Hawaiian Electric Industries, Inc. (NYSE-HE)	3,286.7	92		3,701.9	2.5	BBB-	Baa2	4.2	HI	47.8	8.5	1.55
Integrys Energy Group (NYSE-TEG)	4,918.7	26	39	6,062.6	4.6	A-	A2/A3	5.8	WI,IL,MN,MI	51.3	10.1	1.43
Nextera Energy (NYSE-NEE)	14,330.0	71		50,460.0	34.7	A-/BBB+	Aa3	3.3	FL	37.0	10.7	2.09
Northeast Utilities (NYSE-NU)	7,176.4	87	11	16,931.4	13.0	A-	Baa1	3.8	CT,NH,MA	50.2	8.5	1.38
NorthWestern Corporation (NYSE-NWE)	1,089.8	75	25	2,532.4	1.7	A-	A2	2.5	SD,MT,NE	46.5	11.3	1.69
OGE Energy Corp. (NYSE-OGE)	3,611.1	61		6,382.9	14.1	BBB+	Baa1	4.1	OK,AR	49.4	12.5	2.39
Otter Tail Corporation (NDQ-OTTR)	728.3	86		1072.8	0.9	BBB-	Baa3	2.9	ND,SD,MN	54.5	5.1	1.67
Pepco Holdings, Inc. (NYSE-POM)	4,515.0	94	4	9,253.0	4.8	A-/BBB+	Baa1/Baa2	3.7	DC,MD,VA,NJ	44.6	NM	1.12
Pinnacle West Capital Corp. (NYSE-PNW)	3,405.1	100		10,309.6	6.0	BBB	Baa1	4.4	AZ	52.9	10.8	1.49
PNM Resources, Inc. (NYSE-PNM)	1,378.4	100		3,807.4	1.8	BBB	Baa3	2.4	NM,TX	44.7	6.5	1.10
Portland General Electric Company (NYSE-POR)	1,789.0	100		4,532.0	2.2	A-	A2	2.8	OR	50.3	5.4	1.25
SCANA Corporation (NYSE-SCG)	4,487.0	56	18	11,348.0	6.8	BBB+	Baa1/Baa2	3.2	SC,NC,GA	43.9	10.9	1.50
SEMPRA Energy (NYSE-SRE)	10,479.0	34	39	25,171.0	20.0	A/A-	A2	2.8	CA	44.0	9.7	1.89
Southern Company (NYSE-SO)	16,895.0	95		49,317.0	36.8	A	A3/Baa1	5.3	GA,AL,FL,MS	45.3	9.2	1.96
TECO Energy, Inc. (NYSE-TE)	2,944.0	66	14	6,040.5	3.6	BBB+/BBB	A3	3.4	FL	43.6	7.9	1.56
Vectren Corporation (NYSE-VVC)	2,389.2	26	33	3,160.6	2.8	A/A-	A2	3.6	IN,OH	44.3	8.4	1.82
Westar Energy, Inc. (NYSE-WR)	2,335.3	100		7,557.3	4.0	A-	A3	3.5	KS	44.9	10.6	1.36
Wisconsin Energy Corporation (NYSE-WEC)	4,398.0	74	24	10,704.5	9.3	A-/BBB+	A2/A3	4.0	WI	45.0	13.2	2.20
Xcel Energy Inc. (NYSE-XEL)	10,637.2	83	11	24,813.4	13.8	A-	A3	3.6	MN,WI,ND,SD,MI	44.8	10.9	1.48
Mean	6,525.1	73	20	15,923.8	11.2	A-/BBB+	A3/Baa1	3.5		45.3	9.0	1.65
Median	4,442.5	80	17	9,218.5	6.4	A-/BBB+	A3/Baa1	3.4		45.2	9.2	1.55

Southern Company (NYSE-SO)	16,895.0	95		49,317.0	36.8	A	A3/Baa1	4.8	GA,AL,FL,MS	45.3	9.2	1.96

Data Source: *AUS Utility Reports*, September, 2013; Pre-Tax Interest Coverage and Primary Service Territory are from *Value Line Investment Survey*, 2013.

Exhibit JRW-4
Gulf Power Company
Value Line Risk Metrics

Electric Proxy Group

Company	Beta	Financial Strength	Safety	Stock Price Stability
ALLETE, Inc. (NYSE-ALE)	0.70	2	A	100
Alliant Energy Corporation (NYSE-LNT)	0.75	2	A	95
Ameren Corporation (NYSE-AEE)	0.80	3	B++	95
American Electric Power Co. (NYSE-AEP)	0.70	3	B++	100
Avista Corporation (NYSE-AVA)	0.70	2	A	95
Black Hills Corporation (NYSE-BKH)	0.85	3	B+	90
Cleco Corporation (NYSE-CNL)	0.65	1	A	100
CMS Energy Corporation (NYSE-CMS)	0.75	3	B+	95
Consolidated Edison, Inc. (NYSE-ED)	0.60	1	A+	100
DTE Energy Company (NYSE-DTE)	0.75	2	B++	100
Duke Energy Corporation (NYSE-DUK)	0.60	2	A	100
Edison International (NYSE-EIX)	0.75	2	B++	95
FirstEnergy Corporation (ASE-FE)	0.80	3	B+	90
Great Plains Energy Incorporated (NYSE-GXP)	0.80	3	B+	90
Hawaiian Electric Industries, Inc. (NYSE-HE)	0.70	2	B++	90
IDACORP, Inc. (NYSE-IDA)	0.70	2	B++	100
MGE Energy, Inc. (NYSE-MGEE)	0.60	1	A	100
Nextera Energy (NYSE-NEE)	0.70	2	A	100
Northeast Utilities (NYSE-NU)	0.75	2	B++	100
NorthWestern Corporation (NYSE-NWE)	0.70	3	B+	100
Otter Tail Corporation (NDQ-OTTR)	0.90	3	B+	80
Pepco Holdings, Inc. (NYSE-POM)	0.75	3	B	95
PG&E Corporation (NYSE-PCG)	0.55	3	B+	100
Pinnacle West Capital Corp. (NYSE-PNW)	0.70	1	A	100
PNM Resources, Inc. (NYSE-PNM)	0.90	3	B	80
Portland General Electric Company (NYSE-POR)	0.75	2	B++	100
PPL Corporation (NYSE-PPL)	0.65	3	B++	95
SCANA Corporation (NYSE-SCG)	0.65	2	B++	100
Southern Company (NYSE-SO)	0.55	1	A	100
UNS Energy Corp. (NYSE-UNS)	0.70	3	B+	100
Westar Energy, Inc. (NYSE-WR)	0.75	2	B++	100
Wisconsin Energy Corporation (NYSE-WEC)	0.65	1	A	100
Xcel Energy Inc. (NYSE-XEL)	0.65	2	B++	100
Mean	0.71	2.21	B++	97
Median	0.70	2.00	B++	100

Data Source: *Value Line Investment Survey*, 2013.

Exhibit JRW-4
Gulf Power Company
Value Line Risk Metrics

Vander Weide Proxy Group

Company	Beta	Financial Strength	Safety	Stock Price Stability
ALLETE, Inc. (NYSE-ALE)	0.70	2	A	100
Alliant Energy Corporation (NYSE-LNT)	0.75	2	A	95
American Electric Power Co. (NYSE-AEP)	0.70	3	B++	100
Black Hills Corporation (NYSE-BKH)	0.85	3	B+	90
CenterPoint Energy (NYSE-CNP)	0.80	2	B++	90
CMS Energy Corporation (NYSE-CMS)	0.75	3	B+	95
Dominion Resources, Inc. (NYSE-D)	0.70	2	B++	100
DTE Energy Company (NYSE-DTE)	0.75	2	B++	100
Duke Energy Corporation (NYSE-DUK)	0.60	2	A	100
Entergy Corporation (NYSE-ETR)	0.70	3	B++	100
Great Plains Energy Incorporated (NYSE-GXP)	0.80	3	B+	90
Hawaiian Electric Industries, Inc. (NYSE-HE)	0.70	2	B++	90
Integrys Energy Group (NYSE-TEG)	0.90	2	A	75
Nextera Energy (NYSE-NEE)	0.70	2	A	100
Northeast Utilities (NYSE-NU)	0.75	2	B++	100
NorthWestern Corporation (NYSE-NWE)	0.70	3	B+	100
OGE Energy Corp. (NYSE-OGE)	0.75	2	A	95
Otter Tail Corporation (NDQ-OTTR)	0.90	3	B+	80
Pepco Holdings, Inc. (NYSE-POM)	0.75	3	B	95
Pinnacle West Capital Corp. (NYSE-PNW)	0.70	1	A	100
PNM Resources, Inc. (NYSE-PNM)	0.90	3	B	80
Portland General Electric Company (NYSE-POR)	0.75	2	B++	100
SCANA Corporation (NYSE-SCG)	0.65	2	B++	100
SEMPRA Energy (NYSE-SRE)	0.80	2	A	95
Southern Company (NYSE-SO)	0.55	1	A	100
TECO Energy, Inc. (NYSE-TE)	0.85	2	B++	90
Vectren Corporation (NYSE-VVC)	0.75	2	A	95
Westar Energy, Inc. (NYSE-WR)	0.75	2	B++	100
Wisconsin Energy Corporation (NYSE-WEC)	0.65	1	A	100
Xcel Energy Inc. (NYSE-XEL)	0.65	2	B++	100
Mean	0.74	2.20	B++	95
Median	0.75	2.00	B++	100

Data Source: *Value Line Investment Survey*, 2013.

Exhibit JRW-5
Gulf Power Company
Capital Structure Ratios

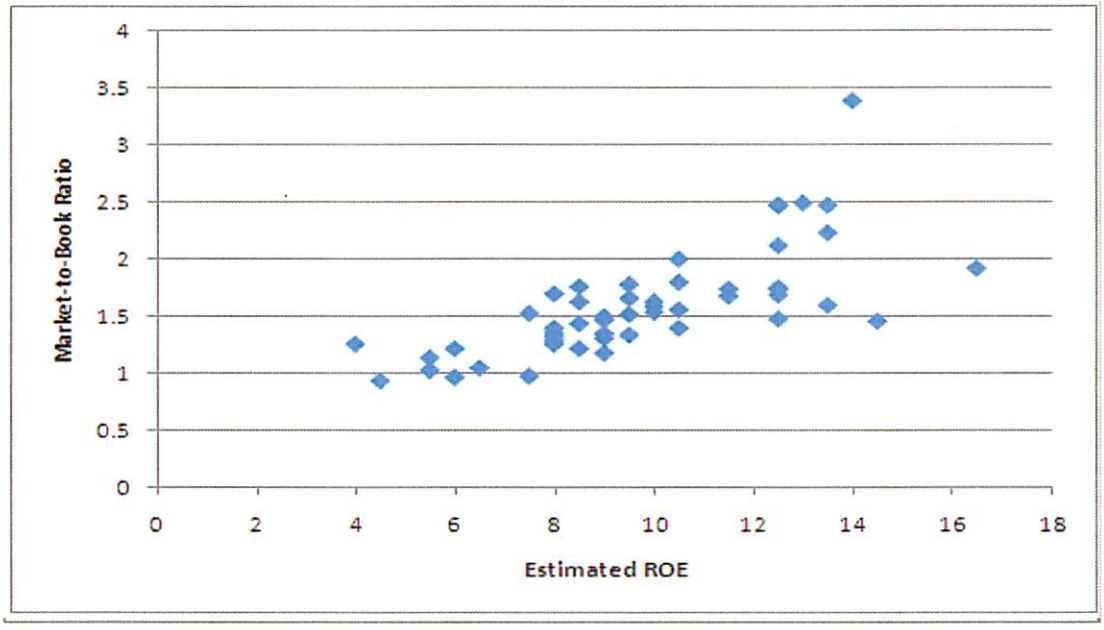
Panel A - Gulf's Recommended Capitalization Ratios - Investor-Provided Capital

Capital		Capitalization Amounts	Capitalization Ratios
Short-Term Debt	$	27,615	1.83%
Long-Term Debt	$	685,025	45.46%
Preferred Stock	$	79,085	5.25%
Common Equity	$	715,221	47.46%
	$	1,506,946	100.00%

Panel B - OPC's Recommended Capitalization Ratios - Investor-Provided Capital

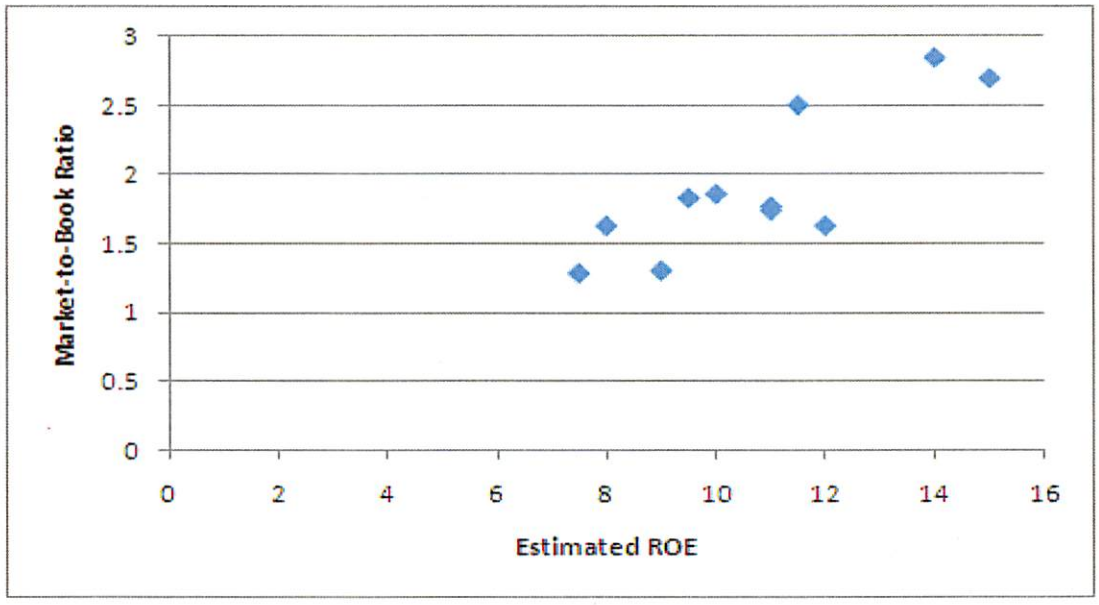
Capital		Capitalization Amounts	Capitalization Ratios
Short-Term Debt	$	27,615	1.83%
Long-Term Debt	$	685,025	45.46%
Preferred Stock	$	79,085	5.25%
Common Equity	$	715,221	47.46%
	$	1,506,946	100.00%

Exhibit JRW-6
Electric Utilities
Panel A



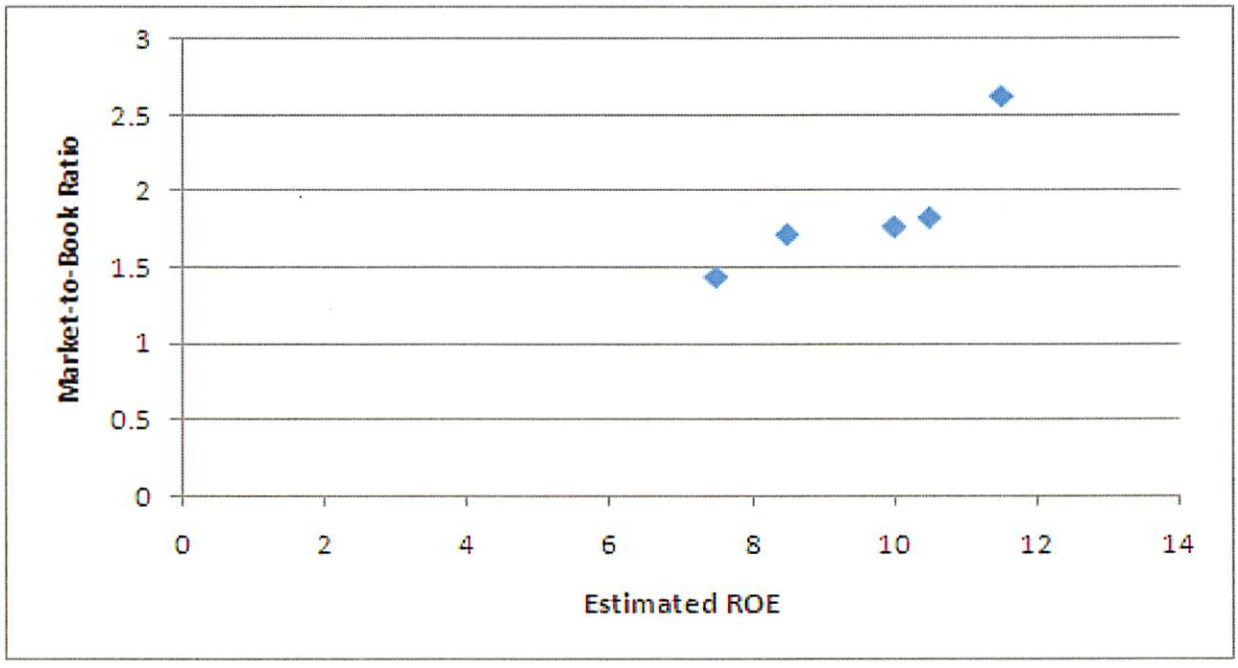
R-Square = .52, N=51.

Gas Companies
Panel B



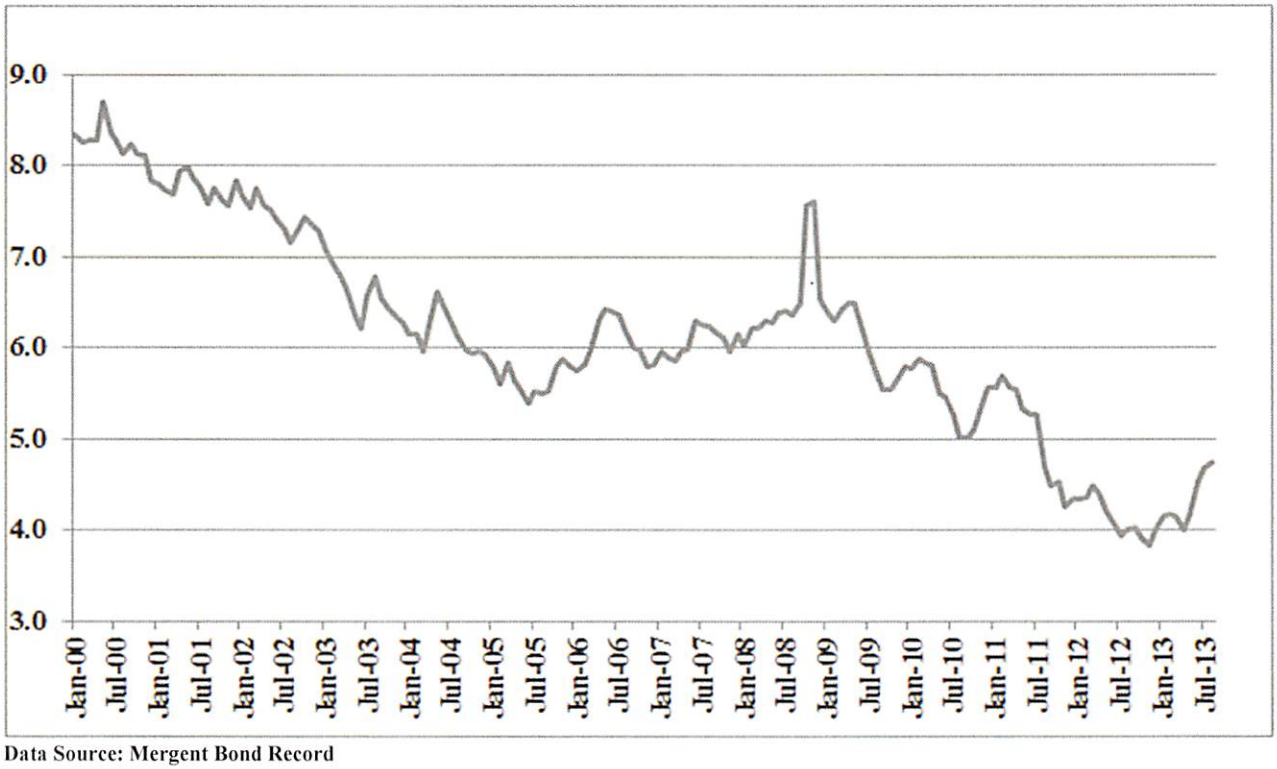
R-Square = .71, N=11.

Exhibit JRW-6
Water Companies
Panel C



R-Square = .77, N=5.

Exhibit JRW-7
Long-Term 'A' Rated Public Utility Bonds



Data Source: Mergent Bond Record

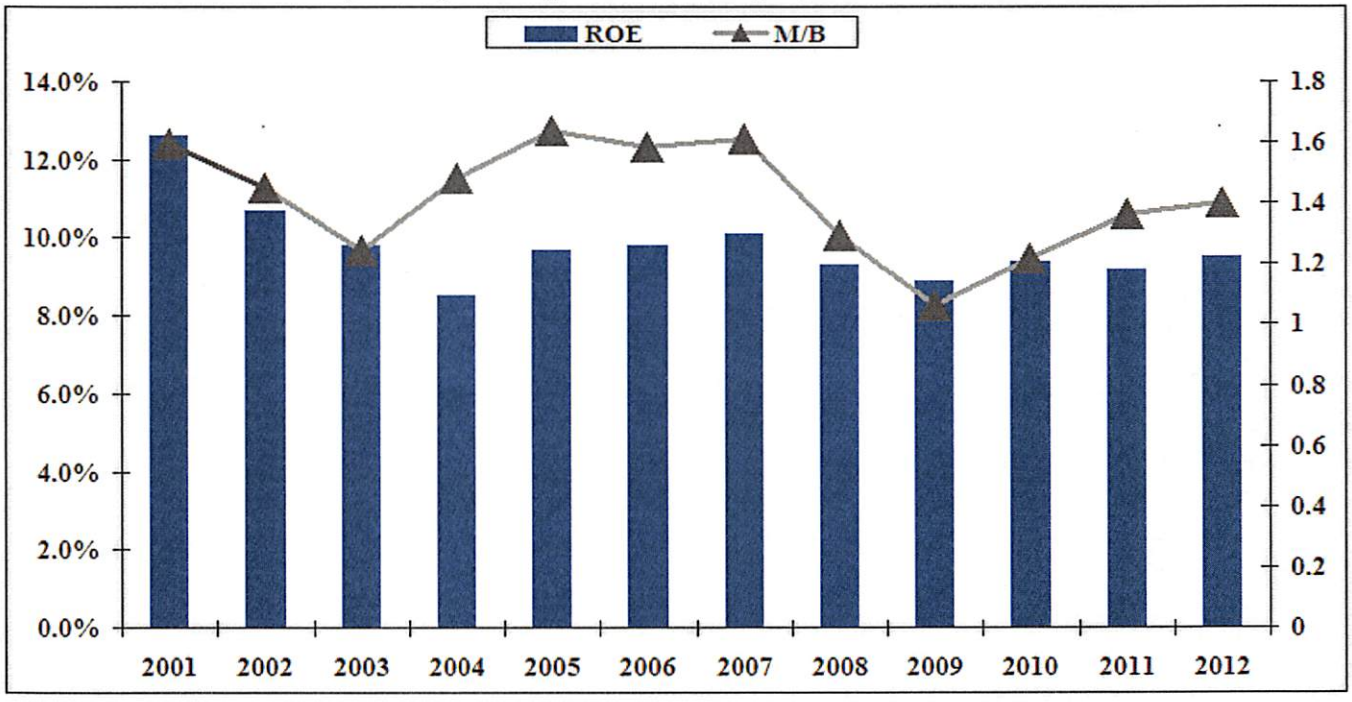
Exhibit JRW-7

Electric Proxy Group Average Dividend Yield

Data Source: *Value Line Investment Survey.*

Exhibit JRW-7

Electric Proxy Group Average Return on Equity and Market-to-Book Ratios



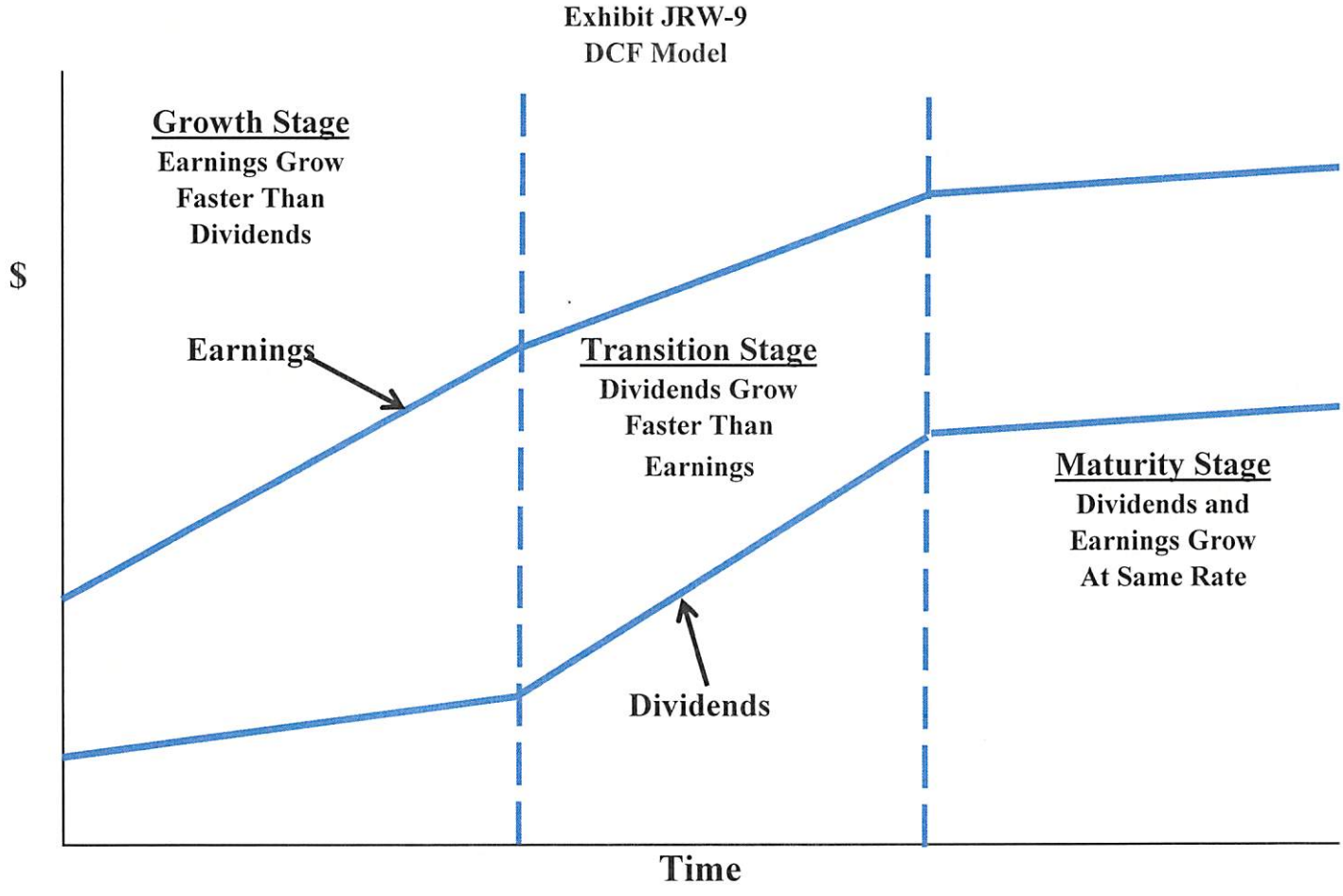
Data Source: *Value Line Investment Survey.*

Exhibit JRW-8

Industry Average Betas

Industry Name	No.	Beta	Industry Name	No.	Beta	Industry Name	No.	Beta
Public/Private Equity	11	2.18	Natural Gas (Div.)	29	1.33	IT Services	60	1.06
Advertising	31	2.02	Financial Svcs. (Div.)	225	1.31	Retail Building Supply	8	1.04
Furn/Home Furnishings	35	1.81	Toiletries/Cosmetics	15	1.30	Computer Software	184	1.04
Heavy Truck & Equip	21	1.80	Apparel	57	1.30	Med Supp Non-Invasiv	146	1.03
Semiconductor Equip	12	1.79	Computers/Peripherals	87	1.30	Biotechnology	158	1.03
Retail (Hardlines)	75	1.77	Retail Store	37	1.29	E-Commerce	57	1.03
Newspaper	13	1.76	Chemical (Specialty)	70	1.28	Telecom. Equipment	99	1.02
Hotel/Gaming	51	1.74	Precision Instrument	77	1.28	Pipeline MLPs	27	0.98
Auto Parts	51	1.70	Wireless Networking	57	1.27	Telecom. Services	74	0.98
Steel	32	1.68	Restaurant	63	1.27	Oil/Gas Distribution	13	0.96
Entertainment	77	1.63	Shoe	19	1.25	Utility (Foreign)	4	0.96
Metal Fabricating	24	1.59	Publishing	24	1.25	Industrial Services	137	0.93
Automotive	12	1.59	Trucking	36	1.24	Bank (Midwest)	45	0.93
Insurance (Life)	30	1.58	Human Resources	23	1.24	Reinsurance	13	0.93
Oilfield Svcs/Equip.	93	1.55	Entertainment Tech	40	1.23	Food Processing	112	0.91
Coal	20	1.53	Engineering & Const	25	1.22	Medical Services	122	0.91
Chemical (Diversified)	31	1.51	Air Transport	36	1.21	Insurance (Prop/Cas.)	49	0.91
Building Materials	45	1.50	Machinery	100	1.20	Beverage	34	0.88
Semiconductor	141	1.50	Securities Brokerage	28	1.20	Telecom. Utility	25	0.88
R.E.I.T.	5	1.47	Petroleum (Integrated)	20	1.18	Tobacco	11	0.85
Homebuilding	23	1.45	Healthcare Information	25	1.17	Med Supp Invasive	83	0.85
Recreation	56	1.45	Packaging & Container	26	1.16	Educational Services	34	0.83
Railroad	12	1.44	Precious Metals	84	1.15	Environmental	82	0.81
Retail (Softlines)	47	1.44	Diversified Co.	107	1.14	Bank	426	0.77
Maritime	52	1.40	Funeral Services	6	1.14	Electric Util. (Central)	21	0.75
Office Equip/Supplies	24	1.38	Property Management	31	1.13	Electric Utility (West)	14	0.75
Cable TV	21	1.37	Pharmacy Services	19	1.12	Retail/Wholesale Food	30	0.75
Retail Automotive	20	1.37	Drug	279	1.12	Thrift	148	0.71
Chemical (Basic)	16	1.36	Aerospace/Defense	64	1.10	Electric Utility (East)	21	0.70
Paper/Forest Products	32	1.36	Foreign Electronics	9	1.09	Natural Gas Utility	22	0.66
Power	93	1.35	Internet	186	1.09	Water Utility	11	0.66
Petroleum (Producing)	176	1.34	Information Services	27	1.07	Total Market	5891	1.15
Electrical Equipment	68	1.33	Household Products	26	1.07			
Metals & Mining (Div.)	73	1.33	Electronics	139	1.07			

Source: Damodaran Online 2012 - http://pages.stern.nyu.edu/~adamodar/



Source: William F. Sharpe, Gordon J. Alexander, and Jeffrey V. Bailey, Investments (Prentice-Hall, 1995), pp. 590-91.

Exhibit JRW-9
DCF Model
Consensus Earnings Estimates
Alliant Energy Corp ("LNT")

www.reuters.com

8/30/2013

	# of Estimates	Mean	High	Low
Earnings (per share)				
Quarter Ending Dec-13	4	0.52	0.58	0.44
Quarter Ending Mar-14	1	0.66	0.66	0.66
Year Ending Dec-13	10	3.13	3.20	3.08
Year Ending Dec-14	10	3.31	3.35	3.25
LT Growth Rate (%)	2	5.40	6.00	4.80

Data Source: www.reuters.com

Exhibit JRW-10

Gulf Power Company
Discounted Cash Flow Analysis

Panel A
Electric Proxy Group

Dividend Yield*	4.10%
Adjustment Factor	1.023
Adjusted Dividend Yield	4.2%
Growth Rate**	4.60%
Equity Cost Rate	8.8%

* Page 2 of Exhibit JRW-10

** Based on data provided on pages 4, 6, 8, and 10 of Exhibit JRW-10

Panel B
Vander Weide Proxy Group

Dividend Yield*	4.10%
Adjustment Factor	1.024
Adjusted Dividend Yield	4.2%
Growth Rate**	4.80%
Equity Cost Rate	9.0%

* Page 3 of Exhibit JRW-10

** Based on data provided on pages 5, 7, 9, and 10 of Exhibit JRW-10

Exhibit JRW-10

Gulf Power Company
Dividend Yields
Electric Proxy Group

Company	Apr	May	Jun	Jul	Aug	Sept	Mean
ALLETE, Inc. (NYSE-ALE)	3.8%	3.6%	4.0%	3.5%	4.0%	4.0%	3.8%
Alliant Energy Corporation (NYSE-LNT)	3.6%	3.9%	4.0%	3.5%	3.7%	3.8%	3.8%
Ameren Corporation (NYSE-AEE)	4.7%	4.4%	4.9%	4.4%	4.8%	4.6%	4.6%
American Electric Power Co. (NYSE-AEP)	3.7%	4.0%	4.5%	4.2%	4.6%	4.4%	4.2%
Avista Corporation (NYSE-AVA)	4.5%	4.2%	4.7%	4.2%	4.5%	4.6%	4.5%
Black Hills Corporation (NYSE-BKH)	3.3%	3.0%	3.3%	2.9%	3.0%	3.1%	3.1%
Cleco Corporation (NYSE-CNL)	2.9%	3.0%	3.3%	3.0%	3.2%	3.3%	3.1%
CMS Energy Corporation (NYSE-CMS)	3.5%	3.5%	3.9%	3.6%	3.8%	3.8%	3.7%
Consolidated Edison, Inc. (NYSE-ED)	3.9%	4.0%	4.4%	4.1%	4.4%	4.3%	4.2%
DTE Energy Company (NYSE-DTE)	3.4%	3.5%	4.1%	3.7%	3.9%	3.9%	3.8%
Duke Energy Corporation (NYSE-DUK)	4.1%	4.3%	4.7%	4.3%	4.7%	4.6%	4.5%
Edison International (NYSE-EIX)	2.6%	2.8%	3.0%	2.7%	2.9%	3.2%	2.9%
FirstEnergy Corporation (ASE-FE)	4.8%	5.1%	6.1%	5.7%	6.0%	5.8%	5.6%
Great Plains Energy Incorporated (NYSE-GXP)	3.7%	3.6%	4.0%	3.5%	3.9%	3.9%	3.8%
Hawaiian Electric Industries, Inc. (NYSE-HE)	4.6%	4.5%	5.2%	4.6%	4.9%	4.9%	4.8%
IDACORP, Inc. (NYSE-IDA)	3.2%	3.1%	3.3%	3.2%	3.1%	3.2%	3.2%
MGE Energy (NDQ-MGEE)	2.9%	2.8%	3.0%	2.6%	2.9%	3.0%	2.9%
Nextera Energy (NYSE-NEE)	3.3%	3.5%	3.4%	3.1%	3.2%	3.2%	3.3%
Northeast Utilities (NYSE-NU)	3.3%	3.3%	3.7%	3.3%	3.6%	3.5%	3.5%
NorthWestern Corporation (NYSE-NWE)	3.7%	3.6%	4.0%	3.5%	3.8%	3.5%	3.7%
Otter Tail Corporation (NDQ-OTTR)	3.9%	4.0%	4.4%	3.7%	4.4%	4.2%	4.1%
Pepco Holdings, Inc. (NYSE-POM)	5.0%	4.9%	5.6%	5.3%	5.7%	5.8%	5.4%
PG&E Corporation (NYSE-PCG)	3.8%	3.9%	4.2%	4.0%	4.3%	4.3%	4.1%
Pinnacle West Capital Corp. (NYSE-PNW)	3.6%	3.6%	4.2%	3.6%	4.0%	3.9%	3.8%
PNM Resources, Inc. (NYSE-PNM)	2.8%	2.9%	3.1%	2.8%	2.9%	2.9%	2.9%
Portland General Electric (NYSE-POR)	3.5%	3.3%	3.7%	3.4%	3.9%	3.8%	3.6%
PPL Corporation (NYSE-PPL)	4.5%	4.6%	5.1%	4.7%	4.8%	4.8%	4.8%
SCANA Corporation (NYSE-SCG)	3.9%	3.8%	4.3%	3.9%	4.2%	4.3%	4.1%
Southern Company (NYSE-SO)	4.0%	4.4%	4.8%	4.5%	4.8%	4.8%	4.6%
UNS Energy Corp. (NYSE-UNS)	3.5%	3.5%	4.0%	3.4%	3.8%	3.7%	3.7%
Westar Energy, Inc. (NYSE-WR)	4.0%	4.0%	4.5%	4.0%	4.3%	4.5%	4.2%
Wisconsin Energy Corporation (NYSE-WEC)	3.1%	3.1%	3.5%	3.1%	3.7%	3.7%	3.4%
Xcel Energy Inc. (NYSE-XEL)	3.5%	3.6%	4.0%	3.7%	4.0%	4.0%	3.8%
Mean	3.7%	3.7%	4.1%	3.7%	4.1%	4.0%	3.9%
Median	3.7%	3.6%	4.0%	3.6%	4.0%	3.9%	3.8%

Data Source: AUS Utilities Report, Monthly issues

Annual Dividend	Dividend Yield 30 Day	Dividend Yield 60 Day	Dividend Yield 90 Day
1.90	4.00%	3.85%	3.87%
1.88	3.80%	3.69%	3.73%
1.60	4.72%	4.65%	4.69%
1.96	4.54%	4.44%	4.42%
1.22	4.64%	4.49%	4.52%
1.52	3.12%	3.02%	3.06%
1.45	3.23%	3.13%	3.15%
1.02	3.88%	3.77%	3.79%
2.46	4.42%	4.30%	4.31%
2.62	3.96%	3.88%	3.91%
3.12	4.70%	4.60%	4.63%
1.35	2.96%	2.88%	2.89%
2.20	5.91%	5.86%	5.89%
0.87	3.95%	3.81%	3.83%
1.24	4.97%	4.85%	4.90%
1.52	3.18%	3.06%	3.10%
1.63	3.06%	2.92%	2.94%
2.64	3.29%	3.21%	3.26%
1.47	3.60%	3.50%	3.52%
1.52	3.59%	3.62%	3.68%
1.19	4.36%	4.18%	4.20%
1.08	5.86%	5.65%	5.59%
1.82	4.45%	4.28%	4.22%
2.18	4.02%	3.90%	3.91%
0.66	2.99%	2.90%	2.93%
1.30	4.61%	4.43%	4.39%
1.47	4.85%	4.80%	4.88%
2.03	4.36%	4.18%	4.18%
2.03	4.91%	4.76%	4.73%
1.74	3.79%	3.66%	3.71%
1.36	4.46%	4.30%	4.32%
1.53	3.78%	3.69%	3.72%
1.12	4.07%	3.96%	3.96%
Mean	4.1%	4.0%	4.0%
Median	4.0%	3.9%	3.9%

Data Source: AUS Utilities Report, www.yahoo.com

Summary Dividend Yields

	Dividend Yield 6 Month	Dividend Yield 30 Day	Dividend Yield 60 Day	Dividend Yield 90 Day
Mean	3.9%	4.1%	4.0%	4.0%
Median	3.8%	4.0%	3.9%	3.9%

Exhibit JRW-10

Gulf Power Company
Dividend Yields
Vander Weide Proxy Group

Company	Apr	May	Jun	Jul	Aug	Sept	Mean
ALLETE, Inc. (NYSE-ALE)	3.8%	3.6%	4.0%	3.5%	4.0%	4.0%	3.8%
Alliant Energy Corporation (NYSE-LNT)	3.6%	3.9%	4.0%	3.5%	3.7%	3.8%	3.8%
American Electric Power Co. (NYSE-AEP)	3.7%	4.0%	4.5%	4.2%	4.6%	4.4%	4.2%
Black Hills Corporation (NYSE-BKH)	3.3%	3.0%	3.3%	2.9%	3.0%	3.1%	3.1%
CenterPoint Energy (NYSE-CNP)	3.4%	3.4%	3.7%	3.4%	3.6%	3.4%	3.5%
CMS Energy Corporation (NYSE-CMS)	3.5%	3.5%	3.9%	3.6%	3.8%	3.8%	3.7%
Dominion Resources, Inc. (NYSE-D)	3.7%	3.7%	4.2%	3.8%	3.9%	3.6%	3.8%
DTE Energy Company (NYSE-DTE)	3.4%	3.5%	4.1%	3.7%	3.9%	3.9%	3.8%
Duke Energy Corporation (NYSE-DUK)	4.1%	4.3%	4.7%	4.3%	4.7%	4.6%	4.5%
Entergy Corporation (NYSE-ETR)	4.8%	4.7%	5.0%	4.6%	5.2%	5.1%	4.9%
Great Plains Energy Incorporated (NYSE-GXP)	3.7%	3.6%	4.0%	3.5%	3.9%	3.9%	3.8%
Hawaiian Electric Industries, Inc. (NYSE-HE)	4.6%	4.5%	5.2%	4.6%	4.9%	4.9%	4.8%
Integrys Energy Group (NYSE-TEG)	4.5%	4.4%	4.9%	4.4%	4.7%	4.8%	4.6%
Nextera Energy (NYSE-NEE)	3.3%	3.5%	3.4%	3.1%	3.2%	3.2%	3.3%
Northeast Utilities (NYSE-NU)	3.3%	3.3%	3.7%	3.3%	3.6%	3.5%	3.5%
NorthWestern Corporation (NYSE-NWE)	3.7%	3.6%	4.0%	3.5%	3.8%	3.5%	3.7%
OGE Energy Corp. (NYSE-OGE)	2.4%	2.3%	2.6%	2.3%	2.4%	2.3%	2.4%
Otter Tail Corporation (NDQ-OTTR)	3.9%	4.0%	4.4%	3.7%	4.4%	4.2%	4.1%
Pepco Holdings, Inc. (NYSE-POM)	5.0%	4.9%	5.6%	5.3%	5.7%	5.8%	5.4%
Pinnacle West Capital Corp. (NYSE-PNW)	3.6%	3.6%	4.2%	3.6%	4.0%	3.9%	3.8%
PNM Resources, Inc. (NYSE-PNM)	2.8%	2.9%	3.1%	2.8%	2.9%	2.9%	2.9%
Portland General Electric (NYSE-POR)	3.5%	3.3%	3.7%	3.4%	3.9%	3.8%	3.6%
SCANA Corporation (NYSE-SCG)	3.9%	3.8%	4.3%	3.9%	4.2%	4.3%	4.1%
SEMPRA Energy (NYSE-SRE)	3.1%	3.0%	3.2%	2.9%	3.1%	2.9%	3.0%
Southern Company (NYSE-SO)	4.0%	4.4%	4.8%	4.5%	4.8%	4.8%	4.6%
TECO Energy (NYSE-TE)	4.8%	4.6%	5.3%	4.9%	5.3%	5.2%	5.0%
Vectren Corporation (NYSE-VVC)	3.9%	3.9%	4.4%	3.9%	4.2%	4.2%	4.1%
Westar Energy, Inc. (NYSE-WR)	4.0%	4.0%	4.5%	4.0%	4.3%	4.5%	4.2%
Wisconsin Energy Corporation (NYSE-WEC)	3.1%	3.1%	3.5%	3.1%	3.7%	3.7%	3.4%
Xcel Energy Inc. (NYSE-XEL)	3.5%	3.6%	4.0%	3.7%	4.0%	4.0%	3.8%
Mean	3.7%	3.7%	4.1%	3.7%	4.0%	4.0%	3.9%
Median	3.7%	3.6%	4.1%	3.7%	4.0%	3.9%	3.8%

Data Source: AUS Utilities Report, Monthly issues

Company	Annual Dividend	Dividend Yield 30 Day	Dividend Yield 60 Day	Dividend Yield 90 Day
ALLETE, Inc. (NYSE-ALE)	1.90	4.00%	3.85%	3.87%
Alliant Energy Corporation (NYSE-LNT)	1.88	3.80%	3.69%	3.73%
American Electric Power Co. (NYSE-AEP)	1.96	4.54%	4.44%	4.42%
Black Hills Corporation (NYSE-BKH)	1.52	3.12%	3.02%	3.06%
CenterPoint Energy (NYSE-CNP)	0.83	3.53%	3.49%	3.52%
CMS Energy Corporation (NYSE-CMS)	1.02	3.88%	3.77%	3.79%
Dominion Resources, Inc. (NYSE-D)	2.25	3.72%	3.78%	3.86%
DTE Energy Company (NYSE-DTE)	2.62	3.96%	3.88%	3.91%
Duke Energy Corporation (NYSE-DUK)	3.12	4.70%	4.60%	4.63%
Entergy Corporation (NYSE-ETR)	3.32	5.24%	5.07%	5.00%
Great Plains Energy Incorporated (NYSE-GXP)	0.87	3.95%	3.81%	3.83%
Hawaiian Electric Industries, Inc. (NYSE-HE)	1.24	4.97%	4.85%	4.90%
Integrys Energy Group (NYSE-TEG)	2.72	4.90%	4.69%	4.72%
Nextera Energy (NYSE-NEE)	2.64	3.29%	3.21%	3.26%
Northeast Utilities (NYSE-NU)	1.47	3.60%	3.50%	3.52%
NorthWestern Corporation (NYSE-NWE)	1.52	3.59%	3.62%	3.68%
OGE Energy Corp. (NYSE-OGE)	0.84	2.36%	2.31%	2.37%
Otter Tail Corporation (NDQ-OTTR)	1.19	4.36%	4.18%	4.20%
Pepco Holdings, Inc. (NYSE-POM)	1.08	5.86%	5.65%	5.59%
Pinnacle West Capital Corp. (NYSE-PNW)	2.18	4.02%	3.90%	3.91%
PNM Resources, Inc. (NYSE-PNM)	0.66	2.99%	2.90%	2.93%
Portland General Electric (NYSE-POR)	1.30	4.61%	4.43%	4.39%
SCANA Corporation (NYSE-SCG)	2.03	4.36%	4.18%	4.18%
SEMPRA Energy (NYSE-SRE)	2.52	2.97%	2.96%	3.03%
Southern Company (NYSE-SO)	2.03	4.91%	4.76%	4.73%
TECO Energy (NYSE-TE)	0.88	5.30%	5.19%	5.19%
Vectren Corporation (NYSE-VVC)	1.42	4.31%	4.15%	4.18%
Westar Energy, Inc. (NYSE-WR)	1.36	4.46%	4.30%	4.32%
Wisconsin Energy Corporation (NYSE-WEC)	1.53	3.78%	3.69%	3.72%
Xcel Energy Inc. (NYSE-XEL)	1.12	4.07%	3.96%	3.96%
Mean		4.1%	4.0%	4.0%
Median		4.0%	3.9%	3.9%

Data Source: AUS Utilities Report, www.yahoo.com

Summary Dividend Yields

	Dividend Yield 6 Month	Dividend Yield 30 Day	Dividend Yield 60 Day	Dividend Yield 90 Day
Mean	3.9%	4.1%	4.0%	4.0%
Median	3.8%	4.0%	3.9%	3.9%

Exhibit JRW-10

Gulf Power Company
DCF Equity Cost Growth Rate Measures
***Value Line* Historic Growth Rates**

Electric Proxy Group

Company	*Value Line* Historic Growth					
	Past 10 Years			Past 5 Years		
	Earnings	Dividends	Book Value	Earnings	Dividends	Book Value
ALLETE, Inc. (NYSE-ALE)				-2.5%	4.5%	5.5%
Alliant Energy Corporation (NYSE-LNT)	3.5%	-1.5%	2.0%	4.0%	8.0%	3.5%
Ameren Corporation (NYSE-AEE)	-2.0%	-4.5%	2.5%	-2.5%	-9.0%	-0.5%
American Electric Power Co. (NYSE-AEP)	2.0%	-3.0%	2.5%	1.0%	4.0%	4.5%
Avista Corporation (NYSE-AVA)	2.5%	8.5%	3.0%	8.5%	14.0%	4.0%
Black Hills Corporation (NYSE-BKH)	-5.5%	2.5%	5.0%	-8.0%	2.0%	3.0%
Cleco Corporation (NYSE-CNL)	5.5%	2.5%	8.0%	13.0%	4.5%	9.0%
CMS Energy Corporation (NYSE-CMS)	18.0%	-5.0%	-1.5%	12.5%		3.0%
Consolidated Edison, Inc. (NYSE-ED)	2.0%	1.0%	4.0%	3.0%	1.0%	4.5%
DTE Energy Company (NYSE-DTE)	2.0%	1.0%	4.0%	6.0%	2.0%	4.0%
Duke Energy Corporation (NYSE-DUK)				4.5%	18.0%	-1.0%
Edison International (NYSE-EIX)		.	11.5%	2.5%	3.0%	5.5%
FirstEnergy Corporation (ASE-FE)	-1.0%	4.0%	2.5%	-8.0%	3.5%	1.0%
Great Plains Energy Incorporated (NYSE-GXP)	-3.0%	-6.5%	4.5%	-6.0%	-12.5%	5.0%
Hawaiian Electric Industries, Inc. (NYSE-HE)	-0.5%		2.0%	2.0%		2.0%
IDACORP, Inc. (NYSE-IDA)	1.5%	-4.0%	4.0%	10.0%	1.0%	5.5%
MGE Energy (NDQ-MGEE)	5.0%	1.5%	6.5%	6.0%	2.0%	5.5%
Nextera Energy (NYSE-NEE)	8.5%	7.0%	8.0%	10.0%	7.5%	8.5%
Northeast Utilities (NYSE-NU)	10.5%	9.5%	4.0%	13.0%	9.5%	6.0%
NorthWestern Corporation (NYSE-NWE)				9.0%	4.0%	2.5%
Otter Tail Corporation (NDQ-OTTR)	-9.5%	1.5%	3.5%	-18.5%	0.5%	-1.0%
Pepco Holdings, Inc. (NYSE-POM)	-4.0%		0.5%	-3.5%	1.0%	
PG&E Corporation (NYSE-PCG)			11.5%	-0.5%	6.5%	6.0%
Pinnacle West Capital Corp. (NYSE-PNW)		4.0%	2.0%	2.5%	2.5%	
PNM Resources, Inc. (NYSE-PNM)	-4.5%	-0.5%	1.5%	-4.0%	-9.0%	-2.0%
Portland General Electric (NYSE-POR)				4.0%	14.5%	2.0%
PPL Corporation (NYSE-PPL)	4.0%	9.0%	10.5%	2.0%	5.5%	6.0%
SCANA Corporation (NYSE-SCG)	3.0%	5.0%	4.0%	2.5%	3.0%	4.5%
Southern Company (NYSE-SO)	3.5%	3.5%	4.5%	3.0%	4.0%	5.5%
UNS Energy Corp. (NYSE-UNS)	7.0%	15.0%	7.0%	10.5%	14.5%	5.5%
Westar Energy, Inc. (NYSE-WR)	16.0%			1.5%	5.0%	4.5%
Wisconsin Energy Corporation (NYSE-WEC)	9.5%	7.5%	7.0%	10.0%	17.0%	7.0%
Xcel Energy Inc. (NYSE-XEL)	2.0%	-3.0%	1.5%	5.5%	3.0%	4.5%
Mean	2.9%	2.3%	4.5%	2.8%	4.4%	4.0%
Median	2.3%	2.0%	4.0%	3.0%	4.0%	4.5%
Data Source: *Value Line Investment Survey.*	Average of Median Figures =			3.3%		

Exhibit JRW-10

Gulf Power Company
DCF Equity Cost Growth Rate Measures
***Value Line* Historic Growth Rates**

Vander Weide Proxy Group

Company	*Value Line* Historic Growth					
	Past 10 Years			Past 5 Years		
	Earnings	Dividends	Book Value	Earnings	Dividends	Book Value
ALLETE, Inc. (NYSE-ALE)				-2.5%	4.5%	5.5%
Alliant Energy Corporation (NYSE-LNT)	3.5%	-1.5%	2.0%	4.0%	8.0%	3.5%
American Electric Power Co. (NYSE-AEP)	2.0%	-3.0%	2.5%	1.0%	4.0%	4.5%
Black Hills Corporation (NYSE-BKH)	-5.5%	2.5%	5.0%	-8.0%	2.0%	3.0%
CenterPoint Energy (NYSE-CNP)	-1.5%	-4.5%	-4.0%	3.0%	7.0%	13.5%
CMS Energy Corporation (NYSE-CMS)	18.0%	-5.0%	-1.5%	12.5%		3.0%
Dominion Resources, Inc. (NYSE-D)	5.0%	4.5%	2.5%	7.0%	7.0%	3.5%
DTE Energy Company (NYSE-DTE)	2.0%	1.0%	4.0%	6.0%	2.0%	4.0%
Duke Energy Corporation (NYSE-DUK)				4.5%	18.0%	-1.0%
Entergy Corporation (NYSE-ETR)	7.5%	10.0%	4.0%	5.5%	7.5%	5.0%
Great Plains Energy Incorporated (NYSE-GXP)	-3.0%	-6.5%	4.5%	-6.0%	-12.5%	5.0%
Hawaiian Electric Industries, Inc. (NYSE-HE)	-0.5%		2.0%	2.0%		2.0%
Integrys Energy Group (NYSE-TEG)	2.0%	2.5%	5.5%	-0.5%	3.0%	0.5%
Nextera Energy (NYSE-NEE)	8.5%	7.0%	8.0%	10.0%	7.5%	8.5%
Northeast Utilities (NYSE-NU)	10.5%	9.5%	4.0%	13.0%	9.5%	6.0%
NorthWestern Corporation (NYSE-NWE)				9.0%	4.0%	2.5%
OGE Energy Corp. (NYSE-OGE)	8.0%	1.5%	7.0%	7.5%	2.5%	8.5%
Otter Tail Corporation (NDQ-OTTR)	-9.5%	1.5%	3.5%	-18.5%	0.5%	-1.0%
Pepco Holdings, Inc. (NYSE-POM)	-4.0%		0.5%	-3.5%	1.0%	
Pinnacle West Capital Corp. (NYSE-PNW)		4.0%	2.0%	2.5%	2.5%	
PNM Resources, Inc. (NYSE-PNM)	-4.5%	-0.5%	1.5%	-4.0%	-9.0%	-2.0%
Portland General Electric (NYSE-POR)				4.0%	14.5%	2.0%
SCANA Corporation (NYSE-SCG)	3.0%	5.0%	4.0%	2.5%	3.0%	4.5%
SEMPRA Energy (NYSE-SRE)	5.5%	7.0%	12.0%	1.5%	10.5%	7.5%
Southern Company (NYSE-SO)	3.5%	3.5%	4.5%	3.0%	4.0%	5.5%
TECO Energy (NYSE-TE)	-5.5%	-4.5%	-3.5%	0.5%	2.0%	4.0%
Vectren Corporation (NYSE-VVC)	3.0%	3.0%	4.0%	1.0%	2.5%	3.0%
Westar Energy, Inc. (NYSE-WR)	16.0%			1.5%	5.0%	4.5%
Wisconsin Energy Corporation (NYSE-WEC)	9.5%	7.5%	7.0%	10.0%	17.0%	7.0%
Xcel Energy Inc. (NYSE-XEL)	2.0%	-3.0%	1.5%	5.5%	3.0%	4.5%
Mean	3.0%	1.8%	3.3%	2.5%	4.7%	4.2%
Median	3.0%	2.5%	4.0%	2.8%	4.0%	4.3%
Data Source: *Value Line Investment Survey.*	Average of Median Figures =			3.4%		

Exhibit JRW-10

Gulf Power Company
DCF Equity Cost Growth Rate Measures
Value Line Projected Growth Rates

Electric Proxy Group

Company	*Value Line* Projected Growth Est'd. '10-'12 to '16-'18			*Value Line* Sustainable Growth		
	Earnings	Dividends	Book Value	Return on Equity	Retention Rate	Internal Growth
ALLETE, Inc. (NYSE-ALE)	7.0%	3.5%	4.0%	10.0%	39.0%	3.9%
Alliant Energy Corporation (NYSE-LNT)	6.0%	4.5%	4.0%	11.5%	42.0%	4.8%
Ameren Corporation (NYSE-AEE)	-0.5%	1.5%	-0.5%	8.5%	33.0%	2.8%
American Electric Power Co. (NYSE-AEP)	4.5%	4.0%	4.0%	10.0%	39.0%	3.9%
Avista Corporation (NYSE-AVA)	4.0%	4.5%	3.0%	8.5%	34.0%	2.9%
Black Hills Corporation (NYSE-BKH)	11.5%	2.5%	3.0%	9.5%	45.0%	4.3%
Cleco Corporation (NYSE-CNL)	5.5%	10.0%	5.0%	11.0%	43.0%	4.7%
CMS Energy Corporation (NYSE-CMS)	5.5%	8.0%	5.5%	13.0%	38.0%	4.9%
Consolidated Edison, Inc. (NYSE-ED)	2.5%	1.5%	3.5%	9.0%	39.0%	3.5%
DTE Energy Company (NYSE-DTE)	4.0%	5.5%	4.0%	9.0%	36.0%	3.2%
Duke Energy Corporation (NYSE-DUK)	4.0%	2.0%	3.0%	8.0%	33.0%	2.6%
Edison International (NYSE-EIX)	1.5%	5.5%	3.5%	10.5%	50.0%	5.3%
FirstEnergy Corporation (ASE-FE)	0.5%	0.0%	1.5%	7.5%	13.0%	1.0%
Great Plains Energy Incorporated (NYSE-GXP)	6.5%	6.0%	2.5%	8.0%	39.0%	3.1%
Hawaiian Electric Industries, Inc. (NYSE-HE)	3.5%	1.0%	4.5%	8.0%	22.0%	1.8%
IDACORP, Inc. (NYSE-IDA)	2.0%	7.0%	4.5%	8.5%	48.0%	4.1%
MGE Energy (NDQ-MGEE)	5.5%	3.5%	5.0%	11.5%	49.0%	5.6%
Nextera Energy (NYSE-NEE)	5.5%	8.5%	6.5%	12.5%	45.0%	5.6%
Northeast Utilities (NYSE-NU)	8.0%	8.0%	6.0%	9.5%	45.0%	4.3%
NorthWestern Corporation (NYSE-NWE)	4.5%	4.0%	4.5%	9.5%	39.0%	3.7%
Otter Tail Corporation (NDQ-OTTR)	21.5%	1.5%	2.0%	11.0%	34.0%	3.7%
Pepco Holdings, Inc. (NYSE-POM)	6.0%	1.0%	2.0%	8.0%	31.0%	2.5%
PG&E Corporation (NYSE-PCG)	2.5%	2.5%	3.0%	8.5%	31.0%	2.6%
Pinnacle West Capital Corp. (NYSE-PNW)	5.0%	2.0%	3.5%	10.0%	40.0%	4.0%
PNM Resources, Inc. (NYSE-PNM)	12.0%	12.5%	3.5%	9.0%	49.0%	4.4%
Portland General Electric (NYSE-POR)	3.5%	3.0%	3.5%	8.0%	42.0%	3.4%
PPL Corporation (NYSE-PPL)	0.0%	2.0%	4.5%	10.5%	35.0%	3.7%
SCANA Corporation (NYSE-SCG)	4.5%	2.5%	5.0%	9.5%	43.0%	4.1%
Southern Company (NYSE-SO)	4.5%	3.5%	4.0%	12.5%	28.0%	3.5%
UNS Energy Corp. (NYSE-UNS)	6.5%	5.5%	5.0%	11.5%	39.0%	4.5%
Westar Energy, Inc. (NYSE-WR)	6.0%	3.0%	5.0%	9.0%	45.0%	4.1%
Wisconsin Energy Corporation (NYSE-WEC)	5.5%	12.0%	3.5%	14.5%	35.0%	5.1%
Xcel Energy Inc. (NYSE-XEL)	4.5%	4.5%	4.5%	10.0%	42.0%	4.2%
Mean	5.3%	4.4%	3.8%	9.9%	38.3%	3.8%
Median	4.5%	3.5%	4.0%	9.5%	39.0%	3.9%
Average of Median Figures =		4.0%				3.9%

Data Source: *Value Line Investment Survey.*

Exhibit JRW-10

Gulf Power Company
DCF Equity Cost Growth Rate Measures
Value Line Projected Growth Rates

Vander Weide Proxy Group

Company	*Value Line* Projected Growth Est'd. '10-'12 to '16-'18			*Value Line* Sustainable Growth		
	Earnings	Dividends	Book Value	Return on Equity	Retention Rate	Internal Growth
ALLETE, Inc. (NYSE-ALE)	7.0%	3.5%	4.0%	10.0%	39.0%	3.9%
Alliant Energy Corporation (NYSE-LNT)	6.0%	4.5%	4.0%	11.5%	42.0%	4.8%
American Electric Power Co. (NYSE-AEP)	4.5%	4.0%	4.0%	10.0%	39.0%	3.9%
Black Hills Corporation (NYSE-BKH)	11.5%	2.5%	3.0%	9.5%	45.0%	4.3%
CenterPoint Energy (NYSE-CNP)	6.0%	4.0%	5.0%	14.5%	43.0%	6.2%
CMS Energy Corporation (NYSE-CMS)	5.5%	8.0%	5.5%	13.0%	38.0%	4.9%
Dominion Resources, Inc. (NYSE-D)	5.0%	5.5%	4.5%	14.5%	28.0%	4.1%
DTE Energy Company (NYSE-DTE)	4.0%	5.5%	4.0%	9.0%	36.0%	3.2%
Duke Energy Corporation (NYSE-DUK)	4.0%	2.0%	3.0%	8.0%	33.0%	2.6%
Entergy Corporation (NYSE-ETR)	-4.0%	0.5%	2.0%	9.5%	36.0%	3.4%
Great Plains Energy Incorporated (NYSE-GXP)	6.5%	6.0%	2.5%	8.0%	39.0%	3.1%
Hawaiian Electric Industries, Inc. (NYSE-HE)	3.5%	1.0%	4.5%	8.0%	22.0%	1.8%
Integrys Energy Group (NYSE-TEG)	4.5%	1.0%	5.0%	8.5%	32.0%	2.7%
Nextera Energy (NYSE-NEE)	5.5%	8.5%	6.5%	12.5%	45.0%	5.6%
Northeast Utilities (NYSE-NU)	8.0%	8.0%	6.0%	9.5%	45.0%	4.3%
NorthWestern Corporation (NYSE-NWE)	4.5%	4.0%	4.5%	9.5%	39.0%	3.7%
OGE Energy Corp. (NYSE-OGE)	5.0%	8.5%	7.0%	12.0%	47.0%	5.6%
Otter Tail Corporation (NDQ-OTTR)	21.5%	1.5%	2.0%	11.0%	34.0%	3.7%
Pepco Holdings, Inc. (NYSE-POM)	6.0%	1.0%	2.0%	8.0%	31.0%	2.5%
Pinnacle West Capital Corp. (NYSE-PNW)	5.0%	2.0%	3.5%	10.0%	40.0%	4.0%
PNM Resources, Inc. (NYSE-PNM)	12.0%	12.5%	3.5%	9.0%	49.0%	4.4%
Portland General Electric (NYSE-POR)	3.5%	3.0%	3.5%	8.0%	42.0%	3.4%
SCANA Corporation (NYSE-SCG)	4.5%	2.5%	5.0%	9.5%	43.0%	4.1%
SEMPRA Energy (NYSE-SRE)	4.5%	7.5%	4.5%	11.0%	46.0%	5.1%
Southern Company (NYSE-SO)	4.5%	3.5%	4.0%	12.5%	28.0%	3.5%
TECO Energy (NYSE-TE)	3.0%	2.0%	2.0%	12.0%	31.0%	3.7%
Vectren Corporation (NYSE-VVC)	7.5%	2.5%	4.0%	11.5%	39.0%	4.5%
Westar Energy, Inc. (NYSE-WR)	6.0%	3.0%	5.0%	9.0%	45.0%	4.1%
Wisconsin Energy Corporation (NYSE-WEC)	5.5%	12.0%	3.5%	14.5%	35.0%	5.1%
Xcel Energy Inc. (NYSE-XEL)	4.5%	4.5%	4.5%	10.0%	42.0%	4.2%
Mean	5.8%	4.5%	4.1%	10.5%	38.4%	4.0%
Median	5.0%	3.8%	4.0%	10.0%	39.0%	4.0%
Average of Median Figures =		4.3%				4.0%

Data Source: *Value Line Investment Survey.*

Exhibit JRW-10

Gulf Power Company
DCF Equity Cost Growth Rate Measures
Analysts Projected EPS Growth Rate Estimates

Electric Proxy Group

Company	Yahoo	Zacks	Reuters	Mean
ALLETE, Inc. (NYSE-ALE)	6.0%	6.0%	6.0%	6.0%
Alliant Energy Corporation (NYSE-LNT)	4.8%	5.3%	5.4%	5.2%
Ameren Corporation (NYSE-AEE)	2.1%	2.7%	2.1%	2.3%
American Electric Power Co. (NYSE-AEP)	4.1%	3.9%	4.1%	4.0%
Avista Corporation (NYSE-AVA)	5.0%	5.0%	5.0%	5.0%
Black Hills Corporation (NYSE-BKH)	4.0%	4.0%	4.0%	4.0%
Cleco Corporation (NYSE-CNL)	8.0%	8.0%	n/a	8.0%
CMS Energy Corporation (NYSE-CMS)	5.9%	5.8%	5.9%	5.8%
Consolidated Edison, Inc. (NYSE-ED)	1.8%	3.0%	1.8%	2.2%
DTE Energy Company (NYSE-DTE)	4.6%	4.6%	4.6%	4.6%
Duke Energy Corporation (NYSE-DUK)	3.7%	3.7%	3.9%	3.7%
Edison International (NYSE-EIX)	0.8%	1.4%	1.5%	1.2%
FirstEnergy Corporation (ASE-FE)	1.9%	0.0%	2.1%	1.4%
Great Plains Energy Incorporated (NYSE-GXP)	6.4%	6.5%	6.4%	6.4%
Hawaiian Electric Industries, Inc. (NYSE-HE)	2.4%	2.4%	3.7%	2.8%
IDACORP, Inc. (NYSE-IDA)	4.0%	4.0%	n/a	4.0%
MGE Energy (NDQ-MGEE)	4.0%	n/a	n/a	4.0%
Nextera Energy (NYSE-NEE)	6.4%	6.2%	6.1%	6.2%
Northeast Utilities (NYSE-NU)	7.6%	7.9%	7.2%	7.6%
NorthWestern Corporation (NYSE-NWE)	4.0%	4.5%	n/a	4.3%
Otter Tail Corporation (NDQ-OTTR)	6.0%	n/a	n/a	6.0%
Pepco Holdings, Inc. (NYSE-POM)	3.8%	5.0%	3.8%	4.2%
PG&E Corporation (NYSE-PCG)	2.8%	3.9%	3.6%	3.4%
Pinnacle West Capital Corp. (NYSE-PNW)	4.7%	4.6%	4.7%	4.7%
PNM Resources, Inc. (NYSE-PNM)	6.4%	7.8%	6.4%	6.9%
Portland General Electric Company (NYSE-POR)	6.5%	5.9%	6.2%	6.2%
PPL Corporation (NYSE-PPL)	1.7%	-3.0%	1.7%	0.1%
SCANA Corporation (NYSE-SCG)	4.8%	4.7%	4.8%	4.8%
Southern Company (NYSE-SO)	4.3%	4.4%	4.5%	4.4%
UNS Energy Corp. (NYSE-UNS)	8.0%	7.0%	n/a	7.5%
Westar Energy, Inc. (NYSE-WR)	1.9%	3.6%	1.9%	2.4%
Wisconsin Energy Corporation (NYSE-WEC)	5.2%	5.4%	5.2%	5.3%
Xcel Energy Inc. (NYSE-XEL)	4.9%	4.3%	5.5%	4.9%
Mean	4.5%	4.5%	4.4%	4.5%
Median	4.6%	4.6%	4.6%	4.6%

Data Sources: www.reuters.com, www.zacks.com, http://quote.yahoo.com, September 30, 2013.

Exhibit JRW-10

Gulf Power Company
DCF Equity Cost Growth Rate Measures
Analysts Projected EPS Growth Rate Estimates

Vander Weide Proxy Group

Company	Yahoo	Zacks	Reuters	Mean
ALLETE, Inc. (NYSE-ALE)	6.0%	6.0%	6.0%	6.0%
Alliant Energy Corporation (NYSE-LNT)	4.8%	5.3%	5.4%	5.2%
American Electric Power Co. (NYSE-AEP)	4.1%	3.9%	4.1%	4.0%
Black Hills Corporation (NYSE-BKH)	4.0%	4.0%	4.0%	4.0%
CenterPoint Energy (NYSE-CNP)	4.5%	5.1%	4.5%	4.7%
CMS Energy Corporation (NYSE-CMS)	5.9%	5.8%	5.9%	5.8%
Dominion Resources, Inc. (NYSE-D)	6.9%	5.8%	6.7%	6.5%
DTE Energy Company (NYSE-DTE)	4.6%	4.6%	4.6%	4.6%
Duke Energy Corporation (NYSE-DUK)	3.7%	3.7%	3.9%	3.7%
Entergy Corporation (NYSE-ETR)	-3.8%	na	-0.9%	-2.3%
Great Plains Energy Incorporated (NYSE-GXP)	6.4%	6.5%	6.4%	6.4%
Hawaiian Electric Industries, Inc. (NYSE-HE)	2.4%	2.4%	3.7%	2.8%
Integrys Energy Group (NYSE-TEG)	5.0%	5.0%	5.0%	5.0%
Nextera Energy (NYSE-NEE)	6.4%	6.2%	6.1%	6.2%
Northeast Utilities (NYSE-NU)	7.6%	7.9%	7.2%	7.6%
NorthWestern Corporation (NYSE-NWE)	4.0%	4.5%	n/a	4.3%
OGE Energy Corp. (NYSE-OGE)	4.6%	5.5%	4.6%	4.9%
Otter Tail Corporation (NDQ-OTTR)	6.0%	n/a	n/a	6.0%
Pepco Holdings, Inc. (NYSE-POM)	3.8%	5.0%	3.8%	4.2%
Pinnacle West Capital Corp. (NYSE-PNW)	4.7%	4.6%	4.7%	4.7%
PNM Resources, Inc. (NYSE-PNM)	6.4%	7.8%	6.4%	6.9%
Portland General Electric (NYSE-POR)	6.5%	5.9%	6.2%	6.2%
SCANA Corporation (NYSE-SCG)	4.8%	4.7%	4.8%	4.8%
SEMPRA Energy (NYSE-SRE)	2.9%	5.0%	2.9%	3.6%
Southern Company (NYSE-SO)	4.3%	4.4%	4.5%	4.4%
TECO Energy (NYSE-TE)	2.8%	5.0%	2.8%	3.6%
Vectren Corporation (NYSE-VVC)	5.0%	5.0%	n/a	5.0%
Westar Energy, Inc. (NYSE-WR)	1.9%	3.6%	1.9%	2.4%
Wisconsin Energy Corporation (NYSE-WEC)	5.2%	5.4%	5.2%	5.3%
Xcel Energy Inc. (NYSE-XEL)	4.9%	4.3%	5.5%	4.9%
Mean	4.5%	5.1%	4.7%	4.7%
Median	4.7%	5.0%	4.7%	4.8%

Data Sources: www.reuters.com, www.zacks.com, http://quote.yahoo.com, September 30, 2013.

Exhibit JRW-10

Gulf Power Company
DCF Growth Rate Indicators

Summary Growth Rates

Growth Rate Indicator	Electric Proxy Group	Vander Weide Proxy Group
Historic *Value Line* Growth in EPS, DPS, and BVPS	3.3%	3.4%
Projected *Value Line* Growth in EPS, DPS, and BVPS	4.0%	4.3%
Sustainable Growth ROE * Retention Rate	3.9%	4.0%
Projected EPS Growth from Yahoo, Zacks, and Reuters	4.6%	4.8%
Average of Historic and Projected Growth Rates	4.0%	4.1%
Average of Sustainable and Projected Growth Rates	4.2%	4.4%

Exhibit JRW-11

Gulf Power Company
Capital Asset Pricing Model

Electric Proxy Group

Risk-Free Interest Rate	**4.00%**
Beta*	**0.70**
Ex Ante Equity Risk Premium**	**5.00%**
CAPM Cost of Equity	**7.5%**

* See page 3 of Exhibit JRW-11
** See pages 5 and 6 of Exhibit JRW-11

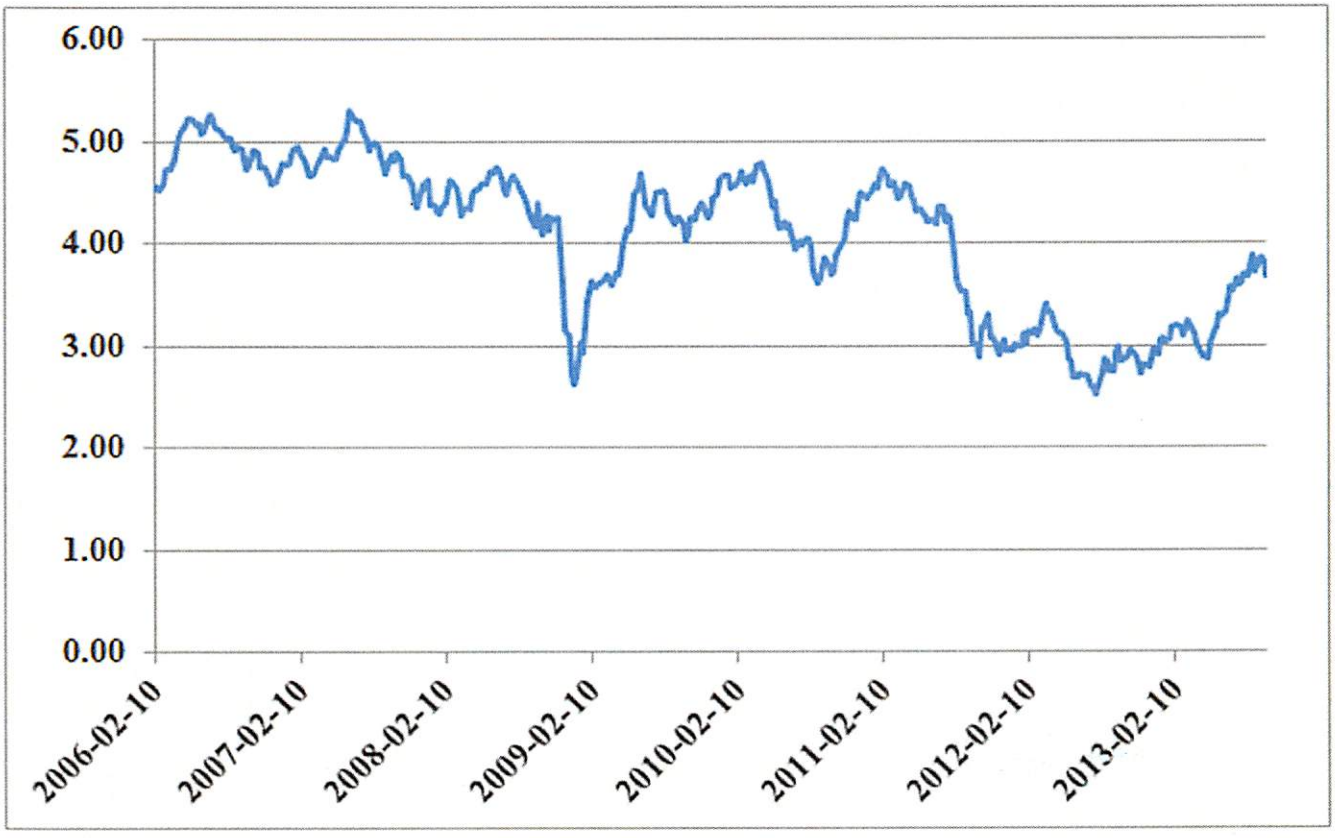
Vander Weide Proxy Group

Risk-Free Interest Rate	**4.00%**
Beta*	**0.75**
Ex Ante Equity Risk Premium**	**5.00%**
CAPM Cost of Equity	**7.8%**

* See page 3 of Exhibit JRW-11
** See pages 5 and 6 of Exhibit JRW-11

Exhibit JRW-11

30-Year U.S. Treasury Yields
January 2006-Present

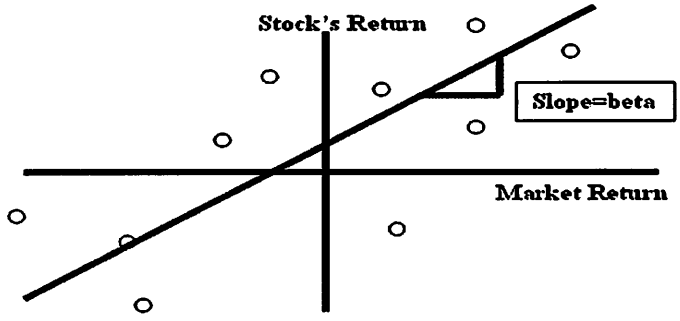


Source: Federal Reserve Bank of St. Louis, FRED Database.

Exhibit JRW-11

Betas

Calculation of Beta



Panel A
Electric Proxy Group

Company Name	Beta
ALLETE, Inc. (NYSE-ALE)	0.70
Alliant Energy Corporation (NYSE-LNT)	0.75
Ameren Corporation (NYSE-AEE)	0.80
American Electric Power Co. (NYSE-AEP)	0.70
Avista Corporation (NYSE-AVA)	0.70
Black Hills Corporation (NYSE-BKH)	0.80
Cleco Corporation (NYSE-CNL)	0.65
CMS Energy Corporation (NYSE-CMS)	0.75
Consolidated Edison, Inc. (NYSE-ED)	0.60
DTE Energy Company (NYSE-DTE)	0.75
Duke Energy Corporation (NYSE-DUK)	0.60
Edison International (NYSE-EIX)	0.75
FirstEnergy Corporation (ASE-FE)	0.80
Great Plains Energy Incorporated (NYSE-GXP)	0.80
Hawaiian Electric Industries, Inc. (NYSE-HE)	0.70
IDACORP, Inc. (NYSE-IDA)	0.70
MGE Energy, Inc. (NYSE-MGEE)	0.60
Nextera Energy (NYSE-NEE)	0.70
Northeast Utilities (NYSE-NU)	0.75
NorthWestern Corporation (NYSE-NWE)	0.70
Otter Tail Corporation (NDQ-OTTR)	0.90
Pepco Holdings, Inc. (NYSE-POM)	0.75
PG&E Corporation (NYSE-PCG)	0.55
Pinnacle West Capital Corp. (NYSE-PNW)	0.70
PNM Resources, Inc. (NYSE-PNM)	0.95
Portland General Electric Company (NYSE-POI	0.75
PPL Corporation (NYSE-PPL)	0.65
SCANA Corporation (NYSE-SCG)	0.65
Southern Company (NYSE-SO)	0.55
UNS Energy Corp. (NYSE-UNS)	0.70
Westar Energy, Inc. (NYSE-WR)	0.75
Wisconsin Energy Corporation (NYSE-WEC)	0.65
Xcel Energy Inc. (NYSE-XEL)	0.60
Mean	0.71
Median	0.70

Data Source: *Value Line Investment Survey, 2013.*

Panel B
Vander Weide Proxy Group

Company Name	Beta
ALLETE, Inc. (NYSE-ALE)	0.70
Alliant Energy Corporation (NYSE-LNT)	0.75
American Electric Power Co. (NYSE-AEP)	0.70
Black Hills Corporation (NYSE-BKH)	0.80
CenterPoint Energy (NYSE-CNP)	0.80
CMS Energy Corporation (NYSE-CMS)	0.75
Dominion Resources, Inc. (NYSE-D)	0.70
DTE Energy Company (NYSE-DTE)	0.75
Duke Energy Corporation (NYSE-DUK)	0.60
Entergy Corporation (NYSE-ETR)	0.70
Great Plains Energy Incorporated (NYSE-GXP)	0.80
Hawaiian Electric Industries, Inc. (NYSE-HE)	0.70
Integrys Energy Group (NYSE-TEG)	0.90
Nextera Energy (NYSE-NEE)	0.70
Northeast Utilities (NYSE-NU)	0.75
NorthWestern Corporation (NYSE-NWE)	0.70
OGE Energy Corp. (NYSE-OGE)	0.75
Otter Tail Corporation (NDQ-OTTR)	0.90
Pepco Holdings, Inc. (NYSE-POM)	0.75
Pinnacle West Capital Corp. (NYSE-PNW)	0.70
PNM Resources, Inc. (NYSE-PNM)	0.95
Portland General Electric Company (NYSE-POR	0.75
SCANA Corporation (NYSE-SCG)	0.65
SEMPRA Energy (NYSE-SRE)	0.80
Southern Company (NYSE-SO)	0.55
TECO Energy (NYSE-TE)	0.85
Vectren Corporation (NYSE-VVC)	0.75
Westar Energy, Inc. (NYSE-WR)	0.75
Wisconsin Energy Corporation (NYSE-WEC)	0.65
Xcel Energy Inc. (NYSE-XEL)	0.60
Mean	0.74
Median	0.75

Data Source: *Value Line Investment Survey, 2013.*

Exhibit JRW-11
Risk Premium Approaches

	Historical Ex Post Returns	**Surveys**	**Expected Return Models and Market Data**
Means of Assessing The Market Risk Premium	Historical Average Stock Minus Bond Returns	Surveys of CFOs, Financial Forecasters, Companies, Analysts on Expected Returns and Market Risk Premiums	Use Market Prices and Market Fundamentals (such as Growth Rates) to Compute Expected Returns and Market Risk Premiums
Problems/Debated Issues	Time Variation in Required Returns, Measurement and Time Period Issues, and Biases such as Market and Company Survivorship Bias	Questions Regarding Survey Histories, Responses, and Representativeness Surveys may be Subject to Biases, such as Extrapolation	Assumptions Regarding Expectations, Especially Growth

Source: Adapted from Antti Ilmanen, Expected Returns on Stocks and Bonds," *Journal of Portfolio Management*, (Winter 2003).

Exhibit JRW-11

Gulf Power Company
Capital Asset Pricing Model
Equity Risk Premium

Category	Study Authors	Publication Date	Time Period Of Study	Methodology	Return Measure	Range Low	Range High	Midpoint of Range	Mean	Median
Historical Risk Premium										
	Ibbotson	2013	1926-2012	Historical Stock Returns - Bond Returns	Arithmetic				5.70%	
					Geometric				4.10%	
	Damodaran	2013	1928-2012	Historical Stock Returns - Bond Returns	Arithmetic				5.88%	
					Geometric				4.20%	
	Dimson, Marsh, Staunton	2013	1900-2012	Historical Stock Returns - Bond Returns	Arithmetic					
					Geometric				4.20%	
	Bate	2008	1900-2007	Historical Stock Returns - Bond Returns	Geometric				4.50%	
	Shiller	2006	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				7.00%	
					Geometric				5.50%	
	Siegel	2005	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				6.10%	
					Geometric				4.60%	
	Dimson, Marsh, and Staunton	2006	1900-2005	Historical Stock Returns - Bond Returns	Arithmetic				5.50%	
	Goyal & Welch	2006	1872-2004	Historical Stock Returns - Bond Returns					4.77%	
	Median									5.14%
Ex Ante Models (Puzzle Research)										
	Claus Thomas	2001	1985-1998	Abnormal Earnings Model					3.00%	
	Arnott and Bernstein	2002	1810-2001	Fundamentals - Div Yld + Growth					2.40%	
	Constantinides	2002	1872-2000	Historical Returns & Fundamentals - P/D & P/E					6.90%	
	Cornell	1999	1926-1997	Historical Returns & Fundamental GDP/Earnings		3.50%	5.50%	4.50%	4.50%	
	Easton, Taylor, et al	2002	1981-1998	Residual Income Model					5.30%	
	Fama French	2002	1951-2000	Fundamental DCF with EPS and DPS Growth		2.55%	4.32%		3.44%	
	Harris & Marston	2001	1982-1998	Fundamental DCF with Analysts' EPS Growth					7.14%	
	Best & Byrne	2001								
	McKinsey	2002	1962-2002	Fundamental (P/E, D/P, & Earnings Growth)		3.50%	4.00%		3.75%	
	Siegel	2005	1802-2001	Historical Earnings Yield	Geometric				2.50%	
	Grabowski	2006	1926-2005	Historical and Projected		3.50%	6.00%	4.75%	4.75%	
	Maheu & McCurdy	2006	1885-2003	Historical Excess Returns, Structural Breaks,		4.02%	5.10%	4.56%	4.56%	
	Bostock	2004	1960-2002	Bond Yields, Credit Risk, and Income Volatility		3.90%	1.30%	2.60%	2.60%	
	Bakshi & Chen	2005	1982-1998	Fundamentals - Interest Rates					7.31%	
	Donaldson, Kamstra, & Kramer	2006	1952-2004	Fundamental, Dividend yld., Returns., & Volatility		3.00%	4.00%	3.50%	3.50%	
	Campbell	2008	1982-2007	Historical & Projections (D/P & Earnings Growth)		4.10%	5.40%		4.75%	
	Best & Byrne	2001	Projection	Fundamentals - Div Yld + Growth					2.00%	
	Fernandez	2007	Projection	Required Equity Risk Premium					4.00%	
	DeLong & Magin	2008	Projection	Earnings Yield - TIPS					3.22%	
	Siegel - Rethink ERP	2011	Projection	Real Stock Returns and Components					5.50%	
	American Appraisal Quarterly ERP	2013	Projection	Fundamental Economic and Market Factors					6.50%	
	Duarte & Rosa - NY Fed	2013	projection	Projections from 29 Models					5.40%	
	Duff & Phelps	2013	Projection	Normalized with 4.0% Long-Term Treasury Yield					5.00%	
	Damodaran	2013	Projection	Fundamentals - Implied from FCF to Equity Model					5.74%	
	Social Security									
	Office of Chief Actuary		1900-1995							
	John Campbell	2001	1860-2000	Historical & Projections (D/P & Earnings Growth)	Arithmetic	3.00%	4.00%	3.50%	3.50%	
			Projected for 75 Years		Geometric	1.50%	2.50%	2.00%	2.00%	
	Peter Diamond	2001	Projected for 75 Years	Fundamentals (D/P, GDP Growth)		3.00%	4.80%	3.90%	3.90%	
	John Shoven	2001	Projected for 75 Years	Fundamentals (D/P, P/E, GDP Growth)		3.00%	3.50%	3.25%	3.25%	
	Median									4.00%
Surveys										
	Survey of Financial Forecasters	2013	10-Year Projection	About 50 Financial Forecastsers					2.30%	
	Duke - CFO Magazine Survey	2013	10-Year Projection	Approximately 350 CFOs					4.20%	
	Welch - Academics	2008	30-Year Projection	Random Academics		5.00%	5.74%	5.37%	5.37%	
	Fernandez - Academics, Analysts, and Compan	2013	Long-Term	Survey of Academics, Analysts, and Companies					5.70%	
	Median									4.79%
Building Block										
	Ibbotson and Chen	2013	1926-2012	Historical Supply Model (D/P & Earnings Growth)	Arithmetic			6.13%	5.11%	
					Geometric			4.09%		
	Chen - Rethink ERP	2010	20-Year Projection	Combination Supply Model (Historic and Projection)	Geometric				4.00%	
	Ilmanen - Rethink ERP	2010	Projection	Current Supply Model (D/P & Earnings Growth)	Geometric				3.00%	
	Grinold, Kroner, Siegel - Rethink ERP	2011	Projection	Current Supply Model (D/P & Earnings Growth)	Arithmetic			4.63%	4.12%	
					Geometric			3.60%		
	Woolridge		2013	Current Supply Model (D/P & Earnings Growth)					4.00%	
	Median									4.00%
Mean										4.48%
Median										4.39%

Exhibit JRW-11

Gulf Power Company
Capital Asset Pricing Model
Equity Risk Premium

Summary of 2010-13 Equity Risk Premium Studies

Category	Study Authors	Publication Date	Time Period Of Study	Methodology	Return Measure	Range Low	Range High	Midpoint of Range	Mean	Average
Historical Risk Premium										
	Ibbotson	2013	1926-2012	Historical Stock Returns - Bond Returns	Arithmetic				5.70%	
					Geometric				4.10%	
	Damodaran	2013	1928-2012	Historical Stock Returns - Bond Returns	Arithmetic				5.88%	
					Geometric				4.20%	
	Dimson, Marsh, Staunton	2013	1900-2012	Historical Stock Returns - Bond Returns	Arithmetic					
					Geometric				4.20%	
	Median									4.82%
Ex Ante Models (Puzzle Research)										
	Siegel - Rethink ERP	2011	Projection	Real Stock Returns and Components					5.50%	
	American Appraisal Quarterly ERP	2013	Projection	Fundamental Economic and Market Factors					6.50%	
	Duarte & Rosa - NY Fed	2013	Projection	Projections from 29 Models					5.40%	
	Duff & Phelps	2013	Projection	Normalized with 4.0% Long-Term Treasury Yield					5.00%	
	Damodaran	2013	Projection	Fundamentals - Implied from FCF to Equity Model					5.74%	
	Median									5.50%
Surveys										
	Survey of Financial Forecasters	2013	10-Year Projection	About 50 Financial Forecastsers					2.30%	
	Duke - CFO Magazine Survey	2013	10-Year Projection	Approximately 350 CFOs					4.20%	
	Fernandez - Academics, Analysts, and Companies	2013	Long-Term	Survey of Academics, Analysts, and Companies					5.70%	
	Median									4.20%
Building Block										
	Ibbotson and Chen	2013	Projection	Historical Supply Model (D/P & Earnings Growth)	Arithmetic			6.13%	5.11%	
					Geometric			4.09%		
	Chen - Rethink ERP	2010	20-Year Projection	Combination Supply Model (Historic and Projection)	Geometric				4.00%	
	Ilmanen - Rethink ERP	2010	Projection	Current Supply Model (D/P & Earnings Growth)	Geometric				3.00%	
	Grinold, Kroner, Siegel - Rethink ERP	2011	Projection	Current Supply Model (D/P & Earnings Growth)	Arithmetic			4.63%	4.12%	
					Geometric			3.60%		
	Woolridge	2013	Projection	Current Supply Model (D/P & Earnings Growth)	Geometric				4.00%	
	Median									4.00%
Mean										4.63%
Median										4.51%

Exhibit JRW-12
Gulf Power Company
S&P Bond Ratings

Gulf Power Co.

Issuer Credit Rating		
	Ratings	**Rating Date**
Foreign Long Term	A	21-Dec-2000
Foreign Short Term	A-1	29-Jun-2009
Local Long Term	A	21-Dec-2000
Local Short Term	A-1	29-Jun-2009

Tampa Electric Co.

Issuer Credit Rating		
	Ratings	**Rating Date**
Foreign Long Term	BBB+	27-May-2011
Foreign Short Term	A-2	06-May-2009
Local Long Term	BBB+	27-May-2011
Local Short Term	A-2	06-May-2009

Florida Power & Light Co.

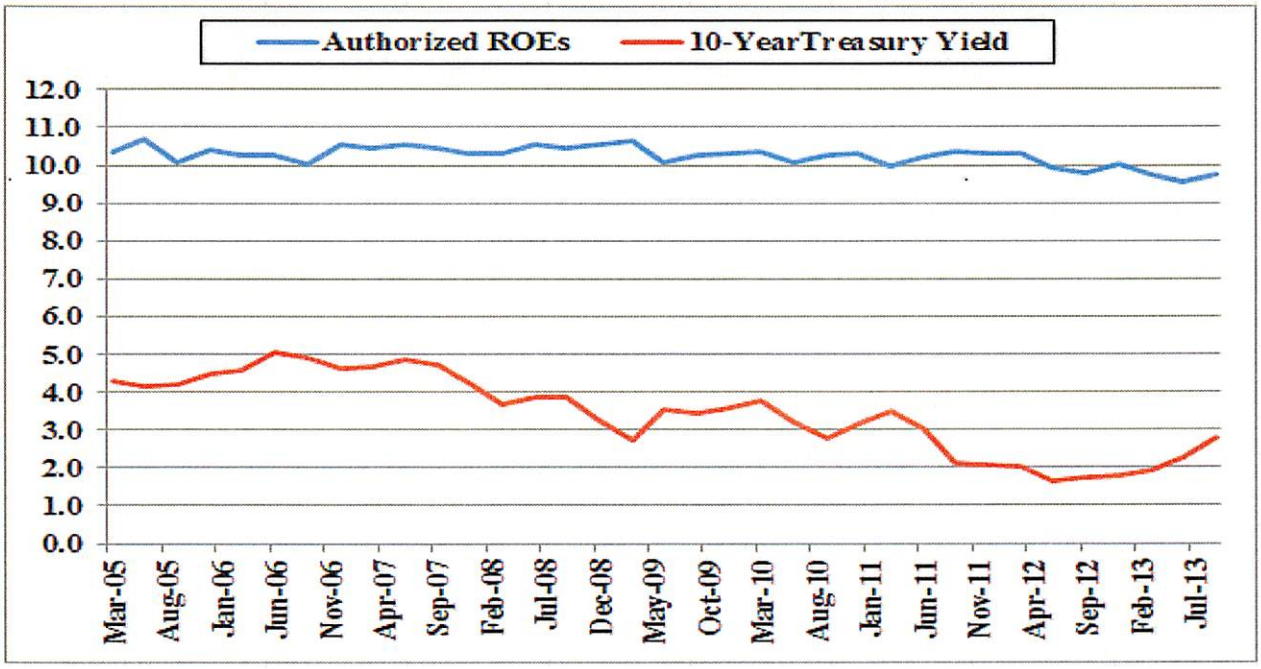
Issuer Credit Rating		
	Ratings	**Rating Date**
Foreign Long Term	A-	11-Mar-2010
Foreign Short Term	A-2	11-Mar-2010
Local Long Term	A-	11-Mar-2010
Local Short Term	A-2	11-Mar-2010

Progress Energy Inc.

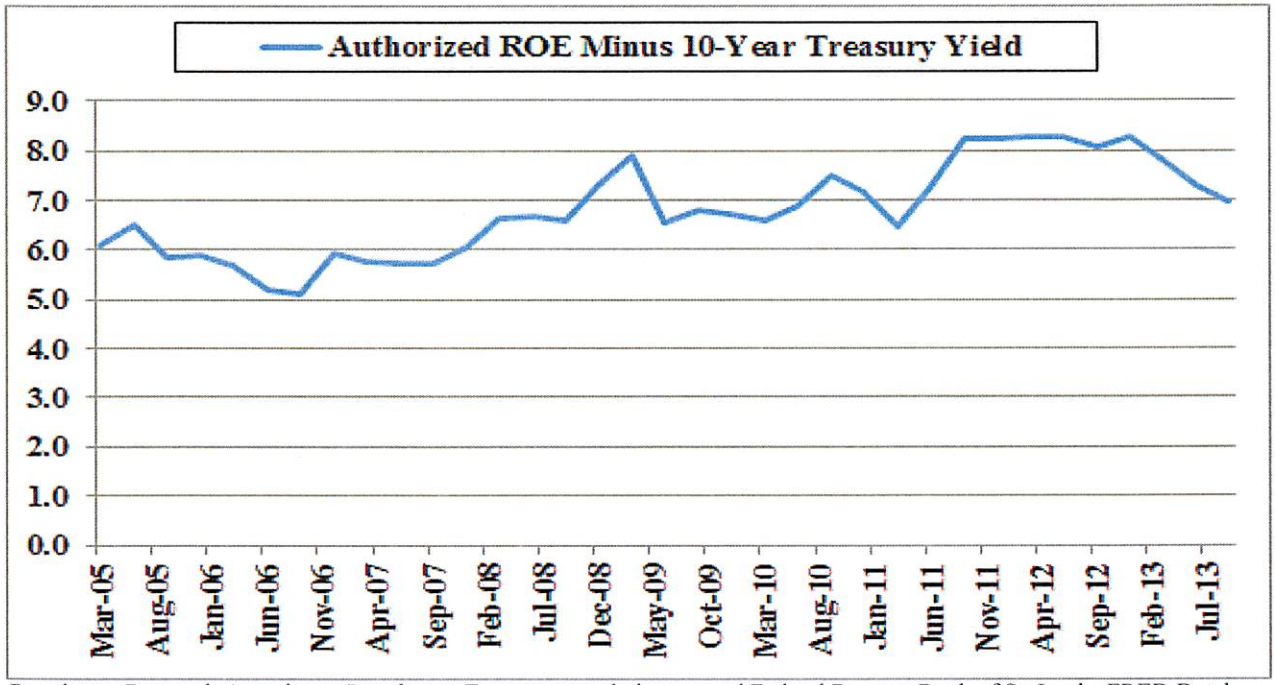
Issuer Credit Rating		
	Ratings	**Rating Date**
Foreign Long Term	BBB+	15-Mar-2007
Foreign Short Term	A-2	23-Nov-2005
Local Long Term	BBB+	15-Mar-2007
Local Short Term	A-2	23-Nov-2005

Source: www.standardandpoors.com

Exhibit JRW-13
Panel A
Authorized ROEs for Electric Utilities and 10-Year Treasury Yields
2005-2013



Panel B
Authorized ROEs for Electric Utilities Minus 10-Year Treasury Yields
2005-2013



Regulatory Research Associates, *Regulatory Focus*, quarterly issues, and Federal Reserve Bank of St. Louis, FRED Database.

Exhibit JRW-14
Gulf Power Company
Recommended Cost of Capital

Weighted Average Cost of Capital - Regulatory Capital Structure

Capital	Capitalization Amounts	Capitalization Ratios	Cost Rate	Weighted Cost Rate
Short-Term Debt	$ 27,615	1.47%	0.82%	0.01%
Long-Term Debt	$ 685,025	36.36%	4.96%	1.80%
Preferred Stock	$ 79,085	4.20%	6.00%	0.25%
Common Equity	$ 715,221	37.96%	11.50%	4.37%
Customer Deposits	$ 20,943	1.11%	2.30%	0.03%
Deferred Taxes	$ 379,918	20.17%	0.00%	0.00%
FASB 109 Deferred Taxes	$ (25,718)	-1.37%	0.00%	0.00%
Investment Credit - Weighted Cost	$ 1,812	0.10%	8.04%	0.01%
Totals	$ 1,883,901	100.00%		6.47%

MFR D-1a

Panel B - OPC's Recommended Capitalization Ratios for Gulf Power - Investor-Provided Capital

Capital	Capitalization Amounts	Capitalization Ratios	Cost Rate	Weighted Cost Rate
Short-Term Debt	$ 27,615	1.83%	0.82%	0.02%
Long-Term Debt	$ 685,025	45.46%	4.96%	2.25%
Preferred Stock	$ 79,085	5.25%	6.00%	0.31%
Common Equity	$ 715,221	47.46%	11.50%	5.46%
	$ 1,506,946	100.00%		8.04%

Panel A

Summary of Dr. Vander Weide's Equity Cost Rate Approaches and Results

Approach	Electric Utilities
DCF	10.40%
Ex Ante Risk Premium	11.20%
Ex Post Risk Premium	10.80%
CAPM - Historical	10.40%
CAPM - DCF Based	10.70%
Average	10.70%

Panel B

Summary of Dr. Vander Weide's DCF Results

	Electric Utilities
Average Adjusted Dividend Yield*	4.80%
Growth**	5.60%
DCF Result	10.40%

* Includes adjustments for quarterly payments and flotation costs

** Expected EPS Growth from IBES

Panel C

Summary of Dr. Vander Weide's Ex Ante Risk Premium Results

	Electric Utilities
Projected 'A' Rated PU Yield	6.55%
Ex Ante Risk Premium	4.62%
Equity Cost Rate	11.20%

Panel D

Summary of Dr. Vander Weide's Historical Risk Premium Results

	Electric Utilities
Projected 'A' Rated PU Yield	6.55%
Historic Risk Premium*	4.05%
Equity Cost Rate	10.60%
Flotation Cost Adjustment	0.20%
Adjusted CAPM Result	10.80%

* Midpoint of 3.8% and 4.3%

Panel E

Summary of Dr. Vander Weide's Historical CAPM Results

	Electric Utilities
Risk-Free Rate	5.25%
Beta	0.73
Equity Risk Premium	6.70%
CAPM Result	10.16%
Flotation Cost Adjustment	0.24%
Adjusted CAPM Result	10.40%

Panel F

Summary of Dr. Vander Weide's Expected CAPM Results

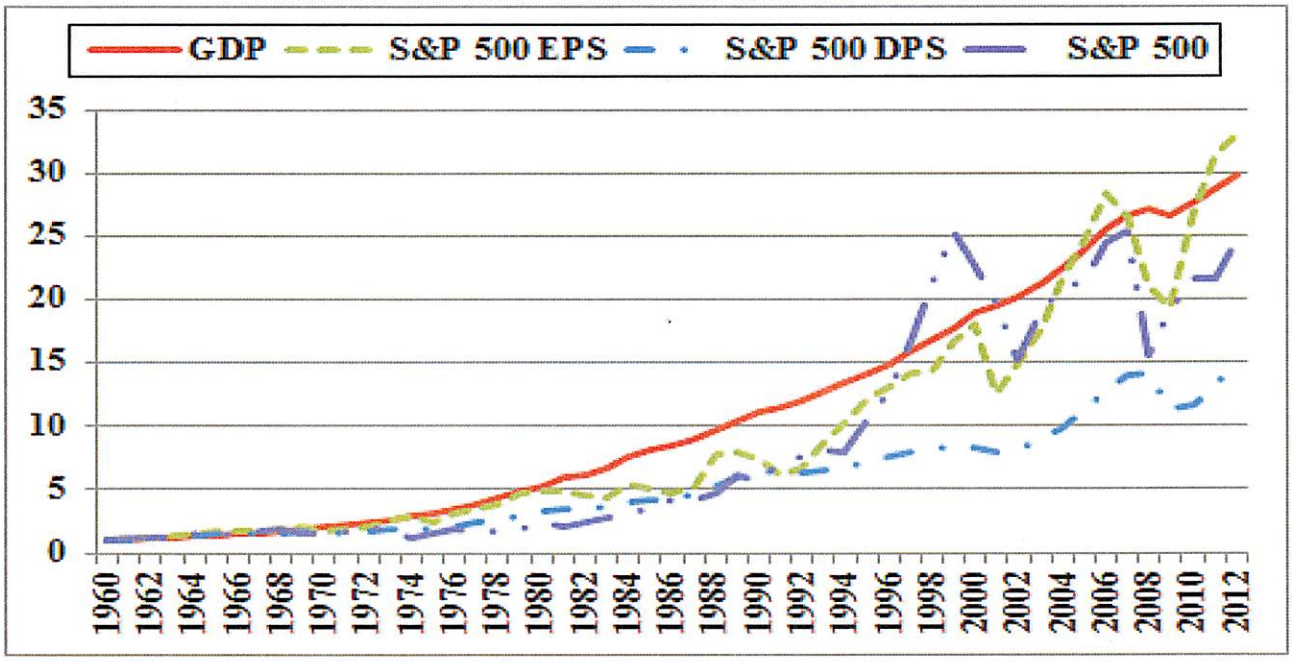
	Utility Proxy Group
Risk-Free Rate	5.25%
Beta	0.73
Equity Risk Premium	7.15%
CAPM Result	10.47%
Flotation Cost Adjustment	0.24%
Adjusted CAPM Result	10.70%

Exhibit JRW-15
Growth Rates
GDP, S&P 500 Price, EPS, and DPS

	GDP	S&P 500	Earnings	Dividends	
1960	526.4	58.11	3.10	1.98	
1961	544.8	71.55	3.37	2.04	
1962	585.7	63.10	3.67	2.15	
1963	617.8	75.02	4.13	2.35	
1964	663.6	84.75	4.76	2.58	
1965	719.1	92.43	5.30	2.83	
1966	787.7	80.33	5.41	2.88	
1967	832.4	96.47	5.46	2.98	
1968	909.8	103.86	5.72	3.04	
1969	984.4	92.06	6.10	3.24	
1970	1038.3	92.15	5.51	3.19	
1971	1126.8	102.09	5.57	3.16	
1972	1237.9	118.05	6.17	3.19	
1973	1382.3	97.55	7.96	3.61	
1974	1499.5	68.56	9.35	3.72	
1975	1637.7	90.19	7.71	3.73	
1976	1824.6	107.46	9.75	4.22	
1977	2030.1	95.10	10.87	4.86	
1978	2293.8	96.11	11.64	5.18	
1979	2562.2	107.94	14.55	5.97	
1980	2788.1	135.76	14.99	6.44	
1981	3126.8	122.55	15.18	6.83	
1982	3253.2	140.64	13.82	6.93	
1983	3534.6	164.93	13.29	7.12	
1984	3930.9	167.24	16.84	7.83	
1985	4217.5	211.28	15.68	8.20	
1986	4460.1	242.17	14.43	8.19	
1987	4736.4	247.08	16.04	9.17	
1988	5100.4	277.72	24.12	10.22	
1989	5482.1	353.40	24.32	11.73	
1990	5800.5	330.22	22.65	12.35	
1991	5992.1	417.09	19.30	12.97	
1992	6342.3	435.71	20.87	12.64	
1993	6667.4	466.45	26.90	12.69	
1994	7085.2	459.27	31.75	13.36	
1995	7414.7	615.93	37.70	14.17	
1996	7838.5	740.74	40.63	14.89	
1997	8332.4	970.43	44.09	15.52	
1998	8793.5	1229.23	44.27	16.20	
1999	9353.5	1469.25	51.68	16.71	
2000	9951.5	1320.28	56.13	16.27	
2001	10286.2	1148.09	38.85	15.74	
2002	10642.3	879.82	46.04	16.08	
2003	11142.2	1111.91	54.69	17.88	
2004	11853.3	1211.92	67.68	19.41	
2005	12623.0	1248.29	76.45	22.38	
2006	13377.2	1418.30	87.72	25.05	
2007	14028.7	1468.36	82.54	27.73	
2008	14291.5	903.25	65.39	28.05	
2009	13973.7	1115.10	59.65	22.31	
2010	14498.9	1257.64	83.66	23.12	
2011	15075.7	1257.60	97.05	26.02	Average
2012	15681.5	1426.19	102.47	30.44	
Growth Rates	**6.74**	**6.35**	**6.96**	**5.39**	**6.36**

Data Sources: GDPA - http://research.stlouisfed.org/fred2/categories/106
S&P 500, EPS and DPS - http://pages.stern.nyu.edu/~adamodar/

Exhibit JRW-15
Long-Term Growth of GDP, S&P 500, S&P 500 EPS, and S&P 500 DPS



	GDP	S&P 500	S&P 500 EPS	S&P 500 DPS
Growth Rates	6.74%	6.35%	6.96%	5.39%

Exhibit JRW-15
Panel A
Historic GDP Growth Rates

10-Year Average	4.0%
20-Year Average	4.6%
30-Year Average	5.1%
40-Year Average	6.6%
50-Year Average	6.8%

Calculated from Page 1 of Exhibit JRW-15

Panel B
Projected GDP Growth Rates

	Time Frame	Projected Nominal GDP Growth Rate
Congressional Budget Office	2013-2023	4.6%
Survey of Financial Forecasters	Ten Year	4.8%
Energy Information Administration	2011-2040	4.5%

Sources:
http://www.cbo.gov/ftpdocs/120xx/doc12039/01-26_FY2013Outlook.pdf page XIII
http://www.eia.gov/forecasts/aeo/tables_ref.cfm Table 20
http://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/2013/survq113.cfm

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814-865-1160

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120 Haymaker Circle
State College, PA 16801
814-238-9428

Academic Experience

Professor of Finance, the Smeal College of Business Administration, the Pennsylvania State University (July 1, 1990 to the present).

President, Nittany Lion Fund LLC, (January 1, 2005 to the present)

Director, the Smeal College Trading Room (January 1, 2001 to the present)

Goldman, Sachs & Co. and Frank P. Smeal Endowed University Fellow in Business Administration (July 1, 1987 to the present).

Associate Professor of Finance, College of Business Administration, the Pennsylvania State University (July 1, 1984 to June 30, 1990).

Assistant Professor of Finance, College of Business Administration, the Pennsylvania State University (September, 1979 to June 30, 1984).

Education

Doctor of Philosophy in Business Administration, the University of Iowa (December, 1979). Major field: Finance.

Master of Business Administration, the Pennsylvania State University (December, 1975).

Bachelor of Arts, the University of North Carolina (May, 1973) Major field: Economics.

Books

James A. Miles and J. Randall Woolridge, *Spinoffs and Equity Carve-Outs: Achieving Faster Growth and Better Performance* (Financial Executives Research Foundation), 1999

Patrick Cusatis, Gary Gray, and J. Randall Woolridge, *The StreetSmart Guide to Valuing a Stock* (2nd Edition, McGraw-Hill), 2003.

J. Randall Woolridge and Gary Gray, *The New Corporate Finance, Capital Markets, and Valuation: An Introductory Text* (Kendall Hunt, 2003).

Research

Dr. Woolridge has published over 35 articles in the best academic and professional journals in the field, including the *Journal of Finance,* the *Journal of Financial Economics,* and the *Harvard Business Review*.

Exhibit JRW-16

Appendix A
Educational Background, Research, and Related Business Experience
J. Randall Woolridge

J. Randall Woolridge is a Professor of Finance and the Goldman, Sachs & Co. and Frank P. Smeal Endowed Faculty Fellow in Business Administration in the College of Business Administration of the Pennsylvania State University in University Park, PA. In addition, Professor Woolridge is Director of the Smeal College Trading Room and President and CEO of the Nittany Lion Fund, LLC.

Professor Woolridge received a Bachelor of Arts degree in Economics from the University of North Carolina, a Master of Business Administration degree from the Pennsylvania State University, and a Doctor of Philosophy degree in Business Administration (major area-finance, minor area-statistics) from the University of Iowa. He has taught Finance courses including corporation finance, commercial and investment banking, and investments at the undergraduate, graduate, and executive MBA levels.

Professor Woolridge's research has centered on empirical issues in corporation finance and financial markets. He has published over 35 articles in the best academic and professional journals in the field, including the *Journal of Finance,* the *Journal of Financial Economics,* and the *Harvard Business Review.* His research has been cited extensively in the business press. His work has been featured in the *New York Times*, *Forbes, Fortune, The Economist*, *Barron's*, *Wall Street Journal*, *Business Week*, *Investors' Business Daily*, *USA Today*, and other publications. In addition, Dr. Woolridge has appeared as a guest to discuss the implications of his research on CNN's *Money Line*, CNBC's *Morning Call* and *Business Today*, and Bloomberg's *Morning Call.*

Professor Woolridge's stock valuation book, *The StreetSmart Guide to Valuing a Stock* (McGraw-Hill, 2003), was released in its second edition. He has also co-authored *Spinoffs and Equity Carve-Outs: Achieving Faster Growth and Better Performance* (Financial Executives Research Foundation, 1999) as well as a textbook entitled *Basic Principles of Finance* (Kendall Hunt, 2011).

Professor Woolridge has also consulted with corporations, financial institutions, and government agencies. In addition, he has directed and participated in university- and company-sponsored professional development programs for executives in 25 countries in North and South America, Europe, Asia, and Africa.

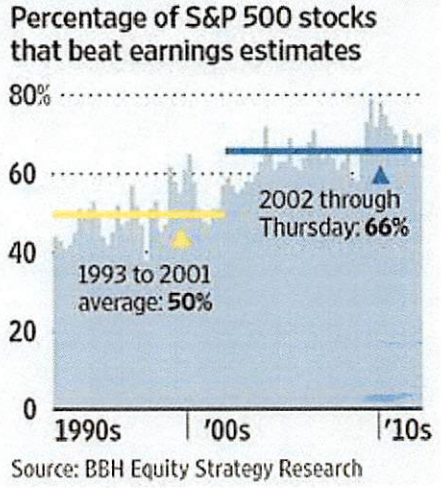
Over the past twenty-five years Dr. Woolridge has prepared testimony and/or provided consultation services in regulatory rate cases in the rate of return area in following states: Alaska, Arizona, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Indiana, Kansas, Kentucky, Massachusetts, Missouri, Nebraska, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, South Carolina, Texas, Utah, Vermont, Washington, and Washington, D.C. He has also prepared testimony which was submitted to the Federal Energy Regulatory Commission.

Most of the attention given to the accuracy of analysts' earnings per share ("EPS") forecasts comes from media coverage of companies' quarterly earnings announcements. When companies' announced earnings beat Wall Street's EPS estimates ("a positive surprise"), their stock prices usually go up. When a company's EPS figure misses or is below Wall Street's forecasted EPS ("a negative surprise"), their stock price usually declines, sometimes precipitously so. Wall Street's estimate is the consensus forecast for quarterly EPS made by analysts who follow the stock as of the announcement date. And so Wall Street's estimate is the consensus EPS made in the days leading up to the EPS announcement.

In recent years, it has become more common for companies to beat Wall Street's quarterly EPS estimate. A recent *Wall Street Journal* article summarized the results for the first quarter of 2012: "While this "positive surprise ratio" of 70% is above the 20-year average of 58% and also higher than last quarter's tally, it is just middling since the current bull market began in 2009. In the past decade, the ratio only dipped below 60% during the financial crisis. Look before 2002, though, and 70% would have been literally off the chart. From 1993 through 2001, about half of companies had positive surprises."[1] Figure 1 below provides the record for companies beating Wall Street's EPS estimate on a quarterly basis over the past 20 years.

[1] Spencer Jakab, "Earnings Surprises Lose Punch," *Wall Street Journal* (May 7, 2012), p. C1.

Figure 1
Percent of Companies Beating Wall Street's Quarterly Estimates



A. RESEARCH ON THE ACCURACY OF ANALYSTS' NEAR-TERM EPS ESTIMATES

There is a long history of studies that evaluate how well analysts forecast near-term EPS estimates and long-term EPS growth rates. Most of these studies have evaluated the accuracy of earnings forecasts for the current quarter or year. Many of the early studies indicated that analysts make overly optimistic EPS earnings forecasts for quarter-to-quarter EPS (Stickel (1990); Brown (1997); Chopra (1998)).[2] More recent studies have shown that the optimistic bias tends to be larger for longer-term forecasts and smaller for forecasts made nearer to the

[2] S. Stickel, "Predicting Individual Analyst Earnings Forecasts," *Journal of Accounting Research*, Vol. 28, 409-417, 1990. Brown, L.D., "Analyst Forecasting Errors: Additional Evidence," *Financial Analysts Journal*, Vol. 53, 81-88, 1997, and Chopra, V.K., "Why So Much Error in Analysts' Earnings Forecasts?" *Financial Analysts Journal*, Vol. 54, 30-37 (1998).

EPS announcement date. Richardson, Teoh, and Wysocki (2004) report that the upward bias in earnings growth rates declines in the quarters leading up to the earnings announcement date.[3] They call this result the "walk-down to beatable analyst forecasts." They hypothesize that the walk-down might be driven by the "earning-guidance game," in which analysts give optimistic forecasts at the start of a fiscal year, then revise their estimates downwards until the firm can beat the forecasts at the earnings announcement date.

However, two regulatory developments over the past decade have potentially impacted analysts' EPS growth rate estimates. First, Regulation Fair Disclosure ("Reg FD") was introduced by the Securities and Exchange Commission ("SEC") in October 2000. Reg FD prohibits private communication between analysts and management to level the information playing field in the markets. With Reg FD, analysts are less dependent on gaining access to management to obtain information and, therefore, are not as likely to make optimistic forecasts to gain access to management. Second, the conflict of interest within investment firms with investment banking and analyst operations was addressed in the Global Analysts Research Settlements ("GARS"). GARS, as agreed upon on April 23, 2003, between the SEC, the National Association of Securities Dealers ("NASD"), the New York Stock Exchange ("NYSE") and ten of the largest U.S. investment firms, includes a number of regulations that were

[3] S. Richardson, S. Teoh, and P. Wysocki, "The Walk-Down to Beatable Analyst Forecasts: The Role of Equity Issuance and Insider Trading Incentives," *Contemporary Accounting Research*, pp. 885–924, (2004).

introduced to prevent investment bankers from pressuring analysts to provide favorable projections.

The previously cited *Wall Street Journal* article acknowledged the impact of the new regulatory rules in explaining the recent results:[4] "What changed? One potential reason is the tightening of rules governing analyst contacts with management. Analysts now must rely on publicly available guidance or, gasp, figure things out by themselves. That puts companies, with an incentive to set the bar low so that earnings are received positively, in the driver's seat. While that makes managers look good short-term, there is no lasting benefit for buy-and-hold investors."

These comments on the impact of regulatory developments on the accuracy of short-term EPS estimates was addressed in a study by Hovakimian and Saenyasiri (2010).[5] The authors investigate analysts' forecasts of annual earnings for the following time periods: (1) the time prior to Reg FD (1984-2000); (2) the time period after Reg FD but prior to GARS (2000-2002);[6] and (3) the time period after GARS (2002-2006). For the pre-Reg FD period, Hovakimian and Saenyasiri find that analysts generally make overly optimistic forecasts of annual earnings. The forecast bias is higher for early forecasts and

[4] Spencer Jakab, "Earnings Surprises Lose Punch," *Wall Street Journal* (May 7, 2012), p. C1.

[5] A. Hovakimian and E. Saenyasiri, "Conflicts of Interest and Analysts Behavior: Evidence from Recent Changes in Regulation," *Financial Analysts* Journal (July-August, 2010), pp. 96-107.

[6] Whereas the GARS settlement was signed in 2003, rules addressing analysts' conflict of interest by separating the research and investment banking activities of analysts went into effect with the passage of NYSE and NASD rules in July 2002.

steadily declines in the months leading up to the earnings announcement. The results are similar for the time period after Reg FD but prior to GARS. However, the bias is lower in the later forecasts (the forecasts made just prior to the announcement). For the time period after GARS, the average forecasts declined significantly, but a positive bias remains. In sum, Hovakimian and Saenyasiri find that: (1) analysts make overly optimistic short-term forecasts of annual earnings; (2) Reg FD had no effect on this bias; and (3) GARS did result in a significant reduction in the bias, but analysts' short-term forecasts of annual earnings still have a small positive bias.

B. RESEARCH ON THE ACCURACY OF ANALYSTS' LONG-TERM EPS GROWTH RATE FORECASTS

There have been very few studies regarding the accuracy of analysts' long-term EPS growth rate forecasts. Cragg and Malkiel (1968) studied analysts' long-term EPS growth rate forecasts made in 1962 and 1963 by five brokerage houses for 185 firms. They concluded that analysts' long-term earnings growth forecasts are on the whole no more accurate than naïve forecasts based on past earnings growth. Harris (1999) evaluated the accuracy of analysts' long-term EPS forecasts over the 1982-1997 time period using a sample of 7,002 firm-year observations.[7] He concluded the following: (1) the accuracy of analysts' long-term EPS forecasts is very low; (2) a superior long-run method to forecast long-term EPS growth is to assume that all companies will have an earnings growth

[7] R.D. Harris, "The Accuracy, Bias, and Efficiency of Analysts' Long Run Earnings Growth Forecasts," *Journal of Business Finance & Accounting*, pp. 725-755 (June/July 1999).

rate equal to historic GDP growth; and (3) analysts' long-term EPS forecasts are significantly upwardly biased, with forecasted earnings growth exceeding actual earnings growth by seven percent per annum. Subsequent studies by DeChow, P., A. Hutton, and R. Sloan (2000), and Chan, Karceski, and Lakonishok (2003) also conclude that analysts' long-term EPS growth rate forecasts are overly optimistic and upwardly biased.[8] The Chan, Karceski, and Lakonishok (2003) study evaluated the accuracy of analysts' long-term EPS growth rate forecasts over the 1982-98 time period. They reported a median Institutional Brokers' Estimate System ("I/B/E/S") growth forecast of 14.5%, versus a median realized 5-year growth rate of about 9%. They also found that the I/B/E/S forecasts of EPS beyond 2 years are not accurate. They concluded the following: "Over long horizons, however, there is little forecastability in earnings, and analysts' estimates tend to be overly optimistic."

Lacina, Lee, and Xu (2011) evaluated the accuracy of analysts' long-term earnings growth rate forecasts over the 1983-2003 time period.[9] The study included 27,081 firm-year observations, and compared the accuracy of analysts' EPS forecasts to those produced by two naïve forecasting models: (1) a random

[8] P. DeChow, A. Hutton, and R. Sloan, "The Relation Between Analysts' Forecasts of Long-Term Earnings Growth and Stock Price Performance Following Equity Offerings," *Contemporary Accounting Research (2000)* and K. Chan, L., Karceski, J., & Lakonishok, J., "The Level and Persistence of Growth Rates," *Journal of Finance* pp. 643–684, (2003).

[9] M. Lacina, B. Lee and Z. Xu, *Advances in Business and Management Forecasting (Vol. 8),* Kenneth D. Lawrence, Ronald K. Klimberg (ed.), Emerald Group Publishing Limited, pp.77-101.

walk model ("RW") where the long-term EPS (t+5) is simply equal to last year's EPS figure (t-1); and (2) a RW model with drift ("RWGDP"), where the drift or growth rate is GDP growth for period t-1. In this model, long-term EPS (t+5) is simply equal to last year's EPS figure (t-1) times (1 + GDP growth (t-1)). The authors conclude that using the RW model to forecast EPS in the next 3-5 years proved to be just as accurate as using the EPS estimates from analysts' long-term earnings growth rate forecasts. They find that the RWGDP model performs better than the pure RW model, and that both models perform as well as analysts in forecasting long-term EPS. They also discover an optimistic bias in analysts' long-term EPS forecasts. In the authors' opinion, these results indicate that analysts' long-term earnings growth rate forecasts should be used with caution as inputs for valuation and cost of capital purposes.

C. ISSUES REGARDING THE SUPERIORITY OF ANALYSTS' EPS FORECASTS OVER HISTORIC AND TIME-SERIES ESTIMATES OF LONG-TERM EPS GROWTH

As highlighted by the classic study by Brown and Rozeff (1976) and the other studies that followed, analysts' forecasts of quarterly earnings estimates are superior to the estimates derived from historic and time-series analyses.[10] This is often attributed to the information and timing advantage that analysts have over historic and time-series analyses. These studies relate to analysts' forecasts of quarterly and/or annual forecasts, and not to long-term EPS growth rate forecasts.

[10] L. Brown and M. Rozeff, "The Superiority of Analyst Forecasts as Measures of Expectations: Evidence from Earnings," *The Journal of Finance* 33 (1): pp. 1-16 (1976).

The previously cited studies by Harris (1999); Chan, Karceski, and Lakonishok (2003); and Lacina, Lee, and Xu (2011) all conclude that analysts' forecasts are no better than time-series models and historic growth rates in forecasting long-term EPS. Harris (1999) and Lacina, Lee, and Xu (2011) concluded that historic GDP growth was superior to analysts' forecasts for long-run earnings growth. These overall results are similar to the findings by Bradshaw, Drake, Myers, and Myers (2009) that discovered that time-series estimates of annual earnings are more accurate over longer horizons than analysts' forecasts of earnings. As the authors state, "These findings suggest an incomplete and misleading generalization about the superiority of analysts' forecasts over even simple time-series-based earnings forecasts."[11]

D. STUDY OF THE ACCURACY OF ANALYSTS' LONG-TERM EARNINGS GROWTH RATES

To evaluate the accuracy of analysts' EPS forecasts, I have compared actual 3-5 year EPS growth rates with forecasted EPS growth rates on a quarterly basis over the past 20 years for all companies covered by the I/B/E/S data base. In Panel A of page 1 of Exhibit JRW-16, Appendix B1, I show the average analysts' forecasted 3-5 year EPS growth rate with the average actual 3-5 year EPS growth rate for the past 20 years.

The following example shows how the results can be interpreted. For the 3-5 year period prior to the first quarter of 1999, analysts had projected an EPS

[11] M. Bradshaw, M. Drake, J. Myers, and L. Myers, "A Re-examination of Analysts' Superiority Over Time-Series Forecasts," Workings paper, (1999), http://ssrn.com/abstract=1528987.

growth rate of 15.13%, but companies only generated an average annual EPS growth rate of 9.37% over the 3-5 years. This projected EPS growth rate figure represented the average projected growth rate for over 1,510 companies, with an average of 4.88 analysts' forecasts per company. For the entire 20-year period of the study, for each quarter there were on average 5.6 analysts' EPS projections for 1,281 companies. Overall, my findings indicate that forecast errors for long-term estimates are predominantly positive, which indicates an upward bias in growth rate estimates. The mean and median forecast errors over the observation period are 143.06% and 75.08%, respectively. The forecasting errors are negative for only 11 of the 80 quarterly time periods: five consecutive quarters starting at the end of 1995 and six consecutive quarters starting in 2006. As shown in Panel A of page 1 of Exhibit JRW-16, Appendix B1, the quarters with negative forecast errors were for the 3-5 year periods following earnings declines associated with the 1991 and 2001 economic recessions in the U.S. Thus, there is evidence of a persistent upward bias in long-term EPS growth forecasts.

The average 3-5 year EPS growth rate projections for all companies provided in the I/B/E/S database on a quarterly basis from 1988 to 2008 are shown in Panel B of page 1 of Exhibit JRW-16, Appendix B1. In this graph, no comparison to actual EPS growth rates is made, and hence, there is no follow-up period. Therefore, since companies are not lost from the sample due to a lack of follow-up EPS data, these results are for a larger sample of firms. The average

projected growth rate increased to the 18.0% range in 2006, and has since decreased to about 14.0%.

The upward bias in analysts' long-term EPS growth rate forecasts appears to be known in the markets. Page 2 of Exhibit JRW-16, Appendix B1 provides an article published in the *Wall Street Journal*, dated March 21, 2008, that discusses the upward bias in analysts' EPS growth rate forecasts.[12] In addition, a recent *Bloomberg Businessweek* article also highlighted the upward bias in analysts' EPS forecasts, citing a study by McKinsey Associates. This article is provided on pages 3 and 4 of Exhibit JRW-16, Appendix B1. The article concludes with the following:[13]

The bottom line: *Despite reforms intended to improve Wall Street research, stock analysts seem to be promoting an overly rosy view of profit prospects.*

E. REGULATORY DEVELOPMENTS AND THE ACCURACY OF ANALYSTS' LONG-TERM EARNINGS GROWTH RATES FORECASTS

Whereas Hovakimian and Saenyasiri evaluated the impact of regulations on analysts' short-term EPS estimates, there is little research on the impact of Reg FD and GARS on the long-term EPS forecasts of Wall Street analysts. My study with Patrick Cusatis did find that the long-term EPS growth rate forecasts of analysts did not decline significantly and have continued to be overly optimistic in

[12] Andrew Edwards, "Study Suggests Bias in Analysts' Rosy Forecasts," *Wall Street Journal* (March 21, 2008), p. C6.
[13] Roben Farzad, 'For Analysts, Things are Always Looking Up,' *Bloomberg Businessweek* (June 14, 2010), pp. 39-40.

the post-Reg FD and GARS period.[14] Analysts' long-term EPS growth rate forecasts before and after GARS are about two times the level of historic GDP growth. These observations are supported by a *Wall Street Journal* article entitled "Analysts Still Coming Up Rosy – Over-Optimism on Growth Rates is Rampant – and the Estimates Help to Buoy the Market's Valuation." The following quote provides insight into the continuing bias in analysts' forecasts:

> Hope springs eternal, says Mark Donovan, who manages Boston Partners Large Cap Value Fund. "You would have thought that, given what happened in the last three years, people would have given up the ghost. But in large measure they have not.
>
> These overly optimistic growth estimates also show that, even with all the regulatory focus on too-bullish analysts allegedly influenced by their firms' investment-banking relationships, a lot of things haven't changed. Research remains rosy and many believe it always will.[15]

These observations are echoed in a recent McKinsey study entitled "Equity Analysts: Still too Bullish" which involved a study of the accuracy on analysts long-term EPS growth rate forecasts. The authors conclude that after a decade of stricter regulation, analysts' long-term earnings forecasts continue to be excessively optimistic. They made the following observation (emphasis added):[16]

---

[14] P. Cusatis and J. R. Woolridge, "The Accuracy of Analysts' Long-Term EPS Growth Rate Forecasts," Working Paper (July 2008).

[15] Ken Brown, "Analysts Still Coming Up Rosy – Over-Optimism on Growth Rates is Rampant – and the Estimates Help to Buoy the Market's Valuation," *Wall Street Journal*, p. C1, (January 27, 2003).

[16] Marc H. Goedhart, Rishi Raj, and Abhishek Saxena, "Equity Analysts, Still Too Bullish," *McKinsey on Finance*, pp. 14-17, (Spring 2010).

> Alas, a recently completed update of our work only reinforces this view—despite a series of rules and regulations, dating to the last decade, that were intended to improve the quality of the analysts' long-term earnings forecasts, restore investor confidence in them, and prevent conflicts of interest. For executives, many of whom go to great lengths to satisfy Wall Street's expectations in their financial reporting and long-term strategic moves, this is a cautionary tale worth remembering. This pattern confirms our earlier findings that analysts typically lag behind events in revising their forecasts to reflect new economic conditions. When economic growth accelerates, the size of the forecast error declines; when economic growth slows, it increases. So as economic growth cycles up and down, the actual earnings S&P 500 companies report occasionally coincide with the analysts' forecasts, as they did, for example, in 1988, from 1994 to 1997, and from 2003 to 2006. Moreover, analysts have been persistently overoptimistic for the past 25 years, with estimates ranging from 10 to 12 percent a year, compared with actual earnings growth of 6 percent. Over this time frame, actual earnings growth surpassed forecasts in only two instances, both during the earnings recovery following a recession. On average, analysts' forecasts have been almost 100 percent too high.

F. ANALYSTS' LONG-TERM EPS GROWTH RATE FORECASTS FOR UTILITY COMPANIES

To evaluate whether analysts' EPS growth rate forecasts are upwardly biased for utility companies, I conducted a study similar to the one described above using a group of electric utility and gas distribution companies. The results are shown on Panels A and B of page 5 of Exhibit JRW-16, Appendix B1. The projected EPS growth rates for electric utilities have been in the 4% to 6% range over the last 20 years, with the recent figures at approximately 5%. As shown, the achieved EPS growth rates have been volatile and, on average, below the projected growth rates. Over the entire period, the average quarterly 3-5 year projected and actual EPS growth rates are 4.59% and 2.90%, respectively.

For gas distribution companies, the projected EPS growth rates have declined from about 6% in the 1990s to about 5% in the 2000s. The achieved EPS growth rates have been volatile. Over the entire period, the average quarterly 3-5 year projected and actual EPS growth rates are 5.15% and 4.53%, respectively.

Overall, the upward bias in EPS growth rate projections for electric utility and gas distribution companies is not as pronounced as it is for all companies. Nonetheless, the results here are consistent with the results for companies in general -- analysts' projected EPS growth rate forecasts are upwardly biased for utility companies.

G. *VALUE LINE*'S LONG-TERM EPS GROWTH RATE FORECASTS

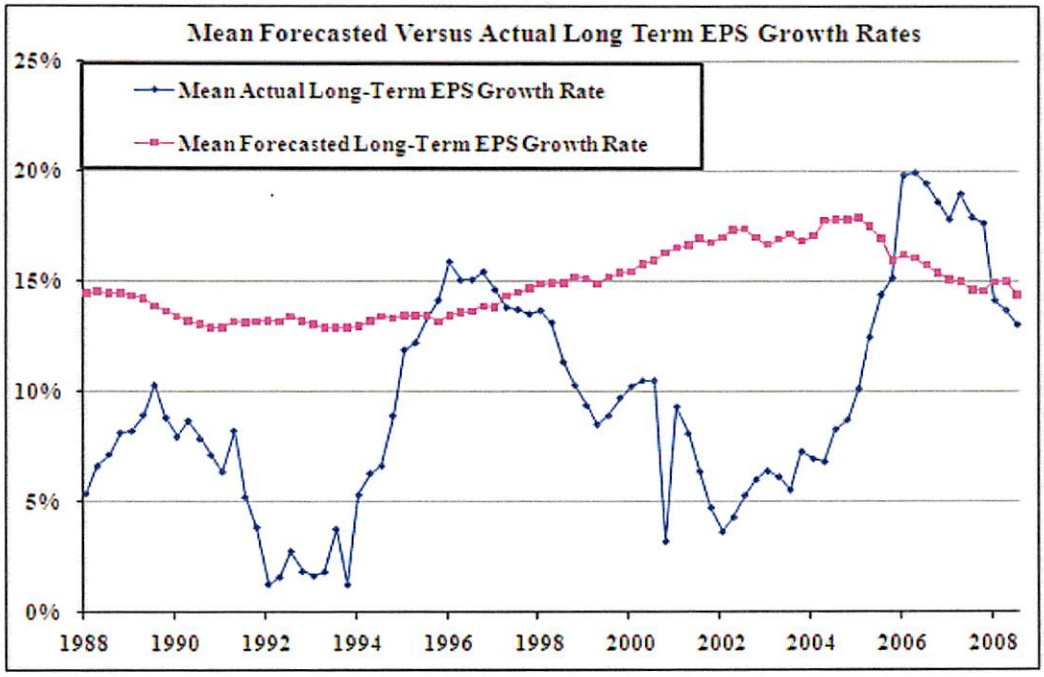
To assess *Value Line*'s earnings growth rate forecasts, I used the *Value Line Investment Analyzer*. The results are summarized in Panel A of Page 6 of Exhibit JRW-16, Appendix B1. I initially filtered the database and found that *Value Line* has 3-5 year EPS growth rate forecasts for 2,333 firms. The average projected EPS growth rate was 14.70%. This is high given that the average historical EPS growth rate in the U.S. is about 7%. A major factor seems to be that *Value Line* only predicts negative EPS growth for 43 companies. This is less than 2% of the companies covered by *Value Line*. Given the ups and downs of corporate earnings, this is unreasonable.

To put this figure in perspective, I screened the *Value Line* companies to see what percent of companies covered by *Value Line* had experienced negative

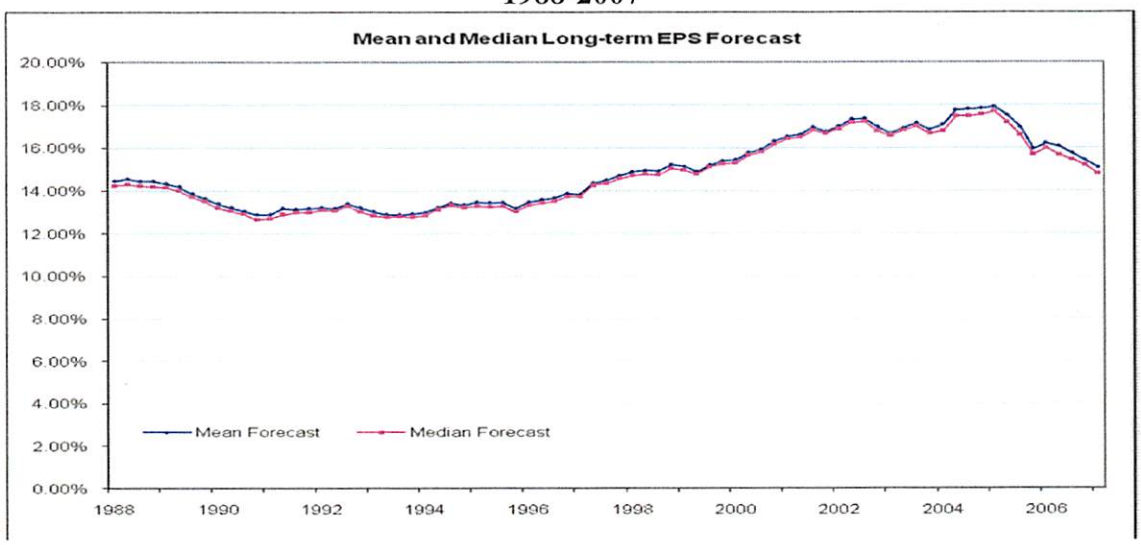
EPS growth rates over the past 5 years. *Value Line* reported a 5-year historic growth rate for 2,219 companies. The results are shown in Panel B of page 6 of Exhibit JRW-16, Appendix B1 and indicate that the average 5-year historic growth rate was 3.90%, and *Value Line* reported negative historic growth for 844 firms, which represents 38.0% of these companies.

These results indicate that *Value Line*'s EPS forecasts are excessive and unrealistic. It appears that the analysts at *Value Line* are similar to their Wall Street brethren in that they are reluctant to forecast negative earnings growth.

Panel A
Long-Term Forecasted Versus Actual EPS Growth Rates
1988-2009



Panel B
Long-Term Forecasted EPS Growth Rates
1988-2007



Source: Patrick J. Cusatis and J. Randall Woolridge, "The Accuracy of Analysts' Long-Term Earnings Per Share Growth Rate Forecasts," (July, 2008).

THE WALL STREET JOURNAL.

Study Suggests Bias in Analysts' Rosy Forecasts

By ANDREW EDWARDS
March 21, 2008; Page C6

Despite an economy teetering on the brink of a recession -- if not already in one -- analysts are still painting a rosy picture of earnings growth, according to a study done by Penn State's Smeal College of Business.

The report questions analysts' impartiality five years after then-New York Attorney General Eliot Spitzer forced analysts to pay $1.5 billion in damages after finding evidence of bias.

"Wall Street analysts basically do two things: recommend stocks to buy and forecast earnings," said J. Randall Woolridge, professor of finance. "Previous studies suggest their stock recommendations do not perform well, and now we show that their long-term earnings-per-share growth-rate forecasts are excessive and upwardly biased."

The report, which examined analysts' long-term (three to five years) and one-year per-share earnings expectations from 1984 through 2006 found that companies' long-term earnings growth surpassed analysts' expectations in only two instances, and those came right after recessions.

Over the entire time period, analysts' long-term forecast earnings-per-share growth averaged 14.7%, compared with actual growth of 9.1%. One-year per-share earnings expectations were slightly more accurate: The average forecast was for 13.8% growth and the average actual growth rate was 9.8%.

"A significant factor in the upward bias in long-term earnings-rate forecasts is the reluctance of analysts to forecast" profit declines, Mr. Woolridge said. The study found that nearly one-third of all companies experienced profit drops over successive three-to-five-year periods, but analysts projected drops less than 1% of the time.

The study's authors said, "Analysts are rewarded for biased forecasts by their employers, who want them to hype stocks so that the brokerage house can garner trading commissions and win underwriting deals."

They also concluded that analysts are under pressure to hype stocks to generate trading commissions, and they often don't follow stocks they don't like.

Write to Andrew Edwards at andrew.edwards@dowjones.com

Markets & Finance June 10, 2010, 5:00PM EST

Bloomberg Businessweek

For Analysts, Things Are Always Looking Up

They're raising earnings estimates for U.S. companies at a record pace

By Roben Farzad

For years, the rap on Wall Street securities analysts was that they were shills, reflexively producing upbeat research on companies they cover to help their employers win investment banking business. The dynamic was well understood: Let my bank take your company public, or advise it on this acquisition, and—wink, wink—I will recommend your stock through thick or thin. After the Internet bubble burst, that was supposed to change. In April 2003 the Securities & Exchange Commission reached a settlement with 10 Wall Street firms in which they agreed, among other things, to separate research from investment banking.

Seven years on, Wall Street analysts remain a decidedly optimistic lot. Some economists look at the global economy and see troubles—the European debt crisis, persistently high unemployment worldwide, and housing woes in the U.S. Stock analysts as a group seem unfazed. Projected 2010 profit growth for companies in the Standard & Poor's 500-stock index has climbed seven percentage points this quarter, to 34 percent, data compiled by Bloomberg show. According to Sanford C. Bernstein (AB), that's the fastest pace since 1980, when the Dow Jones industrial average was quoted in the hundreds and Nancy Reagan was getting ready to order new window treatments for the Oval Office.

Among the companies analysts expect to excel: Intel (INTL) is projected to post an increase in net income of 142 percent this year. Caterpillar, a multinational that gets much of its revenue abroad, is expected to boost its net income by 47 percent this year. Analysts have also hiked their S&P 500 profit estimate for 2011 to $95.53 a share, up from $92.45 at the beginning of January, according to Bloomberg data. That would be a record, surpassing the previous high reached in 2007.

With such prospects, it's not surprising that more than half of S&P 500-listed stocks boast overall buy ratings. It is telling that the proportion has essentially held constant at both the market's October 2007 high and March 2009 low, bookends of a period that saw stocks fall by more than half. If the analysts are correct, the market would appear to be attractively priced right now. Using the $95.53 per share figure, the price-to-earnings ratio of the S&P 500 is a modest 11 as of June 9. If, however, analysts end up being too high by, say, 20 percent, the P/E would jump to almost 14.

If history is any guide, chances are good that the analysts are wrong. According to a recent McKinsey report by Marc Goedhart, Rishi Raj, and Abhishek Saxena, "Analysts have been persistently over-optimistic for 25 years," a stretch that saw them peg earnings growth at 10 percent to 12 percent a year when the actual number was ultimately 6 percent. "On average," the researchers note, "analysts' forecasts have been almost 100 percent too high," even after regulations were enacted to weed out conflicts and improve the rigor of their calculations. As the chart below shows, in most years analysts have been forced to lower their estimates after it became apparent they had set them too high.

While a few analysts, like Meredith Whitney, have made their names on bearish calls, most are chronically bullish. Part of the problem is that despite all the reforms they remain too aligned with the companies they cover. "Analysts still need to get the bulk of their information from companies, which have an incentive to be over-optimistic," says Stephen Bainbridge, a professor at UCLA Law School who specializes in the securities industry. "Meanwhile, analysts don't want to threaten that ongoing access by being too negative." Bainbridge says that with the era of the overpaid, superstar analyst long over, today's job description calls for resisting the urge to be an iconoclast. "It's a matter of herd behavior," he says.

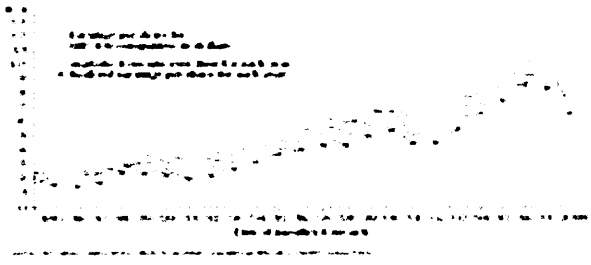
So what's a more plausible estimate of companies' earning power? Looking at factors including the strengthening dollar, which hurts exports, and higher corporate borrowing costs, David Rosenberg, chief economist at Toronto-based investment shop Gluskin Sheff + Associates, says "disappointment looms." Bernstein's Adam Parker says every 10 percent drop in the value of the euro knocks U.S. corporate earnings down by 2.5 percent to 3 percent. He sees the S&P 500 earning $86 a share next year.

As realities hit home, "It's only natural that analysts will have to revise down their views," says Todd Salamone, senior vice-president at Schaeffer's Investment Research. The market may be making its own downward adjustment, as the S&P 500 has already fallen 14 percent from its high in April. If precedent holds, analysts are bound to curb their enthusiasm belatedly, telling us next year what we really needed to know this year.

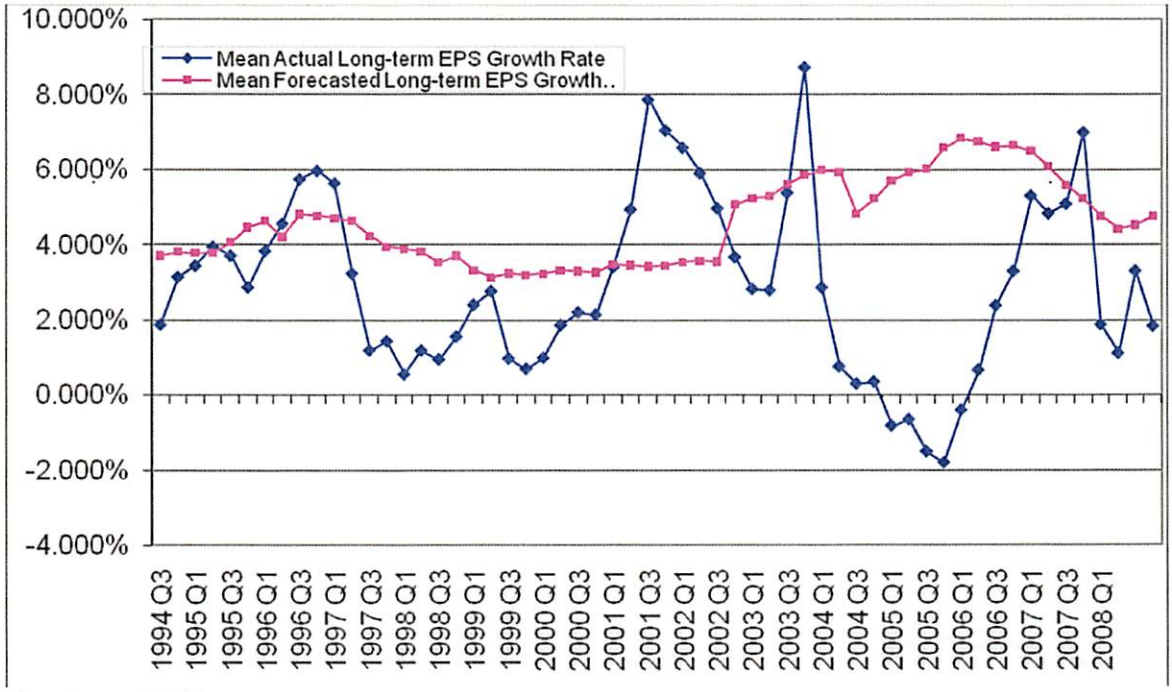
The bottom line: *Despite reforms intended to improve Wall Street research, stock analysts seem to be promoting an overly rosy view of profit prospects.*

Bloomberg Businessweek Senior Writer Farzad covers Wall Street and international finance.

The Earnings Roller Coaster

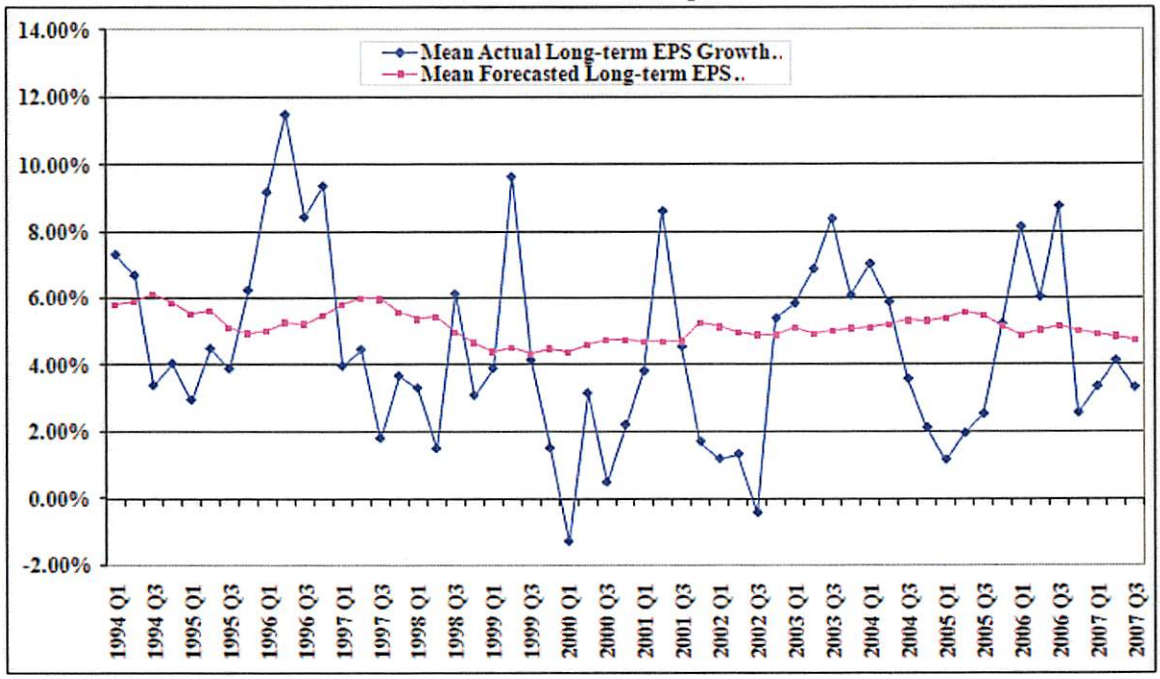


Panel A
Long-Term Forecasted Versus Actual EPS Growth Rates
Electric Utility Companies
1988-2008



Data Source: IBES

Panel B
Long-Term Forecasted Versus Actual EPS Growth Rates
Gas Distribution Companies



Panel A
Value Line 3-5 year EPS Growth Rate Forecasts

	Average Projected EPS Growth rate	Number of Negative EPS Growth Projections	Percent of Negative EPS Growth Projections
2,333 Companies	**14.70%**	**43**	**1.80%**

Value Line Investment Survey, June, 2012

Panel B
Historical Five-Year EPS Growth Rates for Value Line Companies

	Average Historical EPS Growth rate	Number with Negative Historical EPS Growth	Percent with Negative Historical EPS Growth
2,219 Companies	**3.90%**	**844**	**38.00%**

Value Line Investment Survey, June, 2012

Exhibit JRW-16
Appendix C
Building Blocks Equity Risk Premium

A. THE BUILDING BLOCKS MODEL

Ibbotson and Chen (2003) evaluate the ex post historical mean stock and bond returns in what is called the Building Blocks approach.[1] They use 75 years of data and relate the compounded historical returns to the different fundamental variables employed by different researchers in building ex ante expected equity risk premiums. Among the variables included were inflation, real earnings per share ("EPS") and dividend per share ("DPS") growth, return on equity ("ROE") and book value growth, and price-earnings ("P/E") ratios. By relating the fundamental factors to the ex post historical returns, the methodology bridges the gap between the ex post and ex ante equity risk premiums. Ilmanen (2003) illustrates this approach using the geometric returns and five fundamental variables – inflation ("CPI"), dividend yield ("D/P"), real earnings growth ("RG"), repricing gains ("PEGAIN"), and return interaction/reinvestment ("INT").[2] This is shown on page 1 of Exhibit JRW-16, Appendix C1. The first column breaks down the 1926-2000 geometric mean stock return of 10.7% into the different return components demanded by investors: the historical U.S. Treasury bond return (5.2%), the excess equity return (5.2%), and a small interaction term (0.3%). This 10.7% annual stock return over the 1926-2000 period can then be broken down into

[1] Roger Ibbotson and Peng Chen, "Long Run Returns: Participating in the Real Economy," *Financial Analysts Journal*, (January 2003).

[2] Antti Ilmanen, Expected Returns on Stocks and Bonds," *Journal of Portfolio Management*, (Winter 2003), p. 11.

Exhibit JRW-16
Appendix C
Building Blocks Equity Risk Premium

the following fundamental elements: inflation (3.1%), dividend yield (4.3%), real earnings growth (1.8%), repricing gains associated with higher P/E ratios (1.3%), and a small interaction term (0.2%).

The third column in the graph on page 1 of Exhibit JRW-16, Appendix C1 shows current inputs to estimate an ex ante expected market return. These inputs include the following:

CPI – To assess expected inflation, I have employed expectations of the short-term and long-term inflation rate. Long-term inflation forecasts are available in the Federal Reserve Bank of Philadelphia's publication entitled *Survey of Professional Forecasters*. While this survey is published quarterly, only the first quarter survey includes long-term forecasts of gross domestic product ("GDP") growth, inflation, and market returns. In the first quarter 2013 survey, published on February 15, 2013, the median long-term (10-year) expected inflation rate as measured by the CPI was 2.30% (see Panel A of page 2 of Exhibit JRW-16, Appendix C1).

The University of Michigan's Survey Research Center surveys consumers on their short-term (one-year) inflation expectations on a monthly basis. As shown on page 3 of Exhibit JRW-16, Appendix C1, the current short-term expected inflation rate is 3.0%.

Exhibit JRW-16
Appendix C
Building Blocks Equity Risk Premium

As a measure of expected inflation, I will use the average of the long-term (2.3%) and short-term (3.0%) inflation rate measures, or 2.65%.

D/P – As shown on page 4 of Exhibit JRW-16, Appendix C1, the dividend yield on the Standard and Poor's (S&P) 500 has fluctuated from 1.0% to almost 3.5% from 2000-2010. Ibbotson and Chen (2003) report that the long-term average dividend yield of the S&P 500 is 4.3%. As of October 2013, the indicated S&P 500 dividend yield was 2.1%. I will use this figure in my ex ante risk premium analysis.

RG – To measure expected real growth in earnings, I use the historical real earnings growth rate S&P 500 and the expected real GDP growth rate. The S&P 500 was created in 1960 and includes 500 companies which come from 10 different sectors of the economy. On page 5 of Exhibit JRW-16, Appendix C1, real EPS growth is computed using the CPI as a measure of inflation. The real growth figure over the 1960-2011 period for the S&P 500 is 2.8%.

The second input for expected real earnings growth is expected real GDP growth. The rationale is that, over the long-term, corporate profits have averaged 5.50% of U.S. GDP.[3] Expected GDP growth, according to the

[3]Marc. H. Goedhart, et al, "The Real Cost of Equity," *McKinsey on Finance* (Autumn 2002), p.14.

Exhibit JRW-16
Appendix C
Building Blocks Equity Risk Premium

Federal Reserve Bank of Philadelphia's *Survey of Professional Forecasters,* is 2.64% (see Panel B of page 2 of Exhibit JRW-16, Appendix C1).

Given these results, I will use 2.75% for real earnings growth.

PEGAIN – PEGAIN is the repricing gain associated with an increase in the P/E ratio. It accounted for 1.3% of the 10.7% annual stock return in the 1926-2000 period. In estimating an ex ante expected stock market return, one issue is whether investors expect P/E ratios to increase from their current levels. The P/E ratios for the S&P 500 over the past 25 years are shown on page 4 of Exhibit JRW-16, Appendix C1. The run-up and eventual peak in P/Es in the year 1999 is very evident in the chart. The average P/E declined until late 2006, and then increased to still higher levels, primarily due to the decline in EPS as a result of the financial crisis and the recession. As of October 2013, the average P/E for the S&P 500 was 15.5X, which is in line with the historic average. Since the current figure is near the historic average, a PEGAIN would not be appropriate in estimating an ex ante expected stock market return.

Expected Return from Building Blocks Approach - The current expected market return is represented by the last column on the right in the graph entitled "Decomposing Equity Market Returns: The Building Blocks Methodology" set forth on page 1 of Exhibit JRW-16, Appendix C1. As

Exhibit JRW-16
Appendix C
Building Blocks Equity Risk Premium

shown, the expected market return of 7.50% is composed of 2.65% expected inflation, 2.10% dividend yield, and 2.75% real earnings growth rate.

This expected return of 7.50% is consistent with other expected return forecasts.

1. In the first quarter 2013 *Survey of Financial Forecasters*, published on February 15, 2013 by the Federal Reserve Bank of Philadelphia, the median long-term expected return on the S&P 500 was 6.13% (see Panel D of page 2 of Exhibit JRW-16, Appendix C1).
2. John Graham and Campbell Harvey of Duke University conduct a quarterly survey of corporate CFOs. The survey is a joint project of Duke University and *CFO Magazine*. In the June 2013 survey, the mean expected return on the S&P 500 over the next 10 years was 6.70%.[4]

B. THE BUILDING BLOCKS EQUITY RISK PREMIUM

The current 30-year U.S. Treasury yield is 3.50%. This ex ante equity risk premium is simply the expected market return from the Building Blocks methodology minus this risk-free rate:

[4] The survey results are available at www.cfosurvey.org.

Exhibit JRW-16
Appendix C
Building Blocks Equity Risk Premium

Ex Ante Equity Risk Premium = 7.50% - 3.50% = 4.00%

This is only one estimate of the equity risk premium. As shown on page 6 of Exhibit JRW-11, I am also using the results of other studies and surveys to determine an equity risk premium for my Capital Asset Pricing Model ("CAPM").

Exhibit JRW-16, Appendix C1

Decomposing Equity Market Returns
The Building Blocks Methodology

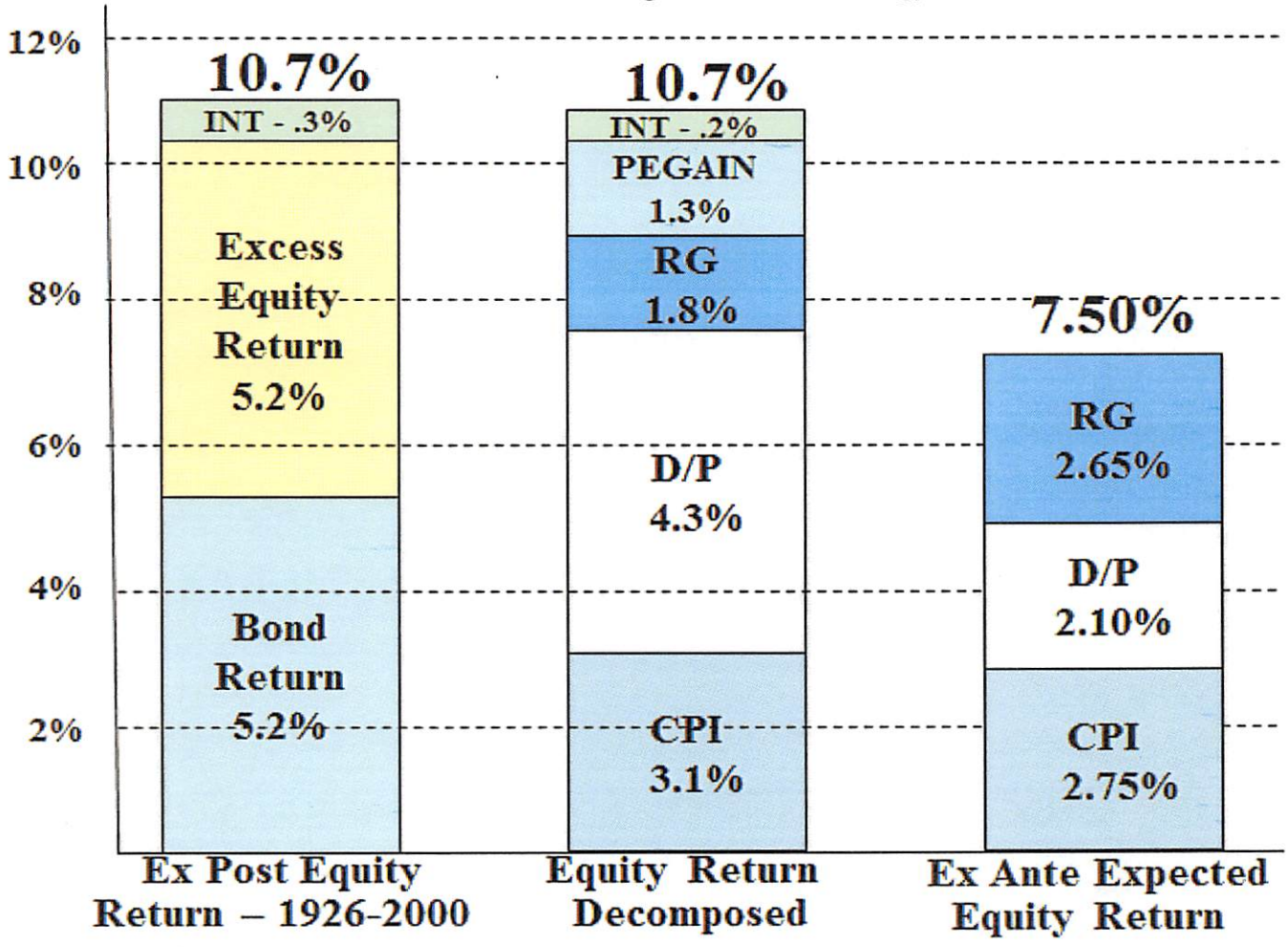


Exhibit JRW-16, Appendix C1

2013 Survey of Professional Forecasters
Philadelphia Federal Reserve Bank
Long-Term Forecasts

Table Seven
LONG-TERM (10 YEAR) FORECASTS

Panel A

SERIES: CPI INFLATION RATE	
STATISTIC	
MINIMUM	0.97
LOWER QUARTILE	2.05
MEDIAN	2.30
UPPER QUARTILE	2.60
MAXIMUM	3.50
MEAN	2.33
STD. DEV.	0.45
N	39
MISSING	7

Panel B

SERIES: REAL GDP GROWTH RATE	
STATISTIC	
MINIMUM	1.90
LOWER QUARTILE	2.50
MEDIAN	2.64
UPPER QUARTILE	2.90
MAXIMUM	3.75
MEAN	2.67
STD. DEV.	0.41
N	37
MISSING	8

Panel C

SERIES: PRODUCTIVITY GROWTH	
STATISTIC	
MINIMUM	0.90
LOWER QUARTILE	1.50
MEDIAN	1.80
UPPER QUARTILE	2.20
MAXIMUM	3.00
MEAN	1.86
STD. DEV.	0.51
N	30.00
MISSING	16

Panel D

SERIES: STOCK RETURNS (S&P 500)	
STATISTIC	
MINIMUM	4.00
LOWER QUARTILE	5.05
MEDIAN	6.13
UPPER QUARTILE	6.95
MAXIMUM	10.00
MEAN	6.15
STD. DEV.	1.58
N	24
MISSING	22

Panel E

SERIES: BOND RETURNS (10-YEAR)	
STATISTIC	
MINIMUM	1.90
LOWER QUARTILE	2.75
MEDIAN	3.83
UPPER QUARTILE	4.30
MAXIMUM	7.00
MEAN	3.70
STD. DEV.	1.32
N	26.00
MISSING	20

Panel F

SERIES: BILL RETURNS (3-MONTH)	
STATISTIC	
MINIMUM	0.50
LOWER QUARTILE	1.80
MEDIAN	2.40
UPPER QUARTILE	2.85
MAXIMUM	4.25
MEAN	2.46
STD. DEV.	0.98
N	25
MISSING	21

Source: Philadelphia Federal Reserve Bank, Survey of Professional Forecasters, February 15, 2013.

Exhibit JRW-16, Appendix C1

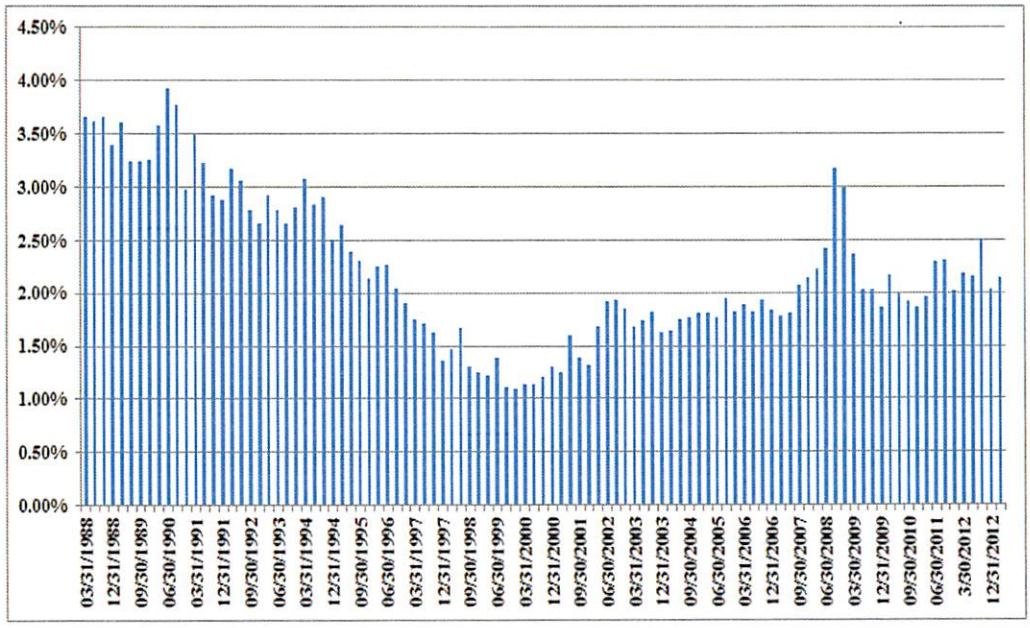
University of Michigan Survey Research Center
Expected Short-Term Inflation Rate

Data Source: http://research.stlouisfed.org/fred2/series/MICH?cid=98

Exhibit JRW-16, Appendix C1

Decomposing Equity Market Returns
The Building Blocks Methodology

S&P 500 Dividend Yield



S&P 500 P/E Ratio

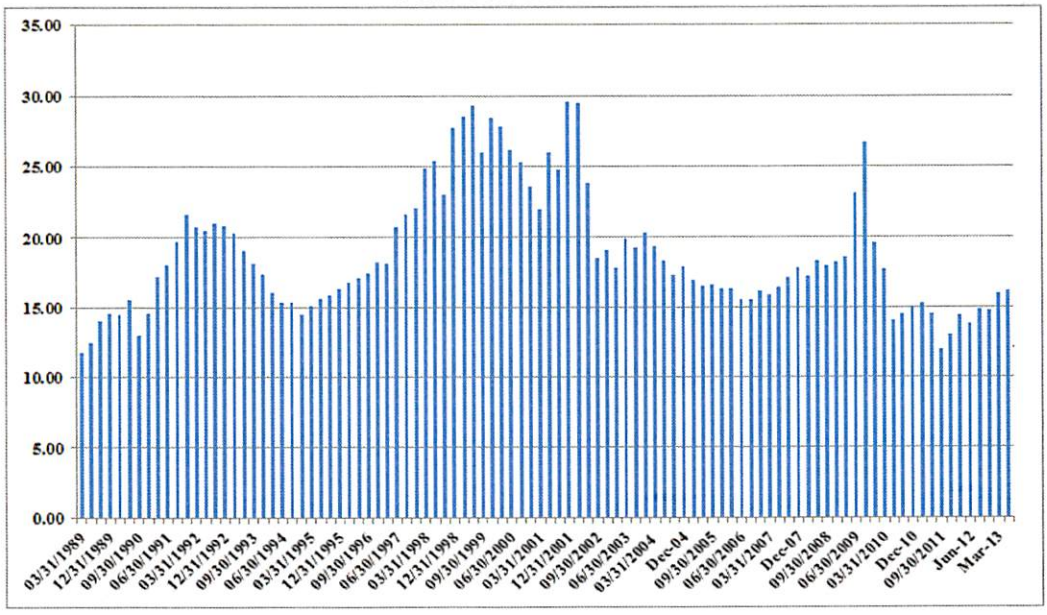


Exhibit JRW-16, Appendix C1

Real S&P 500 EPS Growth Rate

Year	S&P 500 EPS	Annual Inflation CPI	Inflation Adjustment Factor	Real S&P 500 EPS	
1960	3.10	1.48		3.10	
1961	3.37	0.07	1.01	3.35	
1962	3.67	1.22	1.02	3.59	
1963	4.13	1.65	1.04	3.99	
1964	4.76	1.19	1.05	4.55	
1965	5.30	1.92	1.07	4.97	
1966	5.41	3.35	1.10	4.90	
1967	5.46	3.04	1.14	4.80	
1968	5.72	4.72	1.19	4.81	
1969	6.10	6.11	1.26	4.83	10-Year
1970	5.51	5.49	1.34	4.13	2.89%
1971	5.57	3.36	1.38	4.04	
1972	6.17	3.41	1.43	4.33	
1973	7.96	8.80	1.55	5.13	
1974	9.35	12.20	1.74	5.37	
1975	7.71	7.01	1.86	4.14	
1976	9.75	4.81	1.95	4.99	
1977	10.87	6.77	2.08	5.22	
1978	11.64	9.03	2.27	5.13	
1979	14.55	13.31	2.57	5.66	10-Year
1980	14.99	12.40	2.89	5.18	2.30%
1981	15.18	8.94	3.15	4.82	
1982	13.82	3.87	3.27	4.23	
1983	13.29	3.80	3.40	3.91	
1984	16.84	3.95	3.53	4.77	
1985	15.68	3.77	3.66	4.28	
1986	14.43	1.13	3.70	3.90	
1987	16.04	4.41	3.87	4.15	
1988	22.77	4.42	4.04	5.64	
1989	24.03	4.65	4.22	5.69	10-Year
1990	21.73	6.11	4.48	4.85	-0.65%
1991	19.10	3.06	4.62	4.14	
1992	18.13	2.90	4.75	3.81	
1993	19.82	2.75	4.88	4.06	
1994	27.05	2.67	5.01	5.40	
1995	35.35	2.54	5.14	6.88	
1996	35.78	3.32	5.31	6.74	
1997	39.56	1.70	5.40	7.33	
1998	38.23	1.61	5.48	6.97	
1999	45.17	2.68	5.63	8.02	10-Year
2000	52.00	3.39	5.82	8.93	6.29%
2001	44.23	1.55	5.92	7.48	
2002	47.24	2.38	6.06	7.80	
2003	54.15	1.88	6.17	8.77	
2004	67.01	3.26	6.37	10.51	
2005	68.32	3.42	6.60	10.35	
2006	81.96	2.54	6.77	12.11	
2007	87.51	4.08	7.04	12.43	
2008	65.39	0.09	7.05	9.28	
2009	59.65	2.72	7.24	8.24	10-Year
2010	83.66	1.50	7.35	11.39	2.46%
2011	97.05	2.96	7.57	12.83	
Data Source: http://pages.stern.nyu.edu/~adamodar/				Real EPS Growth	2.8%

Exhibit JRW-16
Appendix D
The Use of Historical Returns to Measure an Expected Risk Premium

It is quite common for analysts to estimate an equity or market risk premium as the difference between historical stock and bond returns. However, using the historical relationship between stock and bond returns to measure an ex ante equity risk premium can produce an inflated measure of the true market or equity risk premium. The equity risk premium is based on expectations of the future. When past market conditions vary significantly from the present, historic data does not provide a realistic or accurate barometer of future expectations. More significantly, there are a number of empirical issues that can result in historical returns being poor measures of the expected risk premium.

There are a number of issues in using historic returns over long time periods to estimate expected equity risk premiums. These issues include:

(A) Biased historical bond returns

(B) Use of the arithmetic versus the geometric mean return

(C) The large error in measuring the equity risk premium using historical returns

(D) Unattainable and biased historical stock returns

(E) Company Survivorship bias

(F) The "Peso Problem" - U.S. stock market survivorship bias

These issues will be addressed in order.

Exhibit JRW-16
Appendix D
The Use of Historical Returns to Measure an Expected Risk Premium

A. Biased Historical Bond Returns

An essential assumption of this approach is that over long periods of time, investors' expectations are realized. However, the experienced returns of bondholders in the past invalidate this critical assumption. Historic bond returns are biased downward as a measure of expectancy because of capital losses suffered by bondholders in the past. As such, risk premiums derived from this data are biased upwards.

B. The Arithmetic versus the Geometric Mean Return

The measure of investment return has a significant effect on the interpretation of the risk premium results. When analyzing a single security price series over time (i.e., a time series), the best measure of investment performance is the geometric mean return. Using the arithmetic mean overstates the return experienced by investors. In a study entitled "Risk and Return on Equity: The Use and Misuse of Historical Estimates," Carleton and Lakonishok make the following observation: "The geometric mean measures the changes in wealth over more than one period on a buy and hold (with dividends invested) strategy."[1] When a historic stock and bond return study covers more than one period (and he assumes that dividends are reinvested), he should be employing the geometric

[1] Willard T. Carleton and Josef Lakonishok, "Risk and Return on Equity: The Use and Misuse of Historical Estimates," *Financial Analysts Journal*, pp. 38-47, (January-February, 1985).

Exhibit JRW-16
Appendix D
The Use of Historical Returns to Measure an Expected Risk Premium

mean and not the arithmetic mean.

To demonstrate the upward bias of the arithmetic mean, consider the following example. Assume that you have a stock (that pays no dividend) that is selling for $100 today, then it increases to $200 in one year, and then falls back to $100 in two years. The table below shows the prices and returns.

Time Period	Stock Price	Annual Return
0	$100	
1	$200	100%
2	$100	-50%

The arithmetic mean return is simply (100% + (-50%))/2 = 25% per year. The geometric mean return is $((2 * .50)^{(1/2)}) - 1 = 0\%$ per year. Therefore, the arithmetic mean return suggests that your stock has appreciated at an annual rate of 25%, while the geometric mean return indicates an annual return of 0%. Since after two years, your stock is still only worth $100, the geometric mean return is the appropriate return measure. For this reason, when stock returns and earnings growth rates are reported in the financial press, they are generally reported using the geometric mean. This is because of the upward bias of the arithmetic mean. As further evidence of the appropriate mean return measure, the Securities Exchange Commission ("SEC") requires equity mutual funds to report historic return performance using geometric mean and not arithmetic mean returns.[2] Therefore, the historic arithmetic mean return measures are biased and should be disregarded.

[2] SEC, Form N-1A.

Exhibit JRW-16
Appendix D
The Use of Historical Returns to Measure an Expected Risk Premium

Nonetheless, in measuring historic returns to develop an expected equity risk premium, finance texts will often recommend the use of an arithmetic mean return as a measure of central tendency. A common justification for using the arithmetic mean return is that since annual stock returns are not serially correlated, the best measure of a return for the next year is the arithmetic mean of past returns. On the other hand, Damodaran suggests that such an estimate is not appropriate in estimating an equity risk premium:[3]

> "There are, however, strong arguments that can be made for the use of geometric averages. First, empirical studies seem to indicate that returns on stocks are negatively correlated over long periods of time. Consequently, the arithmetic average return is likely to overstate the premium. Second, while asset pricing models may be single period models, the use of these models to get expected returns over long periods (such as five or ten years) suggests that the estimation period may be much longer than a year. In this context, the argument for geometric average premiums becomes stronger."

C. The Error in Measuring Equity Risk Premiums with Historic Data

Measuring the equity risk premium using historical stock and bond returns is subject to a substantial forecasting error. For example, the arithmetic mean long-term equity risk premium of approximately 6.5% has a standard deviation of over 20%. This may be interpreted in the following way with respect to the historical distribution of the long-term equity risk premium using a standard normal distribution and a 95%, +/- 2 standard deviation confidence interval: we can say, with a 95% degree of confidence, that the true equity risk premium is between -34.7% and +47.7%. As such, the historical equity risk premium is measured with a

[3] Aswath. Damodaran, "Equity Risk Premiums (ERP): Determinants, Estimation and Implications – The 2013 Edition" NYU Working Paper, 2013, p. 27.

substantial amount of error.

D. Unattainable and Biased Historic Stock Returns

Returns developed using Ibbotson's methodology are computed on stock indexes and therefore: (1) cannot be reflective of expectations because these returns are unattainable to investors and (2) produce biased results. This methodology assumes: (1) monthly portfolio rebalancing and (2) reinvestment of interest and dividends. Monthly portfolio rebalancing presumes that investors rebalance their portfolios at the end of each month in order to have an equal dollar amount invested in each security at the beginning of each month. The assumption generates high transaction costs and thereby renders these returns unattainable to investors. In addition, an academic study demonstrates that the monthly portfolio rebalancing assumption produces biased estimates of stock returns.[4]

Transaction costs themselves provide another bias in historic versus expected returns. In the past, the observed stock returns were not the realized returns of investors, due to the much higher transaction costs of previous decades. These higher transaction costs are reflected through the higher commissions on stock trades and the lack of low-cost mutual funds like index funds.

E. Company Survivorship Bias

[4] See Richard Roll, "On Computing Mean Returns and the Small Firm Premium," *Journal of Financial Economics*, pp. 371-86, (1983).

Exhibit JRW-16
Appendix D
The Use of Historical Returns to Measure an Expected Risk Premium

Using historic data to estimate an equity risk premium suffers from company survivorship bias. Company survivorship bias results when using returns from indexes like the S&P 500. The S&P 500 includes only companies that have survived. The fact that returns of firms that did not perform well were dropped from these indexes is not reflected. Therefore, these stock returns are upwardly biased because they only reflect the returns from more successful companies.

F. The "Peso Problem" - U.S. Stock Market Survivorship Bias

The use of historic return data also suffers from the so-called "Peso Problem," which is also known as "U.S. stock market survivorship bias." The "peso problem" issue was first highlighted by the Nobel laureate, Milton Friedman, and gets its name from conditions related to the Mexican peso market in the early 1970s. This issue involves the fact that past stock market returns were higher than were expected at the time because despite war, depression and other social, political, and economic events, the U.S. economy survived and did not suffer hyperinflation, invasion, and/or the calamities of other countries. As such, highly improbable events, which may or may not occur in the future, are factored into stock prices, leading to seemingly low valuations. Higher than expected stock returns are then earned when these events do not subsequently occur. Therefore, the "peso problem" indicates that historic stock returns are overstated

Exhibit JRW-16
Appendix D
The Use of Historical Returns to Measure an Expected Risk Premium

as measures of expected returns because the U.S. markets have not experienced the disruptions of other major markets around the world.

. One of the Biggest Mistakes in Teaching Finance

Jay Ritter, a Professor of Finance at the University of Florida, identified the use of historical stock and bond return data to estimate a forward-looking equity risk premium as one of the "Biggest Mistakes" taught by the finance profession.[5] His argument is based on the theory behind the equity risk premium, the excessive results produced by historical returns, and the previously discussed errors such as survivorship bias in historical data.

[5] Jay Ritter, "The Biggest Mistakes We Teach," *Journal of Financial Research* (Summer 2002).