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J. R. Kelly
Interim Public Counsel

December 27, 2007

Ms. Ann Cole, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0870

RE: Docket No. 070304-EI, In re: Petition for rate increase by Florida Public Utilities Company;

Docket No. 070300, In re: Review of 2007 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342,F.A.C. submitted by Florida Public Utility Company.

Dear Ms. Cole:

Please find enclosed for filing, on behalf of the Citizens of the State of Florida, an original and 15 copies of the Testimonies of Dr. J. Randall Woolridge, Hugh Larkin, Jr. and Patricia Merchant in Docket No. 070304-EI and Docket No. 070300-EI. Please note that the above Testimonies are captioned with both docket numbers and titles and as such should be treated as filed in both dockets pursuant to Order No. PSC-0969-PCO-EI, issued December 5, 2007, which states:

> To avoid the filing of duplicative testimony and exhibits in the two cases, and to thereby promote the just, speedy, and inexpensive determination of all aspects of the two cases, I find that those who are parties to both dockets may use and rely upon any and all evidence adduced in Docket No. 070300-EI to support evidence produced and positions taken in Docket No. 070304-EI, and those parties may use and rely upon any and all evidence adduced in Docket No. 070304-EI to support evidence produced and positions taken in Docket No. 070300-EI.

CMP 2
COM 5
CTR 1
ECR ____
GCL 3
OPC ____
RCA 2
SCR ____
SGA ____
SEC ____
OTH ____

Please indicate the time and date of receipt on the enclosed duplicate of this letter and return it to our office.

Sincerely,

Patricia A. Christensen
Associate Public Counsel

Enclosures
PAC:ppg
cc: Parties of Record

DOCKET NO. 070304-EI & DOCKET NO. 070300-EI
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the Office of Public Counsel's Testimonies of Hugh Larkin, Jr., Patricia A. Merchant and Dr. J. Randall Woolridge has been furnished by U.S. Mail on this 27th day of December, 2007, to the following:

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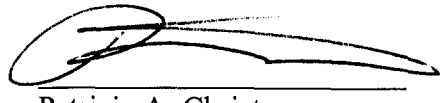

Patricia A. Christensen
Associate Public Counsel

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for rate increase Florida Public Utilities Company _____/	Docket No. 070304-EI Filed: December 27, 2007
In Re: Review of 2007 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342, F.A.C. submitted by Florida Public Utility Company _____/	Docket No. 070300-EI Filed: December 27, 2007

DIRECT TESTIMONY AND EXHIBITS
OF
DR. J. RANDALL WOOLRIDGE
ON BEHALF OF
THE OFFICE OF PUBLIC COUNSEL

Respectfully Submitted,

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for rate increase Florida Public Utilities Company _____/	Docket No. 070304-EI Filed: December 27, 2007
In Re: Review of 2007 Electric Infrastructure Storm Hardening Plan filed pursuant to Rule 25-6.0342, F.A.C. submitted by Florida Public Utility Company _____/	Docket No. 070300-EI Filed: December 27, 2007

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DOCKET NOS. 070304-EI & 070300-EI

Direct Testimony of
Dr. J. Randall Woolridge

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JRW-6	Public Utility Capital Cost Indicators
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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. A summary of my educational background, research, and related business experience is provided in Appendix A.

I. SUBJECT OF TESTIMONY AND SUMMARY OF RECOMMENDATIONS

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

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

Q. PLEASE SUMMARIZE YOUR TESTIMONY AND FINDINGS CONCERNING THE RATE OF RETURN THAT SHOULD BE UTILIZED IN SETTING RATES FOR FPU IN THIS PROCEEDING.

A. In developing my recommendation, I have primarily reviewed the testimony and recommendations of FPU witnesses Ms. Doreen Cox and Mr. Robert Camfield. In developing my recommended rate of return, I have used the Company's proposed capital structure. I have made a minor adjustment to the short-term debt cost rate to reflect today's lower interest rates. The major area of contention in this case is the proposed equity cost rate for FPU. I have applied the Discounted Cash Flow Model ("DCF") and the Capital Asset Pricing Model ("CAPM") to two groups of publicly-held utility companies. My analysis indicates an equity cost rate of 9.15% for FPU. Using my inputs, I am recommending an overall fair rate of return of 7.09% for FPU. This recommendation is summarized in Exhibit No.__(JRW-1).

As discussed in my testimony, my equity cost rate recommendation is consistent with the current economic environment. Long-term capital costs are at historical low levels. The yields on long-term Treasury bonds have been in the 4-5 percent range for several years. Prior to this cyclical decline in rates in 2002, these yields had not been this low over an extended period of time since the 1960s. Long-term capital costs are also low due to the decline in the equity risk premium and the *Jobs and Growth Tax Relief Reconciliation Act of 2003* which reduced the tax rates on dividend income and capital gains.

Mr.Camfield's equity cost rate estimate is 11.5%. My analysis indicates an equity cost rate of 9.15% is appropriate for FPU. Mr. Camfield uses four methods -- Discounted Cash Flow (DCF) model, Capital Asset Pricing Model (CAPM), Risk Premia - Size-Adjusted (RP) approach, and Realized Market Returns (RMR) approach. Overall, his approaches produce an inflated equity cost rate for FPU. I have employed the DCF and CAPM methodologies. I have applied these approaches to Mr. Camfield's two groups of electric utility and gas distribution companies. Mr. Camfield and I also disagree on the need for a size premium and an issuance or flotation cost adjustment in determining an equity cost rate for FPU.

In the end, the most significant areas of disagreement between Mr. Camfield and myself with respect to the cost of equity are (1) the importance of the DCF model and its results in determining an equity cost rate for the Company, and (2) the measurement and magnitude of the equity risk premium. I believe that the DCF model provides a good indication of equity cost rates for public utilities and have placed heavy reliance on these results in this proceeding. With respect to the measurement of an equity risk premium and expected stock returns, Mr. Camfield relies solely on historical stock and bond returns. As I discuss in my testimony, there are three procedures for estimating an equity risk premium – averages of historical returns, surveys of market professionals, and models of expected market returns. I provide evidence that risk premiums based on historic returns series are upwardly biased measures of expected equity risk premiums. I employ an equity risk

premium which (1) uses all three approaches to estimating an equity premium and (2) employs the results of many studies of the equity risk premium. As I detail later in my testimony, my equity risk premium is consistent with the equity risk premiums (1) advanced in recent academic studies by leading finance scholars, (2) employed by leading investment banks and management consulting firms, and (3) developed in surveys of financial forecasters and corporate CFOs.

II. CAPITAL COSTS IN TODAY'S MARKETS

Q. PLEASE DISCUSS CAPITAL COSTS IN TODAY'S MARKETS.

A. Long-term capital cost rates for U.S. corporations are currently at their lowest levels in more than four decades. Corporate capital cost rates are determined by the level of interest rates and the risk premium demanded by investors to buy the debt and equity capital of corporate issuers. The base level of long-term interest rates in the US economy is indicated by the rates on ten-year U.S. Treasury bonds. The rates are provided in Exhibit No.__(JRW-2) from 1953 to the present. As indicated, prior to the decline in rates that began in the year 2000, the 10-year Treasury yield had not consistently been in the 4-5 percent range over an extended period of time since the 1960s.

The second base component of the corporate capital cost rates is the risk premium. The risk premium is the return premium required by investors to purchase riskier securities. Risk premiums for bonds are the yield differentials between different bond classes as rated by agencies such as Moody's and Standard and Poor's. The yield differential between Baa-rated corporate bonds and 10-year Treasuries is shown in Exhibit No.__(JRW-2). This yield differential peaked at 350 basis points (BPs) in 2002 and has declined significantly since that time. This is an indication that the market price of risk has declined and therefore the risk premium has declined in recent years.

The equity risk premium is the return premium required to purchase stocks as opposed to bonds. Since the equity risk premium is not readily observable in the markets (as are bond risk premiums), and there are alternative approaches to estimating the equity premium, it is the subject of 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 5-7 percent range. But recent studies by leading academics indicate the forward-looking equity risk premium is in the 3-4 percent range. These authors indicate that historical equity risk premiums are upwardly biased measures of expected equity risk premiums. Jeremy Siegel, a Wharton finance professor and author of the

book *Stocks for the Long Term*, published a study entitled "The Shrinking Equity Risk Premium."[1] He concludes:

> The degree of the equity risk premium calculated from data estimated from 1926 is unlikely to persist in the future. The real return on fixed-income assets is likely to be significantly higher than estimated on earlier data. This is confirmed by the yields available on Treasury index-linked securities, which currently exceed 4%. Furthermore, despite the acceleration in earnings growth, the return on equities is likely to fall from its historical level due to the very high level of equity prices relative to fundamentals.

Even Alan Greenspan, the former Chairman of the Federal Reserve Board, indicated in an October 14, 1999, speech on financial risk that the fact that equity risk premiums have declined during the past decade is "not in dispute." His assessment focused on the relationship between information availability and equity risk premiums.

> There can be little doubt that the dramatic improvements in information technology in recent years have altered our approach to risk. Some analysts perceive that information technology has permanently lowered equity premiums and, hence, permanently raised the prices of the collateral that underlies all financial assets.
>
> The reason, of course, is that information is critical to the evaluation of risk. The less that is known about the current state of a market or a venture, the less the ability to project future outcomes and, hence, the more those potential outcomes will be discounted.
>
> The rise in the availability of real-time information has reduced the uncertainties and thereby lowered the variances that we employ to guide portfolio decisions. At least part of the observed fall in equity premiums in

[1] Jeremy J. Siegel, "The Shrinking Equity Risk Premium," *The Journal of Portfolio Management* (Fall, 1999), p. 15.

> our economy and others over the past five years does not appear to be the result of ephemeral changes in perceptions. It is presumably the result of a permanent technology-driven increase in information availability, which by definition reduces uncertainty and therefore risk premiums. This decline is most evident in equity risk premiums. It is less clear in the corporate bond market, where relative supplies of corporate and Treasury bonds and other factors we cannot easily identify have outweighed the effects of more readily available information about borrowers.[2]

In sum, the relatively low interest rates in today's markets as well as the lower risk premiums required by investors indicate that capital costs for U.S. companies are the lowest in decades. In addition, the 2003 tax law further lowered capital cost rates for companies, as further set forth below.

Q. HOW DID THE *JOBS AND GROWTH TAX RELIEF RECONCILIATION ACT OF 2003* REDUCE THE COST OF CAPITAL FOR COMPANIES?

A. On May 28, 2003, President Bush signed the *Jobs and Growth Tax Relief Reconciliation Act of 2003.* The primary purpose of this legislation was to reduce taxes to enhance economic growth. A primary component of the new tax law was a significant reduction in the taxation of corporate dividends for individuals. Dividends have been described as "double-taxed." First, corporations pay taxes on the income they earn before they pay dividends to investors, then investors pay taxes on the dividends that they receive from corporations. One of the implications of the double taxation of dividends is

[2] Alan Greenspan, "Measuring Financial Risk in the Twenty-First Century," Office of the Comptroller of the Currency Conference, October 14, 1999.

that, all else equal, it results in a higher cost of raising capital for corporations. The tax legislation reduced the effect of double taxation of dividends by lowering the tax rate on dividends from the 30 percent range (the average tax bracket for individuals) to 15 percent.

Overall, the 2003 tax law reduced the pre-tax return requirements of investors, thereby reducing corporations' cost of equity capital. This is because the reduction in the taxation of dividends for individuals enhances their after-tax returns and thereby reduces their pre-tax required returns. This reduction in pre-tax required returns (due to the lower tax on dividends) effectively reduces the cost of equity capital for companies. The 2003 tax law also reduced the tax rate on long-term capital gains from 20% to 15%. The magnitude of the reduction in corporate equity cost rates is debatable, but it could be as large as 100 basis points.

III. COMPARISON GROUP SELECTION

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

A. To develop a fair rate of return recommendation for FPU, I have evaluated the return requirements of investors on the common stock of a proxy group of publicly-held utility companies.

Q. PLEASE DESCRIBE YOUR GROUP OF UTILITY COMPANIES.

A. I am using Mr. Camfield's two groups of eight electric utility and nine natural

gas distribution companies.[3] Summary financial statistics for the groups are provided in Exhibit No.__(JRW-3). For the electric utility proxy group, the average revenues and net plant are $2,190.6M and $2,626.9M, respectively. The group has an average common equity ratio and current earned return on common equity of 48%, and of 9.0%, respectively. The gas distribution proxy group has average revenues and net plant of $2,214.0M and $1,989.0M, respectively. This group has an average common equity ratio and current earned return on common equity of 52%, and of 13.6%, respectively. FPU, with revenues and net plant of $134.5M and 137.0M, is much smaller than the average of the electric and gas companies in the two groups. In addition, FPU's common equity ratio (45%) and return on common equity (6.8%) is below the averages for the two groups. Nonetheless, FPU's Moody's bond Rating of Aaa is above the average bond ratings for the electric (A2) and gas (Baa1) proxy group.

On page 2 of Exhibit No.__(JRW-3), I have assessed the riskiness of FPU relative to the average of the two proxy groups using six different risk measures published by *Value Line*. These measures include Beta, Safety, Financial Strength, Stock Price Stability, Price Growth Persistence, and Earnings Predictability. Compared to the electric utility group, FPU's lower Beta and higher Price Growth Persistence suggests that it is lower in risk, but FPU's slightly lower Safety, Financial Strength, Stock Price Stability, and Earnings Predictability ratings indicate that FPU is riskier than the group. Compared to the gas proxy group, FPU's Beta is the only risk rating which

[3] Cascade Natural Gas Company has been acquired and no longer trades.

indicates FPU is less risky than the group. However, FPU's risk ratings which suggest that FPU is riskier than the gas proxy group (Safety, Financial Strength, Stock Price Stability, Price Growth Persistence, and Earnings Predictability) are quite close to the average rating of the group. Overall, these results suggest that FPU is comparable in risk to the electric utility proxy group, and a little riskier than the gas distribution proxy group.

IV. CAPITAL STRUCTURE RATIOS AND DEBT COST RATES

Q. PLEASE DISCUSS THE RECOMMENDED AND ACTUAL CAPITAL STRUCTURE OF THE COMPANY.

A. The Company's recommended conventional capital structure ratios are provided in Panel A of Exhibit No.__(JRW-4). These ratios represent a 2008 13-month average capitalization and include a projected common stock offering in 2008. The average common equity ratio of the conventional capital structure is 50.41%. In Panel B of Exhibit No.__(JRW-4) I show the average capital structure ratios for the companies in the electric utility proxy group. The average common equity ratio is 48.04%. As such, FPU's recommended conventional capital structure, with the pro forma equity offering, includes slightly less financial risk than the average of the electric utility proxy group. Nonetheless, I believe that it falls within a zone of reasonableness relative to the electric utility proxy group and, therefore, I will use FPU's recommended conventional capital structure. Likewise, I will also

use FPU's capital inputs for regulatory capital structure, which includes customer deposits, deferred taxes, and investment tax credits.

Q. ARE YOU ALSO USING FPU'S RECOMMENDED SENIOR CAPITAL COST RATES?

A. Yes, with the exception of the Company's short-term debt cost rate. As shown in Exhibit DC-RC-4 and discussed on page 33 of the Cox-Camfield testimony, the Company's projected short-term debt cost rate of 6.81% is based on a Federal Funds rate of 5.25%. Since the testimony was prepared, the Federal Reserve Board has reduced the Federal Funds rate. On December 11, the Federal Funds Target Rate was reduced to 4.25%. Using this rate, and including FPU's adjustments, I will use a short-term debt cost rate of 5.81%.

Q. PLEASE SUMMARIZE YOUR RECOMMENDED CAPITAL STRUCTURE AND SENIOR CAPITAL COST RATES.

A. My recommended capital structure and senior capital cost rates are summarized below. I have used the Company's long-term debt cost and preferred stock cost rates of 6.05% and 4.81%, respectively. My proposed capitalization and debt cost rates are listed below:

FPU	Capitalization Amounts	Cost Rate
Short-Term Debt	5.62%	5.81%
Long-Term Debt	43.45%	7.96%
Preferred Stock	0.52%	4.75%
Common Equity	50.41%	
Total Capital		

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, however, and to the economic benefit to society from avoiding duplication of these services, some public utilities are monopolies. It is not appropriate to permit monopoly utilities to set their own prices because of the lack of competition and the essential nature of the services. Thus, regulation seeks to establish prices which are fair to consumers and at the same time are 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 is 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 and the book value of the firm's securities must be equal.

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, has described this essential relationship

between the return on equity, the cost of equity, and the market-to-book ratio in the following manner:[4]

> 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 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 which 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 which earns a return on equity below its cost of equity will see its common stock sell at a price below its book value.

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

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:[5]

> For a given industry, more profitable firms – those able to generate higher returns per dollar of equity – should have higher market-to-book ratios. Conversely, firms which are unable to generate returns in excess of their cost of equity 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 have performed a regression study between estimated return on equity and market-to-book ratios using natural gas distribution, electric utility and water utility companies. I used all companies in these three industries which are covered by *Value Line* and who have estimated return on equity and market-to-book ratio data. The results are presented in Panels A, B, and C of Exhibit No.__(JRW-5).

The average R-squares for the electric, gas, and water companies are 0.70, 0.64, and 0.93. This demonstrates the strong positive relationship between ROEs and market-to-book ratios for public utilities.[6]

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

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

A. Exhibit No.__(JRW-6) provides indicators of public utility equity cost rates over the past decade. Page 1 shows the yields on 10-year, 'A' rated public utility bonds. These yields peaked in the 1990s at 8.5%, then declined and again hit the 8.0 percent range in the year 2000. They subsequently declined, hovering in the 4.5 to 5.0 percent range between 2003 and 2005. They increased to 6.0% in June of 2006, and have since retreated to the 5.50 percent range. Page 2 provides the dividend yields for the fifteen utilities in the Dow Jones Utilities Average over the past decade. These yields peaked in 1994 at 7.2%. Since that time they have declined and were at 3.5% as of 2006.

Average earned returns on common equity and market-to-book ratios are given on page 3 of Exhibit No.__(JRW-6). Over the past decade, earned returns on common equity have consistently been in the 10.0-13.0 percent range. The high point was 13.45% in 2001, and they subsequently decreased before recovering in 2005 and 2006. As of 2006, the average was 13.1%. Over the past decade, market-to-book ratios for this group have increased gradually, but with several ups and downs. The market-to-book average was 1.75 as of 2001, declined to 1.45 in 2003, and increased to 2.10 as of 2006.

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

The indicators in Exhibit No.__(JRW-6), coupled with the overall decrease in interest rates, suggest that capital costs for the Dow Jones Utilities have decreased over the past decade.

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 ELECTRIC UTILITY COMPANIES 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 No.__(JRW-7) provides an assessment of investment risk for 100 industries as measured by beta, which according to modern capital market theory is the only relevant measure of investment risk that need be of concern for investors. These betas come from the *Value Line Investment Survey* and are compiled by Aswath Damodoran of New York University.[7] The study shows that the investment risk of public utilities is relatively low. The average beta for electric utility companies (Electric Utility – West, Central, East) of 0.93 is below the Value Line average of 1.14. As such, the cost of equity for the electric utility industry is below the average 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.

[7] They may be found on the Internet at http:// www.stern.nyu.edu/~adamodar.

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 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 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 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. I have also performed a CAPM study, but 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. This is discussed at length later in this testimony.

B. Discounted Cash Flow Analysis

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

A. According to the discounted cash flow 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 No.__(JRW-8) and discussed below. 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 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. These stages are depicted in the graphic in JRW-8 labeled the Three-Stage DCF Model.[8]

1. Growth stage: Characterized by rapidly expanding sales, high profit margins, and 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.

[8] This description comes from William F. Sharpe, Gordon J. Alexander, and Jeffrey V. Bailey, *Investments* (Prentice-Hall, 1995), pp. 590-91.

3. Maturity (steady-state) stage: Eventually the company reaches a position where its new investment opportunities offer, on average, only slightly attractive returns on equity. At that time its earnings growth rate, payout ratio, and return on equity 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:

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

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. Therefore, 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 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

The appropriate adjustment to the dividend yield is further complicated in the regulatory process when the overall cost of capital is applied to a projected rate base. The net effect of this application is an overstatement of the equity cost rate estimate derived from the DCF model. In the context of the constant-growth DCF model, both the adjusted dividend yield and the growth component are overstated. The overstatement results from applying an equity cost rate computed using current market data to a future or test-year-end rate base which includes growth associated with the retention of earnings during the year. In other words, an equity cost rate times a future, yet to be achieved rate base, results in an inflated dividend yield and 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.

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 GROUPS OF ELECTRIC UTILITY AND GAS DISTRIBUTION COMPANIES?

A. I have analyzed a number of measures of growth for the electric utility and gas distribution companies. I have 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 have utilized the average EPS growth rate forecasts of Wall Street analysts as provided by Zacks, Reuters, and First Call. These services solicit five-year earnings growth rate projections from securities analysts and compile and publish the averages of these forecasts on the Internet. Finally, I have also assessed prospective growth as 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 virtually all investors and 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 HISTORICAL GROWTH OF THE COMPANIES IN THE ELECTRIC UTILITY GROUP AS PROVIDED IN THE *VALUE LINE INVESTMENT SURVEY.*

A. Historic growth rates for the companies in the electric utility group, as published in the *Value Line Investment Survey*, are provided on page 3 of Exhibit No.__(JRW-9). Due to the presence of outliers among the historic growth rate figures, both the mean and medians are used in the analysis. The historical growth measures in EPS, DPS, and BVPS for the group, as measured by the means and medians, range from 1.0% to 5.0%, with an average of 2.6%.

Q. PLEASE SUMMARIZE *VALUE LINE'S* PROJECTED GROWTH RATES FOR THE GROUP OF ELECTRIC UTILITY COMPANIES.

A. *Value Line's* projections of EPS, DPS, and BVPS growth for the group are shown on page 4 of Exhibit No.__(JRW-9). As above, due to the presence of outliers, both the mean and medians are used in the analysis. For the group, the central tendency measures range from 0.5% to 4.5%, with an average of 2.9%.

Also provided on page 4 of Exhibit No.__(JRW-9) is prospective internal growth for the group as measured by *Value Line*'s average projected retention rate and return on shareholders' equity. The average prospective internal growth rate for the group is 3.5%.

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

A. Zacks, First Call, and Reuters collect, summarize, and publish Wall Street analysts' five-year EPS growth rate forecasts for companies. These forecasts are provided for the companies in the group of electric utility companies on page 5 of Exhibit No.__(JRW-9). The mean of the analysts' projected EPS growth rates for the group is 4.9%.[10]

Q. PLEASE SUMMARIZE YOUR ANALYSIS OF THE HISTORICAL AND PROSPECTIVE GROWTH OF THE ELECTRIC UTILITY PROXY GROUP.

A. The summary DCF growth rate indicators for the group of electric utility companies are presented on page 6 of Exhibit No.__(JRW-9). For the group, the average of *Value Line*'s historical mean and median growth rate measures in EPS, DPS, and BVPS is 2.6%. *Value Line*'s average projected growth rate for EPS, DPS, and BVPS is 2.9%. The average internal growth rate is 3.5%, and the mean projected EPS growth rate for companies in the group is 4.9%. Given greater weight to the projected growth rate figures of Wall Street analysts, an expected growth rate in the 4.75 percent range is reasonable for the group.

[10] 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 DISCUSS YOUR ANALYSIS OF THE HISTORICAL AND PROSPECTIVE GROWTH OF THE GAS DISTRIBUTION PROXY GROUP.

A. Page 6 of Exhibit No.__(JRW-9) shows the summary DCF growth rate indicators for the proxy group of gas distribution companies. The average of *Value Line*'s historical growth rate measures in EPS, DPS, and BVPS is 5.4%. *Value Line*'s average projected growth rate for EPS, DPS, and BVPS is 4.4%. The average internal growth rate is 5.2%, and the mean projected EPS growth rate for companies in the gas distribution group is 5.4%. Given greater weight to the projected growth rate figures of Wall Street analysts, an expected growth rate in the 5.25% range is reasonable for the 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 rate for the group is:

$$\text{DCF Equity Cost Rate (k)} = \frac{D}{P} + g$$

	Dividend Yield	½ Growth Adjustment	DCF Growth Rate	Equity Cost Rate
Electric Group	4.3%	1.02375	4.75%	9.15%
Gas Group	3.4%	1.02625	5.25%	8.74%

These results are summarized on page 1 of Exhibit No.__(JRW-9).

C. Capital Asset Pricing Model Results

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:

$$K = (R_f) + \beta_i * [E(R_m) - (R_f)]$$

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*—($ß_i$) 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 ($ß_i$), 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 the yield on long-term Treasury bonds. $ß_i$, 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, with most of the discussion focusing on the expected equity risk premium.

Q. PLEASE DISCUSS EXHIBIT NO.__(JRW-10).

A. Exhibit No.__(JRW-10) provides the summary results for my CAPM study. Page 1 shows the results, and the pages following it contain the supporting data.

Q. PLEASE DISCUSS THE RISK-FREE INTEREST RATE.

A. The yield on long-term Treasury bonds has usually been viewed as the risk-free rate of interest in the CAPM. The yield on long-term Treasury bonds, in turn, has been considered to be the yield on Treasury bonds with 30-year maturities. However, when the Treasury's issuance of 30-year bonds was interrupted for a period of time in recent years, the yield on 10-year Treasury bonds replaced the yield on 30-year Treasury bonds as the benchmark long-term Treasury rate. The 10-year Treasury yields over the past five years are shown on page 2 of Exhibit No.__(JRW-10). These rates hit a 60-year low in the summer of 2003 at 3.33%. They increased with the rebounding economy and fluctuated in the 4.0-4.50 percent range over the past three years until advancing to 5.0% in early 2006 in response to a strong economy and increases in energy, commodity, and consumer prices. In late 2006, long-term interest rates retreated to the 4.5 percent area as commodity and energy prices declined and inflationary pressures have subsided. These rates rebounded to the 5.0% level as the economy has remained strong in 2007. However, the mid-summer housing and sub-prime mortgage issues have caused these rates to once again fall below 5.0 percent.

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

A. The U.S. Treasury began to issue the 30-year bond in the early 2000s as the U.S. budget deficit increased. As such, the market has once again focused on its yield as the benchmark for long-term capital costs in the U.S. As noted

above, the yields on the 10- and 30- year Treasuries have increased and have decreased to below 5.0% in response to the sub-prime mortgage and housing concerns. As of December 18, 2007, as shown page 2 of Exhibit No.__(JRW-10), the rates on 10- and 30- Treasury Bonds were 4.14% and 4.56%, respectively. Given this recent range and recent movement, I will use 4.75% 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 No.__(JRW-10).

The slope of the regression line is the stock's ß. A steeper line indicates 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.

Numerous 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 group of electric utility companies, I am using the betas for the companies as provided in the *Value Line Investment Survey*. As shown on page 4 of Exhibit No.__(JRW-10), the average beta for the electric utility and gas distribution proxy groups are 0.81 and 0.86.

Q. PLEASE DISCUSS THE OPPOSING 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 5 of Exhibit No.__(JRW-10) 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 of 5-7 percent above the rate on long-term 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.[11] 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

[11] The problems with using ex post historical returns as measures of ex ante expectations will be discussed at length later in my testimony.

Mehra and Prescott in which the authors first questioned the magnitude of historical equity risk premiums relative to fundamentals.[12]

Q. PLEASE BRIEFLY SUMMARIZE SOME OF THE ACADEMIC STUDIES THAT DEVELOP EX ANTE EQUITY RISK PREMIUMS.

A. Two of the most prominent studies of ex ante expected equity risk premiums were by Eugene Fama and Ken French (2002) and James Claus and Jacob Thomas (2001). The primary debate in these studies revolves around two related issues: (1) the size of expected equity risk premium, which is the return equity investors require above the yield on bonds; and (2) the fact that estimates of the ex ante expected equity risk premium using fundamental firm data (earnings and dividends) are much lower than estimates using historical stock and bond return data. Fama and French (2002), two of the most preeminent scholars in finance, use dividend and earnings growth models to estimate expected stock returns and ex ante expected equity risk premiums.[13] They compare these results to actual stock returns over the period 1951-2000. Fama and French estimate that the expected equity risk premium from DCF models using dividend and earnings growth to be between 2.55% and 4.32%. These figures are much lower than the ex post historical equity risk premium produced from the average stock and bond return over the same period, which was 7.40%.

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[12] Rahnish Mehra and Edward Prescott, "The Equity Premium: A Puzzle," *Journal of Monetary Economics* (1985).

[13] Eugene F. Fama and Kenneth R. French, "The Equity Premium," *The Journal of Finance*, (April 2002).

Fama and French conclude that the ex ante equity risk premium estimates using DCF models and fundamental data are superior to those using ex post historical stock returns for three reasons: (1) the estimates are more precise (a lower standard error); (2) the Sharpe ratio, which is measured as the [(expected stock return – risk-free rate)/standard deviation], is constant over time for the DCF models but varies considerably over time and more than doubles for the average stock-bond return model; and (3) valuation theory specifies relationships between the market-to-book ratio, return on investment, and cost of equity capital that favor estimates from fundamentals. They also conclude that the high average stock returns over the past 50 years were the result of low expected returns and that the average equity risk premium has been in the 3-4 percent range.

The study by Claus and Thomas of Columbia University provides direct support for the findings of Fama and French.[14] These authors compute ex ante expected equity risk premiums over the 1985-1998 period by (1) computing the discount rate that equates market values with the present value of expected future cash flows, and (2) then subtracting the risk-free interest rate. The expected cash flows are developed using analysts' earnings forecasts. The authors conclude that over this period the ex ante expected equity risk premium is in the range of 3.0%. Claus and Thomas note that, over this period, ex post historical stock returns overstate the ex ante expected

[14] James Claus and Jacob Thomas, "Equity Risk Premia as Low as Three Percent? Empirical Evidence from Analysts' Earnings Forecasts for Domestic and International Stock Market," *Journal of Finance.* (October 2001).

equity risk premium because, as the expected equity risk premium has declined, stock prices have risen. In other words, from a valuation perspective, the present value of expected future returns increase when the required rate of return decreases. The higher stock prices have produced stock returns that have exceeded investors' expectations and therefore ex post historical equity risk premium estimates are biased upwards as measures of ex ante expected equity risk premiums.

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

A. Derrig and Orr (2003) and Fernandez (2007) have completed the most comprehensive reviews to date of the research on the equity risk premium.[15] 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. Page 6 of Exhibit No.__(JRW-10) provides a summary of the results of the primary risk premium studies reviewed by Derrig and Orr and Fernandez. In developing Page 6 of Exhibit No.__(JRW-10), I have

[15] Richard Derrig and Elisha Orr, "Equity Risk Premium: Expectations Great and Small," Working Paper (version 3.0), Automobile Insurers Bureau of Massachusetts, August 28, 2003, and Pablo Fernandez, "Equity Premium: Historical, Expected, Required, and Implied," IESE Business School Working Paper, 2007.

categorized the studies as discussed on page 6 of Exhibit No.__(JRW-10). 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 below. The Building Blocks approach is a hybrid approach employing elements of both historic and ex ante models.

Q. PLEASE DISCUSS YOUR DEVELOPMENT OF AN EQUITY RISK PREMIUM COMPUTED USING THE BUILDING BLOCKS METHODOLOGY.

A. Ibbotson and Chen (2003) evaluate the ex post historical mean stock and bond returns in what is called the Building Blocks approach.[16] 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 EPS and DPS growth, ROE and book value growth, and 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).[17] This is shown on page 7 of Exhibit No.__(JRW-10). The first

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

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

column breaks the 1926-2000 geometric mean stock return of 10.7% into the different return components demanded by investors: the historical 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 the following fundamental elements: inflation (3.1%), dividend yield (4.3%), real earnings growth (1.8%), repricing gains (1.3%) associated with higher P/E ratios, and a small interaction term (0.2%).

Q. HOW ARE YOU USING THIS METHODOLOGY TO DERIVE AN EX ANTE EXPECTED EQUITY RISK PREMIUM?

A. The third column in the graph above 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. As shown on page 8 of Exhibit No.__(JRW-10), the expected annual inflation rate according to consumers, as measured by the CPI, over the coming year. This survey is published monthly by the University of Michigan Survey Research Center. In the most recent report, the expected one-year inflation rate was 3.4%.

Longer term inflation forecasts are available in the Federal Reserve Bank of Philadelphia's publication entitled *Survey of Professional*

Forecasters.[18] This survey of professional economists has been published for almost 50 years. While this survey is published quarterly, only the first quarter survey includes long-term forecasts of GDP growth, inflation, and market returns. In the first quarter, 2007 survey, published on February 13, 2007, the median long-term (10-year) expected inflation rate as measured by the CPI was 2.35% (see page 9 of Exhibit No.__(JRW-10).

Given these results, I will use the average of the University of Michigan and Philadelphia Federal Reserve's surveys (3.4% and 2.35%), or 2.9%.

D/P – As shown on page 10 of Exhibit No.__(JRW-10), the dividend yield on the S&P 500 has decreased significantly over the past two decades. It bottomed out at 1.1% in 1999, and has since increased to the 1.5-1.9 percent range. Today, it is far below its average of 4.3% over the 1926-2000 time period. It is currently at 1.9% which I use in the ex ante risk premium analysis.

RG – To measure expected real growth in earnings, I use (1) the historical real earnings growth rate for the S&P 500, and (2) expected real GDP growth. The S&P 500 was created in 1960. It includes 500 companies which come from ten different sectors of the economy. Over the 1960-2006 period,

[18]Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters,* February 13, 2007. 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.

nominal growth in EPS for the S&P 500 was 7.38%. On page 11 of Exhibit No.__(JRW-10), real EPS growth is computed using the CPI as a measure of inflation. As indicated by Ibbotson and Chen, real earnings growth over the 1926-2000 period was 1.8%. The real growth figure over 1960-2006 period for the S&P 500 is 3.0 %.

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 a relatively consistent 5.50% of US GDP.[19] Real GDP growth, according to McKinsey, has averaged 3.5% over the past 80 years. Expected GDP growth, according to the Federal Reserve Bank of Philadelphia's *Survey of Professional Forecasters,* is 3.0% (see page 9 of Exhibit No.__(JRW-10).

Given these results, I will use the average of the historical S&P EPS real growth and the projected real GDP growth (as reported by the Philadelphia Federal Reserve Survey) -- 3.0% and 3.0% -- or 3.0%, 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 graph on page 12 of Exhibit No.__(JRW-10) shows the P/E ratio

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

for the S&P 500 since 1962. The P/E ratios for the S&P 500 peaked in 1999 at over 30 and have since declined. As of December, 2007 the P/E for the S&P 500, is 18.9 according to www.standardandpoors.com.

Given the current economic and capital markets environment, I do not believe that investors expect even higher P/E ratios. Therefore, a PEGAIN would not be appropriate in estimating an ex ante expected stock market return. There are two primary reasons for this. First, the average historical S&P 500 P/E ratio is 15 – thus the current P/E exceeds this figure. Second, as previously noted, interest rates are at a cyclical low not seen in almost 50 years. This is a primary reason for the high current P/Es. Given the current market environment with relatively high P/E ratios and low relative interest rates, investors are not likely to expect to get stock market gains from lower interest rates and higher P/E ratios.

Q. GIVEN THIS DISCUSSION, WHAT IS YOUR EX ANTE EXPECTED MARKET RETURN AND EQUITY RISK PREMIUM USING THE "BUILDING BLOCKS METHODOLOGY"?

A. My 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 7 of Exhibit No.__(JRW-10). As shown, my expected market return of 7.80% is composed of 2.9% expected inflation, 1.90% dividend yield, and 3.00% real earnings growth rate.

Q. GIVEN THAT THE HISTORICAL COMPOUNDED ANNUAL MARKET RETURN IS IN EXCESS OF 10%, WHY DO YOU BELIEVE THAT YOUR EXPECTED MARKET RETURN OF 7.80% IS REASONABLE?

A. As discussed above in the development of the expected market return, stock prices are relatively high at the present time in relation to earnings and dividends and interest rates are relatively low. Hence, it is unlikely that investors are going to experience high stock market returns due to higher P/E ratios and/or lower interest rates. In addition, as shown in the decomposition of equity market returns, whereas the dividend portion of the return was historically 4.3%, the current dividend yield is only 1.9%. Due to these reasons, lower market returns are expected for the future.

Q. IS YOUR EXPECTED MARKET RETURN OF 7.80% CONSISTENT WITH THE FORECASTS OF MARKET PROFESSIONALS?

A. Yes. In the first quarter, 2007 survey, published on February 13, 2007, the median long-term expected return on the S&P 500 was 7.50% (see page 9 of of Exhibit No.__(JRW-10). This is consistent with my expected market return of 7.80%.

Q. IS YOUR EXPECTED MARKET RETURN CONSISTENT WITH THE EXPECTED MARKET RETURNS OF CORPORATE CHIEF FINANCIAL OFFICERS (CFOS)?

A. Yes. 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 December 2007 survey, the average expected return on the S&P 500 over the next ten years is 8.34%.[20]

Q. GIVEN THIS EXPECTED MARKET RETURN, WHAT IS YOUR EX ANTE EQUITY RISK PREMIUM USING THE BUILDING BLOCKS METHODOLOGY?

A. As shown in the December 18, 2007, as shown in the U. S. Treasury Yield Chart on page 2 of Exhibit No.__(JRW-10), the current 30-year Treasury yield is 4.56%. My ex ante equity risk premium is simply the expected market return from the Building Blocks methodology minus this risk-free rate:

Ex Ante Equity Risk Premium = 7.80% - 4.56% = 3.24%

Q. GIVEN THIS DISCUSSION, HOW ARE YOU MEASURING AN EXPECTED EQUITY RISK PREMIUM IN THIS PROCEEDING?

A. As discussed above, page 6 of Exhibit No.__(JRW-10) 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, as well as academics, and (4) the Building Block approaches to the equity risk premium. There are results reported for thirty

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

studies, and the average equity risk premium is 4.52%, which I will use as the equity risk premium in my CAPM study.

Q. IS YOUR EX ANTE EQUITY RISK PREMIUM CONSISTENT WITH THE EQUITY RISK PREMIUMS OF LEADING INVESTMENT FIRMS?

A. Yes. One of the first studies in this area was by Stephen Einhorn, one of Wall Street's leading investment strategists.[21] His study showed that the market or equity risk premium had declined to the 2.0 to 3.0 percent range by the early 1990s. Among the evidence he provided in support of a lower equity risk premium is the inverse relationship between real interest rates (observed interest rates minus inflation) and stock prices. He noted that the decline in the market risk premium has led to a significant change in the relationship between interest rates and stock prices. One implication of this development was that stock prices had increased higher than would be suggested by the historical relationship between valuation levels and interest rates.

The equity risk premiums of some of the other leading investment firms today support the result of the academic studies. An article in *The Economist* indicated that some other firms like J.P. Morgan are estimating an equity risk premium for an average risk stock in the 2.0 to 3.0 percent range above the interest rate on U.S. Treasury Bonds.[22]

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[21] Steven G. Einhorn, "The Perplexing Issue of Valuation: Will the Real Value Please Stand Up?" *Financial Analysts Journal* (July-August 1990), pp. 11-16.

[22] For example, see "Welcome to Bull Country," *The Economist* (July 18, 1998), pp. 21-3, and "Choosing the

Q. IS YOUR EX ANTE EQUITY RISK PREMIUM CONSISTENT WITH THE EQUITY RISK PREMIUMS USED BY CORPORATE CHIEF FINANCIAL OFFICERS (CFOS)?

A. Yes. In the previously-referenced December, 2007 CFO survey conducted by *CFO Magazine* and Duke University, the average expected 10-year equity risk premium was 4.24%.

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

A. Yes. The financial forecasters in the previously-referenced Federal Reserve Bank of Philadelphia survey project both stock and bond returns. As shown on page 9 of Exhibit No.__JRW-10, the median long-term expected stock and bond returns were 7.50% and 5.00%, respectively. This provides an ex ante equity risk premium of 2.50%.

Q. IS YOUR EX ANTE EQUITY RISK PREMIUM CONSISTENT WITH THE EQUITY RISK PREMIUMS USED BY THE LEADING CONSULTING FIRMS?

A. Yes. McKinsey & Co. is widely recognized as the leading management consulting firm in the world. They recently published a study entitled "The Real Cost of Equity" in which they developed an ex ante equity risk premium for the US. In reference to the decline in the equity risk premium, as well as

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Right Mixture," *The Economist* (February 27, 1999), pp. 71-2.

what is the appropriate equity risk premium to employ for corporate valuation purposes, the McKinsey authors concluded the following:

> We attribute this decline not to equities becoming less risky (the inflation-adjusted cost of equity has not changed) but to investors demanding higher returns in real terms on government bonds after the inflation shocks of the late 1970s and early 1980s. We believe that using an equity risk premium of 3.5 to 4 percent in the current environment better reflects the true long-term opportunity cost of equity capital and hence will yield more accurate valuations for companies.[23]

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

A. The results of my CAPM study for the group of electric utility companies are provided below:

$$K = (R_f) + \beta i * [E(R_m) - (R_f)]$$

Electric Utility Proxy Group **K = 4.75 + (0.81) * (4.52%) = 8.41%**

Gas Distribution Proxy Group **K = 4.75 + (0.86) * (4.52%) = 8.64%**

V. EQUITY COST RATE SUMMARY

Q. PLEASE SUMMARIZE YOUR EQUITY COST RATE STUDY.

A. The results for my DCF and CAPM analyses for the group of electric utility companies are indicated below:

	DCF	CAPM
Electric Group	9.15%	8.41%
Gas Group	8.74%	8.64%

[23] Marc H. Goedhart, et al, "The Real Cost of Equity," *McKinsey on Finance* (Autumn 2002), p. 15.

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

A. I conclude that the equity cost rate for the group of electric utility companies is in the 8.41-9.15 percent range. Given these results and the discussion of the riskiness of FPU relative to the electric and gas proxy groups, and focusing on the DCF results for the electric group, I will use 9.15% as my equity cost rate for FPU. This is at the top end of the range for the proxy groups, and recognizes that FPU's riskiness is at the high end of the range of the two groups.

Q. ISN'T THIS RATE OF RETURN LOW BY HISTORICAL STANDARDS?

A. Yes it is, and appropriately so. My rate of return is low by historical standards for three reasons. First, as discussed above, current capital costs are very low by historical standards, with interest rates at a cyclical low not seen since the 1960s. Second, the 2003 tax law, which reduces the tax rates on dividend income and capital gains, lowers the pre-tax return required by investors. And third, as discussed below, the equity or market risk premium has declined.

Q. FINALLY, PLEASE DISCUSS YOUR RATE OF RETURN IN LIGHT OF RECENT YIELDS ON 'A' RATED PUBLIC UTILITY BONDS.

A. In recent months the yields on long-term public utility bonds have been in the 5.50-6.00 percent range (see page 1 of Exhibit No. __(JRW-6). My rate of return may appear to be too low given these yields. However, as previously

noted, my recommendation must be viewed in the context of the significant decline in the market or equity risk premium. As a result, the return premium that equity investors require over bond yields is much lower today. This decline was previously reviewed in my discussion of capital costs in today's markets.

Q. HOW DO YOU TEST THE REASONABLENESS OF YOUR COST OF EQUITY AND OVERALL RATE OF RETURN RECOMMENDATION?

A. To test the reasonableness of my equity cost rate recommendation, I examine the relationship between the return on common equity and the market-to-book ratios for the companies in the two proxy groups of electric utility and gas distribution companies.

Q. WHAT DO THE RETURNS ON COMMON EQUITY AND MARKET-TO-BOOK RATIOS FOR THE PROXY GROUPS OF ELECTRIC UTILITY AND GAS DISTRIBUTION COMPANIES INDICATE ABOUT THE REASONABLENESS OF YOUR RECOMMENDATION?

A. Page 1 of Exhibit No.__(JRW-3) provides financial performance and market valuation statistics for the two proxy groups of electric utility and gas distribution companies. The median current return on equity and market-to-book ratios for the group are summarized below:

	Current ROE	Market-to-Book Ratio
Electric Group	9.0%	1.65
Gas Group	13.6%	2.06

These results indicate that, on average, these companies are earning returns on equity above their equity cost rates. As such, this observation provides evidence that my recommended equity cost rate is reasonable and fully consistent with the financial performance and market valuation of the group of electric utility companies.

VI. CRITIQUE OF FPU'S RATE OF RETURN TESTIMONY

Q. PLEASE SUMMARIZE FPU'S OVERALL RATE OF RETURN RECOMMENDATION.

A. FPU's rate of return of return recommendation is provided by of FPU witnesses Ms. Doreen Cox and Mr. Robert Camfield. Ms. Cox has prepared the capital structure and debt cost rate recommendations, and Mr. Camfield has made the common equity cost rate recommendation. Ms. Cox's conventional capital structure includes capital structure ratios of 43.45% long-term debt, 5.62% short-term debt, 0.52% preferred stock, and 50.41% common equity with a long-term and short-term debt cost rates of 7.96% and 6.81%, a preferred stock cost rate of 4.75%, and an equity cost rate of 11.50%. FPU's overall recommendation is summarized below:

Capital Source	Ratio	Cost Rate	Weighted Cost Rate
S-T Debt	5.62%	6.81%	0.38%
L-T Debt	43.45%	7.96%	3.46%
Preferred Stock	0.520%	4.75%	0.02%
Common Equity	50.41%	11.50%	5.80%

Total	100.00%	9.67%

Q. WHAT ARE THE ERRORS IN COMPANY'S RATE OF RETURN POSITION?

A. FPU's proposed rate of return is excessive due to an inflated short-term debt cost rate and, primarily, an overstated common equity cost rate. The short-term debt cost rate issue was discussed on page 11 of my testimony. The excessive equity cost rate recommendation is discussed below.

Q. PLEASE REVIEW MR. CAMFIELD'S EQUITY COST RATE APPROACHES.

A. Mr. Camfield estimates an equity cost rate of 11.50% for FPU by applying DCF, CAPM, RP, and RMR models to a group of eight electric utility companies and a group of ten natural gas distribution companies. He makes a flotation cost adjustment to his equity cost rate estimates. His results are summarized in Exhibit No.__(JRW-11).

Q. HOW ARE YOU ORGANIZING YOUR CRITIQUE OF MR. CAMFIELD'S EQUITY COST RATE STUDIES?

A. I will initially address the issue of issuance or flotation cost since a flotation cost adjustment is included in all of Mr. Camfield's equity cost rate results. I will then evaluate a major common error in Mr. Camfield's CAPM, RP, and

RMR approaches. This issue involves his use of historic stock and bond returns as measures of expected returns and the equity risk premium. This error is the most serious of his errors in cost of capital testimony. I will then address specific issues in his DCF, CAPM, RP, and RMR approaches.

Flotation Cost Adjustment

Q. PLEASE EVALUATE MR. CAMFIELD'S ISSUANCE OR FLOTATION COST ADJUSTMENT.

A. Mr. Camfield's equity cost rate approaches include an explicit issuance or flotation cost adjustment of 6%. In Exhibit 55.1, Mr. Camfield provided projected issuance costs which include a gross spread of 4.85% and other fees of 1.15%. Mr. Camfield has provided no justification, documentation, or source documents to support these fees (as he was requested), and therefore this adjustment should be rejected outright. Nonetheless, flotation cost adjustments are commonly requested by utilities in rate cases, but the issue remains as to what and how equity flotation costs can and should be recovered.

Q. PLEASE DISCUSS THE ISSUES OF AN EQUITY ISSUANCE OR FLOTATION COST ADJUSTMENT IN A RATE CASE PROCEEDING?

A. It is common for rate of return analysts to adjust equity cost rates upwards for issuance or flotation costs, even if a utility does not intend to issue equity in

the near future. Such flotation cost adjustments are not always necessary. The argument is usually made that a flotation cost adjustment is necessary to prevent the dilution of the existing shareholders. It is justified by reference 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 utility companies are nearly 2.0 actually suggests that there should be a flotation cost reduction (and not increase) to the equity cost rate. This happens 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, then the cost of that debt lower is 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) It is argued that a flotation cost adjustment is needed to prevent dilution of existing stockholders' investment. However, 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, 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 or gross spread and not out-of-pocket expenses. On a per share basis, the underwriting or gross spread is the difference between the price the investment banker receives from investors and the price the investment banker pays to the company. Hence, these are not expenses that are paid by the utility and hence must be recovered through the regulatory process. Furthermore, the underwriting spread is known to the investors who are buying the new issue of stock, 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 Mr. Camfield believes that the Company should be compensated for these transactions costs, he does not account for other market transaction costs in determining a cost of equity for the Company. Most notably, brokerage fees that investors pay when they buy shares in the open market which are another market transaction cost. Brokerage fees increase the effective stock price paid by investors to buy shares. If brokerage fees or transaction costs are included

in a DCF analyses, the higher effective stock prices paid for stocks would lead to lower dividend yields and equity cost rates. To be fair then, if one is making an upward adjustment for transaction costs in the form of flotation costs, they also should have made a downward adjustment for transaction costs in the form of brokerage fees.

Q. GIVEN THIS DISCUSSION, WHAT IS YOUR OPINION ON FPU'S REQUEST FOR AN ISSUANCE OR FLOTATION COST ADJUSTMENT TO ITS EQUITY COST RATE?

A. First, given the lack of documentation of the 6% issuance expenses, I believe that FPU should not receive any compensation for these costs. However, even if FPU has documented out-of-pocket expenses associated with a projected equity issuance, then it should request reimbursement of these expenses as a cost of service. But, given the discussion above, there should not be a straight equity cost rate adjustment to recover undocumented issuance costs. As discussed above, on a per share basis, the underwriting or gross spread is the difference between the price the investment banker receives from investors and the price the investment banker pays to the company. Hence, these are not out-of-pocket 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, 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. Finally, if the issuance costs are added to the estimated equity cost rate, the Company will effectively receive an annual

annuity in the form of higher revenues and returns since there are no annual out-of-pocket expenses for issuance costs.

Using Historic Returns as Measures of Expected Returns

Q. PLEASE DISCUSS MR. CAMFIELD'S USE OF HISTORIC RETURNS IN HIS CAPM, RP, AND RMR APPROACHES.

A. The primary problem with Mr. Camfield's CAPM, PR, and RMR approaches is his use of historic stock and bond returns as measures of expected returns and the expected equity risk premium. In the case of the CAPM and RP approaches, Mr. Camfield uses historic stock and bond market returns from the 1950-2005 to measure expected equity risk and size premiums. In the RMR method, Mr. Camfield uses the historic returns for the companies in the electric utility and gas distribution proxy groups over the 1996-2005 period to gauge the investors' expected returns on these stocks. The discussion below highlights the many problems and errors associated with using historic returns to measure an expected equity risk premium (as in Mr. Camfield's CAPM and RP approaches) and expected stock returns (as in Mr. Camfield's RMR approach).

Q. PLEASE PROVIDE INSIGHTS INTO THE ERRORS IN THE USE OF HISTORIC RETURNS TO COMPUTE A FORWARD-LOOKING OR EX ANTE RISK PREMIUM OR STOCK RETURN.

A. Using the historic relationship between stock and bond returns to measure an ex ante equity risk premium is erroneous and, especially given current market conditions, overstates the true market equity risk premium and expected stock return. The equity risk premium and the expected stock return is based on expectations of the future and when past market conditions vary from the present, historic data does not provide a realistic or accurate barometer of expectations of the future. At the present time, using historic returns to measure the ex ante equity risk premium and/or stock return ignores market conditions and masks the changes in the markets. This change suggests that the equity risk premium has declined and the expected stock return is lower that it has been in the past.

Q. PLEASE DISCUSS THE ERRORS IN USING HISTORIC STOCK AND BOND RETURNS TO ESTIMATE AN EX ANTE EQUITY RISK PREMIUM.

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

(A) Biased historic bond returns;

(B) The arithmetic versus the geometric mean return;

(C) Unattainable and biased historic stock returns;

(D) Survivorship bias;

(E) The "Peso Problem;"

(F) Market conditions today are significantly different than the past; and

(G) Changes in risk and return in the markets.

These issues will be addressed in order.

Biased Historic Bond Returns

Q. HOW ARE HISTORIC BOND RETURNS BIASED?

A. An essential assumption of these historic equity risk premium studies is that over long periods of time investors' expectations are realized. However, the experienced returns of bondholders in the past violate this critical assumption. Historically, 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.

The Arithmetic versus the Geometric Mean Return

Q. PLEASE DISCUSS THE ISSUE RELATING TO THE USE OF THE ARITHMETIC VERSUS THE GEOMETRIC MEAN RETURNS IN MEASURING HISTORIC RETURNS.

A. 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."[24] Since Mr. Camfield's study covers more than one period (and he assumes that dividends are reinvested), he should be employing the geometric mean and not the arithmetic mean.

Q. PLEASE PROVIDE AN EXAMPLE DEMONSTRATING THE PROBLEM WITH USING THE ARITHMETIC MEAN RETURN.

A. 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, 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

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

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 as to the appropriate mean return measure, the U.S. Securities and Exchange Commission requires equity mutual funds to report historical return performance using geometric mean and not arithmetic mean returns.[25] Therefore, Mr. Camfield's arithmetic mean return measures are biased and should be disregarded.

Unattainable and Biased Historic Stock Returns

Q. YOU NOTE THAT HISTORIC STOCK RETURNS ARE BIASED USING THE HISTORIC RETURNS METHODOLOGY. PLEASE ELABORATE.

A. Returns developed using historic returns methodology (1) cannot be reflective of expectations because these returns are unattainable to investors, and (2) produce biased results. This methodology assumes (a) monthly portfolio rebalancing and (b) 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 would obviously generate extremely high transaction costs and, as such, these returns are unattainable to investors. In

[25] U.S. Securities and Exchange Commission, Form N-1A.

addition, an academic study demonstrates that the monthly portfolio rebalancing assumption produces biased estimates of stock returns.[26]

Transaction costs themselves provide another bias in historic versus expected returns. The observed stock returns of the past 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.

Survivorship Bias

Q. HOW DOES SURVIVORSHIP BIAS TAINT MR. CAMFIELD'S HISTORIC EQUITY RISK PREMIUM?

A. Using historic data to estimate an equity risk premium or stock return suffers from survivorship bias. 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 so 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.

The "Peso Problem"

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

Q. WHAT IS THE "PESO PROBLEM" AND HOW DOES IT AFFECT HISTORIC RETURNS AND EQUITY RISK PREMIUMS?

A. Mr. Camfield's use of historic return data also suffers from the so-called "peso problem." 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 US economy survived and did not suffer hyperinflation, invasion, and the calamities of other countries. Built into historical stock prices is a market risk premium for such calamities. Therefore, historic stock returns are overstated as measures of expected returns.

Market Conditions Today are Significantly Different than in the Past

Q. FROM AN EQUITY RISK PREMIUM OR EXPECTED STOCK RETURN PERSPECTIVE, PLEASE DISCUSS HOW MARKET CONDITIONS ARE DIFFERENT TODAY.

A. The equity risk premium or expected stock return 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. As noted previously, stock valuations (as measured by P/E) are relatively high and interest rates are relatively low, on a historic basis. Therefore, given the high stock prices and low interest rates, expected returns are likely to be lower on a going forward basis.

Changes in Risk and Return in the Markets

Q. PLEASE DISCUSS THE NOTION THAT HISTORIC EQUITY RISK PREMIUM STUDIES DO NOT REFLECT THE CHANGE IN RISK AND RETURN IN TODAY'S FINANCIAL MARKETS.

A. The historic equity risk premium methodology is unrealistic in that it makes the explicit assumption that risk premiums do not change over time based on market conditions such as inflation, interest rates, and expected economic growth. Furthermore, using historic returns to measure the equity risk premium masks the dramatic change in the risk and return relationship between stocks and bonds. The nature of the change, as I will discuss below, is that bonds have increased in risk relative to stocks. This change suggests that the equity risk premium has declined in recent years.

Page 1 of Exhibit No.__(JRW-12) provides the yields on long-term U.S. Treasury bonds from 1926 to 2006. One very obvious observation from this graph is that interest rates increase dramatically from the mid-1960s until the early 1980s, and since have returned to their 1960 levels. The annual market risk premiums for the 1926 to 2006 period are provided on page 2 of Exhibit No.__(JRW-12). The annual market risk premium is defined as the return on common stock minus the return on long-term Treasury Bonds. There is considerable variability in this series and a clear decline in recent decades. The high was 54% in 1933 and the low was -38% in 1931. Evidence of a change in the relative riskiness of bonds and stocks is provided on page 3 of Exhibit No.__(JRW-12) which plots the standard deviation of

monthly stock and bond returns since 1930. The plot shows that, whereas stock returns were much more volatile than bond returns from the 1930s to the 1970s, bond returns became more variable than stock returns during the 1980s. In recent years stocks and bonds have become much more similar in terms of volatility, but stocks are still a little more volatile. The decrease in the volatility of stocks relative to bonds over time has been attributed to several stock related factors: the impact of technology on productivity and the new economy; the role of information (see former Federal Reserve Chairman Greenspan's comments referred to earlier in this testimony) on the economy and markets; better cost and risk management by businesses; and several bond related factors; deregulation of the financial system; inflation fears and interest rates; and the increase in the use of debt financing. Further evidence of the greater relative riskiness of bonds is shown on page 4 of Exhibit No.__(JRW-12), which plots real interest rates (the nominal interest rate minus inflation) from 1926 to 2006. Real rates have been well above historic norms during the past 10-15 years. These high real interest rates reflect the fact that investors view bonds as riskier investments.

The net effect of the change in risk and return has been a significant decrease in the return premium that stock investors require over bond yields. In short, the equity or market risk premium has declined in recent years. This decline has been discovered in studies by leading academic scholars and investment firms, and has been acknowledged by government regulators. As such, using a historic equity risk premium analysis is simply outdated and not

reflective of current investor expectations and investment fundamentals.

Q. DO YOU HAVE ANY OTHER THOUGHTS ON THE USE OF HISTORICAL RETURN DATA TO ESTIMATE EQUITY RISK PREMIUMS AND STOCK RETURNS?

A. Yes. Jay Ritter, a Professor of Finance at the University of Florida, identified the use of historical returns to estimate a forward-looking equity risk premium as one of the "Biggest Mistakes" taught by the finance profession.[27] His argument is based on the theory behind the equity risk premium, the excessive results produced by historical returns, and the previously-discussed errors of such as survivorship bias in historical data.

DCF Approach

Q. PLEASE SUMMARIZE MR. CAMFIELD'S DCF ESTIMATES.

A. In Exhibit DC-RC-7, Mr. Camfield estimates an equity cost rate of 9.63% for his electric utility proxy group and 9.46% for his gas distribution company proxy group. These figures include base DCF estimates of 9.30% (electrics) and 9.20% (gas companies) plus a 33 basis points adjustment to the indicated equity cost rates to account for flotation costs. Mr. Camfield's DCF estimates are listed in Exhibit No.__(JRW-13).

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

Q. PLEASE EXPRESS YOUR CONCERNS WITH MR. CAMFIELD'S DCF STUDIES.

A. I have three major concerns with Mr. Camfield's DCF equity cost rate studies: (1) an excessive dividend yield, including the full year's growth rate adjustment to the dividend yield, and (2) an inflated DCF growth rate, and (3) the previously-discussed issuance or flotation cost adjustment.

Q. PLEASE DISCUSS THE EXCESSIVE DIVIDEND YIELD.

A. Mr. Camfield's dividend yields of 5.11% for the electric proxy group and 4.01% are excessive and not reflective of the dividend yields for the two groups. As I show, the more current and representative dividend yields for the two groups are 4.3% and 3.4%. Mr. Camfield's dividend yields are excessive because they (1) reflect stale data (2006), (2) used only a two month window for stock prices, and (3) include a full-year's growth rate adjustment.

Q. WHY IS IT NOT APPROPRIATE TO ADJUST THE DIVIDEND YIELD BY A FULL YEAR OF GROWTH IN THE DCF MODEL?

A. As previously discussed, the appropriate growth rate adjustment to the dividend yield in the DCF model is complicated in the regulatory process when the overall cost of capital is applied to a projected or end-of-future-test-year rate base. Using a full year's growth rate, as Mr. Camfield has done, results in an overstated equity cost rate because growth is already reflected in

the projected rate base. Because of this, I have adjusted the dividend yield for the groups by 1/2 the expected growth rate.

Q. PLEASE DISCUSS MR. CAMFIELD'S EXCESSIVE DCF GROWTH RATE.

A. Mr. Camfield's DCF dividend yield and expected growth rate reflect data which is rather stale. My updated dividend yield and growth rate data, as presented in Exhibit No__(JRW-9), is more appropriate and representative for the two groups.

<u>CAPM</u>

Q. PLEASE SUMMARIZE MR. CAMFIELD'S CAPM EQUITY COST RATES.

A. In Exhibit DC-RC-6, Mr. Camfield develops CAPM equity cost rate estimates for FPU of 11.27% for his electric utility proxy group and 11.28% for his gas distribution company proxy group. These results are summarized in Exhibit No.__(JRW-14).

Q. WHAT CONCERNS DO YOU HAVE WITH MR. CAMFIELD'S CAPM ANALYSES?

A. I have three major concerns with Mr. Camfield's CAPM analyses: (1) his risk-free rate of 4.73%, (2) most significantly, his equity or market risk premium

of 8.27%, and (3) the previously-discussed issuance or flotation cost adjustment.

Q. WHAT IS THE PROBLEM WITH MR CAMFIELD'S RISK-FREE RATE OF 4.73%?

A. Mr. Camfield's CAPM analysis employs a risk-free rate of 4.73%. This rate is based on the yields on ten-year Treasuries. As shown on page 2 of Exhibit No__(JRW-10), the current yield on ten-year Treasuries is only 4.14%. Hence, Mr. Camfield's risk-free rate exceeds the current market yield by 59 basis points.

Q. PLEASE DISCUSS MR CAMFIELD'S EQUITY RISK PREMIUM OF 8.27%?

A. Mr. Camfield's equity or market risk premium of 8.27% is computed as the expected stock market return (13.0%) minus his risk-free interest rate (4.73%). The 13.0% expected market return is computed as the arithmetic mean return on the S&P 500 from 1950-2005. I have discussed at length the myriad of empirical issues and errors in using historic returns as measures of expected returns. In short, using historic returns as measures of expected returns is subject to a myriad of empirical biases which results in an overstatement of the expected stock return and equity risk premium. These empirical issues include measuring returns with arithmetic as opposed to geometric mean returns, survivorship bias, unattainable returns (since the

returns are measured from stock indexes), the change in market conditions (stock prices are relatively high and interest rates are relatively low), and the documented decline in the equity risk premium.

Q. IS MR CAMFIELD'S EXPECTED STOCK MARKET RETURN ON 13.0% CONSISTENT WITH THE EXPECTATIONS OF MARKET PROFESSIONALS?

A. No. There are only two surveys that I am aware in which market professionals project long-term stock market returns. These are the *Survey of Professional Forecasters* (SPF) and the *CFO Magazine* – Duke University Survey of Corporate CFOs which were previously cited. In both cases, the respondents are asked for the expected return on the S&P 500 over the next ten years. In the most recent SPF, published on February 13, 2007, the median long-term expected return on the S&P 500 was 7.50%. In the most recent CFO survey (December 2007), the average expected return on the S&P 500 over the next ten years was 8.34%. Hence, Mr. Camfield's expected market return on 13.0% is well out-of-line with that of market professionals.

Q. IS MR CAMFIELD'S RESULTING EQUITY RISK PREMIUM OF 8.27% CONSISTENT WITH THE RESEARCH STUDIES ON THE EQUITY RISK PREMIUM?

A. No, it is vastly overstated compared to the many studies which have evaluated the equity risk premium. On page 6 of Exhibit No.__(JRW-10), I have

presented the results of thirty studies of the equity risk premium which have been authored by many of the leading scholars in the field. None of these studies have discovered an equity risk premium as high as 8.27%.

RP Results

Q. PLEASE SUMMARIZE MR. CAMFIELD'S RP EQUITY COST RATES.

A. In Exhibit DC-RC-8, Mr. Camfield develops equity cost rate estimates for FPU using the RP results for his proxy groups of electric utilities and gas distribution companies. These results are summarized in Exhibit No.__(JRW-15).

Q. WHAT CONCERNS DO YOU HAVE WITH MR. CAMFIELD'S RP ANALYSIS?

A. I have four major concerns with Mr. Camfield's RP analyses: (1) his risk-free rate of 4.7% (midpoints of 3.3% + 1.4%) (2) most significantly, his equity or market risk premium of 7.5% (midpoint 12.2%- midpoint 4.7%), (3) his small cap premium of 2.2%, and (4) the previously-discussed issuance or flotation cost adjustment.

Q. PLEASE DISCUSS MR CAMFIELD'S RISK-FREE RATE OF 4.7%?

A. Mr. Camfield's RP CAPM analysis uses a ten-year Treasury risk-free rate of 4.7%. As shown on page 39, the current yield on ten-year Treasuries is only

4.14%. Hence, Mr. Camfield's risk-free rate exceeds the current market yield by over ½ percent or 50 basis points.

Q. PLEASE DISCUSS MR CAMFIELD'S EQUITY RISK PREMIUM OF 7.5%.

A. Mr. Camfield's equity of 7.5% is computed as the expected stock market return (12.2%) minus his a risk-free interest rate (4.7%). This equity risk premium is based on the historic difference between stock and bond returns. Above I have discussed at length the myriad of empirical issues and errors in using historic returns as measures of expected returns. These will not be repeated here.

The fact is that Mr. Camfield's RP equity risk premium of 7.50%, like his CAPM equity risk premium of 8.27%, is excessive compared to the many studies which have evaluated the equity risk premium. In fact, none of thirty studies of the equity risk premium which I present on page 6 of Exhibit No. __(JRW-10) have discovered an equity risk premium as high as 7.50%. In addition, the expected market return of 12.2%, which provides the basis for this equity risk premium, is well in excess of the expectations of market professionals as found in the most-recent *Survey of Professional Forecasters* (SPF) and the *CFO Magazine* – Duke University Survey of Corporate CFOs.

Q. FINALLY PLEASE ADDRESS MR. CAMFIELD'S ADJUSTMENT FOR THE SIZE OF THE COMPANY.

A. Mr. Camfield adjusts his RP equity cost rate results to account for the size of the Company. He supports his size premium on the basis of a historical return analysis performed by Ibbotson Associates. As discussed above, there are numerous errors in using historical market returns to compute risk premiums. These errors provide inflated estimates of expected risk premiums. Among the errors are the well-known survivorship bias (only successful companies survive – poor companies do not survive) and unattainable return bias (the Ibbotson procedure presumes monthly portfolio rebalancing). In fact, Richard Roll found that ½ of the small firm effect disappears if you correct for monthly portfolio rebalancing.[28] The net result is that Ibbotson's size premiums are poor measures for any risk adjustment to account for the size of the Company.

Finally, and most significantly, Professor Annie Wong has tested for a size premium in utilities and concluded that, unlike industrial stocks, utility stocks do not exhibit a significant size premium.[29] As explained by Professor Wong, there are several reasons why such a size premium would not be attributable to utilities. Utilities are regulated closely by state and federal agencies and commissions and hence their financial performance is monitored on an ongoing basis by both the state and federal governments. In addition, public utilities must gain approval from government entities for common financial transactions such as the sale of securities. Furthermore, unlike their industrial

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

[29] Annie Wong, "Utility Stocks and the Size Effect: An Empirical Analysis," *Journal of the Midwest Finance Association*, 1993, PP. 95-101.

counterparts, accounting standards and reporting are fairly standardized for public utilities. And finally, a utility's earnings are predetermined to a certain degree through the ratemaking process in which performance is reviewed by state commissions and other interested parties. Overall, in terms of regulation, government oversight, performance review, accounting standards, and information disclosure, utilities are much different than industrials, which could account for the lack of a size premium.

RMR Results

Q. PLEASE SUMMARIZE MR. CAMFIELD'S RMR EQUITY COST RATES.

A. Mr. Camfield develops equity cost rate estimates for FPU his RMR approach in Exhibit DC-RC-9. These results are summarized in Exhibit No.__(JRW-16).

Q. WHAT ISSUES DO YOU HAVE WITH MR. CAMFIELD'S RMR ANALYSIS?

A. I have two major concerns with Mr. Camfield's RMR analyses: (1) his use of historic returns and the 1996-2005 time period, and (2) the previously-discussed issuance or flotation cost adjustment.

Q. PLEASE DISCUSS THE ERRORS IN USING HISTORIC RETURNS IN MR. CAMFIELD'S RMR ANALYSIS?

A. Mr. Camfield's RMR analyses involves computing historic stock returns over the 1996-2005 time period for the companies in the electric utility and gas distribution proxy groups. These are several major issues with this approach. First, the errors in using historic returns as measures of expected returns. This issue has been addressed at length in my testimony. Second, Mr. Camfield has not provided any empirical support for the selection of the 1996-2005 period as the appropriate time frame to provide guidance concerning expectations of the future. A key issue here is whether conditions in the markets today are reflected in the historic time period selected. I do not believe that this is true. A key driver of the increase in the stock market over the past decade has been the decline in interest rates. In 1996, the base period of Mr. Camfield's analysis, the average yield on ten-year Treasury bonds was 6.44%. In the year 2007, the average yield on ten-year Treasury bonds has been 4.68%. Therefore, Mr. Camfield's historic RMR results are conditioned on a further decline in interest rates to 2-3 percent level to support his RMR returns. Mr. Camfield has provided no evidence that long-term U. S. Treasury yields are projected to decline to the 2-3 percent level.

Q. ARE MR. CAMFIELD'S RMR RETURNS CONSISTENT WITH THE FORECASTS OF MARKET PROFESSIONALS?

A. No. In the previously-cited *Survey of Professional Forecasters* (SPF) and the *CFO Magazine* – Duke University Survey of Corporate CFOs, the expected returns over the next ten years are 7.50% and 8.24% for the S&P 500,

respectively. Mr. Camfield's RMR returns range from 10.0% to 11.86% for electric and gas utility stocks are clearly out-of-line with these expectations. In my opinion, this is because of: (1) the much-discussed errors in using historic returns as measures of market return expectations and (2) the fact that market professionals take into account current market conditions such as interest rates and the economy in making their forecasts.

Q. <u>DOES THIS CONCLUDE YOUR TESTIMONY?</u>

A. Yes it does.

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. At Iowa he received a Graduate Fellowship and was awarded membership in Beta Gamma Sigma, a national business honorary society. He has taught Finance courses at the University of Iowa, Cornell College, and the University of Pittsburgh, as well as the Pennsylvania State University. These courses include corporation finance, commercial and investment banking, and investments at the undergraduate, graduate, and executive MBA levels.

Professor Woolridge's research has centered on the theoretical and empirical foundations of corporation finance and financial markets and institutions. 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, Financial World*, *Barron's*, *Wall Street Journal*, *Business Week*, *Washington Post*, *Investors' Business Daily*, *Worth Magazine*, *USA Today*, and other publications. In addition, Dr. Woolridge has appeared as a guest on CNN's *Money Line* and CNBC's *Morning Call* and *Business Today*.

The second edition of Professor Woolridge's popular 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 new textbook entitled Applied Principles of *Finance* (Kendall Hunt, 2006). Dr. Woolridge is a founder and a managing director of www.valuepro.net - a stock valuation website.

Professor Woolridge has also consulted with and prepared research reports for major corporations, financial institutions, and investment banking firms, and government agencies. In addition, he has directed and participated in over 500 university- and company- sponsored professional development programs for executives in 25 countries in North and South America, Europe, Asia, and Africa.

Dr. Woolridge has prepared testimony and/or provided consultation services in the following cases:

Pennsylvania: Dr. Woolridge has prepared testimony on behalf of the Pennsylvania Office of Consumer Advocate in the following cases before the Pennsylvania Public Utility Commission: Bell Telephone Company (R-811819), Peoples Natural Gas Company (R-832315), Pennsylvania Power Company (R-832409), Western Pennsylvania Water Company (R-832381), Pennsylvania Power Company (R-842740), Pennsylvania Gas and Water Company (R-850178), Metropolitan Edison Company (R-860384), Pennsylvania Electric Company (R-860413), North Penn Gas Company (R-860535), Philadelphia Electric Company (R-870629), Western Pennsylvania Water Company (R-870825), York Water Company (R-870749), Pennsylvania-American Water Company (R-880916), Equitable Gas Company (R-880971), the Bloomsburg Water Co. (R-891494), Columbia Gas of Pennsylvania, Inc. (R-891468), Pennsylvania-American Water Company (R-90562), Breezewood Telephone Company (R-901666), York Water Company (R-901813), Columbia Gas of Pennsylvania, Inc. (R-901873), National Fuel Electric utility Company (R-911912), Pennsylvania-American Water Company (R-911909), Borough of Media Water Fund (R-912150), UGI Utilities, Inc. - Electric Utility Division (R-922195), Dauphin Consolidated Water Supply Company - General Waterworks of Pennsylvania, Inc, (R-932604), National Fuel Electric utility Company (R-932548), Commonwealth Telephone Company (I-920020), Conestoga Telephone and Telegraph Company (I-920015), Peoples Natural Gas Company (R-932866), Blue Mountain Consolidated Water Company (R-932873), National Fuel Gas Company (R-942991), UGI - Gas Division (R-953297), UGI - Electric Division (R-953534), Pennsylvania-American Water Company (R-973944), Pennsylvania-American Water Company (R-994638), Philadelphia Suburban Water Company (R-994868;R-994877;R-994878; R-9948790), Philadelphia Suburban Water Company (R-994868),

Wellsboro Electric Company (R-00016356), Philadelphia Suburban Water Company (R-00016750), National Fuel Electric utility Company (R-00038168), Pennsylvania-American Water Company (R-00038304), York Water Company (R-00049165), Valley Energy Company (R-00049345), Wellsboro Electric Company (R-00049313), National Fuel Gas Utility Corporation (R-00049656), T.W. Phillips Gas and Oil Co. (R-00051178), PG Energy (R-00061365), City of Dubois Water Company (Docket No. R-00050671), R-00049165), York Water Company (R-00061322), Emporium Water Company (R-00061297), Pennsylvania-American Water Company (R-00072229),

New Jersey: Dr. Woolridge prepared testimony for the New Jersey Department of the Public Advocate, Division of Rate Counsel: New Jersey-American Water Company (R-91081399J), New Jersey-American Water Company (R-92090908J), and Environmental Disposal Corp (R-94070319).

Alaska: Dr. Woolridge prepared testimony for Attorney General's Office of Alaska: Golden Heart Utilities, Inc. and College Utilities Corp. (Water Public Utility Service TA-29-118 and Sewer Public Utility Service TA-82-97), Anchorage Water and Wastewater Utility (TA-106-122).

Arizona: Dr. Woolridge prepared testimony for Utility Division Staff of the Arizona Corporation Commission, Arizona Public Service Company (Docket No. E-01345A-06-0009).

Hawaii: Dr. Woolridge prepared testimony for the Hawaii Office of the Consumer Advocate: East Honolulu Community Services, Inc. (Docket No. 7718).

Delaware: Dr. Woolridge prepared testimony for the Delaware Division of Public Advocate: Artesian Water Company (R-00-649). Dr. Woolridge prepared testimony for the Staff of the Public Service Commission: Artesian Water Company (R-06-158).

Ohio: Dr. Woolridge prepared testimony for the Ohio Office of Consumers' Council: SBC Ohio (Case No. 02-1280-TP-UNC R-00-649), and Cincinnati Gas & Electric Company (Case No. 05-0059-EL-AIR).

Texas: Dr. Woolridge prepared testimony for the Atmos Cities Steering Committee: Mid-Texas Division of Atmos Energy Corp. (Docket No. 9670).

New York: Dr. Woolridge prepared testimony for the County of Nassau in New York State: Long Island Lighting Company (PSC Case No. 942354).

Florida: Dr. Woolridge prepared testimony for the Office of Public Counsel in Florida: Florida Power & Light Co. (Docket No. 050045-EL).

Indiana: Dr. Woolridge prepared testimony for the Indiana Office of Utility Consumer Counsel (OUCC) in the following cases: Southern Indiana Gas and Electric Company (IURC Cause No. 43111 and IURC Cause No. 43112).

Oklahoma: Dr. Woolridge prepared testimony for the Oklahoma Industrial Energy Companies (OIEC) in the following cases: Public Service Company of Oklahoma (Cause No. PUD 200600285), Oklahoma Gas & Electric Company (Cause No. PUD 200700012

Connecticut: Dr. Woolridge prepared testimony for the Office of Consumer Counsel in Connecticut: United Illuminating (Docket No. 96-03-29), Yankee Gas Company (Docket No. 04-06-01), Southern Connecticut Gas Company (Docket No. 03-03-17), the United Illuminating Company (Docket No. 05-06-04), Connecticut Light and Power Company (Docket No. 05-07-18), Birmingham Utilities, Inc. (Docket No. 06-05-10), Connecticut Water Company (Docket No. 06-07-08), Connecticut Natural Gas Corp. (Docket No. 06-03-04), Aquarion Water Company

(Docket No. 07-05-09), Yankee Gas Company (Docket No. 06-12-02), and Connecticut Light and Power Company (Docket No. 07-07-01).

California: Dr. Woolridge prepared testimony for the Office of Ratepayer Advocate in California: San Gabriel Valley Water Company (Docket No. 05-08-021), Pacific Gas & Electric (Docket No. 07-05-008), San Diego Gas & Electric (Docket No. 07-05-007), and Southern California Edison (Docket No. 07-05-003).

South Carolina: Dr. Woolridge prepared testimony for the Office of Regulatory Staff in South Carolina: South Carolina Electric and Gas Company (Docket No. 2005-113-G), Carolina Water Service Co. (Docket No. 2006-87-WS), Tega Cay Water Company (Docket No. 2006-97-WS), United Utilities Companies, Inc. Company (Docket No. 2006-107-WS).

Missouri: Dr. Woolridge prepared testimony for the Department of Energy in Missouri: Kansas City Power & Light Company (CASE NO. ER-2006-0314). Dr. Woolridge prepared testimony for the Office of Attorney General of Missouri: Union Electric Company (CASE NO. ER-2007-0002).

Kentucky: Dr. Woolridge prepared testimony for the Office of Attorney General in Kentucky: Kentucky-American Water Company (Case No. 2004-00103), Union Heat, Light, and Power Company (Case No. 2004-00042), Kentucky Power Company (Case No. 2005-00341), Union Heat, Light, and Power Company (Case No. 2006-00172), Atmos Energy Corp. (Case No. 2006-00464), Columbia Gas Company (Case No. 2007-00008), Delta Natural Gas Company (Case No. 2007-00089), Kentucky-American Water Company (Case No. 2007-00143).

Washington, D.C.: Dr. Woolridge prepared testimony for the Office of the People's Counsel in the District of Columbia: Potomac Electric Power Company (Formal Case No. 939).

Washington: Dr. Woolridge consulted with trial staff of the Washington Utilities and Transportation Commission on the following cases: Puget Energy Corp. (Docket Nos. UE-011570 and UG-011571); and Avista Corporation (Docket No. UE-011514).

Kansas: Dr. Woolridge prepared testimony on behalf of the Kansas Citizens' Utility Ratepayer Board Utilities in the following cases: Western Resources Inc. (Docket No. 01-WSRE-949-GIE), UtiliCorp (Docket No. 02-UTCG701-CIG), and Westar Energy, Inc. (Docket No. 05-WSEE-981-RTS).

FERC: Dr. Woolridge has prepared testimony on behalf of the Pennsylvania Office of Consumer Advocate in the following cases before the Federal Energy Regulatory Commission: National Fuel Gas Supply Corporation (RP-92-73-000) and Columbia Gulf Transmission Company (RP97-52-000).

Vermont: Dr. Woolridge prepared testimony for the Department of Public Service in the Central Vermont Public Service (Docket No. 6988) and Vermont Gas Systems, Inc. (Docket No. 7160).

Exhibit__(JRW-1)

Florida Public Utilities Company
Cost of Capital

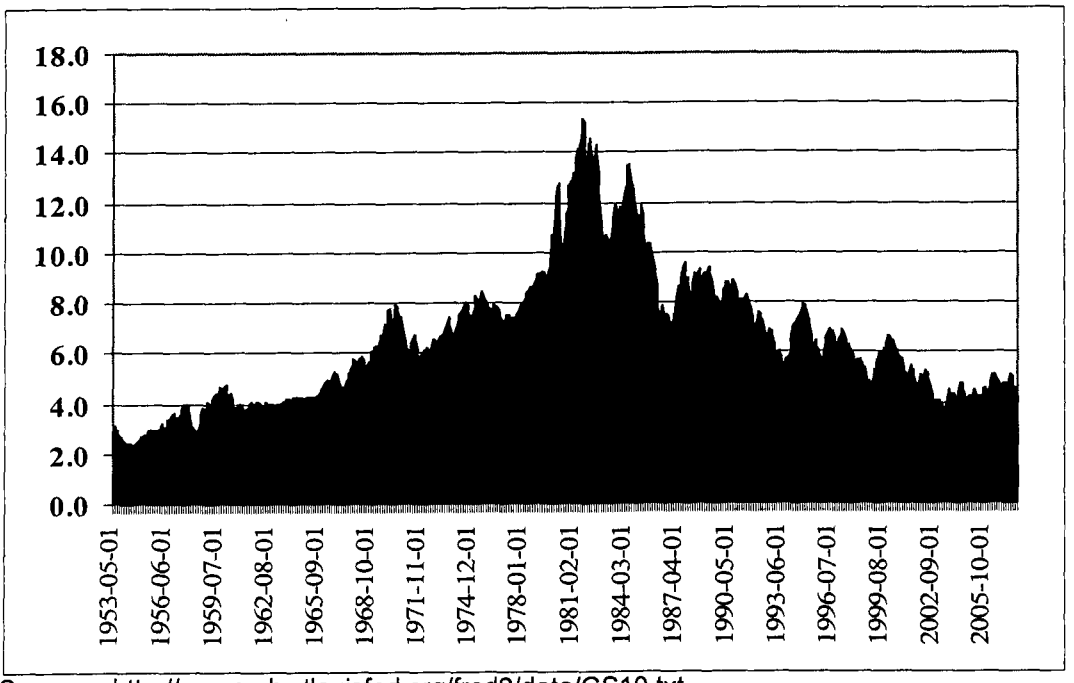
Weighted Average Cost of Capital - Regulatory Capital Structure

Capital Source		Capital	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	$	1,905,259	4.43%	5.81%	0.26%
Long-Term Debt	$	14,733,561	34.25%	7.96%	2.73%
Preferred Stock	$	177,593	0.41%	4.75%	0.02%
Common Equity	$	17,095,113	39.74%	9.15%	3.64%
Customer Deposits	$	2,948,763	6.85%	6.32%	0.43%
Deferred Taxes	$	6,078,743	14.13%	0.00%	0.00%
ITC @ Zero Cost	$	-	0.00%	0.00%	0.00%
ITC @ Overall Cost	$	81,965	0.19%	8.42%	0.02%
Total	$	43,020,997	100.00%		7.09%

Weighted Average Cost of Capital - Conventional Capital Structure

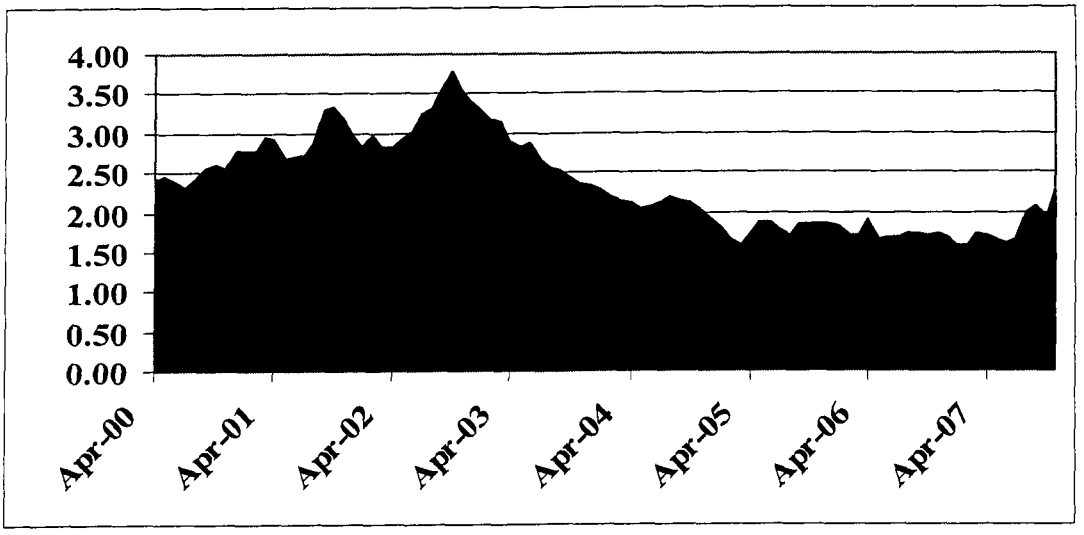
Capital Source		Capital	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Short-Term Debt	$	6,436,923	5.62%	5.81%	0.33%
Long-Term Debt	$	49,777,370	43.45%	7.96%	3.46%
Preferred Stock	$	600,000	0.52%	4.75%	0.02%
Common Equity	$	57,755,879	50.41%	9.15%	4.61%
Total	$	114,570,172	100.00%		8.42%

Exhibit__(JRW-2)
Ten-Year Treasury Yields
1953-Present



Source: http://research.stlouisfed.org/fred2/data/GS10.txt

Yield Spreads
Baa-Rated Corporate Bond Yield Minus Ten-Year Treasury Bond Yield



Source: http://www.treas.gov/offices/domestic-finance/debt-management/interest-rate/index.html

Exhibit__(JRW-3)

Florida Public Utilities Company

Electric Utility Proxy Group
Summary Financial Statistics

Company	Symbol	Moodys Bond Rating	Operating Revenue ($mil)	Percent Electric Revenue	Net Plant ($mil)	Pre-Tax Interest Coverage	Primary Service Area	Common Equity Ratio*	Return on Equity	Price/ Earnings Ratio	Market to Book Ratio
Central Vermont Pub. Serv.	CV	NR	327.8	100%	316.7	3.7	VT	59	9.1%	18.4	1.66
Energy East Corp.	EAS	A3	5,164.4	57%	5,942.0	2.7	NY,ME,CT	44	8.6%	16.1	1.37
Florida Public Utilities	FPU	Aaa	134.5	40%	137.0	2.3	FL	45	6.8%	21.5	1.47
Great Plains Energy	GXP	A2	3,116.4	40%	3,317.2	4.1	KS,MO,KS	49	10.2%	17.6	1.68
Hawaiian Elec.	HE	Baa3	2,435.3	83%	2,400.2	2.7	HI	27	5.1%	30	1.59
MGE Energy	MGEE	Aa2	533.4	63%	807.1	4.3	WI	56	11.7%	14.5	1.74
Otter Tail Corp.	OTTR	A3	1,195.9	26%	786.0	5.7	MN,ND,SD	58	10.1%	20.7	2.02
SCANA Corp.	SCG	Baa2	4,617.0	42%	7,309.0	2.7	SC	44	10.2%	23.5	1.66
Mean		A2	2,190.6	56%	2,626.9	3.5		48	9.0%	20.3	1.65

Data Source: AUS *Utility Reports*, December, 2007; *Value Line Investment Survey*, 2007, www.yahoo.com.

Florida Public Utilities	FPU	Aaa	134.5	40%	137.0	2.3	FL	45	6.8%	21.5	1.47

Natural Gas Distribution Proxy Group
Summary Financial Statistics

Company	Symbol	Moodys Bond Rating	Operating Revenue ($mil)	Percent Gas Revenue	Net Plant ($mil)	Pre-Tax Interest Coverage	Primary Service Area	Common Equity Ratio*	Return on Equity	Price/ Earnings Ratio	Market to Book Ratio
AGL Resources	ATG	A3	2,516.0	65%	3,532.0	3.5	GA,VA	43	12.0%	14.9	1.76
Atmos Energy	ATO	Baa3	5,867.8	57%	3,757.5	2.8	LA,KY,TX, CO,KS	45	9.9%	13.1	1.22
Energy South	ENSI	NR	59.4	97%	253.9		AL	60	12.2%	32.1	3.79
New Jersey Resources	NJR	NR	2,966.0	33%	953.3	6.0	NJ,Canada	54	14.5%	15.0	2.05
Northwest Natural Gas Comp	NWN	A2	1,038.5	98%	1,420.1	3.5	OR,WA	48	12.7%	18.3	2.27
Piedmont Natural Gas, Inc.	PNY	A3	1,715.5	82%	2,116.9	4.0	NC,SC,TN	67	21.6%	18.0	2.11
South Jersey Industries	SJI	Baa1	974.2	63%	942.1	5.0	NJ	48	18.1%	13.6	2.38
Southwest Gas	SWX	Baa3	2,156.9	85%	2,797.7	2.4	AZ,NV,CA	43	9.8%	14.0	1.30
WGL Holdings, Inc.	WGL	A2	2,631.5	57%	2,127.5	5.7	DC,VA,MD	59	11.7%	14.4	1.63
Mean		Baa1	2,214.0	71%	1,989.0	4.1		52	13.6%	17.0	2.06

Data Source: AUS *Utility Reports*, December, 2007; *Value Line Investment Survey*, 2007, www.yahoo.com.

Florida Public Utilities	FPU	Aaa	134.5	40%	137.0	2.3	FL	45	6.8%	21.5	1.47

Exhibit__(JRW-3)

Florida Public Utilities Company

Electric Utility Proxy Group
Value Line Risk Metrics

Company	Beta	Safety	Financial Strength	Stock Price Stability	Price Growth Persistence	Earnings Predict
Central Vermont Pub. Serv.	1.00	3	B	65	55	30
Energy East Corp.	0.80	2	B++	100	30	85
Florida Public Utilities	0.65	3	B+	90	55	60
Great Plains Energy	0.85	2	A	100	35	70
Hawaiian Elec.	0.70	2	A	100	45	75
MGE Energy	0.85	1	A	85	50	75
Otter Tail Corp.	0.75	2	A	85	45	80
SCANA Corp.	0.85	2	A	100	55	95
Mean	0.81	2	B++	91	46	71

Florida Public Utilities	0.65	3	B+	90	55	60

Data Source: *Value Line Investment Survey*, 2007.

Natural Gas Distribution Proxy Group
Value Line Risk Metrics

Company	Beta	Safety	Financial Strength	Stock Price Stability	Price Growth Persistence	Earnings Predict
AGL Resources	0.85	2	B++	100	70	80
Atmos Energy	0.85	2	B+	100	30	80
Energy South	0.80	2	B++	85	85	95
New Jersey Resources	0.85	1	A	100	70	95
Northwest Natural Gas Company	0.90	1	A	100	85	80
Piedmont Natural Gas, Inc.	0.85	2	B++	100	60	80
South Jersey Industries	0.85	2	B++	100	95	85
Southwest Gas	0.90	3	B	100	60	65
WGL Holdings, Inc.	0.85	1	A	100	50	65
Mean	0.86	2	B++	98	67	81

Florida Public Utilities	0.65	3	B+	90	55	60

Data Source: *Value Line Investment Survey*, 2007.

Exhibit__(JRW-3)

Florida Public Utilities Company

Value Line Risk Metrics

Beta - A relative measure of the historical sensitivity of the stock's price to overall fluctuations in the New York Stock Exchange Composite Index. A Beta of 1.50 indicates a stock tends to rise (or fall) 50% more than the New York Stock Exchange Composite Index. The "Beta coefficient" is derived from a regression analysis of the relationship between weekly percentage changes in the price of a stock and weekly percentage changes in the NYSE Index over a period of five years. In the case of shorter price histories, a smaller time period is used, but two years is the minimum. The Betas are adjusted for their long-term tendency to converge toward 1.00. Additionally, Value Line shows betas computed based on monthly total returns for the trailing three year, five-year and 10-year periods.

Safety Rank - A measurement of potential risk associated with individual common stocks. The Safety Rank is computed by averaging two other Value Line indexes - the Price Stability Index and the Financial strength Rating. Safety Ranks range from 1 (Highest) to 5 (Lowest). Conservative investors should try to limit their purchases to equities ranked 1 (Highest) and 2 (Above Average) for Safety.

Financial Strength Rating - A relative measure of financial strength of the companies reviewed by Value Line. The relative ratings range from A++ (strongest) down to C (weakest), in nine steps.

Price Stability Index - A measure of the stability of a stock's price. It includes sensitivity to the market (see Beta) as well as the stock's inherent volatility. Value Line Stability ratings range from 100 (highest) to 5 (lowest).

Price Growth Persistence - The historic tendency of a stock to show persistent growth compared with the average stock. Expressed as an index ranging from 100 (highest) to 5 (lowest) in increments of 5.

Earnings Predictability Index - A measure of the reliability of an earnings forecast. Predictability is based upon the stability of year-to-year comparisons, with recent years being weighted more heavily that earlier ones. The most reliable forecasts tend to be those with the highest rating (100); the least reliable, the lowest (5). The earnings stability is derived from the standard deviation of percentage changes in quarterly earnings over an eight-year period. Special adjustments are made for comparisons around zero and from plus to minus.

Exhibit__(JRW-4)
Florida Public Utilities Company
Capital Structure Ratios

Panel A - FPU Recommended Capitalization Ratios

Capital	Capitalization Ratios
Short-Term Debt	5.62%
Long-Term Debt	43.45%
Preferrred Stock	0.52%
Common Equity	50.41%
Total Capital	100.00%

Testimony of George J. Eckenroth

Panel B - Electric Utility Proxy Group - Capitalization Ratios

Capital	Capitalization Ratios			
	9/30/07	6/30/07	3/31/07	12/31/06
Short Term Debt	13.10%	7.01%	6.40%	8.10%
Long-Term Debt	38.62%	43.67%	43.30%	43.80%
Preferred Stock	0.82%	1.05%	1.08%	0.88%
Common Equity	47.46%	48.27%	49.22%	47.22%
Total	100.00%	100.00%	100.00%	100.00%

Electric Utility Proxy Group
Four-Quarter Average Capitalization Ratios

Capital	Capitalization Ratios
Short Term Debt	8.65%
Long-Term Debt	42.35%
Preferred Stock	0.96%
Common Equity	48.04%
Total	100.00%

Exhibit__(JRW-4)

Florida Public Utilities Company

Capital Structure Ratios

Electric Utility Proxy Group

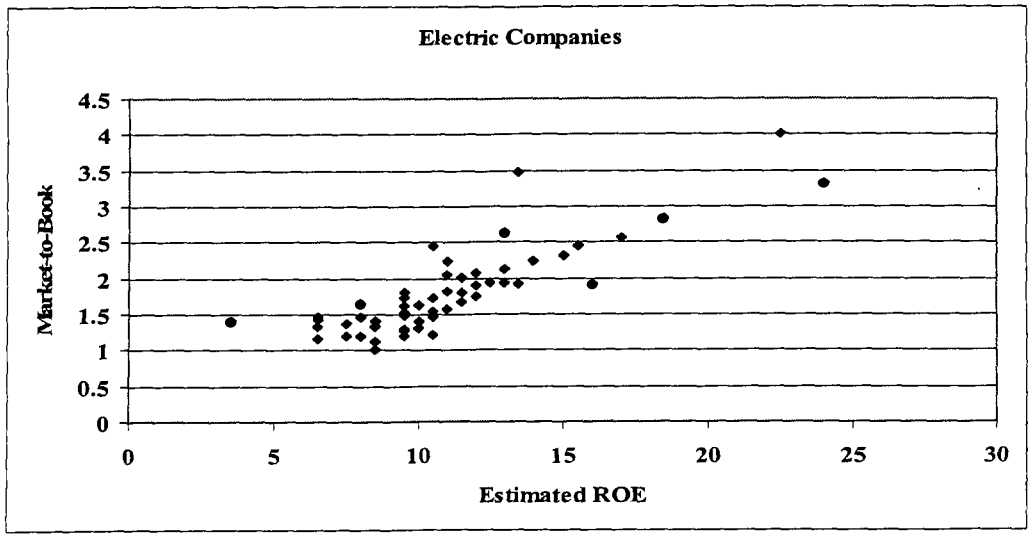
CV		9/30/07	6/30/07	3/31/07	12/31/06
	Short Term Debt	2,357	4,865	3,604	2,427
	Long-Term Debt	127,010	127,709	128,163	129,005
	Preferred Stock	10,054	10,054	10,054	10,054
	Common Equity	178,776	181,891	180,993	180,568
	Total	318,197	324,519	322,814	322,054
EAS					
	Short Term Debt	230,554	292,027	271,109	332,446
	Long-Term Debt	3,703,325	3,872,386	3,941,553	3,951,543
	Preferred Stock				24,592
	Common Equity	3,183,811	3,217,112	3,194,133	2,839,755
	Total	7,117,690	7,381,525	7,406,795	7,148,336
FPU					
	Short Term Debt	10,657	1,105	2,215	3,466
	Long-Term Debt	49,342	50,730	50,723	50,702
	Preferred Stock	600	600	600	600
	Common Equity	48,723	48,813	48,959	47,572
	Total	109,322	101,248	102,497	102,340
GXP					
	Short Term Debt	437256	518995	379729	782258
	Long-Term Debt	1117977	862207	621848	668656
	Preferred Stock	39000	39000	39000	39000
	Common Equity	1530176	1527307	1563726	1341916
	Total	3,124,409	2,947,509	2,604,303	2,831,830
HE					
	Short Term Debt	1,832,896	125,465	123,414	176,272
	Long-Term Debt	1,229,949	2,948,851	2,815,707	2,701,770
	Preferred Stock		0	0	0
	Common Equity	1,130,424	1,108,398	1,096,568	1,095,240
	Total	4,193,269	4,182,714	4,035,689	3,973,282
MGEE					
	Short Term Debt	104,000	58,500	62,000	72,000
	Long-Term Debt	232,330	237,315	237,299	237,284
	Preferred Stock				
	Common Equity	420,172	408,545	386,018	375,348
	Total	756,502	704,360	685,317	684,632
OTTR					
	Short Term Debt	81800	97052	77214	42025
	Long-Term Debt	278378	254140	254804	255436
	Preferred Stock		15500	15500	
	Common Equity	515439	508,062	495,765	490770
	Total	875,617	874,754	843,283	788,231
SCG					
	Short Term Debt	688,000	627,000	549,000	530,000
	Long-Term Debt	2,956,000	2,959,000	2,965,000	3,067,000
	Preferred Stock	106,000	106,000	106,000	106,000
	Common Equity	2,930,000	2,894,000	2,895,000	2,846,000
	Total	6,680,000	6,586,000	6,515,000	6,549,000

CV		9/30/07	6/30/07	3/31/07	12/31/06
	Short Term Debt	0.74%	1.50%	1.12%	0.75%
	Long-Term Debt	39.92%	39.35%	39.70%	40.06%
	Preferred Stock	3.16%	3.10%	3.11%	3.12%
	Common Equity	56.18%	56.05%	56.07%	56.07%
	Total	100.00%	100.00%	100.00%	100.00%
EAS					
	Short Term Debt	3.24%	3.96%	3.66%	4.65%
	Long-Term Debt	52.03%	52.46%	53.22%	55.28%
	Preferred Stock	0.00%	0.00%	0.00%	0.34%
	Common Equity	44.73%	43.58%	43.12%	39.73%
	Total	100.00%	100.00%	100.00%	100.00%
FPU					
	Short Term Debt	9.75%	1.09%	2.16%	3.39%
	Long-Term Debt	45.13%	50.10%	49.49%	49.54%
	Preferred Stock	0.55%	0.59%	0.59%	0.59%
	Common Equity	44.57%	48.21%	47.77%	46.48%
	Total	100.00%	100.00%	100.00%	100.00%
GXP					
	Short Term Debt	13.99%	17.61%	14.58%	27.62%
	Long-Term Debt	35.78%	29.25%	23.88%	23.61%
	Preferred Stock	1.25%	1.32%	1.50%	1.38%
	Common Equity	48.97%	51.82%	60.04%	47.39%
	Total	100.00%	100.00%	100.00%	100.00%
HE					
	Short Term Debt	43.71%	3.00%	3.06%	4.44%
	Long-Term Debt	29.33%	70.50%	69.77%	68.00%
	Preferred Stock	0.00%	0.00%	0.00%	0.00%
	Common Equity	26.96%	26.50%	27.17%	27.57%
	Total	100.00%	100.00%	100.00%	100.00%
MGEE					
	Short Term Debt	13.75%	8.31%	9.05%	10.52%
	Long-Term Debt	30.71%	33.69%	34.63%	34.66%
	Preferred Stock	0.00%	0.00%	0.00%	0.00%
	Common Equity	55.54%	58.00%	56.33%	54.82%
	Total	100.00%	100.00%	100.00%	100.00%
OTTR					
	Short Term Debt	9.34%	11.09%	9.16%	5.33%
	Long-Term Debt	31.79%	29.05%	30.22%	32.41%
	Preferred Stock	0.00%	1.77%	1.84%	0.00%
	Common Equity	58.87%	58.08%	58.79%	62.26%
	Total	100.00%	100.00%	100.00%	100.00%
SCG					
	Short Term Debt	10.30%	9.52%	8.43%	8.09%
	Long-Term Debt	44.25%	44.93%	45.51%	46.83%
	Preferred Stock	1.59%	1.61%	1.63%	1.62%
	Common Equity	43.86%	43.94%	44.44%	43.46%
	Total	100.00%	100.00%	100.00%	100.00%

Summary	9/30/07	6/30/07	3/31/07	12/31/06
Short Term Debt	13.10%	7.01%	6.40%	8.10%
Long-Term Debt	38.62%	43.67%	43.30%	43.80%
Preferred Stock	0.82%	1.05%	1.08%	0.88%
Common Equity	47.46%	48.27%	49.22%	47.22%
Total	100.00%	100.00%	100.00%	100.00%

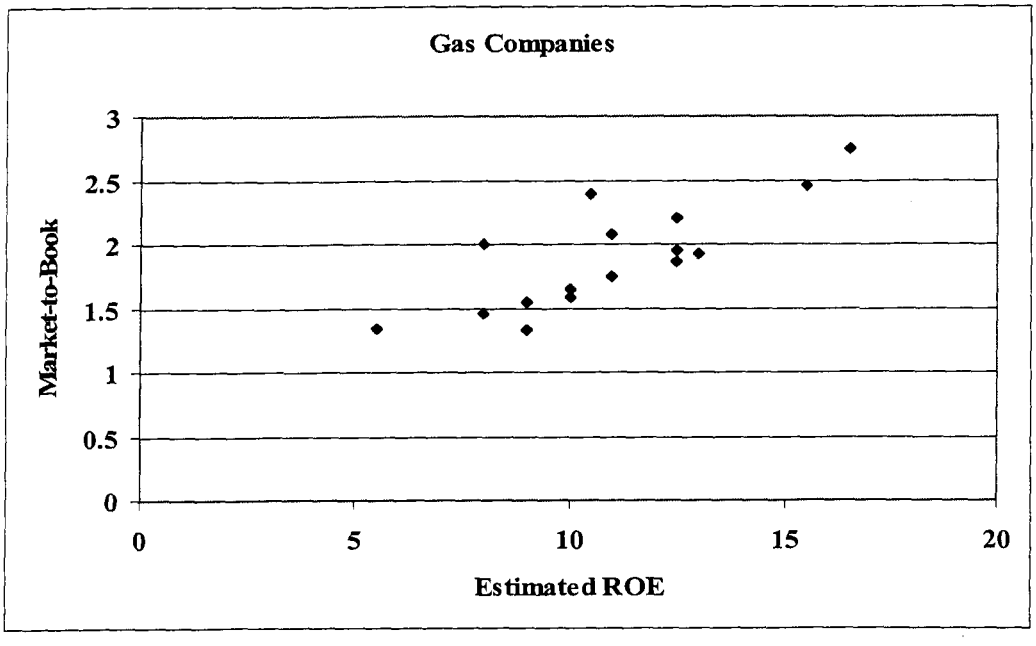
Exhibit__(JRW-5)

Panel A
Electric Utility Companies



R-Square = .70, N=58.

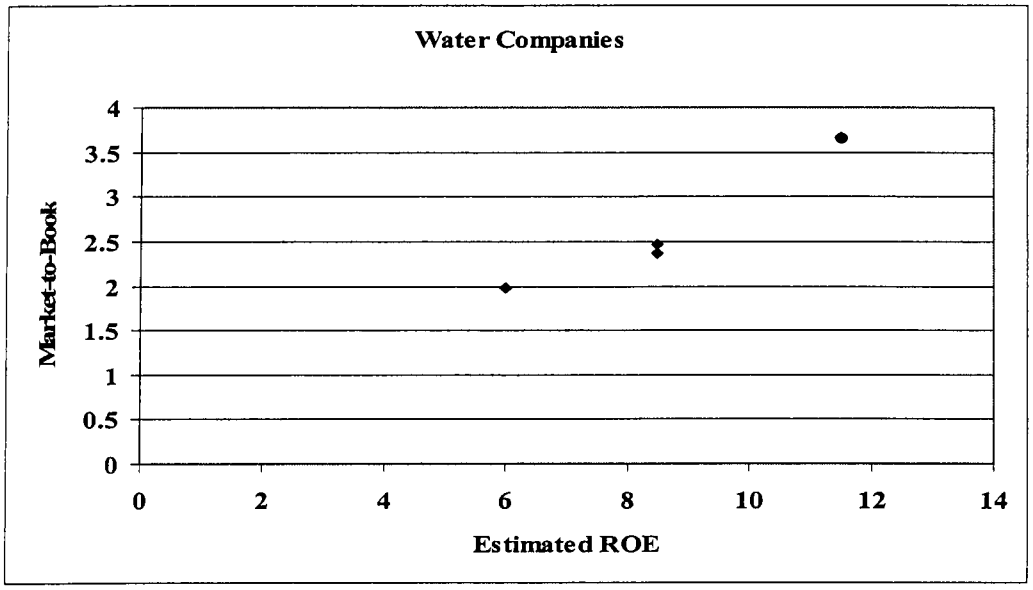
Panel B
Natural Gas Distribution Companies



R-Square = .64, N=16.

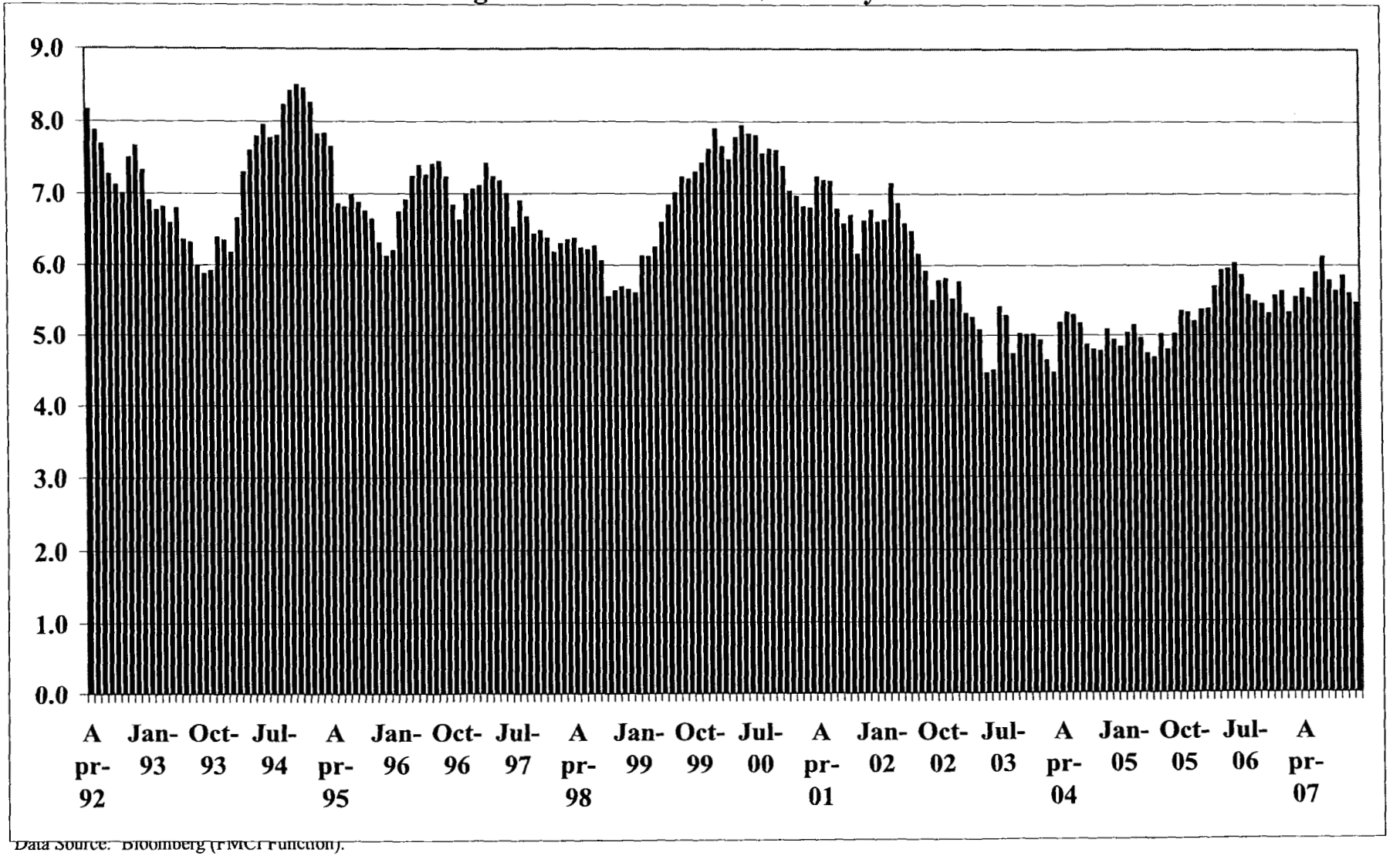
Exhibit__(JRW-5)

Panel C
Water Utility Companies



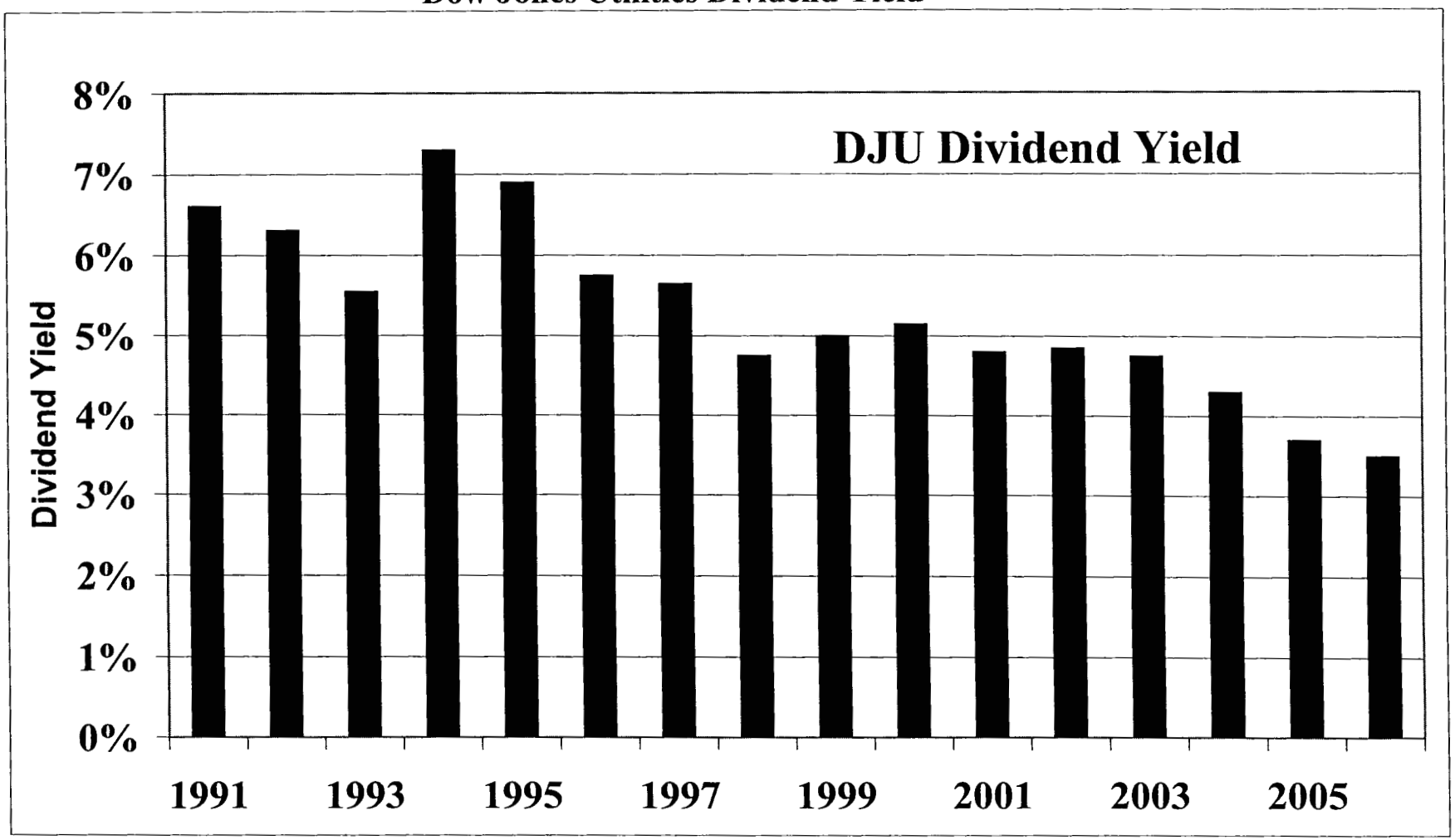
R-Square = .93, N=4.

Exhibit__(JRW-6)
Long-Term 'A' Rated Public Utility Bonds



Data Source: Bloomberg (PMCI Function).

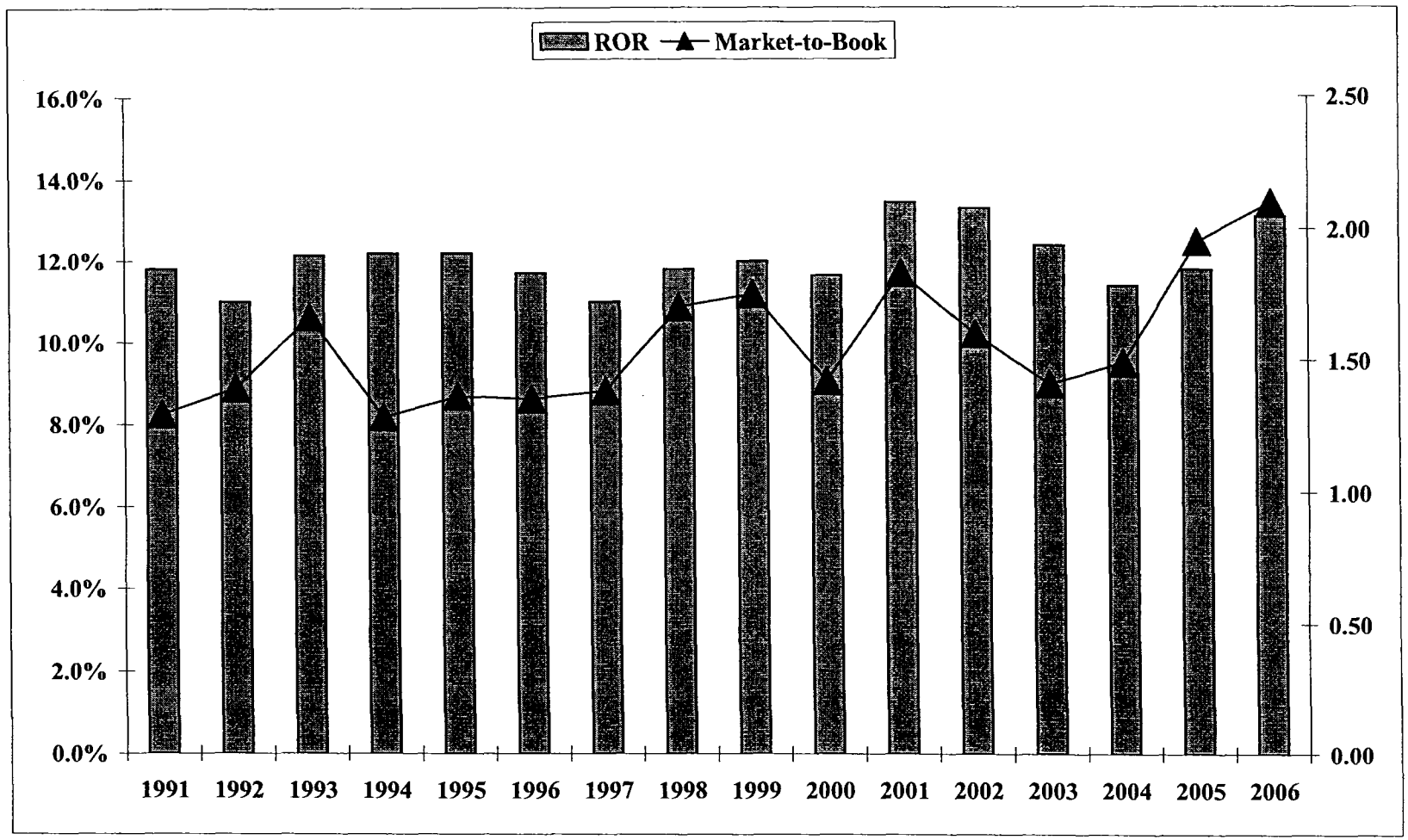
Exhibit__(JRW-6)
Dow Jones Utilities Dividend Yield



Data Source: Value Line Investment Survey

Exhibit__(JRW-6)

Dow Jones Utilities - Market to Book and ROE



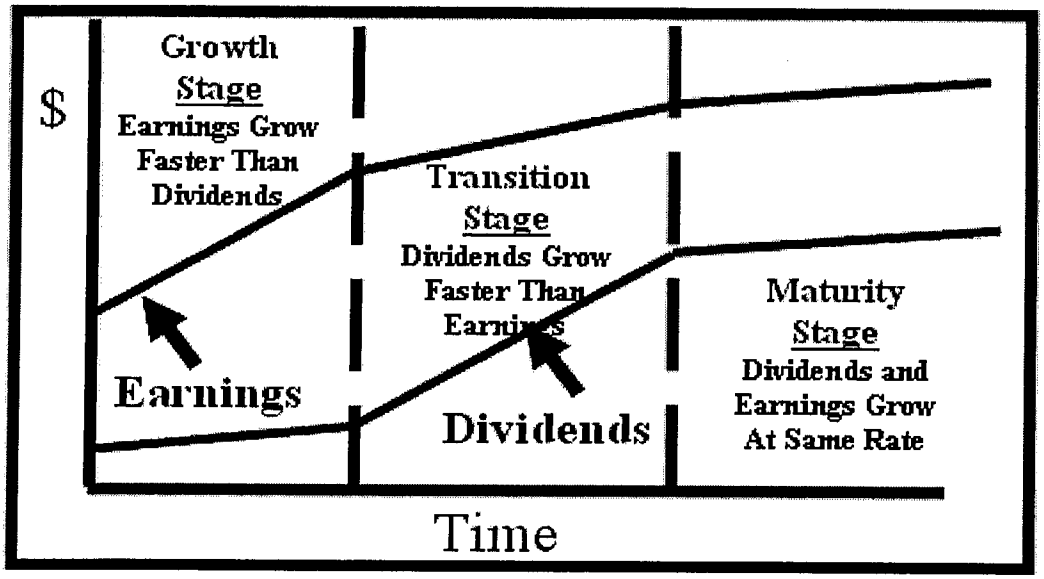
Data Source: Value Line Investment Survey

Exhibit__(JRW-7)
Industry Average Betas

Industry Name	Number of Firms	Beta	Industry Name	Number of Firms	Beta	Industry Name	Number of Firms	Beta
Semiconductor Equip	14	2.95	Retail Automotive	15	1.04	Publishing	50	0.89
Semiconductor	124	2.92	Grocery	19	1.04	Petroleum (Producing)	178	0.88
Wireless Networking	73	2.41	Foreign Electronics	10	1.03	Diversified Co.	134	0.87
Power	41	2.39	Office Equip/Supplies	26	1.02	Electric Utility (East)	29	0.87
Telecom. Equipment	136	2.35	Cement & Aggregates	13	1.02	Furn/Home Furnishings	38	0.87
Internet	329	2.30	Information Services	41	1.02	Environmental	96	0.87
E-Commerce	60	2.23	Metal Fabricating	37	1.01	Packaging & Container	36	0.87
Entertainment Tech	31	2.18	Natural Gas (Div.)	34	1.01	Maritime	46	0.86
Computers/Peripherals	148	1.99	Industrial Services	230	1.01	Home Appliance	14	0.84
Computer Software/Svcs	425	1.84	Machinery	139	1.01	Paper/Forest Products	42	0.84
Bank (Foreign)	4	1.78	Utility (Foreign)	6	1.00	Toiletries/Cosmetics	21	0.83
Cable TV	23	1.76	Auto Parts	64	0.99	Insurance (Prop/Cas.)	97	0.83
Coal	16	1.75	Advertising	36	0.99	Restaurant	81	0.80
Precision Instrument	104	1.71	Manuf. Housing/RV	19	0.99	Bank (Midwest)	37	0.79
Drug	334	1.59	Homebuilding	41	0.98	Tobacco	11	0.79
Biotechnology	105	1.56	Chemical (Specialty)	94	0.98	Household Products	31	0.79
Electrical Equipment	94	1.52	Trucking	38	0.98	R.E.I.T.	143	0.77
Steel (Integrated)	16	1.50	Retail (Special Lines)	164	0.98	Hotel/Gaming	84	0.77
Electronics	186	1.49	Building Materials	47	0.98	Newspaper	18	0.76
Telecom. Services	173	1.43	Chemical (Basic)	24	0.98	Investment Co.	20	0.75
Air Transport	56	1.38	Electric Utility (West)	16	0.97	Canadian Energy	14	0.73
Entertainment	101	1.30	Chemical (Diversified)	36	0.97	Natural Gas (Distrib.)	30	0.73
Securities Brokerage	32	1.29	Tire & Rubber	10	0.96	Water Utility	16	0.73
Auto & Truck	31	1.29	Railroad	20	0.96	Food Processing	123	0.72
Human Resources	35	1.22	Petroleum (Integrated)	30	0.96	Bank (Canadian)	7	0.72
Healthcare Information	34	1.22	Retail Building Supply	9	0.95	Food Wholesalers	21	0.72
Investment Co.(Foreign)	15	1.21	Medical Services	186	0.94	Beverage (Soft Drink)	21	0.71
Steel (General)	30	1.16	Retail Store	51	0.94	Beverage (Alcoholic)	27	0.66
Recreation	84	1.12	Electric Util. (Central)	24	0.94	Bank	550	0.59
Medical Supplies	279	1.11	Pharmacy Services	20	0.93	Thrift	248	0.56
Educational Services	37	1.09	Insurance (Life)	40	0.93	**Market**	**7661**	**1.14**
Shoe	24	1.08	Apparel	64	0.93			
Other	1	1.06	Aerospace/Defense	73	0.92			
Oilfield Svcs/Equip.	110	1.05	Precious Metals	67	0.90			
Metals & Mining (Div.)	82	1.04	Financial Svcs. (Div.)	269	0.89			

Data Source: http://pages.stern.nyu.edu/~adamodar/

Exhibit__(JRW-8)
Three-Stage DCF Model



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

Exhibit__(JRW-9)

Florida Public Utilities Company
Discounted Cash Flow Analysis

Electric Utility Proxy Group

Dividend Yield*	4.30%
Adjustment Factor	1.02375
Adjusted Dividend Yield	4.40%
Growth Rate**	4.75%
Equity Cost Rate	9.15%

* Page 2 of Exhibit__(JRW-6
** Based on data provided on pages 3,4, and 5, Exhibit__(JRW-6

Natural Gas Distribution Proxy Group

Dividend Yield*	3.40%
Adjustment Factor	1.02625
Adjusted Dividend Yield	3.49%
Growth Rate**	5.25%
Equity Cost Rate	8.74%

* Page 2 of Exhibit__(JRW-6
** Based on data provided on pages 3,4, and 5, Exhibit__(JRW-6

Exhibit__(JRW-9)

Florida Public Utilities Company
Monthly Dividend Yields
July 2007 - December 2007

Electric Utility Proxy Group

Company	July	Aug	Sep	Oct	Nov	Dec	Mean
Central Vermont Pub. Serv.	2.5%	2.3%	2.4%	2.8%	2.9%	3.2%	2.7%
Energy East Corp.	5.2%	4.6%	4.6%	4.5%	4.4%	4.5%	4.6%
Florida Public Utilities	3.8%	3.6%	3.8%	3.9%	3.8%	3.8%	3.8%
G't Plains Energy	5.6%	5.8%	5.7%	5.9%	5.7%	5.5%	5.7%
Hawaiian Elec.	5.3%	5.3%	5.7%	6.0%	5.6%	5.7%	5.6%
MGE Energy	4.3%	4.3%	4.0%	4.4%	4.3%	4.2%	4.3%
Otter Tail Corp.	3.6%	3.6%	3.1%	3.4%	3.4%	3.4%	3.4%
SCANA Corp.	4.4%	4.6%	4.7%	4.6%	4.5%	4.2%	4.5%
Mean	4.3%	4.3%	4.3%	4.4%	4.3%	4.3%	4.3%

Data Source: *AUS Utility Reports* , monthly issues.

Natural Gas Distribution Proxy Group

Company	July	Aug	Sep	Oct	Nov	Dec	Mean
AGL Resources	4.0%	4.0%	4.3%	4.2%	4.3%	4.5%	4.2%
Atmos Energy	4.2%	4.2%	4.7%	4.7%	4.6%	4.8%	4.5%
Energy South	2.0%	2.0%	1.9%	2.2%	1.9%	1.8%	2.0%
New Jersey Resources	2.9%	3.0%	3.0%	3.3%	3.3%	3.1%	3.1%
Northwest Natural Gas Company	2.9%	3.1%	3.0%	3.2%	3.3%	2.9%	3.1%
Piedmont Natural Gas, Inc.	3.7%	4.0%	3.7%	4.1%	4.1%	3.9%	3.9%
South Jersey Industries	2.7%	2.8%	3.0%	2.9%	2.8%	2.8%	2.8%
Southwest Gas	2.3%	2.7%	2.9%	3.0%	3.1%	3.0%	2.8%
WGL Holdings, Inc.	4.1%	4.2%	4.1%	4.2%	4.2%	4.1%	4.1%
Mean	3.2%	3.3%	3.4%	3.5%	3.5%	3.4%	3.4%

Data Source: *AUS Utility Reports* , monthly issues.

Exhibit__(JRW-9)

Florida Public Utilities Company
DCF Equity Cost Growth Rate Measures
Value Line Historic Growth Rates

Electric Utility Proxy Group

Company	Sym	*Value Line* Historic Growth					
		Past 10 Years			Past 5 Years		
		Earnings	Dividends	Book Value	Earnings	Dividends	Book Value
Central Vermont Pub. Serv.	CV	-3.5%	-1.0%	1.5%	-2.5%	1.0%	2.0%
Energy East Corp.	EAS	3.5%	3.5%	4.5%	-3.0%	5.0%	6.0%
Florida Public Utilities	FPU				3.5%	3.5%	9.5%
Great Plains Energy	GXP	2.0%	0.5%	1.0%	5.0%	0.0%	3.0%
Hawaiian Elec.	HE	0.5%	0.5%	1.5%	-1.0%	0.0%	2.0%
MGE Energy	MGEE	3.5%	1.0%	4.0%	2.5%	1.0%	7.0%
Otter Tail Corp.	OTTR	3.5%	2.5%	6.5%	1.0%	2.0%	8.0%
SCANA Corp.	SCG	4.0%	1.0%	4.0%	7.0%	5.0%	2.5%
Mean		1.9%	1.1%	3.3%	1.6%	2.2%	5.0%
Median		3.5%	1.0%	4.0%	1.8%	1.5%	4.5%
		Average of Mean and Median I			2.6%		

Data Source: *Value Line Investment Survey, 2007.*

Natural Gas Distribution Proxy Group

Company	Sym	*Value Line* Historic Growth					
		Past 10 Years			Past 5 Years		
		Earnings	Dividends	Book Value	Earnings	Dividends	Book Value
AGL Resources	ATG	7.0%	2.5%	6.5%	15.0%	4.0%	10.5%
Atmos Energy	ATO	3.5%	3.0%	6.5%	10.0%	2.0%	8.5%
Energy South	ENSI				8.5%	5.0%	7.0%
New Jersey Resources	NJR	7.5%	3.0%	6.5%	8.0%	3.5%	8.5%
Northwest Natural Gas Compa	NWN	2.0%	1.0%	4.0%	3.0%	1.5%	3.5%
Piedmont Natural Gas, Inc.	PNY	5.5%	5.5%	6.5%	5.0%	5.0%	6.5%
South Jersey Industries	SJI	8.5%	2.0%	6.0%	9.5%	3.5%	13.5%
Southwest Gas	SWX	12.0%	0.0%	3.0%	6.0%	0.0%	3.5%
WGL Holdings, Inc.	WGL	4.5%	1.5%	4.0%	6.0%	1.5%	3.0%
Mean		6.3%	2.3%	5.4%	7.9%	2.9%	7.2%
Median		6.3%	2.3%	6.3%	8.0%	3.5%	7.0%
		Average of Mean and Median I			5.4%		

Data Source: *Value Line Investment Survey, 2007.*

Exhibit__(JRW-9)

Florida Public Utilities Company

DCF Equity Cost Growth Rate Measures
***Value Line* Projected Growth Rates**

Electric Utility Proxy Group

Company	Sym	*Value Line* Projected Growth Est'd. '04-'06 to '10-'12			*Value Line* Internal Growth		
		Earnings	Dividends	Book Value	Return on Equity	Retention Rate	Internal Growth
Central Vermont Pub. Serv.	CV	9.0%	0.0%	3.0%	8.0%	43.0%	3.4%
Energy East Corp.	EAS	0.5%	4.0%	2.0%	8.5%	22.0%	1.9%
Florida Public Utilities	FPU				8.7%	39.0%	3.4%
Great Plains Energy	GXP	1.5%	0.0%	4.5%	10.5%	25.0%	2.6%
Hawaiian Elec.	HE	1.5%	0.0%	-1.0%	11.0%	19.0%	2.1%
MGE Energy	MGEE	6.0%	0.5%	7.0%	14.0%	43.0%	6.0%
Otter Tail Corp.	OTTR	5.0%	2.0%	5.0%	11.0%	46.0%	5.1%
SCANA Corp.	SCG	3.5%	4.0%	4.5%	11.0%	38.0%	4.2%
Mean		3.9%	1.5%	3.6%	10.3%	34.4%	3.6%
Median		3.5%	0.5%	4.5%	10.8%	38.5%	3.4%
Average of Mean and Median Figures =			2.9%			Average =	3.5%

Data Source: *Value Line Investment Survey, 2007.*

Natural Gas Distribution Proxy Group

Company	Sym	*Value Line* Projected Growth Est'd. '04-'06 to '10-'12			*Value Line* Internal Growth		
		Earnings	Dividends	Book Value	Return on Equity	Retention Rate	Internal Growth
AGL Resources	ATG	3.5%	5.5%	2.5%	14.0%	42.0%	5.9%
Atmos Energy	ATO	5.0%	1.5%	5.5%	9.0%	42.0%	3.8%
Energy South	ENSI				12.6%	50.0%	6.3%
New Jersey Resources	NJR	4.0%	5.0%	10.5%	10.5%	46.0%	4.8%
Northwest Natural Gas Compar	NWN	7.0%	5.5%	3.5%	11.5%	42.0%	4.8%
Piedmont Natural Gas, Inc.	PNY	4.0%	4.5%	2.5%	12.0%	28.0%	3.4%
South Jersey Industries	SJI	NMF	5.5%	4.5%	16.5%	60.0%	9.9%
Southwest Gas	SWX	8.0%	1.5%	4.0%	10.5%	66.0%	6.9%
WGL Holdings, Inc.	WGL	2.0%	2.5%	4.5%	10.5%	33.0%	3.5%
Mean		4.8%	3.9%	4.7%	11.9%	45.4%	5.5%
Median		4.0%	4.8%	4.3%	11.5%	42.0%	4.8%
Average of Mean and Median Figures =			4.4%			Average =	5.2%

Data Source: *Value Line Investment Survey, 2007.*

Exhibit__(JRW-9)

Florida Public Utilities Company

DCF Equity Cost Growth Rate Measures

Analysts Projected EPS Growth Rate Estimates

Electric Utility Proxy Group

Company	Sym	Yahoo First Call	Reuters	Zack's	Average
Central Vermont Pub. Serv.	CV	8.9%	8.9%	-	8.9%
Energy East Corp.	EAS	5.0%	-	3.0%	4.0%
Florida Public Utilities	FPU	-	-	-	-
Great Plains Energy	GXP	3.6%	3.0%	3.3%	3.3%
Hawaiian Elec.	HE	3.1%	3.1%	4.5%	3.6%
MGE Energy	MGEE	-	-	-	-
Otter Tail Corp.	OTTR	4.7%	6.0%	4.5%	5.1%
SCANA Corp.	SCG	5.0%	4.5%	5.0%	4.8%
Mean		5.1%	5.1%	4.1%	4.9%

Data Sources: www.zacks.com, www.investor.reuters.com,http://quote.yahoo.com. December, 2007

Natural Gas Distribution Proxy Group

Company	Sym	Yahoo First Call	Reuters	Zack's	Average
AGL Resources	ATG	4.97%	5.35%	4.80%	5.04%
Atmos Energy	ATO	5.63%	5.25%	5.20%	5.36%
Energy South	ENSI	7.00%	--	--	7.00%
New Jersey Resources	NJR	5.00%	5.50%	6.00%	5.50%
Northwest Natural Gas Compan	NWN	--	5.33%	5.30%	5.32%
Piedmont Natural Gas, Inc.	PNY	4.75%	5.23%	5.70%	5.23%
South Jersey Industries	SJI	7.00%	6.50%	7.50%	7.00%
Southwest Gas	SWX	4.50%	3.50%	--	4.00%
WGL Holdings, Inc.	WGL	--	3.50%	4.00%	3.75%
Mean		5.3%	4.9%	5.7%	5.4%

Data Sources: www.zacks.com, www.investor.reuters.com,http://quote.yahoo.com. December, 2007

Exhibit__(JRW-9)

Florida Public Utilities Company
DCF Equity Cost Growth Rate Measures
Summary Growth Rate Measures

Growth Rate Indicator	Electric Utility Proxy Group	Gas Company Proxy Group
Historic *Value Line* Growth in EPS, DPS, and BVPS	2.60%	5.40%
Projected *Value Line* Growth in EPS, DPS, and BVPS	2.90%	4.40%
Internal Growth ROE * Retention rate	3.50%	5.20%
Projected EPS Growth from First Call, Reuters, and Zacks	4.90%	5.40%

Exhibit__(JRW-10)

Florida Public Utilities Company
Capital Asset Pricing Model

Electric Utility Proxy Group

Risk-Free Interest Rate	4.75%
Beta*	0.81
Ex Ante Equity Risk Premium**	4.52%
CAPM Cost of Equity	8.41%

* See page 2 of Exhibit__(JRW-7
** See page 3 of Exhibit__(JRW-7

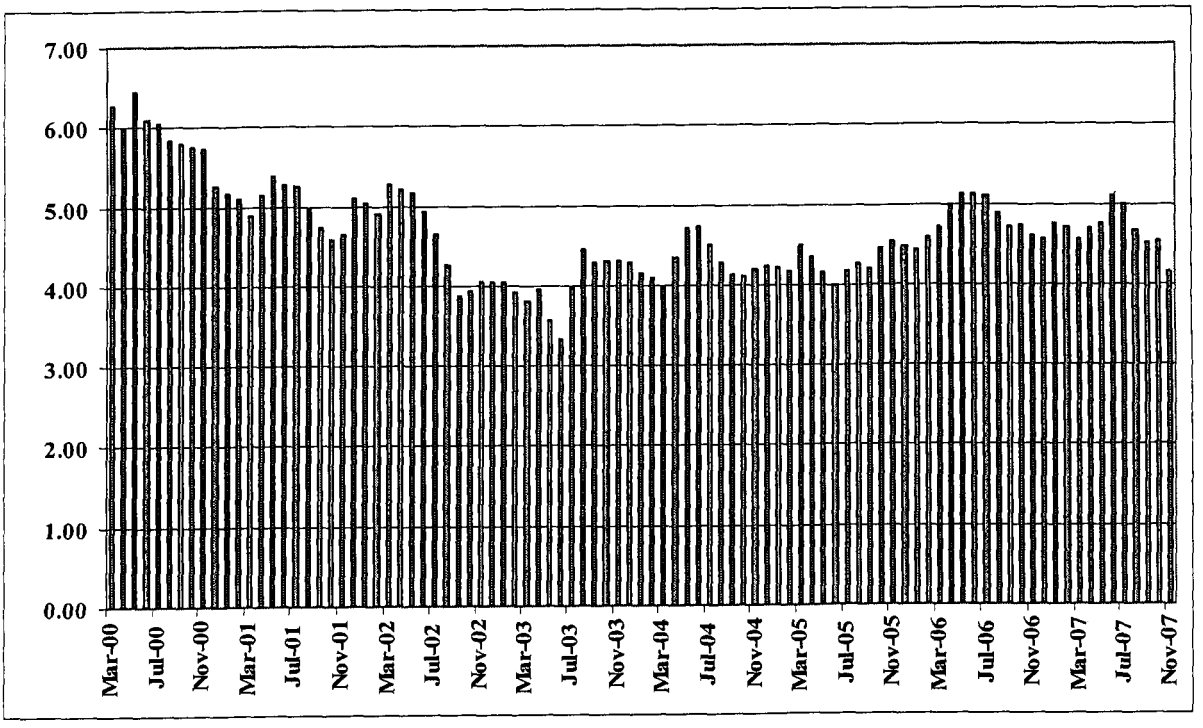
Natural Gas Distribution Proxy Group

Risk-Free Interest Rate	4.75%
Beta*	0.86
Ex Ante Equity Risk Premium**	4.52%
CAPM Cost of Equity	8.64%

* See page 2 of Exhibit__(JRW-7
** See page 3 of Exhibit__(JRW-7

Exhibit__(JRW-10)

Ten-Year U.S. Treasury Yields
January 2000-November 2007



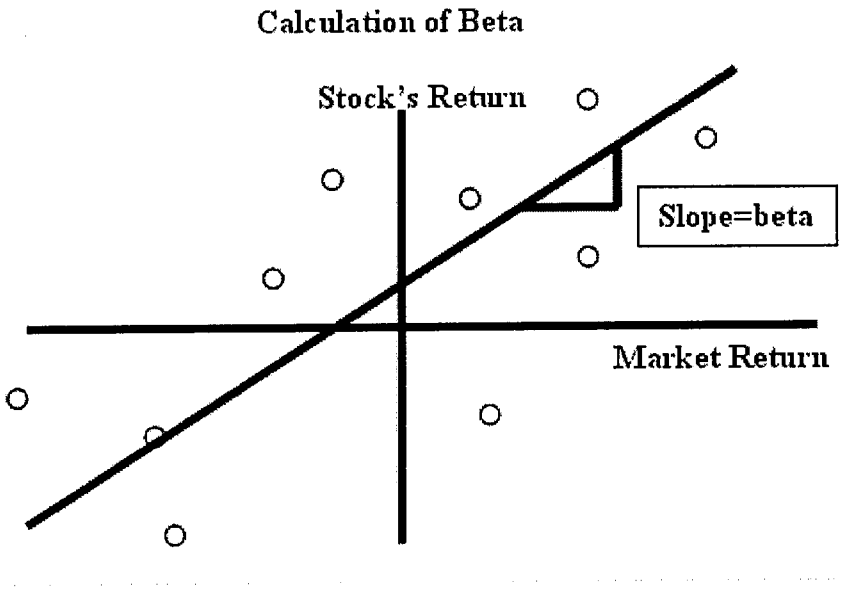
Source: http://www.federalreserve.gov/releases/h15/current/h15.pdf

U.S. Treasury Yields
18-Dec-07

NOTES/BONDS	COUPON	MATURITY DATE	CURRENT PRICE/YIELD
2-YEAR	3.125	11/30/2009	99-27¼ / 3.20
5-YEAR	3.375	11/30/2012	99-08+ / 3.54
10-YEAR	4.250	11/15/2017	100-28+ / 4.14
30-YEAR	5.000	05/15/2037	107-01½ / 4.56

Source: www.bloomberg.com

Exhibit__(JRW-10)
Beta



Exhibit__(JRW-10)
Beta

Electric Utility Proxy Group

Company		Beta
Cen. Vermont Pub. Serv.	CV	1.00
Energy East Corp.	EAS	0.80
Florida Public Utilities	FPU	0.65
Great Plains Energy	GXP	0.85
Hawaiian Elec.	HE	0.70
MGE Energy	MGEE	0.85
Otter Tail Corp.	OTTR	0.75
SCANA Corp.	SCG	0.85
Mean		0.81

Data Source: *Value Line Investment Survey, 2007.*

Natural Gas Distribution Proxy Group

Company		Beta
AGL Resources	ATG	0.85
Atmos Energy	ATO	0.85
Energy South	ENSI	0.80
New Jersey Resources	NJR	0.85
Northwest Natural Gas Company	NWN	0.90
Piedmont Natural Gas, Inc.	PNY	0.85
South Jersey Industries	SJI	0.85
Southwest Gas	SWX	0.90
WGL Holdings, Inc.	WGL	0.85
Mean		0.86

Data Source: *Value Line Investment Survey, 2007.*

Exhibit__(JRW-10)
Risk Premium Approaches

	Historical Ex Post Excess Returns	Surveys	Ex Ante Models and Market Data
Means of Assessing the Equity-Bond Risk Premium	Historical average is a popular proxy for the ex ante premium – but likely to be misleading	Investor and expert surveys can provide direct estimates of prevailing expected returns/premiums	Current financial market prices (simple valuation ratios or DCF-based measures) can give most objective estimates of feasible ex ante equity-bond risk premium
Problems/Debated Issues	Time variation in required returns and systematic selection and other biases have boosted valuations over time, and have exaggerated realized excess equity returns compared with ex ante expected premiums	Limited survey histories and questions of survey representativeness. Surveys may tell more about hoped-for expected returns than about objective required premiums due to irrational biases such as extrapolation.	Assumptions needed for DCF inputs, notably the trend earnings growth rate, make even these models' outputs subjective. The range of views on the growth rate, as well as the debate on the relevant stock and bond yields, leads to a range of premium estimates.

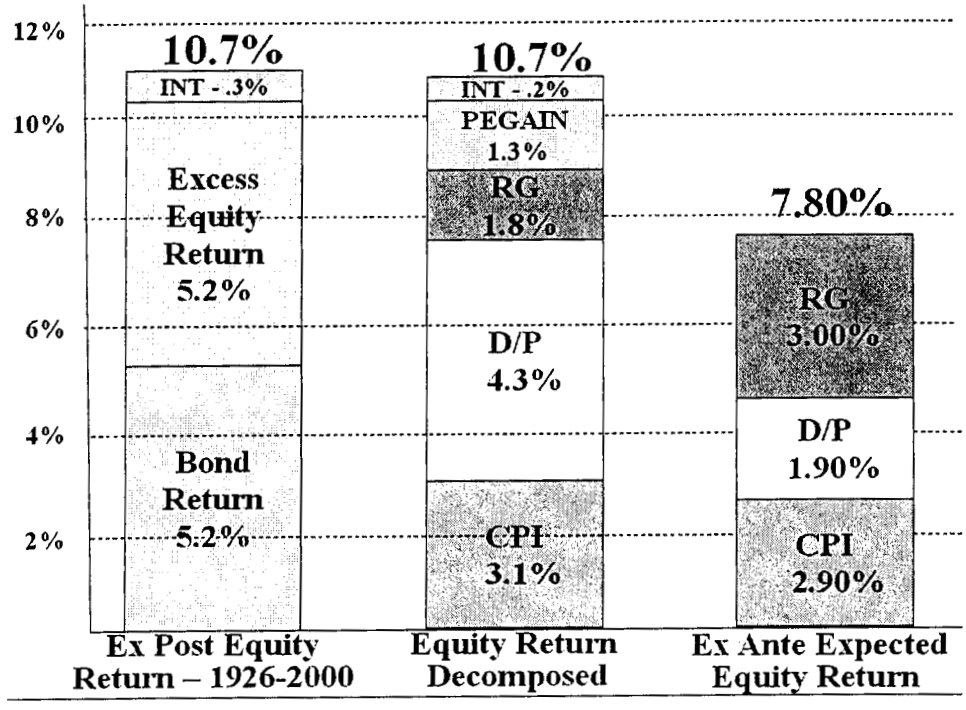
Source: Antti Ilmanen, Expected Returns on Stocks and Bonds," *Journal of Portfolio Management*, (Winter 2003).

Exhibit__(JRW-10)

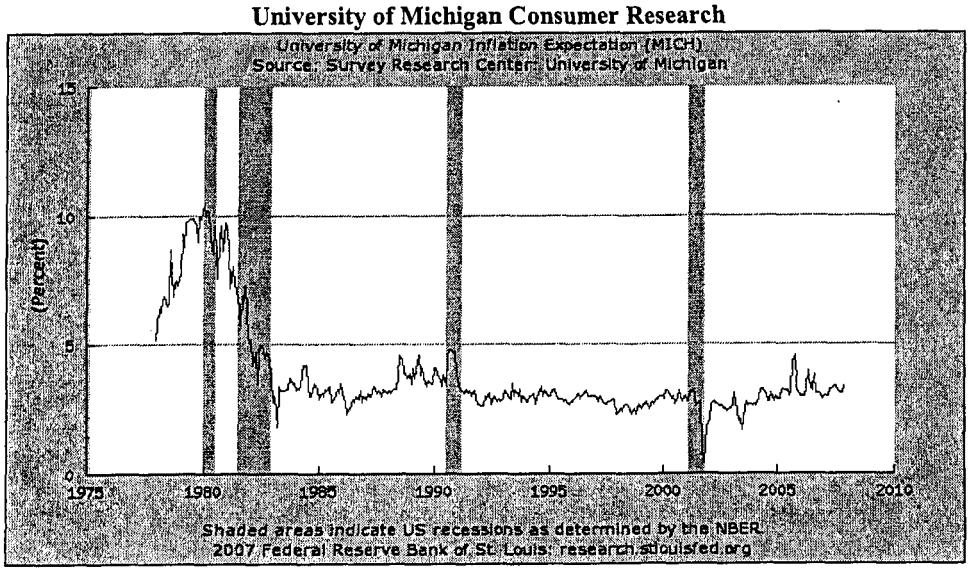
Capital Asset Pricing Model
Equity Risk Premium

Category	Study Authors	Publication Date	Time Period Of Study	Methodology	Return Measure	Range Low	Range High	Midpoint of Range	Mean	Average
Historical Risk Premium										
	Ibbotson	2007	1926-2006	Historical Stock Returns - Bond Returns	Arithmetic				6.50%	
					Geometric				5.00%	
	Shiller	2006	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				7.00%	
					Geometric				5.50%	
	Damodoran	2006	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				6.70%	
					Geometric				5.10%	
	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%	
	AVERAGE									5.68%
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%	
	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%	
	Fernandez	2006	Projection	Required Equity Risk Premium					4.00%	
	Social Security									
	Office of Chief Actuary		1900-1995							
	John Campbell	2001	1860-2000	Historical & Ratios (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%	
	AVERAGE									4.12%
Surveys										
	Survey of Financial Forecasters	2007	10-Year Projection	62 Financial Forecastsers					2.50%	
	Duke - CFO Magazine Survey	2007	10-Year Projection	Approximately 500 CFOs					4.24%	
	Welch - Academics	2005	30-Year Projection	Random Academics		5.00%	5.50%		5.25%	
	AVERAGE									4.00%
Building Block										
	Ibbotson and Chen	2007	1926-2006	Historical Supply Model (D/P & Earnings Growth)	Arithmetic			6.35%	5.34%	
					Geometric			4.33%		
	Woolridge		2007	Current Supply Model (D/P & Earnings Growth)					3.24%	
	AVERAGE									4.29%
OVERALL AVERAGE										4.52%

Exhibit__(JRW-10)
Decomposing Equity Market Returns
The Building Blocks Methodology



Exhibit__(JRW-10)
Expected Inflation Rate
University of Michigan Consumer Research



Exhibit__(JRW-10)
Survey of Professional Forecasters
Philadelphia Federal Reserve Bank
Long-Term Forecasts

TABLE FIVE
LONG-TERM (10 YEAR) FORECASTS

SERIES: CPI INFLATION RATE	
STATISTIC	
MINIMUM	1.690
LOWER QUARTILE	2.200
MEDIAN	2.350
UPPER QUARTILE	2.600
MAXIMUM	4.000
MEAN	2.410
STD. DEV.	0.400
N	46
MISSING	3

SERIES: REAL GDP GROWTH RATE	
STATISTIC	
MINIMUM	2.500
LOWER QUARTILE	2.810
MEDIAN	3.000
UPPER QUARTILE	3.200
MAXIMUM	3.500
MEAN	3.010
STD. DEV.	0.220
N	44
MISSING	5

SERIES: PRODUCTIVITY GROWTH	
STATISTIC	
MINIMUM	1.200
LOWER QUARTILE	2.000
MEDIAN	2.200
UPPER QUARTILE	2.300
MAXIMUM	3.000
MEAN	2.150
STD. DEV.	0.320
N	0
MISSING	11

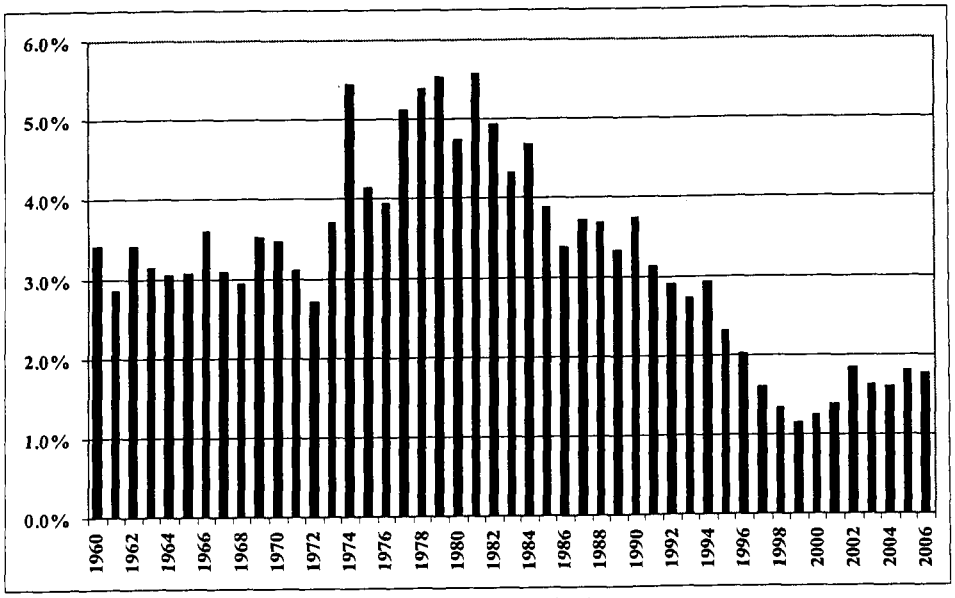
SERIES: STOCK RETURNS (S&P 500)	
STATISTIC	
MINIMUM	5.000
LOWER QUARTILE	6.400
MEDIAN	7.500
UPPER QUARTILE	8.130
MAXIMUM	15.000
MEAN	7.680
STD. DEV.	2.050
N	32
MISSING	17

SERIES: BOND RETURNS (10-YEAR)	
STATISTIC	
MINIMUM	2.000
LOWER QUARTILE	5.000
MEDIAN	5.000
UPPER QUARTILE	5.200
MAXIMUM	6.000
MEAN	5.000
STD. DEV.	0.600
N	39
MISSING	10

SERIES: BILL RETURNS (3-MONTH)	
STATISTIC	
MINIMUM	3.000
LOWER QUARTILE	4.000
MEDIAN	4.500
UPPER QUARTILE	4.680
MAXIMUM	6.000
MEAN	4.330
STD. DEV.	0.670
N	39
MISSING	10

Source: Philadelphia Federal Researve Bank, Survey of Professional Forecasters, February 13, 2007.
http://www.phil.frb.org/files/spf/spfq107.pdf

Exhibit__(JRW-10)
S&P 500 Dividend Yield

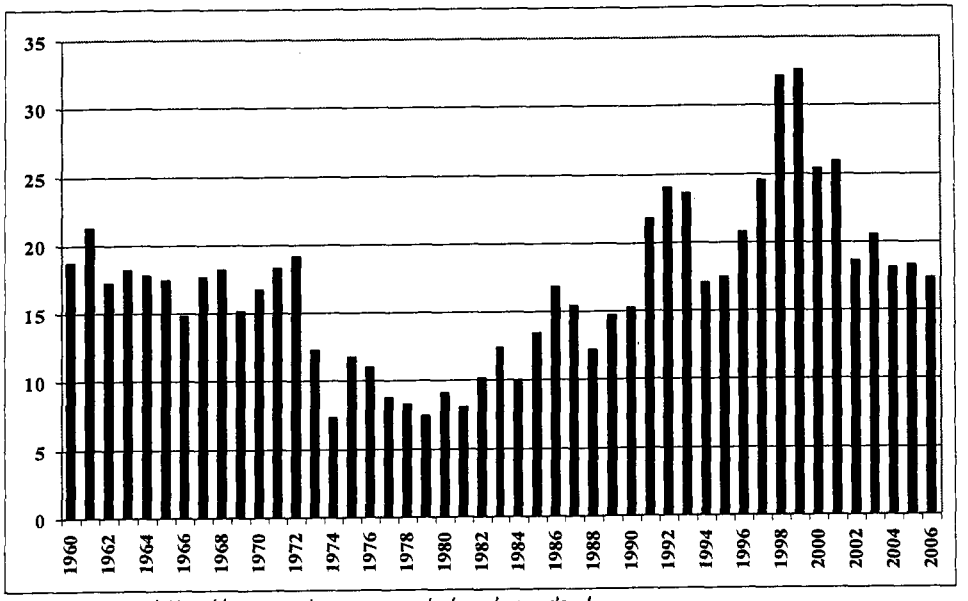


Data Source: http://pages.stern.nyu.edu/~adamodar/

Exhibit__(JRW-10)
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	1.40		3.10	
1961	3.37	0.70	1.01	3.35	
1962	3.67	1.30	1.02	3.59	
1963	4.13	1.60	1.04	3.99	
1964	4.76	1.00	1.05	4.55	
1965	5.30	1.90	1.07	4.97	
1966	5.41	3.50	1.10	4.90	
1967	5.46	3.00	1.14	4.80	
1968	5.72	4.70	1.19	4.81	
1969	6.10	6.20	1.26	4.83	10-Year
1970	5.51	5.60	1.34	4.13	2.89%
1971	5.57	3.30	1.38	4.04	
1972	6.17	3.40	1.43	4.33	
1973	7.96	8.70	1.55	5.13	
1974	9.35	12.30	1.74	5.37	
1975	7.71	6.90	1.86	4.14	
1976	9.75	4.90	1.95	4.99	
1977	10.87	6.70	2.08	5.22	
1978	11.64	9.00	2.27	5.13	
1979	14.55	13.30	2.57	5.66	10-Year
1980	14.99	12.50	2.89	5.18	2.30%
1981	15.18	8.90	3.15	4.82	
1982	13.82	3.80	3.27	4.23	
1983	13.29	3.80	3.40	3.91	
1984	16.84	3.90	3.53	4.77	
1985	15.68	3.80	3.66	4.28	
1986	14.43	1.10	3.70	3.90	
1987	16.04	4.40	3.87	4.15	
1988	22.77	4.40	4.04	5.64	
1989	24.03	4.60	4.22	5.69	10-Year
1990	21.73	6.10	4.48	4.85	-0.65%
1991	19.10	3.10	4.62	4.14	
1992	18.13	2.90	4.75	3.81	
1993	19.82	2.70	4.88	4.06	
1994	27.05	2.70	5.01	5.40	
1995	35.35	2.50	5.14	6.88	
1996	35.78	3.30	5.31	6.74	
1997	39.56	1.70	5.40	7.33	
1998	38.23	1.60	5.48	6.97	
1999	45.17	2.70	5.63	8.02	10-Year
2000	52.00	3.40	5.82	8.93	6.29%
2001	44.23	1.60	5.92	7.48	
2002	47.24	2.40	6.06	7.80	
2003	54.15	1.90	6.17	8.77	
2004	67.01	3.26	6.37	10.51	5-Year
2005	68.32	3.52	6.60	10.35	3.00%
2006	81.96	2.50	6.76	12.12	
				Real EPS Growth	3.0%

Exhibit__(JRW-10)
S&P 500 P/E Ratio



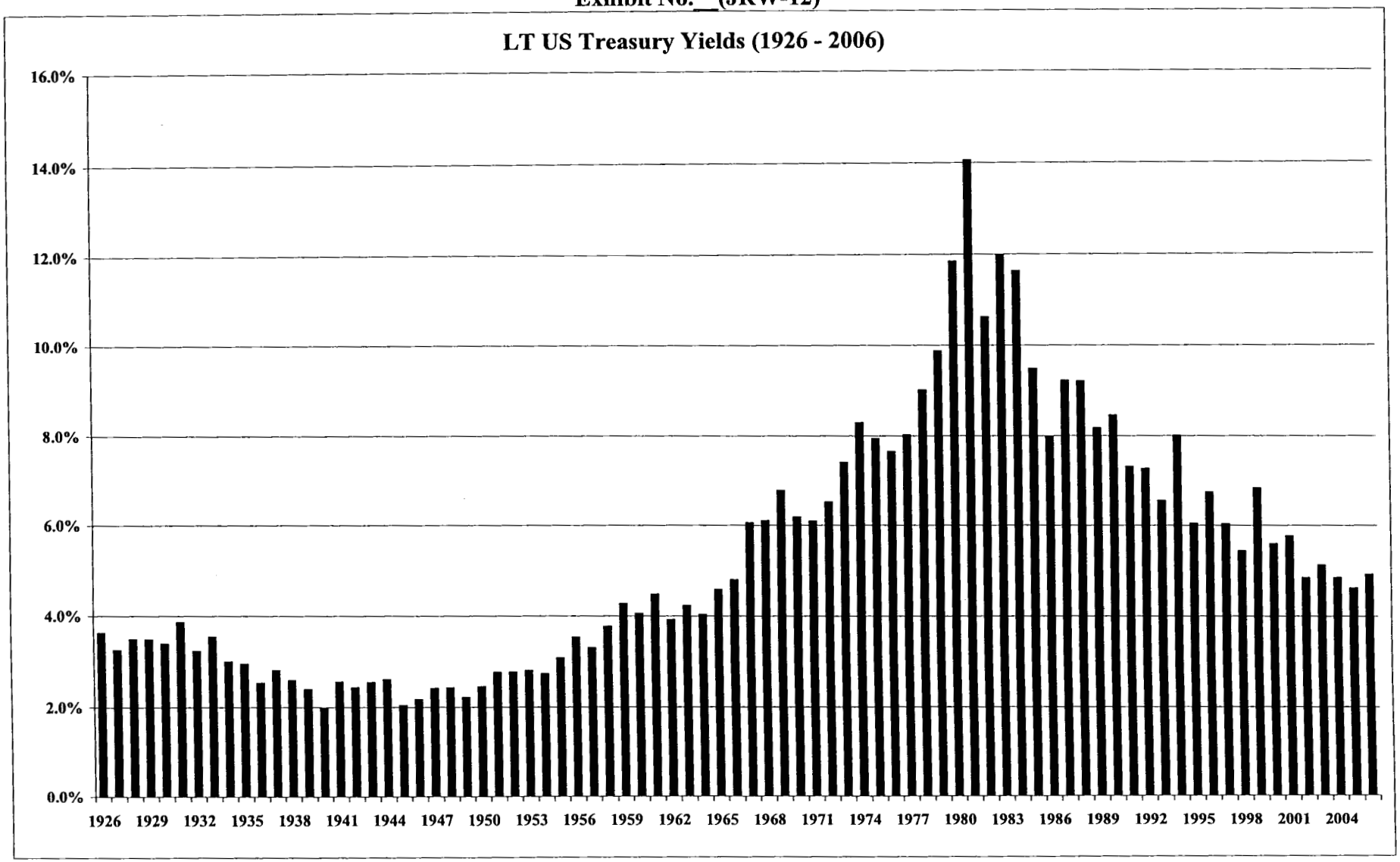
Data Source: http://pages.stern.nyu.edu/~adamodar/

Exhibit__(JRW-11)
Summary of FPU's Equity Cost Rate Approaches and Results

Method	Eight Electric Utility Companies	Ten Gas Distribution Companies
DCF	9.63%	9.46%
CAPM	11.27%	11.28%
RP	12.50%	12.30%
RMR		
5- to 10- Year Periods	11.45%	10.10%
Per Annum, for 5-Year Periods	10.85%	10.00%
Cumulative, 5- to 10- Year Periods	11.09%	11.86%

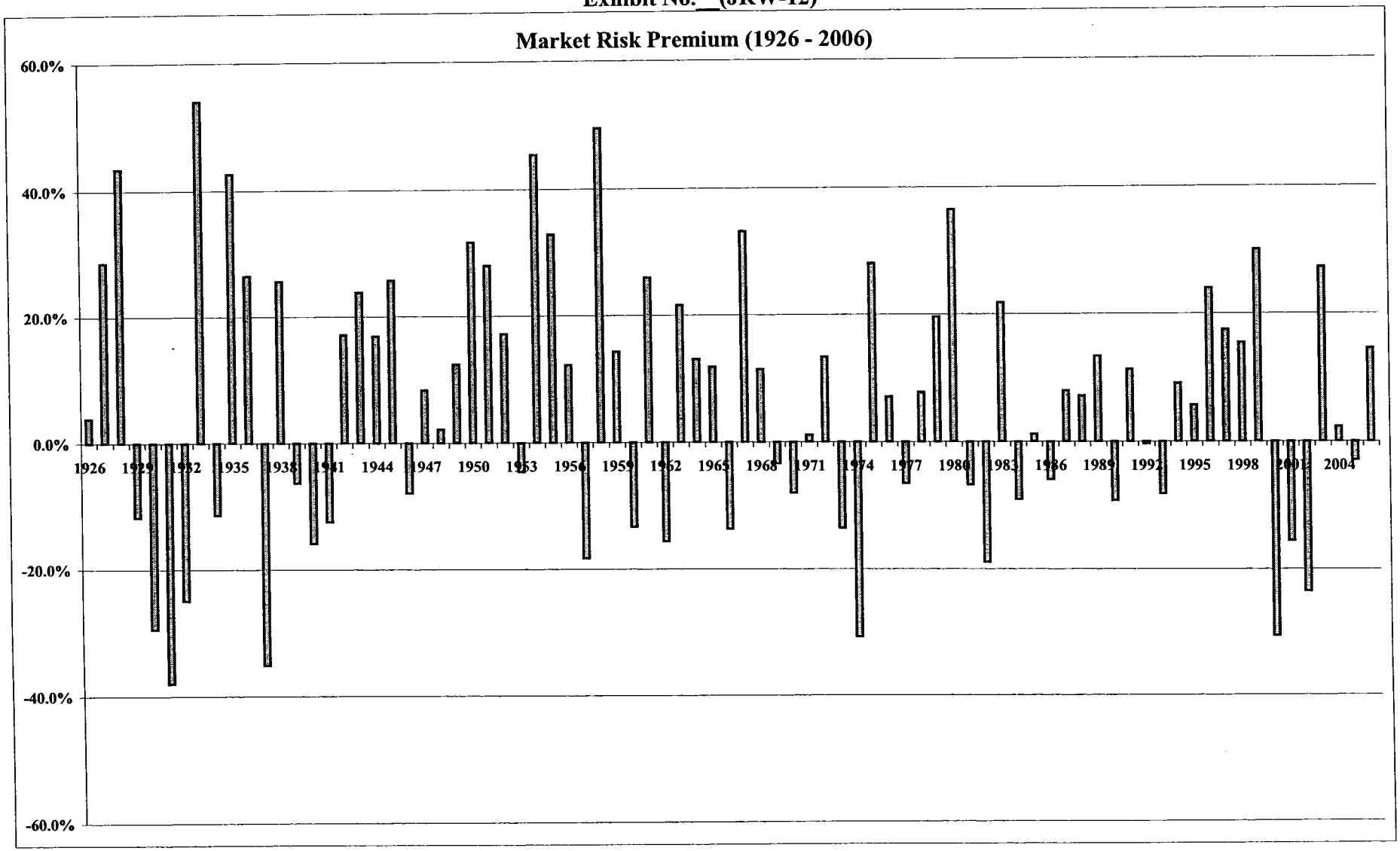
Common Equity Cost Rate Recommendation **11.50%**

Exhibit No.__(JRW-12)



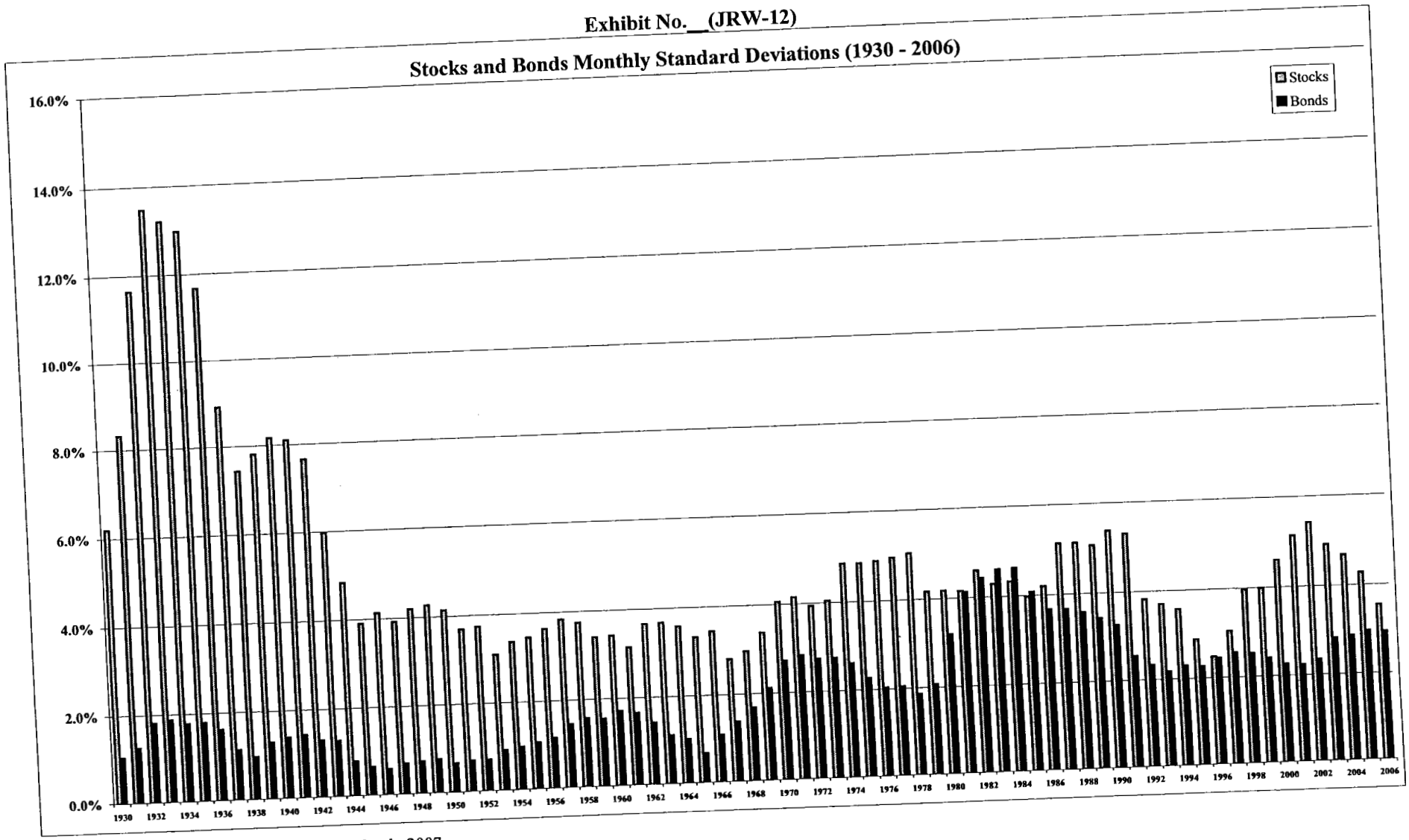
Data Source: Ibbotson Associates, *SBBI Yearbook*, 2007.

Exhibit No.__(JRW-12)



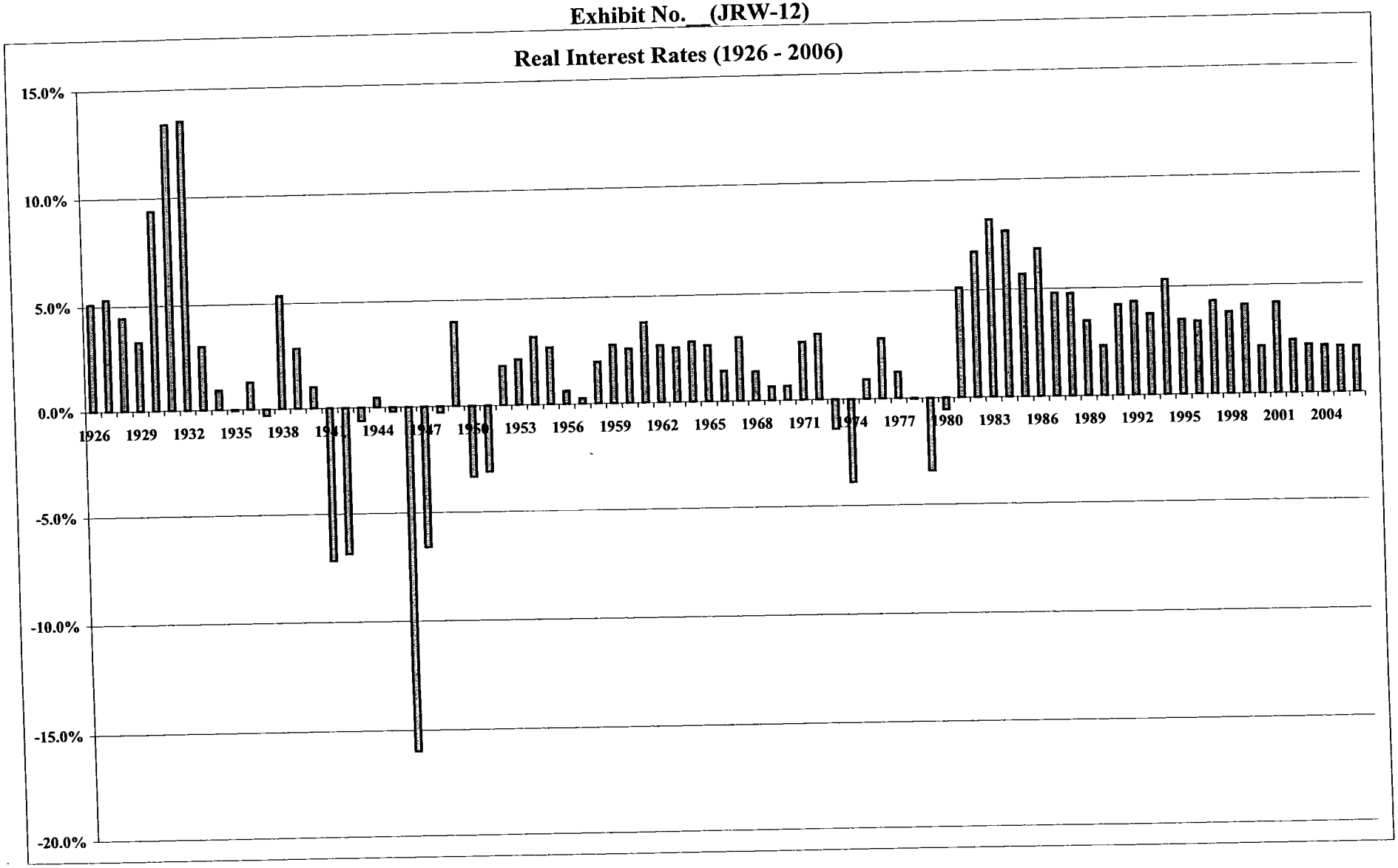
Data Source: Ibbotson Associates, *SBBI Yearbook*, 2007.

Exhibit No.__(JRW-12)



Data Source: Ibbotson Associates, *SBBI Yearbook*, 2007.

Exhibit No.__(JRW-12)



Data Source: Ibbotson Associates, *SBBI Yearbook*, 2007.

Exhibit__(JRW-13)
Summary of FPU's DCFResults

	Eight Electric Utility Companies	Ten Gas Distribution Companies
Adjusted Dividend Yield	5.11%	5.11%
Expected Growth	4.19%	5.19%
DCF Equity Cost Rate	**9.30%**	**9.20%**
Flotation Cost Adjustment	0.33%	0.33%
Adjusted DCF Equity Cost Rate	**9.63%**	**9.46%**

Exhibit__(JRW-14)
Summary of FPU's CAPM Results

	Eight Electric Utility Companies	Ten Gas Distribution Companies
Risk-Free Rate	4.73%	4.73%
Beta	0.75	0.75
Equity Risk Premium	8.27%	8.27%
CAPM Equity Cost Rate	**10.94%**	**10.95%**
Flotation Cost	**0.33%**	**0.33%**
Adjusted CAPM Equity Cost Rate	**11.27%**	**11.28%**

Exhibit__(JRW-15)
Summary of FPU's RP Results

	Eight Electric Utility Companies	Ten Gas Distribution Companies
Expected Market Return	12.20%	12.20%
Diversifiable Risk	-2.20%	-2.50%
RP - Small Cap/Very Small Cap	2.20%	2.20%
RP Equity Cost Rate- Small Cap/Very Small Cap	**12.20%**	**12.00%**
Flotation Cost	0.30%	0.40%
Adjusted RP Equity Cost Rate- Small Cap/Very Small Cap	**12.50%**	**12.30%**

Exhibit__(JRW-16)
Summary of FPU's RMR Results

	Eight Electric Utility Companies	Ten Gas Distribution Companies
Per Annum - 5- to 10- Year Periods	11.12%	9.77%
Flotation Costs	0.33%	0.33%
Adjusted - Per Annum – 5- to 10- Year Periods	**11.45%**	**10.10%**
Per Annum – for 5-Year Periods	10.52%	9.67%
Flotation Costs	0.33%	0.33%
Adjusted - Per Annum – for 5-Year Periods	**10.85%**	**10.00%**
Cumulative- 5- to 10- Year Periods	10.76%	11.53%
Flotation Costs	0.33%	0.33%
Adjusted - Cumulative- 5- to 10- Year Periods	**11.09%**	**11.86%**