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REGULATORY COMMISSION

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INDIANA UTILITY REGULATORY COMMISSION

PETITION OF NORTHERN INDIANA PUBLIC SERVICE COMPANY	))	CAUSE NO. 43526

PREFILED TESTIMONY OF

J. RANDALL WOOLRIDGE - PUBLIC'S EXHIBIT NO. 8

ON BEHALF OF

THE INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

MAY 8, 2009

NORTHERN INDIANA PUBLIC SERVICE COMPANY
CAUSE NO. 43526

Direct Testimony of
Dr. J. Randall Woolridge

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TESTIMONY OF J. RANDALL WOOLRIDGE, PH.D.
CAUSE NO. 43526
NORTHERN INDIANA PUBLIC SERVICE COMPANY

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 Indiana Office of Utility Consumer Counselor ("OUCC") to provide an opinion as to the overall fair rate of return or cost of capital for Northern Indiana Public Service Company ("NIPSCO" or "Company") and to evaluate NIPSCO's rate of return testimony in this proceeding.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. First I will review my cost of capital recommendation for NIPSCO, and review the primary areas of contention between NIPSCO's rate of return position and OUCC. Second, I provide an assessment of capital costs in today's capital markets. Third, I discuss my proxy group of electric utility companies for estimating the cost of capital for NIPSCO. Fourth, I present my recommendations for the Company's capital structure and debt cost rate. Fifth, I discuss the concept of the cost of equity capital, and then estimate the equity cost rate for NIPSCO. Next, I critique NIPSCO's rate of return analysis and testimony. I have a table of contents just after the title page for a more detailed outline.

Q. PLEASE REVIEW YOUR RECOMMENDATIONS REGARDING THE APPROPRIATE RATE OF RETURN FOR NIPSCO.

A. I have used a capital structure that employs the non-investor provided capital in NIPSCO's capitalization along with the proportions of long-term debt and equity in the capital structure of NIPSCO's parent company, NiSource, Inc. My recommended capitalization more accurately reflects the capitalizations of electric utilities and includes the capitalization that NIPSCO ultimately relies upon to raise capital. I have applied the Discounted Cash Flow Model ("DCF") and the Capital Asset Pricing Model ("CAPM") to a proxy group of publicly-held electric utility companies ("Electric Proxy Group"). My analysis indicates an equity cost rate in the range of 7.1%-10.4% for NIPSCO. I have used an equity cost rate at the upper end of the range, 10.0%, in recognition of the current volatile capital

market conditions. Using my capital structure and debt and equity cost rates, I am recommending an overall rate of return of 6.98% for NIPSCO. These findings are summarized in Exhibit JRW-1.

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

A. Ms. Linda Miller provides the Company's proposed capital structure and debt cost rates, and Mr. Paul R. Moul recommends a return on equity. My analysis suggests that the Company's recommended capital structure with a common equity ratio of 60.60% is equity-rich when compared to the capitalizations of electric utility companies. I have therefore used components of the capital structures of both NIPSCO and NiSource in arriving at an appropriate capital structure for ratemaking purposes for NIPSCO.

As for the equity cost rate, Mr. Moul's estimate is 12.0%, whereas my analysis indicates an equity cost rate of 10.0% is appropriate for NIPSCO. We have both used DCF and CAPM approaches to estimating an equity cost rate for the Company. Mr. Moul has also used Risk Premium ("RP") and Comparable Earnings ("CE") approaches to estimate an equity cost rate for NIPSCO. Mr. Moul applied these approaches to a proxy group of combination electric and gas companies. I have also used a proxy group, but it consists of only electric utility companies. It is my contention that my electric utility proxy group is the appropriate comparable group for NIPSCO.

In terms of the DCF approach, the two major areas of disagreement are (1) the appropriate adjustment to the DCF dividend yield, and (2) most significantly, the estimation of the expected growth rate. With respect to (1), Mr. Moul has made several inappropriate adjustments to the spot dividend yield. With respect to (2), Mr. Moul has relied excessively on the forecasted earnings per share ("EPS") growth rates of Wall Street analysts and *Value Line* in estimating a DCF equity cost rate. I have used both historic and projected growth rate measures, and have evaluated growth in dividends, book value, and earnings per share. A very significant factor that I consider and highlight is the upwardly-biased expected earnings growth rates of Wall Street analysts and *Value Line*.

The CAPM approach requires an estimate of the risk-free interest rate, beta, and the equity risk premium. Whereas there is general agreement on the beta, Mr. Moul's risk-free interest rate is above current market rates and Mr. Moul and myself have significantly different views on the approach to measuring the equity risk premium as well as the magnitude of equity risk premium. As I highlight in my testimony, there are three procedures for estimating an equity risk premium – historic returns, surveys, and expected return models. Mr. Moul uses an equity risk premium of 8.44% which was developed from: (1) projected equity risk premium of 10.37% and (2) a historical risk premium of 6.50% using the Ibbotson results. I demonstrate that Mr. Moul's projected equity risk premium, which uses analysts' EPS growth rate projections, includes unrealistic assumptions regarding future economic and earnings growth and stock returns. In addition, I provide evidence that risk premiums based on historic stock and bond

returns are subject to a myriad of empirical errors which results in upwardly biased measures of expected equity risk premiums. In contrast, I have used an equity risk premium of 4.60% 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 note, my equity risk premium is consistent with the equity risk premiums (1) discovered in recent academic studies by leading finance scholars, (2) employed by leading investment banks and management consulting firms, and (3) found in surveys of financial forecasters and corporate CFOs.

Mr. Moul's RP and CE approaches are subject to a number of errors and therefore do not provide reliable estimates of the Company's cost of equity capital. His RP approach employs historic bond and stocks returns which, as indicated above, are not reliable measures of expected returns. On the other hand, the CE methodology, which is not market-based, has not been used by regulatory commissions for years as an equity cost rate approach.

Mr. Moul also includes flotation cost and size adjustments in computing his equity cost rates. I argue that the flotation cost adjustment is not needed in this proceeding as no such costs have been identified. Mr. Moul and I also disagree on the need for a size premium adjustment to the CAPM. The size premium is based on historical stock returns and, as discussed in my testimony, there are a number of errors in using historical market returns to compute risk premiums. In addition, I argue that any equity cost rate adjustment based on the relative size of a public utility is inappropriate. One study noted in my testimony tested for a size premium in utilities and concluded that, unlike industrial stocks,

utility stocks do not exhibit a significant size premium. The primary reason that a size premium is not required for utilities is that utilities are regulated closely by state and federal agencies and commissions and hence their financial performance is monitored on an on-going basis by agencies of both the state and federal governments.

In the end, the most significant areas of disagreement between Mr. Moul and me with respect to the cost of equity are (1) the sole use of the upwardly biased EPS growth rate projections of Wall Street analysts and *Value Line* in the DCF model, and (2) the measurement and magnitude of the equity risk premium.

II. CAPITAL COSTS IN TODAY'S MARKETS

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

A. Long-term capital cost rates for U.S. corporations are a function of the required returns on risk-free securities plus a risk premium. The risk-free rate of interest is the yield on long-term U.S Treasury yields. The yields on ten-year U.S. Treasury bonds are provided in Panel A of Exhibit JRW-2 from 1953 to the present. These yields peaked in the early 1980s and have generally declined since that time. In the summer of 2003 these yields hit a 60-year low at 3.33%. They subsequently increased and fluctuated between the 4.0% and 5.0% levels over the next four years in response to ebbs and flows in the economy. Ten-year Treasury yields began to decline in mid-2007 at the beginning of the current financial crisis. In 2008 Treasury yields declined to below 3.0% as a result of the expansion of the

mortgage and sub-prime market credit crisis, the turmoil in the financial sector, the government bailout of financial institutions, and the economic recession. Overall, these economic developments have led to a "flight to quality" in the fixed income market which has driven Treasury yields to historically low levels.

Panel B of Exhibit JRW-2 shows the differences in yields between ten-year Treasuries and Moody's Baa rated bonds since the year 2000. This differential primarily reflects the additional risk required by bond investors for the risk associated with investing in corporate bonds. The difference also reflects, to a much lesser degree, yield curve changes over time. The Baa rating is the lowest of the investment grade bond ratings for corporate bonds. The yield differential hovered in the 2.0% to 3.0% area until 2005, declined to 1.5% in late 2007, and then increased significantly in response to the current financial crisis. This differential peaked at 6.0% in November of 2008 at the height of the financial crisis due to tightening in credit markets which increased corporate bond yields and the flight to quality which decreased treasury yields. The differential has declined over the past several months.

As noted, the risk premium is the return premium required by investors to purchase riskier securities. As illustrated in Panel B of Exhibit JRW-2, the risk premium required by investors to buy corporate bonds is observable based on yield differentials in the markets. The equity risk premium is the return premium required to purchase stocks as opposed to bonds. The equity risk premium is not readily observable in the markets (as are bond risk premiums) since expected stock market returns are not readily observable. As a result, equity risk premiums

must be estimated using market data. There are alternative methodologies to estimating the equity risk premium, and the alternative approaches and equity risk premium results are subject to much debate. One way to estimate the equity risk premium is to compare the mean returns on bonds and stocks over long historical periods. Measured in this manner, the equity risk premium has been in the 5-7 percent range. But studies by leading academics indicate the forward-looking equity risk premium is in the 4.0 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.

Q. PLEASE DISCUSS THE FINANCIAL CRISIS AND THE RESPONSE OF THE U.S. GOVERNMENT.

A. The mortgage crisis, subprime crisis, credit crisis, economic recession and the restructuring of financial institutions has had tremendous global economic

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

implications. This issue first surfaced in the summer of 2007 as a mortgage crisis. It expanded into the subprime area in late 2008, and led to the collapse of certain financial institutions, notably Bear Stearns, in the first quarter of 2008. Commodity and energy prices peaked and then began to decline in the summer of 2008 as the crisis in the financial markets spread to the global economy. The turmoil in the financial sector peaked in September with the failure of several large financial institutions, Bank of America's buyout of Merrill Lynch, and the government takeover of Fannie Mae and Freddie Mac.

The spillover to the economy has been ongoing and growing. According to the National Bureau of Economic Research, the economy slipped into a recession in the 4th quarter of 2007 and remains there. The unemployment rate increased to 8.2% in March and is expected to continue to climb as layoffs continue in response to the declining economy. Inflationary pressures--which were tied to global growth and increases in commodity prices until mid-2008--now have largely disappeared. A barrel of oil, which was nearly $150 in mid-2008, is now in the $50 range. Other commodity prices also peaked and have declined significantly.

In response to the current market crisis, the Federal Reserve has gone to extraordinary steps in an effort to stabilize capital markets. Most significantly, the Fed has opened its lending facilities to numerous banking and investment firms to promote credit markets. As a result, the balance sheet of the Federal Reserve has grown by hundreds of billions of dollars in support of the financial system. The federal government has taken and will take additional steps in the near future, a

series of measures to shore up the economy and the markets. The Troubled Asset Relief Program ("TARP") is aimed at providing over $700B in government funds into the banking system in the form of equity investments. The federal government has spent billions in assistance to a number of prominent financial institutions, including AIG, Citigroup, and Bank of America. The government is also moving to provide financial assistance to other industries, most notably the auto industry. More recently, President Obama signed into law his $787B economic stimulus which includes significant tax cuts and government spending aimed at creating jobs and turning around the economy.

In summary, the Federal Reserve and government have taken never-before seen actions and have provided or will provide extraordinary sums of money in various ways to rescue the economy, certain industries, and the credit markets.

Q. PLEASE DISCUSS THE RESPONSE OF THE FINANCIAL MARKETS TO THE ACTIONS OF THE U.S. GOVERNMENT.

A. In response to the financial crisis, United States ("U. S.") Treasury Rates have declined to levels not seen since the 1950s. The long-term Treasury bond is in the 3.5% range. This reflects the "flight to quality" in the credit markets as investors have sought out low risk investments. The credit market for corporate and utility debt has experienced higher rates due to the credit crisis. The short-term credit markets were initially hit with credit issues, leading to the demise of several large financial institutions. The primary indicator of the short-term credit market is the 3-month London Interbank Offered Rate ("LIBOR") rate. LIBOR peaked about 3

months ago at 4.75%. It has declined to 1.0% range as the short-term credit markets have opened up and Treasury rates have continued to decline.

The long-term credit market remains tight, but has improved over the past two months. The credit crisis is associated with concerns among credit providers – mainly financial institutions – in terms of making loans and investing in bonds due to the overleveraging in the economy and perceived weakness of the economy. Panel A of page 1 of Exhibit JRW-3 provides the yields on A, BBB+, and BBB rated public utility bonds. These yields peaked in November and have since declined by about 150 basis points. Panel B of page 1 of Exhibit JRW-3 provides the yield spreads on A, BBB+, and BBB rated public utility bonds relative to Treasury bonds. These yield spreads increased dramatically in the third quarter during the peak of the financial crisis and have since decreased by 50-100 basis points.

Thus, the yields and yield spreads have declined in response to the federal government's unprecedented actions in response to the financial crisis. Public utility debt in particular has recently found favor with investors. Pages 2 and 3 of Exhibit JRW-3 contain an article from the *Wall Street Journal* which highlights the fact that the market for the bonds of utilities has come back significantly since the end of 2008. In particular, the article highlights the fact that utility bonds are viewed as a 'safe haven' in the current market and that, over the past month, yields on utility bonds have declined significantly and bond issuances have picked up. The article also notes that utilities are likely to benefit under an Obama administration. It also includes a quote from Mark Mulhern, CFO of Progress

Energy, who says, "People have turned the page on 2008 and spreads have come down for people like us."

In sum, it appears that the massive government spending and Federal Reserve actions have had an effect on the credit markets. The Obama administration is clearly committed to bringing the economy around. The worst of the credit crisis appears to be over. The short-term credit market has loosened up considerably. LIBOR rates peaked in the fall and have declined. Likewise, the long-term credit market appears to be loosening up, as credit spreads, while still high, have declined.

Q. PLEASE PROVIDE YOUR ASSESSMENT OF THE IMPACT OF RECENT CAPITAL MARKET CONDITIONS ON THE VOLATILITY OF STOCKS AND BONDS.

A. To assess the effect of recent capital market volatility on the equity risk premium and the equity cost rate, one must look at the volatility of stocks relative to bonds. To compare the volatility of stocks and bonds, one must standardize the volatility measure. This is normally done by dividing the volatility measure, the standard deviation, by the mean. This standardized volatility measure is known as the Coefficient of Variation ("CV").

I have performed an analysis of the volatility of stocks relative to bonds since 2000. I have used the S&P 500 and the Bear Sterns Bond Price Index

("BSBPI") and computed the CV using a twenty-two day mean and standard deviation. A twenty two day period approximates one month of trading. In Panel A of Exhibit JRW-3, page 4, I have graphed the CV for the S&P 500 and the BSBPI since the year 2000. In association with the unprecedented economic events in the third quarter of 2008, there is a dramatic increase in the volatility of stocks and a not so dramatic increase in the volatility of bonds. After the September – October time frame, stock volatility declined significantly while bond volatility increased. In the first quarter of 2009, there was another increase in the volatility of stocks relative to bonds. However, stock volatility has declined over the past month. Panel B of Page 4 of Exhibit JRW-5 shows the ratio of the CV(Stock CV)/CV(Bond CV). Hence, this graph shows the standardized volatility of stocks relative to bonds. Higher levels of this ratio represent time periods when stock volatility is high relative to bond volatility, and low levels of this ratio occur during time periods when stock volatility is low relative to bonds. It demonstrates that stock volatility has declined relative to bond volatility over the past month. As such, the volatility of stocks relative to bonds has declined over the past month, suggesting that the markets have settled somewhat compared to the third quarter of 2008 and the first quarter of 2009.

Q. HAVE LEADING FINANCIAL PRACTITIONERS WEIGHED IN ON THE IMPACT OF THE FINANCIAL CRISIS ON THE COST OF EQUITY CAPITAL?

A. Yes. McKinsey & Co., recognized as the leading management consulting firm in the world, recently published a study entitled "Why the Crisis Hasn't Shaken the Cost of Capital."[2] In the study, the authors contend the financial crisis has not significantly changed the firm's long-term estimate of the equity risk premium which is in the 3.5 to 4 percent range. McKinsey develops an equity risk premium based on the price level of the S&P 500, GDP growth, and corporate profits. In summing up their analysis of the impact of the financial crisis on S&P 500, GDP growth, and corporate profits, they conclude: "Taking all these factors into account, we think there has been no significant change in the long-term cost of equity capital."

Q. HOW HAVE THE STOCKS OF ELECTRIC UTILITY COMPANIES FARED IN THE CURRENT MARKET COMPARED TO STOCKS IN GENERAL?

A. To evaluate how electric utility stocks have fared relative to the overall market, I have compared the performance of electric utility stocks relative to the S&P 500 over the past nine months. This is found on page 5 of Exhibit JRW-3. For the electric utility stocks, I have used the nine companies in my Electric Proxy Group (which is discussed below). I have compared the average stock price performance of this group relative to the price performance of the S&P 500 from July 1, 2008 until March 30 1, 2009. Over the nine months, the S&P 500 has declined to

[2]Richard Dobbs, Bin Jang, and Timothy Koeller, "Why the Crisis Hasn't Shaken the Cost of Capital," *McKinsey Quarterly* (December 2008), p. 1-6.

66.7% of its July 1, 2008 value, which represents a loss of 33.3%. On the other hand, electric utility stocks have only decreased to 84.3% of their July 1, 2008 values. This represents a loss of only 15.7%. Moreover, during this time period, the S&P 500 was almost 2.5 times as risky as the electric utility stocks as measured by the coefficient of variation. As such, this evidence suggests that electric utility stocks have held up well in the current market conditions compared to the overall market.

III. PROXY GROUP SELECTION

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

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

Q. PLEASE DESCRIBE YOUR PROXY GROUP OF ELECRIC UTILITY COMPANIES.

A. My Electric Proxy Group consists of nine electric utility companies. These companies met the following selection criteria: (1) listed as a Electric Utility or Combination Electric and Gas Company in *AUS Utility Reports*; (2) listed as a Electric Utility in the Standard Edition of the *Value Line Investment Survey*; (3) at least 75% regulated electric revenues; (4) operating revenues of less than $10B; (5)

at least a three-year history of paying dividends, with no actual or pending dividend cuts; and (6) an investment grade bond rating by Moody's and/or Standard & Poor's. Summary financial statistics for the Electric Proxy Group are listed in Exhibit JRW-4. The average operating revenues and net plant for the group are $2,671.0M and $4,598.1M, respectively. On average, the group receives 94% of revenues from regulated electric operations, a current common equity ratio of 45%, and an earned return on common equity of 9.0%.

IV. CAPITAL STRUCTURE RATIOS AND DEBT COST RATES

Q. WHAT IS THE RECOMMENDED CAPITAL STRUCTURE OF THE COMPANY?

A. The Company's recommended capital structure, from investor provided capital, is shown in Panel A of page 1 of Exhibit JRW-5. The Company is requesting a capital structure consisting of 39.40% long-term debt and 60.60% common equity. This capital structure is as of December 31, 2007.

Q. IS THE COMPANY'S RECOMMENDED CAPITAL STRUCTURE APPROPRIATE FOR NIPSCO?

A. No. This capital structure is not appropriate for NIPSCO. First, the proposed capital structure ratios do not reflect the capital structure ratios of electric utility companies. Panel B of page 1 of Exhibit JRW-5 shows the average common equity ratio for the Electric Proxy Group over 2008. The average common equity

ratio for the group, including short-term debt, is only 46.7%. The individual company data is provided on page 3 of Exhibit JRW-5. Panel C of page 1 of Exhibit JRW-5 provides the average capital structure ratios of the Electric Proxy Group over the most recent four quarters. These ratios include only long-term capital and therefore exclude short-term debt. The individual company data is provided on page 4 of Exhibit JRW-5. The average over the past four quarters includes 52.00% long-debt, 0.53% preferred stock, and a 47.47% common equity. This demonstrates that the proposed capital structure for NIPSCO is significantly out of line with the capital structures of electric utility companies.

Q. IS NIPSCO'S PROPOSED CAPITAL STRUCTURE ALSO OUT OF LINE WITH THE CAPITAL STRUCTURE OF NIPSCO'S PARENT COMPANY, NISOURCE?

A. Yes. Panels D and E of page 1 of Exhibit JRW-5 provide NiSource's capital structure over the past four quarters. Panel D figures include short-term debt, and Panel E figures exclude short-term debt. NiSource's average common equity ratio is 41.48% with short-term debt and 45.64% excluding short-term debt. These capitalization figures are in-line with those of other electric utilities, and further demonstrate that NIPSCO's proposed capitalization is inappropriate in this proceeding.

Q. WHAT OTHER THOUGHTS DO YOU HAVE ON THE COMPANY'S PROPOSED CAPITAL STRUCTURE?

A. Ultimately, the borrowing costs of NIPSCO depend on the financial and capitalization profile of its parent, NiSource. The customers of NIPSCO should pay rates on the basis of the capitalization that is used to attract capital – which is the capitalization of NiSource – and not the capitalization of NIPSCO. To this end, the bonds of NiSource are rated by BBB- by S&P and Baa2 by Moody's and, as shown in Exhibit JRW-5, NiSource's common equity ratio is 41.48% including short-term debt and 45.64% excluding short-term debt. As discussed above, NiSource's capitalization is in line with other electric utilities but has much less equity than the capitalization proposed by NIPSCO.

Q. GIVEN THIS BACKGROUND, HOW SHOULD NIPSCO'S PROPOSED CAPITAL STRUCTURE BE ADJUSTED FOR RATEMAKING PURPOSES?

A. NIPSCO's proposed capital structure should be adjusted to reflect the mix of debt and equity used by NiSource. Again, NiSource's capitalization is the one that is used by both NiSource and NIPSCO to attract capital. NIPSCO's proposed capital structure would impose substantial costs on ratepayers with no corresponding benefits in the way of improved bond ratings. This is due to the fact that NiSource's capitalization drives NIPSCO's bond rating and causes NIPSCO's bond rating to be weak (BBB-).

Q. WHAT STEPS DID YOU USE TO DEVELOP A CAPITAL STRUCTURE THAT REFLECTS THE MIX OF DEBT AND EQUITY USED BY NISOURCE?

A. I am using a four-step process. I am starting with the Company's proposed capitalization for ratesetting purposes, which includes investor provided capital as well as customer deposits, cost-free capital, and investment tax credits. This capital structure is provided in Panel A of page 2 of Exhibit JRW-5. In this capitalization, investor provided capital makes up 82.41% of total capital (32.47% long-term debt plus 49.94% common equity).

In the second step, I recognize the difference in the common equity ratios in the capitalizations (from investor provided capital) between (1) NIPSCO and (2) NiSource. As noted above, NIPSCO's recommended capitalization, based on investor provided capital as of December 31, 2007, includes 39.40% long-term debt and 60.60% common equity. Panel B of page 2 of Exhibit JRW-5 shows the capital structure ratios from investor provided capital for NiSource as of December 31, 2007. The common equity ratio is 47.57%. It is important to note that this common equity ratio is almost identical to the average common equity ratio for the Electric Proxy Group of 47.47% (Panel C of page 1 of Exhibit JRW-5).

In the third step, I adjust NIPSCO's capital structure for ratesetting purposes to account for the different common equity ratios as discussed in step 2. This is developed in Panel C of page 2 of Exhibit JRW-5. Columns (1) and (2) show NIPSCO's recommended capital structure ratios based on (1) investor

provided capital (2) for ratesetting purposes as of December 31, 2007. As shown in (2), the sum of investor provided debt and equity is 82.41%. Column (3) shows the capital structure ratios for NiSource based on investor provided capital as of December 31, 2007. These ratios are 52.43% debt and 47.57% common equity. In Column (4), I compute the capital structure ratios for ratesetting purposes by multiplying (1) the capital structure ratios for NiSource from investor provide capital, times (2) 82.41%, which is the percent of debt plus equity capital in NIPSCO's recommended capitalization for ratesetting purposes. The resulting capital structure ratios for ratesetting purposes, which reflect the investor provided capitalization of NiSource, are 43.21% long-term debt and 39.20% common equity.

The fourth step combines the capital structure ratios for ratesetting purposes developed in step three with the percentages of customer deposits, cost-free capital, and investment tax credits as recommended by NIPSCO. The resulting capital structure ratios are my recommendation in this proceeding and much more accurately reflect the capitalizations from investor provided capital of electric utilities and NIPSCO's parent, NiSource, than the recommendation made by the Company. See JRW-5, page 2, Panel D.

Q. WHAT IMPACT ON REVENUE REQUIREMENTS IS CAUSED BY USING A CAPITAL STRUCTURE THAT REFLECTS NISOURCE'S MIX OF DEBT AND EQUITY CAPITAL?

A. OUCC witness Thomas Catlin has calculated that the use of my recommended capital structure reduces NIPSCO's revenue requirement by $29.9 million.

Q. WHAT LONG-TERM DEBT COST RATE ARE YOU USING IN THE COST OF CAPITAL FOR NIPSCO?

A. I will use the Company's long-term debt cost rate of 6.56%.

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 that 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 him or her 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:[3]

> 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

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

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 that earns a return on equity above its cost of equity will see its common stock sell at a price above its book value. Conversely, a firm that earns a return on equity below its cost of equity will see its common stock sell at a price below its book value.

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

A. This relationship is discussed in a classic Harvard Business School case study entitled "A Note on Value Drivers." On page 2 of that case study, the author describes the relationship very succinctly:[4]

> 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*

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

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-C of Exhibit JRW-6. The average R-squares for the electric, gas, and water companies are 0.65, 0.60, and 0.92.[5] This demonstrates the strong positive relationship between ROEs and market-to-book ratios for public utilities. This means that utilities with higher expected ROEs sell at higher market-to-book ratios.

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

A. Exhibit JRW-7 provides indicators of public utility equity cost rates over the past decade. Page 1 shows the monthly yields on long-term 'A' rated public utility bonds. These yields peaked in the early 2000s at over 8.0%, declined to about 5.0% in 2005, and rose to 6.0% in 2007. They stayed in that 6.0% range until the third quarter of 2008 when they spiked to almost 8.0%. They have since retreated to the 6.0% range again.

[5] 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.

Page 2 provides the dividend yields for the Electric Utility Group over the past decade. These yields peaked in 2003 at 5.5%, declined to the 4.0% range as of 2007, and increased in 2008 to 4.3%.

Average earned returns on common equity and market-to-book ratios for the group are given on page 3 of Exhibit JRW-7. Over the past decade, earned returns on common equity have been in the 8.0%-12.0% range. The average ROE peaked at 12.5% in 2001 and subsequently declined through the year 2005 before rebounding in 2006 and 2007. Over the past decade, the average market-to-book ratios for this group have been between 1.40 to 1.80. As of 2008, the average ROE and market-to-book for the group was 11.5% and 1.66, respectively.

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 PUBLIC 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 JRW-8 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. These betas come from the *Value Line Investment Survey* and are compiled by Aswath Damodoran of New York University.[6] The study shows that the investment risk of public utilities is relatively low. The average beta for electric utility industry is 0.88. This figure put electric utility companies in the bottom twenty percent of all industries and well below the *Value Line* average of 1.24. As such, the cost of equity for the electric utility industry is relatively low compared to other industries in the U.S.

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

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

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

According to valuation principles, the present value of an asset equals the discounted value of its expected future cash flows. Investors discount these expected cash flows at their required rate of return that, as noted above, reflect 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 current conditions in the economy and the financial markets.

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

A. I rely primarily on the 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.

B. Discounted Cash Flow Analysis

Q. DESCRIBE THE THEORY BEHIND THE TRADITIONAL DCF MODEL.

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

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

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

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

A. Yes. Virtually all investment firms use some form of the DCF model as a valuation technique. One common application for investment firms is called the three-stage DCF or dividend discount model ("DDM"). The stages in a three-stage DCF model are presented in Exhibit JRW-9. 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.

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.

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:

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

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

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

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

A. One should be sensitive to several factors when using the DCF model to estimate a firm's cost of equity capital. In general, one must recognize the assumptions under which the DCF model was developed in estimating its components (the

dividend yield and expected growth rate). The dividend yield can be measured precisely at any point in time, but tends to vary somewhat over time. Estimation of expected growth is considerably more difficult. One must consider recent firm performance, in conjunction with current economic developments and other information available to investors, to accurately estimate investors' expectations.

Q. PLEASE DISCUSS YOUR DCF ANALYSIS.

A. My DCF analysis is provided in Exhibit JRW-10. The DCF summary is on page 1 of this Exhibit, and the supporting data and analysis for the dividend yield and expected growth rate are provided on the following pages of the Exhibit.

Q. WHAT DIVIDEND YIELDS ARE YOU EMPLOYING IN YOUR DCF ANALYSIS FOR THE PROXY GROUP?

A. The dividend yields on the common stock for the companies in the proxy group are provided on page 2 of Exhibit JRW-10 for the six-month period ending April 2009. For the DCF dividend yields for the group, I am using the average of the six month and April 2009 dividend yields, or 5.5% and 5.1%. This average is 5.3%.

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

A. According to the traditional DCF model, the dividend yield term relates to the dividend yield over the coming period. As indicated by Professor Myron Gordon, who is commonly associated with the development of the DCF model for popular

use, this is obtained by: (1) multiplying the expected dividend over the coming quarter by 4 and (2) dividing this dividend by the current stock price to determine the appropriate dividend yield for a firm, that pays dividends on a quarterly basis.[7]

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

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

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

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'

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

expectation of the long-term dividend growth rate. Presumably, investors use some combination of historical and/or projected growth rates for earnings and dividends per share and for internal or book value growth to assess long-term potential.

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

A. I have analyzed a number of measures of growth for companies in the proxy group. 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 Yahoo, Bloomberg, Reuters, and Zacks. These services solicit five-year earnings growth rate projections from securities analysts, and compile and publish the means and medians of these forecasts. Finally, I 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. WHY ARE YOU NOT RELYING EXCLUSIVELY ON THE EPS FORECASTS OF WALL STREET ANALYSTS IN ARRIVING AT A DCF GROWTH RATE FOR THE PROXY GROUP?

A. There are several issues with using the EPS growth rate forecasts of Wall Street analysts as DCF growth rates. First, the appropriate growth rate in the DCF

model is the dividend growth rate, not the earnings growth rate. Nonetheless, over the very long-term, dividend and earnings will have to grow at similar rates. Therefore, in my opinion, consideration must be given to other indicators of growth, including prospective dividend growth, internal growth, as well as projected earnings growth. Second, and most significantly, it is well-known that the EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased. Hence, using these growth rates as a DCF growth rate will provide an overstated equity cost rate. This issue is discussed at length in the section of testimony critiquing NIPSCO's case-in-chief.

Q. PLEASE DISCUSS THE HISTORICAL GROWTH OF THE COMPANIES IN THE GROUP AS PROVIDED IN THE *VALUE LINE INVESTMENT SURVEY*.

A. Historic growth rates for the companies in the group, as published in the *Value Line Investment Survey*, are provided on page 3 of Exhibit JRW-10. Due to the presence of outliers among the historic growth rate figures, both the mean and medians are used in the analysis.[8] The historical growth measures in EPS, DPS, and BVPS for the Electric Proxy Group, as measured by the means and medians, range from -2.3% to 2.8%, with an average of 1.0%.

[8] Outliers are observations that are much larger or smaller than the majority of the observations that are being evaluated.

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

A. *Value Line's* projections of EPS, DPS, and BVPS growth for the companies in the proxy group are shown on page 4 of Exhibit JRW-10. As stated above, due to the presence of outliers, both the mean and medians are used in the analysis. For the Electric Proxy Group, the central tendency measures range from 3.3% to 5.6%, with an average of 4.6%.

Also provided on page 4 of Exhibit JRW-10 is prospective internal growth for the proxy group as measured by *Value Line*'s average projected retention rate and return on shareholders' equity. As noted above, internal growth is a significant driver of long-run earnings growth. For the Electric Proxy Group, the average prospective internal growth rate is 4.0%.

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

A. Zacks, Bloomberg, and Yahoo First Call collect, summarize, and publish Wall Street analysts' five-year EPS growth rate forecasts for the companies in the proxy group. These forecasts are provided for the companies in the proxy group on page 5 of Exhibit JRW-10. The median of analysts' projected EPS growth rates for the Electric Proxy Group is 6.7%.[9]

[9] Since there is considerable overlap in analyst coverage between the three services, and not all of the companies have forecasts from the different services, I have averaged the expected five-year EPS growth rates from the three services for each company to arrive at an expected EPS growth rate by company.

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

A. Page 6 of Exhibit JRW-10 shows the summary DCF growth rate indicators for the proxy group. The average of the historic and projected growth rate indicators for the Electric Proxy Group is 4.1%. The EPS, DPS, and BVPS growth rate projections of *Value Line* for the group, as well as projected internal growth, suggest growth in the 4.0%-4.6% range. The projected EPS figures of Wall Street analysts suggest somewhat higher growth. However, these growth rate forecasts must be discounted due to the well-known upward bias in Wall Street EPS growth rate projections. The average of the projected growth rate indicators and internal growth, excluding historical growth, is 5.1%. Given these figures, I will use an expected DCF growth rate of 5.0% for the Electric Proxy Group.

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

A. My DCF-derived equity cost rate for the group is summarized on page 1 of Exhibit JRW-10.

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

$$\text{DCF Equity Cost Rate (k)} = 5.4\% + 5.0\% = 10.4\%$$

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:

$$K = (R_f) + ß * [E(R_m) - (R_f)]$$

Where:

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

To estimate the required return or cost of equity using the CAPM requires three inputs: the risk-free rate of interest (R_f), the beta (ß), and the expected equity or market risk premium $[E(R_m) - (R_f)]$. R_f is the easiest of the inputs to measure – it is the yield on long-term Treasury bonds. ß, the measure of systematic risk, is a little more difficult to measure because there are different opinions about what adjustments, if any, should be made to historical betas due to their tendency to regress to 1.0 over time. And finally, an even more difficult input to measure is the expected equity or market risk premium $(E(R_m) - (R_f))$. I will discuss each of these inputs below.

Q. PLEASE DISCUSS YOUR CAPM RESULTS.

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

Q. PLEASE DISCUSS THE RISK-FREE INTEREST RATE.

A. The yield on long-term U.S. Treasury bonds has usually been viewed as the risk-free rate of interest in the CAPM. The yield on long-term U.S. Treasury bonds, in turn, has been considered to be the yield on U.S. Treasury bonds with 30-year maturities. 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 U.S. Treasury bonds replaced the yield on 30-year U.S. Treasury bonds as the benchmark long-term Treasury rate. The 10-year U.S. Treasury yields over the past five years are shown on page 2 of Exhibit JRW-11. 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 in recent 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 subsided. These rates rebounded to the 5.0% level in the first half of 2007. However, over the following year, ten-year Treasury yields fell below 4.0% due to the housing and sub-prime mortgage crises and its affect on the economy and financial markets. In the fourth quarter of 2008 long-term Treasury yields were pushed even lower as the mortgage and sub-prime market credit crisis led to turmoil in the financial sector, uncertainty with respect to the length of the economic recession, and the government bailout of financial institutions. In total, these developments have led to a flight to quality in the bond market which has driven Treasury yields to historic low levels.

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 U.S. Treasuries have decreased to historically low levels as a result of the mortgage and sub-prime market credit crisis, the turmoil in the financial sector, the prospect of an economic recession, and the government bailout of financial institutions. As of April 28, 2009, as shown on page 2 of Exhibit JRW-11 in the "Current Price/Yield" column, the rates on 10- and 30- U.S. Treasury Bonds were 2.91% and 3.83%, respectively. However, these yields have been highly volatile over the past three months. Given this recent range and volatility, I believe that a long-term Treasury rate in the 3.5%-4.0% is reasonable for the near future. I will use the upper end of this range, 4.0%, as the risk-free rate, or R_f, in my CAPM.

Q. WHAT BETAS ARE YOU EMPLOYING IN YOUR CAPM?

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

and has a beta less than 1.0. Estimating a stock's beta involves running a linear regression of a stock's return on the market return.

As shown on page 3 of Exhibit JRW-11, the slope of the regression line is the stock's ß. A steeper line indicates 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. These services routinely report different betas for the same stock. The differences are usually due to: (1) the time period over which the ß is measured and (2) any adjustments that are made to reflect the fact that betas tend to regress to 1.0 over time. In estimating an equity cost rate for the proxy group, I am using the betas for the companies as provided in the *Value Line Investment Survey*. As shown on page 3 of Exhibit JRW-11, the average beta for the companies in Electric Proxy Group is 0.68.

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

The use of historical returns as market expectations has been criticized in numerous academic studies.[10] The general theme of these studies is that the large equity risk premium discovered in historical stock and bond returns cannot be justified by the fundamental data. These studies, which fall under the category "Ex Ante Models and Market Data," compute ex ante expected returns using market data to arrive at an expected equity risk premium. These studies have also been called "Puzzle Research" after the famous study by Mehra and Prescott in which the authors first questioned the magnitude of historical equity risk premiums relative to fundamentals.[11]

Q. PLEASE 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.

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

[11] R. Mehra and E. Prescott, "The Equity Premium: A Puzzle," *Journal of Monetary Economics* (1985).

Fama and French (2002), two of the preeminent scholars in finance, use dividend and earnings growth models to estimate expected stock returns and ex ante expected equity risk premiums.[12] 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 is 7.40%. 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.

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

The study by Claus and Thomas of Columbia University provides direct support for the findings of Fama and French.[13] 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 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), Fernandez (2007), and Song (2007) have completed the

[13] 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).

most comprehensive reviews to date of the research on the equity risk premium.[14] Derrig and Orr's study evaluated the various approaches to estimating equity risk premiums as well as the issues with the alternative approaches and summarized the findings of the published research on the equity risk premium. Fernandez examined four alternative measures of the equity risk premium – historical, expected, required, and implied. He also reviewed the major studies of the equity risk premium and presented the summary equity risk premium results. Song provides an annotated bibliography and highlights the alternative approaches to estimating the equity risk summary.

Page 5 of Exhibit JRW-11 provides a summary of the results of the primary risk premium studies reviewed by Derrig and Orr, Fernandez, and Song. In developing page 5 of Exhibit JRW-11, I have categorized the studies as discussed on page 4 of Exhibit JRW-11. I have also included the results of the "Building Blocks" approach to estimating the equity risk premium, including a study I performed, which is presented 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.

[14] 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), Pablo Fernandez, "Equity Premium: Historical, Expected, Required, and Implied," IESE Business School Working Paper, (2007), and Zhiyi Song, "The Equity Risk Premium: An Annotated Bibliography," CFA Institute, (2007).

A. Ibbotson and Chen (2003) evaluate the ex post historical mean stock and bond returns in what is called the Building Blocks approach.[15] 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 price-earnings ("P/E") ratios. By relating the fundamental factors to the ex post historical returns, the methodology bridges the gap between the ex post and ex ante equity risk premiums. Ilmanen (2003) illustrates this approach using the geometric returns and five fundamental variables – inflation ("CPI"), dividend yield ("D/P"), real earnings growth ("RG"), repricing gains ("PEGAIN") and return interaction/reinvestment ("INT").[16] This is shown on page 7of Exhibit JRW-11. The first column breaks the 1926-2000 geometric mean stock return of 10.7% into the different return components demanded by investors: the historical U.S. Treasury bond return (5.2%), the excess equity return (5.2%), and a small interaction term (0.3%). This 10.7% annual stock return over the 1926-2000 period can then be broken down into 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%).

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

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

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

A. The third column on page 7 of Exhibit JRW-11 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. Page 8 of Exhibit JRW-11 shows 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 1.7%.

Longer term inflation forecasts are available in the Federal Reserve Bank of Philadelphia's publication entitled *Survey of Professional Forecasters*.[17] 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 gross domestic product ("GDP") growth, inflation, and market returns. In the first quarter 2009 survey, published on February 13, 2009, the median long-term (10-year) expected inflation rate as measured by the CPI was 2.4% (see page 9 of Exhibit JRW-11).

Given the current market conditions, I will rely solely on the long-term forecast the Federal Reserve Bank of Philadelphia of 2.4%.

[17]Federal Reserve Bank of Philadelphia, *Survey of Professional Forecasters*, (February 13, 2009). 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.

D/P – As shown on page 10 of Exhibit JRW-11, the dividend yield on the S&P 500 has decreased gradually over the past decade. Today, it is below its average of 4.3% over the 1926-2000 time period. Whereas the S&P dividend yield bottomed out at less than 1.4% in 2000, it is currently at 3.0 % which I use in the ex ante risk premium analysis (see page 11 of Exhibit JRW-11).

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 1960-2007 period, nominal growth in EPS for the S&P 500 was 7.36%. On page 12 of Exhibit JRW-11, 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 1960-2008 period for the S&P 500 is 2.3%.

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 U.S. GDP.[18] 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 2.58% (see page 9 of Exhibit JRW-11).

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

Given these results, I will use 2.5% as my estimate of real earnings growth. This figure balances the higher long-term historical figures with the lower shorter-term historical figure and projections.

PEGAIN – PEGAIN is the repricing gain associated with an increase in the P/E ratio. It accounted for 1.3% of the 10.7% annual stock return in the 1926-2000 period. In estimating an ex ante expected stock market return, one issue is whether investors expect P/E ratios to increase from their current levels. The P/E ratios for the S&P 500 over the past 25 years are shown on page 10 of Exhibit JRW-11. The run-up and eventual peak in P/Es is most notable in the chart. The relatively low P/E ratios (in the range of 10) over two decades ago are also quite notable. As shown on page 11 of Exhibit JRW-11, the March 31, 2009 average P/E ratio for the S&P 500 was 52.62.[19]

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 15.74 – 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.

[19] Source: www.standardandpoors.com.

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 JRW-11. As shown, my expected market return of 7.9% is composed of 2.4% expected inflation, 3.0% dividend yield, and 2.5% 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 7.9% 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 3.0%. Due to these reasons, lower market returns are expected for the future.

Q. IS YOUR EXPECTED MARKET RETURN OF 7.9% CONSISTENT WITH THE FORECASTS OF MARKET PROFESSIONALS?

A. Yes. In the first quarter 2009 *Survey of Financial Forecasters*, published on February 13, 2009, by the Federal Reserve Bank of Philadelphia, the expected long-term expected return on the S&P 500 was 6.6% (see page 9 of Exhibit JRW-11).

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 March 2009 survey, the mean expected return on the S&P 500 over the next ten years was 8.77%.[20]

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

A. As shown on page 2 of Exhibit JRW-11, the current 30-year U.S. Treasury yield is 3.83%. My ex ante equity risk premium is simply the expected market return from the Building Blocks methodology minus this risk-free rate:

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

Ex Ante Equity Risk Premium = 7.9% - 3.83% = 4.07%

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

A. As discussed above, page 5 of Exhibit JRW-11 provides a summary of the results of the equity risk premium studies that I have reviewed. These include the results of: (1) the various studies of the historical risk premium, (2) ex ante equity risk premium studies, (3) equity risk premium surveys of CFOs, Financial Forecasters, and academics, and (4) the Building Block approaches to the equity risk premium. There are results reported for over thirty studies, and the average equity risk premium is 4.61%.

Q. SOME OF THE EQUITY RISK PREMIUM STUDIES THAT YOU USE IN YOUR EQUITY RISK PREMIUM STUDY DATE BACK INTO THE EARLY 2000s. IF YOU ELIMINATE THE OLDER STUDIES, HOW DOES THAT AFFECT YOUR EQUITY RISK PREMIUM?

A. In developing my equity risk premium study, I have used all equity risk premium studies and surveys I could identify that were published over the past decade and that provided an equity risk premium estimate. Since some of these studies were published in the early 2000s at the market peak, and well before the current financial crisis, one could argue that these results are not as relevant today. However, most of these studies used data over long periods of time (as long as fifty years of data) and so they were not estimating an equity risk premium as of a

point in time (e.g., the year 2001). Nonetheless, to assess whether the earlier studies significantly affect my equity risk premium results, on page 6 of Exhibit JRW-11 I have reconstructed page 5 of Exhibit JRW-11, but I have eliminated all studies published before 2008. The average for this subset of studies is 4.58%. Therefore, eliminating the earlier studies results does not significantly impact my equity risk premium.

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

A. Again, my equity risk premium is a little high compared to the equity risk premiums of CFOs. In the previously referenced March 2009 CFO survey conducted by *CFO Magazine* and Duke University, the expected 10-year equity risk premium was 5.77%.

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

A. Again, my equity risk premium is somewhat higher. 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 JRW-11, the mean long-term expected stock and bond returns were 6.62% and 4.68%, respectively. This provides an ex ante equity risk premium of 1.94%.

Q. WHAT ARE THE EQUITY RISK PREMIUMS USED BY THE LEADING CONSULTING FIRMS?

A. McKinsey & Co. is widely recognized as the leading management consulting firm in the world. It published a study entitled "The Real Cost of Equity" in which the McKinsey authors developed an ex ante equity risk premium for the U.S. In reference to the decline in the equity risk premium, as well as 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.[21]

Q. HAS MCKINSEY RECENTLY REAFFIRMED ITS OPINION ON THE EQUITY RISK PREMIUM IN LIGHT OF THE FINANCIAL TURMOIL OF THE LAST TWO YEARS?

A. Yes. As previously discussed, McKinsey has recently published a study in which they reaffirm their estimate of the equity risk premium in light of the financial turmoil of the past two years.[22]

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

[22] Richard Dobbs, Bin Jang, and Timothy Koeller, "Why the Crisis Hasn't Shaken the Cost of Capital," *McKinsey Quarterly* (December 2008), p. 1-6.

Q. WHAT EQUITY COST RATES ARE INDICATED BY YOUR CAPM ANALYSIS?

A. The results of my CAPM study for the proxy group are provided below:

$$K = (R_f) + ß * [E(R_m) - (R_f)]$$
$$K = 4.00\% + 0.68 * 4.61\%$$
$$K = 7.1\%$$

D. EQUITY COST RATE SUMMARY

Q. PLEASE SUMMARIZE YOUR EQUITY COST RATE STUDY.

A. The results for my DCF and CAPM analyses for the Electric Proxy Group indicate equity cost rates of 10.4% and 7.1%, respectively.

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

A. Given these results, I conclude that the appropriate equity cost rate for the Electric Proxy Group is in the 7.1%-10.4% range. This broad range, in my opinion, reflects the current volatile capital market conditions which were discussed above. In light of these market conditions, I am using the upper end of the range as the equity cost rate for NIPSCO. Therefore, I am recommending an equity cost rate of 10.0% for NIPSCO. In using the upper end of the range, I am effectively incorporating a very high equity risk premium into my recommendation. This is in recognition of the current market conditions.

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 Electric Proxy Group.

Q. WHAT DO THE RETURNS ON COMMON EQUITY AND MARKET-TO-BOOK RATIOS FOR THE PROXY GROUP INDICATE ABOUT THE REASONABLENESS OF YOUR RECOMMENDATION?

A. Exhibit JRW-4 provides financial performance and market valuation statistics for companies in the proxy group. The mean current return on equity and market-to-book ratio for the group are 9.0% and 1.32, respectively. 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 proxy group of electric utility companies.

VI. CRITIQUE OF NIPSCO'S RATE OF RETURN TESTIMONY

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

A. Yes. I have issues with Mr. Moul's recommended capital structure, and equity cost rate.

Q. PLEASE EVALUATE THE COMPANY'S RECOMMENDED CAPITAL STRUCTURE.

A. The Company is requesting a capital structure from investor capital consisting of 39.40% long-term debt and 60.60% common equity. The Company's recommended capital structure is not appropriate for ratemaking purposes in this proceeding. The recommended capital structure: (1) is equity rich and has a much higher common equity ratio than that employed by other electric companies; and (2) is not reflective of the capital structure used by NIPSCO's parent, NiSource, to attract capital from investors.

Q. PLEASE REVIEW THE CAPITAL STRUCTURE RATIOS OF ELECTRIC UTILITIES.

A. Panel B of page 1 of Exhibit JRW-5 shows the average common equity ratio for the Electric Proxy Group in 2008. The average common equity ratio for 2008 for the group is 46.7%. Panel C of page 1 of Exhibit JRW-5 shows the quarterly capital structure ratios for the Electric Proxy Group for the past four quarters. These average capital structure ratios are 52.00% long-term debt, 0.53% preferred stock, and 47.47% common equity.

Q. PLEASE EVALUATE MR. MOUL'S ASSESSMENT OF THE COMPANY'S CAPITAL STRUCTURE.

A. In his testimony, Mr. Moul does not provide an empirical assessment of the Company's proposed capital structure. Panel A of page 1 of Exhibit JRW-13 shows the average current common equity ratio for his combination group is 45% as reported by *AUS Utility Reports*. In response to OUCC 15-023, Mr. Moul does attempt to defend the Company's proposed capital structure. His analysis shows an average common equity ratio for the combination group of 58.05% as of the end of 2007. However, his analysis is flawed because the Company's proposed capital structure is based on the book values of debt and equity, while Mr. Moul's capital structure ratios in OUCC15-023 are based on market values. This is effectively an 'apples and oranges' comparison. The market value of equity for the companies in the combination group is above the book values, and therefore the common equity ratio in Mr. Moul's comparison is inflated. As discussed above, the actual current average common equity ratio for the combination group is 45%.

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

A. Mr. Moul uses a proxy group of utility companies and employs DCF, CAPM, RP, and CE equity cost rate approaches.

Q. PLEASE SUMMARIZE MR. MOUL'S EQUITY COST RATE RESULTS.

A. Mr. Moul's equity cost rate estimates for NIPSCO are summarized in Panel A of Exhibit JRW-12. Based on these figures, he concludes that the appropriate equity cost rate for the Company is in the range of 11.21% - 15.70%. Given these results, he has recommended an equity cost rate of 12.0%.

Q. PLEASE DISCUSS YOUR ISSUES WITH MR. MOUL'S RECOMMENDED EQUITY COST RATE.

A. Mr. Moul's proposed return on common equity is too high primarily due to: (1) an inappropriate group of comparable companies; (2) the full-year adjustment to the dividend yield and an inflated growth rate in his DCF approach; (3) an adjustment for flotation costs; and (4) excessive equity risk premiums in his CAPM approaches.

A. Comparable Electric Companies

Q. PLEASE DISCUSS THE PROBLEM WITH MR. MOUL'S ELECTRIC UTILITY GROUP.

A. Mr. Moul's utility proxy group employs combination electric and gas companies to estimate an equity cost rate for NIPSCO electric operations. There are several issues with this approach. First, as shown in Panel A of Exhibit JRW-13 Page 1, on average only 57% of revenues were from regulated electric utility operations. Several of these companies have a notably low level of regulated electric revenues. These companies, and their percent of regulated electric revenues, include: Avista Corp. – 50%, CMS Energy – 53%, Integrys Energy Group – 9%, NiSource – 15%,

and Vectren – 21%. Second, the average common equity ratio for these companies - 45% - is well out of line with NIPSCO's proposed capitalization. Hence, these companies are not particularly good proxies for NIPSCO.

Q. PLEASE ASSESS THE RISKINESS OF NIPSCO RELATIVE TO MR. MOUL'S COMBINATION GROUP.

A. Panel B of Exhibit JRW-13 provides the results of Mr. Moul's earnings variability risk study of NIPSCO relative to the combination group. This study uses the earned returns on common equity over the past five years and the coefficient of variation ("CV") as a measure of relative variability and risk. The results show that NIPSCO's CV of earned returns on equity (.15), is below the midpoint of the range for the combination group and well below the average CV of the combination group (.245). Hence, Mr. Moul's own study demonstrates that his combination group is riskier than NIPSCO**.**

B. DCF Approach

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

A. On pages 17-28 of his testimony, in Appendix D, and in Exhibit PRM-2, Schedules 5-7, Mr. Moul develops an equity cost rate by applying a DCF model to his group of comparable companies. In the traditional DCF approach, the equity cost rate is the sum of the dividend yield and expected growth. Mr. Moul makes adjustments to the dividend yield to reflect the quarterly payment of dividends and an ex-dividend

adjustment to the stock price. Mr. Moul reviews a number of historical and projected measures of expected growth for his DCF model. He uses the projected EPS growth rate forecasts from Zacks and *Value Line*. Mr. Moul then makes a flotation cost adjustment to his DCF equity cost rate. Mr. Moul's DCF results are provided in Panel B of Exhibit JRW-12. Based on these figures, Mr. Moul claims that the DCF equity cost rate for NIPSCO is 11.21% including flotation costs.

Q. PLEASE EXPRESS YOUR CONCERNS WITH MR. MOUL'S DCF STUDY.

A. I have four issues with Mr. Moul's DCF equity cost rate. These are the Moul Proxy Group, the dividend yield adjustment, the DCF growth rate, and the flotation cost adjustments. The errors in the Moul Proxy Group are discussed above. The other issues are reviewed below.

<u>DCF Dividend Yield Adjustment</u>

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

A. In Appendix E of his testimony, Mr. Moul discusses the adjustments he makes to his dividend yields. This includes an adjustment to reflect the time value of money. The quarterly timing adjustment is in error and results in an overstated equity cost rate. First, as above, the appropriate dividend yield adjustment for growth in the

DCF model is the expected dividend for the next quarter multiplied by four. The quarterly adjustment procedure is clearly inconsistent with this approach.

Second, Mr. Moul's approach presumes that investors require additional compensation during the coming year because their dividends are paid out quarterly instead of being paid all in a lump sum. Therefore, he compounds each dividend to the end of the year using the long-term growth rate as the compounding factor. The error in this logic and approach is that the investor receives the money from each quarterly dividend and has the option to reinvest it as he or she chooses. This reinvestment generates its own compounding, but it is outside of the dividend payments of the issuing company. Mr. Moul's approach simply serves to duplicate this compounding process, thereby inflating the return to the investor. Finally, the notion that an adjustment is required to reflect the quarterly timing issue is refuted in a study by Richard Bower of Dartmouth College. Bower acknowledges the timing issue and downward bias addressed by Mr. Moul. However, he demonstrates that this does not result in a biased required rate of return. He provides the following assessment:[23]

> ... authors are correct when they say that the conventional cost of equity calculation is a downward-biased estimate of the market discount rate. They are not correct, however, in concluding that it has a bias as a measure of required return. As a measure of required return, the conventional cost of equity calculation (K*), ignoring quarterly compounding and even without adjustment for fractional periods, serves very well.

[23] See Richard Bower, The N-Stage Discount Model and Required Return: A Comment," *Financial Review* (February 1992), pp 141-9.

He also makes the following observation on the issue:

> Too many rate cases have come and gone, and too many utilities have survived and sustained market prices above book, to make downward bias in the conventional calculation of required return a likely reality.

DCF Growth Rate

Q. PLEASE CRITIQUE MR. MOUL'S DCF GROWTH RATE OF 6.5%.

A. In Exhibit PRM-2, Schedules 6 and 7, Mr. Moul provides fifteen alternative measures of growth he claims to have reviewed in arriving at his 6.50% growth rate. The average of these figures is well below 6.50%, and only two of the sixteen growth rates are as large as 6.50%. As such, Mr. Moul's DCF growth rate is grossly overstated, and he has ignored the vast majority of his historic and projected growth rate measures.

Q. GIVEN THAT MR. MOUL'S HISTORICAL AND PROJECTED GROWTH RATE MEASURES DO NOT SUPPORT HIS 6.50% DCF GROWTH RATE FOR THE GROUP, HOW DO YOU BELIEVE HE ARRIVES AT THE 6.50% FIGURE?

A. According to the DCF model, growth refers to not only EPS growth but also DPS and BVPS growth as well. *Value Line*'s projected EPS, DPS, and BVPS growth rates for Mr. Moul's proxy group are provided on page 2 of Exhibit JRW-13. Whereas *Value Line*'s projected EPS growth rate for the group is 6.2%, the

projected growth rates for DPS and BVPS are only 4.5% and 4.2%, respectively. As a result, Mr. Moul appears to have relied excessively on selected EPS growth rate forecasts of Wall Street analysts and on selected *Value Line* growth rate measures. This is an error. It is well-known that the EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased. Furthermore, I provide evidence below that *Value Line*'s projected EPS growth rates are also overly optimistic. Hence, using these projected EPS growth rates as a DCF growth rate will provide an overstated equity cost rate.

Q. PLEASE REVIEW THE BIAS IN ANALYSTS' GROWTH RATE FORECASTS.

A. Analysts' growth rate forecasts are collected and published by Bloomberg, Zacks, First Call, I/B/E/S, and Reuters. These services retrieve and compile EPS forecasts from Wall Street analysts. These analysts come from both the sell side (Merrill Lynch, Paine Webber) and the buy side (Prudential Insurance, Fidelity).

The problem with using these forecasts to estimate a DCF growth rate is that the objectivity of Wall Street research has been challenged, and many have argued that analysts' EPS forecasts are overly optimistic and biased upwards. To evaluate the accuracy of analysts' EPS forecasts, I have compared actual 3-5 year EPS growth rates with forecasted EPS growth rates on a quarterly basis over the past 20 years for all companies covered by the I/B/E/S data base. In Panel A of page 3 of Exhibit JRW-13, I show the average analysts' forecasted 3-5 year EPS growth rate with the average actual 3-5 year EPS growth rate for the past twenty

years.

The following example shows how the results can be interpreted. For the 3-5year period prior to the first quarter of 1999, analysts had projected an EPS growth rate of 15.13%, but companies only generated an average annual EPS growth rate over the 3-5 years of 9.37%. This projected EPS growth rate figure represented the average projected growth rate for over 1,510 companies, with an average of 4.88 analysts' forecasts per company. For the entire twenty-year period of the study, for each quarter there were on average 5.60 analysts' EPS projections for 1,281 companies. Overall, my findings indicate that forecast errors for long-term estimates are predominantly positive, which indicates an upward bias in growth rate estimates. The mean and median forecast errors over the observation period are 143.06% and 75.08%, respectively. The forecast errors are negative for only eleven of the eighty quarterly time periods: five consecutive quarters starting at the end of 1995 and six consecutive quarters starting in 2006. As shown in the figure below, the quarters with negative forecast errors were for the 3-5 year periods following earnings declines associated with the 1991 and 2001 economic recessions in the U.S. Thus, there is evidence of a persistent upward bias in long-term EPS growth forecasts.

The average 3-5year EPS growth rate projections for all companies provided in the I/B/E/S database on a quarterly basis from 1988 to 2007 are shown in Panel B of page 3 of Exhibit JRW-13. In this graph, no comparison to actual EPS growth rates is made, and hence, there is no follow-up period. Therefore, since companies are not lost due to a lack of follow-up EPS data, these

results are for a larger sample of firms. Analysts' forecasts for EPS growth were higher for this larger sample of firms, with a more pronounced run-up and then decline around the stock market peak in 2000. The average projected growth rate hovered in the 14.5%-17.5% range until 1995 and then increased dramatically over the next five years to 23.3% in the fourth quarter of the year 2000. Forecasted EPS growth has since declined to the 15.0% range.

Q. WHAT IMPACT HAVE RECENT REGULATORY DEVELOPMENTS HAD ON ANALYSTS' EPS GROWTH RATE FORECASTS?

A. Analysts' EPS growth rate forecasts have subsided somewhat since the stock market peak of 2000. In addition, the apparent conflict of interest within investment firms with investment banking and analysts' operations was addressed in the Global Analysts Research Settlements ("GARS"). GARS, as agreed upon on April 23, 2003, between the SEC, NASD, NYSE and ten of the largest U.S. investment firms, includes a number of regulations that were introduced to prevent investment bankers from pressuring analysts to provide favorable projections. Nonetheless, despite the new regulations, analysts' EPS growth rate forecasts have not significantly changed and continue to be overly-optimistic. Analysts' long-term EPS growth rate forecasts before and after GARS, are about two times the level of historic GDP growth. Furthermore, historic growth in GDP and corporate earnings has been in the 7% range.

Finally, these observations are supported by a *Wall Street Journal* article entitled "Analysts Still Coming Up Rosy – Over-Optimism on Growth Rates is

Rampant – and the Estimates Help to Buoy the Market's Valuation." The following quote provides insight into the continuing bias in analysts' forecasts:

> Hope springs eternal, says Mark Donovan, who manages Boston Partners Large Cap Value Fund. "You would have thought that, given what happened in the last three years, people would have given up the ghost. But in large measure they have not."
>
> These overly optimistic growth estimates also show that, even with all the regulatory focus on too-bullish analysts allegedly influenced by their firms' investment-banking relationships, a lot of things haven't changed: Research remains rosy and many believe it always will.[24]

Q. IS THE BIAS IN ANALYSTS' GROWTH RATE FORECASTS GENERALLY KNOWN IN THE MARKETS?

A. Yes. Page 4 of Exhibit JRW-13 provides a recent article published in the *Wall Street Journal* that discusses the upward bias in analysts' EPS growth rate forecasts.

Q. ARE ANALYSTS' EPS GROWTH RATE FORECASTS LIKEWISE UPWARDLY BIASED FOR ELECTRIC UTILITY COMPANIES?

A. Yes. To evaluate whether analysts' EPS growth rate forecasts are upwardly biased for electric utility companies, I conducted a study similar to the one described above using a group of electric utility companies. The results are shown on page 5 of Exhibit JRW-13. The projected EPS growth rates have declined from about six percent in the 1990s to about five percent in the 2000s. As shown, the achieved EPS growth rates have been volatile. Overall, the upward bias in EPS growth rate projections is not as pronounced for electric utility companies as it is

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

for all companies. Over the entire period, the average quarterly 3-5 year projected and actual EPS growth rates are 4.59% and 2.90%, respectively. These results are consistent with the results for companies in general -- analysts' projected EPS growth rate forecasts are upwardly-biased for utility companies.

Q. ARE *VALUE LINE*'S GROWTH RATE FORECASTS SIMILARILY UPWARDLY BIASED?

A. Yes. *Value Line* has a decidedly positive bias to its earnings growth rate forecasts as well. To assess *Value Line*'s earnings growth rate forecasts, I used the *Value Line Investment Analyzer*. The results are summarized in Panel A of Exhibit JRW-14. I initially filtered the database and found that *Value Line* has 3-5 year EPS growth rate forecasts for 2,619 firms. The average projected EPS growth rate was 13.28%. This is high given that the average historical EPS growth rate in the U.S. is about 7%. A major factor seems to be that *Value Line* only predicts negative EPS growth for 124 companies. This is less than five percent of the companies covered by *Value Line*. Given the ups and downs of corporate earnings, this is unreasonable.

To put this figure in perspective, I screened the *Value Line* companies to see what percent of companies covered by *Value Line* had experienced negative EPS growth rates over the past five years. *Value Line* reported a five-year historic growth rate for 2,281 companies. The results are shown in Panel B of Exhibit JRW-14 and indicate that the average 5-year historic growth rate was 14.12%, and *Value Line* reported negative historic growth for 421 firms which represents 18.46% of these companies. It should be noted that the five years (2003-2008) was a period of

relatively rapidly rising corporate earnings growth as the economy and businesses was recovering from the recession of 2001-2 and the current financial crisis had not fully impacted the economy.

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

Q. PLEASE SUMMARIZE YOUR ASSESSMENT OF MR. MOUL'S DCF GROWTH RATE.

A. Mr. Moul's DCF growth rate is overstated because he has relied solely on the upwardly biased EPS growth rate forecasts of Wall Street analysts and *Value Line*. Furthermore, this figure is not supported by his own historic and projected growth rates, which are presented in his Schedules 6 and 7.

<u>Flotation Cost Adjustment</u>

Q. PLEASE DISCUSS MR. MOUL'S ADJUSTMENT FOR FLOTATION COSTS.

A. Mr. Moul adjusts his equity cost rates using the DCF and other approaches for flotation costs. He discusses this adjustment in Appendix E. This adjustment factor is erroneous for several reasons. First, the Company has not identified any actual flotation costs for itself. Therefore, the Company is requesting annual revenues in the form of a higher return on equity for flotation costs that have not

been identified. Second, it is commonly argued that a flotation cost adjustment (such as that used by the Company) is necessary to prevent the dilution of the existing shareholders. In this case, a floatation cost adjustment 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 electric utility companies are over 1.0 actually suggests that there should be a flotation cost reduction (and not increase) to the equity cost rate. This is because when (a) a bond is issued at a price in excess of face or book value, and (b) the difference between market price and the book value is greater than the flotation or issuance costs, the cost of that debt is lower than the coupon rate of the debt. The amount by which market values of electric companies are in excess of book values is much greater than flotation costs. Hence, if common stock flotation costs were exactly like bond flotation costs, and one was making an explicit flotation cost adjustment to the cost of common equity, the adjustment would be downward;

(2) If a flotation cost adjustment is needed to prevent dilution of existing stockholders' investment, then the reduction of the book value of stockholder investment associated with flotation costs can occur only when a company's stock is selling at a market price at/or below its book value. As noted above, electric companies are selling at market prices in excess of book value. Hence, when new

shares are sold, existing shareholders realize an increase in the book value per share of their investment, not a decrease;

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

(4) Flotation costs, in the form of the underwriting spread, are a form of a transaction cost in the market. They represent the difference between the price paid by investors and the amount received by the issuing company. Whereas the Company believes that it should be compensated for these transactions costs, they have not accounted 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 are another market transaction cost. Brokerage fees increase the effective stock price paid by investors to buy shares. If the Company had included these brokerage fees or transaction costs in their DCF analysis, the higher effective stock prices paid for stocks would lead to lower

dividend yields and equity cost rates. This would result in a downward adjustment to their DCF equity cost rate.

C. Risk Premium ("RP") Approach

Q. PLEASE REVIEW MR. MOUL'S RP ANALYSIS.

A. On pages 28-34 of his testimony, in Appendix G, and in Exhibit PRM-2, Schedules 9 and 10, Mr. Moul develops an equity cost rate using the RP model. Mr. Moul's RP results are provided in Panel C of Exhibit JRW-12. Based on these figures, Mr. Moul claims that the CAPM equity cost rate for NIPSCO is 11.67% including flotation costs.

Q. PLEASE DISCUSS THE BASE YIELD OF MR. MOUL'S RP ANALYSIS.

A. The base yield in Mr. Moul's RP analysis is the prospective yield on long-term, 'A' rated public utility bonds. Using the yield on these securities inflates the required return on equity for the Company in two ways: (1) long-term bonds are subject to interest rate risk, a risk which does not affect common stockholders since dividend payments (unlike bond interest payments) are not fixed but tend to increase over time; and (2) the base yield in Mr. Moul's risk premium study is subject to credit risk since it is not default risk-free like an obligation of the U.S. Treasury. As a result, its yield-to-maturity includes a premium for default risk and therefore, is above its expected return. Hence, using a bond's yield-to-maturity as a base yield results in an

overstatement of investors' return expectations.

Q. PLEASE REVIEW MR. MOUL'S RP STUDY.

A. Mr. Moul performs a historical RP study that appears in Schedule PRM-10 and Appendix G of his direct testimony. This study involves an assessment of the historical differences between S&P Public Utility Index stock returns and public utility bond returns over various time periods between the years 1928-2007. Mr. Moul evaluates the stock-bond return differentials using different measures of central tendency (the geometric and arithmetic means and the median) over four alternative time intervals (1928-2007, 1952-2007, 1974-2007, and 1979-2007). From the results of his study, he concludes that an appropriate risk premium for the S&P Public Utilities is 6.23%. To recognize the lower risk of combination electric and gas utility companies, he arbitrarily adjusts this figure downwards to 5.50%.

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

A. Using the historical relationship between stock and bond returns to measure an ex ante equity risk premium is erroneous and especially in this case, overstates the true market equity risk premium. The equity risk premium is based on expectations of the future and when past market conditions vary significantly from the present, historic data does not provide a realistic or accurate barometer of expectations of the future. Using historical returns to measure the ex ante

equity risk premium ignores current market conditions and masks the change in the risk and return relationship between stocks and bonds. This change suggests that the equity risk premium has declined.

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

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

(A) Biased historical bond returns;

(B) The arithmetic versus the geometric mean return;

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

(D) Unattainable and biased historical stock returns;

(E) Company Survivorship bias;

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

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

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

These issues will be addressed in order.

<u>Biased Historical Bond Returns</u>

Q. HOW ARE HISTORICAL BOND RETURNS BIASED?

A. An essential assumption of these 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. Historic bond returns are biased downward as a measure of expectancy because of capital losses suffered by bondholders in the past. As such, risk premiums derived from this data are biased upwards.

<u>The Arithmetic versus the Geometric Mean Return</u>

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

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."[25] Since Mr. Moul'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 returns and earnings growth rates are reported in the financial press, they are generally reported using

[25] 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.

the geometric mean. This is because of the upward bias of the arithmetic mean. As further evidence of the appropriate mean return measure, the U.S. Securities and Exchange Commission requires equity mutual funds to report historic return performance using geometric mean and not arithmetic mean returns.[26] Therefore, Mr. Moul's arithmetic mean return measures are biased and should be disregarded.

The Large Error in Measuring Equity Risk Premiums with Historic Data

Q. PLEASE DISCUSS THE LARGE ERROR IN MEASURING THE EQUITY RISK PREMIUM USING HISTORICAL STOCK AND BOND RETURNS.

A. Measuring the equity risk premium using historical stock and bond return is subject to a very large amount of forecasting error. For example, the long-term equity risk premium of 6.5% has a standard deviation of 20.6%. This may be interpreted in the following way with respect to the historical distribution of the long-term equity risk premium using a standard normal distribution and a 95%, +/- two standard deviation confidence interval: We can say, with a 95% degree of confidence, that the true equity risk premium is between -34.7% and +47.7%. As such, the historical equity risk premium is measured with a large degree of error.

Unattainable and Biased Historic Stock Returns

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

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

A. Returns developed using Ibbotson's methodology are computed on stock indexes and therefore (1) cannot be reflective of expectations because these returns are unattainable to investors and (2) produce biased results. This methodology assumes: (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 thereby render these returns unattainable to investors. In addition an academic study demonstrates that the monthly portfolio rebalancing assumption produces biased estimates of stock returns.[27]

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.

<u>Company Survivorship Bias</u>

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

Q. HOW DOES COMPANY SURVIVORSHIP BIAS AFFECT MR. MOUL'S HISTORIC EQUITY RISK PREMIUM?

A. Using historic data to estimate an equity risk premium suffers from company survivorship bias. Company survivorship bias results when using returns from indexes like the S&P 500. The S&P 500 includes only companies that have survived. The fact that returns of firms that did not perform 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" - U.S. Stock Market Survivorship Bias

Q. WHAT IS THE "PESO PROBLEM," AND HOW DOES IT RELATE TO SURVIVORSHIP BIAS IN U. S. STOCK MARKET RETURNS?

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

returns are then earned when these events do not subsequently occur. Therefore, the "peso problem" indicates that historic stock returns are overstated as measures of expected returns because the U.S. markets have not experienced the disruptions of other major markets around the world.

Market Conditions Today are Significantly Different than in the Past

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

A. The equity risk premium is based on expectations of the future. When past market conditions vary significantly from the present, historic data does not provide a realistic or accurate barometer of expectations of the future. 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 JRW-15 provides the yields on long-term U.S. Treasury bonds from 1926 to 2007. One very obvious observation from this graph is that interest rates increase dramatically from the mid-1960s until the early 1980s and have since returned to their 1960 levels. The annual market risk premiums for the 1926 to 2007 period are provided on page 2 of Exhibit JRW-15. The annual market risk premium is defined as the return on common stock minus the return on long-term U.S. 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 -62% in 2008. Evidence of a change in the relative riskiness of bonds and stocks is provided on page 3 of Exhibit JRW-15, 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: (1) the impact of technology on productivity and the new economy; (2) the role of information in the economy and markets; (3) better cost and risk management by businesses; (4) several bond related factors; (5) deregulation of the financial system; (6) inflation fears and interest rates; and (7) the increase in the use of debt financing. Further evidence of the greater relative riskiness of bonds is shown on page 4 of Exhibit JRW-15, which plots real interest rates (the nominal interest rate minus inflation) from 1926 to 2007. 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 AN EQUITY RISK PREMIUM?

A. Yes. Jay Ritter, a Professor of Finance at the University of Florida, identified the use of historical stock and bond return data to estimate a forward-looking equity

risk premium as one of the "Biggest Mistakes" taught by the finance profession.[28] His argument is based on the theory behind the equity risk premium, the excessive results produced by historical returns, and the previously-discussed errors such as survivorship bias in historical data.

D. CAPM Approach

Q. PLEASE DISCUSS MR. MOUL'S CAPM.

A. On pages 34-37 of his testimony, in Appendix H, and in Exhibit PRM-2, Schedule 11, Mr. Moul develops an equity cost rate by applying a CAPM model to his group of comparable companies. Mr. Moul's CAPM results are provided in Panel C of Exhibit JRW-12. Based on these figures, Mr. Moul claims that the CAPM equity cost rate for NIPSCO is 12.76% which includes both size and a flotation cost adjustments.

Q. WHAT ARE THE ERRORS IN MR. MOUL'S CAPM ANALYSIS.

A. There are four flaws with Mr. Moul's CAPM analysis: (1) the risk-free rate of 4.5%; (2) the equity risk premium of 8.44%; (3) the flotation cost adjustment; and (4) the size adjustment. The flotation cost adjustment was discussed above. The other errors are reviewed below.

Q. PLEASE REVIEW THE RISK-FREE RATE OF MR. MOUL'S CAPM.

A. Mr. Moul uses a risk-free rate of 4.5% in his CAPM, which represents the yield on

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

long-term U.S. Treasury bonds. As shown in Exhibit JRW-11, page 2, the current yields on 10- year and 30-year U.S. Treasury bonds, which are the U.S. Treasury yields most commonly reported in the financial press, are only 2.91% and 3.83%. Hence, Mr. Moul's risk-free rate in his CAPM is overstated and not reflective of current market interest rates.

Q. PLEASE REVIEW THE ERRORS IN MR. MOUL'S EQUITY OR MARKET RISK PREMIUM IN HIS CAPM APPROACH.

A. The primary problem with Mr. Moul's CAPM analysis is the size of the market or equity risk premium. Mr. Moul develops a market risk premium of 8.44% in his Appendix H. It is computed as the average risk premium of: (1) the 1926-2007 historic risk premium results from the Ibbotson study of 6.50%; and (2) a projected market risk premium of 10.37% using an expected market return, which is the average of: (a) *Value Line's* 3-5 year annual return projection and (b) a DCF expected market return using the S&P 500. The primary error with Mr. Moul's equity risk premium is that both the Ibbotson historic returns and Mr. Moul's projected market returns are overstated as measures of expected market risk premiums.

Q. PLEASE INITIALLY ADDRESS THE PROBLEMS WITH MR. MOUL'S HISTORIC RISK PREMIUM.

A. Mr. Moul computes a historic risk premium of 6.50% based on the difference between the arithmetic mean stock and bond returns over the 1926-2007 period.

The errors associated with computing an expected equity risk premium using historical stock and bond returns was addressed at length earlier in my testimony. In short, there are a myriad of empirical problems, which result in historical market returns producing inflated estimates of expected risk premiums. Among the errors are the U.S. stock market survivorship bias (the 'Peso Problem'), the company survivorship bias (only successful companies survive – poor companies do not survive), and unattainable return bias (the Ibbotson procedure presumes monthly portfolio rebalancing).

Q. PLEASE CRITIQUE MR. MOUL'S PROSPECTIVE EQUITY OR MARKET RISK PREMIUM OF 10.37%, WHICH HE CALCULATES EXPECTED MARKET RETURNS USING *VALUE LINE'S* PROJECTED RETURNS AND APPLYING A DCF MODEL TO THE S&P 500.

A. Mr. Moul computes an expected equity risk premium of 10.37% using an expected market return of 14.87%, which is the average of: (a) *Value Line's* 3-5 year annual return projection of 16.29% and (b) a DCF expected market return using the S&P 500 of 13.45%. The primary error in using *Value Line's* 3-5 year annual return projections is that these projections are consistently high relative to actual experienced returns and as such, provide upwardly biased equity risk premiums. In addition, Mr. Moul's application of a DCF model to the S&P 500 is significantly overstated and unrealistic because he employs an expected DCF growth rate based solely on analysts' forecasted EPS growth rates.

Q. PLEASE ASSESS MR. MOUL'S EXPECTED MARKET RETURN OF 16.29% BASED ON *VALUE LINE'S* PROJECTED RETURNS.

A. Mr. Moul's expected equity risk premium is based in part on an expected stock market return of 16.29% as computed using *Value Line's* 3-5 year projected market price appreciation potential. The problem with this approach is that *Value Line* has consistently overstated market price appreciation potential in the past. This bias is highlighted in a study shown in Exhibit JRW-16. Over the 1984-2004 time period, this study demonstrates that *Value Line's* projected 3-5 year annual return has been, on average, 3.64% above the actual 3-5 year annual return. As such, *Value Line's* 3-5 year annual returns produce excessive equity risk premiums.

This positive bias in *Value Line*'s 3-5 year annual returns shown above is corroborated in a study performed by *Value Line* itself. Page 2 of Exhibit JRW-16 shows *Value Line*'s own study, which demonstrates that its projected market appreciation potential has been in excess of the price appreciation.

Q. PLEASE PROVIDE ADDITIONAL EMPIRICAL EVIDENCE ON BIASES IN USING *VALUE LINE*'S DIVIDEND YIELD AND MEDIAN APPRECIATION POTENTIAL TO ESTIMATE AN EXPECTED MARKET RETURN.

A. To evaluate the use of *Value Line*'s data to estimate an expected market return, I used the *Value Line Investment Analyzer* (February 2, 2009). I discovered three errors in Mr. Moul's analysis, which lead to an overstatement of the expected market return and therefore, equity risk premium using *Value Line's* dividend yield

and 3-5 year median appreciation potential. These errors include:

1. The dividend yield of 2.1% used by Mr. Moul is only for stocks followed by *Value Line* that pay a dividend. As of February 2, 2009, *Value Line* reported no dividend yield for 750 of its 1,700 stocks (44% of the 1,700 stocks). Therefore, the expected return on these stocks using the DCF model would simply be the annual price appreciation potential. The median dividend yield for all 1,700 stocks is 0.57%. By using the dividend yield for only those stocks that pay a dividend, Mr. Moul has inflated his dividend yield by 1.63% (2.2% - 0.57% = 1.63%).
2. As shown above, *Value Line* has a tendency to produce inflated projected measures of growth, primarily since the service rarely forecasts negative growth. As of February 2, 2009, *Value Line* projected negative price appreciation potential for only 10 of the 1,687 stocks. This is only 0.6% of the stocks it covers. In other words, *Value Line*'s presumption is that 99.4% of stocks will see price appreciation over the next 3-5 years. This is an unrealistic assumption. To put this figure in perspective, *Value Line* reported a negative stock return over the last five years for 54% of its stocks.
3. Using the median appreciation potential results in an inflated expected market return and equity risk premium, since it effectively gives equal weight to all 1,700 stocks. That is, all companies are weighted equally in producing the median price appreciation potential. Therefore, by using the

median price appreciation potential, *Value Line* gives the same weight to Exxon Mobil, with a market capitalization of $392B, as it does to Cost Plus Inc, with a market capitalization of a $21.2M. Obviously, Exxon Mobil is a much, much bigger part of the stock market than Cost Plus, and therefore, should be given a much greater weight in determining an expected market return.

Q. PLEASE ASSESS MR. MOUL'S EQUITY RISK PREMIUM DERIVED FROM APPLYING THE DCF MODEL TO THE S&P 500.

A. Mr. Moul also estimated an expected market return of 13.45% by applying the DCF model to the S&P 500. This approach uses a dividend yield of 2.16% and an expected DCF growth rate of 11.29%. The primary error in this approach is that his expected DCF growth rate is the projected 5-year EPS growth rate for the companies in the S&P 500 as reported by First Call. As explained below, this produces an overstated expected market return and equity risk premium.

Q. WHAT EVIDENCE CAN YOU PROVIDE THAT THE MR MOUL'S S&P 500 GROWTH RATE IS EXCESSIVE?

A. Mr. Moul's expected S&P 500 growth rate of 11.29% represents the forecasted 5-year EPS growth rates of Wall Street analysts. The error with this approach is that the EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased.

Q. CAN YOU PROVIDE ADDITIONAL EVIDENCE REGARDING THE PROBLEMS OF MR. MOUL'S DCF GROWTH RATE FOR THE S&P 500 OF 11.29%?

A. Yes. A long-term growth rate of 11.29% is inconsistent with economic and earnings growth in the U.S. The long-term economic and earnings growth rate in the U.S. has only been about 7%. I have performed a study of the growth in nominal GDP, S&P 500 stock price appreciation, and S&P 500 EPS and DPS growth since 1960. The results are provided on page 3 of Exhibit JRW-16, and a summary is given in the table below.

GNP, S&P 500 Stock Price, EPS, and DPS Growth
1960-Present

Nominal GDP	7.20%
S&P 500 Stock Price Appreciation	5.88%
S&P 500 EPS	5.66%
S&P 500 DPS	5.68%
Average	6.33%

These results offer compelling evidence that a long-run growth rate of in the 6%-7% is appropriate for companies in the U.S. By comparison, Mr. Moul's long-run growth rate projection of 11.29% is clearly not realistic. These estimates suggest that companies in the U.S. would be expected to: (1) increase their growth rate of EPS by over 50% in the future and (2) maintain that growth indefinitely in an economy that is expected to grow at about one half his projected growth rates. Such a scenario is not economically feasible or reasonable, and is directly

attributable to Mr. Moul's use of the upwardly biased EPS growth rate forecasts of Wall Street analysts.

Q. PLEASE PROVIDE A SUMMARY ASSESSMENT OF MR. MOUL'S EQUITY RISK PREMIUMS DERIVED FROM EXPECTED MARKET RETURNS.

A. Mr. Moul's equity risk premiums derived from expected market return models are inflated due to errors and bias in his studies. As previously discussed, at the present time stock prices (relative to earnings and dividends) are high while interest rates are low. Major stock market upswings that produce above average returns tend to occur when stock prices are low and interest rates are high. Thus, current market conditions do not suggest above-average expected market return and equity risk premium. Investment banks, consulting firms, and CFOs use the equity risk premium concept every day in making financing, investment, and valuation decisions. On this issue, the opinions of CFOs and financial forecasters are especially relevant. CFOs deal with capital markets on an ongoing basis since they must continually assess and evaluate capital costs for their companies. Furthermore, as is the case with any student of finance, they are well aware of the historical equity risk premium results as published by Ibbotson Associates as well as Wall Street analysts' projections. Nonetheless, the CFOs in the March 2009 *CFO Magazine* – Duke University Survey of over 500 CFOs shows an expected return on the S&P 500 of 8.77% over the next ten years. In addition, the financial

forecasters in the February 2009 Federal Reserve Bank of Philadelphia survey expect an annual market return of 6.6% over the next ten years. As such, the appropriate equity cost rate for a public utility should be in the 9.0%-10.0% range and not in the 11.0%-12.0% range.

Size Adjustment

Q. PLEASE DISCUSS MR. MOUL'S SIZE ADJUSTMENT.

A. Mr. Moul includes a size adjustment of 0.92% in his CAPM approach for NIPSCO. This adjustment is based on the historical stock market returns studies as performed by Morningstar (formerly Ibbotson Associates).

There are several flaws in this analysis. First, as discussed above, there are a number of errors in using historical market returns to compute risk premiums. Second, the Ibbotson study used for the explicit size premium is based on the stock returns for companies in the 10th decile. However, a review of the Ibbotson document indicates that these companies have betas that are much larger than the betas of electric utility companies. Hence, these size premiums are not associated with the electric utility industry. Finally, and most importantly, any equity cost rate adjustment based on the relative size of a public utility is inappropriate. 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 on-going 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 counterparts, accounting standards and reporting are fairly standardized for public utilities. 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 disclose, utilities are much different than industrials which could account for the lack of a size premium.

E. Comparable Earnings ("CE") Approach

Q. PLEASE DISCUSS MR. MOUL'S CE ANALYSIS.

A. On pages 38-41 of his testimony, Exhibit PRM-2, Schedule 12, and Appendix I, Mr. Moul estimates an equity cost rate for the Company employing the CE approach. His methodology involves averaging historic and prospective returns on common equity for a proxy group of non-utility companies comparable in risk

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

to his proxy group as determined from screening *Value Line's* Value Screen database. Mr. Moul screens the database on six risk measures and arrives at a group of thirty-one unregulated comparable companies. As shown in Panel E of Exhibit JRW-12, the average of the historic and projected median returns on common equity for the group is 15.4%.

This approach is fundamentally flawed for several reasons. Mr. Moul has not performed any analysis to examine whether his return on equity figures are likely measures of long-term earnings expectations. More importantly, since Mr. Moul has not evaluated the market-to-book ratios for these companies, he cannot indicate whether the past and projected returns on common equity are above or below investors' requirements. These returns on common equity are excessive if the market-to-book ratios for these companies are above 1.0. For example, Pitney Bowes is one of the companies 'comparable' to the Company. The projected return on equity of Pitney Bowes is 89.0%, and it is used by Mr. Moul in his CE to arrive at the equity cost rate for NIPSCO. However, I doubt if any financial analyst, including Mr. Moul, would suggest that Pitney Bowes has an equity cost rate of 89.0%. Indeed, the market-to-book ratio for the company is in excess of 10.0. This indicates that its return on equity is well above its cost of equity capital.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

VERIFICATION

COMMONWEALTH OF PENNSYLVANIA)
) ss:
COUNTY OF CENTRE)

The undersigned, J. Randall Woolridge, under penalties of perjury and being first duly sworn on his oath, says that he is a Professor of Finance at Pennsylvania State University, a Consultant for the Indiana Office of Utility Consumer Counselor; and in the matter of Cause No. 43526 that he caused to be prepared and read the foregoing that the representations set forth therein are true and correct to the best of his knowledge, information and belief.

Dated: April 30, 2009

By: J Randall Woolridge

Subscribed and sworn to before me, a Notary Public, this 30 day of april 2009.

Mary L. Hart
Signature

MARY L. HART
Printed Name

My Commission Expires: August 25, 2009

My County of Residence: Centre

NOTARIAL SEAL
Mary L. Hart, Notary Public
State College Boro., Centre County
My commission expires August 25, 2009

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 to discuss the implications of his research on CNN's *Money Line*, CNBC's *Morning Call* and *Business Today*, and Bloomberg Televisions' *Morning Call*.

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 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 Gas Corporation (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 Gas Corporation (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 Corporation (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 Gas Corporation (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 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), Cincinnati Gas & Electric Company (Case No. 05-0059-EL-AIR), Dominion East Ohio Company (Case No. 07-829-GA-AIR), and Columbia Gas of Ohio, Inc. (Case No. 08-0072-GA-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), Connecticut Light and Power Company (Docket No. 07-07-01), and the United Illuminating Company (Docket No. 08-07-03).

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), Southern California Edison (Docket No. 07-05-003), California-American Water Company (Docket No. 08-05-003), Golden State Water Company (Docket No. 08-05-004), and California Water Service Company (Docket No. 08-05-002).

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. (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 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).

Utah: Dr. Woolridge prepared testimony on behalf of the Utah Committee on Consumer Services (CCS) in the following case: Questar Gas Company (Docket No. No. 07-057-13).

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).

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

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

Northern Indiana Public Service Company
Cost of Capital

Northern Indiana Public Service Company
Weighted Average Cost of Capital
Investor Provided Capital

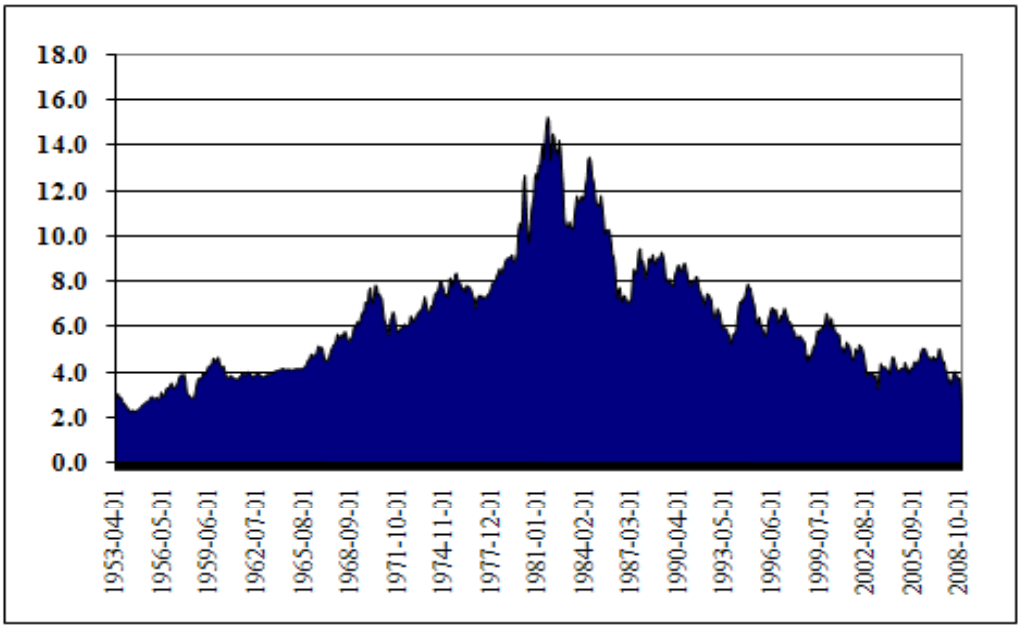
Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	52.4%	6.56%	3.44%
Common Equity	47.6%	10.00%	4.76%
Total Capital	100.0%		8.20%

Northern Indiana Public Service Company
Weighted Average Cost of Capital
For Ratesetting Purposes

Capital Source	Capitalization Ratio	Cost Rate	Weighted Cost Rate
Long-Term Debt	43.21%	6.56%	2.83%
Common Equity	39.20%	10.00%	3.92%
Customer Deposits	2.28%	6.00%	0.14%
Cost-Free Capital	14.21%	0.00%	0.00%
JDITC	1.09%	8.20%	0.09%
Total Capital	100.00%		6.98%

Exhibit JRW-2

Panel A
Ten-Year Treasury Yields
1953-Present



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

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

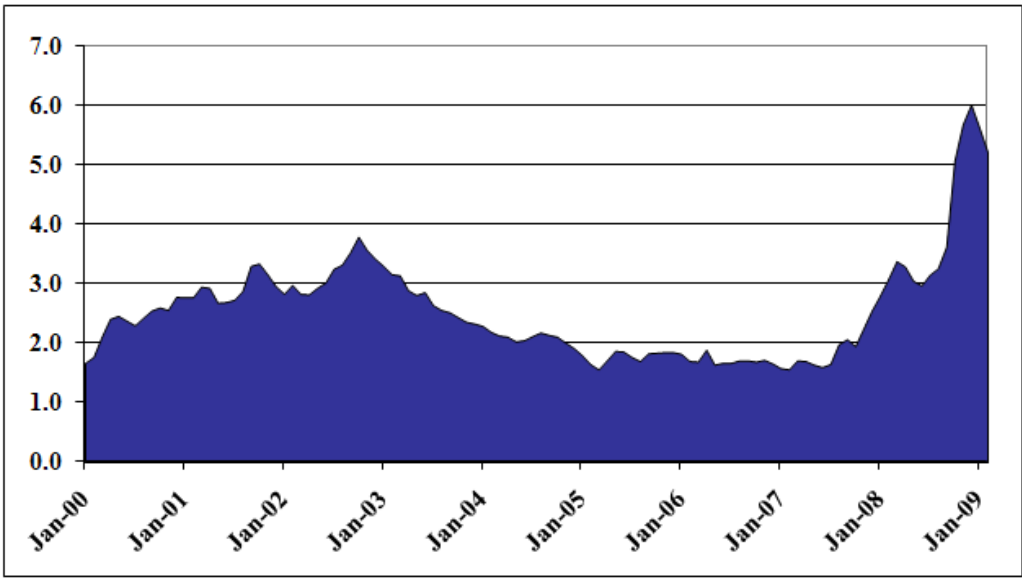
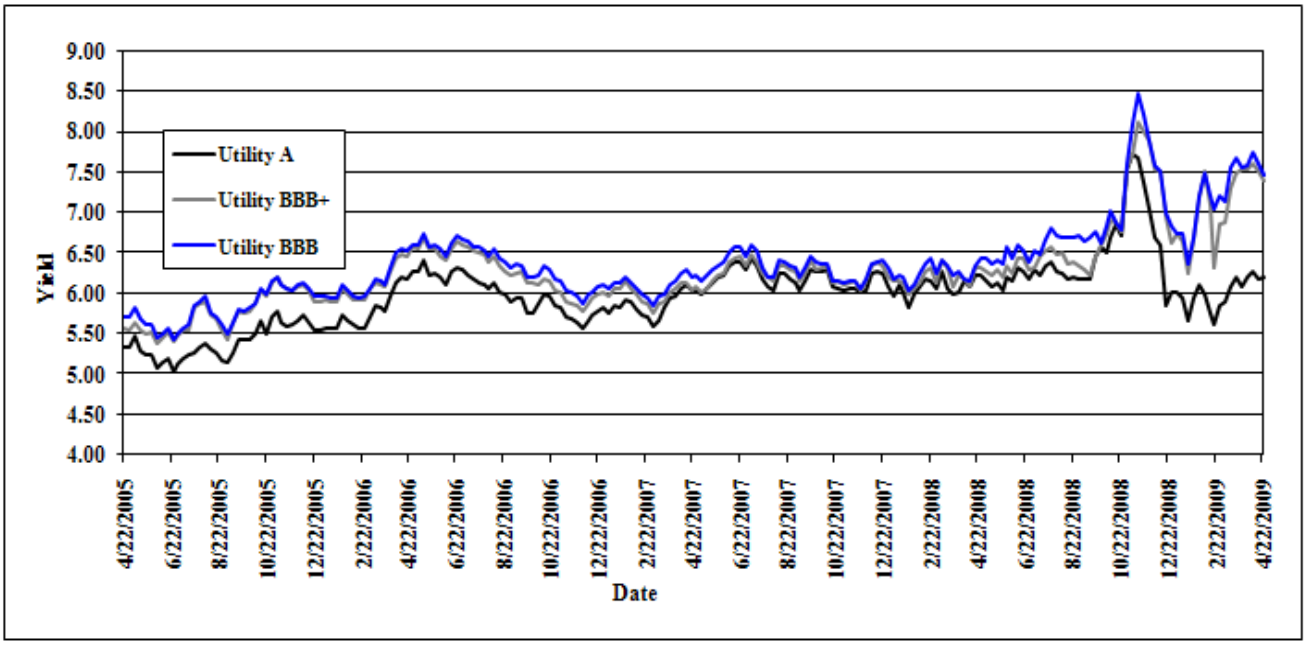


Exhibit JRW-3
Panel A
Thirty-Year Public Utility Yields



Panel B
Thirty-Year Public Utility Yield Spread Over Treasuries

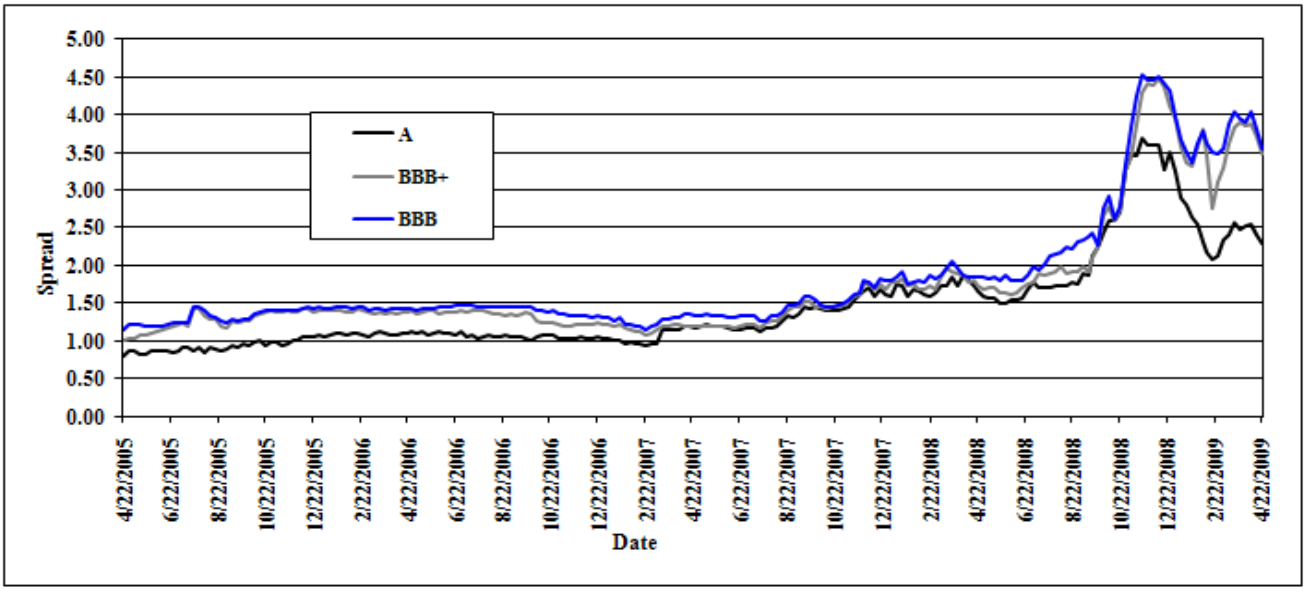


Exhibit JRW-3
Bonds a Bright Spot for Utilities in '08

THE WALL STREET JOURNAL.

JANUARY 13, 2009

Bonds a Bright Spot for Utilities in '08

Debt Issuance Rose 34% as Investors Shunned Commercial Paper, Stocks

By REBECCA SMITH

Even as credit markets seized last year, the utility industry achieved a noteworthy feat: It sold more bonds than it had in years.

Utilities with investment-grade credit ratings sold $47 billion of corporate bonds last year, 34% more than the $35 billion issued in 2007 and 77% more than the $26.5 billion of 2006.

The 2008 increase marked one of the few bright spots in the overall bond market, which registered a decline in issuance of nearly 35%, to $645 billion from $987 billion in 2007, according to Thomson SDC.

Pacificorp's Huntington Power Plant in Huntington, Utah — Reuters

Some of Heftiest Utility Bond Sales

2008 sales rose. So did spreads

Date priced	Company	Total size (billions)	Interest rate	Spread to U.S. Treasurys* (pct. pts)
Sept. 3, '08	Oncor Electric Delivery	$1.5	5.950%	3.05
June 11, '08	Florida Power	1.5	5.650	1.63
April 1, '08	Consolidated Edison of N.Y.	1.2	5.850	2.30
Jan. 5, '09	Pacificorp	1.0	5.500	3.10
Nov. 12, '08	Duke Energy Carolinas	0.9	5.750	3.45
Nov. 17, '08	Sempra Energy	0.75	8.900	6.70
Nov. 4, '08	Virginia Electric & Power	0.7	8.875	4.56
May 15, '08	NiSource Finance	0.7	6.150	2.92
March 19, '08	Commonwealth Edison	0.7	5.800	2.45
March 25, '08	MidAmerican Energy	0.65	5.750	2.25

Source: Thomson SDC — * Based on first portion of issuance

Utilities are the third-largest debt issuers after government and finance, requiring a steady supply of cash to build power plants, pipelines and transmission lines and to meet tightening environmental requirements. When credit markets tanked last autumn, many utilities were hurt as market valuations tumbled amid investor fears that demand for their services would decline and that they would have difficulty raising the large sums of money they require, at least at affordable rates.

The full-year issuance for utilities is encouraging, analysts said, because it shows a vital sector of the economy has adapted to changing conditions and is getting the money it needs to support basic operations as well as fund expansion.

Utilities will be critical players in President-elect Barack Obama's economic-stimulus plan, particularly in efforts to modernize the nation's electric grid and to triple the amount of energy garnered from renewable sources in coming years.

Exhibit JRW-3
Bonds a Bright Spot for Utilities in '08

Key to that effort is the ability of utilities to finance big infrastructure projects. Steve Tulip, a managing director in debt capital markets for Goldman Sachs Group, says utilities stood out in a stormy credit landscape. "The flight to quality clearly has benefited the power sector," Mr. Tulip said. "Investors are looking for safe havens."

Utilities leaned on the bond market last year partly out of desperation because commercial paper markets came unglued and they were unable, in some cases, to refinance short-term notes. Meantime, sagging stock market valuations made equity issuance unattractive. Bonds offered a better way for companies to secure stable money and garner some measure of protection against what could be a rough 2009.

"We expect a choppy economy," said Bill Johnson, chief executive of Progress Energy Inc., a utility that operates in the Carolinas and Florida that sold $600 million of bonds Jan. 8. It hopes that will be sufficient to tide it over until 2010. "It felt good to get that one off the table," he said.

The 10-year bonds carried a coupon rate of 5.3%, substantially less than the 7.5% to 8% rate executives felt they might have to swallow, based on prevailing rates in mid- to late-December.

"People have turned the page on 2008 and spreads have come down for people like us," said Mark Mulhern, Progress Energy's chief financial officer.

Pepco Holdings Inc. did three $250-million bond issuances in November and December for its three utilities, including sales of five-year, 10-year and 30-year bonds. Though the spreads to comparable U.S. Treasurys were high -- such as the 4.12 percentage point spread for 10-year bonds issued by Atlantic City Electric -- the actual coupon rates "weren't bad," said Chief Financial Officer Paul Barry. Interest rates were 7.75% for the Atlantic City Electric issuance and 6.4% and 6.5% on two other issues.

Higher financing costs for utilities could put pressure on customer rates if they continue long enough. That is because financing costs typically are a pass-through expense, though there sometimes is a lag between when costs are incurred and when they get folded into rates. That lag can be a drag on utility earnings.

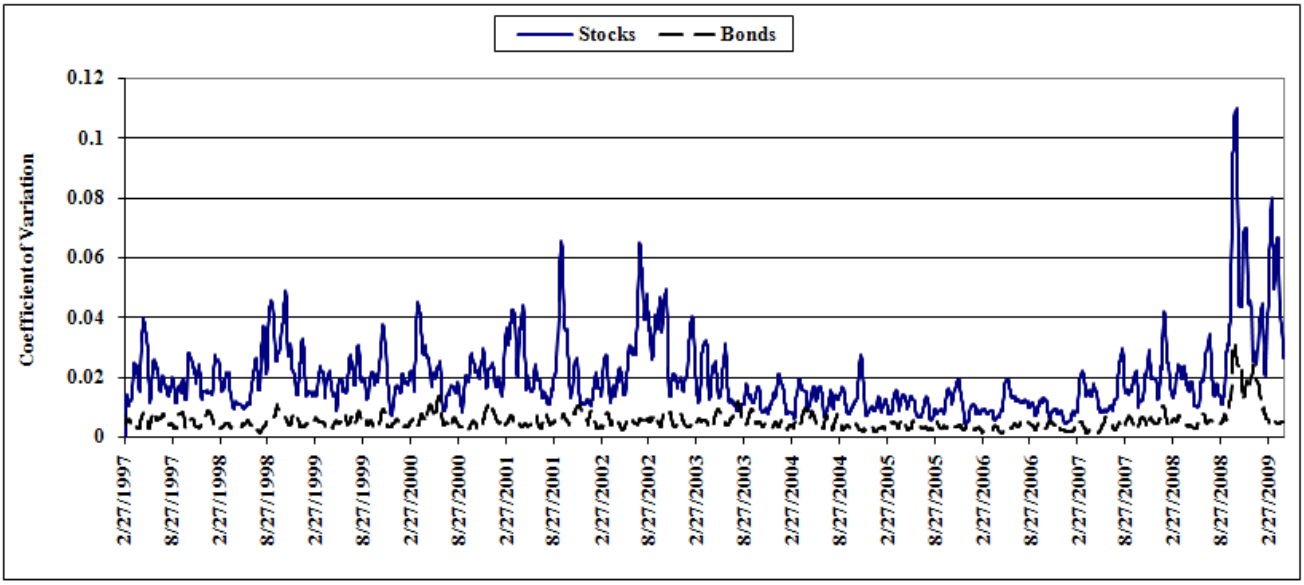
The financing cost, expressed as a "spread," or an amount above the interest rates for U.S. Treasury notes of similar duration, widened to about five to eight percentage points by the end of 2008 from two or three percentage points at the beginning of the year. The actual interest rates paid to bond purchasers, called the coupon rates, didn't rise to unbearable levels because Treasury interest rates fell.

In the fourth quarter, issuance by investment-grade utilities topped $10 billion. In 2008, utilities widened their share of total U.S. investment-grade bond issuance to 7% from 4% in 2007 and 3% in 2006.

Total bond issuance by financial firms, such as commercial banks and investment banks, skidded 52% to $322 billion from $676 billion in 2007 and $686 billion in 2006. For nonfinancial firms, with utilities excluded, total issuance held steady at $275 billion for 2008 and 2007, up from $217 billion in 2006.

Exhibit JRW-3

Panel A
Coefficient of Variation



Panel B
Coefficient of Variation
S&P 500 Price CV/Bear Sterns Bond Price Index CV

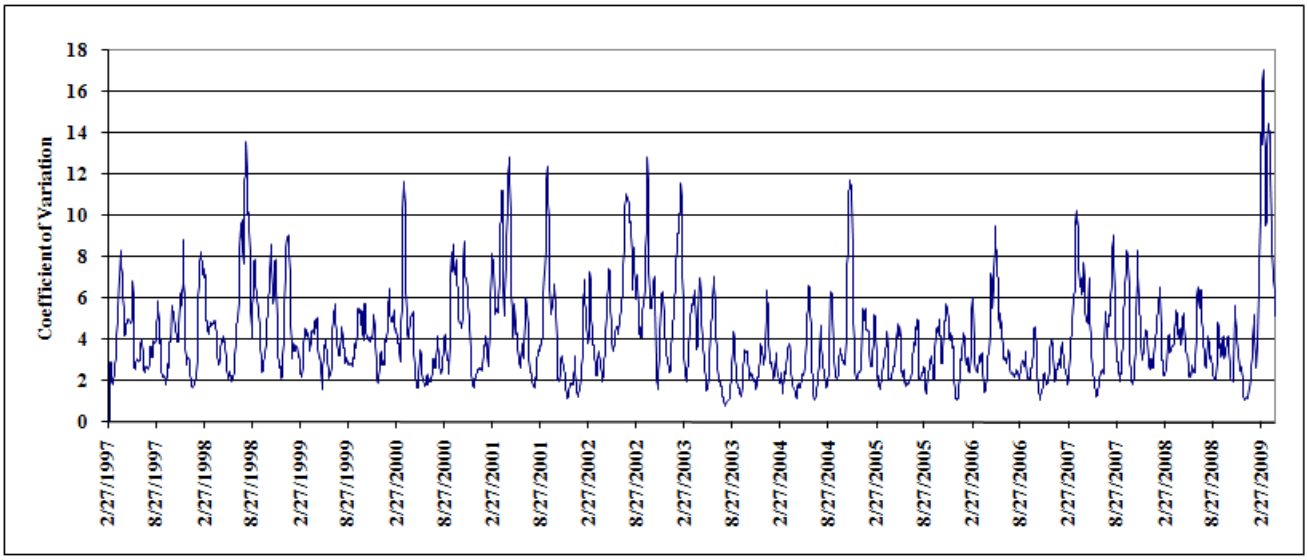
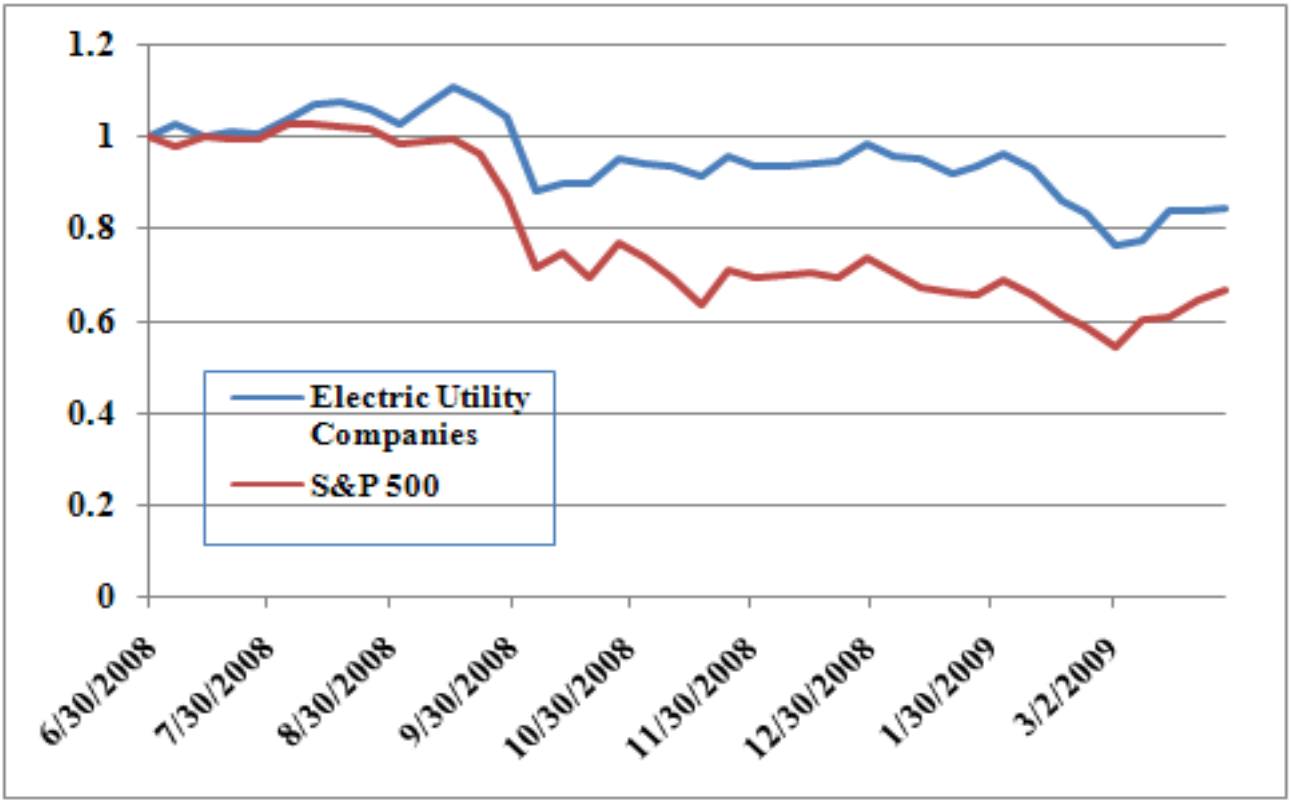


Exhibit JRW-3
The Performance of Electric Utility Stocks Relative to the S&P 500
July 1, 2008 - March 31, 2009



Data Source: www.yahoo.com

Exhibit JRW-4
Northern Indiana Public Service Company
Summary Financial Statistics for Electric Proxy Group

Electric Proxy Group

Company	Operating Revenue ($mil)	Percent Elec Revenue	Net Plant ($mil)	Moody's Bond Rating	S&P Bond Rating	Long-Term Interest Coverage	Primary Service Area	Common Equity Ratio	Return on Equity	Market to Book Ratio
ALLETE, Inc. (NYSE-ALE)	801.0	89	1,387.3	NR	A-	6.0	MN, WS	57	12.5	97
Central Vermont Public Serv. Corp. (NYSE-CV)	342.2	100	342.5	NR	BBB+	4.1	VT	55	7.8	92
Cleco Corporation (NYSE-CNL)	1,080.2	96	2,045.3	Baa1	BBB	3.2	LA	48	9.9	123
DPL Inc.(NYSE-DPL)	1,601.6	100	2,876.4	A2	A-	6.2	OH	38	NM	266
IDACORP, Inc. (NYSE-IDA)	960.4	100	2,758.2	A3	A-	2.4	ID,OR	48	7.8	83
Northeast Utilities (NYSE-NU)	5,800.1	81	8,207.9	Baa1	BBB+	2.8	CT,NH,MA	38	8.8	112
NSTAR (NYSE-NST)	3,345.4	79	4,398.4	A1	AA-	3.3	MA	40	5.4	189
Progress Energy Inc. (NYSE-PGN)	9,159.0	100	18,293.0	A2	A-	2.9	NC,SC,FL	45	9.7	106
UIL Holdings Corporation (NYSE-UIL)	948.7	100	1,073.6	Baa2	NR	4.2	CT	39	10.3	116
	2,671.0	94	4,598.1			3.9		45	9.0	132

Data Source: AUS *Utility Reports* , April, 2009; Service Area and Long-Term Interest Coverage are from *Value Line Investment Survey* , 2009.

Exhibit JRW-5
Northern Indiana Public Service Company
Capital Structure Ratios

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

Capital	Capitalization Ratios
Long-Term Debt	39.40%
Common Equity	60.60%
Total Capital	100.00%

Source: Testimony of Ms. Linda Miller

Panel B - Average Common Equity Ratio of Electric Proxy Group

Average Common Equity Ratio	46.7

Source: Page 3 of Exhibit JRW-5

Panel C - Electric Proxy Group Average Quarterly Capital Structures

Source	30-Sep-08	30-Jun-08	31-Mar-08	31-Dec-07	Average
Long-Term Debt	52.64%	53.02%	51.34%	51.01%	52.00%
Preferred Stock	0.47%	0.53%	0.54%	0.56%	0.53%
Common Equity	46.89%	46.44%	48.12%	48.43%	47.47%
Total Capital	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Page 4 of Exhibit JRW-5

Panel D - Nisource's Capital Structure with Short-Term Debt

Source	30-Sep-08	30-Jun-08	31-Mar-08	31-Dec-07
Short-Term Debt	1,282,900	666,500	1,186,300	1,175,200
Long-Term Debt	6,323,300	6,115,500	5,383,000	5,596,100
Common Equity	4,670,800	4,810,900	5,064,200	5,076,600
Total Capital	12,277,000	11,592,900	11,633,500	11,847,900

Source	30-Sep-08	30-Jun-08	31-Mar-08	31-Dec-07	Average
Short-Term Debt	10.4%	5.7%	10.2%	9.9%	9.08%
Long-Term Debt	51.5%	52.8%	46.3%	47.2%	49.44%
Common Equity	38.0%	41.5%	43.5%	42.8%	41.48%
Total Capital	100.0%	100.0%	100.0%	100.0%	100.00%

Panel E - Nisource's Capital Structure without Short-Term Debt

Source	30-Sep-08	30-Jun-08	31-Mar-08	31-Dec-07
Long-Term Debt	6,323,300	6,115,500	5,383,000	5,596,100
Common Equity	4,670,800	4,810,900	5,064,200	5,076,600
Total Capital	10,994,100	10,926,400	10,447,200	10,672,700

Source	30-Sep-08	30-Jun-08	31-Mar-08	31-Dec-07	Average
Long-Term Debt	57.5%	56.0%	51.5%	52.4%	54.36%
Common Equity	42.5%	44.0%	48.5%	47.6%	45.64%
Total Capital	100.0%	100.0%	100.0%	100.0%	100.00%

Exhibit JRW-5
Northern Indiana Public Service Company
Capital Structure Ratios

Panel A - NIPSCO's Recommended Capitalization Ratios - For Ratesetting Purposes

Capital	Capitalization Ratios
Long-Term Debt	32.47%
Common Equity	49.94%
Customer Deposits	2.28%
Cost-Free Capital	14.21%
JDITC	1.09%
Total Capital*	100.0%

Source: Testimony of Ms. Linda Miller

Panel B - Capital Structure Ratios - December 31, 2007

Source	NiSource
Long-Term Debt	52.43%
Preferred Stock	0.00%
Common Equity	47.57%
Total Capital	100.00%

Source: Page 1 of Exhibit JRW-5

Panel C - Capital Structure Ratios - Investor Provided Capital and For Rateseting Purposes

	(1)	(2)	(3)	(4)
	NIPSCO Recommended Investor Provided Capital	NIPSCO Recommended For Ratesetting Purposes	NiSource Investor Provided Capital	NiSource For Ratesetting Purposes
Long-Term Debt	39.40%	32.47%	52.43%	43.21%
Common Equity	60.60%	49.94%	47.57%	39.20%
Total Capital	100.00%	82.41%	100.00%	82.41%

Panel D - OUCC Recommended Capitalization Ratios For Ratesetting Purposes

Capital	Capitalization Ratios
Long-Term Debt	43.21%
Common Equity	39.20%
Customer Deposits	2.28%
Cost-Free Capital	14.21%
JDITC	1.09%
Total Capital	100.0%

Exhibit JRW-5
Northern Indiana Public Service Company
Common Equity Ratios of Electric Proxy Group

Electric Proxy Group

Company	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Mean
ALLETE, Inc. (NYSE-ALE)	62.0	62.0	63.0	63.0	63.0	60.0	60.0	60.0	60.0	57.0	57.2	58.0	**60.4**
Central Vermont Public Serv. Corp. (NYSE-CV)	59.0	59.0	59.0	60.0	60.0	51.0	51.0	51.0	50.0	50.0	50.1	50.0	**54.2**
Cleco Corporation (NYSE-CNL)	56.0	56.0	56.0	54.0	54.0	51.0	51.0	51.0	49.0	49.0	49.5	50.0	**52.2**
DPL Inc.(NYSE-DPL)	34.0	34.0	34.0	35.0	35.0	35.0	36.0	36.0	36.0	39.0	39.1	40.0	**36.1**
IDACORP, Inc. (NYSE-IDA)	48.0	48.0	48.0	47.0	47.0	46.0	46.0	46.0	46.0	46.0	45.9	46.0	**46.7**
Northeast Utilities (NYSE-NU)	43.0	43.0	43.0	43.0	43.0	42.0	42.0	42.0	42.0	40.0	40.3	39.0	**41.9**
NSTAR (NYSE-NST)	41.0	41.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	39.7	40.0	**40.1**
Progress Energy Inc. (NYSE-PGN)	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	43.0	43.0	44.0	**45.3**
UIL Holdings Corporation (NYSE-UIL)	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.4	40.0	**43.7**
Mean	**48.1**	**48.1**	**48.1**	**48.0**	**48.0**	**46.1**	**46.2**	**46.2**	**45.9**	**45.3**	**45.5**	**45.2**	**46.7**

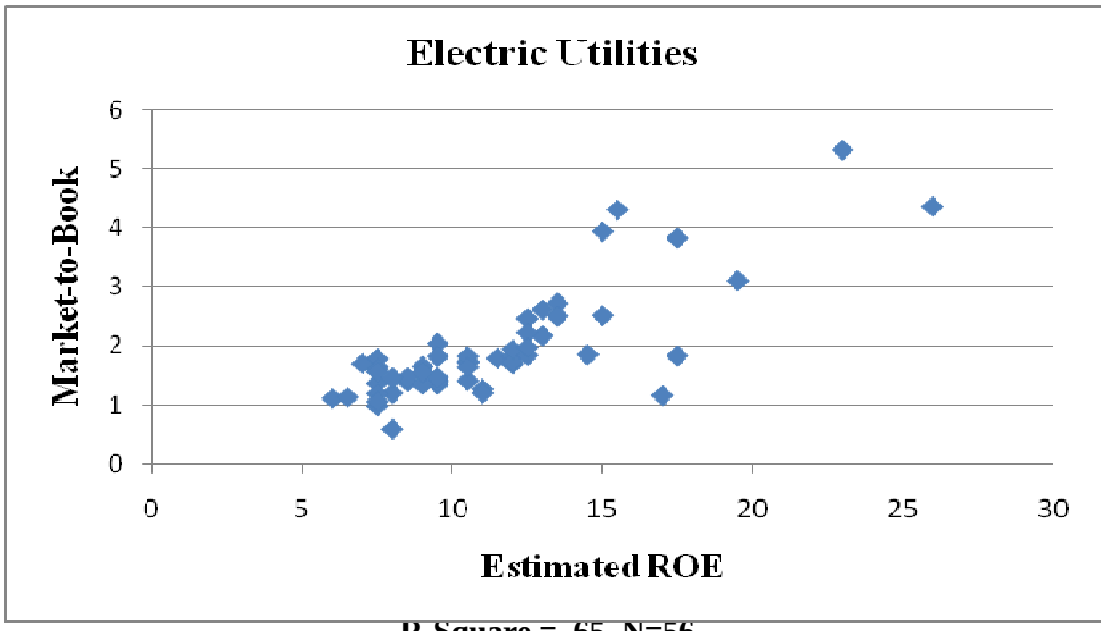
Data Source: AUS *Utility Reports.*

Northern Indiana Public Service Company
Capital Structures of Electric Proxy Group

		30-Sep-08	30-Jun-08	31-Mar-08	31-Dec-07		30-Sep-08	30-Jun-08	31-Mar-08	31-Dec-07
ALLETE, Inc. (N	L-T Debt	537,200	538,500	470,300	410,900	L-T Debt	40.18%	41.50%	38.50%	35.62%
	Preferred Stock					Preferred Stock	0.00%	0.00%	0.00%	0.00%
	Common Equity	799,700	759,200	751,400	742,600	Common Equity	59.82%	58.50%	61.50%	64.38%
	Total Capital	1,336,900	1,297,700	1,221,700	1,153,500	Total Capital	100.00%	100.00%	100.00%	100.00%
Central Vermont	L-T Debt	185,343	196,018	132,988	123,431	L-T Debt	46.31%	49.20%	39.89%	37.36%
	Preferred Stock	9,054	9,054	9,054	10,054	Preferred Stock	2.26%	2.27%	2.72%	3.04%
	Common Equity	205,853	193,326	191,313	196,861	Common Equity	51.43%	48.53%	57.39%	59.59%
	Total Capital	400,250	398,398	333,355	330,346	Total Capital	100.00%	100.00%	100.00%	100.00%
Cleco Corporatior	L-T Debt	944,869	950,090	861,025	769,103	L-T Debt	51.03%	52.02%	50.51%	48.52%
	Preferred Stock					Preferred Stock	0.00%	0.00%	0.00%	0.00%
	Common Equity	906,592	876,183	843,619	816,110	Common Equity	48.97%	47.98%	49.49%	51.48%
	Total Capital	1,851,461	1,826,273	1,704,644	1,585,213	Total Capital	100.00%	100.00%	100.00%	100.00%
DPL Inc.(NYSE-D	L-T Debt	1,276,500	1,541,500	1,451,600	1,451,700	L-T Debt	57.50%	62.66%	63.37%	63.70%
	Preferred Stock	22,900	22,900	22,900	22,900	Preferred Stock	1.03%	0.93%	1.00%	1.00%
	Common Equity	920,500	895,600	816,000	804,400	Common Equity	41.47%	36.41%	35.63%	35.30%
	Total Capital	2,219,900	2,460,000	2,290,500	2,279,000	Total Capital	100.00%	100.00%	100.00%	100.00%
IDACORP, Inc. (N	L-T Debt	1,273,028	1,153,454	1,155,290	1,156,880	L-T Debt	50.05%	48.50%	48.69%	48.93%
	Preferred Stock					Preferred Stock	0.00%	0.00%	0.00%	0.00%
	Common Equity	1,270,660	1,224,648	1,217,487	1,207,315	Common Equity	49.95%	51.50%	51.31%	51.07%
	Total Capital	2,543,688	2,378,102	2,372,777	2,364,195	Total Capital	100.00%	100.00%	100.00%	100.00%
Northeast Utilities	L-T Debt	5,560,685	5,703,694	5,202,837	4,609,496	L-T Debt	64.84%	65.99%	64.00%	61.27%
	Preferred Stock					Preferred Stock	0.00%	0.00%	0.00%	0.00%
	Common Equity	3,015,981	2,939,456	2,926,776	2,913,835	Common Equity	35.16%	34.01%	36.00%	38.73%
	Total Capital	8,576,666	8,643,150	8,129,613	7,523,331	Total Capital	100.00%	100.00%	100.00%	100.00%
NSTAR (NYSE-N	L-T Debt	2,720,102	2,014,220	2,016,598	2,501,400	L-T Debt	59.77%	52.51%	53.24%	58.88%
	Preferred Stock	43,000	43,000	43,000	43,000	Preferred Stock	0.94%	1.12%	1.14%	1.01%
	Common Equity	1,787,520	1,778,484	1,728,458	1,703,815	Common Equity	39.28%	46.37%	45.63%	40.11%
	Total Capital	4,550,622	3,835,704	3,788,056	4,248,215	Total Capital	100.00%	100.00%	100.00%	100.00%
Progress Energy I	L-T Debt	10,389,000	10,393,000	8,901,000	8,976,000	L-T Debt	54.06%	54.17%	51.10%	51.59%
	Preferred Stock		93000			Preferred Stock	0.00%	0.48%	0.00%	0.00%
	Common Equity	8,827,000	8,700,000	8,518,000	8,422,000	Common Equity	45.94%	45.35%	48.90%	48.41%
	Total Capital	19,216,000	19,186,000	17,419,000	17,398,000	Total Capital	100.00%	100.00%	100.00%	100.00%
UIL Holdings Cor	L-T Debt	475,031	475,031	514,719	527,147	L-T Debt	49.99%	50.63%	52.73%	53.17%
	Preferred Stock					Preferred Stock	0.00%	0.00%	0.00%	0.00%
	Common Equity	475,175	463,243	461,410	464,291	Common Equity	50.01%	49.37%	47.27%	46.83%
	Total Capital	950,206	938,274	976,129	991,438	Total Capital	100.00%	100.00%	100.00%	100.00%
Average						L-T Debt	52.64%	53.02%	51.34%	51.01%
						Preferred Stock	0.47%	0.53%	0.54%	0.56%
						Common Equity	46.89%	46.44%	48.12%	48.43%
						Total Capital	100.00%	100.00%	100.00%	100.00%

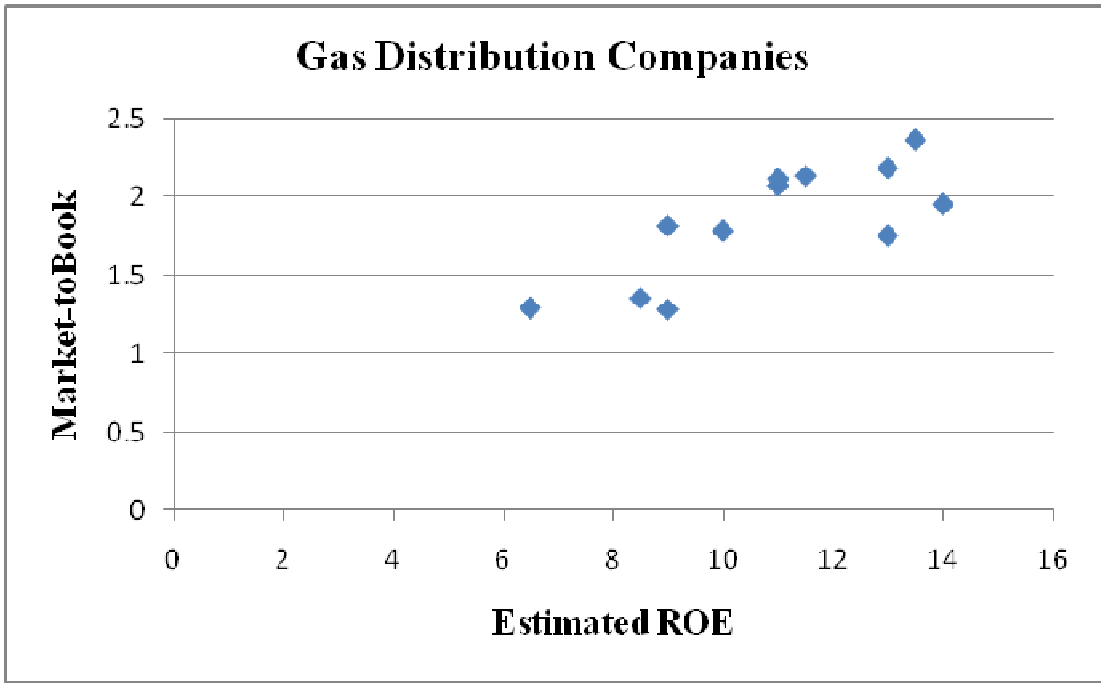
Exhibit JRW-6

Panel A



R-Square = .65, N=56.

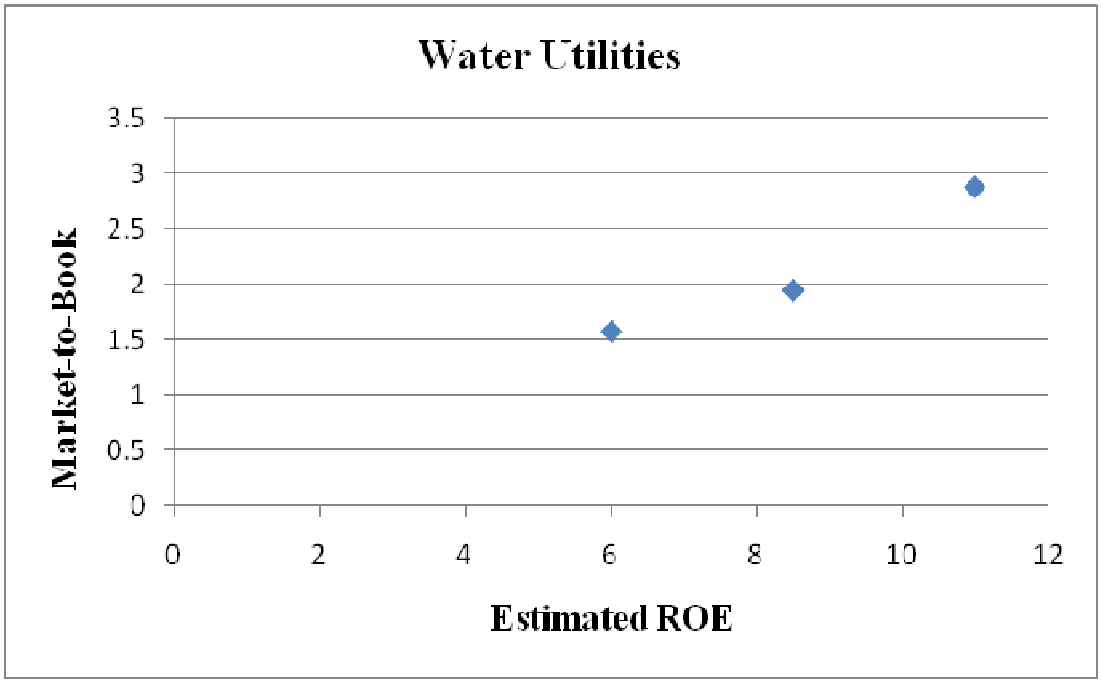
Panel B



R-Square = .60, N=12.

Exhibit JRW-6

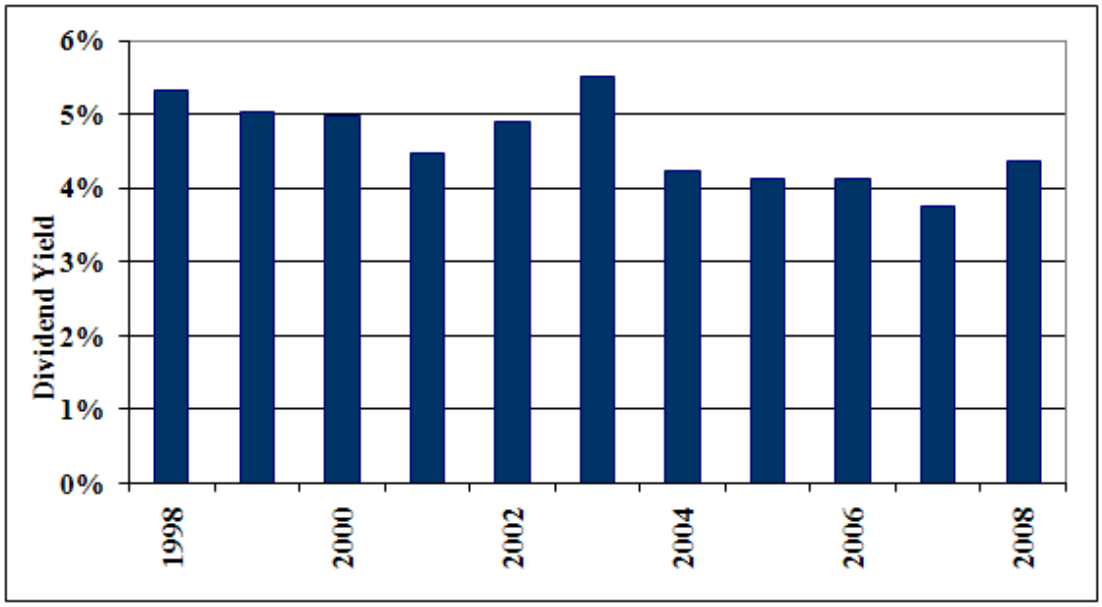
Panel C



R-Square = .92, N=4.

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

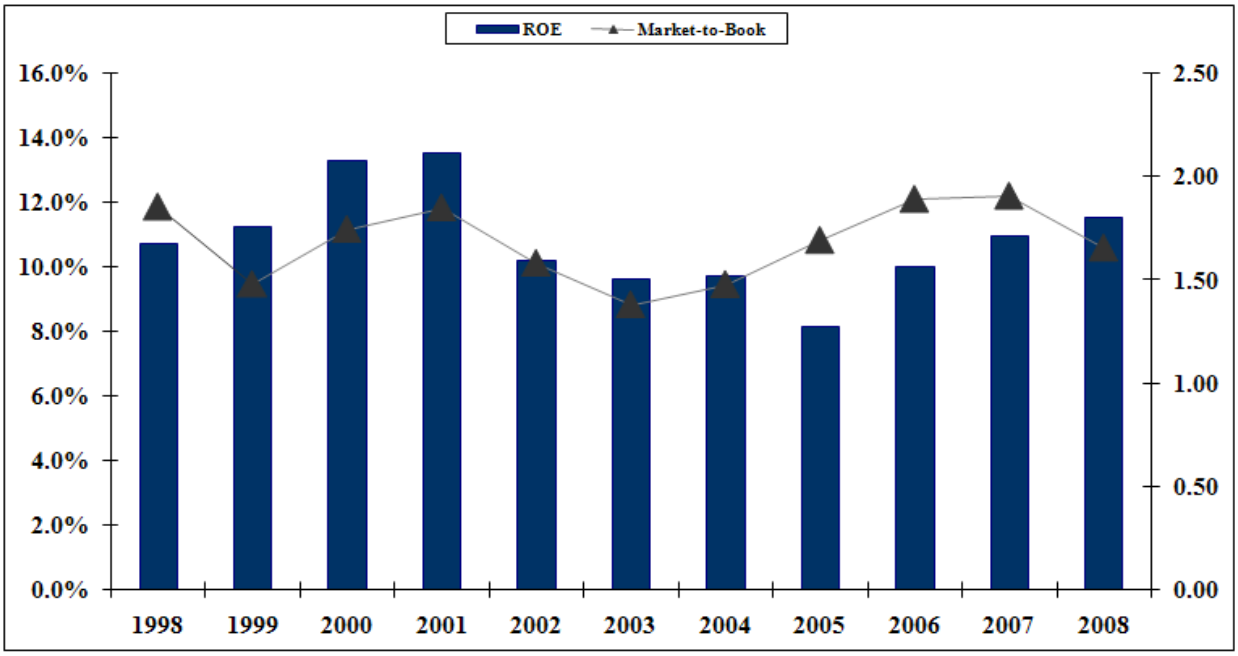
Exhibit JRW-7
Electric Proxy Group Dividend Yield



Data Source: *Value Line Investment Survey*

Exhibit JRW-7

Electric Proxy Group - Market to Book and ROE



Data Source: *Value Line Investment Survey*

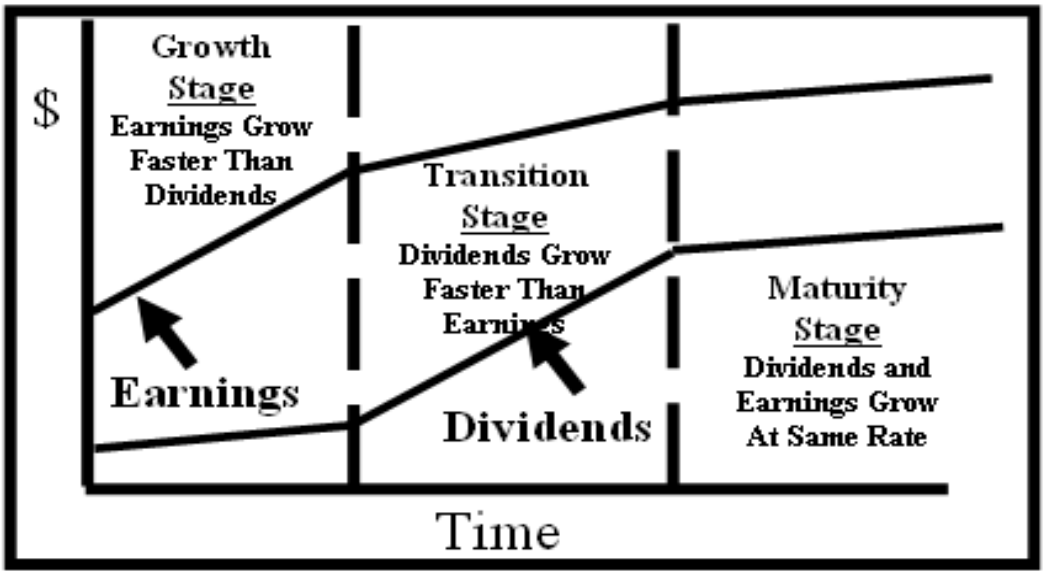
Exhibit JRW-8

Industry Average Betas

Industry Name	Number of Firms	Beta	Industry Name	Number of Firms	Beta	Industry Name	Number of Firms	Beta
Semiconductor	138	2.59	Telecom. Services	152	1.34	Utility (Foreign)	6	1.01
Semiconductor Equip	16	2.51	Electronics	179	1.32	Petroleum (Producing)	186	1.00
Wireless Networking	74	2.20	Investment Co.(Foreign)	15	1.31	Environmental	89	1.00
E-Commerce	56	2.08	Educational Services	39	1.27	Grocery	15	0.99
Entertainment Tech	38	2.06	Retail (Special Lines)	164	1.26	Home Appliance	11	0.95
Telecom. Equipment	124	1.98	Hotel/Gaming	75	1.25	Insurance (Life)	40	0.94
Steel (Integrated)	14	1.97	Heavy Construction	12	1.25	Electric Util. (Central)	25	0.93
Internet	266	1.97	Retail Building Supply	9	1.23	Paper/Forest Products	39	0.93
Manuf. Housing/RV	18	1.92	Railroad	16	1.23	Restaurant	75	0.93
Power	58	1.87	Industrial Services	196	1.22	Natural Gas (Div.)	31	0.93
Computers/Peripherals	144	1.86	Newspaper	18	1.21	Healthcare Information	38	0.91
Drug	368	1.78	Aerospace/Defense	69	1.19	Property Management	12	0.91
Coal	18	1.71	Metal Fabricating	37	1.19	R.E.I.T.	147	0.90
Steel (General)	26	1.71	Machinery	126	1.19	Household Products	28	0.89
Securities Brokerage	31	1.66	Chemical (Diversified)	37	1.16	Insurance (Prop/Cas.)	87	0.89
Precision Instrument	103	1.66	Financial Svcs. (Div.)	294	1.14	Beverage	44	0.89
Homebuilding	36	1.64	Office Equip/Supplies	25	1.13	Electric Utility (West)	17	0.88
Advertising	40	1.60	Packaging & Container	35	1.12	Maritime	52	0.87
Retail Automotive	16	1.58	Precious Metals	84	1.11	Apparel	57	0.87
Cable TV	23	1.56	Retail Store	42	1.11	Bank (Midwest)	38	0.85
Computer Software/Svcs	376	1.56	Furn/Home Furnishings	39	1.10	Toiletries/Cosmetics	21	0.85
Auto & Truck	28	1.54	Oilfield Svcs/Equip.	113	1.10	Electric Utility (East)	27	0.84
Recreation	73	1.54	Medical Services	178	1.10	Canadian Energy	13	0.80
Entertainment	93	1.53	Foreign Electronics	10	1.08	Food Wholesalers	19	0.79
Chemical (Basic)	19	1.52	Building Materials	49	1.07	Water Utility	16	0.78
Biotechnology	103	1.51	Pharmacy Services	19	1.07	Natural Gas Utility	26	0.78
Shoe	20	1.47	Chemical (Specialty)	90	1.06	Food Processing	123	0.77
Auto Parts	56	1.45	Metals & Mining (Div.)	78	1.05	Oil/Gas Distribution	15	0.72
Medical Supplies	274	1.43	Information Services	38	1.05	Investment Co.	18	0.71
Air Transport	49	1.40	Trucking	32	1.04	Tobacco	11	0.70
Human Resources	35	1.38	Diversified Co.	107	1.03	Bank (Canadian)	8	0.67
Publishing	40	1.35	Petroleum (Integrated)	26	1.02	Bank	504	0.63
Electrical Equipment	86	1.35	Reinsurance	11	1.01	Thrift	234	0.59
						Total/Average	**7364**	1.24

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

Exhibit JRW-9
Three-Stage DCF Model



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

Exhibit JRW-10

Northern Indiana Public Service Company
Discounted Cash Flow Analysis

Electric Proxy Group

Dividend Yield*	5.3%
Adjustment Factor	1.025
Adjusted Dividend Yield	5.4%
Growth Rate**	5.0%
Equity Cost Rate	10.4%

* Page 2 of Exhibit JRW-10

** Based on data provided on pages 3, 4, and 5 of Exhibit JRW-10

Exhibit JRW-10

Northern Indiana Public Service Company
Monthly Dividend Yields
November 2008 - April 2009

Electric Proxy Group

Company	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**Mean**
ALLETE, Inc. (NYSE-ALE)	**4.6%**	**5.1%**	**5.5%**	**5.7%**	**6.2%**	**6.4%**	**5.6%**
Central Vermont Public Serv. Corp. (NYSE-CV)	**4.4%**	**5.2%**	**4.4%**	**4.2%**	**3.8%**	**4.8%**	**4.5%**
Cleco Corporation (NYSE-CNL)	**4.2%**	**4.2%**	**4.2%**	**4.2%**	**4.4%**	**4.2%**	**4.2%**
DPL Inc.(NYSE-DPL)	**4.9%**	**5.4%**	**5.1%**	**5.1%**	**5.6%**	**5.1%**	**5.2%**
IDACORP, Inc. (NYSE-IDA)	**4.7%**	**4.2%**	**4.1%**	**4.2%**	**4.9%**	**5.0%**	**4.5%**
Northeast Utilities (NYSE-NU)	**4.1%**	**3.8%**	**3.8%**	**3.7%**	**3.8%**	**4.4%**	**3.9%**
NSTAR (NYSE-NST)	**4.8%**	**4.6%**	**4.2%**	**4.3%**	**4.5%**	**4.8%**	**4.5%**
Progress Energy Inc. (NYSE-PGN)	**6.8%**	**6.6%**	**6.3%**	**6.6%**	**6.6%**	**7.0%**	**6.7%**
UIL Holdings Corporation (NYSE-UIL)	**5.3%**	**5.9%**	**5.8%**	**5.9%**	**7.3%**	**8.0%**	**6.4%**
Mean	**4.9%**	**5.0%**	**4.8%**	**4.9%**	**5.2%**	**5.5%**	**5.1%**

Source: *AUS Utility Reports* , monthly issues.

Exhibit JRW-10

Northern Indiana Public Service Company
DCF Equity Cost Growth Rate Measures
***Value Line* Historic Growth Rates**

Electric Proxy Group

Company	*Value Line* Historic Growth					
	Past 10 Years			Past 5 Years		
	Earnings	Dividends	Book Value	Earnings	Dividends	Book Value
ALLETE, Inc. (NYSE-ALE)	NA	NA	NA	NA	NA	NA
Central Vermont Public Serv. Corp. (NYSE-CV)	-2.5%	1.0%	1.0%	-2.5%	1.0%	2.0%
Cleco Corporation (NYSE-CNL)	2.5%	1.5%	6.5%	-2.0%	0.5%	7.0%
DPL Inc.(NYSE-DPL)	1.0%	1.5%	-0.5%	-1.0%	1.0%	2.5%
IDACORP, Inc. (NYSE-IDA)	-1.0%	-4.5%	3.5%	-7.0%	-8.5%	2.5%
Northeast Utilities (NYSE-NU)	11.0%	-4.5%	0.5%	8.5%	9.5%	2.5%
NSTAR (NYSE-NST)	4.5%	3.0%	3.5%	3.5%	3.5%	4.0%
Progress Energy Inc. (NYSE-PGN)	0.0%	3.0%	6.0%	-4.5%	2.5%	3.0%
UIL Holdings Corporation (NYSE-UIL)	-2.0%	0.0%	0.5%	-6.0%	0.0%	-1.0%
Mean	1.7%	0.1%	2.6%	-1.4%	1.2%	2.8%
Median	0.5%	1.3%	2.3%	-2.3%	1.0%	2.5%
	Average of Mean and Median =			1.0%		

Data Source: *Value Line Investment Survey.*

Exhibit JRW-10

Northern Indiana Public Service Company
DCF Equity Cost Growth Rate Measures
***Value Line* Projected Growth Rates**

Electric Proxy Group

	Value Line			*Value Line*		
	Projected Growth			**Internal Growth**		
Company	**Est'd. '05-'07 to '11-'13**			**Return on Equity**	**Retention Rate**	**Internal Growth**
	Earnings	**Dividends**	**Book Value**			
ALLETE, Inc. (NYSE-ALE)	**-1.0%**	**3.0%**	**3.5%**	**9.0%**	**28.0%**	**2.5%**
Central Vermont Public Serv. Corp. (NYSE-CV)	**2.0%**	**0.0%**	**6.0%**	**6.5%**	**45.0%**	**2.9%**
Cleco Corporation (NYSE-CNL)	**10.5%**	**9.5%**	**6.0%**	**12.0%**	**37.0%**	**4.4%**
DPL Inc.(NYSE-DPL)	**8.0%**	**3.5%**	**10.5%**	**19.0%**	**49.0%**	**9.3%**
IDACORP, Inc. (NYSE-IDA)	**5.0%**	**0.0%**	**4.0%**	**8.0%**	**54.0%**	**4.3%**
Northeast Utilities (NYSE-NU)	**10.5%**	**6.5%**	**5.5%**	**9.0%**	**51.0%**	**4.6%**
NSTAR (NYSE-NST)	**7.5%**	**6.5%**	**5.5%**	**15.0%**	**40.0%**	**6.0%**
Progress Energy Inc. (NYSE-PGN)	**5.5%**	**1.0%**	**2.0%**	**9.5%**	**26.0%**	**2.5%**
UIL Holdings Corporation (NYSE-UIL)	**2.0%**	**0.0%**	**1.0%**	**11.0%**	**19.0%**	**2.1%**
Mean	**5.6%**	**3.3%**	**4.9%**	**11.0%**	**38.8%**	**4.3%**
Median	**5.5%**	**3.0%**	**5.5%**	**9.5%**	**40.0%**	**3.8%**
Average of Mean and Median Figures =		**4.6%**			**Average =**	**4.0%**

Data Source: *Value Line Investment Survey.*

Exhibit JRW-10

DCF Equity Cost Growth Rate Measures
Analysts Projected EPS Growth Rate Estimates

Electric Proxy Group

Company	Yahoo First Call Mean	Zack's Mean	Bloomberg Mean	Average
ALLETE, Inc. (NYSE-ALE)	**6.00%**	**6.50%**	**7.50%**	**6.7%**
Central Vermont Public Serv. Corp. (NYSE-CV)	**8.90%**	--	--	**8.9%**
Cleco Corporation (NYSE-CNL)	**11.70%**	**14.50%**	**13.13%**	**13.1%**
DPL Inc.(NYSE-DPL)	**6.33%**	**7.40%**	**9.15%**	**7.6%**
IDACORP, Inc. (NYSE-IDA)	**5.00%**	**6.00%**	**5.00%**	**5.3%**
Northeast Utilities (NYSE-NU)	**7.44%**	**9.50%**	**6.54%**	**7.8%**
NSTAR (NYSE-NST)	**6.33%**	**7.40%**	**6.03%**	**6.6%**
Progress Energy Inc. (NYSE-PGN)	**5.54%**	**4.80%**	**5.54%**	**5.3%**
UIL Holdings Corporation (NYSE-UIL)	**5.00%**	**6.70%**	**5.03%**	**5.6%**
Median				**6.7%**

Data Sources: www.zacks.com, http://quote.yahoo.com, 2009, and Bloomberg, April 27, 2009.

Exhibit JRW-10

Northern Indiana Public Service Company
DCF Growth Rate Indicators

Electric Proxy Group

Growth Rate Indicator	Growth Rate
Historic Value Line Growth in EPS, DPS, and BVPS	1.0%
Projected *Value Line* Growth in EPS, DPS, and BVPS	4.6%
Internal Growth ROE * Retention Rate	4.0%
Projected EPS Growth from Bloomberg and Zacks	6.7%
Average of Historic and Projected Growth Rates	4.1%
Average of Projected and Internal Growth Rates	5.1%

Exhibit JRW-11

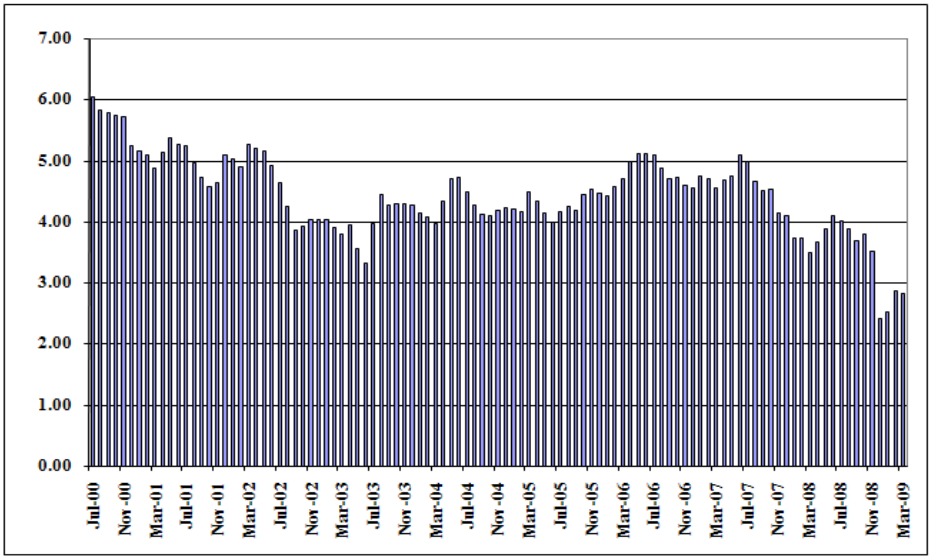
Capital Asset Pricing Model

Electric Proxy Group

Risk-Free Interest Rate	**4.00%**
Beta*	**0.68**
Ex Ante Equity Risk Premium**	**4.61%**
CAPM Cost of Equity	**7.1%**

* See page 3 of Exhibit JRW-11
** See page 5 of Exhibit JRW-11

Exhibit JRW-11
Ten-Year U.S. Treasury Yields
January 2000-March 2009



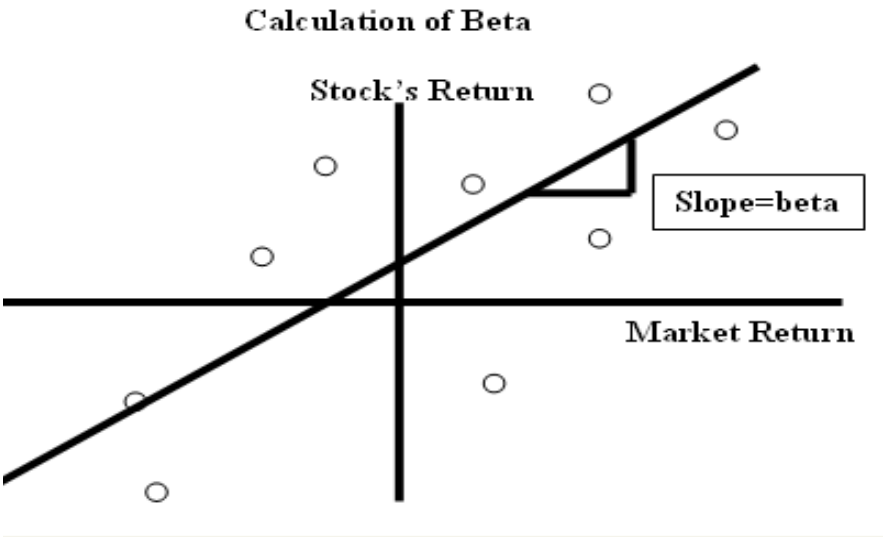
http://research.stlouisfed.org/fred2/series/GS10?cid=115

U.S. Treasury Yields

U.S. Treasuries

	COUPON	MATURITY DATE	CURRENT PRICE/YIELD
3-MONTH	0.000	07/30/2009	0.12 / .12
6-MONTH	0.000	10/29/2009	0.29 / .29
12-MONTH	0.000	04/08/2010	0.45 / .46
2-YEAR	0.875	04/30/2011	99-31 / .89
3-YEAR	1.375	04/15/2012	100-08 / 1.29
5-YEAR	1.750	03/31/2014	99-18+ / 1.84
10-YEAR	2.750	02/15/2019	98-20+ / 2.91
30-YEAR	3.500	02/15/2039	94-05½ / 3.83

Exhibit JRW-11



Electric Proxy Group

Company	Beta
ALLETE, Inc. (NYSE-ALE)	**0.65**
Central Vermont Public Serv. Corp. (NYSE-CV)	**0.80**
Cleco Corporation (NYSE-CNL)	**0.75**
DPL Inc.(NYSE-DPL)	**0.60**
IDACORP, Inc. (NYSE-IDA)	**0.80**
Northeast Utilities (NYSE-NU)	**0.70**
NSTAR (NYSE-NST)	**0.65**
Progress Energy Inc. (NYSE-PGN)	**0.60**
UIL Holdings Corporation (NYSE-UIL)	**0.60**
Mean	**0.68**

Data Source: *Value Line Investment Survey.*

Exhibit JRW-11

Northern Indiana Public Service Company
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.

Exhibit JRW-11

Northern Indiana Public Service Company
Capital Asset Pricing Model
Equity Risk Premium

Category	Study Authors	Publication Date	Time Period Of Study	Methodology	Return Measure	Range Low	Range High	Midpoint of Range	Mean	Average
Historical Risk Premium										
	Ibbotson	2009	1926-2008	Historical Stock Returns - Bond Returns	Arithmetic				5.60%	
					Geometric				3.90%	
	Bate	2008	1900-2007	Historical Stock Returns - Bond Returns	Geometric				4.50%	
	Shiller	2006	1926-2005	Historical Stock Returns - Bond Returns	Arithmetic				7.00%	
					Geometric				5.50%	
	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									5.39%
Ex Ante Models (Puzzle Research)										
	Claus Thomas	2001	1985-1998	Abnormal Earnings Model					3.00%	
	Arnott and Bernstein	2002	1810-2001	Fundamentals - Div Yld + Growth					2.40%	
	Constantinides	2002	1872-2000	Historical Returns & Fundamentals - P/D & P/E					6.90%	
	Cornell	1999	1926-1997	Historical Returns & Fundamental GDP/Earnings		3.50%	5.50%	4.50%	4.50%	
	Easton, Taylor, et al	2002	1981-1998	Residual Income Model					5.30%	
	Fama French	2002	1951-2000	Fundamental DCF with EPS and DPS Growth		2.55%	4.32%		3.44%	
	Harris & Marston	2001	1982-1998	Fundamental DCF with Analysts' EPS Growth					7.14%	
	Best & Byrne	2001								
	McKinsey	2002	1962-2002	Fundamental (P/E, D/P, & Earnings Growth)		3.50%	4.00%		3.75%	
	Siegel	2005	1802-2001	Historical Earnings Yield	Geometric				2.50%	
	Grabowski	2006	1926-2005	Historical and Projected		3.50%	6.00%	4.75%	4.75%	
	Maheu & McCurdy	2006	1885-2003	Historical Excess Returns, Structural Breaks,		4.02%	5.10%	4.56%	4.56%	
	Bostock	2004	1960-2002	Bond Yields, Credit Risk, and Income Volatility		3.90%	1.30%	2.60%	2.60%	
	Bakshi & Chen	2005	1982-1998	Fundamentals - Interest Rates					7.31%	
	Donaldson, Kamstra, & Kramer	2006	1952-2004	Fundamental, Dividend yld., Returns,, & Volatility		3.00%	4.00%	3.50%	3.50%	
	Campbell	2008	1982-2007	Historical & Projections (D/P & Earnings Growth)		4.10%	5.40%		4.75%	
	Best & Byrne	2001	Projection	Fundamentals - Div Yld + Growth					2.00%	
	Fernandez	2007	Projection	Required Equity Risk Premium					4.00%	
	DeLong & Magin	2008	Projection	Earnings Yield - TIPS					3.22%	
	Damodoran	2009	Projection	Fundamentals - Implied from FCF to Equity Model					6.43%	
	Social Security									
	Office of Chief Actuary		1900-1995							
	John Campbell	2001	1860-2000	Historical & Projections (D/P & Earnings Growth)	Arithmetic	3.00%	4.00%	3.50%	3.50%	
			Projected for 75 Years		Geometric	1.50%	2.50%	2.00%	2.00%	
	Peter Diamond	2001	Projected for 75 Years	Fundamentals (D/P, GDP Growth)		3.00%	4.80%	3.90%	3.90%	
	John Shoven	2001	Projected for 75 Years	Fundamentals (D/P, P/E, GDP Growth)		3.00%	3.50%	3.25%	3.25%	
	AVERAGE									4.12%
Surveys										
	Survey of Financial Forecasters	2009	10-Year Projection	About 50 Financial Forecastsers					1.94%	
	Duke - CFO Magazine Survey	2009	10-Year Projection	Approximately 500 CFOs					5.87%	
	Welch - Academics	2008	30-Year Projection	Random Academics		5.00%	5.74%	5.37%	5.94%	
	Fernandez - Academics	2009	Long-Term	Fernandez - Academics				6.50%		
	AVERAGE									4.58%
Building Block										
	Ibbotson and Chen	2009	1926-2008	Historical Supply Model (D/P & Earnings Growth)	Arithmetic			5.73%	4.68%	
					Geometric			3.62%		
	Woolridge		2009	Current Supply Model (D/P & Earnings Growth)					4.07%	
	AVERAGE									4.37%
OVERALL AVERAGE										**4.61%**

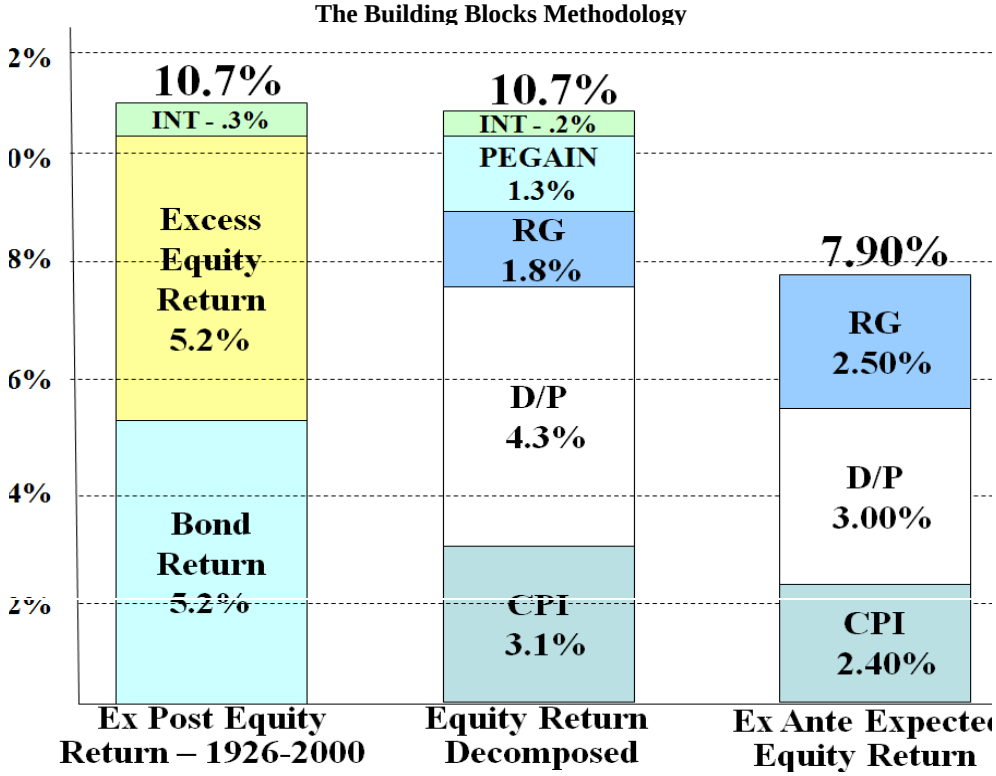
Exhibit JRW-11

Northern Indiana Public Service Company
Capital Asset Pricing Model
Equity Risk Premium

Category	Study Authors	Publication Date	Time Period Of Study	Methodology	Return Measure	Range Low	Range High	Midpoint of Range	Mean	Average
Historical Risk Premium										
	Ibbotson	2009	1926-2008	Historical Stock Returns - Bond Returns	Arithmetic				5.60%	
					Geometric				3.90%	
	Bate	2008	1900-2007	Historical Stock Returns - Bond Returns	Geometric				4.50%	
	AVERAGE									4.67%
Ex Ante Models (Puzzle Research)										
	Campbell	2008	1982-2007	Historical & Projections (D/P & Earnings Growth)		4.10%	5.40%		4.75%	
	DeLong & Magin	2008	Projection	Earnings Yield - TIPS					3.22%	
	Damodoran	2009	Projection	Fundamentals - Implied from FCF to Equity Model					6.43%	
	AVERAGE									4.80%
Surveys										
	Survey of Financial Forecasters	2009	10-Year Projection	About 50 Financial Forecastsers					1.94%	
	Duke - CFO Magazine Survey	2009	10-Year Projection	Approximately 500 CFOs					5.87%	
	Welch - Academics	2008	30-Year Projection	Random Academics		5.00%	5.74%	5.37%	5.94%	
	Fernandez - Academics	2009	Long-Term	Fernandez - Academics				6.50%		
	AVERAGE									4.58%
Building Block										
	Ibbotson and Chen	2009	1926-2008	Historical Supply Model (D/P & Earnings Growth)	Arithmetic			5.73%	4.68%	
					Geometric			3.62%		
	Woolridge		2009	Current Supply Model (D/P & Earnings Growth)					4.07%	
	AVERAGE									4.37%
OVERALL AVERAGE										**4.61%**

Exhibit JRW-11

Northern Indiana Public Service Company
Decomposing Equity Market Returns
The Building Blocks Methodology

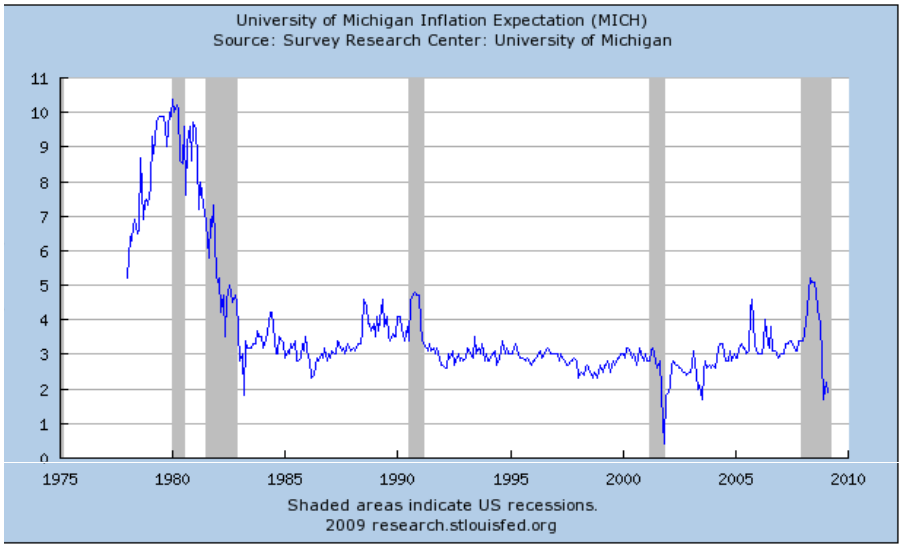


Source: Antti Ilmanen, Expected Returns on Stocks and Bonds," *Journal of Portfolio Management* , (Winter 2003).

Exhibit JRW-11

Northern Indiana Public Service Company
Decomposing Equity Market Returns
The Building Blocks Methodology

Expected Inflation Rate
University of Michigan Consumer Research



(Data Source: http://research.stlouisfed.org/fred2/series/MICH/98)

Exhibit JRW-11

Northern Indiana Public Service Company

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

Table Seven
LONG-TERM (10 YEAR) FORECASTS

SERIES: CPI INFLATION RATE	
STATISTIC	
MINIMUM	1.130
LOWER QUARTILE	2.000
MEDIAN	2.400
UPPER QUARTILE	2.750
MAXIMUM	3.800
MEAN	2.410
STD. DEV.	0.600
N	39
MISSING	4

SERIES: REAL GDP GROWTH RATE	
STATISTIC	
MINIMUM	2.000
LOWER QUARTILE	2.300
MEDIAN	2.560
UPPER QUARTILE	2.800
MAXIMUM	3.750
MEAN	2.580
STD. DEV.	0.380
N	37
MISSING	6

SERIES: PRODUCTIVITY GROWTH	
STATISTIC	
MINIMUM	1.200
LOWER QUARTILE	1.700
MEDIAN	1.900
UPPER QUARTILE	2.000
MAXIMUM	3.000
MEAN	1.900
STD. DEV.	0.380
N	34
MISSING	9

SERIES: STOCK RETURNS (S&P 500)	
STATISTIC	
MINIMUM	2.400
LOWER QUARTILE	5.000
MEDIAN	6.500
UPPER QUARTILE	8.000
MAXIMUM	11.400
MEAN	6.620
STD. DEV.	2.030
N	29
MISSING	14

SERIES: BOND RETURNS (10-YEAR)	
STATISTIC	
MINIMUM	2.000
LOWER QUARTILE	4.250
MEDIAN	4.850
UPPER QUARTILE	5.100
MAXIMUM	6.000
MEAN	4.680
STD. DEV.	0.820
N	32
MISSING	11

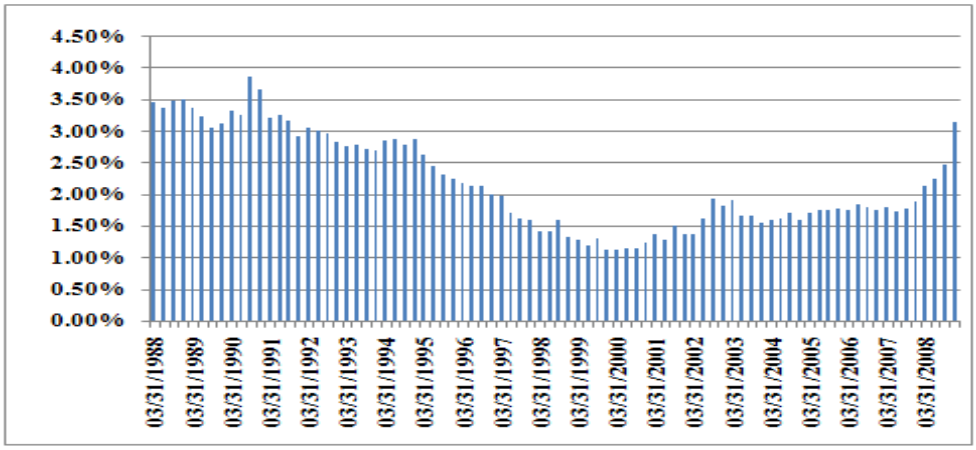
SERIES: BILL RETURNS (3-MONTH)	
STATISTIC	
MINIMUM	1.100
LOWER QUARTILE	2.500
MEDIAN	3.000
UPPER QUARTILE	4.000
MAXIMUM	5.100
MEAN	3.190
STD. DEV.	0.940
N	32
MISSING	11

Source: Philadelphia Federal Researve Bank, Survey of Professional Forecasters, February 13, 2009.

Exhibit JRW-11

Northern Indiana Public Service Company
Decomposing Equity Market Returns
The Building Blocks Methodology

S&P 500 Dividend Yield



S&P 500 PE Ratios

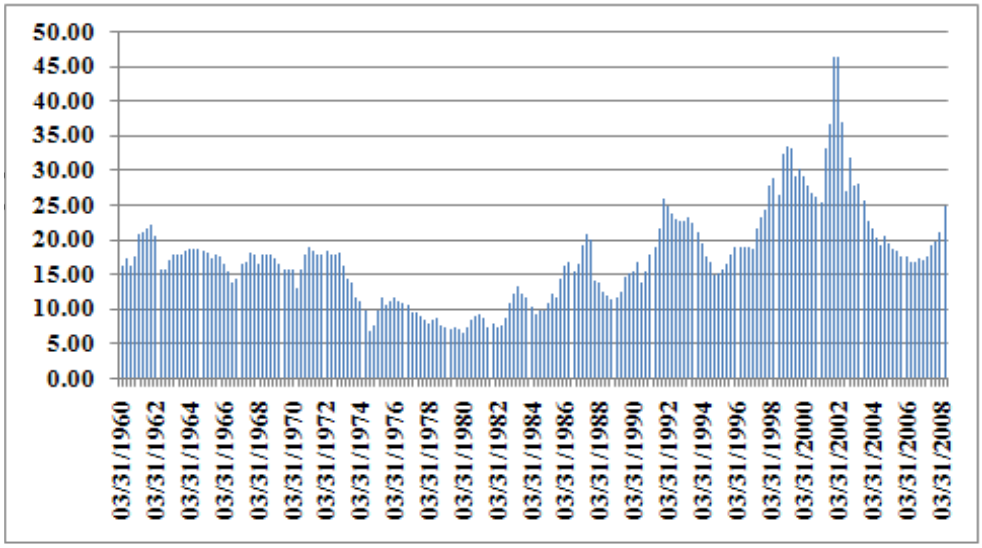


Exhibit JRW-11

Northern Indiana Public Service Company

Current S&P 500 Dividend Yield and P/E Ratio

S&P 500 Dividend Yield

S&P 500 Statistics
As of March 31, 2009

Total Market Value ($ Billion)	6,928
Mean Market Value ($ Million)	13,855
Median Market Value ($ Million)	5,248
Weighted Ave. Market Value ($ Million)	64,343
Largest Cos. Market Value ($ Million)	336,525
Smallest Cos. Market Value ($ Million)	360
Median Share Price ($)	23.00
P/E Ratio	52.62
Indicated Dividend Yield (%)	3.03

Data Source: www.standardandpoors.com.

Exhibit JRW-11

Northern Indiana Public Service Company
CAPM
Real S&P 500 EPS Growth Rate

Year	S&P 500 EPS	Annual Inflatior CPI	Inflation Adjustment Factor	Real S&P 500 EPS	
1960	3.10	1.48		3.10	
1961	3.37	0.07	1.01	3.35	
1962	3.67	1.22	1.02	3.59	
1963	4.13	1.65	1.04	3.99	
1964	4.76	1.19	1.05	4.55	
1965	5.30	1.92	1.07	4.97	
1966	5.41	3.35	1.10	4.90	
1967	5.46	3.04	1.14	4.80	
1968	5.72	4.72	1.19	4.81	
1969	6.10	6.11	1.26	4.83	10-Year
1970	5.51	5.49	1.34	4.13	2.89%
1971	5.57	3.36	1.38	4.04	
1972	6.17	3.41	1.43	4.33	
1973	7.96	8.80	1.55	5.13	
1974	9.35	12.20	1.74	5.37	
1975	7.71	7.01	1.86	4.14	
1976	9.75	4.81	1.95	4.99	
1977	10.87	6.77	2.08	5.22	
1978	11.64	9.03	2.27	5.13	
1979	14.55	13.31	2.57	5.66	10-Year
1980	14.99	12.40	2.89	5.18	2.30%
1981	15.18	8.94	3.15	4.82	
1982	13.82	3.87	3.27	4.23	
1983	13.29	3.80	3.40	3.91	
1984	16.84	3.95	3.53	4.77	
1985	15.68	3.77	3.66	4.28	
1986	14.43	1.13	3.70	3.90	
1987	16.04	4.41	3.87	4.15	
1988	22.77	4.42	4.04	5.64	
1989	24.03	4.65	4.22	5.69	10-Year
1990	21.73	6.11	4.48	4.85	-0.65%
1991	19.10	3.06	4.62	4.14	
1992	18.13	2.90	4.75	3.81	
1993	19.82	2.75	4.88	4.06	
1994	27.05	2.67	5.01	5.40	
1995	35.35	2.54	5.14	6.88	
1996	35.78	3.32	5.31	6.74	
1997	39.56	1.70	5.40	7.33	
1998	38.23	1.61	5.48	6.97	
1999	45.17	2.68	5.63	8.02	10-Year
2000	52.00	3.39	5.82	8.93	6.29%
2001	44.23	1.55	5.92	7.48	
2002	47.24	2.38	6.06	7.80	
2003	54.15	1.88	6.17	8.77	
2004	67.01	3.26	6.37	10.51	5-Year
2005	68.32	3.42	6.60	10.35	3.00%
2006	81.96	2.54	6.77	12.11	
2007	87.51	4.08	7.04	12.43	
2008	65.39	0.09	7.05	9.28	

Panel A
Summary of Mr. Moul's Equity Cost Rate Approaches and Results

Approach	Equity Cost Rate
DCF	11.21%
RP	11.67%
CAPM	12.76%
CE	15.70%
Average	12.84%
Median	12.22%
Midpoint	13.46%

Panel B
Summary of Mr. Moul's DCF Results

	Moul Proxy Group
Adjusted Dividend Yield	4.54%
Growth	6.50%
DCF Result	11.04%
Flotation Cost Adjustment	1.015
Adjusted DCF Result	11.21%

Panel C
Summary of Mr. Moul Risk Premium Results

	RP
Base Yield	6.00%
Risk Premium	5.50%
RP Cost Rate	11.75%
Flotation Cost Adjustment	0.17%
RP Equity Cost Rate	11.92%

Panel D
Summary of Mr. Moul's CAPM Results

	CAPM
Risk-Free Rate	4.50%
Beta	0.85
Market Risk Premium	8.44%
CAPM Result	11.67%
+ Size Adjustment	0.92%
+Flotation Cost Adjustment	0.17%
CAPM Equity Cost Rate	12.76%

Panel E
Summary of Mr. Moul Comparable Earnings Results

	CE
Historical ROEs	15.40%
Forecasted ROEs	16.00%
Average	15.70%

Exhibit JRW-13

Northern Indiana Public Service Company

Panel A
Moul Proxy Group
Financial Statistics

Company	Operating Revenue ($mil)	Percent Elec Revenue	Net Plant ($mil)	S&P Bond Rating	Moody's Bond Rating	Common Equity Ratio	Return on Equity	Market to Book Ratio
Alliant Energy Corporation (NYSE-LNT)	3,681.7	65	5,353.5	A-	A2	57	10.5	0.9
Ameren Corporation (NYSE-AEE)	7,835.0	81	16,567.0	BBB	Baa2	46	8.8	0.7
CMS Energy Corporation (NYSE-CMS)	6,821.0	53	9,190.0	BBB	Baa1	26	12.5	1.1
DTE Energy Company (NYSE-DTE)	9,329.0	52	12,231.0	A-	A3	42	9.2	0.7
Duke Energy Corporation (NYSE-DUK)	13,207.0	71	34,036.0	A	A3	59	6.1	0.9
Empire District Electric Co. (NYSE-EDE)	518.2	86	1,342.8	BBB+	Baa1	40	7.4	0.9
FirstEnergy Corporation (NYSE-FE)	13,627.0	89	17,723.0	BBB+	Baa2	37	15.6	1.4
Integrys Energy Group (NYSE-TEG)	14,047.8	9	4,773.3	A-	A1	56	4.0	0.6
MGE Energy, Inc. (NDQ-MGEE)	596.0	58	901.2	AA-	Aa2	55	11.6	1.5
NiSource Inc. (NYSE-NI)	8,876.4	15	10,388.1	BBB-	Baa2	38	7.5	0.6
Vectren Corporation (NYSE-VVC)	2,484.7	21	2,720.3	A	A3	43	10.0	1.2
Wisconsin Energy Corporation (NYSE-WEC)	4,431.0	61	8,517.0	A-	Aa3	41	11.1	1.4
Xcel Energy Inc. (NYSE-XEL)	11,203.2	78	17,688.7	A-	A3	44	9.7	1.2
Mean	7,435.2	57	10,879.4			45	9.5	1.0

Data Source: *AUS Utility Reports.*

Panel B
Moul Proxy Group

Company or Group	2007	2006	2005	2004	2003	Average	Standard Deviation	Coefficient of Variation
Northern Indiana Public Service Company	0.103	0.116	0.133	0.146	0.148	0.129	0.019	0.150
Combination Group								
Alliant Energy Corporation (NYSE-LNT)	0.159	0.130	0.022	0.083	0.071	0.093	0.053	0.573
Ameren Corporation (NYSE-AEE)	0.093	0.085	0.103	0.103	0.121	0.101	0.013	0.134
CMS Energy Corporation (NYSE-CMS)				0.053		0.053		
DTE Energy Company (NYSE-DTE)	0.131	0.072	0.098	0.080	0.091	0.094	0.023	0.241
Duke Energy Corporation (NYSE-DUK)	0.065	0.098	0.160	0.083		0.102	0.041	0.407
Empire District Electric Co. (NYSE-EDE)	0.067	0.095	0.063	0.058	0.085	0.074	0.016	0.213
FirstEnergy Corporation (NYSE-FE)	0.143	0.135	0.096	0.100	0.051	0.105	0.037	0.349
Integrys Energy Group (NYSE-TEG)	0.074	0.104	0.131	0.144	0.119	0.114	0.027	0.236
MGE Energy, Inc. (NDQ-MGEE)	0.122	0.118	0.094	0.112	0.122	0.114	0.012	0.103
NiSource Inc. (NYSE-NI)	0.062	0.063	0.058	0.092	0.097	0.074	0.019	0.249
Vectren Corporation (NYSE-VVC)	0.120	0.094	0.121	0.098	0.113	0.109	0.013	0.115
Wisconsin Energy Corporation (NYSE-WEC)	0.112	0.112	0.117	0.050	0.109	0.100	0.028	0.281
Xcel Energy Inc. (NYSE-XEL)	0.094	0.099	0.091	0.099	0.099	0.096	0.004	0.039
Group Average	0.104	0.100	0.096	0.089	0.098	0.095	0.024	0.245

Data Source: NIPSCO response to OUCC15-24.

Exhibit JRW-13

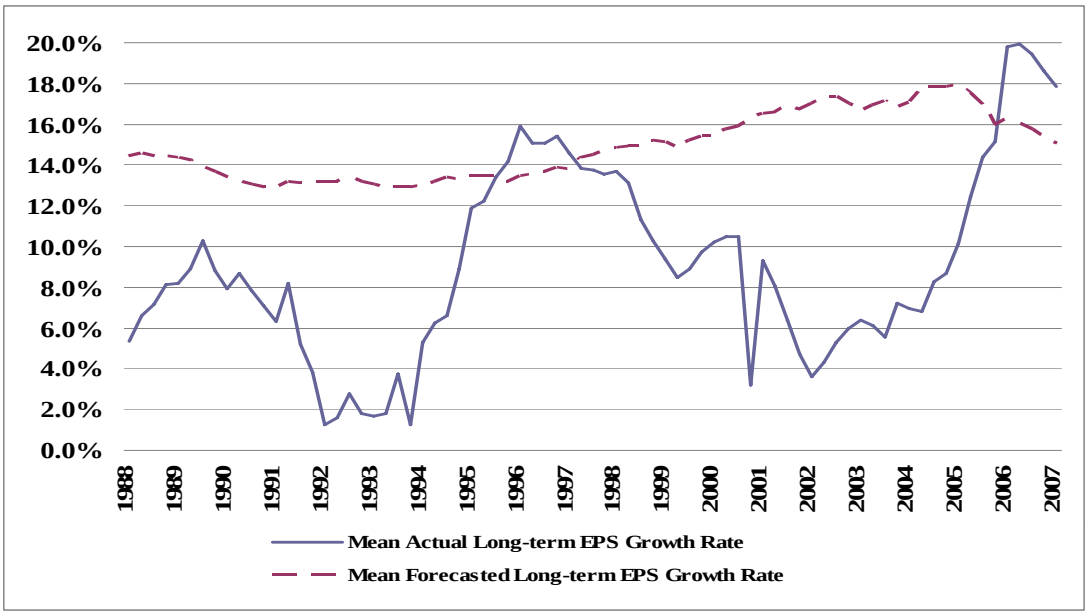
Northern Indiana Public Service Company

Moul Proxy Group
DCF Equity Cost Growth Rate Measures
***Value Line* Projected Growth Rates**

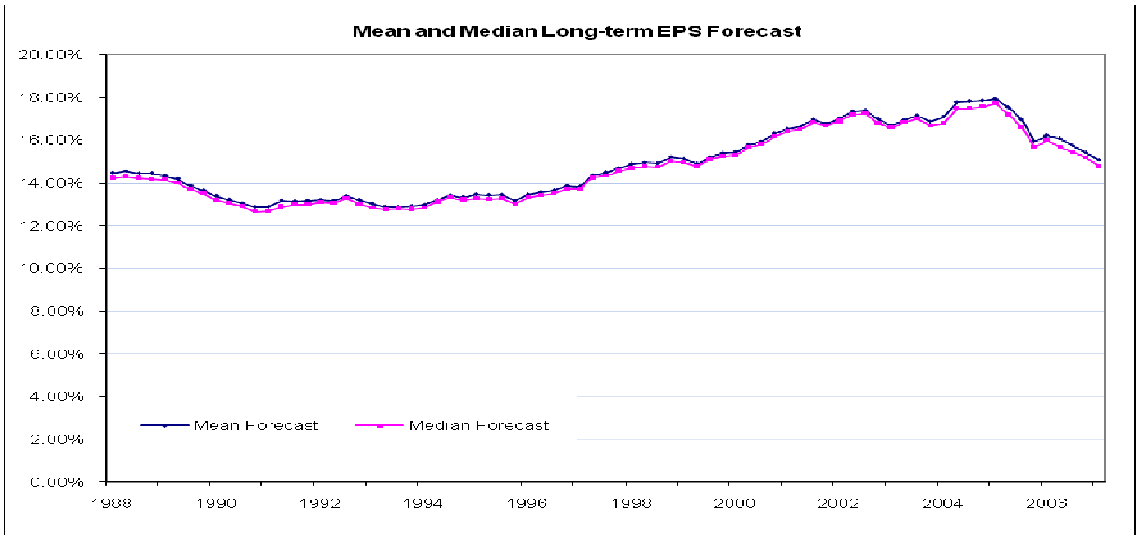
Company	*Value Line* Projected Growth Est'd. '05-'07 to '11-'13			*Value Line* Internal Growth		
	Earnings	Dividends	Book Value	Return on Equity	Retention Rate	Internal Growth
Alliant Energy Corporation (NYSE-LNT)	5.0%	7.0%	4.0%	10.5%	0.36	3.8%
Ameren Corporation (NYSE-AEE)	1.5%	-5.5%	4.0%	8.0%	0.49	3.9%
CMS Energy Corporation (NYSE-CMS)	10.0%	27.5%	6.0%	11.0%	0.47	5.2%
DTE Energy Company (NYSE-DTE)	4.5%	2.5%	3.0%	9.0%	0.34	3.1%
Duke Energy Corporation (NYSE-DUK)	7.0%	3.5%	1.5%	8.0%	0.26	2.1%
Empire District Electric Co. (NYSE-EDE)	8.5%	1.5%	2.0%	11.0%	0.29	3.2%
FirstEnergy Corporation (NYSE-FE)	10.0%	8.0%	7.5%	15.0%	0.55	8.3%
Integrys Energy Group (NYSE-TEG)	4.5%	-4.5%	2.5%	7.0%	0.41	2.9%
MGE Energy, Inc. (NDQ-MGEE)	6.0%	0.5%	7.0%	12.0%	0.45	5.4%
NiSource Inc. (NYSE-NI)	1.5%	0.0%	0.5%	6.5%	0.27	1.8%
Vectren Corporation (NYSE-VVC)	6.0%	3.0%	6.0%	10.0%	0.35	3.5%
Wisconsin Energy Corporation (NYSE-WEC)	8.0%	12.0%	6.0%	12.0%	0.56	6.7%
Xcel Energy Inc. (NYSE-XEL)	7.5%	3.0%	4.5%	10.5%	0.45	4.7%
Mean	6.2%	4.5%	4.2%	10.0%	40.4%	4.2%

Data Source: *Value Line Investment Survey.*

Panel A
Long-Term Forecasted Versus Actual EPS Growth Rates
1988-2007



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



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

THE WALL STREET JOURNAL.

Study Suggests Bias in Analysts' Rosy Forecasts

By ANDREW EDWARDS
March 21, 2008; Page C6

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

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

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

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

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

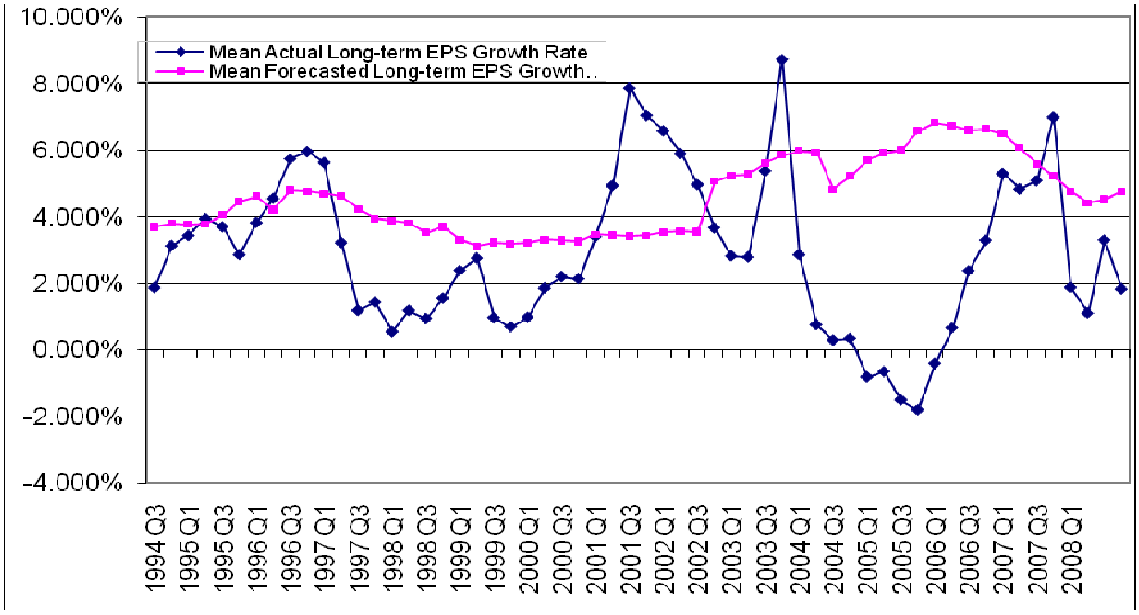
"A significant factor in the upward bias in long-term earnings-rate forecasts is the reluctance of analysts to forecast" profit declines, Mr. Woolridge said. The study found that nearly one-third of all companies experienced profit drops over successive three-to-five-year periods, but analysts projected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

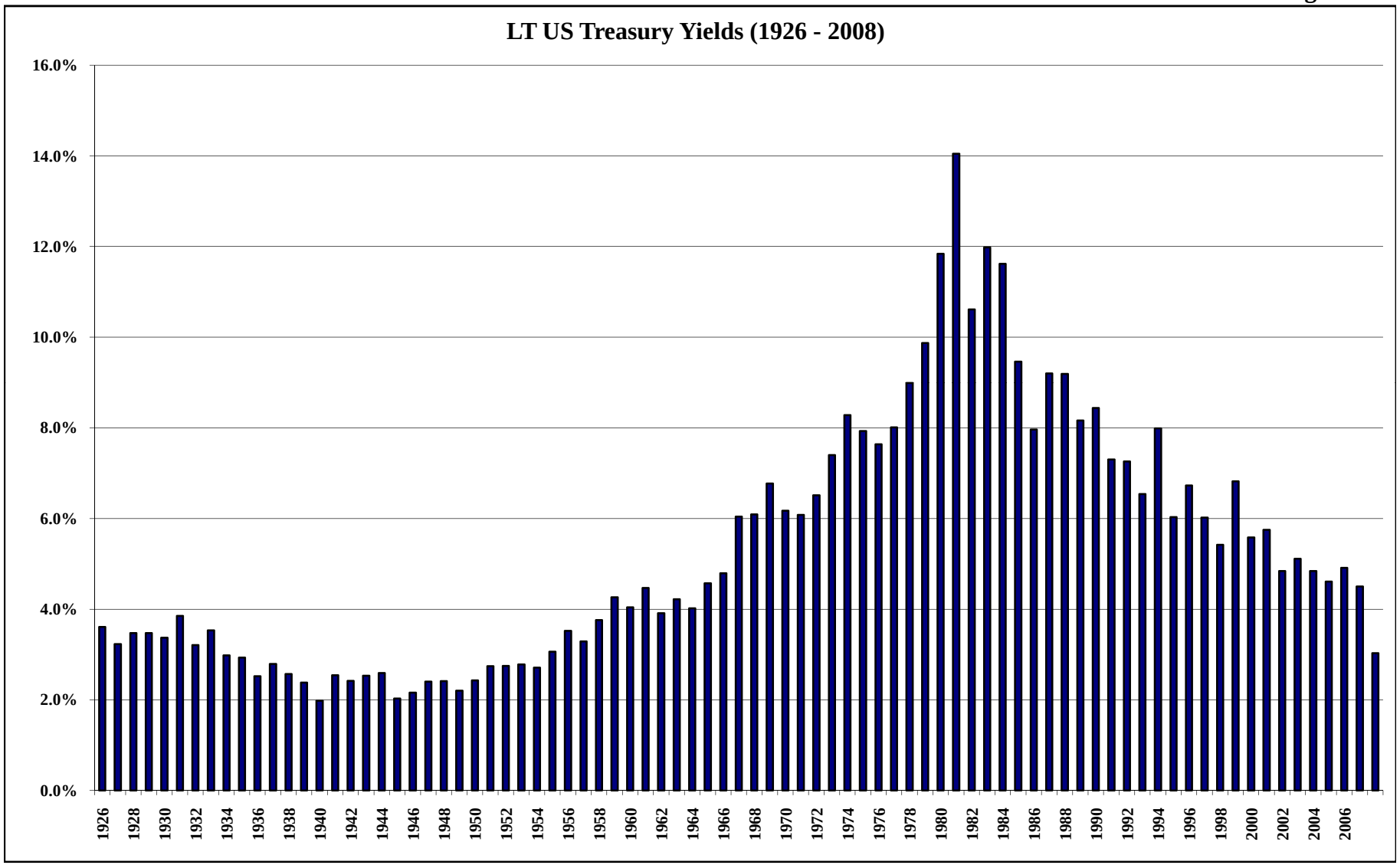
The study's authors said, "Analysts are rewarded for biased forecasts by their employers, who want them to hype stocks so that the brokerage house can garner trading commissions and win underwriting deals."

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

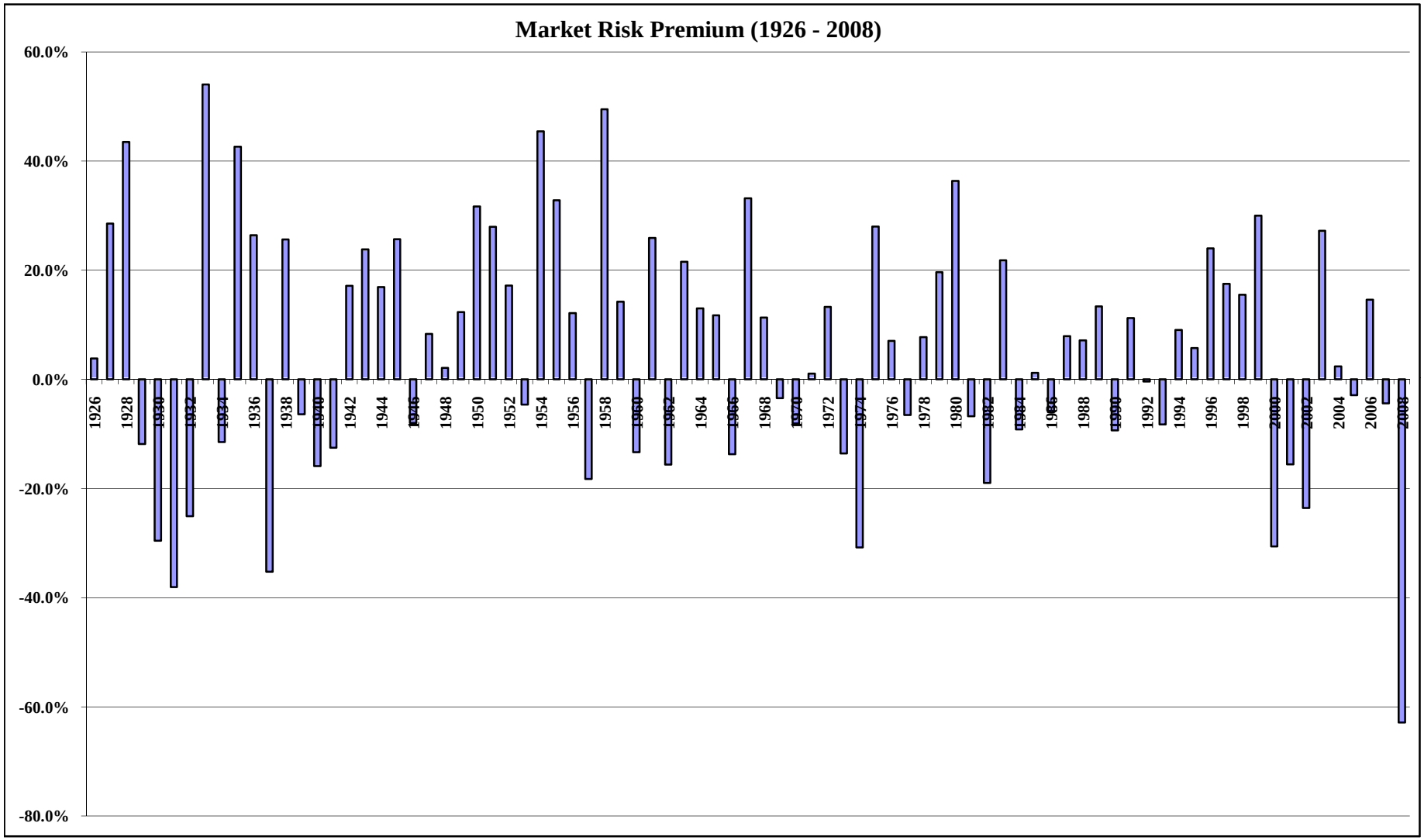
Write to Andrew Edwards at andrew.edwards@dowjones.com

Long-Term Forecasted Versus Actual EPS Growth Rates
Electric Utility Companies
1988-2007

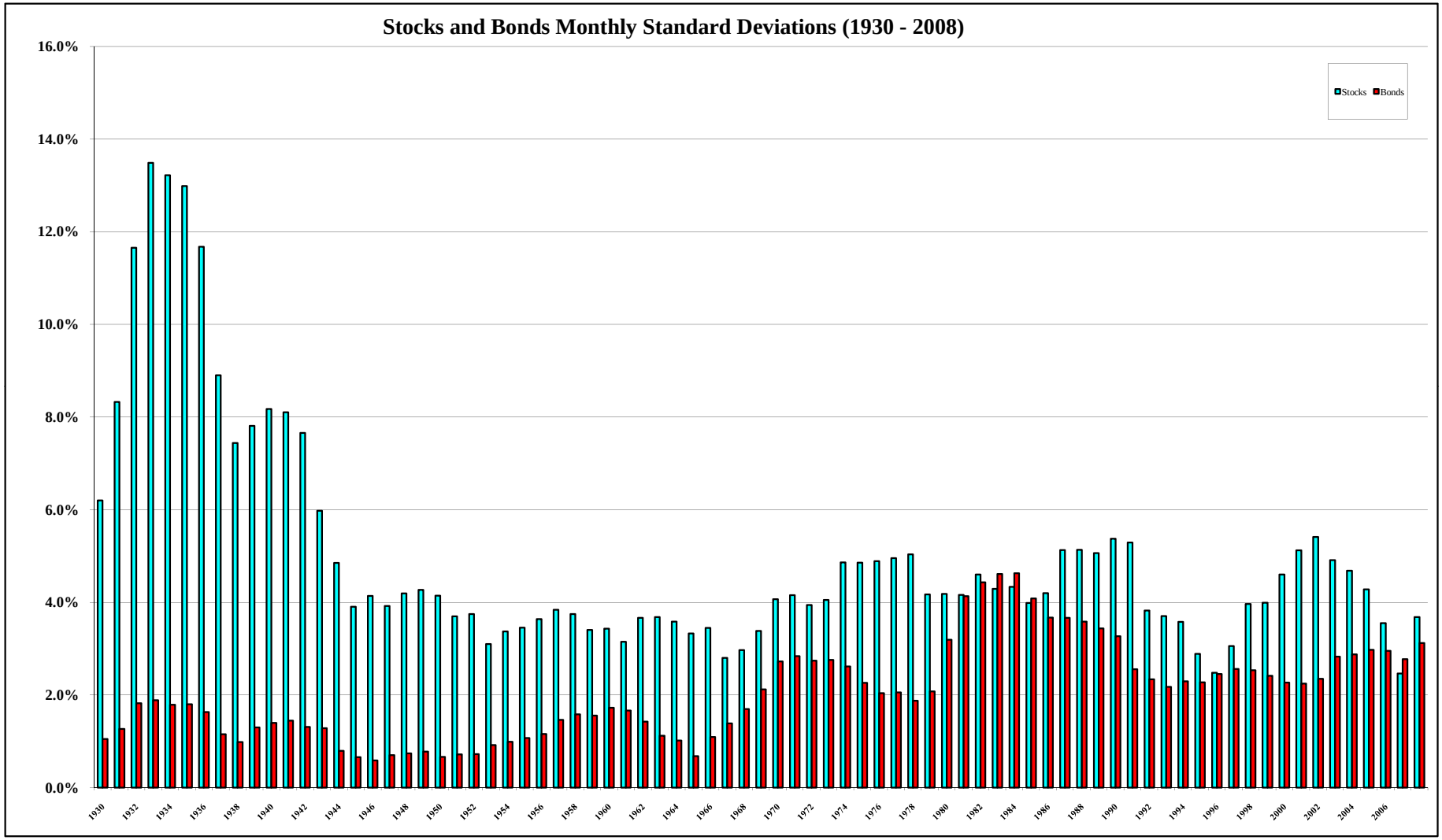




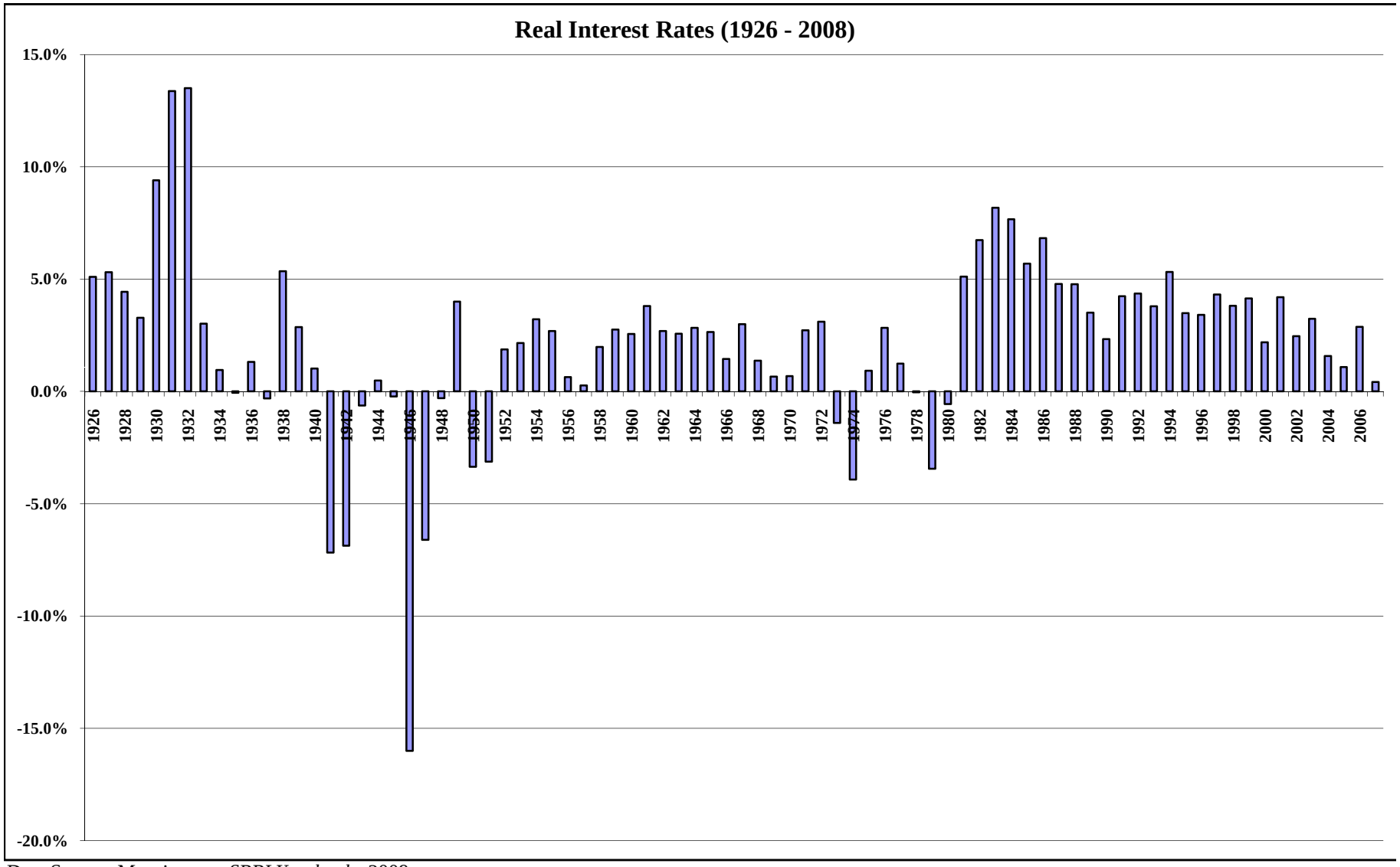
Data Source: Morningstar, *SBBI Yearbook* , 2009.



Data Source: Morningstar, *SBBI Yearbook* , 2009.



Data Source: Morningstar, *SBBI Yearbook* , 2009.



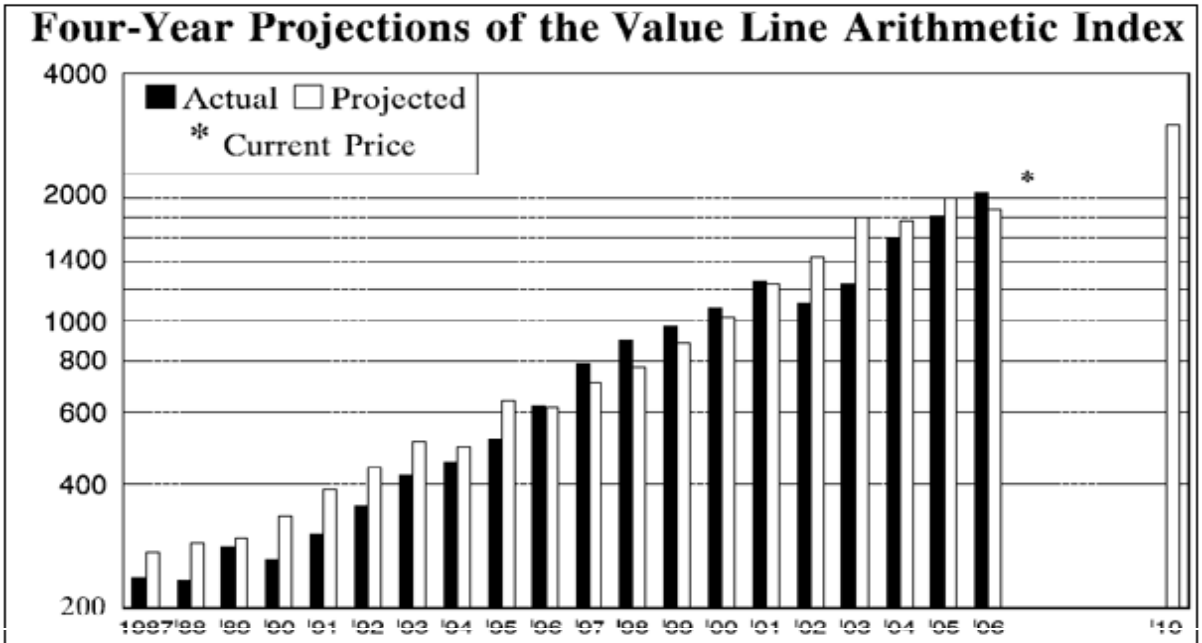
Data Source: Morningstar, *SBBI Yearbook* , 2009.

Exhibit JRW-16
***Value Line* Projected Return Study**

	Value Line Projected Four-Year Return	Large Cap Actual One-Year Return	Large Cap Actual Four-Year Return	Value Line - Large Cap Four-Year Return
1984	23.30%	6.27%	15.03%	8.27%
1985	20.03%	32.16%	17.78%	2.25%
1986	14.38%	18.47%	17.63%	-3.25%
1987	14.68%	5.23%	11.85%	2.84%
1988	18.67%	16.81%	18.04%	0.63%
1989	16.80%	31.49%	15.66%	1.14%
1990	20.88%	-3.17%	10.61%	10.27%
1991	19.00%	30.55%	11.87%	7.12%
1992	17.70%	7.67%	13.32%	4.39%
1993	14.96%	9.99%	17.17%	-2.21%
1994	15.61%	1.31%	22.95%	-7.34%
1995	15.14%	37.43%	30.50%	-15.36%
1996	13.19%	23.07%	26.42%	-13.23%
1997	11.56%	33.36%	17.20%	-5.64%
1998	12.26%	28.58%	5.66%	6.60%
1999	15.05%	21.04%	-6.78%	21.83%
2000	18.88%	-9.11%	-5.34%	24.22%
2001	17.16%	-11.88%	-0.52%	17.68%
2002	16.47%	-22.10%	3.92%	12.55%
2003	16.00%	28.70%	14.74%	1.26%
2004	11.60%	10.87%	9.18%	2.42%
2005	11.40%	4.91%		
2006	11.20%	15.80%		
2007	10.60%	5.49%		
	Average Projected - Actual Return			3.64%

Data Source: Value Line Investment Survey, various issues.

Exhibit JRW-16
Value Line Index Projections



Actual	236	234	281	262	303	354	421	455	518	621	788	897	971	1072	1247	1107	1232	1594	1804	2047				
Projected	274	287	296	335	390	442	508	495	637	618	707	769	883	1024	1228	1438	1795	1743	1995	1861				3000

Data Source: *Value Line website*.

Growth Rates

GNP, S&P 500 Price, EPS, and DPS

	GDP	S&P 500	Earnings	Dividends	
1960	526.4	58.11	3.10	1.98	
1961	544.7	71.55	3.37	2.04	
1962	585.6	63.1	3.67	2.15	
1963	617.7	75.02	4.13	2.35	
1964	663.6	84.75	4.76	2.58	
1965	719.1	92.43	5.30	2.83	
1966	787.8	80.33	5.41	2.88	
1967	832.6	96.47	5.46	2.98	
1968	910.0	103.86	5.72	3.04	
1969	984.6	92.06	6.10	3.24	
1970	1038.5	92.15	5.51	3.19	
1971	1127.1	102.09	5.57	3.16	
1972	1238.3	118.05	6.17	3.19	
1973	1382.7	97.55	7.96	3.61	
1974	1500.0	68.56	9.35	3.72	
1975	1638.3	90.19	7.71	3.73	
1976	1825.3	107.46	9.75	4.22	
1977	2030.9	95.1	10.87	4.86	
1978	2294.7	96.11	11.64	5.18	
1979	2563.3	107.94	14.55	5.97	
1980	2789.5	135.76	14.99	6.44	
1981	3128.4	122.55	15.18	6.83	
1982	3255.0	140.64	13.82	6.93	
1983	3536.7	164.93	13.29	7.12	
1984	3933.2	167.24	16.84	7.83	
1985	4220.3	211.28	15.68	8.20	
1986	4462.8	242.17	14.43	8.19	
1987	4739.5	247.08	16.04	9.17	
1988	5103.8	277.72	22.77	10.22	
1989	5484.4	353.4	24.03	11.73	
1990	5803.1	330.22	21.73	12.35	
1991	5995.9	417.09	19.10	12.97	
1992	6337.7	435.71	18.13	12.64	
1993	6657.4	466.45	19.82	12.69	
1994	7072.2	459.27	27.05	13.36	
1995	7397.7	615.93	35.35	14.17	
1996	7816.9	740.74	35.78	14.89	
1997	8304.3	970.43	39.56	15.52	
1998	8747.0	1229.23	38.23	16.20	
1999	9268.4	1469.25	45.17	16.71	
2000	9817.0	1320.28	52.00	16.27	
2001	10128.0	1148.09	44.23	15.74	
2002	10469.6	879.82	47.24	16.08	
2003	10960.8	1111.91	54.15	17.88	
2004	11685.9	1211.92	67.01	19.41	
2005	12433.9	1248.29	68.32	22.38	
2006	13194.7	1418.3	81.96	25.05	
2007	13841.3	1468.36	87.51	27.73	
2008		903.25	65.39	28.05	**Average**
Growth	**7.20%**	**5.88%**	**6.56%**	**5.68%**	**6.33%**

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