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MISSOURI PUBLIC SERVICE COMMISSION

REGULATORY REVIEW DIVISION
UTILITY SERVICES

SURREBUTTAL TESTIMONY

OF

DAVID MURRAY

UNION ELECTRIC COMPANY,
d/b/a Ameren Missouri

CASE NO. ER-2012-0166

Jefferson City, Missouri
September 2012

*** Denotes Highly Confidential Information ****

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TABLE OF CONTENTS

OF THE SURREBUTTAL TESTIMONY OF

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Q. Please state your name.

A. My name is David Murray.

Q. Are you the same David Murray who previously prepared and caused to be filed in Case No. ER-2012-0166 the Rate of Return ("ROR") Section of the Staff's Cost of Service Report ("Staff's Report") and Rebuttal Testimony related to ROR?

A. Yes, I am.

Q. What is the purpose of your Surrebuttal testimony?

A. The purpose of my Surrebuttal Testimony is to respond to the Rebuttal Testimony of Mr. Robert B. Hevert. Mr. Hevert sponsored ROR testimony on behalf of Union Electric Company, d/b/a Ameren Missouri.

EXECUTIVE SUMMARY

Q. What areas will you address in your surrebuttal testimony?

A. I will address some of the specific criticisms Mr. Hevert provided in his rebuttal testimony regarding my cost of equity ("COE") analysis and the reasonableness of my return on common equity ("ROE") recommendation.

Q. What is the primary theme of Mr. Hevert's argument that the Commission should not reduce Ameren Missouri's allowed ROE from its previous level of 10.20%?

A. Mr. Hevert's theme is that, despite declining interest rates, both U.S. Treasury's and more importantly utility bond yields, the COE in the U.S. markets has not declined along with bond yields. In fact, in certain parts of Mr. Hevert's testimony, he indicates that certain indicators may actually justify a higher COE.

Q. What is the primary problem with Mr. Hevert's theme?

A. Mr. Hevert inappropriately groups regulated electric utility company stocks with the broader equity markets when discussing the impacts of the macroeconomic environment on the regulated electric utility industry's COE. I agree that aggregate indices, such as the S&P 500, have exhibited periods of volatility in the last few years due to uncertainty in the domestic and global economy. However, this is the very reason that investors have sought the safety of regulated utility stocks. In fact, regulated electric utility stocks have been trading at a premium to the S&P 500, which normally would cause some to believe that regulated electric utility company stock prices are overvalued, but investment analysts are appropriately comparing the valuation level of electric utility stocks to that of bond prices rather than to the valuation level of the S&P 500, because utility stocks are evaluated based on the yield and the safety of the yield.

Consequently, the cost of debt should be a direct consideration when estimating the COE for regulated utility companies. This has generally been accepted by the investment community for many years and continues to be the focus of investment analysts in the current macroeconomic environment.

Q. What is Mr. Hevert's reaction to COE estimates for regulated electric utility companies that may be as low as the 7% range?

A. He seems to believe COE estimates this low are not even conceivable and "there are no market data of which [he is] aware that could rationalize such low results."[1] As Staff will discuss later in its testimony, Mr. Hevert could have discussed such possibilities with Ameren itself when discussing the current capital market environment. Ameren routinely hires financial consultants to provide it advice for purposes of considering strategic decisions, such as targeted credit ratings to achieve the lowest cost of capital. If Mr. Hevert had discussed these issues with Ameren's own financial personnel, Staff believes he would have received opinions that current market data does justify a COE as low as in the 7% range for regulated electric utility companies.

SPECIFIC RESPONSE TO MR. HEVERT'S REBUTTAL TESTIMONY

Q. Did Mr. Hevert update his COE estimates in his rebuttal testimony?

A. Yes.

Q. Did Mr. Hevert change his recommended ROE as a result of his updates?

A. Yes. Mr. Hevert is now recommending an ROE of 10.50% based on his updated COE range of 10.25% to 11.00%.

Q. Mr. Hevert claims the Commission "set" the "Cost of Equity" at 10.20% in July 2011.[2] Does the Commission "set" the Cost of Equity?

A. No. The COE is determined by the market, not set by the Commission. I agree the Commission sets the allowed ROE, but this does not necessarily equal the COE.

[1] Hevert Rebuttal, p. 58, ll. 9-10.
[2] Hevert Rebuttal, p. 3, ll. 15-17.

Relative Estimates of Decrease in the COE

Q. Is it appropriate for Mr. Hevert to compare your COE estimates in this case to the allowed ROE in the previous case for purposes of assessing your view on the relative decline in the COE since the last rate case?

A. No. I estimated the COE to be in the range of 8.25% to 9.25% in Ameren Missouri's last rate case. In this case, I recommended an ROE range of 8.00% to 9.00%, even though the implied COE was lower. Based on the mid-point of my multi-stage DCF analysis, the implied COE in this case is 8.25%. If I subtract the mid-point COE in this case from the mid-point COE in the last case, this implies the COE decreased by 50 basis points since Ameren Missouri's last rate case.

Q. Do you believe the 10.20% authorized ROE for Ameren Missouri is the appropriate benchmark if the Commission reduces the allowed ROE to reflect the decrease in the COE since the last rate case?

A. No. It is my understanding from Commission agenda discussions, the Commission considered 10% to be within a zone of reasonableness and in fact was considering this as a possible allowed ROE. Although the Commission ultimately authorized an ROE of 10.20%, it is Staff's opinion that the Commission should authorize an ROE for Ameren Missouri similar to that of KCPL and GMO because of similar risk profiles. It was Staff's opinion in Ameren Missouri's last rate case that the COE for regulated electric utility companies had actually declined since the Commission authorized a 10% ROE for KCPL and GMO in Case Nos. ER-2010-0355 and ER-2010-0356, respectively. Consequently, from a reduced cost of capital perspective, the benchmark for any considered reduction to the allowed ROE should be no higher than 10%.

Q. What was Mr. Hevert's recommended ROE in Ameren Missouri's last rate case?

A. 10.90%.

Q. What was Mr. Gorman's recommended ROE in Ameren Missouri's last rate case?

A. 9.75%.

Q. What is Mr. Gorman's recommended ROE in this case?

A. 9.30%.

Q. Does this mean there is some agreement among the ROR witnesses on at least the relative decline in the COE?

A. Yes, even though the ROR witnesses disagree on the absolute level of a COE estimate, at least there appears to be some agreement on the relative decrease in the COE since the last rate case

Q. If the Commission were to judge the fairness of an allowed ROE in this case on a relative basis compared to the appropriate ROE benchmark of 10% in the last rate case, what is the minimum reduction to the allowed ROE the Commission should make for purposes of this case?

A. Because all of the ROR witnesses seem to agree that the COE has decreased by approximately 50 basis points since the last rate case, the Commission could easily justify an allowed ROE of no higher than 9.5%.

Q. Does this mean that Staff believes this is Ameren Missouri's COE?

A. No, but Staff recognizes the various opinions on the COE and the Commission's difficult task of weighing all the testimony sponsored in this case.

Consequently, Staff believes because all parties have determined there is an approximate 50 basis point decline in the COE, this gives the Commission support for an allowed ROE at least in the mid-9% range.

Mr. Hevert's Opinion Versus Ameren's Opinion on Utility Stock Characteristics

Q. On page 39, line 10 through page 43, line 6 of his rebuttal testimony, Mr. Hevert cites several research articles and his own research in attempting to support his position that utility investors focus on EPS growth rates rather than potential DPS when valuing regulated electric utility stocks. Is Mr. Hevert's opinion consistent with that of Ameren's opinion?

A. No. Mr. Hevert's position is completely at odds with Ameren's own view on the focus of utility investors. In evaluating its dividend policy, Ameren's Finance Committee of the Board indicated the following during its October 13, 2011 meeting:

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The Finance Committee of the Board also indicated the following about expected returns from capital appreciation as opposed to dividend yield when comparing utility stocks to those of the broader market:

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Considering this relationship in context of the DCF methodology, the total return estimated from a DCF analysis should be tilted much more toward the dividend yield rather than expected capital appreciation. In Mr. Hevert's attempts to justify higher COE estimates by assuming regulated electric utility stock returns will be driven by capital appreciation rather than dividend yield, he loses touch with the reality of the basic characteristics of regulated utility stocks. Based on Mr. Hevert's use of updated projected long-term growth rates of approximately 5.07% to 5.67% and dividend yields in the 4.23% to 4.48% range, he is projecting that electric utility investors expect to receive a majority of their total return from an appreciation in regulated electric utility companies' stock prices. This is in direct contradiction with what has occurred over the last 35 years for regulated electric utility companies. If the relationship of dividend return to total return continues to hold true, then the implied growth in stock price for a regulated electric utility may only be 2.07% using Mr. Hevert's updated median dividend yield of 4.4% on page 2 of Schedule RBH-ER10 (4.4%/68 %= 6.47% and then, 6.47% - 4.4% = 2.07%).

Q. This results in an expected return of only 6.47% for Mr. Hevert's regulated electric utility proxy group. Can this be right?

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A. Certainly. Although this represents a little over 200 basis points of risk premium for investing in regulated electric utility stocks as opposed 'Baa' rated electric utility bond yields of 4.28% as of August 22, 2012[3], this is entirely plausible. Also, considering that The Survey of Professional Forecasters projects annual compound returns for the S&P 500 for the next ten years to be only 6.8%, this low of a return for regulated electric utility stocks is quite logical.

Q. Was there any other information provided by Ameren's financial consultant, JP Morgan, which provides a reasonableness check for growth rates used in a DCF analysis?

A. Yes. JP Morgan specifically stated the following about utility investors and the growth rates they would expect from such investments:

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Utility investors do not invest in regulated utility company stocks expecting growth rates of 5% in the long-run. Consequently, while Staff's perpetual growth rates are higher than the ** __ ** achieved levels discussed by JP Morgan, at least they are within reach of actual historically achieved growth rates for regulated electric utilities.

Q. Did Mr. Hevert take issue with your suggestion that investors may not expect utility investments to grow much faster than the rate of inflation in the long-term?

A. Yes. Mr. Hevert seems to believe that "electric utilities would face significant difficulty competing for capital if investors believed that the long-term real growth rate for the companies was negligible. In addition, since earnings growth supports dividend growth,

[3] The Value Line Investment Survey, August 31, 2012, p. 1405.

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if Mr. Murray is correct that long-term growth does not exceed the expected inflation rate, electric utilities would not be able to offer investors any prospect for dividend growth."

Q. If an investor does not expect utility stock prices to grow at a rate much higher than inflation over the long-term, does this mean that the company would not be able to compete for capital?

A. No. A dividend paying stock can still earn a positive real return without the stock price growing more than the inflation rate. As the information provided by JP Morgan indicates, ** _____ _____ _____ _____ **

Q. ** _____ _____ **

A. ** _____ _____

_____ _____ **

Consequently, Mr. Hevert's opinion about what is required for a utility company to attract capital is completely at odds with Ameren's opinion.

Q. Does Ameren estimate its COE for purposes of attempting to target a capital structure and credit rating that it believes will allow it to achieve the lowest cost of capital?

A. Yes. Staff reviewed documents from several of Ameren's Finance Committee of the Board meetings and they routinely evaluate (with the help of information from

JP Morgan) what they consider to be an optimal credit rating for purposes of achieving the lowest cost of capital. As part of this process, Ameren must estimate its COE. As of July 2012, Ameren used the following inputs to estimate its current COE:

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Q. Isn't Ameren's COE affected by its riskier merchant generation operations?

A. Yes.

Q. Would this cause the need to adjust the COE downward for Ameren Missouri's operations?

A. Yes.

Q. How much lower could Ameren's beta be if it didn't have its exposure to the merchant generation operations?

A. It would probably be close to the average of Staff's proxy group of 0.7.

Q. How much would this reduce Ameren Missouri's estimated COE?

A. Almost 100 basis points to ** ____ **

Utility Stocks Compared to Bonds

Q. On page 5, lines 11 through 13 of his rebuttal testimony, Mr. Hevert indicates that utility stocks are not seen as "safe havens" to the extent that investors have dramatically reduced their required returns. Do investors view regulated utility stocks as "safe havens" and value them based on the level of interest rates?

A. Yes. Almost all equity analyses of regulated utility stocks involve some form of comparison to the current level of interest rates when determining a fair value to pay for the stock. This is widely accepted and understood by professional securities analysts. For example, Greg Gordon, lead Power & Utilities Research analyst for International Strategy and Investment Group Inc. ("ISI") and recent speaker at the Mid-America Regulatory Conference ("MARC") in June 2012, recently published a research report discussing this relationship.[4] Specifically, Mr. Gordon and his coauthors indicated the following (entire report is attached as Schedule DM-SUR-1):

> **The Balance of Risks vs. Bonds is More Favorable**
>
> **Our dividend/bond yield model suggests the balance of risks for the Regulated Utility sub-group is more positive,** even assuming the sunset of the 15% tax rate on dividends. We believe utility stock valuations are highly correlated to bond market conditions given their leverage and high dividend yields, which make them alternatives to fixed income instruments. Going back 40 years, utility dividend yields — and, by extension, P/E multiples — have shown an 80% correlation to both 10-year Treasury note yields and to BBB corporate bond yields. Investor appetite for a dividend income, and the assumption of how much that income will grow over time, is a valuation driver that expresses itself through a relationship to the bond market. (emphasis in the original)

[4] Greg Gordon, Jon Cohen, Bill Appicelli, and Dmitri Pchelintsev, Regulated Utilities: "Valuations Supported By Low Interest Rates; There Are Relative Values," January 9, 2012, International Strategy and Investment Group, Inc.

> The fact that this correlation was high as it related to both Treasuries and corporate bonds was misleading. Since 1970 the BBB credit spread over Treasuries has averaged +/-210 bp. During the financial crisis when corporate credit markets imploded and government markets rallied the correlation to Treasuries broke down while the correlation to BBB credits stayed extremely high, leading utility stocks lower. At its apex (December 2008), the spread between Treasury yields and corporate bond yields peaked at ~600 bp. The average BBB credit spread over Treasuries is now approximately 329 bp.

Consequently, although Mr. Hevert is correct regarding his observation that utility stock prices have not been as highly correlated with U.S. Treasury yields since the financial crisis in late 2008 and early 2009, he is not correct regarding their continued correlation to corporate bond yields. Yields on investment grade corporate bonds have been quite low for some time because of the safety associated with investment-grade corporate bonds. Specifically, yields on utility bonds have been very low. This low corporate bond-yield environment has had a dramatic impact on regulated electric utilities' COE. This directly explains the significant increase in regulated electric utilities' stock prices over the last couple of years. While we can argue about how much the COE has dropped, there is no doubt it has dropped, which gives the Commission sufficient support for lowering the allowed ROE for Ameren Missouri to at least 9.50%, even though Staff's opinion is that Ameren Missouri's COE is lower than this level.

Q. Mr. Hevert indicates that you did not provide any support for your assertion that utility stocks are considered to be bond surrogates/substitutes by the investment community.[5] Are the views and investment decisions of the investment community supportive of this statement?

[5] Hevert Rebuttal, p. 63, ll. 3-15.

A. Absolutely. Staff didn't invent this analogy. It is straight from the "mouths" and actions of investors. Investment research reports on utility stocks are replete with the comparison of utility dividend yields to bond yields and utility P/E ratios to bond yields. In fact the quoted material above specifically addresses this comparison. As interest rates decrease, utility stock prices increase. This same relationship holds true for long-term bonds. As interest rates decrease, the prices of long-term bonds increase. This explains the correlation of utility stock P/E ratios with the level of interest rates. If Mr. Hevert would rather Staff use the term "alternatives" to describe this relationship, as Mr. Gordon did in his analysis of the regulated electric utility universe, then Staff can do so, but this is mincing words in Staff's opinion. Staff has researched the opinions of several investment analysts and the view that regulated utility stocks are a close substitute to bond investments is pervasive. This is exactly why utility stock analysis devotes significant attention to interest rate forecasts.

Q. Mr. Hevert also explains in his rebuttal testimony why the "flight to quality" in treasury bonds and investment grade corporate bonds should not cause one to conclude that the COE has decreased as well. He also claims that utility stocks are not seen as "safe havens."[6] How do you respond?

A. I strongly disagree! Considering the fact that the U.S. economy has had one of the slowest recoveries from a recession since at least the Great Depression and the fact that demand for electricity is expected to be extremely low for the foreseeable future, there is really no other explanation for the dramatic increase in regulated electric utility stock prices over the last couple of years other than investors viewing regulated electric utility stocks as

[6] Hevert Rebuttal, p. 5, l.3 through p. 6, l. 2.

"safe havens" in this low growth, low interest rate environment. Although regulated electric utility companies have been trading at premiums to the S&P 500, some analysts believe there is more room for regulated electric utility stock prices to increase if interest rates continue to remain so low and/or commissions do not reduce allowed ROEs.

Q. Is there any recent information provided by the Edison Electric Institute ("EEI") that supports your position that regulated electric utility stocks are "safe havens" and viewed as "bond substitutes"?

A. Yes. EEI provided the following commentary regarding the current valuation levels of regulated electric utility stocks:

> Stretched Valuations?
>
> Despite trailing the broad market averages during the first half of 2012, the EEI Index outperformed all major market sectors over the 12-month period ending June 30 (as shown in Table IX). This was due less to any change in the industry's prospects than to the **industry's status as a safe-harbor during macroeconomic turbulence**. The broad market fell more than 10% during Q3 2011 as the spectacle of the U.S. fiscal debt limit debate (and Standard & Poor's August 5, 2011 downgrade of U.S. debt from AAA to AA+) along with European leaders' equally contentious response to a flare-up of market stress over their continents' sovereign debt woes rattled investors.
>
> By late June 2012, **most analysts observed that utility price/earnings ratios were near historical highs relative to the broad market**, suggesting that the group's strength may be nearing an end. Conversely, given today's extraordinarily low interest rates, utility shares receive powerful support from the industry's roughly 4% dividend yield, double that of the S&P 500's dividend yield. **When viewed as a bond substitute (offering bond-like yields with dividend growth potential), analysts observed that utility stocks could have room to rise given the very low yields available most everywhere else.**
>
> To the extent that utility dividends remain perceived as stable and safe, and if interest rates remain very low, utility shares will likely receive an ongoing strong bid from investors. However if rates were to rise or if industry fundamentals were to worsen — such as the perception of difficulty executing capital investment programs or renewed fuel cost increases pressuring end-user rates, fostering a

> more contentious environment in rate cases — the group's stock market fortunes may take a turn for the worse.
>
> Recent years have delivered many tailwinds for the industry, independent of the hard work by companies to reform themselves around the traditional utility business model while implementing the strong public good aspect of their mission — that of ensuring safe, reliable and increasingly environmentally clean electricity within regulated service territories. It's likely that the values of utility shares in the immediate future will continue to be driven more by global macroeconomic issues outside of the industry's control than by changes in business strategies or fundamentals that managements can control. That is not to say that the month-to-month and year-to-year challenges that come with the management of shareholder-owned utilities are not significant, it's just that they are largely under control for now.[7] (emphasis added throughout)

Capital Markets and Authorized ROEs

Q. Mr. Hevert also claims that he "strongly disagrees" with COE estimates that are below any ROE authorized since at least 1980.[8] How do you respond?

A. The U.S. macroeconomic and capital market environment are in unprecedented territory. Interest rates are the their lowest levels in decades; the economic recovery from the worst recession since the Great Depression is so slow it can barely be labeled a recovery; unemployment is stubbornly high; there are concerns regarding the stability of economies within the Eurozone; and inflation is almost nonexistent. It is quite clear that we are in an environment that has never been experienced since 1980 so to use this period to justify keeping allowed ROEs consistent with this period is entirely inappropriate.

Q. On page 22, lines 1 through 7 of his rebuttal testimony, Mr. Hevert provides a comparison of the S&P Utilities Index and the S&P 500 and concludes that because the S&P 500 outperformed the S&P Utilities Index that this causes any COE reductions due to the previous run-up in regulated electric utilities' stock prices to no longer be valid. Is this at all

[7] Edison Electric Institute's Second Quarter 2012 Financial Update, p. 7 (Schedule DM-SUR-2).
[8] Hevert Rebuttal, p. 13, ll. 13-15.

logical considering regulated electric utility stock prices have continued to increase over this 6-month period, albeit at a slower pace?

A. No. A good way to illustrate the fallacies of Mr. Hevert's argument is to consider the performance of the bond markets over the last 6 months. The Barclays Aggregate Bond Index had a total return of 2.37% for the 6 months through June 30, 2012, whereas the S&P 500 had a total return of 9.49%. Just because the S&P 500 had higher returns in the first 6 months of 2012 than the Barclays Aggregate Bond Index does not mean that the cost to issue bonds is not still low. In fact, the average yield to maturity on the Barclays Aggregate Bond Index is only 1.48%. It is the relative price of the index as compared to other indices that should be the focus. Regulated electric utilities are still trading at a premium to the S&P 500, as was recognized in EEI's commentary discussed above.

Considering the magnitude of the financial crisis, Staff believes a proper comparison of S&P 500 returns to regulated electric utility returns would be from the beginning of the stock market recovery to the current period. For the period April 1, 2009 through June 30, 2012, regulated electric utilities have had a cumulative total return of 92.57% compared to the S&P 500 total return of 82.8%. This equates into an annual compound rate of return of 20.40% for the S&P 500 compared to an annual compound rate of return of 22.34% for regulated electric utilities.[9]

However, again, Staff believes the most relevant data for purposes of understanding why it makes sense to reduce the allowed ROE to at least 9.5% is that the P/E ratios for regulated electric utilities continue to justify this action.

[9] EEI's Second Quarter 2012 Financial Update.

Q. Mr. Hevert indicates that you are incorrect in concluding that Ameren Missouri's COE is below the 9% ROE that you recommend. He also claims that investment analysts do expect commissions to set the allowed ROE equal to the COE. Does he provide any supporting 3rd-party investment analysis to support his opinion?[10]

A. No.

Q. Do you have any proof that this is the view of investment analysts?

A. Yes. Staff has provided supporting documentation for this position in recent utility rate cases in Missouri and specifically in Ameren Missouri's last two rate cases, Case Nos. ER-2011-0028 and ER-2010-0036. The most obvious statement that supports this notion was that of Goldman Sachs when it stated the following in a March 10, 2009 research report:

> **If implied costs of equity remain high or authorized RoEs do not increase, companies will likely decrease longer-term capital spending and rate base growth – reducing our 4-5 year EPS growth outlook below current levels.** Our implied DDM analysis shows that the implied cost of equity has increased by approximately 27% since March 2008 to levels near 11.3% - above where regulators recently set authorized returns on equity. Authorized returns are key given the increased costs of equity and debt – if authorized rates of return set by regulators do not increase, many companies will face challenges of earning a WACC-like return on capital investment, driving them to reevaluate and potentially reduce longer-term discretionary spending where possible. Alternatively, if the cost of equity declines as stock prices increase or bond yields decrease, companies will face less economic pressure to reduce capital spending. (emphasis in the original)[11]

[10] Hevert Rebuttal, p. 67, l. 14 – p. 68, l. 21.
[11] Michael Lapides, Zac Hurst, Jadieep Malik and Neil Mehta, "Reiterate Neutral Coverage View; POR Replaces NVE as CL Buy," Goldman Sachs, March 10, 2009.

The time at which Goldman Sachs published this report was at the nadir of the stock market crash caused by the severe banking crisis experienced during the fall of 2008 through the spring of 2009. Obviously, the COE had increased considerably and authorized ROEs were approximately 10.30% for the first quarter of 2009 and 10.55% in the second quarter of 2009. Performing some simple algebra indicates that Goldman Sachs estimated the COE to be approximately 8.9% in March 2008. Average authorized ROEs in the first half of 2008 were approximately 10.5%. Clearly, Goldman Sachs expected commissions to set allowed ROEs higher if stock prices did not recover, otherwise utility companies face challenges of earning a "WACC-like return on capital investment." Apparently, Goldman Sachs was much more comfortable when allowed ROEs exceeded the COE by approximately 150 basis points. However, the concern then becomes whether these investments are made because they are economical investments or because they simply allow shareholders to earn above-market returns.

Now that the economy has slowed down to a trickle and investment-grade corporate bond yields have declined significantly, investors expect the opposite to occur, which is that commissions will start to lower allowed ROEs because the current COE to allowed ROE spread is much higher than is usually the case. Mr. Gordon specifically states the following in his report:

> At present, we are monitoring all three fronts [Assets, Allowed Returns and Capital Ratios]. **The spread between authorized returns on equity and the cost of equity appears wide by historical standards**, although we believe the equity risk premiums may in fact be hire [sic] than they appear given that low interest rates are being driven by sovereign credit risk. We are watching the regulatory backdrop closely but so far ROE's have come down at a moderate pace… (emphasis added)

Investors are now expecting allowed ROEs to eventually decline and/or bond yields to increase to cause the historical spread between allowed ROEs and the COE to revert back to historical average spreads. Because economic forecasters have consistently projected interest rates to increase over the last several years, but this has not materialized, Staff urges the Commission to start recognizing the lower COE by lowering the allowed ROE.

Multi-Stage DCF

Q. Is there anything else in Mr. Gordon's report that is relevant to this proceeding?

A. Yes. Considering the fact that all three ROR witnesses in this case are employing a multi-stage DCF, it is especially relevant to explore the valuation approach used by Mr. Gordon's firm, ISI, which is also a multi-stage DCF approach. Before Staff delves into the details of Mr. Gordon's approach, it is important to compare and contrast the purpose for which ROR witnesses use a multi-stage DCF and the purpose for which investment analysts use a multi-stage DCF approach.

Investment analysts often use both absolute valuation methodologies and relative valuation methodologies when evaluating a fair price to pay for a stock. Relative valuation methodologies focus on the P/E ratios for the subject company as it compares to the industry. Absolute valuation methodologies are those that analyze specific cash flow estimates to the shareholder and then discount these cash flows by a discount rate (i.e., the COE). The investment analyst and/or investor uses a COE that he/she believes is consistent with the risks of the cash flows expected from the company. The unknown variable the investor is solving for when he/she uses an absolute valuation model, such as the multi-stage DCF methodology, is the fair price to pay for the stock. The variable the ROR witness is

attempting to solve for is the discount rate (i.e., the COE) investors are using to estimate a fair price to pay for the stock. Although investment analysts may have some variance in their opinion on the proper COE to use when discounting projected future cash flows (just as they will differ on their projected growth rates in cash flows and earnings), Staff's experience has been that equity analysts' COE rates have been in the range of 7% to 9% even before the recent decline in corporate bond yields and corresponding increase in regulated electric utility stock prices. Although Staff is not aware of any source that publishes securities analysts' consensus COE estimates, if one follows the logic that investors follow the advice of these analysts, then the consensus COE of the analysts is that which is embodied in stock prices.

Q. Where does Mr. Gordon explain the ISI multi-stage DCF methodology in the January 9, 2012, research report (*see* Schedule DM-SUR-1 attached to this testimony)?

A. On pages 17 to 18 of the report.

Q. ISI characterizes its multi-stage DCF as a dividend discount model ("DDM"). Is the DDM the same methodology as the DCF as used in the utility ratemaking?

A. Yes. The DDM more properly specifies the DCF used in utility ratemaking. A DCF analysis can refer to the discounting of a variety of different cash flow proxies, but as used in utility ratemaking, the DCF is referring to dividends as the expected cash flows.

Q. What are the key areas of ISI's multi-stage DCF analysis that are relevant to evaluating the reasonableness of assumptions made by the various ROR witnesses in this case?

A. The most obvious is the assumed perpetual growth rate of 2% starting in year 21. This is much more in line with the perpetual growth rates Staff has observed in

other investment analyses. Mr. Hevert claims that a long-term growth rate this low is illogical because investors wouldn't purchase stock that didn't offer real growth.[12] Mr. Hevert also claims that if long-term growth in earnings didn't exceed inflation, then electric utilities would not be able to offer investors any prospects for dividend growth, which would put utilities in a situation in which they could not attract equity capital.[13] Mr. Hevert provides no practical investment analyses to support his position, whereas Staff has provided such professional investment analysis to support the reasonableness of its position.

The other is the fact that the first two stages occur over a 20-year period rather than a more conventional 10-year period. The longer transition period would cause more sensitivity in the estimated value of the stock if the assumed rate base growth was significantly higher than the perpetual rate base growth of 2%. However, because ISI indicates that the rate base growth for years 6 through 20 should be consistent with a long-term estimate for the company or the industry, its example shows a relatively conservative 3% compound average growth in rate base for the second period.

Another relevant aspect of ISI's multi-stage DCF methodology for purposes of understanding investor assumptions and expectations is the fact that ISI assumes that dividend growth will be driven by rate base growth. Apparently, because of a utility company's monopoly status, ISI makes the assumption that it will be able to continuously raise rates to pay for rate base investment. In past rate cases, Staff estimated the long-term growth rate by using demand growth plus an inflation factor. While Staff is aware of other investment firms, such as BMO Capital Markets, that had estimated perpetual growth rates

[12] Hevert Rebuttal at p. 54, lines 8-9.
[13] Hevert Rebuttal, p. 54, ll. 9-15.

by using projected demand growth rates, using rate base growth is logical assuming these investments are allowed in rates.

An additional significant area of interest is the assumed allowed ROE in the model. As can be seen, for the long-term, the model assumes an allowed ROE of 10.5%. This assumed allowed ROE is very close to long-term averages of commission allowed ROEs in recent years. However, it is important to understand that investment analysts do not equate allowed ROEs with the COE as is often assumed by certain ROR witnesses. For example, both Mr. Gorman and Mr. Hevert assume allowed ROEs are equal to the COE for purposes of their risk premium analyses. ISI's report makes it very clear that they consider commission allowed ROEs to be higher than the COE for utilities.

As Staff discussed earlier, investment analysts are aware that the spread between allowed ROEs and the COE are currently high. This is mainly due to the fact that commissions have not reduced allowed ROEs to reflect the decrease in the COE. However, as Staff indicated before, it appears that investment analysts do not expect, or desire, for commissions to set the allowed ROE equal to the COE. If commissions set the allowed ROE as low as the COE reflected in regulated electric utility stock prices, then allowed ROEs would be closer to the 7% to 8% range.

Credit Rating Considerations

Q. On page 66, line 8 through page 67, line 12 of his rebuttal testimony, Mr. Hevert indicates that you did not quantify the potential effect of your ROE recommendation on Ameren Missouri's financial integrity. Did Mr. Hevert attempt any such quantification in his direct testimony?

A. No.

Q. Mr. Hevert even hints that if the Commission were to adopt your recommended ROE, S&P may downgrade Ameren Missouri's credit rating to below investment grade. Do you agree?

A. No.

Q. Why?

A. Ameren Missouri has been earning an ROE in the 7% range for the last three years and its credit metrics, specifically Ameren Missouri's funds from operations (FFO) to debt ratios, have been consistent with S&P's financial risk profile of 'significant'. Ameren Missouri's FFO to debt has averaged around 23% for the most recent three years, which is above the 20% lower threshold for S&P's benchmark.

Consequently, if Ameren Missouri were allowed an ROE above the earned ROE of approximately 7 percent, assuming all else is held equal, it would seem likely that Ameren Missouri's credit metrics would at least be maintained at their current levels.

Q. Mr. Hevert also brings up the concern about a possibility of S&P downgrading Ameren Missouri to below investment grade if the Commission allowed a lower ROE. Is this of concern to Staff as well?

A. Yes, but for different reasons. If it weren't for Ameren Missouri's credit support, it is quite probable that Ameren would already have below investment-grade credit ratings due to the significant drag of Ameren's non-regulated operations. If it weren't for Ameren Missouri's affiliation with these weaker operations, its S&P credit rating could be as high as an 'A-' according to S&P's benchmarks. Ameren Missouri has an 'excellent' business risk profile, but because of its affiliation with Ameren's other operations, S&P does not rate Ameren Missouri based on this lower business risk profile. If S&P did, because

Ameren Missouri's average FFO/debt ratio (23%) over the last three years has been above the 20% lower threshold for S&P's benchmark for a 'significant' financial risk profile, this would justify a rating as high as an 'A-'.

Ameren currently only has 'strong' business risk profile, which is considered riskier than Ameren Missouri on a stand-alone basis. This is the primary reason Ameren Missouri's S&P credit rating is only one notch above "junk" status. It is entirely inappropriate to suggest that the allowed ROE needs to be set high enough to avoid a non-investment grade credit rating when the cause for Ameren Missouri's borderline investment grade credit rating is that of non-regulated business and financial risks. Because most investors assign either no equity value or even negative equity value to Ameren's non-regulated operations, on a market-value basis, Ameren's non-regulated operations are underwater (i.e., more outstanding debt than equity). This is having a direct negative impact on Ameren's cost of capital and an indirect negative impact on Ameren Missouri's cost of capital. Because Staff is not relying on a company-specific COE analysis of Ameren, Staff is comfortable that its COE estimate does not include higher costs due to Ameren's increased risk profile, but Staff is not confident that Ameren Missouri's cost of debt is free from this influence.

Q. Is it possible that Ameren Missouri's cost of debt may be higher due to its affiliation with Ameren's non-regulated operations?

A. Yes.

Q. Did you make any downward adjustments to Ameren Missouri's cost of debt to take this into consideration?

A. Not for purposes of my initial recommendation, but because Ameren Missouri has not allowed Staff to review certain Ameren Board materials that Staff believes discuss

credit rating risks from Ameren's merchant generation operations and certain strategies Ameren could take to protect Ameren Missouri's value and credit profile, Staff has not ruled out the possibility of making a downward adjustment to Ameren Missouri's cost of debt.

Q. If Ameren Missouri had a better credit rating based on its stand-alone risk profile, would this assist Ameren Missouri in attracting capital and improving its financial integrity?

A. Yes.

Q. Assuming Ameren Missouri does not provide the documents that you believe discuss protecting Ameren Missouri's credit rating and value, what adjustment to the cost of debt would you suggest?

A. Because Staff believes Ameren Missouri could have a credit rating as high as an 'A-' absent its affiliation with Ameren's other operations, Staff would likely recommend the Commission reduce Ameren Missouri's embedded cost of debt by 76 basis points, consistent with the spread Mr. Hevert provided in Table 5, on page 23 of his rebuttal testimony. This would result in an embedded cost of debt of 5.12% as compared to Ameren Missouri's actual cost of debt of 5.885%.

Q. Is Ameren using Ameren Missouri's credit capacity, which may limit Ameren Missouri's financial flexibility?

A. Yes. Staff explored this issue in more detail in Ameren Missouri's last rate case. Ameren Missouri's rates should be set based on the assumption that financing decisions are made in the best interest of Ameren Missouri. However, Ameren has a conflict of interest due to its ownership interest in other operations. While Ameren appears to have taken some steps to separate itself from its non-regulated operations, Ameren still has access

to $500 million of a shared credit facility with Ameren Missouri. Ameren Missouri also has direct access to $500 million of short-term debt under this shared $800 million credit facility assuming Ameren hasn't drawn in excess of $300 million. Ameren can reduce Ameren Missouri's direct access to credit by $200 million if it fully draws on its access.

Ameren Missouri, on a stand-alone basis has a larger total asset base than Great Plains Energy, Inc. ("GPE") on a consolidated basis. However, GPE has $1.05 billion of credit capacity under two credit facilities it maintains at KCP&L ($600 million) and KCP&L Greater Missouri Operations Company ($450 million). Although GPE shares access to these credit facilities with its subsidiaries, the subsidiaries have direct access to the entire amount of their individual credit facilities. Consequently, based on this comparison, it appears that Ameren Missouri should demand at least $1 billion of direct credit capacity since it provides the asset base to support access to this liquidity. Additionally, as discussed earlier in my testimony, Ameren Missouri's stand-alone credit metrics and business risk support a higher credit profile that would allow it to have a higher credit rating, absent its affiliation with Ameren's other operations.

Rule of Thumb

Q. Mr. Hevert claims that the lower bound of your "Rule of Thumb" test of reasonableness is 8.52%. Is this accurate?

A. No, but Staff did make a mistake on how it reported the "Rule of Thumb" COE estimates so Staff can understand why Mr. Hevert may have believed this. Actually, because regulated utility stocks are considered by the investment community to have bond-like characteristics, Staff considers the 3% risk premium over the utility industry bond yields to be the more likely risk premium requirement by utility stock investors. Based on

the range of "A" rated and "Baa" rated bond yields, this results in an indicated COE estimate of 7.92% to 8.52%. Consequently, the lower bound for the reasonableness of a COE estimate is more accurately defined by the 7.92%. If one assumes Ameren Missouri would be a 'BBB' rated entity on a stand-alone basis, which as Staff has already discussed is highly debatable, then the upper end of this indicative COE range would be considered a good test of reasonableness. Because Staff ultimately recommended an ROE of 9.0%, Staff believes its recommendation is well within the zone of reasonableness if the Commission believes the ROE should be set based on the COE.

Comparable Companies

Q. Mr. Hevert claims you should have included Edison International in your proxy group because your business risk criterion is already contemplated in your criterion requiring an investment grade credit rating. How do you respond?

A. While I agree the investment grade credit rating does encompass all risks of the company, which includes business and financial risk, Edison International's non-regulated subsidiary, Edison Mission Group ("EMG"), is involved in merchant generation operations, which are much riskier than regulated electric utility operations. The risks caused by non-regulated operations are not immaterial and should rightfully be considered when estimating the COE for regulated electric utility operations, and as mentioned above, even the cost of debt. As Staff explained in its rebuttal testimony, Staff has observed COE estimates for non-regulated merchant operations that are twice as high as those used for regulated utility operations.

Q. Mr. Hevert claims you should have considered percentage of income from regulated operations to screen for proxy companies. How do you respond?

A. I believe my criteria were more effective in screening companies that have non-regulated operations. For example, if the non-regulated operations do not produce any income or the income is negative, then Mr. Hevert's net income screening criterion will allow for companies that have underperforming non-regulated operations, which increases the risk profile of the comparable group. However, the use of a net income criterion in addition to evaluating revenues and assets could be useful in certain situations.

Long-Term Realized Electric Utility Growth

Q. Mr. Hevert claims that you did not provide any basis for your selection of the period of 1968 through 1999 to evaluate electric utility realized growth rates for purposes of projecting potential future growth for the electric utility industry.[14] Do you agree?

A. No. As Staff explained in the Staff Report, Staff believed it was important to analyze electric utility industry data dating back to at least the early 1970s because this was approximately the beginning of the last large construction cycle for the electric utility industry. Because the electric utility industry started another construction cycle starting around 2005, it is important to consider growth rates over an entire period from beginning of construction in one cycle to beginning of construction in another cycle. While Staff did not analyze data past 1999 because of various disruptions in company-specific data due to restructuring of the electric utility industry, Staff's further evaluation of aggregate utility GDP data confirms that the industry as a whole was declining through 2005. Consequently, inclusion of this data would have only caused the realized growth rates to have been lower.

Q. Are there important differences in this construction cycle for the electric utility industry versus the construction cycle that started in the 1970s?

[14] Hevert Rebuttal, p. 44, ll. 14-17.

A. Yes. The first construction cycle was driven by the need for additional capacity because of strong demand growth that had been occurring in the two to three decades preceding this period. The second construction cycle has not been driven by demand, but by environmental requirements, replacement of aging infrastructure, energy efficiency measures and other non-capacity related issues.

Because the first construction cycle was driven by demand growth, it is only logical to conclude that utilities' achieved growth rates over this period should be considered as a high-end estimate for long-term projected growth for utilities during the second construction cycle. Because usage is not expected to increase much over the second cycle, the only way utility companies will be able to recoup the costs of this additional investment is to charge higher rates for the customers remaining on the system. This would seem to place some constraint on potential future growth for the electric utility industry.

Q. Mr. Hevert also takes issue with the fact that the companies you used to evaluate regulated electric utility growth over the last construction cycle are not the same as the companies in your proxy group to estimate the current COE for regulated electric utility companies.[15] How do you respond?

A. The selection of a group of companies to evaluate the long-term growth of the electric utility industry necessarily requires choosing companies that existed during this period and were fairly steady-state regulated utility companies. The composition of companies in any given industry changes over time. This was especially the case for the electric utility industry because of the push for deregulation and restructuring of the markets. A perfect example is Staff's inclusion of St. Joseph Light and Power Company ("SJL&P).

[15] Hevert Rebuttal, p. 45, ll. 1-7.

Although SJL&P was an ideal proxy for a pure-play regulated electric utility company through 1999, it simply no longer existed after it was acquired by Aquila, Inc. (then named UtiliCorp United, Inc.).

Staff selected these companies to develop a proxy of actual realized growth for the regulated electric utility industry over a long period (30 years) that covered almost the entire period of the electric utility industry's last construction cycle. Although Staff attempted to procure data on broader indices, such as the Dow Jones Utility Index, the S&P Electric Utilities Index or some similar type of index, this information simply wasn't available to Staff. Staff has no objection to evaluating the EPS and DPS growth for some other regulated utilities' index, but Staff would have to determine if it is worth the expense to gain access to this data. Unless the Commission expresses an interest in reviewing this data for purposes of deciding on an allowed ROE, Staff does not believe this would be an efficient use of Commission funds.

Q. Did the companies you used to evaluate realized electric utility growth for the 30-year period 1969 through 1999 include any Missouri electric utilities?

A. Yes.

Q. What companies were included?

A. Empire, Kansas City Power and Light Company and SJL&P.

Q. Why wasn't Union Electric included?

A. Staff removed Union Electric due to its merger with CIPSCO in 1997, but since Staff has data on Union Electric through 1997 and it does not appear that the merger with CIPSCO caused a significant change in the data in 1998 and 1999, Staff believes

reviewing the actual growth rates of Missouri's major electric utilities could provide a reality check on potential growth for at least Missouri electric utility companies.

Q. What were the actual achieved growth rates in EPS, DPS and BVPS for Missouri's major publicly-traded electric utilities for the time period of 1969 through 1999?

A. As shown on Schedule DM-SUR-3, the average of the 10-year compound averages for DPS, EPS and BVPS were 3.59%, 3.11% and 2.57%, respectively, with an overall average of 3.09% for all indicators.

Q. Are you proposing to use these growth rates as a proxy for perpetual growth in your multi-stage DCF analysis?

A. No. Staff is just providing this information to show the actual realized growth of Missouri's major electric utilities. However, these growth rates do support the reasonableness of Staff's long-term growth rates.

GDP Growth Rates

Q. On pages 47 to 49 of his rebuttal testimony, Mr. Hevert provides his rationale as to why he does not consider it appropriate to rely on economists' 10-year projections of GDP growth for purposes of the perpetual growth rate used in a multi-stage DCF analysis. Is Mr. Hevert's rationale consistent with his decision to rely on equity analysts' 5-year EPS forecasted growth rates for his constant-growth DCF analysis?

A. No. Mr. Hevert's constant-growth DCF analysis assumes his proxy group's stock prices can grow in perpetuity at the same rate as equity analysts' 5-year EPS forecasts. However, when deciding on an appropriate proxy to use for his assumed perpetual GDP growth rate, he claims that because economists' forecasts only cover a ten-year period, these growth rate projections are not reliable for assumed perpetual growth. If the Commission

accepts the premise that electric utilities can grow at the same rate as the growth in the overall economy, then the Commission should rely on forecasted long-term GDP growth rates provided by the Congressional Budget Office and/or Blue Chip Economic Forecasts. This provides a much more reasonable expected GDP growth rate than Mr. Hevert's updated GDP growth rate of 5.67%.

Q. Mr. Hevert's concerns notwithstanding, are there any projected GDP growth rates that extend beyond ten years?

A. Yes. Staff provided projections from the Energy Information Administration ("EIA"), which extend through 2035. The expected compound growth rate for nominal GDP for the period 2010 through 2035 was approximately 4.40 percent. The projected growth rates for the period 2022 (the year in which my perpetual growth rate is presumed to begin) through 2035 is approximately 4.70 percent, based on the compounding of real GDP growth and inflation growth. Clearly this provides a reasonableness check to Mr. Hevert's self-calculated projected GDP growth rate of 5.67 percent.

Q. On page 48, lines 13 through 15 of his rebuttal testimony, Mr. Hevert indicates that subtracting a current implied inflation rate of approximately 2.20% from a projected nominal GDP annual growth rate of 4.30% results in a real growth rate of only 2.05%. Mr. Hevert claims that this seems to be a fairly low expected real GDP growth rate as compared to the historical real GDP growth reported by the BEA for the period 1929 through 2011. Do you agree?

A. Yes. This is exactly the concern of most investors at this point in time. It is much too naïve to assume the U.S. economy will rebound back to levels it achieved during

much of the post WWII era. The U.S. is a developed country, with a mature economy. The EIA is projecting such lower growth rates for the U.S. economy for years to come as well.

Q. On page 49, lines 6 through 15 of his rebuttal testimony, Mr. Hevert claims that "some analysts" assume that a long-term risk-free rate can be used as a proxy for long-term U.S. GDP growth. Are you aware of the use of a long-term risk-free rate to approximate long-term growth for purposes of asset valuation?

A. Yes. In fact, Staff had introduced this idea in past rate cases when providing an estimate of an ex-ante equity risk premium for purposes of applying the CAPM. It appears that Mr. Hevert's source for this logic is the same as Staff's, Dr. Aswath Damodaran, Professor of Finance at New York University's Stern School of Business and publisher of textbooks used in the Chartered Financial Analyst ("CFA") Program. However, in no way does Dr. Damodaran advocate using a projected risk-free rate for purposes of estimating asset values or growth rates. He advocates using the current risk-free rate. In response to Staff Data Request No. 0500, Mr. Hevert provided the document he relied upon from Dr. Damadoran to support his use of a projected risk-free rate as a proxy for GDP growth (*see* Schedule DM-SUR-4). Dr. Damadoran specifically indicates the following in this document:

> 4. The dynamic valuation: You could use today's combination of a low risk free rate, high risk premium and low nominal growth to estimate a value of $1,700 million for the company. The valuation is internally consistent but the downside is that it will be volatile and change as the macro environment changes, creating discomfort for those who believe that intrinsic value is a stable number that stays unchanged over time.
>
> I would steer away from the internally inconsistent valuations, either dysfunctional (giving you too high a number) or depressed (giving you too low a number) because your inputs are at war with each other. As for denial and dynamic

> valuations, I prefer dynamic valuations because I am not sanguine that reversion back to historic norms will happen soon….

It is also noteworthy that Dr. Damodaran does not advocate the use of a GDP growth rate as a perpetual growth rate for mature industries such as the utility industry. He indicates the following about potential perpetual growth rates in one of his textbooks:

> Can a stable growth rate be much lower than the growth rate in the economy? There are no logical or mathematical limits on the downside. Firms that have a stable growth rate much lower than the growth rate in the economy will become smaller in proportion to the economy over time. Since there is no economic basis for arguing that this cannot happen, there is no reason to prevent analysts from using a stable growth rate much lower than the nominal growth rate in the economy.[16]

In the Staff Report, Staff provided information from the Bureau of Economic Analysis that shows that the utility industry has been becoming a smaller part of the economy in recent years.

Q. Mr. Hevert claims that because his analysis of S&P 500 EPS data as compared to nominal GDP data shows similar growth rates for this period that this somehow justifies the use of expected nominal GDP growth for purposes of estimating the COE for regulated electric utility companies. How do you respond?

A. First, I should note that I provided information in the Staff Report that refutes the notion that the S&P 500 would be expected to grow at the same rate as GDP due to the dilutive effects of issuing additional equity and the fact that the growth in the S&P 500 index's earnings does not consider the creation of new enterprises due to technological innovations.

[16] Aswath Damodaran, *Investment Valuation: Tools and techniques for determining the value of any asset*, p. 193, 1996, John Wiley & Sons, Inc.

That being said, even if this relationship were to hold true, the studies are only looking at the relationship of the S&P 500 to nominal GDP, not regulated utility companies to that of GDP. Staff discovered that electric utility companies, due to their high dividend payout ratios and usually acute need for large amounts of capital, suffer an approximate 50% dilution to their expected aggregate earnings and dividend growth rates. Staff believes this was largely confirmed by the Ameren Board's own consideration of the importance of dividends for regulated utility companies. Consequently, the Commission should focus on specific observations of the characteristics of regulated utility companies' securities that Ameren's Board itself considered when evaluating its dividend policy.

Backed Into Estimates

Q. Mr. Hevert also backs into an implied long-term growth rate of 5.97% to test the reasonableness of my growth rate estimates by assuming an allowed ROE of 10.15%. What is the problem with Mr. Hevert's reasoning in this example?[17]

A. This example only illustrates the dangers of setting the ROE higher than economically necessary. It is true a company may be able to achieve a growth rate of 5.97% if it is allowed an ROE of 10.15% on its investments, but this assumes there is a continuous need for investment. As discussed in the materials from the October 13, 2011 meeting of the Finance Committee of the Board (see page 6, lines 13 - 28 of this testimony), this often isn't the case. The benefit of setting the allowed ROE equal or close to the COE is that the company will only invest in projects that are truly economical. If a company believes it will be allowed an ROE higher than its COE, then it can create value for its shareholders by

[17] Hevert Rebuttal, p. 49, l. 16 through p. 50, l. 3.

merely investing for investments' sake. Of course, this will come at the expense of ratepayers and can only continue for so long before rates become unreasonable.

Staff could easily back into a much lower implied growth rate if new investment were allowed ROEs closer to the COE. For example, setting the allowed ROE at 8.25%, results in an approximate growth rate of 3.5%. The growth rate should be determined by economical investments produced by the needs of the system, not artificially inflated allowed returns. Of course, if a regulatory body wants to incentivize investments, then it may set the allowed ROE higher than the COE, much as the Federal Energy Regulatory Commission has done with encouraging transmission investments.

Q. Mr. Hevert backed into an implied authorized ROE of 10.26% based on the 3.59% realized growth rate that you calculated for the Central Region proxy group of companies for the period 1968 – 1999. Should the Commission consider this as a test of reasonableness for a COE estimate in this case?

A. No. Again this calculation illustrates the perverse incentive that can be caused by allowing ROEs that are much higher than the COE. For companies that are subject to competition, their expected ROEs will gradually be reduced to the COE as firms enter the market to pursue the excess economic profits available in the industry. However, in the case of regulated utilities, it is up to the regulator to be a surrogate for the competitive force. Although Staff did not research the details of the actual earned ROEs for the period of 1968 to 1999, Staff generally understands that the allowed ROEs were much higher during this period. Staff also generally understands that the COE was also much higher during this period. To the extent that regulated electric utility companies were able to reinvest capital consistent with these higher allowed ROEs then it is only logical that expected growth would

be higher during this period. If anything, Mr. Hevert's example only validates what Staff has already observed through investor commentary, which is that regulators will eventually lower allowed ROEs to be more consistent with the COE, which will lower expected growth rates because utilities will be limited to investing in economical projects.

CAPM

Q. Mr. Hevert provides rebuttal testimony concerning your CAPM methodology. Do you have any general comments regarding the CAPM?

A. Only a few. Although I did not directly rely on my CAPM estimates for purposes of my recommended allowed ROE in this case, I believe it is important to briefly discuss situations in which the CAPM may or may not provide reliable COE estimates. Staff has rarely assigned much weight to its CAPM COE estimate due to the fact that Staff has consistently relied on historical earned return spreads between stocks and government bonds as an estimate of the market risk premium. The problem with this assumption is that this estimated risk premium is biased high when market implied risk premiums are actually quite low (e.g., years prior to the financial crisis and the late 1990s) and biased low when the market implied risk premiums are actually quite high (e.g., late 2008 and early 2009).[18]

However, in the above circumstances, it is not the CAPM that causes questionable results, it is the inputs. It has been Staff's experience that the major competitors in asset valuation, financial advisement, securities underwriting and equity research use their own proprietary models to estimate an appropriate equity risk premium for purposes of estimating a fair price to pay for assets and stock. Although Staff could attempt to develop its own

[18] Past Staff testimonies will show that Staff has equally dismissed CAPM estimates when they were too low and too high.

quantitative methodology to estimate the market equity risk premium, because Staff is attempting to solve for the required return rather than providing its own valuation opinion, Staff believes knowledge of the actual equity risk premiums being used by influential experts in the field of valuation and investing is most relevant to the task of estimating the market cost of equity.

Q. Mr. Hevert claims that it is important to rely on a forward-looking market equity risk premium estimate for a CAPM analysis, especially under the current market conditions. Do you agree?

A. Yes.

Q. Do you agree with the methodologies Mr. Hevert used to estimate the forward looking market equity risk premium?

A. No.

Q. Did you provide an estimated forward-looking expected return on the S&P 500 in your rebuttal testimony?

A. Yes. Using Mr. Hevert's higher estimated long-term GDP growth rate of 5.61% I estimated a long-term expected market return of 8.97%.

Q. What expected market returns did Mr. Hevert use in his updated CAPM analysis provided in his rebuttal testimony?

A. Mr. Hevert's expected market returns ranged from 11.10% to 13.45%.

Q. How does this compare to the expected market return Ameren used to estimate its COE for purposes of discussing the WACC in Finance Committee Board meetings?

A. The expected market return as of July 2012 was approximately ** __ ** (** __ ** risk premium + 1.53% 10-year T-bond yield).

Q. How does Mr. Hevert's expected market returns compare to those suggested by Dr. Damadoran in the material Mr. Hevert provided to justify using risk-free rates as a proxy for GDP growth?

A. As of September 2011, Dr. Damodaran estimated a market return of slightly below 9%. When measured against the 10-year T-bond yield at the time of slightly over 2%, this resulted in an equity risk premium of approximately 6.5%.

Q. If you subtract the approximate 2% 10-year T-Bond yield from the expected return you provided in Schedule 9 attached to your rebuttal testimony, what risk premium would be implied from this calculation?

A. 7%.

Q. Did you use a 10-year T-bond to estimate the equity risk premium in your CAPM analysis in the Staff Report?

A. No. I had used a 30-year T-bond rate. I am just using the 10-year rate for purposes of this discussion because this is the rate used for purposes of the Ameren Finance Committee Board meeting and by Dr. Damodaran.

Q. If you subtracted the year-end 30-year T-bond rate of approximately 3% from an expected market return of 9% to 10%, what is the implied equity risk premium that would be used in a CAPM analysis?

A. 6% to 7%, which is slightly higher than the arithmetic historical risk premium of 5.7%.

NP

Q. If you applied the average beta of approximately 0.7 for your proxy group to this risk premium, what COE would be implied?

A. 7.55%, which is quite consistent with the ** _____ _____ **

DEMAND-SIDE INVESTMENT MECHANISIM PROGRAM CONSIDERATIONS

Q. Did you perform additional discovery to determine how investors view the business risk impact of Ameren Missouri's new Demand-Side Investment Mechanism ("DSIM")?

A. Yes. I reviewed several equity analyst reports to assess the investment communities' view of the DSIM. Unfortunately, most of these reports were published prior to the Commission's approval of the DSIM so Staff still cannot provide much information on the reaction from the investment community. Although Staff still does not propose any specific adjustment to Ameren Missouri's allowed ROE due to this program, considering the fact that the DSIM does not require Ameren Missouri to invest capital as it would with a supply-side investment and the mechanism is intended to make the company whole for lost margins due to energy efficiency programs, intuitively, there appears to be little downside risk to this program. Consequently, Staff still urges the Commission to take this into consideration with all of the other macroeconomic factors in deciding on a fair allowed ROE in this case.

SUMMARY AND CONCLUSIONS

Q. Please summarize the conclusions of your surrebuttal testimony.

NP

A. Mr. Hevert's attempts to discredit my testimony by discussing theories, citing articles, backing into estimates and relying on historical allowed ROEs to paint the Staff as not being in touch with the reality of the capital markets is completely refuted by Ameren's Board discussions, reputable professional equity analysis, and observable risk premium tests of reasonableness.

Mr. Hevert's attempts to group regulated electric utility company stocks with the broader equity markets is completely discredited by the appreciation of regulated electric utility companies' stock prices over the last two and a half years. At a time when growth in the U.S. economy is moving at a snail's pace, U.S. regulated electric utility stock prices have soared. This is not due to increased growth expectations, as Mr. Hevert would have the Commission believe, it is a result of a decrease in bond yields. Bond prices increase when yields decrease and utility stock prices increase when yields decrease. While Mr. Hevert is correct, a utility stock is not identical to a bond, this does not change the long-held view of utility stocks as yield investments. If the yields on bonds decline, the opportunity cost of not investing in regulated utility stocks increases. Because regulated utility companies are allowed to pass increased costs through to ratepayers, even if there is a lag, investors view utility stocks as a safe investment. Consequently, it is inappropriate for Mr. Hevert to conclude that the COE for regulated electric utility companies has not declined because he believes the COE for the broader markets is at the same level as Ameren Missouri's last case. The Commission should recognize Ameren Missouri's lower COE by authorizing a lower ROE.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Increase Its Revenues for Electric Service	))))	Case No. ER-2012-0166

AFFIDAVIT OF DAVID MURRAY

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

David Murray, of lawful age, on his oath states: that he has participated in the preparation of the foregoing Surrebuttal Testimony in question and answer form, consisting of 41 pages to be presented in the above case; that the answers in the foregoing Surrebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true and correct to the best of his knowledge and belief.

David Murray
DAVID MURRAY

Subscribed and sworn to before me this 7th day of September, 2012.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: December 08, 2012
Commission Number: 08412071

D Suzie Mankin
Notary Public

REGULATED UTILITIES

Valuations Supported By Low Interest Rates; There Are Relative Values

We Reiterate Our Buy Ratings on AEP and PCG & Are Upgrading PNW & WR from Hold to Buy. We Are Downgrading ED to Sell.

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- **Our 18 Stock Regulated Electric Utilities Universe Returned 20.9% in FY '11** versus a flat S&P 500 return. Stock performance was highly correlated with the S&P500 until mid-August '11, when the stocks became extremely cheap to the bond market, with their yield profile causing a Q3 bounce versus the S&P 500 that persisted through year-end.
- **Investment Thesis: Own Large Cap Value Over Quality and Overweight Mid-Cap Yield Names:** Our target prices are up on average 10%, with the Regulated Utilities trading 5% cheap—on average—assuming a 12-month holding period and offering total return prospects of 8.5% This reflects an average target P/E multiple of 14.5x '13 EPS, vs. our prior target which averaged 13.5x. This is supported by the persistently low interest rate backdrop and the assumption of a stable regulatory profile over the next year. If anything, we see an upside bias to our targets if interest rates stay persistently accommodative. **We continue to recommend investors own value over quality in the large-cap regulated universe, with our Buy rated stocks being AEP and PCG. We are upgrading PNW, WR from Hold to Buy** as we think they offer superior relative yield opportunities and improving risk profiles which should allow for multiple expansion. **We are lowering ED from Hold to Sell**, as the stock trades at a premium valuation but could face regulatory headwinds if they fail to achieve a rate settlement prior to their expected March 2012 rate filing.
- **Stock Selection Will Be Key To Performance This Year:** In all but two years since 1990 it was possible to beat the market in this sub-group. Last year, it was a macro call, with only *one* stock, PCG, lagging the market, as Regulated Utilities returned >20% on average. This year will be much more difficult. Bond market conditions continue to be supportive of a higher average valuation for the group, but meaningful price appreciation and/or relative performance should be skewed to stocks that still have a combination of attractive yield characteristics and improving regulatory/economic risk profiles that allow for multiple expansion. Our Buy rated portfolio trades at an average P/E multiple of 13.2x '13 EPS with a dividend yield averaging 4.6%, offering total return prospects of 17% over the next twelve months. The most fully valued stocks in the group today, D, DUK, ED, SO, WEC, trade at 14.5x-15.5x '13 EPS and an average dividend yield of 4% due to their perceived "quality" and/or the "safety" of their regulatory and economic outlook (and therefore the dividend). A potential change in the story is needed to prompt a "Sell" rating (our view on ED).
- **Top Down View: Balance of Risks appears Supportive Despite High Valuation vs. Stocks:** Regulated utility valuations look full vs. stocks but less so versus bonds. 2013 consensus P/E sits at 13.9x, with a relative P/E vs. the S&P 500 of 1.23x, through the last high in November 2008. Relationships to the bond market do look more favorable, with our dividend yield/corporate bond yield model showing modestly positive risk/reward under the assumption of an extended period of depressed Treasury note yields and stable/tightening of BBB corporate bond yields.
- **Bottom Up View: Is the Backdrop "As Good As It Gets?"** The last several years have generally been a constructive "bottom up" environment for regulated utilities. On the regulatory front state governments have allowed authorized returns on equity to fall, on average, slower than interest rates, in part because the rate impact has been muted as customers have benefited from the pass through of lower fuel costs (lower natural gas prices) and the overall lack of inflation has blunted the impact of cost recovery. The balance sheet and cash flow profile of the group has remained resilient due to this backdrop driving easy access to the capital markets, and cash inflows from economic stimulus (like bonus depreciation). While we may be closer to the "end of the runway," continued declines in gas pricing, low inflation and a measured approach to ratemaking vis-à-vis authorized ROE's appear to set the stage for a balanced bottom up profile once again in 2012.

Table of Contents

Exhibit 1

Summary of Ratings, Target Prices & Investment Theses

Ticker	ISI Rating	Target Price NEW	Target Price Prior	Current Price	One Yr Total Rtn	Summary of Investment Thesis
PCG	**BUY**	**48.00**	**45.00**	**41.05**	**21.4%**	The stock has been pummeled by the continued financial overhang from last year's pipeline explosion, negative EPS revisions for '12 due to other un-related headwinds, and increased CA regulatory risk in '13 due to the increasing certainty of a lower ROE and equity ratio being granted. We think these risks are priced-in, as PCG has underperformed its peers by ~29% over the past year, trading at 13.5x '13. The stock appears to discount almost $1.5 billion of value destruction in excess of our estimate. We think that is extreme.
AEP	**BUY**	**46.00**	**42.00**	**40.98**	**16.7%**	The financial outlook has been inscrutable for the last 18 months due to a panoply of regulatory and political uncertainties, particularly in Ohio. We believe the stock overly discounts the risks. The current price discounts no growth in earnings through 2014 and that the company never breaks a 10% ROE at its core utility business. As AEP resolves some of the issues or gets more clarity on them over the next 12 months, the risk premium in the stock will dissipate.
WR	**BUY**	**31.00**	**27.00**	**28.26**	**14.2%**	We think the resolution of WR's pending base rate case by April 2012 will validate both their near term earnings outlook and a stable regulatory regime, allowing WR to trade to a higher valuation. WR will grow rate-base at >8% annually between '10 and '15, with capital committed to environmental retrofits at coal plants and transmission infrastructure. After equity needs, we expect 5% EPS growth over that period, with the dividend growing in line with earnings.
PNW	**BUY**	**52.00**	**46.00**	**47.15**	**14.7%**	We think the resolution of PNW's pending rate case settlement in Q2 2012 will validate both their near term earnings outlook and a stable regulatory regime, allowing PNW to trade to a higher valuation. Our base case assumes earnings growth post 2012 may be challenging between rate cases (due to regulatory lag) unless the economic recovery in AZ accelerates and/or PNW secures the majority of the provisions in its pending rate request. However, investors are being "paid to wait" with an above average dividend yield and the balance of risks appears favorable for PNW at current levels.
NVE	HOLD	**17.50**	15.50	16.05	12.1%	NVE's stock price has risen over the last 18 months as the time approached for the filing of a rate case for their southern Nevada subsidiary, because investors have become comfortable that the regulatory environment in Nevada is now balanced enough to discount a rational outcome. The stock has upside to an economic recovery, but appears fully valued under our base case.
NST	HOLD	**48.50**	44.50	44.80	12.1%	Since our launch, NST shares look more rationally priced, having discounted some execution risk on their capital program and the regulatory front. Our forecast assumes the pending merger between NU and NSTAR closes by YE '11, so we value NST at 1.312 our $33.50 target price for NU
DTE	HOLD	**57.00**	51.00	53.52	10.9%	DTE is a bit more diversified than most of its peers. Gas storage/pipelines, an unregulated power and industrial projects unit and energy trading round out the mix. For DTE to achieve its 5-6% EPS growth target through '15 DTE will need stable authorized returns in MI and is counting on significant growth at the P&IP unit and the gas business. We have a hard time betting against DTE as they are sound operators and allocators of capital, but they have a marginally higher risk profile given the business mix.
NU	HOLD	**37.00**	34.00	34.51	10.7%	Since our launch, NU shares look more rationally priced, having discounted some execution risk on their capital program and the regulatory front. Our forecast assumes the pending merger between NU and NSTAR closes by YE '11, increasing NU's EPS growth potential from '10-15 to 7% from 6% annually assuming: 1) They hit transmission development goals, 2) Merger synergies help NU operating subs to earn better ROE's, and 3) NST negotiates a constructive multi-year rate deal to replace the one expiring YE '12.
TE	HOLD	**20.00**	18.50	18.95	10.0%	TECO's core utilities have only 2.5% growth in rate base expected from '10-'15. TE has reduced legacy utility investments in Guatemala so their significant non-utility exposure is at TECO Coal. The investment case hinges on: 1) How cash rich they become over the next few years as they consume parent NOL's and capture increased profits from met-coal before global supply conditions improve, and; 2) what they do with the money.

Source: ISI Research

Exhibit 2

Summary of Ratings, Target Prices & Investment Theses

Ticker	ISI Rating	Target Price NEW	Target Price Prior	Current Price	One Yr Total Rtn	Summary of Investment Thesis
SRE	HOLD	**59.00**	57.00	55.88	8.9%	SRE is capable of reaching its EPS growth aspiration of 6-8% annually, given rate base growth at its core CA utilities, growth projects at its pipeline and storage segment, and the contribution from its solar power development pipeline. At a 23% discount to the peer group it appears interesting. However, the earnings expected to come from investment tax credits (15% by 2015) is an issue, as is increased exposure to South America through buying 100% ownership of utilities in Peru and Chile.
D	HOLD	**53.50**	50.00	51.36	8.0%	Skeptics look at Dominon's recent outperformance and high relative P/E versus the peer group and conclude the stock is overvalued. We conclude that this is only partly true and that a premium is to a large degree justified, driven by the superior return and growth profile of the utility and gas infrastructure segments over the forecast period.
CMS	HOLD	**22.00**	19.50	21.73	5.1%	In Mid-2010, CMS materially increased the dividend and laid out a capital expenditure program that support EPS growth from '10-'15 of between 5-7%. This presumes consistent treatment by the Michigan regulators and an absence of equity financing needs over the forecast period. All in all, CMS has become a lower risk investment with a balanced total return profile. While CMS offers an EPS and total return profile consistent with other regulated names, the discount is driven to some degree by its higher leverage/lower credit profile relative to its peers.
WEC	HOLD	**34.50**	31.50	34.50	3.0%	WEC is concluding a seven year infrastructure growth cycle through. The company will be cash rich over the next several years but lacks investment opportunities at its core utility, so they will return value to shareholders through increasing the dividend payout ratio to 60% over '12-'15 and buying back $300m of stock from mid-'11 through '13.
XEL	HOLD	**27.00**	23.75	27.22	3.0%	We expect EPS growth to decelerate to 5% through 2015, with dividend growth averaging around 3%. The key to XEL hitting the higher end of its 5-7% EPS growth aspiration and achieving P/E multiple expansion is showing an improving ROE trend at its core utility business
PGN	HOLD	**53.50**	49.75	54.53	2.7%	The proposed merger with DUK appears value enhancing as it creates customer benefits through rate mitigation, while a modest level of synergies retained by the combined company could drive less regulatory lag than we had forecasted given their aggressive cap-ex plan and nuclear issue in FL.
SO	HOLD	**43.50**	38.00	44.95	0.9%	Southern has the building blocks in place to achieve the high end of their 5-7% EPS growth aspiration through 2015, while earning an above-industry average ROE and looks like an execution story over the next 24-36 months, but this largely appears reflected in the stock price.
DUK	HOLD	**20.50**	19.00	21.47	0.1%	The proposed merger with PGN appears value enhancing for DUK shareholders as it creates tangible customer benefits through rate mitigation, while a modest level of operating synergies retained by the combined company could help Duke's Carolina and Indiana regulated returns on equity lag less than we had forecasted given their aggressive cap-ex plan and cost over-run issues. This—among other factors—improves the odds that the combined company will be able to achieve it LT EPS growth aspiration of 4-6% off 2011 EPS.
ED	SELL	**56.00**	51.50	59.27	-1.5%	ED's premium valuation is driven by its inherent "defensiveness" as a conservatively operated, predictable dividend payer with a rate certainty through mid-'13 but looks overvalued on our base case forecast. We think that ED's stock will be more influenced short-term by exogenous factors as its defensive premium will dissipate if U.S. economic conditions improve and the market begins embracing risk.

Source: ISI Research, Company Data

Exhibit 3

Summary Regulated Comp Sheet – PE Valuation

Ticker	Company Name	1/9/12 Price	ISI Rating	Shares Out	Market Cap	2012 Div Yld	2012 Payout	ISI EPS Estimate 2012	ISI EPS Estimate 2013	ISI EPS Estimate 2014	P/E Multiple 2012	P/E Multiple 2013	P/E Multiple 2014	'11-'15 EPS Growth	Price to Book	Prem. to Group
PGN	Progress Energy Inc	$54.53	HOLD	296	16,135	4.5%	79%	3.13	3.28	3.28	17.4x	**16.6x**	16.6x	2.0%	1.6x	20%
NST	NStar	$44.80	HOLD	104	4,659	3.9%	64%	2.75	2.85	2.95	16.3x	**15.7x**	15.2x	3.9%	2.4x	13%
SO	Southern Company Inc	$44.95	HOLD	861	38,720	4.3%	71%	2.75	2.90	3.10	16.3x	**15.5x**	14.5x	6.7%	2.4x	11%
ED	Consolidated Edison Inc	$59.27	SELL	294	17,442	4.1%	65%	3.75	3.90	3.95	15.8x	**15.2x**	15.0x	3.3%	1.6x	9%
WEC	Wisconsin Energy Corp	$34.50	HOLD	235	8,123	3.5%	53%	2.25	2.35	2.40	15.3x	**14.7x**	14.4x	4.4%	2.0x	6%
D	Dominion Resources Inc	$51.36	HOLD	575	29,508	4.0%	63%	3.30	3.55	3.70	15.6x	**14.5x**	13.9x	5.5%	2.3x	4%
DUK	Duke Energy Corp	$21.47	HOLD	1,333	28,609	4.7%	70%	1.45	1.48	1.57	14.8x	**14.5x**	13.7x	5.2%	1.3x	4%
XEL	Xcel Energy Inc	$27.22	HOLD	486	13,216	3.9%	59%	1.82	1.92	2.02	15.0x	**14.2x**	13.5x	5.4%	1.6x	2%
NU	Northeast Utilities	$34.51	HOLD	178	6,129	3.8%	54%	2.40	2.50	2.70	14.4x	**13.8x**	12.8x	5.1%	1.6x	-1%
WR	Westar Energy Inc	$28.26	BUY	119	3,369	4.7%	68%	1.95	2.05	2.15	14.5x	**13.8x**	13.1x	5.7%	1.4x	-1%
DTE	DTE Energy Co	$53.52	HOLD	171	9,149	4.5%	65%	3.75	3.95	4.10	14.3x	**13.5x**	13.1x	3.9%	1.3x	-3%
PNW	Pinnacle West Capital Corp	$47.15	BUY	110	5,166	4.6%	64%	3.40	3.50	3.55	13.9x	**13.5x**	13.3x	5.6%	1.4x	-3%
PCG	PG&E Corp	$41.05	BUY	402	16,499	4.4%	56%	3.25	3.05	3.55	12.6x	**13.5x**	11.6x	1.4%	1.5x	-3%
TE	Teco Energy Inc	$18.95	HOLD	215	4,077	4.7%	64%	1.40	1.45	1.50	13.5x	**13.1x**	12.6x	2.8%	1.9x	-6%
CMS	CMS Energy Corp	$21.73	HOLD	262	5,699	4.4%	61%	1.57	1.67	1.79	13.9x	**13.0x**	12.2x	6.8%	2.0x	-6%
NVE	NV Energy	$16.05	HOLD	237	3,806	3.3%	42%	1.25	1.29	1.34	12.8x	**12.4x**	12.0x	13.9%	1.1x	-11%
AEP	American Electric Power Co Inc	$40.98	BUY	482	19,764	4.5%	58%	3.20	3.35	3.45	12.8x	**12.2x**	11.9x	3.4%	1.5x	-12%
SRE	Sempra Energy	$55.88	HOLD	242	13,518	3.4%	43%	4.50	5.20	5.25	12.4x	**10.7x**	10.6x	7.1%	1.5x	-23%
Regulated Group Average						**4.2%**	**61%**				**14.5x**	**13.9x**	**13.3x**	**5.1%**	**1.7x**	
Regulated Group Max						4.7%	79%				17.4x	16.6x	16.6x	13.9%	2.4x	
Regulated Group Min						3.3%	42%				12.4x	10.7x	10.6x	1.4%	1.1x	

Source: ISI Research and FactSet

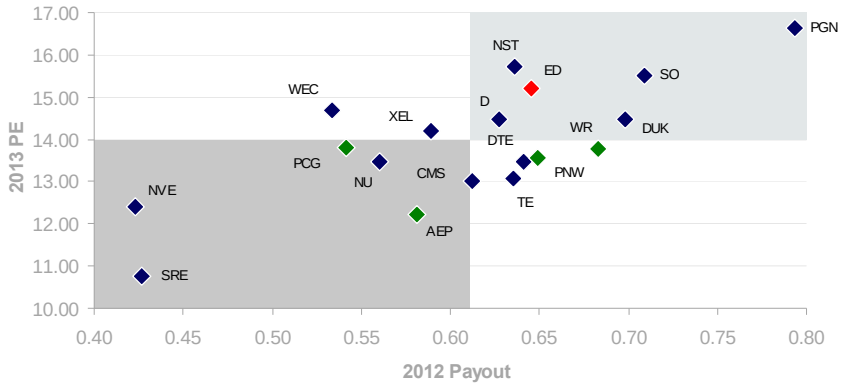
- **"Quality" is at a premium 14.5-15.5x 2013 EPS: SO, ED, WEC, D**
- **"Value" is at a discount, 11-13.5x 2013 EPS: AEP, CMS, NVE, PCG, SRE, TE**
- **"Second Tier Quality" in the middle: DTE, DUK, NU, PNW, WR, XEL**

Stocks We Like Look Relatively Cheap With Catalysts

Investment Thesis: As one could glean from reading the summary's above, all the stocks we like appear to have improving fundamental outlooks with catalysts over the next twelve months that should drive an upward absolute/relative valuation within the peer group. Our Buy rated portfolio trades at an average P/E multiple of 13.2x '13 EPS with a dividend yield averaging 4.6%, offering total return prospects of 17% over the next twelve months. In comparison the most fully valued stocks in the group today, D, DUK, ED, SO, WEC, trade at 14.5x-15.5x '13 EPS and an average dividend yield of 4% due to their perceived "quality" and/or the "safety" of their regulatory and economic outlook (and therefore the dividend).

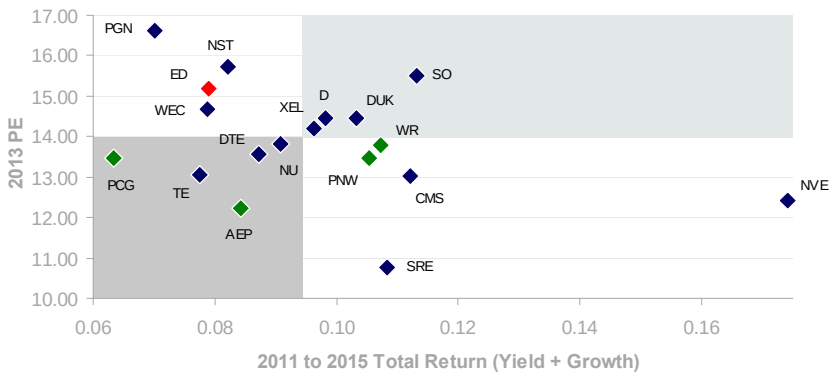
Valuation: P/E Ratio Often Correlates To Payout Ratio, Without Considering Total Return Profile

Exhibit 4
2013 Price to Earnings vs. 2012 Payout Ratio



Source: ISI Research, Company Data

Exhibit 5
'13 P/E vs. '11-'15 Total Return (Yield + Growth)



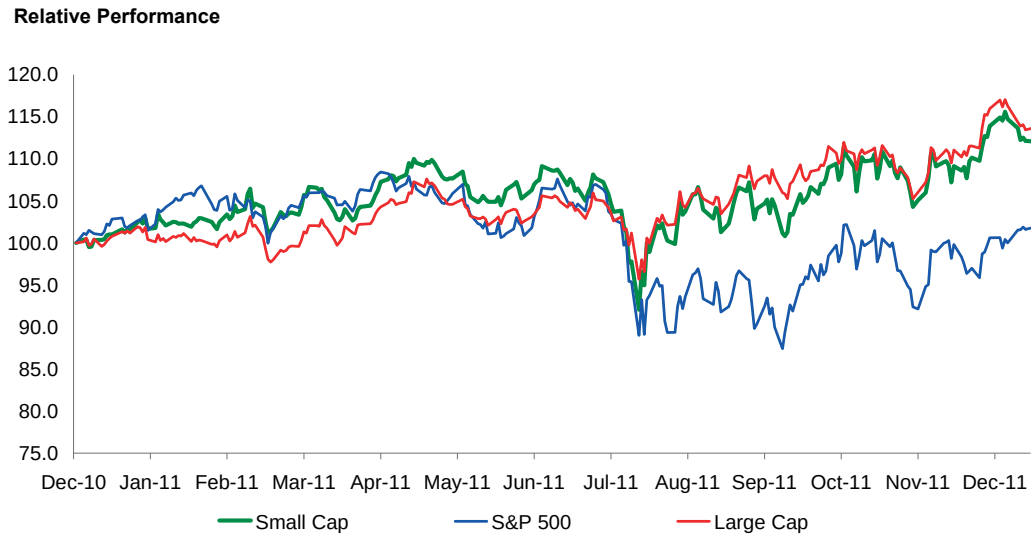
Source: ISI Research, Company Data

- **There appears to be a correlation between P/E ratio and payout ratio**
- **PNW & WR offer above average total return prospects at a discount to the peer group**
- **AEP trades at a significant discount to its large cap peer group based on our EPS growth forecast and the current dividend**
- **PCG doesn't look cheap using this particular screen, as its earnings and dividend growth potential recalibrate in 2014**

Regulated Utilities Have Outpaced the Market

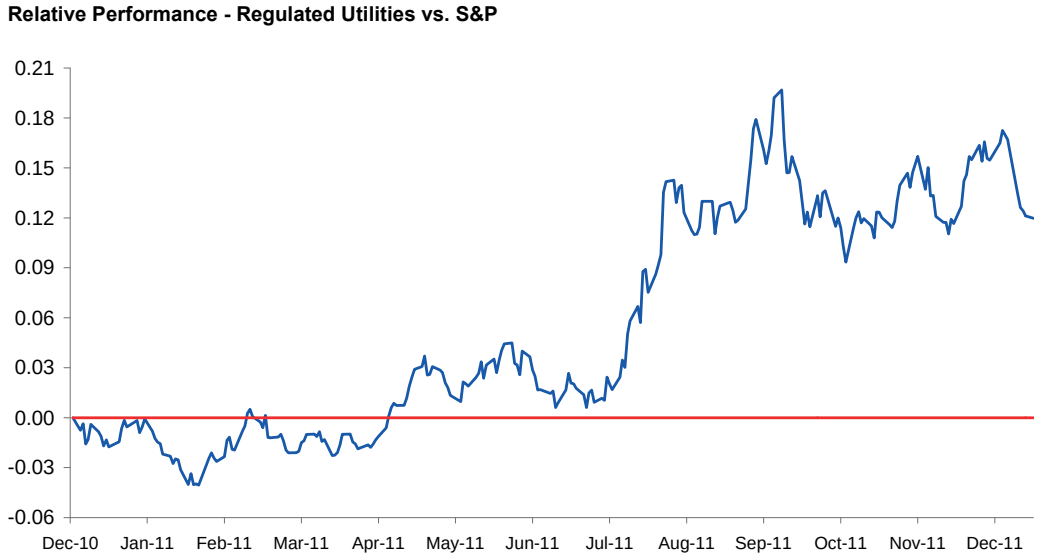
Investment Thesis: After beating the market in 2010 Regulated Utility stocks performed in line with the S&P500, more or less, until early August. It is interesting perspective to note that the majority of the groups 20.9% outperformance vs. the S&P500 happened in Q3 '11, when they rallied against the stock market in our view because they became very cheap relative to bond yields (see page 10 for more details).

Exhibit 6
Absolute & Relative Performance vs. the S&P 500: Regulated Utilities: The Stocks Have Outperformed



Source: ISI Research FactSet

Exhibit 7
Relative Performance of Regulated Utilities vs. the S&P 500 since 1/1/11



Source: ISI Research, FactSet

This Performance Is Consistent With History

Regulated utilities tend to outperform in downturns but do not necessarily underperform in the period after a recovery… Regulated Utilities beat the S&P 500 on a total return basis in each of the last five contractions, including the "Great Recession." Interestingly, they also outperformed the market subsequent to the end of four of the last five cycles.

Exhibit 8
Utility Performance Through The Business Cycle

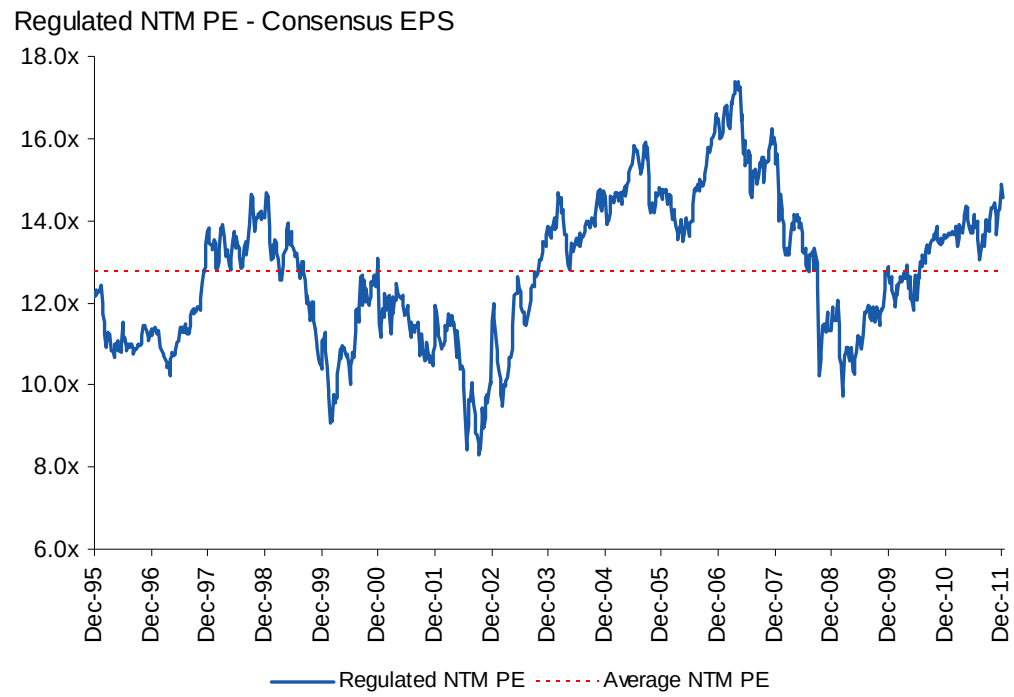
	Business Cycle Periods			Total Return				
Business Contractions	Previous Trough	Start Date (Peak)	End Date (Trough)	No Recession Trough to Pk	During Recession	12 Months Post Trough	24 Months Post Trough	30 Months Post Trough
1980 Contraction	Mar-75	Jan-80	Jul-80					
S&P 500				NA	6.5	12.9	-5.4	22.4
Utilities Large Cap1				NA	16.7	7.4	31.1	58.6
Utilities Small Cap2				NA	16.4	5.8	24.8	50.9
Defensive Utilities Avg				NA	17.5	7.8	32.3	62.4
Utility Out / (Under) Performance				**NA**	**11.0**	**-5.1**	**37.6**	**40.1**
1981 Contraction	Jul-80	Jul-81	Nov-82					
S&P 500				12.9	4.4	20.8	23.6	32.7
Utilities Large Cap1				7.4	39.3	35.1	57.5	83.6
Utilities Small Cap2				5.8	35.0	28.1	56.1	62.1
Defensive Utilities				7.8	41.6	32.4	54.7	76.8
Utility Out / (Under) Performance				**-5.1**	**37.2**	**11.6**	**31.0**	**44.0**
1990 Contraction	Nov-82	Jul-90	Mar-91					
S&P 500				164.3	3.5	11.4	19.3	25.0
Utilities Large Cap1				329.4	10.1	20.8	55.4	68.6
Utilities Small Cap2				289.7	5.1	12.1	45.0	63.4
Defensive Utilities				316.7	9.6	17.3	47.7	62.6
Utility Out / (Under) Performance				**152.4**	**6.1**	**5.9**	**28.3**	**37.6**
2001 Contraction	Mar-91	Mar-01	Nov-01					
S&P 500				235.0	-12.7	-16.9	-3.1	2.1
Utilities Large Cap1				206.6	12.8	-15.7	1.4	9.3
Utilities Small Cap2				162.7	-7.1	-29.0	-6.8	-1.4
Defensive Utilities				184.6	2.4	-16.8	3.8	11.6
Utility Out / (Under) Performance				**-50.4**	**15.0**	**0.1**	**6.8**	**9.4**
2007 Contraction	Nov-01	Dec-07	Jun-09					
S&P 500				36.6	-37.9	12.1	43.7	36.8
Utilities Large Cap[1]				78.4	-17.7	19.6	46.3	67.7
Utilities Small Cap[2]				73.6	-18.4	24.1	65.3	80.9
Defensive Utilities				84.2	-18.6	21.1	57.1	75.2
Utility Out / (Under) Performance				**47.6**	**19.4**	**9.0**	**13.4**	**38.5**

Source: ISI Research, FactSet, Company Data
1) Includes SO, DUK, PCG, AEP, PGN, ED, XEL, DTE
2) Includes WEC, NST, PNW, CMS, TE, NVE, WR

Valuation vs. The S&P 500 Looks Stretched

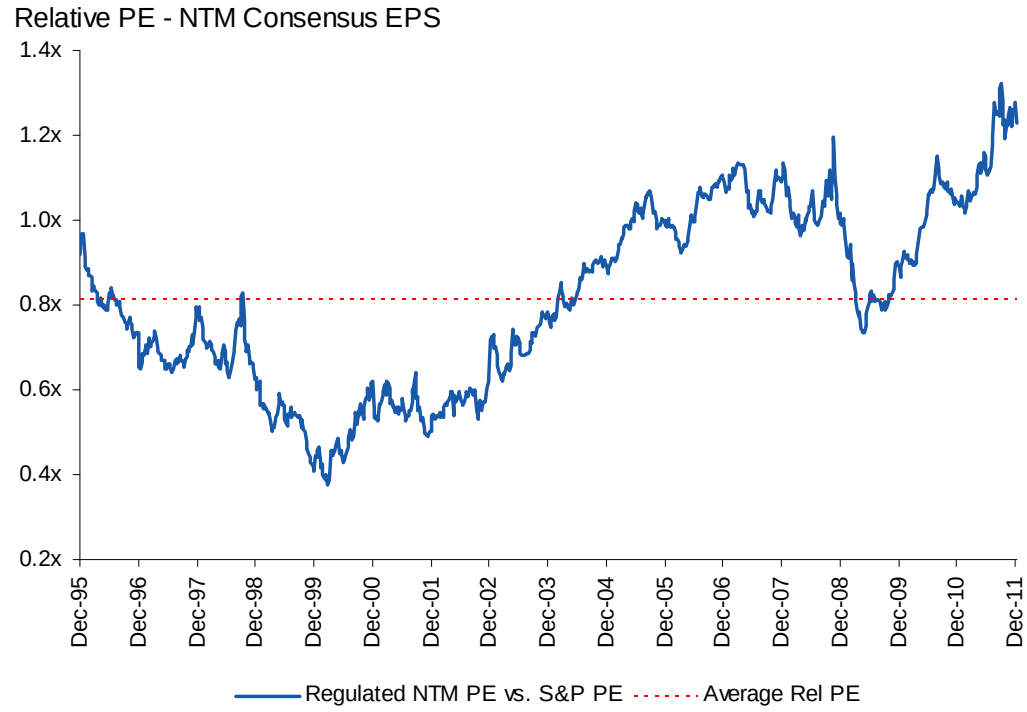
While the stocks don't look particularly expensive on an absolute P/E multiple basis, they are trading at high's vs. the S&P 500 one year forward P/E multiple on consensus EPS.

Exhibit 9
While Absolute P/E's Don't Look Stretched…



Source: ISI Research, FactSet

Exhibit 10
…Relative P/E on 1-Year Forward Consensus EPS Is Near Recent Highs



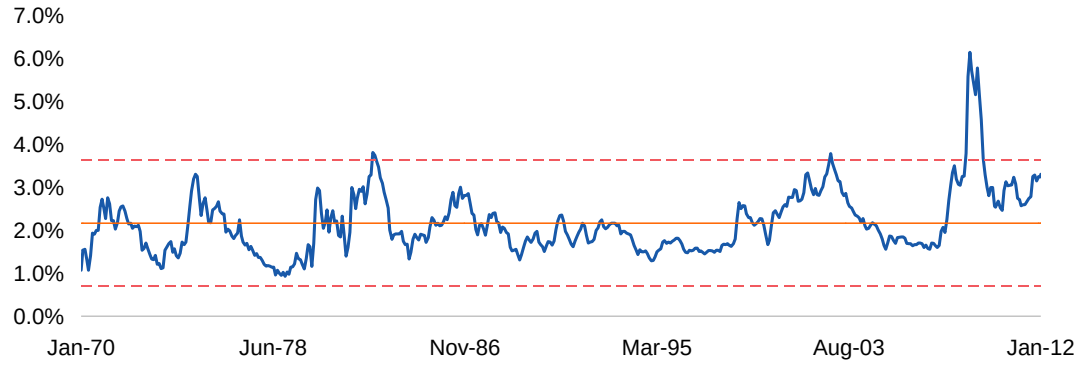
Source: ISI Research, FactSet

The Balance of Risks vs. Bonds is More Favorable

Our dividend/bond yield model suggests the balance of risks for the Regulated Utility sub-group is more positive, even assuming the sunset of the 15% tax rate on dividends. We believe utility stock valuations are highly correlated to bond market conditions given their leverage and high dividend yields, which make them alternatives to fixed income instruments. Going back 40 years, utility dividend yields — and, by extension, P/E multiples — have shown an 80% correlation to both 10-year Treasury note yields and to BBB corporate bond yields. Investor appetite for a dividend income, and the assumption of how much that income will grow over time, is a valuation driver that expresses itself through a relationship to the bond market.

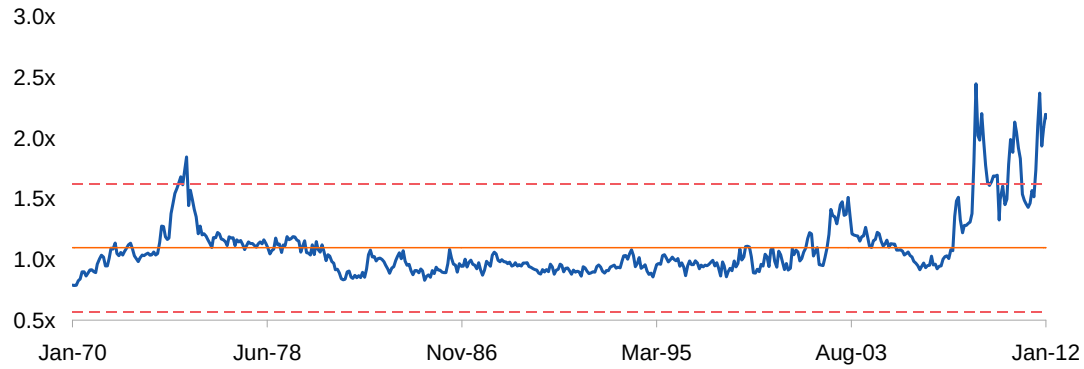
The fact that this correlation was high as it related to both Treasuries and corporate bonds was misleading. Since 1970 the BBB credit spread over Treasuries has averaged +/-210 bp. During the financial crisis when corporate credit markets imploded and government markets rallied the correlation to Treasuries broke down while the correlation to BBB credits stayed extremely high, leading utility stocks lower. At its apex (December 2008), the spread between Treasury yields and corporate bond yields peaked at ~600 bp. The average BBB credit spread over Treasuries is now approximately 329 bp.

Exhibit 11
BBB Corporate Bond Spread to 10-Year Treasuries—Still Wide



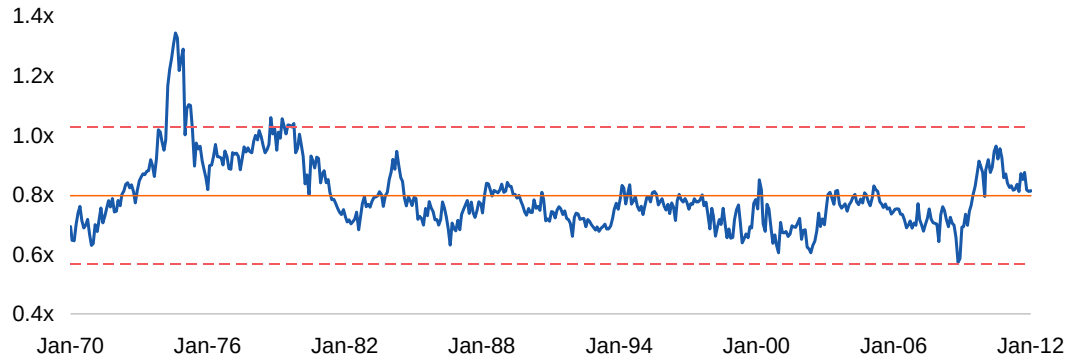
Source: ISI Research, FactSet

Exhibit 12
Dividend Yield Premium to 10-Year Treasury Yield—Still Blown Out…..



Source: ISI Research, FactSet

Exhibit 13
Dividend Yield to BBB Bond Yield Ratio: Supportive But Not Definitively Cheap

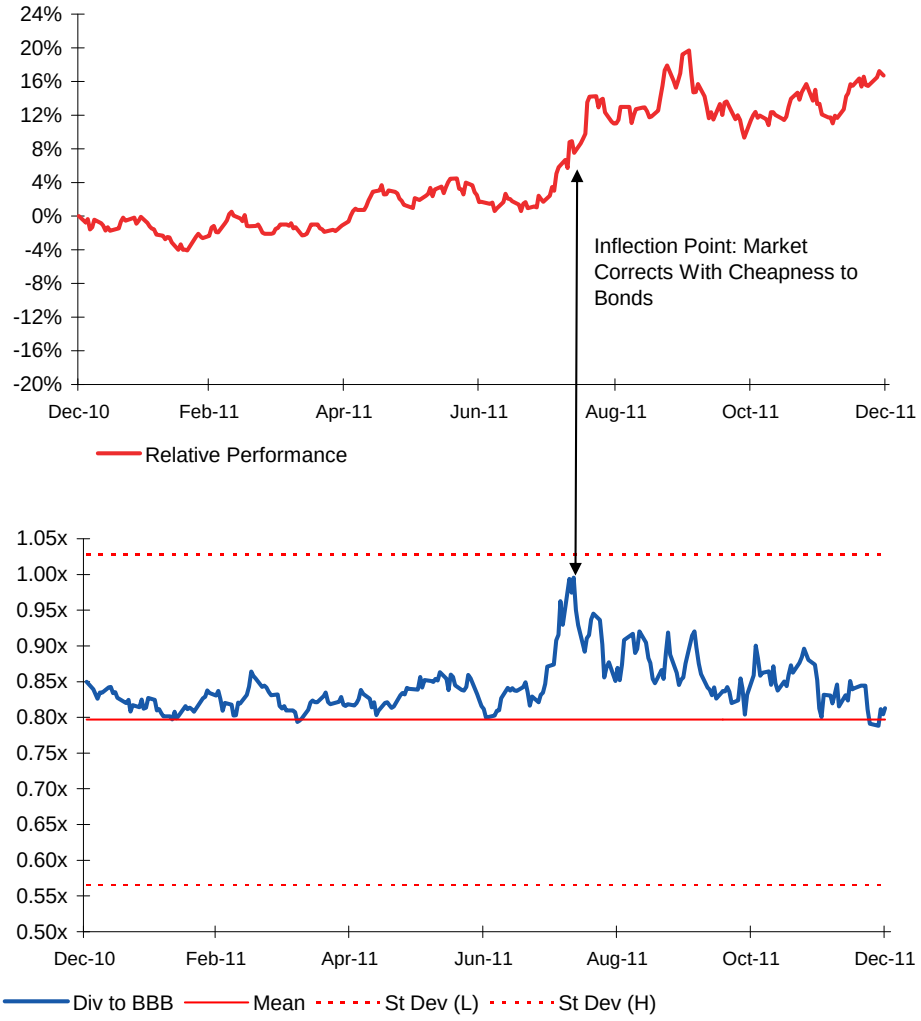


Source: ISI Research, FactSet

Rally in Q3 2011 Began When Utilities Become Oversold To the Bond Market

The vast majority of the outperformance of regulated utilities vs. The S&P500 occurred in Q3 subsequent to the group trading to at 68% confidence interval vs. the corporate bond market, based on our regression model.

Exhibit 14
Relative Utility Performance vs. Dividend Yield / Corporate BBB Relationship



Source: ISI Research, FactSet

We stress test our model for different tax rate as well as interest rate assumptions. One of the factors in the model that we adjust for is the varying tax treatment for dividends over the 1970–2010 period, with income tax rates from 1970–2003 and the 15% flat tax on dividends from 2004-present. We have added an algorithm to our model that allows us to flatten after tax yields. We also make an adjustment for the percentage of individual vs. institutional investors that own the shares of the regulated utility group (our view is that individuals change their behavior based on tax rates, while institutions do not, at least directly).

In our view the regulated names look cheap—on average—to the current interest backdrop. They price in rising Treasury bond yields & tightening corporate bond spreads. If the market begins to discount lower rates for longer and low tax rates the average multiple could trade to 16X. Under a higher rate scenario with rising tax rates, the group could see 5%+ absolute downside from its current valuation. We assume the 10-year Treasury rises to 3.5% by year-end 2013.

We have run four sensitivities using our regression model. Our assumptions are as follows:

- 3.5% 10YR Treasury, 6% BBB, 33% tax

high interest rate, low tax scenario (HR/LT):

- 3.5% 10YR Treasury, 6% BBB, 15% tax

low interest rate, high tax scenario (LR/HT):

- 2% 10YR Treasury, 5.3% BBB, 33% tax

low interest rate, low tax scenario (LR/LT):

- 2% 10YR Treasury, 5.3% BBB, 15% tax

Moving the dividend tax from 15% to the income tax rate affects the P/E on the group by ~1x.

Exhibit 15

Valuation Sensitivity to Dividend Tax/Interest Rate Assumption: Bond Correlations. Bear Case 12x. Bull Case 14.5x '12 EPS. Our target is 13.5x '12 EPS.

Scenarios:	Low Rates / Low Taxes	High Rates / Low Taxes	Low Rates / High Taxes	High Rates / High Taxes	Current Outlook
Rate Assumptions					
10 Year Treasury Yield	1.96%	3.50%	1.96%	3.50%	1.96%
Assumed BBB Bond Yield	5.25%	6.00%	5.25%	6.00%	6.00%
Tax Assumptions					
Tax Rate Levelized at Ordinary Income Tax Rate[1]			✓	✓	
Tax Rate Levelized at 15% Income Tax Rate [2]	✓	✓			
					Market Multiple
Target 2013 PE	**16.1x**	**14.2x**	**15.0x**	**13.1x**	**13.9x**
Target 2012 Dividend Yield	3.6%	4.1%	3.9%	4.4%	4.2%
Upside to our Target Multiple of 14.5x	11.2%	-2.0%	3.4%	-9.8%	
Upside to Current Market Multiple of 13.9x	16.0%	2.2%	7.9%	-5.9%	

Source: ISI Research, FactSet

Note: Averages based on our regulated universe excluding CMS, NVE, and WEC

1) Assumes a positive adjustment to post 2003 dividends in our regression series by approximately 7%. This represents the delta between the current 15% dividend tax rate and an assumed rate of 33%, adjusted by our assumption that 40% of shareholders are individual taxpayers. The sensitivity to the PE multiple from a 1% change in the assumed tax rate is 0.1x. The sensitivity to the PE multiple from a 10% change in our assumption relating to the proportion of tax-paying shareholders is 0.1x

2) Assumes a negative adjustment to pre 2003 dividends in our regression series by approximately 11%. This represents the delta between the current 15% dividend tax rate and a pre-2003 assumed rate of 33%, reduced by our assumption that 60% of shareholders were individual tax payers. The sensitivity to the PE multiple from a 1% change in the assumed tax rate is 0.1x. The sensitivity to the PE multiple from a 10% change in our assumption relating to the proportion of tax-paying shareholders is 0.1x

The Bottom Up Backdrop Has Been Favorable: But It Could Be "As Good As It Gets"

The utility industry's ability to sustain earnings and dividend growth is predicated on the ability to negotiate recovery of and on its investment in infrastructure while earning the highest achievable return over its cost of equity, all while mitigating growth in customer rates. This is not an easy task, but the economic backdrop over the last several years has generally allowed the utility industry to prosper by reducing the challenges associated with maintaining this virtuous cycle.

Rate base growth, which drives earnings growth, has been robust, while customer bills have been mitigated by low inflation and the steep drop in natural gas prices as electric power fuel, due to what we call the "shale gas dividend." As a result, authorized returns on equity have remained generally attractive. Therefore, capital markets have been amenable to funding utility investment and acquisitions. The industry has been aided by stimulus related cash flows associated with bonus depreciation and in some cases companies leaning on legacy NOL or AMT tax credit positions to help fund spending.

One of our concerns prospectively is that this environment, one way or another, will change for the worse. If the economy re-accelerates and/or we enter an inflationary, rising rate environment that is bad for utility stocks on multiple fronts. That does not appear to be a risk over the course of the next 12 months as the economy is growing but at a measure pace (The ISI forecast for GDP growth is 2% for 1H '12 and 2% for FY '12, while natural gas prices and to a lesser degree coal prices continue to fall, which flows through to customer bills.

If we are in a prolonged low interest rate, low inflation environment it could boost valuation for some period of time but we think the state regulators will continue to moderate authorized ROE's. As long as this process is deliberate and not abrupt, we think it is generally a manageable risk for the industry and for stock price valuations.

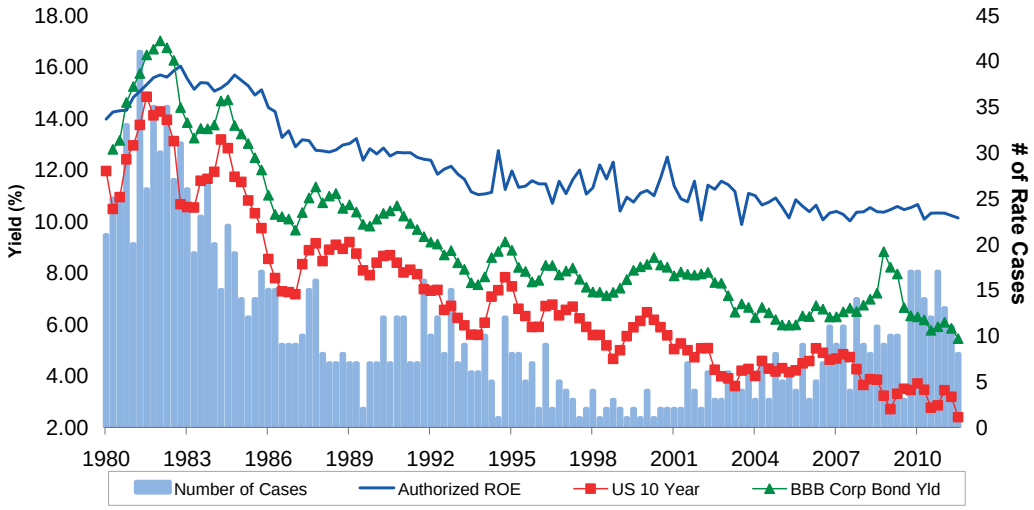
Our 14.5x average P/E multiple target for the group on '13 EPS consciously takes in to account both this bottom up risk (potential for modest EPS revisions if ROE's moderate) as well as the top down risk associated with higher interest rates and/or the sunset of the dividend tax. Because, as we showed earlier, the current interest rate backdrop is supportive of even higher valuations, all things equal.

Exhibit 16
Utility Regulation "Circle of Life"

Source: Southern Company, 2011 Analyst Meeting

Exhibit 17

Authorized Returns on Equity Have Come Down Slower Than Interest Rates



Source: ISI Research, SNL Research

Exhibit 18

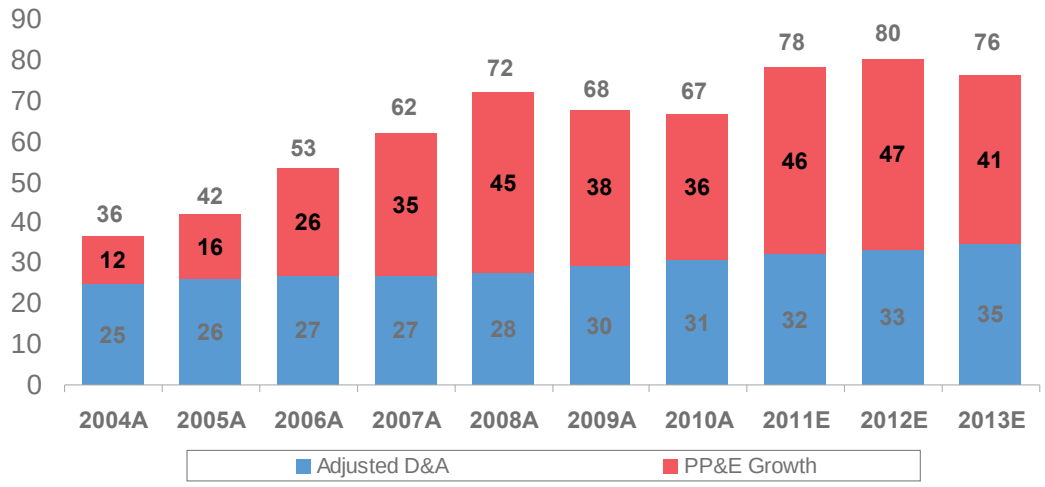
2013 Target Multiple expands with a 50bps decrease in authorized ROEs

Ticker	'13 EPS ($)	Proforma '13 EPS ($)	'13 Payout	Proforma '13 Payout	Δ in '13 OCF ($m)	Δ in '13 TD/Cap (bps)	Target Mult	Proforma Target Mult	Multiple Δ
NST	2.85	2.75	63.2%	65.4%	-10	8	17.0x	17.6x	0.6x
PGN	3.28	3.11	75.6%	79.6%	-52	7	16.3x	17.2x	0.9x
PCG	3.05	2.90	59.7%	62.8%	-65	10	15.7x	16.6x	0.8x
WR	2.05	1.94	68.2%	72.0%	-15	-1	15.4x	16.2x	0.8x
PNW	3.50	3.26	64.6%	69.3%	-13	-151	14.9x	15.9x	1.1x
SO	2.90	2.81	69.8%	72.1%	-82	4	15.0x	15.5x	0.5x
D	3.55	3.46	61.7%	63.3%	-55	6	15.1x	15.5x	0.4x
NU	2.50	2.40	56.0%	58.4%	-32	0	14.8x	15.4x	0.6x
XEL	1.92	1.77	58.2%	63.3%	-76	14	14.1x	15.3x	1.2x
WEC	2.35	2.27	55.3%	57.2%	-51	15	14.7x	15.2x	0.5x
ED	3.90	3.73	62.6%	65.4%	-50	0	14.4x	15.0x	0.6x
DTE	3.95	3.80	64.2%	66.7%	-27	8	14.4x	15.0x	0.6x
AEP	3.35	3.18	56.9%	59.9%	-81	0	13.7x	14.5x	0.7x
DUK	1.48	1.42	69.4%	72.5%	-137	4	13.8x	14.4x	0.6x
NVE	1.29	1.22	44.1%	46.8%	-18	0	13.5x	14.4x	0.8x
TE	1.45	1.40	64.1%	66.5%	-11	0	13.8x	14.3x	0.5x
CMS	1.67	1.60	61.8%	64.6%	-91	-126	13.2x	13.8x	0.6x
SRE	5.20	5.09	36.9%	37.8%	-28	5	11.3x	11.6x	0.3x
Average			**60.7%**	**63.5%**			**14.5x**	**15.2x**	**0.7x**

Source: ISI Research, Company Data

Exhibit 19

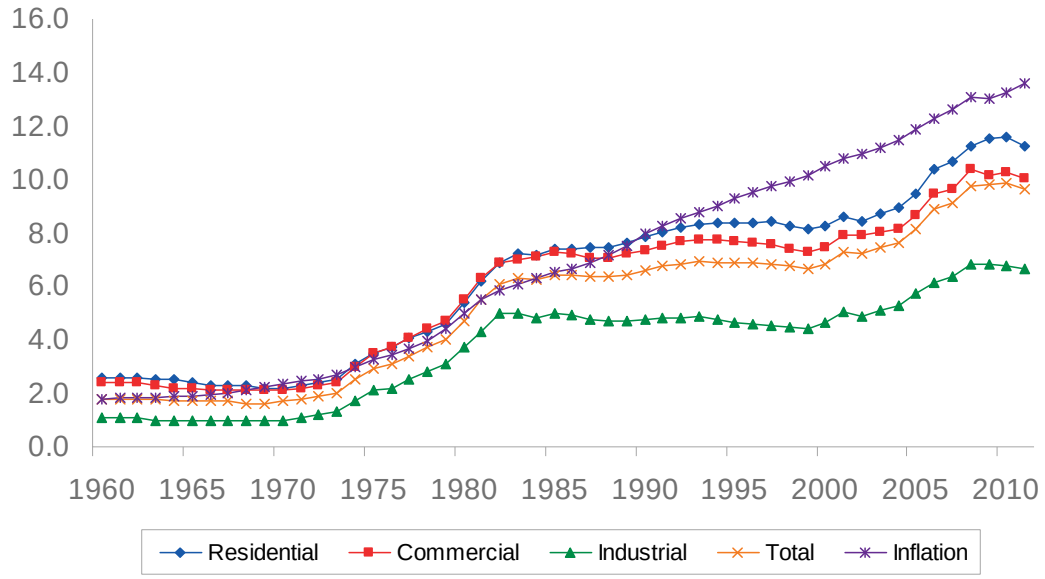
Rate Base Growth/Capital Spending Has Been Strong (Billions)



Source: SNL Research "Capital Expenditure Report" dated May 6, 2-11, Based on sample of 44 companies
Total Capex shown in grey numbers above bar chart, equals Adjusted D&A plus PP&E Growth

Exhibit 20

Average Utility Rates (c/ KWh) vs. Inflation



Source: ISI Research, EIA and Bureau of Labor Statistics

The Regulated Value Proposition Is A Function Of Asset Growth, Allowed Returns & Capital Ratios

The value proposition in a regulated utility stock is driven by the perception of its long term earnings power and ability to distribute dividends to shareholders. Our primary valuation tool is therefore a dividend discount/residual income model. The factors that drive the ability of a utility to create value that are ultimately inputs in to this tool can be boiled down to a three factor model.

Exhibit 21
Regulated Utilities: Key Value Drivers

Earnings = *f* (Assets, Allowed Returns, Capital Ratios)

Category	Driver	Recent Impact	Commentary
Assets	**Rate Base Growth**	**Positive**	T&D Upgrades needed to improve system reliability and move renewable energy to loads and install the "smart grid". Capex for generation assets. Environmental retrofits needed to meet tightening regulatory standards.
Allowed Returns	**Rate Cases**	**Neutral/Positive**	Allowed ROEs have been generally stable. Recessionary pressures have not driven confiscatory decisions in most states
Capital Ratios	**Rate Cases**	**Neutral**	Equity Ratio is determined by regulators and companies manage to prescribed levels. These have remained stable due to regulators being mindful of credit metrics.

Source: ISI Research

We are concerned about the level of authorized returns on two fronts and see the risk of decelerating rate base growth.

Of the value drivers discussed above, the one that has by far the biggest impact on earnings and valuation is allowed (and earned) ROEs. While rate base growth and capital ratios are important, they have a second order impact on valuation. Rate base growth and higher equity layers do lead to earnings growth however they must be financed with equity issuances, thus blunting the impact to valuation.

The other assumption which of course is a key determinant of value is the equity discount rate. As we will discuss below, it is the spread between these two parameters (earned returns over the cost of equity) which drives value.

At present, we are monitoring all three fronts. The spread between authorized returns on equity and the cost of equity appears wide by historical standards, although we believe that equity risk premiums may in fact be hire than they appear given that low interest rates are being driven by sovereign credit risk. We are watching the regulatory backdrop closely but so far ROE's have come down at a moderate pace. As is shown above, projected rate base growth looks to already be slowing. The level of capital spending witnessed over the past 4 years will be hard to sustain short run, although environmental capital costs will accelerate circa '14-'15.

How Our Proprietary DDM Model Works

Our dividend discount model guides us to our target PE multiple given the following inputs:

1) The group's current equity discount rate, based on the current risk-free rate (10 year US Treasury bond), the current adjusted beta of the regulated utility group (average of a subset of regulated utilities vs. the S&P 500 over the past 3 years, trending toward one), and an assumed equity risk premium

2) An estimate of near term and longer term earned returns on equity (ROEs) and equity ratios *from the valuation date*.

3) An estimate of near-term and longer term rate base growth *from the valuation date*

Our model discounts a hypothetical stream of residual cash flows to the equity holder based on the above parameters, assuming incremental rate base growth is financed with equity issuances above the total level of debt allowed by the regulators. To simplify the modeling, we assume equity cash flow is approximately equal to net income, plus D&A, plus incremental debt issuance less capex.

We consider three "stages" for these inputs. The first stage encompasses the first 5 years of our valuation period (Years 1 to 5). We assume a certain rate base growth trajectory, and assume that the earned ROE's remain constant over that time period.

In the second stage we adjust both the rate base growth and earned ROE projections up or down to reflect what we believe to be a reasonable longer-term estimate for the company or industry over the next 15 years (years 6 to 20). This presumes a level of mean reversion to the regulated utility industry regarding both the rate of growth as well the earned returns on equity.

Finally, we assume a modest perpetuity growth rate (2%) for the final year of cash flows (from year 20) to derive a terminal value

The annual equity cash flows from stages 1 and 2 as well as the terminal value is discounted back to a valuation date, and expressed as a multiple of first year's (Year 1's) net income.

Exhibit 22

Example of ISI's Proprietary DDM Valuation Approach

	Period	Rate Base	EPS	Total Debt	Total Equity	Equity FCF	Dscnt FCF	Rate Base Growth	ROE	Equity Ratio
	0	18.2	1.00	9.09	9.09			**4.0%**	**11.0%**	**50.0%**
Stage 1	1	18.9	1.04	9.45	9.45	0.68	**0.62**	4.0%	11.0%	50.0%
	2	19.7	1.08	9.83	9.83	0.70	**0.60**	4.0%	11.0%	50.0%
	3	20.5	1.12	10.23	10.23	0.73	**0.58**	4.0%	11.0%	50.0%
	4	21.3	1.17	10.64	10.64	0.76	**0.55**	4.0%	11.0%	50.0%
	5	22.1	1.22	11.06	11.06	0.79	**0.53**	4.0%	11.0%	50.0%
	6	22.8	1.20	11.39	11.39	0.86	**0.54**	**3.0%**	**10.5%**	**50.0%**
	7	23.5	1.23	11.73	11.73	0.89	**0.51**	3.0%	10.5%	50.0%
	8	24.2	1.27	12.09	12.09	0.92	**0.49**	3.0%	10.5%	50.0%
	9	24.9	1.31	12.45	12.45	0.94	**0.46**	3.0%	10.5%	50.0%
	10	25.6	1.35	12.82	12.82	0.97	**0.44**	3.0%	10.5%	50.0%
	11	26.4	1.39	13.21	13.21	1.00	**0.42**	3.0%	10.5%	50.0%
	12	27.2	1.43	13.60	13.60	1.03	**0.40**	3.0%	10.5%	50.0%
Stage 2	13	28.0	1.47	14.01	14.01	1.06	**0.38**	3.0%	10.5%	50.0%
	14	28.9	1.52	14.43	14.43	1.09	**0.36**	3.0%	10.5%	50.0%
	15	29.7	1.56	14.86	14.86	1.13	**0.34**	3.0%	10.5%	50.0%
	16	30.6	1.61	15.31	15.31	1.16	**0.33**	3.0%	10.5%	50.0%
	17	31.5	1.66	15.77	15.77	1.20	**0.31**	3.0%	10.5%	50.0%
	18	32.5	1.71	16.24	16.24	1.23	**0.30**	3.0%	10.5%	50.0%
	19	33.5	1.76	16.73	16.73	1.27	**0.28**	3.0%	10.5%	50.0%
	20	34.5	1.81	17.23	17.23	1.31	**0.27**	3.0%	10.5%	50.0%
Stage 3	**20**					**20.92**	**4.29**	**2.0%**		
	Sum of Discounted Equity Free Cash Flow						**13.00**			
	Expressed as a Multiple of Year 1 Net Income						**12.5x**			

Stage One (Years 1 to 5) Assumptions for Rate Base Growth, ROE and Equity Ratio

Stage Two (Years 6 to 20) Assumptions for Rate Base Growth, ROE and Equity Ratio

Terminal Growth rate for Year 20 Equity Free Cash Flow

Source: ISI Research

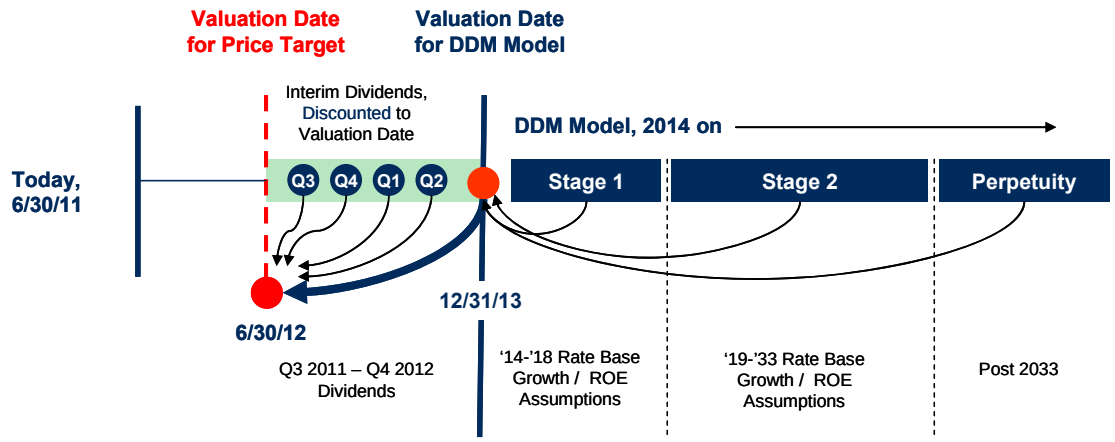
In our valuation approach, we actually use 2014 as our base valuation year, with a year-end 2013 valuation date. We argue that if we have the ability to model a company's structural earnings power out that far, we can see through near term issues and potentially have an edge on the longer term value proposition.

The P/E multiple target we derive in this approach tells us what multiple the stock should trade to by YE '13, which we can then easily discount back to where the stock should trade 12 months from today, which is our target price.

In addition, any dividends received between our price target date and our DDM valuation date (year end 2013), must be discounted back to our price target valuation date and added to our valuation.

In the exhibit below, we illustrate how to derive a one year forward price target using the principles discussed.

Exhibit 23
Proprietary DDM Illustration



Source: ISI Research

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Buy Low Risk ETR	**Buy Medium Risk ETR**	**Buy High Risk ETR**
>+10%	>+15%	>+20%
Hold Low Risk ETR	**Hold Medium Risk ETR**	**Hold High Risk ETR**
0% to +10%	-5% to +15%	-10% to +20%
Sell Low Risk ETR	**Sell Medium Risk ETR**	**Sell High Risk ETR**
<0%	<-5%	<-10%

ISI has assigned a rating of BUY to 46% of the securities rated as of 12/31/11.
ISI has assigned a rating of HOLD to 51% of the securities rated as of 12/31/11.
ISI has assigned a rating of SELL to 3% of the securities rated as of 12/31/11

RISK RATING
Our risk ratings are based on an assessment of underlying business mix (regulated vs. merchant), state regulatory risk and financial strength

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Stock Performance

Q2 2012
FINANCIAL UPDATE

QUARTERLY REPORT
OF THE U.S. SHAREHOLDER-OWNED
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EEI's quarterly financial updates present industry trend analyses and financial data covering 59 U.S. shareholder-owned electric utility companies. These 59 companies include 52 electric utility holding companies whose stocks are traded on major U.S. stock exchanges and seven electric utilities who are subsidiaries of non-utility or foreign companies. Financial updates are published for the following topics:

Dividends	Rate Case Summary
Stock Performance	SEC Financial Statements (Holding Companies)
Credit Ratings	FERC Financial Statements (Regulated Utilities)
Construction	Fuel

For EEI Member Companies

The EEI Finance and Accounting Division is developing current year and historical data sets that cover a wide range of industry financial and operating metrics. We look forward to serving as a resource for member companies who wish to produce customized industry financial data and trend analyses for use in:

- Investor relations studies and presentations
- Internal company presentations
- Performance benchmarking
- Peer group analyses
- Annual and quarterly reports to shareholders

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Future EEI Finance Meetings

47th EEI Financial Conference
November 11-14, 2012
JW Marriott Desert Ridge Resort and Spa
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The 59 U.S. Shareholder-Owned Electric Utilities

The companies listed below all serve a regulated distribution territory. Other utilities, such as transmission provider ITC Holdings, are not shown below because they do not serve a regulated distribution territory. However, their financial information is included in relevant EEI data sets, such as transmission-related construction spending.

ALLETE, Inc. (ALE)
Alliant Energy Corporation (LNT)
Ameren Corporation (AEE)
American Electric Power Company, Inc. (AEP)
Avista Corporation (AVA)
Black Hills Corporation (BKH)
CenterPoint Energy, Inc. (CNP)
Central Vermont Public Service Corporation (CV)
CH Energy Group, Inc. (CHG)
Cleco Corporation (CNL)
CMS Energy Corporation (CMS)
Consolidated Edison, Inc. (ED)
Dominion Resources, Inc. (D)
DPL, Inc. (DPL)
DTE Energy Company (DTE)
Duke Energy Corporation (DUK)
Edison International (EIX)
El Paso Electric Company (EE)
Empire District Electric Company (EDE)
Iberdrola USA
Energy Future Holdings Corp. (formerly TXU Corp.)
Entergy Corporation (ETR)
Exelon Corporation (EXC)
FirstEnergy Corp. (FE)
Great Plains Energy Incorporated (GXP)
Hawaiian Electric Industries, Inc. (HE)
IDACORP, Inc. (IDA)
Integrys Energy Group, Inc. (TEG)
IPALCO Enterprises, Inc.
MDU Resources Group, Inc. (MDU)
MGE Energy, Inc. (MGEE)
MidAmerican Energy Holdings Company
NextEra Energy, Inc. (NEE)
NiSource Inc. (NI)
Northeast Utilities (NU)
NorthWestern Corporation (NWE)
NV Energy, Inc. (NVE)
OGE Energy Corp. (OGE)
Otter Tail Corporation (OTTR)
Pepco Holdings, Inc. (POM)
PG&E Corporation (PCG)
Pinnacle West Capital Corporation (PNW)
PNM Resources, Inc. (PNM)
Portland General Electric Company (POR)
PPL Corporation (PPL)
Progress Energy (PGN)
Public Service Enterprise Group Inc. (PEG)
Puget Energy, Inc.
SCANA Corporation (SCG)
Sempra Energy (SRE)
Southern Company (SO)
TECO Energy, Inc. (TE)
UIL Holdings Corporation (UIL)
UniSource Energy Corporation (UNS)
Unitil Corporation (UTL)
Vectren Corporation (VVC)
Westar Energy, Inc. (WR)
Wisconsin Energy Corporation (WEC)
Xcel Energy, Inc. (XEL)

Companies Listed by Category
(as of 12/31/11)

Please refer to the Quarterly Financial Updates webpage for previous years' lists.

Given the diversity of utility holding company corporate strategies, no single company categorization approach will be useful for all EEI members and utility industry analysts. Nevertheless, we believe the following classification provides an informative framework for tracking financial trends and the capital markets' response to business strategies as companies depart from the traditional regulated utility model.

Regulated	80%+ of total assets are regulated
Mostly Regulated	50% to 80% of total assets are regulated
Diversified	Less than 50% of total assets are regulated

Categorization of the 52 publicly traded utility holding companies is based on year-end business segmentation data presented in 10Ks, supplemented by discussions with company IR departments. Categorization of the seven non-publicly traded companies (*shown in italics*) is based on estimates derived from FERC Form 1 data and information provided by parent company IR departments.

The EEI Finance and Accounting Division continues to evaluate our approach to company categorization and business segmentation. In addition, we can produce customized categorization and peer group analyses in response to member company requests. We welcome comments, suggestions and feedback from EEI member companies and the financial community.

Regulated (39 of 59)

ALLETE, Inc.
Alliant Energy Corporation
Ameren Corporation
American Electric Power Company, Inc.
Avista Corporation
Central Vermont Public Service Corporation
CH Energy Group, Inc.
Cleco Corporation
CMS Energy Corporation
Consolidated Edison, Inc.
DPL, Inc.
DTE Energy Company
Edison International
El Paso Electric Company
Empire District Electric Company
Iberdrola USA
Entergy Corporation
Great Plains Energy Incorporated
IDACORP, Inc.
Integrys Energy Group
IPALCO Enterprises, Inc.
Northeast Utilities
NorthWestern Energy
NV Energy, Inc.
PG&E Corporation
Pinnacle West Capital Corporation
PNM Resources, Inc.
Portland General Electric Company
Progress Energy
Puget Energy, Inc.
Southern Company
TECO Energy, Inc.
UIL Holdings Corporation
UniSource Energy Corporation
Unitil Corporation
Vectren Corporation
Westar Energy, Inc.
Wisconsin Energy Corporation
Xcel Energy, Inc.

Mostly Regulated (17 of 59)

Black Hills Corporation
CenterPoint Energy, Inc.
Dominion Resources, Inc.
Duke Energy Corporation
Exelon Corporation
First Energy Corp.
MGE Energy, Inc.
MidAmerican Energy Holdings
NextEra Energy, Inc.
NiSource Inc.
OGE Energy Corp.
Otter Tail Corporation
Pepco Holdings, Inc.
PPL Corporation
Public Service Enterprise Group, Inc.
SCANA Corporation
Sempra Energy

Diversified (3 of 59)

Energy Future Holdings
Hawaiian Electric Industries, Inc.
MDU Resources Group, Inc.

Note: Based on assets at 12/31/11

The following companies were removed from the consolidated financial statements for 2009 and 2010 because they did not file Form 10-K with the SEC: Duquesne Light Holdings, Green Mountain Power, KeySpan, Kentucky Utilities, Louisville Gas and Electric and Niagara Mohawk Power.

Q2 2012

Stock Performance

HIGHLIGHTS

- While the EEI Index trailed the major averages for the first half of 2012, the year's first two quarters were mirror opposites and reflected the influence of global macroeconomic developments far more than any significant change in industry fundamentals.
- Interest rates continued to decline. The 10-year Treasury yield fell from a high of about 2.4% in late March to below 1.5% by mid-June. Historically low interest rates have offered an important source of support for utility shares in recent years.
- The EEI Index outperformed all major market sectors over the 12-month period ending June 30. By late June, most analysts observed that utility price/earnings ratios were near historical highs relative to the broad market. However, given today's extraordinarily low interest rates, utility shares receive powerful support from the industry's roughly 4% dividend yield, double that of the S&P 500's dividend yield. Industry business fundamentals remain reasonably healthy and analysts continue to expect mid-single-digit earnings growth for many utilities driven by sizeable ongoing capital investment programs.

COMMENTARY

The EEI Index trailed all three major market indices for the first half of 2012, returning 5.2% versus the Dow Jones Industrials' 6.8%, the S&P 500's 9.5% and the more volatile and tech-heavy Nasdaq Composite Index's strong 12.7% gain. However, the final tally for the six-month period was less illuminating than its composition on a quarter-to-quarter basis. The year's first two quarters were mirror opposites and reflected the influence of global macroeconomic develop-

I. Index Comparison (% Return)

Index	2006	2007	2008	2009	2010	2011	2012*
EEI Index	20.8	16.6	-25.9	10.7	7.0	20.0	5.2
Dow Jones Inds.	19.1	8.9	-31.9	22.7	14.1	8.4	6.8
S&P 500	15.8	5.5	-37.0	26.5	15.1	2.1	9.5
Nasdaq Comp.^	9.5	9.8	-40.5	43.9	16.9	-1.8	12.7

Calendar year returns shown for all periods, except where noted. / *Through 6/30
^Price gain/loss only. Other indices show total return.
Full year, except where noted.
Source: EEI Finance Department

II. Category Comparison (% Return)

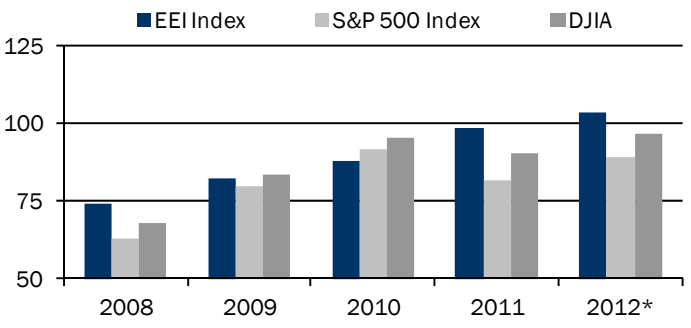
U.S. Shareholder-Owned Electric Utilities

Index	2006	2007	2008	2009	2010	2011	2012*
All Companies	22.5	9.8	-20.9	14.1	11.9	21.4	5.0
Regulated	22.6	7.8	-15.6	14.2	15.8	22.3	5.4
Mostly Regulated	22.4	9.9	-27.0	15.6	8.5	19.5	4.6
Diversified	22.2	18.5	-33.9	8.1	-5.2	21.4	6.3

Calendar year returns shown for all periods except where noted. / *Through 6/30
Returns shown here are unweighted averages of constituent company returns. The EEI Index return shown in Table I above is cap-weighted.
Source: EEI Finance Department, SNL Financial and company annual reports.

III. Total Return Comparison

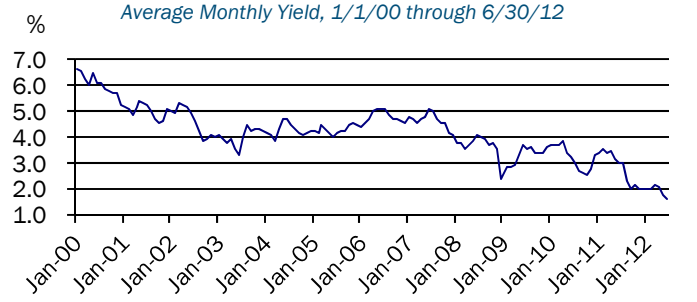
Value of $100 invested at close on 12/31/2007



Note: Year end, except where noted. / *Through 6/30
Source: EEI Finance Department

IV. 10-Year Treasury Yield — Monthly

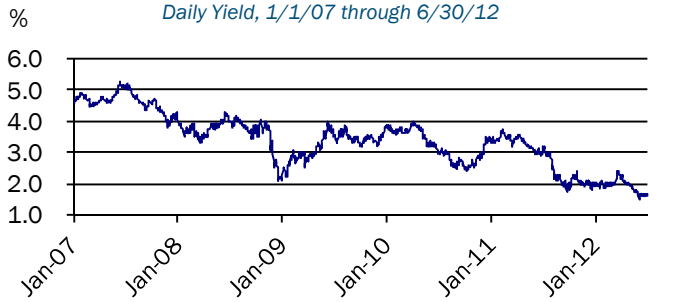
Average Monthly Yield, 1/1/00 through 6/30/12



Source: U.S. Federal Reserve

V. 10-Year Treasury Yield — Daily

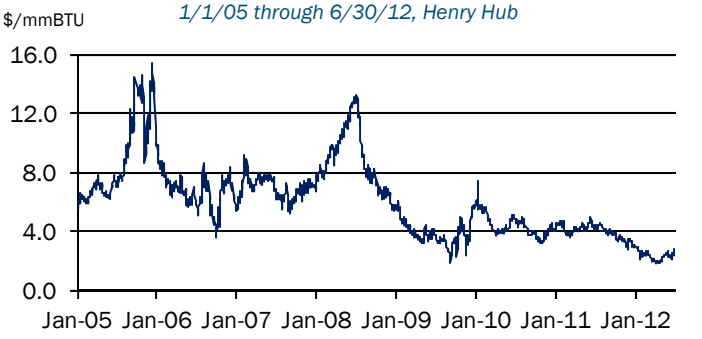
Daily Yield, 1/1/07 through 6/30/12



Source: U.S. Federal Reserve

VI. Natural Gas Spot Prices

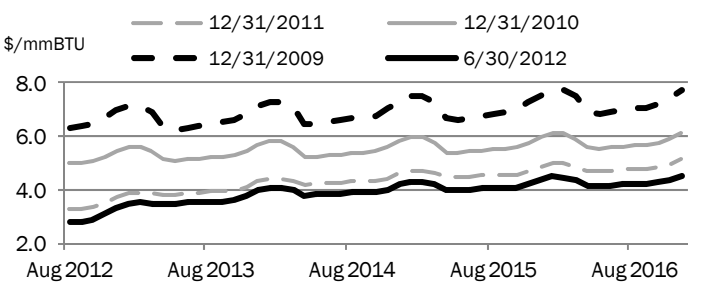
1/1/05 through 6/30/12, Henry Hub



Source: SNL Financial

VII. NYMEX Natural Gas Futures

August 2012 through December 2016, Henry Hub



Source: SNL Financial

VIII. Returns by Quarter

U.S. Shareholder-Owned Electric Utilities

Index	2009 Q3	2009 Q4	2010 Q1	2010 Q2	2010 Q3	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Q4	2012 Q1	2012 Q2
EEI Index	5.5	8.0	-2.5	-3.7	12.6	1.3	2.9	5.7	1.8	8.4	-1.4	6.6
Dow Jones Ind.	15.8	8.1	4.8	-9.4	11.1	8.0	7.1	1.4	-11.5	12.8	8.8	-1.8
S&P 500	15.6	6.0	5.4	-11.4	11.3	10.7	5.9	0.1	-13.9	11.8	12.6	-2.8
Nasdaq Comp.^	15.7	6.9	5.7	-12.0	12.3	12.0	4.8	-0.3	-12.9	7.9	18.7	-5.1

^Price gain/loss only. Other indices show total return.

Category*	2009 Q3	2009 Q4	2010 Q1	2010 Q2	2010 Q3	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Q4	2012 Q1	2012 Q2
All Companies	9.0	9.0	0.3	-3.7	12.1	3.3	4.8	5.9	-0.3	9.7	-0.6	5.6
Regulated	9.6	9.6	1.3	-2.7	12.0	4.8	5.4	6.4	-1.0	10.2	-0.5	5.9
Mostly Regulated	8.9	8.3	-0.8	-5.2	13.7	1.5	3.6	4.7	1.1	9.0	-1.0	5.6
Diversified	5.6	8.0	-2.6	-7.1	5.1	-0.2	8.9	6.1	-3.6	8.9	1.0	5.2

* Returns shown here are unweighted averages of constituent company returns. The EEI Index return shown above is cap-weighted.
Source: EEI Finance Department, SNL Financial and company annual reports.

IX. Sector Comparison, Trailing 12 mo. Total Return

For the twelve-month period ending 6/30/12

Sector	Total Return
EEI Index	**15.8%**
Consumer Services	13.3%
Telecommunications	12.7%
Utilities	12.4%
Technology	10.9%
Healthcare	10.1%
Consumer Goods	6.8%
Financials	0.3%
Industrials	-1.0%
Oil & Gas	-9.0%
Basic Materials	-15.9%

Note: Sector Comparison page based on the Dow Jones U.S. Indexes, which are market-capitalization-weighted indices. Find more information at http://www.djindexes.com/mdsidx/downloads/fact_info/Dow_Jones_US_Indexes_Industry_Indexes_Fact_Sheet.pdf

X. Sector Comparison, Q2 2012 Total Return

For the three-month period ending 6/30/12

Sector	Total Return
Telecommunications	12.2%
EEI Index	**6.6%**
Utilities	4.6%
Healthcare	2.1%
Consumer Services	0.7%
Consumer Goods	-2.4%
Industrials	-4.3%
Financials	-5.0%
Oil & Gas	-6.9%
Basic Materials	-7.5%
Technology	-8.0%

Note: Sector Comparison page based on the Dow Jones U.S. Indexes, which are market-capitalization-weighted indices. Find more information at http://www.djindexes.com/mdsidx/downloads/fact_info/

XI. Market Capitalization at June 30, 2012 (in $ Mil.)

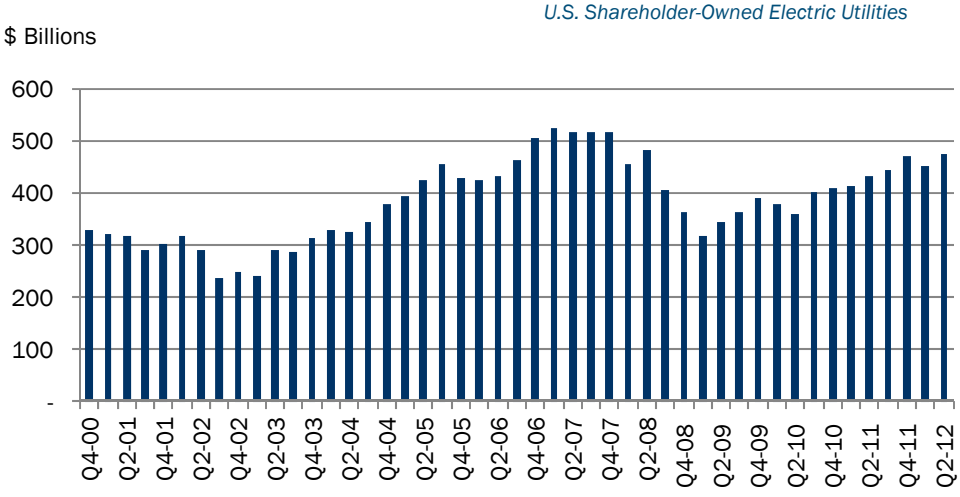
U.S. Shareholder-Owned Electric Utilities

Company	Stock Symbol	$ Market Cap	% Total	Company	Stock Symbol	$ Market Cap	% Total
Southern Company	SO	40,136	8.45%	Integrys Energy Grp. Inc.	TEG	4,470	0.94%
Duke Energy Corporation	DUK	30,844	6.49%	Pepco Holdings, Inc.	POM	4,462	0.94%
Dominion Resources, Inc.	D	30,807	6.48%	NV Energy, Inc.	NVE	4,149	0.87%
NextEra Energy, Inc.	NEE	28,370	5.97%	MDU Res. Group, Inc.	MDU	4,080	0.86%
Exelon Corporation	EXC	26,526	5.58%	TECO Energy, Inc.	TE	3,863	0.81%
FirstEnergy Corp.	FE	20,561	4.33%	Westar Energy, Inc.	WR	3,789	0.80%
American Elec. Power Co.	AEP	19,305	4.06%	Great Plains Energy Inc.	GXP	2,907	0.61%
PG&E Corporation	PCG	18,742	3.94%	Hawaiian Elec. Ind., Inc.	HE	2,745	0.58%
Consolidated Edison, Inc.	ED	18,213	3.83%	Cleco Corporation	CNL	2,527	0.53%
Progress Energy, Inc.	PGN	17,870	3.76%	Vectren Corporation	VVC	2,419	0.51%
Sempra Energy	SRE	16,573	3.49%	IDACORP, Inc.	IDA	2,098	0.44%
Public Svc. Ent. Grp. Inc.	PEG	16,445	3.46%	Portland Gen. Elec. Co.	POR	2,011	0.42%
PPL Corporation	PPL	16,092	3.39%	UIL Holdings Corporation	UIL	1,818	0.38%
Edison International	EIX	15,061	3.17%	Avista Corporation	AVA	1,564	0.33%
Xcel Energy Inc.	XEL	13,846	2.91%	PNM Resources, Inc.	PNM	1,560	0.33%
Entergy Corporation	ETR	12,007	2.53%	ALLETE, Inc.	ALE	1,538	0.32%
DTE Energy Company	DTE	10,086	2.12%	UniSource Energy Corp.	UNS	1,461	0.31%
Wisconsin Energy Corp.	WEC	9,121	1.92%	Black Hills Corporation	BKH	1,407	0.30%
CenterPoint Energy, Inc.	CNP	8,809	1.85%	NorthWestern Corp.	NWE	1,333	0.28%
Ameren Corporation	AEE	8,137	1.71%	El Paso Electric Company	EE	1,323	0.28%
NiSource Inc.	NI	7,002	1.47%	MGE Energy, Inc.	MGEE	1,093	0.23%
Northeast Utilities	NU	6,910	1.45%	CH Energy Group, Inc.	CHG	978	0.21%
SCANA Corporation	SCG	6,232	1.31%	Empire District Elec. Co.	EDE	887	0.19%
CMS Energy Corporation	CMS	6,007	1.26%	Otter Tail Corporation	OTTR	823	0.17%
Pinnacle West Cap. Corp.	PNW	5,651	1.19%	Unitil Corporation	UTL	289	0.06%
OGE Energy Corp.	OGE	5,091	1.07%				
Alliant Energy Corp.	LNT	5,045	1.06%	Total Industry		475,083	100.00%

Source: EEI Finance Department and Wall Street Journal

XII. EEI Index Market Capitalization (at Period End)

U.S. Shareholder-Owned Electric Utilities

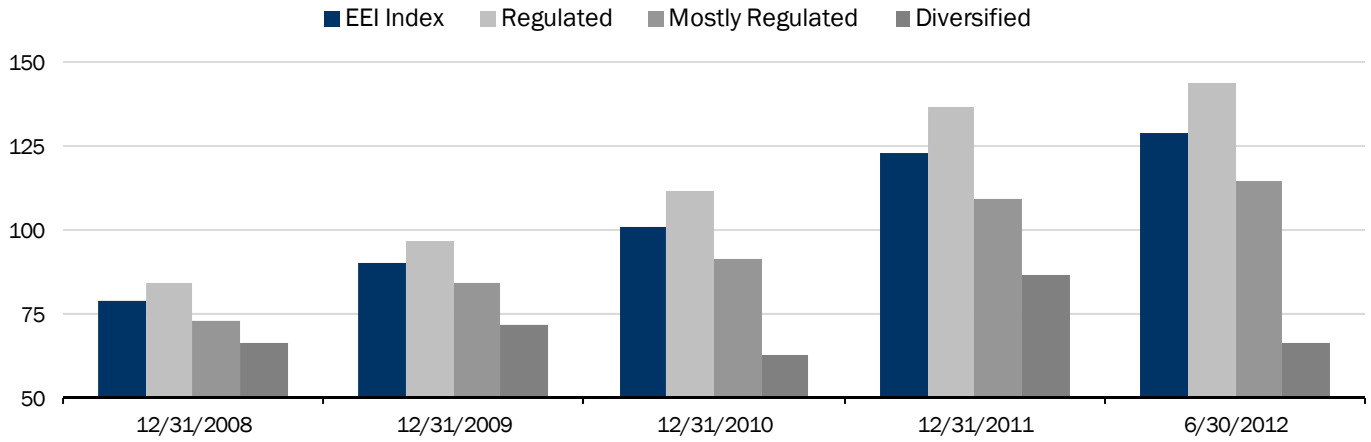


Note: Change in EEI Index market capitalization reflects the impact of buyout and spin-off activity in addition to stock market performance.
Source: EEI Finance Department and Wall Street Journal

EEI Index Market Cap (in $Billions)			
Q3-01	291,035	Q1-07	525,088
Q4-01	300,200	Q2-07	515,565
Q1-02	317,668	Q3-07	514,946
Q2-02	292,238	Q4-07	514,486
Q3-02	238,331	Q1-08	456,711
Q4-02	249,553	Q2-08	482,024
Q1-03	240,598	Q3-08	404,472
Q2-03	289,454	Q4-08	361,921
Q3-03	288,073	Q1-09	316,070
Q4-03	314,324	Q2-09	343,844
Q1-04	329,601	Q3-09	363,185
Q2-04	323,193	Q4-09	389,672
Q3-04	342,460	Q1-10	377,281
Q4-04	380,305	Q2-10	360,044
Q1-05	395,663	Q3-10	402,014
Q2-05	425,989	Q4-10	407,275
Q3-05	454,727	Q1-11	411,164
Q4-05	428,825	Q2-11	433,236
Q1-06	422,899	Q3-11	442,352
Q2-06	432,848	Q4-11	471,635
Q3-06	464,281	Q1-12	450,597
Q4-06	503,858	Q2-12	475,083

XIII. Comparative Category Total Annual Returns

U.S. Shareholder-Owned Electric Utilities, Value of $100 invested at close on 12/31/2007



		2008	2009	2010	2011	2012*
EEI Index Annual Return (%)		-20.9	14.1	11.9	21.4	5.0
EEI Index Cumulative Return ($)	100	79.1	90.2	100.9	122.5	128.6
Regulated EEI Index Annual Return		-15.6	14.2	15.8	22.3	5.4
Regulated EEI Index Cumulative Return	100	84.4	96.4	111.6	136.5	143.9
Mostly Regulated EEI Index Annual Return		-27.0	15.6	8.5	19.5	4.6
Mostly Regulated EEI Index Cumulative Return	100	73.0	84.4	91.6	109.4	114.5
Diversified EEI Index Annual Return		-33.9	8.1	-5.2	21.4	6.3
Diversified EEI Index Cumulative Return	100	66.1	71.4	62.7	86.7	66.6

Calendar year returns shown, except where noted. / * at 6/30
Returns are unweighted averages of constituent company returns.

ments on investors' preferences far more than any significant change in industry fundamentals.

As shown in Table VIII, the major market indices surged higher during the first quarter as aggressive global central bank moves to support market liquidity (particularly in Europe) trumped investors' fears of slowing U.S. economic growth, signs of outright recession in peripheral European economies, and indications that strength in emerging market economies was also fading. The EEI Index returned -1.4% as investors favored companies whose earnings outlooks are more leveraged to a monetary policy induced recovery in economic strength.

The market's bullish spirits faded to a worried caution in Q2, deflated by the recognition — as has often followed the bouts of optimism since the crisis of 2008/2009 — that central banks can supply economies with easy money but cannot make them grow. The EEI Index returned 5.6% in the second quarter, considerably outperforming the -2% to -3% losses produced by the Dow and S&P 500 and the Nasdaq's -5.1% decline.

XIV. EEI Index Top Ten Performers

For the 12-month period ending 6/30/12

Company	Category	% Return
Sempra Energy	MR	27.6
NextEra Energy, Inc.	MR	15.1
Wisconsin Energy Corporation	R	15.0
CH Energy Group, Inc.	R	14.4
FirstEnergy Corp.	MR	13.6
Edison International	R	13.2
PG&E Corporation	R	12.1
Cleco Corporation	R	11.5
DTE Energy Company	R	11.3
Hawaiian Electric Industries, Inc.	D	10.3

Note: Return figures include capital gains and dividends.
R = Regulated, MR = Mostly Regulated, D = Diversified
Source: EEI Finance Department

Another trend evident in the EEI Index's performance during the year's first half is the relative similarity of returns among the constituent groups. As shown in the bottom half of Table VIII, the Regulated, Mostly Regulated and Diversified company categories clustered around near-zero returns in Q1 and 5% to 6% gains in Q2. The market now perceives most utilities — whether they are fully or only mostly regulated — as essentially stable businesses with strong dividends, offering a safe harbor in turbulent times from exposure to the riskier, more competitively exposed and more economically leveraged earnings streams found in other economic industries.

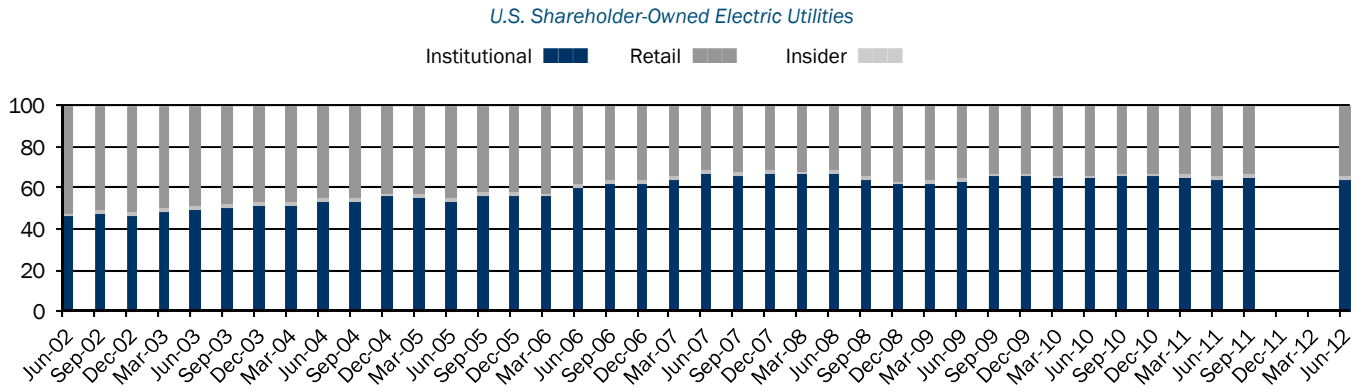
Macro Forces Drive Shares

There has been very little change in the industry's fundamental picture in recent years. Since the middle of the last decade, most utilities have focused their strategies around the traditional regulated business model (emphasizing either regulated transmission and distribution businesses or vertically integrated regulated businesses that include ownership of generation in rate base) or some combination of regulated businesses and competitive generation within an overall holding company (i.e., the "Mostly Regulated" model). In fact, at year-end 2004 there were 11 companies in EEI's Diversified category (out of 72 total companies), where regulated assets total less than 50% of total holding company assets. By year-end 2011, the Diversified Group's total had been reduced to only three companies (out of a total of 61). As a result, the Diversified category's stock performance has lost much of its significance as a referendum on the market's evaluation of the competitive business model.

The phrase "back to basics" was often used to describe the early years of this migration. And indeed the appeal of utility stocks today resembles to a large degree that of the years before deregulation: businesses capable of producing reasonably steady and dependable earnings streams with slow but steady earnings growth and slowly rising dividends.

Yet given this backdrop, trends that utility managements cannot control have been as forceful shapers of recent stock market performances as those they can. The two primary ones have been the persistent decline in interest rates and in the level of natural gas prices. Utilities are often seen as bond substitutes — income-producing investments with potential for growth in the income stream through dividend increases — whose value rises as interest rates decline. Following the competitive generation build-out during the previous decade, competitive power market prices were often set by natural gas as the marginal price setting fuel. The long-

XV. Share Ownership by Investor Category (% of total)



	Mar-04	Jun-04	Sep-04	Dec-04	Mar-05	Jun-05	Sep-05	Dec-05	Mar-06	Jun-06	Sep-06	Dec-06	Mar-07	Jun-07	Sep-07	Dec-07
Institutional	51.4	53.1	53.5	55.6	54.9	53.3	56.1	55.9	55.6	60.2	61.8	61.7	63.4	66.9	65.7	66.7
Insider	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.5
Retail	47.1	45.4	45.1	43.0	43.3	44.9	42.2	42.3	42.7	38.0	36.4	36.5	34.8	31.4	32.6	31.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

	Mar-08	Jun-08	Sep-08	Dec-09	Mar-09	Jun-09	Sep-09	Dec-09	Mar-10	Jun-10	Sep-10	Dec-10	Mar-11	Jun-11	Sep-11	Jun-12
Institutional	66.4	66.7	64.0	61.8	61.9	63.0	65.4	65.7	64.7	64.8	65.4	65.5	64.7	64.1	64.6	63.5
Insider	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.3	1.2	1.2	1.2	1.2	1.9	1.9	1.9	1.7
Retail	32.1	31.8	34.5	36.9	36.7	35.6	33.2	33.0	34.0	34.0	33.4	33.3	33.4	34.0	33.4	34.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: SNL Financial and EEI Finance Department. Note: Institutional figures represent end-of-quarter, unweighted average of the 55 publicly traded EEI Index companies. Insider data reported annually. Retail data defined as 100% - (Institutional data % + Insider %). Totals may not add to 100 due to rounding.
Note: Data unavailable for Dec-11, Mar-12

term decline in both metrics has surprised economists and industry analysts alike.

Historically Low Interest Rates

As shown in Charts IV and V, the 10-year Treasury yield (an adequate, albeit imperfect, proxy for market interest rates) has declined from the 5% to 6% range during 2006-2007 to under 2% in the second quarter of 2012. Federal Reserve policy to push interest rates lower in support of economic growth has been the primary cause of this decline, while the sluggish economic recovery has offered a counterpoint in the real economy in the form of generally weak loan demand. Most economists have predicted rising rates now for several years, and these prognostications have been continually thwarted. During the second quarter of 2012, the 10-year Treasury yield fell from a high of about 2.4% in late March to below 1.5% by mid-June, firming at quarter end up to 1.7%. Historically low interest rates have unquestionably offered an important source of support for utility shares in recent years by reducing the significant interest expense component of utilities' cost structure and elevating the value of the dividend stream for investors. Eventually, if history is any guide, the trend will reverse and rates will begin a long-term rise. With the economy now mired in politically unacceptable weakness and the Federal Reserve apparently set on its zero short-term rate policy for two more years, such a prospect does not appear imminent. But when the trend reverses, it will mark the end of one of the major macro themes that has supported the performance of utility stocks for many years.

Natural Gas Price Collapse

The collapse in natural gas prices due to the emergence of low-cost drilling for shale gas has had a less straightforward impact on utility shares. Many regulated companies have arguably benefitted — not directly, since changes in fuel costs are usually passed through to ratepayers and lower fuel costs don't mean higher profits — but indirectly, since lower fuel costs have helped keep customer rates down despite rising capital investment and the need to recover other rising costs in rates.

Competitive generators however, which are often subsidiaries of holding companies with regulated operations, have been hard hit. It would have been nearly inconceivable from 2005 through 2008, when natural gas spot price ranged from roughly $6-$12/mmBtu, to contemplate a near future in which prices would stagnate below $3 with no end in sight. And early in the second quarter of 2012, spot gas even dipped below $2. Competitive power prices have likewise eroded, considerably diminishing earnings outlooks for competitive generators whose price hedges, put in place when market prices were much higher, are now rolling off. This has acted as a countervailing force, operating opposite to that of falling interest rates, on the shares of utilities with significant competitive operations.

Analysts today seem reasonably unanimous in the belief that new shale gas drilling techniques and the abundance of reserves will keep natural gas prices low for the forseeable future. Chart VII shows just how sharply price forecasts have declined in recent years, with the natural gas futures curve now fairly steady at slightly over $4/mmBTU after falling from a range of $6 to $8 only two-and-a-half years ago. Perhaps the most confident statement one can make about the natural gas market at mid-year 2012 is that it appears to have little room to fall further, although the prospect of any recovery, which over the past few years has always seemed a year or two way, still seems a year or two away.

Stable Business Fundamentals

General business conditions in the industry at mid-year 2012 remain reasonably strong, with the big picture narrative little changed from that of recent years. Utilities are undertaking sizeable and wide-ranging capital investment programs that include distribution network upgrades, Smart Grid investments, a significant boost in the pace of transmission investment, rising emissions-related capex driven by the need to comply with EPA regulations, and generation investments in select power markets. All told, the construction cycle has supported mid-single digit earnings growth for much of the industry over the past six or seven years.

Despite the prospects for only tepid electricity demand growth going forward (due in part to energy efficiency technologies and wider use of demand side management programs), estimated at 0% to 1% annual gains nationwide, analysts expect the industry's ongoing capital spending to drive mid single-digit earnings growth for many utilities over the next several years. Much of this investment is going into rate base, with a state regulatory backdrop that most analysts say is constructive and supportive of the need for such investment. The value to investors of such a predictable, if not placid, business environment is seen in Chart III, which shows that an investment in the EEI Index made at the end of 2007 and indexed to 100 would have outperformed both the S&P 500 and the Dow Jones Industrial Average if held through June 30, 2012. This period includes the severe decline and wild volatility of the 2008/9 financial crisis, the strong subsequent market recovery and recent sideways progression of the markets since early 2011 — offering a diverse macroeconomic and market backdrop in which to evaluate the industry's emphasis on core regulated and competitive electricity businesses.

Stretched Valuations?

Despite trailing the broad market averages during the first half of 2012, the EEI Index outperformed all major market sectors over the 12-month period ending June 30 (as shown in Table IX). This was due less to any change in the industry's prospects than to the industry's status as a safe-harbor during macroeconomic turbulence. The broad market fell more than 10% during Q3 2011 as the spectacle of the U.S. fiscal debt limit debate (and Standard & Poor's August 5, 2011 downgrade of U.S. debt from AAA to AA+) along with European leaders' equally contentious response to a flare-up of market stress over their continents' sovereign debt woes rattled investors.

By late June 2012, most analysts observed that utility price/earnings ratios were near historical highs relative to the broad market, suggesting that the group's strength may be nearing an end. Conversely, given today's extraordinarily low interest rates, utility shares receive powerful support from the industry's roughly 4% dividend yield, double that of the S&P 500's dividend yield. When viewed as a bond substitute (offering bond-like yields with dividend growth potential), analysts observed that utility stocks could have room to rise given the very low yields available most everywhere else.

To the extent that utility dividends remain perceived as stable and safe, and if interest rates remain very low, utility shares will likely receive an ongoing strong bid from investors. However if rates were to rise or if industry fundamentals were to worsen — such as the perception of difficulty executing capital investment programs or renewed fuel cost increases pressuring end-user rates, fostering a more contentious environment in rate cases — the group's stock market fortunes may take a turn for the worse.

Recent years have delivered many tailwinds for the industry, independent of the hard work by companies to reform themselves around the traditional utility business model while implementing the strong public good aspect of their mission — that of ensuring safe, reliable and increasingly environmentally clean electricity within regulated service territories. It's likely that the values of utility shares in the immediate future will continue to be driven more by global macroeconomic issues outside of the industry's control than by changes in business strategies or fundamentals that managements can control. That is not to say that the month-to-month and year-to-year challenges that come with the management of shareholder-owned utilities are not significant, it's just that they are largely under control for now.■

Union Electric Company d/b/a Ameren Missouri
CASE NO. ER-2012-0166

Missouri-Only Utility Proxy Group
DPS, EPS, BVPS & GDP
10-Year Compound Growth Rate Averages (1968-1999)

DPS		*EPS*		*BVPS*		Average	GDP	
Years	10 yr compound growth rate avgs	Years	10 yr compound growth rate avgs	Years	10 yr compound growth rate avgs	DPS, EPS and BVPS	Years	10 yr compound growth rate avgs
1968-70 to 1978-80	**2.34%**	1968-70 to 1978-80	**1.14%**	1968-70 to 1978-80	**1.81%**	**1.76%**	1968-70 to 1978-80	**10.05%**
1969-71 to 1979-81	**2.20%**	1969-71 to 1979-81	**1.21%**	1969-71 to 1979-81	**1.38%**	**1.60%**	1969-71 to 1979-81	**10.41%**
1970-72 to 1980-82	**2.23%**	1970-72 to 1980-82	**2.10%**	1970-72 to 1980-82	**1.13%**	**1.82%**	1970-72 to 1980-82	**10.42%**
1971-73 to 1981-83	**2.50%**	1971-73 to 1981-83	**3.83%**	1971-73 to 1981-83	**1.14%**	**2.49%**	1971-73 to 1981-83	**10.22%**
1972-74 to 1982-84	**2.97%**	1972-74 to 1982-84	**5.81%**	1972-74 to 1982-84	**1.45%**	**3.41%**	1972-74 to 1982-84	**10.03%**
1973-75 to 1983-85	**3.45%**	1973-75 to 1983-85	**6.92%**	1973-75 to 1983-85	**2.02%**	**4.13%**	1973-75 to 1983-85	**9.96%**
1974-76 to 1984-86	**3.75%**	1974-76 to 1984-86	**6.71%**	1974-76 to 1984-86	**2.61%**	**4.36%**	1974-76 to 1984-86	**9.77%**
1975-77 to 1985-87	**3.88%**	1975-77 to 1985-87	**6.02%**	1975-77 to 1985-87	**2.97%**	**4.29%**	1975-77 to 1985-87	**9.34%**
1976-78 to 1986-88	**3.96%**	1976-78 to 1986-88	**5.55%**	1976-78 to 1986-88	**3.11%**	**4.21%**	1976-78 to 1986-88	**8.80%**
1977-79 to 1987-89	**4.20%**	1977-79 to 1987-89	**6.03%**	1977-79 to 1987-89	**3.26%**	**4.50%**	1977-79 to 1987-89	**8.32%**
1978-80 to 1988-90	**4.48%**	1978-80 to 1988-90	**5.60%**	1978-80 to 1988-90	**3.50%**	**4.53%**	1978-80 to 1988-90	**7.92%**
1979-81 to 1989-91	**4.73%**	1979-81 to 1989-91	**5.22%**	1979-81 to 1989-91	**3.80%**	**4.58%**	1979-81 to 1989-91	**7.38%**
1980-82 to 1990-92	**4.83%**	1980-82 to 1990-92	**3.57%**	1980-82 to 1990-92	**3.93%**	**4.11%**	1980-82 to 1990-92	**7.06%**
1981-83 to 1991-93	**4.68%**	1981-83 to 1991-93	**1.64%**	1981-83 to 1991-93	**3.80%**	**3.38%**	1981-83 to 1991-93	**6.72%**
1982-84 to 1992-94	**4.34%**	1982-84 to 1992-94	**0.23%**	1982-84 to 1992-94	**3.46%**	**2.68%**	1982-84 to 1992-94	**6.49%**
1983-85 to 1993-95	**3.96%**	1983-85 to 1993-95	**-0.31%**	1983-85 to 1993-95	**3.01%**	**2.22%**	1983-85 to 1993-95	**6.12%**
1984-86 to 1994-96	**3.72%**	1984-86 to 1994-96	**0.03%**	1984-86 to 1994-96	**2.62%**	**2.12%**	1984-86 to 1994-96	**5.89%**
1985-87 to 1995-97	**3.53%**	1985-87 to 1995-97	**0.26%**	1985-87 to 1995-97	**2.31%**	**2.03%**	1985-87 to 1995-97	**5.81%**
1986-88 to 1996-98	**3.27%**	1986-88 to 1996-98	**0.67%**	1986-88 to 1996-98	**2.17%**	**2.03%**	1986-88 to 1996-98	**5.73%**
1987-89 to 1997-99	**2.82%**	1987-89 to 1997-99	**0.06%**	1987-89 to 1997-99	**1.98%**	**1.62%**	1987-89 to 1997-99	**5.63%**
Average	**3.59%**	**Average**	**3.11%**	**Average**	**2.57%**		**Average**	**8.10%**

Average of 10-year Rolling Averages EPS, DPS and BVPS **3.09%**

Source: Value Line Investment Survey

Average EPS, DPS and BVPS as a percentage of average GDP: 38.16%

SCHEDULE DM-SUR-3

Musings on Markets

My not so profound thoughts about valuation, corporate finance and the news of the day!

FRIDAY, SEPTEMBER 30, 2011

Risk free rates and value: Dealing with historically low risk free rates

Last week, the 10-year US treasury bond rate dropped to 1.75%. While it has risen since to about 2%, there can be no denying a basic fact. Government bond rates have dropped in almost all of the developed market currencies: the Euro, the British Pound, the Swiss Franc and the Yen. Since government bond rates are used as risk free rates to estimate discount rates in valuation or hurdle rates in corporate finance, there has been a great deal of hand wringing and angst among valuation practitioners on the consequences. In fact, if you allow for the increase in sovereign risk across the globe, you could argue that the "true" risk free rates are even lower than the already low government bond rates. In my previous post on the sovereign rating downgrade for the US, I noted that the default spread would have to be netted out against the government bond rate to get to the risk free rate. If, for instance, you accepted the S&P rating of AA+ for the US and estimated a default spread of 0.20% for that rating, the US dollar risk free rate right now would be about 1.80% (2% minus 0.20%).

So what effect do lower risk free rates have on value? The answer, if you follow conventional valuation practice, seems obvious. Lower risk free rates, holding all else constant, result in lower discount rates, and lower discount rates, all else held the same, will result in higher value. In fact, this seems to be the implicit message in the Fed's Operation Twist 2: that lower risk free rates are good for the economy and markets. It is also this facile conclusion that makes some practitioners uncomfortable with using today's rates in valuations; the angst gets deeper when the practitioner in question wants a "low" value for an asset (for tax assessments or to tilt the scales in a legal tussle). It is not surprising then that these practitioners flirt with an alternative: why not use "normalized" risk free rates instead of today's "abnormally" low risk free rates? The normalized risk free rates are generally computed by looking at the past: thus, the average 10-year treasury bond rate over the last 30 years, which is closer to 4%, is suggested as an option. Alluring though this option seems, not only is it the wrong solution to the perceived problem (of low risk free rates and out of control valuations), there may be no problem to solve in the first place. And here is why..

1. The risk free rate is not just a number in a discount rate computation but an opportunity cost. One way to think about the risk free rate is that it is the rate you will earn if you choose not to take the risky investments that are out there (stocks, corporate bonds, real estate, a business venture). So, let's carry this to its logical extreme. Let's assume that you do replace today's risk free rate (2% or lower) with your normalized rate (4%) and that the resulting high discount rate gives you a low value for your risky asset. Let's then assume that you choose not to invest in that risky asset. Where do you plan to invest that money instead? In your normalized bond earning 4%? Since it exists only on your spreadsheet, I am afraid that you will have to settle for that "abnormally" low 2% interest rate.

2. The risk free rate is a reflection of what people expect in the overall economy for the foreseeable future. Harking back to an equation that I have used before, note that the risk free rate is the sum of two market expectations: an expectation of inflation for the future and an expectation of real growth.
Risk free rate = Expected inflation + Expected real growth
Viewed through these lens, it is quite clear that a very low risk free rate is not generally compatible with a vibrant high growth economy. In fact, the biggest factor driving down ten-year bond rates this year from 3.29% to 2% has been the increasing pessimism about global economic health, pushing down both expected real growth and expected inflation. That is the basis for my argument that the Fed has become a side player in this game and that its push for lower risk free rates is actually at odds with its desire that the US return to healthy economic growth.

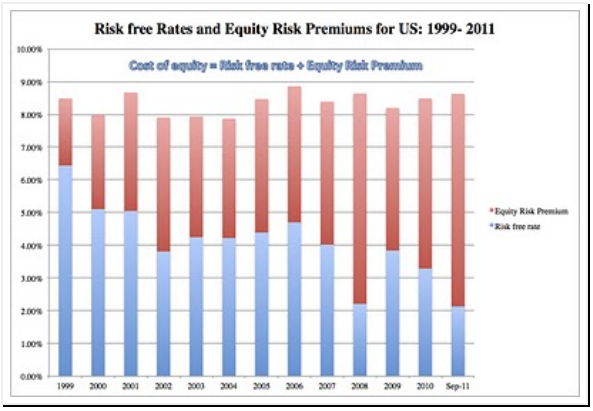
3. The risk free asset is also where investors flee when the fear factor rises, the much vaunted "flight to safety" during crises. But this flight does not just affect the risk free rate.... It affects risk premiums for all risky asset classes: equity risk premiums rise, default spreads on corporate bonds widen and cap rates on real estate become higher. If you define the expected return from stocks as the sum of the risk free rate and the equity risk premium, the last decade has seen changes in that composition:

ABOUT ME

Aswath Damodaran

I am a Professor of Finance at the Stern School of Business at NYU. I teach classes in corporate finance and valuation, primarily to MBAs, but generally to anyone who will listen.

View my complete profile



Note that while the overall expected return on stocks (backed out from level of the S&P 500 index and expected cash flows from stocks) has been in a fairly tight range (8%-9%), the proportions coming from the risk free rate and equity risk premium have changed. And there are consequences for value as well. To see why assume that you are valuing a mature, average risk company (growing at the same rate as the economy) with $ 100 million in cash flows to equity currently in a market where the risk free rate is 4% and the equity risk premium is also 4% (thus creating a cost of equity of 8%). Since the risk free rate is the proxy for nominal growth in the economy, this company's value is:

Value of company = 100 (1.04) / (.08-.04) = $2,600 million

Now consider valuing the same company when the risk free rate is 2% and the equity risk premium is 6%. Since the nominal growth rate expectation is down to 2%, the value of the company is:

Value of company = 100 (1.02)/ (.08 - .02) = $1,700 million

The effect on value will be greater for higher risk companies, where the risk premium is magnified, and lower for lower risk companies, but it will be significant across the board. Note that the first scenario resembles the market numbers in 2007 whereas the second is close to where we are today. The shift in risk free rates/ risk premiums may explain why stocks look cheap today, relative to historic metrics.

So, what do we do about low risk free rates? As I see it, you can choose one of four routes, ranging from dysfunctional to dynamic:

1. The dysfunctional valuation: You leave risk free rates at today's low levels, while your risk premiums and growth rates come from happier, more stable times. Implicitly, this is exactly what you will do, if you use equity risk premiums from historical data (Ibbotson, for instance) and earnings growth rates that reflect the "good old days". Using the example above, you would value the average risk, mature company, using a 2% risk free rate, a 4% nominal growth rate and a 4% equity risk premium:

Value of company = 100 (1.04)/ (.06-.04) = $5,200 million

You will find everything you look at to be dramatically under valued, but the model is internally inconsistent. In effect, though, you are combining a crisis risk free rate with a good times risk premium/growth rate to estimate too high a value.

2. The depressed valuation: You could replace the risk free rate today with a higher, normalized risk free rate, while using the higher risk premiums and growth rates that characterize crisis marks. Thus, in the valuation example, you would be using a 4% risk free rate in conjunction with a 2% nominal growth rate and a 6% equity risk premium, leading unsurprisingly to a low value:

Value of company = 100 (1.02) / (.10 - .02) = $1,275 million

Here, the inconsistency is that you have combined a good times risk free rate with a crisis risk premium/growth rate to estimate too low a value.

3. The denial valuation:You could be a normalizer, replacing current numbers with normal numbers, not just on the risk free rate but on the other inputs (equity risk premiums, cash flows, growth rates) as well. This faith in mean reversion leaves the intrinsic value of the hypothetical company stuck at $2,600 million, as risk free rates and risk premiums change, and views the crisis as "nightmare" that will soon be forgotten. Unlike the first two choices, this one is internally consistent and may, in fact, be the valuation that is used by a classic contrarian investor, who believes that markets over react and adjust back to norms over time.

4. The dynamic valuation: You could use today's combination of a low risk free rate, high risk premium and low nominal growth to estimate a value of $1,700 million for the company. The valuation is internally consistent but the downside is that it will be volatile and change as the macro environment changes, creating discomfort for those who believe that intrinsic value is a stable number that stays unchanged over time.

I would steer away from the internally inconsistent valuations, either dysfunctional (giving you too high a number) or depressed (giving you too low a number) because your inputs are at war with each other. As for denial and dynamic valuations, I prefer dynamic valuations because I am not sanguine that reversion back to historic norms will happen soon. I can see why long term, value investors may be attracted to denial valuations but they better have a road map to their alternate pre-crisis universe, or the valuations will not come to fruition. But the bottom line about risk free rates is worth repeating. Lower risk free rates do not always translate into higher values for risky assets and it is not necessarily a "problem" that needs to be solved.

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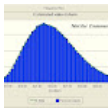
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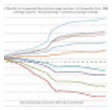
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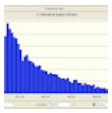
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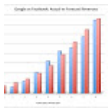
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The Facebook IPO gets closer and I don't think I can put off this valuation much longer. While we don't have an offering price yet, the pre...


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BLOG ARCHIVE

Posted by Aswath Damodaran at 3:16 PM

27 comments:

Jason DaCruz said...

This comment has been removed by the author.

October 1, 2011 12:50 AM

Jason DaCruz said...

With the macro environment so unstable, I find valuation to be even more subjective than normal. Correct me if I'm wrong -- as I probably am -- but let's say you take the Treasuries to be a good indicator of the risk-free rate. Let's also say your time horizon is long term. And then operation twist happens.

Your risk-free rate would be pushed down, correct? So your PV rises. But your growth expectations -- grounded in the teachings of Bernanke -- rise. So your PV falls? Finding those numbers seems to leave a lot to user preference/error. And then there's inflation...

October 1, 2011 12:52 AM

Pi said...

my take away from this post is that inherently valuations probably don't drive stock prices as valuation is a subjective issue, a matter of assumption and choosing values. someone can justify a valuation of 1275mn and someone 5200mn. In good times market would choose to give credence to the 5200 valuation levels, and in bad times to 1275. This is why the crazy moves, when underlying fundamentals don't change that dramatically. I mean could a change in growth rates from 3% to sub 2% mean a change in fundamental valuations by 20% or more? I thought equities discounted long term cash-flows, but it seems they don't look beyond the next 3 yrs.

October 1, 2011 12:53 AM

Alan Shouls said...

Hi,

I am fairly new to this but I can't see that there is any real option other than valuing a company relative to the current risk free rate. You look at the current risk free rate and see how a company measures up against it because the risk free rate is the best that you can do (risk-lessly) at this point in time. If the current, say "dollar" based risk free rate really is too high or low then the market will adjust it quite quickly.

As far as I can make out valuation seems to me to be a valuation of the future for the fixed point in time - now. An intrinsic valuation seems to be a valuation of a risky asset that is relative to a risk-less asset that takes into account the risk. This seems to be a really sound way of doing things as if suddenly say you could buy a bond, available in unlimited supply, that would risk-lessly yield 10% every year for 10 years then you would be nuts to buy an asset that yielded less. So the value of your risky asset would have to change. Somebody will see that $10 on the ground ;-)

The other way that I have found that I think of things is that the risk free rate is a foundation. Assets are valued relative to this foundation. If there is an earthquake and the foundations start moving (becoming volatile) the all the stories above it will move as well - their valuations will change. If the foundations change very rapidly than the intrinsic valuations (which are relative to the foundations) will change rapidly as well - no matter how stable the asset's cash flows. The real value of the business will change rapidly there is no option.

So, you do a valuation, how long is it good for? Well it is good for now. If things change it will be out of date. If there is a huge spill in the Gulf of Mexico then the valuation of your company will change it it was responsible. If the risk free rate changes then the value of your asset changes.

October 1, 2011 2:57 AM

Aswath Damodaran said...

Alan,
I think you have it just right. A valuation is an assessment of the future as of right now.... and you have to use the current risk free rate.
Jason,
You are right about the macro environment instability translating into valuation instability (why is it subjective? It is what it is...) As for your reasoning, out works only if you believe that Bernanke has immense persuasive powers left... I don't think he does.

October 1, 2011 5:25 AM

Mike Barad said...

A good quote from Atlas Shrugged..."A is A." I agree that there is no problem to solve here. The risk free rate is forward looking and incorporates future expectations of growth and inflation. It can't be too low or too high, it just is. Sometimes A is A.

October 1, 2011 9:02 AM

Mike said...

Good points.

Here is an informative/scary article from a mises scholar, - it is an eye opener for me. It explains the effects of Fed's rate manupulation.

http://mises.org/daily/5223/media.aspx?action=author&ID=1619

October 1, 2011 8:33 PM

Unknown said...

Look..LOL... I can assure you that most practicioners don't use these frameworks in their investment decisions.

Those that do, do so only on the margin; it's never the decisive factor. Real investment decisions are ultimately made for other reasons.

I'd say the practicioners (i.e. the market) in a low rate environment functions more like the following:

Let's look for the greater fool, and play chicken until the village idiot buys; then sell sell sell, and run for the hills.

October 1, 2011 9:37 PM

Aswath Damodaran said...

Unknown,
By "practitioners", you must mean investors, analysts and portfolio managers and I agree with you. Most of them don't do and are not interested in valuation. They want to stay ahead of the pack and most of the time, they are the pack.
However, I am referring to a much wider set of practitioners. About 90% of valuations are done by appraisers valuing private businesses for sale, accountants assessing fair value and others whose objectives don't include making money on the valuation. Those practitioners still have to make choices on risk free rates, risk premiums and growth rates..

October 2, 2011 9:38 AM

Unknown said...

as the new view of lower future nominal growth (let's assume lower real growth and not lower inflation, thus WACC does not change) becomes priced in, the discount rate increases (WACC - g) lowering present value, as you mention...but in your example, you do not change FCFE...if future g is lower, why shouldn't future FCFE increase? if it does not increase, you must believe future ROIC on old invested capital decreases as g rates decrease...in extreme cases, I believe they probably do (e.g. 1930's).

October 2, 2011 4:55 PM

Aswath Damodaran said...

That is actually a great point about ROIC. I am implicitly assuming that the ROIC will decrease if nominal growth opportunities decrease but I should have been explicit.

An interesting question would then become: what would happen if the ROIC stayed unchanged? Here are the consequences. For firms with ROIC = Cost of capital, there would be no change in value when the risk free rate declined (and risk premiums go up). For firms with ROIC> Cost of capital, the value will go down but not by as much as in the example in the post. For firms with ROIC < cost of capital, it will actually be good if there is less growth and less reinvestment.

October 3, 2011 4:53 AM

Stan Jonas said...

curious.. if the real risk free rate is that of a 10 year zero coupon rather than a coupon bond your problem is solved..
The "return to a 10 year" coupon bond is largely a result of the reinvestment rate of the coupon... and as you well know only if the reinestment rate remains at the coupon rate is YTM an accurate measure...

Ten Year Zero Coupon bonds have rallied close to 30% in "price" in the last months..
thats the real valuation exercise... not two hypothetical and imposible to predict future cash flows... i.e. the rate of reinestment and the dividend rate.

October 3, 2011 9:14 PM

Ankit said...

Sir,

I was not able to understand why
Risk free rate = Expected inflation + Expected real growth

does the above equation applicable for US only or for some other country like India?

October 4, 2011 2:26 AM

Aswath Damodaran said...

Stan,
What problem are you solving? And a zero-coupon is a nominal rate, not a real rate...

Ankit,
The equivalence holds in all markets but it is an expected growth rate in the long term (and so will not be directly comparable to current growth in growing, emerging markets).

October 4, 2011 3:45 AM

Sylvie B said...

This comment has been removed by the author.

October 4, 2011 4:10 PM

Sylvie B said...

Thanks for sharing your views. Would you apply the same kind of "reverse" rationals for PIGS countries which have historically high risk free rates ?
Thanks, Sylvie

October 4, 2011 4:11 PM

Aswath Damodaran said...

The PIGS countries all operate in Euros. The Euro risk free rate is at historic lows (not highs). The rates for these countries are high because of sovereign default risk being high and not because of the risk free rate. In other words, the risk free rate in Euros for a Greek company is still 1.5%... it is the rest of the equation (the equity risk premium) that is sky high.

October 5, 2011 4:46 AM

Random Thougths said...

Sir,

Should we not be using different WACC for each year ? For example, if we think that the economic outlook to restore to normal in 2 years, we can use the the normal risk-free rate, Risk premiums and growth projections from 2013 onwards while going for the current low risk-free rates etc for the next two years. I think that should take care of the above differences and further reduce the variance under each scenario that you have caluclated.

October 9, 2011 7:46 AM

Aswath Damodaran said...

As long as you change the risk premiums every year as well...

October 9, 2011 12:08 PM

Florin said...

Great topic, I've been thinking about this multiple times. Using the current 'risk free rate' to value riskier investments is problematic MOSTLY because the rate is rigged by the FEDs - so is that rate real (is it incorporating actual expectations of inflation and growth, if you know for a fact that rate is being pushed down). I know a lot of you will say that the markets are efficient and they would push the rate back up if the investors felt that the rate is lower than where it should be... I have my doubts about that and about market efficiency for short periods of time.
So now the issue is, a lot of investors feel the need to value assets (not only buy and sell on momentum, but on a valuation basis) - how should those investors approach that valuation - I believe it's about time horizon.
Inconsistent models don't make sense for sure, so short term investors would make sense to value assets by using the dynamic model (if fact they don't care if the rate is gamed, they only care what looks cheap based on that). Long term investors shouldn't go for the same logic, since the chances are that the rates will reverse to a certain degree once the multiple QEs end(God knows how many there will be.
But one thing I do hate, and that is hearing people on radio saying that stocks are cheap based on the FED model (they were also saying that months ago based on the same argument) - I never was a fan of that model

October 9, 2011 4:55 PM

Manish said...

Hi
We calculate Equity Risk Premium for a longer term period and takes a average of it as our basis of calculating required returns. In the given case how should we calculate the Equity Risk Premium as the long term average seems to give us a low required return. Is it implied equity risk premium or it is based upon some option methos? Please explain.

October 18, 2011 7:12 AM

prisci said...

Necesito el valor de la tasa libre de riesgo de los bonos del tesoro de eeuu, a 10 años...por favor.. es urgente..
I need the value of risk-free rate of U.S. Treasury bonds, 10 years ... please .. urgent ..

November 22, 2011 11:52 AM

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November 22, 2011 11:53 AM

Anonymous said...

Hi, In the text you refer to the 30-year historical US government 10-year bond yield to be 4%. I find the historical number for the same period to be around 7% (nominal). Have you corrected for any items (high inflation in the 1980s?)? As I am a "normalizer" I am trying to find the best forecast for the normalized risk-free rate. Forecasts for real growth and inflation for the US imply 4-5%. Historical 10-year US government bond yield around 7% (I thought). So I am uncertain which rate to apply - the range 4-7% is quite large. The WACC for this purpose will be used as discount rate for long-term investments in the minings and metal industry. Thanks in advance.

January 6, 2012 6:02 AM

Shan said...

Dear Prof. Damodaran !

I hope you will find this in the best of your health and spirits.

I am afraid my question is not related to this particular post.

My question is related to FCFF.

The formula is:

EBIT(1-t)+ Depreciation - CAPEX + Decrease in Working Capital...

I want to ask:

The resulting FCFF will give the free cash flows for all supplers of capital and shareholders.

What about the OPENING CASH BALANCE (in case of retail companies, they may have a lot), what about CASH INTEREST ON DEPOSITS, and finally what about DIVIDENDS RECEIVED for a holdings company, which almost every year receives dividends.

Why don't we use them in FCFF calculation?

Thank you for your kind cooperation.

Bye

January 8, 2012 9:52 AM

Air Cleaner said...

Most people spend over 90% of their time indoors, not knowing that the air they are breathing may be more polluted than the air outside. Our one of my Air Cleaner. It provide good Indoor Air Quality.

February 2, 2012 10:43 PM

AC Service Phoenix said...

Our one of my AC Service Phoenix business provide air-conditioning repair and a quiet solution for cooling and heating problems.

February 16, 2012 3:02 AM

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