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MISSOURI PUBLIC SERVICE COMMISSION

UTILITY SERVICES DIVISION

SURREBUTTAL TESTIMONY

OF

DAVID MURRAY

Great Plains Energy, Incorporated
KCP&L GREATER MISSOURI OPERATIONS COMPANY

FILE NO. ER-2010-0356

Jefferson City, Missouri
January 2011

** Denotes Highly Confidential Information **

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Q. Please state your name.

A. My name is David Murray.

Q. Are you the same David Murray who prepared the Rate-of-Return Section ("ROR Section") of Staff's Cost of Service Report ("Staff's Report") and who filed rebuttal testimony in this case?

A. Yes, I am. I sponsored the ROR Section of the Staff's Report filed on November 17, 2010. I also filed rate-of-return ("ROR") rebuttal testimony in this case on December 15, 2010.

Q. What is the purpose of your Surrebuttal Testimony?

A. The purpose of my Surrebuttal Testimony is to respond to the Rebuttal Testimony of Samuel C. Hadaway, Michael W. Cline, and Curtis D. Blanc.

Dr. Hadaway's Rebuttal Testimony presents his criticisms of my cost of equity estimate in the ROR Section of the Staff's Report. Mr. Cline's Rebuttal Testimony states his criticisms of my recommended capital structure, my recommended cost of debt and the adjustment I made to the cost of Great Plains Energy, Inc.'s ("GPE") equity units. Mr. Blanc's Rebuttal Testimony compares my recommended return on common equity ("ROE") to ROEs authorized in other states. He also compares the Missouri Public Service

Commission Staff's ("Staff") past ROE recommendations to those of other parties that have filed ROR testimony in Missouri in the past.

EXECUTIVE SUMMARY

Q. Please summarize the main issues addressed in your Surrebuttal Testimony.

A. Dr. Hadaway's Rebuttal Testimony suggests that my cost of equity estimate is not supported by my analysis and should be disregarded. Dr. Hadaway specifically suggests that I should have used equity analysts' 5-year EPS projected growth rates in my constant-growth DCF. While this may be an easy and convenient way to estimate a utility's cost of equity, it is not reliable.

Dr. Hadaway also takes specific issue with the data I used for my analysis of long-term electric utility industry growth rates. Dr. Hadaway tested two data points out of 53 from the data provided in the 2003 Mergent *Public Utility and Transportation Manual ("Mergent")*. Although Dr. Hadaway's analysis was not thorough enough to render this information unreliable, Dr. Hadaway's concern did cause Staff to perform additional research in this area. This research, which is discussed below, provides the Missouri Public Service Commission ("Commission") with additional information to use in judging the reasonableness of long-term growth rates used in DCF analyses. Staff's further analysis and review of other sources in response to Dr. Hadaway's criticisms has confirmed that Staff's estimated long-term growth rate of 3 to 4 percent is quite reasonable.

Mr. Blanc's Rebuttal Testimony compares Staff's cost of equity estimates to allowed ROEs in other states and also to those sponsored by parties other than the Company. Mr. Blanc's opinion that Staff should fall in the middle of the consumer witness(es) and the

Company witness is disturbing for a variety of reasons, which Staff will address in this Testimony.

Mr. Cline claims in his Rebuttal Testimony that I inappropriately used the net proceeds balance of the equity units rather than the outstanding balance. I agree with Mr. Cline on this point. The effect of this change in position will be discussed in the following portions of this Testimony.

Mr. Cline does not agree with the approach I used to estimate a proxy cost of debt for purposes of estimating KCP&L Greater Missouri Operation Company's ("GMO") ROR. He believes it is inappropriate to use an aggregate proxy from another company to estimate GMO's cost of debt. He believes it is more appropriate to adjust the cost of the higher cost debt that has been assigned to GMO.

Mr. Cline also takes issue with my adjustment to the cost of GPE's equity units and the basis I used to estimate this adjustment. I understand that my proposed method for making an adjustment is based on an imperfect proxy; however, this does not change the fact that GPE's higher financial risk profile, due to its acquisition of the GMO properties and the assumption of Aquila, Inc. ("Aquila") legacy debt, caused the Company to pay a higher cost for the equity units. While it could be argued that GPE's risk is higher due to its construction of Iatan 2, Staff and other parties specifically considered the need to mitigate this risk when entering into a Stipulation & Agreement ("S&A") with Kansas City Power & Light Company ("KCPL") in Case No. EO-2005-0329. The terms of this S&A allowed KCPL to increase rates above those that would have been generated under traditional utility ratemaking through a mechanism generally referred to as a "Regulatory Amortization." Specifically, the Regulatory Amortization mechanism allowed KCPL to request an additional

increase in rates in order to increase its cash flow to meet specific financial ratio benchmarks consistent with that of a 'BBB+' credit rating. As a result of this stipulation, any higher capital costs incurred by GPE due to its increased financial risk because of its assumption of Aquila legacy debt should not be allowed in GMO's ROR. Even if Aquila had maintained ownership of the GMO properties, Staff would have made adjustments to the higher capital costs caused by the higher financial risk associated with Aquila's higher cost debt. The change in ownership should not impact the ratemaking approach to ensure that ratepayers are not harmed by these lingering risks.

STAFF RESPONSE TO DR. HADAWAY'S REBUTTAL TESTIMONY

Q. Dr. Hadaway maintains that your estimated cost of equity is not supported by your analysis. What is Dr. Hadaway's basis for this claim?

A. Apparently Dr. Hadaway believes my estimated cost of common equity range should precisely correspond with the exact cost of equity indications from the various methodologies. For example, Dr. Hadaway indicates that because the low end of my cost of equity range of 8.5 percent does not show up specifically in my various analyses, it is not supported.

Q. How did you arrive at your estimated cost of common equity range of 8.5 percent to 9.5 percent?

A. Staff performed several different analyses in determining a reliable cost of equity estimate. As explained in Staff's Report, Staff gave primary weight to its multi-stage DCF method[1]. Using the mid-point of Staff's estimated perpetual growth rate range of 3 to 4 percent resulted in a multi-stage DCF-estimated cost of common equity of

[1] P. 29, ll. 16-17 of Staff's Report.

approximately 9.0 percent. Due to the inherent subjectivity involved in estimating the cost of equity, Staff recommended a cost of equity range of 8.5 to 9.5 percent. Staff continues to believe that this cost of equity range is an appropriate estimate of GMO's cost of common equity.

Q. Dr. Hadaway indicates that your "rule of thumb" equity risk premium cost of equity range is 9.14 percent to 9.71 percent. Did Dr. Hadaway correctly restate your testimony?

A. No. The "rule of thumb" cost of equity estimate is based on general experience in the U.S. markets that indicates that the cost of equity is generally 3-4 percent higher than the yield-to-maturity on a company's debt. As I indicated in the Staff's Report, it is logical to expect that risk premiums over corporate bond yields would be lower for regulated utility stocks considering they have bond-like investment characteristics. Therefore, I considered the 3 percent risk premium to be more relevant for purposes of the test. The use of this 3 percent risk premium results in a cost of equity indication of 8.14 percent for 'A'-rated utilities and 8.71 percent for 'BBB'-rated utilities.

Q. On page 12, lines 4 through 18, of his Rebuttal Testimony, Dr. Hadaway produces various results by applying the constant-growth DCF method to your proxy group. Does this analysis provide any useful insight to the cost of equity for your proxy group?

A. No. Dr. Hadaway peruses the growth rates produced in my schedules and selects growth rates based on equity analysts' 5-year EPS growth rates obtained from Value Line and Reuters. Dr. Hadaway then assumes that investors will simply use these 5-year projected EPS growth rates for purposes of estimating their expected growth in dividends into perpetuity. Dr. Hadaway does nothing to test the reasonableness of these

growth rates and does not provide any corroborating support that investors make this assumption in practice. To the contrary, the use of these growth rates violates the logic Dr. Hadaway used in his multi-stage DCF analysis, in which he maintains that the perpetual growth rate should be no higher than the expected growth in the broader economy. Comparing the equity analysts' projected 5-year EPS growth rates to a reasonable GDP growth rate projection of approximately 4.5 percent, renders these growth rates unsustainable and unreasonable to use for the very reason advocated by Dr. Hadaway.

Q. Do sources that publish projected GDP growth rates project growth over periods greater than 5 years?

A. Yes.

Q. Does Dr. Hadaway rely on these sources to estimate a perpetual growth rate in his multi-stage and constant-growth DCF analysis using GDP growth rates?

A. No.

Q. Is it logical for Dr. Hadaway to use projected growth rates over 5-years in one DCF analysis, but dismiss projected GDP growth rates available for periods greater than 5 years in his other DCF analyses?

A. No.

Q. Is Dr. Hadaway's DCF analysis consistent with GPE's own internal DCF analysis performed for the purpose of estimating a fair value of its electric utility assets?

A. No. GPE considers projected data available from the Congressional Budget Office ("CBO") and the *Blue Chip Economic Indicators* to be a fair representation of what market participants would rely upon for purposes of estimating a fair market value of GPE's utility assets. The fact that GPE believes market participants would rely on CBO data is in

direct contradiction to its own ROR witness' position in this case. If Dr. Hadaway had relied on this same source, his estimated cost of equity would have been in the low 9 percent range.

Q. You and Dr. Hadaway use a multi-stage DCF to estimate the cost of common equity in this case. What is Dr. Hadaway's primary concern about your multi-stage DCF analysis?

A. He disagrees with my estimated perpetual growth rate range.

Q. How did you estimate the perpetual growth rate you used in your multi-stage DCF analysis?

A. I analyzed electric utility industry data for the period 1947 through 1999 published in the 2003 *Mergent Public Utility & Transportation Manual.*

Q. Why didn't you use a more recent edition of this manual?

A. Because more recent editions no longer publish this data.

Q. Are you aware of any other sources that publish similar data?

A. No.

Q. How did you go about calculating historical growth rates from this data?

A. I calculated a simple average of rolling 10-year compound average growth rates for the 1947-1999 period. The 10-year compound average growth rates were based on an average of 3-years of annual data for both the beginning and ending values. This is the same methodology used by Value Line in reporting its historical 10-year compound average growth rates.

Q. In which schedule did your provide this information in the Staff's Report?

A. Schedule 14, contained in Appendix 2.

Q. Do you have any corrections to make to this schedule?

A. Yes. The years specified in this schedule indicate that the data is for the period 1948 through 2000. This is incorrect. The years specified should be 1947 through 1999. I have attached Corrected Schedule 14 to this Surrebuttal Testimony.

Q. Did this correction cause any changes to the calculated growth rates?

A. No. The data was reported correctly.

Q. What were the realized growth rates for earnings per share ("EPS"), dividends per share ("DPS") and book value per share ("BVPS") over this period?

A. The average 10-year historical compound growth rates were 3.74 percent for DPS, 3.18 percent for EPS and 3.63 percent BVPS.

Q. Is your perpetual growth rate range consistent with these averages?

A. Yes. I estimated a perpetual growth rate of 3 to 4 percent.

Q. Did you test the reasonableness of these growth rates with other investment and valuation analyses to ensure that this growth rate range was reasonable?

A. Yes. Goldman Sachs' for example uses a perpetual growth rate of 2.5 percent when performing a DCF analysis on electric utility stocks.

Q. Dr. Hadaway raises some concerns about the reliability of the data provided in the 2003 *Mergent Public Utility Manual.* Are you aware of any published criticisms of this data?

A. No.

Q. Do you consider this source to be authoritative?

A. Yes.

Q. Is this source generally relied upon by experts in your field?

A. Yes.

Q. What concerns did Dr. Hadaway have with your use and analysis of this data?

A. Dr. Hadaway indicates on page 13, lines 15 through 16 of his Rebuttal Testimony: "Mr. Murray's study and conclusions can be evaluated from two perspectives: one, common sense and two, statistical accuracy."

Q. What statistical tests did Dr. Hadaway perform on this data to arrive at his conclusion that it was statistically inaccurate?

A. Apparently none. Staff issued Data Request No. 0573 in the KCPL rate case in an attempt to understand the specific statistical tests performed by Dr. Hadaway. In response to this data request Dr. Hadaway indicated that he did not rely on statistical tests in evaluating Staff's analysis.

Q. If Dr. Hadaway did not perform any statistical analysis on the data, what does he mean by "statistical accuracy"?

A. Apparently his issue is with the data published in the 2003 Mergent *Public Utility and Transportation Manual* and not with the analysis Staff performed on this data. Apparently he believes that this data is not reliable due to his testing of one 5-year compound growth rate (1995-2000) out of the 53 years of data. Staff does not consider this to be a thorough test of the veracity of the data and Staff has no reason to question its use at this time.

Q. Is this the same calculation methodology used by Mergent?

A. No. The data compiled by Mergent is based on a weighted per share average, not a simple average.

Q. Did Dr. Hadaway do anything else in his analysis that would cause his results to be different than that provided by Mergent?

A. Yes. He excluded several companies from his simple average calculation, which affects the results.

Q. Did you contact Mergent to attempt to acquire more detail about their data reporting and calculation process?

A. Yes.

Q. Did Mergent's answers help you with your effort to provide additional detail on their data reporting and calculation process?

A. No. Mergent indicated to Staff that they collect the reported information from the companies' annual reports, which Staff assumed was probably the case before contacting Mergent.

Q. Did Staff perform its own analysis using Value Line data for the same companies used by Mergent?

A. Yes. Because Staff had readily available information for these companies for the period 1982 through 1999, Staff evaluated this data to attempt to replicate the results Staff determined when relying directly on the Mergent data (*See* Schedule 1).

Q. What did Staff discover in its analysis?

A. The rolling 10-year compound growth rates for this period were not as low as those Staff calculated from the Mergent data. The charts below show a comparison of the Mergent EPS and DPS growth rates to those Staff determined using the Value Line data:

Mergent		Value Line	
DPS		***DPS***	
Years	**10 yr compound growth rate avgs**	**Years**	**10 yr compound growth rate avgs**
1982-84 to 1992-94	**1.37%**	1982-84 to 1992-94	**2.11%**
1983-85 to 1993-95	**0.87%**	1983-85 to 1993-95	**1.84%**
1984-86 to 1994-96	**0.49%**	1984-86 to 1994-96	**1.51%**
1985-87 to 1995-97	**0.19%**	1985-87 to 1995-97	**1.25%**
1986-88 to 1996-98	**-0.35%**	1986-88 to 1996-98	**0.82%**
1987-89 to 1997-99	**-0.70%**	1987-89 to 1997-99	**0.52%**
Average	**0.31%**		**1.34%**

Mergent		Value Line	
EPS		***EPS***	
Years	**10 yr compound growth rate avgs**	**Years**	**10 yr compound growth rate avgs**
1982-84 to 1992-94	**-1.81%**	1982-84 to 1992-94	**1.28%**
1983-85 to 1993-95	**-1.71%**	1983-85 to 1993-95	**0.82%**
1984-86 to 1994-96	**-1.51%**	1984-86 to 1994-96	**0.39%**
1985-87 to 1995-97	**-1.51%**	1985-87 to 1995-97	**0.40%**
1986-88 to 1996-98	**-2.94%**	1986-88 to 1996-98	**0.17%**
1987-89 to 1997-99	**-2.50%**	1987-89 to 1997-99	**0.42%**
Average	**-2.00%**		**0.58%**

Q. What may have caused the differences in the results you calculated based on the Value Line data compared to the Mergent data?

A. The differences could be due to a number of reasons, including but not limited to the following list:

1. The weighted-average share calculation methodology;
2. Normalization of data;
3. Data revisions; and
4. Mergers and/or acquisitions.

Q. Has your further analysis of this data caused you to change your estimated range of perpetual growth rates?

A. No. Staff plans to continue its investigation into the discrepancy between the growth rates Staff calculated using the Mergent data compared to the Value Line data, but Staff believes the general declining nature of the growth in electric utility per share data is consistent with Staff's understanding of the long-term outlook for the electric utility industry.

Q. Is the general decline in electric utility per share data over the last 50 years of the past century consistent with the general declining nature of electricity demand in the United States as reported by the Energy Information Administration ("EIA")?

A. Yes.

Q. Are you aware of any research that corroborates the low experienced growth of electric utilities' EPS over the latter part of this period?

A. Yes. In August 2005, Hugh Wynne, Senior Analyst of Bernstein Research, published an article entitled "U.S. Utilities: The Drivers of Returns, 1984-2004." (*See* Schedule 2). This article provides support for perpetual growth rates more consistent with those estimated by Staff and consistent with the declining nature of growth rates calculated from the data published in the 2003 *Mergent Public Utility and Transportation Manual.*

Q. What are some of the key points in this research report that the Commission should consider when evaluating testimony in this case?

A. First, Mr. Wynne's 2005 research report indicates that over the period 1984 through 2004 the sample of 13 continuously regulated electric utilities had an average

EPS growth rate of only 1.1 percent. This compares to an aggregate earnings growth rate of 3.8 percent before dilution from the issuance of additional common equity.

This report found that the biggest driver of earnings growth for regulated electric utilities was total invested capital, which in turn was driven by demand growth.[2] The report also examined the relationships between allowed ROEs and 10-year Treasury yields, finding that for every 100 basis point change in the 10-year Treasury yield, there was an approximate 56 basis point change in the allowed ROE. The report attributes the lag of changes in the allowed ROEs compared to the changes in the U.S. Treasury yields to the following:

> The greater stability of allowed ROEs relative to underlying changes in U.S. Treasury yields likely reflects the efforts of regulators to limit the volatility in electricity rates while offering stable long-run returns on utility capital. Thus, regulators may look beyond the current peaks and troughs in Treasury yields when making their rate decisions, attenuating the impact of market movements in Treasury yields on allowed ROEs. P. 17-18.

The final section of Mr. Wynne's report discusses the implications of slow EPS growth for the valuation of regulated utilities. The report implies that electric utility equity valuation levels at the time of publication implied costs of equity were in the range of 6.1 to 7.4 percent.

Q. Does any of the electric utility EPS and/or DPS data you analyzed support Dr. Hadaway's assumption that electric utilities' EPS and/or DPS should be expected to grow at the same rate of the economy?

[2] In both cases the R-squared for the two variables exceeded 90 percent. This means that the independent variable (invested capital in the first instance and demand growth in the second instance) explained the dependent variable (earnings growth in the first instance and invested capital in the second instance) over 90 percent of the time.

A. No. Assuming one accepts that electric utilities' EPS has only grown at an annual compound rate of approximately 1.1 percent per year for the period 1984 through 2004, this is approximately 20 percent of GDP growth over the same period.

Q. Even though you have not been able to replicate the same data provided by Mergent, is there a noticeable trend in realized growth rates for the electric utility industry?

A. Yes. Based on this and other data, there is an undeniable trend of declining growth in the electric utility industry. While Dr. Hadaway seems to believe that it defies common sense for a company to not experience growth at least similar to that of inflation, this is entirely logical and practical if an industry has reached a mature stage and is starting to enter a period of decline.

Q. Is the declining trend in growth rates for the electric utility per share data consistent with the declining trend in electricity consumption?

A. Yes. This is consistent with the decline in electricity usage reported by EIA and was the basic premise for Staff's projected growth rates in GMO's last electric rate case.

Q. Although you believe you have data and examples that support the use of perpetual growth rates below expected economic growth, what would Dr. Hadaway's updated multi-stage DCF estimated cost of equity have been if he had used the CBO projected economic data as GPE did for its own internal DCF analysis performed for purposes of its 2010 Annual Goodwill Impairment test?

A. If Dr. Hadaway had used a more reasonable projected GDP growth rate from the CBO of 4.5 percent for the period 2015 through 2020 (*See* Schedule 3), his multi-stage cost of equity indication would have been approximately 9.1 to 9.2 percent (*See* Schedule 4).

Q. This is lower than the indicated cost of equity of approximately 9.5 percent you provided in Rebuttal Testimony when replicating Dr. Hadaway's multi-stage approach using the same 4.5 percent growth rate. Does it make sense that the cost of equity for electric utility companies could have dropped by up to 40 basis points between the time Dr. Hadaway filed his Direct Testimony in June 2010 and his updated cost of equity in his Rebuttal Testimony filed on December 8, 2010?

A. Yes. Utility bond yields had decreased by approximately 80 basis points from the first quarter of 2010 to the end of the third quarter of 2010. However, utility bond yields had increased by approximately 35 basis points in November 2010.

STAFF RESPONSE TO MR. BLANC'S REBUTTAL TESTIMONY

Q. GMO witness Curtis D. Blanc indicates that the Staff's recommended ROE should be somewhere in between the Company's recommendation and the customers' recommendation. Did you know what the Company's recommended ROE was at the time you filed your recommendation in this case?

A. Yes. At the time GMO filed its application on June 4, 2010 in this case, they also filed rate of return testimony of Dr. Hadaway. I was able to review that testimony and become aware of the Company's recommendations in this case.

Q. Was your estimated ROE below that of the Company's recommendation?

A. Yes.

Q. Did you know what the Office of the Public Counsel's or any other intervenors' recommended ROE might be at the time you filed your recommendation in this case?

A. No. In fact, I did not even know which interveners would sponsor ROR testimony.

Q. Would it have impacted your recommendation had you known?

A. No.

Q. What does Mr. Blanc's testimony imply about how you should go about determining your recommended ROE?

A. Apparently I should ask the intervener ROR witnesses what their cost of equity estimate will be and then I should manipulate my analysis, in a results driven manner, so I can somehow end up in the middle of their recommendations and that of the Company.

Q. Do you consider this ethical?

A. No.

Q. Is the apparent phenomenon of Staff estimating an ROE lower than that of OPC and the intervener witnesses necessarily driven by Staff's ROE estimates?

A. No. Missouri's neighboring states, Kansas and Illinois, tend to have lower recommended ROE's from their consumer advocates. In the most recent KCPL rate case in Kansas, Docket No. 10-KCPE-415-RTS, the Citizen Utility Rate Board ("CURB") ROR witness estimated a cost of equity of 9.39 percent. Considering her testimony was filed in June 2010 and utility bond yields have since declined rather sharply, it seems reasonable that her estimated cost of equity would have been lower if she had filed testimony later in the year.

Staff also has knowledge of recommended ROEs filed for Ameren's Illinois utilities in Docket Nos. 09-0306, 09-0307, 09-0308, 09-0309, 09-0310 and 09-0311, which are all now under the AmerenIL subsidiary. In those cases, the Citizen Utility Board ("CUB") in

Illinois recommended an ROE of 8.76 percent for AmerenIL's electric utility operations and an ROE of 7.97 percent for AmerenIL's gas utility operations.

In any event, although Staff understands that some may perceive its estimated cost of equity as being too low when compared to other ROR witnesses, Staff believes that if one were to more appropriately compare Staff's cost of equity estimates to the cost of equity estimates used in mainstream investment analysis, one would come to a much different conclusion.

For example, Staff is not aware of any investment analyst that uses his/her own projected 5-year EPS growth rate to discount dividends to determine a fair price to pay for utility stocks. However, this is what many ROR witnesses assume when estimating the cost of equity. Because the objective of a ROR witness is to attempt to emulate the methodologies and thought processes of those making investment decisions and/or recommendations, it seems rather imprudent to ignore the fact that this assumption is not supported by actual investment practice.

STAFF RESPONSE TO MR. CLINE'S REBUTTAL TESTIMONY

Q. Mr. Cline claims that the equity unit balance you included in your capital structure should not have been reduced for issuance expenses. How do you respond?

A. I agree. Considering the fact that the debt and preferred stock balances in the capital structure were not reduced for issuance expenses, the same treatment should be afforded to the equity units.

Q. Have you attached a corrected capital structure and resulting ROR schedule to this testimony?

A. Yes. Please see Corrected Schedule 6 and Corrected Schedule 16 attached to this Surrebuttal Testimony.

Q. Mr. Cline claims that the cost of equity units should not be adjusted downward because the costs are more directly comparable to GPE's cost of equity and not its cost of debt. How do you respond?

A. The equity units should be adjusted downward regardless of how the cost is determined. GPE's strained credit metrics affect its cost of equity, cost of debt and other alternative forms of capital. The higher GPE's interest coverage ratios, the more cash GPE has available for its shareholders. The lower GPE's leverage ratios, the less volatile the cash flows to GPE's shareholders from financial risk. Debt capital and equity capital do not exist in vacuums. This is especially true for utility stocks since they are close alternative to fixed-income investments.

Q. Do you have proof that GPE's financial risk is higher due to its acquisition of the GMO properties?

A. Yes. Staff discovered this information during its investigation in KCPL's application to sell wind turbines, such case being designated as Case No. EO-2010-0353. Schedules 5-1, 5-2, and 5-3 show KCPL's and GMO's projected credit metrics for 2009 through 2014. Clearly GMO's credit metrics are much more strained than those of KCPL's. As a result when both GMO and KCPL are consolidated at the GPE level, GMO's more strained credit metrics cause an obvious drag on GPE's credit metrics.

Considering the strained GPE ratios were the primary focus of GPE's management when it decided to issue the equity units in May 2009[3] and the margin for a further decline in

[3] April 23, 2009 Memorandum from Michael Cline to Members of the Great Plains Energy Board of Directors.

the funds from operations ("FFO") to debt ratios was reduced due to GPE's acquisition of GMO, it is inappropriate to request GMO ratepayers to pay the full cost of the equity units.

Q. Assuming the Commission accepts the premise that GMO ratepayers should not have to pay the full cost of the equity units, is it acceptable to use debt yield differentials to estimate the appropriate adjustment to make to this capital component?

A. Yes. This is typically the same approach that Staff uses to adjust the cost of equity of a subject company if its credit rating is lower than that of the proxy group average. Although GPE's credit rating is below that of the proxy group in this case, Staff did not recommend an increase to the cost of equity because as Staff has already discussed, GPE's credit metrics have been strained due to its assumption of Aquila legacy debt when it acquired the GMO properties.

Q. Why does Staff consider this approach to be reasonable for adjusting equity and/or equity unit costs?

A. Because regulated utility company stocks behave much like bonds. For instance, if interest rates increase, then bond prices and utility stock prices will normally decrease. This is due to the income nature of both bonds and utility stocks. Consequently, it seems logical and quantifiable to use yield spreads between bonds to estimate an appropriate adjustment to the cost of equity and in this case, equity units.

Q. Does Mr. Cline agree with your recommended cost of debt for GMO?

A. No.

Q. What is his main concern?

A. He believes it is inappropriate to use The Empire District Electric Company, Inc.'s ("Empire") cost of debt as proxy for GMO's cost of debt.

Q. What method does he propose for purposes of estimating a proxy cost of debt for GMO?

A. He believes it is more appropriate to only use a proxy for the debt that had been directly impacted by Aquila's failed non-regulated investments. He believes this proxy debt should be combined with the debt that was not impacted by Aquila's failed non-regulated investments to determine a cost of debt to use for GMO's ROR.

Q. Before you discuss your concerns about this approach, did you indicate in your Rebuttal Testimony that you considered the current level of debt cost recommended by GMO in this case to be a reasonable alternative to your recommended debt cost?

A. Yes. Because GMO's debt imputation process currently results in a cost of debt proxy that is less than that of KCPL's actual cost of debt, Staff considered the Company's recommended cost of debt for GMO to be acceptable.

Q. That being said, why are you unwilling to accept the process used by GMO to estimate its cost of debt?

A. It is subjective and open to manipulation.

Q. But doesn't the cost of debt process used by GMO include debt that was actually issued by the companies that previously owned the GMO properties?

A. Yes, but only the debt issued prior to 2001 can be considered unaffected by Aquila's failed non-regulated investments. The portion of this debt to the total debt outstanding at GMO is becoming much smaller as time elapses.

Q. What percentage of the debt assigned to GMO was based on the hypothetical assumption that GMO was owned by an investment grade parent company?

A. According to GMO's response to Staff Data Request No. 0159, approximately 52 percent of the debt assigned to GMO as of June 30, 2010 was adjusted to assume that it was a division of an investment grade parent company.

Q. Does this mean that most of the debt used to determine GMO's embedded costs of debt is not related to an actual arms-length transaction?

A. Yes.

Q. Did Mr. Cline express reservations about the use of Empire's cost of debt because the debt issued by Empire was not based on the specific characteristics of GMO's electric utility operations?

A. Yes. Beginning on page 7, line 4 of his Rebuttal Testimony, Mr. Cline cites the following reasons as to why the Commission should not rely on Staff's decision to use Empire's cost of debt as a proxy cost of debt:

> ...the average maturity, the timing and amount of issuance, the terms and conditions of the issuances, the credit profile of the entity at the time of issuance, availability of alternate sources of funding, the entity's market capitalization, and general financial market conditions at the time of issuance.

Q. Doesn't this mean that all of the circumstances cited by Mr. Cline are just as relevant to the debt assigned to GMO since they were divisions of a non-investment grade company?

A. Yes. None of the adjusted debt assigned to GMO was based on the reality of an investment grade regulated electric utility company. Consequently, either way the Commission is stuck with deciding on the most appropriate hypothetical cost of debt to use as proxy for GMO. At least in the case of using Empire's cost of debt as a proxy, the Commission has the assurance that these costs were based on arms-length negotiations

between the third-party debt investors and a utility company whose risk profile is similar to that of GMO.

UPDATE ON ADDITIONAL DISCOVERY OF INVESTMENT ANALYSIS

Q. In your Rebuttal Testimony you indicated that you would update the Commission on any further discovery you performed regarding the perpetual growth rates used by financial consultants hired by GPE and Aquila to provide Fairness Opinions. What did you discover?

A. I was able to review the Board Presentations that each consultant made to their respective clients. However, these presentations did not provide the details that underlie the analyses performed. The presentations did contain "implied perpetual growth rates" based on terminal values determined by applying certain multiples to income statement data. Staff did not discover an "implied perpetual growth rate" that exceeded Staff's perpetual growth rate range of 3 to 4 percent.

Q. Have you discovered any additional information that supports the accuracy and reliability of Staff's estimated cost of equity in this case?

A. Yes. GPE hired Goldman Sachs as a Joint Book-Running Manger in conjunction with its May 2009 issuance of equity units and common equity. On April 6, 2009, Goldman Sachs made a Presentation to GPE's Board of Directors. The materials from that presentation are attached to this testimony as Schedule 6. Page 11 of the presentation compared the cost of equity capital in early 2009 to that of the cost of equity in May 2007. According to Goldman Sachs, the range of cost of equity estimates in early 2009 was from ** _____ **. Considering the fact that capital markets have stabilized considerably since Goldman Sachs

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provided these estimates, it is fairly reasonable to conclude that Goldman Sachs would estimate a ** ____ ** cost of equity for the electric utility industry in the current environment.

Q. Goldman Sachs' median and low cost of equity is premised on a price to earnings ("P/E") ratio of ** _____ ** respectively. Based on stock prices for your comparable group for December 2010, what is the current P/E ratio of your comparable group?

A. 12.57x (*See* Schedule 7).

Q. What does this imply from the Goldman Sachs' estimates?

A. That the Goldman Sachs' current implied cost of equity estimate for the electric utility industry would be closer to ** _____ **.

Q. Did Goldman Sachs provide cost of equity estimates for the electric utility industry during more stable capital markets?

A. Yes. For comparison purposes, Goldman Sachs provided cost of equity estimates for the electric utility industry in May 2007. Goldman Sachs' cost of equity estimates ranged from ** _____ _____ **.

Q. Do you have any idea why Goldman Sachs believes the cost of equity was so much ** _____ **?

A. As Goldman Sachs states ** _____ _____ _____

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_____

_____

_____

_____

_____ **

Q. How is it possible that ROR witnesses' estimated costs of equity in rate cases could ** _____ **?

A. Growth rates. As Staff has discussed at length, many ROR witnesses simply assume that electric utility companies' dividends can grow at the same rate as 5-year EPS growth or the same rate as economic growth. Staff has analyzed historical electric utility information that disproves this occurs. Additionally, Staff continues to discover information indicating that investment and valuation analysts do not make this assumption in practice.

SUMMARY AND CONCLUSIONS

Q. Please summarize the conclusions of your Surrebuttal Testimony.

A. My conclusions are:

1. A perpetual growth rate range of 3 to 4 percent is reasonable even after Staff performed further analysis in response to Dr. Hadaway's criticisms;

2. Electric utility growth rates have been lower than GDP growth rates and there is no fundamental change in the industry that would cause investors to believe otherwise;

3. The cost of equity has declined since Dr. Hadaway filed his Direct Testimony in June 2010. This provides support for an allowed ROE lower than previous authorizations;

4. Mr. Blanc's testimony implies that Staff's recommendation should be end-result oriented, which would be unethical in Staff's view;

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5. Mr. Cline is correct regarding the balance of equity units that should be included in the capital structure;

6. Mr. Cline's suggestion that my adjustment to the cost of equity units is not based on a sound approach is secondary to the main concern, which is that GMO's ratepayers should not be charged the full cost of these equity units because GPE's acquisition of GMO included the assumption of Aquila legacy debt, which has caused strain on GPE's credit metrics; and

7. GMO's cost of debt should be based on an aggregate cost of debt proxy because such a cost of debt is a function of arms-length transactions.

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 the Application of KCP&L Greater Missouri Operations Company for Approval to Make Certain Changes in its Charges for Electric Service	))))	File No. ER-2010-0356

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 25 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

Subscribed and sworn to before me this 12th day of January, 2011.

Notary Public

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

KCPL Greater Missouri Operations
File No. ER-2010-0356

Mergent *DPS*		Value Line *DPS*		GDP	
Years	10 yr compound growth rate avgs	Years	10 yr compound growth rate avgs	Years	10 yr compound growth rate avgs
1982-84 to 1992-94	1.37%	1982-84 to 1992-94	2.11%	1982-84 to 1992-94	6.49%
1983-85 to 1993-95	0.87%	1983-85 to 1993-95	1.84%	1983-85 to 1993-95	6.12%
1984-86 to 1994-96	0.49%	1984-86 to 1994-96	1.51%	1984-86 to 1994-96	5.89%
1985-87 to 1995-97	0.19%	1985-87 to 1995-97	1.25%	1985-87 to 1995-97	5.81%
1986-88 to 1996-98	-0.35%	1986-88 to 1996-98	0.82%	1986-88 to 1996-98	5.73%
1987-89 to 1997-99	-0.70%	1987-89 to 1997-99	0.52%	1987-89 to 1997-99	5.63%
Average	0.31%		1.34%		5.94%

Mergent *EPS*		Value Line *EPS*		GDP	
Years	10 yr compound growth rate avgs	Years	10 yr compound growth rate avgs	Years	10 yr compound growth rate avgs
1982-84 to 1992-94	-1.81%	1982-84 to 1992-94	1.28%	1982-84 to 1992-94	6.49%
1983-85 to 1993-95	-1.71%	1983-85 to 1993-95	0.82%	1983-85 to 1993-95	6.12%
1984-86 to 1994-96	-1.51%	1984-86 to 1994-96	0.39%	1984-86 to 1994-96	5.89%
1985-87 to 1995-97	-1.51%	1985-87 to 1995-97	0.40%	1985-87 to 1995-97	5.81%
1986-88 to 1996-98	-2.94%	1986-88 to 1996-98	0.17%	1986-88 to 1996-98	5.73%
1987-89 to 1997-99	-2.50%	1987-89 to 1997-99	0.42%	1987-89 to 1997-99	5.63%
Average	-2.00%		0.58%		5.94%

Schedule 1

U.S. Utilities: The Drivers of Returns, 1984-2004

Hugh Wynne
+1-212-823-2692
wynnehn@bernstein.com

AUGUST 2005

Overview

Over the last 20 years, regulated U.S. electric utilities have achieved remarkably low average EPS growth: 1.1% annually for our sample of 13 continuously regulated electric utilities. The growth of the group's aggregate net income was higher (3.8% per annum), tracking the growth in regulated assets, but was diluted by repeated share issuances. At 1% annual EPS growth, the industry's average payout ratio of 70% and current average P/E multiple of 16x imply prospective returns on regulated utility stocks of 5.4% per annum. Investors seeking higher returns are urged to focus on (i) stocks combining low P/E multiples (14-15x) and high sustainable dividend payout ratios (70-75%), or (ii) well-capitalized utilities with minimal risk of equity dilution and rapid growth in rate base, such as Edison International (rated outperform, target price $44).

With 16 states having deregulated the generation of electricity, the category "utility" no longer defines a class of stocks with uniform commercial or investment characteristics. Rather, while regulated utilities continue to display the sector's traditionally low volatility of returns, since 2002 deregulated utilities have demonstrated a *higher* volatility of returns than the broader market. This marked difference in the betas of regulated and deregulated utility stocks persuades us that including both categories of stocks in a single asset class is no longer appropriate. This analysis, therefore, will focus solely on regulated utilities.

Over the past 20 years, our sample of 13 regulated utilities experienced a compound annual growth rate (CAGR) in aggregate earnings of 3.8%. In exploring the drivers of earnings growth, we found that the aggregate earnings of our sample group could be predicted as a linear function of total invested capital with an R-squared of 90%. In turn, the best predictor of invested capital appears to be demand growth; a correlation analysis of MWh sold with total invested capital also produces an R-squared of 90%.

Over the same period, however, the compound annual growth in earnings per share for our sample group was only 1.1%. This marked dilution of earnings on a per-share basis reflects the deleveraging of utilities' balance sheets over the last 20 years. In 1984, our 13 sample utilities had an aggregate equity-to-total capital ratio of 32%; by 2004, equity had increased to 38% of total capital. Thus, while strong growth in invested capital drove a commensurate increase in aggregate earnings over the last 20 years, the benefit to EPS was largely diluted away through repeated issues of stock.

If demand growth, forecast at 2% per annum, continues to drive the expansion of invested capital and thus growth in regulated earnings, regulated utilities, in the absence of further equity dilution, can be expected to grow EPS at 2% annually. Given the industry average dividend payout ratio of 70% and P/E multiple of 16x, expected returns are thus in the area of 6.4%. Investors seeking higher returns must find stocks valued significantly below or growing significantly above the industry average. Thus, utilities projected to grow 2% annually while sustaining a dividend payout ratio of 70% will realize returns in excess of 7% only if their earnings multiples are 14x or below. Alternatively, utilities valued at 16 times earnings must realize long-term earnings growth of 3% or more, while maintaining dividend payout ratios of 65% or higher, to offer equity investors returns in excess of 7%.

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Defining Regulated Utilities

With 16 states having deregulated the generation of electricity to various degrees, the category "utility" no longer defines an asset class with uniform investment characteristics. Our research indicates that while regulated utilities continue to display an investment characteristic long associated with the sector — i.e., much lower volatility than the equity market generally — deregulated utilities since 2002 have demonstrated a *higher* volatility of returns than the broader market. It is this marked difference in the betas of regulated and deregulated utility stocks that persuades us that including both categories of stocks in a single asset class is no longer appropriate. Referring to regulated and deregulated power companies as "utilities," with the term's historical connotation of steady income and price stability, is misleading, in our view. In the first chapter of this *Whitebook*, therefore, we will distinguish between the two categories of stocks, and in the remainder of our discussion will focus on regulated utilities only.

A Modified Capital Asset Pricing Model

We have applied regression analysis of market data from the last three and a half years to determine the correlation of monthly utility returns in excess of market returns with two independent variables: the equity market risk premium (monthly equity market returns in excess of Treasury bond yields) and the credit risk premium (the excess of corporate bond yields over Treasury bond yields). This allowed us to derive a modified capital asset pricing model (CAPM) that predicts the excess return of utility stocks as a function of the market premium and credit spread:

$$R - Rf = \beta(Rm - Rf) + \gamma DEF$$

Where:
R = total returns for a market-cap-weighted portfolio of utilities;
Rf = the risk-free rate as measured by the yield on the one-month Treasury bill;
Rm = total market return; and
DEF = the credit or default risk factor, as measured by the difference between the yield on the Moody's Corporate Bond Index and the 10-year Treasury bond.

Since monthly utility returns and market returns both exhibit a great deal of variability, we use trailing-six-month averages for all of the variables.

Diverging Betas for Regulated and Unregulated Utilities

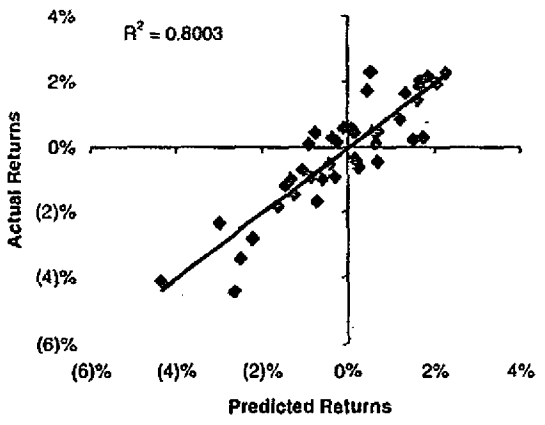
In the second stage of our analysis, we divided the universe of utility stocks into two groups, regulated and deregulated, and again used regression analysis to derive modified CAPM equations specific to each of the two groups. We defined regulated utilities as those firms with more than 70% of their operations subject to rate regulation on a cost-of-service basis and deregulated utilities as those firms with less than 70% of their operations subject to regulation (or, put another way, with more than 30% of their operations conducted in unregulated markets). In determining the specific category for each utility, we followed the classification system developed by the Cambridge Energy Research Associates (CERA). This research institute divides the utility sector into the following five groups:

Utility – at least 90% of the business is regulated;
Utility Plus – 70-90% of the business is regulated;
Hybrid – utility and non-utility businesses each account for at least 30% of the business;
Competitive – at least 70% of the business is deregulated; and
Diversified – less than 50% of the business is in energy industries.

For companies not included in CERA's list, we determined the utility's classification based on the same criteria. According to the definitions above, 31% of publicly traded U.S. electric utilities are predominantly regulated, 30% are "utility plus" companies with 10-30% of their business being competitive, 25% are hybrids with 30% or more of their business competitive, 11% are predominantly competitive, and 3% are diversified with less than 50% of the business in energy industries. In testing our modified CAPM, we defined regulated utilities as those in the "utility" and "utility plus" categories. Deregulated utilities consist of all those designated as hybrid, competitive or diversified.

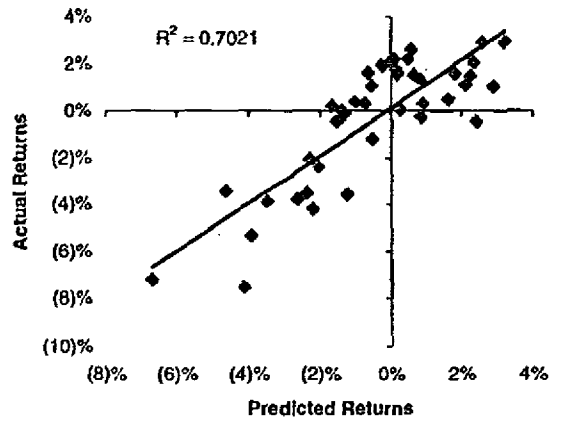
Our modified CAPM predicts excess returns by the regulated utilities since 2002 with considerable accuracy, explaining 80% of the variance in excess returns (see Exhibit 1). The model is slightly less effective for deregulated utilities but still explains 69% of the variance in returns (see Exhibit 2).

Exhibit 1 Regulated Utilities: Actual vs. Predicted Returns, 2002-05



Source: FactSet, Bloomberg L.P. and Bernstein analysis.

Exhibit 2 Deregulated Utilities: Actual vs. Predicted Returns, 2002-05



Source: FactSet, Bloomberg L.P. and Bernstein analysis.

Importantly, we found that the coefficients for the two variables in our modified CAPM differ significantly between regulated and deregulated utilities (see Exhibit 3). The coefficient of the market risk premium, which is essentially a beta adjusted for credit risk, is 0.72 for regulated utilities, while for deregulated utilities it was 1.08. Regulated utilities are thus less sensitive to the market premium than equities generally, while deregulated utilities are slightly more sensitive than the broader market. Similarly, for regulated utilities, the coefficient of the credit risk premium is 3.35, while for deregulated utilities it is 4.15. Regulated utilities are thus less sensitive to the market's pricing of credit risk than are deregulated utilities.

Exhibit 3 Modified CAPM Coefficients per Regulated vs. Deregulated Utilities

	Regulated	Deregulated
Market Premium	0.72	1.08
t-stat	12.61	9.49
Credit Risk	3.35	4.15
t-stat	4.63	2.87

Source: FactSet, Bloomberg L.P. and Bernstein analysis.

Conclusion

These results show that while regulated utilities continue to display an investment characteristic long associated with the sector — i.e., much lower volatility than the equity market generally — deregulated utilities since 2002 have demonstrated a higher volatility of returns than the broader market. The marked difference in betas between regulated and deregulated utility stocks suggests that their inclusion in the same asset class is no longer appropriate. The remainder of our analysis, therefore, focuses exclusively on the category of regulated utilities.

Utility Earnings Within a Regulated Framework

Historical Review of Regulated Utility Performance

Historically, electric utilities in the United States have been regulated monopolies, restricted to the supply of one or at most two products (electricity and gas) within a defined geographic area or service territory. This regulatory paradigm precluded growth through market share gains, new product introduction or geographic expansion. Moreover, as well-run utilities generally enjoyed a return on capital equal to the maximum allowed by their regulators, improvements in the operating performance translated into reductions in rates rather than increased returns to investors. Growth could only come, therefore, through increases in invested capital. These in turn were constrained by the growth in power demand in the utility's service territory.

A regulated utility's accumulated stock of invested capital, or rate base, is the primary determinant of its earnings. Under rate regulation based on cost of service, a utility's allowed revenues are a function of (i) the operating costs incurred by a utility in providing electric service (i.e., fuel, purchased power, operation and maintenance expense, and general and administrative expense); (ii) the capital costs incurred by the utility through its investment in regulated rate base (i.e., depreciation expense and interest on debt); and (iii) the utility's allowed return on equity. Because rates are set at a level designed to generate a revenue stream sufficient to recover both operating and capital costs, the earnings of regulated utilities have historically been highly stable, and can be expressed by the equation:

Net Income = (Allowed ROE x Equity)/(Total Capital x Rate Base)

As we will see below, regulated returns on invested capital have been relatively stable over the last 20 years, with the result that utilities' regulated earnings have tended to grow in tandem with rate base. Growth in rate base, in turn, has tracked growth in power demand, which over the last 20 years has averaged 2.6% per annum. Over this period, U.S. utilities' regulated returns on equity have tended to fall in the range of 10.75% to 13.00%. The combination of such high rates of return on equity with low rates of demand growth — and thus limited opportunities for investment in rate base — has been reflected in high dividend payout ratios (approximately 75%) and correspondingly low rates of reinvestment. This, in turn, has defined the financial profile of utility stocks as high-yielding, low-growth investments with very stable annual returns.

More than any other category of stock, therefore, regulated utilities have lent themselves to valuation by the application of the Gordon dividend growth model:

Price = (EPS x dividend payout ratio)/(discount rate – EPS growth rate)

Dividing through by EPS, we get:

P/E = dividend payout ratio/(discount rate – EPS growth rate)

We will analyze the historical financial performance of a sample of regulated electric utilities to determine appropriate values for the key variables in the P/E equation: payout ratio, discount rate and rate of dividend growth. These values will then be compared with those implicit in the current valuation of regulated utilities to estimate the likely future returns on shareholders' investments.

Sample Selection

Exhibit 4 presents a list of U.S. electric utilities whose power generation assets remain subject to rate regulation on a cost-of-service basis. Exhibit 5 presents a subset of these utilities that we have used as a sample group for purposes of our historical statistical analysis. The smaller sample in Exhibit 5 excludes companies that experienced abnormal shocks to their earnings from 1984 to 2004. (For example, the failed deregulation effort in California caused tremendous earnings volatility for companies such as Edison International, Pacific Gas and Electric, and Sierra Pacific Resources.) To reflect the normal historical performance of fully regulated utilities in the absence of such shocks, we excluded companies that experienced a volatility in year-on-year EPS growth greater than ±60%, as measured by the standard deviation of EPS growth. The exclusion of these companies considerably smoothes the historical series of aggregate earnings and weighted average earnings per share, as can be seen in Exhibits 6 through 9.

Exhibit 4 Regulated U.S. Electric Utilities: Market Caps as of December 31, 2004 ($ million)

SO	$24,865
FPL	13,917
PCG	13,057
PGN	11,174
SCG	4,449
MDU	3,154
TE	3,066
PSD	2,467
OGE	2,386
HE	2,352
PNM	1,529
IDA	1,291
SRP	1,233
BKH	1,174
ALE	1,091
CNL	1,005
ILA	892
AVA	857
OTTR	740
MGEE	735
EDE	583
GMP	148
FPU	76
Total	$92,241

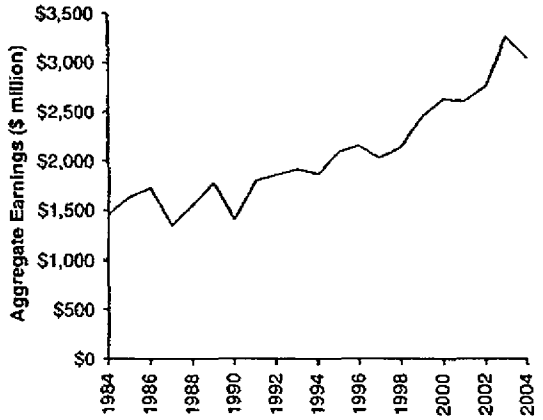
Source: FactSet.

Exhibit 5 Sample Group of Regulated Utilities: Market Caps as of December 31, 2004 ($ million)

SO	$24,865
PGN	11,174
MDU	3,154
PSD	2,467
OGE	2,386
HE	2,352
IDA	1,291
BKH	1,174
ALE	1,091
OTTR	740
MGEE	735
EDE	583
FPU	76
Total	$52,088

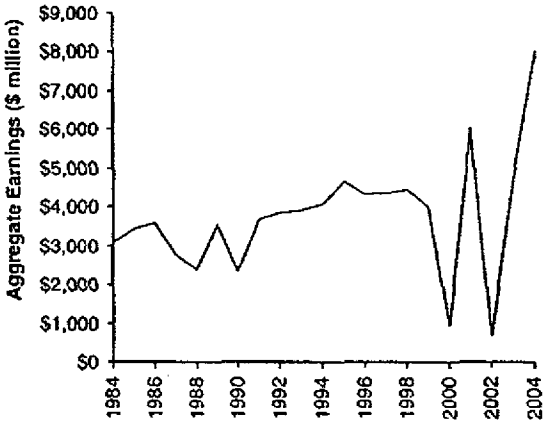
Source: FactSet.

Exhibit 6 Aggregate Earnings of Sample Group



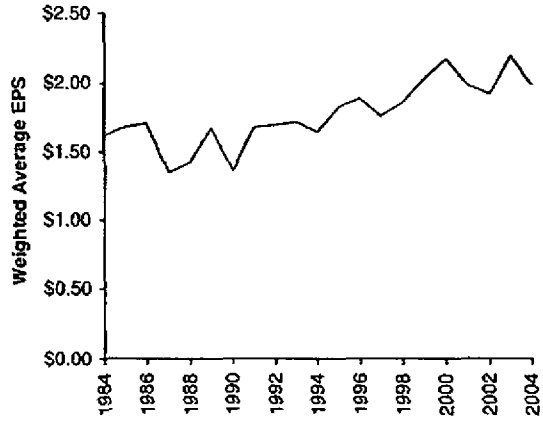
Source: FactSet and Bernstein analysis.

Exhibit 7 Aggregate Earnings of All Regulated Utilities



Source: FactSet and Bernstein analysis.

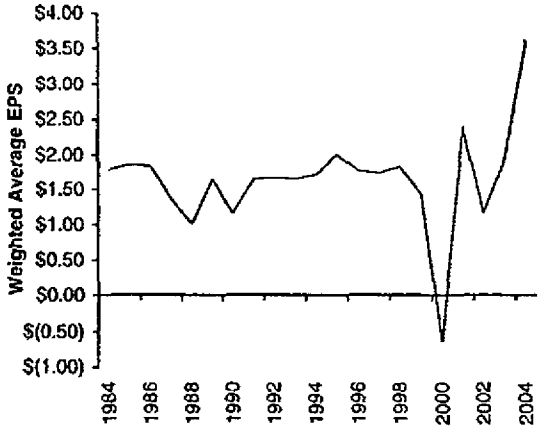
Exhibit 8 Weighted Average EPS of Sample Group[1]



1 Weighted by share of aggregate market cap in 1984.

Source: FactSet and Bernstein analysis.

Exhibit 9 Weighted Average EPS of All Regulated Utilities[1]



1 Weighted by share of aggregate market cap in 1984.

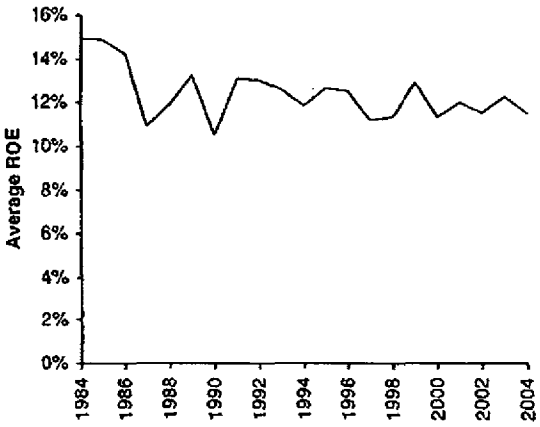
Source: FactSet and Bernstein analysis.

Determinants of Earnings Growth

Over the past 20 years, our sample of 13 regulated utilities experienced a compound annual growth rate in aggregate earnings of 3.8%. Over the same period, however, we estimate the compound annual growth in earnings per share for the sample group at 1.1%.[1] Below, we discuss the historical drivers of earnings growth at our sample of regulated utilities, as well as the reasons for EPS growth to lag behind that of aggregate earnings.

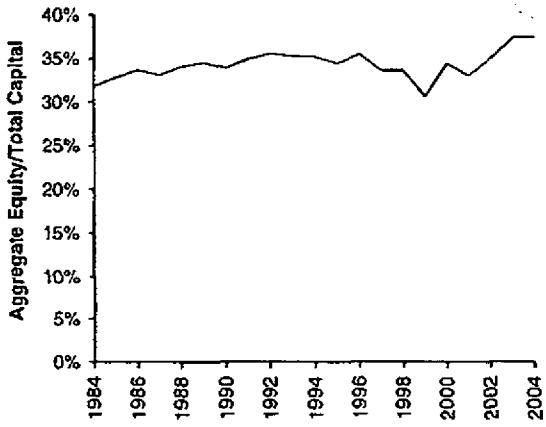
Regulated returns on equity and allowed ratios of equity to total capital have moved in opposite directions over the last 20 years (see Exhibits 10 and 11). Thus, the average ROE of the 13 regulated utilities in our sample declined from 15.0% in 1984 to 11.5% in 2004, while the average ratio of equity to total capital increased from 32% to 38%. The product of the two, representing the ratio of net income to total capital, fell from 4.8% in 1984 to 4.3% in 2004. With return on invested capital falling, it is clear that growth in rate base has been the primary driver of earnings growth at our sample of 13 regulated utilities over the last 20 years.

Exhibit 10 Aggregate ROE, 1984-2004



Source: FactSet and Bernstein analysis.

Exhibit 11 Aggregate Equity to Total Capital Ratio, 1984-2004



Source: FactSet and Bernstein analysis.

To estimate the aggregate rate base of the utilities of our sample group, we have used as a proxy the total invested capital of these companies as presented in their U.S. GAAP financial statements. Exhibit 12 graphs the tendency for the aggregate earnings of our sample group to track the growth in total capital invested. Exhibit 13 shows the results of a correlation analysis between the two variables at our sample of 13 regulated utilities over the last 20 years. As can be seen there, the aggregate earnings of our sample group can be predicted as a linear function of total invested capital with an R-squared of 90%.

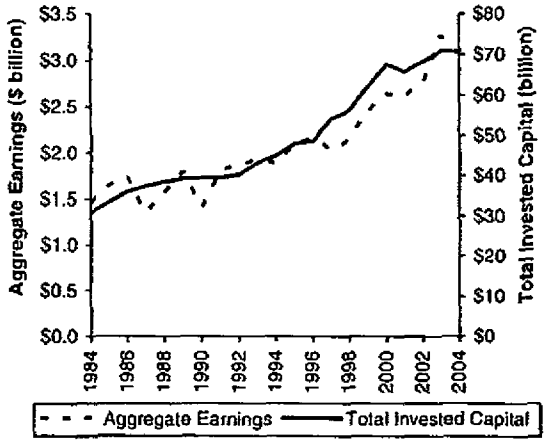
While the expansion of rate base has been the primary driver of earnings growth at our sample of regulated utilities, rate base in turn has tracked the increase in power demand. Exhibit 14 compares the growth in total invested capital of the sample group with the growth in power demand and the consumer price index over the last 20 years. Statistically, the

1 To estimate the rate of EPS growth for the sample group over the last 20 years, we calculated a weighted average of the EPS of each of the 13 sample companies, with each company's EPS weighted by that company's share of the aggregate market capitalization of the sample in 1984:

$$\text{Aggregate EPS} = \sum_{i=1}^{13} \text{EPS of Company } i \times \frac{\text{1984 Market Capitalization of Company } i}{\text{Total Market Capitalization of all Sample Utilities}}$$

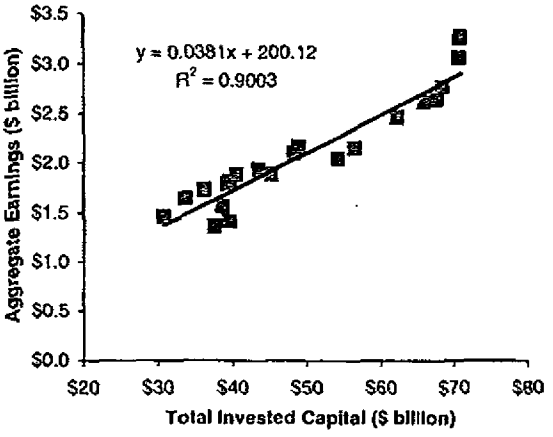
best predictor of invested capital appears to be demand growth; as can be seen in Exhibit 15, a correlation analysis of MWh sold with total invested capital produces an R-squared of 90%. Adding the Consumer Price Index as a second variable in the correlation analysis raises the R-squared even further, but the explanatory power of the CPI variable is dwarfed by that of MWh sales.

Exhibit 12 Trends in Aggregate Earnings and Total Invested Capital for Our Sample of 13 Regulated Utilities, 1984-2004



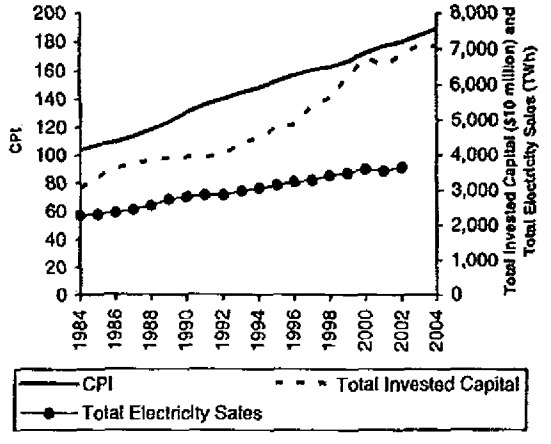
Source: FactSet and Bernstein analysis.

Exhibit 13 Relationship Between Aggregate Earnings and Total Invested Capital for Our Sample of 13 Regulated Utilities, 1984-2004



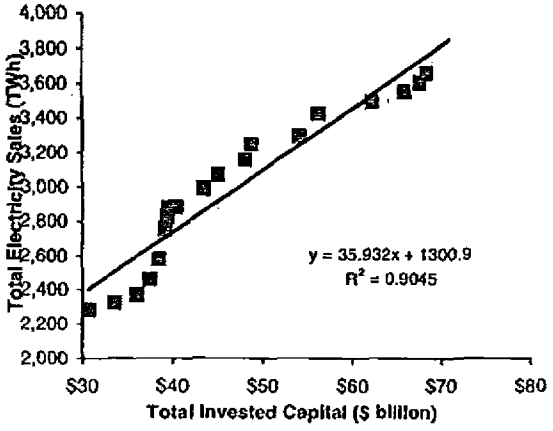
Source: FactSet and Bernstein analysis.

Exhibit 14 Relationship Between Total Invested Capital, Load Growth and Consumer Price Index



Source: FactSet and Bernstein analysis.

Exhibit 15 TWh Sales vs. Total Invested Capital, 1984-2004



Source: FactSet and Bernstein analysis.

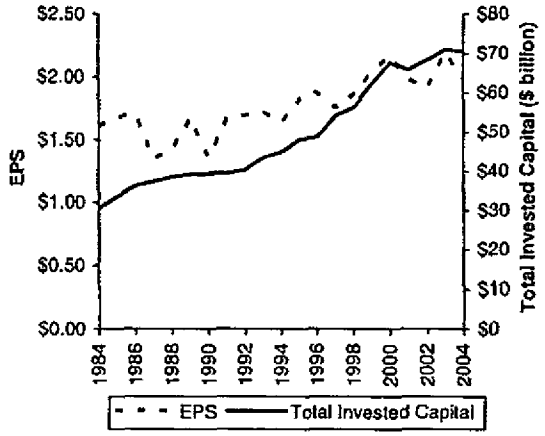
That invested capital should show a higher degree of correlation with MWh of electricity demand than with the aggregate price level points to an important fact of regulated utility economics: the nominal value of utility rate base, and thus of allowed earnings, has no direct link to inflation. In the

United States, the value of historical investment in rate base is not indexed to increases in the price level. If the allowed ROE and equity-to-capital ratios of regulated utilities maintain their historical stability in the future, therefore, the rate of growth in regulated utility earnings will be driven primarily by the expansion of rate base, as incremental capital investments are made to supply increases in power demand. The North American Electric Reliability Council (NERC) forecasts the rate of growth in U.S. electricity demand at 2.0% per annum over the next 10 years.

Determinants of EPS Growth

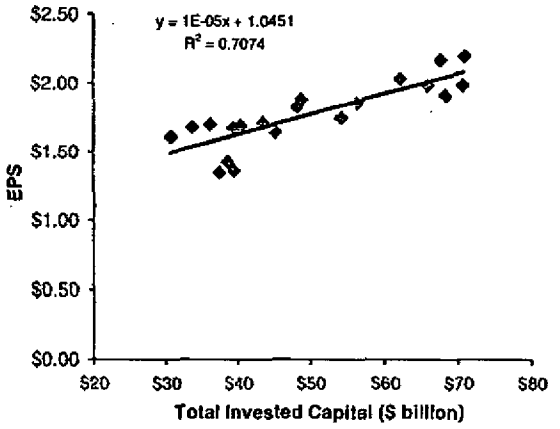
As noted above, EPS growth at our sample of regulated utilities has averaged 1.1% per year over the last 20 years, significantly lagging the 3.8% annual growth in aggregate earnings. The strong tendency for earnings to track total capital invested (illustrated in Exhibit 12) is considerably weakened, therefore, when earnings are expressed on a per-share basis (compare Exhibit 16). Statistically, the weaker link between EPS and invested capital is captured in the correlation analysis in Exhibit 17, where invested capital is found to predict EPS with an R-squared of 71%, in comparison with that in Exhibit 13, where invested capital predicts aggregate earnings with an R-squared of 90%.

Exhibit 16 Trends in EPS and Total Invested Capital for Our Sample of 13 Regulated Utilities, 1984-2004



Source: FactSet and Bernstein analysis.

Exhibit 17 Relationship Between EPS and Total Invested Capital for Our Sample of 13 Regulated Utilities, 1984-2004



Source: FactSet and Bernstein analysis.

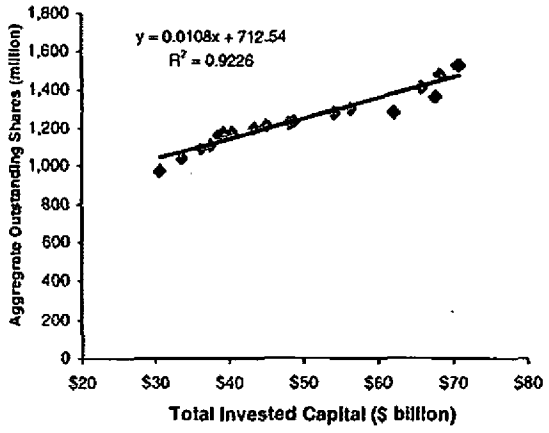
Our analysis suggests two possible explanations for why EPS growth has fallen so far behind aggregate earnings growth over the last 20 years. First, we find a very strong correlation historically between share count and invested capital. As can be seen in Exhibit 18, the shares outstanding of our sample group can be predicted as a linear function of total invested capital with an R-squared of 92%. Thus, while strong growth in invested capital drove a roughly commensurate increase in aggregate earnings over the last 20 years, the benefit to EPS was largely diluted away through repeated issues of stock.

The tendency for share count to rise in direct relation to invested capital could reflect the high dividend payout ratio of regulated utilities, which causes them to rely on external sources of capital to fund growth in rate base. Over the last 20 years, our sample group of regulated utilities paid out

76% of their aggregate earnings as dividends, retaining less than a quarter. In round numbers, the aggregate earnings of the sample utilities over the period totaled $44 billion, of which $34 billion were paid out as dividends and only $10 billion were retained. The increase in the sample group's total invested capital over this period, by contrast, was some $40 billion. The sample utilities' retained earnings over 1984-2004 were thus equivalent to only 25% of the growth in their total invested capital. At the beginning of the period, by contrast, the sample group had equity equivalent to 32% of total capital invested; without recourse to external sources of equity, therefore, funding the growth of invested capital would have resulted in a significant increase in the utilities' leverage.

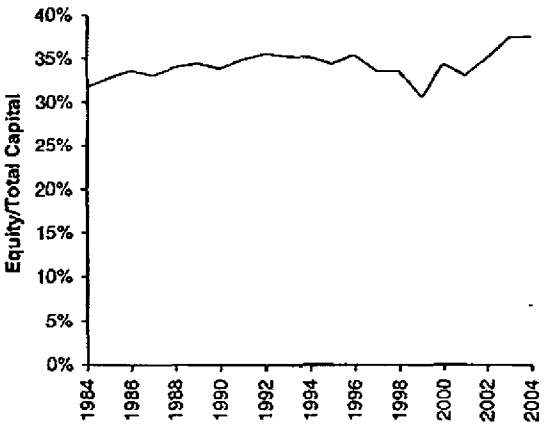
The second contributor to the increase in share count among our sample utilities has been their tendency to reduce leverage over the last 20 years (see Exhibit 19). In 1984, our 13 sample utilities had an aggregate ratio of equity to total capital of 32%; by 2004, they had raised equity to 38% of total capital. To maintain and indeed increase their equity-to-capital ratio, the sample utilities found it necessary to raise some $6 billion in equity from external sources. This sum was equal to 66% of the book value of the sample utilities' equity at the beginning of the period; the increase in shares outstanding of the sample group from 1984 to 2004 was comparable, at 57%.

Exhibit 18 Relationship Between Shares Outstanding and Invested Capital, 1984-2004



Source: FactSet and Bernstein analysis.

Exhibit 19 Ratio of Equity to Total Capital for Our Sample of 13 Regulated Utilities, 1984-2004



Source: FactSet and Bernstein analysis.

It would appear, therefore, that the much slower rate of EPS growth among our sample utilities, as compared with the growth in the aggregate earnings of the group over 1984-2004, can be attributed to the interaction of (i) a very high dividend payout ratio; (ii) a significant program of capital expenditure; (iii) the desire to maintain a minimum ratio of equity to total capital, necessitating the periodic issuance of stock to augment the equity funds available from retained earnings; and (iv) a tendency to increase the ratio of equity to total capital over time.

Conclusion

Over the past 20 years, our sample of 13 regulated utilities experienced a compound annual growth rate in aggregate earnings of 3.8%. In exploring the drivers of earnings growth, we found that the aggregate earnings of our sample group could be predicted as a linear function of total invested capital, with an R-squared of 90%. In turn, the best predictor of invested capital appears to be demand growth; a correlation analysis of MWh sold with total invested capital also produces an R-squared of 90%.

Over the same period, however, the compound annual growth in earnings per share for our sample group was only 1.1%. Our analysis suggests two possible explanations for why EPS growth has fallen so far behind aggregate earnings growth over the last 20 years. First, we find a very strong correlation historically between share count and invested capital, possibly reflecting the high dividend payout of regulated utilities and, thus, the limited retained earnings available to fund capital investment. The second contributor to the increase in share count among our sample utilities has been their tendency to reduce leverage over the last 20 years. In 1984, our 13 sample utilities had an aggregate ratio of equity to total capital of 32%; by 2004, they had raised equity to 38% of total capital. Thus, while strong growth in invested capital drove a roughly commensurate increase in aggregate earnings over the last 20 years, the benefit to EPS was largely diluted away through repeated issues of stock.

Impact of Future Rate Cases on Allowed ROE and Earnings

Relationship Between Interest Rates and Allowed ROE

In the preceding chapter, we noted that the earnings of regulated utilities can be expressed by the equation:

Net Income = (Allowed ROE x Equity)/(Total Capital x Rate Base)

In analyzing these drivers of regulated utilities' earnings, we found that over the last 20 years, regulated returns on equity and allowed ratios of equity to total capital have moved in opposite directions, such that return on rate base was little changed over the period. Consequently, we found growth in rate base to be the strongest predictor of earnings growth. This chapter will focus more deeply on the determinants of ROE and equity to total capital, as well as the relation of these two earnings drivers to each other.

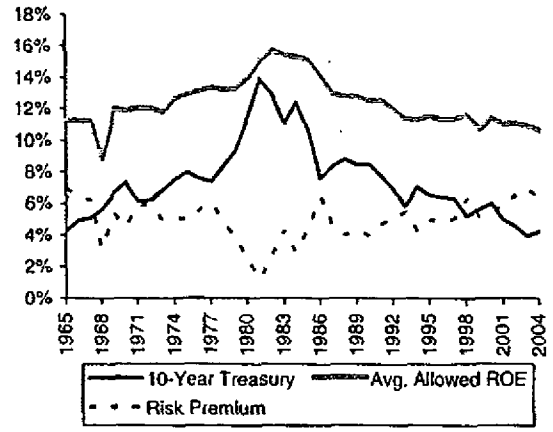
While one would expect allowed returns on equity to track movements in the long-term Treasury rates fairly closely, our research indicates that over the past 40 years, the annual average of allowed rates of return granted in rate cases to regulated electric utilities in the United States has exhibited far greater stability than 10-year U.S. Treasury yields (see Exhibit 20). Over this period, the standard deviation of allowed ROEs granted in utility rate cases has been only 1.5 percentage points (pp), versus 2.4 pp for 10-year Treasuries. The coefficient of variation — the standard deviation as a fraction of the mean value — was also smaller for allowed ROEs than for Treasury yields over the period: the coefficient of variation was 12% in the case of allowed ROEs and 33% in the case of 10-year Treasury yields.

A regression analysis of ROEs allowed by utility regulators in rate cases decided over the last 40 years, against then-prevailing 10-year Treasury yields, results in the following equation:

Allowed ROE = 0.56 x 10-Year Treasury Yield + 0.08

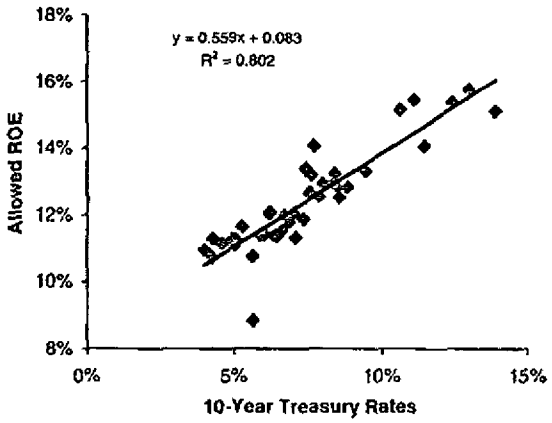
The regression has an R-squared of 80% and a t-statistic of 8.28, implying that it offers a statistically significant explanation of 80% of the movement in allowed ROEs. Based on the experience of the last 40 years, therefore, a 100 basis point (bp) change in the 10-year Treasury yield can be expected to have a 56 bp impact on allowed ROEs granted in utility rate cases (see Exhibit 21).

Exhibit 20 10-Year Treasury Yields and Allowed ROEs



Source: FactSet, Regulatory Research Associates (RRA) and Bernstein analysis.

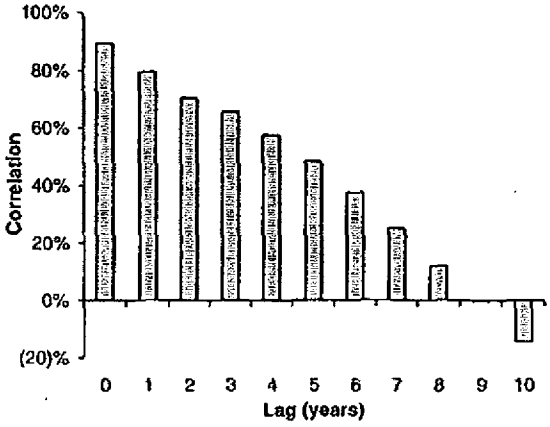
Exhibit 21 Interest Rates and Allowed ROEs



Source: FactSet, RRA and Bernstein analysis.

While changes in interest rates are not fully reflected in changes in allowed ROE, the historical evidence suggests that allowed ROEs are set in utility rate cases in light of currently prevailing, rather than historical, Treasury yields. This is illustrated in Exhibit 22, which shows the correlation between the average of allowed ROEs in a particular year and the yield on the 10-year Treasury over the last 10 years. Allowed ROEs show the highest correlation with Treasury yields in the year of the rate decision, and steadily weaker correlations with Treasury yields in preceding years.

Exhibit 22 Correlation Between 10-Year Treasury Yield and Allowed ROE Lagged to 10 Years



Source: FactSet, RRA and Bernstein analysis.

The greater stability of allowed ROEs relative to underlying changes in U.S. Treasury yields likely reflects the efforts of regulators to limit volatility in electricity rates while offering stable long-run returns on utility capital. Thus, regulators may look beyond current peaks or troughs in Treasury

yields when making their rate decisions, attenuating the impact of market movements in Treasury yields on allowed ROEs. In estimating utilities' cost of equity, moreover, regulators tend to add to prevailing Treasury yields an estimate of the equity risk premium, which could be relatively constant over time. We note, for example, that the regression of allowed ROEs against Treasury yields over the last 40 years (refer to Exhibit 21) has a *y*-intercept of 8.3%. Incorporating a fixed equity risk premium in the calculation of allowed ROEs would, of course, increase the sensitivity of allowed ROEs to movements in underlying Treasury yields.

Exhibit 23 displays individual rate cases over the past two years as well as averages for 2003 and 2004.

Exhibit 23 Electric Utility Rate Cases, 2003-04

Electric Utility	State	Date	Allowed ROE
Entergy Gulf States, Inc.	LA	1/8/2003	11.10%
South Carolina Electric & Gas Co.	SC	1/31/2003	12.45
Madison Gas & Electric Co.	WI	2/28/2003	12.30
PacifiCorp	WY	3/6/2003	10.75
Rochester Gas & Electric	NY	3/7/2003	9.96
Wisconsin Public Service	WI	3/20/2003	12.00
Commonwealth Edison	IL	3/28/2003	11.72
Wisconsin Power and Light	WI	4/3/2003	12.00
Interstate Power & Light	IA	4/15/2003	11.15
Aquila	CO	6/12/2003	10.75
Public Service of Colorado	CO	6/26/2003	10.75
Public Service Electric & Gas Co.	NJ	7/31/2003	9.75
Rockland Electric Co.	NJ	7/31/2003	9.75
Jersey Central Power & Light Co.	NJ	8/1/2003	9.50
Pacific Power & Light Co.	OR	8/26/2003	10.50
Maine Public Service Co.	ME	9/3/2003	10.25
Connecticut Power & Light	CT	12/17/2003	9.85
PacifiCorp	UT	12/17/2003	10.70
Montana-Dakota Utilities	ND	12/18/2003	11.50
Wisconsin Power & Light	WI	12/19/2003	12.00
Wisconsin Public Service	WI	12/19/2003	12.00
Green Mountain Power	VT	12/22/2003	10.50
Madison Gas & Electric Co.	WI	1/13/2004	12.00
PacifiCorp	WY	3/2/2004	10.75
Nevada Power	NV	3/24/2004	10.25
Interstate Power & Light	MN	4/5/04	11.00
PSI Energy	IN	5/18/04	10.50
Idaho Power	ID	5/25/04	10.25
Sierra Pacific Power	NV	5/27/04	10.25
Kentucky Utilities	KY	6/30/04	10.50
Louisville Gas & Electric	KY	6/30/04	10.50
Aquila	CO	8/25/04	10.25
Avista	ID	9/9/04	10.40
Narragansett Electric	RI	11/19/04	10.50
Detroit Edison	MI	11/23/04	11.00
Interstate Power & Light	IA	12/14/04	11.75
Georgia Power	GA	12/21/04	11.25
Wisconsin Public Services	WI	12/21/04	11.50
PPL Electric Utilities	PA	12/22/04	10.70
Madison Gas & Electric	WI	12/22/04	11.50
Western Massachusetts Electric	MA	12/29/04	9.85
Average			10.88%
Average, 2003			10.97
Average, 2004			10.77

Source: RRA and Bernstein analysis.

A Case Study of Capital Structure Adjustments in Response to Changes in Allowed ROE

Given the overwhelming importance of allowed ROEs to the earnings and financial performance of regulated utilities, we performed a case study to determine how regulated utilities respond to changes in their allowed ROE. A cut in allowed ROE, all else being unchanged, would lead to a decline in net income. A countervailing influence, of course, is the tendency for utility rate base to grow; in the long run, however, rate base growth reflects the rate of growth of power demand, which currently averages about 2% per annum. A more powerful tool in the short term, therefore, may be for utilities to adjust their capital structure to offset the change in allowed ROE. To test the hypothesis that utilities may seek to offset cuts in allowed ROE by raising their ratio of equity to total capital, we conducted a case study of eight electric utilities confronted with reductions in their allowed ROEs.

The criteria that a utility had to meet to be included in our study were: (1) the utility's operations were entirely regulated on a cost-of-service basis; (2) the utility operated in only one state, so that the decisions of that state's regulators influenced the entirety of its operations; (3) the utility generated only electricity, or if it provided both gas and electric services, then the rates for both had to be set equally and simultaneously; and (4) the utility had at least four rate cases since 1990. The eight utilities that fit all of these criteria and were included in our study are Madison Gas and Electric, PSI Energy, Hawaiian Electric, Northern States Power, Wisconsin Power & Light, Wisconsin Public Service, Green Mountain Power and Puget Sound Energy.

We analyzed these companies on the basis of two relationships using scatter plots. First, we looked at the relationship between allowed ROEs and the equity-to-total capital ratio (we calculated the equity-to-total capital ratio from the companies' balance sheets as reported in their GAAP financial statements, and refer to it hereafter as the "balance sheet equity-to-capital ratio"). Second, we plotted the allowed ROE versus the maximum equity-to-total capital ratio permitted by the utility's regulators. This regulatory equity-to-total capital ratio is the maximum percentage of equity on which the stated return can be earned. While a company's balance sheet equity to total capital can diverge from the regulatory ratio, the utility will not earn a return on equity in excess of this ratio. Exhibits 24-39 display the two relationships for each company.

Three trends can be discerned by examining these two relationships across all eight companies. First, six of the eight companies studied show an inverse relationship between allowed ROE and the maximum ratio of equity to capital authorized by regulators. This suggests that regulators have tended to allow higher maximum equity-to-total capital ratios when ROEs are reduced.

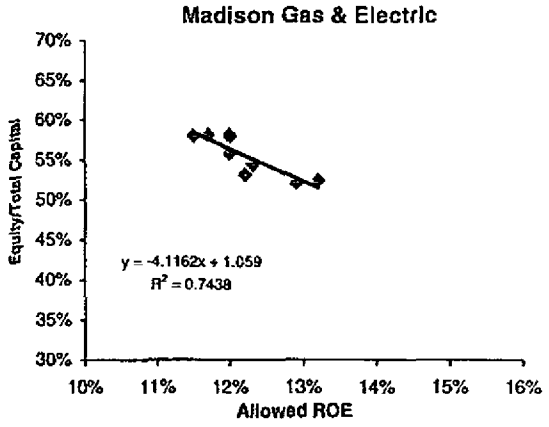
Second, seven of the eight companies exhibit an inverse relationship between authorized ROEs and the ratio of equity to total capital on their balance sheets. Three companies, Madison Gas and Electric, PSI Energy and Hawaiian Electric, exhibit particularly strong inverse relationships: for every percentage point decline in ROE at these three companies, the balance sheet equity-to-total capital ratio rises by one to four percentage points. This would imply that utilities seek to capitalize on the higher benchmark equity-to-capital ratios allowed by regulators by raising the ratio of equity to total capital on their balance sheets.

Third, balance sheet equity-to-total capital ratios move more than benchmark equity-to-total capital ratios for every percentage-point move in allowed ROEs. The greater response is witnessed at six of the eight companies studied. The fact that utilities adjust their balance sheet equity-to-

capital ratios more than anticipated by regulators in setting the benchmark ratio suggests a concerted effort to use this mechanism to their advantage. While regulated utilities cannot earn a return beyond their regulatory equity-to-capital ratio, utilities may have sought to raise their equity ratios in order to position themselves for their next rate case.

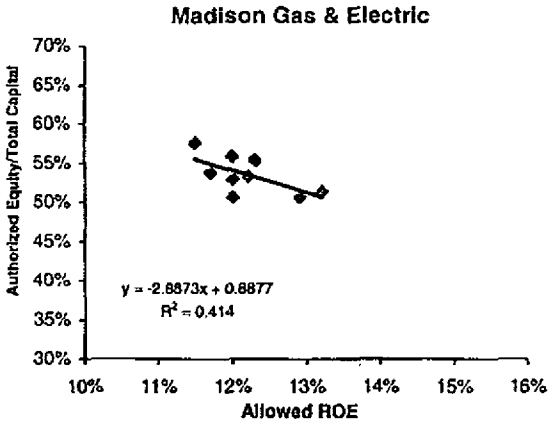
In summary, there is evidence to suggest that (i) when cutting allowed ROEs, regulators often allow increases in maximum permitted equity-to-capital ratios, and (ii) utilities adjust their capital structure in response to changes in allowed ROE. Such adjustments to regulatory and balance sheet equity-to-capital ratios would tend to stabilize utility earnings in the face of cuts in allowed ROEs.

Exhibit 24 Madison Gas & Electric: Allowed ROE vs. Equity-to-Total Capital



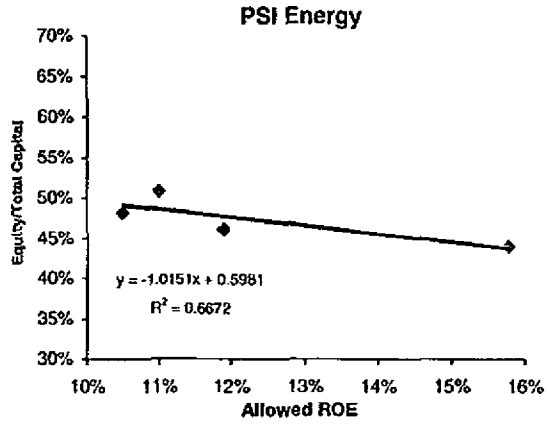
Source: FactSet, RRA and Bernstein analysis.

Exhibit 25 Madison Gas & Electric: Allowed ROE vs. Authorized Equity-to-Total Capital



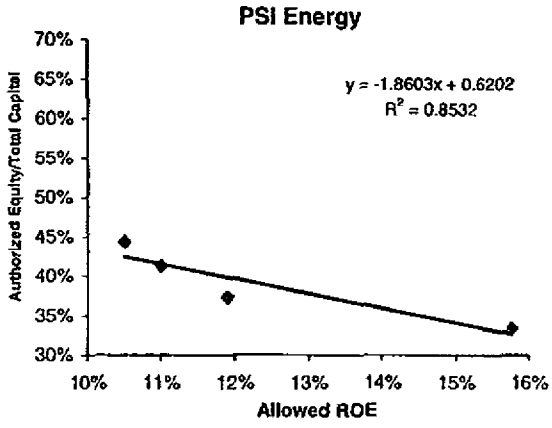
Source: FactSet, RRA and Bernstein analysis.

Exhibit 26 PSI Energy: Allowed ROE vs. Equity-to-Total Capital



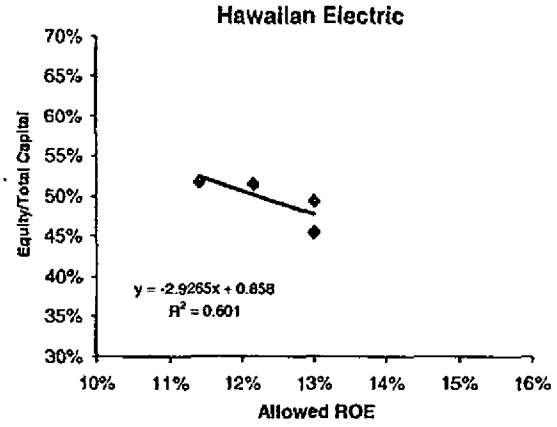
Source: FactSet, RRA and Bernstein analysis.

Exhibit 27 PSI Energy: Allowed ROE vs. Authorized Equity-to-Total Capital



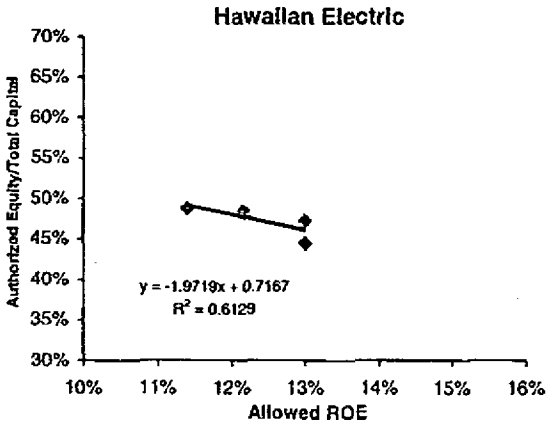
Source: FactSet, RRA and Bernstein analysis.

Exhibit 28 Hawaiian Electric: Allowed ROE vs. Equity-to-Total Capital



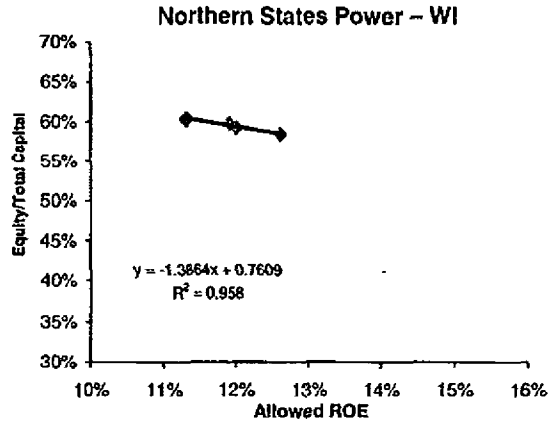
Source: FactSet, RRA and Bernstein analysis.

Exhibit 29 Hawaiian Electric: Allowed ROE vs. Authorized Equity-to-Total Capital



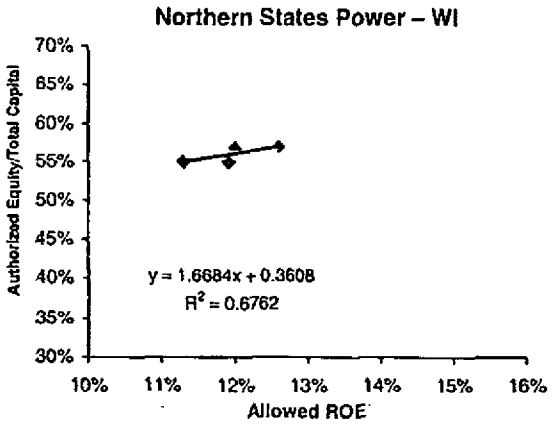
Source: FactSet, RRA and Bernstein analysis.

Exhibit 30 Northern States Power – WI: Allowed ROE vs. Equity-to-Total Capital



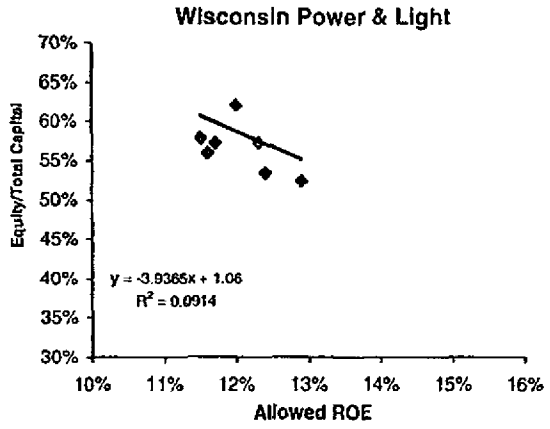
Source: FactSet, RRA and Bernstein analysis.

Exhibit 31 Northern States Power – WI: Allowed ROE vs. Authorized Equity-to-Total Capital



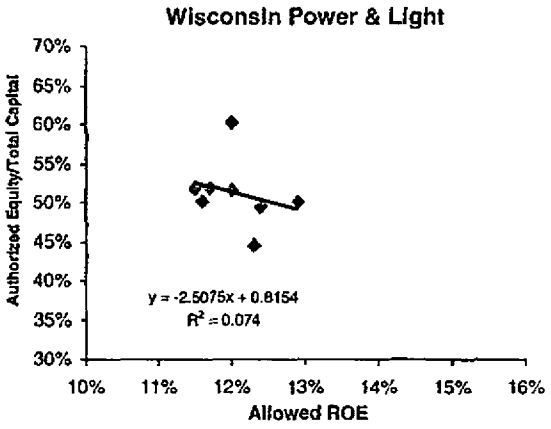
Source: FactSet, RRA and Bernstein analysis.

Exhibit 32 Wisconsin Power & Light: Allowed ROE vs. Equity-to-Total Capital



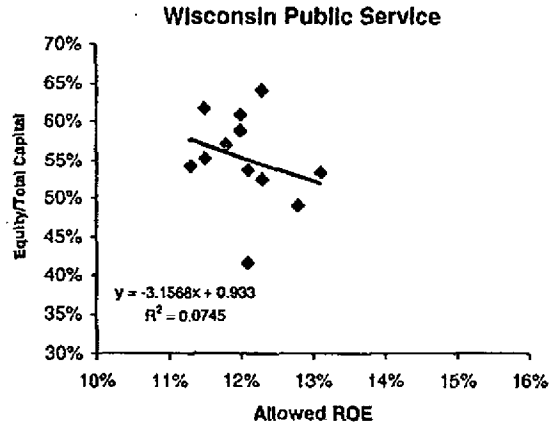
Source: FactSet, RRA and Bernstein analysis.

Exhibit 33 Wisconsin Power & Light: Allowed ROE vs. Authorized Equity-to-Total Capital



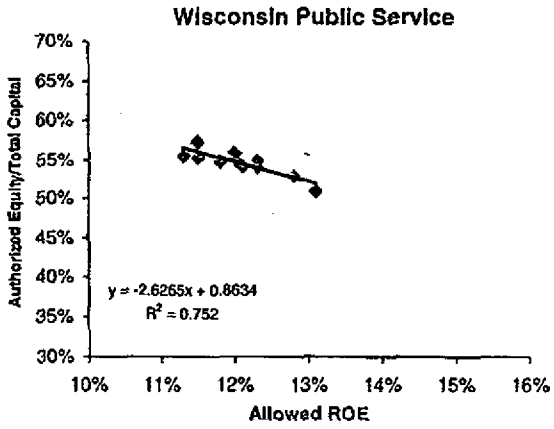
Source: FactSet, RRA and Bernstein analysis.

Exhibit 34 Wisconsin Public Service: Allowed ROE vs. Equity-to-Total Capital



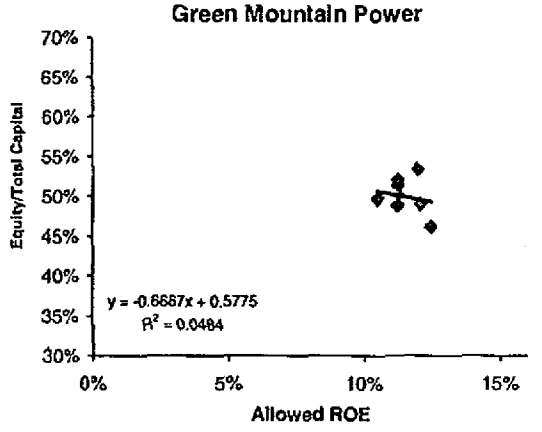
Source: FactSet, RRA and Bernstein analysis.

Exhibit 35 Wisconsin Public Service: Allowed ROE vs. Authorized Equity-to-Total Capital



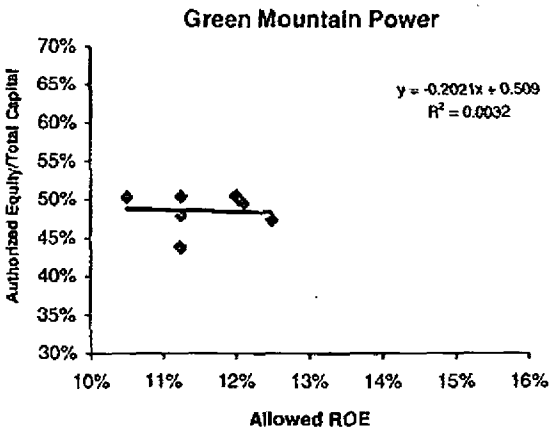
Source: FactSet, RRA and Bernstein analysis.

Exhibit 36 Green Mountain Power: Allowed ROE vs. Equity-to-Total Capital



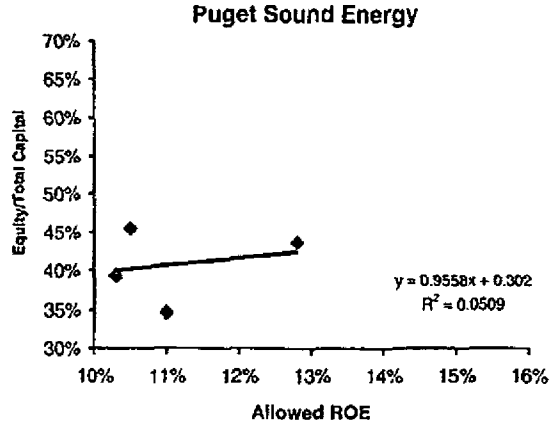
Source: FactSet, RRA and Bernstein analysis.

Exhibit 37 Green Mountain Power: Allowed ROE vs. Authorized Equity-to-Total Capital



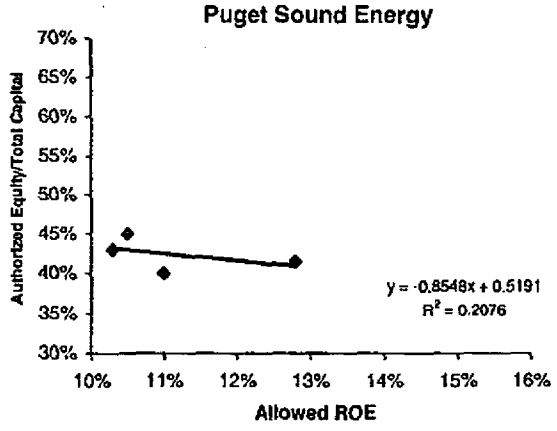
Source: FactSet, RRA and Bernstein analysis.

Exhibit 38 Puget Sound Energy: Allowed ROE vs. Equity-to-Total Capital



Source: FactSet, RRA and Bernstein analysis.

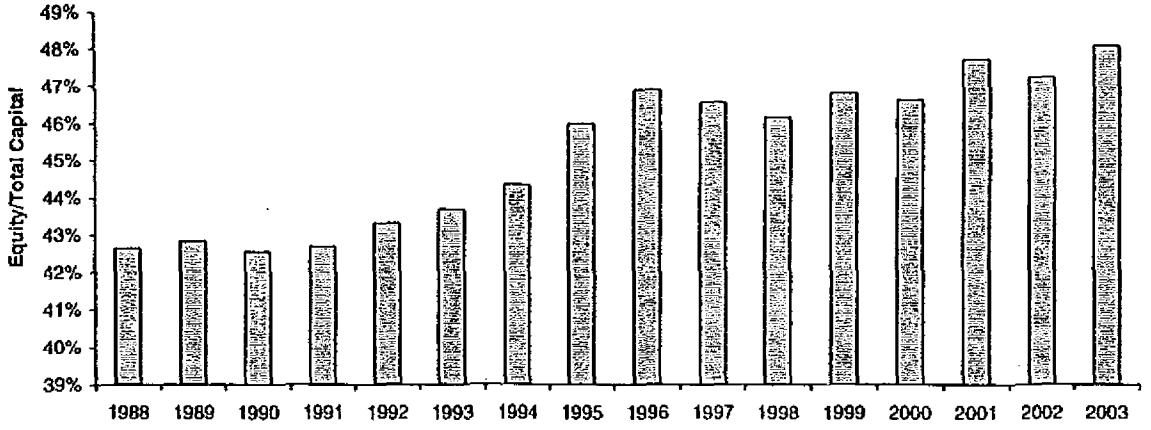
Exhibit 39 Puget Sound Energy: Allowed ROE vs. Authorized Equity-to-Total Capital



Source: FactSet, RRA and Bernstein analysis.

The pattern illustrated by our test companies is repeated when the utility industry is viewed in aggregate. The last 15 years have been a period of steadily declining long-term interest rates, accompanied by a similar, albeit more modest, decline in average allowed ROEs. As illustrated in Exhibit 40, this period has also witnessed a 5.5 pp increase in the average equity-to-capital ratio, from 42.5% to 48.0%.

Exhibit 40 Utility Operating Company Equity-to-Total Capital

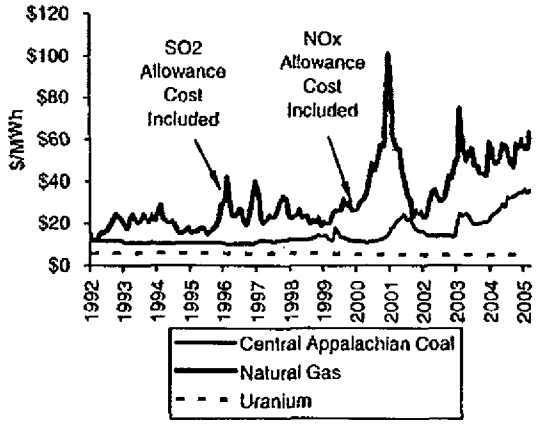


Source: Platts and Bernstein analysis.

The Outlook for Future ROEs and Earnings at Regulated Utilities

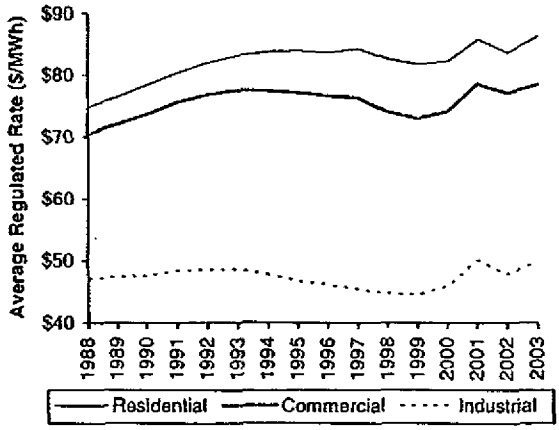
This analysis has broad implications for regulated utilities going forward. The regulatory environment for these companies is currently in a state of flux. Electricity rates at regulated utilities have come under upward pressure in recent years as utilities seek to pass on to customers the higher fuel costs incurred to generate electricity (see Exhibit 41). This trend is likely to persist in the years ahead as long-term coal contracts expire and are renewed at the higher market prices currently prevailing (see Exhibit 42). Second, the recently issued Clean Air Interstate Rule will significantly increase both the operating cost and capital expenditures of coal-fired power generators: we estimate that utilities in the 28 eastern states covered by CAIR will incur $3.6 billion in incremental operating costs and $24 billion dollars in capital expenditures in order to achieve the emissions reductions required by 2010. Finally, the consensus expectation is for long-term interest rates, as measured by the yield on the 10-year U.S. Treasury bond, to rise by 75-100 basis points over the next year. Whereas in the past decade utilities faced with rising operating costs may have been deterred from seeking rate increases by the low-interest-rate environment, the consensus view that rates are now headed upwards, combined with sharply rising fuel and environmental compliance costs, makes it likely that utility rate cases will be more frequent in the years ahead.

Exhibit 41 Fuel Costs ($/MWh)



Source: Platts, Bloomberg L.P. and Bernstein analysis.

Exhibit 42 Average Regulated Rates ($/MWh)



Source: Platts and Bernstein analysis.

Our analysis suggests that utility ROEs and earnings may come under less pressure in these upcoming rate cases than is suggested by the decline in Treasury yields over the last two decades. We have found that, historically, 100 bp movements in the yield of the 10-year U.S. Treasury are associated with only 56 bp movements in allowed ROEs. The greater stability of allowed ROEs relative to underlying changes in U.S. Treasury yields likely reflects the efforts of regulators to limit volatility in electricity rates while offering stable long-run returns on utility capital. Further limiting the impact of rate movements on utility earnings is the tendency of changes in allowed ROEs to be offset, at least in part, by inverse movements in the maximum equity-to-capital ratios permitted by regulators. Based on a limited case study of eight utilities' experience since 1990, it seems that utility managements have sought to capitalize on this tendency by raising balance sheet equity-to-capital ratios to offset reductions in allowed ROE.

Implications of Slow EPS Growth for Utility Valuation

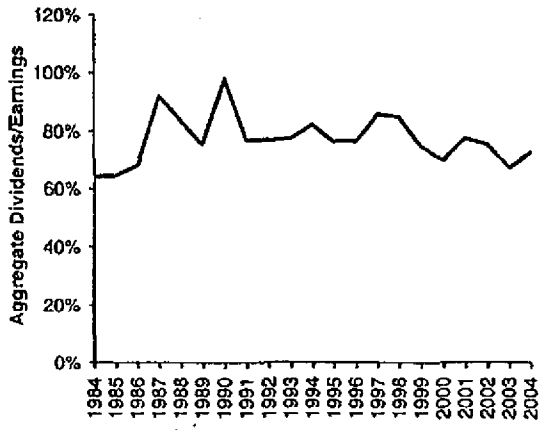
Valuation of Utility Stocks

In light of our analysis of the historical and anticipated growth of earnings per share at regulated utilities, what can be concluded regarding an appropriate P/E multiple for these stocks? As previously noted, the price-to-earnings ratio can be expressed as a function of the dividend payout ratio, the rate of growth in EPS and the discount rate applied by investors to the stream of future dividends:

P/E = dividend payout ratio/(discount rate – EPS growth rate)

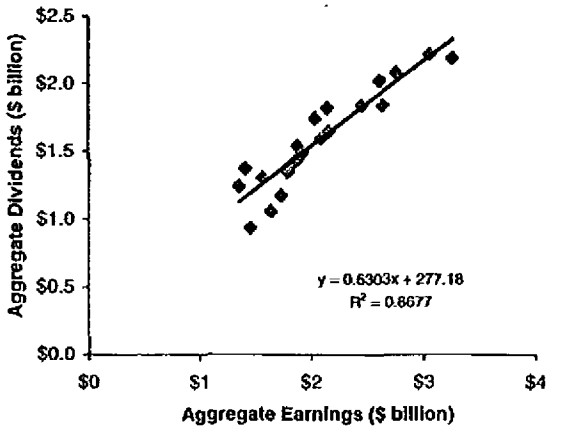
The rate of EPS growth for our sample companies was 1.1% per year over the last two decades and is unlikely, according to our analysis, to exceed the rate of growth in rate base in the future. As rate base correlates closely with growth in power demand, growth in EPS would seem bounded on the upside by the long-run growth in power demand, which NERC estimates to be about 2.0% annually. Finally, the dividend payout ratio of our sample of regulated utilities has been relatively stable over time, as can be seen in Exhibits 43 and 44, and over the last five years has ranged from 67% to 77% of earnings. Inserting this range of values for earnings growth and dividend payout into the equation above allows us to solve for the expected rate of return on regulated utility stocks at different P/E multiples. Alternatively, we can select a desired rate of return and calculate the maximum P/E multiple that an investor should be prepared to pay.

Exhibit 43 Ratio of Aggregate Dividends to Aggregate Earnings of Sample Group (Payout Ratio)



Source: FactSet and Bernstein analysis.

Exhibit 44 Relationship Between Aggregate Dividends and Aggregate Earnings for Sample Group



Source: FactSet and Bernstein analysis.

Implication of Slow EPS Growth

Our analysis indicates that regulated electric utilities, which currently trade at an average P/E multiple of some 16 times forward earnings, are capitalizing future dividends at relatively low discount rates — or, put another way, offer investors relatively low long-run returns. Thus, assuming a dividend payout ratio of 75% (at the upper end of the recent range) and long-run growth rates of 1.0-2.0% per annum, a P/E multiple of 16x is consistent with expected returns of 5.7-6.7% (see Exhibit 45). At a dividend payout ratio of 70%, to pay a 16x multiple for a regulated utility growing at 1-2% per year implies the expectation of future returns of 5.4-6.4% (see Exhibit 46) — while at a payout ratio of 65%, expected returns would fall to the range of 5.1-6.1% (see Exhibit 47).

Exhibit 45 Return Assuming 75% Payout Ratio

	P/E Multiple		
Growth	14x	15x	16x
1%	6.4%	6.0%	5.7%
2%	7.4	7.0	6.7
3%	8.4	8.0	7.7

Source: FactSet and Bernstein analysis.

Exhibit 46 Return Assuming 70% Payout Ratio

	P/E Multiple		
Growth	14x	15x	16x
1%	6.0%	5.7%	5.4%
2%	7.0	6.7	6.4
3%	8.0	7.7	7.4

Source: FactSet and Bernstein analysis.

Exhibit 47 Return Assuming 65% Payout Ratio

	P/E Multiple		
Growth	14x	15x	16x
1%	5.6%	5.3%	5.1%
2%	6.6	6.3	6.1
3%	7.6	7.3	7.1

Source: FactSet and Bernstein analysis.

Investors seeking higher returns must find stocks valued significantly below or growing significantly above the industry average. Thus, utilities projected to grow 2% per year while sustaining a dividend payout ratio of 70% will realize returns in excess of 7% only if their earnings multiples are 14x or below. Alternatively, utilities valued at 16 times earnings must realize long-term earnings growth of 3% or more, while maintaining dividend payout ratios of 65% or higher, to offer equity investors returns in excess of 7%.

The next three exhibits are configured to allow the reader to select a target return and, based on the given assumptions as to dividend payout and growth, to determine the maximum P/E multiple that should be paid for a regulated utility stock. Thus, investors targeting a 7.0-8.0% return should be prepared to pay between 10.7 and 12.5 times earnings for a regulated utility that offers 1-2% annual EPS growth while maintaining a sustainable dividend payout ratio of 75% (see Exhibit 48). For utilities paying out only 70% of earnings on an ongoing basis, the P/E multiples corresponding to a 7.0-8.0% target return range from 10.0x to 11.7x (see Exhibit 49), while for utilities paying out only 65% of earnings, the corresponding range of P/E multiples is only 9.3-10.8x (see Exhibit 50). Alternatively, investors may seek out stocks whose earnings growth is more rapid than the industry average and whose capitalization and cash generation is such that the risk of equity dilution is minimal. Utilities capable of growing EPS at 3% per year, for example, while sustaining a dividend payout ratio of 65% or higher can realize 7.0-8.0% returns for their shareholders at P/E multiples of 13.0-16.3x. A regulated utility that combines rapid growth prospects with sound capitalization is Edison International (rated outperform, target price $44).

Exhibit 48 P/E Multiple Assuming 75% Payout Ratio

	Discount Rate		
Growth	6.0%	7.0%	8.0%
1%	15.0x	12.5x	10.7x
2%	18.8	15.0	12.5
3%	25.0	18.8	15.0

Source: FactSet and Bernstein analysis.

Exhibit 49 P/E Multiple Assuming 70% Payout Ratio

	Discount Rate		
Growth	6.0%	7.0%	8.0%
1%	14.0x	11.7x	10.0x
2%	17.5	14.0	11.7
3%	23.3	17.5	14.0

Source: FactSet and Bernstein analysis.

Exhibit 50 P/E Multiple Assuming 65% Payout Ratio

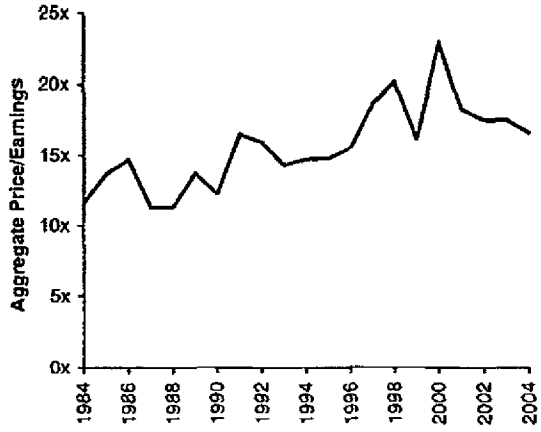
	Discount Rate		
Growth	6.0%	7.0%	8.0%
1%	13.0x	10.8x	9.3x
2%	16.3	13.0	10.8
3%	21.7	16.3	13.0

Source: FactSet and Bernstein analysis.

Utility Valuations and Interest Rates

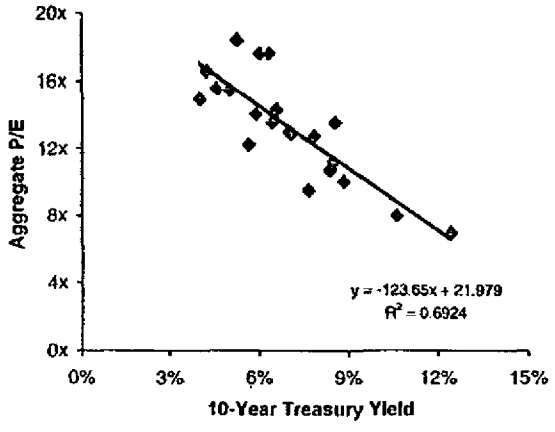
Investors' apparent willingness to accept relatively low expected rates of return on regulated utility stocks is consistent with the historically strong relationship between Treasury yields on the one hand and the price-to-earnings and price-to-dividend ratios of utility stocks on the other. The historical trend in the P/E ratios of our sample utilities and the correlation of P/E ratios with 10-year Treasury yields are presented in Exhibits 51 and 52, while the historical trend in the ratio of price to dividends and the correlation of this ratio with Treasury yields are presented in Exhibits 53 and 54. As can be seen there, movements in the 10-year Treasury bond yield explain 69% of the variation in the average P/E ratio of regulated utility stocks over the last 20 years, and 77% of the variation in the average dividend yield of the group. The high level of utility stock prices relative to current earnings and dividends, in other words, is likely best explained by the historically low level of interest rates and the correspondingly modest return expectations of investors.

Exhibit 51 History of Aggregate P/E for Sample Group, 1984-2004



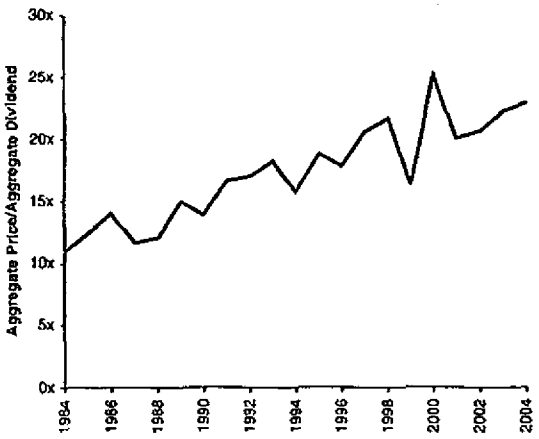
Source: FactSet and Bernstein analysis.

Exhibit 52 Relationship of Aggregate P/E vs. 10-Year Treasury Yields for Regulated Utilities, 1984-2004



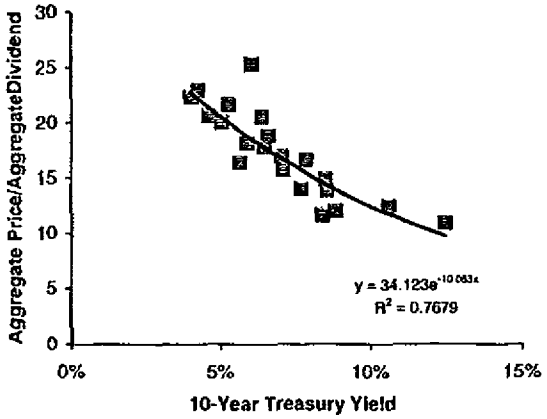
Source: FactSet and Bernstein analysis.

Exhibit 53 Aggregate Price-to-Aggregate Dividend for Regulated Utilities, 1984-2004



Source: FactSet and Bernstein analysis.

Exhibit 54 Relationship Between Aggregate Price to Dividend vs. 10-Year Treasury Yield for Regulated Utilities, 1984-2004



Source: FactSet and Bernstein analysis.

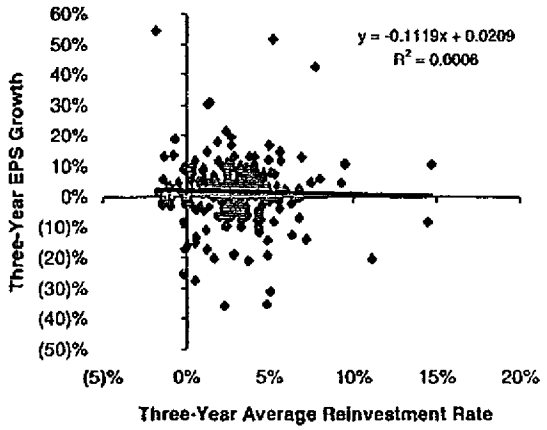
Should Utility Investors Pay for Growth?

Investor expectations that regulated utilities will realize higher rates of earnings growth than the 1.0-2.0% indicated by our research would, of course, justify higher P/E ratios than those calculated in Exhibits 45-47, above. In aggregate, we deem it unlikely that the growth of regulated utilities' rate base should accelerate in the future; rather, the energy intensity of U.S. GDP (energy consumed per dollar of GDP) has tended to fall over time, with the result that the rate of growth in electricity demand has tended to lag further behind that of GDP. The historically low level of interest rates currently prevailing, moreover, introduces the risk that allowed ROEs will be reduced in future rate cases, eroding the earnings power of historical investments in rate base. At the level of individual utilities, however, company-specific opportunities for earnings growth (such as faster-than-average population growth in a utility's service territory) in theory should be rewarded with higher P/Es.

Given the tendency of regulated utility earnings to grow with rate base, we examined the historical relationship between high rates of reinvestment by regulated utilities and subsequent earnings growth. If these variables were to show a strong positive correlation, higher P/E multiples than those estimated above might be appropriate for companies with high rates of retained earnings. To test this relationship, we calculated the reinvestment rate (net income minus dividends divided by book value of equity at the beginning of the year) for each of the 13 regulated utilities in our sample for each year from 1984 to 2004. We then calculated three- and five-year rolling averages of each utility's reinvestment rate and compared these with that utility's compound average rate of growth in earnings per share for the corresponding period. Exhibit 55 presents the results of a correlation analysis between these two variables over rolling three-year periods, while Exhibit 56 presents the correlation over rolling five-year periods. Surprisingly, high rates of reinvestment show a very modest correlation with EPS growth (R-squared = 0% over three years; R-squared = 4% over five years). Among our sample group of regulated utilities, in other words, the rate of reinvestment has not been a reliable predictor of medium-term EPS growth.

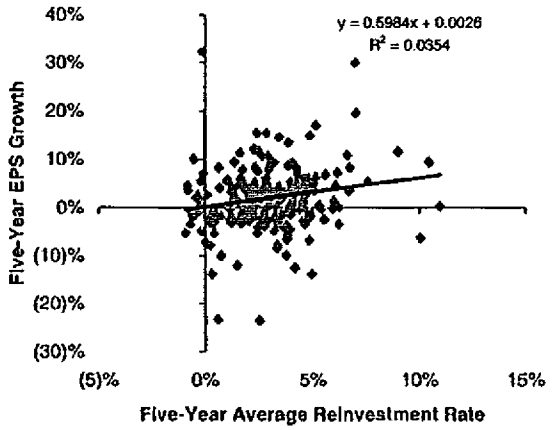
While we can speculate as to the reasons for this (e.g., disallowance of capital expenditures by regulators or unsuccessful attempts at diversification into unregulated businesses), these results imply that investors should be cautious when paying premium P/E multiples for companies with high rates of reinvestment.

Exhibit 55 Three-Year Average Reinvestment Rate vs. Three-Year EPS Growth Rate



Source: FactSet and Bernstein analysis.

Exhibit 56 Five-Year Average Reinvestment Rate vs. Five-Year EPS Growth Rate



Source: FactSet and Bernstein analysis.

Conclusion

Our analysis indicates that regulated electric utilities, which currently trade at an average P/E multiple of some 16 times forward earnings, offer investors relatively low long-run returns. Thus, assuming a dividend payout ratio of 70% and long-run growth rates of 1.0-2.0%, a P/E multiple of 16x is consistent with expected returns of 5.4-6.4%. Our analysis also finds that high rates of reinvestment by regulated utilities historically have shown only a very modest correlation with EPS growth. Investors seeking returns in excess of 7% on their regulated utility investments are therefore urged to focus on stocks combining low P/E multiples (14-15x) and high sustainable dividend payout ratios (70-75%).

Conclusions

Over the past 20 years, our sample of 13 regulated utilities experienced a compound annual growth rate in aggregate earnings of 3.8%. In exploring the drivers of earnings growth, we found that the aggregate earnings of our sample group could be predicted as a linear function of total invested capital with an R-squared of 90%. In turn, the best predictor of invested capital appears to be demand growth; a correlation analysis of MWh sold with total invested capital also produces an R-squared of 90%.

Over the same period, however, the compound annual growth in earnings per share for our sample group was only 1.1%. Our analysis suggests two possible explanations for why EPS growth has fallen so far behind aggregate earnings growth over the last 20 years. First, we find a very strong correlation historically between share count and invested capital, possibly reflecting the high dividend payout of regulated utilities and, thus, the limited retained earnings available to fund capital investment. The second contributor to the increase in share count among our sample utilities has been their tendency to reduce leverage over the last 20 years. In 1984, our 13 sample utilities had an aggregate ratio of equity to total capital of 32%; by 2004, they had raised equity to 38% of total capital. Thus, while strong growth in invested capital drove a roughly commensurate increase in aggregate earnings over the last 20 years, the benefit to EPS was largely diluted away through repeated issues of stock.

If demand growth, forecast at 2% per annum, continues to drive the expansion of invested capital and thus growth in regulated earnings, regulated utilities, in the absence of further equity dilution, can be expected to grow EPS at 2% annually. Given the industry average dividend payout ratio of 70% and P/E multiple of 16x, expected returns are thus in the area of 6.4%. Investors' apparent willingness to accept relatively low expected rates of return on regulated utility stocks is consistent with the historically strong relationship between Treasury yields on the one hand and the price-to-earnings and price-to-dividend ratios of utility stocks on the other. The high level of utility stock prices relative to current earnings and dividends, in other words, is best explained by the low returns available on alternative investments of comparable duration and risk.

Investors seeking higher returns must find stocks valued significantly below or growing significantly above the industry average. Thus, regulated utilities projected to grow 2% per year while sustaining a dividend payout ratio of 70% will realize returns in excess of 7% only if their earnings multiples are 14x or below. Alternatively, utilities valued at 16 times earnings must realize long-term earnings growth of 3% or more, while maintaining dividend payout ratios of 65% or higher, to offer equity investors returns in excess of 7%. We note, however, that among our sample group of regulated utilities, the rate of reinvestment has not been a reliable predictor of medium-term EPS growth. Investors should be cautious, therefore, when paying premium P/E multiples for companies with high rates of reinvestment.

Disclosure Appendix

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  Market-Perform: Stock will perform in line with the market index to within +/-15 pp in the year ahead.

  Underperform: Stock will trail the performance of the market index by more than 15 pp in the year ahead.
- As of 7/29/05, our ratings were distributed as follows: Outperform/Buy – 45.2%; Market-Perform/Hold – 49.8%; Underperform/Sell – 5.0%.
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- The following companies are or during the past twelve (12) months were clients of Bernstein, which provided non-investment banking-securities related services and received compensation for such services EIX / Edison International.
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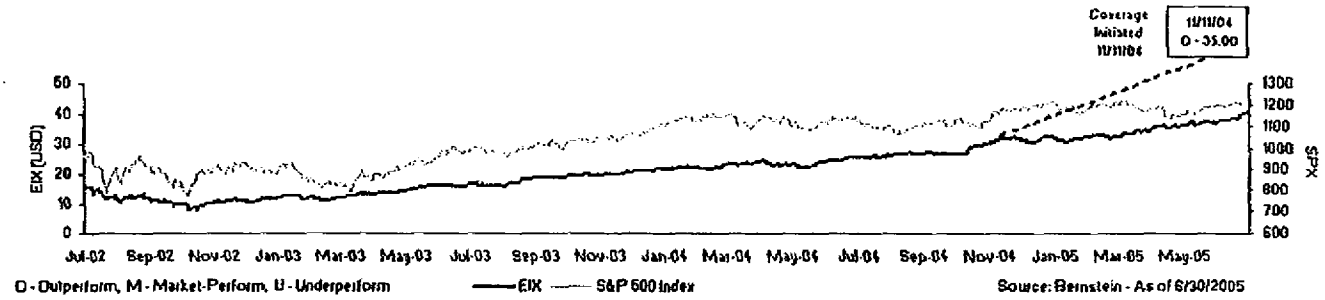

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Congressional **CBO Summary** Budget Office

The Budget and Economic Outlook: An Update

The Congressional Budget Office (CBO) estimates that the federal budget deficit for 2010 will exceed $1.3 trillion—$71 billion below last year's total and $27 billion lower than the amount that CBO projected in March 2010, when it issued its previous estimate.[1] Relative to the size of the economy, this year's deficit is expected to be the second largest shortfall in the past 65 years: At 9.1 percent of gross domestic product (GDP), it is exceeded only by last year's deficit of 9.9 percent of GDP. As was the case last year, this year's deficit is attributable in large part to a combination of weak revenues and elevated spending associated with the economic downturn and the policies implemented in response to it.

This report presents CBO's updated budget and economic projections spanning the 2010–2020 period. Those projections reflect the assumption that current laws affecting the budget will remain unchanged—and thus the projections serve as a neutral benchmark that lawmakers can use to assess the potential effects of policy decisions. As such, CBO assumes that tax reductions enacted earlier in this decade that are currently set to expire at the end of this year do so as scheduled; it also assumes that no new legislation aimed at keeping the alternative minimum tax (AMT) from affecting many more taxpayers is enacted. In addition, CBO assumes that the measures enacted in the past two years to provide fiscal stimulus to the weakened economy will expire as currently scheduled and that future annual appropriations will be kept constant in real (inflation-adjusted) terms. Under those assumptions, the federal budget deficit would decline substantially over the next two years—to 4.2 percent of GDP by 2012—and, consequently, the budget would provide much less support to the economy than has been the case for the past two years.

According to CBO's projections, the recovery from the economic downturn will continue at a modest pace during the next few years. Growth in the nation's output since the middle of calendar year 2009 has been anemic in comparison with that of previous recoveries following deep recessions, and the unemployment rate has remained quite high, averaging 9.7 percent in the first half of this year. Such weak growth tends to occur in recoveries from recessions spurred by financial crises. The considerable number of vacant houses and underused factories and offices will be a continuing drag on residential construction and business investment, and slow income growth as well as lost wealth will weigh on consumer spending.

All of those forces, along with the waning of federal fiscal support, will tend to restrain spending by individuals and businesses—and, therefore, economic growth—during the recovery. CBO projects that the economy will grow by only 2.0 percent from the fourth quarter of 2010 to the fourth quarter of 2011; even with faster growth in subsequent years, the unemployment rate will not fall to around 5 percent until the end of 2014.

In CBO's current-law projections, once the economy has recovered, the federal budget deficit amounts to between 2.5 percent and 3.0 percent of GDP from 2014 to 2020. Projected deficits total $6.2 trillion for the 10 years starting in 2011, raising federal debt held by the public to more than 69 percent of GDP by 2020, almost double the 36 percent of GDP observed at the end of 2007.

Those projections, which are similar in many respects to the ones that CBO prepared in March, reflect assump-

1. See Congressional Budget Office, *An Analysis of the President's Budgetary Proposals for Fiscal Year 2011* (March 2010).

tions about revenues and spending that may significantly underestimate actual deficits. Because the projections presume no changes in current tax laws, they result in estimates of revenues that, as a percentage of GDP, would be quite high by historical standards. Because of the assumption that future annual appropriations are held constant in real terms, the projections yield estimates of discretionary spending relative to GDP that would be low by historical standards.

Of course, many other outcomes are possible. If, for example, the tax reductions enacted earlier in the decade were continued, the AMT was indexed for inflation, and future annual appropriations remained the share of GDP that they are this year, the deficit in 2020 would equal about 8 percent of GDP, and debt held by the public would total nearly 100 percent of GDP. A different fiscal policy would also yield different economic outcomes. For example, CBO estimates that under an alternative fiscal path similar to the one just mentioned, growth of real GDP in 2011 would be 0.6 to 1.7 percentage points higher than it is in the baseline forecast, and the unemployment rate at the end of 2011 would be 0.3 to 0.8 percentage points lower. However, later in the coming decade, real GDP would fall below the level in CBO's baseline because the larger budget deficits would reduce investment in productive capital.

Beyond the 10-year budget window, the nation will face daunting long-term fiscal challenges posed by the aging of the population and rising costs for health care. Continued large deficits and the resulting increases in federal debt over time would reduce long-term economic growth. Putting the nation on a sustainable fiscal course will require policymakers to restrain the growth of spending substantially, raise revenues significantly above their average percentage of GDP of the past 40 years, or adopt some combination of those approaches.

The Budget Outlook

Fiscal year 2010 will mark a change in the recent trends that have prevailed for both revenues and outlays. After falling sharply during the recession, revenues are projected to increase (in nominal dollars) for the first time in three years, rising by $38 billion, or about 2 percent. Outlays, which have grown rapidly in recent years because of the recession, the turmoil in financial markets, and policies enacted in response to those events, are expected to decline by about 1 percent.

On the basis of tax collections through July 2010, CBO expects federal revenues to total $2.1 trillion this fiscal year, or about 14.6 percent of GDP (see Summary Table 1). Gains in receipts in recent months indicate that federal revenues are beginning to recover from the recession. In the period from October to December 2009, revenues were about 10 percent lower than in the same quarter a year earlier. But from January to July 2010, revenues were about 6 percent greater than in the comparable period of 2009.

Outlays are expected to total $3.5 trillion this year, or nearly 24 percent of GDP—a level slightly lower than the 25 percent share recorded last year but still much higher than the average level of roughly 21 percent of GDP over the past 40 years (see Summary Figure 1). Spending has dropped sharply this year for certain programs related to the federal government's response to the turmoil in the housing and financial markets. For activities other than those programs, overall spending will rise by 10 percent in 2010, CBO estimates.

Over the next few years, federal budget deficits would decline markedly as a share of GDP if the current-law assumptions about fiscal policy in CBO's baseline came to pass. Under those assumptions, the deficit would drop to 7.0 percent of GDP in 2011 and 4.2 percent in 2012 and then would reach a low of 2.5 percent of GDP in 2014. For the rest of the 10-year projection period, deficits would range between 2.6 percent and 3.0 percent of GDP, close to the average of 2.6 percent of GDP experienced over the past 40 years.

In CBO's baseline, total revenues climb sharply in the next few years, from 14.6 percent of GDP in 2010 to 17.5 percent in 2011 and 18.7 percent in 2012. That increase is attributable in part to the scheduled expiration of tax provisions originally enacted in 2001, 2003, and 2009 (including temporary relief from the AMT, which expired at the end of December 2009) and in part to the anticipated economic recovery. Revenues will also be boosted by provisions of the recently enacted health care legislation (the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010), which are estimated to increase receipts by growing amounts over the next few years, reaching 0.6 percent of GDP by 2020. In addition, the structure of the individual income tax will gradually raise receipts over time. Together, all of those factors push federal revenues in CBO's baseline to 21.0 percent of GDP

Summary Table 1.

CBO's Baseline Budget Outlook

	Actual 2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total, 2011-2015	Total, 2011-2020
							In Billions of Dollars							
Total Revenues	2,105	2,143	2,648	2,953	3,236	3,561	3,743	3,975	4,201	4,421	4,640	4,856	16,140	38,234
Total Outlays	3,518	3,485	3,714	3,618	3,760	4,000	4,250	4,560	4,780	4,983	5,274	5,541	19,342	44,480
Total Deficit (-) or Surplus	**-1,413**	**-1,342**	**-1,066**	**-665**	**-525**	**-438**	**-507**	**-585**	**-579**	**-562**	**-634**	**-685**	**-3,202**	**-6,246**
On-budget	-1,550	-1,419	-1,154	-766	-639	-569	-650	-732	-727	-711	-777	-817	-3,778	-7,542
Off-budget[a]	137	77	88	101	114	131	143	148	148	149	143	132	576	1,296
Debt Held by the Public at the End of the Year	7,545	9,031	10,007	10,790	11,422	11,950	12,544	13,214	13,885	14,546	15,281	16,073	n.a.	n.a.
							As a Percentage of Gross Domestic Product							
Total Revenues	14.8	14.6	17.5	18.7	19.4	20.1	20.1	20.4	20.6	20.8	20.9	21.0	19.2	20.1
Total Outlays	24.7	23.8	24.5	23.0	22.5	22.5	22.8	23.4	23.4	23.4	23.8	23.9	23.0	23.3
Total Deficit	**-9.9**	**-9.1**	**-7.0**	**-4.2**	**-3.1**	**-2.5**	**-2.7**	**-3.0**	**-2.8**	**-2.6**	**-2.9**	**-3.0**	**-3.8**	**-3.3**
Debt Held by the Public at the End of the Year	53.0	61.6	66.1	68.5	68.4	67.3	67.3	67.7	68.1	68.3	68.8	69.4	n.a.	n.a.
Memorandum:														
Gross Domestic Product (Billions of dollars)	14,230	14,666	15,148	15,764	16,705	17,760	18,630	19,508	20,398	21,293	22,205	23,154	84,008	190,567

Source: Congressional Budget Office.

Note: n.a. = not applicable.

a. Off-budget surpluses comprise surpluses in the Social Security trust funds and the net cash flow of the Postal Service.

by 2020, compared with an average level of about 18 percent of GDP over the past 40 years.

In 2011, federal outlays in CBO's baseline total $3.7 trillion (24.5 percent of GDP), almost $230 billion more than the amount anticipated for this year. Much of that increase stems from temporary factors that have held down outlays this year. Net outlays in 2010 for the Troubled Asset Relief Program were reduced by an adjustment to the outlays recorded for the previous year, and premiums paid by banks for deposit insurance were unusually high this year; neither factor is expected to recur next year. Furthermore, because October 1, 2011, falls on a weekend, some benefit payments will shift from fiscal year 2012 into 2011. In the other direction, outlays related to Fannie Mae and Freddie Mac are projected to decline significantly in 2011. With all of those factors excluded, total outlays would be only about $80 billion more than the projection for this year.

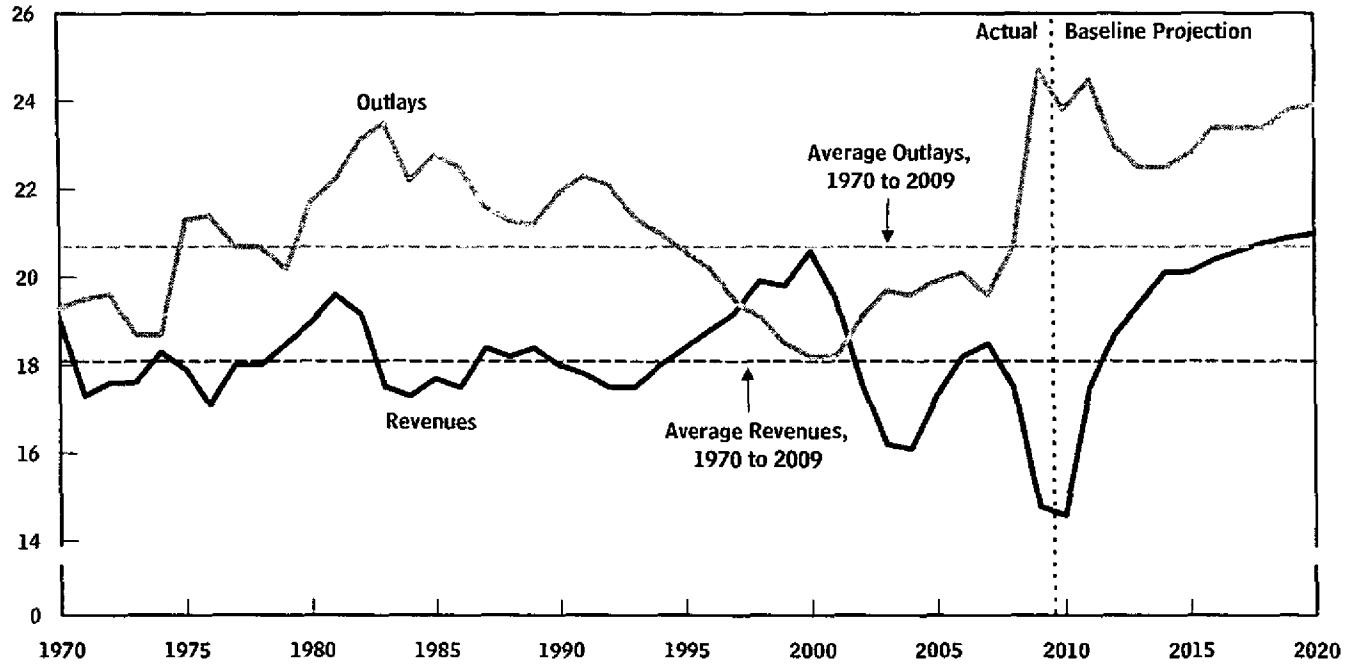
As spending from the American Recovery and Reinvestment Act of 2009 tails off and as the anticipated economic recovery allows payments for unemployment compensation and other benefits that automatically rise during recessions to continue returning toward more typical levels, outlays are projected to decline to 23.0 percent of GDP in 2012 and then to fall a bit further before rising eventually to 23.9 percent by 2020. Relative to GDP, mandatory spending is projected to rise (outlays for Medicare, Medicaid, and Social Security contribute significantly to that increase), and discretionary outlays are projected to fall. From 2012 through 2020, outlays in CBO's baseline average 23.2 percent of GDP—2.5 percentage points higher than the average over the past 40 years.

The federal government's spending on interest is determined largely by the stock of debt and prevailing interest

Summary Figure 1.

Total Revenues and Outlays

(Percentage of gross domestic product)



Source: Congressional Budget Office.

rates. The amount of federal debt held by the public has skyrocketed in the past two years: from 40 percent of GDP at the end of 2008 to nearly 62 percent at the end of this year, CBO estimates. Interest rates, however, have fallen to historically low levels, so despite the higher levels of debt, interest costs have not yet increased significantly.

Interest rates are expected to rise noticeably in the next few years, though, and under the assumptions of CBO's baseline, debt held by the public is projected to exceed 69 percent of GDP by the end of 2020. As a result, over the next decade, the government's annual net spending for interest is projected to more than double as a share of GDP, increasing from 1.5 percent in 2011 to 3.4 percent by 2020 (see Summary Figure 2). Over the 10-year projection period, such spending grows at an average rate of 15 percent a year.

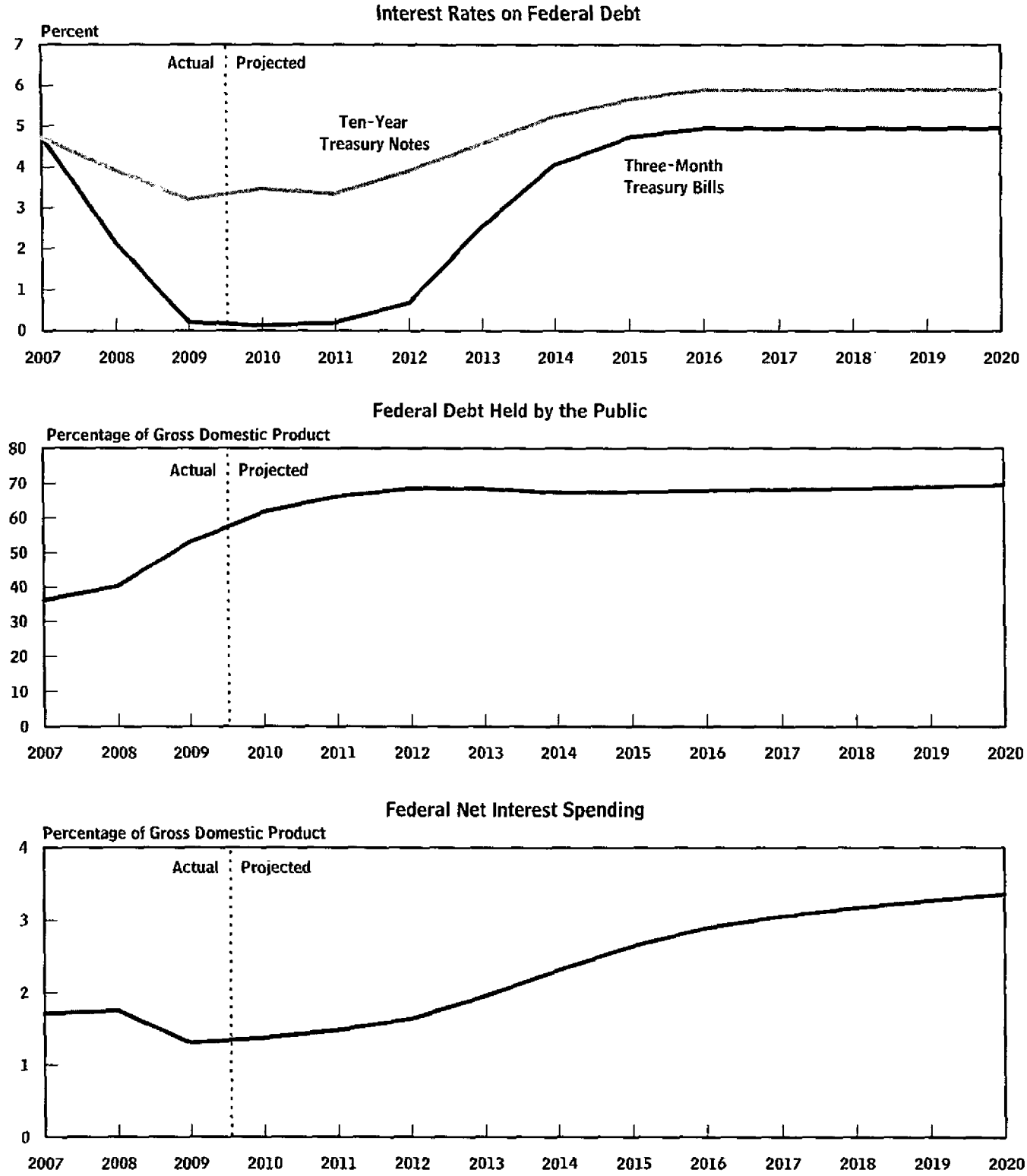
The Economic Outlook

The pace of growth after the recent recession is likely to be slower than usual as the economy recovers from the effects of the financial crisis and as the support to economic activity provided by fiscal policy diminishes. In the past, many recoveries from deep recessions have been quite robust. After deferring purchases during a slump (especially for expensive goods like homes, automobiles, and capital equipment), households and businesses typically boost their spending quickly as economic prospects improve. However, international experience suggests that recoveries from recessions that were spurred by financial crises tend to be slower than average—perhaps because the losses in wealth and damage to the financial system that occur during such crises weigh on spending for a number of years. Following such a crisis, it takes time for consumers to rebuild their wealth, for financial institutions to restore their capital bases, and for nonfinancial firms to regain the confidence required to invest in new plant and equipment; all of those forces tend to restrain spending. In addition, under current law, both the waning of fiscal stimulus and the scheduled increases in taxes will temporarily subtract from growth, especially in 2011.

In CBO's projections, real GDP increases by 2.8 percent between the fourth quarter of calendar year 2009 and the fourth quarter of 2010 and by 2.0 percent in 2011 (see Summary Table 2). Such rates of growth are well below

Summary Figure 2.

Net Interest and Its Determinants in CBO's Baseline



Source: Congressional Budget Office.

Summary Table 2.

CBO's Economic Projections for Calendar Years 2010 to 2020

	Forecast		Projected Annual Average	
	2010	2011	2012–2014	2015–2020
	Calendar Year Average			
Nominal GDP				
Billions of dollars	14,804	15,262	17,987 [a]	23,398 [b]
Percentage change	3.8	3.1	5.6	4.5
Unemployment Rate (Percent)	9.5	9.0	6.7	5.0
Interest Rates (Percent)				
Three-month Treasury bill rate	0.2	0.2	2.8	4.9
Ten-year Treasury note rate	3.4	3.5	4.7	5.9
	Fourth Quarter to Fourth Quarter (Percentage change)			
Real GDP	2.8	2.0	4.1	2.4
GDP Price Index	1.0	1.0	1.6	2.0
PCE Price Index	0.9	1.1	1.6	2.0
Core PCE Price Index[c]	0.9	1.1	1.5	2.0
Consumer Price Index[d]	0.8	1.2	1.8	2.3

Sources: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis; Department of Labor, Bureau of Labor Statistics; Federal Reserve.

Notes: The dollar values for nominal GDP do not incorporate the July 2010 revisions of the national income and product accounts.

Economic projections for each year from 2010 to 2020 are in Appendix C of this report.

GDP = gross domestic product; PCE = personal consumption expenditures.

a. Value for 2014.

b. Value for 2020.

c. Excludes prices for food and energy.

d. The consumer price index for all urban consumers.

historical norms for a recovery from a severe recession; for example, following the deep recession of 1981 and 1982, real GDP surged by nearly 8 percent in 1983 and by roughly 6 percent in 1984. In CBO's forecast, the growth of real GDP picks up after 2011, averaging 4.1 percent annually from 2012 through 2014 and closing the gap between GDP and its potential level (the amount of production that corresponds to a high use of labor and capital) by the end of 2014.

The modest growth in output projected for the next few years points to sluggish growth in employment during the remainder of this year and next. Consequently, CBO projects that the unemployment rate will decline slowly, falling to 9.3 percent at the end of 2010 and 8.8 percent at the end of 2011. After that, the growth in employment will accelerate, and the unemployment rate will decline more rapidly, reaching 5.1 percent at the end of 2014.

Inflation in the prices of consumer goods and services (calculated using the price index for personal consumption expenditures, or PCE) is projected to be about 1 percent in 2010 and 2011, when measured on a fourth-quarter-to-fourth-quarter basis. Core inflation, which excludes the prices of food and energy, is also projected to be about 1 percent this year and next. CBO projects that inflation will pick up moderately thereafter but remain below 2.0 percent from 2012 through 2014.

Interest rates in CBO's projections remain very low through the end of 2011 and then rise gradually as the recovery continues. The Federal Reserve is unlikely to raise its target for the federal funds rate (the interest rate at which depository institutions lend reserves to each other overnight) from its near-zero level while the recovery remains subdued and inflation stays low. As a result, the interest rate on 3-month Treasury bills will average

0.2 percent in 2010 and 2011, CBO projects. However, given CBO's outlook that the economy will strengthen and inflation will increase somewhat between 2012 and 2014, the projected 3-month Treasury bill rate averages 2.8 percent in those years. In the projections, the interest rate on 10-year Treasury notes, which is influenced by investors' expectations about monetary policy and other factors, edges up from an average of 3.4 percent in 2010 to 3.5 percent in 2011 and then rises to an average of 4.7 percent over the 2012–2014 period.

Beyond 2014, CBO projects, growth in real GDP will match the growth of potential GDP at 2.4 percent. In the agency's projections, the unemployment rate averages 5.0 percent from 2015 through 2020, and inflation (as measured by the PCE price index) averages 2.0 percent. During that period, the interest rates on 3-month Treasury bills and 10-year Treasury notes average 4.9 percent and 5.9 percent, respectively.

Economic forecasts are always subject to considerable uncertainty. The uncertainty regarding CBO's current forecast is especially large, both because forecasting the path of the economy near turning points in the business cycle is always difficult and because the current business cycle has been unusual in a variety of ways. Many developments could lead to outcomes that differ substantially, in one direction or the other, from those CBO has projected.

KCP&L Greater Missouri Operations
Low Near-Term Growth
Two-Stage Growth DCF Model

	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
				CASH FLOWS							
Company	2011 Div	2014 Div	Annual Change to 2014	Recent Price	Year 1 Div	Year 2 Div	Year 3 Div	Year 4 Div	Year 5 Div	Year 5-150 Div Growth	ROE=Internal Rate of Return *(Yrs 0-150)*
1 ALLETE	1.76	1.85	0.03	-36.41	1.76	1.79	1.82	1.85	1.93	4.50%	9.0%
2 Alliant Energy Co.	1.65	1.92	0.09	-35.78	1.65	1.74	1.83	1.92	2.01	4.50%	9.2%
3 American Elec. Pwr.	1.70	1.90	0.07	-36.12	1.70	1.77	1.83	1.90	1.99	4.50%	9.1%
4 Avista Corp.	1.08	1.30	0.07	-21.06	1.08	1.15	1.23	1.30	1.36	4.50%	9.9%
5 Black Hills Corp	1.48	1.60	0.04	-31.48	1.48	1.52	1.56	1.60	1.67	4.50%	9.0%
6 Cleco Corporation	1.08	1.45	0.12	-29.39	1.08	1.20	1.33	1.45	1.52	4.50%	8.8%
7 Con. Edison	2.40	2.46	0.02	-48.15	2.40	2.42	2.44	2.46	2.57	4.50%	9.0%
8 DPL Inc.	1.28	1.50	0.07	-26.09	1.28	1.35	1.43	1.50	1.57	4.50%	9.5%
9 DTE Energy Co.	2.30	2.70	0.13	-46.74	2.30	2.43	2.57	2.70	2.82	4.50%	9.5%
10 Duke Energy	0.99	1.05	0.02	-17.61	0.99	1.01	1.03	1.05	1.10	4.50%	9.8%
11 Edison Internat.	1.34	1.50	0.05	-34.54	1.34	1.39	1.45	1.50	1.57	4.50%	8.3%
12 Empire District	1.28	1.35	0.02	-20.09	1.28	1.30	1.33	1.35	1.41	4.50%	10.4%
13 Entergy Corp.	3.53	4.15	0.21	-77.33	3.53	3.74	3.94	4.15	4.34	4.50%	9.2%
14 Hawaiian Electric	1.24	1.30	0.02	-23.33	1.24	1.26	1.28	1.30	1.36	4.50%	9.4%
15 IDACORP	1.20	1.40	0.07	-35.89	1.20	1.27	1.33	1.40	1.46	4.50%	7.9%
16 Nextera Energy	2.10	2.40	0.10	-54.20	2.10	2.20	2.30	2.40	2.51	4.50%	8.4%
17 Northeast Utilities	1.10	1.30	0.07	-29.62	1.10	1.17	1.23	1.30	1.36	4.50%	8.3%
18 NSTAR	1.73	2.05	0.11	-39.12	1.73	1.84	1.94	2.05	2.14	4.50%	9.1%
19 PG&E Corp.	1.92	2.20	0.09	-46.21	1.92	2.01	2.11	2.20	2.30	4.50%	8.7%
20 Pinnacle West	2.10	2.30	0.07	-40.69	2.10	2.17	2.23	2.30	2.40	4.50%	9.5%
21 Portland General	1.07	1.20	0.04	-20.20	1.07	1.11	1.16	1.20	1.25	4.50%	9.7%
22 Progress Energy	2.52	2.58	0.02	-42.97	2.52	2.54	2.56	2.58	2.70	4.50%	9.8%
23 SCANA Corp.	1.92	2.00	0.03	-40.06	1.92	1.95	1.97	2.00	2.09	4.50%	8.9%
24 Sempra Energy	1.68	2.05	0.12	-52.47	1.68	1.80	1.93	2.05	2.14	4.50%	7.9%
25 Southern Co.	1.88	2.10	0.07	-37.03	1.88	1.95	2.03	2.10	2.19	4.50%	9.5%
26 Teco Energy, Inc.	0.84	0.95	0.04	-17.20	0.84	0.88	0.91	0.95	0.99	4.50%	9.3%
27 UIL Holdings Co.	1.73	1.73	0.00	-27.49	1.73	1.73	1.73	1.73	1.81	4.50%	10.1%
28 Vectren Corp.	1.39	1.50	0.04	-25.65	1.39	1.43	1.46	1.50	1.57	4.50%	9.6%
29 Westar Energy	1.28	1.40	0.04	-24.35	1.28	1.32	1.36	1.40	1.46	4.50%	9.6%
30 Wisconsin Energy	1.80	2.40	0.20	-57.21	1.80	2.00	2.20	2.40	2.51	4.50%	8.1%
31 Xcel Energy Inc.	1.03	1.15	0.04	-22.80	1.03	1.07	1.11	1.15	1.20	4.50%	8.9%
GROUP AVERAGE											9.1%
GROUP MEDIAN											9.2%

Sources: Value Line Investment Survey, Electric Utility (East), Aug 27, 2010; (Central), Sep 24, 2010; (West), Nov 5, 2010.

SCHEDULE 5

HAS BEEN DEEMED

HIGHLY CONFIDENTIAL

IN ITS ENTIRETY

SCHEDULE 6

HAS BEEN DEEMED

HIGHLY CONFIDENTIAL

IN ITS ENTIRETY

KCPL Greater Missouri Operations
File No. ER-2010-0356

Price/Earnings Ratios for Comparable Electric Utility Companies

Company Name	-- December 2010 -- High Stock Price	Low Stock Price	Average Average High/Low Stock Price	Consensus Projected 2011 EPS	P/E
Alliant Energy	37.32	36.28	36.80	2.86	12.87 x
American Electric Power	36.47	34.92	35.70	3.15	11.33 x
Cleco Corp.	31.22	30.05	30.64	3.00	10.21 x
DPL Inc.	26.45	25.32	25.89	2.44	10.61 x
IDACORP, Inc.	37.76	36.57	37.17	3.01	12.35 x
PG&E Corp.	48.63	46.61	47.62	3.72	12.80 x
Pinnacle West Capital	41.99	40.15	41.07	3.07	13.38 x
Progress Energy	44.26	43.08	43.67	3.14	13.91 x
Southern Company	38.49	37.43	37.96	2.52	15.06 x
Xcel Energy	23.89	23.20	23.55	1.74	13.53 x
			360.05	28.65	12.57 x

Sources: http://finance.yahoo.com for stock prices; Reuters.com for 2011consensus projected EPS

SCHEDULE 7

KCPL Greater Missouri Operations
Case No. ER-2010-0356

Capital Structure as of June 30, 2010
Great Plains Energy

Capital Component		Dollar Amount (millions)	Percentage of Capital
Common Stock Equity	$	2,870	47.87%
Preferred Stock	$	-	0.00%
Long-Term Debt	$	2,838	47.34%
Equity Units	$	288	4.80%
Total Capitalization	**$**	**5,995**	**100.00%**

Source: KCPL Greater Missouri Operation's response to Staff's Data Request No. 0159.

CORRECTED SCHEDULE 6 (DIRECT)

KCPL Greater Missouri Operations
File No. ER-2010-0356

Electric Utility
DPS, EPS, BVPS & GDP
10-Year Compound Growth Rate Averages (1947-1999)

DPS		*EPS*		*BVPS*		GDP	
Years	10 yr compound growth rate avgs	Years	10 yr compound growth rate avgs	Years	10 yr compound growth rate avgs	Years	10 yr compound growth rate avgs
1947-49 to 1957-59	4.58%	1947-49 to 1957-59	4.92%	1947-49 to 1957-59	3.10%	1947-49 to 1957-59	6.28%
1948-50 to 1958-60	4.49%	1948-50 to 1958-60	4.91%	1948-50 to 1958-60	3.30%	1948-50 to 1958-60	6.10%
1949-51 to 1959-61	4.33%	1949-51 to 1959-61	5.00%	1949-51 to 1959-61	3.39%	1949-51 to 1959-61	5.77%
1950-52 to 1960-62	4.31%	1950-52 to 1960-62	5.35%	1950-52 to 1960-62	3.48%	1950-52 to 1960-62	5.27%
1951-53 to 1961-63	4.48%	1951-53 to 1961-63	5.76%	1951-53 to 1961-63	3.79%	1951-53 to 1961-63	4.96%
1952-54 to 1962-64	4.74%	1952-54 to 1962-64	5.99%	1952-54 to 1962-64	4.22%	1952-54 to 1962-64	5.26%
1953-55 to 1963-65	5.16%	1953-55 to 1963-65	6.09%	1953-55 to 1963-65	4.53%	1953-55 to 1963-65	5.47%
1954-56 to 1964-66	5.52%	1954-56 to 1964-66	6.26%	1954-56 to 1964-66	4.65%	1954-56 to 1964-66	5.82%
1955-57 to 1965-67	5.87%	1955-57 to 1965-67	6.50%	1955-57 to 1965-67	4.65%	1955-57 to 1965-67	5.94%
1956-58 to 1966-68	5.97%	1956-58 to 1966-68	6.57%	1956-58 to 1966-68	4.69%	1956-58 to 1966-68	6.36%
1957-59 to 1967-69	5.96%	1957-59 to 1967-69	6.50%	1957-59 to 1967-69	4.73%	1957-59 to 1967-69	6.63%
1958-60 to 1968-70	5.89%	1958-60 to 1968-70	6.06%	1958-60 to 1968-70	4.88%	1958-60 to 1968-70	6.93%
1959-61 to 1969-71	5.68%	1959-61 to 1969-71	5.60%	1959-61 to 1969-71	4.97%	1959-61 to 1969-71	7.16%
1960-62 to 1970-72	5.42%	1960-62 to 1970-72	5.27%	1960-62 to 1970-72	5.14%	1960-62 to 1970-72	7.46%
1961-63 to 1971-73	5.00%	1961-63 to 1971-73	4.95%	1961-63 to 1971-73	5.05%	1961-63 to 1971-73	7.92%
1962-64 to 1972-74	4.35%	1962-64 to 1972-74	4.41%	1962-64 to 1972-74	4.92%	1962-64 to 1972-74	8.24%
1963-65 to 1973-75	3.50%	1963-65 to 1973-75	3.71%	1963-65 to 1973-75	4.83%	1963-65 to 1973-75	8.49%
1964-66 to 1974-76	2.77%	1964-66 to 1974-76	3.02%	1964-66 to 1974-76	4.92%	1964-66 to 1974-76	8.62%
1965-67 to 1975-77	2.46%	1965-67 to 1975-77	2.90%	1965-67 to 1975-77	5.00%	1965-67 to 1975-77	8.91%
1966-68 to 1976-78	2.47%	1966-68 to 1976-78	2.63%	1966-68 to 1976-78	4.83%	1966-68 to 1976-78	9.29%
1967-69 to 1977-79	2.71%	1967-69 to 1977-79	2.71%	1967-69 to 1977-79	4.63%	1967-69 to 1977-79	9.71%
1968-70 to 1978-80	3.03%	1968-70 to 1978-80	2.49%	1968-70 to 1978-80	4.40%	1968-70 to 1978-80	10.05%
1969-71 to 1979-81	3.46%	1969-71 to 1979-81	2.88%	1969-71 to 1979-81	4.16%	1969-71 to 1979-81	10.41%
1970-72 to 1980-82	3.89%	1970-72 to 1980-82	3.19%	1970-72 to 1980-82	3.78%	1970-72 to 1980-82	10.42%
1971-73 to 1981-83	4.29%	1971-73 to 1981-83	3.69%	1971-73 to 1981-83	3.49%	1971-73 to 1981-83	10.22%
1972-74 to 1982-84	4.82%	1972-74 to 1982-84	4.36%	1972-74 to 1982-84	3.37%	1972-74 to 1982-84	10.03%
1973-75 to 1983-85	5.27%	1973-75 to 1983-85	4.80%	1973-75 to 1983-85	3.17%	1973-75 to 1983-85	9.96%
1974-76 to 1984-86	5.57%	1974-76 to 1984-86	5.15%	1974-76 to 1984-86	3.01%	1974-76 to 1984-86	9.77%
1975-77 to 1985-87	5.43%	1975-77 to 1985-87	4.45%	1975-77 to 1985-87	2.81%	1975-77 to 1985-87	9.34%
1976-78 to 1986-88	4.98%	1976-78 to 1986-88	3.44%	1976-78 to 1986-88	2.71%	1976-78 to 1986-88	8.80%
1977-79 to 1987-89	4.32%	1977-79 to 1987-89	1.78%	1977-79 to 1987-89	2.36%	1977-79 to 1987-89	8.32%
1978-80 to 1988-90	3.59%	1978-80 to 1988-90	0.82%	1978-80 to 1988-90	1.88%	1978-80 to 1988-90	7.92%
1979-81 to 1989-91	2.99%	1979-81 to 1989-91	0.34%	1979-81 to 1989-91	1.82%	1979-81 to 1989-91	7.38%
1980-82 to 1990-92	2.46%	1980-82 to 1990-92	0.16%	1980-82 to 1990-92	1.93%	1980-82 to 1990-92	7.06%
1981-83 to 1991-93	1.93%	1981-83 to 1991-93	-0.50%	1981-83 to 1991-93	2.43%	1981-83 to 1991-93	6.72%
1982-84 to 1992-94	1.37%	1982-84 to 1992-94	-1.81%	1982-84 to 1992-94	2.90%	1982-84 to 1992-94	6.49%
1983-85 to 1993-95	0.87%	1983-85 to 1993-95	-1.71%	1983-85 to 1993-95	2.62%	1983-85 to 1993-95	6.12%
1984-86 to 1994-96	0.49%	1984-86 to 1994-96	-1.51%	1984-86 to 1994-96	2.25%	1984-86 to 1994-96	5.89%
1985-87 to 1995-97	0.19%	1985-87 to 1995-97	-1.51%	1985-87 to 1995-97	1.78%	1985-87 to 1995-97	5.81%
1986-88 to 1996-98	-0.35%	1986-88 to 1996-98	-2.94%	1986-88 to 1996-98	1.59%	1986-88 to 1996-98	5.73%
1987-89 to 1997-99	-0.70%	1987-89 to 1997-99	-2.50%	1987-89 to 1997-99	2.51%	1987-89 to 1997-99	5.63%
Average	3.74%	Average	3.18%	Average	3.63%	Average	7.53%

Average of 10-year Rolling Averages EPS, DPS and BVPS **3.52%**

Source: 2003 *Mergent Public Utility and Transportation Manual*

CORRECTED Schedule 14 (DIRECT)

Weighted Cost of Capital as of June 30, 2010 for KCPL Greater Missouri Operations

Capital Component	Percentage of Capital	Embedded Cost		Weighted Cost of Capital Using Common Equity Return of: 8.50%	9.00%	9.50%
Common Stock Equity	47.87%	—		4.07%	4.31%	4.55%
Preferred Stock	0.00%	0.000%		0.00%	0.00%	0.00%
Long-Term Debt	47.34%	6.520%	[1]	3.09%	3.09%	3.09%
Equity Units	4.80%	12.351%		0.59%	0.59%	0.59%
Total	**100.00%**			**7.75%**	**7.99%**	**8.23%**

Note:

1. Embedded cost of long-term debt is based on The Empire District Electric Company's embedded cost of long-term debt provided in Case No. ER-2011-0004.

Weighted Cost of Capital as of June 30, 2010 for KCPL Greater Missouri Operations

Capital Component	Percentage of Capital	Embedded Cost		Weighted Cost of Capital Using Common Equity Return of: 8.50%	9.00%	9.50%
Common Stock Equity	47.87%	-----		4.07%	4.31%	4.55%
Preferred Stock	0.00%	0.000%		0.00%	0.00%	0.00%
Long-Term Debt	47.34%	6.520%	1	3.09%	3.09%	3.09%
Equity Units	4.80%	12.351%		0.59%	0.59%	0.59%
Total	**100.00%**			**7.75%**	**7.99%**	**8.23%**

Note:

1. Embedded cost of long-term debt is based on The Empire District Electric Company's embedded cost of long-term debt provided in Case No. ER-2011-0004.