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Witness:	Kathleen C. McShane
Sponsoring Party:	Foster Associates, Inc
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. EC-2002-1

REBUTTAL TESTIMONY

OF

KATHLEEN C. McSHANE

ON

BEHALF OF

UNION ELECTRIC COMPANY
d/b/a AmerenUE

Exhibit No. 135
Date 7/10/02 Case No. EC-2002-1
Reporter KEM

St. Louis, Missouri
May, 2002

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REBUTTAL TESTIMONY

OF

KATHLEEN C. McSHANE

CASE NO. EC-2002-1

1. INTRODUCTION AND SUMMARY OF CONCLUSIONS

Q. Please state your name and business address.

A. My name is Kathleen C. McShane and my business address is 4550 Montgomery Avenue, Suite 350N, Bethesda, Maryland 20814.

Q. What is your occupation?

A. I am a Senior Vice President and Treasurer of Foster Associates, Inc., an economic consulting firm.

Q. What are your educational background and experience?

A. I hold a Masters Degree in Business Administration with a concentration in Finance from the University of Florida (1980) and am a Chartered Financial Analyst (1989). I have testified on cost of capital in over 100 cases in Federal, State, Provincial and Territorial regulatory jurisdictions in the U.S. and Canada since 1987. In addition, as part of my testimony, I have prepared an **Executive Summary** attached hereto as Appendix A. My professional experience is detailed in Appendix B to this Exhibit.

Q. *What is the purpose of your testimony?*

A. I have been requested by AmerenUE to: (1) evaluate and comment on the return on equity recommended by the Staff, and the support they offer for that

recommendation, and (2) independently estimate a fair return on equity for AmerenUE's regulated Missouri operations.

Q. Please describe the background which gave rise to your testimony in this proceeding.

A. AmerenUE has operated under an Experimental Alternative Regulation Plan (EARP) in Missouri for the past six years. The EARP had an original term of three years, from July 1, 1995 to June 30, 1998. The plan was extended for an additional three years; the second term expired June 30, 2001. That plan provided for a sharing of earnings between ratepayers and shareholders. The sharing grid agreed to under the EARP provided for AmerenUE to retain 100% of earnings up to 12.61%, and to share earnings above that level such that AmerenUE's maximum achievable return on equity was limited to 13.5%.

In March 2002, Missouri Public Service Commission Staff filed a complaint with the Commission in which it seeks to have the Commission order a rate reduction in the range of $246 to $285 million, including a reduction in the rate of return on equity underpinning base rates to a level of 8.91% to 9.91% (with a mid-point of 9.41%).

My testimony critiques the opinions offered by Staff witness Ronald L. Bible concerning the appropriate return on equity for AmerenUE, shows that the Staff has failed to meet its burden of proof on this critical issue, and provides an independent estimate of a just and reasonable return on equity for AmerenUE.

Q. Please summarize your conclusions regarding the reasonableness of Staff's recommended ROE and your estimates of a just and reasonable return for AmerenUE.

A. In summary, my conclusions are:

- Key considerations in the estimation of a fair return include:
  - The rate of return on common equity is perhaps the most important element of the revenue requirement, and should be approached with the high degree of thought and analysis that it merits.
  - The estimation of a fair return is not produced by a simple arithmetic formula, but requires the use of multiple tests applied to samples of comparable companies, followed by the application of expert judgment to the results.
  - A fair and reasonable return falls within a range; the allowed return should be set within that range, based on the application of the multiple criteria that govern what is fair and reasonable.
- Staff's testimony in this case underestimates the fair return on equity for AmerenUE by approximately 3 percentage points:
  - Staff recommends a return (8.91% to 9.91%) which is neither fair nor reasonable; corrections to the flaws in the approach taken by Mr. Bible show the recommended return should have been approximately 11.8% to 12.8%.

- Mr. Bible's recommendation is based solely on a discounted cash flow result applied to Ameren Corp. No competent analyst would base the cost of equity on a single test applied to a single company.
- Mr. Bible has devised his own standard by which he judges whether his DCF result for Ameren is reasonable. That standard, which requires the results of his other tests to be more than two times his Ameren-only DCF result before he would recommend a different ROE, is non-sensical. Mr. Bible's application of the DCF test to the company, which is the subject of this rate proceeding, is entirely circular. Its results are a function of the return the regulator is expected to allow. That is the same return the analyst is supposed to be estimating.
- By averaging historic growth rates with analysts' consensus forecasts of future growth rates (which already take into account historic rates), Mr. Bible's DCF test calculation gives excessive weight to historic growth rates in what is supposed to be an effort to estimate future investor growth expectation. Replacement of Mr. Bible's average historic and forecast growth rates with only the forecast growth rates increases his DCF return on equity results by between 1.25 and 3 percentage points.

- Mr. Bible's risk premium analysis of Ameren erroneously replaces, relative to past Staff practice, utility bond yields with government bond yields. Correction for this error increases the risk premium return on equity result by 0.7 percentage points.
- Mr. Bible's Capital Asset Pricing Model utilizes a risk-free rate, a market risk premium and relative risk factors (betas) which significantly understate AmerenUE's required equity return. Replacement of the unreasonably low inputs with appropriate values increases his CAPM return on equity results by 1.9 to 4.5 percentage points.
- Mr. Bible opted not to apply a risk premium test to his comparable sample. Inclusion of that analysis adds a further test result that is 2.7 percentage points above his return on equity recommendation.
- Corrections for these errors and omissions in Staff's testimony raises the rate of return on equity to a range of approximately 11.8% to 12.8% when equal weight is given to each of the test results for Ameren Corporation and Mr. Bible's sample of comparable companies. That return is 2.2 to 3.4 percentage points higher than the mid-point of Staff's recommendation.

TABLE 1

Test	Mr. Bible's Results	Corrected Results	Correction
DCF – Ameren	8.91% to 9.91%	11.2%	Use analysts' growth forecasts
Risk Premium – Ameren	11.87%	12.53%	Use utility bond yields
CAPM – Ameren	9.34% to 9.40%	11.2% to 13.9%	Use reasonable risk-free rate, correct market risk premium and beta
DCF – Comparables	9.75%	12.8%	Use analysts' growth forecasts
Risk Premium – Comparables	--	12.1%	Apply test to sample companies
CAPM - Comparables	9.46% to 9.52%	11.2% to 13.9%	Use reasonable risk-free rate, correct market risk premium and beta
Average	**9.9% to 10.1%**	**11.8% to 12.8%**	
BIBLE RECOMMENDATION	**8.91% to 9.91%**		

- My independent analysis of the fair return in this case shows that a fair return for AmerenUE is in the range of 12% to 14%.
  - The analysis is based on the results of multiple tests applied to samples of comparable companies. Such an approach is required because no single test can be expected to provide the "correct" answer. More importantly, the ability of any single test applied to one individual company to obtain the "right" answer would be pure happenstance.

- My DCF test, applied to a sample of eight comparable electric utilities (including Ameren Corporation), using analysts' consensus growth forecasts, results in an estimated cost of equity (on market value) of 11.0% to 11.3%.
- My CAPM return on equity results, applied to the same sample of electric utilities, is 11.5% to 11.75%.
- Both the DCF and CAPM results are market rates, that is, derived from market values and applicable to the market value of investments. However, regulatory convention applies that return to the book value. The further the market value of a company's equity is above its book value, the greater the extent to which a current DCF or CAPM cost of equity understates the fair return on book equity. Simply put, the application of the market return arising from the DCF and CAPM tests to the book value of equity under current market conditions is wrong. Unless the market-derived cost of equity estimates recognize the significant deviation between current market value and book value, the application of those tests will, by definition, significantly understate the return (in dollar terms) on original cost book value that investors require. When the market value-derived expected returns on equity are

translated into fair returns on book value, the resulting required returns on equity are:

DCF	11.5% to 13.5%
CAPM	12.0% to 14.0%

- My comparable earnings test applied to unregulated companies indicates a fair return in the range of 13.75% to 14.0%. The comparable earnings test estimates the opportunity cost of equity; that is, the returns available from alternative investments of comparable risk. It is the only test that directly measures the fair return in the same manner in which the allowed return is applied: to book value. It is also the only test that explicitly recognizes that utilities do not operate in a utility-only capital market. Utilities have to compete with other types of companies for capital. Therefore, their equity returns also need to be comparable, on a risk-adjusted basis, to those of unregulated companies.

- AmerenUE's proposed alternative regulation plan includes a sharing grid which assumes that shareholder returns will not be excessive.

The proposed grid begins sharing at returns below what would be a fair and reasonable return under traditional cost of service ratemaking.

- The sharing grid allows for returns in line with those under similar plans approved by other state regulators.
- The maximum achievable return is compatible with ROEs forecast for other Central U.S. electric utilities.
- The maximum achievable return is well below the average ROE forecast for competitive industrials.

In summary, Staff has recommended a return on equity for AmerenUE which is clearly inadequate; a return on equity of 9.41% does not approach meeting the standards which govern a fair and reasonable return. Correction of Staff's estimates for various errors and omissions brings the results to a level (11.8% to 12.8%) which lies within the range of reasonableness. My own analysis, which supports a return on equity in the range of 12.0-14.0%, confirms the validity of the Staff's corrected results.

2. THE STAFF'S PROPOSED RATE OF RETURN IS NOT SUPPORTED BY COMPETENT OR SUBSTANTIAL EVIDENCE, AND SO IS NEITHER JUST NOR REASONABLE

Q. Please summarize your understanding of the testimony of the Staff with respect to a fair return on equity for AmerenUE.

A. The Staff's testimony on this issue is sponsored by Mr. Ronald Bible. Mr. Bible recommends a return on equity in the range of 8.91% to 9.91%, with a mid-point of 9.41% for AmerenUE. Mr. Bible's opinion of what constitutes a just and reasonable return for AmerenUE is the result of his use of <u>one</u> methodology for estimating the future return on equity, the discounted cash flow method ("DCF"), but only applied to <u>one</u>

company. That is, Mr. Bible arrives at his rate of return recommendation by relying exclusively on the DCF method as applied solely to the parent of AmerenUE.

Mr. Bible also uses several other methods whose results he claims support his recommendation. The average of these tests produces a higher result than the mid-point of Mr. Bible's Ameren-only DCF test. Nevertheless, Mr. Bible's rate of return recommendation remains at the lower value produced by that single DCF calculation. He justifies this by applying a standard which he admits is his alone; it is not employed by other Staff members nor other cost of capital experts. That standard, as I explain below, would be non-sensical to any person who is knowledgeable in the area of cost of capital. As the analysis below will show, there is no basis for concluding that the rate of return proposed by the Staff can be seen as leading to just and reasonable rates in this case.

3. THE STAFF'S RATE OF RETURN OPINION IS PATENTLY UNREASONABLE

Q. Why do you conclude that the rate of return proposed by the Staff is unreasonable?

A. Before one even addresses the multiple flaws and omissions in the calculations offered by Mr. Bible for his position, there are certain fairly obvious observations that one can make – even if one is not familiar with any of the methods Mr. Bible uses – that make the Staff's recommendation immediately suspect.

First, if Ameren Corporation were only able to earn the 9.41% ROE (mid-point of his recommended range) that Mr. Bible claims is its cost of equity and a fair return, it would not even be able to cover its current dividend. A 9.41% return on the 2001 book value per share of $24.05 estimated by Value Line (January 2002) equates to

earnings per share of $2.26 (9.41% x $24.05). A 9.41% ROE consequently does not even come close to covering Ameren's $2.54 dividend.

Ameren Corporation has paid the same dividend of $2.54 for the last five years. Utility shares have traditionally been viewed as providing a steady stream of dividend income, with moderate increases from year-to-year. A reduction in allowed return to a level which would not allow the payment of a dividend that has not been raised for five years would not be well received by investors. To my knowledge, no utility in this country has been forced to reduce its dividends because the regulator has not allowed a return adequate to pay the existing dividends.

Second, one can look at what is happening in other jurisdictions. In doing so, one sees that Mr. Bible's recommended return of 9.41% falls well short of the returns which have been allowed in recent years by other state regulators. The following table summarizes the average returns that have been allowed by state regulators for electric utilities over the life of both Ameren's EARPs.

TABLE 2

Year	Average Allowed Return
1995/96	11.44%
1996/97	11.39
1997/98	11.42
1998/99	11.17
1999/00	10.89
2000/01	11.57

Source: Regulatory Research Associates, Inc. Regulatory Focus, Major Rate Case Decisions: January 1990-December 2000, January 2001 and Major Rate Case Decisions --January – September 2001, October 2001

This table shows that the ROEs allowed by other regulators over the past several years have been, on average, in the fairly narrow range of 10.9% to 11.6%, well above Mr. Bible's recommendation. The December 2001 Public Utilities Fortnightly survey of state regulatory decisions for electric and gas utilities indicates that the average allowed ROE for the 12 months ending September 30, 2001 was 11.3%, compared to the same utilities' previously authorized average return of 11.4%. This is only a minimal change in same-utilities' allowed ROEs relative to past decisions.

While the average allowed ROEs have been close to 11.0% to 11.5% for years, a number of decisions for companies that are relatively comparable to AmerenUE have been in the 12.0% to 12.9% range. To illustrate, Wisconsin Electric Power Company ("WEP") was allowed a return on equity of 12.2% in September 1997 (Decision 6630-UR-110), a return which was reconfirmed in September 1999 (Decision 6630-UR-111). Other recent similar Wisconsin decisions include: Madison Gas & Electric (April 2000), 12.9%, and Wisconsin Public Service (March 2000), 12.1%. In its 1997 decision for WEP, the Public Service Commission of Wisconsin specifically justified its allowed ROE, stating:

> the Commission intends to send a clear signal supporting financially strong utilities.

Two recent decisions in North Dakota, for Northern States Power (PU-400-00-195, December 2000) and Otter Tail Power (PU-401-00-36, July 2001), allowed a return on equity of 12.0% (50/50 sharing with customers of earnings above 13%).

At the Federal level, in a March 21, 2001 Order (EL01-47-000), the Federal Energy Regulatory Commission ("FERC") proposed a package of incentive mechanisms to ensure adequate transmission investment in the western U.S., including

incremental risk premiums for more timely in-service dates. Under a subsequent Order (EL01-47-001) dated May 15, 2001, allowing a baseline return on equity of 11.5% (based on its July 2000 decision for Southern California Edison of 11.6%), the FERC provided for ROEs of up to 13.5% for transmission projects placed in service by a prescribed deadline. The FERC's baseline ROE of 11.5% for transmission is over 200 basis points above Mr. Bible's recommended ROE for an integrated utility. More recently (January 30, 2002), the FERC preliminarily accepted the Midwest ISO's requested 13% return on equity (ER02-485) subject to refund and the outcome of an expedited hearing. In its Order, the Commission, based on information provided by the parties, and using the methodology set forth in Commission precedent, concluded the mid-point and median of the zone of reasonableness were 12.4% and 12.8% respectively. It is well recognized that transmission operations are less risky than integrated electric operations,[1] so, if anything, the rate of return for an integrated utility like AmerenUE should be higher than that for transmissions operations alone.

While this Commission is not bound by what other regulators do, the nature of the capital markets, the economy and the electric utility industry do not dramatically change just by crossing the borders of Missouri. Surely what other regulators have done in neighboring jurisdictions is relevant to assess the reasonableness of Mr. Bible's recommendations and to this Commission's consideration of this case. However, not only has Mr. Bible not considered the experience of utilities from

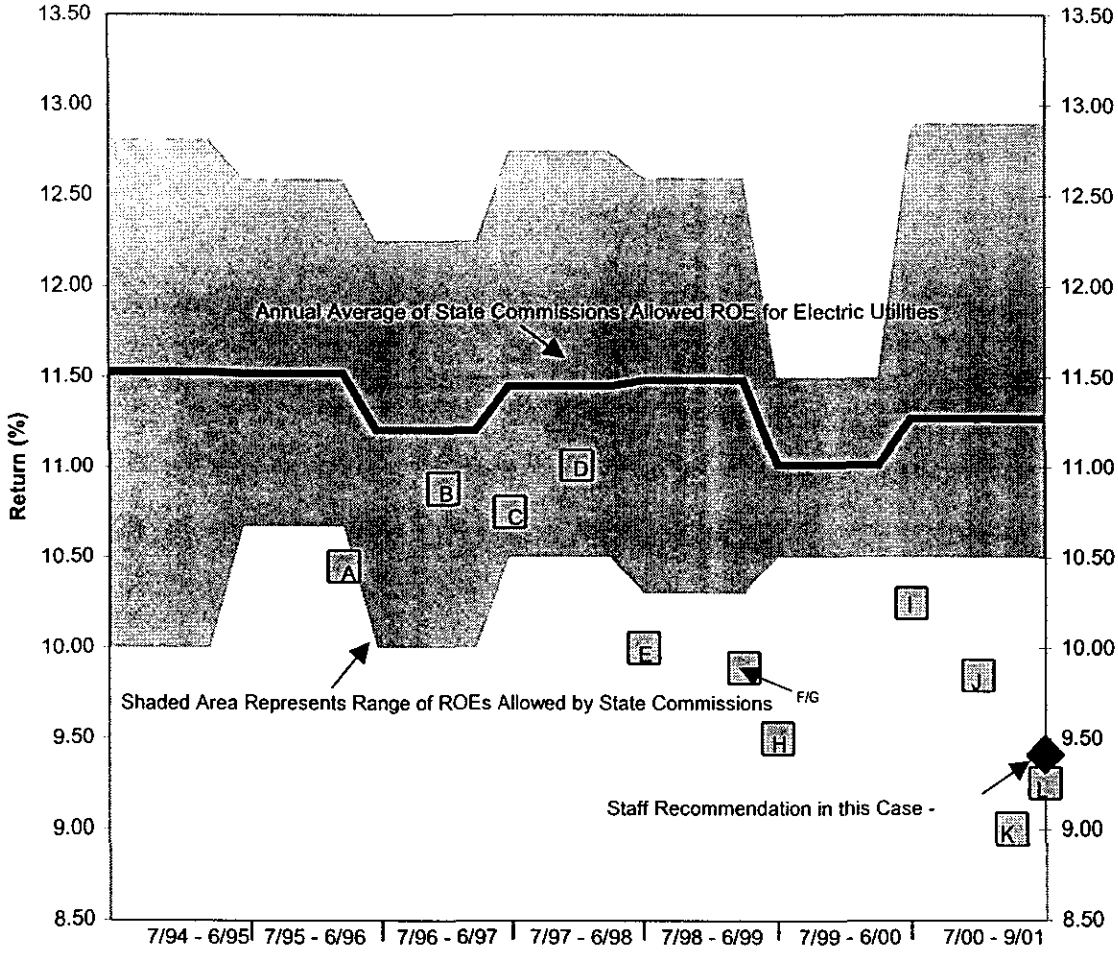
[1] To illustrate, S&P states, "Owing to the relatively low business risk of large transmission systems and regulated distribution systems (the "wires" business), business profile assessments for these companies should fall within the 1-4 range. The generation business is the most risky, reflecting the competitive nature of this business, and generators will generally receive business profile assessments in the mid- to lower-end of the range." (Standard & Poor's, Infrastructure Finance, "Rating Methodology for Global Power Utilities", October 1998.)

elsewhere in the U.S., he urges this Commission to approve a return that would clearly result in Missouri being out of the mainstream with regard to allowed rates of return in today's marketplace.

Q. How do the Staff's recommendations generally compare to the returns other Commissions are allowing?

A. The chart on the following page shows that in recent years, the Staff's recommendations fall below the lower end of the range of what other Commissions have been allowing.

Comparison of Allowed Returns on Equity
(MPSC Staff Recommendations Compared to State Commissions' Orders)



Staff ROE Recommendations

A - Broadwater - GR-96-193 - Laclede (1996) - 10.45%
B - Broadwater - ER-97-81 - EDE (1997) - 10.88%
C - Hill - ER-97-394 - MPS (1997) - 10.75%
D - Bible - GR-98-140 - Missouri Gas (1998) - 11.01%
E - Broadwater - GR-98-374 - Laclede (1998) - 10%
F - Bible - GR-99-246 - SJLP (1999) - 9.89%
G - Bible - ER-99-247 - SJLP (1999) - 9.89%
H - Broadwater - GR-99-315 - Laclede (1999) - 9.5%
I - McKiddy - GR-2000-512 - AmerenUE (2000) - 10.25%
J - Murray - GR-2001-292 - Missouri Gas (2001) - 9.85%
K - McKiddy - ER-2001-299 - EDE (2001) - 9%
L - McKiddy - GR-2001-620 - Laclede (2001) - 9.25%

Note: Allowed ROE statistics for 2001 do not include MPSC's September 21st decision allowing a 10.00% ROE for Empire District Electric.

Source: Regulatory Research Associates, Inc., Regulatory Focus, Major Rate Case Decisions: January 1990 – December 2000, January 2001 and Major Rate Case Decisions – January – September 2001, October 2001.

Q. Mr. Bible has also calculated "retrospective" costs of equity for each of the years of the EARP 1996 to 2000, which were filed in response to Union Electric's First Request for Admissions, No. 33 (dated September 5, 2001). Are these returns as out-of-line as the ROE recommended in this proceeding?

A. Yes. Mr. Bible's retrospective calculations of the cost of equity for Ameren – which, unlike his current testimony, give weight to several tests – are, on average, almost two percentage points lower than the average returns on equity allowed by State Commissions during 1996 to 2000 shown on Table 2.

The comparisons are shown in the table below.

TABLE 3

EARP YEAR	MR. BIBLE'S ROE CALCULATION FOR AMERENUE	AVERAGE ROE ALLOWED BY STATE COMMISSIONS	DIFFERENCE
1999/2000	9.49%	11.57%	-2.08%
1998/1999	10.25%	10.89%	-0.64%
1997/1998	9.24%	11.17%	-1.93%
1996/1997	9.54%	11.42%	-1.88%
1995/1996	9.38%	11.39%	-2.01%
		AVERAGE DIFFERENCE	-1.71%

These factors alone should lead to grave doubts about the reasonableness of Staff's proposal.

Q. Do the financial markets have grave doubts about the reasonableness of Staff's proposal?

A. Yes. Following Staff's initial July 2001 proposal of a $214 to $250 million annual revenue reduction, Moody's Investors Service assigned a negative outlook to the long-term ratings of AmerenUE and Ameren Corporation.[2] Moody's noted:

[2] Moody's Investors Service, "Fundamental Credit Research, Rating Action", July 12, 2001.

> A $214 million to $250 million annual revenue reduction will considerably reduce AmerenUE's financial flexibility. In 2000, the company's revenues were $2.7 billion, but its funds from operations minus capital expenditures was only $292 million. A $214 million to $250 million revenue reduction in 2000, after adjusting for taxes would therefore have significantly reduced the company's free cash flow for any additional working capital and capital expenditure needs as well as for dividends to parent Ameren Corporation.
>
> Moody's believes the reduction would, to the same significant extent, affect the company's cash flows going forward. [3]

Moody's next action would be to either remove the negative outlook for the long-term securities or to also put the short-term credit rating under negative outlook. If Moody's decides to put the short term credit rating on "negative outlook", there is a strong chance of a three notch downgrade in the long term issuer and senior unsecured ratings from A1 to Baa1. Such a downgrade would significantly increase AmerenUE's cost of new debt.

4. THE CALCULATIONS AND APPLICATIONS OF THE METHODOLOGIES OFFERED BY MR. BIBLE DO NOT JUSTIFY HIS RATE OF RETURN ESTIMATE

Q. Turning to the details of Mr. Bible's calculations, are there any initial observations you believe are in order?

A. Yes. Two points that do not appear to concern Mr. Bible cannot be stressed too strongly. First, and perhaps most obviously, the estimation of the rate of return to be allowed AmerenUE in the future is one of the most, if not the most, critical component of the revenue requirement for an integrated electric utility like AmerenUE. In simplest terms, the return, including the associated income taxes, accounts for approximately 30% of AmerenUE's revenue requirement.

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[3] Ibid.

To provide a further perspective on the critical nature of the rate of return on the revenue requirement, one need only look at how much of the Staff's proposed rate cut results from Mr. Bible's recommended return on equity and the associated income taxes. Staff has proposed a rate reduction in the range of $246 to $285 million; of the proposed reduction, approximately $120 million, or almost half, can be directly attributed to Mr. Bible's erroneous return on equity recommendation.

This importance of the return on equity compared to the other cost components of the revenue requirement is a result of a basic characteristic of an integrated electric utility: it is a capital-intensive firm. A capital-intensive firm is basically one for which a high proportion of costs are attributable to long-lived hard assets it must acquire or build, expand and maintain in order to deliver the level of service demanded by customers.

The cost of capital is, like labor expense, a real cost to the utility. The return on capital represents the compensation investors require to make available the funds necessary to build, grow and maintain the infrastructure necessary to deliver services essential to the economic well-being of a region.

A just and reasonable return on the capital provided by investors not only fairly compensates the investors who have put up and continue to commit the funds necessary to deliver service, but benefits all stakeholders, especially ratepayers. Just and reasonable compensation for the capital invested in an electric utility attracts needed capital from other investments to which that capital could be committed, and so provides the utility with the financial means that allow it to pursue technological innovations and

build the infrastructure facilities that are necessary to meet the requirements of all customers in a dynamic economy.

An inadequate return, on the other hand, undermines the ability of a utility to compete for investment capital, and consequently handicaps the ability of a utility to make the required investments in infrastructure and in technology that could result in more efficient operations. Moreover, inadequate returns restrain a utility from expanding within its service area, potentially degrading the quality of service or depriving existing customers from the benefit of lower unit costs which might be achieved by spreading costs over a larger customer base. In short, if the utility is not given the opportunity to earn a fair and reasonable return, it will be prevented from making all but the minimally required investments in the existing infrastructure.

The importance of providing a utility with the opportunity to earn a fair and reasonable return on the capital invested cannot be overstated. Hence, it follows that all stakeholders, especially the Commission, who must set the allowed rate of return, need to have competent, well-reasoned evidence regarding a fair return for AmerenUE.

Even small errors in the application of methodologies employed to estimate the fair return will have a large impact on the return to investors. To illustrate, AmerenUE has a jurisdictional rate base of approximately $4 billion. A 0.25% underestimation of the cost of equity is equivalent to over a $6 million shortfall in the required return to equity investors.

Mr. Bible appears to be unconcerned about the significance or consequences of his opinion, by disavowing, in his responses to direct questioning in his deposition, any knowledge of the linkages between his rate of return opinion and the

Staff's claim that AmerenUE has had "excess earnings" under the EARP,[4] or on the massive rate cut that the Staff is now seeking.[5] Instead, Mr. Bible appears to approach the formulation of his recommended return on equity as essentially a mathematical exercise, of merely mechanically applying certain formulas -- without questioning the validity of the assumptions underlying these formulas -- to produce a number that someone else will use to try to justify lowering AmerenUE's rates.

Q. What is the second point?

A. The second point arises from the formulaic approach of Mr. Bible and his failure to apply competent judgment. Because of the importance of the rate of return, the "calculations" and "methodologies" that are used in making this estimate – words that are deceptively precise and scientific – need to be applied using sound judgment and common sense. The estimate of a just and reasonable return on equity, while critical, cannot be reduced to an arithmetic or formulaic exercise.

The return on equity is a prospective concept. It does not measure the returns that investors have achieved; it predicts the returns investors expect to achieve in the future. As Mr. David Parcell, a cost of capital expert who appears to be respected by Mr. Bible,[6] has put it in testimony before this Commission:

> Neither the courts nor economic/financial theory have developed exact and mechanical procedures for precisely determining the cost of capital. This is the case since the cost of capital is an opportunity cost and is prospective looking, which indicates it must be estimated. [7]

[4] Deposition 1 of Ronald L. Bible, November 12, 2001 ("Bible Dep. 1"), pp. 51-52.
[5] Bible Dep. 1, pp. 8-11.
[6] Bible Dep. 1, pp. 23-24.
[7] David C. Parcell, Direct Testimony on Behalf of Missouri Public Counsel, Case No. GR-97-393, p. 9, lines 12-15.

The determination of a return on equity is in a sense a "double-barreled" prediction, because the effort to estimate future return expectations from an individual stock investment has two logical steps. The first step requires the prediction (by analysts) of how a particular company will perform in the future, including what investments it is likely to undertake and what its success will be in operating in markets whose future conditions are uncertain. This step in itself is a difficult task. Nevertheless, from the results of that step, a cost of capital analyst must then go on to infer from the market prices of the equity shares how investors perceive these predictions of future performance.

Thus, though various methods or models have been developed to try to estimate the cost of equity, each has different premises or assumptions that may or may not actually reflect the real economic or capital market facts at a particular time. As a result, each model has strengths and weaknesses depending on the particular economic circumstances or context in which the model is being used. It is not surprising, then, that one of the bedrock principles of estimating the return on equity, accepted by virtually every leading authority, is that an analyst must rely on several models to arrive at a well-reasoned estimate of a fair return. As Dr. Roger A. Morin, one of the experts cited by the Staff in this case,[8] has put it:

> It is dangerous and inappropriate to rely on only one methodology in determining the cost of equity. For instance, by relying solely on the DCF model at a time when the fundamental assumptions underlying the DCF model are tenuous, a regulatory body greatly limits its flexibility and increases the risk of authorizing unreasonable rates of return. The results from only one method are likely to contain a high degree of measurement error.[9]

[8] Staff's Response to Union Electric Company's First Set of Interrogatories, Nos. 82 and 83.
[9] Roger A. Morin, Regulatory Finance: Utilities' Cost of Capital, Arlington, VA; Public Utilities Reports, Inc., 1994, p. 28.

Similarly, James C. Bonbright, in what is universally considered the classic treatise on public utility ratemaking, emphasized, "No single or group test or technique is conclusive."[10]

When the true dimensions of the task of estimating a return on equity for ratemaking purposes are fully appreciated, it should be clear that a competent analyst must:

(1 have an in-depth understanding of the company, its operations and the industry in which it operates;

(2) evaluate a broad range of relevant data for comparable companies and apply multiple methodologies to make estimates of the cost of equity; and

(3) apply expert judgment to the various estimates to arrive at a reasoned conclusion which is compatible with the recognized criteria for a fair return.

Mr. Bible's written testimony, and his answers in his deposition, lack the caution which should be expected in assessing whether his calculations come close to capturing economic reality, a reality that is of vital importance to the individuals and businesses of Missouri that AmerenUE serves. An example of this lack of sound judgment, illustrates my point. In using the risk premium model as a check on the results of their DCF calculations, the Staff in the past has, applied the risk premium test to the

[10] James C. Bonbright, Albert L. Danielsen, and David R. Kamerschen, Principles of Public Utility Rates, Second Edition, Arlington, VA: Public Utilities Reports, Inc. 1988, p. 317.

same sample of comparable companies being used in the DCF calculations.[11] In his November 12, 2001 deposition, Mr. Bible was asked why he did not perform this test for his comparables in this case:

Q. Okay. Now, you didn't do a risk premium analysis on your comparable companies?
A. That's correct.
Q. Why not?
A. Because I didn't want to.
Q. And why didn't you want to?
A. I just didn't want to. [12]

These responses, which offer no justification for not performing this test, are inexcusable for a witness who purports to be an expert in this area. This Commission cannot reasonably rely on "analysis" which demonstrates such a lack of reasoning and judgment.

In his deposition of April 16, 2002, Mr. Bible effectively concluded that it didn't matter what other tests he performed or how he performed them. In response to questioning regarding Mr. Bible's mischaracterization of inputs to his DCF model for the comparable companies, he stated, "No, it doesn't make any difference, because, as I said before, I do not use these to directly determine return on equity and rate of return for Ameren."[13]

Q. Are there other examples of the lack of expert knowledge Mr. Bible exhibits with his rate of return analysis?

[11] David P. Broadwater, Direct Testimony, Missouri Public Service Commission, Case No. GR-99-315, Laclede Gas Company.
[12] Bible Dep. 1, pp. 149-150; In the Errata sheet to the November 12, 2001 filed deposition Mr. Bible modified the "I just didn't want to" by adding the phrase "because it wasn't necessary for my analysis".
[13] Bible Dep. 2, p. 37.

A. Yes. In estimating investor expectations as to what a future return on equity should be, one obviously should know what a utility's return on equity has been. This is particularly important in this context because of the unique attributes of the EARP, under which AmerenUE's earnings for the last six years were shared with its customers, a sharing that has affected the Company's actual return on equity for each of those years. Mr. Bible's analysis starts off on the wrong foot by incorrectly identifying what AmerenUE's return on equity has been.

Mr. Bible has confused Ameren Corporation with AmerenUE. On page 16, lines 13-15 of his testimony (based on data from his Schedule 8), Mr. Bible claims that AmerenUE's ROE has fluctuated between a low of 12.38% in 1996 to a high of 14.30%[14] in 2000. This is incorrect. Ameren Corporation earned a return on year-end common equity of 14.3% in 2000; AmerenUE earned 13.4%. The correct ROEs for AmerenUE (not limited to the Missouri jurisdictional portion of the Company) are as follows:

TABLE 4

Return on Year-End Equity for AmerenUE				
1996	1997	1998	1999	2000
12.38%	12.27%	12.84%	13.99%	13.39%

Source: 10-Ks for Union Electric (1996 to 1997) and AmerenUE (1998 to 2000).

[14] Mr. Bible's testimony, as originally filed, contained a 2000 ROE of 14.6% for AmerenUE. He later changed this to 14.3%, which is Ameren Corporation's calculation of year-end return on equity.

Q. Should Mr. Bible have been aware that the 2000 return on equity of 14.3% he used for AmerenUE was not correct?

A. Yes. AmerenUE's EARP limited the return for its Missouri jurisdictional electric utility operations to a maximum of 13.3% in the first EARP and a maximum of 13.5% in the second EARP. Consequently, it is highly unlikely that AmerenUE as a whole could have earned 14.3% in 2000. However, Mr. Bible did not appear to understand what limitations the EARP put on AmerenUE's earnings, as indicated in the deposition exchange below:

Q. Right. Are you familiar with the sharing grids in the first and second EARPs?
A. You know, I don't recall. I looked at a sharing grid. I don't know if it was for a first EARP, a second EARP.. . . .
Q. Now, the sharing grid for the first EARP starts at 12.61 percent. Correct?
A. No.
Q. Well, where does sharing start?
A. Something in excess of 12.61. It says up to and including 12.61 there is no sharing.
Q. Okay. Sharing starts after 12.61?
A. Yes.
Q. I stand corrected.
And then between something above 12.61 percent to 14 percent, there is a 50/50 sharing.
Do I have that correct?
A. That's correct.
Q. Okay. And then above 14 percent there is a sharing formula which has zero percent for the company, 100 percent for its customers. Correct?
A. That portion, yes.
Q. Okay. Now, would you agree that the maximum effective return that UE could earn under that sharing grid is 13.3 percent?
A. I don't see that in here anywhere.
Q. No. But if you – have you ever done any calculations to figure out what the maximum effective return would be in light of the sharing that is provided for there?
A. Maximum effective return?
I don't recall doing any calculations on maximum effective return.

Q. Well, under the EARP you're familiar with the fact that UE would pay credits based on its ROE. Correct?
A. I don't know all of the specifics of what it's based on. If that's what it's based on, then that's what it's based on. . . . . .
Q. I understand. So you have no reason to doubt, then, that 13.3 percent effective return on equity under the sharing grid is correct, do you? I mean, that's what the Staff represented to the Commission.
A. Yes, I do.
Q. Oh, really. What is that?
A. Well, as I pointed out in my testimony – and you pointed out to me – on page – what? Is it 16?
Q. This is of your testimony –
A. They earned 14.6 in the year 2000
Q. Where did you get that number?
A. Well, let's see. Schedule 8 of the – it's from your annual report. [15]

Clearly, both AmerenUE as a whole and UE's Missouri electric operations have earned less than the 14.3% Mr. Bible claims.

5. THE STAFF'S DCF CALCULATION FUNDAMENTALLY DISTORTS INVESTOR GROWTH EXPECTATIONS BY THE EXCESSIVE WEIGHT GIVEN TO HISTORIC GROWTH RATES

Q. Turning to Mr. Bible's specific calculations, briefly describe your understanding of Mr. Bible's DCF method.

A. Mr. Bible applied the constant growth DCF method to Ameren Corporation and then, separately, to a set of three comparable electric utilities. Relying upon an average of historic growth rates and analysts' forecasts of growth rates, Mr. Bible estimated the cost of equity for Ameren Corporation in the range of 8.91% to 9.91% with a midpoint of 9.41%. For his comparables, his DCF estimate was 9.75%.[16]

[15] Bible Dep. 1; p. 78, line 20 to page 82, line 22.
[16] Direct Testimony of Ronald L. Bible, March 2002 ("Bible Testimony 2"), Schedules 18-22.

Q. Did Mr. Bible correctly employ the DCF method?

A. No. There are several critical flaws at the heart of Mr. Bible's implementation of the DCF model that completely undermine the reliability of his results. First, a central problem with his initial calculations lies in the excessive weight Mr. Bible's analysis gives to historical growth as a measure of investor expectations. Second, his approach to the DCF test does not seem tempered by any judgment, qualification or confirmation by any of the other tests he has performed. His approach treats the DCF method as a "formula" into which one plugs numbers and gets the "right" answer. Further, as discussed below, his application of the DCF test solely to Ameren Corporation is a circular analysis that renders the result unreliable.

Q. Please explain your reference to the excessive weight Mr. Bible gives to historic growth rates.

A. Growth rates in the DCF approach are supposed to estimate investor expectations of future returns. Mr. Bible reaches his estimate by averaging together historic growth rates and analysts' forecast growth rates. However, because analysts' forecast growth rates already include a consideration of historic growth rates, the end result of Mr. Bible's approach is to give excessive weight to historic growth rates in estimating what investors expect future growth to be.

The fundamental flaw in this approach is apparent when one recalls that the DCF method proceeds from the proposition that the price of a common stock is the present value of the future expected cash flows to the investor, discounted at a rate which reflects the riskiness of those cash flows. If the price of the security is known (can be observed), and if the expected stream of cash flows can be estimated, it is possible to

estimate the investor's required return (or capitalization rate) as the rate which equates the price of the stock to the discounted value of future cash flows.

At the outset, then, it is important to reiterate that a major objective of the exercise is to capture investor growth expectations. The DCF model is an expectational model. The price which is relied upon to estimate the dividend yield component of the DCF test reflects what investors expect in the future. As Dr. Bonbright has underscored:

> It should be obvious that one can get any expected return on equity one wants by simply picking a particular growth rate. ... The first point to remember in evaluating the growth rate is that it is not what a witness thinks the growth rate should be that matters. What matters is what investors expect the growth rate to be.[17]

Clearly, a misrepresentation of investor growth expectations will result in an over- or understatement of the return investors expect in the future.

Q. Please discuss how you should estimate investor growth expectations when applying the DCF model.

A. To reiterate a key point, investor expectations of growth estimated in the DCF model relate to future growth. Logically, then, investor expectations of growth should be inferred from forward-looking estimates. Analysts' consensus forecasts of long-term earnings growth are used most frequently for this purpose. There are several widely available sources of consensus earnings growth estimates, including I/B/E/S International, Zacks, and FirstCall.

Q. Shouldn't historic growth rates be considered in estimating future growth rates?

A. Of course. But, analysts' forecasts of growth, like those mentioned in

[17] Bonbright et. al., p. 319 [emphasis in original].

response to the previous question, already explicitly factor in a company's historic growth rates. As Dr. Morin points out, authoritative research shows that "historical growth rates do not contain any information that is not already impounded in analysts' growth forecasts."[18] By averaging historic growth rates with forecast growth rates, as Mr. Bible does, historic growth rates are effectively double-counted. The problem is compounded if the forecast growth rates are systematically different from historic growth rates. Consequently, averaging history and forecasts will mis-estimate the forward-looking investor growth expectations that the DCF test is trying to capture.

Q. Has any empirical analysis confirmed your understanding that forecasted growth rates, and not historic growth rates, are a more accurate approach in DCF?

A. Yes, numerous authoritative studies have concluded that analysts' forecasts are a better predictor of growth than naïve forecasts equivalent to historic growth rates; moreover, analysts' forecasts have been shown to be more closely related to investor's expectations.[19]

For example, among the academic studies that have confirmed this notion is that of James H. Vander Weide and Willard T. Carleton who

> ... found overwhelming evidence that the consensus analysts' forecast of future growth is superior to historically oriented growth measures in

[18] Morin, p. 155.

[19] Empirical studies that conclude that investment analysts' growth forecasts serve as a better surrogate for investors expectations than historic growth rates include Lawrence D. Brown and Michael S. Rozeff, "The Superiority of Analyst Forecasts as Measures of Expectations: Evidence from Earnings", The Journal of Finance, Vol. XXXIII, No. 1, March 1978; Dov Fried and Dan Givoly, "Financial Analysts Forecasts of Earnings, A Better Surrogate for Market Expectations", Journal of Accounting and Economics, Vol. 4 (1982); R. Charles Moyer, Robert E. Chatfield, Gary D. Kelley, "The Accuracy of Long-Term Earnings Forecasts in the Electric Utility Industry", International Journal of Forecasting Vol. I (1985); Robert S. Harris, "Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return", Financial Management, Spring 1986, and, James H. Vander Weide and William T. Carleton, "Investor Growth Expectations: Analysts vs. History", The Journal of Portfolio Management, Spring 1998.

> predicting the firm's stock price [and that these results] also are consistent with the hypothesis that investors use analysts' forecasts, rather than historically oriented growth calculations, in making stock buy-and-sell decisions."[20]

Q. Besides not measuring investors' expectations of future growth, are there other weaknesses with the information to be gleaned from historic growth rates?

A. Yes. The usefulness of the past in estimating what the future will bring is obviously dependent upon how likely the future is to repeat the past. The value of purely historical growth rates to the DCF method diminishes greatly when fundamental changes have occurred that make it unrealistic to assume that past growth will simply trend forward into the future. As Dr. Morin warns:

> . . . it is perilous to apply historical growth when a utility is in transition between growth paths. When payout ratios, equity return, and market-to-book ratios are changing, reliance on historical growth is hazardous.[21]

No informed observer could fail to note that volatility and rapid change are dominant characteristics of the environment in which electric utilities operate today and will continue to operate in the reasonably near future. This Commission noted the problems of reliance on history in the current environment in its December 6, 2001 decision which rejected Staff's 1999/2000 test year. Specifically, the Commission noted,

> Because the test year is used to forecast what future earnings and revenues should be, Staff's proposal would result in the Commission setting rates for implementation during the spring and summer of 2002 but these rates would be based upon data which reaches back to 1999. During the times of traditional rate of return regulation, at a time when there was little or no competition in the marketplace, this might have been a safe and appropriate test year.

[20] Vander Weide and Carleton.
[21] Morin, p. 153.

Instead, the Commission concluded that the test year would be the 12 months ending June 30, 2001. As Dr. Fox-Penner's testimony explains in more detail, the passage of the Energy Policy Act of 1992 and subsequent actions by the FERC (Orders 888 and 2000), as well as the emergence of competitive wholesale markets, have fundamentally altered the operating environment of the preponderance of electric utilities. These changes, which impact future growth prospects, are unlikely to be reflected in historic growth rates. Mr. Bible, however, was also unaware of even these most fundamental developments.[22]

With respect to Ameren and the comparable companies used by Mr. Bible, there are specific factors which point to the irrelevance of historic growth rates to future growth expectations. For example, Mr. Bible heavily relies on data from Value Line investment research for his analysis. However, the Value Line discussions of the several electric utilities utilized in Mr. Bible's DCF analysis make it clear that these companies are not the same today as they were even in the recent past:

- Ameren Corporation was formed by the merger of Union Electric and CIPSCO in December 1997. Accordingly, in its analysis of Ameren Corporation, Value Line specifically states that the "data prior to 1998 are for Union Electric, and are not comparable to Ameren" (Value Line, January 4, 2002).
- A similar comment is made with respect to Cinergy, one of Mr. Bible's three comparable utilities. Cinergy was formed by the 1994 merger of Cincinnati Gas & Electric with PSI Resources.

[22] Bible Dep. 1; p. 107, line 1 to p. 108, line 3.

Moreover, Cinergy has predicted significant increases in the proportion of earnings and assets related to non-regulated businesses and now faces competition in Ohio. (Value Line, January 4, 2002; Annual Report to Shareholders, 2000).

- Alliant Energy was formed in April 1998 through the merger of WPL Holdings, IES Industries and Interstate Power. Value Line states specifically that data prior to 1998 are for WPL Holdings only and are not comparable to Alliant Energy data. (Value Line, January 4, 2002).
- Allegheny Energy acquired the energy trading business of Merrill Lynch in early 2001. Value Line noted that this portion of Allegheny's business gave "a notable boost to overall revenue and earnings results." (Value Line, December 7, 2001). The I/B/E/S long-term consensus earnings forecasts for Allegheny jumped in January 2001 from 5% to 10%.

Mr. Bible uses data as far back as 1991 to measure the historic growth rates he uses to estimate future growth expectations. The changes in the structure and operations of Ameren and each of Mr. Bible's three comparables confirm that the companies that existed in 1991 are not the same as they are now, much less as they could be expected to be in the future. Giving their historic growth rates any more weight than that already given in forecasted growth rates distorts the resulting estimates of future growth rates.

Q. Do regulatory precedents also confirm the inappropriateness of relying on historic growth rates in a changing industry?

A. Yes. The FERC, in Opinion 414-A, rejected the use of historical growth rates in applying the DCF test. In that Opinion, the Commission explains,

> the Commission has rejected the use of the historical data on which the ALJ relied in part to determine the future growth rate. The Commission has determined that historic return data is not forward-looking and might create 'the potential for the long-term growth calculation to reflect atypical historical factors, such as recovery from heavy losses suffered during gas price regulation'.[23]

As my earlier list of developments in the electric utility industry illustrates, the concerns that the FERC expressed about atypical historic factors undeniably apply to electric utilities today, which are undergoing significant structural change stemming from federal and state legislative and regulatory initiatives to develop competition.

In its recent decisions for electric utilities, FERC has confirmed its reliance on forecast growth rates. For example, in Opinion 445, Southern California Edison, Docket ER97-2355-000) the FERC used the I/B/E/S analysts' earnings growth forecasts of returns and earnings retention rates to measure "sustainable growth". In Docket No. ER98-1247-000, March 27, 2002, for Consumers Energy), in the absence of Value Line forecasts, the FERC relied on I/B/E/S forecasts only.

Q. With respect to the Mr. Bible's DCF analysis, are these fundamental changes that limit the usefulness of past growth rates apparent?

[23] Transcontinental Gas Pipe Line Corp., Opinion No. 414-A, 84 FERC 61,084 at 61,425, reh'g denied, Opinion No. 414-B, 85 FERC 61,323 (1998) (citing Opinion No. 414, 80 FERC 61,157, at 61,670 (1997)).

A. Absolutely. The table below highlights the differences between the historic and forecast growth rates reported by Mr. Bible.

TABLE 5

	Mr. Bible's Historic Growth Rates	**Mr. Bible's Forecast Growth Rates**
Ameren Corporation	1.5%	5.0%
Comparable Electric Utilities	2.35%	6.33%

Source: Bible Testimony, Schedules 11 and 20.

The striking divergence between these historic and forecast growth rates palpably illustrates the problem, and certainly should have signaled to Mr. Bible that historic growth rates are not likely to be indicative of investors' future growth expectations. It is obvious from these numbers that weighting past growth rates as Mr. Bible does artificially depresses investors' growth expectations. Thus, acceptance of this averaging method would handcuff a utility's future growth by its past growth, despite different circumstances which point to higher future growth capabilities. In this regard, Mr. Bible's method is fundamentally at odds with the most elementary legal standards governing ratemaking, which assure a utility that it will be given an opportunity to earn a return on equity comparable to those of companies with similar risk.[24]

Q. Is Mr. Bible's reliance on historical growth rates consistent with the premises on which he bases his work?

A. No. Ironically, Mr. Bible and I apparently agree about what DCF is intended to accomplish. His answers in deposition clearly reveal that Mr. Bible recognizes that the DCF model is a tool to estimate expected growth:

[24] Federal Power Commission v. Hope Natural Gas Company (320 U.S. 391, 1944).

Q. Now, I'm sorry. I want to get back to the one observation that you made which I'm not sure that I understand. The fact that Ameren's stock price -- Ameren's stock price is an important component in the DCF calculation, isn't it?
A. It's a component, yes.
Q. It is a basic measure of investor expectations, isn't it?
A. No.
Q. What is its role in the DCF?
A. It is the price that investors are willing to pay for the dividend and the expected growth.[25]

The exchange with Mr. Bible went on to underscore this point:

Q. Right. But DCF is a forward-looking methodology. Correct?
A. Yes. It's a prospective methodology.[26]

Q. Does Mr. Bible's deposition testimony actually suggest what you would agree to be the right approach, though one fundamentally different from that in his written testimony?

A. Yes. In his November 12, 2001 deposition, with reference to Cinergy, one of his comparables, Mr. Bible agreed that Value Line had stated that pre-1994 data were for Cincinnati Gas & Electric only and not comparable to the post-1994 data for Cinergy (which reflects the 1994 merger with PSI Resources). Nevertheless, in calculating historic growth rates, Mr. Bible admitted he made no distinction between pre- and post-1994 data, apparently because he believes Value Line took into account the non-comparability of pre- and post-merger data in making its projections of future growth, as indicated in the following exchange:[27]

Q. Now, why would you . . not follow Value Line's warning that the data is not comparable with respect to those rates for Cinergy?

[25] Bible Dep. 1, p. 76, lines 10-22 [emphasis added]
[26] Bible Dep. 1, p. 78, lines 16-19]
[27] Bible Dep. 1, p. 145, line 18 to p. 146, line 11.

A. Well, I wouldn't construe this as a warning from Value Line. And I would consider that Value Line has taken this into consideration when they've made their projections.

Q. When Value Line says that data is not comparable, what do you understand Value Line to be saying?

A. That the data is for Cincinnati Gas & Electric and not for Cinergy –

Q. And –

A. -- on those dates.

Q. And Cincinnati Gas & Electric is a different company from Cinergy. Correct?

A. Yes.

Thus, it is clear that Mr. Bible believes that these forecasts quite properly take into account changes in the Company or the industry. Nevertheless, Mr. Bible, does not then simply use those forecasts in his DCF calculation, but skews the results by taking the additional and unnecessary step of averaging these forecasts with historic rates. This is clearly wrong, since, as Mr. Bible concludes, forecasts, like Value Line, already take into account how past developments in the industry and in companies will alter future prospects. Consequently, reliance on those forecasts is the most reasonable means of estimating future growth expectations.

Q. Has Mr. Bible altered the analysts' forecasts that he does use in any way?

A. Yes. In the testimony filed in March 2002, Mr. Bible has calculated his own forecast earnings growth rates for his comparables from Value Line rather than relying directly on the forecast rates of growth provided by Value Line.

Q. What do Mr. Bible's Value Line earnings forecasts represent?

A. They represent the average of Value Line's three individual forecasts of earnings, dividends and book values.

Q. Why is this a problem?

A. Primarily because it represents an unsubstantiated change from the manner in which Mr. Bible presented the Value Line forecasts in his July 2001 testimony, a change which has the effect of reducing the forecast growth rates. I should note also that this change in Mr. Bible's testimony came to light only in response to questions at Mr. Bible's recent deposition. In his filed testimony, this data remained identified only as an "EPS Growth" number, even though it represented an average of EPS, DPS, and BPS. Thus, Mr. Bible's new testimony not only presented no justification for this averaging (which serves only to depress his results), but the fact that Mr. Bible did this averaging was not even acknowledged by him in his testimony.

Q. What is the difference between the Value Line growth forecasts presented in the same manner as in Mr. Bible's July 2001 testimony and those calculated by Mr. Bible and presented in the March 2002 testimony?

A. The table below indicates that Mr. Bible's recalculations of the forecasts reduce the Value Line earnings growth forecasts by over 300 basis points.

TABLE 6

COMPANY	VALUE LINE EPS GROWTH FORECAST	MR. BIBLE'S VALUE LINE FORECAST	DIFFERENCE
Allegheny	14.0%	9.33%	4.67%
Alliant	6.5%	3.17%	3.33%
Cinergy	6.0%	4.12%	1.88%
Average	8.83%	5.54%	3.29%

Source: Bible Testimony 2, Schedule 20; Value Line, December 2001 and January 4, 2002.

Q. What would be the results of Mr. Bible's DCF analysis if only forecast growth rates were used to estimate future investors' growth expectations?

A. The following table illustrates the significant increase in Mr. Bible's DCF results if investors' expected growth rates are based appropriately on analysts' forecast growth rates.[28]

TABLE 7

	Dividend Yield	**Forecast Growth**	**Corrected DCF Results**	**Mr. Bible's DCF Results**
Ameren	6.16%	5.0%	**11.16%**	8.91%-9.91%
Comparables				
Allegheny Energy	3.91%	11.0%	**14.91%**	10.76%
Alliant Energy	6.76%	5.25%	**12.01%**	9.72%
Cinergy	5.60%	6.0%	**11.60%**	8.78%
Average of Three Comparables			**12.84%**	9.75%

Source: Bible Testimony, Schedules 10-12 (Ameren) and Schedules 19-22 (Comparables); Table 6.

As Table 7 indicates, Mr. Bible's unwarranted double-weighting of historic growth rates serve only to artificially and incorrectly depress his DCF results; the recalculation of the Value Line earnings growth forecasts further reduces the results. Reliance on analysts' forecast growth rates alone increases Mr. Bible's DCF results for Ameren Corporation by 125-225 basis points, and for the three comparable electric utilities by over 300 basis points.

[28] Including the actual Value Line earnings growth forecasts for the comparables, rather than Mr. Bible's revamped calculations.

6. THE STAFF INTRODUCES MULTIPLE FLAWS INTO THEIR ROE RECOMMENDATION BY BASING THAT RECOMMENDATION ON THE RESULTS OF THE DCF METHOD APPLIED ONLY TO AMEREN

Q. Could you explain what you meant by Mr. Bible's DCF approach does not seem tempered by "judgment, qualification, or confirmation?"

A. As I discussed earlier, the effort to determine an appropriate rate of return on equity in a ratemaking is basically a predictive task. In the absence of a crystal ball, there are various economic "models" for estimating what investors expect the future to look like. But these models must be used with judgment; they should not inadvertently be treated as if they were crystal balls. Drs. Richard A. Brealey and Stewart C. Myers, in their widely utilized and cited text Principles of Corporate Finance, made an observation about the DCF in particular, but it can be applied to all methods:

> The simple constant-growth DCF formula is an extremely useful rule of thumb, but no more than that. Naïve trust in the formula has led many financial analysts to silly conclusions.[29]

Not only does the fact that these methods are "rules of thumb" mean that the results have to be reached through choices of inputs, but it also means recognizing that different methods have distinct strengths and weaknesses, which depend on their underlying assumptions and premises, as well as on the economic circumstances in which they are being applied. Understanding the strengths and weaknesses of each method in the particular case in which it is being used, and taking appropriate steps to mitigate the weaknesses of each method, is the only rational way in which to estimate the return on equity.

[29] Richard A. Brealey and Stewart C. Myers, Principles of Corporate Finance, Sixth Edition, Boston, MA: Irwin McGraw Hill, 2000, p. 69.

Q. With respect to the constant growth DCF method, what are the assumptions underlying this particular "rule of thumb" that should have tempered Mr. Bible's analysis?

A. Mr. Bible himself identified in his written testimony nine assumptions or premises on which the DCF method rests.[30] This list of assumptions includes premises that are more theoretical than realistic, e.g., constant growth in cash dividends, and stability in interest rates over time. Mr. Bible is at least partially right in saying: "Even though the entire list of . . . assumptions is rarely met, the DCF model is a reasonable working model describing an actual investor's expectations and resulting behaviors."[31] However, the analyst must be aware of the extent to which these assumptions are at odds with the real world, and exercise appropriate judgment and caution when theoretical assumptions and reality disconnect. It goes without saying that, the more of the assumptions that do not fit with reality, the greater the judgment and caution that need to be applied.

In today's capital markets and industry environment, which are characterized by volatility, it is highly likely that few, if any of these nine assumptions of the DCF model, all of which rely on the consistency of some economic event or attribute over time, could possibly be met. Mr. Bible agreed that some of the assumptions have not held; for others he professed ignorance of whether these foundations of the DCF model are connected to the real economic environment in which the allowed ROE will be

[30] Bible Testimony 2, pp. 20-21. The nine assumptions identified are: market equilibrium; perpetual life of the company; constant payout ratio; payout of less than 100% of earnings; constant price/earnings ratio; constant growth in cash dividends; stability in interest rates over time; stability in required rates of return over time; and stability in earned returns over time.
[31] Bible Testimony 2, p. 20-21.

set.[32] Nevertheless, Mr. Bible's analysis involves no explicit recognition of the divergence between the theoretical assumptions and reality in his application of the constant growth DCF test; consequently he takes few, if any, steps to ameliorate any of the weaknesses of the model, much less exercise any judgment to ensure that his recommendation is compatible with real world equity return requirements.

Q. In general, what kind of judgment needs to be exercised to use methods like the constant growth DCF test sensibly?

A. Judgment should be exercised by considering whether numerical results from these models recognize factors that are germane to the future outlook for the company or the industry, but have not necessarily been captured in the rate of return "numbers". For example, the impacts of industry restructuring on the business risk profile of electric utilities would not necessarily be reflected in historical measures of risk. As a result, expert judgment would be required to assess what the relationship between the historic risk calculations and the prospective risk estimates should be.

Further, judgment should be applied to the numerical estimates using well-recognized criteria which govern the estimation of a fair and reasonable return. Under the three criteria that are most frequently cited by analysts and regulators, a fair rate of return should provide the utility with an opportunity to (1) attract capital on reasonable

[32] See Bible Dep. 1, p. 83, line 17 through p. 84, line 2., ibid. p. 84, line 20 through p. 85, line 13 (assumption of market equilibrium); ibid., .p. 88, lines 5 through 10 and p. 89, lines 9 through 18 (assumption of perpetual life of the company);ibid., p. 97, lines 3 through 7 (assumption of constant payout ratio); ibid., p. 98, lines 8 through 16 (assumption of payout of less than 100% of earnings); ibid., p. 98, lines 1 through 20 (assumption of constant price/earnings ratio); ibid., p. 98, lines 21 through 24 (assumption of constant growth in cash dividends); ibid., p. 99, line 24 through p. 100, line 3 (assumption of stability in interest rates over time); ibid., p. 103, lines 15 through 24 (assumption of stability in required rates of return over time); ibid., p. 104, lines 13 through 16 (assumption of stability in earned returns over time).

terms; (2) maintain its financial integrity; and (3) achieve returns commensurate with those achievable on alternative investments of comparable risk.

Dr. Bonbright and Mr. Parcell both point out additional criteria that govern the fair return.[33] They include: rewards for managerial efficiency, rate predictability and stability, and consumer rationing. The first two are self-explanatory. The third can be explained as follows: Customers should be charged prices that reflect the economic cost of providing service. If the rate of return is set too low (below the cost of equity), customers will be charged a price which understates the true cost of the service being consumed. Consequently, if the return is too low, the customer will be sent a faulty signal to over-consume scarce resources, e.g., electricity.

There is no indication in Mr. Bible's analysis that he either explicitly or implicitly used these criteria to evaluate the validity or the reasonableness of the rate of return he is proposing.

Q. What other flaws are there in Mr. Bible's analysis that reflect a lack of caution in his use of the DCF method?

A. A critical flaw is his reliance on a DCF result for a single company, Ameren Corporation. Unfortunately, that result is the very foundation of Mr. Bible's recommendation. In principle, the cost of equity for firms of similar risk in the same industry should be quite similar. The fact that individual company cost of capital model results differ widely is a strong indication that such calculations for any individual company are not a reliable estimate of that company's capital cost. Consequently, it is imperative to rely on a sample of companies as a proxy for a specific company.

[33] Bonbright, p. 203; also cited by Parcell, p. 2, line 12.

Drs. Brealey and Myers also stress that a set of comparable companies should be used to estimate the cost of capital for a specific company:

> Remember, [a company's] cost of equity is not its personal property. In well-functioning capital markets investors capitalize the dividends of all securities in [the company's] risk class at exactly the same rate. But any estimate of [the cost of equity] for a single common stock is noisy and subject to error. Good practice does not put too much weight on single-company cost-of-equity estimates. It collects samples of similar companies, estimates [the cost of equity] for each, and takes an average. The average gives a more reliable benchmark for decision making.[34]

Dr. Morin makes the same point in his authoritative book:

> There are several reasons why the determination of cost of capital should not rest on a sample of one firm:
>
> (1) Consistency with the notions of fair and reasonable return promulgated in the Hope and Bluefield cases. The basic premise in determining a fair return is that the allowed return on equity should be commensurate with returns on investments in other firms with comparable risk, hence the need to extend the sample to firms of comparable risk. Moreover, the equity costs of other firms represent economic opportunity costs that have a direct impact on the cost of equity for the utility being studied.
>
> (2) Added reliability. Confidence in the reliability of the estimate of equity cost can be enhanced by estimating the cost of equity capital for a variety of risk-equivalent companies. Such group comparisons not only act as a useful check on the magnitude of the cost of equity estimate obtained from a single company, but also mitigate any distortion introduced by measurement errors in the two components of equity return, namely dividend yield and growth. Utilizing a portfolio of similar companies along with the company-specific DCF acts to reduce the chance of either overestimating or underestimating the cost of equity for an individual company. By relying solely on a single-company DCF estimate or for that matter on a single methodology, a regulatory commission limits its flexibility and increases the risk of authorizing unreasonable rates of return. For example, in a large group of companies, positive and negative deviations from the expected growth will tend to cancel out owing to the law of large numbers, provided that the errors are independent. The average growth rate of several comparable firms is less likely to diverge from expected growth than is the estimate of growth for a single firm. More generally, the assumptions of the DCF model are more likely to be fulfilled for a group of companies than for any single firm.

[34] Brealey and Myers, p. 69 (emphasis added).

(3) Abnormal conditions. When there is reason to believe that the standard DCF model is inapplicable to a particular utility, or when a utility is experiencing extraordinary circumstances, the use of a benchmark group of companies is the only viable alternative to measure equity costs through the DCF method. Appropriate risk adjustments must, of course, be rendered. Such extraordinary circumstances would include a corporate restructuring, a major plant cancellation, or situations such as those of General Public Utilities following the Three Mile Island accident or of Washington Power Public Service following the default on its bonds.

(4) Circularity problem. Stock price, hence cost of equity capital, depends on investors' growth expectations, which in turn depend partially on investors' perception of the regulatory process. The net result is that the cost of equity depends in part on anticipated regulatory action, since both components of equity return – yield and growth – are influenced by the regulatory process. Carried to its extreme, this implies that regulation would in effect deliver whatever equity return investors expect.[35]

Q. Mr. Bible uses other companies he considers comparable to Ameren in his analysis. Doesn't this address the issue you are raising?

A. No. Although Mr. Bible does generate DCF numbers from what he views as comparable companies, he gives no weight to the results. In his analysis, Mr. Bible begins by calculating a DCF number for Ameren alone. That calculation becomes, not only his base DCF result, but the "right answer" unless his other results are, in his estimation, twice as high.[36] The point is that Mr. Bible should not use a DCF calculation generated using solely Ameren Corporation as the baseline for his DCF estimate. Rather, the "baseline" DCF cost estimate should be derived from a sample of companies; the "baseline" DCF cost for the sample should then become one of several results from tests other than DCF that are used in conjunction with expert judgment to arrive at a fair and reasonable range for the return on equity. Mr. Bible does not do this.

[35] Morin, pp. 201 to 202.
[36] Bible Dep. 1, p. 131-132.

Q. What problems does the failure to use a sample of companies as the base for his DCF calculation introduce into his analysis?

A. First, as I explained earlier, the application of the DCF approach requires inferring investor growth expectations. The resulting DCF number is very sensitive to the growth expectations inferred. Measurement error results when the growth forecasts relied upon for the growth component of the model do not match the growth expectations that are embedded (but not observable) in the company's stock price. By relying on a sample of comparable companies, the amount of such "measurement error" in the data is reduced. The larger the sample, the more confidence the analyst has that the sample results are representative of the cost of equity.

Second, the application of the DCF test solely to the company whose allowed return is being set introduces considerable circularity into the process. The forecast growth rates for any given utility are likely to reflect in some measure the return the analysts expect the regulator to allow. As Dr. Morin puts it:

> To estimate what ROE resides in the minds of investors is equivalent to estimating the market's assessment of the outcome of regulatory hearings. Expected ROE is exactly what regulatory commissions set in determining an allowed rate of return. If the ROE input required by the model differs from the recommended return on equity, a fundamental contradiction in logic follows. In other words, the method requires an estimate of return on equity before it can even be implemented. Common sense would dictate the inconsistency of a return on equity recommendation that is different than the expected ROE that the method assumes the utility will earn forever. For example, using an expected return on equity ROE of 13% to determine the growth rate and using the growth rate to recommend a return on equity of 11.5% is inconsistent. It is not reasonable to assume that this company is expected to earn 13% forever, but recommend an 11.5% return on equity. The only way this utility can earn 13% is that rates be set by the regulator so that the utility will in fact earn 13%.[37]

[37] Morin, p. 161.

Thus, application of the DCF test to Ameren alone means that regulators in a ratemaking setting are trying to estimate investor expectations to determine what return they will allow, but those investor expectations are themselves ultimately determined by the rate of return those regulators will allow in that very same ratemaking. Because the analyst is undertaking a circular exercise, there is significant potential for, at best, a measurement error, at worst, a fundamentally irrational process. Such error can be avoided by relying on a DCF calculation generated from a sample of companies, rather than one exclusively based on the utility that is the subject of the ratemaking.

Third, a DCF analysis based solely on the company whose rates are being set may produce results that are lower or higher than the DCF results for a sample of its peers, because managerial efficiency or inefficiency has created a lower or higher risk environment for that company. As the FERC concluded in Opinion No. 414-A (Transcontinental Gas Pipe Line)[38], a company should not be penalized for lower risk arising from greater efficiency by being allowed a lower return relative to its peers (and vice versa). By relying on the results for a sample of companies to set the allowed return, an efficient company will not be penalized by being allowed a lower return than its peers simply because it is more efficient. Similarly, an inefficient company will not be rewarded for inefficiency through a higher return.

Q. Is there any indication that Mr. Bible had some concerns with the circularity problem that you described above when he prepared his testimony?

A. Yes. When Mr. Bible selected a sample of comparable companies to serve as a check on the reasonableness of his Ameren-specific DCF test result, he explicitly

[38] Transcontinental Gas Pipe Line Corp., Opinion No. 414-A, 84 FERC 61,084 pp. 61427-4, 61627-5.

eliminated companies with Missouri operations. That selection criterion indicates that he recognizes there is circularity in relying on companies whose allowed returns are set by this Commission.

Indeed, in his November 12, 2001 deposition, Mr. Bible expressly acknowledged that concern:

> Q. Okay. Now, why didn't you use any Missouri companies in your comparables for your analysis?
> A. Because I didn't feel it was appropriate to use them.
> Q. Why?
> A. There is an argument that there is circularity, in that if the Commission sets the rates for a company, then the circularity of influencing your decision or your thoughts as far as what the rates should be in a specific case.
> Q. Do you agree with that argument?
> A. I accept it.
> Q. And so it obviously was a building block of your analysis?
> A. It was something that I took into consideration when I did my analysis.[39]

It is counter-intuitive to eliminate Missouri companies from a sample so that the circularity is avoided in the sample, while at the same time basing the entire ROE recommendation solely on a DCF calculation for the very company whose ROE is being set by this Commission.

Q. What other problems have you identified with Mr. Bible's lack of caution in applying the DCF test?

A. I believe – and Mr. Bible did once too – that the size of Mr. Bible's comparable sample is too small to allow meaningful accuracy in estimating a company's cost of equity.

[39] Bible Dep. 1, p. 16, lines 1 through 16.

Q. Would you briefly summarize your concern with the size of his comparable sample?

A. Mr. Bible's comparable sample contains only three companies, which means the addition or elimination of a single company can significantly alter the results.

Q. Has Mr. Bible ever commented on the appropriate size of a sample?

A. Yes. Mr. Bible testified in Kansas Pipeline (Docket RP99-485-000) on behalf of the Commission in which he concluded "...it is my opinion that a proxy group of only three companies is too small to provide a reasonable range of equity returns."[40] He has not explained here why three companies are now sufficient for his analysis. I do not think a sample of three is adequate.

Q. Do you believe Mr. Bible was constrained by the lack of comparable companies?

A. No. Mr. Bible chose to limit the electric utilities that he selected to companies within a relatively narrow range of total capital ($4 to $8 billion). A broadening of this range would have permitted the selection of additional companies. There is no empirical support for the conclusion that a company with $10 to $15 billion of capital is dissimilar to a company with $4 to $8 billion of capital, in terms of its cost of equity.

Q. Beyond performing a DCF analysis for comparable companies, are there other steps that should be taken?

[40] Prepared Direct and Answering Testimony of Ronald L. Bible (Docket RP99-485-000), page 11, line 22 to p. 12, line 1.

A. Yes, the analyst should also use methods other than the DCF model to estimate a reasonable return on equity. As Dr. Morin emphasizes (echoing Drs. Brealey and Myers):

> Sole reliance on the DCF model ignores the capital market evidence and financial theory formalized in the CAPM and other risk premium methods. The DCF model is one of many tools to be employed in conjunction with other methods to estimate the cost of equity. It is not a superior methodology that supplants other financial theory and market evidence. [41]

Mr. Parcell agrees: "[N]o single model is so inherently precise that it can be relied on solely to the exclusion of other theoretically sound models."[42]

Q. Has Mr. Bible performed other tests?

A. Yes. However, he has not meaningfully and appropriately considered the results of these other tests in his analysis.

Q. What other tests did Mr. Bible perform?

A. He applied the Capital Asset Pricing Model (CAPM) and the risk premium method.

Q. Could you explain the capital asset pricing model ("CAPM")?

A. The CAPM is a formal equity risk premium model based on the assumption that the required return on an equity security has a direct relationship to the required return on a risk-free investment. This assumption of CAPM, in turn, rests on the premise that an investor requires compensation for "non-diversifiable" risks only, that is,

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[41] Morin, p. 231.

[42] David C. Parcell, The Cost of Capital – A Practitioner's Guide, Prepared for the Society of Utility and Regulatory Financial Analysts, 1997 Edition, p. 4. In his Direct Testimony on behalf of Missouri Public Counsel (Case No. GR-97-393), Mr. Parcell estimated the cost of equity for Union Electric using three methods: DCF, CAPM, and the risk premium method. His "overall conclusion for the utility industry from these results is a range of 10 – 11 ½ percent, which focuses on the findings from all three tests." [emphasis added] (p. 46).

risks that arise from overall market factors (e.g., interest rate changes, economic growth) that cannot be minimized simply by diversifying into a portfolio of investments. Company-specific risks, according to the CAPM, can be diversified away by investing in a portfolio of securities, and therefore require no compensation.

This "non-diversifiable" risk is described numerically by "beta," which is a measure of the volatility of a particular stock or group of stocks relative to the market. The beta is essentially a ratio comparing two things: (1) the uncertainty related to economic events as they impact the market as a whole (the variance of the market return) with (2) the responsiveness of the required return on an individual security to changes in events which also change the required return on the market as a whole (the covariance).

The beta is multiplied by the required, or expected, market risk premium, which is the difference between the expected return on the total market (comprised, in theory, of all capital market assets), less the risk-free rate.

Q. How do you identify the risk-free rate of return for purposes of a CAPM analysis?

A. The simple CAPM model, if it were applied rigorously, would entail using a short-term government rate as the risk-free rate, because the shortest term government rates entail minimal inflation or interest rate risk. However, it is widely recognized that short-term rates are largely the effect of monetary policy and, as such, are administered, rather than market-driven, rates. Hence, most analysts rely on a long-term government yield, which is risk-free in that there is no default risk associated with U.S. Treasury securities. Moreover, reliance on a long-term yield is consistent with the longer-term nature of utility investments.

Q. What issues arise in the estimation of the required market risk premium?

A. While the market risk premium concept is deceptively simple, its quantification is, in principle, quite complex. The level of the risk premium expected or required by investors is not static; it changes with economic and capital market conditions (particularly with inflation expectations), as well as with investors' willingness to bear risk. Because the market risk premium varies with changes in economic circumstances, a direct measure of the prospective market risk premium (for example through a DCF model) may provide a more accurate measure of the current level of the expected differential between stock and bond returns than experienced risk premiums.

Q. If an analyst relies on historic risk premium data to estimate the expected risk premiums, what are the key measurement techniques that should be followed?

A. First, as stated by Ibbotson (the source of Mr. Bible's historic risk premium data),

> The expected equity risk premium should always be calculated using the arithmetic mean. The arithmetic mean is the rate of return which, when compounded over multiple periods, gives the mean of the probability distribution of ending wealth values . . . in the investment markets, where returns are described by a probability distribution, the arithmetic mean is the measure that accounts for uncertainty, and is the appropriate one for estimating discount rates and the cost of capital.[43]

[43] Ibbotson Associates, Stocks, Bonds, Bills and Inflation, 1998 Yearbook, Chicago: Ibbotson Associates, 1998, pp. 157-159.

Second, the measurement of the bond component of the risk premium should be based on income returns, not total returns. Ibbotson Associates also provides the rationale for that practice.

> Another point to keep in mind when calculating the equity risk premium is that the income return on the appropriate-horizon Treasury security, rather than the total return, is used in the calculation. The total return is comprised of three return components: the income return, the capital appreciation return, and the reinvestment return. The income return is defined as the portion of the total return that results from a periodic cash flow or, in this case, the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in reaction to unexpected fluctuations in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.[44]

Q. What are the relevant considerations in estimating the appropriate beta for electric utilities?

A. First, as with the DCF test, the CAPM needs to be applied to a sample of comparable firms to avoid measurement error, such as firm-specific anomalies. Thus, betas for a sample of comparable companies should be used to estimate the relative risk.

Second, the beta is a forward looking concept. Typically, betas are calculated from historic data.[45] The applicability of a calculated historic beta to a future period needs to be analyzed in the context of events that gave rise to the calculation as compared to the economic environment predicted for the future.

[44] Ibbotson Associates, SBBI Valuation Edition, 2001 Yearbook, Chicago: Ibbotson Associates, 2001, pp. 59-60.

[45] Calculated betas are typically simple regressions between the daily, weekly or monthly price changes for individual stocks and the corresponding price for changes in the market index for the past five years.

Third, empirical studies have shown that the CAPM understates the return requirement for companies with betas less than the market mean of 1.0.[46] Reliance on Value Line betas, which are adjusted for betas' tendency to trend toward the market mean of 1.0, assists in mitigating the model's tendency toward understatement of required returns for low beta (e.g., utility) stocks. Mr. Bible does, in fact, rely on Value Line betas.

Q. Please summarize Mr. Bible's application of the CAPM.

A. Mr. Bible applies the CAPM to Ameren and also applies the CAPM to his sample of three comparable companies. His results of 9.34% to 9.40% for Ameren and 9.46% to 9.52% for the comparables are based on:

(1) a risk-free rate of 5.38%;

(2) a market risk premium of 7.20% to 7.30%; and,

(3) betas of 0.55 for Ameren and of 0.57 (on average) for the sample of comparables.

Q. Does Mr. Bible's application of the CAPM lead to an underestimate of the cost of equity, and if so, why?

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[46] Evidence of this is found in the following studies:

Fisher Black, Michael C. Jensen, and Myron S. Scholes "The Capital Asset Pricing Model: Some Empirical Tests," Studies in the Theory of Capital Markets, edited by Michael Jensen. (New York: Praeger, 1972), pp. 79-121.

Marshall E. Blume and Irwin Friend, "A New Look at the Capital Asset Pricing Model," Journal of Finance, Vol. XXVIII (March 1973), pp. 19-33.

Eugene F. Fama, and James D. MacBeth, "Risk, Return and Equilibrium: Empirical Tests," Unpublished Working Paper No. 7237, University of Chicago, Graduate School of Business, August 1972.

Nancy Jacob, "The Measurement of Systematic Risk for Securities and Portfolios: Some Empirical Results," Journal of Financial and Quantitative Analysis, Vol. VI (March 1971), pp. 815-834.

A. Yes, Mr. Bible has underestimated the risk-free rate, the market risk premium and the betas.

Q. What are your concerns with Mr. Bible's choice of risk free rate?

A. First, no single "spot" yield should be relied upon as representative of expected yields. First, Mr. Bible should have recognized that long-term yields were, at the time he prepared his evidence, close to a cyclical low and expected to rise. Value Line forecast that 30-year Treasuries would reach 6.1% by 2003.[47] Based on Mr. Bible's own testimony, the 30-year Treasury yield utilized should be in the range of 5.5-6.0%.

Second, the fact that 30-year Treasury bonds are no longer being issued calls into question the very validity of relying upon the 30-year yield as a reliable estimate of the risk free rate. These broader issues are dealt with in more detail below in the discussion of Mr. Bible's risk premium test.

Q. What are the problems with Mr. Bible's market risk premium estimates?

A. There are two. First, he relies on total returns for the bond component of the historic equity risk premiums, rather than the income returns. Second Mr. Bible's risk premiums are derived from achieved returns over two periods, 1926-2000, and 1991-2000. He correctly uses the arithmetic average of historic returns for the 1926-2000, but incorrectly uses geometric returns for the period 1991-2000. His testimony offers no explanation of this mixing of arithmetic and geometric averages.

Q. What would Mr. Bible's risk premiums be if he used bond income returns and arithmetic average returns over both historic periods?

[47] Bible Testimony 2, p. 13, line 10.

A. The following table compares Mr. Bible's filed results to the corrected results.

TABLE 8

	Risk Premium as Filed	Risk Premium as Corrected
1926-2000	7.3%	7.8%
1991-2000	7.2%	11.6%

Q. Why do you conclude that Mr. Bible's betas are too low?

A. The betas utilized by Mr. Bible are simply the Value Line betas which were calculated over a recent five year period. However, analysis of the capital market environment prevailing during the period over which the betas were calculated reveals that these calculations understate a forward looking beta that reasonably reflects the non-diversifiable risks faced by the electric utilities.

Schedule 1 shows that the Value Line betas of Ameren and of Mr. Bible's comparable sample averaged close to 0.70 over the period 1986-1997, before declining to approximately 0.55 in 1998-2001. The observed decline in calculated betas since 1998 was not due to any decline in electric utility risk, but rather can be attributed to extreme volatility in the equity markets in 1998-2000. During that period, utility prices were moving in the opposite direction from the overall market, i.e., down, when the rest of the market was rising, and vice-versa. This abnormally high degree of counter-cyclicality means that the calculated utility betas which include that period are abnormally low.

Q. Please explain.

A. In 1998 through early 2000, investors were focused on "New Economy Stocks", pushing the valuations of technology-related equities to irrationally high levels. The S&P Industrials Composite jumped 34% and 26% in 1998 and 1999 respectively; the S&P Technology Sector jumped 73% and 75% during the same periods. "Old Economy" stocks, including utilities, were generally ignored, dismissed as "untimely". As the overall market roared to new heights, fueled by the notion that the "only risk was not to be in the market", utilities languished. In mid-1999, with the economy at risk of overheating and the Federal Reserve pushing up interest rates, already neglected utility shares were further depressed. In contrast, rising interest rates had no immediate impact on the "hot" technology sectors.

In 2000, the market bubble burst. The economy stalled and investors quickly faced the reality of the equity market's overvaluation. Almost as quickly as the market had accelerated to its peak, the formerly-favored technology stocks were quickly discarded for the safer havens of "Old Economy" stocks (including utilities). Utility shares quickly benefited from investors' change of heart.

In effect, the movement in utility share prices was uncoupled from that of the overall market starting in 1998, depressing the betas. However, there is no reason to conclude that the fundamental risk associated with electric utilities has declined.

Q. **Please provide evidence showing that utility risks have not declined.**

A. The following table summarizes the median values of a number of risk measures for Ameren and Mr. Bible's sample of comparables since 1996 (to capture values both before and after the observed change in the calculated beta). It can be seen

from this table, that there is no empirical support for concluding that the risk of the electric utilities relied on by Mr. Bible has declined.

TABLE 9

	Value Line Risk Measures			S & P Risk Measures	
	Earnings Predictability	**Financial Strength**	**Safety[48]**	**Business Profile[49]**	**Bond Rating**
1996	88	A+	2	n/a	AA-/A+
1997	85	A+/A	1	4	AA/AA-
1998	85	A	2	n/a	A+/A
1999	85	A	2	5	A+
2000	85	A	2	5	A+
2001	65	A	2	5	A-

Source: Schedule 2.

Based on this analysis, there is no reason to conclude that the forward-looking beta should be any lower than the betas that prevailed prior to the recent equity market extremes. Hence the abnormally depressed betas need to be replaced with more representative betas of 0.70 for Ameren, and an average of 0.70 for the sample of comparables (See Schedule 1).

[48] Value Line's definition of Safety Rank is:

"A measure of potential risk associated with individual common stocks rather than large diversified portfolios (for which Beta is a good risk measure). Safety is based on the stability of price, which includes sensitivity to the market (see Beta) as well as the stock's inherent volatility, adjusted for trend and other factors including company size, the penetration of its markets, product market volatility, the degree of financial leverage, the earnings quality, and the overall condition of the balance sheet. Safety Ranks range from 1 (Highest) to 5 (Lowest). Conservative investors should try to limit purchases to equities ranked 1 (Highest) or 2 (Above Average) for Safety."

49 Standard and Poor's designates business profiles on a 10-point scale, with '1' being the strongest. Business profiles assess qualitative criteria, such as regulation, operations, and competitiveness. In addition to analysis of local markets and customer mix, the business profile incorporates an analysis of the macroeconomic environment of the utility's country of domicile.

Q. What are the corrected results of Mr. Bible's CAPM test?

A. Mr. Bible's CAPM results for both Ameren and the comparables would be in the range of 11.2% to13.9%, as shown below. These estimates are approximately 1.8% to 4.5% higher than Mr. Bible's filed results for Ameren and 1.7% to 4.4% higher than Mr. Bible's results for his comparables.

5.5% to 6.0% + .70 (7.8%) = 11.2%

5.5% to 6.0% + .70 (11.6%) = 13.9%

Q. Mr. Bible's other method for validating his results was the risk premium model. Please describe this test.

A. The risk premium test is based on a basic principle of finance that equity is riskier than debt. Logically, then, the required return on equity is higher than the required return on the debt of the same company. Although the risk premium test is based on universally accepted financial principles, it is not a formal model as are the DCF and CAPM tests. Nevertheless, the typical application of the risk premium test involves estimation of the differential between the required (expected) return on equity for a sample of utilities and the corresponding current cost of long-term debt for the same sample of companies, i.e., utility bond yields.

Q. Please summarize Mr. Bible's application of the risk premium test.

A. Mr. Bible applied the risk premium test to Ameren by subtracting the monthly yield on 30-year Treasury bonds from the Value Line projection of return on equity for the subsequent year. The differentials, or risk premiums, were calculated over the period 1992-2001. Mr. Bible then added an average differential of 6.49% to the

January 14, 2002 yield on 30-year Treasuries of 5.38% to arrive at a cost of equity for Ameren of 11.87%.

Q. How does this approach differ from that used by other Staff witnesses in the past?

A. In past rate cases, Staff witnesses have applied the risk premium test using utility bond yields. As recently as August 2000, Staff witnesses were using the differential between projected ROEs and utility bond yields to estimate the risk premium.[50]

The comparison of a utility's expected return on equity and utility bond yields is a common-sense comparison. Utility bond yields contain a premium above the risk-free rate for the risk that the company will default on those obligations. The default premium provides compensation to bond investors for the business and financial risks to which they are exposed. Hence, utility bond yields should track changes in the business and financial risks faced by the companies, whereas government bond yields do not. As a result, changes in utility bond yields should provide a more direct measure of the changes in the return required by utility common equity investors than changes in government bond yields.

Q. Has Mr. Bible ever taken a position on this issue?

A. Yes. In testimony on behalf of this Commission before FERC he stated, "the correct way to calculate the risk premium for utility stocks is to subtract utility bond returns from the equity returns of utilities" with similar credit ratings.[51]

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[50] Roberta McKiddy, Direct Testimony on Behalf of Missouri Public Service Commission, Case No. GR-2000-512, AmerenUE.

[51] Direct Testimony of Ronald L. Bible on behalf of the Missouri Public Service Commission in Kansas Pipeline (Docket RP99-485-000), p. 22.

Q. Did the Staff offer any justification in the record for this switch?

A. Not in the July 2001 written testimony, nor in Mr. Bible's November 2001 deposition. This switch was made without any justification in their written testimony of July 2001. In fact, not only was the record bare of justification, there was no plausible explanation for the switch. This is clear from Mr. Bible's response in the November deposition when he was asked why he switched from utility bonds to Treasury bond yields:

> Q. Now, in your view has something changed to make the Moody's either Aa or A utility bond rates inappropriate for risk premium analysis?
> A. I don't recall exactly when we made the determination, but something happened to either the historical database or the going-forward database. I'd have to check. But we decided we needed to move over to the 30-year. And now the 30-year has gone away. So we'll have to make a decision on the risk-free rate again.
> Q. So is it your testimony that you – I guess, meaning the Staff as a whole – recently made a judgment not to use the Moody's rate? Is that how I understand?
> A. I don't recall. I know we had discussions about it.
> Q. Okay. But you don't recall the basis for making that change?
> A. Not exactly, no.
> Q. What do you recall?
> A. That something had happened where historical data wasn't available or wasn't readily available. So we wanted to use something that was readily available.[52]

Q. To your knowledge, is there a problem with the historic data or their availability?

A. No. In fact, Mr. Bible had supplied the required utility bond yields on Schedule 5-1 of his direct testimony of July 2001.

Q. Did Staff later provide a reason for the switch?

[52] Bible Dep. 1, p. 120, line 15 to p. 121, line 22.

A. Yes. In DR No. JJC-3 from Union Electric Company, following Mr. Bible's November 2001 deposition, Staff was asked to explain the basis for its decision not to use Moody's utility bond rates in its risk premium analysis. The response stated, "Staff determined that the 30-year Treasury bond contains less default risk than utility bonds in Moody's Mergent Bond Record." (12/07/01).[53]

Q. Does this response justify the switch?

A. Absolutely not. Staff has simply stated what amounts to a truism, a fact that has always existed. Nothing has changed in this regard since Mr. Bible made his statement before the FERC (referenced above) that "the correct way to calculate the risk premium for utility stocks is to subtract utility bond yields from the equity returns of utilities". (Emphasis added).

Q. Is there any reason to switch to 30-year Treasuries?

A. No. In fact, there are compelling reasons why Mr. Bible should not have switched. As I discuss in more detail below, in early 2000, the U.S Treasury announced a debt buy-back program intended to pay down the national debt. The announcement immediately increased prices of 30-year bonds to the point where yields on 30-year bonds were lower than the corresponding 10-year yields. This anomaly – 30-year yields are normally higher than 10-year yields due to their higher risk – resulted from investors bidding up the price of what was believed to become an increasingly scarce commodity.

[53] Strikingly, in Bible Dep. 2, p. 16, Mr. Bible directly contradicted that data request response, stating in response to the question at his deposition:

Q. Is there more risk in utility bonds than in the 30-year Treasury Bond?
A. I have never done an analysis to determine that and I've never seen an analysis done to determine that.

Due to this anomaly, by mid-2000, the financial community had already decided that the 30-year Treasury bond could no longer serve as the capital market benchmark.

Mr. Bible was apparently not even aware of this important development, for when asked in his deposition if the analytical community has decided not to use 30-year Treasury bonds as a benchmark due to the Treasury's decision to halt issuance of these bonds, Mr. Bible responded, "I don't know if they've decided to use it or not to use it for any reason."[54] If the abandonment of the 30-year Treasury bonds as a benchmark was not sufficient to cast doubt on Staff's decision to switch from utility bond yields to 30-year government bonds, in October 2001, the Treasury Department announced that it would no longer even issue 30-year Treasuries. As of February 18, 2002, the Federal Reserve website no longer reports 30-year yields. Consequently, not only has the Staff not offered adequate justification for the switch to 30-year Treasuries, but this move was clearly unsupportable and served to lower Mr. Bible's risk premium test results.

Q. What happens to Mr. Bible's risk premium result for Ameren if he had relied on AA utility bond yields as he and other Staff witnesses have done in the past?

A. As shown on Schedule 3, page 2 of 5, the average risk premium for Ameren over AA rated utility bonds over the 1992-2001 period used by Mr. Bible was 5.25%. The yield on AA rated utility bonds during January 2002 was 7.28%. Adding the 5.25% risk premium to a 7.28% AA utility bond yield produces an estimate of Ameren's return on equity of 12.53%.

[54] Bible Dep. 1, p. 126, lines 5-6.

Q. How does that estimate compare to Mr. Bible's ROE estimate using the problematic 30-year Treasury bond yield?

A. The 12.53% is almost ¾ of a percentage point higher than Mr. Bible's 11.87%. Mr. Bible's switch from utility bonds to treasury bonds clearly served to lower his ROE result.

Q. Earlier you mentioned Mr. Bible's failure to apply the risk premium test to his group of comparables. What is the significance of this omission?

A. Application of any of the tests to a single company introduces measurement error; reliance on a sample reduces the potential for mis-estimation of the return requirement. Further, since none of the tests provides a reliable formula for estimating the return on equity by itself, common sense suggests that more tests rather than fewer should be applied.

Q. Did you apply Mr. Bible's risk premium test to Mr. Bible's sample of comparables?

A. Yes. The application of the test to the comparables using AA utility bonds indicates a required return on equity of 12.1%. The details of the analysis are provided on Schedule 3, pages 3 to 5.

Q. What is the importance of this estimate?

A. The 12.1% estimate of the return on equity is over 250 basis points higher than Mr. Bible's recommended rate of return (mid-point) of 9.41%. That comparison lends further support to the conclusion that Mr. Bible's recommendation is unreasonably low.

Q. Earlier you concluded that expert judgment needed to be applied to the numerical results to arrive at a recommended return on equity. Do you believe Mr. Bible did so?

A. No. Most obviously, and perhaps most importantly, while Mr. Bible applied models other than the DCF model, he does not undertake any meaningful comparison of these models' results with his DCF results. Indeed, he relies on a "standard" of his own making that is entirely unsuited to confirm the validity of his Ameren-only DCF results.

Because Mr. Bible's written testimony has provided no insight at all into why he believed his DCF results had been confirmed by these other estimates, he was asked about his reasoning in his deposition of November 12, 2001. It turns out that his rationale was essentially idiosyncratic, a standard he had fashioned relying on no particular authority, and that, to his knowledge, no other member of the Staff employed. In Mr. Bible's view, the results from his other methods would need to be more than twice that of his Ameren-specific DCF result before he would question this DCF result. The deposition exchange with Mr. Bible is quite informative in this regard:

> Q. You did look at comparables, you explained in your testimony, and I wonder if you could just explain how all of the other calculations in addition to your DCF calculation confirmed in your view the DCF calculation for UE.
> A. The results weren't so different to cause me to question any of the inputs I used to the DCF model.
> Q. What do you mean by "so different"?
> A. They weren't so far removed from the results of the DCF model.
> Q. How far is too far removed?
> A. Far enough that would cause me to question the results of the DCF model.
> Q. Tell me what difference in basis points would make the results too different in your view.

A. If it was twice as much, it would cause me to go back and take a look at the inputs to my DCF model and reevaluate whether I correctly did the calculations.[55]

Moreover, on further questioning, it became apparent that this measure of what would trigger concern about the accuracy of a DCF result was simply Mr. Bible's personal opinion:

Q. In that judgment that we're talking about in terms of when you believe that the comparable calculations are too far removed, your judgment of twice the DCF results, is that your perspective or is that a practice that is followed by other members of the Staff?
A. That's my perspective.
Q. Do you know how other Staff members approach that same question?
A. Not offhand I don't, no.
Q. Have you ever talked to them about it?
A. Yes.
Q. And do you have any kind of recollection of how other Staff members approach that?
A. As far as a specific number? No.[56]

In percentage terms, what Mr. Bible's standard means is that, if his DCF result for Ameren were 9%, his other tests would have to show returns in excess of 18% before he questioned the validity of his company-specific DCF result.

While Mr. Bible may be content to apply a "rule" that requires such a vast divergence between the company-specific cost of equity and the results of his other tests before recommending an ROE different from the company-specific DCF cost, investors and the customers who depend on the Company being able to supply safe and reliable service are not likely to be as sanguine. Every 1% difference in equity return to

[55] Bible Dep. 1, p. 131, line 9 to 132, line 1.
[56] Bible Dep. 1, p. 136, line 14 to 137, line 2.

AmerenUE is worth approximately $24 million in funds for both reinvestment in plant and payment of dividends.

Q. What approach do you subscribe to?

A. To avoid potential bias, in arriving at the estimated return, it is appropriate to explicitly give weight to the results of all of the tests performed.

Q. What are some common methods used in this regard?

A. There is no set rule for weighting the various benchmark results to come up with a recommended cost of equity for a company. However, reasonable ways include giving equal weight to (averaging) all test results, or focusing on the mid-point of the range of the various test results.

Q. Has Staff ever taken that type of approach in the past?

A. Yes. Missouri Staff has in the past used the average of the mid-points of the various methods considered to come up with a recommendation. For example, Staff Witness, Roberta A. McKiddy presented average results in her Exhibit 30 in Case No. GR-2000-512 and recommended a return on equity close to that average.

Q. Has Mr. Bible ever used weighted averages with respect to cost of equity estimates for AmerenUE in the past?

A. Yes. Mr. Bible estimated costs of equity for each year from 1995 to 2000. These estimates were used by Staff in their February 1, 2001, report evaluating AmerenUE's earnings during the EARP. In arriving at those estimates, he gave explicit weights to his other test results. When asked in deposition why he did so for that purpose, he replied,

Q. And where would that be?

A. In doing the estimates for the report that Staff filed on the EARP, January, February.
Q. Now, why did you do that?
A. Like I said, to give the company the benefit of the doubt of the higher numbers.
Q. On what do you base your judgment that doing that produces higher numbers for the company?
A. Well, any time you weight a higher number, you're going to incrementally move the overall average up.
Q. What if you weight the lower number, though; then you move the incremental average down. True?
A. Well, if you start with the DCF model and it's the lower number, that would be the result you would use. And anything that you would weight that is higher than that would bring the overall result up.
Q. So any averaging in that situation would bring the result up if the other numbers were higher?
A. If the other numbers were higher.[57]

Since none of Mr. Bible's tests will provide a definitive estimate of the cost of equity, there is no reason for Mr. Bible to revert to relying solely on his Ameren-only DCF result.

Q. Are there other reasons that the reliability of Mr. Bible's recommendation is questionable?

A. Yes. Mr. Bible's November 12, 2001 deposition revealed a lack of knowledge of economic trends and of the operating environment of electric utilities. The following quote is illustrative:

Q. But you're familiar with PURPA?
A. Generally, yes.
Q. Okay. And would it be fair to say that PURPA introduced competition into the generation of electricity?
A. Um, if you say so.
Q. Well, I'm not the witness here. If you don't have an opinion, that's fine, but –
A. Okay. Then I don't have an opinion.
Q. So you don't know?
A. I don't have an opinion.

[57] Bible Dep. 1, p. 139, line 19 to p. 140, line 12.

Q. Do you know?
A. No.
Q. Okay. Do you know whether the Energy Policy Act of 1992 expanded competition in the generation of electricity?
A. No.
Q. Do you know what FERC Order 888 does?
A. No.
Q. Do you know what FERC Order 2000 does?
A. No.
Q. Okay. Do you know how many states have introduced some form of retail competition?
A. No.
Q. Do you know whether it's fair to say that for all practical purposes the United States now has a wholesale market for the purchase and sale of electricity?
A. I guess it would depend on what you would define as a wholesale market. I don't know. [58]

No competent equity return recommendation can be made without a reasonable knowledge of the economic and operating environment in which the Company operates.

Q. Is there any other aspect of Mr. Bible's testimony which causes you concern?

A. Yes. Mr. Bible makes a point of stating that utilities should not be able to recover the costs of poor management outcomes. Specifically he states, "captive ratepayers of public utilities should not be forced to bear the brunt of poor or inept management that results in unnecessarily higher costs."[59]

I agree. However, it is appropriate to send to investors and management the correct signal, i.e. that efficiency has value to all stakeholders. There is no question that AmerenUE is viewed as an efficient operation. Among the material provided by Mr. Bible in his response to Interrogatory No. 5 (dated 9/14/01) were several documents that

[58] Bible Dep. 1, p. 107 line 1 through p. 108 line 3.
[59] Bible Testimony 2, p. 6, lines 27-28.

highlighted the efficiency of AmerenUE's management team. For example, Standard & Poor's stress that AmerenUE's strengths include (1) "competitive rates"; (2) "superb nuclear performance"; (3) "its position as one of the lowest-cost producers in the Midwest"; (4) "strong transmission ties;" (5) a "[s]trong management team [that is] cost-conscious, credible, and committed to credit quality"; (6) that the "UE/CIPS merger created a bigger, more efficient utility" with pries that are "even lower than if this transaction had not occurred"; and (7) the fact that "on the fuel-cost management front, virtually no one can compete with UE."[60]

Nevertheless, Mr. Bible does not consider the fair return criterion of rewarding efficient management when setting the allowed return. In deposition, Mr. Bible was asked if he considered efficiency:

> Q. .... In setting a fair rate of return, should one factor that you consider be discouraging inefficiency?
> A. If you're asking me if I set rates of return to discourage inefficiency, I would say, no --
> Q. Okay.
> A. -- not specifically.
> Q. In any way.
> A. No.
> Q. Okay. And then I'm just going to ask you the corresponding question then. Is it fair to say that you don't in any way set rates to reward management efficiency?
> A. In the context of a rate case, whether a management acts efficiently or inefficiently is something that management is going to do, and they're going to do that irrespectively of what rate of return is suggested, set, authorized.
> Q. So does that mean the answer to my question is, no, that you do not consider rewarding management efficiency in proposing a fair rate of return?
> A. No.[61]

[60] S&P's RatingsDirect, October 17, 2000, p. 3.
[61] Bible Dep. 1, p. 51, line 4 through p. 52, line 3.

Q. What should Mr. Bible's corrected results be if (a) weight is given to all the tests; (b) the DCF test results are corrected to reflect only forecast (not historic) growth rates; (c) the historic market risk premiums are corrected and a reasonable forward-looking beta is used in the CAPM test; (d) the risk premium test utilizes utility bond yields, instead of 30-year Treasuries; and (e) the risk premium test is applied to the sample companies.

A. The table below summarizes the results that Mr. Bible's cost of equity methodologies would yield if applied correctly and highlights the very significant discrepancy between these results and his recommendation to the Commission:

TABLE 10

Test	Mr. Bible's Results	Corrected Results	Correction
DCF – Ameren	8.91% to 9.91%	11.2%	Use analysts' growth forecasts
Risk Premium – Ameren	11.87%	12.53%	Use utility bond yields
CAPM – Ameren	9.34% to 9.40%	11.2% to 13.9%	Use reasonable risk-free rate, correct market risk premium and beta
DCF – Comparables	9.75%	12.8%	Use analysts' growth forecasts
Risk Premium – Comparables	--	12.1%	Apply test to sample companies
CAPM - Comparables	9.46% to 9.52%	11.2% to 13.9%	Use reasonable risk-free rate, correct market risk premium and beta
Average	**9.9% to 10.1%**	**11.8% to 12.8%**	
BIBLE RECOMMENDATION	**8.91% to 9.91%**		

Source: Table 6, Schedule 3, and p. 50.

By simply giving weight to all the tests he performed, Mr. Bible's mid-point ROE recommendation would have been approximately 10.2% rather than 9.41%. The application of the corrections noted in the table and discussed above raises the estimate of the cost of equity to a range of 11.8% to 12.8%.[62]

Q. What is the dollar impact on AmrenUE's cost of service of relying on the average of all of Mr. Bible's corrected results rather than the 9.41% mid-point of Mr. Bible's recommendation?

A. The difference between his 9.41% DCF test result and the mid-point of the range of his results as corrected amounts to a increased cost of service of about $120 million.

Q. You previously discussed why it is not good practice to rely on cost of equity tests applied to a single company. What would be the result if Ameren were included in his sample of comparables?

A. The table below summarizes the corrected results of Mr. Bible's tests applied to a sample of four comparables, including Ameren:

TABLE 11

DCF Test	12.4%
Risk Premium Test	12.2%
CAPM	11.2% to 13.9%
Average	11.9% to 12.8%

Source: Tables 7 and 10, and Schedule 3.

[62] These corrections do not address the issue of the incompatibility of applying a market-derived return to the book value of equity. The problems with doing so are addressed in full in Sections V and VI. Correcting for the inconsistency would further raise Mr. Bible's recommended return.

As Table 11 shows, the result of relying on all three tests applied to a sample of four comparable companies would be an estimated return on equity in the range of 11.9% to 12.8%.

7. STAFF'S ALLEGATIONS THAT THE SHARING GRIDS IN AMERENUE'S RECENTLY EXPIRED EARP ARE TOO HIGH ARE NOT SUPPORTABLE

Q. Please provide some context to Staff's allegations that AmerenUE's returns have been excessive.

A. The EARP which expired on July 1, 2001, included an earnings sharing grid which split between ratepayers and shareholders earnings above 12.61%, and limited the shareholder return from Missouri jurisdictional electric operation, after sharing, effectively to 13.5%.[63] The Missouri Public Commission Staff's Report Regarding The Experimental Alternative Regulation Plans of Union Electric Company, D/B/A AmerenUE, filed February 1, 2001, states,

> UE's present rates are excessive even though UE's customers receive half of the excess earnings between a 12.61% ROE and a 14.00% ROE for UE and a larger percentage above 14.00% ROE. The 12.61% to 14.00% ROE range represents a substantial amount of excess earnings of which only half must be shared by UE with its ratepayers."

[63] Under the terms of the first EARP, the maximum shareholder return was limited to 13.3%. There were two sharing bands. The first band, up to and including 12.61% ROE, was retained by the shareholders. The second band, returns above 12.61% up to and including 14.0%, was split 50%/50% between shareholders and ratepayers. Ratepayers received 100% of returns above 14%. The maximum effective shareholder return was calculated as follows:

$$13.3\% = 100\% \times (12.61\%) + 50\% \times (14\% - 12.61\%) = 12.61\% + .7\%$$

Under the terms of the second EARP, the shareholder return was limited to 13.5%. An additional sharing band was added which increased the maximum effective return. This new sharing band provided for a 10%90% (shareholders/ratepayers) sharing of earnings above 14% up to and including 16%. The maximum effective shareholder return was calculated as follows:

$$13.5\% = 100\% \times (12.61\%) + 50\% \times (14\% - 12.61\%) + 10\% \times (16\% - 14\%) = 12.61\% + .7\% + .2\%$$

The 13.5% maximum achievable return under the second EARP can be compared with various benchmarks, including the recent and expected returns on equity of other electric utilities, as well as the parameters of other recently approved earnings sharing mechanisms.

For the Central U.S. electric utilities (excluding Ameren), the average achieved ROE in 1995 to 2001 was 11.6%; the average return for the upper 50% of Central U.S. electric utilities (excluding Ameren) was 13.5% (Schedule 4), identical to the EARP's cap on AmerenUE's Missouri return on equity after sharing. The Value Line forecasts of ROEs for 2001 and forward for the Central U.S. electric utilities (excluding Ameren) are:

TABLE 12

CENTRAL U.S. ELECTRIC UTILITIES' AVERAGE EXPECTED ROE		
PERIOD	**ENTIRE SAMPLE**	**UPPER 50%**
2001	11.4%	14.2%
2002	12.5%	15.0%
2004 to 2006	12.5%	13.1%

Source: Schedule 4.

Based on the actual earnings expected for the industry as a whole, and the Central U.S. electric utilities specifically, AmerenUE's ability to earn regulated returns of up to 13.5% clearly were not excessive.

Q. Can you give some perspective on how these specific utility returns compare to broader industrial returns?

A. Yes. Over the 1995 to 2001 period, the return on equity for the S&P Industrials Composite averaged 22.9%.

Q. How do recently approved plans in other jurisdictions compare with AmerenUE's recently expired EARP?

A. The following table illustrates plans in effect in various jurisdictions.

TABLE 13

Company	Date of Decision	Earnings Sharing
Alabama Power	1982; last extended 1995	ROE range of 13.0% to 14.5%, with rates adjusted when ROE falls outside range
Consolidated Edison	10/00	Earnings above 12.9% shared equally
Georgia Power Company	12/01	ROE range of 10.0-12.5%. Earnings above 12.5% shared 67%/33% ratepayers/shareholders
Kentucky Utilities	2/00	Earnings above 12.5% shared 60% utility/40% customers
MidAmerican Energy Co.	12/01	Earnings shared 50/50 between 12% and 14% and 83.3% to ratepayers above 14%
Orange & Rockland Utilities	9/00	Earnings above 11.1% shared equally
Narragansett Electric	4/00	Earnings above 12% shared equally; earnings above 13% are to be shared 75%/25% ratepayers/ customers
Northern States Power	12/00	Earnings above 13% shared equally
Northwest Natural Gas	4/99	33% customer/67% utility sharing of ROE above 13.25%
Sierra Pacific Power	2/97	Earnings above 12% shared equally

Q. What does the above indicate?

A. In the context of both expected earnings of other electric utilities as well as earning sharing plans recently approved for other utilities, there is no basis to conclude that the permissible earnings levels possible under UE's EARP were excessive.

Moreover, at the time the Staff presented the first EARP to the Commission for its approval, the Staff clearly believed that the effective ROE levels set out in the EARP were reasonable, and most certainly not excessive, as counsel for the Staff explained:

> Mr. Dottheim: Regarding the sharing grid which appears in the Stipulation and Agreement, I would like to turn to that for a short while. The staff had certain operating principles in addressing the sharing grid. It is based upon, first, a Staff analysis of what it believes is a reasonable return on common equity range.[64]

Mr. Bible offers no explanation for what, if anything, has changed to now make what was " a reasonable return on common equity range" into excessive returns.

Q. Does your analysis of Staff's testimony support the conclusion that the cost of capital has declined since the EARP was first implemented?

A. No. Mr. Bible's own Schedule 5, page 1 is clear evidence that the utility cost of capital has not declined since the EARP was first implemented. Schedule 5, page 1, which is a history of yields on Mergent's Public Utility Bonds, shows that the average yield was 7.6% during the first year of the EARP (July 1995 – June 1996); during the most recent twelve months presented in Mr. Bible's testimony (January-December 2001), the average yield was 7.7%, 10 basis points higher. By the end of December 2001, the yields were even higher, at 7.9%.

[64] Hearing, in the matter of a Stipulation & Agreement respecting UE Co.'s effectuating a one-time credit, a reduction in annual Missouri retail electric revenues, and a three-year experimental alternative regulation plan, Case No. ER95-411 (July 19, 1995), at 12-13:23-3.

Further, the calculations made by Mr. Bible in his direct testimony and his retrospective cost of equity calculations, while flawed, do not support the contention that the cost of equity has declined since the EARP was implemented. In fact, they point to the opposite trend; the calculations signal an increase in the cost of equity.

The following table presents Mr. Bible's retrospective ROE calculations for AmerenUE[65] as well as the values derived from his July 2001 and March 2002 direct testimony in this case.

TABLE 14

TREND IN MR. BIBLE'S ROE CALCULATIONS FOR AMERENUE [66]	
1996	9.38%
1997	9.54%
1998	9.24%
1999	10.25%
2000	9.49%
2001	10.50%
2001/2002	10.10%

[65] As filed in response to Union Electric's First Request for Admissions, No. 33; except for 1999, the calculations represent the simple average of Mr. Bible's Ameren-specific DCF, CAPM and risk premium test results. The 1999 ROE calculated by Mr. Bible is not directly comparable to the calculations for the other years, because, for the 1999 ROE, (1) the three tests were weighted differently and (2) the DCF calculation for Ameren used only forecast growth rates, not an average of historic and forecast growth rates.

[66] 1996-2000 values from response to Union Electric's First Request for Admissions, No. 33; 2001 value from Bible testimony, July 2001; 2001/2002 value from Bible testimony, March 2002.

8. ECONOMIC AND CAPITAL MARKET TRENDS INDICATE THE COST OF EQUITY CAPITAL HAS NOT DECLINED MATERIALLY SINCE THE EARP WAS FIRST IMPLEMENTED

Q. Does your own evaluation of economic and capital trends indicate that the cost of capital has not declined since the EARP was first implemented?

A. Yes.

Q. Please summarize the economic and capital market trends since the EARP was first approved which bear on the cost of capital environment.

ECONOMIC GROWTH

A. When the EARP was first implemented (July 1995), the economy was in the midst of the longest expansion in U.S. history. From 1991 to 2000, real GDP growth averaged 3.3%, fueled by strong consumer spending and corporate investment (Schedule 5). Soaring equity markets throughout most of the period, which pumped up the consumer's net worth, provided a key impetus for consumer confidence and consumer spending. Investment spending was particularly strong in technology-related areas, giving rise to strong productivity gains and healthy growth in corporate profits of close to 8.4% per year (Schedule 5).

Returns on equity for the S&P Industrials Composite averaged 21% over the business cycle 1991 to 2000, compared to an average of 15% achieved during the prior business cycle (1983 to 1990).

The strength of the US. economy was exemplified by its resilience in the face of a global capital market crisis during this period. Despite the confluence of events domestically and abroad (Asian financial crisis, defaults in the Russian bond market and the near-collapse of a major hedge fund) which precipitated a global capital market crisis

in mid-1998, the U.S. economy was able to maintain a healthy rate of growth. Even with the significant drag on the export sector, largely due to economic weakness in Asia, the U.S. economy continued to expand at a robust pace until mid-2000.

In mid-1999, concerned that the economy was growing too rapidly, the Federal Reserve began raising the Federal Funds rate. By gradually raising rates, the Fed hoped to steer the booming economy into a soft landing. By mid-2000, the Fed had raised the Fed Funds rate six times by a total of 175 basis points.

Between mid-2000 and summer 2001, the economy had slowed considerably. The deceleration in growth was prompted by the Fed's actions to increasing interest rates, as well as by rising energy prices, which began to put a squeeze on profit margins and reduce business spending. Signs of a slumping economy spilled over into the equity markets, which were widely viewed as overvalued. By the end of August 2001, the Dow Jones Industrials average had fallen 16% from its January 2000 peak; the technology-laden NASDAQ had plummeted by over 58%. As equity markets weakened and the public's net worth shrank, consumer confidence dropped, and with it consumer spending. Reversing course, the Fed took steps to halt the economic slide. It lowered interest rates seven times between January and August 2001, for a total of 300 basis points, as the economy continued to weaken and threatened to sink into recession. With the Fed's actions, by early September 2001 the consensus view was that the U.S. would avoid an outright recession.

The September 11, 2001 terrorist attacks on the U.S. materially worsened the near-term outlook for the economy. The attacks further damaged already drooping consumer confidence and produced a sharp downturn in consumer spending, which had

remained the only significant source of U.S. economic growth in the first half of the year. Since the September 11 attacks, the Fed cut rates four more times, in an effort to ensure sufficient monetary policy stimulus to turn the economy around. The Fed Funds rate is now at its lowest level since 1962. Although the National Bureau of Economic Research determined that a recession had begun at the end of first quarter 2001, based on a significant decline in activity spread across the economy, the U.S. only experienced one quarter of an absolute decline in real GDP growth.

A rebound in the economy has already been registered in early 2002. Growth in 2002 is expected to reach 3.3% (quarter over prior year's quarter) by fourth quarter 2002 and to average 2.0% for the year (Blue Chip Economic Indicators, March 10, 2002).

For the long-term (2003 to 2013), real growth is forecast at 3.2% (Blue Chip Economic Indicators, March 10, 2002), virtually identical to that experienced over the past business cycle and well above the 2.5% that had historically been viewed as sustainable. The higher long-term growth estimates reflect the increasingly accepted view that technology-driven productivity gains will allow higher long-term growth to be sustained with inflation maintained at acceptable levels.

INFLATION

Inflation remained in check throughout the cyclical expansion, averaging only 2.7% (CPI) from 1991 to 1999 (Schedule 5). Concerns that a tight labor market would trigger a wage-price spiral were not realized. High levels of business investment in new technology resulted in increased efficiency, reduction in costs, and an increase in work force productivity. Large gains in productivity kept inflation in check as gains in output covered higher employment costs.

Spurred by rising energy prices, the CPI reached a cyclical high in 2000, rising 3.4%. However, with weakening economic activity, declining energy prices and higher unemployment rates, inflation has since moderated. CPI inflation averaged 2.8% in 2001; for 2002, the consensus forecast anticipates that the CPI will increase by 1.4% (Blue Chip Economic Indicators, March 10, 2002).

Over the longer-term (2003-2013), inflation, as measured by the CPI, is expected to average 2.7%, and, as measured by the GDP Deflator, 2.2% (Blue Chip Economic Indicators, March 2002). The expected longer-term inflation rates are very similar to those experienced over the past business cycle.

INTEREST RATES

Over the past seven years, short-term interest rates have been buffeted by the effects of monetary policy initiatives. From mid-1995 until the global market crisis of August 1998, 90-day Treasury bill yields fluctuated in the relatively narrow range of 4.8-5.8% (Schedule 6). With the combination of Fed actions to relieve the August 1998 crisis and increasing inflows of capital to the "safe haven" of U.S. government securities, T-bill rates hit a low of 4.1% in October 1998.

However, given the underlying strength of the U.S. economy, which led to multiple increases in the Fed Funds rate in 1999 to 2000, 90-day T-bill rates gradually rose. By November 2000, T-bill rates had risen over 200 basis points from their mid-1998 lows, peaking at 6.2%. With the weakening economy, exacerbated by the events of September 11, aggressive Fed Funds rate cuts have produced 90-day T-bills yields that are at their lowest levels in decades (1.8% at March 15, 2002).

Ten- and 30-year Treasuries followed a similar up-and-down pattern as Treasury bills from mid-1995 through 1997. Ten-year Treasury notes averaged 6.3% and

fluctuated within a range of approximately 6.0% to 6.75%. Thirty-year Treasuries averaged 6.6%, within a range of approximately 6.25% to 7.00%. A decline in 10-year and 30-year rates in 1998 to approximately 4.7% and 5.0% respectively – supported by the demand for safe U.S. Treasuries in the face of turbulent global markets – was short-lived. As short-term rates were pushed up as the economy boomed, so too were the 10- and 30- year Treasury yields, peaking at 6.7% and 6.6% respectively in January 2000.

In January 2000, faced with significant Federal government budget surpluses, the U.S. Treasury Department announced a plan to pay down the national debt. The announcement had an immediate impact on the long end of the government bond yield curve, as investors scurried to acquire a diminishing supply of longer-term government securities. By month-end January 2000, the normally upward sloping yield curve developed a hump between 10-year and 30-year Treasuries. By May, the spread between 10-year and 30-year Treasuries was a negative 30 basis points.

An article published in Business Economics described the shrinkage in long-term U.S. government debt as follows,

> "More recently, however, the supply of 30-year Treasury bonds has been shrinking at an astounding rate, thanks to mounting Federal budget surpluses in 1998, 1999 and projected for 2000. Over the coming decade, the Congressional Budget Office projects that a continuation of these annual surpluses will result in a dramatic shrinkage in Treasury debt held by the public from $3.6 trillion at the end of fiscal 1999 to only $0.9 trillion at the end of fiscal 2009. Reflecting these declining Treasury demands on the U.S. capital market, only $20 billion in 30-year Treasury bonds were auctioned in 1999; and this year these bond sales are expected to whither away further to $15 billion, dramatically reducing trading activity and liquidity in the long-term sector of the Treasury securities market. In addition, the Treasury has announced a "buy back" plan amounting to $30 billion in 2000 aimed at phasing out long-term bonds sporting the highest interest rates and at maintaining efficiently large auction size and liquidity of the most recent (on-the-run) issues. The powerful pull of shrinking supply on the 30-year Treasury bond yield

> caused it to drop below the yield on 10-year Treasury notes at the start of 2000, defying the normal relationship between these yields implied by an upward sloping yield curve. Some market observers are speculating that the Treasury will eliminate its 30-year bond offering altogether, as budget surpluses mount and government borrowing needs contract further."[67]

In May 2000, the Wall Street Journal announced that it would no longer rely on the 30-year Treasury as its benchmark[68] yield. Instead, it would rely on the 10-year Treasury note as the benchmark.

The government plan to eliminate all outstanding debt by 2013 has even called into question the reliability of the 10-year Treasury note as a benchmark. In the wake of the government announcement, a flurry of articles suggested a variety of alternatives (e.g., Fannie Mae securities).

With the deterioration in the economy, the expected surpluses became less certain, and the concern with the supply of long-term government debt retreated. As the yield curve because increasingly upward sloping, the spread between 10- and 30-year Treasuries resumed a more normal level.

On October 31, 2001, the U.S. Treasury announced that it would no longer issue 30-year bonds. The announcement, intended to direct downward pressure on long-term rates, and push investors into short-term securities, again created an anomaly in the

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[67] David M. Jones, "The Demise of the 30-Year Treasury Bond as a Benchmark for Pricing Fixed-Income Securities", Business Economics, October 2000.

[68] The term "benchmark" has been defined as follows:

> "...backed by the full faith and credit of the U.S. government, Treasury yields can be considered the risk-free rate, thus becoming the critical input when discounting cash flows of other securities. Examples include valuing non-government debt, equity, derivatives, and currencies. The risk-free rate is also the basis for corporations and other investors evaluating projects or potential acquisition candidates using discounted cash flow analysis. This role transcends borders, as a key characteristic of a good benchmark is to facilitate such analysis across currencies." (Steven A. Zamsky, "Diminishing Treasury Supply: Implications and Benchmark Alternatives", Business Economics, October 2000).

yield curve. The anomaly has been most obvious in the spreads between 20- and 30-year Treasury yields. On October 30th, the day before the announcement, the 20/30 year spread was 1 basis point. Two days after the announcement, the spread was a negative 18 basis points. The announcement that 30-year bonds would no longer be issued was the final death knell. The 30-year bond can no longer be reliably utilized as the proxy for the risk-free rate.

With respect to the new benchmark, the 10-year Treasury note, the combination of the economic slump, monetary policy stimulus and Federal Government plans to reduce the supply of longer-term securities pushed yields to their lowest levels in three years. From their January 2000 peak of 6.7%, 10-year yields declined to a low of 4.2% in early November 2001, before beginning to rebound. At March 15, 2002, 10-year Treasury yields stood at 5.3%.

The most recent Blue Chip Economic Indicators (March 10, 2002) forecasts 10-year Treasuries as follows:

2002	**2003**
5.2%	5.6%

2004 to 2008	**2009 to 2013**
(Average)	**(Average)**
5.9%	5.9%

The recent low yields on 10-year notes reflect in large measure the Federal Reserve's efforts to jump-start the economy by lowering the Federal funds rate 475 basis points between January 2001 and December 11, 2001, as well as the Treasury Department's efforts to lower longer-term rates by eliminating sales of 30-year bonds.

An examination of the trends in utility bond yields indicates that the current yields on longer-term government securities are not an accurate reflection of the overall utility cost of capital environment. In the second half of 1995, the average yield on AA-rated utility bonds was 7.4%, 130 basis points above 10-year Treasuries.[69] By the first half of 1998 – just before the second term of the EARP began – AA utility bond yields had declined marginally, to 7.0%. The resulting AA utility/10-year Treasury spreads were similar to the previous period of only slightly higher (140 basis points). However, during 2001, the average yield on AA utility bonds was virtually identical to its 1997 level, at 7.5%, but the spread above 10-year Treasuries had risen to an average of 250 basis points. In mid-March 2002, the yield on Moody's AA rated utility bonds was 7.5%, 220 basis points higher than the 5.3% yield on 10-year Treasuries.

Q. What are the key messages that the analysis of government vs. corporate bond yields delivers?

A. Essentially, the trend in, and spreads on, utility bond yields relative to government securities deliver two key messages:

(1) current levels of longer-term Government bond yields reflect a "scarcity premium". That "scarcity premium", which arises from a lack of supply of "safe haven" securities, needs to be taken into account in applying the Capital Asset Pricing Model. The "scarcity premium" can be discounted either by an adjustment to the risk-free rate or to the equity risk premium.

(2) the level of and trend in utility bond yields are an indicator of the trends in the cost of equity, inasmuch as corporate yields are a

[69] See Schedule 6; the long-term average spread prior to 2000 was approximately 135 basis points.

reflection of investors' perceptions of the underlying business and financial risks of the issuing corporations. The levels of utility bond yields are evidence that the cost of equity under current capital market conditions is not significantly different from that in 1995 (when the EARP was first implemented) and is higher than in mid-1998 when the second term of the EARP commenced.

EQUITY MARKETS

Q. How has the equity market behaved since the EARP was first implemented in 1995?

A. Much of the period was characterized by an exuberant but volatile bull market which favored high growth, high-tech, "New Economy" stocks. In their enthusiasm for technology-based equities, investors essentially shunned stocks that were deemed to be "Old Economy" companies. From the beginning of 1995 to its 2000 peak, the S&P 500 price index increased 230%; the NASDAQ rose by 580%. At the market peak, valuations had been pushed to historically high levels. Utility share prices, in contrast, reacted negatively to the rising interest rate environment. As a result, the utility sectors became decoupled from the rest of the market.

As the economy began to deteriorate in mid-2000, investors precipitously abandoned the high flying "New Economy" stocks, turning to the safe havens of the perennial "defensive" sectors of the economy. From its 2000 peak to its post-September 11 trough, the S&P 500 declined by 40%; the corresponding decline in the NASDAQ was 72%. Utility share prices benefited from both the investor's flight to safety as well as the decline in interest rates precipitated by the Federal Reserve's initiatives to keep the economy moving.

Although the market has recently appeared to reflect renewed consumer confidence, the "irrational exuberance" and subsequent "irrational pessimism" exhibited by investors during the past business cycle are not likely to be repeated in the near future. Nevertheless, past experience suggests that investors will tend to shift back to growth stocks as the economy revives. Defensive stocks, including utility shares, will likely, once again, take a back seat to growth stocks at that time. For example, since the post-September 11 market trough, through mid-March, the S&P has climbed 21%; the NASDAQ is up over 30%. Electric utility shares, in contrast only rose by 6% over the same period.

9. MY ESTIMATE OF A FAIR RETURN ON EQUITY FOR AMERENUE TAKES ACCOUNT OF THE ORIGINAL COST BASIS ON WHICH THE COMPANY IS REGULATED

Q. Have you done an independent analysis of the fair return on equity for AmerenUE?

A. Yes.

Q. Please summarize the key principles that governed your estimation of a fair return on equity for AmerenUE.

A. My estimate of a fair return on equity starts with a recognition of the objective of regulation. That objective is to simulate competition, i.e., to establish a regulatory framework which will mimic the competitive model. Under the competitive model, a firm should be able to anticipate a return on equity which reflects the opportunity cost of capital, i.e., a return which is commensurate with the returns available on foregone investments of similar risk.

The objective of regulation, in conjunction with a utility's obligation to serve, has, as noted earlier, given rise to multiple criteria for a fair and reasonable return.

Three criteria in particular have been promulgated by both judicial and regulatory precedents. The three criteria provide the opportunity for a utility:

1. to attract capital on reasonable terms
2. to maintain its financial integrity; and,
3. to achieve returns commensurate with those achievable on alternative investments of comparable risk.

The additional criteria cited by Dr. Bonbright, noted earlier, are also relevant in applying expert judgment to the estimation of a fair return. These include: rewarding managerial efficiency; predictability and stability of rates; and sending proper pricing signals to customers (consumer rationing).

Q. How are the determination of a fair return and the base on which that return is set inter-related?

A. The base to which the return is applied determines the dollar earnings stream to the utility, which, in turn, generates the return to the shareholder (dividends plus capital appreciation). The application of a capital market-derived "cost of attracting capital" to a historic rate base in principle means that the value of the investment will trend toward the historic cost. The arguments in support of that result focus on the way "cost" has typically been interpreted and applied in determining other cost elements in the regulation of North American utilities. For most utilities, rates are set on the basis of average book costs; that concept has been applied to cost of debt, depreciation expense, as well as to all operating and maintenance expenses.

For economists, the theoretically appropriate definition of cost is marginal or incremental cost. Average historic costs have been substituted for marginal or

incremental costs for two reasons: first, as a practical matter, long-run incremental costs are difficult to measure; second, for the capital intensive utility industries, pricing on the basis of short-run marginal costs would not cover total costs incurred.

The determination of the return on common equity has traditionally been a "hybrid" concept: to the extent that the cost of equity is based on a forward-looking measure of the cost of attracting capital, it is in principle an incremental cost concept. It has not, however, been applied to a similarly determined base. It is applied to an original cost rate base. When there is a significant difference in the historic original cost rate base and the corresponding current cost of the investment, application of a current cost of attracting capital to an original cost rate base produces an earnings stream that is significantly lower than that which is implied by the application of that same cost rate to market value.

The current cost of attracting capital is measured by reference to market values. The discounted cash flow test, for example, measures the return that investors require on the market value of the equity. For a utility regulated on the basis of original cost book value, the current cost of attracting equity capital is only equivalent to the return investors require on book value when the market value of the common stock is equal to its book value.

As the market value of the equity of regulated utilities increases relative to its book value, the application of a market-value derived cost of equity to the book value of that equity increasingly understates investors' return requirements (in dollar terms).

Some would argue that the market-value of utility shares should be equal to book value. However, economic principles do not support that conclusion. A basic

economic principle establishes the expected relationship between market value and replacement cost which provides support for market prices in excess of original cost book value. That economic principle holds that, in the longer-run, in the aggregate for an industry, market value should equal replacement cost of the assets. The principle is based on the notion that, if the market value of firms exceeds the replacement cost of the productive capacity, there is an incentive to establish new firms. The existence of additional firms would lower prices of goods and services, lower profits and thus reduce market values of all the firms in the industry. In the opposite circumstance, there is an incentive to disinvest, i.e., to not replace depreciated assets. The disappearance of firms would push up prices of goods and services, raise the profits of the remaining firms, thereby raising the market values of the remaining firms. In equilibrium, market value should equal replacement cost. In the presence of inflation, even at moderate levels, absent significant technological advances, replacement cost should exceed the original cost book value of assets. Consequently, the market value of utility shares should be expected to exceed their book value.

To apply a market-derived current cost of equity to an original cost book value, without offsetting opportunities to achieve returns on book equity commensurate with investor return requirements, will tend to produce an uneconomic allocation of scarce capital resources. Hence, when the allowed return on original cost book value is set, the market-derived cost of attracting capital should be converted to a fair and reasonable return on book equity, so that the stream of dollar earnings on book value equates to the investors' dollar return requirements on market value.

10. MULTIPLE TESTS NEED TO BE PERFORMED TO ESTIMATE A FAIR RETURN ON EQUITY FOR AMERENUE. THE ESTIMATES FROM THESE TESTS INDICATE A FAIR RETURN ON EQUITY FOR AMERENUE OF NO LESS THAN 12.0%; A REASONABLE RETURN ON EQUITY SHOULD BE VIEWED AS FALLING WITHIN A RANGE OF 12.0% TO 14.0%

Q. What tests have you relied upon to estimate a fair return on equity for AmerenUE?

A. I have utilized the discounted cash flow model, capital asset pricing model, and the comparable earnings test.

DISCOUNTED CASH FLOW MODEL

Q. To what companies did you apply the DCF test?

A. The discounted cash flow test was applied to a sample of eight electric utilities that serve as a proxy for AmerenUE. This sample includes all electric companies:

(1) classified by Value Line as an electric utility;

(2) with no less than 70% of total assets devoted to electric operations;

(3) total assets of more than 1 billion dollars;

(4) whose Standard & Poor's debt rating is A- or higher; and,

(5) for which at least three analysts' long-term earnings growth rate forecasts are available from the I/B/E/S International and Zacks[70] data bases.

The resulting eight electric utilities are listed on Schedule 7.

Q. Please discuss how you estimated investor growth expectations.

A. I have estimated investor growth expectations using consensus forecasts of

[70] To ensure that the forecasts are a "consensus" view, not those of a single analyst.

long-term earnings growth. Specifically, I relied on two widely available sources: I/B/E/S International and Zacks. I have supplemented these forecasts with the Value Line forecasts of cash flow per share growth.[71] Cash flow is considered by analysts to be the second most important input (after earnings) to the analysis of securities.[72]

Q. Please summarize your application of the DCF model.

A. The constant growth DCF model,

$$\frac{D_o(1+g)}{P_o} + g$$

was applied to the sample of eight electric utilities using the following inputs:

(1) the annualized dividend paid during the three months ending February 28, 2002 as D_o;

(2) the average of the monthly closing prices for the three months ending February 28, 2002 as P_o; and

(3) the average of the February 2002 I/B/E/S International and Zacks earnings growth forecasts and the most recent Value Line[73] cash flow per share growth forecasts to estimate "g" in both the growth component and the expected dividend yield component.

Q. What is the cost of equity estimated by the constant growth DCF model?

[71] Neither I/B/E/S International nor Zacks provides a consensus forecast of cash flow growth.
[72] Stanley B. Block, "A Study of Financial Analysts: Practice and Theory", Financial Analysts Journal, Volume 55, No. 4 (July/August 1999).
[73] Issues dated January 4, 2002 and March 8, 2002.

A. Based on the median and average DCF costs of equity for the sample, the estimated required return on the current (market) value of common equity is in the range of 11.0% to 11.3%, see Schedule 8.

Q. What does the 11.0-11.3% DCF cost represent?

A. It represents the return investors expect to earn on the current market value of their utility common equity investments. It is not, however, the return that investors expect the electric utilities to earn on the book value of their common equity. Value Line, which publishes its projections of utility ROEs quarterly, anticipates (2004 to 2007) that the average ROE for the sample of eight electric utilities over the period will be 13.5% to 14.0% (Schedule 8).

Q. Have you tested the DCF estimates using any other growth forecasts?

A. Yes. An alternative approach is to use an estimate of sustainable growth, which is determined using forecasted return on equity and earnings retention rates. Sustainable growth is equal to: Expected ROE x proportion of earnings retained. As shown on Schedule 8, Value Line forecasts the returns on equity for the sample of electrics at 13.5-14.0%, with dividend payout ratios of 50.5% to 51.2%. The earnings retention rate is the complement of the dividend payout ratio (i.e., 48.8% to 49.5%). Estimated sustainable growth is thus 6.7%, higher than indicated by the analysts' forecasts of earnings and cash flow per share growth. Hence, the 11.0-11.3% DCF cost estimate should be viewed as conservative.

Q. Isn't there a "disconnect" in logic if one expects the allowed return on equity to be set at the DCF cost of equity?

A. Yes. If a utility whose market/book ratio was 175% were expected to earn only 11.0% on book value, the market price would tend to decline to book value, so that investors experience a capital loss of 43%. The idea that investors are willing to pay a price equal to 175% of book value in order to see the market value of their investment drop by 43% is illogical.[74]

Q. Should regulators totally discard use of the DCF test under today's market conditions?

A. Not as long as further steps are taken. The appeal of the discounted cash flow test as a measure of the fair return lies in the relative simplicity of its application. As a measure of the fair return, however, in a regulatory framework that relies on original cost book value as the base to which the return is applied, as is the case in Missouri, the DCF test has significant limitations. The investor's required return as measured by the DCF test (derived directly from the current market price) and the expected return on book value will only converge when the market value is close to book value. In today's capital market environment, that premise does not hold, since utility market values are significantly higher than book value.

[74] To illustrate, assume a utility's book value is $10.00 and its stock sells at $17.50 (so that its market-to-book ratio is 175%); its expected return is 13.75% (earnings per share of $1.375); and its expected payout ratio is 50% (dividend per share of $0.69). An application of the DCF formula would show a current dividend yield of 3.9% ($0.69 / $17.50), and a longer-term "sustainable" growth rate of 6.9% (50% x 13.75%, i.e., sustainable growth = percent of earnings retained x return on equity), for a DCF cost of 10.8%.

If the calculated DCF cost of 10.8% were applied to book value, earnings would decline to $1.08 per share ($10.00 x 10.8%), the payout ratio would rise to 64% ($0.69 / $1.08) and the longer-term growth rate would decline to 3.9%, calculated as (1.0 - .64) x 10.8%. Hence, investors' expectations for growth of 6.9% would not be realized, and the stock price would decline to book value. The expected return on the revalued stock would be 10.8%, comprised of a dividend yield of 6.9% ($0.69 / $10.00) and growth of only 3.9%. However, the realized holding period return for an investor purchasing the stock at $17.50 per share (assuming a one year work-out period) would be a capital loss of 43%. The proposition that investors are willing to invest $17.50 per share to end up with a stock whose value is $10.00 defies common sense.

Q. What steps will translate the current DCF cost of equity into a fair return on book value?

A. At a minimum, the DCF test result should be augmented by an increment for financial flexibility, which puts the utility in a position to raise new common equity without impairment of its financial integrity and which provides a cushion to protect against unanticipated capital market conditions (i.e., a major break in the capital markets). As discussed in Appendix C, a minimum allowance is 50 basis points, which raises the 11.0-11.3% DCF test result to no less than 11.5-11.8%.

Q. Does the 50 basis point allowance for financing flexibility fully account for the deviation between book and market value so as to translate the current cost of equity into a fair return on the book value of equity?

A. No. As discussed in Section V, in competitive markets, equity market values tend to gravitate toward the replacement cost of the underlying assets. Absent inflation (or technological change), the market value of firms operating in a competitive environment would tend to equal their book value or cost. However, the fact that inflation has occurred changes the above analysis. Due to experienced inflation, current costs are generally higher than historic costs. The market value of a firm will thus trend toward the higher current (replacement) cost of its assets. The book value of the assets, in contrast, reflects the historic depreciated cost of the assets. Consequently, since there have been moderate to relatively high levels of inflation over the past two business cycles, one would expect the market value to be higher than the book value.

Q. What are the implications of applying a market-derived cost of equity to the book value of equity?

A. The further the market value of equity is above book value, the greater the extent to which the DCF cost of equity understates the fair return on book equity. Investors are interested in dollar returns. A required return of 11.0% to 11.3% on equity whose value is 175% of book value is not equivalent to an 11.0% to 11.3% return on the original cost book value. Assuming a stock price of $17.50, an 11.0% return is equal to an expected cash flow to the equity investor of $1.92; an 11.0% return applied to a book value of $10.00 is only $1.10. Hence, the application of the DCF cost of equity to book value understates the expected return, in dollar terms, by over 40%. Unless the DCF estimate is transformed to a fair return on book value, the application of the DCF test will, by definition, significantly understate the return on original cost book value that investors require.

Q. What steps should be taken to convert the market-derived DCF cost to a fair return on book value?

A. The DCF estimate should be adjusted to reflect the replacement cost/book value ratio.

Q. What is the relationship between the market/book ratio and the replacement cost/book value ratio?

A. In principle, the replacement cost/book value ratio should correspond to the long-run equilibrium market/book ratio.

Q. How does one estimate the replacement cost/book value ratio?

A. By repricing the equity of the electric utilities for past inflation, an approximation of the replacement cost can be made. To reprice the equity, each annual increment to common equity needs to be increased by experienced inflation from the time

the equity was added to the present. The total repriced equity is a proxy for replacement cost. The total repriced equity is then compared to the original cost book value of the equity to arrive at an estimate of the replacement cost/book value ratio. The replacement cost/book value ratio is, in turn, an estimate of the expected long-run equilibrium market value/book ratio that should be anticipated under competition.

Q. What is the estimated replacement cost/book value ratio for your sample?

A. The resulting replacement cost/book value ratio for the eight electric utilities was 148% at the end of 2000 (Schedule 9).[75]

Q. What does that number imply?

A. That ratio indicates that the longer-run equilibrium market/book ratio for the electric utilities is approximately 150%.

Q. What is the next step?

A. The replacement cost/book value relationship provides an economically sound basis for converting the current DCF cost of equity to a fair return on book value. The DCF model itself provides the technique for doing so.

[75] Due to data limitations, the increments to equity were only repriced for the past twenty years.

$$ROE = \frac{M/B\ (k)}{1 + [b\ (M/B-1)]}$$

where:

ROE = return on book equity

k = market-derived cost of equity

b = earnings retention rate

The derivation of the formula is found on Schedule 10.

Using a repriced equity/book value ratio of 150% as a proxy for the longer-run equilibrium market/book ratio, a market-derived cost of equity of 11.0% to 11.3% and a longer-term expected earnings retention rate of close to 50%, (based on Value Line forecasts; see Schedule 8), the fair return on book equity can be estimated as 13.2% to 13.6%,[76] or approximately 13.25% to 13.5%.

CAPITAL ASSET PRICING MODEL

Q. Please briefly review the elements of the CAPM.

A. The CAPM cost of equity is estimated as:

Cost of Equity = Risk-Free Rate + Beta (Market Risk Premium),

where the beta measures the risk of the stock or portfolio of stocks relative to the market as a whole.

Q. What have you used as the proxy for the risk-free rate?

A. Traditionally, I have used a forecast of the 30-year Treasury yield as the proxy for the risk-free rate, on the grounds that the term of the 30-year Treasury most

[76] To illustrate:

$$\frac{1.50\ (11.0\%)}{1 + [.50\ (1.50 - 1.0)]} = 13.2\%$$

closely matched the average life of utility assets. As discussed in Section IV, the 30-year Treasury yield is no longer a viable proxy for the risk-free rate. As a result, my CAPM analysis will rely on a 10-year Treasury yield as the risk-free rate proxy.

Q. What is the appropriate 10-year yield to be used as the risk-free rate in the CAPM analysis?

A. The forecast yields on 10-year Treasury notes for the near term lie well below the levels compatible with long-term fundamentals. In equilibrium, the nominal risk-free rate should reflect the real cost of capital plus the expected rate of inflation over the term of the issue. The 10-year forecast of inflation based on the GDP deflator is approximately 2.2% (Blue Chip Economic Indicators, March 2002). The yield on long-term real return (inflation-indexed) government bonds – which provide a proxy for the real cost of capital – is currently 3.4% (3/15/02). The yield on these bonds has averaged approximately 3.75% since they were first issued in 1997.[77] In the long run, the real cost of capital – which represents the productivity of capital – should be approximately equal to the rate of growth in the economy, forecast to be approximately 3.2% over the next decade (Blue Chip Economic Indicators, March 2002). Based on these data, the real cost of long-term capital is in the range of 3.25% to 3.75%. Combining the long-term expected inflation rate (2.2%) with a long term real cost of capital of 3.25% to 3.75% indicates a fundamental value for 10-year Treasuries of 5.5% to 6.0%.

The fundamental analysis above is consistent with the longer-term forecasts of 10-year Treasuries, which, as shown in Section VI, are expected to be 5.9%. Based both on the fundamental analysis and the longer-term forecasts of 10-year

[77] Through February 28, 2002.