Exhibit No.: _____
Issue(s): Executive Summary/
OPC's Concerns Regarding
Mr. Hevert's Cost-of-Common
Equity Analysis/
OPC's Concerns Regarding
Mr. Gorman's Cost-of-Common
Equity Analysis/
OPC's Concerns Regarding
Mr. Murray's Cost-of-Common
Equity Analysis/
Summary of Corrected Results
Witness/Type of Exhibit: Schafer/Rebuttal
Sponsoring Party: Public Counsel
Case No.: ER-2014-0258

REBUTTAL TESTIMONY

OF

LANCE SCHAFER

Submitted on Behalf of the Office of the Public Counsel

UNION ELECTRIC
D/B/A
AMEREN MISSOURI

CASE NO. ER-2014-0258

January 16, 2015

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariff to Increase Its Revenues for Electric Service	)))))	Case No. ER-2014-0258

AFFIDAVIT OF LANCE SCHAFER

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Lance Schaefer, of lawful age and being first duly sworn, deposes and states:

1. My name is Lance Schafer. I am the Public Utility Financial Analyst for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

Lance Schafer
Public Utility Financial Analyst

Subscribed and sworn to me this 16th day of January 2015.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

JERENE A. BUCKMAN
My Commission Expires
August 23, 2017
Cole County
Commission #13754037

Jerene A. Buckman
Notary Public

My Commission expires August 23, 2017.

TABLE OF CONTENTS

REBUTTAL TESTIMONY

OF

LANCE C. SCHAFER

Union Electric Company
d/b/a Ameren Missouri

Case No. ER-2014-0258

SECTION 1: INTRODUCTION AND STATEMENT OF PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Lance C. Schafer. My business address is P.O. Box 2230, Jefferson City, MO 65102.

Q. ARE YOU THE SAME LANCE C. SCHAFER WHO FILED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to the direct testimonies of Company witness Robert B. Hevert, MIEC witness Michael P. Gorman, and Staff Witness David Murray. Specifically, I will address issues related to the witnesses' estimation of Ameren Missouri's cost of common equity.

Q. HAVE YOU PREPARED SCHEDULES IN SUPPORT OF YOUR TESTIMONY?

A. Yes. I have prepared 9 Schedules in support of my analysis that are attached to this testimony (Rebuttal Schedules LCS-1 through LCS-9). These schedules were prepared by me and are correct to the best of my knowledge and belief.

SECTION 2: EXECUTIVE SUMMARY

Q. PLEASE SUMMARIZE YOUR ANALYSIS OF MR. HEVERT'S RECOMMENDED RETURN ON COMMON EQUITY.

A. Mr. Hevert's results are unreasonably high because of the following factors:

1. The use of "mean high" and "mean low" growth estimates
2. A dividend payment timing error
3. An inappropriate payout-ratio forecast
4. An unreasonably high estimation of GDP
5. Risk premia established with unreasonably high constant-growth rates
6. The selective use of a "long term projected" risk-free rate
7. An inappropriately applied argument relating to the supposed inverse relationship between interest rates and the equity risk premium

I will explain these factors in detail in the proceeding section. The following table presents Mr. Hevert's original results and the results I have obtained by correcting for these factors, updating the stock prices, and making an update to Mr. Hevert's proxy group, as explained in the next section:

Mr. Hevert						
	Original Results				Corrected Results	
Constant-Growth DCF	Mean Low	Mean	Mean High		Mean	
30-Day Average	8.44%	9.56%	10.87%		**9.37%**	
90-Day Average	8.50%	9.62%	10.93%		**9.53%**	
180-Day Average	8.61%	9.73%	11.04%		**9.56%**	
Multi-Stage DCF						
30-Day Average	9.61%	9.93%	10.36%		**8.84%**	
90-Day Average	9.67%	10.00%	10.43%		**9.00%**	
180-Day Average	9.80%	10.13%	10.58%		**9.03%**	
CAPM Results	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium			6.2% Market Risk Premium	
Average Bloomberg Beta Coefficient						
Current 30-Year Treasury (3.42%)	11.27%	10.69%			**8.34%**	
Near Term 30-Year Treasury (4.07%)	11.92%	11.34%			**8.98%**	
Average Value Line Beta Coefficient						
Current 30-Year Treasury (3.42%)	11.17%	10.59%			**8.33%**	
Near Term 30-Year Treasury (4.07%)	11.82%	11.24%			**8.98%**	
Bond Yield Plus Risk Premium	**Low**	**Mid**	**High**		**Low**	**High**
	10.16%	10.31%	10.77%		**7.85%**	**8.50%**
Final Recommendation	10.40%				**9.07%**	

Q. PLEASE SUMMARIZE YOUR ANALYSIS OF MR. GORMAN'S RECOMMENDED RETURN ON COMMON EQUITY.

A. Mr. Gorman's results were higher than necessary due to inappropriate rounding. Also, his CAPM result was too high due to an improperly formed measure of the market risk premium.

The following table presents Mr. Gorman's original results and the results I have obtained by correcting for these two factors:

Mr. Gorman		
	Original Return on Common Equity Results	**Corrected Results**
DCF	9.00%	8.95%
Risk Premium	9.60%	9.58%
CAPM	9.24%	8.82%
Final Recommendation	9.30%	**9.20%**

Q. PLEASE SUMMARIZE YOUR ANALYSIS OF MR. MURRAY'S RECOMMENDED RETURN ON COMMON EQUITY.

A. Rather than recommending a result calculated directly from his financial models, Mr. Murray calculated his final recommended return on equity by just reducing the 2012 authorized ROE by 50 basis points[1]. Mr. Murray obtained the figure of 50 basis points by comparing the results of his financial calculations for this case with the results of his financial calculations for the previous Ameren Missouri case. Based on his models, he concluded that the current cost of common equity is 50 basis points lower than it was during the previous case. For reasons I will explain later, I do not agree with this adjustment and, therefore, recommend that Staff's recommendation be discarded. However, if the Commission accepts Mr. Murray's final recommendation, it should be adjusted downward by 7 basis points to reflect a minor adjustment that I believe better represents the decrease that Mr. Murray has calculated.

[1] Mr. Murray uses 9.75% as the appropriate 2012 authorized ROE figure, presumably because it is the midpoint of what he identifies as the Commission-approved range from the previous case. See Murray Direct, p. 11, lines 2-3.

The following table presents Mr. Murray's original result and the result I have obtained by correcting one element of his calculation to account for a difference in scale:

Mr. Murray		
	Original Return on Common Equity Result	**Corrected Result**
Final Recommendation	9.25%	**9.18%**

Q. HOW DO THE CORRECTED RESULTS COMPARE TO YOUR RECOMMENDATION OF THE REQUIRED RETURN ON COMMON EQUITY?

A. All three corrected results fall within the top half of the range I recommended during my direct testimony (8.74% to 9.22%).

SECTION 3: OPC'S CONCERNS REGARDING MR. HEVERT'S COST-OF-COMMON-EQUITY ANALYSIS

MR. HEVERT'S PROXY GROUP

Q. DO YOU BELIEVE AN UPDATE IS NECESSARY TO THE PROXY GROUP MR. HEVERT PRESENTED IN HIS DIRECT TESTIMONY?

A. Yes.

Q. WHAT UPDATE TO MR. HEVERT'S PROXY GROUP DO YOU BELIEVE IS APPROPRIATE?

A. Based on the criteria established by Mr. Hevert in his direct testimony, I believe the following two companies should be removed from Mr. Hevert's proxy group: Cleco Corporation (CNL), and Duke Energy Corporation (DUK).

Q. WHY SHOULD CLECO CORPORATION BE REMOVED FROM MR. HEVERT'S PROXY GROUP?

A. In his direct testimony, Mr. Hevert states that he "eliminated companies that are currently known to be party to a merger, or other significant transaction" when forming his proxy group.[2] Shortly after Mr. Hevert filed his direct testimony, Cleco Corporation agreed to be acquired by a group of infrastructure investors.[3] This acquisition occurred after Mr. Hevert's analysis and, therefore, will not impact his original calculation. However, when I update the stock prices of Mr. Hevert's proxy group in my final calculation, this acquisition would be reflected in those prices if I did not exclude Cleco Corporation. Therefore, when I update the proxy group's stock prices, I will exclude Cleco Corporation. Importantly, however, for purposes of analyzing the results of Mr. Hevert's models, I will continue to use Mr. Hevert's *original* proxy group.

Q. WHY SHOULD DUKE ENERGY CORPORATION BE REMOVED FROM MR. HEVERT'S PROXY GROUP?

A. Duke Energy has been involved in significant transactions since Mr. Hevert filed his direct testimony. For example, Duke Energy sold retail business and ownership interest in

[2] See Hevert Direct, p. 10, lines 1-2.

[3] See http://www.wsj.com/articles/cleco-to-be-bought-by-infrastructure-investor-group-for-3-4-billion-1413817141

11 power plants in the Midwest for $2.8 billion to Dynegy.[4] These transactions occurred after Mr. Hevert's analysis and, therefore, will not impact his original calculation. However, when I update the stock prices of Mr. Hevert's proxy group in my final calculation, these transactions would be reflected in those prices if I did not exclude Duke Energy. Therefore, when I update the proxy group's stock prices, I will exclude Duke Energy. Importantly, however, for purposes of analyzing the results of Mr. Hevert's models, I will continue to use Mr. Hevert's *original* proxy group.

Q. HOLDING ALL OTHER VARIABLES EQUAL, WHAT IMPACT DOES THE EXCLUSION OF DUKE ENERGY AND CLECO CORPORATION HAVE ON MR. HEVERT'S DCF AND CAPM RESULTS?

A. The exclusion of Duke Energy and Cleco Corporation increases Mr. Hevert's original constant-growth and multi-stage DCF results by an average of 4 basis points. The exclusions increase Mr. Hevert's original CAPM results by an average of 7 basis points.

Q. DO YOU UTILIZE THE REMAINING COMPANIES IN MR. HEVERT'S UPDATED PROXY GROUP IN THIS REBUTTAL TESTIMONY?

A. My final corrections are done with the updated proxy group. However, I use Mr. Hevert's original proxy group to show the precise impact that his errors have on his original recommendation of Ameren Missouri's required return on common equity.

[4] See http://www.marketwatch.com/story/dynegy-to-buy-assets-from-duke-energy-capital-for-625-billion-2014-08-22

MR. HEVERT'S CONSTANT-GROWTH DCF MODEL

Q. WHAT CONCERN DO YOU HAVE ABOUT MR. HEVERT'S CONSTANT-GROWTH DCF MODEL?

A. Mr. Hevert calculates two of the three growth rates that are used in his analysis in a way that distorts the true consensus of the estimates that he obtains from three different sources.

Q. HOW DOES MR. HEVERT CALCULATE THE GROWTH RATES HE USES IN HIS CONSTANT-GROWTH MODEL?

A. Mr. Hevert begins by obtaining earnings growth estimates from Zacks, First Call, and Value Line. He then creates three sets of growth estimates from this data. Mr. Hevert's "mean" result is the average of the estimates from all three sources. The "mean" result is not controversial and is calculated the same way MIEC witness Michael P. Gorman and I calculate our "mean" results.[5] However, what Mr. Hevert refers to as the "mean high" result is calculated as the average of each proxy-group company's highest growth estimate taken by selecting *across his sources*. Similarly, Mr. Hevert's "mean low" result is calculated as the average of each proxy-group company's lowest growth estimate taken by selecting across his sources.[6] This is inappropriate because only the "mean" results are representative of the consensus of the estimates that Mr. Hevert has at his disposition.

[5] See Gorman Direct, p. 17, lines 15-16; See Schafer Direct, p. 13, lines 21-22 and p. 14, line 1.

[6] See Hevert Direct, p. 18, lines 11-21.

Q. DOES MR. HEVERT DESCRIBE THE TECHNIQUE HE USES TO OBTAIN THE GROWTH RATES HE EMPLOYS IN HIS MODEL?

A. Yes, he does. However, Mr. Hevert neither presents nor discusses the proxy-group averages for his "mean high" or "mean low" calculations. He does, however, present the "mean" result (the average of the estimates from all three of the sources he uses) in his Direct Testimony Schedules and workpapers. Since his "mean high" and "mean low" calculations are quite different from the "mean" calculation, a discussion of the impact of using those calculations is necessary.

Q. PLEASE PRESENT MR. HEVERT'S "MEAN HIGH" GROWTH RATE CALCULATION.

A. The following table shows Mr. Hevert's "mean high" calculation, as well as the average of all three estimates to serve as a point of reference. The highlighted estimates represent each company's highest growth-rate estimate, which are used to form Mr. Hevert's "mean high":

Company	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average of the Three Estimates
American Electric Power Company, Inc.	4.40%	4.79%	4.50%	4.56%
Cleco Corporation	8.00%	7.00%	4.50%	6.50%
Duke Energy Corporation	4.20%	4.19%	5.00%	4.46%
Empire District Electric Company	3.00%	3.00%	4.00%	3.33%
Great Plains Energy Inc.	5.10%	5.25%	6.00%	5.45%
Hawaiian Electric Industries, Inc.	6.00%	3.20%	4.00%	4.40%
Idacorp, Inc.	4.00%	4.00%	2.00%	3.33%
NextEra Energy, Inc.	6.40%	6.23%	6.00%	6.21%
Northeast Utilities	6.90%	6.36%	8.00%	7.09%
Otter Tail Corporation	NA	6.00%	15.00%	10.50%
Pinnacle West Capital Corporation	4.10%	4.28%	4.00%	4.13%
PNM Resources, Inc.	8.50%	8.39%	12.00%	9.63%
Portland General Electric Company	6.80%	11.21%	5.00%	7.67%
Southern Company	3.70%	3.64%	3.50%	3.61%
Westar Energy, Inc.	3.70%	2.90%	6.00%	4.20%
"Mean high" average:				**6.96%**
Average of all estimates				5.67%

Q. PLEASE PRESENT MR. HEVERT'S "MEAN LOW" GROWTH RATE CALCULATION.

A. The following table shows Mr. Hevert's "mean low" calculation, as well as the average of all three estimates to serve as a point of reference. The highlighted estimates represent each company's lowest growth-rate estimate, which are used to form Mr. Hevert's "mean low":

Company	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average of the Three Estimates
American Electric Power Company, Inc.	4.40%	4.79%	4.50%	4.56%
Cleco Corporation	8.00%	7.00%	4.50%	6.50%
Duke Energy Corporation	4.20%	4.19%	5.00%	4.46%
Empire District Electric Company	3.00%	3.00%	4.00%	3.33%
Great Plains Energy Inc.	5.10%	5.25%	6.00%	5.45%
Hawaiian Electric Industries, Inc.	6.00%	3.20%	4.00%	4.40%
Idacorp, Inc.	4.00%	4.00%	2.00%	3.33%
NextEra Energy, Inc.	6.40%	6.23%	6.00%	6.21%
Northeast Utilities	6.90%	6.36%	8.00%	7.09%
Otter Tail Corporation	NA	6.00%	15.00%	10.50%
Pinnacle West Capital Corporation	4.10%	4.28%	4.00%	4.13%
PNM Resources, Inc.	8.50%	8.39%	12.00%	9.63%
Portland General Electric Company	6.80%	11.21%	5.00%	7.67%
Southern Company	3.70%	3.64%	3.50%	3.61%
Westar Energy, Inc.	3.70%	2.90%	6.00%	4.20%
"Mean low" average:				**4.57%**
Average of all estimates				5.67%

Q. WHAT ARE YOUR OBJECTIONS TO THE WAY MR. HEVERT SELECTS GROWTH RATES ACROSS SOURCES IN ORDER TO CALCULATE HIS "MEAN HIGH" AND "MEAN LOW" RESULTS?

A. By using only one across-source estimate for each company in his "mean low" and "mean high" calculations, Mr. Hevert inappropriately blends estimates to obtain averages that have outlier characteristics and that do not represent the consensus of the estimates he has obtained.

Q. DO YOU BELIEVE THAT MR. HEVERT PRESENTS THE RESULTS BASED ON HIS CALCULATED GROWTH RATES IN A CLEAR MANNER?

A. No. Mr. Hevert uses the "mean low", "mean", and "mean high" growth rates to calculate constant-growth DCF results that he presents as if they represent a true range. However, only the "mean" results are representative of the consensus of the estimates that Mr. Hevert has at his disposition.

Q. WHAT IS THE IMPACT OF THIS TECHNIQUE?

The actual averages of the three sets of estimates that Mr. Hevert starts with are 5.34% (Zacks), 5.36% (First Call), and 5.97% (Value Line).[7] Between the lowest average (5.34%) and the highest average (5.97%), there is a spread of 63 basis points. By choosing across his sources in order to establish a "mean low" and "mean high", Mr. Hevert establishes a new growth-rate range of 4.57% to 6.96%. The spread between this new range is now a phenomenal 239 basis points. This inappropriately large spread will carry over directly to the results of Mr. Hevert's constant-growth DCF model, thus giving the impression that the range of Ameren Missouri's cost of common equity is much greater than it otherwise would be.

Q. BUT DOESN'T MR. HEVERT MAKE THIS CLEAR IN HIS TESTIMONY?

A. No. Mr. Hevert *never* presents or discusses the impact of the proxy-group growth averages calculated as a result of his "mean low" and "mean high" technique. Furthermore, he eliminates any reference to this technique between his initial

[7] These averages are reported as calculated by Mr. Hevert in his Direct Testimony workpapers.

presentation of the results of his constant-growth DCF model and the summary of his DCF results presented at the end of his direct testimony.

The following table, which I have taken from Mr. Hevert's direct testimony,[8] shows his initial constant-growth DCF results. This table includes "mean low" and "mean high" headings:

Table 3: Constant Growth DCF Results

	Mean Low	*Mean*	*Mean High*
30-Day Average	8.44%	9.56%	10.87%
90-Day Average	8.50%	9.62%	10.93%
180-Day Average	8.61%	9.73%	11.04%

However, when Mr. Hevert summarizes his results at the end of his testimony, there is a subtle difference in the information he presents, as seen in the following table:[9]

Table 8a: Summary of DCF Results

Constant Growth DCF	***Low***	***Mean***	***High***
30-Day Average	8.44%	9.56%	10.87%
90-Day Average	8.50%	9.62%	10.93%
180-Day Average	8.61%	9.73%	11.04%
Multi-Stage DCF	***Low***	***Mean***	***High***
30-Day Average	9.61%	9.93%	10.36%
90-Day Average	9.67%	10.00%	10.43%
180-Day Average	9.80%	10.13%	10.58%

Mr. Hevert changes "mean low" to "low" and "mean high" to "high", giving the false impression that he is presenting a true range of estimates and a traditional mean.

[8] See Hevert Direct, p. 19, line 4

[9] See Hevert Direct, p. 42, line 14

Q. DOESN'T THE RANGE ESTABLISED BY THE "LOW" AND "HIGH" ESTIMATES IN TABLE 8A FROM MR. HEVERT'S DIRECT TESTIMONY (PRESENTED ABOVE) CORRESPOND TO THE MEAN THAT HE PRESENTS?

A. No, nor does Mr. Hevert claim this to be the case. However, since Mr. Hevert has chosen to eliminate all reference to "mean low" and "mean high" in his summary, a reader of Mr. Hevert's summary of DCF results (table 8a above) from his "conclusions and recommendation" section would have to remember details of Mr. Hevert's calculations that were explained over 20 pages earlier in his testimony in order to interpret the results correctly.

Q. IF A READER WERE TO FORGET THAT THE "MEAN" ESTIMATES PRESENTED IN MR. HEVERT'S TABLE 8A WERE NOT THE ACTUAL MEANS OF THE LOW AND HIGH ESTIMATES, WOULD IT MATTER?

A. Yes. The following table presents a calculation of the means of the low and high results from Mr. Hevert's Table 8a. I have enclosed the means of the low and high results in a box to emphasize that they were not presented by Mr. Hevert. I have also added the averages of all the estimates for illustrative purposes:

Constant Growth DCF	Low	Mean	Actual Mean of Low and High	High
30-Day Average	8.44%	9.56%	9.66%	10.87%
90-Day Average	8.50%	9.62%	9.72%	10.93%
180-Day Average	8.61%	9.73%	9.83%	11.04%
Multi-Stage DCF	**Low**	**Mean**	**Actual Mean of Low and High**	**High**
30-Day Average	9.61%	9.93%	9.99%	10.36%
90-Day Average	9.67%	10.00%	10.05%	10.43%
180-Day Average	9.80%	10.13%	10.19%	10.58%
Average of All Estimates	**9.11%**	**9.83%**	**9.91%**	**10.70%**

All of the means of the ranges established by the low and high results are higher than the mean results that Mr. Hevert presents by an average of 8 basis points (9.91% - 9.83% = .08%). The average spread between the "low" results and the "mean" results is 72 basis points (9.83% - 9.11% = .72%). The average spread between the "mean" and "high" results is 87 basis points (10.70% - 9.83% = .87%). Therefore, the top "half" of the range that Mr. Hevert presents in his Table 8a is an average of 15 basis points *larger* than the bottom "half". In percent, the top "half" of Mr. Hevert's range is 20.8% *larger* than the bottom "half".

Q. FROM A PRACTICAL PERSPECTIVE, WHAT DOES THIS SIGNIFY?

A. Return-on-equity estimates derived using the top "half" of Mr. Hevert's range will be unreasonably high.

Q. DOES THE FACT THAT MR. HEVERT PRESENTS BOTH A "MEAN LOW" RESULT AND A "MEAN HIGH" RESULT SOMEHOW BALANCE OUT?

A. To answer this question, it is necessary to look at both the range of Mr. Hevert's final recommended ROE and the range of the results from all his calculations. The following table presents those ranges and their midpoints:

Ranges of Mr. Hevert's Results	Low	Midpoint	High
Mr. Hevert's Final Recommended Range:	10.20%	10.40%	10.60%
Range of all of Mr. Hevert's Results	8.44%	10.18%	11.92%

Since the midpoint of the range of Mr. Hevert's final recommended range (10.40%) is higher than the midpoint of the range of all his estimates (10.18%) and, in addition, is significantly higher than the average of all of the "mean" results of both his constant-growth and multi-stage DCF models (9.83%), I believe that Mr. Hevert's "mean high" results inappropriately influenced his final recommendation more than his "mean low" results did.

Q. PLEASE SUMMARIZE THE EFFECT OF MR. HEVERT'S GROWTH-RATE CALCULATIONS.

Mr. Hevert uses growth rate estimates selected across his sources in order to establish a range that has outlier characteristics and that does not represent the consensus of the estimates that he has at his disposition. The components of that range are not calculated with comparable techniques, nor do they have the mathematical relationship that a low, mean, and high estimate should have with each other.

Mr. Hevert's mean return-on-equity calculation is based reasonably on the average of growth estimates from three different sources. However, the false range that

Mr. Hevert wraps around that mean is based on "mean low" and "mean high" estimates, which were each derived from only one growth estimate, chosen across his sources.

Mr. Hevert presents his results in his "conclusions and recommendation" section without reference to the different technique used to obtain his "range".

Q. IS MR. HEVERT'S "MEAN HIGH" CALCULATED GROWTH RATE REALISTIC?

A. No. His "mean high" growth rate is 6.96%. It is important to remember that the constant-growth DCF model projects growth in perpetuity. Therefore, Mr. Hevert makes one of his constant-growth DCF calculation based on the "mean high" growth rate with the assumption that the companies in his proxy group will grow in perpetuity at the extremely high average rate of 6.96%. This implies that Mr. Hevert's proxy group will grow faster in perpetuity than the economy in which it operates.

Q. IS MR. HEVERT'S "MEAN HIGH" GROWTH RATE SIGNIFICANTLY HIGHER THAN ANY OTHER AVERAGE GROWTH RATE HE USES IN HIS CONSTANT-GROWTH OR MULTI-STAGE DCF CALCULATIONS?

A. Yes. The next-highest average growth rate he uses is 5.71%, which he uses for the terminal stage of his multi-stage DCF model. 5.71% is Mr. Hevert's estimate of GDP growth. This value is significantly lower than the 6.96% "mean high" growth rate used by Mr. Hevert.

Q. IS THE TERMINAL STAGE OF THE MULTI-STAGE DCF MODEL COMPARABLE TO THE CONSTANT-GROWTH DCF MODEL?

A. Yes. The constant-growth DCF model, also known as the Gordon Growth model, can be used to establish the terminal value of the stock in the third stage of the multi-stage model. Mr. Hevert uses this technique and describes it in his direct testimony:

> I calculated the terminal price based on the Gordon model, which defines the price as the expected dividend divided by the difference between the cost of equity (i.e., the discount rate) and the long-term expected growth rate. In essence, the terminal price is defined by the present value of the remaining "cash flows" in perpetuity.[10]

Mr. Hevert uses 5.71% as the average perpetual growth rate in his multi-stage DCF model. But he uses 6.96% as the average "mean high" perpetual growth rate in his constant-growth DCF model, and does so without ever presenting that rate or commenting on its reasonableness. This is inappropriate.

Q. WHY IS THIS INAPPROPRIATE?

It is normal for an analyst to use different rates for the constant-growth DCF model and the terminal stage of the multi-stage DCF model; however, as both rates are being used to project growth in perpetuity, when they differ significantly, that difference cannot simply be ignored, as Mr. Hevert has done by not analyzing that difference at all. As I will show later, the different constant-growth rates that Mr. Hevert uses in his constant-growth DCF model cause his constant-growth DCF results to vary by 2.43%. Clearly, results from the same model that vary by 2.43% are worthy of scrutiny.

[10] See Hevert Direct, p. 20, lines 1-5.

Q. DOES ANY OTHER RATE-OF-RETURN WITNESS IN THE PRESENT CASE USE AVERAGE PERPETUAL GROWTH RATES THAT CONTAIN AS MUCH VARIABILITY AS MR. HEVERT'S DO?

A. No. The following table shows the average perpetual growth rates used in the constant-growth DCF model and stage three (the terminal stage) of the multi-stage DCF model:

Proxy-Group Average Growth Rates Used in Perpetual Growth Calculations

	Constant-Growth DCF	Terminal Growth in Multi-Stage DCF
Mr. Hevert	4.57%, 5.67%, 6.96%	5.71%
Mr. Schafer	5.03%	4.86%
Mr. Gorman	5.05%	4.60%
Mr. Murray	3.5% to 4.5%	3.00% to 4.00%

Mr. Gorman's average perpetual growth rates differ by 45 basis points (5.05% - 4.60% = .45). My average perpetual growth rates differ by 27 basis points (5.03% - 4.86% = .27). Mr. Murray's average perpetual growth rates present a range that differs by 50 basis points (3.5% - 3.0% = .50; 4.5% - 4.0% = .50). In sharp contrast, Mr. Hevert's average perpetual growth rates differ by 114 basis points (5.71% - 4.57%), 4 basis points (5.71% - 5.67%) and 125 basis points (6.96% - 5.71%).

Furthermore, if I limit this comparison to the average perpetual growth rates used only in the constant-growth DCF model, Mr. Gorman and I present no variability, while Mr. Murray's range covers 100 basis points (4.5% - 3.5% = 1%). Again in sharp contrast, Mr. Hevert's "mean low" and "mean high" estimates are separated by 239 basis points (6.96% - 4.57% = 2.39%).

Q. WHY IS IT IMPORTANT TO CONSIDER THE DIFFERENCE IN THE AVERAGE PERPETUAL GROWTH RATES?

A. DCF models are extremely sensitive to perpetual growth rates. As I showed above, Mr. Hevert uses "mean low" and "mean high" average perpetual growth rates for his constant-growth DCF model that are separated by a range of 239 basis points. This unreasonable range carries over to his constant-growth DCF return-on-equity results. The following table summarizes those results and presents the spread between the low and high estimates:

Mr. Hevert's Constant-Growth DCF Results

	"Mean Low"	Mean	"Mean High"	Spread Between "Mean Low" and "Mean High" Results
30-Day Average	8.44%	9.56%	10.87%	2.43%
90-Day Average	8.50%	9.62%	10.93%	2.43%
180-Day Average	8.61%	9.73%	11.04%	2.43%

Mr. Hevert's use of his "mean low" and "mean high" growth rate estimates inappropriately leads to ROE results that differ by 243 basis points.

Q. HAVE OTHER RATE-OF-RETURN WITNESSES IN THIS CASE STATED THE IMPORTANCE OF COMPARING AVERAGE PERPETUAL GROWTH RATES?

A. Yes. Mr. Gorman states the following:

> The constant growth DCF analysis for my proxy group is based on a long-term sustainable growth rate of 5.05%. This growth rate is higher than my estimate of a maximum long-term sustainable growth rate of 4.6% [which Mr. Gorman uses in his multi-stage DCF

> model]. Therefore, I believe the constant growth DCF analysis produces slightly overstated return estimates.[11]

Mr. Gorman judged it necessary to state that the results of his constant-growth DCF were "slightly overstated" due to a difference in average perpetual growth rates of 45 basis points. Mr. Hevert's perpetual growth rates used in the same two models differ by as much as 125 basis points, but he chooses not to comment on the effect those growth rates have on his results.

Q. WHAT CHANGES SHOULD BE MADE TO MR. HEVERT'S CONSTANT-GROWTH DCF MODEL?

A. All calculations based on his "mean low" and "mean high" growth rates should be discarded.

Q. WITHOUT MAKING ANY OTHER CHANGES, PLEASE PRESENT MR. HEVERT'S CONSTANT-GROWTH DCF RESULTS WITHOUT THE "MEAN LOW" AND "MEAN HIGH" CALCULATIONS.

A. The following table summarizes Mr. Hevert's constant-growth DCF results without the "mean low" and "mean high" calculations: [12]

Constant Growth DCF	Mean
30-Day Average	9.56%
90-Day Average	9.62%
180-Day Average	9.73%

[11] See Gorman Direct, p. 18, lines 12-15.

[12] See Hevert Direct, p. 42, line 14.

Therefore, the range of estimates is from 9.56% to 9.73%. Previously, with the "mean low" and "mean high" calculations, the range was from 8.44% to 11.04%.

MR. HEVERT'S MULTI-STAGE DCF MODEL

Q. DOES MR. HEVERT USE THE SAME 'MEAN LOW" AND "MEAN HIGH" GROWTH RATES DESCRIBED ABOVE IN HIS MULTI-STAGE DCF MODEL?

A. Yes, he does.

Q. ARE YOU ALSO RECOMMENDING THAT THE RESULTS OF HIS MULTI-STAGE DCF MODEL BASED ON THE "MEAN LOW" AND "MEAN HIGH" GROWTH RATES BE REJECTED?

A. Yes, I am.

Q. USING MR. HEVERT'S ORIGINAL DIRECT TESTIMONY PROXY GROUP, PLEASE PRESENT MR. HEVERT'S MULTI-STAGE DCF RESULTS WITHOUT THE "MEAN LOW" AND "MEAN HIGH" CALCULATIONS.

A. The following table summarizes Mr. Hevert's multi-stage DCF results without the "mean low" and "mean high" calculations: [13]

[13] See Hevert Direct, p. 42, line 14.

Multi-Stage DCF	Mean
30-Day Average	9.93%
90-Day Average	10.00%
180-Day Average	10.13%

Therefore, the range of estimates is from 9.93% to 10.13%. Previously, with the "mean low" and "mean high" calculations, the range was from 9.61% to 10.58%.

Q. WHAT ADDITIONAL CONCERNS DO YOU HAVE WITH MR. HEVERT'S MULTI-STAGE DCF MODEL?

A. First, the timing of Mr. Hevert's forecasted dividend payments is incorrect. Second, Mr. Hevert uses a payout-ratio forecast that unjustifiably increases his dividend growth rates. Third, Mr. Hevert uses an estimate of GDP for his terminal growth rate that is significantly higher than estimates from reliable sources.

Q. PLEASE EXPLAIN WHY THE TIMING OF MR. HEVERT'S FORECASTED DIVIDEND PAYMENTS IS INACCURATE.

A. Mr. Hevert incorrectly forecasts a year's worth of dividend payments over a period of only 6 months. This unreasonably doubles the amount of dividends that should be received during the concerned period. The following table comes from Mr. Hevert's direct testimony workpapers:[14]

[14] See Hevert Direct Schedule RBH-2. The pages of this Schedule are not numbered correctly, but the error in question is featured on all ten pages, even if the amounts differ slightly.

Projected Annual Data Investor Cash Flows		[64]	[65]	[66]	[67]	[68]
Company	Ticker	Initial Outflow	5/30/14	12/31/14	6/30/15	6/30/16
American Electric Power Company, Inc.	AEP	($50.54)	$0.00	$1.21	$2.18	$2.27
Cleco Corporation	CNL	($49.91)	$0.00	$0.96	$1.89	$2.07
Duke Energy Corporation	DUK	($71.04)	$0.00	$1.83	$3.05	$3.04
Empire District Electric Company	EDE	($23.73)	$0.00	$0.56	$0.98	$1.00
Great Plains Energy Inc.	GXP	($25.93)	$0.00	$0.48	$0.97	$1.08
Hawaiian Electric Industries, Inc.	HE	($24.85)	$0.00	$0.66	$1.27	$1.38
IDACORP, Inc.	IDA	($54.47)	$0.00	$0.91	$1.86	$2.05
NextEra Energy, Inc.	NEE	($94.09)	$0.00	$1.59	$3.05	$3.29
Northeast Utilities	NU	($44.89)	$0.00	$0.74	$1.39	$1.50
Otter Tail Corporation	OTTR	($29.41)	$0.00	$0.67	$1.17	$1.21
Pinnacle West Capital Corporation	PNW	($54.53)	$0.00	$1.27	$2.42	$2.59
PNM Resources, Inc.	PNM	($26.51)	$0.00	$0.44	$0.93	$1.06
Portland General Electric Company	POR	($31.86)	$0.00	$0.79	$1.43	$1.51
Southern Company	SO	($43.16)	$0.00	$1.25	$2.19	$2.25
Westar Energy, Inc.	WR	($34.62)	$0.00	$0.76	$1.47	$1.59

In the table above, the dates listed for columns [65], [66], and [67] are 5/30/14, 12/31/14, and 6/30/15, respectively. From column [67] on (not shown in its entirety here, but the columns in Mr. Hevert's Schedules extend until column [80]), the dates are annual: 6/30/15, 6/30/16, 6/30/17, etc. Between the dates 12/31/14 (column [66]) and 6/30/15 (column [67]), Mr. Hevert projects that investors will receive a full year's worth of dividend payments. This clearly cannot be the case.

Q. DOES MR. HEVERT MAKE THIS DIVIDEND PAYMENT TIMING ERROR IN EVERY VERSION OF THE MULTI-STAGE DCF MODEL THAT HE PRESENTS?

A. Yes.

Q. CAN YOU CORRECT MR. HEVERT'S DIVIDEND PAYMENT TIMING ERROR WITHOUT CHANGING ANY OTHER ASPECT OF HIS CALCULATION?

A. Yes. Using Mr. Hevert's own dividend payment convention, by which he calculates the quantity of dividends to be paid for periods of less than one year by the number of days in the period, I have simply corrected this one error and changed nothing else in his model in order to see what effect this error has on his results.[15]

Q. WHAT EFFECT DOES THIS DIVIDEND PAYMENT TIMING ERROR HAVE ON MR. HEVERT'S MULTI-STAGE DCF MODEL?

A. The following table shows the difference between Mr. Hevert's mean multi-stage DCF results before and after the dividend payment timing error correction (see Rebuttal Schedule LCS-1):

Multi-Stage DCF	Mean (with error)	Mean (corrected Dividend Payment Timing Error)
30-Day Average	9.93%	9.85%
90-Day Average	10.00%	9.92%
180-Day Average	10.13%	10.05%

Mr. Hevert's dividend payment timing error creates an average upward error in his calculated return-on-equity results of 8 basis points (average of the three estimates with error: 10.02%. Average of the three estimates after correction: 9.94%. 10.02% - 9.94% = .08%).

[15] For Mr. Hevert's dividend payment convention, see Mr. Hevert's Direct Testimony workpapers, Schedule RBH-2 (see the excel formula in cells E95 through E109).

Q. EARLIER YOU STATED THAT YOU ALSO IDENTIFIED AN ERROR IN MR. HEVERT'S USE OF A FORECASTED PAYOUT RATIO IN HIS MULTI-STAGE DCF MODEL. PLEASE DESCRIBE THE PAYOUT RATIO.

A. The payout ratio is the proportion of a company's earnings that is paid out to the shareholders. It is important to think of the payout ratio in relation to the retention ratio, which is the proportion of earnings that a company keeps in order to grow the business. These two must logically sum to 100%.

Q. HOW DOES MR. HEVERT'S USE OF A FORECASTED PAYOUT RATIO LEAD TO ERRORS IN HIS MODEL?

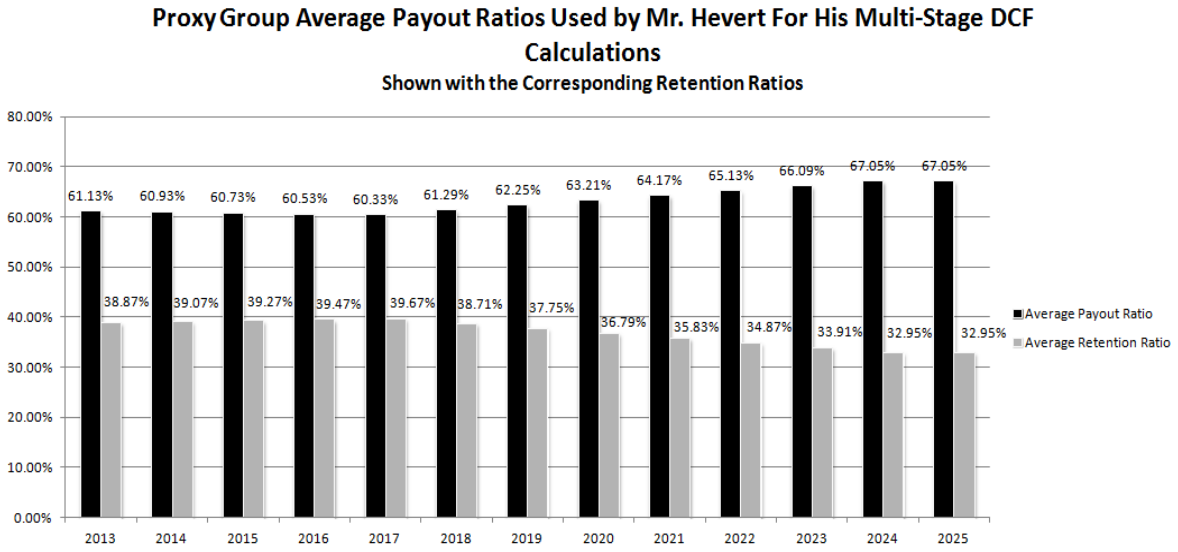
A. Mr. Hevert increases the payout ratio with no consideration of the fact that the corresponding retention ratio must also be decreased.

Q. PLEASE EXPLAIN.

A. Mr. Hevert establishes the growth rates that he uses for his proxy group in the three stages of his multi-stage DCF model *before* he includes any consideration of a change in payout ratio. He uses these growth rates to forecast earnings over the period covered by his model. Only *after* Mr. Hevert applies his growth rates in order to forecast earnings does he then introduce the payout-ratio forecast. Mr. Hevert multiplies the earnings that he forecasts with his growth rates by payout ratios forecasted by Value Line and payout ratios that he believes his proxy group will revert to over the long term. The results of these calculations produce the forecasted dividend payments.

The problem is that while Mr. Hevert increases the payout ratio, he does not take into consideration that increasing the payout ratio decreases the retention ratio. Decreasing the retention ratio will then decrease the amount of earnings that a company retains in order to grow. Mr. Hevert never returns to the growth rates that he uses to forecast earnings in order to adjust them downward to reflect the decrease in retention ratio. By adjusting the payout ratio up but never adjusting the growth rates down to reflect the decrease in retention ratio, Mr. Hevert's forecasted dividend growth increases much higher than it reasonably would be able to.

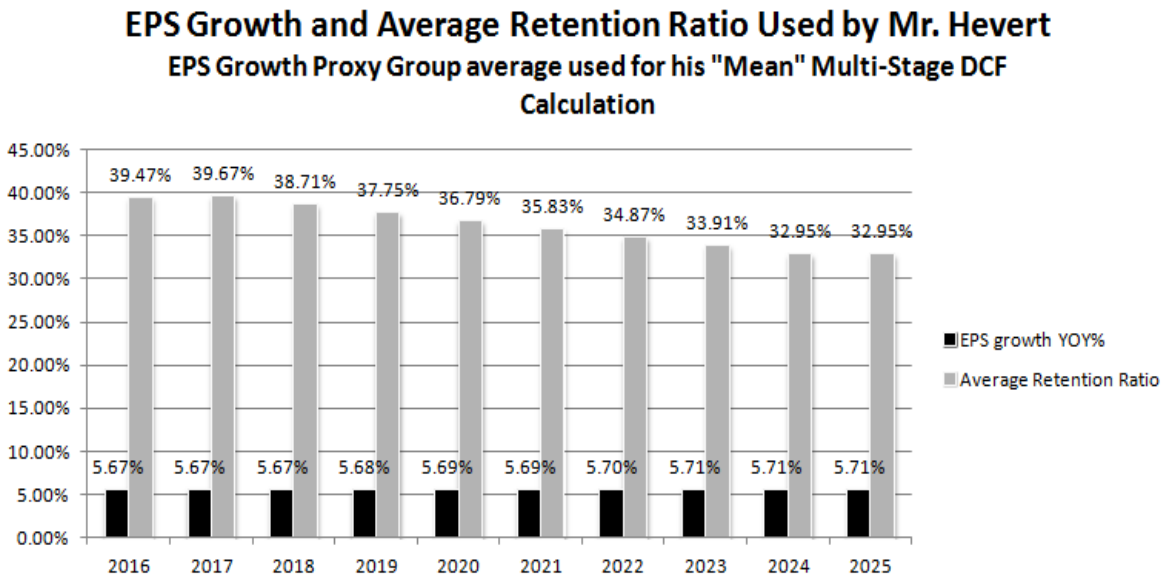
The following series of charts show Mr. Hevert's payout-ratio forecast and its effects. The first chart shows the payout ratios that Mr. Hevert includes in his multi-stage DCF model (I have added the corresponding retention ratios):



The payout ratio begins at 61.13% and increases to 67.05%, while the corresponding retention ratio begins at 38.87% and decreases to 32.95%.

The next chart shows the average earnings (EPS) growth that Mr. Hevert uses in his multi-stage DCF model juxtaposed with the retention ratio that is implied from Mr.

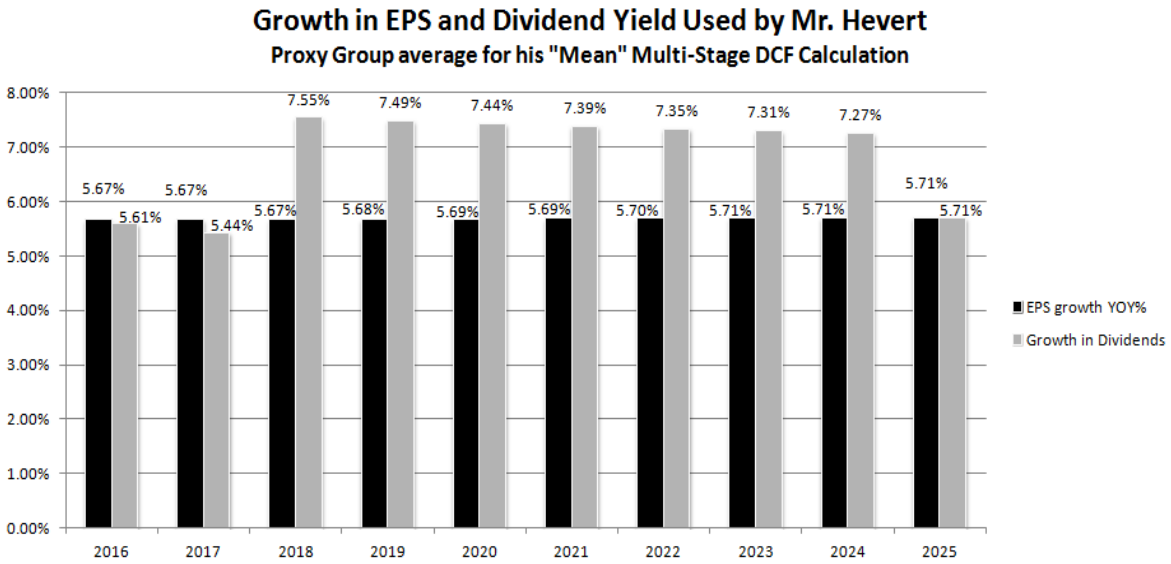
Hevert's payout ratio forecast (note: the following charts begin at year 2016 because the 2015-2016 year is the first year unaffected by Mr. Hevert's previous dividend payment timing error):



In year 2016, Mr. Hevert's proxy group will retain 39.47% of its earnings in order to foster growth and will grow at a rate of 5.67%. By 2024, Mr. Hevert's proxy group will retain only 32.95% of its earnings, yet will grow at 5.71%. In Mr. Hevert's model, a decrease in retained earnings of 6.52% somehow leads to 4 basis points worth of earnings growth. It is important to remember that the retention ratio represents that portion of earnings that a company retains in order to grow the business. It is illogical for a company's growth to increase over the long term while, at the same time, that company retains less and less earnings with which to foster growth. However, that is exactly what Mr. Hevert has forecast.

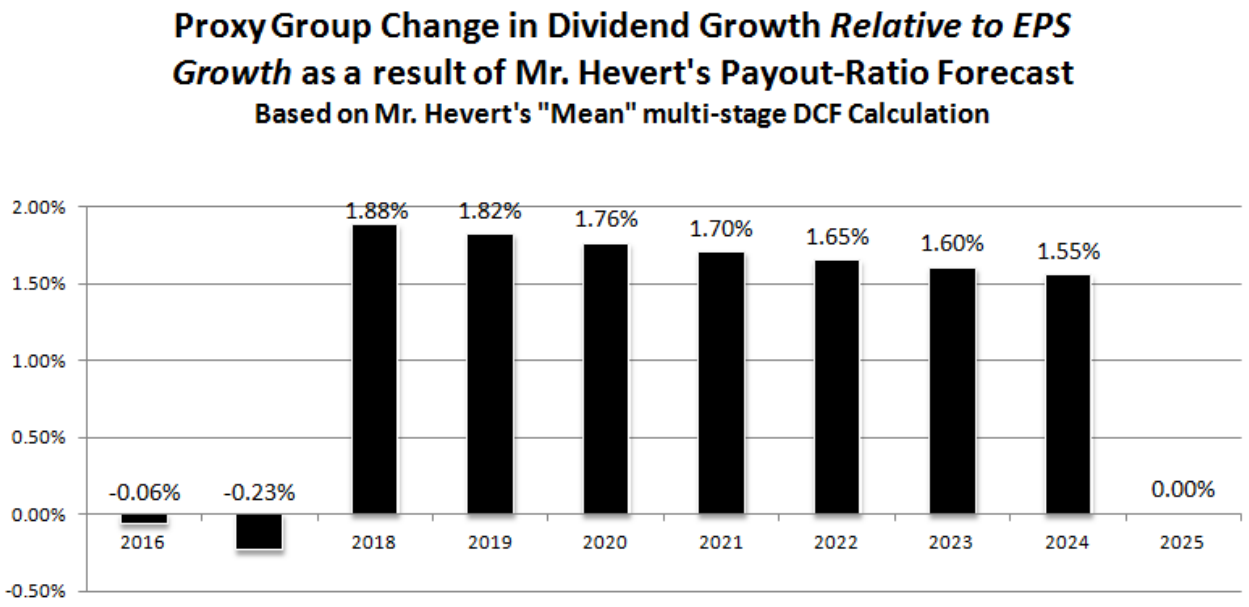
The next chart shows the effect of increasing the payout ratio without decreasing the earnings growth rate to reflect the decreasing retention ratio. Earnings growth remains

where it was before the change in payout ratio, and the dividend growth rate increases to reflect the higher payout ratios:



In the chart above, the differences in EPS growth and dividend growth are caused by Mr. Hevert's payout-ratio forecast. In Mr. Hevert's model, earnings growth never decreases due to a decreasing retention ratio, yet dividend growth mainly increases because of Mr. Hevert's forecasted payout ratios.

Finally, the following chart shows how much dividend growth Mr. Hevert was unreasonably able to create by changing the payout ratios used in his multi-stage DCF model as described above. This chart represents the difference between the growth in dividends and the EPS growth presented in the preceding chart:



The amounts shown in the chart above should not have been included in Mr. Hevert's model.

Q. HAS MR. HEVERT EVER PROVIDED HISTORICAL EVIDENCE THAT EARNINGS ACTUALLY INCREASE AS THE RETENTIO RATIO DECREASES?

A. Yes. In his Rebuttal Testimony for Ameren Missouri Case No. ER-2012-0166, Mr. Hevert cites three articles that challenge the idea that high dividend payout ratios are followed by periods of low earnings growth.[16] Arnott and Asness, the authors of the main article cited, indeed found *historical* evidence that "strongly suggests that expected earnings growth is fastest when current payout ratios are high and slowest when payout ratios are low."[17] However, using this information in order to justify a payout-ratio

[16] See Hevert Rebuttal, ER-2012-0166, p. 81, lines 9-13.

forecast that features lower retention ratios and higher earnings would be completely misguided. As authors Arnott and Asness state in regard to the statistically strong historical relationship between high payout ratios and high growth,

> We found that the empirical facts conform to a world in which managers possess private information that causes them to pay out a large share of earnings when they are optimistic that dividend cuts will not be necessary and to pay out a small share when they are pessimistic, perhaps so that they can be confident of maintaining the dividend payouts.[18]

Clearly, it would be a mistake to believe that because high payout ratios have historically been *correlated* with periods of faster earnings growth that high payout ratios *cause* faster earnings growth.

Q. CAN YOU REMOVE THE EFFECT OF MR. HEVERT'S PAYOUT-RATIO FORECAST FROM HIS MULTI-STAGE DCF MODEL?

A. Yes, I can. Mr. Hevert forecasts earnings in order to derive the cash flows (dividends) by multiplying earnings by the payout ratio. I have removed the earnings forecast and payout-ratio forecast from Mr. Hevert's model and I have input instead, as a starting point for the forecast, the 2013 historical annual dividend payments as reported by Value Line. The only other elements I have eliminated from Mr. Hevert's original models are the error in dividend payment timing described earlier and the flawed "mean low" and "mean high" calculations.

[17] Asness, Clifford & Arnott, Robert. "Surprise: Higher Dividends = Higher Earnings Growth". *Financial Analysts Journal*, Vol. 59, No. 1, January/February 2003.

[18] *Ibid*. p. 84.

Q. WHAT ARE THE COMBINED EFFECTS OF THE DIVIDEND PAYMENT TIMING ERROR AND THE PAYOUT-RATIO FORECAST?

A. The following table presents Mr. Hevert's original "mean" multi-stage DCF results and the "mean" multi-stage DCF results after the two errors have been corrected (see Rebuttal Schedule LCS-2):

Multi-Stage DCF	Mean (with errors)	Mean (corrected)
30-Day Average	9.93%	9.74%
90-Day Average	10.00%	9.80%
180-Day Average	10.13%	9.92%

The average result of the three estimates before the errors are removed is 10.02%. The average result of the three estimates after the two errors are removed is 9.82%. The dividend payment timing error and the payout-ratio forecast are thus responsible for 20 basis points (10.02 – 9.82% = .20%) of upward bias in Mr. Hevert's multi-stage DCF results.

Q. PLEASE EXPLAIN THE CONCERNS YOU HAVE WITH THE ESTIMATE OF GDP MR. HEVERT USES FOR HIS TERMINAL GROWTH RATE.

A. Mr. Hevert's estimate of GDP growth comes from the average historical real GDP growth rate from 1929 to 2013 of 3.27%, which is then combined with a forecasted inflation rate of 2.37% to calculate his terminal growth rate.[19] Mr. Hevert is the only rate of return analyst in this case who relied entirely on historical real GDP data for this calculation.

[19] See Hevert Direct, p. 22, lines 4-5.

Q. DID MR. HEVERT EXPLAIN WHY HE RELIED ON HISTORICAL REAL GDP DATA TO CALCULATE HIS TERMINAL GROWTH RATE?

A. Yes. Mr. Hevert states "in essence, my real GDP growth rate projection is based on the assumption that absent specific knowledge to the contrary, it is reasonable to assume that over time, real GDP growth will revert to its long-term mean."[20]

Q. ARE MULTIPLE ESTIMATES OF GDP FROM RELIABLE SOURCES AVAILABLE THAT MR. HEVERT COULD HAVE UTILIZED?

A. Yes. For example, I use estimates from the U.S. Energy Information Administration, the Congressional Budget Office, and the Organisation for Economic Co-operation and Development;[21] Mr. Gorman uses GDP estimates from Blue Chip Economic Indicators.[22] Mr. Murray references GDP projections from the Federal Reserve Board Members and the Federal Reserve Bank Presidents.[23]

Q. IS THERE REASON TO BELIEVE THAT GDP WILL BE LOWER THAN THE HISTORICAL AVERAGE?

A. Yes. For example, the Congressional Budget Office states in *The Budget and Economic Outlook: 2014 to 2024* that "beyond 2017, CBO expects that economic growth will

[20] See Hevert Direct, p. 23, lines 3-5.

[21] See Schafer Direct, p. 25, lines 7-9.

[22] See Gorman Direct, p. 24, lines 3-18.

[23] See Murray Direct, p. 14, lines 14-17.

diminish to a pace that is well below the average seen over the past several decades."[24] The forecasts of GDP growth provided by the U.S. Energy Information Administration (covering 2014 to 2040), the Economic Report of the President (covering 2014-2020), and the International Monetary Fund (covering 2014 to 2019) are also all lower than the historical average growth in GDP.[25]

Q. IS THE 2014 TO 2024 TIME PERIOD MENTIONED ABOVE RELEVANT TO THE THIRD STAGE OF THE MULTI-STAGE DCF MODELS USED IN THIS CASE?

A. Yes. During his Rebuttal Testimony for Ameren Missouri Case no. ER-2012-0166, Mr. Hevert takes issue with MIEC witness Mr. Gorman's multi-stage DCF model because "Mr. Gorman's model assumes a terminal growth rate *beginning* in year eleven based on a GDP growth rate projection that actually *ends* in the eleventh year of his study period."[26] Mr. Hevert and I agree that the relevant estimate of GDP should cover the period beginning at year 11 of the multi-stage model.

However, the second stage of the multi-stage DCF model, which covers years 6 through 10, uses growth rates that transition from the stage-one growth rates to the terminal growth rate. In other words, the terminal growth rate used for stage three influences the multi-stage DCF model starting at the beginning of stage two (year 6). Mr.

[24] http://www.cbo.gov/publication/45010

[25] See the U.S. Energy Information Administration, Annual Energy Outlook 2014 (http://www.eia.gov/forecasts/aeo/pdf/0383(2014).pdf); The Economic Report of the President 2014 (http://www.gpo.gov/fdsys/pkg/ERP-2014/pdf/ERP-2014.pdf); http://knoema.com/IMFWEO2014Oct/imf-world-economic-outlook-october-2014.

[26] See Hevert Rebuttal ER-2014-0166, p. 84, lines 7-9.

Hevert uses an estimate of GDP for his stage-three growth rate that is based on the historical average real GDP, which also causes his growth rates in stage two to reflect historical averages rather than estimates of economic conditions for that period. Since we have estimates of economic conditions from reliable sources for the period of 2019 to 2024, that information can be used to judge the reasonableness of the stage two growth rates.

Q. IS IT YOUR OPINION THAT THE WAY THE STAGE-TWO GROWTH RATE IS CALCULATED SHOULD BE CHANGED?

No. I am certainly not arguing that the technique used to calculate stage-two growth rates be changed. However, it is important to analyze the impact that growth rates have on the model. The following chart presents the growth rates that Mr. Hevert and I applied to earnings and dividends, respectively, for the second and third stages of our multi-stage DCF models:

	Stage Two					Stage Three
	6	7	8	9	10	11
Mr. Hevert's Growth Rates	5.68%	5.69%	5.69%	5.70%	5.71%	5.71%
Mr. Schafer's Growth Rates	5.00%	4.97%	4.94%	4.91%	4.89%	4.86%

As can be seen in the table above, Mr. Hevert's choice of stage-three growth rate causes his stage-two growth rates to be very close to the historical average, even though the GDP estimates from reliable sources cited by three of the four rate-of-return witnesses in this case are significantly lower for that time period (2019-2024).

Q. IS MR. HEVERT GENERALLY OPPOSED TO USING ESTIMATES THAT ARE NOT BASED ON HISTORICAL DATA?

A. No. He uses forecasted 30-year Treasury rates from Blue Chip Economic Indicators for both his CAPM and bond-yield-plus-risk-premium analyses,[27] earnings growth estimates from Bloomberg and Value Line to calculate the market risk premium for his CAPM,[28] earnings growth estimates from Value Line, Zacks, and First call to use as inputs for his constant-growth and multi-stage DCF models,[29] and payout-ratio forecasts from Value Line for his multi-stage DCF model.[30]

Q. IS IT GENERALLY MR. HEVERT'S POLICY TO ASSUME THAT ESTIMATES WILL REVERT TO HISTORICAL AVERAGES WITHOUT ANALYZING THEM IN THE CONTEXT OF CURRENT ECONOMIC INFORMATION?

A. No. In his direct testimony, Mr. Hevert states

> While I appreciate that all analyses require an element of judgment, the application of that judgment must be made in the context of the quantitative and qualitative information available to the analyst and the capital market environment in which the analyses were undertaken.[31]

Despite this, when it is a question of the most important growth rate used in the multi-stage DCF model, Mr. Hevert curiously finds that a mere "assumption" is appropriate,

[27] See Hevert Direct, Schedule RBH-5 and Schedule RBH-6, p. 1 of 19.

[28] See Hevert Direct, p.26, lines 11-19.

[29] See Hevert Direct, p. 18, lines 11-14, and p. 20, line 9.

[30] See Hevert Direct, p. 23, lines 12-13.

[31] See Hevert Direct, p. 41, lines 17-20.

without any analysis of the growth rate in the context of the current capital market environment.

Q. YOU ALSO RELY ON A HISTORICAL ESTIMATE OF REAL GDP IN YOUR ANALYSES. WHAT ARE THE DIFFERENCES IN THE WAY YOU AND MR. HEVERT USE THE AVERAGE HISTORICAL GDP IN YOUR DIRECT TESTIMONY?

A. As I explain in my direct testimony, the terminal-stage growth rate covers a period of roughly 20 years.[32] Since the terminal stage starts in year 11 of the multi-stage DCF model, the relevant forecast period for GDP approximately covers the period starting 11 years from now and ending 33 years from now. Although I had estimates of GDP that covered the entire time period, I did not have multiple estimates for the last five years of that time period. Therefore, I reverted to the historical average for the last five years only. In contrast, Mr. Hevert unreasonably used a historical estimate of GDP for the entire period.

Q. PLEASE PRESENT THE TERMINAL-STAGE GROWTH RATES THAT WERE USED IN THE MULTI-STAGE DCF MODELS BY THE RATE-OF-RETURN WITNESSES IN THIS CASE.

A. The following table presents the terminal-stage growth rates used in the multi-stage DCF models of the rate-of-return witness who filed direct testimony in this case:

[32] See Schafer Direct, p. 25, lines 19-20 and p. 26, lines 1-4.

Terminal Growth Rates Used in the Multi-Stage DCF Models	
Mr. Hevert	5.71%
Mr. Schafer	4.86%
Mr. Gorman	4.60%
Mr. Murray	3% to 4%

Q. WHAT EXPLAINS THE VARIATION IN THE ESTIMATES OF TERMINAL GROWTH PRESENTED IN THE TABLE ABOVE?

A. Mr. Murray, Mr. Gorman, and I present evidence in our direct testimony that growth rates on which the terminal growth rate should be based are lower than nominal GDP.[33] Mr. Gorman and I use forecasts of full GDP as terminal growth rates, while acknowledging that these growth rates are conservative. Mr. Murray uses a rate that is lower than GDP as the result of research performed by Staff. However, Mr. Hevert neither considers the possibility that the growth rate could be lower than GDP, nor does he consider that forecasts of GDP from reliable sources are significantly lower than the historical average that he chooses to use in his calculation.

Q. WHAT EFFECT DOES THE TERMINAL GROWTH RATE THAT MR. HEVERT USES HAVE ON HIS MULTI-STAGE DCF MODEL?

A. The multi-stage DCF model is extremely sensitive to the terminal growth rate. The following table presents three sets of results: 1. Mr. Hevert's original mean multi-stage DCF results; 2. Mr. Hevert's mean multi-stage DCF results after the correction of the dividend payment timing and payout-ratio errors discussed earlier, and 3. the mean results after the correction of the dividend payment timing and payout ratio errors

[33] See Schafer Direct, p. 23, lines 3-19 and p. 24, lines 1-4; see also Gorman Direct, p. 23, lines 16-20; see also Murray Direct, p. 32, lines 12-21 and p. 34, lines 10-12.

discussed earlier, and using the next-highest terminal growth rate estimate of 4.86% (see Rebuttal Schedule LCS-3):

	Mr. Hevert's Results	After Dividend Payment Timing and Payout Ratio Corrections	After Dividend Payment Timing and Payout Ratio Corrections; 4.86% Terminal Growth Rate
Multi-Stage DCF	Mean	Mean	Mean
30-Day Average	9.93%	9.74%	9.05%
90-Day Average	10.00%	9.80%	9.11%
180-Day Average	10.13%	9.92%	9.23%

As can be seen, Mr. Hevert's dividend payment timing error and his payout-ratio forecast alone cause his results to be an average of 20 basis points too high. Additionally, Mr. Hevert's choice of terminal growth rate causes his results to be an average of 69 basis points higher than they would have been had he used a reliable estimate of GDP rather than a historical average. The combined effects of the dividend payment timing error, payout-ratio forecast, and higher terminal growth rate account for an average difference of 89 basis points. Therefore, Mr. Hevert's multi-stage DCF results are an average of 89 basis points higher than they should be. This is unreasonable.

MR. HEVERT'S CAPITAL ASSET PRICING MODEL (CAPM)

Q. WHAT CONCERNS DO YOU HAVE ABOUT MR. HEVERT'S CAPM ANALYSIS?

A. The market-risk-premium inputs to Mr. Hevert's CAPM model are greatly exaggerated due to the estimated required return on the market that Mr. Hevert calculates by means of his "market capitalization weighted average ROE based on the Constant Growth DCF model." [34] The high market-risk premia that Mr. Hevert uses cause the model to produce exaggerated return-on-equity results.

Q. PLEASE EXPLAIN HOW MR. HEVERT CALCULATES HIS "MARKET CAPITALIZATION WEIGHTED AVERAGE ROE BASED ON THE CONSTANT GROWTH DCF MODEL" AND HIS RISK-PREMIUM INPUTS.

A. Mr. Hevert first uses the constant-growth DCF model to calculate expected returns for all the companies in the S&P 500 for which growth-rate estimates are available. Next, he weights each company's expected return by the company's market-capitalization weight. He then sums all of the companies' market-capitalization-weighted returns, which gives him the expected return on the S&P 500. Mr. Hevert does this calculation once with data from Value Line and a second time with data from Bloomberg.

To calculate his risk-premium inputs, Mr. Hevert takes the expected returns on the S&P 500 that he has calculated and subtracts the current risk-free rate.

Q. WHAT CONCERNS DO YOU HAVE WITH THE CALCULATION MR. HEVERT USES TO ESTABLISH HIS RISK PREMIA?

[34] See Hevert Direct, p. 26, lines 10-11.

A. First, Mr. Hevert's use of the risk-free rate is inconsistent with how he uses it elsewhere. Second, Mr. Hevert does not analyze the reliability of the risk premia estimates that he obtains by using the constant-growth DCF model.

Q. HOW IS MR. HEVERT'S USE OF THE RISK-FREE RATE WHEN ESTABLISHING THE MARKET-RISK PREMIUM INCONSISTENT WITH HOW HE USES IT ELSEWHERE?

A. In both the CAPM and the bond-yield-plus-risk-premium approach, Mr. Hevert uses multiple estimates of the risk-free rate. For example, he uses the current (3.42%) and "near term projected" (4.07%) rates for his CAPM. He uses current (3.42%), "near term projected" (4.07%), and "long term projected" (5.25%) rates for his bond-yield-plus-risk-premium approach. As the risk-free rate input increases, the results of his models increase. In other words, using higher estimates of the risk-free rate in the CAPM and in the bond-yield-plus-risk-premium approach results in higher estimates of the cost of common equity. When using multiple risk-free rates results in higher cost-of-common-equity results, Mr. Hevert uses them.

However, when using multiple risk-free rates *decreases* the cost-of-common-equity results, Mr. Hevert does not use them. When Mr. Hevert calculates his risk-premium *inputs* for the CAPM, he must *subtract* the risk-free rate from his calculated return on the S&P 500. Higher estimates of the risk-free rate would thus *decrease* his calculated risk premia, and, in turn, *decrease* the results of his CAPM. For this calculation, Mr. Hevert does not use multiple estimates of the risk-free rate as he did before. Mr. Hevert only uses the current risk-free rate, which is the lowest estimate. If he

had used the same estimates of the risk-free rate that he previously used, his risk premia inputs would have been lower, which would have produced a lower CAPM result.

Q. YOU ALSO STATE THAT MR. HEVERT DOES NOT ANALYZE THE RELIABILITY OF THE RISK PREMIA ESTIMATES THAT HE OBTAINS BY USING THE CONSTANT-GROWTH DCF MODEL. PLEASE EXPLAIN.

A. The constant-growth DCF model relies on the assumption that a company can grow in perpetuity at a constant growth rate. If a growth rate that cannot reasonably be sustained in perpetuity is used, the results of the model will not be reliable.

Q. DOES MR. HEVERT ANALYZE AND ACCOUNT FOR THIS ASSUMPTION ELSEWHERE IN HIS DIRECT TESTIMONY?

A. Yes. When describing the multi-stage DCF model, Mr. Hevert states

> Since the model provides the ability to specify near, intermediate and long-term growth rates, for example, it avoids the sometimes limiting assumption that the subject company will grow at the same, constant rate in perpetuity.[35]

Q. WHAT AVERAGE PERPETUAL GROWTH RATES FOR THE COMPANIES OF THE S&P 500 ARE IMPLIED BY MR. HEVERT'S CALCULATION OF HIS REQUIRED RETURN ON THE MARKET?

A. Using the data from Mr. Hevert's Direct Testimony Schedules RBH-2 and RBH-3, I calculated Mr. Hevert's implied constant-growth rates for the companies in the S&P 500 by multiplying the long-term growth estimate for each company by the company's

[35] See Hevert Direct, p. 20, lines 13-14 and p. 21, line 1.

market-capitalization weight. I then summed the results to obtain the constant-growth rate.

Based on the Bloomberg data, the perpetual growth rate is 11.4% (see Rebuttal Schedule LCS-4). Based on the Value Line data, the perpetual growth rate is 10.5% (see Rebuttal Schedule LCS-5). These are the values that are reflected in Mr. Hevert's "market capitalization weighted average ROE based on the Constant Growth DCF model".

Q. ARE 11.4% AND 10.5% REASONABLE PERPETUAL GROWTH RATES?

A. No. During direct testimony, Mr. Hevert, Mr. Gorman, and I use various estimates of GDP as perpetual growth rates. The highest estimate of GDP—provided by Mr. Hevert—was 5.71%. When compared to the perpetual growth rates above of 11.4% (Bloomberg) and 10.5% (Value Line), Mr. Hevert's "market capitalization weighted average ROE based on the Constant Growth DCF model" unreasonably implies that the companies in the S&P 500 will grow in perpetuity at as much as *twice* the rate of Mr. Hevert's 5.71% estimate of GDP.

Q. SHOULD MR. HEVERT HAVE ANALYZED THE IMPACT OF THE GROWTH RATES HE USES IN PERPETUITY?

Mr. Hevert's risk-premium estimates are unreasonably high because he uses analysts' 3-to-5 year growth estimates in perpetuity in his DCF model. As Pratt informs us in his book *Cost of Capital*, "these earnings growth estimates typically are for only the next two

to five years; they are not perpetual. Therefore, *any use* of these forecasts in a single-stage DCF model must be tempered with a longer-term forecast" [emphasis added].[36]

Q. HOW DO THE RISK PREMIA THAT MR. HEVERT DEVELOPS BY MEANS OF HIS "MARKET CAPITALIZATION WEIGHTED ROE BASED ON THE CONSTANT GROWTH DCF MODEL" COMPARE TO THE RISK PREMIA USED BY THE OTHER WITNESSES IN THIS CASE FOR THEIR CAPM ANALYSES?

A. Mr. Hevert calculates two risk premia: 10.02% and 9.28%.[37] Mr. Murray uses two estimates based on historical data obtained from Duff & Phelps: 6.20% and 4.64%.[38] Mr. Gorman uses two estimates based on historical data obtained from Morningstar: 7.3% and 6.2%.[39] I use two estimates based on historical data obtained from Morningstar: 6.2% and 4.6%.[40] The estimates are summarized in the following table:

Risk Premia Used In The CAPM (listed by Analyst)

	Low Estimate	High Estimate
Mr. Hevert	9.28%	10.02%
Mr. Gorman	6.20%	7.30%
Mr. Murray	4.64%	6.20%
Mr. Schafer	4.60%	6.20%

As can be seen, Mr. Hevert's estimates are significantly higher than the other witnesses' estimates.

[36] Pratt, Shannon P. Cost of Capital. New York, New York: John Wiley & Sons, Inc. 1998. p. 100.

[37] See Hevert Direct, Schedule RBH-5.

[38] See Murray Direct, p. 43, lines 14-19.

[39] See Gorman Direct, p. 35, lines 1-20.

[40] See Schafer Direct, p. 35, lines 7-14.

Q. WHAT IS THE RESULT OF REPLACING THE RISK PREMIA USED IN MR. HEVERT'S CAPM WITH THE RISK PREMIA USED BY ALL THE OTHER RATE-OF-RETURN WITNESSES IN THIS CASE?

A. By doing so, the unreasonable results caused by Mr. Hevert's "market capitalization weighted ROE based on the Constant Growth DCF model" technique become clear.

The following table shows Mr. Hevert's original results as presented in his direct testimony[41]:

	Bloomberg Derived Market Risk Premium	***Value Line Derived Market Risk Premium***
Average Bloomberg Beta Coefficient		
Current 30-Year Treasury (3.42%)	11.27%	10.69%
Near Term Projected 30-Year Treasury (4.07%)	11.92%	11.34%
Average Value Line Beta Coefficient		
Current 30-Year Treasury (3.42%)	11.17%	10.59%
Near Term Projected 30-Year Treasury (4.07%)	11.82%	11.24%

The following table summarizes the CAPM recommendations of the other three rate-of-return witnesses in this case, along with the market risk premia they used:

CAPM Recommendations		
	Market Risk Premia Used	**CAPM Result**
Mr. Gorman	6.2% and 7.3%	9.24%
Mr. Schafer	4.6% and 6.2%	8.74%
Mr. Murray	4.64% and 6.2%	6.6% and 7.76%; 6.53% and 7.66%

Holding all other variables equal (and, as a reminder, using Mr. Hevert's original proxy group), the following table demonstrates the CAPM results obtained by removing

[41] See Hevert Direct, P.28, line 1.

the market risk premia that Mr.Hevert uses and adding the four market risk premia used by the other witnesses in this case (see Rebuttal Schedule LCS-6):

	CAPM Result			
PROXY GROUP BLOOMBERG AVERAGE BETA COEFFICIENT	4.6% Market Risk Premium	4.64% Market Risk Premium	6.2% Market Risk Premium	7.3% Market Risk Premium
Current 30-Year Treasury (30-day average)	7.02%	7.05%	8.28%	9.14%
Near-Term Projected 30-Year Treasury	7.67%	7.70%	8.93%	9.79%
PROXY GROUP VALUE LINE AVERAGE BETA COEFFICIENT				
Current 30-Year Treasury (30-day average)	6.98%	7.01%	8.21%	9.06%
Near-Term Projected 30-Year Treasury	7.62%	7.65%	8.86%	9.71%

When the other witnesses' measures of the market risk premium are substituted into Mr. Hevert's CAPM model, there are minor, logical differences in results owing to the different measures of Beta and risk-free rates. However, Mr. Hevert's calculation of the market risk premium is the undeniable source of the biggest difference between his results and the results of the other three witnesses.

Q. CAN MR. HEVERT'S CAPM BE CORRECTED?

A. Yes. Correcting Mr. Hevert's CAPM can be done by replacing the risk premia calculated from his "market capitalization weighted ROE based on the Constant Growth DCF model" with historical risk premia. I suggest using the consensus estimate of the other rate-of-return witnesses. This can be accomplished by replacing Mr. Hevert's equity risk premia with the 6.2% equity risk premium, which was used by every other rate-of-return witness in this case. Mr. Murray and I use 6.2% as our high estimate of the risk premium. Mr. Gorman uses 6.2% as his low estimate. For reasons I will detail in a later section, Mr. Gorman's high estimate (7.3%) is unreliable and should not be used.

Mr. Gorman, Mr. Murray, and I obtained the 6.2% risk-premium estimate using the same calculation. Mr. Murray and I also calculate lower risk premia (4.64% and 4.6%, respectively) by using geometric mean averages rather than arithmetic mean averages. Although I firmly believe using both the geometric and arithmetic mean averages better represents investor opinion, for this correction I will use the estimate that best represents the consensus of the estimates that the witnesses in this case provided. Using 6.2% will admittedly produce higher results than Mr. Murray and I obtained by employing both the geometric and arithmetic means.

Q. PLEASE PRESENT MR. HEVERT'S ORIGINAL CAPM RESULTS AND THE CORRECTED RESULTS.

A. The following table shows Mr. Hevert's original results as well as the corrected results:

	Mr. Hevert's Original CAPM Results		Corrected CAPM Results
	Bloomberg Market DCF Derived	Value Line Market DCF Derived	6.2% Market Risk Premium
PROXY GROUP BLOOMBERG AVG. BETA COEFFICIENT			
Current 30-Year Treasury (30-day average)	11.27%	10.69%	8.28%
Near-Term Projected 30-Year Treasury	11.92%	11.34%	8.93%
PROXY GROUP VALUE LINE AVG. BETA COEFFICIENT			
Current 30-Year Treasury (30-day average)	11.17%	10.59%	8.21%
Near-Term Projected 30-Year Treasury	11.82%	11.24%	8.86%

MR. HEVERT'S BOND-YIELD-PLUS-RISK-PREMIUM APPROACH

Q. WHAT CONCERN DO YOU HAVE ABOUT MR. HEVERT'S BOND-YIELD-PLUS-RISK-PREMIUM APPROACH?

A. First, Mr. Hevert's use of a "long term projected" rate as one of his risk-free rate inputs is inappropriate. Second, Mr. Hevert's application of an argument relating to the inverse

relationship between the equity risk premium and the level of interest rates is flawed and unreasonable.

Q. PLEASE DESCRIBE THE RISK-FREE RATE INPUTS THAT MR. HEVERT USES IN HIS BOND-YIELD-PLUS-RISK-PREMIUM APPROACH.

A. Mr. Hevert uses three measures of the 30-year treasury yield in order to obtain risk-free-rate inputs: a "current" rate of 3.42%, a "near term projected" rate of 4.07%, and a "long term projected" rate of 5.25%.[42] The "current" rate and "near term projected rate" are consistent with what Mr. Hevert employed in his CAPM analysis.[43] However, it should be noted that Mr. Hevert did not use the "long term projected" rate for his CAPM analysis.

Mr. Hevert includes the "long term projected" rate in his bond-yield-plus-risk-premium analysis without discussing the reasons for its inclusion. The "long term projected" rate is much higher than the "current" and "near term projected" rates. Therefore, using it to establish the return on equity today is equivalent to saying that the Company should receive a higher return now because the required return in the distant future will be higher than it is currently. This is illogical and unreasonable.

Q. IS THERE A REASON AN ANALYST WOULD USE DIFFERENT PROJECTIONS OF THE RISK-FREE RATE IN THE BOND-YIELD-PLUS-RISK-PREMIUM APROACH THAN HE OR SHE USES IN THE CAPM?

[42] See Hevert Direct Schedule RBH-6, page 1 of 19.

[43] See Hevert Direct, p. 27, lines 3-4.

A. If an analyst decides to use treasury bonds in both models, as Mr. Hevert has done, there is no reason not to use the same estimates for both models. Indeed, Mr. Hevert does use the same "current" and "near term projected" rates for both models. If Mr. Hevert found it relevant to use the "long term projected" rate in his bond-yield-plus-risk-premium approach, then logically he should have used the "long term projected" rate for his CAPM analysis as well, since the CAPM is also a bond-yield-plus-risk-premium approach.

Q. IF MR. HEVERT HAD USED THE "LONG TERM PROJECTED" RATE IN HIS CAPM, WHAT EFFECT WOULD THIS HAVE HAD ON HIS RESULTS?

A. The CAPM results incorporating the "long term projected" 30-year Treasury yield would have been conspicuously high. To show this, I have used Mr. Hevert's CAPM model and simply added the "long term projected" 30-year Treasury rate, without changing any other aspect of the model. The results of Mr. Hevert's original CAPM analysis and the additional results that I have obtained by adding the "long term projected" 30-year Treasury rate to Mr. Hevert's model are shown in the following table (see Rebuttal Schedule LCS-7):

	CAPM Result	
	Bloomberg Market DCF Derived	Value Line Market DCF Derived
PROXY GROUP BLOOMBERG AVERAGE BETA COEFFICIENT		
Current 30-Year Treasury (30-day average)	11.27%	10.69%
Near-Term Projected 30-Year Treasury	11.92%	11.34%
Long-Term Projected 30-Year Treasury	**13.11%**	**12.52%**
PROXY GROUP VALUE LINE AVERAGE BETA COEFFICIENT		
Current 30-Year Treasury (30-day average)	11.17%	10.59%
Near-Term Projected 30-Year Treasury	11.82%	11.24%
Long-Term Projected 30-Year Treasury	**13.00%**	**12.43%**

Q. DOES MR. HEVERT DESCRIBE THE TIME PERIOD TO WHICH HIS "LONG TERM PROJECTED" RATE APPLIES?

A. No. Mr. Hevert does not discuss his "long term projected" rate.

Q. WHAT EFFECT DOES MR. HEVERT'S USE OF A "LONG TERM PROJECTED" RATE HAVE ON THE RESULTS OF HIS BOND-YIELD-PLUS-RISK-PREMIUM APPROACH?

A. The result calculated using the "long term projected" rate represents the highest estimate Mr. Hevert obtained from his bond-yield-plus-risk-premium approach: 10.77%.

Q. WHAT IS YOUR RECOMMENDATION REGARDING MR. HEVERT'S USE OF THE "LONG TERM PROJECTED" TREASURY YIELD?

A. The result based on his "long term projected" rate should be discarded. If Mr. Hevert believes that a projected risk-free rate from farther in the future than his "near term

projected" rate is appropriate, then he should give a clear justification for its use. Mr. Hevert never attempts to explain why the rate is included in his approach. Furthermore, the fact that Mr. Hevert uses the "long term projected" rate selectively—using it in his bond-yield-plus-risk-premium approach but avoiding it in his CAPM—raises more doubts as to the reliability of the results calculated with that estimate.

Q. EARLIER, YOU STATED THAT MR. HEVERT'S APPLICATION OF AN ARGUMENT RELATING TO THE INVERSE RELATIONSHIP BETWEEN THE EQUITY RISK PREMIUM AND THE LEVEL OF INTEREST RATES WAS FLAWED AND UNREASONABLE. PLEASE EXPLAIN HOW MR. HEVERT DEVELOPS HIS ARGUMENT.

A. Mr. Hevert defines the risk premium that he uses in his bond-yield-plus-risk-premium approach as "the difference between the authorized ROE and the then-prevailing level of long-term (i.e., 30-year) Treasury yield."[44] He then develops an argument that his risk premium based on authorized ROEs needs to be adjusted because of "prior research", which he does not reference or define, but which he claims "has shown that the Equity Risk Premium is inversely related to the level of interest rates."[45] He then conducts a semi-log regression analysis of historical authorized ROE data and corresponding Treasury yields in order to reflect the supposed inverse relationship between the equity risk premium and Treasury yields.

[44] See Hevert Direct, p. 29, lines 3-4.

[45] *Ibid*. p. 29, lines 11-12.

Q. HOW DOES MR. HEVERT'S RISK PREMIUM INPUT CHANGE AS A RESULT OF HIS REGRESSION ANALYSIS?

A. The risk premium that Mr. Hevert calculates before he conducts his regression analysis is 4.43%.[46] The risk premia that he uses as a result of his regression analysis are 5.52%, 6.25% and 6.74%.[47]

Q. WHY DO YOU BELIEVE MR. HEVERT'S APPLICATION OF THE ARGUMENT RELATING TO THE INVERSE RELATIONSHIP BETWEEN EQUITY RISK PREMIA AND TREASURY YIELDS IS FLAWED?

A. Mr. Hevert states that the "prior research" he has reviewed to formulate his argument relates to the inverse relationship between the *equity risk premium* and Treasury yield. However, Mr. Hevert uses a risk premium for his bond-yield-plus-risk-premium approach that is based on historical *authorized ROE*. An *equity risk premium* and a *risk premium based on authorized ROE* are clearly not the same thing.

Q. HAS MR. HEVERT PROVIDED THE SOURCES OF THE STATED "PRIOR RESEARCH" AT ANY TIME IN THE PAST WHILE MAKING THE SAME ARGUMENT?

A. Yes. In Ameren Missouri Case no. ER-2012-0166, Mr. Hevert cites the following paragraph from *New Regulatory Finance* by Roger Morin:

[46] See Hevert Direct, p. 30, line 8.

[47] See Hevert Direct Schedule RBH-6, page 1 of 19.

> Published studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and other demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates – rising when rates fell and declining when interest rates rose."[48]

Q. DO THE ARTICLES LISTED IN THE PARAGRAPH ABOVE SUPPORT MR. HEVERT'S ARGUMENT?

A. No. They confirm that the inverse relationship has existed–but only during specific periods of time. As Mr. Morin states in the above paragraph, the cited articles describe an inverse relationship between equity risk premia and Treasury yields beginning in 1980. However, by looking at the publication dates of the articles in the paragraph above, it is clear that the studies only found this inverse relationship for a very limited, and therefore inconclusive, time period.

Brigham, Shome, and Vinson (1985) found the inverse relationship for the period of 1980 to 1984.[49] However, for the period of 1970 to 1979, they found that the relationship between equity risk premia and Treasury yields was positive.[50] This means that the argument holds true for the period of 1980 to 1984, but not for the period of 1970 to 1979.

Similarly, Harris (1986) finds that "risk premia for both stocks in general and utilities are inversely related to the level of government interest rates but positively

[48] See Hevert Rebuttal from ER-2012-0166, p. 103, lines 10-14; *See also* Morin, Roger A. *New Regulatory Finance.* Vienna, Virginian: Public Utilities Reports, Inc. , 2006.

[49] Brigham, Eugene F.; Shome, Dilip K.; and Vinson, Steve R. (1985). The Risk Premium Approach to Measuring a Utility's Cost of Equity. *Financial Management,* Spring, p. 38

[50] *Ibid*.

related to the bond yield spreads which proxy for the incremental risk of investing in equities rather than government bonds" ,[51] but this conclusion is based solely on data from the 36-month period of January 1982 to December 1984.

Maddox, Pippert, and Sullivan (1995) summarize and confirm the Harris and Marston (1992) study.[52] Maddox, Pippert, and Sullivan (1995) analyze the period of 1980 to 1993, and confirm "the existence of a general inverse relationship between interest rates and risk premiums over the study period."[53] However, Maddox, Pippert, and Sullivan state that their results are descriptive of *their study period only* and add that during the study period "any number of events could have had an impact on the relative risks of debt and equity. In all likelihood, this relationship will continue to be affected by innumerable future events."[54]

I was unable to obtain the Morin (2005) and McShane (2005) studies, but their study period would have ended approximately 10 years ago.

Q. DO THE STUDIES SUPPORT APPLYING THIS ARGUMENT TO A RISK PREMIUM THAT IS BASED ON HISTORICAL AUTHORIZED ROE, AS MR. HEVERT DOES?

[51] Harris, Robert S. (1986). Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return. *Financial Management*, Spring, p. 66.

[52] Maddox, Farris M.; Pippert, Donna T.; and Sullivan, Rodney N. (1995). An Empirical Study of the Ex Ante Risk Premiums for the Electric Utility Industry. *Financial Management*, Autumn, vol. 24, no. 3, pp. 89-95.

[53] *Ibid*., p. 93.

[54] *Ibid*., p.94.

A. No. *None* of the studies I reviewed feature risk premiums based on authorized ROE. Brigham, Shome, and Vinson (1985) use a DCF method that incorporates the stock prices of companies included in the Dow Jones Industrial and Utility averages, as provided by Value Line.[55] Harris (1986)[56] and Harris and Marston (1992)[57] use a "market" required rate of return calculated by using each dividend paying stock in the S&P 500 Index. Maddox, Pippert, and Sullivan (1995) use data such as stock prices, dividends per share, and expected growth rates for a sample group of 30 electric utilities.[58]

Q. IS MR. HEVERT'S ARGUMENT FOR THE INVERSE RELATIONSHIP BETWEEN TREASURY YIELDS AND RISK PREMIA CONSISTENT WITH WHAT HE HAS DONE ELSEWHERE IN HIS DIRECT TESTIMONY?

A. No. Mr. Hevert makes no such argument in his CAPM analysis even though the CAPM is also a bond-yield-plus-risk-premium approach. If Mr. Hevert believes this is a valid argument, then one would expect him to apply it to the risk premium he uses in his CAPM as well.

[55] Brigham, Eugene F.; Shome, Dilip K.; and Vinson, Steve R. (1985). The Risk Premium Approach to Measuring a Utility's Cost of Equity. *Financial Management*, Spring, p. 36

[56] Harris, Robert S. (1986). Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return. *Financial Management*, Spring, p. 62.

[57] Harris, Robert S. and Marston, Felicia C. (1992). Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts. *Financial Management*, Summer, p. 65.

[58] Maddox, Farris M.; Pippert, Donna T.; and Sullivan, Rodney N. (1995). An Empirical Study of the Ex Ante Risk Premiums for the Electric Utility Industry. *Financial Management*, Autumn, vol. 24, no. 3, p. 91.

Q. WHAT IS YOUR RECOMMENDATION REGARDING MR. HEVERT'S APPLICATION OF THE ARGUMENT FOR THE INVERSE RELATIONSHIP BETWEEN EQUITY RISK PREMIA AND TREASURY YIELDS?

A. The effects of Mr. Hevert's regression analysis should be removed by using the risk premium that he calculated before conducting his regression analysis (4.43%).

Q. PLEASE PRESENT THE ORIGINAL RESULTS OF MR. HEVERT'S BOND-YIELD-PLUS-RISK-PREMIUM APPROACH AND THE RESULTS WITHOUT THE "LONG TERM PROJECTED" RISK-FREE RATE AND THE EFFECTS OF HIS REGRESSION ANALYSIS.

A. The following table summarizes Mr. Hevert's original results and the results after the two corrections discussed earlier:

	Mr. Hevert's Original BYPRP Return on Equity Results	Corrected Results
Current	10.16%	**7.85%**
Near Term Projected	10.31%	**8.50%**
Long Term Projected	10.77%	Reject

SUMMARY OF RECOMMENDED CHANGES TO MR. HEVERT'S RESULTS

Q. PLEASE PRESENT MR. HEVERT'S ORIGINAL RESULTS AND THE RESULTS OBTAINED BY CORRECTING HIS MODELS.

A. The following table summarizes Mr. Hevert's original results and the results obtained by correcting the errors detailed above. As a reminder, no changes to Mr. Hevert's original proxy group have been made yet:

	Mr. Hevert's Results				Corrected Results	
Constant-Growth DCF	Mean Low	Mean	Mean High		Mean	
30-Day Average	8.44%	9.56%	10.87%		9.56%	
90-Day Average	8.50%	9.62%	10.93%		9.62%	
180-Day Average	8.61%	9.73%	11.04%		9.73%	
Multi-Stage DCF					**After Dividend Payment Timing and Payout Ratio Corrections; 4.86% Terminal Growth Rate**	
30-Day Average	9.61%	9.93%	10.36%		9.05%	
90-Day Average	9.67%	10.00%	10.43%		9.11%	
180-Day Average	9.80%	10.13%	10.58%		9.23%	
CAPM Results	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium			6.2% Market Risk Premium	
Average Bloomberg Beta Coefficient						
Current 30-Year Treasury (3.42%	11.27%	10.69%			8.28%	
Near Term 30-Year Treasury (4.07%)	11.92%	11.34%			8.93%	
Average Value Line Beta Coefficient						
Current 30-Year Treasury (3.42%	11.17%	10.59%			8.21%	
Near Term 30-Year Treasury (4.07%)	11.82%	11.24%			8.86%	
Bond Yield Plus Risk Premium	**Low**	**Mid**	**High**		**Low**	**High**
	10.16%	10.31%	10.77%		7.85%	8.50%

Q. SHOULD ANY FURTHER CHANGES BE MADE TO MR. HEVERT'S RESULTS?

A. Yes. As I discussed above, two of the companies in Mr. Hevert's proxy group no longer meet Mr. Hevert's proxy-group criteria. These two companies—Duke Energy and Cleco Corporation—should be removed from the results. As I mentioned earlier, the removal of Duke Energy and Cleco Corporation causes a slight increase in Mr. Hevert's original return-on-equity estimates, so their removal should not be controversial.

Q. HAVE YOU UPDATED MR. HEVERT'S RESULTS?

Yes. In order to compare Mr. Hevert's estimates to my own, I have updated the stock prices so that the most recent date in the estimates corresponds to the most recent date I used (November 17, 2014) in my direct testimony. In updating the prices, I used Mr. Hevert's preferred 30-Day, 90-Day, and 180-Day averages, calculated exactly as he has done in his workpapers. Only the dates are different.

Q. PLEASE PRESENT THE UPDATED RESULTS.

A. The following table summarizes Mr. Hevert's original results and the results obtained from correcting the errors detailed above, using 4.86% as the terminal growth rate, updating the stock prices, and removing Duke Energy and Cleco Corporation from the proxy group (see Rebuttal Schedule LCS-8 for the DCF calculations; see Rebuttal Schedule LCS-9 for the CAPM update):

	Mr. Hevert's Results				Corrected Results with Updated Stock Prices and the Exclusion of Duke and Cleco	
Constant-Growth DCF	Mean Low	Mean	Mean High		Mean	
30-Day Average	8.44%	9.56%	10.87%		9.37%	
90-Day Average	8.50%	9.62%	10.93%		9.53%	
180-Day Average	8.61%	9.73%	11.04%		9.56%	
Multi-Stage DCF						
30-Day Average	9.61%	9.93%	10.36%		8.84%	
90-Day Average	9.67%	10.00%	10.43%		9.00%	
180-Day Average	9.80%	10.13%	10.58%		9.03%	
CAPM Results	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium			6.2% Market Risk Premium	
Average Bloomberg Beta Coefficient						
Current 30-Year Treasury (3.42%	11.27%	10.69%			8.34%	
Near Term 30-Year Treasury (4.07%)	11.92%	11.34%			8.98%	
Average Value Line Beta Coefficient						
Current 30-Year Treasury (3.42%	11.17%	10.59%			8.33%	
Near Term 30-Year Treasury (4.07%)	11.82%	11.24%			8.98%	
Bond Yield Plus Risk Premium	**Low**	**Mid**	**High**		**Low**	**High**
	10.16%	10.31%	10.77%		7.85%	8.50%

Q. WHAT FINAL RECOMMENDED RETURN ON EQUITY DO THESE CORRECTED RESULTS SUGGEST?

A. In his direct testimony, Mr. Hevert recommended a 40 basis-point range, the low estimate of which was situated at approximately the midpoint of his highest and lowest estimates. The updated low estimate is 8.18% and comes from average result of the bond-yield-plus-risk-premium approach ((8.50% + 7.85%) / 2). The updated high estimate is 9.56% and comes from the constant-growth DCF model. The midpoint of the updated high and

low estimates is 8.87% ((8.18 + 9.56%)/ 2). The updated final recommended range would be from 8.87% to 9.27%, with the midpoint serving as an updated final recommended ROE.

Based on this, Mr. Hevert's updated final recommended ROE would be **9.07%.**

SECTION 4: OPC'S CONCERNS REGARDING MR. GORMAN'S COST-OF-COMMON-EQUITY ANALYSIS

MR. GORMAN'S CAPITAL ASSET PRICING MODEL (CAPM)

Q. WHAT CONCERNS DO YOU HAVE ABOUT MR. GORMAN'S CAPM ANALYSIS?

A. I believe that Mr. Gorman's calculation of a "forward-looking" estimate of the risk premium is unreliable.

Q. HOW DOES MR. GORMAN CALCULATE THE RISK PREMIA HE USES IN HIS CAPM?

A. Mr. Gorman calculates two risk premia: one based on a long-term historical average, and a second, "forward-looking" estimate.

Q. HOW DOES MR. GORMAN CALCULATE HIS RISK PREMIA BASED ON A LONG-TERM HISTORICAL AVERAGE?

Mr. Gorman's risk premium based on a long-term historical average is calculated by taking the historical arithmetic average of the total return on the S&P 500 from 1926 to

2013, as provided by Morningstar, and subtracting the total return on long-term Treasury bonds from the corresponding time period. Since the risk premium input for the CAPM is a measure of the excess return of the broad market over a risk-free rate, it is logical to use corresponding data. In other words, if we want to determine, for example, how much more an investor was compensated for investing in stocks versus Treasury bonds in the year 1940, we need to look at the market return for 1940 and subtract from that the yield on Treasury bonds from 1940. When we want to determine how much more an investor was compensated for investing in stocks rather than Treasury bonds over a longer period of time, we simply calculate each year's excess return and take the average over the entire period. This is what Mr. Gorman has done for his long-term historical arithmetic average, and, not surprisingly, he obtains the same result (6.2%) as Mr. Murray and I obtain from the same calculation.

Q. WHY DO YOU AND MR. MURRAY ALSO OBTAIN LOWER RISK PREMIA ESTIMATES THAN MR. GORMAN?

A. Mr. Murray and I calculate the risk premium using both arithmetic and geometric means of the historical returns on large company stocks and long-term government bonds. Although I believe very strongly that using both the arithmetic and geometric means accounts for the diverse range of opinions on this subject, I am not suggesting that Mr. Gorman's long-term historical average risk premium calculation be modified to reflect this.

Q. HOW DOES MR. GORMAN CALCULATE HIS "FORWARD-LOOKING" RISK PREMIUM ESTIMATE?

A. Mr. Gorman's "forward-looking" estimate attempts to incorporate a measure of forecasted inflation into the risk premium. To do this, he starts his calculation with the historical arithmetic average *real* market return from 1926 to 2013 so that he has an estimate of the historical return that does not factor in inflation. He then takes an estimate of future inflation and adds it to his historical arithmetic average real return.

Next, when Mr. Gorman calculates the excess return over the risk-free rate, he uses his estimate of the return on the market, and he subtracts from that estimate his *forward estimate* of the risk-free rate. Again, the risk premium used in the CAPM measures the *excess* return over the risk-free rate, which means the measures of the market returns and the risk-free rates should correspond to the same time periods. Mr. Gorman takes the average real market return calculated from every year between 1926 and 2013, adjusts it for expected inflation, and subtracts from that average *one estimate* of the *future* risk-free rate.

To continue the example from earlier, it is clearly not appropriate to calculate the excess return of the market over the risk-free rate for the year 1940 by subtracting an estimate of the 2016 risk-free rate from the 1940 return on the market. However, that is what Mr. Gorman's calculation in part does—he subtracts a future risk free rate from an estimate of the market return that is based on the average real return on large company stocks from 1926 to 2013. Admittedly, when the average historical risk premium is used, an analyst is taking an average historical estimate of the *risk premium* and applying it to a

current risk-free rate. However, Mr. Gorman's method does not properly establish a risk premium that can be applied to a current or projected risk-free rate.

Q. HOW DO THE INPUTS MR. GORMAN USES FOR HIS "FORWARD-LOOKING" ESTIMATE COMPARE TO THOSE HE USES FOR HIS ESTIMATE BASED ON HISTORICAL DATA?

A. The following table summarizes the inputs Mr. Gorman uses for his estimates. I have added the measure of inflation that was implied by the difference between the arithmetic average historical return and the arithmetic average real return, since, as Morningstar states, "the geometric and arithmetic means are lower by the amount of inflation than those of the nominal series":[59]

Estimates Used By Mr. Gorman For His Risk-Premia Calculations		
	Long-Term Historical Average	**"Forward-Looking"**
Return on the Market	12.10%	11.40%
Inflation	3.20%	2.30%
Risk-Free Rate	5.90%	4.10%
Risk-Premium Result	**6.20%**	**7.30%**

Mr. Gorman's blending of historical and "forward-looking" estimates has a significant impact on his calculated risk premium. The biggest impact comes from the risk-free rate input. When Mr. Gorman uses corresponding time periods for the returns on the market and long-term government bonds in order to establish the risk premium, his result is 6.2%. When he uses time periods that do not correspond, his result is 7.3%. The difference in results is mainly because of the large difference between Mr. Gorman's

[59] Ibbotson Associates (Firm), and Morningstar, Inc. *Ibbotson SBBI 2014 Classic Yearbook: Market Results for Stocks, Bonds, Bills, and Inflation*. Chicago, Il: Morningstar, Inc., 2014. p. 92

future risk-free rate and the 1926 to 2013 historical average return on long-term government bonds. These blended estimates do not result in a reliable measure of the risk premium.

Q. IS IT RECOMMENDED PRACTICE FOR A FINANCIAL ANALYST TO USE ESTIMATES OF MARKET RETURNS AND RETURNS ON GOVERNMENT BONDS FROM TIME PERIODS THAT DO NOT CORRESPOND IN ORDER TO CALCULATE A RISK PREMIUM?

A. No. For example, Dr. Morin states that when establishing a risk premium, an analyst should "first, determine the *historical spread* between the return on debt and the return on equity. Second, add this spread to the current debt yield to derive an estimate of current equity return requirements" [emphasis added].[60]

Q. ARE TECHNIQUES FOR ESTABLISHING "FORWARD-LOOKING" ESTIMATES OF THE RISK PREMIUM DESCRIBED IN FINANCIAL LITERATURE?

Yes. For example, Brigham, Shome, and Vinson (1985) describe how to estimate an *ex-ante* market risk premium:

> Here, one estimates the average expected future return on equity for a group of stocks, k_M, and then subtracts the concurrent risk-free rate, Rf, as proxied by the yield to maturity on either corporate or Treasury securities:
>
> $$RP_M = k_M - R_f$$
>
> Conceptually, this procedure is exactly like the I&S approach [*the authors are referring to the historical approach based on data*

[60] Morin, Roger A. Regulatory Finance. Arlington, Virginia: Public Utilities Reports, Inc., 1994. p. 269.

> *from Ibbotson and Sinquefield, now published by Morningstar. Mr. Gorman uses this approach for his long-term historical estimate*] except that one makes direct estimates of future expected returns on stocks and bonds rather than assuming investors expect future returns to mirror past returns.
>
> The most difficult task, of course, is to obtain a valid estimate of k_M, the expected rate of return on the market. Several studies have attempted to estimate DCF risk premiums for the utility industry and for other stock market indices.[61]

In the passage above, Brigham, Shome, and Vinson state that forward-looking (ex-ante) calculations require forward-looking data—not historical data. Despite this, Mr. Gorman has calculated his "forward-looking" estimate by blending historical data with forecasts, which renders his risk-premium result unreliable.

Q. DOES MR. GORMAN ATTEMPT TO SHOW THE REASONABLENESS OF HIS ESTIMATES?

A. Yes, he does. Mr. Gorman states that he will use the results of Morningstar's calculation of the risk premium to show the reasonableness of his own estimates.[62] Morningstar's risk premium is calculated by taking the total return on large company stocks and subtracting the *income return* on Treasury bonds. The difference between this calculation and the calculation Mr. Gorman uses to establish his long-term historical arithmetic average risk premium is the measure of bond return used: in Mr. Gorman's calculation, he uses the *total return* on

[61] Brigham, Eugene F.; Shome, Dilip K.; and Vinson, Steve R. (1985). The Risk Premium Approach to Measuring a Utility's Cost of Equity. *Financial Management*, Spring, p. 35.

[62] See Gorman Direct, p. 36, lines 18-19.

long-term government bonds; Morningstar uses the *income return* on long-term government bonds.

Q. DOES MR. GORMAN EXPRESS APPROVAL OF MORNINGSTAR'S USE OF THE INCOME RETURN ON LONG-TERM GOVERNMENT BONDS?

A. No, he does not. On the subject of Morningstar's use of the income return on long-term government bonds, Mr. Gorman states:

> Morningstar argues that the income return is the only true risk-free rate associated with Treasury bonds and is the best approximation of a truly risk-free rate. I disagree with this assessment from Morningstar, because it does not reflect a true investment option available to the marketplace and therefore *does not produce a legitimate estimate of the expected premium of investing in the stock market versus that of Treasury bonds.* Nevertheless, I will use Morningstar's conclusion to show the reasonableness of my market risk premium estimates [emphasis added].[63]

Q. HOW DOES MR. GORMAN PROVE THE REASONABLENESS OF HIS MARKET RISK PREMIUM ESTIMATES BY COMPARING THEM TO A RISK PREMIUM ESTIMATE THAT HE BELIEVES IS NOT LEGITMATE?

A. Mr. Gorman never explains how comparing his estimates to estimates that he believes are not legitimate proves their reasonableness. However, the range of estimates that Morningstar provides with its calculations, which Mr. Gorman does

[63] See Gorman Direct, p. 36, lines 13-19.

not approve of, is from 6.1% to 7.0%.[64] Mr. Gorman's two estimates of the market risk premium are 6.2% (based on historical data) and 7.3% (the "forward-looking" estimate). It would appear that Mr. Gorman is implying that his "forward-looking" estimate is not unreasonably high when compared to Morningstar's "illegitimate" estimates.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING THE RESULTS OF MR. GORMAN'S CAPM ANALYSIS?

A. I believe the results he obtained by using his "forward-looking" risk premium should be discarded.

Q. PLEASE PRESENT MR. GORMAN'S ORIGINAL CAPM RESULTS AND THE CORRECTED RESULTS OBTAINED BY REMOVING THE EFFECTS OF HIS "FORWARD-LOOKING" RISK PREMIUM.

A. The following table summarizes Mr. Gorman's original CAPM results and the corrected results. Mr. Gorman reports them in his testimony under the rubrics "High Market Risk Premium" and "Low Market Risk Premium".[65] I am reporting them here by the corresponding name of the technique he uses to avoid confusion:

[64] *Ibid*., p.36, lines 20-24 and p. 37, lines 1-11.

[65] See Gorman Direct Schedule MPG-16.

	Mr. Gorman's Original CAPM Results		Corrected Results
	"Forward-Looking" Market Risk Premium Result	Historical Market Risk Premium Result	Historical Market Risk Premium Result
CAPM Result	9.66%	8.82%	8.82%
CAPM Recommendation	9.24%		**8.82%**

MR. GORMAN'S ROUNDING OF HIS RESULTS

Q. WHAT CONCERNS DO YOU HAVE ABOUT THE WAY MR. GORMAN ROUNDS THE RESULTS OF HIS FINANCIAL MODELS?

A. Mr. Gorman rounds two of his results, which he then uses to determine his final recommended ROE.[66] I believe that an analyst should calculate final results based on unrounded numbers if the rounding produces material differences, as I believe it does in this instance.

Q. WHAT EFFECT DOES MR. GORMAN'S ROUNDING HAVE ON HIS FINAL RECOMMENDED ROE?

A. Mr. Gorman's final ROE recommendation is "approximately the midpoint" of his high and low estimates, so I will calculate the unrounded final result accordingly. The following table presents his original results and final recommendation along with the unrounded results:

[66] See Gorman Direct p. 26, lines 6-7; and p. 32, line 11.

	Mr. Gorman's Original Return on Common Equity Results	Unrounded Results
DCF	9.00%	8.95%
Risk Premium	9.60%	9.58%
CAPM	9.24%	9.24%
Final Recommendation (midpoint of the high and low estimates)	9.30%	9.27%

As can be seen, three basis points of Mr. Gorman's final recommendation are attributable solely to his decision to round the results of his DCF and Risk Premium approaches before calculating his final recommended ROE.

Also of note, Mr. Gorman's DCF result of 8.95% is already the highest estimate he obtains from his DCF analyses. Adding 5 more basis points due to rounding places his DCF result above the range of results he calculated.

Q. ARE THREE BASIS POINTS IN MR. GORMAN'S FINAL ROE RECOMMENDATION SIGNIFICANT?

A. Yes. One basis point of the common-equity component of Ameren's capital structure represents $393,889 ($3,938,890,562 * .0001). Three basis points, therefore, represent $1,181,667 ($3,938,890,562 * .0003).

I am certainly not opposed to rounding in general. For example, the amounts above are rounded to the nearest dollar. However, when a simple rounding choice has an impact on the final result measured in the millions of dollars, I question its utility.

Q. WHAT IS YOUR RECOMMENDATION CONCERNING MR. GORMAN'S USE OF ROUNDING?

A. Mr. Gorman's unrounded results should be used to calculate the final recommended ROE.

Q. PLEASE PRESENT MR. GORMAN'S ORIGINAL RESULTS AND THE CORRECTED RESULTS.

A. The following table summarizes Mr. Gorman's original results and the corrected results calculated with both the unrounded estimates and the discussed correction to the CAPM:

	Mr. Gorman's Original Return on Common Equity Results	Unrounded Results, Corrected CAPM
DCF	9.00%	8.95%
Risk Premium	9.60%	9.58%
CAPM	9.24%	8.82%
Final Recommendation (midpoint of the high and low estimates)	9.30%	**9.20%**

SECTION 5: <u>OPC'S CONCERNS REGARDING MR. MURRAY'S COST-OF-COMMON-EQUITY ANALYSIS</u>

MR. MURRAY'S CALCULATION OF HIS FINAL RECOMMENDED RETURN ON COMMON EQUITY

Q. WHAT CONCERNS DO YOU HAVE REGARDING MR. MURRAY'S CALCULATION OF HIS FINAL RECOMMENDATION?

A. First, I believe Mr. Murray's calculation needs to be adjusted for a difference in scale between the numbers he uses. Second, his final recommendation relies on an adjustment that I do not accept.

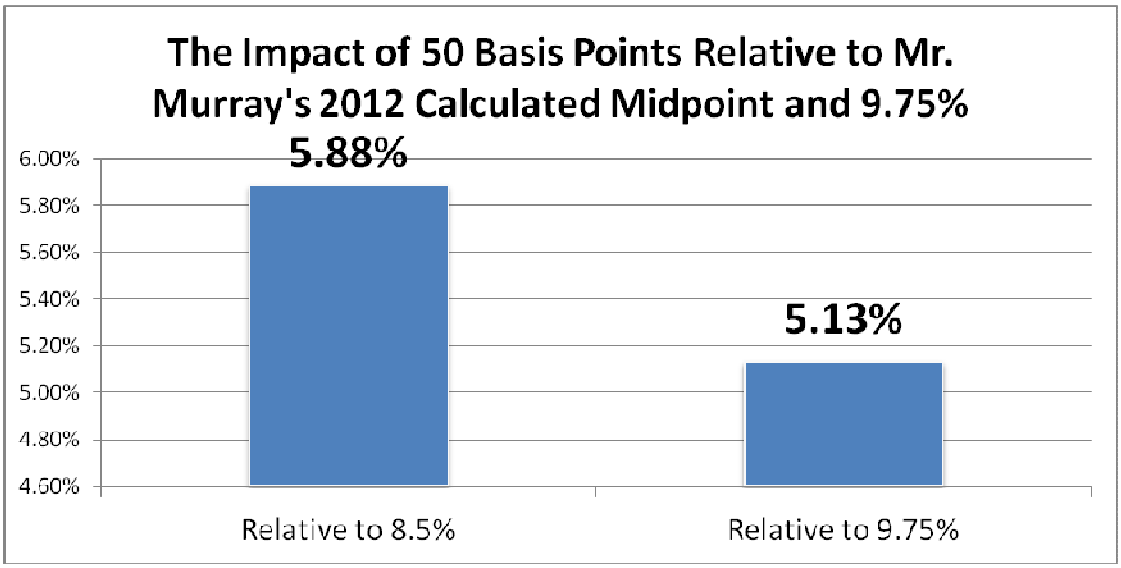
Q. PLEASE DESCRIBE THE DIFFERENCE IN SCALE THAT YOU BELIEVE EXISTS BETWEEN MR. MURRAY'S CALCULATED ROE AND THE AUTHORIZED RETURNS.

A. In his direct testimony, Mr. Murray recommends a 50-basis-point decrease relative to the 2012 authorized ROE. This decrease is based on the 50-basis-point decrease that occurred between the results of his 2012 and 2014 analyses. However, 50 basis points do not have the same weight relative to the result of his 2012 models (8.5% midpoint) as they do relative to 9.75% (the figure he uses as the midpoint of the 2012 Commission-approved range[67]).

Q. PLEASE EXPLAIN.

Mr. Murray's calculated cost-of-common-equity results dropped from a midpoint of 8.5% in 2012 to a midpoint of 8.0% in 2014. This 50-basis-point drop amounts to a 5.88% decrease. However, when he proposes that the same 50 basis points be subtracted from 9.75%, he is in fact proposing a decrease in authorized ROE of only 5.13%. The following chart shows the percent value of 50 basis points in relation to the relevant 2012 estimates:

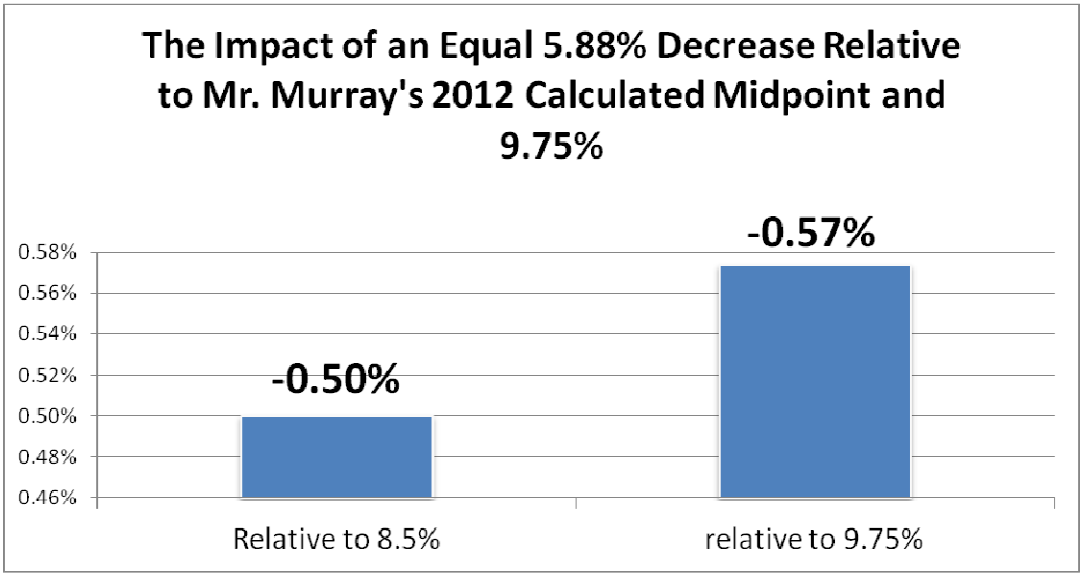
[67] See Murray Direct, p. 11, lines 2-3.



Q. WHAT ADJUSTMENT SHOULD BE MADE TO ACCOUNT FOR THE DIFFERENCE IN SCALE THAT YOU HAVE IDENTIFIED?

A. I believe that the 9.75% figure should not be decreased by 50 basis points, but rather by the percent decrease that occurred between Mr. Murray's 2012 and 2014 results. In this way, the application of Mr. Murray's technique will avoid the error of scale.

Using an Equal 5.88% decrease means that a 50-basis-point decrease of Mr. Murray's calculated midpoint is equivalent to a 57-basis-point decrease of 9.75%. The following chart shows the impact of an equal 5.88% decrease in relation to the relevant 2012 figures:



Q. HOW DOES MR. MURRAY'S FINAL RECOMMENDED ROE CHANGE BASED ON THIS ADJUSTMENT?

A. Mr. Murray's unaltered final recommended ROE is 9.25%. Decreasing 9.75% by 5.88% rather than by 50 basis points results in a final recommended ROE of **9.18%.** Therefore, this adjustment decreases Mr. Murray's recommendation by 7 basis points.

Q. HOW DID MR. MURRAY CALCULATE HIS FINAL RECOMMENDATION?

A. Mr. Murray proposes a 50-basis-point adjustment to the 2012 authorized ROE rather than recommending the result of his financial calculations.[68] Mr. Murray calculates this adjustment as the difference in the results of his 2012 and 2014 financial models.

[68] Mr. Murray uses 9.75% as the appropriate 2012 authorized ROE figure, presumably because it is the midpoint of what he identifies as the Commission-approved range from the previous case. See Murray Direct, p. 11, lines 2-3.

Q. WHY DID MR. MURRAY FEEL THE NEED TO BASE HIS FINAL RECOMMMENDATION ON THIS ADJUSTMENT RATHER THAN RECOMMENDING THE RESULT OF HIS CALCULATIONS?

A. Mr. Murray states that "because there appears to be some concern in setting an allowed return on equity based on a reasonable estimate of the cost of equity, Staff recommends the Commission set the allowed ROE at 9.25% in this case."[69]

Q. WHAT "CONCERN" IS MR. MURRAY REFERRING TO?

A. In his direct testimony, Mr. Murray summarizes the rationale for his proposed adjustment as follows:

> Being that the main issue the Commission had with Staff's cost of equity estimate in the last rate case was that it was just too low, which was primarily driven by Staff's use of a lower perpetual growth rate, the Commission should focus on the relative change in Staff's cost of equity estimate compared to 2012 rather than the absolute estimate.[70]

Mr. Murray seems to be concerned that since in 2012 the Commission found the result of his financial models too low (midpoint of 8.5%), it is possible that the Commission will also find the result of his 2014 financial models too low (midpoint of 8%).

Q. DO YOU BELIEVE MR. MURRAY'S FINAL RECOMMENDATION SHOULD BE ACCEPTED?

[69] See Murray Direct, p. 46, lines 21-23.

[70] See Murray Direct, p. 21, lines 25-29.

A. No, I do not. The adjustment Mr. Murray proposes is not financial in nature, but rather based on the "concern" described above. Basing a financial adjustment on the concern that results are "just too low," or for that matter "just too high," does not provide the rigor required to recommend a reliable result.

The difference between Mr. Murray's final recommended ROE and the midpoint of the results of his financial calculations is 125 basis points (9.25% - 8.00% = 1.25%).[71] Based on the common-equity component of Ameren's capital structure, 125 basis points are worth $49,236,132 ($3,938,890,562 * .0125) in revenue requirement.[72] Essentially, Mr. Murray is recommending a revenue-requirement increase of $49,236,132 from the midpoint of the results of his financial calculations based on the "concern". I believe an adjustment of this magnitude should be based on more quantifiable information.

However, if the Commission decides that this is a valid adjustment, I propose that the result based on the change in calculation that I described earlier be adopted.

SECTION 6: SUMMARY OF CORRECTED RESULTS

Q. PLEASE PRESENT THE ORIGINAL RESULTS OF THE OTHER THREE RATE-OF-RETURN WITNESS IN THIS CASE AND THE RESULTS OF YOUR PROPOSED CORRECTIONS.

[71] Had Mr. Murray recommended the top of his range, the difference would be 85 basis points (9.25% - 8.4% = .85%). Had he recommended the bottom of his range, the difference would be 165 basis points (9.25% - 7.60% = 1.65%).

[72] Had Mr. Murray recommended the top of his range, the 85-basis-point adjustment would be worth $33,480,570 ($3,938,890,562 * .0085). Had he recommended the bottom of his range, the 165-basis-point adjustment would be worth $64,991,694 ($3,938,890,562 * .0165).

A. The following table summarizes my analysis of Mr. Hevert's results:

Mr. Hevert						
	Original Results				Corrected Results with Updated Stock Prices and the Exclusion of Duke and Cleco	
Constant-Growth DCF	Mean Low	Mean	Mean High		Mean	
30-Day Average	8.44%	9.56%	10.87%		**9.37%**	
90-Day Average	8.50%	9.62%	10.93%		**9.53%**	
180-Day Average	8.61%	9.73%	11.04%		**9.56%**	
Multi-Stage DCF						
30-Day Average	9.61%	9.93%	10.36%		**8.84%**	
90-Day Average	9.67%	10.00%	10.43%		**9.00%**	
180-Day Average	9.80%	10.13%	10.58%		**9.03%**	
CAPM Results	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium			6.2% Market Risk Premium	
Average Bloomberg Beta Coefficient						
Current 30-Year Treasury (3.42%)	11.27%	10.69%			**8.34%**	
Near Term 30-Year Treasury (4.07%)	11.92%	11.34%			**8.98%**	
Average Value Line Beta Coefficient						
Current 30-Year Treasury (3.42%)	11.17%	10.59%			**8.33%**	
Near Term 30-Year Treasury (4.07%)	11.82%	11.24%			**8.98%**	
Bond Yield Plus Risk Premium	**Low**	**Mid**	**High**		**Low**	**High**
	10.16%	10.31%	10.77%		**7.85%**	**8.50%**
Final Recommendation	10.40%				**9.07%**	

The following table summarizes my analysis of Mr. Gorman's results:

Mr. Gorman		
	Original Return on Common Equity Results	**Unrounded Results, Corrected CAPM**
DCF	9.00%	8.95%
Risk Premium	9.60%	9.58%
CAPM	9.24%	8.82%
Final Recommendation (midpoint of the high and low estimates)	9.30%	**9.20%**

The following table summarizes my analysis of Mr. Murray's results, assuming the results are accepted:

Mr. Murray		
	Original Return on Common Equity Result	**After Accounting for a difference in scale**
Final Recommendation	9.25%	**9.18%**

Q. HOW DO THESE CORRECTED RESULTS COMPARE TO THE RESULTS YOU PRESENTED IN YOUR DIRECT TESTIMONY?

The final recommendations based on the changes I have outlined in this rebuttal testimony all fall within the top half of the range I recommended during my direct testimony (8.74% to 9.22%).

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.