

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Application Of Kentucky Power Company For:)	
(1) A General Adjustment Of Its Rates For Electric)	
Service; (2) An Order Approving Its 2014)	
Environmental Compliance Plan; (3) An Order)	Case No. 2014-00396
Approving Its Tariffs And Riders; And (4) An)	
Order Granting All Other Required Approvals)	
And Relief)	

REBUTTAL TESTIMONY

OF

WILLIAM E. AVERA
AND
ADRIEN M. MCKENZIE

ON BEHALF OF

KENTUCKY POWER COMPANY

VERIFICATION

Dr. William E. Avera being duly sworn deposes and says he is the President of FINCAP, Inc., and that he has personal knowledge of the matters set forth in the forgoing testimony and the information contained therein is true and correct to the best of his information, knowledge, and belief.

William E. Avera

DR. WILLIAM E. AVERA

STATE OF TEXAS

)

) CASE NO. 2014-00396

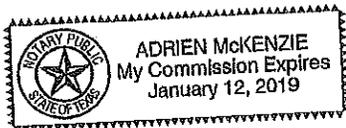
COUNTY OF TRAVIS

)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by, Dr. William E. Avera this 27 day of April 2015.

Adrien McKenzie

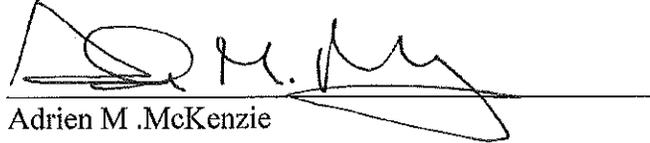
Notary Public



My Commission Expires: 1/12/19

VERIFICATION

Adrien M. McKenzie being duly sworn deposes and says he is the Vice President of FINCAP, Inc., and that he has personal knowledge of the matters set forth in the forgoing testimony and the information contained therein is true and correct to the best of his information, knowledge, and belief.


Adrien M .McKenzie

STATE OF TEXAS

)

) CASE NO. 2014-00396

COUNTY OF TRAVIS

)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by, Adrien M .McKenzie this 27th day of April 2015.




Notary Public

My Commission Expires: 6/20/2018

REBUTTAL TESTIMONY

OF

**WILLIAM E. AVERA
AND
ADRIEN M. MCKENZIE**

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<u>Exhibit</u>	<u>Description</u>
WEA/AMM R1	Expected Earnings Approach
WEA/AMM R2	Allowed ROE
WEA/AMM R3	Baudino CAPM Analysis – EPS Growth

I. INTRODUCTION

1 Q1. PLEASE STATE YOUR NAMES AND BUSINESS ADDRESS.

2 A1. Our names are William E. Avera and Adrien M. McKenzie. Our business address is
3 3907 Red River, Austin, Texas.

4 Q2. DID YOU PREVIOUSLY SUBMIT DIRECT TESTIMONY IN THIS
5 PROCEEDING?

6 A2. Yes, we did.

7 Q3. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS
8 CASE?

9 A3. Our purpose is to respond to the testimony of Dr. J. Randall Woolridge, submitted
10 on behalf of the Kentucky Office of Attorney General (“OAG”), Mr. Richard
11 Baudino, on behalf of the Kentucky Industrial Utility Consumers (“KIUC”), and Mr.
12 Steve W. Chriss, on behalf of Wal-Mart Stores East, LP and Sam’s East, Inc.,
13 concerning the fair rate of return on equity (“ROE”) that Kentucky Power Company
14 (“Kentucky Power” or “the Company”) should be authorized to earn on their
15 investment in providing electric utility service.

16 Q4. PLEASE SUMMARIZE THE PRINCIPAL CONCLUSIONS OF YOUR
17 REBUTTAL TESTIMONY.

18 A4. Investors have many options for their funds and competition for investment dollars
19 is intense. The cost of equity recommendations of Dr. Woolridge and Mr. Baudino
20 are simply too low and fail to reflect the risk perceptions and return requirements of
21 real-world investors in the capital markets. Our rebuttal testimony demonstrates
22 that:

- 23 • *The analyses conducted by Dr. Woolridge and Mr. Baudino are flawed*
24 *and incomplete, and result in cost of equity estimates that are far below*
25 *investors’ required return;*

- 1 • *Kentucky Power must be granted an opportunity to earn a return that is*
2 *competitive with other utilities:*
- 3 • *Allowed ROEs, which average approximately 10.1% to 10.3% for the*
4 *risk-comparable electric utilities referenced by Dr. Woolridge and*
5 *Mr. Baudino, demonstrate that their recommendations are too low.*
- 6 • *The recommendations of Dr. Woolridge and Mr. Baudino are also*
7 *inadequate to compensate investors in Kentucky Power when*
8 *evaluated against the results of the expected earnings approach for*
9 *other electric utilities, which suggest an average ROE approximately*
10 *150 basis points higher than their recommendations.*

11 With respect to Dr. Woolridge’s and Mr. Baudino’s analyses and
12 conclusions, our rebuttal testimony shows that:

- 13 • *In applying quantitative methods to estimate the cost of equity, Dr.*
14 *Woolridge incorporated data that does not reflect investors’ expectations*
15 *and failed to exclude illogical results, which imparts a downward bias to*
16 *his conclusions;*
- 17 • *Dr. Woolridge made no attempt to eliminate illogical data in applying*
18 *the DCF model, which included numerous negative growth rates.*
19 *Similarly, Mr. Baudino also failed to evaluate the reasonableness of*
20 *individual DCF estimates. As a result, their conclusions are unreliable*
21 *and should be ignored;*
- 22 • *Dr. Woolridge’s and Mr. Baudino’s application of the DCF model based*
23 *on the internal, “br” growth rate is flawed and incomplete;*
- 24 • *The CAPM results reported by Dr. Woolridge were based on a hodge-*
25 *podge of historical data that failed to reflect forward-looking*
26 *expectations, particularly in light of current conditions in the capital*
27 *markets;*
- 28 • *Similarly, Mr. Baudino’s application of the CAPM was compromised by*
29 *reliance on historical data, while his forward-looking approach was*
30 *marred by methodological shortcomings and inconsistencies;*
- 31 • *Because of flaws in the screening criteria and data used by Dr.*
32 *Woolridge and Mr. Baudino, their proxy groups of electric utilities*
33 *should be rejected;*
- 34 • *Dr. Woolridge’s and Mr. Baudino’s characterization of capital market*
35 *conditions is flawed and incomplete, and fails to reflect widely-held*
36 *expectations for higher capital costs; and,*
- 37 • *The failure of Mr. Baudino and Dr. Woolridge to consider the impact of*
38 *flotation costs contradicts the findings of the financial literature and the*

1 *economic requirements underlying a fair rate of return on equity.*

2 In addition, we address the comments and observations offered by Mr.
3 Chriss, which also support our findings that the recommendations of Dr. Woolridge
4 and Mr. Baudino are too low. Finally, our rebuttal testimony demonstrates that Dr.
5 Woolridge’s and Mr. Baudino’s criticisms of our alternative applications and
6 conclusions are misguided and should be ignored. Our rebuttal testimony continues
7 to support the reasonableness of a 10.62% ROE for Kentucky Power, including the
8 use of the 10.62% ROE for the Environmental Surcharge (Tariff E.S.), the Big
9 Sandy Retirement Rider (Tariff B.S..R.R.) and the Big Sandy 1 Operation Rider
10 (B.S.1.O.R.)

II. RECOMMENDATIONS FAIL REGULATORY STANDARDS

11 **Q5. IS IT WIDELY ACCEPTED THAT A UTILITY’S ABILITY TO ATTRACT**
12 **CAPITAL MUST BE CONSIDERED IN ESTABLISHING A FAIR RATE OF**
13 **RETURN?**

14 A5. Yes. This is a fundamental standard underlying the regulation of public utilities.
15 The Supreme Court’s *Bluefield* and *Hope* decisions established that a regulated
16 utility’s authorized returns on capital must be sufficient to assure investors’
17 confidence and adequate, under efficient and economical management, to maintain
18 and support a utility’s credit and enable it to raise money necessary to provide safe
19 and reliable service to its customers.¹

20 Beyond these standards, one fundamental requirement that any ROE
21 recommendation must satisfy before it can be considered reasonable is that it must
22 grant Kentucky Power the opportunity to earn an ROE comparable to

¹ *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm’n*, 262 U.S. 679, 694 (1923) (“*Bluefield*”);
FPC v. Hope Natural Gas Co., 320 U.S. 591, 603 (1944) (“*Hope*”).

1 contemporaneous returns available from alternative investments of similar risk if
2 they are to maintain its financial flexibility and ability to attract capital. Dr.
3 Woolridge and Mr. Baudino clearly recognized,² but then ignored, these
4 fundamental standards.

5 **Q6. HAVE OTHER REGULATORS RECENTLY RECOGNIZED THE**
6 **IMPORTANCE OF THESE FUNDAMENTAL STANDARDS IN**
7 **EVALUATING A FAIR ROE?**

8 A6. Yes. The Federal Energy Regulatory Commission (“FERC”) recently affirmed that
9 its “ultimate task is to ensure that the resulting ROE satisfies the requirements of
10 *Hope and Bluefield*.”³ While FERC looks initially to the DCF methodology when
11 evaluating a fair ROE, it has also made clear that it is the result reached, not the
12 method used, that determines whether an ROE is just and reasonable.⁴ As FERC
13 observed:

14 [W]e also understand that any DCF analysis may be affected by
15 potentially unrepresentative financial inputs to the DCF formula,
16 including those produced by historically anomalous capital market
17 conditions. Therefore, while the DCF model remains the
18 Commission’s preferred approach to determining allowed rate of
19 return, the Commission may consider the extent to which economic
20 anomalies may have affected the reliability of DCF analyses in
21 determining where to set a public utility’s ROE within the range of
22 reasonable returns . . .⁵

23 FERC concluded that due to anomalous capital market conditions, a
24 mechanical application of the DCF model would result in an ROE that was

² For example, Dr. Woolridge (p. 3) noted that the ROE must “comparable to returns investors expect to earn on other investments of similar risk.” Similarly, Mr. Baudino (pp. 13-14) also recognized these fundamental standards underlying a fair ROE.

³ *Coakley v. Bangor Hydro-Electric Co.*, Opinion No. 531, 147 FERC ¶ 61,234 at P 144 (2014) (“Opinion No. 531”).

⁴ *See, e.g.*, Opinion No. 531 at P 142.

⁵ *Id.* at P 41. Application of the two-step DCF method without the “mid-point of the upper half of the range” adjustment would have resulted in an ROE of only 9.39%, a value FERC found unreasonable. *Id.* at P 142.

1 insufficient to meet regulatory standards, and that “it is necessary and reasonable to
 2 consider additional record evidence, including evidence of alternative benchmark
 3 methodologies and state commission-approved ROEs,” to determine a just and
 4 reasonable ROE.⁶ In Opinion No. 531, FERC found that risk premium, CAPM, and
 5 expected earnings methodologies directly comparable to those applied in our direct
 6 testimony in this case were informative and relied on these analyses to set the just
 7 and reasonable point ROE at the upper end of the DCF range.

8 **Q7. DID DR. WOOLRIDGE OR MR. BAUDINO TEST THEIR ROE**
 9 **RECOMMENDATIONS AGAINST THESE FUNDAMENTAL**
 10 **REGULATORY REQUIREMENTS?**

11 A7. No. Expected earned rates of return for other utilities provide one useful benchmark
 12 to gauge the reasonableness of the ROE recommendation of Dr. Woolridge and Mr.
 13 Baudino, but neither witness performed this test.⁷ The expected earnings approach
 14 is predicated on the comparable earnings test, which developed as a direct result of
 15 the Supreme Court decisions in *Bluefield* and *Hope*. This test recognizes that
 16 investors compare the allowed ROE with returns available from other alternatives of
 17 comparable risk.

18 Importantly, the expected earnings approach explicitly recognizes that
 19 regulators do not set the returns that investors earn in the capital markets.
 20 Regulators can only establish the allowed return on the value of a utility’s
 21 investment, as reflected on its accounting records. As a result, the expected
 22 earnings approach provides a direct guide to ensure that the allowed ROE is similar
 23 to what other utilities of comparable risk will earn on invested capital. This

⁶ Opinion No. 531 at P 145.

⁷ Dr. Woolridge (pp. 25-26) cited to earned returns for his electric proxy group of approximately 9.0%-12.0%, but made no inference between these results and his own 8.65% ROE recommendation.

1 opportunity cost test does not require theoretical models to indirectly infer
2 investors' perceptions from stock prices or other market data. As long as the proxy
3 companies are similar in risk, their expected earned returns on invested capital
4 provide a direct benchmark for investors' opportunity costs that is independent of
5 fluctuating stock prices, market-to-book ratios, debates over DCF growth rates, or
6 the limitations inherent in any theoretical model of investor behavior.

7 **Q8. DID MR. BAUDINO RECOGNIZE THE ECONOMIC PREMISE**
8 **UNDERLYING THE EXPECTED EARNINGS APPROACH?**

9 A8. Yes. The simple, but powerful concept underlying the expected earnings approach
10 is that investors compare each investment alternative with the next best opportunity.
11 As Baudino recognized, economists refer to the returns that an investor must forgo
12 by not being invested in the next best alternative as "opportunity costs."⁸ Mr.
13 Baudino went on to explain that, "One measures the opportunity cost of an
14 investment equal to what one would have obtained in the next best alternative."⁹

15 **Q9. DESPITE RECOGNIZING THE REGULATORY STANDARDS**
16 **UNDERLYING YOUR REFERENCE TO EARNINGS ON BOOK VALUE,**
17 **DR. WOOLRIDGE AND MR. BAUDINO ARE CRITICAL OF THIS**
18 **METHOD. HAS THE EXPECTED EARNINGS APPROACH BEEN**
19 **RECOGNIZED AS A VALID ROE BENCHMARK?**

20 A9. Yes. A textbook prepared for the Society of Utility and Regulatory Analysts labels
21 the comparable earnings approach the "granddaddy of cost of equity methods" and
22 points out that the amount of subjective judgment required to implement this
23 method is "minimal," particularly when compared to the DCF and CAPM

⁸ Baudino Direct at 13.

⁹ *Id.*

1 methods.¹⁰ The *Practitioner’s Guide* notes that the comparable earnings method is
 2 “easily understood” and firmly anchored in the regulatory tradition of the *Bluefield*
 3 and *Hope* cases,¹¹ as well as sound regulatory economics. Similarly, *New*
 4 *Regulatory Finance* concluded that, “because the investment base for ratemaking
 5 purposes is expressed in book value terms, a rate of return on book value, as is the
 6 case with Comparable Earnings, is highly meaningful.”¹² More recently, FERC
 7 concluded that the expected earnings approach “can be useful in validating our ROE
 8 recommendation . . . given its close relationship to the comparable earnings standard
 9 that originated in *Hope*, and the fact that it is used by investors to estimate the ROE
 10 that a utility will earn in the future.”¹³

11 **Q10. DO YOU AGREE WITH MR. BAUDINO (P. 44) THAT MARKET DATA IS**
 12 **THE ONLY USEFUL BENCHMARK IN EVALUATING INVESTORS’**
 13 **OPPORTUNITY COSTS?**

14 A10. No. While we agree that market-based models are certainly important tools in
 15 estimating investors’ required rate of return, this in no way invalidates the
 16 usefulness of the expected earnings approach. In fact, this is one of its advantages.

17 It is a very simple, conceptual principle that when evaluating two
 18 investments of comparable risk, investors will choose the alternative with the higher
 19 expected return. If the Company is only allowed the opportunity to earn an 8.65%
 20 or 8.75% return on the book value of its equity investment, as recommended by Dr.
 21 Woolridge and Mr. Baudino, while other electric utilities are expected to earn an

¹⁰ Parcell, David C., “The Cost of Capital – A Practitioner’s Guide,” at 115-116 (2010).

¹¹ *Id.*

¹² Morin, Roger A., *New Regulatory Finance*, at 395 (Public Utilities Reports, Inc. 2006).

¹³ Opinion No. 531 at P 147. The Virginia Corporation Commission is required by statute (Virginia Code § 56-585.1.A.2.a) to consider the earned returns on book value of electric utilities in its region. Another example is the Idaho Public Utilities Commission, which continues to confirm the relevance of return on book equity evidence. *See, e.g.*, Order No. 29505, Case No. IC-E-03-13 at 38 (Idaho Public Utilities Commission, May 25, 2004).

1 average of 10.68%,¹⁴ the implications are clear – Kentucky Power’ investors will be
 2 denied the ability to earn their opportunity cost.

3 Moreover, regulators do not set the returns that investors earn in the capital
 4 markets – they can only establish the allowed return on the value of a utility’s
 5 investment, as reflected on its accounting records. As a result, the expected
 6 earnings approach provides a direct guide to ensure that the allowed ROE is similar
 7 to what other utilities of comparable risk will earn on invested capital. This
 8 opportunity cost test does not require theoretical models to indirectly infer
 9 investors’ perceptions from stock prices or other market data. As long as the proxy
 10 companies are similar in risk, their expected earned returns on invested capital
 11 provide a direct benchmark for investors’ opportunity costs that is independent of
 12 fluctuating stock prices, market-to-book ratios, debates over DCF growth rates, or
 13 the limitations inherent in any theoretical model of investor behavior.

14 **Q11. WHAT ROE IS IMPLIED BY THE EXPECTED EARNINGS APPROACH**
 15 **FOR THE PROXY GROUPS OF ELECTRIC UTILITIES REFERENCED BY**
 16 **OAG AND KIUC?**

17 A11. The year-end returns on common equity projected by Value Line Investment Survey
 18 (“Value Line”) over its forecast horizon for the firms in the electric utility proxy
 19 groups referenced by OAG and KIUC are shown on Exhibit WEA/AMM R1. Once
 20 adjusted to mid-year, reference to expected earnings implied an annual average cost
 21 of equity for the utilities referenced by Dr. Woolridge of 10.07%, or 9.91% for Mr.
 22 Baudino’s proxy group. These book return estimates are an “apples to apples”
 23 comparison to the 8.65% to 8.75% ROE recommendations of OAG and KIUC,
 24 respectively.

¹⁴ Value Line reports an average expected return on book equity for 2018-20 of 10.68% for the electric utility industry. The Value Line Investment Survey (Dec. 19, 2014, Jan. 30 & Feb. 20, 2015).

1 **Q12. DO YOU AGREE WITH DR. WOOLRIDGE (PP. 78) THAT IT IS**
2 **NECESSARY TO EXAMINE MARKET-TO-BOOK RATIOS (“M/B”) IN**
3 **APPLYING THE EXPECTED EARNINGS APPROACH?**

4 A12. No. Traditional applications of the expected earnings approach do not involve an
5 M/B adjustment. Nor is such an adjustment recommended in recognized texts such
6 as *New Regulatory Finance*.¹⁵

7 **Q13. IS THERE A CLEAR LINK BETWEEN M/B FOR UTILITIES AND**
8 **ALLOWED RATES OF RETURN?**

9 A13. No. Underlying Dr. Woolridge’s criticism is the supposition that utility earnings are
10 too high and that regulators should set an ROE to produce an M/B of approximately
11 1.0. This is misguided. For example, *Regulatory Finance: Utilities Cost of Capital*
12 noted that:

13 The stock price is set by the market, not by regulators. The M/B
14 ratio is the end result of regulation, and not its starting point. The
15 view that regulation should set an allowed rate of return so as to
16 produce an M/B of 1.0, presumes that investors are irrational. They
17 commit capital to a utility with an M/B in excess of 1.0, knowing full
18 well that they will be inflicted a capital loss by regulators. This is
19 certainly not a realistic or accurate view of regulation.¹⁶

20 With M/B for most utilities above 1.0, Dr. Woolridge is suggesting that, unless book
21 value grows rapidly, regulators should establish equity returns that will cause share
22 prices to fall. Given the regulatory imperative of preserving a utility’s ability to
23 attract capital, this would be a truly nonsensical result. M/B is determined by
24 investors in the stock market, and a utility would be foreclosed from attracting
25 capital if regulators were to push M/B to 1.0 while other firms command prices well
26 in excess of 1.0 times book value.

¹⁵ Roger A. Morin, “New Regulatory Finance,” *Public Utilities Reports, Inc.* (2006).

¹⁶ *Id.* at 376.

1 **Q14. ARE ADJUSTMENTS BASED ON M/B A COMMON FEATURE IN**
2 **DETERMINING ALLOWED ROES FOR UTILITIES?**

3 A14. No. While arguments regarding the implications of an M/B greater than 1.0 are not
4 uncommon, we are not aware of a single instance in recent history in which a state
5 regulator has approved an M/B adjustment in establishing a fair ROE. Similarly,
6 FERC explicitly recognized the fallacy of relying on M/B in applying the expected
7 earnings approach in a March 2015 decision:

8 The returns on book equity that investors expect to receive from a
9 group of companies with risks comparable to those of a particular
10 utility are relevant to determining that utility’s market cost of equity,
11 because those returns on book equity help investors determine the
12 opportunity cost of investing in that particular utility instead of other
13 companies of comparable risk. . . . [C] considering market-to-book
14 ratios in an expected earnings study is inconsistent with the purpose
15 of the comparable earnings model.¹⁷

16 **Q15. CAN ALLOWED ROES ALSO BE USED TO EVALUATE WHETHER THE**
17 **RECOMMENDATIONS OF DR. WOOLRIDGE AND MR. BAUDINO ARE**
18 **SUFFICIENT TO MEET REGULATORY STANDARDS?**

19 A15. Yes. Allowed ROEs provide a gauge of the reasonableness of the outcome of a
20 particular analysis or decision, but ROE values do not exist in a vacuum. In
21 considering utilities with comparable risks, investors will always prefer to provide
22 capital to the opportunity with the highest expected return. If a utility is unable to
23 offer a return similar to that available from other investment opportunities posing
24 equivalent risks, investors will become unwilling to supply the utility with capital
25 on reasonable terms. While the ROEs approved in other jurisdictions do not
26 constrain the KPSC’s decision-making in this proceeding, it is important to
27 understand that there would be a disincentive for investors to provide equity capital

¹⁷ *Opinion No. 531-B*, 150 FERC ¶ 61,165 at P 128, 132 (2015) (“Opinion No. 531-B”).

1 if the Commission were to apply an unreasonably low ROE to Kentucky Power,
2 compared to entities of comparable risk.

3 **Q16. HOW DO THE 8.65% AND 8.75% ROE RECOMMENDATIONS OF DR.**
4 **WOOLRIDGE AND MR. BAUDINO IN THIS PROCEEDING COMPARE**
5 **TO AUTHORIZED RETURNS FOR THE UTILITIES IN THE PROXY**
6 **GROUPS THEY USED TO ESTIMATE THE COST OF EQUITY?**

7 A16. The ROE recommendations of Dr. Woolridge and Mr. Baudino fall well below
8 average returns authorized for other utilities. As shown on Exhibit WEA/AMM R2,
9 data reported by Value Line indicates that the average authorized ROES for the
10 firms in Dr. Woolridge's and Mr. Baudino's electric proxy groups are 10.16% and
11 10.03%, respectively, which are 151 and 128 basis points higher than their
12 recommendations for Kentucky Power.

13 **Q17. WHAT ARE THE IMPLICATIONS OF SETTING AN ALLOWED ROE FAR**
14 **BELOW THE RETURNS AVAILABLE FROM OTHER INVESTMENTS OF**
15 **COMPARABLE RISK?**

16 A17. If the utility is unable to offer a return similar to the returns available from other
17 opportunities of comparable risk, investors will become unwilling to supply capital
18 to the utility on reasonable terms. For existing investors, denying the utility an
19 opportunity to earn what is available from other similar risk alternatives prevents
20 them from earning their cost of capital. Both of these outcomes violate regulatory
21 standards.

22 **Q18. WHAT OTHER PITFALLS ARE ASSOCIATED WITH AN ROE THAT**
23 **FALLS BELOW THOSE AUTHORIZED FOR OTHER COMPARABLE**
24 **COMPANIES?**

25 A18. Adopting an ROE for Kentucky Power that is well below the ROEs for comparable
26 utilities could lead investors to view the KPSC's regulatory framework as

1 unsupportive, an outcome that would undermine investors’ willingness to support
 2 future capital availability for investment in Kentucky. Security analysts study
 3 regulatory orders in order to advise investors where to invest their money. Moody’s
 4 Investors Service (“Moody’s”) noted that, “[f]undamentally, the regulatory
 5 environment is the most important driver of our outlook.”¹⁸ Similarly, Standard &
 6 Poor’s Corporation (“S&P”) concluded that “[t]he regulatory framework/regime’s
 7 influence is of critical importance when assessing regulated utilities’ credit risk
 8 because it defines the environment in which a utility operates and has a significant
 9 bearing on a utility’s financial performance.”¹⁹

10 If the KPSC’s actions instill confidence that the regulatory environment is
 11 supportive, investors will provide the necessary capital, even in times of turmoil in
 12 the financial markets. In evaluating Kentucky Power’ ROE in this case, the KPSC
 13 has an opportunity to show that it recognizes the importance of continuity and a
 14 balanced regulatory regime.

15 Meanwhile, adopting OAG’s or KIUC’s recommendation would likely
 16 increase the cost of capital for Kentucky Power and the other utilities in the state.
 17 The dangers of such an outcome were recognized at FERC. A Presiding Judge
 18 recently noted that “if ROE is set substantially below 10% for long periods ... it
 19 could negatively impact future investment,” and concluded that if “investment is
 20 substantially limited in the future, it will have a negative impact upon operational
 21 needs, reliability, and ultimately ratepayers’ future costs.”²⁰ It is only rational for
 22 potential investors to consider the regulatory treatment afforded to Kentucky Power

¹⁸ Moody’s Investors Service, *Regulation Will Keep Cash Flow Stable As Major Tax Break Ends, Industry Outlook* (Feb. 19, 2014).

¹⁹ Standard & Poor’s Corporation, *Key Credit Factors For The Regulated Utilities Industry, RatingsDirect* (Nov. 19, 2013).

²⁰ *Martha Coakley, Massachusetts Attorney General*, 144 FERC ¶ 63,012 at P 576 (2013).

1 in evaluating whether to commit new capital to Kentucky jurisdictional utilities, and
 2 at what cost.

3 **Q19. WHAT OTHER EVIDENCE INDICATES THAT THE ROE**
 4 **RECOMMENDATIONS OF DR. WOOLRIDGE AND MR. BAUDINO FAIL**
 5 **TO MEET REGULATORY STANDARDS?**

6 A19. As discussed in our direct testimony,²¹ expected rates of return for firms in the
 7 competitive sector of the economy are also relevant in determining the appropriate
 8 return to be allowed for rate-setting purposes. The idea that investors evaluate
 9 utilities against the returns available from other investment alternatives – including
 10 the low-risk companies in our Non-Utility Group – is a fundamental cornerstone of
 11 modern financial theory. Aside from this theoretical underpinning, any casual
 12 observer of stock market commentary and the investment media quickly comes to
 13 the realization that investors’ choices are almost limitless. It is simple, common
 14 sense that utilities must offer a return that can compete with other risk-comparable
 15 alternatives, or capital will simply go elsewhere.

16 In fact, returns in the competitive sector of the economy form the very
 17 underpinning for utility ROEs because regulation purports to serve as a substitute
 18 for the actions of competitive markets. The Supreme Court has recognized that the
 19 degree of risk, not the nature of the business, is relevant in evaluating an allowed
 20 ROE for a utility.²² The cost of capital is an opportunity cost based on the returns
 21 that investors could realize by putting their money in other alternatives, and the total
 22 capital invested in utility stocks is only the tip of the iceberg of total common stock
 23 investment. Consistent with this view, Mr. Baudino noted (pp. 13-14) that the

²¹ Avera/McKenzie Direct at 63-67.

²² *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

1 notion of “opportunity cost” underlies the Supreme Court’s economic standards, and
 2 that:

3 One measures the opportunity cost of an investment equal to what one
 4 would have obtained in the next best alternative. ... That alternative could
 5 have been another utility stock, a utility bond, a mutual fund, a money
 6 market fund, or any other number of investment vehicles.²³

7 As Mr. Baudino correctly observed, “The key determinant in deciding
 8 whether to invest, however, is based on comparative levels of risk,” and he
 9 concluded, “[T]he task for the rate of return analyst is to estimate a return that is
 10 equal to the return being offered by other risk-comparable firms.”²⁴ In other words,
 11 Mr. Baudino recognized that investors gauge their required returns from utilities
 12 against those available from non-utility firms of comparable risk. Our reference to a
 13 comparable-risk Non-Utility Group is entirely consistent with the guidance of the
 14 Supreme Court and the principles outlined in Mr. Baudino’s own testimony.

15 **Q20. DOES DR. WOOLRIDGE CONSIDER NON-UTILITY STOCK RETURNS**
 16 **RELEVANT TO DETERMINING THE COST OF CAPITAL?**

17 A20. Yes, it appears that he does. Dr. Woolridge cites many studies of past and expected
 18 stock market returns in his testimony, including a list of over 40 studies included on
 19 Exhibit JRW-11. *Not one* of these studies is limited to utilities, and all include a
 20 predominance of non-utility common stocks, *e.g.*, the S&P 500 Index. Moreover,
 21 while Dr. Woolridge references a study of industry betas done at New York
 22 University that suggests utilities have lower risks than the average firm in the non-
 23 regulated sector,²⁵ this establishes nothing more than the obvious – while some
 24 unregulated firms have higher risks than utilities, others have lower risks. As

²³ Baudino Direct at 13-14 (emphasis added).

²⁴ Baudino Direct at 14.

²⁵ Woolridge Direct at 27.

1 documented in our direct testimony and discussed further in our rebuttal testimony,
2 the firms in our Non-Utility Group are also in the lower range of risk as measured
3 by objective, widely referenced benchmarks.

4 **Q21. DID MR. BAUDINO OR DR. WOOLRIDGE PRESENT ANY OBJECTIVE**
5 **EVIDENCE TO SUPPORT THEIR CONTENTION THAT YOUR NON-**
6 **UTILITY PROXY GROUP IS RISKIER THAN KENTUCKY POWER OR**
7 **YOUR COMBINATION UTILITY GROUP?**

8 A21. No. Dr. Woolridge presented no meaningful evidence to rebut the results for our
9 Non-Utility Group; rather, he simply observed that the “lines of business are vastly
10 different” from utilities and they do not operate in a “highly regulated
11 environment.”²⁶ Similarly, apart from sweeping generalizations about the risk
12 differences between regulated and non-regulated companies, Mr. Baudino provided
13 no support whatsoever for his contention that our Non-Utility Group is riskier than
14 Kentucky Power or the proxy groups of utilities. Both Dr. Woolridge and Mr.
15 Baudino ignored any comparison of accepted measures of investment risks, and
16 instead simply noted that there are distinctions in the operating circumstances and
17 degree of regulation between utilities and firms in the competitive sector.

18 Our direct testimony did not contend that the operations of the companies in
19 the Non-Utility Group are comparable to those of utilities. Clearly, operating a
20 worldwide enterprise in the beverage, pharmaceutical, retail, or food industry
21 involves unique circumstances that are as distinct from one another as they are from
22 an electric utility. But as the Supreme Court recognized, investors consider the
23 expected returns available from all these opportunities in evaluating where to
24 commit their scarce capital. So long as the risks associated with the Non-Utility

²⁶ *Id.* at 78.

1 Group are comparable to Kentucky Power and other utilities – and our unrebutted
 2 direct testimony demonstrates conclusively that they are lower – the resulting DCF
 3 estimates provide a meaningful benchmark for the cost of equity.

4 Consider Mr. Baudino’s statement that utilities “have protected markets,
 5 e.g., service territories, and may increase the prices they charge in the face of falling
 6 demand or loss of customers.”²⁷ Based on this, Mr. Baudino summarily concluded,
 7 “Obviously, the non-utility companies have higher overall risk structures.” In fact,
 8 however, investors are quite aware that utilities are not guaranteed recovery of
 9 reasonable and necessary costs incurred to provide service and that there are many
 10 instances in which utilities are unable to increase rates to fully recoup reasonable
 11 and necessary costs, resulting in an inability to earn the allowed ROE – and
 12 potentially, even bankruptcy. The simple observation that a firm operates in non-
 13 utility businesses says nothing at all about the overall investment risks perceived by
 14 investors, which is the very basis for a fair rate of return.

15 **Q22. DOES OBJECTIVE EVIDENCE SUPPORT THE RISK ARGUMENTS OF**
 16 **DR. WOOLRIDGE OR MR. BAUDINO?**

17 A22. No. In fact, the objective risk measures specifically cited by these witnesses as
 18 being relevant indicia of overall investment risks contradict their assertions. It is
 19 telling to recognize that Dr. Woolridge (at Exhibit JRW-4) acknowledged the
 20 relevance of the objective risk measure afforded by published credit ratings in
 21 evaluating his proxy group. Similarly, Mr. Baudino testified that bond ratings
 22 reflect a detailed and comprehensive analysis of the key factors contributing to a
 23 firm’s overall investment risk, concluding (p. 15), “Bond and credit ratings are tools
 24 that investors use to assess the risk comparability of firms.”

²⁷ Baudino Direct at 45.

1 Contradicting Mr. Baudino’s unsupported assertion (p. 45) that the
 2 companies in our Non-Utility Group “have higher overall risk structures,” our direct
 3 testimony noted that the average corporate credit rating for the Non-Utility Group of
 4 “A/A2” is higher than the triple-B average for the Utility Group and the BBB/Baa2
 5 ratings assigned to Kentucky Power.²⁸ This assessment is confirmed by the review
 6 of beta values and other objective indicators of investment risk presented in Table 5
 7 to our direct testimony, which consider the impact of competition and market share,
 8 demonstrated that, if anything, the Non-Utility Group could be considered less risky
 9 in the minds of investors than the common stocks of the proxy group of utilities.

10 **Q23. DOES THE FACT THAT UTILITIES ARE REGULATED SOMEHOW**
 11 **INVALIDATE THIS COMPARISON OF OBJECTIVE RISK INDICATORS?**

12 A23. Absolutely not. While we do not disagree that utilities operate under a regulatory
 13 regime that differs from firms in the competitive sector, any risk-reducing benefit of
 14 regulation is already incorporated in the overall indicators of investment risk
 15 presented in Table 6 to our direct testimony. The impact of regulation on a utility’s
 16 investment risks is one of the key elements considered by credit rating agencies and
 17 investment advisory services, such as S&P and Value Line, when establishing
 18 corporate credit ratings and other risk measures. As a result, the impact of
 19 regulatory protections is already reflected in our risk analysis. Meanwhile, the beta
 20 values supported by modern financial theory are premised on stock price volatility
 21 relative to the market as a whole, and are not dependent on an assessment of firm-
 22 specific considerations. As a result, the impact of regulatory differences on
 23 investment risk is accounted for in the published risk indicators relied on by
 24 investors and cited in our direct testimony.

²⁸ Avera/McKenzie Direct at Table 6. P. 66.

1 **Q24. WHAT DO THESE BENCHMARKS YOU DISCUSS IMPLY WITH**
2 **RESPECT TO OAG’S AND KIUC’S RECOMMENDATIONS?**

3 A24. As set forth above, objective consideration of regulatory standards and alternative
4 benchmarks demonstrate that the 8.65% and 8.75% ROEs recommended by Dr.
5 Woolridge and Mr. Baudino are too low and violate the economic and regulatory
6 standards underlying a fair ROE.

III. DCF RESULTS ARE UNDERSTATED

7 **Q25. WHAT ARE THE FUNDAMENTAL PROBLEMS WITH THE DCF**
8 **ANALYSES CONDUCTED BY DR. WOOLRIDGE?**

9 A25. There are numerous fundamental problems with the DCF analyses presented by Dr.
10 Woolridge that lead to biased end results:

- 11 • Reliance on dividend growth rates and historical growth measures do not
12 reflect a meaningful guide to investors’ expectations;
- 13 • Dr. Woolridge discounts reliance on analysts’ growth forecasts for earnings
14 per share (“EPS”) as somehow biased, and fails to recognize that it is
15 investors’ *perceptions and expectations* that must be considered in applying
16 the DCF model;
- 17 • Rather than looking to the capital markets for guidance as to investors’
18 forward-looking expectations, Dr. Woolridge applies the DCF model based
19 on his own personal views; and,
- 20 • Because Dr. Woolridge failed to test the reasonableness of model inputs, he
21 incorrectly includes data that results in illogical cost of equity estimates.

22 As a result of these flaws and omissions, the resulting DCF cost of equity estimates
23 are downward biased and fail to reflect investors’ required rate of return.

1 **Q26. DO THE GROWTH RATES REFERENCED BY DR. WOOLRIDGE**
2 **MIRROR INVESTORS' LONG-TERM EXPECTATIONS IN THE CAPITAL**
3 **MARKETS?**

4 A26. No. There is every indication that his growth rates, and resulting DCF cost of equity
5 estimates, are biased downward and fail to reflect investors' required rate of return.
6 If past trends in earnings, dividends, and book value are to be representative of
7 investors' expectations for the future, then the historical conditions giving rise to
8 these growth rates should be expected to continue. That is clearly not the case for
9 utilities, where structural and industry changes have led to declining growth in
10 dividends, earnings pressure, and, in many cases, significant write-offs. While these
11 conditions serve to depress historical growth measures, they are not representative
12 of long-term expectations for the utility industry or the expectations that investors
13 have incorporated into current market prices.

14 **Q27. DID DR. WOOLRIDGE AND MR. BAUDINO RECOGNIZE THE PITFALLS**
15 **ASSOCIATED WITH HISTORICAL GROWTH RATES?**

16 A27. Yes. Dr. Woolridge noted that:

17 [T]o best estimate the cost of common equity capital using the
18 conventional DCF model, one must look to long-term growth rate
19 expectations.²⁹

20 But as he acknowledged, historical growth rates can differ significantly from the
21 forward-looking growth rate required by the DCF model:

22 [O]ne must use historical growth numbers as measures of investors'
23 expectations with caution. In some cases, past growth may not
24 reflect future growth potential. Also, employing a single growth rate
25 number (for example, for five or ten years), is unlikely to accurately
26 measure investors' expectations due to the sensitivity of a single

²⁹ Woolridge Direct at 35.

1 growth rate figure to fluctuations in individual firm performance as
 2 well as overall economic fluctuations (i.e., business cycles).³⁰

3 Similarly, Mr. Baudino noted (p. 21) that the analysis of investors’ cost of
 4 equity “is a forward-looking process,” and that “historical growth rates may not
 5 accurately represent investors’ expectations.” Mr. Baudino concluded that analysts’
 6 forecasts “provide better proxies for the expected growth components in the DCF
 7 model than historical growth rates.” Moreover, to the extent historical trends for
 8 utilities are meaningful, they are already captured in projected growth rates,
 9 including those published by Value Line, IBES, Zacks, and Reuters, since securities
 10 analysts also routinely examine and assess the impact and continued relevance (if
 11 any) of historical trends.

12 **Q28. DR. WOOLRIDGE ARGUES (P. 34) THAT, “BY DEFINITION” THE**
 13 **APPROPRIATE GROWTH RATE IN THE DCF MODEL IS THE DIVIDEND**
 14 **GROWTH RATE. DO YOU AGREE THAT THIS IS WHAT INVESTORS**
 15 **ARE MOST LIKELY TO CONSIDER IN DEVELOPING THEIR LONG-**
 16 **TERM GROWTH EXPECTATIONS?**

17 A28. No. Implementation of the DCF model is solely concerned with replicating the
 18 forward-looking evaluation of actual investors. In the case of utilities, growth rates
 19 in dividends per share (“DPS”) are not likely to provide a meaningful guide to
 20 investors’ current growth expectations. This is because utilities have significantly
 21 altered their dividend policies in response to more accentuated business risks in the
 22 industry.³¹ As a result of this trend towards a more conservative payout ratio,

³⁰ *Id.*

³¹ For example, the payout ratio for electric utilities fell from approximately 80% historically to on the order of 60%. *See, e.g.*, The Value Line Investment Survey (Sep. 15, 1995 at 161, Feb. 24, 2012 at 136).

1 dividend growth in the utility industry has lagged as utilities conserve financial
2 resources to provide a hedge against heightened uncertainties.

3 **Q29. WHAT ARE INVESTORS MOST LIKELY TO CONSIDER IN**
4 **DEVELOPING THEIR LONG-TERM GROWTH EXPECTATIONS?**

5 A29. As payout ratios for firms in the utility industry trended downward, investors' focus
6 has increasingly shifted from DPS to earnings as a measure of long-term growth.
7 Future trends in EPS, which provide the source for future dividends and ultimately
8 support share prices, play a pivotal role in determining investors' long-term growth
9 expectations. As noted in our direct testimony, the importance of earnings in
10 evaluating investors' expectations and requirements is well accepted in the
11 investment community and by other regulators.³² As explained in *New Regulatory*
12 *Finance*:

13 Because of the dominance of institutional investors and their
14 influence on individual investors, analysts' forecasts of long-run
15 growth rates provide a sound basis for estimating required returns.
16 Financial analysts exert a strong influence on the expectations of
17 many investors who do not possess the resources to make their own
18 forecasts, that is, they are a cause of g [growth].³³

19 Apart from Value Line, investment advisory services do not generally
20 publish comprehensive DPS growth projections, and this scarcity of dividend
21 growth rates relative to the abundance of earnings forecasts attests to their relative
22 influence. The fact that securities analysts focus on growth EPS, and that DPS
23 growth rates are not routinely published, indicates that projected EPS growth rates
24 are likely to provide a superior indicator of the future long-term growth expected by
25 investors.

³² Avera/McKenzie Direct at 30-34.

³³ Morin, Roger , "New Regulatory Finance," *Public Utilities Reports, Inc.* at 298 (2006).

1 **Q30. IS DR. WOOLRIDGE CONSISTENT IN HIS INSISTENCE THAT**
2 **HISTORICAL GROWTH RATES AND TRENDS IN DPS MUST BE**
3 **CONSIDERED IN APPLYING THE DCF MODEL?**

4 A30. No. In his testimony before FERC, Dr. Woolridge has applied the DCF model
5 without any reference to historical trends or growth rates in DPS.³⁴ Despite his
6 fervent indictment of analysts' EPS growth projections, this data largely serves as
7 the basis for his own DCF analysis.³⁵

8 **Q31. SHOULD THE KPSC GIVE ANY CREDENCE TO DR. WOOLRIDGE'S**
9 **ALLEGATIONS THAT PROJECTED EPS GROWTH RATES ARE BIASED?**

10 A31. No. These arguments were anticipated on pages 36-38 of our direct testimony. In
11 applying the DCF model to estimate the cost of equity, the only relevant growth rate
12 is the forward-looking expectations of investors that are captured in current stock
13 prices. Dr. Woolridge's claim that analysts' estimates are discounted by investors is
14 illogical given the reality of a competitive market for investment advice. If financial
15 analysts' forecasts do not add value to investors' decision making, it would be
16 irrational for investors to pay for these estimates. Similarly, those financial analysts
17 who fail to provide reliable forecasts will lose out in competitive markets relative to
18 those analysts whose forecasts investors find more credible. The reality that analyst
19 estimates are routinely referenced in the financial media and in investment advisory
20 publications implies that investors use them as a basis for their expectations.

21 The continued success of investment services such as IBES and Value Line,
22 and the fact that projected growth rates from such sources are widely referenced,
23 provides strong evidence that investors give considerable weight to analysts'

³⁴ See, e.g., *Testimony of J. Randall Woolridge*, Docket No. EL14-86-000, Exhibit CAP-1.

³⁵ Dr. Woolridge noted (p. 42) that his analysis gives "primary weight" to securities analysts' projected growth measures.

1 earnings projections in forming their expectations for future growth. Earnings
2 growth projections of security analysts provide the most frequently referenced guide
3 to investors' views and are widely accepted in applying the DCF model. As the
4 KPSC has previously concluded:

5 KU's argument concerning the appropriateness of using investors'
6 expectations in performing a DCF analysis is more persuasive than
7 the AG's argument that analysts' projections should be rejected in
8 favor of historical results. The Commission agrees that analysts'
9 projections of growth will be relatively more compelling in forming
10 investors' forward-looking expectations than relying on historical
11 performance...³⁶

12 Similarly, Mr. Baudino noted that analysts' projected EPS growth rates "are
13 widely available to investors and one can reasonably assume that they influence
14 investor expectations," and he concluded that analysts' forecasts "provide better
15 proxies for the expected growth component in the DCF model."³⁷

16 **Q32. DID DR. WOOLRIDGE PROVIDE ANY MEANINGFUL SUPPORT FOR**
17 **HIS ALLEGATION THAT VALUE LINE FORECASTS ARE "EXCESSIVE"**
18 **AND "UNREALISTIC"?**

19 A32. No. Dr. Woolridge based this assertion on his personal belief that Value Line does
20 not report a sufficient number of negative growth rates.³⁸ But negative growth rates
21 imply a cost of equity less than the utility's dividend yield, and are inconsistent with
22 the assumptions of the DCF model and not likely to be representative of investors'
23 expectations. Dr. Woolridge's personal opinions are irrelevant to a determination of
24 what investors expect and, contrary to his conclusion, Value Line is a well-
25 recognized source in the investment and regulatory communities. For example,

³⁶ *Case No. 2009-00548*, Final Order at 30-31.

³⁷ Baudino Direct at 21.

³⁸ Woolridge Direct at B-13.

1 *Cost of Capital – A Practitioners’ Guide*, published by the Society of Utility and
 2 Financial Analysts, noted that:

3 [A] number of studies have commented on the relative accuracy of
 4 various analysts’ forecasts. Brown and Rozeff (1978) found that
 5 Value Line was superior to other forecasts. Chatfield, Hein and
 6 Moyer (1990, 438) found, further “Value Line to be more accurate
 7 than alternative forecasting methods” and that “investors place the
 8 greatest weight on the forecasts provided by Value Line.”³⁹

9 Similarly, Mr. Baudino noted that Value Line “is a widely used and
 10 respected source of investor information.”⁴⁰ Given the fact that Value Line is
 11 perhaps the most widely available source of information on common stocks, the
 12 projections of Value Line analysts provide an important guide to investors’
 13 expectations. Moreover, in contrast to Dr. Woolridge’s unsupported assertion, the
 14 fact that Value Line is not engaged in investment banking or other relationships
 15 with the companies that it follows reinforces its impartiality in the minds of
 16 investors.

17 **Q33. IS THE DOWNWARD BIAS IN DR. WOOLRIDGE’S HISTORICAL AND**
 18 **DPS GROWTH MEASURES SELF EVIDENT?**

19 A33. Yes, it is. As shown on page 3 of Exhibit JRW-10, many of the individual historical
 20 growth rates reported by Dr. Woolridge for the companies in his electric proxy
 21 group were *negative*, which provides absolutely no meaningful information
 22 regarding investors’ expectations.

23 Similarly, roughly one-third of Dr. Woolridge’s historical DPS growth rates
 24 are 1.0% or less. Combining a growth rate of 1.0% with Dr. Woolridge’s dividend
 25 yield of 3.6% (Exhibit JRW-10, p. 1) implies a DCF cost of equity of approximately

³⁹ Parcell, David C., “The Cost of Capital – A Practitioner’s Guide,” *Society of Utility and Regulatory Financial Analysts* (2006) at 143.

⁴⁰ Baudino Direct at 20.

1 4.6%. This implied cost of equity is equal to the yield from triple-B public utility
 2 bonds, which averaged approximately 4.6% over the six-months ended March
 3 2015.⁴¹ Clearly, the risks associated with an investment in public utility common
 4 stocks exceed those of long-term bonds and Dr. Woolridge’s historical DPS growth
 5 measures provide no meaningful information regarding the expectations and
 6 requirements of investors. Meanwhile, projected DPS growth rates included in Dr.
 7 Woolridge’s analysis ranged from -3.5% to 12.0%. When combined with Dr.
 8 Woolridge’s 3.6% dividend yield the implied cost of equity range based on these
 9 values is 0.1% to 15.6%, which again gives no useful basis to evaluate a fair ROE
 10 for Kentucky Power.

11 **Q34. DID DR. WOOLRIDGE MAKE ANY EFFORT TO TEST THE**
 12 **REASONABLENESS OF THE INDIVIDUAL GROWTH ESTIMATES HE**
 13 **RELIED ON TO APPLY THE CONSTANT GROWTH DCF MODEL?**

14 A34. No. Despite recognizing that caution is warranted in using historical growth rates,
 15 Dr. Woolridge simply calculated the average and median of the individual growth
 16 rates with no consideration for the reasonableness of the underlying data. In fact, as
 17 demonstrated above, many of the cost of equity estimates implied by Dr.
 18 Woolridge’s DCF application make no economic sense.

19 **Q35. DOES REFERENCE TO THE MEDIAN CORRECT FOR ANY**
 20 **UNDERLYING BIAS IN UNDERLYING GROWTH RATES?**

21 A35. No. While Dr. Woolridge (p. 40) and Mr. Baudino (p. 38) advance the median as
 22 being “more accurate,”⁴² the median is simply the observation with an equal number
 23 of data values above and below. For odd-numbered samples, the median relies on
 24 only a single number, *e.g.*, the fifth number in a nine-number set. Reliance on the

⁴¹ Moody’s Analytics, Yields & Spreads Data, <http://credittrends.moodys.com/chartroom.asp?c=3>.

⁴² Baudino Direct at 26.

1 median value for a series of illogical values does not correct for the inability of
2 individual cost of equity estimates to pass fundamental tests of economic logic.

3 **Q36. WHAT APPROACH SHOULD DR. WOOLRIDGE AND MR. BAUDINO**
4 **HAVE USED TO EVALUATE LOW-END DCF ESTIMATES?**

5 A36. The ROE that investors require from a utility's common stock, which is the most
6 junior and riskiest of its securities, must be considerably higher than the yield
7 offered by senior, long-term debt. Consistent with this principle, Dr. Woolridge and
8 Mr. Baudino should have eliminated growth rates that produce illogical DCF results.

9 **Q37. HAVE OTHER REGULATORS RECOGNIZED THAT IT IS APPROPRIATE**
10 **TO ADD A RISK PREMIUM ABOVE THE COST OF DEBT WHEN**
11 **EVALUATING LOW-END DCF VALUES?**

12 A37. Yes. The practice of eliminating low-end outliers has been affirmed in numerous
13 FERC proceedings.⁴³ In *Southern California Edison* FERC noted that adjustments
14 to the zone of reasonableness are justified where applications of its preferred DCF
15 approach produce illogical results:

16 An adjustment to this data is appropriate in the case of PG&E's low-
17 end return of 8.42 percent, which is comparable to the average
18 Moody's "A" grade public utility bond yield of 8.06 percent, for
19 October 1999. Because investors cannot be expected to purchase
20 stock if debt, which has less risk than stock, yields essentially the
21 same return, this low-end return cannot be considered reliable in this
22 case.⁴⁴

23 Similarly, in its October 2006 decision in *Kern River Gas Transmission Company*,
24 FERC noted that:

⁴³ See, e.g., *Virginia Electric Power Co.*, 123 FERC ¶ 61,098 at P 64 (2008).

⁴⁴ *Southern California Edison Company, Edison* at 61,266 (footnote omitted).

1 [T]he 7.31 and 7.32 percent costs of equity for El Paso and Williams
2 found by the ALJ are only 110 and 122 basis points above that
3 average yield for public utility debt.⁴⁵

4 FERC upheld the opinion of FERC Staff and the Administrative Law Judge (“ALJ”)
5 that cost of equity estimates for these two proxy group companies “were too low to
6 be credible.”⁴⁶

7 More recently, in Opinion No. 531 FERC concluded that, “The purpose of
8 the low-end outlier test is to exclude from the proxy group those companies whose
9 ROE estimates are below the average bond yield or are above the average bond
10 yield but are sufficiently low that an investor would consider the stock to yield
11 essentially the same return as debt.”⁴⁷ Monthly yields on triple-B bonds reported by
12 Moody’s averaged approximately 4.6% over the six months ended March 2015,⁴⁸
13 and FERC has used 100 basis points above this benchmark as an approximation of
14 this threshold, but has also recognized that this is a flexible test.⁴⁹

15 **Q38. HAS DR. WOOLRIDGE ADOPTED THIS EXACT SAME TEST OF LOW-**
16 **END DCF ESTIMATES IN OTHER FORUMS?**

17 A38. Yes. For example, in prior testimony filed with FERC Dr. Woolridge applied this
18 test to the results of his DCF analysis.⁵⁰ As Dr. Woolridge concluded:

19 These data suggest that the prospective yield on utility bonds with a
20 rating similar to the proxy group (A-/BBB+) is in the 5.0% range.
21 Given this figure, and FERC’s bond yield plus 100 basis point
22 threshold for the low-end outliers, the elimination [of] the low-end

⁴⁵ *Kern River Gas Transmission Company*, Opinion No. 486, 117 FERC ¶ 61,077 (2006) at P 140 and footnote 227.

⁴⁶ *Id.*

⁴⁷ Opinion No. 531 at P 122.

⁴⁸ Moody’s Investors Service, <http://credittrends.moody.com/chartroom.asp?c=3>.

⁴⁹ Opinion No. 531 at P 122.

⁵⁰ *Direct Testimony of J. Randall Woolridge*, FERC Docket No. EL11-66.

1 results for Entergy (5.6%) and Great Plains Energy (6.2%) is
2 supported.⁵¹

3 **Q39. WHAT ELSE SHOULD BE CONSIDERED IN EVALUATING DCF**
4 **ESTIMATES AT THE LOW END OF THE RANGE?**

5 A39. As indicated in our direct testimony, while utility bond yields have declined
6 substantially as the financial crisis has abated, it is generally expected that long-term
7 interest rates will rise as the economy returns to a more normal pattern of growth.
8 As shown in Table R-1 below, the most recent forecasts of IHS Global Insight and
9 the Energy Information Administration (“EIA”) imply an average triple-B bond
10 yield of 6.88% over the period 2015-2019:

⁵¹ *Id.* at 35-36.

1
2

**TABLE R-1
IMPLIED UTILITY BOND YIELDS**

	2015-19
Projected AA Utility Yield	
IHS Global Insight (a)	6.10%
EIA (b)	6.08%
Average	6.09%
Current BBB - AA Yield Spread (c)	0.79%
Implied Triple-B Utility Yield	6.88%

-
- (a) IHS Global Insight, The U.S. Economy: The 30-Year Focus (Third-Quarter 2014)
 - (b) Energy Information Administration, Annual Energy Outlook 2014 (May 7, 2014)
 - (c) Based on monthly average bond yields from Moody's Investors Service for the six-month period Oct. 2014 - Mar. 2015

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The increase in debt yields anticipated by IHS Global Insight and EIA is also supported by the widely referenced Blue Chip Financial Forecasts, which projects that yields on corporate bonds will climb over 200 basis points through 2019.⁵²

Q40. WHAT ARE THE IMPLICATIONS OF DR. WOOLRIDGE’S AND MR. BAUDINO’S FAILURE TO ELIMINATE ILLOGICAL DATA IN APPLYING THE DCF MODEL?

A40. The DCF results presented by Dr. Woolridge and Mr. Baudino are unreliable, downward biased, and should be given no weight.

⁵² *Blue Chip Financial Forecasts*, Vol. 33, No. 12 (Dec. 1, 2014).

1 **Q41. IS THERE ANY BASIS TO EXCLUDE A SYMMETRICAL NUMBER OF**
2 **ESTIMATES ON THE LOW AND HIGH END, AS DR. WOOLRIDGE**
3 **CONTENDS (P. 59)?**

4 A41. No. As discussed above, low-end outliers were evaluated against the observable
5 returns available from long-term bonds. But the fact that there are numerous results
6 that fail this test of reasonableness says nothing about the validity of estimates at the
7 upper end of the range of results, and there is no basis to discard an equal number of
8 values from the top of the range. While upper end cost of equity estimates of 13.0%
9 percent from our Exhibit WEA/AMM 6 may exceed expectations for most utilities,
10 the remaining low-end estimates in the 7.8% range are assuredly far below
11 investors' required rate of return. Taken together and considered along with the
12 balance of the DCF estimates, the values at the upper end of our DCF range provide
13 a reasonable basis on which to evaluate investors' required rate of return.

14 **Q42. DOES MR. BAUDINO'S REFERENCE TO ALLOWED ROEs PROVIDE A**
15 **LOGICAL BASIS TO EVALUATE HIGH-END DCF ESTIMATES?**

16 A42. No. Mr. Baudino suggests (pp. 36-37) that any DCF value that exceeds the average
17 ROE allowed by state regulators is inherently suspect and should be disregarded.
18 Of course, following Mr. Baudino's flawed logic, it would be just as valid to argue
19 for the elimination of all values *below* the average allowed ROE. While the allowed
20 ROEs referenced by Mr. Baudino certainly call into question the validity of his own
21 8.6% ROE recommendation, they provide no basis to evaluate the range of plausible
22 DCF results. The Supreme Court has recognized that there is broad latitude in
23 establishing reasonable ROE range:

24 Statutory reasonableness is an abstract quality represented by an area
25 rather than a pinpoint. *It allows a substantial spread between what is*

1 *unreasonable because too low and what is unreasonable because too*
 2 *high.*⁵³

3 In contrast to the “pinpoint” test proposed by Mr. Baudino, our DCF results are
 4 entirely consistent with this standard, and provide a sound basis to evaluate a fair
 5 ROE for Kentucky Power.

6 **Q43. DR. WOOLRIDGE AND MR. BAUDINO ALSO PRESENTED**
 7 **SUSTAINABLE, “BR” GROWTH RATES (EX. JRW-10, P. 4; EX. NO. RAB-**
 8 **4, P. 1). SHOULD THE KPSC PLACE ANY WEIGHT ON THESE VALUES?**

9 A43. No. The internal growth rates calculated by Dr. Woolridge and Mr. Baudino are
 10 downward biased because of computational errors and omissions. These witnesses
 11 based their calculations of the internal, “br” retention growth rate on data from
 12 Value Line, which reports end-of-period results. If the rate of return, or “r”
 13 component of the internal growth rate, is based on end-of-year book values, such as
 14 those reported by Value Line, it will understate actual returns because of growth in
 15 common equity over the year. This downward bias has been recognized by FERC,⁵⁴
 16 which specifically requires an adjustment to Value Line data to correct for the bias
 17 introduced by calculating “r” using end-of-year data.⁵⁵ Dr. Woolridge has also
 18 recognized and adopted this adjustment to Value Line’s projections:

19 The average values for r are then adjusted by the ‘Adjustment Factor’
 20 since Value Line’s expected earned rate of return on equity is based
 21 on end-of-year figure equity. The Adjustment Factor is calculated as
 22 $((2*(1+5\text{-yr Change in Equity})/(2+5\text{-yr Change in Equity})).$ ⁵⁶

⁵³ *Montana-Dakota Utils. Co. v. Nw. Pub. Serv. Co.*, 341 U.S. 246, 251 (1951) (emphasis added).

⁵⁴ See, e.g., *Southern California Edison Company*, Opinion No. 445 (Jul. 26, 2000), 92 FERC ¶ 61,070.

⁵⁵ *Bangor Hydro-Elec. Co.*, 122 FERC ¶ 61,265 (2008).

⁵⁶ *Direct Testimony of Randall J. Woolridge*, Federal Energy Regulatory Commission, Docket No. EL-11-66 (Oct. 1, 2012).

1 Because Dr. Woolridge and Mr. Baudino both ignored this adjustment in this case,
2 their internal, “br” growth rates are distorted and should be ignored.

3 **Q44. WHAT OTHER CONSIDERATION LEADS TO A DOWNWARD BIAS IN**
4 **THE INTERNAL, “BR” GROWTH RATES OF DR. WOOLRIDGE AND MR.**
5 **BAUDINO?**

6 A44. Both Dr. Woolridge and Mr. Baudino ignored the impact of additional issuances of
7 common stock in their analyses of the sustainable growth rate. Under DCF theory,
8 the "sv" factor is a component designed to capture the impact on growth of issuing
9 new common stock at a price above, or below, book value. Professor Myron J.
10 Gordon recognized the need for the “sv” adjustment in his 1974 study,⁵⁷ and Dr.
11 Woolridge has also included the additional growth from new share issues by
12 incorporating the “sv” component in prior testimony before FERC.⁵⁸ The fact that
13 Dr. Woolridge and Mr. Baudino failed to consider the incremental impact of new
14 share issues on growth results in another downward bias to their “internal” growth
15 rates, which should be given no weight.

16 **Q45. WHAT DO YOU CONCLUDE BASED ON YOUR REVIEW OF THE DCF**
17 **ANALYSES PRESENTED BY DR. WOOLRIDGE AND MR. BAUDINO?**

18 A45. Historical growth rates and trends in DPS are distorted by fundamental changes in
19 industry financial policies and Dr. Woolridge and Mr. Baudino failed to evaluate the
20 underlying reasonableness of individual growth rates. In addition, the calculations
21 used to arrive at the internal growth rates reported by Dr. Woolridge and Mr.
22 Baudino are flawed and incomplete. As a result, their DCF cost of equity estimates
23 are biased downward and fail to reflect investors’ required rate of return.

⁵⁷ Gordon, Myron J., “The Cost of Capital to a Public Utility,” MSU Public Utilities Studies (1974), at 31–32.

⁵⁸ *Testimony of J. Randall Woolridge*, FERC Docket No. EL-66 at Exhibit JRW-8, pp. 3-4 (2011) and Exhibit SC-111 (2012).

IV. CAPM RESULTS SHOULD BE DISREGARDED

1 **Q46. DID EITHER DR. WOOLRIDGE OR MR. BAUDINO RELY ON THEIR**
2 **CAPM RESULTS IN ARRIVING AT THEIR RECOMMENDATIONS IN**
3 **THIS CASE?**

4 A46. No. Dr. Woolridge ignored his 7.9% CAPM cost of equity estimate in arriving at his
5 8.65% recommendation, which he calculated by adding a risk premium of 0.25% to
6 his proxy group equity cost rate of 8.4%, near the top of his 7.9% to 8.45% cost of
7 equity range.⁵⁹ Dr. Woolridge noted that he relied primarily on the DCF model, and
8 he concluded that the CAPM provides “a less reliable indication of equity cost rates
9 for public utilities.”⁶⁰ Similarly, Mr. Baudino noted (p. 3) that his ROE
10 recommendation was based solely on cost of equity estimates implied by his
11 application of the DCF model and ignored his CAPM results entirely. While we
12 agree with the decision of Dr. Woolridge and Mr. Baudino to give no weight to their
13 CAPM results, for completeness our rebuttal testimony nevertheless addresses the
14 major flaws associated with their applications of this approach.

15 **Q47. WHAT IS THE FUNDAMENTAL PROBLEM ASSOCIATED WITH THE**
16 **HISTORICAL APPROACHES USED BY DR. WOOLRIDGE AND MR.**
17 **BAUDINO TO APPLYING THE CAPM?**

18 A47. Like the DCF model, the CAPM is an *ex-ante*, or forward-looking model based on
19 expectations of the future. As a result, in order to produce a meaningful estimate of
20 investors’ required rate of return, the CAPM must be applied using data that reflect
21 the expectations of actual investors in the market. Dr. Woolridge recognized that
22 “ex post returns are not the same as ex ante expectations” and noted that “market

⁵⁹ Woolridge Direct at 53-54.

⁶⁰ Woolridge Direct at 28.

1 risk premiums can change over time; increasing when investors become more risk-
2 averse.”⁶¹ Similarly, Mr. Baudino has recognized that, “There is no real support for
3 the proposition that an unchanging, mechanically applied historical risk premium is
4 representative of current investor expectations and return requirements.”⁶²

5 Nevertheless, Dr. Woolridge’s application of the CAPM method was based
6 entirely on *historical* – not projected – rates of return, as was the CAPM method
7 presented on Mr. Baudino’s Exhibit (RAB-6). The key importance of current
8 expectations was recognized by *Morningstar*, one of the sources relied on by Dr.
9 Woolridge and Mr. Baudino:

10 The cost of capital is always an expectational or forward-looking
11 concept. While the past performance of an investment and other
12 historical information can be good guides and are often used to
13 estimate the required rate of return on capital, the expectations of
14 future events are the only factors that actually determine cost of
15 capital.⁶³

16 Because the backward-looking analyses of Dr. Woolridge and Mr. Baudino ignore
17 the returns investors are currently requiring in the capital markets, the resulting
18 CAPM estimates fall woefully short of investors’ current required rate of return.

19 **Q48. DR. WOOLRIDGE (P. 51) ATTEMPTS TO CHARACTERIZE HIS CAPM**
20 **STUDY AS INCORPORATING AN “EX ANTE” RISK PREMIUM. IS THIS**
21 **AN ACCURATE ASSESSMENT?**

22 A48. No. In order to be considered a forward-looking, *ex ante* estimate of the current
23 market risk premium, the analysis must be predicated on investors’ current
24 expectations. Dr. Woolridge did not attempt to develop a market risk premium

⁶¹ Woolridge Direct at 47.

⁶² *Direct Testimony and Exhibits of Richard A. Baudino*, Case No. 2012-00221 & Case No. 2012-00222, at p. 28 (October 2012).

⁶³ Morningstar, *Ibbotson SBBI, 2013 Valuation Yearbook* at 21 (2013).

1 using current capital market information. Rather, he simply presented the results of
 2 various studies and surveys conducted in the past. Certain of these studies may
 3 have attempted to infer the equity risk premium using expected data at the time they
 4 were developed, but expectations at some point in the past are not equivalent to
 5 investors *ex ante* requirements in capital markets today.

6 In other words, instead of directly considering requirements in today’s
 7 capital markets, Dr. Woolridge is implicitly asserting that events and expectations
 8 for the time periods covered by selected historical studies is more representative of
 9 what is likely to occur going forward. This assertion runs counter to the
 10 assumptions underlying the use of the CAPM approach to estimate investors’
 11 required return, which is purely a forward-looking model. Indeed, Dr. Woolridge
 12 granted that, “The use of historical returns as market expectations has been
 13 criticized in numerous academic studies,” and he concluded that, “(1) *ex post*
 14 returns are not the same as *ex ante* expectations; (2) market risk premiums can
 15 change over time, increasing when investors become more risk-averse and
 16 decreasing when investors become less risk-averse; and (3) market conditions can
 17 change such that *ex post* historical returns are poor estimates of *ex ante*
 18 expectations.”⁶⁴

19 In short, the only relevant issue in applying the CAPM method is
 20 determining the return investors currently expect to earn on money invested today.
 21 In contrast to the historical approaches relied on by Dr. Woolridge and Mr. Baudino,
 22 our method represents a straightforward and direct approach to answer this question
 23 that has been recognized as superior to historical methods by other regulators.⁶⁵

⁶⁴ Woolridge Direct at 47.

⁶⁵ Opinion No. 531-B at PP 108-119.

1 **Q49. IS THERE EVIDENCE THAT THE STUDIES REFERENCED BY DR.**
 2 **WOOLRIDGE DO NOT REFLECT INVESTORS' EXPECTATIONS?**

3 A49. Yes. The vast majority of the equity risk premium findings reported by Dr.
 4 Woolridge do not make economic sense and contradict his own testimony. For
 5 example, page 5 of Dr. Woolridge's Exhibit JRW-11 reveals that over one-half of the
 6 historical studies included in Dr. Woolridge's review found market equity risk
 7 premiums of approximately 5.0% or below.⁶⁶ This was also true for one-half of the
 8 individual risk premium studies that Dr. Woolridge classified as "more recent."⁶⁷
 9 But combining a market equity risk premium of 5.0% with Dr. Woolridge's 4.0%
 10 risk-free rate results in an indicated cost of equity for the market as a whole of 9.0%,
 11 which barely exceeds Dr. Woolridge's ROE recommendations for Kentucky Power
 12 in this case. Many of his other benchmarks for the market rate of return fall *below*
 13 the anemic cost of equity he recommends for the Company. For example, Dr.
 14 Woolridge develops a market rate of return of 7.25% based on his "building blocks"
 15 approach,⁶⁸ which falls 140 basis points *below* his recommended ROE in this case.

16 Meanwhile, after noting that beta is the only relevant measure of investment
 17 risk under modern capital market theory, Dr. Woolridge concluded that his
 18 comparison of beta values (Exhibit JRW-8) indicates that investors' required return
 19 on the market as a whole should exceed the cost of equity for electric utilities.⁶⁹
 20 Based on Dr. Woolridge's own logic, it follows that a market rate of return that does
 21 not exceed his own downward biased ROE recommendation by a significant margin
 22 has no relation to the current expectations of real-world investors. The fact that

⁶⁶ Similarly, Dr. Woolridge reported equity risk premiums of 4.0% to 6.0%, 1.88%, and 5.0% (pp. 51-52) based on selected surveys.

⁶⁷ Exhibit JRW-11, p. 6.

⁶⁸ Woolridge Direct at C-4.

⁶⁹ *Id.* at 27.

1 much of his CAPM “evidence” violates the risk-return tradeoff that is fundamental
 2 to finance clearly illustrates the frailty of Dr. Woolridge’s analyses.

3 **Q50. ARE YOU IN ANY WAY ALLEGING THAT ALL THESE STUDIES AND**
 4 **SURVEYS ARE INCORRECT?**

5 A50. No, not at all.⁷⁰ Rather, we are challenging the inferences that Dr. Woolridge draws
 6 from them, and the particular use being made of the cited studies. The point that we
 7 are making is that there is more than one way to define and calculate an equity risk
 8 premium. The problem with Dr. Woolridge’s approach is that, instead of looking
 9 directly at an equity risk premium based on current expectations – which is what is
 10 required in order to properly apply the CAPM – he undertakes an unrelated exercise
 11 of compiling a list of selected computations culled from the historical record.
 12 Average realized risk premiums computed over some selected time period may be
 13 an accurate representation of what was actually earned in the past, but they don’t
 14 answer the question as to what risk premium investors were actually expecting to
 15 earn on a forward-looking basis during these same time periods. Similarly,
 16 calculations of the equity risk premium developed at a point in history – whether
 17 based on actual returns in prior periods or contemporaneous projections – are not
 18 the same as the forward-looking expectations of today’s investors, which are
 19 premised on an entirely different set of capital market and economic expectations.

20 Likewise, surveys of selected corporate executives or economists, or
 21 building blocks based on academic research, are not equivalent to investors’

⁷⁰ Nor are we supporting these studies as rigorous. For example, Dr. Woolridge makes repeated reference (p. 49, p. 52, Exhibit JRW-11) to a survey conducted by Pablo Fernandez, which is flawed on many levels. Mr. Fernandez is also the author of a recent paper entitled, “CAPM: an absurd model,” which concludes that “CAPM is a model a) based on senseless assumptions, and b) none of its predictions happens in our world. Which other test do we need to reject the model?” In contrast to Mr Fernandez’s view, the pioneers of the CAPM model were awarded the Nobel Prize in Economics, and the CAPM is widely accepted in financial textbooks, by practitioners, and in the regulatory sphere.

1 required returns in the coming period. Since the benchmark for a fair ROE requires
2 that the utility be able to compete for capital in the current capital market, the
3 relevant inquiry is to determine the return that real world investors in today's
4 markets require from Kentucky Power in order to compete for capital with other
5 comparable risk alternatives. In short, while there are many potential definitions of
6 the equity risk premium, the only relevant issue for application of the CAPM in a
7 regulatory context is the return investors currently expect to earn on money invested
8 today in the risky market portfolio versus the risk-free U.S. Treasury alternative.

9 **Q51. IS THERE GOOD REASON TO ENTIRELY DISREGARD THE RESULTS**
10 **OF HISTORICAL CAPM ANALYSES SUCH AS THOSE PRESENTED BY**
11 **DR. WOOLRIDGE?**

12 A51. Yes. The CAPM cost of common equity estimate is calibrated from investors'
13 required risk premium between Treasury bonds and common stocks. In response to
14 heightened uncertainties, investors have repeatedly sought a safe haven in U.S.
15 government bonds and this "flight to safety," coupled with the unprecedented
16 actions of the Federal Reserve, have pushed Treasury yields significantly lower.
17 This distortion not only impacts the absolute level of the CAPM cost of equity
18 estimate, but it affects estimated risk premiums.

19 Meanwhile, the backward-looking approach used by Dr. Woolridge
20 incorrectly assumes that investors' assessment of the relative risk differences, and
21 their required risk premium, between Treasury bonds and common stocks is
22 constant and equal to some historical average. At no time in recent history has the
23 fallacy of this assumption been demonstrated more concretely. This incongruity
24 between investors' current expectations and requirements and historical risk
25 premiums is particularly relevant during periods of heightened uncertainty and
26 rapidly changing capital market conditions, such as those experienced recently.

1 As a result, there is every indication that the historical CAPM approach fails
2 to fully reflect the risk perceptions of real-world investors in today’s capital
3 markets, which would violate the standards underlying a fair rate of return by failing
4 to provide an opportunity to earn a return commensurate with other investments of
5 comparable risk. FERC recently affirmed its decision to reject a similar historical
6 CAPM analysis presented by Dr. Woolridge in favor of the same forward-looking
7 approach presented in our direct testimony in this case.⁷¹

8 **Q52. HAS THIS DISTORTION BEEN RECOGNIZED IN THE INVESTMENT**
9 **COMMUNITY?**

10 A52. Yes. The American Appraisal Risk Premium Quarterly included in Dr. Woolridge’s
11 CAPM analysis observed that “the Federal Reserve and other Central Banks around
12 the world have undertaken quantitative easing and other efforts to lower interest
13 rates in response to economic conditions.”⁷² This publication went on to conclude
14 that:

15 As a result, the capital asset pricing model (“CAPM”), which utilizes
16 the [equity risk premium] to calculate a cost of equity, has implied
17 below-average cost of equity when the market may have exhibited
18 higher risk. Yields on US Treasury bonds, which were being
19 manipulated by government intervention, were the primary driver for
20 the implied below-average cost of equity.⁷³

21 Similarly, the Duff & Phelps report included on Exhibit JRW-11 to Dr.
22 Woolridge’s testimony specifically abandoned the use of current bond yields as a
23 basis for the risk-free rate in the CAPM, in favor of a “normalized” rate.⁷⁴ Duff &
24 Phelps noted that, “Normalized in this context means that in months where the risk-
25 free rate is deemed to be abnormally low, a proxy for a longer-term sustainable risk-

⁷¹ *Opinion No. 531-B*, 150 FERC ¶ 61,165 at PP 102, 108-119 (2015).

⁷² American Appraisal, *Equity Risk Premium Quarterly* (July 2014).

⁷³ *Id.*

⁷⁴ Duff & Phelps, *Equity Risk Premium & Risk-Free Rate*, www.duffandphelps.com/CostofCapital.

1 free rate is used.”⁷⁵ Apart from demonstrating the failings of Dr. Woolridge’s
 2 historical approach, this is entirely consistent with my reference to projected bond
 3 yields in applying the CAPM and other methods, and in evaluating DCF results.

4 **Q53. WERE DR. WOOLRIDGE OR MR. BAUDINO JUSTIFIED IN RELYING**
 5 **ON GEOMETRIC MEANS AS A MEASURE OF AVERAGE RATE OF**
 6 **RETURN WHEN APPLYING THE HISTORICAL CAPM?**

7 A53. No. While both the arithmetic and geometric means are legitimate measures of
 8 average return, they provide different information. Each may be used correctly, or
 9 misused, depending upon the inferences being drawn from the numbers. The
 10 geometric mean of a series of returns measures the constant rate of return that would
 11 yield the same change in the value of an investment over time. The arithmetic mean
 12 measures what the expected return would have to be each period to achieve the
 13 realized change in value over time.

14 In estimating the cost of equity, the goal is to replicate what investors expect
 15 going forward, not to measure the average performance of an investment over an
 16 assumed holding period. When referencing realized rates of return in the past,
 17 investors consider the equity risk premiums in each year independently, with the
 18 arithmetic average of these annual results providing the best estimate of what
 19 investors might expect in future periods. *Regulatory Finance: Utilities’ Cost of*
 20 *Capital* had this to say:

21 One major issue relating to the use of realized returns is whether to
 22 use the ordinary average (arithmetic mean) or the geometric mean
 23 return. *Only arithmetic means are correct for forecasting purposes*
 24 *and for estimating the cost of capital.* When using historical risk
 25 premiums as a surrogate for the expected market risk premium, the

⁷⁵ *Id.*

1 relevant measure of the historical risk premium is the arithmetic
2 average of annual risk premiums over a long period of time.⁷⁶

3 Similarly, Morningstar concluded that:

4 For use as the expected equity risk premium in either the CAPM or
5 the building block approach, the arithmetic mean or the simple
6 difference of the arithmetic means of stock market returns and
7 riskless rates is the relevant number. ... The geometric average is
8 more appropriate for reporting past performance, since it represents
9 the compound average return.⁷⁷

10 We certainly agree that both geometric and arithmetic means are useful, but
11 the issue is not whether both measures can be useful; it is which one best fits the use
12 for a forward-looking CAPM in this case. One does not have to get deeply into
13 finance theory to see why the arithmetic mean is more consistent with the facts of
14 this case. The KPSC is not setting a constant return that Kentucky Power is
15 guaranteed to earn over a long period. Rather, the exercise is to set an expected
16 return based on test year data. In the real world, the Company's yearly return will
17 be volatile, depending on a variety of economic and industry factors, and investors
18 do not expect to earn the same return each year.

19 The usefulness of the arithmetic mean for making forward-looking estimates
20 was confirmed in *Quantitative Investment Analysis* (2007), one of the textbooks
21 included in the study curriculum for the Chartered Financial Analyst designation,
22 which concluded that the arithmetic mean is the appropriate measure when
23 calculating an expected equity risk premium in a forward-looking context.⁷⁸ Just as
24 importantly, by relying directly on expectations and estimates of investors' required

⁷⁶ Morin, Roger , "Regulatory Finance: Utilities' Cost of Capital," *Public Utilities Reports* AT 275 (1994) (emphasis added).

⁷⁷ Morningstar, *Ibbotson SBBI 2011 Valuation Yearbook* at 56 (2011).

⁷⁸ DeFusco, Richard , Dennis W. McLeavey, Jerald E. Pinto, and David E. Runkle, *Quantitative Investment Analysis*, John Wiley & Sons, Inc. (2007) at 128.

1 rate of return, as incorporated in the CAPM analysis presented in our direct
2 testimony, there is no need to debate the merits of geometric versus arithmetic
3 means, because neither is required to apply this forward-looking approach.

4 **Q54. WHAT DOES THIS IMPLY WITH RESPECT TO DR. WOOLRIDGE’S AND**
5 **MR. BAUDINO’S CAPM RESULTS?**

6 A54. For a variable series, such as stock returns, the geometric average will always be
7 less than the arithmetic average. Accordingly, reference to geometric average rates
8 of return provides yet another element of built-in downward bias to the CAPM
9 applications of Dr. Woolridge and Mr. Baudino.

10 **Q55. WHAT ABOUT DR. WOOLRIDGE’S VIEW THAT YOUR FORWARD-**
11 **LOOKING ESTIMATE OF THE MARKET RATE OF RETURN IS TOO**
12 **HIGH?**

13 A55. He is mistaken. The use of forward-looking expectations in estimating the market
14 risk premium is well accepted in the financial literature. For example, in “The
15 Market Risk Premium: Expectational Estimates Using Analysts’ Forecasts” [*Journal*
16 *of Applied Finance*, Vol. 11 No. 1, 2001], Robert S. Harris and Felicia C. Marston
17 employed the DCF model and earnings growth projections from IBES – just as we
18 did in our direct testimony. Dr. Woolridge’s criticisms of our forward-looking
19 CAPM approach seem to hinge on the fact that this method produces an equity risk
20 premium for the S&P 500 that is considerably higher than his historical benchmarks
21 – the majority of which produce illogical results.

22 But estimating investors’ required rate of return by reference to current,
23 forward-looking data, as we have done, is entirely consistent with the theory
24 underlying the CAPM methodology. Dr. Woolridge does not suggest that the
25 CAPM model is “wrong” to focus on forward-looking projections instead of
26 backward, historical results, nor does he claim that looking to the future, as we have

1 done, is a misapplication of the CAPM. Instead, he simply believes that the result
2 of applying the CAPM in a manner that is consistent with the underlying
3 assumptions produces a result that he views as being too high. But the application
4 of alternative methods is not a process of deviating from the underlying assumptions
5 of the model until the results are consistent with those produced using an alternative
6 approach.

7 **Q56. HAVE OTHER REGULATORS RELIED ON A FORWARD-LOOKING**
8 **CAPM APPROACH SIMILAR TO THE ONE PRESENTED IN YOUR**
9 **DIRECT TESTIMONY?**

10 A56. Yes. We based our CAPM approach on the methods used by the Staff at the Illinois
11 Commerce Commission, whose witnesses have routinely relied on a forward-
12 looking market rate of return estimate to apply the CAPM. For example, Illinois
13 Staff witness Rochelle Langfeldt employed an expected market return based on an
14 analysis analogous to the approach described in our direct testimony:

15 Q. How was the expected rate of return on the market portfolio
16 estimated?

17 A. The expected rate of return on the market was estimated by
18 conducting a DCF analysis on the firms composing the S&P 500
19 Index ("S&P 500"). ... Firms not paying a dividend as of June
20 28, 2001, or for which neither Zacks nor IBES growth rates were
21 available were eliminated from the analysis. The resulting
22 company-specific estimates of the expected rate of return on
23 common equity were then weighted using market value data
24 from Salomon Smith Barney, Performance and Weights of the
25 S&P 500: Second Quarter 2001. The estimated weighted
26 averaged expected rate of return for the remaining 365 firms
27 composing 78.31% of the market capitalization of the S&P 500
28 equals 15.31%.⁷⁹

⁷⁹ Direct Testimony of Rochelle Langfeldt, Illinois Commerce Commission Docket No. 01-0423 at 23-24 (2001).

1 As noted earlier, FERC recently rejected the historical CAPM approach relied on by
 2 Dr. Woolridge and Mr. Baudino and adopted the same size, adjusted, forward-
 3 looking CAPM application that we have proposed in this proceeding.⁸⁰ In addition,
 4 FERC also dismissed Dr. Woolridge’s arguments (pp. 69-70) that growth rates for
 5 firms in the market as a whole should somehow be limited to growth in the general
 6 economy.⁸¹

7 **Q57. IS THERE ANY MERIT TO MR. BAUDINO’S ARGUMENT (P. 40) THAT**
 8 **YOUR ANALYSIS OF THE MARKET RATE OF RETURN SHOULD NOT**
 9 **HAVE BEEN LIMITED SOLELY TO THE DIVIDEND PAYING FIRMS IN**
 10 **THE S&P 500?**

11 A57. No. As Mr. Baudino recognized (p. 16), under the constant growth form of the DCF
 12 model, investors’ required rate of return is computed as the sum of the dividend
 13 yield over the coming year plus investors’ long-term growth expectations. Because
 14 the dividend yield is a key component in applying the DCF model, its usefulness is
 15 hampered for firms that do not pay common dividends. Accordingly, our DCF
 16 analysis of the market rate of return properly focused on the dividend paying firms
 17 included in the S&P 500. As FERC observed, “a DCF analysis can only be
 18 conducted for companies that pay dividends. ... Basing a CAPM study on only
 19 dividend-paying companies is therefore appropriate in this context.”⁸²

20 Meanwhile, Mr. Baudino (p. 26) predicated his DCF analysis of the market
 21 rate of return on the companies followed by Value Line. Of these approximately
 22 1,700 companies, approximately 600 do not pay common dividends. In other
 23 words, over one-third of the companies that underpin Mr. Baudino’s DCF analysis

⁸⁰ *Opinion No. 531-B*, 150 FERC ¶ 61,165 at P 108-119 (2015).

⁸¹ *Id.* at P 113.

⁸² *Opinion No. 531-B*, 150 FERC ¶ 61,165 at P 111 (2015).

1 do not have the data necessary to implement this approach. Further, many of these
 2 firms are relatively small and lack a meaningful operating history. As a result, there
 3 is also greater uncertainty associated with estimating the future growth expectations
 4 that are central to the application of the DCF method. Taken together, these factors
 5 impugn the reliability of Mr. Baudino’s market risk premium and confirm our
 6 decision to restrict our analysis to the established, dividend paying firms in the S&P
 7 500.

8 **Q58. WHAT OTHER PROBLEMS ARE ASSOCIATED WITH MR. BAUDINO’S**
 9 **MARKET RATE OF RETURN BASED ON VALUE LINE DATA?**

10 A58. While expected growth in earnings is far more likely to be representative of
 11 investors’ forward-looking expectations, Mr. Baudino nevertheless included book
 12 value growth rates in the DCF analysis he employed to estimate the expected market
 13 rate of return. This had the effect of understating the resulting CAPM cost of equity
 14 estimates. As shown on Exhibit WEA/AMM 14, basing Mr. Baudino’s DCF
 15 analysis solely on EPS growth rates, which served as the basis for his DCF study for
 16 utilities, resulted in an estimated CAPM cost of equity of 10.22%.

17 **Q59. DID DR. WOOLRIDGE AND MR. BAUDINO FAIL TO CONSIDER OTHER**
 18 **IMPORTANT FACTORS IN EVALUATING THE CAPM?**

19 A59. Yes. As noted in our direct testimony,⁸³ empirical research indicates that the CAPM
 20 does not fully account for observed differences in rates of return attributable to firm
 21 size. To account for this, *Morningstar* – a source relied on by Dr. Woolridge and
 22 Mr. Baudino – has developed size premiums that need to be added to the theoretical
 23 CAPM cost of equity estimates to account for the level of a firm’s market
 24 capitalization in determining the CAPM cost of equity.

⁸³ Avera/McKenzie Direct at 43-44.

1 **Q60. DO THE ARGUMENTS ADVANCED BY DR. WOOLRIDGE AND MR.**
 2 **BAUDINO UNDERMINE THE NEED FOR THIS ADJUSTMENT?**

3 A60. No. Mr. Baudino simply observes that the average beta associated with the lower
 4 size deciles examined by *Morningstar* is greater than the average his proxy group.⁸⁴
 5 While we do not dispute the observation, it has no relevance whatsoever to the
 6 implications of *Morningstar*'s findings regarding the impact of firm size. The fact
 7 that the average beta for smaller size deciles is greater than for 1.00 says nothing
 8 about the range of individual beta values underlying this average. While the size
 9 premiums reported by *Morningstar* were not estimated on an industry-by-industry
 10 basis, this provides no basis to ignore this relationship in estimating the cost of
 11 equity for utilities. Utilities are included in the companies used by *Morningstar* to
 12 quantify the size premium, and firm size has important practical implications with
 13 respect to the risks faced by investors in the utility industry.

14 Similarly, Dr. Woolridge's arguments concerning the implications of
 15 "survivor bias" are equally misplaced.⁸⁵ The expected returns of failed companies
 16 that are in decline or go out of business are irrelevant to the question of whether or
 17 not the CAPM fully accounts for investors' risk perceptions when applied to
 18 companies included in broad market indices, such as those reflected in
 19 *Morningstar*'s analysis. The companies in the proxy groups used by Dr. Woolridge
 20 and Mr. Baudino are not start-ups – they are seasoned utilities that have been
 21 publicly traded for many years, just like the listed companies in the *Morningstar*
 22 data base. The arguments relative to survivor bias may have been relevant to the
 23 studies in the 1980's and 1990's, but they do not take away from the solid empirical

⁸⁴ Baudino at 41.

⁸⁵ Woolridge Direct at 69.

1 basis of the size adjustment reported by *Morningstar* that are all based on surviving
 2 companies.

3 Further, it is not necessary to use the historical market risk premium from
 4 *Morningstar* to correctly apply the size adjustment. *Morningstar's* size adjustment
 5 is based on empirical research using their return data and betas, and there is no
 6 reason the size differential could not be properly applied to a CAPM using forward-
 7 looking risk premiums, as we have done.

8 **Q61. DOES THIS SIZE ADJUSTMENT APPLY TO UTILITIES?**

9 A61. Yes. For example, a study reported in *Public Utilities Fortnightly* noted that the
 10 betas of small companies do not fully account for the higher realized rates of return
 11 associated with small company stocks:

12 The smaller deciles show returns not fully explainable by the CAPM.
 13 The difference in risk premium (realized versus CAPM) grows larger
 14 as one moves from the largest companies in decile 1 to the smallest
 15 in decile 10. The difference is especially pronounced for deciles 9
 16 and 10, which contain the smallest companies.⁸⁶

17 The study went on to conclude that a publicly traded utility with a market
 18 capitalization of \$1.0 billion would require a small company premium of
 19 approximately 130 basis points above the rate of return for larger firms.

20 We acknowledge that there are any number of specific factors that
 21 distinguish a utility's risks from other firms in the non-regulated sector, just as there
 22 are important distinctions between the circumstances faced by airlines and drug
 23 manufacturers. But under the assumptions of modern capital market theory on
 24 which the CAPM rests, these considerations are reduced to a single risk measure –

⁸⁶ Annin, Michael, "Equity and the Small-Stock Effect", *Public Utilities Fortnightly* (Oct. 15, 1995), at 43.

1 beta – which captures stock price volatility relative to the market.⁸⁷ Within the
 2 CAPM paradigm, the degree of regulation, the nature of competition in the industry,
 3 the competence of management, and every other firm-specific consideration is
 4 boiled down to a single question; namely, how much does the stock’s price fluctuate
 5 in relation to the market as a whole? Beta is the measure of that variability, and
 6 research demonstrates that beta does not fully account for the impact of firm size.
 7 As FERC concluded regarding the same adjustment methodology employed in our
 8 direct testimony in this case, “This type of size adjustment is a generally accepted
 9 approach to CAPM analyses.”⁸⁸

V. NO INCONSISTENCY IN RISK PREMIUM METHOD

10 **Q62. PLEASE RESPOND TO DR. WOOLRIDGE’S COMMENTS REGARDING**
 11 **YOUR RISK PREMIUM ANALYSIS (PP. 72-73)?**

12 A62. Dr. Woolridge has two criticisms of our risk premium analysis based on previously
 13 allowed ROEs for utilities. The first is that the “base yield” on public utility bonds
 14 to which we added the risk premium is somehow inflated. This is not accurate. The
 15 yield to maturity is a direct measure of investors’ required return to compensate for
 16 the risks they associate with utility bonds, including credit risks. Aside from the fact
 17 that his contention is not accurate, it is irrelevant because similar public utility bond
 18 yields were used to calculate the risk premium; hence, the risk premium would be
 19 understated by a comparable and offsetting amount. In addition, Dr. Woolridge
 20 suggests that our application of the risk premium approach considered only
 21 projected bond yields, which is not accurate. Page 1 of Exhibit WEA/AMM 9 to
 22 our direct testimony applies this approach using current yields.

⁸⁷ Dr. Woolridge also recognized that beta is the only relevant risk measure within the context of the CAPM. Woolridge Direct at 29.

⁸⁸ *Opinion No. 531-B*, 150 FERC ¶ 61,165 at P 117 (2015).

1 Second, Dr. Woolridge argues that allowed ROEs do not reflect investors’
 2 expectations. But as he recognized, “Regulatory commissions evaluate capital
 3 market data is setting authorized ROEs.”⁸⁹ While regulators certainly consider
 4 case-specific evidence in evaluating a fair ROE, Dr. Woolridge provides no
 5 evidence to support his assertion that allowed ROEs, on balance, are distorted or
 6 biased.

7 Third, Dr. Woolridge claims that because utility common stocks have been
 8 selling in excess of book value for many years, this means regulators have routinely
 9 authorized ROEs greater than what investors require. This criticism suggests that
 10 Dr. Woolridge has a low regard for regulators’ ability to make informed judgments
 11 as to the ROE that is necessary to compensate investors fairly for the use of their
 12 capital, enable the utility to attract capital on reasonable terms, and maintain the
 13 utility's financial integrity. Moreover, as discussed earlier, establishing returns to
 14 produce a market-to-book ratio of 1.00 implies a capital loss to investors in utility
 15 common stocks, which is inconsistent with regulatory standards and the
 16 expectations underlying utility stock prices.

17 **Q63. DOES MR. BAUDINO ADVANCE ANY CREDIBLE CRITICISM OF YOUR**
 18 **RISK PREMIUM APPROACH?**

19 A63. No. Mr. Baudino’s only observation is that the risk premium method is
 20 “imprecise.”⁹⁰ Of course, this “criticism” applies equally to every model of investor
 21 behavior that is used to estimate required returns, including the DCF approach that
 22 formed the sole basis for Mr. Baudino’s recommendation. The DCF method is only
 23 one theoretical approach to gain insight into the return investors require, which is
 24 unobservable. While the tautology of the DCF model boils this determination down

⁸⁹ Woolridge Direct at 6.

⁹⁰ Baudino Direct at 43

1 to the familiar dividend yield and growth rate components, this masks the
2 underlying complexities that accompany any attempt to distill every facet of
3 investors' expectations into a single growth estimate. Mr. Baudino's claim that the
4 DCF is "far more reliable and accurate" is unsubstantiated and directly contradicted
5 by the recent findings of FERC, where risk premium results were used to establish
6 an ROE from the upper end of the DCF range due to its finding that DCF results
7 were skewed downwards.⁹¹

VI. EXPECTED CAPITAL MARKET CONDITIONS

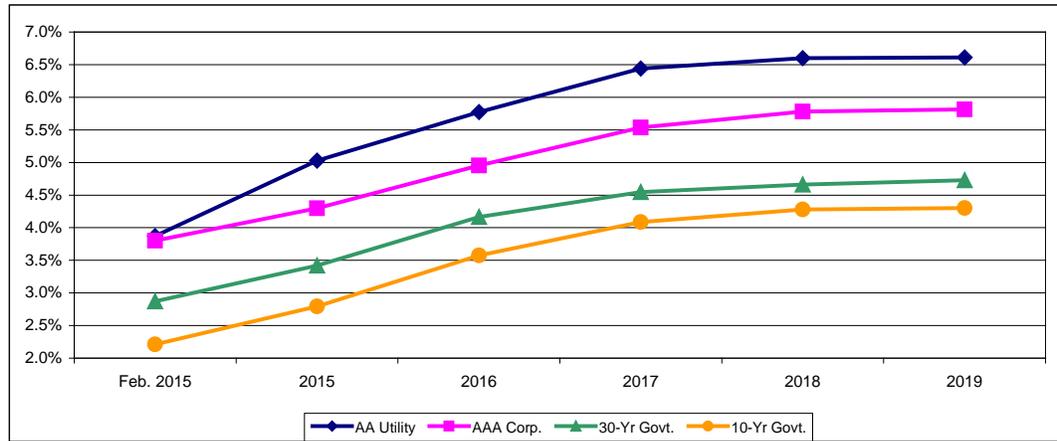
8 **Q64. DR. WOOLRIDGE AND MR. BAUDINO ARGUE THAT CURRENT**
9 **INTEREST RATES ARE INDICATIVE OF EXPECTATIONS FOR LOW**
10 **CAPITAL COSTS. DO YOU AGREE?**

11 A64. No. Investors' current outlook for long-term capital costs was discussed at length in
12 our direct testimony.⁹² None of the discussion presented by Dr. Woolridge or Mr.
13 Baudino evidences a fundamental shift in expectations since that time. Figure R-1
14 below provides an updated comparison of current interest rates on 30-year Treasury
15 bonds, triple-A rated corporate bonds, and double-A rated utility bonds with near-
16 term projections from the Value Line Investment Survey ("Value Line"), IHS Global
17 Insight, Blue Chip Financial Forecasts ("Blue Chip"), and the Energy Information
18 Administration ("EIA"):

⁹¹ Opinion No. 531.

⁹² Avera/McKenzie Direct at 11-19.

**FIGURE R-1
INTEREST RATE TRENDS**



Source:

Value Line Investment Survey, Forecast for the U.S. Economy (Feb. 20, 2015)
 IHS Global Insight, The U.S. Economy: The 30-Year Focus (Third-Quarter 2014)
 Energy Information Administration, Annual Energy Outlook 2014 (May 7, 2014)
 Blue Chip Financial Forecasts, Vol. 33, No. 12 (Dec. 1, 2014)

1 Contrary to Dr. Woolridge’s (p. 14) and Mr. Baudino’s position (p. 9) that current
 2 interest rates are indicative of future expectations, these highly regarded and widely
 3 referenced forecasts evidence a clear consensus in the investment community that
 4 the cost of long-term capital will be significantly higher over the 2015-2019 period.
 5 Similarly, as noted earlier Dr. Woolridge’s own sources contradict his views and
 6 expressly consider “normalized” interest rates, rather than current, suppressed
 7 values.

8 **Q65. PLEASE ADDRESS DR. WOOLRIDGE’S CONCERNS (P. 15) OVER THE**
 9 **ACCURACY OF INTEREST RATE FORECASTS.**

10 A65. Dr. Woolridge apparently believes that because “100% of economists were wrong”
 11 in forecasting higher interest rates in 2014, investors will simply throw up their
 12 hands and give up attempts to anticipate the future. Of course, such a scenario is
 13 completely at odds with rational investor behavior, as evidenced by the intense
 14 scrutiny of Federal Reserve pronouncements for any nuanced clue as to future
 15 policy. The fact that independent forecasts of bond yields have not mirrored actual

1 results is irrelevant because it is the answer to a different question. While the actual
2 pattern of bond yields will invariably deviate from these forecasts, the forecasts, as
3 opposed to historical results, are the relevant inquiry because they provide an
4 independent, well-recognized guidepost to investors' future expectations. Just as
5 when relying on growth projections in applying the DCF model, the paramount
6 consideration is investors' expectations, and not historical comparisons. The very
7 same is true of investors' expectations for higher interest rates, and the fact that past
8 forecasts have not materialized does not support Dr. Woolridge's subjective
9 dismissal of this evidence.

VII. FLOTATION COSTS SHOULD BE CONSIDERED

10 **Q66. PLEASE RESPOND TO DR. WOOLRIDGE'S SPECIFIC CRITICISMS OF**
11 **YOUR FLOTATION COST ADJUSTMENT.**

12 A66. First, while Dr. Woolridge suggests that flotation costs should be ignored because
13 our adjustment was not predicated on a precise accounting for Kentucky Power, this
14 belies the point of the adjustment. While Kentucky Power does not issue common
15 stock, and will never incur flotation costs directly, this does not mean that flotation
16 costs can be ignored. The equity capital supporting Kentucky Power's investment
17 in utility plant is ultimately obtained through the sale of common stock by the
18 Company's parent, American Electric Power Company, and the fact that the
19 Company does not incur issuance expenses directly provides no basis to ignore a
20 flotation cost adjustment. The approach outlined in our direct testimony is
21 supported by recognized regulatory textbooks and based on research reported in the
22 academic literature. Without a flotation adjustment, these legitimate costs incurred
23 to raise the equity capital necessary for Kentucky Power to provide utility service

1 will be excluded for ratemaking purposes and will undercut Kentucky Power’s
 2 ability to earn its authorized ROE.

3 Meanwhile, Dr. Woolridge mistakenly claims that a flotation cost
 4 adjustment “is necessary to prevent dilution of the existing shareholders.”⁹³ In fact,
 5 a flotation cost adjustment is required in order to allow the utility the opportunity to
 6 recover the issuance costs associated with selling common stock, even when those
 7 stock sales are made by Kentucky Power’s parent company. Dr. Woolridge’s
 8 observation about the level of market-to-book ratios may be factually correct, but it
 9 has nothing to do with flotation costs. The fact that market prices may be above
 10 book value does not alter the fact that a portion of the capital contributed by equity
 11 investors is not available to earn a return because it is paid out as flotation costs.
 12 Even if the utility is not expected to issue additional common stock, a flotation cost
 13 adjustment is necessary to compensate for flotation costs incurred in connection
 14 with past issues of common stock.

15 Dr. Woolridge’s argument (p. 75-76) that flotation costs are “not out-of-
 16 pocket expenses” is simply wrong. Dr. Woolridge apparently believes that if
 17 investors in past common stock issues had paid the full issuance price directly to the
 18 utility and the utility had then paid underwriters’ fees by issuing a check to its
 19 investment bankers, that flotation cost would be a legitimate expense. Dr.
 20 Woolridge’s observation merely highlights the absence of an accounting convention
 21 to properly accumulate and recover these legitimate and necessary costs. Just like
 22 the issuance costs associated with long-term bonds, which are recorded on Kentucky
 23 Power’s financial records and reflected in the embedded cost of debt, equity

⁹³ Woolridge Direct at 74.

1 flotation costs are a necessary expense associated with raising long-term capital, and
2 should be considered in establishing a fair ROE.

3 With respect to Dr. Woolridge's (p. 76) and Mr. Baudino's (p. 43-44)
4 contention that flotation costs are somehow accounted for in current stock prices,
5 *Regulatory Finance: Utilities' Cost of Capital* has this to say:

6 A third controversy centers around the argument that the omission of
7 flotation cost is justified on the grounds that, in an efficient market,
8 the stock price already reflects any accretion or dilution resulting
9 from new issuances of securities and that a flotation cost adjustment
10 results in a double counting effect. The simple fact of the matter is
11 that whatever stock price is set by the market, the company issuing
12 stock will always net an amount less than the stock price due to the
13 presence of intermediation and flotation costs. As a result, the
14 company must earn slightly more on its reduced rate base in order to
15 produce a return equal to that required by shareholders.⁹⁴

16 Similarly, the need to consider past flotation costs has been recognized in the
17 financial literature, including sources that Dr. Woolridge relied on in his testimony.
18 Specifically, Ibbotson Associates concluded that:

19 Although the cost of capital estimation techniques set forth later in
20 this book are applicable to rate setting, certain adjustments may be
21 necessary. One such adjustment is for flotation costs (amounts that
22 must be paid to underwriters by the issuer to attract and retain
23 capital).⁹⁵

⁹⁴ Morin, Roger , "Regulatory Finance: Utilities' Cost of Capital," *Public Utilities Reports, Inc.* at 174 (1994).

⁹⁵ Morningstar, *Ibbotson SBBI 2011 Valuation Yearbook* at 25 (2011).

VIII. PROXY GROUP REVENUE TEST IS UNSUPPORTED

1 **Q67. DO YOU AGREE WITH DR. WOOLRIDGE AND MR. BAUDINO THAT**
2 **THE SOURCE OF A UTILITY’S REVENUES IS A VALID CRITERION IN**
3 **SELECTING A PROXY GROUP FOR KENTUCKY POWER?**

4 A67. No. Dr. Woolridge and Mr. Baudino argued for the elimination of companies if less
5 than 50% of total revenues were attributable to regulated electric utility
6 operations.⁹⁶ However, both witnesses failed to demonstrate how this subjective
7 criterion translates into differences in the investment risks perceived by investors.
8 Any comparison of objective indicators demonstrates that investment risks for the
9 firms in our proxy groups are relatively homogeneous and comparable to Kentucky
10 Power.

11 **Q68. DID DR. WOOLRIDGE OR MR. BAUDINO DEMONSTRATE A NEXUS**
12 **BETWEEN THEIR SUBJECTIVE REVENUE CRITERION AND**
13 **OBJECTIVE MEASURES OF INVESTMENT RISK?**

14 A68. No. Under the regulatory standards established by *Hope*⁹⁷ and *Bluefield*⁹⁸, the
15 salient criterion in establishing a meaningful proxy group to estimate investors’
16 required return is relative risk, not the source of the revenue stream. Dr. Woolridge
17 Mr. Baudino presented no evidence to demonstrate a connection between the
18 subjective revenue criterion that they employed and the views of real-world
19 investors in the capital markets.

20 Due to differences in business segment definition and reporting between
21 utilities, it is often impossible to accurately apportion financial measures, such as
22 total revenues, between utility segments (*e.g.*, electric and natural gas) or regulated

⁹⁶ Woolridge Direct at 17; Baudino Direct at 18.

⁹⁷ *Fed. Power Comm’n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

⁹⁸ *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm’n*, 262 U.S. 679 (1923).

1 and non-regulated sources. As a result, even if one were to ignore the fact that there
2 is no clear link between the source of a utility’s revenues and investors’ risk
3 perceptions, it is generally not possible to accurately and consistently apply
4 revenue-based criteria. In fact, other regulators have rebuffed these notions, with
5 FERC rejecting attempts to restrict a proxy group to companies based on sources of
6 revenues. As FERC concluded:

7 This is inconsistent with Commission precedent in which we have
8 rejected proposals to restrict proxy groups based on narrow company
9 attributes.⁹⁹

10 FERC has specifically rejected arguments that utilities “should be excluded from the
11 proxy group given the risk factors associated with its unregulated, non-utility
12 business operations.”¹⁰⁰

13 **Q69. ARE THERE OTHER INCONSISTENCIES ASSOCIATED WITH THE**
14 **REVENUE TESTS PROPOSED BY DR. WOOLRIDGE AND MR.**
15 **BAUDINO?**

16 A69. Yes. While Dr. Woolridge and Mr. Baudino screened all electric and combination
17 electric and gas utilities followed by Value Line, their revenue tests were based
18 solely on electric revenues and ignored the impact of gas utility operations. For
19 example, despite the fact that Dr. Woolridge’s source indicates that Sempra Energy
20 has electric and gas utility revenues well in excess of 50% of consolidated revenues,
21 Dr. Woolridge and Mr. Baudino would exclude this firm under their revenue test.
22 Considering the similarities in the regulatory and business environments for
23 regulated electric and gas utility operations, there is no justification for Dr.

⁹⁹ *Pepco Holdings, Inc.*, 124 FERC ¶ 61,176 at P 118 (2008) (footnote omitted).

¹⁰⁰ *Bangor Hydro-Elec. Co.*, 117 FERC ¶ 61,129 at PP 19, 26 (2006).

1 Woolridge’s and Mr. Baudino’s failure to incorporate gas utility revenues in
 2 implementing their revenue test.

3 The arbitrary nature of the 50% revenue criterion proposed by Dr.
 4 Woolridge and Mr. Baudino is further illustrated by the lack of any independent,
 5 objective findings to support his imposed threshold. In fact, Dr. Woolridge cannot
 6 seem to decide for himself what the correct cutoff should be. For example, in his
 7 2010 testimony before the KPSC in Case No. 2009-00548, Dr. Woolridge argued to
 8 exclude companies with less than 80% of revenues attributable to electric
 9 operations. Dr. Woolridge’s revenue statistic has no demonstrable link to risk and
 10 his internal inconsistency merely highlights the entirely subjective and baseless
 11 nature of his “test.”

12 **Q70. DOES MR. BAUDINO’S PROXY GROUP ACCURATELY REFLECT THE**
 13 **SELECTION CRITERIA HE EMPLOYED?**

14 A70. No. There are apparent inconsistencies in Mr. Baudino’s application of his proxy
 15 group criteria. For example, Black Hills Corporation (BBB/Baa1), IDACORP, Inc.
 16 (BBB/Baa1), and Westar Energy (BB+/Baa1) all have S&P and Moody’s credit
 17 ratings within the range specified by Mr. Baudino and, according to Dr. Woolridge,
 18 all three of these utilities meet Mr. Baudino’s 50% revenue test. Mr. Baudino did
 19 not indicate that these firms were excluded based on his remaining screens.¹⁰¹

¹⁰¹ Baudino Direct at 18.

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IX. RESPONSE TO MR. CHRISS

Q71. DID MR. CHRISS CONDUCT AN INDEPENDENT EVALUATION OF A FAIR ROE FOR KENTUCKY POWER?

A71. No. Mr. Chriss did not conduct any analyses of the cost of equity. His testimony was limited to a presentation of selected data concerning previously authorized ROEs. Based on this limited review, Mr. Chriss expressed his concern that a 10.62% ROE for Kentucky Power is “excessive.”¹⁰²

Q72. DO YOU AGREE WITH MR. CHRISS THAT ALLOWED ROES PROVIDE ONE BENCHMARK WORTHY OF CONSIDERATION IN THE COMMISSION’S EVALUATION?

A72. Yes, we do. Importantly, however, such comparisons of allowed ROEs are only one consideration. While this data can be useful in the KPSC’s deliberations, it is not a substitute for the detailed analyses presented in our direct testimony.

Q73. DOES THE DATA PRESENTED BY MR. CHRISS CONFIRM YOUR CONCLUSION THAT DR. WOOLRIDGE’S AND MR. BAUDINO’S RECOMMENDATIONS ARE TOO LOW?

A73. Yes. Mr. Chriss cites an average allowed ROE of 10.1% for 2012-2015 and an average allowed return for vertically integrated utilities of 9.92% for 2014,¹⁰³ which confirms our earlier conclusion that the 8.65% and 8.75% ROE recommendations of Dr. Woolridge and Mr. Baudino fall well below average returns authorized for other utilities, and are insufficient to meet the requirements of regulatory standards.

¹⁰² Chriss Direct at 7.
¹⁰³ Chriss Direct at 11.

1 **Q74. DO YOU AGREE WITH THE INFERENCE THAT MR. CHRISS DRAWS**
 2 **FROM HIS REVIEW OR ALLOWED ROES?**

3 A74. No. First, the data presented by Mr. Chriss does not include all rate case results
 4 compiled by Regulatory Research Associates “(RRA”) and reported to investors by
 5 SNL financial. ROEs for electric utilities reported by RRA from 2012 through the
 6 2014 are displayed in Table R-2, below:

7 **TABLE R-2**
 8 **ALLOWED ROEs FOR ELECTRIC UTILITIES**

<u>Year</u>	<u>ROE</u>	<u>No. Cases</u>
2012	10.17%	58
2013	10.02%	50
2014	9.92%	37
	<u>10.04%</u>	<u>145</u>

9
 10 As illustrated above, these returns result in an average ROE that is significantly
 11 higher than the 9.88% average and 9.83% median values reported by Mr. Chriss.

12 Second, there is no basis for Mr. Chriss to suggest that average authorized
 13 ROEs are somehow skewed upwards because of specific awards in certain states.
 14 Mr. Chriss points to ROEs above 10% awarded in Wisconsin, but he made no effort
 15 to examine results at the low-end of the range. For example the two 8.72% ROEs
 16 that set the minimum of the values reviewed by Mr. Chriss were both authorized in
 17 Illinois based on a fixed spread over Treasury bond yields, which presents a
 18 distorted picture of capital costs for utilities.¹⁰⁴ Similarly, the next-highest 9.0%
 19 value for Maui Electric Company incorporated a penalty related to that utility’s
 20 integration of renewable generation and applies to a jurisdiction that has instituted

¹⁰⁴ For example, FERC recently discontinued its practice of adjusting ROEs based on changes in Treasury bond yields, noting that, “U.S. Treasury bond yields do not provide a reliable and consistent metric for tracking changes in ROE.” Opinion No. 531, 147 FERC ¶ 61,234 at P 160 (2014).

1 full revenue decoupling. In short, while a review of historical authorized ROEs can
 2 provide a meaningful ROE benchmark, it is not a substitute for a thorough analysis
 3 of the cost of capital, such as that contained in our direct testimony and supporting
 4 the Company’s 10.62% requested ROE.

5 **Q75. FROM YOUR POSITION AS AN ECONOMIST, WHAT DO YOU MAKE OF**
 6 **MR. CHRISS’S ADMONITION (PP. 6-7, 11) TO CONSIDER CUSTOMER**
 7 **IMPACTS WHEN ESTABLISHING A FAIR ROE?**

8 A75. First, it is important to note that the determination of the ROE is made by investors
 9 in the capital markets, and is not predicated on any notion of costs or savings to
 10 customers. The U.S. Supreme Court’s regulatory standards embodied in the *Hope*
 11 and *Bluefield* decisions represent a balance between the interests of customers and
 12 investors, by setting forth the guidelines as to a fair ROE. Meanwhile, Mr. Chriss
 13 wrongly suggests that a lower ROE is *per se* in customers’ benefit. This is not the
 14 case. While a downward-biased ROE may provide the illusion of customer
 15 “savings” in the form of a lower revenue requirement in the short-term, the long-
 16 term impact of an inadequate ROE can be injurious to customers and the Kentucky
 17 economy.

18 As discussed earlier, there is a very real connection between the ROE and
 19 the availability of capital, and Mr. Chriss ignores the negative impact that an
 20 inadequate ROE would have on investment. The ROE is the primary signal to
 21 investors, not only with respect to attracting new capital investment, but also in
 22 supporting existing utility operations. If the utility is unable to offer a competitive
 23 ROE, existing shareholders will suffer a capital loss as investors take advantage of
 24 other, more favorable opportunities, and the utility’s stock price would fall.
 25 Moreover, as investors’ confidence is undermined, the ability of utilities to access
 26 equity capital markets and expand investment will suffer. While Kentucky Power

1 would undoubtedly continue to meet its service obligations to customers, a
2 downward-biased ROE would send an unmistakable signal to the investment
3 community as they consider whether to commit capital in Kentucky, and at what
4 cost.

5 **Q76. DOES THE 2013 NORTH CAROLINA SUPREME COURT DECISION**
6 **CITED BY MR. CHRIS (P. 12) SUPPORT HIS ADMONITION?**

7 A76. No.¹⁰⁵ The decision cited by Mr. Chris remanded a Duke Energy Carolinas
8 (“Duke”) case back to the North Carolina Utilities Commission (“NCUC”) because
9 in accepting the ROE in a stipulation the Commission’s order did not address the
10 substantive arguments raised by expert witnesses representing consumer interests.
11 In 2014 there was a subsequent North Carolina Supreme Court Decision confirming
12 the NCUC’s Order on Remand (October, 23 2013).¹⁰⁶ In the Order on Remand the
13 NCUC reached the same conclusion as to ROE but specifically addressed the
14 substantive issues raised by witnesses on behalf of consumer interests. Our rebuttal
15 testimony in this case is consistent with the guidance of the North Carolina Supreme
16 Court because we have responded to every substantive argument in the testimony of
17 opposing witnesses. The North Carolina Supreme Court decision also cited the
18 finding of the Remand Order that reflects our argument that maintaining the utility’s
19 ability to attract capital is in customers’ interest:

20 55. Continuous safe, adequate, and reliable electric service by
21 [Duke] is essential to the well-being of the people, businesses,
22 institutions, and economy of North Carolina.¹⁰⁷

¹⁰⁵ Like Mr. Chriss, we are not attorneys and do not address the legal relevance of this North Carolina case to Kentucky rate cases.

¹⁰⁶ See, *In the Supreme Court of North Carolina, STATE EX REL. UTILS. COMM’N V. COOPER, ATT’Y GEN. No. 268A12-2 (Fined 19 December 2014)* at p. 4.

¹⁰⁷ *Id.*, p. 10.

1 Just as being served by a utility that has reasonable access to capital is in the interest
2 of consumers in North Carolina, so also is Kentucky Power’s access to capital
3 essential to people, businesses, institutions, and the economy of Kentucky. The
4 final conclusion of the December 19, 2014 decision by the North Carolina Supreme
5 Court is consistent with the Company’s ROE request in this case:

6 These findings of fact not only demonstrate that the Commission
7 considered the impact of changing economic conditions upon
8 customers, but also specify how this factor influenced the
9 Commission’s decision to authorize a 10.5% ROE as agreed to in the
10 Stipulation.¹⁰⁸

11 **Q77. DO YOU AGREE WITH MR. CHRISS’S ASSESSMENT REGARDING THE**
12 **IMPACT OF CONSTRUCTION WORK IN PROGRESS (“CWIP”)?**

13 A77. No. While Mr. Chriss attempts to distinguish the risks of Kentucky Power based on
14 the opportunity to include CWIP in rate base, this is hardly novel or unique to
15 Kentucky Power and has been widely utilized since the 1970s to address the impact
16 of construction costs on utilities’ financial integrity.

17 **Q78. WHAT IS CWIP?**

18 A78. CWIP consists of investment in facilities built to meet service obligations that are
19 not yet physically providing service. For an electric utility, CWIP can be sizeable as
20 a result of the capital intensity of utility infrastructure investment and the extended
21 construction periods involved with these facilities. During the construction phase,
22 the utility must pay capital carrying costs (interest, dividends, etc.) on the
23 investment in new facilities. These capital carrying costs are typically accrued for
24 future recovery in the form of Allowance for Funds Used During Construction
25 (“AFUDC”), which is included in rate base at the time the facilities are placed in
26 service. Alternatively, regulators may allow CWIP to be included in rate base and

¹⁰⁸ Id., p. 12.

1 thus permit the utility an opportunity to recover these capital costs through current
2 rates.

3 **Q79. WHAT IS THE FINANCIAL IMPACT OF CWIP?**

4 A79. If CWIP is included in rate base, the utility’s revenue requirements are increased by
5 the capital costs associated with the new construction. As a result, since customers
6 pay the capital carrying costs of CWIP in current rates, capitalized AFUDC is not
7 added to plant cost. From the utility’s standpoint, current cash flow is higher than it
8 would have been otherwise. As a result, including CWIP in rate base improves a
9 utility’s cash flow and increases revenue requirements during the construction
10 phase; however, this increase is offset in the future by the lower rate base that results
11 from eliminating capitalized AFUDC.

12 While the level of a utility’s earnings does not differ dramatically depending
13 on whether or not CWIP is included in rate base, the cash flow implications can be
14 significant, especially in the case of a large construction program. To finance the
15 costs of construction, utilities such as Kentucky Power must obtain financing in the
16 form of common equity or long-term debt. If CWIP is not included in rate base, no
17 cash is generated from current rates to meet the interest and dividend payments
18 associated with these securities, which in turn must be financed.

19 The uncertainties that investors associate with cost deferrals and a
20 deterioration in earnings quality are significant and many of the key indicators relied
21 on by securities analysts and bond rating agencies focus on measures of cash flow.
22 As a result, the greater risk associated with higher levels of non-cash earnings (*i.e.*,
23 AFUDC) would ultimately be reflected in higher rates of return required by
24 investors. Investors recognize that including CWIP in rate base is an important tool
25 that supports the utility’s financial integrity and attenuates some of the financial
26 risks associated with new infrastructure investment.

1 **Q80. IS THERE ANY MERIT TO MR. CHRISS'S CONTENTION (P. 9) THAT**
2 **INCLUDING CWIP IN RATE BASE "SHIFTS RISKS TO RATEPAYERS?"**

3 A80. No. Including CWIP in rate base will ease the financial pressure associated with the
4 Company's capital projects by improving cash flow and providing greater regulatory
5 certainty. While instrumental in supporting financial integrity and ability to attract
6 capital, including CWIP will not have a measurable impact on the overall
7 investment risks of Kentucky Power or investors' required rate of return. Including
8 CWIP in rate base changes only the timing of cost recovery for projects included in
9 CWIP. Accordingly, CWIP does not shift risks to ratepayers, as alleged by Mr.
10 Chriss.

11 **Q81. HAVE OTHER REGULATORS RECOGNIZED THE POTENTIAL**
12 **BENEFITS ASSOCIATED WITH INCLUDING CWIP IN RATE BASE?**

13 A81. Yes. Investors recognize that it is not uncommon for regulators to include CWIP in
14 rate base when establishing rates. A study by the Edison Electric Institute observed
15 that:

16 The inclusion of CWIP in rate base improves cash flow and reduces
17 future rate shocks. This practice also reduces the losses that a utility
18 experiences making large plant additions under historical test year
19 rates. Monitoring by the Edison Electric Institute has found that
20 states that have recently allowed the inclusion of CWIP in rate base
21 include CO, FL, GA, IN, KS, KY, LA, MI, MO, NC, NM, NV, SD,
22 TN, VA, and WV.¹⁰⁹

23 Accordingly, the cost of equity estimates developed for the proxy companies
24 already reflects any impact associated with the opportunity to earn a return on
25 CWIP. FERC has also recognized that including CWIP balances the interest of
26 investors and customers, and the Commission has routinely allowed electric utilities

¹⁰⁹ Edison Electric Institute, *Forward Test Years for US Electric Utilities* (August 2010).

1 to include CWIP in rate base.¹¹⁰ FERC noted in *Order No. 679* that including
2 CWIP in rate base provides “up-front regulatory certainty, rate stability and
3 improved cash flow” that encourage investment by “easing the financial pressures”
4 associated with construction programs.¹¹¹

5 **Q82. IS MR. CHRISS’S POSITION WITH RESPECT TO CWIP CONSISTENT**
6 **WITH ESTABLISHED PRECEDENT IN KENTUCKY?**

7 A82. No. Mr. Chriss’s recommendations conflict with the KPSC’s long-established
8 support for including CWIP without any downward adjustment to the ROE. Mr.
9 Chriss has presented no evidence that would suggest the KPSC’s longstanding
10 practice no longer benefits customers or would otherwise undermine a constructive
11 regulatory policy that is widespread in the industry. Moreover, while CWIP is
12 supportive of Kentucky Power’s credit standing, it does not allow recovery of a
13 return on construction expenditures outside of a rate proceeding. As a result, there
14 can be a significant lag between the time that expenditures are incurred and when
15 they are included in CWIP, which is exacerbated for utilities with capital
16 expenditure programs. Mr. Chriss fails to address these realities, which further
17 disprove his assessment and recommendations.

18 **Q83. DOES THIS CONCLUDE YOUR PRE-FILED REBUTTAL TESTIMONY?**

19 A83. Yes.

¹¹⁰ *Construction Work in Progress for Public Utilities; Inclusion of Costs in Rate Base*, Order No. 298, FERC
Stats. & Regs. ¶ 30,455 (1983), order on reh’g, 25 FERC ¶ 61,023 (1983).

¹¹¹ *Order No.679* at P. 115. *See also, Order No. 679-A* at PP. 114-115.