BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS

In the Matter of the Application of Evergy Kansas South, Inc. and Evergy Kansas Central, Inc. to make Certain Changes in their Charges for Electric Service Pursuant to K.S.A. 66-117.	)))))	**Docket No. 25-EKCE-294-RTS**

REBUTTAL TESTIMONY OF

ANN E. BULKLEY

FILED ON BEHALF OF
EVERGY KANSAS CENTRAL, INC.
AND EVERGY KANSAS SOUTH, INC.

July 3, 2025

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name, by whom you are employed and your business address.

A. My name is Ann E. Bulkley. I am a Principal at The Brattle Group ("Brattle"). My business address is One Beacon Street, Suite 2600, Boston, Massachusetts 02108.

Q. On whose behalf are you testifying?

A. I am submitting this rebuttal testimony before the State Corporation Commission of the State of Kansas ("Commission") on behalf of Evergy Kansas Central, Inc. and Evergy Kansas South, Inc. (collectively, "EKC" or the "Company"), which are wholly-owned subsidiaries of Evergy, Inc.

Q. Are you the same Ann E. Bulkley who previously submitted direct testimony in this proceeding?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the direct testimonies of Mr. Adam H. Gatewood on behalf of the Commission Staff ("Staff"),[1] Dr. J. Randall Woolridge on behalf of the Citizen's Utility Ratepayer Board,[2] and Michael P. Gorman on behalf of Kansas Industrial Consumers Group, Inc. and its Participating Members ("Industrial Consumers"),[3] regarding the just and reasonable return on equity ("ROE") and the

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[1] Kansas Corporation Commission, Docket No. 25-EKCE-294-RTS, Direct Testimony of Adam H. Gatewood, June 6, 2025 ("Gatewood Direct").

[2] Kansas Corporation Commission, Docket No. 25-EKCE-294-RTS, Direct Testimony of Dr. J. Randall Woolridge, June 6, 2025 ("Woolridge Direct").

[3] Kansas Corporation Commission, Docket No. 25-EKCE-294-RTS, Direct Testimony and Exhibits of Michael P. Gorman, June 6, 2025 ("Gorman Direct").

appropriate capital structure for the Company. Further, to the extent that I do not address a particular issue raised by these witnesses should not be viewed as acceptance of the issue.

Q. Are you sponsoring any exhibits as part of your rebuttal testimony?

A. Yes. I am sponsoring Rebuttal Exhibit AEB-13 through Rebuttal Exhibit AEB-24, which have been prepared by me or under my direct supervision.

Q. Have you updated the cost of equity analyses that you presented in your direct testimony to reflect current market conditions?

A. Yes. As discussed in more detail herein, I have updated the cost of equity analyses presented in my direct testimony based on market data through May 30, 2025. These results provide additional support for the Company's proposed ROE of 10.50 percent. My conclusion continues to be based on not only the results of multiple cost of equity models, but also other factors, including capital market conditions, the capital attraction and comparable return standards, and the Company's specific risks.

Q. How is the remainder of your rebuttal testimony organized?

A. The remainder of my rebuttal testimony is organized as follows:

- Section II provides a summary and overview of my rebuttal testimony and the important factors to be considered in establishing the authorized ROE for the Company.
- Section III discusses the changes in capital market conditions since my direct testimony and their effect on the cost of equity and authorized ROEs for comparable vertically-integrated electric utilities nationwide relative to the witnesses' ROE recommendations in this proceeding.
- Section IV provides the update to my cost of equity analyses based on market data as of May 30, 2025.
- Section V provides my response to the issues raised by the parties regarding the proxy group.
- Section VI summaries the results of the cost of equity analyses conducted by Mr. Gatewood, Dr. Woolridge, and Mr. Gorman and discusses inconsistencies between

the results of the models and ROE recommendations for Mr. Gatewood and Dr. Woolridge.

- Section VII provides my response to the parties regarding the DCF model.
- Section VIII provides my response to the parties regarding the CAPM analysis.
- Section IX provides my response to the parties regarding the ECAPM analysis.
- Section X provides my response to the parties regarding the Bond Yield Risk Premium analysis.
- Section XI summarizes the results of the cost of equity analyses conducted by Mr. Gatewood, Dr. Woolridge, and Mr. Gorman based on the updates and corrections to those analyses that I discuss herein.
- Section XII provides my response to the parties regarding the business and regulatory risks of the Company.
- Section XII provides my response to the issues raised by the parties regarding the capital structure of the Company.

II. SUMMARY OF ANALYSES AND CONCLUSIONS

Q. Has anything in the testimonies of Mr. Gatewood, Dr. Woolridge, and Mr. Gorman caused you to change your position regarding the appropriate return on equity and capital structure for the Company?

A. No, nothing in the testimonies of Mr. Gatewood, Dr. Woolridge, and Mr. Gorman causes me to change my positions as set forth in my direct testimony in this proceeding. The Company's requested ROE of 10.50 percent is reasonable if not conversative when considering the updated analyses presented in my rebuttal testimony which reflect market data through May 30, 2025 and my evaluation of the Company's business risks (*i.e.,* wildfire, nuclear generation risk, regulatory risk, capital expenditures) relative to the proxy group contained in my direct testimony, which showed that the Company has greater business risk relative to the proxy group. Furthermore, Mr. Gatewood appears to disregard his cost of equity analyses and instead incorrectly rely on the risk premia (*i.e.,* authorized ROEs over corporate bonds) authorized in prior rate proceedings to develop his

recommended ROE while the ROE recommendations of Dr. Woolridge and Mr. Gorman are based on cost of equity analysis that reflect several inconsistences from the methodologies that each witness has relied on prior cases. Given the identified issues with the analyses conducted by Mr. Gatewood, Dr. Woolridge and Mr. Gorman, the Commission should disregard their conclusions regarding the Company's requested ROE of 10.50 percent. In fact, as shown in Figure 1 below, when reasonable adjustments are applied to the cost of equity models relied on by Mr. Gatewood, Dr. Woolridge and Mr. Gorman, the adjusted results support the Company's ROE request.

Finally, the Company's proposed equity ratio is reasonable based on a comparison to 1) the actual equity ratios of the utility subsidiaries of the proxy group companies; and 2) the authorized equity ratios for comparable vertically-integrated electric utilities across the U.S.

Q. Do these witnesses proposals adequately reflect the factors that should be considered in evaluating the results of the cost of equity analyses and establishing the authorized ROE?

A. No. The primary factors that should be considered are: (1) the importance of providing a return that is comparable to returns on alternative investments with commensurate risk; (2) the need for a return that supports a utility's ability to attract needed capital at reasonable terms; (3) the effect of current and expected capital market conditions; and (4) achieving a reasonable balance between the interests of investors and customers.

Q. What are your key conclusions and recommendations regarding the appropriate ROE for the Company?

A. Based on my review of these witnesses' testimonies, my key conclusions regarding the Company's proposed ROE are:

- Updating the cost of equity estimation models that I relied upon in my direct testimony to reflect the most current data continues to support the Company's requested ROE of 10.50 percent.
- While Mr. Gatewood develops several cost of equity models, the range he recommends for the Company's ROE in this proceeding is not based on the results of his cost of equity models, but rather is based on outdated market information and estimated risk premiums relative to prior authorized ROEs.
- Despite acknowledging that the cost of capital has increased in the current market environment, Mr. Gatewood sets the low end of his range based on his proposed ROE in the Company's 2023 rate case. There is no support that data as of 2023 reflects the low end of the cost of equity range in the current market environment.
- The methodology Mr. Gatewood uses for the high end of his range, which is estimated based on the spread between prior Staff ROE recommendations and corporate bond yields is not a credible estimation of the investor-required return.
- There are a number of inconsistencies in both Dr. Woolridge's and Mr. Gorman's approaches as compared with their testimony in prior proceedings. Specifically:
    - While Dr. Woolridge has consistently indicated that he places primary weight on the results of his DCF analyses, as the results of his DCF analyses have increased over time, Dr. Woolridge has arbitrarily placed greater weight on the results of his CAPM analyses such that the increase in his overall ROE recommendation has been mitigated.
    - Mr. Gorman has also arbitrarily changed the weight that he places on results of each of his DCF analyses from case-to-case such that the estimated cost of equity has remained in the range of 9.10 percent to 9.30 percent since 2023, regardless of the changes in the underlying inputs to his DCF analyses.
        - Mr. Gorman has also arbitrarily selected and then modified the inputs for his Risk Premium analyses over time.
        - Mr. Gorman's beta used in his CAPM analysis is inconsistent with the approach he has relied on in other proceedings.
    - Figure 1 summarizes the results of Mr. Gatewood's, Dr. Woolridge's and Mr. Gorman's model results reflecting the reasonable adjustments discussed in my rebuttal testimony.

Figure 1: Summary of Adjusted Cost of Equity Results

	Mr. Gatewood	Dr. Woolridge	Mr. Gorman
DCF			
Constant Growth			
Analysts' Growth Rates	n/a	10.79% - 10.87%	10.51%
Sustainable Growth Rates	n/a	n/a	n/a
Two-Stage Growth (mean)	10.23%	n/a	n/a
Multi-Stage / IRR (mean)	9.64%	n/a	9.49%
Overall DCF (mean)	9.94%	10.83%	10.00%
CAPM			
Mean / Recommendation	11.01%	10.44%	10.28%
Risk Premium			
Mean / Recommendation	n/a	n/a	10.42%
Average Cost of Equity	**10.47%**	**10.64%**	**10.23%**

Q. What are your key conclusions and recommendations regarding the Company's capital structure?

A. Based on my review of these witnesses' testimonies, my key conclusions regarding the Company's capital structure are:

- The Company's proposed equity ratio of 52.05 percent is reasonable.
- It is well within the range (45.33 percent to 60.29 percent) and generally consistent with the average (51.85 percent) and median (50.80 percent) actual equity ratio of the utility subsidiaries of the proxy group companies (*i.e.*, utilities with risk profiles that are similar to the Company's risk profile); and
- It is well within the range of equity ratios authorized for vertically-integrated electric utilities across the U.S. since 2013.
- While I disagree with the approach supported by Dr. Woolridge and Mr. Gorman in comparing the Company's proposed equity ratio to the average equity ratios of the proxy group holding companies, if that analysis is performed correctly, it also demonstrates that the Company's proposed equity ratio is reasonable.

III. CAPITAL MARKET CONDITIONS AND COMPARABLE RETURN

Q. Do changes in capital market conditions since the filing of the Company's application in this proceeding continue to indicate an increase in the cost of equity?

A. Yes. Changes in long-term bond yields since the Company's last rate proceeding, as well as since the filing of the Company's direct testimony in this proceeding, are indicative of an increase in the cost of capital. Specifically, as shown in Figure 2, the federal funds rate is the same as it was at the time of the Company's direct testimony in this proceeding, while long-term interest rates have increased by 31 basis points over this period. Core inflation has declined modestly since the filing of the direct testimony, although remains above the Federal Reserve's long-term target of 2.00 percent.

Figure 2: Change in Capital Market Conditions

Description	Date	Federal Funds Rate	30-Day Avg. of 30-Year Treasury Bond Yield	Core Inflation Rate
Docket No. 23-EKCE-775-RTS (Prior Case)				
Settlement Agreement Date	9/29/2023	5.33%	4.42%	4.14%
Docket No. 25-EKCE-294-RTS (Curr. Case)				
Direct	12/31/2024	4.33%	4.56%	3.21%
Rebuttal	5/30/2025	4.33%	4.87%	2.77%
Change				
Prior Case to Direct		-1.00%	0.15%	-0.92%
Prior Case to Rebuttal		-1.00%	0.45%	-1.37%

Q. Do any of the intervenor witnesses agree that changes in capital market conditions since the Company's last rate proceeding indicate an increase in the cost of equity?

A. Yes, both Mr. Gatewood and Dr. Woolridge conclude that the cost of equity has increased since the Company's last rate proceeding. For example, Mr. Gatewood states that beta and

the DCF results indicate that the cost of equity is "notably higher" currently than at the time of the Company's last rate proceeding.[4] As a result, Mr. Gatewood states he is recommending an ROE of 9.70 percent, which is 40 basis points higher than his recommendation of 9.30 percent in the Company's last rate proceeding.

Similarly, Dr. Woolridge acknowledges that interest rates have increased since the Company's last rate proceeding and market volatility has recently increased as a result of the Trump administration's trade policies.[5] As a result, Dr. Woolridge recommends an ROE of 9.50 percent, which is towards the high-end of his recommend range of 8.85 percent to 9.80 percent,[6] and 25 basis points higher than his recommended ROE in the Company's last rate proceeding of 9.25 percent.[7]

Therefore, Mr. Gorman is the only ROE witness in this proceeding who has not explicitly acknowledged that the cost of equity has increased since the Company's last rate proceeding. Further, while Mr. Gorman's recommended ROE of 9.40 percent is 10 basis point greater than his recommended ROE of 9.30 percent in the Company's last rate proceeding,[8] which implies the cost of equity has increased, a 10 basis point increase is insufficient to appropriately reflect the change in market conditions as shown in Figure 2 that have occurred since the Company's last rate proceeding.

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4 Gatewood Direct, at 59.

5 Woolridge Direct, at 69.

6 *Id*.

7 Kansas Corporation Commission, Docket No. 23-EKCE-775-RTS, Direct Testimony of Dr. J. Randall Woolridge, August 29, 2023, at 69.

8 Kansas Corporation Commission, Docket No. 23-EKCE-775-RTS, Direct Testimony of Michael P. Gorman, August 29, 2023, at 91.

Q. Do you agree with Mr. Gatewood that because markets are efficient, the effect of capital market conditions is already considered in the results of the DCF and the CAPM models and therefore, there is no need to consider capital market conditions when setting the ROE?

A. No, I do not. First, while Mr. Gatewood suggests that capital market conditions are reflected in the cost of equity estimation methodologies that he uses, he does not actually rely specifically on the results of his models to set either his ROE range or point estimate. Second, Mr. Gatewood sets his ROE recommendation of 9.70 percent at 375 basis points above the yield on the Moody's Baa utility bond index. Therefore, in setting his ROE recommendation, Mr. Gatewood implicitly recognizes the relationship between interest rates and the cost of equity. As a result, it is reasonable to consider the current and expected interest rate environment when establishing the authorized ROE.

Q. What are the expectations for inflation and monetary policy over the near-term?

A. At the June 2025 FOMC meeting, Chairman Powell noted that the economy is in a "solid position", the labor market is at or near "maximum employment" and inflation has declined "a great deal" but does still remain above the 2 percent long-term target.[9] As a result, the FOMC decided to maintain the current federal fund rate range of 4.25 percent to 4.50 percent.[10] Regarding the possible path of monetary policy, Chairman Powell acknowledged increased uncertainly due to the implementation of significant policy changes (*i.e.,* trade, immigration, fiscal policy and regulation) by the Trump administration, in particular, the changes in tariffs which could both increase inflation and decrease

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[9] Transcript of Chair Powell's Press Conference, (June 18, 2025).

[10] *Id.*

economic activity.[11] According to Chairman Powel, the effect of tariffs on inflation will ultimately depend on the size of the tariffs and how long it takes the tariffs to flow through fully into prices. However, Chairman Powell stated that monetary policy is well positioned to wait for greater clarity on the "likely course of the economy" before considering any changes.[12] Similarly to the forecasts produced at the December 2024 and March 2025 meetings, the FOMC is still forecasting just two rate cuts before the end of 2025.[13]

Q. Has the recent tariff policy of the Trump administration resulted in increased volatility in financial markets?

A. Yes, financial markets have been extremely volatile since President Trump announced a significant set of tariffs on April 2, 2025. For example, as shown in Figure 3, the VIX, which measures investors' expectation of volatility in the S&P 500 over the next 30 days, peaked at 52.33 on April 8, 2025. The VIX has not reached 50.00 since April 2020 during the height of the COVID-19 pandemic. The high level of uncertainty associated with the structure of the tariffs as this situation continues to evolve, and the economic effects of the Trump administration's tariff policy, has resulted in significant volatility, thus increasing the risk of holding equity investments and implying an increase in the cost of equity.

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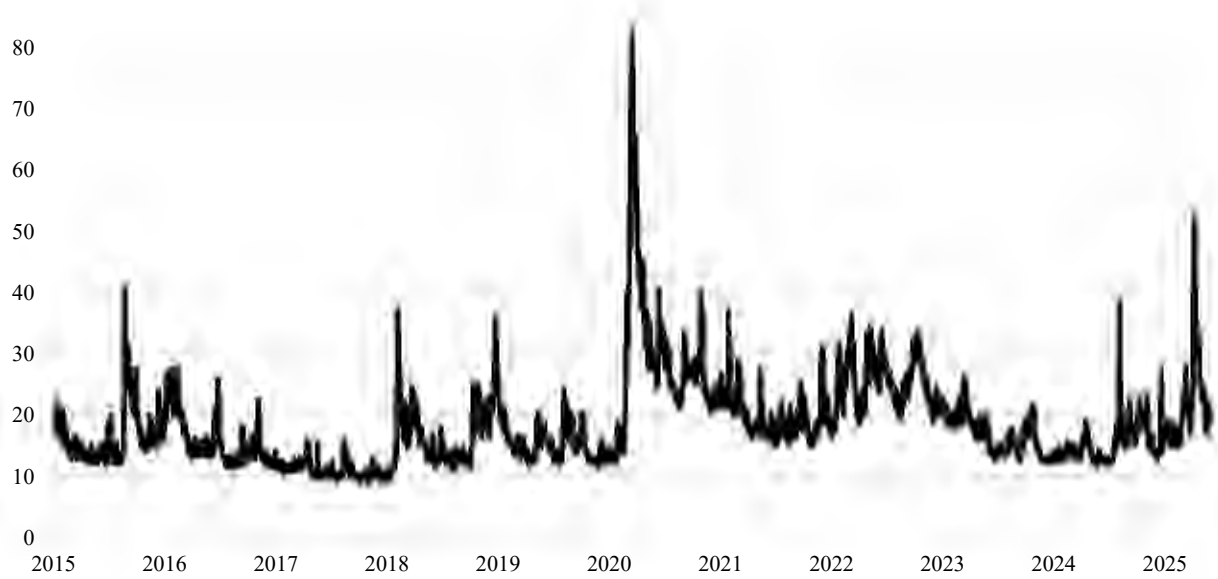
[11] *Id.*

[12] *Id.*

[13] Federal Reserve, Summary of Economic Projections, June 18, 2025, at 2.

Figure 3: CBOE VIX, January 2015 – May 2025[14]



Q. Have you reviewed any other indicators that show uncertainty has increased as a result of the Trump administration's tariff policy?

A. Yes. In addition to the recent high volatility as measured by the VIX, the University of Michigan's consumer sentiment index indicates that while consumer sentiment has improved, it is still 20 percent below the level in December 2024, and inflation expectations still remain above the levels seen throughout the second half of 2024.[15]

Q. What are investors' expectations for the yields on long-term government bonds over the near-term?

A. Economists and analysts are expecting elevated interest rates. *Blue Chip Financial Forecasts*, which provides a forecast from economists on the 30-year Treasury bond, reported most recently that economists expect the 30-year treasury rate to remain relatively stable over the near term and decrease only slightly from 4.70 percent in Q3/2025 to 4.50

[14] Bloomberg Professional Services.

[15] University of Michigan, Surveys of Consumers, Preliminary Results for June 2025.

percent in Q3/2026.[16] Additionally, the consensus estimate over the longer-term (*i.e.,* 2027-2031) as also published in the most recent *Blue Chip Financial Forecasts* report is 4.40 percent.[17] Therefore, consistent with investors' expectations at the time I filed my direct testimony,[18] long-term interest rates are expected to continue to remain elevated during the period that the Company's rates will be in effect.

Q. Do you agree with Mr. Gorman's characterization of the risk of the utility sector?

A. No. While Mr. Gorman states that utilities have maintained investment grade credit strength,[19] a review of his own analyses demonstrates that utility credit ratings have been declining over time. As shown in Table 2 of Mr. Gorman's testimony, as of 2020, 67 percent of utilities had credit ratings of A- or higher (*i.e*., 53 percent at A- and 14 percent at A or higher). However, as of 2025, only 42 percent of utilities have credit ratings of A- or higher (*i.e*., 35 percent at A- and 7 percent at A or higher). The downgrades that have occurred since that 2020 have resulted in an increase in the proportion of BBB+ ratings from 19 percent in 2020 to 40 percent in 2025, as well as an increase in the proportion of BBB ratings from 3 percent to 14 percent. Therefore, while Mr. Gorman focuses on the fact that a substantial portion of the utilities covered by S&P have a credit rating of BBB+ or higher, he fails to recognize the significant change in utility credit quality and increase in the number of downgrades since 2020.

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[16] *Blue Chip Financial Forecasts*, Vol. 44, No. 6, June 2, 2025, at 2.

[17] *Id.*, at 14.

[18] Bulkley Direct, at 17.

[19] Gorman Direct, at 27-28.

Q. Do you agree with Mr. Gorman that his testimony demonstrates utility capital costs are quite low?

A. No. In an attempt to support this conclusion, Mr. Gorman suggests that utilities have continued to access large amounts of external capital to fund capital investment programs and suggests that this has not affected credit ratings; however, as shown in Table 1 of his testimony, electric utilities have been continually downgraded over the past five years. Further, S&P's outlook on the utility sector is counter to Mr. Gorman's conclusions. In its recent report on the industry, S&P noted:

> A high percentage of companies are operating with only minimal financial cushion from our downgrade threshold. Rising capital spending, higher cash flow deficits, and increased wildfire risks led to downgrades outpacing upgrades for the fifth consecutive year.[20]

Q. Have average authorized ROEs nationally for electric utilities been increasing consistent with the increase in interest rates?

Yes. Dr. Woolridge, and Mr. Gorman both acknowledge that there has been an increase in the authorized ROEs for electric utilities in general, and specifically vertically-integrated electric utilities, since 2021.[21] While in the past Mr. Gatewood has considered recently authorized ROEs, in the current case, he limits his review of authorized ROEs to decisions made by this Commission back to 1996.[22] However, as shown in Figure 4, more than three-quarters of the ROEs authorized nationally since the beginning of 2024 have been greater than Mr. Gatewood's recommended ROE of 9.70 percent. Further, 60 percent of the ROEs

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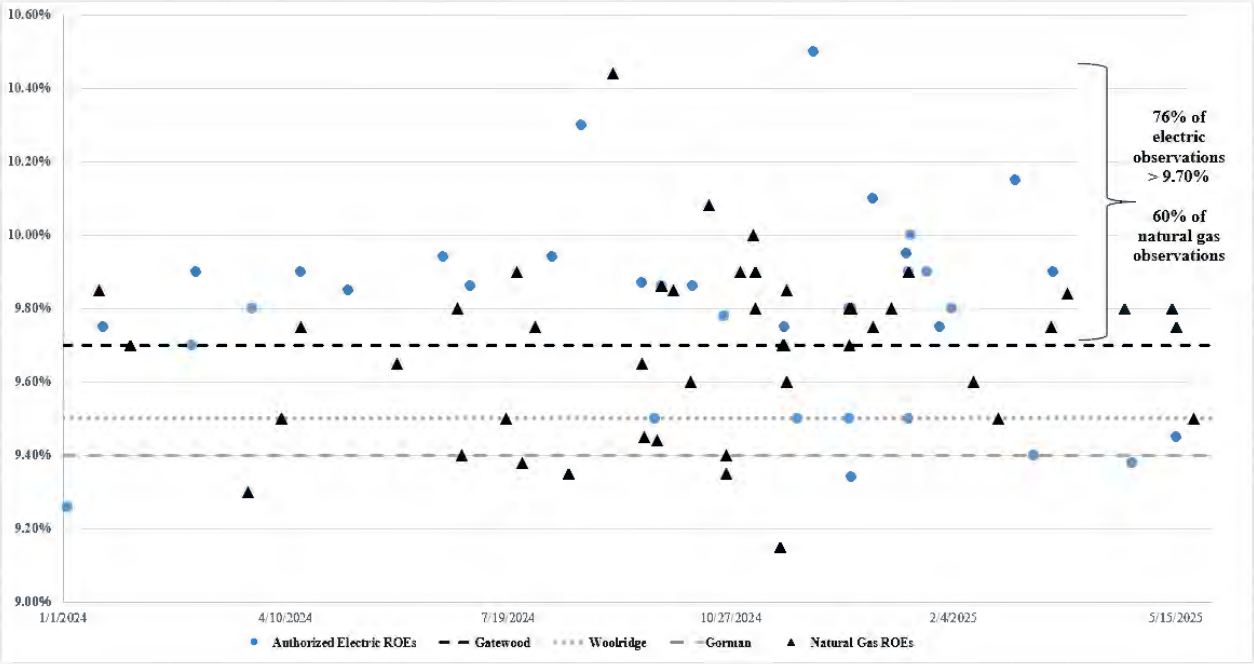
[20] S&P Global Ratings, Industry Credit Outlook 2025, North American Regulated Utilities, "Capex and climate change pressures credit quality," January 14, 2025, at 1.

[21] Woolridge Direct, at 17; Gorman Direct, at 23.

[22] Gatewood Direct, at 9.

authorized for natural gas utilities over the same time period have been greater than 9.70 percent.

Figure 4: Recently Authorized ROEs



Q. Are the ROE recommendations by these witnesses consistent with the trend in capital market conditions and the increase in the cost of equity?

A. Not entirely. While the recommendations of Mr. Gatewood (9.70 percent), Dr. Woolridge (9.50 percent), and Mr. Gorman (9.40 percent) have increased since the Company's last rate proceeding, their recommendations still remain below the median authorized ROE nationally for vertically-integrated electric utilities. For example, Mr. Gorman's recommended ROE is just 2 basis points above the lowest authorized ROE in 2025 for a vertically-integrated electric utility, whereas Dr. Woolridge's recommended ROE is only 12 basis points above the low end of the range and is consistent with the median return in 2021, which all of the witnesses in this proceeding have acknowledged, was a period of much lower interest rates. Further, none of the witnesses in this case have provided any

data that supports a conclusion that the Company has less risk, on average, relative to the industry, such that a return at the low end of the range would be appropriate.

IV. UPDATED COST OF EQUITY ANALYSES

Q. Have you updated your cost of equity analyses from your direct testimony?

A. Yes. I have updated the results of the cost of equity analyses conducted in my direct testimony based on market data through May 30, 2025, using the same methodologies as in my direct testimony.

Q. What are the updated results of your cost of equity analyses?

A. Figure 5 summarizes the results of my updated cost of equity analyses (see also Rebuttal Exhibit AEB-13 through Rebuttal Exhibit AEB-18).

Figure 5: Updated Model Results

Constant Growth DCF

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Mean Results:			
30-Day Avg. Stock Price	9.21%	10.16%	10.80%
90-Day Avg. Stock Price	9.26%	10.21%	10.84%
180-Day Avg. Stock Price	9.35%	10.29%	10.93%
Average	9.27%	10.22%	10.86%
Median Results:			
30-Day Avg. Stock Price	9.50%	10.21%	10.95%
90-Day Avg. Stock Price	9.51%	10.22%	10.99%
180-Day Avg. Stock Price	9.66%	10.44%	11.06%
Average	9.56%	10.29%	11.00%

CAPM / ECAPM / Bond Yield Risk Premium

	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
CAPM:			
Current *Value Line* Beta	11.26%	11.23%	11.20%
Current Bloomberg Beta	10.60%	10.54%	10.50%
Long-term Avg. *Value Line* Beta	10.62%	10.56%	10.52%
ECAPM:			
Current *Value Line* Beta	11.53%	11.50%	11.48%
Current Bloomberg Beta	11.04%	10.99%	10.96%
Long-term Avg. *Value Line* Beta	11.05%	11.01%	10.97%
Bond Yield Risk Premium:	10.80%	10.65%	10.54%

Q. Do the updated results support the Company's requested ROE of 10.50 percent in this proceeding?

A. Yes. The range of updated results reflecting market data through May 30, 2025 continues to support the Company's requested ROE of 10.50 percent. The results of my updated DCF, CAPM and ECAPM analyses are generally consistent with the DCF, CAPM and ECAPM results presented in my direct testimony (*i.e.* the results of some scenarios have slightly increased while others have slightly decreased). Further, the Company's requested

ROE of 10.50 percent is reasonable if not conservative when considering both the updated results and my evaluation of the Company's business risks (*i.e.,* wildfire, nuclear generation risk, regulatory risk, capital expenditures) relative to the proxy group contained in my direct testimony, which showed that the Company has greater business risk relative to the proxy group.[23]

V. PROXY GROUP

Q. Have other witnesses in this proceeding used the same proxy group as you have relied upon?

A. Yes. Mr. Gatewood[24] and Mr. Gorman[25] utilize the same proxy group that I relied upon in my direct testimony. Dr. Woolridge also relies on my group for one version of his cost of equity analyses and relies on his own proxy group for the other version of his cost of equity analyses.

Q. Please describe how Dr. Woolridge selected the companies included in his proxy group.

A. Dr. Woolridge starts with the group of utilities that are classified by *Value Line* as electric utilities. Dr. Woolridge narrows this universe using a set of screening criteria that require a company: (1) have at least 50 percent of operating revenue from retail electric operations; (2) have an investment grade credit rating; (3) have paid a cash dividend in the last 6 months with no cuts or omissions; (4) is not involved in a merger or acquisition; and (5) have projected EPS growth rates available from *Yahoo! Finance*, *S&P Capital IQ*, and/or

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[23] Bulkley Direct, at 37-52.

[24] Gatewood Direct, at 53.

[25] Gorman Direct, at 47.

Zacks.[26] Based on his application of these screening criteria, Dr. Woolridge's proxy group includes 27 companies and as noted, he also presents the results of his cost of equity estimation methodologies using my proxy group as well.

Q. Are the screening criteria applied by Dr. Woolridge appropriate for establishing a proxy group of companies that are most comparable to EKC?

A. No. I disagree with various aspects of the screening criteria and resulting companies in Dr. Woolridge's proxy groups. For example, I do not agree with either Dr. Woolridge's use of a revenue screen or inclusion of companies that do not own generation.[27] Moreover, Dr. Woolridge incorrectly includes EKC's parent company, Evergy, Inc. in his proxy group.[28] Further Dr. Woolridge appears to misapply his M&A screen as he includes Eversource Energy in his proxy group even though Eversource Energy recently agreed to sell its subsidiary Aquarion Water Company, Inc. for $2.4 billion to the Aquarion Water Authority and is therefore involved in a transaction.[29] For all these reasons, I do not believe that Dr. Woolridge's proxy group is as risk-comparable to the Company as my proxy group.

Q. What are your conclusions regarding the proxy group?

A. While Dr. Woolridge's proxy group is different than the proxy group that Mr. Gatewood, Mr. Gorman and I have utilized, the differences in the results of our respective cost of equity models are largely not a function of proxy group differences, but rather

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[26] Woolridge Direct, at 22-23

[27] Please see Moody's Investor's Service, Rating Methodology: Regulated Electric and Gas Utilities, at 14 (August 6, 2024), where Moody's concludes that generation ownership causes vertically integrated electric utilities to have higher business risk than electric T&D companies.

[28] In the current proceeding, the ROE for EKC is being determined, which in turn contributes to the ROE of its parent company, Evergy. Therefore, to avoid circular logic, Evergy should be excluded from the proxy group.

[29] Heike Doerr, "Eversource's Aquarion sale awaits key regulatory approvals," January 29, 2025.

methodological differences in the inputs to the cost of equity models. As a result, I will not further discuss my disagreements with Dr. Woolridge's proxy group.

VI. OVERALL ANALYTICAL RESULTS

Q. What analyses do Mr. Gatewood, Dr. Woolridge, and Mr. Gorman conduct, and what ROEs do each recommend for the Company in this proceeding?

A. Figure 6 summarizes each of these witnesses' respective cost of equity model results and ROE recommendations.

Figure 6: Summary of Cost of Equity Analytical Results

	Mr. Gatewood	Dr. Woolridge	Mr. Gorman
DCF			
Constant Growth			
Analysts' Growth Rates	n/a	n/a	10.51%
Sustainable Growth Rates	n/a	n/a	8.99%
Two-Stage Growth			
Range	8.69% - 9.35%	n/a	n/a
Mean	9.02%	n/a	n/a
Multi-Stage / Internal Rate of Return			
Range	7.71% - 10.41%	n/a	n/a
Mean	8.42%	n/a	8.40%
Overall DCF	n/a	9.60% - 9.80%	9.20%
CAPM			
Range	6.20% - 12.39%	8.85% - 9.00%	n/a
Mean / Recommendation	8.81%	9.00%	9.40%
Risk Premium			
Range	n/a	n/a	9.50% - 9.70%
Mean / Recommendation	n/a	n/a	9.60%
Recommended Range	9.30% - 9.95%	8.85% - 9.80%	9.20% - 9.40%
Overall Recommendation	**9.70%**	**9.50%**	**9.40%**

Q. Does Mr. Gatewood rely on current market data to set his ROE recommendation?

A. No. Mr. Gatewood suggests that capital market conditions are reflected in the cost of equity estimation methodologies that he uses, and therefore the Commission does not need to further consider macroeconomic conditions. However, Mr. Gatewood does not rely specifically on the results of his models to set his ROE range or recommended ROE.

Q. How does Mr. Gatewood determine his ROE recommendation?

A. While Mr. Gatewood develops cost of equity analyses using several models, ultimately, he does not use the results of these models. Rather, Mr. Gatewood establishes his recommended ROE range by applying his recommended ROE of 9.30 percent in the Company's last rate proceeding as the lower bound of his recommended range, and assumes 400 basis points above the yield on the Moody's Baa utility bond index as the upper bound of his range, which he states is consistent with the average risk premium on prior Commission-authorized ROEs from 1996 through 2020.[30] Mr. Gatewood sets his ROE recommendation in this proceeding at 375 basis points above the yield on the Moody's Baa utility bond index, which, based on his analysis of the spread between prior Staff ROE recommendations in electric and natural gas utility rate proceedings in Kansas over the past 10 years relative to corporate bond yields, is well below both the average and median spread indicated by his analysis.[31]

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[30] Gatewood Direct, at 59-60.

[31] *Id*., at 9.

Q. Does Mr. Gatewood's recommended ROE range reflect current market conditions as he suggests?

A. No. Given that Mr. Gatewood sets the lower end of his recommended ROE range in this proceeding based on his ROE recommendation in the Company's last proceeding, his range does not reflect current market conditions. In that prior case, Mr. Gatewood stated that his recommended ROE range and recommended ROE were based on the then current capital market conditions and previous Commission decisions.[32] Further, Mr. Gatewood acknowledges in the current proceeding that the lower bound of his recommended ROE range is "the allowed return Staff recommended in the *previous* Evergy rate case and equates to a risk premium of 335 basis points, a risk premium comparable to that observed in the 23-775 docket."[33] However, in the current proceeding, Mr. Gatewood also states that his DCF model results and increased betas demonstrate higher capital cost since EKC's last rate case.[34] Since Mr. Gatewood's recommendation in the last case was based on market conditions from that period, and yet he recognizes that current market conditions reflect a higher cost of equity, the use of his recommended ROE in the Company's last rate proceeding necessarily understates the lower bound of his range based on the current capital market conditions.

Q. Do you agree with the risk premium data that Mr. Gatewood uses to justify the way that he establishes the upper end of his range?

A. No. Mr. Gatewood states in his testimony that the authorized ROE should be based on current market conditions. However, Mr. Gatewood relies on the spread between the ROE

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[32] Docket No. 23-EKCE-775-RTS, Direct Testimony of Adam H. Gatewood, at p. 7.

[33] Gatewood Direct, at 6; emphasis added.

[34] *Id.*

authorized in select Commission decisions and the then-current yield on Baa-rated corporate bonds for the period 1996 through 2020 to support a 400 basis point risk premium that he uses to set the high end of his recommended ROE range of 9.95 percent. Therefore, the data that he uses to estimate the average risk premium spans a 25-year historical time period that ended five years ago and does not reflect current market conditions and cannot be used to set an upper bound for his recommended ROE range.

Q. Are Mr. Gatewood's criticisms of your Bond Yield Risk Premium ("BYRP") analysis contrary to the risk premiums that he uses to set his recommended ROE range?

A. Yes. Every one of Mr. Gatewood's criticisms of my BYRP analysis apply to the two risk premium estimates he uses in his analysis – the average historical risk premium established by prior Commission decisions, and his risk premium set using the spread between Staff's proposed ROEs and corporate bond yields. Ironically, Mr. Gatewood recommends that the Commission disregard the regression analysis that I develop in my BYRP because: (1) the primary data for the analysis (*i.e.*, authorized ROEs) are not competitive capital market data; (2) there is no control for risks and policy decisions specific to each rate case; (3) it is not comprehensive because settlements are not included in the data, and; (4) the regression attempts to forecast a rate outcome based on a single input; interest rates.[35] However, Mr. Gatewood's analysis using prior Commission authorized ROEs to establish his recommended ROE range would fail each of his criticisms (*i.e.*, he is using authorized ROEs; each of the Commission's prior rate cases have specific circumstances; settlements are not included; and, he is relying on a long-term historical average, which does not address the relationship between interest rates and the market risk premium).

[35] Gatewood Direct, at 36-37.

In addition, Mr. Gatewood's analysis for establishing his recommended ROE range also suffers from the additional issue that he relies on previous Staff *recommended* ROEs and such recommendations were not necessarily realized by the regulated utility in the case, meaning that the proposal could not have been the investor-required return.

Q. Does Mr. Gatewood compare his recommended ROE in this proceeding to recently authorized ROEs?

A. No. In the Company's last rate proceeding, Mr. Gatewood recognized that authorized ROEs were increasing; however, he does not address that same data in his testimony in the current case. As discussed previously, both Dr. Woolridge and Mr. Gorman acknowledge that there has been an increase in the authorized ROEs for electric utilities in general, and specifically vertically-integrated electric utilities, since 2021.[36] Additionally, while I disagree with Mr. Gatewood's conclusion that the Company has similar regulatory risk to the proxy group overall (as discussed in my direct testimony, my evaluation of the Company's regulatory risk relative to the proxy group showed that EKC had slightly greater regulatory risk)[37], nonetheless, as shown in Figure 4 herein, his ROE recommendation in this case is below the industry average authorized ROE.

Q. How does Dr. Woolridge determine his ROE recommendation?

A. Dr. Woolridge has noted in many proceedings, including the current proceeding, that he relies "primarily" on the results of his DCF model to set his ROE recommendation.[38]

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[36] Woolridge Direct, at 17; Gorman Direct, at 23.

[37] Bulkley Direct, at 46-47.

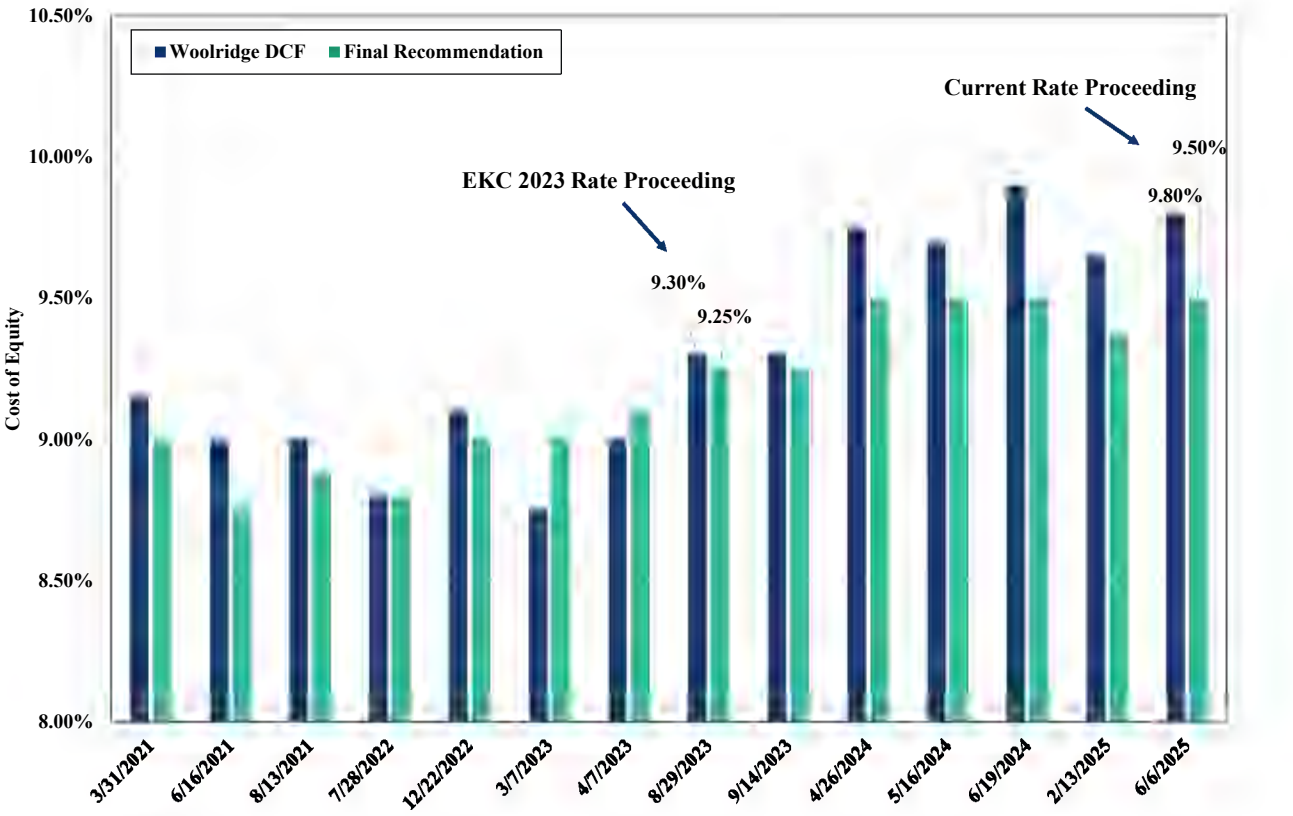
[38] Woolridge Direct, at 5.

Q. While Dr. Woolridge contends that he places "primary" weight on his DCF results, has he applied a consistent weight on the results of his DCF model when determining his recommended ROE?

A. No. While Dr. Woolridge has consistently indicated that he places primary weight on the results of his DCF analyses, he has arbitrarily changed the weight that he places on the DCF results over time. Specifically, as the results of his DCF analyses have increased over time, Dr. Woolridge has arbitrarily placed greater weight on the results of his CAPM analyses such that the increase in his overall ROE recommendation has been mitigated.

Figure 7 presents the results of Dr. Woolridge's DCF analyses and his overall ROE recommendations in 14 proceedings since 2021 for electric utilities. As shown, the results of Dr. Woolridge's DCF analyses have increased substantially since 2021.

Figure 7: Comparison of Dr. Woolridge's DCF Model Results and ROE Recommendations in Rate Proceedings for Sample of Electric Utilities Since 2021



Dr. Woolridge has noted in many proceedings, including the current proceeding, that he relies "primarily" on the DCF model to set his ROE recommendation. As shown in Figure 7, this was an accurate statement prior to 2023 with Dr. Woolridge setting his ROE recommendation generally consistent with the results of his DCF model. However, Figure 7 demonstrates that as the results of his DCF analysis have continued to increase since 2023, Dr. Woolridge started to set his ROE recommendation at a level that was well below the results of his DCF analysis. For example, in the current proceeding, while he also contends to "primarily" weight the results of his DCF analysis for purposes of his ROE recommendation, his recommended ROE of 9.50 percent is well below the range of results produced by his DCF model of 9.60 percent to 9.80 percent. Therefore, instead of reflecting

the change in market conditions that was demonstrated by his DCF model in his ROE recommendations, beginning in 2023, Dr. Woolridge has arbitrarily adjusted the weight he places on his DCF analysis to reduce the effect of the increase in his DCF results on his overall ROE recommendation.

Q. What would Dr. Woolridge's recommendation be in the current proceeding if he placed primary weight on the results of his DCF model such as he has done in prior cases?

A. If Dr. Wooldridge employed a similar approach that he did in the rate proceedings for T&D-only electric utilities prior to 2023, he would have set his recommended ROE closer or equal to the results of his DCF model. Therefore, Dr. Woolridge would have recommended an ROE in the range of 9.60 percent to 9.80 percent. Dr. Woolridge has offered no rationale for why he has changed his approach for determining his recommended ROE. Accordingly, it appears he has done so to arbitrarily reduce the effect on the increase in the cost of equity resulting from the change in market conditions.

VII. DCF ANALYSIS

A. Gorman DCF inconsistencies

Q. Has Mr. Gorman applied a consistent methodology in determining a fair return indicated by the results of his DCF analyses?

A. No. Figure 8 summarizes Mr. Gorman's DCF results and the fair return he asserted was indicated by these results in numerous proceedings since 2019 for electric utilities.[39] As shown, the results of Mr. Gorman's DCF analyses have increased 100 basis points. Despite this significant increase in the cost of equity as demonstrated by his own DCF analyses, Mr. Gorman has modified his approach for determining the fair return indicated by his DCF analysis so that the fair return that he recommends has remained in the range of 9.00 percent to 9.30 percent over this period.[40]

As shown in the last column of Figure 8, Mr. Gorman has changed the weight he places on each of his three DCF models multiple times in order that the fair return he recommends has remained in that narrow range. The conclusions that can be drawn from Figure 8 are as follows:

- It is clear that Mr. Gorman has arbitrarily changed the weight that he places on results of each his DCF analyses in order to engineer a specific result.

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[39] The Direct Testimony of Michael P. Gorman in: Public Utility Commission of Texas, Docket No. 49421, June 6, 2019, at 54, Exhibit MPG-9, and Exhibit MPG-14; Public Utility Commission of Texas, Docket No. 49494, July 25, 2019, at 49, 50, 63 and Exhibit MPG-7; Public Utility Commission of Texas, Docket No. 53601, August 26, 2022, at 58, 59, 73 and Exhibit MPG-5; Public Utility Commission of Texas, Docket No. 53719, October 26, 2022; at 40-41 and Exhibit MPG-5; Arizona Corporation Commission, Docket No. E-04204A-22-0251, June 14, 2023, at 37-38 and Exhibit MPG-5; Kansas Corp. Commission, Docket No. 23-EKCE-775-RTS, August 29, 2023, at 75-76, Exhibit MPG-8, and Exhibit MPG-13; Indiana Utility Regulatory Commission, Cause No. 45933, November 15, 2023, at 89-90 and Attachment MPG-10; Indiana Utility Regulatory Commission, Cause No. 45990, March 12, 2024, at 80-81, Attachment MPG-8, and Attachment MPG-13; Public Utility Commission of Texas, Docket No. 56165, May 16, 2024, at 53 and Exhibit MPG-6 and Exhibit MPG-11; Public Utility Commission of Texas, Docket No. 56211, June 19, 2024, at 55 and Exhibit MPG-6 and Exhibit MPG-11; Public Utility Commission of Texas, Docket No. 57518, April 28, 2025, at 55, Exhibit MPG-5, and Exhibit MPG-11.

[40] Gorman Direct, at 63.

- In the proceedings shown from 2019 through 2022, Mr. Gorman placed primary weight on the results produced by his constant growth DCF analysis using analysts' projected EPS growth rates.
- Beginning in 2023, Mr. Gorman shifted his approach such that he gave equal weight to the results of all of his DCF analyses.
- In 2024, Mr. Gorman contended that it was appropriate to place primary weight on the results of both his constant growth DCF using sustainable growth rates and multi-stage DCF, while effectively dismissing the results of his constant growth DCF using analysts' projected EPS growth rates.
- Comparing the methodology that he used less than two months ago to the approach he is using in the current proceeding, Mr. Gorman has again changed his methodology. In the ETT case, he relied on the midpoint of (i) the average of the results of all three models; and (ii) the average of his constant growth DCF using sustainable growth rates and multi-stage DCF. In the current proceeding, he appears to be setting the lower bound based on the result of his sustainable growth rate DCF and the upper bound at the average of all three methodologies.
- Mr. Gorman has not even been consistent in the methodology he has used for this Company. Figure 8 demonstrates that in the last case, he averaged all of his DCF results, whereas, in comparison, in this case, he has underweighted the results of his constant growth DCF model, by using the average of all three methodologies to set the upper bound and the result of the sustainable growth rate model to set the lower bound.

Figure 8: Comparison of Mr. Gorman's DCF Model Results - Electric Utilities - 2019-2025

Applicant	State	Docket No.	Date	Model 1: Constant Growth DCF (Proj. EPS Gwth) Mean	Model 1: Constant Growth DCF (Proj. EPS Gwth) Median	Model 2: Constant Growth DCF (Sustainable Gwth) Mean	Model 2: Constant Growth DCF (Sustainable Gwth) Median	Model 3: Multi-Stage DCF Mean	Model 3: Multi-Stage DCF Median	Average Analysts' Projected Growth Rate	Projected GDP Growth Rate	Average of DCF Results	Gorman Fair Return of DCF	Primary Basis of Gorman Fair Return of DCF
CenterPoint Houston	TX	49421	6/62019	9.31%	9.57%	8.11%	8.20%	8.21%	8.17%	5.38%	4.00%	8.60%	9.20%	Model 1
AEP Texas	TX	49494	7/25/2019	9.15%	8.96%	8.23%	8.58%	8.01%	7.64%	5.47%	4.10%	8.43%	9.20%	Model 1
Oncor Electric	TX	53601	8/26/2022	8.68%	9.12%	8.24%	7.86%	8.18%	8.18%	5.04%	4.45%	8.38%	8.90%	Model 1
Entergy Texas	TX	53719	10/26/2022	9.15%	9.24%	8.13%	7.87%	7.74%	7.69%	5.70%	4.00%	8.30%	9.00%	Model 1 & Above Avg. of Models 2, 3
UNS Electric	AZ	E-04204A-22-0251	6/14/2023	10.19%	9.98%	8.68%	8.25%	8.33%	8.25%	6.38%	4.00%	8.95%	9.25%	Midpoint of Avg. of Model 1 & Avg. of Models 2, 3
Evergy KS / Metro	KS	23-EKCE-775-RTS	8/29/2023	10.06%	10.24%	8.50%	8.51%	8.59%	8.59%	6.16%	4.30%	9.08%	9.10%	Average of Models 1, 2,3
Indiana Michigan Power	IN	45933	11/15/2023	10.33%	10.26%	8.52%	8.50%	8.78%	8.89%	6.02%	4.00%	9.21%	9.20%	Average of Models 1, 2,3
CenterPoint Indiana	IN	45990	3/12/2024	10.42%	10.16%	9.16%	9.12%	9.10%	9.21%	5.93%	4.20%	9.53%	9.20%	Models 2, 3
AEP Texas	TX	56165	5/16/2024	11.06%	10.71%	9.31%	9.19%	9.38%	9.36%	6.37%	4.10%	9.84%	9.30%	Models 2, 3
CenterPoint Houston	TX	56211	6/19/2024	11.10%	10.62%	9.42%	9.29%	9.30%	9.49%	6.51%	4.10%	9.87%	9.30%	Models 2, 3
ETT	TX	57518	4/28/2025	10.66%	10.46%	9.15%	9.08%	8.75%	8.48%	6.57%	4.10%	9.43%	9.30%	Midpoint of Avg. of Models 1, 2, 3 & Avg. of Models 2, 3
Evergy KS	KS	25-EKCE-294-RTS	6/6/2025	10.51%	10.67%	8.99%	8.98%	8.40%	8.29%	6.76%	4.10%	9.31%	9.20%	Midpoint of Model 2 & Avg. of Models 1, 2, 3

Q. How would the cost of equity indicated by Mr. Gorman's DCF models in the current proceeding change if he had relied on approaches that he has used in prior proceedings?

A. In the current proceeding, Mr. Gorman contends that his DCF models support a fair ROE of 9.20 percent.[41] However, as shown in Figure 9 had Mr. Gorman calculated the ROE indicated by his DCF analyses based on the approach that he applied in a number of proceedings whereby he relied on the results of his DCF analysis using analysts' projected EPS growth rates, his recommended fair return from his DCF analyses would be 10.59 percent. Prior to the instant case, Mr. Gorman has also relied on an approach whereby the high end of his range was set at the result of his constant growth DCF using analysts' projects EPS growth rates, and the low end of his range was above the results of his constant growth DCF using sustainable growth rates and his multi-stage DCF results. As shown in Figure 9, had Mr. Gorman used a similar methodology in the current proceeding, the fair return from his DCF analyses would be approximately 9.75 percent. Similarly, had Mr. Gorman recommended a fair return from the DCF analyses based on an average of mean and median results of all his three DCF approaches as he has done in prior proceedings, the result would be 9.31 percent. Therefore, the changes Mr. Gorman has made to his methodology in this case by not reflecting the full increase in the DCF model results that have occurred over the past two years havearbitrarily lowered the ROE indicated by his DCF models.

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[41] Gorman Direct, at 5.

Figure 9: Cost of Equity Indicated by Mr. Gorman's As Filed DCF Analyses in the Current Proceeding When Applying the Weighting Methodologies He Has Relied On Previously

Gorman DCF Weighting Methodology	Gorman Recommended DCF Range	Gorman Indicated DCF Point Estimate
As Filed		
• High end of recommended range set at midpoint of all three DCF models • Low end of recommended range set at the result of the constant growth DCF using sustainable growth rates	9.00% - 9.30%	9.20%
Alternative 1		
• Avg. of the mean and median DCF results of the constant growth DCF using analysts' projected EPS growth rates	n/a	10.59%
Alternative 2		
• High-end of recommend range set at the constant growth DCF result • Low end of recommended range set at the high-end result of the constant growth DCF using sustainable growth rates and the multi-stage DCF • Implied DCF recommendation is midpoint range	8.99% - 10.51%	9.75%
Alternative 3		
• Avg. of the mean and median DCF results of the Mr. Gorman's constant growth and multi-stage DCF analyses	n/a	9.31%

B. Constant Growth DCF

Q. Which witnesses conduct a constant growth DCF analysis to estimate the cost of equity?

A. Dr. Woolridge and Mr. Gorman each conduct a constant growth DCF analysis. Mr. Gatewood conducts a two growth DCF analysis and a multi-stage DCF analysis, both of which I discuss in discuss in my response in the following section of my testimony.

Q. Please summarize the constant growth DCF analyses developed by Dr. Woolridge and Mr. Gorman.

A. Dr. Woolridge calculates dividend yields using average stock prices over three periods – 30 days, 90 days and 180 days – for the period ending May 20, 2025. While Dr. Woolridge reviews many growth rates, including historical and projected dividend per share ("DPS"), book value per share ("BVPS"), and earnings per share ("EPS") growth rates, and an estimate of a sustainable growth rate calculated using *Value Line* projections, the growth rate that he selects for his constant growth DCF models is primarily based on EPS growth rates. Based on his selected assumptions, Dr. Woolridge's constant growth DCF models produce a cost of equity of 9.80 percent (his proxy group) and 9.60 percent (my proxy group).[42]

Mr. Gorman conducts two constant growth DCF analyses; the first relies on analysts' projected EPS growth rates, and the second relies on estimated sustainable growth rates. Mr. Gorman calculates dividend yields using an average of weekly high and low stock prices over the 13-week period ending May 2, 2025. The mean and median results of Mr. Gorman's constant growth DCF analysis using projected EPS growth rates are 10.51 percent and 10.67 percent, respectively, while the mean and median results of Mr. Gorman's constant growth DCF analysis using sustainable growth rates are 8.99 percent and 8.98 percent, respectively.[43] As discussed previously, Mr. Gorman averages the results of these constant growth models with the results of a multi-stage DCF analysis to establish the upper end of his range of DCF results.

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[42] Exhibit JRW-5, at 1.

[43] Gorman Direct, at 63.

Q. What is your primary area of disagreement with the assumptions used by Dr. Woolridge and Mr. Gorman in the development of their respective constant growth DCF analyses?

A. I disagree with the growth rates that each of these witnesses has relied on in their specifications of the constant growth DCF model.

Q. Please summarize the growth rates that Dr. Woolridge has relied upon in his DCF analysis.

A. Figure 10 summarizes the growth rate ranges considered by Dr. Woolridge and the growth rate that he ultimately relies on for his DCF model.

Figure 10: Summary of Dr. Woolridge's Growth Rate Analysis[44]

Growth Rate Indicator	Woolridge Proxy Group	Bulkley Proxy Group
Historical average *Value Line* Growth in EPS, DPS and BVPS	4.00%	4.20%
Projected average *Value Line* Growth in EPS, DPS and BVPS	5.30%	5.20%
Sustainable Growth Rate	4.30%	3.90%
Projected EPS from Yahoo!, Zacks, and S&P Cap IQ (mean/median)	7.00% /7.10%	7.00% / 7.00%
Appropriate DCF growth rate range[45]	5.50% - 7.05%	
Dr. Woolridge Assumption	6.30%	6.20%

Q. How did Dr. Woolridge establish his growth rate range and his estimated growth rate?

A. Dr. Woolridge established a range of growth rates from 5.50 percent to 7.05 percent, which he indicates is an "appropriate DCF growth rates range."[46] The lower end of this range is the average of the three projected growth rates: (1) projected EPS, DPS, and BVPS growth

[44] Exhibit JRW-5, pg. 6.

[45] Woolridge Direct, at 53.

[46] Woolridge Direct, at 54.

rates reported by *Value Line*; (2) projected sustainable growth rates also developed from *Value Line* data; and (3) projected EPS growth rates of Wall Street analysts. Dr. Woolridge uses the midpoint of that range as his estimated growth rate.[47]

Q. Has Dr. Woolridge consistently applied this approach to estimating growth rates consistently in prior testimony?

A. No. Dr. Woolridge's approach to estimating the growth rate used in his constant growth DCF analysis is subjective, inconsistent over time, and serves to understate the cost of equity. Further, reviewing prior analyses, it is clear that Dr. Woolridge's claim that EPS growth rates are overly optimistic and upwardly biased is simply a justification to reduce the growth rates, at any point in time, regardless of the rates projected by analysts. Figure 11 summarizes the growth rates relied on in the analyses prepared by Dr. Woolridge as compared with the growth rates that I relied upon, in the Company's 2023 rate case and in the current rate case. The important conclusions from this figure are:

- Dr. Woolridge testified in the Company's 2023 rate proceeding that the EPS growth rates needed to be reduced by 17 to 48 basis points for his proxy group, and 33 to 85 basis points for my proxy group. In the current case, Dr. Woolridge has made more significant reductions to the growth rates, reducing them by 63 to 85 basis points.
- In the Company's 2023 rate proceeding, Dr. Woolridge testified that he reduced the growth rates that I relied on because they were "overly optimistic and upwardly biased."[48] Dr. Woolridge makes that same claim in the current proceeding.[49]
- However, in the current proceeding, Dr. Woolridge is now ***relying on*** growth rates for his proxy group and my proxy group that ***are generally comparable to*** the growth rates that I relied on in the Company's 2023 rate case – which he claimed at that time were "overly optimistic and upwardly biased," and noted was the primary assumption of which he disagreed with in my DCF analysis.

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[47] *Id*., at 49-50; Exhibit JRW-5, at 6.

[48] Docket No. 23-EKCE-775-RTS, Direct Testimony of J. Randall Woolridge, at 8.

[49] Woolridge Direct, at 73.

This comparison demonstrates that Dr. Woolridge's growth rate adjustment is arbitrary and is simply a means to reduce his constant growth DCF results.

Figure 11: Dr. Woolridge's Growth Rate Selections[50]

	Woolridge Proxy Group		Bulkley Proxy Group		Bulkley Direct Testimony	
	Mean	Median	Mean	Median	Mean	Median
Docket No. 23-EKCE-775-RTS						
Analysts' Projected EPS Growth Rates	5.58%	5.88%	5.63%	6.15%	6.06%	6.00%
Dr. Woolridge Selected Growth Rate	5.40%		5.30%			
Dr. Woolridge Adjustment	0.17%	0.48%	0.33%	0.85%		
Docket No. 25-EKCE-294-RTS						
Analysts' Projected EPS Growth Rates	6.90%	6.80%	6.78%	6.88%	6.56%	6.58%
Dr. Woolridge Selected Growth Rate	6.05%		6.15%			
Dr. Woolridge Adjustment	0.85%	0.75%	0.63%	0.73%		

Q. What is your response to Dr. Woolridge's position that you should not have exclusively relied on analysts' projected EPS growth rates because of his contention that they are "upwardly biased."[51]

A. It is unclear to me how Dr. Woolridge can continue to assert that the EPS growth rates are "upwardly biased" when he is currently relying on growth rates for the proxy group that are ***generally consistent with*** those I relied on in the Company's last rate proceeding. It is clear from the data presented in Figure 11, that Dr. Wooldridge uses his assertion of "upward bias" as justification to apply judgment to the EPS growth rates. Dr. Woolridge does not provide any current analysis that supports his assertion of bias, and in fact, over a very short period of time has come to rely on growth rates that are in line with those he has previously claimed were "upwardly biased".

[50] *Id*., Exhibit JRW-5, at 6.

[51] Woolridge Direct, at 74.

Q. Dr. Woolridge contends that he has developed an analysis that demonstrates projected EPS growth rates are "overly optimistic and upwardly biased."[52] Do you agree with this analysis?

A. No. There are two significant flaws with Dr. Woolridge's analysis that invalidates his claim that projected EPS growth rates are upwardly biased. The first flaw is that Dr. Woolridge conducts his analysis over the period of 1985 through 2022; however, the 2003 Global Analysts Research Settlement (the "Global Settlement") served to significantly reduce the bias referred to by Dr. Woolridge. The Global Settlement required financial institutions to insulate investment banking from analysis, prohibited analysts from participating in "road shows," and required the settling financial institutions to fund independent third-party research. In addition, analysts covering the common stock of the proxy companies certify that their analyses and recommendations are not related, either directly or indirectly, to their compensation. Thus, it is unclear why the EPS growth rates for the proxy companies would be susceptible to an upward bias.

Furthermore, several studies have been conducted on data since the Global Settlement decision was issued and concluded that the bias that may have existed prior to the settlement was no longer of concern and that any issues related to analysts' forecast pertained to firms with characteristics very different from those of utilities. For example, Hovakimian and Saenyasiri (2010) found that analyst forecast bias declined significantly or disappeared entirely since the Global Settlement:

> Introduced in 2002, the Global Settlement and related regulations had an even bigger impact than Reg FD on analyst behavior. After the Global Settlement, the mean forecast bias declined significantly, whereas the median forecast bias

[52] *Id*., at 44-45.

> essentially disappeared. Although disentangling the impact of the Global Settlement from that or related rules and regulations aimed at mitigating analysts' conflicts of interest is impossible, forecast bias clearly declined around the time the Global Settlement was announced. These results suggest that the recent efforts of regulators have helped neutralize analysts' conflicts of interest.[53]

Other studies such as Hribar and McInnis (2012)[54] and Michel and Pandes (2012)[55] found that analyst earnings forecasts turn out to be too optimistic for stocks that are more difficult to value, for instance, stocks of smaller firms, firms with high volatility or turnover, younger firms, or firms whose prospects are uncertain. These characteristics describe companies that are more volatile and/or less transparent than the average firm – none of which is applicable to the more mature and stable utility companies in the proxy group relied on by both Dr. Woolridge and I, where all companies had at least two analysts providing estimates and who, due to their regulated nature, have information transparency. Consequently, optimism bias is not expected to be an issue for utilities.

Therefore, it is inappropriate to rely on data for the period from prior to the Global Settlement in an attempt to test for bias that may exist since the implementation of the significant reforms that were implemented to address potential bias. However, the underlying data set relied upon by Dr. Woolridge is flawed as a result of his use of historical data that pre-dates the Global Settlement.

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[53] Armen Hovakimian and Ekkachai Saenyasiri, "Conflicts of Interest and Analyst Behavior: Evidence from Recent Changes in Regulation," *Financial Analysts Journal,* Volume 66, Number 4, July/August 2010, at 195.

[54] Paul Hribar and John M. McInnis, "Investor Sentiment and Analysts' Earnings Forecast Errors," *Management Science* (Special Issue on Behavioral Economics and Finance), Vol. 58, No. 2, February 2012, at 293-307.

[55] Jean-Sebastien Michel and J. Ari Pandes. "Are Analysts Really Too Optimistic?," *Social Science Research Network*, March 15, 2012.

Q. What is the second flaw with Dr. Woolridge's projected EPS growth rate study?

A. The second flaw in Dr. Woolridge's projected EPS growth rate analysis is that there are several examples of abnormally high or low EPS growth rates that bias his analysis. To estimate the actual three-to-five-year EPS growth rate, Dr. Woolridge calculated the compound annual growth rate ("CAGR") over a four-year period. For example, in his 2021 data, Dr. Woolridge estimated actual EPS growth as the CAGR over the period of 2017 through 2021. In this instance, since his calculation relies on actual EPS in 2017 and 2021, it is important to review the EPS in both years to determine if the EPS in either year is abnormally high or low and thus possibly affected by a one-time financial event.

While these abnormally high or low actual EPS growth rates could have an effect on *Value Line*'s projected EPS growth rates, Dr. Woolridge does not seem to account for this concern in his own comparison of actual to projected EPS growth rates for his sample of electric and natural gas utilities from 1985 to 2022. The following are examples of the compound annual growth rates that were included in Dr. Woolridge's study that were abnormally high or low and biased his analysis:

- *PG&E Corporation ("PG&E")*: Dr. Woolridge calculated an actual CAGR from 2017 through 2021 of -26.40 percent. However, PG&E filed for bankruptcy in 2019 due to claims brought against the company as a result of billions of dollars of wildfire liabilities.[56] Therefore, Dr. Woolridge is calculating an actual EPS growth rate from 2017 through 2021, where EPS in 2017 is not affected by the bankruptcy, while EPS in 2021 is affected by the bankruptcy, resulting in an EPS growth rate over this period of -26.40 percent. Dr. Woolridge should not have included this observation in his calculation of the average actual EPS growth rate for his sample of electric and natural gas utilities in 2021. Similarly, PG&E was also included in Dr. Woolridge's average for 2020, even though the same concern exists. In the 2020 data set calculated by Dr. Woolridge, PG&E's actual growth rate from 2016 through 2020 was -19.11 percent because he again relied on the pre-bankruptcy EPS from 2016 as the base for his calculation.

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[56] *Value Line* report for PG&E Corp, October 20, 2023.

- *SCANA Corporation ("SCANA")*: While Dr. Woolridge developed a growth rate for this company in 2019, SCANA was acquired by Dominion Energy, Inc. on January 1, 2019, therefore it is not clear how Dr. Woolridge obtained an estimate of EPS for SCANA in 2019. Further, the EPS estimate he reported for 2019 was extremely low and resulted in an actual EPS growth rate of -49.24 percent for 2015 through 2019.
- *NSTAR*: Dr. Woolridge included NSTAR in his average actual EPS growth rate for his sample in 2015 even though NSTAR merged with Northeast Utilities to form Eversource Energy in April 2012. Dr. Woolridge estimated an actual EPS growth rate of -43.19 percent for NSTAR in 2015; a period that is several years past the period that NSTAR even existed. Thus, the inclusion of this growth rate in his 2015 sample is inappropriate, significantly biases the actual average EPS for his electric and natural gas sample group downwards and makes his comparison to the projected EPS growth rates invalid.

It is important to note that the aforementioned examples of PG&E, SCANA, and NSTAR are not an exhaustive list of the errors in Dr. Woolridge's analysis. The examples provide evidence that Dr. Woolridge has not reviewed the actual EPS data for the companies included in his sample to ensure that the results are not biased by one-time financial events. It is evident given the problems with Dr. Woolridge's analysis that it provides no basis to conclude that projected EPS growth rates are "overly optimistic and upwardly biased."

Q. Is there other academic research that provides support for your conclusion that the analysts' growth rates for utilities are not overly optimistic?

A. Yes. Behn, Choi, and Kang (2008) found that the accuracy of analysts' earnings growth projections were higher if the company was audited by a "Big 5" accounting firm.[57] At the time of the study, the Big 5 account firms were Deloitte & Touche, Price Waterhouse, KPMG, Ernst and Young and Coopers and Lybrand. However, because of the merger of

[57] Bruce K. Behn, Jong-Hag Choi and Tony Kang, "Audit Quality and Properties of Analysts Earnings Forecasts," *The Accounting Review,* Vol. 83, No. 2, March 2008, at 327-349.

Price Waterhouse and Coopers and Lybrand, there are currently four big accounting firms. As shown in Figure 12, all of the companies included in Dr. Woolridge's Electric Proxy Group (as well as in my proxy group as shown in Figure 12) are audited by a "Big 4" accounting firm, thus indicating a higher forecast accuracy of earnings growth projections for the proxy group companies.

Figure 12: Auditors of the Proxy Group Companies

Company	Auditor	Company	Auditor
Alliant Energy Corporation	Deloitte & Touche LLP	Exelon Corporation	PricewaterhouseCoopers LLP
Ameren Corporation	PricewaterhouseCoopers LLP	FirstEnergy Corp.	PricewaterhouseCoopers LLP
American Elec. Power Co., Inc.	PricewaterhouseCoopers LLP	IDACORP, Inc.	Deloitte & Touche LLP
Avista Corporation	Deloitte & Touche LLP	Nextera Energy, Inc.	Deloitte & Touche LLP
CenterPoint Energy, Inc.	Deloitte & Touche LLP	NorthWestern Corporation	PricewaterhouseCoopers LLP
CMS Energy Corporation	PricewaterhouseCoopers LLP	OGE Energy Corp.	Ernst & Young
Consolidated Edison, Inc.	PricewaterhouseCoopers LLP	Pinnacle West Capital Corp.	Deloitte & Touche LLP
Dominion Resources, Inc.	Deloitte & Touche LLP	Portland General Electric Co.	Deloitte & Touche LLP
DTE Energy Company	PricewaterhouseCoopers LLP	PPL Corporation	Deloitte & Touche LLP
Duke Energy Corporation	Deloitte & Touche LLP	Public Service Enterprise Group Inc	Deloitte & Touche LLP
Edison International	PricewaterhouseCoopers LLP	Southern Company	Deloitte & Touche LLP
Entergy Corporation	Deloitte & Touche LLP	WEC Energy Group, Inc.	Deloitte & Touche LLP
Evergy, Inc.	Deloitte & Touche LLP	Xcel Energy Inc.	Deloitte & Touche LLP
Eversource Energy	Deloitte & Touche LLP		

Q. Have you reviewed the studies cited by Dr. Woolridge that examine the potential bias in analysts' growth projections?

A. Yes. Dr. Woolridge references a number of articles that he asserts prove the potential bias in analysts' EPS projections.[58] However, only one of the studies that Dr. Woolridge cites, an April 2010 McKinsey and Company study, analyzes the period after the Global Settlement on October 31, 2003. The period after the Global Settlement that was included in the McKinsey study was 2003 to 2008. While the earnings reported by S&P 500 companies met and exceeded the growth rate projected by analysts between 2003 and 2006, the McKinsey study noted that analysts' projections did exceed actual earnings growth in

[58] Woolridge Direct, at 51.

2007 and 2008.[59] However, this time period reflected the start of the Great Recession and does not indicate analyst bias, but rather shows that analysts were unable to predict the severity and magnitude of the financial crisis, which is no different than any other recession or other unanticipated event (*e.g.*, the COVID-19 pandemic). Furthermore, the McKinsey study examines analysts' EPS forecasts for a given year at one, two and three years out but it did not review the 3- to 5-year EPS growth rates that I used in my constant growth DCF analysis.

Q. If Dr. Woolridge had not made any adjustments to the analysts' projected EPS growth rates in his constant growth DCF model, what cost of equity would his analysis have produced?

A. Rebuttal Exhibit AEB-19 presents Dr. Woolridge's DCF analysis for his Electric Proxy Group. Rather than applying an average growth rate for the entirety of the proxy group, I have developed a DCF analysis for each company included in Dr. Woolridge's proxy group. As shown, relying on analysts' projected EPS growth rates, unadjusted, the median result of Dr. Woolridge's constant growth DCF analysis for his proxy group is 10.67 percent, or an increase of 87 basis points from the DCF result using his arbitrarily adjusted growth rates.

Q. Do you agree with Dr. Woolridge's consideration of projected DPS and BVPS growth rates?

A. No, I do not. There are several reasons why reliance on *Value Line* projections of DPS growth and BVPS growth are not appropriate.

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[59] Marc Goedhart, Rishi Raj, and Abhishek Saxena, "Equity analysts: Still too bullish," McKinsey and Company, April 1, 2010.

- Earnings are the fundamental determinant of a company's ability to pay dividends, and over the long-term dividend growth can only be sustained by earnings growth.[60]

- Management decisions to conserve cash for capital investments, to manage the dividend payout for the purpose of minimizing future dividend reductions, or to signal future earnings prospects can influence dividend growth rates in near-term periods. These decisions affect the dividends and the payout ratio in the short term but are not necessarily indicative of a firm's long-term earnings growth. For example, forty S&P 500 companies suspended dividend payments in 2020 as a result of the increased uncertainty due to COVID-19.[61] These dividend suspensions occurred because companies believed earnings over the short term would decline and, therefore, elected to conserve cash to offset the financial effects of COVID-19.

- Given that BVPS is the inverse of DPS, estimates of BVPS growth are also highly influenced by dividend policy. All else equal, investing earnings in assets increases BVPS, while paying dividends and not investing in assets decreases BVPS.

- There is significant academic research demonstrating that EPS growth rates are most relevant in stock price valuation.[62] For example, Liu, *et. al.* (2002) examined "the valuation performance of a comprehensive list of value drivers" and found that "forward earnings explain stock prices remarkably well" and were generally superior to other value drivers analyzed. Gleason, *et. al*. (2012) found that the sell-side analysts with the most accurate stock price targets were those whom the researchers found to have more accurate earnings forecasts. The use of DPS growth rates ignores the academic research demonstrating that EPS growth rates are most relevant in stock price valuation.

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[60] Eugene F. Brigham and Joel F. Houston, Fundamentals of Financial Management, at 317 (Concise Fourth Edition, Thomson South-Western, 2004). As noted by Brigham and Houston: "Growth in dividends occurs primarily as a result of growth in earnings per share (EPS). Earnings growth, in turn, results from a number of factors, including (1) inflation, (2) the amount of earnings the company retains and invests, and (3) the rate of return the company earns on its equity (ROE)."

[61] Karen Langley, "U.S. Companies Slashed Dividends at Fastest Pace in More Than a Decade," *Wall Street Journal*, July 8, 2020.

[62] *See, e.g.*, Robert S. Harris, "Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return," *Financial Management*, Spring 1986, at 66; James H. Vander Weide and Willard T. Carleton, "Investor growth expectations: Analysts vs. history," *The Journal of Portfolio Management*, Spring, 1988; Robert S. Harris and Felicia C. Marston, "Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts," *Financial Management*, Summer, 1992; Advanced Research Center, "Investor Growth Expectations," Summer 2004; Eugene F. Brigham, Dilip K. Shome and Steve R. Vinson, "The Risk Premium Approach to Measuring a Utility's Cost of Equity," *Financial Management*, Vol. 14, No. 1, Spring, 1985; Dr. Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc., 2006, at 299-303; Jing Liu, *et. al*., "Equity Valuation Using Multiples," *Journal of Accounting Research*, Vol. 40 No. 1, March 2002; C. A. Gleason, *et. al*., "Valuation Model Use and the Price Target Performance of Sell-Side Equity Analysts," *Contemporary Accounting Research*, September 2011; Bochun Jung, *et al*., "Do financial analysts' long-term growth forecasts matter? Evidence from stock recommendations and career outcomes," *Journal of Accounting and Economics*, Vol. 53 Issues 1-2, February-April 2012.

- Investment analysts report predominant reliance on EPS growth projections. In a survey completed by 297 members of the Association for Investment Management and Research, the majority of respondents ranked earnings as the most important variable in valuing a security (more important than cash flow, dividends, or book value).[63]
- The projected DPS growth rates from *Value Line*, that Dr. Woolridge relies on, are the views of an individual analyst. In contrast, projected EPS growth rates from *Yahoo! Finance and Zacks Investment Research* ("*Zacks*") are based on consensus estimates available from multiple sources. In other words, projected EPS growth rates include the contributions of more than one analyst and thus the results are less likely to be biased in one direction or another. Moreover, the fact that projected EPS growth estimates are available from multiple sources on a consensus basis attests to the importance of projected EPS growth rates to investors when developing long-term growth expectations.

Therefore, projections of EPS growth provide a more robust estimate of total company growth since it is earnings growth that will influence both DPS and BVPS growth. For all of these reasons, I relied on projected EPS growth rates for purposes of my constant growth DCF analysis.

Q. Setting aside that Mr. Gorman has changed the way in which he weighs the results of his DCF models to establish his recommendation from his DCF analyses, do you agree with Mr. Gorman's specification of his constant growth DCF models?

A. No. I disagree with the assumptions relied upon in Mr. Gorman's constant growth DCF model using sustainable growth rates.

Q. Why do you disagree with Mr. Gorman's constant growth DCF analysis that relies on sustainable growth rates?

A. The premise of Mr. Gorman's analysis is that the "sustainable growth rate is based on the percentage of the utility's earnings that is retained and reinvested in utility plant and

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[63] Stanley B. Block, "A Study of Financial Analysts: Practice and Theory," *Financial Analysts Journal*, July/August 1999.

equipment," and thus the "internal growth methodology is tied to the percentage of earnings retained by the utility and not paid out as dividends."[64] Accordingly, Mr. Gorman's sustainable growth rate calculation assumes that future earnings will increase as the retention ratio (*i.e.*, the portion of earnings not paid out in dividends) increases. However, this assumption that future earnings growth is inversely related to the dividend payout ratio does not necessarily hold in practice. As discussed, management may decide to (i) conserve cash for capital investments; (ii) manage the dividend payout for the purpose of minimizing future dividend reductions; (iii) manage its capital structure; or (iv) signal future earnings prospects. These decisions can and do influence the dividend payout (and therefore earnings retention) in the near-term, and such decisions have been seen recently in the market. Counter to Mr. Gorman's assumption, a company's management will alter dividend policy to respond to changes in earnings, and therefore dividend growth will not always reflect earnings growth (and vice versa).

Q. Is there also academic research that supports your conclusion that future earnings growth is not inversely related to the dividend payout ratio?

A. Yes. Both Zhou and Ruland (2006) and Gwilym, *et al*. (2006) discussed the theory that high dividend payouts (*i.e.*, low retention ratios) are associated with low future earnings growth.[65] Each of these studies also cited Arnott and Asness (2003) that found, over the

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[64] Gorman Direct, at 46.

[65] Ping Zhou and William Ruland, "Dividend Payout and Future Earnings Growth," *Financial Analysts Journal*, Vol. 62, No. 3, 2006; Owain Gwilym, James Seaton, Karina Suddason, and Stephen Thomas, "International Evidence on the Payout Ratio, Earnings, Dividends and Returns," *Financial Analysts Journal*, Vol. 62, No. 1, 2006.

course of 130 years of data, future earnings growth is associated with high, rather than low payout ratios.[66] Specifically, Arnott and Asness (2003) concluded:

> Unlike optimistic new-paradigm advocates, we found that low payout ratios (high retention rates) historically precede low earnings growth. This relationship is statistically strong and robust. We found that the empirical facts conform to a world in which managers possess private information that causes them to pay out a large share of earnings when they are optimistic that dividend cuts will not be necessary and to pay out a small share when they are pessimistic, perhaps so that they can be confident of maintaining the dividend payouts. Alternatively, the facts also fit a world in which low payout ratios lead to, or come with, inefficient empire building and the funding of less than-ideal projects and investments, leading to poor subsequent growth, whereas high payout ratios lead to more carefully chosen projects. The empire-building story also fits the initial macroeconomic evidence quite well. At this point, these explanations are conjectures; more work on discriminating among competing stories is appropriate.[67]

All three studies found that there is a negative, not a positive, relationship between earnings growth rates and retention ratios. As such, Mr. Gorman's reliance on the sustainable growth rates in the constant growth DCF model is not appropriate.

Q. Are there other reasons why you believe that sustainable growth rates should not be used in the DCF model?

A. Yes. The use of the sustainable, or retention, growth rates involves estimating investor expectations for four separate variables over the near-term: (1) the retention ratio, reflected as the "b" variable; (2) the expected return on book equity, reflected as the "r" variable; (3) the growth in the number of shares of common equity, reflected as the "s" variable; and (4) the portion of the market-to-book ratio that exceeds unity, reflected as the "v" variable.

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[66] Robert Arnott and Clifford Asness, "Surprise: Higher Dividends = Higher Earnings Growth," *Financial Analysts Journal*, Vol. 59, No. 1, January/February 2003. Since the payout ratio is the inverse of the retention ratio, the authors found that future earnings growth is negatively related to the retention ratio.

[67] *Id.*

This means that the growth estimate includes the potential forecasting error of the four separate variables.

C. Multi-Stage DCF

Q. Have any of the witnesses conducted a multi-stage DCF analysis?

A. Yes. Mr. Gatewood and Mr. Gorman each conduct a multi-stage DCF analysis. Specifically:

- Mr. Gatewood relies on the results of two forms of the multi-stage DCF model: (1) a two-stage growth DCF model that assigns a 50 percent weighting to projected EPS and DPS growth and a 50 percent weighting to projected GDP growth;[68] and (2) an Internal Rate of Return ("IRR") model using projected EPS and DPS growth rates for the first stage (*i.e.*, 5 years) and historical GDP growth for the second stage. Mr. Gatewood's two-stage DCF produces a cost of equity ranging from 8.69 percent to 9.35 percent, with a mean of 9.02 percent, and his IRR model produces a cost of equity ranging from 7.71 percent to 10.41 percent, with a mean of 8.42 percent.[69]
- Mr. Gorman's multi-stage DCF model relies on analysts' projected EPS growth rates in stage 1 (years 1-5) and a growth rate of 4.10 percent in stage 3 (year 11 onward) to represent projected long-term GDP growth, while the growth rate in stage 2 (years 6-10) linearly transitions between the stage 1 and stage 3 growth rates.[70] The mean and median results of Mr. Gorman's multi-stage DCF analysis using projected EPS growth rates are 8.40 percent and 8.29 percent, respectively.

Q. As a threshold matter, are the results of each of Mr. Gatewood's and Mr. Gorman's multi-stage DCF analyses consistent with previously authorized ROEs?

A. No. The mean results of Mr. Gatewood's two-stage growth DCF and IRR analyses, as well as Mr. Gorman's multi-stage DCF analysis, are either well below (*i.e.*, Mr. Gatewood's IRR analysis and Mr. Gorman's multi-stage analysis) or at the very low-end (*i.e.*, Mr.

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[68] Although Mr. Gatewood refers to his DCF analysis as "two-stage", it appears that his using the traditional constant growth DCF model with an average of both short term and long-term growth rates.

[69] Gatewood Direct, at 8.

[70] Gorman Direct, at 60 and Exhibit MPG-13.

Gatewood's two-stage growth DCF analysis) of the range of authorized ROEs for vertically-integrated utilities in comparable regulatory jurisdictions over at least the past 40 years. As a result, it is reasonable to conclude that the results of both Mr. Gatewood's and Mr. Gorman's multi-stage DCF models are unreasonably low and would not meet the comparable return standard established by the U.S. Supreme Court decisions, *Hope* and *Bluefield*.[71]

Q. Do you agree with Mr. Gatewood's and Mr. Gorman's use of multi-stage DCF analyses to estimate the cost of equity for the Company?

A. No. The utility industry is considered a mature industry due to its regulated status and relatively stable demand. Thus, financial projections such as earnings growth rate projections are also likely to be relatively stable over the long-term. The relative stability of the financial forecasts for utilities supports the use of a constant growth DCF model to estimate the cost of equity for a mature industry like utilities. As noted, Dr. Woolridge also conducts a constant growth DCF – and does not conduct a multi-stage DCF – for the same reason.[72] Therefore, the constant growth DCF model is the more appropriate model to estimate the cost of equity for the Company rather than the multi-stage analyses conducted by Mr. Gatewood or Mr. Gorman.

Q. Do the two-stage and multi-stage forms of the DCF model increase the number of subjective inputs required to estimate the DCF model?

A. Yes. The multi-stage DCF model introduces additional assumptions and potential analyst bias. Specifically, the multi-stage DCF models presented by Mr. Gatewood and Mr.

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[71] Bulkley Direct, at 6-7.

[72] Woolridge Direct, at 42.

Gorman in this proceeding result in the following additional assumptions that require subjective judgment:

- Specification of the Model: In this case, Mr. Gatewood and Mr. Gorman present three different specifications of the model (*i.e.*, a two-stage growth DCF which is a form of the constant growth DCF model but relies on a blended growth rate calculated using a weighted average of short-term and long-term growth; a multi-stage DCF with two stages of growth; and a multi-stage DCF with three stages of growth).
- Selection of the Growth Rates: For Mr. Gatewood's DCF that relies on a blended growth rate and the multi-stage DCF with two stages of growth, this requires selecting a short-term and long-term growth rate, while Mr. Gorman's multi-stage DCF with three stages of growth requires the additional selection of an intermediate growth rate.
- Weighting Factors for the Blended Growth Rate: Mr. Gatewood places 50 percent weight on the short-term growth rate and 50 percent on the long-term growth rate when calculating his blended growth rate. Conversely, the FERC assigns 80 percent weight to the short-term growth rate and 20 percent to the long-term growth rate.[73] Consequently, the selection of the weighting factor has a direct effect on the result produced by Mr. Gatewood's two-stage DCF model.
- Duration of Each Stage of the Multi-Stage DCF Model: For his multi-stage DCF model with two stages of growth, Mr. Gatewood assumes first stage growth from years 1-5 and second stage growth in year 6 and thereafter. Mr. Gorman's multi-stage DCF model with three stages of growth, assumes stage 1 growth is years 1-5, stage 2 growth is years 6-10 and stage 3 growth is year 11 and after.

Given the number of additional subjective assumptions required, it is reasonable to conclude that a multi-stage DCF analysis creates greater opportunity for an analyst to influence the results of the DCF model.

[73] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569-A, 171 FERC ¶ 61,154 (2020), at P57.

Q. How do you respond to Mr. Gorman's and Mr. Gatewood's contention that the use of projected EPS growth rates is not consistent with the infinite time horizon the DCF model?

A. I disagree, for several reasons. First, both Mr. Gorman and I rely on consensus forecasts of EPS growth rates in our respective constant growth DCF analyses. In fact, two of the three sources we rely on for those projected EPS growth rates (*i.e., Zacks* and C*apital IQ*) are the same sources.[74] While Mr. Gorman suggests that projected EPS growth rates are substantially higher than his estimated long-term growth rate, he nonetheless relies on the results of the DCF model using projected EPS analyst growth rates for purposes of both determining the range of the fair return for the Company based on the DCF analysis, as well as his point estimate for the cost of equity resulting from the DCF analysis. Thus, to the extent Mr. Gorman has concerns with the analyst growth rates used in my DCF model, those same concerns would apply to his model.

Second, both Mr. Gatewood[75] and Mr. Gorman[76] suggest that it is not reasonable to assume that utilities can grow at a rate that is greater than the economy over the long-term, and therefore use GDP as a limit on growth. However, the reasonableness of the results of a cost of equity model that relies on GDP as the long-term growth rate forecast relies entirely on the accuracy of Mr. Gatewood's and Mr. Gorman's estimate of the long-term GDP growth rate. I disagree with their estimates of the long-term GDP growth rate as discussed later in my testimony.

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[74] In addition, I rely on *Value Line* whereas Mr. Gorman relies on *I/B/E/S* as reported through another data service LSEG Workspace.

[75] Gatewood Direct, at 30-31, 34, and 71.

[76] Gorman Direct, at 57-58 and 85.

Finally, considering empirical studies comparing the total factor productivity ("TFP") growth of the utility industry relative to the economy, it is not unreasonable to assume that earnings growth for utilities could exceed GDP growth over the long term. In a study filed as part of the Rate Regulation Initiative of the Alberta Utilities Commission, the authors calculated TFP growth[77] for 72 U.S. electric and combination electric and natural gas utilities and for the U.S. economy for the period of 1972 through 2009. For the U.S. utility group, TFP growth averaged 0.96 percent over the period of 1972 to 2009,[78] while TFP growth for the U.S. economy was 0.91 percent,[79] indicating that electric and combination electric and natural gas utilities were approximately 5 percent more productive than the U.S. economy over the study period. Therefore, the authors demonstrated that utility growth exceeded growth for the U.S. economy for approximately 40 years.

Q. How do Mr. Gatewood and Mr. Gorman develop their projected GDP growth rates?

A. Mr. Gatewood cites to the FERC for his reliance on a projected nominal GDP growth rate, which he estimates to be 4.08 percent.[80] Mr. Gatewood calculates his GDP growth rate as the average the projected GDP growth rates from the Energy Information Agency ("EIA"), Congressional Budget Office ("CBO") and the Social Security Administration ("SSA").[81]

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[77] TFP growth is a measure of productivity calculated as the difference between output growth and input growth. Higher TFP growth indicates that a company is converting inputs into higher levels of output growth (*i.e.*, increased productivity).

[78] Alberta Utilities Commission, Jeff Makholm and Agustin Ros, "Update, Reply and PBR Plan Review for AUC Proceeding 566 – Rate Regulation Initiative", February 22, 2012, at 5.

[79] *Id*., at 19.

[80] Gatewood Direct at 70.

[81] Gatewood Direct, at 34.

Mr. Gorman relies on a projected nominal GDP of 4.10 percent as reported by *Blue Chip Financial Forecasts*.[82]

Q. Do you agree with Mr. Gorman's and Mr. Gatewood's projected GDP growth rates?

A. No. Mr. Gatewood relies on projected nominal GDP growth rates from CBO for the period of 2024 to 2054 and from EIA for the period of 2023 to 2050. However, the second stage of Mr. Gatewood's multi-stage DCF analysis begins in year 6, or 2029, and continues into perpetuity. Therefore, the projected nominal GDP growth rates from EIA and CBO would only reflect growth for the 25-year period of 2029 through 2054, even though his multi-stage DCF model extends into perpetuity. In other words, his assumed long-term growth rate only covers a small portion of the long-term period to which it is being applied in his multi-stage DCF analyses. As a result, the projected GDP growth rates from CBO and EIA may not be indicative of the expected growth in GDP over the long term, and therefore, cannot be used as the basis to conclude that the average projected EPS growth rate for my proxy group (*i.e.*, 6.49 percent as shown on Rebuttal Exhibit AEB-14) will not be sustained in perpetuity.

Q. Is the long-term growth rate assumed by Mr. Gatewood and Mr. Gorman in their respective multi-stage DCF analyses consistent with the analyst literature that Mr. Gorman cites in his testimony?

A. No. In his testimony when discussing the long-term growth rate for the multi-stage DCF, Mr. Gorman includes the following quote from the *Ibbotson SBBI 2013 Valuation Yearbook*:

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[82] Gorman Direct, at 59.

> Another approach to estimating long-term growth rates is to focus on estimating the overall economic growth rate. Again, this is the approach used in the *Ibbotson Cost of Capital Yearbook*. To obtain the economic growth rate, a forecast is made of the growth rate's component parts. Expected growth can be broken into two main parts: expected inflation and expected real growth. By analyzing these components separately, it is easier to see the factors that drive growth.[83]

However, Mr. Gorman cites only a portion of the quote and the remainder of the discussion therein indicates that Mr. Gorman's assumed long-term growth rate (*i.e.*, based on the projected nominal GDP growth rate by *Blue Chip Financial Forecasts*, as supported by other sources of projected nominal GDP growth[84]) is inconsistent with the approach recommended by *Ibbotson* for establishing a long-term growth rate:

> Once the long-term expected inflation rate is estimated, the real growth rate must be determined. The growth rate in real Gross Domestic Product (GDP) for the period 1929 to 2012 was approximately 3.22 percent. Growth in real GDP (with only a few exceptions) has been reasonably stable over time; therefore, its historical performance is a good estimate of expected long-term (future) performance.
>
> By combining the inflation estimate with the real growth rate estimate, a long-term estimate of nominal growth is formed.[85]

In other words, the *Ibbotson SBBI 2013 Valuation Yearbook* recommends that the long-term growth rate reflect the sum of the long-term historical average real GDP growth rate and the expected inflation rate. As shown in Rebuttal Exhibit AEB-20, had Mr. Gorman followed this approach as cited in his testimony, the long-term growth rate would have been 5.45 percent, not 4.30 percent. As a result, Mr. Gorman understates the long-term growth rate that would be consistent with *Ibbotson's* methodology.

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[83] *Id*., at 58.

[84] Gorman Direct, at 60.

[85] *Morningstar, Inc.*, Ibbotson SBBI 2013 Valuation Yearbook, at 52.

Q. Is Mr. Gatewood's two-stage DCF analysis consistent with the FERC's application of that model?

A. No. While Mr. Gatewood cites to the FERC for the use of a GDP growth rate, his specification of the two-stage DCF analysis is inconsistent with the FERC's application of that model. Specifically, as stated in Opinion No. 569-A, the FERC relies solely on projected EPS growth rates for the short-term growth rate, and does not rely on projected DPS growth rates such as Mr. Gatewood has also done.[86] In addition, the FERC assigns an 80 percent weight to the projected EPS growth rates and 20 percent to the long-term GDP growth rate, not the 50/50 weighting that Mr. Gatewood applies.[87]

Q. How would Mr. Gatewood's two-stage DCF analysis change if his analysis was consistent with the FERC's application of that model?

A. As shown on Rebuttal Exhibit AEB-21, if Mr. Gatewood's two-stage DCF analysis relies on projected EPS growth rates and applies the 80 percent (short-term growth) / 20 percent (long-term growth) weightings to the growth rates consistent with the FERC's methodology, and relies on reflect the long-term growth rate consistent with the *Ibbotson* methodology, the resulting cost of equity is 10.23 percent.

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[86] *Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, Opinion No. 569-A, 171 FERC ¶ 61,154 (2020), at P55.

[87] *Id.*, at P57.

Q. How would the results of Mr. Gatewood's and Mr. Gorman's multi-stage DCF analyses change if they had relied on a long-term growth rate that was developed consistent with the *Ibbotson* methodology?

A. As shown in Rebuttal Exhibit AEB-22, when Mr. Gatewood's IRR model or multi-stage DCF is adjusted to reflect a long-term growth rate consistent with the *Ibbotson* methodology that is referenced in Mr. Gorman's testimony, the resulting cost of equity is 9.64 percent. Similarly, as shown in Rebuttal Exhibit AEB-23, updating Mr. Gorman's multi-stage DCF analysis to rely on the same long-term growth rate increases his cost of equity result from this model by more than 100 basis points to 9.45 percent.

VIII. CAPM ANALYSIS

Q. Have any of the witnesses conducted a CAPM analysis?

A. Yes. Mr. Gatewood, Dr. Woolridge, and Mr. Gorman have each conducted a CAPM analysis. Specifically:

- Mr. Gatewood conducts two forms of the CAPM – one using forecasted data, in which he conducts three scenarios, and another using historical data, which he conducts two scenarios.
- Dr. Woolridge conducts two CAPM analyses – one using his proxy group and one using my proxy group, relying on the yield on the 30 year Treasury bond yield, current betas for the proxy group as reported by *Value Line* and *S&P Capital IQ*, and selects a market risk premium after considering a range of studies and publications.[88]
- Mr. Gorman's CAPM analysis relies on the near-term projected 30-year Treasury yield as of May 1, 2025 and 3-year and 5-year betas from *Value Line* and *S&P Capital IQ*; and a historical market risk premium inflated.[89]

[88] Woolridge Direct, at 56-68.

[89] Gorman Direct, at 70-78.

Q. What are your primary areas of disagreement with CAPM analyses of these witnesses?

A. My primary areas of disagreement with these witnesses are (1) Mr. Gorman's assumed beta, which is inconsistent with his prior testimony and downwardly biases his overall CAPM recommendation; (2) Mr. Gatewood's misaligned calculation of the market risk premium; and, (3) the assumed market risk premia of Mr. Gatewood, Dr. Woolridge, and Mr. Gorman.

A. Beta

Q. Is Mr. Gorman's assumed beta for his CAPM consistent with his prior testimony?

A. No. In multiple proceedings within the past year, and inconsistent with the approach he relies on in this proceeding, Mr. Gorman has previously testified that it is appropriate to rely on the historical average *Value Line* beta for the proxy group.[90]

Q. If Mr. Gorman had relied on the historical average *Value Line* beta for the proxy group in this proceeding, would his CAPM result increase?

A. Yes. As shown his Exhibit MPG-20, page 2, the historical average *Value Line* beta for Mr. Gorman's proxy group is 0.78. Therefore, all else equal, if Mr. Gorman had relied on the historical average *Value Line* beta for the proxy group, and no other changes are made to his CAPM, the resulting cost of equity would be 9.96 percent – or 57 basis points higher than the CAPM result that Mr. Gorman claims in this proceeding.

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[90] *See, e.g.*, Public Utility Commission of Texas, Docket No. 56165, Direct Testimony and Exhibits of Michael P. Gorman, May 16, 2024, at 67, Exhibit MPG-17 (pp. 2-3), and Exhibit MPG-18; Public Utility Commission of Texas, Docket No. 56211, Direct Testimony and Exhibits of Michael P. Gorman, June 19, 2024, at 71-72, Exhibit MPG-17 (pp. 2-3), and Exhibit MPG-18; Virginia Corporation Commission, Case No. PUR-2023-00194, Direct Testimony and Exhibits of Michael P. Gorman, June 28, 2024, at 63, Exhibit MPG-16 (pp. 2-3), and Exhibit MPG-17.

B. Market Risk Premium

Q. Is it appropriate to use a historical market risk premium in the CAPM to estimate the cost of equity such as Mr. Gatewood has done in two of his five CAPM analyses?

A. No. Fundamentally, the market return and market risk premium should be forward-looking, and Mr. Gatewood's historically-derived market return and market risk premium estimates are certainly not forward-looking and he has not provided any evidence that the historical averages are reflective of the expected market conditions during the period in which the Company's proposed rates will be in effect. As *Morningstar* has observed, the market risk premium is a forward-looking concept, not a historical analysis:

> It is important to note that the expected equity risk premium, as it is used in discount rates and the cost of capital analysis, is a forward-looking concept. *That is, the equity risk premium that is used in the discount rate should be reflective of what investors think the risk premium will be going forward*.[91]

Although the use of a historically-derived average market return and market risk premium are reflective of the returns realized by investors under different market and economic conditions, they are not necessarily reflective of the market return required by investors in the current and expected market environment. Given that the current and projected market conditions that I have discussed affect the current and projected equity risk premium, a forward-looking market return and market risk premium should be used in the CAPM analysis for estimating the cost of equity.

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[91] *Morningstar Inc*., 2010 Ibbotson SBBI Valuation Yearbook, at 55; emphasis added.

Q. Is there evidence that the use of a historical market premium can produce counter-intuitive results?

A. Yes. Figure 13 illustrates the problem with relying on the historical market risk premium such as Mr. Gatewood has done. Specifically, the figure shows that from 2007-2009, the historical market risk premium decreased even as market volatility (the primary statistical measure of risk) significantly increased. Further, this figure demonstrates the significant swings in the annual equity risk premium that are averaged into the long-term historical average calculations. As shown, in 2008, the annual equity risk "premium" was actually negative, which implies a discount for equity holders relative to the cost of debt. It is incomprehensible that the perceived risk for equity was negative (implying a required equity return lower than the cost of debt) in the height of the financial market collapse when the overall market return for equities was negative 37 percent. In fact, as shown, this individual observation alone, which runs counter to the theory of the equity risk premium, reduces the historical average market risk premium for the prior 80 years by 60 basis points. The assumption that investors would expect or require an equity risk "premium" below the cost of debt during periods of increased volatility is counter-intuitive and leads to unreliable analytical results.

Figure 13: Historical Market Risk Premium and Market Volatility

	Market Volatility	Market Return	Annual Equity Premium	Long-term Average Historical Market Risk Premium[92]
2007	17.54	5.49%	0.63%	7.10%
2008	32.69	-37.00%	-41.45%	6.50%
2009	31.48	26.46%	3.47%	6.70%

The assumption that investors would expect or require a lower risk premium during periods of increased volatility is counter-intuitive and leads to unreliable analytical results. The relevant objective in the application of the CAPM is to ensure that all three components of the model (*i.e.*, the risk-free rate, the beta, and the market risk premium) are consistent with market conditions and investor perceptions, and the forward-looking market risk premium estimates used in my CAPM analyses specifically address that concern.

Q. Beyond the problem with relying on a historical market risk premium generally, is Mr. Gatewood's reliance on a geometric average historical market return appropriate?

A. No. Geometric and arithmetic means are used for different purposes. The geometric mean is the compound rate that equates a beginning value to its ending value. It is used to determine the exact rate of compounded return between a specific starting and ending point. The arithmetic mean, which is the appropriate calculation to be used for this purpose, is the simple average of single period rates of return and best approximates the uncertainty associated with returns from year to year. The important distinction between the two

[92] *Morningstar Inc*. 2008 *Ibbotson* Stocks, Bonds, Bills, and Inflation Valuation Yearbook, at 28. *Morningstar Inc*., 2009 *Ibbotson* Stocks, Bonds, Bills, and Inflation Valuation Yearbook, at 23. *Morningstar Inc*., 2010 *Ibbotson* Stocks, Bonds, Bills, and Inflation Valuation Yearbook, at 23. The historical market risk premium equals the total return on large company stocks less the income-only return on long-term government securities.

methods is that the arithmetic mean assumes that each periodic return is an independent observation and, therefore, incorporates uncertainty into the calculation of the long-term average. In contrast, the geometric mean does not incorporate the same degree of uncertainty because it assumes that returns remain constant from year to year.

Cooper (2006) reviewed the literature on the topic and noted the following rationale for using the arithmetic mean:

> Note that the arithmetic mean, not the geometric mean is the relevant value for this purpose. The quantity desired is the rate of return that investors expect over the next year for the random annual rate of return on the market. The arithmetic mean, or simple average, is the unbiased measure of the expected value of repeated observations of a random variable, not the geometric mean.…[The] geometric mean underestimates the expected annual rate of return.[93]

Furthermore, Pratt and Grabowski noted the following in their review of the literature:

> The choice between which average to use is a matter of disagreement among practitioners. The arithmetic average receives the most support in the literature, though other authors recommend a geometric average. The use of the arithmetic average relies on the assumption that (1) market returns are serially independent (not correlated) and (2) the distribution of market returns is stable (not time-varying). Under these assumptions, an arithmetic average gives an unbiased estimate of expected future returns assuming expected conditions in the future are similar to conditions during the observation period. Moreover, the more observations available, the more accurate will be the estimate.[94]

Lastly, *Kroll*, a source that both Mr. Gatewood and Dr. Woolridge rely on for their CAPM analyses, states the following on the use of the arithmetic versus geometric mean:

> The equity risk premium data presented in this book are arithmetic average risk premiums as opposed to geometric average risk premiums. The arithmetic

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[93] Ian Cooper, "Arithmetic versus geometric mean estimators: Setting discount rates for capital budgeting," *European Financial Management*, Vol. 2, No. 2 at 158 (1996).

[94] Shannon P. Pratt and Roger J. Grabowski, *Cost of Capital: Applications and Examples*, Wiley, 2008, at 96.

> average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building-block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number.
>
> This is because both the CAPM and building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance because it represents the compound average return.[95]

Q. Does the market risk premium relied on by Mr. Gorman reflect similar flaws as the historical market risk premia relied on by Mr. Gatewood?

A. Yes. Mr. Gorman characterizes his market return as "forward-looking," which presumably is recognition that the market return estimate of the CAPM should be forward-looking; however, his calculation does not result in a "forward-looking" estimate of the return on the market. Rather, Mr. Gorman's market return calculation simply applies a projected inflation rate to a long-term historical average real market return, which does not result in a "forward-looking" market return. Mr. Gorman provides no evidence that the historical average market return is reflective of the expected market conditions during the period in which the Company's proposed rates will be in effect. Although the historical average real return of large company stocks from 1926 through 2023 that Mr. Gorman references is reflective of the returns realized by investors under different market and economic conditions over that period, it is not reasonable to simply inflate that average and assume that it reflects the expected forward-looking market return in the current and expected market environment and the period in which rates established in this proceeding will be in effect

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[95] *Kroll*, 2022 SBBI Yearbook, Stocks, Bonds, Bills and Inflation, p. 201.

As discussed previously herein, consensus estimates expect interest rates to remain elevated over the at least the next year as well as over the longer-term, and Mr. Gorman has also acknowledged that inflation has remained elevated.[96] In addition, as discussed, market uncertainty has also increased as a result of the Trump administration's policies (*e.g.*, trade, immigration, fiscal policy and regulation), which increases overall risk in the market. As I discuss in more detail later herein, a study published by the Federal Reserve Bank of New York in 2015 evaluated a number of models used to estimate the market risk premium and concluded that the market risk premium is higher during periods of increased inflation.[97] Therefore, the *average* historical real return of large company stocks that Mr. Gorman relies on to calculate his market return is not reflective of current market conditions and their effect on the investor return requirement.

Q. Is there support in other jurisdictions for the use of a forward-looking market return and market risk premium in the CAPM analysis such as you have relied upon?

A. Yes. Various state utility regulatory commissions have also supported the use of a constant growth DCF model to estimate the market return in the CAPM. As shown in Figure 14, the Staff of the Illinois Commerce Commission ("ICC"), the Bureau of Investigation and Enforcement ("I&E") of the Pennsylvania Public Utility Commission ("Pennsylvania PUC"), and the Staff of the Maine Public Utilities Commission ("Maine PUC") have each supported the forward-looking market risk premium, and the market return estimates using the constant growth DCF model. In each of these cases, the respective regulatory

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[96] Gorman Direct, at 29.

[97] Fernando Duarte and Carla Rosa, "The Equity Risk Premium: A Review of Models," Federal Reserve Bank of New York, 2015, at 50.

commission relied on the estimated CAPM results by these parties to determine the authorized ROE and did not dispute the use of the constant growth DCF model to calculate the market return.

Figure 14: Examples of Jurisdictions Where Market Return Estimated Using the Constant Growth DCF Model

Intervening Party	Company	Docket No.	Market Return	Date of Order	Did the Commission Rely on the Party's CAPM?
Staff of the ICC	North Shore Gas Company	20-0810	CGDCF of the dividend-paying companies in the S&P 500 (11.95%)[98]	9/8/21	Yes[99]
I&E	Aqua Pennsylvania, Inc.	R-2021-3027385	CGDCF of the Value Line Universe and S&P 500 (12.14%)[100]	5/12/22	Yes, the PPUC placed primary weight on I&E's CAPM[101]
Staff of the MPUC	Northern Utilities, Inc.	2019-00092	CGDCF of the dividend-paying companies in the S&P 500 (11.33%-13.49%)[102]	4/1/20	Yes[103]

Q. Are the forecasted market risk premia specified by Mr. Gatewood and Dr. Woolridge in their respective CAPM analyses consistent with the inverse relationship between interest rates and the market risk premium?

A. No. Mr. Gatewood's and Dr. Woolridge's forecasted market risk premia do not reflect the inverse relationship between interest rates and the market risk premium. Given that current

98 Illinois Commerce Commission, Docket No. 20-0810, Order, September 8, 2021, at 71.

99 *Id.*, at 86-87.

100 Pennsylvania Public Utility Commission, Docket No. R-2021-3027385, Opinion and Order, Public Meeting held May 12, 2022, at 147.

101 *Id.*, at 178.

102 Maine Public Utilities Commission, Docket No. 2019-00092, Bench Analysis, October 29, 2019, at 21.

103 *Id.*, Order Part II, April 1, 2020, at 58.

yields on Treasury bonds are consistent with the average yields historically, and there is an inverse relationship between interest rates and the market risk premium, the market risk premia on which these witnesses rely in their respective CAPM analyses should be generally consistent with the historical average market risk premium – although, as just discussed, should be calculated on a forward-looking basis. However, Mr. Gatewood's and Dr. Woolridge's respective forecasted market risk premia instead are vastly understated in the current market environment. Specifically, as shown in Figure 15, the risk-free rate assumptions used in their CAPM analyses are either below or consistent with the long-term average risk-free rate, and yet contrary to the inverse relationship between interest rates and the market risk premium, their respective market risk premia are well *below* the long-term term average market risk premium.

Figure 15: Misalignment of Market Risk Premia Relied on by Mr. Gatewood and Dr. Woolridge[104]

Witness	Source	Market Risk Premium	Amount Below Long-Term Avg.	Risk-Free Rate	Amount Below Long-Term Avg.
	Long-Term Historical Avg.	**7.31%**		**4.86%**	
Gatewood	JP Morgan Asset Mgmt.	3.07%	-4.24%	3.90%	-0.96%
Gatewood	Black Rock	3.58%	-3.73%	4.00%	-0.86%
Gatewood	*Kroll* - Normalized	5.50%	-1.81%	4.78%	-0.08%
Woolridge	KPMG	5.00%	-2.31%	5.00%	0.14%
Woolridge	*Kroll* - Normalized	5.50%	-1.81%	5.00%	0.14%
Woolridge	JP Morgan Asset Mgmt.	3.90%	-3.41%	5.00%	0.14%
Woolridge	Professor Damodaran	4.41%	-2.90%	5.00%	0.14%
Woolridge	Fernandez Survey	5.50%	-1.81%	5.00%	0.14%
Woolridge	Duke-CFO Survey	5.20%	-2.11%	5.00%	0.14%

[104] Gatewood Direct, at 86-92; Woolridge Direct, at 68.

Q. Are the cost of equity estimates resulting from Mr. Gatewood's CAPM analyses that rely on the forecasted market risk premiums from J.P. Morgan Asset Management and BlackRock reasonable?

A. No. The average cost of equity results of Mr. Gatewood's CAPM analyses that rely on the J.P. Morgan Asset Management and BlackRock market risk premiums are 6.66 percent and 7.22 percent, respectively. While Mr. Gatewood acknowledges that these results are "relatively low," he nonetheless suggests that is to be expected given the market conditions in which those estimates were prepared.[105] However, Mr. Gatewood's cost of equity results using these forecasted market risk premia are approximately *150 to 200 basis points below any authorized ROE in over four decades* for a vertically-integrated electric utility in a jurisdiction with a comparable regulatory framework as Kansas. Accordingly, these results of Mr. Gatewood's CAPM analyses should be given no weight by the Commission.

Q. Are there also inconsistencies with the forecasted market risk premia used in Mr. Gatewood's and Dr. Woolridge's CAPM analyses and the results of their respective DCF analyses?

A. Yes. The forecasted market risk premia shown in Figure 16 on which Mr. Gatewood and Dr. Woolridge rely are inconsistent with the results of their respective DCF analyses. Specifically, these market risk premia in conjunction with their assumed risk-free rates produce an implied market return that is less than the results of their respective DCF analyses. Such a result is counterintuitive, as it is reasonable to expect that the return on the overall market, which has a beta of 1.0, would be higher than the DCF return for the proxy group of electric utilities, which both Mr. Gatewood and Dr. Woolridge assume have

[105] Gatewood Direct, at 87.

an average beta of less than 1.0.. However, as shown, the results of these witnesses' CAPM analyses indicate the exact opposite of the expected risk/return trade off. In other words, Mr. Gatewood's and Dr. Woolridge's overall market returns reflected in these CAPM analyses are lower than the returns they each estimate for the electric utility proxy group, despite the expectation that this proxy group has lower overall risk than the market.

Figure 16: Mr. Gatewood's and Dr. Woolridge's Implied Market Return in the CAPM Analysis as Compared to Their DCF Results

	CAPM Assumptions				Gatewood / Wooldridge DCF Return for *VI Elec Utilities*
Source	Market Risk Premium	Risk-Free Rate	Implied Return for the *Market*		
Mr. Gatewood					
JP Morgan Asset Mgmt.	3.07%	3.90%	6.97%	v.	9.02%
Black Rock	3.58%	4.00%	7.58%		9.02%
Dr. Woolridge					
JP Morgan Asset Mgmt.	3.90%	5.00%	8.90%		9.60% - 9.80%
Professor Damodaran	4.41%	5.00%	9.41%		9.60% - 9.80%

Q. Is there an additional issue with Mr. Gatewood's calculation of his CAPM analyses that rely on forecasted market risk premia?

A. Yes. In two of his three CAPM analyses in which he relies on forecasted market risk premia, Mr. Gatewood has incorrectly calculated the market risk premium as the total market return less the *total* return on long-term government bonds instead of the *income-only* return on long-term government bonds.[106] The problem with these CAPM analyses

[106] On pages 91-92 of his testimony, Mr. Gatewood also indicates that his historical arithmetic average market risk premium and historical geometric average market risk premium are based on the total return on common stock minus the total return on long-term government bonds instead of the income-only return on government bonds. However, it is unclear whether Mr. Gatewood's figures may be mislabeled and the total return on long-term government bonds is actually the income-only return on government bonds over that period.

is that the calculation of the *total* return on long-term government bonds reflects the sum of both (i) the *income-only* return, which is the return expected by investors at the time of investment since the interest rate on the bond is known at that time; plus (ii) the capital appreciation of the bond, which is the return associated with the investor selling the bond at a higher price. However, the *income-only* return is the only portion of the total return on long-term government bonds that can be considered risk-free. The capital appreciation portion of the return is not without risk since the price of the bond could increase or decrease depending on the market. The appropriateness of using the *income-only* return is supported by various sources.[107] Therefore, reducing the market return by the *total* return on long-term government bonds such as Mr. Gatewood has done, as opposed to the *income-only* return on those bonds, does not properly reduce the market return by a risk-free rate such as specified in the CAPM equation.

Q. Dr. Woolridge states that he gives primary weight to the market risk premium from the Professor Fernandez and Duke CFO surveys. Are there drawbacks to the use of survey data for the CAPM?

A. Yes. The drawbacks include biased responses and biased sampling as noted by Brigham, Shone, and Vinson (1985).[108] Further, Professor Damodaran, whose market risk premium estimate Dr. Woolridge has also given primary weight to in his CAPM, noted that very few practitioners were inclined to use survey results, because, among other things, they were affected by how and of whom the questions were asked and on recent stock price

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[107] *See, e.g.*, Pratt, Shannon P. and Roger J. Grabowski. *Cost of Capital: Applications and Examples.* Wiley, 2008, at 94; *Morningstar. Ibbotson* SBBI 2012 Valuation Yearbook. Market Results for Stocks, Bonds, Bills, and Inflation, 1926-2011, at 55.

[108] Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, "The Risk Premium Approach to Measuring Utility's Cost of Equity," *Financial Management*, Vol. 14, No 1, 1985, at 33.

movements.[109] Additionally, response rates to surveys can be extremely limited, as Graham and Harvey (2018) noted in their Duke CFO survey – which Dr. Woolridge also relies – where the response rate was only 5 percent to 8 percent.[110] Finally, and most importantly, even Professor Fernandez, the author of the survey relied on by Dr. Woolridge, specifically states that the average of the distribution of the required equity premium from the survey *cannot be interpreted as the REP [required equity premium] of the market nor as the REP of a representative investor*.[111]

Q. What is the primary disagreement of Mr. Gatewood, Dr. Woolridge, and Mr. Gorman regarding your CAPM analyses?

A. The primary disagreement that each of these witnesses have with my CAPM analyses is that they contend the forward-looking market return, and thus market risk premium, in my CAPM analyses are too high and not reasonable.[112] In addition, Mr. Gatewood criticizes my market return on the basis that it excludes companies with negative growth rates or those with growth rates that exceed 20 percent.[113] Mr. Gorman also contends that the use of a forecasted risk-free rate is unreasonable.[114]

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[109] Aswath Damodaran, "Equity Risk Premiums (ERP): Determinants, Estimation, and Implications," 2023, at 28-29.

[110] John R. Graham and Campbell R. Harvey, "The Equity Risk Premium in 2018," Social Science Research Network, March 27, 2018.

[111] Pablo Fernandez, Diego Garcia, and Lucia F. Acin, "Survey: Market Risk Premium and Risk-Free Rate used for 54 countries in 2025," IESE Business School, May 20, 2025, at 9; emphasis added.

[112] Gatewood Direct, at 31-32; Woolridge Direct, at 75-93; Gorman Direct, at 86-91.

[113] Gatewood Direct, at 33.

[114] Gorman Direct, at 87.

Q. Is there any merit to these witnesses' contentions that your forward-looking market return, and thus market risk premium, is inflated?

A. No. There are multiple reasons why there is no basis to these witnesses' contentions regarding the market return and thus market risk premia used in my CAPM analyses.

Q. Is it reasonable to rely on growth rates, such as forecasted EPS, in the market return calculation that exceeds GDP growth?

A. Yes. Contrary to these witnesses' contentions, it reasonable to rely on growth rates, such as forecasted EPS growth rates, in the market return calculation that exceed projected U.S. GDP growth. Companies in the S&P 500 Index operate in the modern global economy and not just in the United States. As a result, these companies' future earnings growth is not necessarily constrained by or representative of future growth in the U.S. such as reflected by projected U.S. GDP growth. The U.S. GDP does not account for companies' revenue achieved in international markets.

As stated by *Seeking Alpha*, "the most obvious difference between GDP growth and S&P 500 earnings growth is international earnings growth."[115] Additionally, it has been noted that between 1950-2014, the median S&P 500 return was 13.00 percent, while GDP grew less than 3.00 percent.[116] Similarly, as recently noted by Morgan Stanley: "U.S. companies now get more of their sales from outside the U.S. than they did in the past. GDP does not include those sales."[117] Wellington Management also provides an intuitive

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[115] Matt Comer, "How Do We Have 18.4% Earnings Growth In A 2.58% GDP Economy?," Seeking Alpha, April 19, 2018.

[116] Burt White and Jeff Buchbinder, "The S&P and GDP are not the Same Thing," *LPL Financial*, November 4, 2014.

[117] M. Mauboussin and D. Callahan, "Charts from the Vault. Morgan Stanley Counterpoint Global Insights," December 5, 2024.

example of how the disconnect between GDP and EPS can be observed between the U.S. and China:

> China EPS growth has stagnated while U.S. EPS growth has been exceptional, despite China's economy growing at twice the speed of the U.S…. When EPS is diluted by additional company share issuance, it can further exacerbate this misalignment with GDP growth.[118]

U.S. companies selling goods and services to China and other countries contribute to EPS but not GDP. Both earnings derived from international sales and share issuances/buybacks weaken the link between EPS growth and GDP growth.

Furthermore, it is reasonable to assume that the average growth of the S&P 500 Index could be sustainable in the long run. The calculation of the market risk premium is based on the return on the broader stock market, as measured by S&P 500 Index, less the return on a risk-free instrument (which in my case, is the yield on the 30-year Treasury bond). The S&P 500 Index is composed of the largest top performing companies. Over time, the specific companies that are included in the S&P 500 Index will vary; however, because the index is composed of the largest top performing companies, it is reasonable to assume the index will always contain individual companies with projected earnings growth rates that will be considered high. Therefore, investor expectations of growth and return overall for the index as a whole may not change over time because of the selection process involved in the index including the largest top performing companies.

[118] N. Samouihan and A. King, "Chart in focus: The need to differentiate market growth from macro growth," Wellington Management, September 2024.

Q. Have other regulatory commissions supported the use of a constant growth DCF model to estimate the market return in the CAPM such as you have done?

A. Yes. As previously discussed, various state utility regulatory commissions have supported the use of a constant growth DCF model to estimate the market return in the CAPM. In addition, in a cost of capital proceeding for the electric utilities in California, the California Public Utilities Commission ("California PUC") noted that all parties recognized historical market returns, and economically logical projections, fall within the range of 12 percent – which is consistent with the market return in my CAPM analyses.[119]

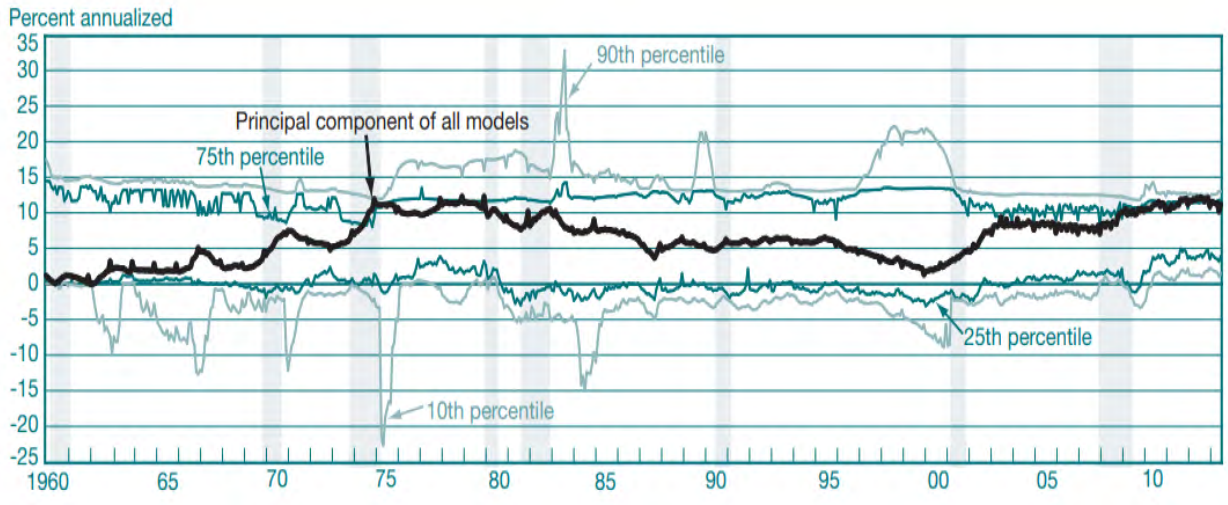
Q. Do studies demonstrate that the market return that is used in your CAPM, and thus the market risk premium, is reasonable?

A. Yes. The Federal Reserve Bank of New York published an analysis in 2015 that reviewed 20 methodologies over the period 1960 through 2013 for estimating the market risk premium. The result of this study demonstrates that my market risk premium estimates, which range from 7.48 percent to 7.94 percent as updated and presented in Exhibit AEB-15, are reasonable. Specifically, the key conclusions from this study are:

- The 20 methodologies reviewed reflected a range for the market risk premium of between -1.0 percent to 14.5 percent.
- As shown in Figure 17, the principal component analysis of the 20 models (i.e. the bold black line) produced a range for the market risk premium of approximately 0% to over 10% from 1960 through 2013.
- The one-year-ahead market risk premium was consistently greater than 10% following the financial crisis of 2008/09.

[119] California Public Utilities Commission, Application No. 22-04-008, Decision No. 22-12-031, December 15, 2022, at 23.

Figure 17: The Federal Reserve Bank of New York, One-Year-Ahead Market Risk Premium[120]



Further, the Federal Reserve Bank of New York also noted the following:

> Chart 2 shows the first principal component of all twenty models in black (the black line is the same principal component shown in black in each of the panels of Chart 1). ***As expected, the principal component tends to peak during financial turmoil, recessions, and periods of low real GDP growth or high inflation***. It tends to bottom out after periods of sustained bullish stock markets and high real GDP growth. Evaluated by the first principal component, the one-year ahead ERP [*equity risk premium*] reaches a local peak in June 2012 at 12.2 percent. The surrounding months have ERP estimates of similar magnitude, with the most recent estimate in June 2013 at 11.2 percent. This behavior is not so clearly seen by simply looking at the collection of individual models in Chart 1, a finding that highlights the usefulness of principal component analysis. Similarly high levels were observed in the mid- and late 1970s, during a period of stagflation, while the recent financial crisis had slightly lower ERP estimates, closer to 10 percent.[121]

Thus, the Federal Reserve Bank of New York noted that the market risk premium is higher during periods of increased inflation. While inflation has been reduced significantly in the past two years, it remains above the Federal Reserve's target of 2

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[120] Fernando Duarte and Carla Rosa, "The Equity Risk Premium: A Review of Models," Federal Reserve Bank of New York, 2015, at 50.

[121] *Id*.; emphasis and clarification added.

percent and inflation is expected by Fed officials and economists to increase in the coming months due to the Trump administration's import tariffs.[122]

Q. How does the market return in your CAPM compare with the historical returns on the market?

A. As shown in Figure 8 of my direct testimony, the market return in my CAPM analyses is reasonable and consistent with the range of annual equity returns that have been observed over the past century.[123]

Q. Does Dr. Woolridge's DCF analysis even support the market return that you relied on in your CAPM?

A. Yes. While Dr. Woolridge contends that my market return is inflated, his own DCF analyses support the market return in my CAPM analyses. As discussed, Dr. Woolridge's estimated cost of equity from his DCF analyses in this proceeding are 9.80 percent (Woolridge proxy group) and 9.60 percent (Bulkley proxy group). In addition, Dr. Woolridge is relying on betas in his CAPM of 0.76 (Woolridge proxy group) and 0.74 (Bulkley proxy group). Therefore, given that Dr. Woolridge's DCF results are reflective of the return for a group of electric utilities and not the market overall, and that his assumed betas for that group of electric utilities indicate that those electric utilities are less risky than the market, his own analysis suggests that the return on the overall market should be approximately 11.32 percent (Woolridge proxy group) and 11.22 percent (Bulkley proxy

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[122] *See, e.g.*, "US consumer prices rise moderately; tariffs expected to fan inflation," *Reuters*, June 11, 2025; "Yellen expects Trump's tariffs will hike inflation to 3% year over year," *CNBC*, June 12, 2025; "Where's the Inflation from Tariffs? Just Wait, Economists Say," *The New York Times*, June 13, 2025.

[123] Bulkley Direct, at 31.

group) – which is higher than the market return that is reflected in the CAPM analyses in my direct or rebuttal testimonies.[124]

Q. What is your overall conclusion regarding the market return in your CAPM analysis?

A. There is sufficient historical market evidence that the market return used in my CAPM analysis is reasonable and appropriate. Further, the position offered by the witnesses in this case that the growth rate in the market overall is limited to the U.S. economy is incorrect and fails to reflect the global economy, which provides a reasonable basis for the expectation that the market can grow at a pace that is greater than long-term U.S. GDP growth. Therefore, I disagree with the contentions made by Mr. Gatewood, Dr. Woolridge, and Mr. Gorman that the market return or market risk premia in my cost of equity analyses are distorted or too high.

Q. Are the claims of Mr. Gatewood, Dr. Woolridge, and Mr. Gorman that your forward-looking market return is inflated internally consistent with their own analyses?

A. No. While each of these witnesses criticize my market return, their testimonies as to the appropriate long-term earnings growth rate of the market contradict the market returns that they use in their own CAPM analyses. Figure 18 summarizes the range of market returns that are either directly specified (*i.e.*, Mr. Gatewood and Mr. Gorman) or implied (*i.e.*, Dr. Woolridge) in their respective CAPM analyses.[125] Assuming that their respective market return estimates include a dividend yield component equal to the dividend yield that I rely

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[124] Equals [(9.80 percent – 5.00 percent) / 0.76] + 5.00 percent = 11.32 percent; [(9.60 percent – 5.00 percent) / 0.74] + 5.00 percent = 11.22 percent.

[125] Gatewood Direct, at 105-110; Woolridge Direct, at 68; Gorman Direct, at 87. Note, Dr. Woolridge does not specify a market return for his market risk premia; however, an implied market return based is reflected based on Dr. Woolridge's assumed market risk premia and his assumed risk-free rate.

on for the S&P 500 in my DCF-derived market return (*i.e.*, 1.58 percent),[126] the average long-term earnings growth rate for the market implied in their respective CAPM analyses ranges from 5.31 percent to 10.19 percent, all of which are substantially higher than, and more than double in many instances, the long-term earnings growth rate of the market that they claim is appropriate. Therefore, while these witnesses support long-term earnings growth rates for the market to allege that my market return is too high, ironically, that same data also invalidates their own CAPM analyses.

Figure 18: Inconsistencies between the Long-Term Market Growth Rates Relied on by Mr. Gatewood, Dr. Woolridge, and Mr. Gorman in Their CAPM Analyses Relative to Their Claimed Long-Term Market Growth Rates[127]

Witness	Total Market Return in CAPM	Avg. Div. Yld. of Market	Implied Avg. Long-Term Market Gwth. Rate		Claimed Long-Term Growth Rate
Gatewood - Max	11.79%	1.52%	10.19%		4.08%
Gatewood - Min	6.87%	1.52%	5.31%		4.08%
Woolridge - Max	10.50%	1.52%	8.91%	**v.**	4.25%
Woolridge - Min	8.90%	1.52%	7.32%		4.25%
Gorman	11.53%	1.52%	9.93%		4.10%

Q. Is there any basis to Mr. Gatewood's contention that you have excluded a large number of companies from the S&P 500 Index in estimating the market return?

A. No. There is no basis to Mr. Gatewood's assertion that my calculation of the market return on the S&P 500 results in a modified population of companies that does not look like the

[126] Rebuttal Exhibit AEB-17.

[127] Gatewood Direct, at 34, 85; Woolridge Direct, at 67-68, 87; Gorman Direct, at 76, 88.

S&P 500 or the equity markets.[128] While I believe that the calculation of the weighted projected earnings growth rate for the S&P 500 Index should include all of the companies in the index, my calculation of the market return for the CAPM and ECAPM excludes companies in the S&P 500 that have a long-term earnings growth rate as published by *Value Line* that is negative or greater than 20 percent. Given that Mr. Gatewood expresses concern regarding the use of a constant growth DCF model relying on projected EPS growth rates because he deems that the resulting cost of equity is too high,[129] his criticism of my market return calculation is clearly inconsistent with his concern regarding the DCF model.

Q. Mr. Gatewood also claims that you have excluded companies that do not pay dividends from your calculation of the market return.[130] Is this correct?

A. No. Mr. Gatewood claims that I have excluded companies that do not pay dividends is simply incorrect. As shown on Exhibit AEB-6 of my direct testimony, I have included all of the companies in the S&P 500 in the calculation of the market return, regardless of whether they pay dividends.

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[128] Gatewood Direct, at 33.

[129] *Id*., at 28.

[130] *Id*., at 33.

Q. As support for his position that the market return in your direct testimony is too high, Dr. Woolridge references a compounded annual return on the U.S. stock market of approximately 10 percent from 1928-2024.[131] Is this data point instructive for the Commission in this proceeding?

A. No. The compound annual return is useful under the circumstances where the analyst may be interested in the holding period return, however that is not the relevant return when estimating the market risk premium. As discussed regarding Mr. Gatewood's historical geometric market return, Dr. Woolridge's suggested use of the compound annual return fails to consider that annual returns are independent observations, unrelated to the prior year return. Therefore, the compound annual return over the historical time period that he selected does not recognize the wide range of returns over that period. In order to recognize the independent nature of the market returns from year to year, the appropriate measure is the arithmetic average. Had Dr. Woolridge relied on the arithmetic average, he would have calculated an average market return from 1926 through 2024 of 12.31 percent, which is consistent with the market return relied on in my direct testimony and as updated herein in my rebuttal testimony.

Q. Is the concern that Mr. Gorman expresses regarding your reliance on long-term projected interest rates as the risk-free rate credible?

A. No. While Mr. Gorman attempts to impugn the use of long-term projected interest rates,[132] he himself relies on near-term projections from the same source that I rely upon in my direct testimony (*i.e.*, the *Blue Chip Financial Forecast*). Further, in Table 4 of his

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[131] Woolridge Direct., at 77.

[132] Gorman Direct, at 87.

testimony, Mr. Gorman summarizes 2-year projected and 5- to 10-year projected interest rates published by the *Blue Chip Financial Forecast* and relies on this data as the foundation for his view that interest rates will decline over the period that rates in this case will be in effect, and that these projections should be considered in setting the ROE in this proceeding.[133]

Q. Have Mr. Gatewood, Dr. Woolridge, and/or Mr. Gorman suggested that your CAPM analysis should be revised to reflect a more reasonable result?

A. Yes. Mr. Gatewood proposes to substitute an average of his forecasted market returns as the market return in my CAPM analysis.[134] Mr. Gorman "revises" my CAPM analysis by substituting his market return and near-term projected risk-free rate in my CAPM analysis, while only relying on the betas used in my CAPM analyses. In addition, Mr. Gorman also presents a "revision" to my CAPM in which he not only substitutes his market return and risk-free rate, but also substitutes his assumed adjusted *Value Line* beta for the proxy group calculated over a three-year period of 0.70.[135]

Q. Have either Mr. Gatewood or Mr. Gorman provided any support for their proposed revisions to your CAPM analysis?

A. No. As a threshold matter, Mr. Gorman's "revision" of my CAPM analysis is simply replacing all of my inputs with his own, which is not a "revision" at all. Regardless, for all of the reasons that I have already discussed regarding the errors and inconsistencies with Mr. Gatewood's and Mr. Gorman's assumed market returns and market risk premia, and

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[133] *Id.*, at 32.

[134] Gatewood Direct, at 35.

[135] Gorman Direct, at 90-91.

the inconsistencies of their criticisms regarding my CAPM analyses when those same criticisms apply to their own analyses, there is no basis for their proposed "revisions" to my CAPM analyses.

Q. When the CAPM analyses of Mr. Gatewood, Dr. Woolridge, and Mr. Gorman are adjusted to address the issues that you have identified with their respective analyses, do they support the Company's proposed ROE in this proceeding?

A. Yes. First, as discussed, Mr. Gatewood conducted five CAPM scenarios; however, the three scenarios using forecasted market risk premia are inconsistent with the inverse relationship between interest rates and the market risk premia. In addition, Mr. Gatewood's historical geometric average historical market return is also inappropriate. Therefore, while I disagree with using a historical arithmetic average market risk premium for the reasons discussed, Mr. Gatewood's CAPM analysis that relies on the historical arithmetic average market risk premium indicates a cost of equity of 11.01 percent, which fully supports the Company's proposed ROE.

Second, as shown in Figure 19, I have developed two adjusted versions of Dr. Woolridge's CAPM analysis. The first relies on the historical arithmetic return as reported by *Kroll* on large company stocks from 1926 through 2024,[136] and the second relies on the most current forward-looking market return of 12.34 percent as reflected in Rebuttal Exhibit AEB-17. As shown, the results of Dr. Woolridge's CAPM analysis, whether using

[136] While I do not agree with the use of the historical return on large company stocks as the estimate of the market return for the reasons discussed, this specification of the market risk premium is more appropriate than the estimates relied by Dr. Woolridge.

his proxy group or my proxy group, are substantially higher than what he has based his ROE recommendation on in this proceeding.

Figure 19: Summary of Dr. Woolridge Adjusted CAPM Results

	Risk-Free Rate	Beta	Market Return	Market Risk Premium	Cost of Equity
As Filed					
Woolridge Proxy Group	5.00%	0.76	n/a	5.25%	9.00%
Bulkley Proxy Group	5.00%	0.74	n/a	5.25%	8.85%
Adjusted (Historical Market Return)					
Woolridge Proxy Group	5.00%	0.76	12.17%	7.17%	**10.45%**
Bulkley Proxy Group	5.00%	0.74	12.17%	7.17%	**10.31%**
Adjusted (Forward Market Return)					
Woolridge Proxy Group	5.00%	0.76	12.34%	7.34%	**10.58%**
Bulkley Proxy Group	5.00%	0.74	12.34%	7.34%	**10.43%**
				Average:	**10.44%**

Lastly, as shown in Figure 20, I have updated Mr. Gorman's CAPM analysis to: (1) rely on the historical average beta for the proxy group as Mr. Gorman presents on Exhibit MPG-20 consistent with his prior testimony; and (2) calculate the market return as the average of Mr. Gorman's historically-based market return of 11.53 percent and my updated forward-looking market return estimate of 12.34 percent. As shown in this exhibit, the effect of these changes is a cost of equity of 10.28 percent.

Figure 20: Summary of Mr. Gorman Adjusted CAPM Results

Description	Mr. Gorman As Filed	Mr. Gorman Adjusted
Risk Free Rate	4.40%	4.40%
Market Return		
Gorman "Forward-Looking"		
Long-term historical avg. real return	9.02%	9.02%
Projected inflation	2.30%	2.30%
Historical Market Return	11.53%	11.53%
Bulkley Forward-Looking Market Return	n/a	12.34%
Average Market Return	n/a	11.93%
Market Risk Premium	7.13%	7.53%
Beta	0.70	0.78
Cost of Equity	**9.39%**	**10.28%**

IX. ECAPM ANALYSIS

Q. Do either Mr. Gatewood, Dr. Woolridge, or Mr. Gorman conduct an ECAPM analysis?

A. No.

Q. What are the positions of Mr. Gatewood, Dr. Woolridge, and Mr. Gorman regarding your ECAPM analyses?

A. Mr. Gatewood states that he opposes the market return that I have used in the ECAPM for the same reasons as discussed regarding my CAPM analysis, but does not state that he

opposes the use of the ECAPM.[137] Since I have addressed Mr. Gatewood's concern in my response to the CAPM, I will not further address that issue further here. Both Dr. Woolridge and Mr. Gorman contend that the use of an adjusted beta in the ECAPM is duplicative and thus produces overstated results.[138] In addition, Dr. Woolridge and Mr. Gorman oppose the use of the ECAPM generally, contending that there is no academic support to show that the CAPM model underestimates the cost of equity for regulated utilities and that the ECAPM adjustment is necessary.[139]

Q. Do you agree with Dr. Woolridge and Mr. Gorman that it is inappropriate to use adjusted betas in the ECAPM?

A. No. The purpose of adjusting beta in the CAPM is to account for the tendency of beta to trend back over time to the market beta of 1.00. The betas published by *Value Line* include this adjustment, which was first proposed by Marshall E. Blume in 1975.[140] The use of adjusted betas in the CAPM is important because if beta trends towards 1.00, as Blume noted, then the adjusted beta will be more reflective of the beta that can be expected over the near-term. This is equally important in the specification of the CAPM in this case since we are estimating the cost of equity for the Company over the near-term.

The ECAPM does not account for the tendency of beta to trend toward 1.00. The purpose of the ECAPM is to account for the fact that the risk-return relationship is flatter than what is estimated by the CAPM, ***even when using adjusted betas***. While beta is not

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[137] Gatewood Direct, at 28.

[138] Woolridge Direct, at 75; Gorman Direct, at 92.

[139] *Id*.

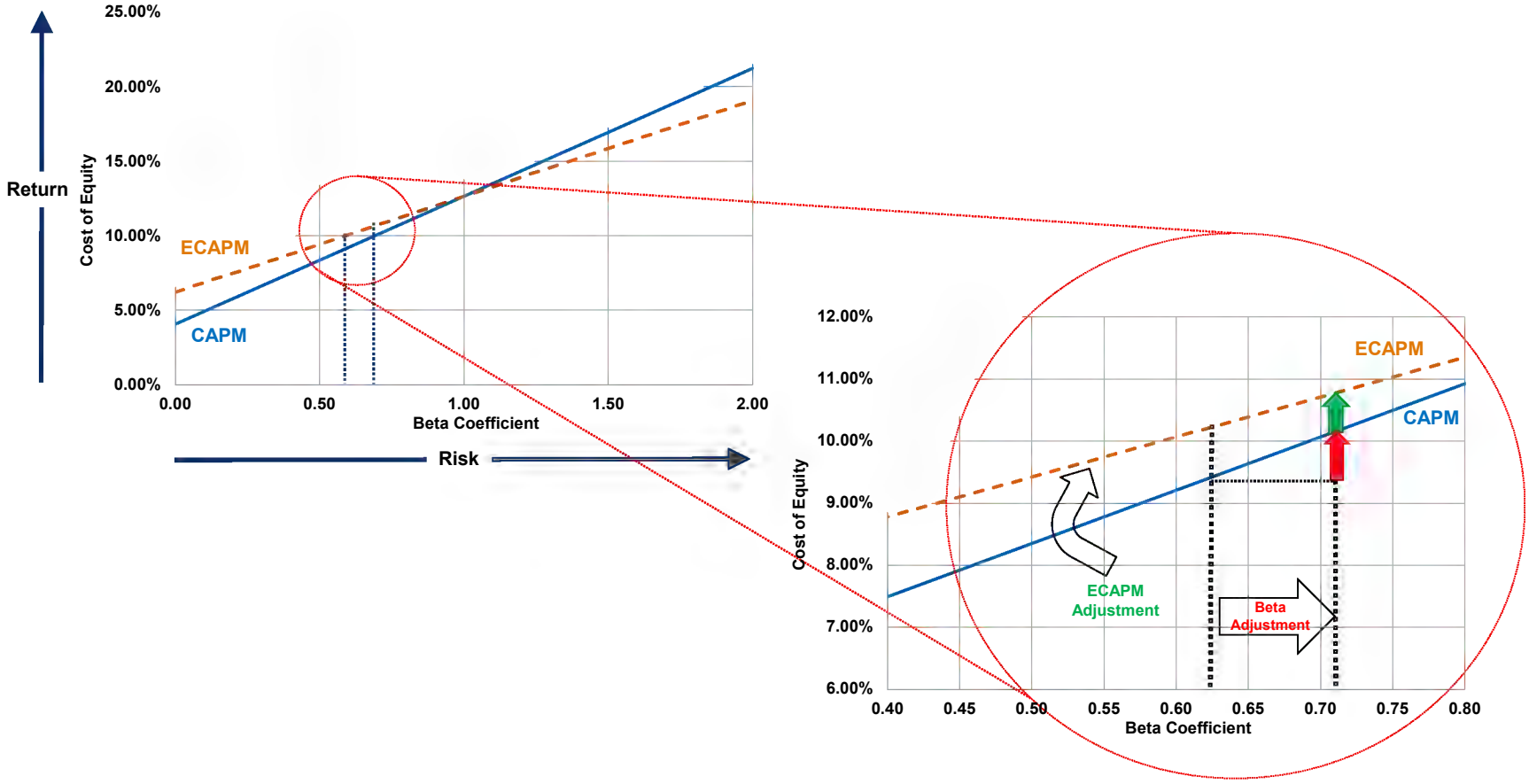
[140] Marshall E. Blume, "Betas And Their Regression Tendencies," *The Journal of Finance*, Vol. 30, No. 3, 1975, at 785–795.

observable and must be estimated, the theory behind the ECAPM is that even if the true value of a stock's beta were observable, the CAPM would understate the results for stocks with betas less than 1.00 and overstate the results for stocks with betas greater than 1.00. Therefore, contrary to the assertions of Dr. Woolridge and Mr. Gorman, the purpose of each adjustment is different and thus applying both adjustments in the ECAPM is not duplicative.

Q. Can you demonstrate that using adjusted betas in the CAPM and relying on the ECAPM analysis are two distinct adjustments to the CAPM?

A. Yes. Figure 21 demonstrates the point that adjusting betas and adjusting the slope of the risk/return relationship through the ECAPM are two distinct adjustments and are not duplicative as alleged by Dr. Woolridge and Mr. Gorman. As shown in Figure 21, when beta is used in the CAPM and adjusted to recognize that betas revert to the market mean of 1.0 over time, the resulting adjustment is shown by the red arrow in the lower right-hand corner. Separately, when the ECAPM is employed to recognize that the risk/return relationship is flatter than predicted by the CAPM, the resulting adjustment is shown by the green arrow in the lower right-hand corner. To the extent that a company with a beta greater than 1.0 were being evaluated, the same process of two separate adjustments would apply, albeit in the opposite direction from what is shown in Figure 21 and would result in a decrease in the cost of equity otherwise predicted by the CAPM.

Figure 21: Risk/Return Relationship between CAPM and ECAPM



Q. Is the use of adjusted betas in the ECAPM inconsistent with academic research such as suggested by Mr. Gorman?

A. No. Mr. Gorman cites two academic studies to support his conclusion that the use of adjusted betas in the ECAPM is inappropriate.[141] However, I have reviewed each of the cited articles and neither concludes that the use of adjusted betas in the ECAPM is inappropriate. The Black, Jensen and Scholes (1972) study cited by Mr. Gorman was developed to test the effectiveness of the CAPM at predicting returns.[142] The Black (1993) study is an update to the 1972 study.[143] To test the validity of the CAPM, Black, Jensen, and Scholes (1972) used historical data and ten different stock portfolios, which were developed based on each stock's beta to estimate the following equation:[144]

$$K_e - r_f = \alpha + \beta(r_m - r_f) \qquad [1]$$

Where:

K_e = the required market ROE;
α = the constant term;
β = beta coefficient of an individual security;
r_f = the risk-free ROR; and
r_m = the required return on the market as a whole.

The purpose was to estimate the constant term for each of the ten portfolios. If the CAPM were to accurately predict the risk premium of the different stock portfolios, the constant term, or α, would equal 0. However, Black, Jenson, and Scholes (1972) found

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141 Gorman Direct, at 89.

142 Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," 1972.

143 Fischer Black, "Beta and Return," *The Journal of Portfolio Management*, Fall 1993, at 8-18.

144 Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," 1972.

that generally the "α" term was positive for the stock portfolios with beta less than 1.0 and negative for the stock portfolios with beta greater than 1.0. These findings were also supported in the updated analysis conducted by Black (1993). Therefore, these two studies cited by Mr. Gorman actually provide empirical support for the use of ECAPM.

Q. Were adjusted betas used in the Black, Jenson, and Scholes (1972) and Black (1993) studies?

A. Not specifically. Black, Jenson, and Scholes (1972) did not use the formula employed by *Value Line* to adjust the betas used in the regression equation. However, the study did consider that betas may not be stationary over the study period. In fact, Black, Jenson, and Scholes (1972) noted:

> The group assignment procedure just described will be satisfactory as long as the coefficients βj are stationary through time. Evidence presented by Blume (1968) indicates this assumption is not totally inappropriate, but we have used a somewhat more complicated procedure for grouping the firms which allows for any non-stationarity in the coefficients through time.[145]

Therefore, the study did account for the fact that beta may not be stationary over time in the development of the data used to estimate Equation 1 above.

Q. Have academic studies used adjusted betas to estimate the ECAPM?

A. Yes. For example, Chrétien and Coggins (2011) studied the CAPM and its ability to estimate the risk premium for the utility industry in particular subgroups of utilities for a data set that included market data through the end of 2006.[146] Chrétien and Coggins considered the CAPM, the Fama-French three-factor model, and a model similar to the

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[145] *Id.*

[146] Stéphane Chrétien and Frank Coggins, "Cost of Equity For Energy Utilities: Beyond The CAPM," *Energy Studies Review*, Vol. 18, No. 2, 2011.

ECAPM. The study shows that the ECAPM significantly outperformed the traditional CAPM at predicting the observed risk premium for the various utility subgroups.

Additionally, Litzenberger, Ramaswamy, and Howard (1980) found that the CAPM tends to understate the return for stocks such as utilities that have a beta less than 1.00.[147] To develop their analysis, the authors used historical (*i.e.,* "raw") betas to estimate the "alpha" factor in the ECAPM. However, the authors also showed that an "alpha" factor can be derived for betas adjusted using the Blume procedure discussed above and the results of their analysis for raw betas. The Blume adjustment is shown in the following equation:

$$\beta_i = \omega\beta_{i(historical)} + (1 - \omega) \qquad [2]$$

Where:

β_i = adjusted beta

β_i [historical] = raw beta

ω = Blume Adjustment factor (*i.e.*, 0.67)

The estimate of "alpha" using Blume-adjusted betas can be derived using the results presented in the "Raw Beta" section of Table 1 on page 380 and the equations on page 376:

$$a = a' - b'\left(\frac{1-\omega}{\omega}\right) = 0.326 - 0.330\left(\frac{0.33}{0.67}\right) = 0.163 \qquad [3]$$

Where:

a = estimated alpha factor for Blume adjusted betas

a' = estimated alpha factor using raw betas

b' = estimated excess return over the risk-free rate using raw betas

[147] Robert Litzenberger, *et al*., "On the CAPM Approach to the Estimation of A Public Utility's Cost of Equity Capital," *The Journal of Finance*, Vol. 35, No. 2, 1980, at 369-383.

Because the authors relied on monthly returns for stocks in the New York Stock Exchange, the estimated "alpha" factor using adjusted betas of 0.163 percent must be annualized.[148] When annualized, the estimated "alpha" factor is 1.97 percent using Blume-adjusted betas, which is consistent with the "alpha" factor relied on by Dr. Morin of 1.0 to 2.0 percent to develop the 0.25 and 0.75 factors included in the ECAPM that I rely on in the ECAPM analyses presented in my direct and rebuttal testimony. Therefore, the Litzenberger, *et al.* (1980) study shows that the adjustment to beta and the use of the ECAPM are not duplicative, but rather account for two different factors in the CAPM.

Finally, Dr. Woolridge's and Mr. Gorman's concern with the ECAPM analysis is addressed directly by Dr. Morin in his 2021 text *Modern Regulatory Finance*:

> Because of this adjustment, some critics of the ECAPM argue that the use of Value Line adjusted betas in the traditional CAPM amounts to using an ECAPM. This is incorrect. The use of adjusted betas in a CAPM analysis is not equivalent to the ECAPM. Betas are adjusted because of the regression tendency of betas to converge towards 1.0 over time. We have seen that numerous empirical studies have determined that the SML [Security Market Line] described by the CAPM formula at *any given moment* in time is not as steeply sloped as the predicted SML. The slope of the SML should not be confused with Beta. On the point, Eugene F. Brigham, finance professor and the author of many financial textbooks states:
>
> > The Slope of the SML (5% in Figure 6-16) reflects the degree of risk aversion in the economy. The greater the average investor's aversion to risk, then (a) the steeper the slope of the line, (b) the greater the risk premium for all stocks, and (c) the higher required rate of return on all stocks. Students sometimes confuse beta with the slope of the SML. This is a mistake.
>
> The use of an adjusted beta by Value Line is correcting for a different problem than the ECAPM. The adjusted beta captures the fact that betas regress towards one over time. The ECAPM corrects for the fact that the CAPM

[148] (1.00163)^12-1 = 1.97 percent

under-predicts observed returns when beta is less than one and over-predicts observed returns when beta is greater than one.[149]

Q. Are you aware of state regulatory commissions that have accepted the use of the ECAPM such as you and Ms. Reno have conducted?

A. Yes. There are various regulatory commissions that have supported the use of the ECAPM in establishing an authorized ROE and have done so when adjusted betas are used in the ECAPM analysis. For example, the New York Public Service Commission ("NYPSC") and North Carolina Utilities Commission ("NCUC") have accepted the ECAPM analysis with the use of adjusted beta coefficients in establishing the authorized ROE for regulated utilities. Specifically, the NYPSC gives equal weight to the CAPM and ECAPM (which it refers to as the "Zero Beta" CAPM) results,[150] and the NCUC has recently found that both the adjustment to beta in the CAPM and the adjustment in the ECAPM were needed because they correct for different things.[151]

X. BOND YIELD PLUS RISK PREMIUM ANALYSIS

Q. Have any of the witnesses conducted a Risk Premium analysis?

A. Yes. Mr. Gorman conducts a Risk Premium analysis to estimate the cost of equity. While Mr. Gatewood and Dr. Woolridge do not conduct a Risk Premium analysis, both they and Mr. Gorman comment on my BYRP analysis.

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[149] Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Reports, Inc., 2021, at 223-224; emphasis added.

[150] *See, e.g.*, New York Public Service Commission, Case No. 20-G-0101, Order, May 19, 2021, at 44-46.

[151] North Carolina Utilities Commission, Docket No. E-2, SUB 1300, Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Public Notice, at 162-163.

Q. How has Mr. Gorman conducted his Risk Premium analysis?

A. Mr. Gorman conducts two forms of a Risk Premium analysis: one based on utility equity risk premia relative to yields on 30-year Treasury bonds (referred to herein as his "Treasury Bond Approach"), and one based on utility equity risk premia relative to yields on Moody's A-rated utility bonds (referred to herein as his "Utility Bond Approach").[152]

Q. Is Mr. Gorman's Risk Premium methodology in this proceeding consistent with the methodology that he has applied in other recent proceedings?

A. No. Just as with the arbitrary and inconsistent changes in his DCF analyses previously discussed, Mr. Gorman has also arbitrarily selected the inputs for his Risk Premium analyses over time. Specifically, Figure 22 summarizes Mr. Gorman's Risk Premium approach in four rate proceedings over the past year, including the current proceeding, and in each case, he has altered his methodology for the manner in which he derives the risk premium in his Treasury Bond Approach and/or Utility Bond Approach. Specifically, as shown in Figure 22, Mr. Gorman in these cases has arbitrarily calculated the risk premium in his Treasury Bond Approach by (1) calculating a rolling five-year historical average risk premium and then taking an average of those five-year averages; (2) calculating a rolling five-year historical average risk premium and then taking an average of those five-year averages, but then taking 95.00 percent of that value; and (3) calculating an average of the historical risk premium (not a rolling average), but then taking 90.00 percent of that value.

Likewise, as also shown in Figure 22, Mr. Gorman has also arbitrarily changed his method for calculating the risk premium in his Utility Bond Approach, and also not in the

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[152] *Id*., at 70.

same manner as he has changed his Treasury Bond Approach. Specifically, in these cases, Mr. Gorman has arbitrarily calculated the risk premium in his Utility Bond Approach by (1) calculating a rolling five-year historical average risk premium and then taking an average of those five-year averages; (2) calculating an average of the historical risk premium (not a rolling average) for only the past two years; (3) calculating a rolling five-year historical average risk premium and then taking an average of those five-year averages, but taking 90.00 percent of that value; and (4) calculating an average of the historical (not rolling average) risk premium, but taking 90.00 percent of that value. There is no principled basis for these changes in methodology and such changes appear to be made to derive a specific result.

Figure 22: Changes in Mr. Gorman's Risk Premium Methodology in Recent Proceedings[153]

Applicant	Case	Testimony Date	Treasury Bond Approach	Utility Bond Approach
CenterPoint Energy Indiana South	Cause No. 45990	3/12/2024	Average of the 5-yr rolling average risk premium + projected 30-yr Treasury bond yield 5.71% + 4.00% = 9.71%	Average of the 5-year rolling average risk premia + 13-week average yield on A-rated utility bonds 4.36% + 5.52% = 9.88%
AEP Texas	Dkt No. 56165	5/16/2024	Average of the 5-yr rolling average risk premium + projected 30-yr Treasury bond yield 5.73% + 4.00% = 9.73%	Average risk premium past 2 years + current average yield on A-rate utility bonds 4.15% + 5.59% = 9.74%
CenterPoint Houston	Dkt No. 56211	6/19/2024	95% of the average of the 5-yr rolling average risk premium + projected 30-yr Treasury bond yield (5.73% x 95%) + 4.20% = 9.60%	90% of the average of the 5-year rolling average risk premia + current average yield on A-rated utility bonds (4.39% x 90%) + 5.67% = 9.60%
Evergy KS Central / Evergy KS South	Dkt No. 25-EKCE-294-RTS	6/6/2025	90% of the average of the historical risk premium + projected 30-yr Treasury bond yield (5.68% x 90%) + 4.40% = 9.50%	90% of the average historical risk premia + current average yield on A-rated utility bonds (4.33% x 90%) + 5.79% = 9.70%

Q. Do you agree with how Mr. Gorman estimates the risk premium in his Treasury Bond and Utility Bond approaches?

A. No. I disagree with Mr. Gorman as to *how* to reflect the changing relationship between bond yields and authorized utility returns in our calculations and estimate of the cost of equity. For example, in his Treasury Bond Approach, Mr. Gorman calculates an historical average risk premia from 1986 through Q1/2025, and then assumes 90.00 percent of that average. To estimate the ROE, Mr. Gorman adds his estimated historical average risk premium to the near-term projected yield on the 30-year Treasury bond, meaning his methodology attempts to estimate a forward-looking equity risk premium based on an

[153] Indiana Utility Regulatory Commission, Cause No. 45990, Verified Public Direct Testimony and Attachments of Michael P. Gorman, March 12, 2024, at 88-89; Public Utility Commission of Texas, Docket No. 56165, Direct Testimony and Exhibits of Michael P. Gorman, May 16, 2024, at 60-61; Public Utility Commission of Texas, Docket No. 56211, Direct Testimony and Exhibits of Michael P. Gorman, June 19, 2024, at 62-63; Gorman Direct Testimony, at 69-70.

historical average of the risk premia. However, Mr. Gorman's application of the risk premium approach does not take into consideration the relationship between the ROEs and the yield on bonds over time. Moreover, Mr. Gorman also only assumes an arbitrary percentage (*i.e.*, 90.00 percent) of his calculated historical risk premium.

In order to recognize the relationship between the historical authorized ROEs and the yield on bonds over time, Mr. Gorman should have developed a regression equation such as I have done in both my direct and rebuttal testimonies. This regression appropriately reflects the dynamic relationship between authorized returns and Treasury bond yields over an extended period of time that can be used to project the required return using current or projected bond yield and the regression equation. The benefit of conducting a regression equation is that it can be used to estimate a forward-looking equity risk premium that corresponds to *any* interest rate that an analyst wishes to specify. Moreover, a regression equation eliminates the need for arbitrary and inconsistent "adjustments" to the historical risk premium such as Mr. Gorman has applied to both his Treasury Bond and Utility Bond approaches. By specifying the interest rate projected for the time period that the Company's rates from this proceeding will be in effect, one can estimate an equity risk premium (and thus ROE) for the forward-looking time period that corresponds with the rates that are set in this proceeding.

Q. Has Mr. Gorman understated the results of his Risk Premium analysis by not considering the dynamic relationship between ROEs and interest rates?

A. Yes. The fundamental misspecification of Mr. Gorman's methodology is that he sums a *projected* or *current* interest rate (*i.e.*, a projected Treasury bond yield or a current utility bond yield, respectively) and a fraction of the average of the historical average risk

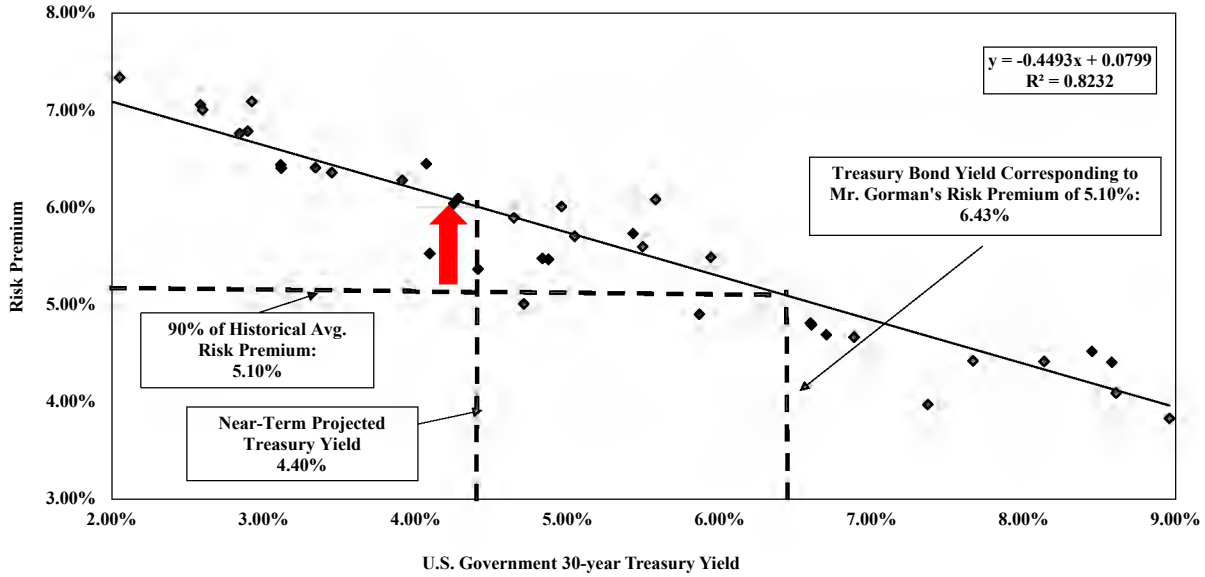
premiums from 1986 through Q1/2025 (*i.e.*, 90.00 percent in his Treasury Bond Approach and 90.00 percent in his Utility Bond Approach). However, Mr. Gorman's selected risk premium is entirely based on his judgment and is unrelated to the current or projected interest rate that he uses to estimate the cost of equity in his Risk Premium approaches. Therefore, Mr. Gorman invalidates the results of his Risk Premium analyses by failing to appropriately account for the dynamic and highly correlated inverse relationship between risk premia and interest rates that is clearly present in the historical data that he considers.

Q. Can you illustrate the extent to which Mr. Gorman has understated the cost of equity resulting from his Risk Premium analyses?

A. Yes. Figure 23 graphs the relationship between Mr. Gorman's historical average Treasury bond risk premia and the historical average Treasury bond yields for the period 1986 through Q1/2025 that he presents on Exhibit MPG-16 for his Treasury Bond Approach. As shown, there is a strong negative relationship between the risk premia and interest rates (*i.e.*, as interest rates increase the risk premium declines and vice versa). In his Treasury Bond Approach, Mr. Gorman uses a risk premium that reflects 90.00 percent of his historical average Treasury bond risk premium of 5.68 percent (*i.e.*, resulting in a risk premium of 5.10 percent) and adds a near-term projected 30-year Treasury bond yield of 4.40 percent, the sum of which produces his estimated cost of equity of 9.50 percent. However, as shown in Figure 23, Mr. Gorman's arbitrary use of a risk premium of 5.10 percent corresponds to a historical average 30-year Treasury bond yield of 6.43 percent – or substantially higher than the Treasury bond yield of 4.40 percent on which he relies for his Treasury Bond Approach. Looking at it a different way, as shown in Figure 23, a Treasury bond yield of 4.40 percent corresponds to a risk premium that is 6.01 percent –

or meaningfully higher than the 5.10 percent that Mr. Gorman arbitrarily selects. The amount of Mr. Gorman's understatement of the risk premium in his Treasury Bond Approach is depicted by the red arrow in Figure 23. Because Mr. Gorman has significantly understated his risk premium, he in turn also significantly understates the cost of equity result produced by his Treasury Bond Approach.

Figure 23: Mr. Gorman's Treasury Bond Approach

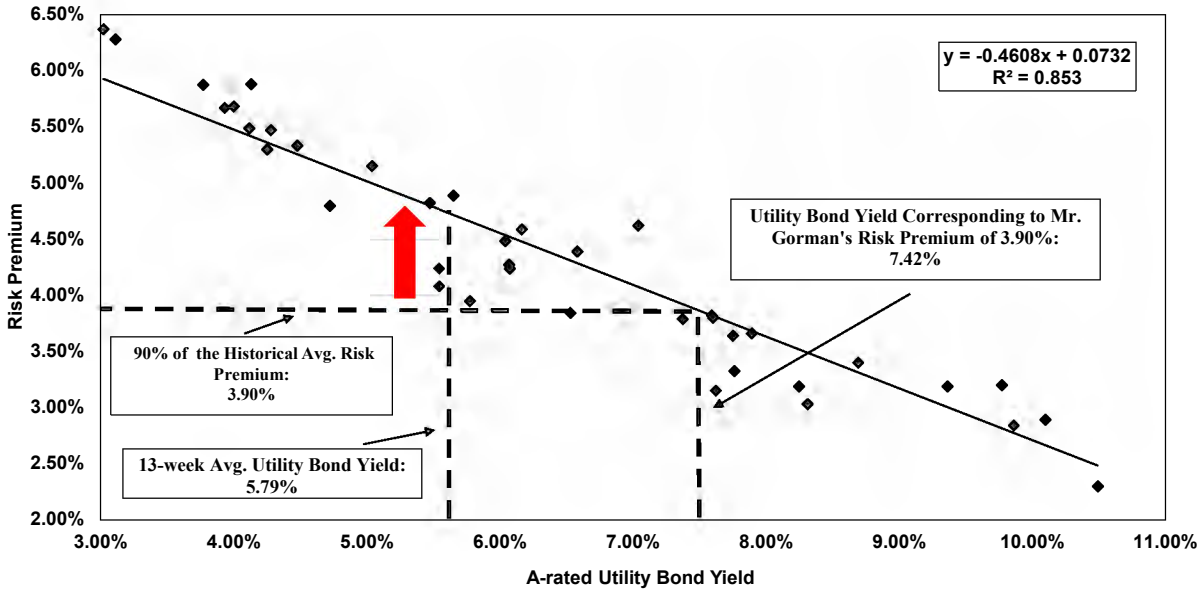


Q. Does Mr. Gorman's Utility Bond Approach also understate the cost of equity?

A. Yes. In the same manner as just discussed regarding Mr. Gorman's Treasury Bond Approach, his Utility Bond Approach also understates the cost of equity. Specifically, in his Utility Bond Approach, Mr. Gorman uses a risk premium that reflects 90.00 percent of his historical average utility bond risk premium of 4.33 percent (*i.e.*, resulting in a risk premium of 3.90 percent) and adds the 13-week average utility bond yield of 5.79 percent, the sum of which produces his estimated cost of equity of 9.70 percent. However, as shown in Figure 24, Mr. Gorman's arbitrary use of a risk premium of 3.90 percent corresponds

to a utility bond yield of 7.42 percent – or substantially higher than the utility bond yield of 5.79 percent on which he relies for his Utility Bond Approach. Looking at it a different way, as shown in Figure 24, a utility bond yield of 5.79 percent corresponds to a risk premium of 4.65 percent – or meaningfully higher than the 3.90 percent that Mr. Gorman arbitrarily selects. Again, the amount of Mr. Gorman's understatement of the risk premium in his Utility Bond Approach is depicted by the red arrow in Figure 24, which means that Mr. Gorman significantly understates the cost of equity result produced by his Utility Bond Approach.

Figure 24: Mr. Gorman's Utility Bond Approach



Q. Have you adjusted Mr. Gorman's risk premium analyses?

A. Yes. I adjusted both Mr. Gorman's Treasury Bond Approach and his Utility Bond Approach so that the results of the analyses account for the inverse relationship between interest rates and the risk premium. For his Treasury Bond Approach, I developed a

regression analysis using the following equation which is similar to the equation I relied on for my risk premium analysis:

$$RP = a + b(T) \qquad [4]$$

Where:

RP = historical average Treasury bond risk premia

a = intercept term

b = slope term

T = historical average Treasury bond yield

As shown in Rebuttal Exhibit AEB-23, the regression equation has an R^2 of approximately 0.82 and the coefficients are statistically significant at the 99.00 percent level. Using the estimated coefficients, a Treasury bond yield can be input to determine the resulting risk premium and cost of equity. Using Mr. Gorman's near-term projected Treasury bond yield of 4.40 percent, the risk premium would be 6.01 percent, and thus the resulting ROE is 10.41 percent. In other words, when the inverse relationship between interest rates and the risk premium are appropriately considered, the result of Mr. Gorman's Treasury Bond Approach increases by approximately 90 basis points from 9.50 percent to 10.41 percent.

Similarly, I have adjusted Mr. Gorman's Utility Bond Approach using equation 4 above, but instead of 90.00 percent of the historical average Treasury bond risk premia, I re-estimated the equation using the historical average utility bond risk premia. As also shown in Rebuttal Exhibit AEB-23, using Mr. Gorman's 13-week average A-rated utility bond yield of 5.79 percent, the risk premium would be 4.65 percent, and the resulting ROE is 10.44 percent. Again, when the inverse relationship between interest rates and the risk

premium are appropriately considered, the result of Mr. Gorman's Utility Bond Approach increases by approximately 75 basis points from 9.70 percent to 10.44 percent

Q. What are the positions of Mr. Gatewood, Dr. Woolridge, and Mr. Gorman regarding your BYRP analyses?

A. These witnesses offer the following positions regarding the Risk Premium approach generally, and my BYRP analyses specifically:

- Mr. Gatewood and Dr. Woolridge oppose the use of a Risk Premium analysis generally because they state that the authorized ROEs are a reflection of regulator behavior and not market behavior.[154]
- Mr. Gatewood, and Mr. Gorman claim that my BYRP analysis reflects a simplistic inverse relationship between equity risk premiums and interest rates and contend that this relationship can be influenced by factors other than interest rates.[155] Mr. Gorman specifically claims that my analysis ignores the effect of inflation on risk premiums.[156]
- Mr. Gatewood also states that there is no way to compare the risk of the utilities cases included in the data set with Evergy and not all rate case outcomes specifically report the authorized ROE.[157]
- Dr. Woolridge claims that my methodology produces an inflated measure of the risk premium because it relies on historical Treasury yields instead of projected Treasury yields, which he claims "are always forecasted to increase."[158]
- Dr. Woolridge contends that a problem with the Risk Premium approach is that it is "obvious that the authorized ROEs of state utility commissions are above the returns that investors require."[159]

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[154] Gatewood Direct, at 36; Woolridge Direct, at 94.

[155] Gatewood Direct, at 37; Gorman Direct, at 95-97.

[156] Gorman Direct, at 96.

[157] Gatewood Direct, at 36-37.

[158] Woolridge Direct, at 94.

[159] *Id*., at 95.

Q. Do you agree with Mr. Gatewood and Dr. Woolridge that the Risk Premium methodology is not valid because it does not measure investor behavior?

A. No. It is unquestionable that both credit rating agencies and investors consider authorized ROE data in their determination of the valuation of utility stocks. Both credit rating agencies and investors have responded negatively to authorized ROEs deemed to be low. Therefore, the relationship between recently authorized ROEs and the prevailing interest rates at the time that the ROE was authorized is reasonable to consider when setting the ROE in the context of a rate proceeding.

Moreover, it is important to recognize the inconsistency in Mr. Gatewood's and Dr. Woolridge's position regarding the reliance of authorized ROEs in the Risk Premium analysis. On the one hand, these witnesses suggest that my BYRP analysis cannot be relied upon because the authorized ROEs represent commission behavior and not investor behavior. On the other hand, however, they each devote significant discussion in their respective testimonies evaluating the same data that I use in the BYRP analysis – authorized ROEs and 30-year Treasury bond yields – as support for their respective recommended ROEs in this proceeding.[160] Therefore, while Mr. Gatewood and Dr. Woolridge suggest that my BYRP analysis cannot be considered because it reflects other factors such as capital structure, credit ratings, and other risk measures used by commissions to determine appropriate ROEs, they disregard these concerns when they rely on this same data to support their respective ROE recommendations.[161]

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[160] Gatewood Direct, at 8-11; Woolridge Direct, at 16-20.

[161] Gatewood Direct, at 8-11 and 60-63; Woolridge Direct, at 16-20.

Q. Do you agree with Mr. Gatewood and Mr. Gorman that the results of your BYRP analysis should not be considered because it does not consider factors other than interest rates that investors consider in the equity risk premium?

A. No. As a threshold matter, while Mr. Gorman criticizes my BYRP analysis because it does not consider factors other than interest rates, his own Risk Premium analyses also consider only long-term interest rates (*i.e.*, either Treasury bond yields or utility bond yields) in estimating the implied equity risk premia that he relies on for his analysis. Thus, there is no basis for Mr. Gorman's critique.

Additionally, Mr. Gatewood and Mr. Gorman fail to recognize the large body of research that supports the inverse relationship between equity risk premia and interest rates. For example, Berry (1998) came to similar conclusions regarding the inverse relationship between interest rates and the risk premia.[162] Also, as summarized in *New Regulatory Finance*:

> Published studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates—rising when rates fell and declining when interest rates rose. The reason for this relationship is that when interest rates rise, bondholders suffer a capital loss. This is referred to as interest rate risk…. Conversely in low interest rate environments, when bondholders' interest rate fears subside and shareholders' fears of loss of earning power dominate, the risk differential will widen and hence the risk premium will increase.[163]

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[162] S. Keith Berry, "Interest Rate Risk and Utility Risk Premia during 1982-93," *Managerial and Decision Economics*, Vol. 19, No. 2, March 1998.

[163] Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc., 2006, at 128.

In his more recent textbook, *Modern Regulatory Finance*, Dr. Morin outlines the issues and academic research and concludes the following with respect to the relationship between interest rates and the equity risk premium:

> This is particularly true in a high inflation environment. Interest rates rise as a result of accelerating inflation, and the interest rate risk of bonds intensifies more than the earnings of common stocks, which are partially hedged from the ravages of inflation. This phenomenon has been termed as a "lock-in" premium. Conversely, in low interest rate environments, when bondholders' interest rate fears subside and shareholders' fears of loss of earnings power dominate, the risk differential will widen and hence the risk premium will increase.
>
> Published empirical studies demonstrate that risk premiums vary inversely with the level of interest rates, rising when rates fell and declining when interest rates rose. Studies by Brigham, Shone, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), and Morin 2020), and others ***demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates – rising when rates fell and declining when rates rose***.[164]

In fact, in discussing the results of the various studies demonstrating the inverse relationship between interest rates and the equity risk premium, Dr. Morin states that "[s]imilar results have been reported by several financial experts who examined the statistical relationship between risk premiums and interest rates using a sample of natural gas utilities," *and cites to, among others, Mr. Gorman's own testimony from 2019*.[165]

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[164] Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Reports, Inc., 2021, at 146; graphic referenced in cite and shown in text has been omitted.

[165] *Id*., at 145.

Q. Does the regression analysis that you have conducted for your BYRP analysis demonstrate a strong inverse relationship between interest rates and the equity risk premium?

A. Yes. As shown on Exhibit AEB-7, as well as updated in Rebuttal Exhibit AEB-18, the regression equation for my BYRP analysis has an R^2 of approximately 0.83, which means that 83.00 percent of the variation in historical implied utility equity risk premia can be explained by changes in interest rates. While Mr. Gatewood claims that there is no way to compare the risk of the utilities in the rate proceedings in my BYRP analysis with Evergy, and that the authorized ROE is not specifically reported in every rate case, the regression reflects all available authorized ROE data and represents a substantial number of observations (*i.e.*, over 1,500) for purposes of reasonably evaluating the relationship between interest rates and the equity risk premium. The regression indicates that there indeed exists a strong negative correlation between utility equity risk premia and interest rates, and that the regression equation is an effective tool for predicting authorized ROEs at specified interest rate levels, whether current or projected interest rates, thus invalidating the critique offered by Mr. Gatewood and Mr. Gorman.

Q. Does Mr. Gorman's Risk Premium analysis demonstrate the inverse relationship between Treasury bond yields and the equity risk premium that he critiques as "simplistic" in your BYRP analysis?

A. Yes. For example, the inverse relationship between Treasury bond yields and the equity risk premium can be seen in Mr. Gorman's Exhibit MPG-16. As shown, all but one year from 1986 through Q1/2025, when the Treasury bond yield increases, the indicated risk

premium decreases, and vice versa. Thus, Mr. Gorman's own data supports that there is an inverse relationship between Treasury bond yields and the equity risk premium.

Q. Is Mr. Gorman's position that your BYRP analysis ignores the effect of inflation on risk premiums consistent with his own testimony?

A. No. Mr. Gorman calculates the market risk premium in his CAPM analysis using nominal interest rates (*i.e.*, 30-year Treasury bond yields), which is no different from the nominal 30-year Treasury bond yields that I use in my BYRP analyses. In addition, Mr. Gorman also relies on nominal interest rates (again, 30-year Treasury bond yields, as well as utility bond yields) in his Risk Premium analyses. Therefore, any concern that Mr. Gorman has regarding my BYRP analysis with respect to inflation and investment risk is equally applicable to his own cost of equity estimates.

Q. Dr. Woolridge suggests that the Risk Premium analysis cannot be relied upon because it relies on projected Treasury bond yields that are "always forecasted to increase."[166] Do you agree with this criticism?

A. No. Dr. Woolridge's criticism mischaracterizes my BYRP analysis. First, as shown on Exhibit AEB-6 of my direct testimony and Exhibit AEB-18 of my rebuttal testimony, I have relied on both a current Treasury bond yield (*i.e.*, the current 30-day average of the 30-year Treasury bond yield), as well as two projections of the Treasury bond yield from the *Blue Chip Financial Forecast* in my BYRP analyses. Thus, Dr. Woolridge's suggestion that I have only relied on forecasted Treasury bond yields is incorrect. Second,

[166] Woolridge Direct, at 94.

as Mr. Gorman notes, the 30-year Treasury is forecasted to decrease, which contradicts Dr. Woolridge's misperception of long-term Treasury forecasts.[167]

Q. Do you agree with Dr. Woolridge's claim that state utility commissions have consistently authorized ROEs that exceed the cost of equity?

A. No. I fundamentally disagree with Dr. Woolridge's claim that regulators across the U.S. have incorrectly and consistently erred in establishing utilities' authorized ROEs for years that are substantially higher than the cost of equity. Regulatory commissions are mandated to approve rates that balance the interests of customers and shareholders and that are just and reasonable. Rather, given their legal mandates for just and reasonable rates, it has to be concluded that the ROEs authorized by regulatory commissions were deemed by those agencies to reflect the investor-required return and produced just and reasonable rates.

Q. Dr. Woolridge cites a Werner and Jarvis (2022) study that he contends demonstrates that authorized ROEs historically have consistently exceeded the cost of equity for utilities. Do you agree?

A. No. There are several limitations to the Werner and Jarvis (2022) study that Dr. Woolridge relies upon to support his hypothesis that authorized ROEs have exceeded the investor-required return. First, the Werner and Jarvis (2022) study, which benchmarks authorized returns to corporate and Treasury bond yields, incorrectly assumes that a 1.00 percentage point change in the yield on Treasury bonds will result in a 1.00 percentage point change in the authorized returns. However, the authors provide no references to studies or other information to support their assumption. Further, when the authors calculated an

[167] Gorman Direct, at 31.

alternative scenario that assumed the authorized return would change at only half the rate of change in the Treasury yield (*i.e.*, a 100 basis point increase in the Treasury yield would result in a 50 basis point increase in the authorized ROE), the spread between the estimated benchmark returns and the authorized returns decreased significantly and did not show an increasing trend over the study period, which suggests that their initial 1-to-1 relationship between the change in the yield on Treasury bonds and the change in authorized ROEs is flawed.

Second, the authors' acknowledged that their analysis, which compares authorized returns to the cost of equity estimates resulting from the CAPM, is highly dependent on the assumptions used to calculate the CAPM. Further, their analyses demonstrated the sensitivity of their results to the assumptions relied on in the CAPM. The authors used two CAPM analyses, with significantly different assumptions and demonstrated that the spread between the cost of equity results of these models and authorized returns were dramatically different. For example, the first CAPM analysis resulted in a spread between the estimated cost of equity and the authorized return of 5.60 percentage points in 2020, while the second CAPM analysis produced a spread of only 0.786 percentage points.[168] Therefore, this test demonstrated that their analysis was highly dependent on the assumptions used in the CAPM and did not support a conclusion that authorized ROEs were systematically higher than the cost of equity:

> Bolstering the financial expertise of regulators is another promising path forward. Seemingly objective methods like the capital asset pricing model cannot provide a definitive answer on the cost of equity. As we have documented, a range of plausible input assumptions can lead to widely

[168] Karl Dunkle Werner and Stephen Jarvis, "Rate of Return Regulation Revisited," Working Paper, Energy Institute, University of California at Berkeley, 2022, at 26.

> divergent estimates of the cost of equity. When incorporating evidence from these methods regulators need to have the expertise to understand their limitations and push back on the assumptions utilities put forward when using them.[169]

Finally, the authors acknowledge that "there are many differences between the utility sector and investor environment in the US and UK," and these differences in the risk factors between utility operations in the United States and the United Kingdom ought to be addressed but are not addressed in their work.[170] Given that the authors acknowledge there are differences in the regulatory environments, yet have not considered the effect of those differences on the cost of equity for the electric and natural gas utilities in either the UK or US, it is not reasonable to conclude that the authorized ROEs in the US are too high based on a comparison to the returns authorized for utilities in the UK. As a result, the limitations of the Werner and Jarvis (2022) study do not support Dr. Woolridge's contention that US state regulatory commissions have consistently authorized ROEs in excess of the cost of equity.

Q. Do you agree with Dr. Woolridge that "it is obvious" that authorized ROEs are above investors' required returns because the market-to-book ratio for electric utilities are greater than 1.0?[171]

A. No. There are several reasons why the market-to-book ratio for utilities may exceed 1.0 other than the ROE exceeding the cost of equity. First, Dr. Woolridge's position assumes that the Efficient Market Hypothesis ("EMH") holds true. The EMH theory contends that

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[169] *Id*., at 34.

[170] *Id*., at 28.

[171] Woolridge Direct, at 95.

all information currently known by investors is already reflected in current stock prices.[172] For example, the theory of the DCF model is that the current share price is equal to the present value of all expected future dividends. Therefore, if markets were fully efficient as suggested by Dr. Woolridge, changes in share prices could only be explained by new information that results in a change to the expected dividends.

> However, as Dr. Lawrence Kolbe and Dr. Michael Vilbert outlined in their 2016 presentation to the California Public Utilities Commission, there is no consensus among economists regarding whether the theory of the efficient market hypothesis holds true and share prices are rationally priced, and even assuming for the sake of argument that the efficient market hypothesis does in fact hold true, there is also no consensus regarding which model produces reasonable estimates of the cost of equity.[173] In fact, Nobel Prize-winning economist Dr. Robert Shiller and others have provided compelling evidence against the efficient market hypothesis, concluding that share prices are not rationally priced and that the DCF model does not fully explain changes in share prices and thus will not accurately estimate the required return of investors.[174] There are numerous practical examples supporting this position (e.g., large sudden declines in the market such as Black Monday in 1987, the Great Recession of 2008/09, the COVID-19 crash in March 2020, and the "tech bubble" of the late 1990s) that cannot be explained by new information regarding dividends).[175]

Second, as Drs. Kolbe and Vilbert also noted, even if one assumes that the theory of the EMH holds, there are several important conditions that must hold before one can

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[172] R. J. Shiller, "Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?*," The American Economic Review*, Vol. 71, No. 3, 1981, at 421-436.

[173] A. Lawrence Kolbe, Ph.D. and Michael J. Vilbert, Ph.D., "Moving Toward Value in Utility Compensation Shareholder Value Concept," Presented to the California Public Utilities Commission, June 13, 2016.

[174] R. J. Shiller, "Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?," *The American Economic Review*, 1981, Vol. 71, No. 3, at 42-436.

[175] *See, also*, R. J. Shiller, "From Efficient Markets Theory to Behavioral Finance," *Journal of Economic Perspectives,* 2003, Vol. 17, No. 1, at 83–104. Dr. Shiller contended that there were "asset bubbles" such as the "tech boom" from 1994 to 2000 that resulted in substantial increases in share prices that could not be explained by market fundamentals.

assume that the ROE equals the cost of equity at a market-to-book ratio of 1.0 for regulated utilities. Those conditions include:

- The theory of the Efficient Market Hypothesis, which assumes that all investor expectations regarding future market conditions are already reflected in current stock prices and the current yields on Treasury bonds, must hold.
- A utility has to be regulated on rate base identical to its GAAP book value.
- A utility has to have 100 percent regulated operations.
- The regulatory system has to be in full equilibrium (*i.e.,* there cannot be a lag in the adjustment of the authorized ROE to the market cost of equity); and,
- The ROE expected, on average, has to equal the authorized ROE.[176]

As Drs. Kolbe and Vilbert concluded, it is very unlikely that all of these conditions will be satisfied. For example, changes in cost trends or regulatory lag can cause a utility to earn more or less than the allowed return, and if the expected return deviates from the allowed return, then the allowed return will not equal the cost of equity and the market-to-book ratio will not equal 1.0.

XI. SUMMARY OF ADJUSTED RESULTS

Q. Have you considered how the ROE recommendations of Mr. Gatewood, Dr. Woolridge, and Mr. Gorman would change if their cost of equity analyses were corrected for the issues you have identified with each of their analyses?

A. Yes, I have evaluated how each of these witnesses' ROE recommendations would change once their analyses are updated and corrected. Figure 25 summarizes the results of these witnesses' cost of equity analyses based on the updates and corrections to those analyses that I have discussed. Specifically, I have adjusted Mr. Gatewood's two-stage DCF

[176] A. Lawrence Kolbe, Ph.D. and Michael J. Vilbert, Ph.D., "Moving Toward Value in Utility Compensation Shareholder Value Concept, Presented to the California Public Utilities Commission, June 13, 2016.

analysis consistent with the FERC's use of projected EPS growth rates for short-term growth and an 80/20 weighting on short-term and long-term growth, adjusted his multi-stage DCF to reflect the long-term growth rate consistent with the *Ibbotson* methodology, and relied on his as-filed CAPM analysis that uses a historical market return and market risk premium. The results shown in Figure 25 for Dr. Woolridge's DCF analysis reflect his proxy group using projected EPS growth rates, while his CAPM analysis reflects an average of two scenarios with one relying on the historical arithmetic market return and the second relies on the most current forward-looking market return. The results shown for Mr. Gorman reflect his as-filed constant growth DCF using EPS growth rates, his multi-stage DCF as adjusted to reflect the long-term growth rate consistent with the *Ibbotson* methodology, and his CAPM using the long-term average historical beta that he has relied on previously and an average of his and my market returns.

Figure 25: Summary of Adjusted Cost of Equity Results

	Mr. Gatewood	Dr. Woolridge	Mr. Gorman
DCF			
Constant Growth			
Analysts' Growth Rates	n/a	10.79% - 10.87%	10.51%
Sustainable Growth Rates	n/a	n/a	n/a
Two-Stage Growth (mean)	10.23%	n/a	n/a
Multi-Stage / IRR (mean)	9.64%	n/a	9.45%
Overall DCF (mean)	9.94%	10.83%	9.98%
CAPM			
Mean / Recommendation	11.01%	10.44%	10.28%
Risk Premium			
Mean / Recommendation	n/a	n/a	10.42%
Average Cost of Equity	**10.47%**	**10.64%**	**10.23%**

Q. Do these reasonable adjustments to Mr. Gatewood's, Dr. Woolridge's, and Mr. Gorman's cost of equity analyses support the Company's proposed ROE of 10.50 percent in this proceeding?

A. Yes. As shown in Figure 25, individually and collectively, these results support the Company's proposed ROE of 10.50 percent.

XII. BUSINESS AND REGULATORY RISKS

Q. What have Mr. Gatewood, Dr. Woolridge, and Mr. Gorman stated regarding the business and regulatory risks of the Company?

A. These witnesses disagree with my conclusion regarding the business and regulatory risks of the Company, and claim that the business and regulatory risks of EKC relative to the

proxy group are already reflected in the credit ratings of the Company, which are higher than the proxy group average.[177]

Q. Do you agree with these witnesses' comparison strictly to credit ratings in terms of assessing business and regulatory risks?

A. No. Credit ratings do not consider all of the risk to equity holders as compared with the proxy group. Credit ratings are assessments of the likelihood a company could default on its debt, whereas the topic of the current proceeding is to determine the riskiness and cost of the Company's equity. In addition, while credit rating agencies consider the business risks of an individual company, when establishing its debt credit rating, they do not conduct a comparative analysis of business risks relative to the proxy group. The development of the investor-required ROE is based on a proxy group of risk-comparable companies. In developing the proxy group, it is essential to balance the relative risk of the companies included in the proxy group with the overall size of the group. Therefore, it is always the case that the proxy companies do not have exactly the same risk profile as the subject company. As such, it is reasonable to review the relative risks of the proxy group companies and the subject company to determine how the subject company's risk profile compares with the group to determine the appropriate placement of the ROE within the range of results established using the proxy group companies.

[177] Gatewood Direct, at 37-46; Woolridge Direct, at 10; Gorman Direct, at 98-100.

Q. Did Dr. Woolridge or Mr. Gorman conduct an analysis of the specific risks of the Company relative to the proxy group?

A. No. Neither Dr. Woolridge nor Mr. Gorman have independently evaluated the comparative risk of the Company relative to the proxy group, but rather simply rely on the current credit ratings of the Company relative to the proxy group.

Q. What is Mr. Gatewood's position regarding the specific risks of the Company relative to the proxy group?

A. Mr. Gatewood states that the evidence demonstrates the regulatory risks for EKC are similar to the proxy group.[178] Specifically, Mr. Gatewood contends that Figure 12 in my direct testimony shows that 9 of the 17 companies included in the proxy group own nuclear generation, and therefore, nuclear generation risk is reflected in the proxy group. Moreover, Mr. Gatewood concludes that the average DCF result and beta for the companies in the proxy group that own nuclear generation are lower than the average DCF result and beta for the companies that do not own nuclear generation. As a result, Mr. Gatewood concludes that an "upward adjustment" to the ROE to account for the Company's nuclear risk is not warranted.[179]

Similarly, Mr. Gatewood concludes that the Company does not have greater regulatory risk relative to proxy group because: (1) the S&P credit supportive rating for Kansas is greater than the average for the proxy group as shown in Exhibit AEB-10 of my direct testimony; and (2) based on a report on regulatory mechanisms from Regulatory Research Associates ("RRA"), the regulatory mechanisms available to the Company are

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[178] Gatewood Direct, at 55.

[179] *Id.,* at 42.

comparable to the regularly mechanism approved from the companies in the proxy group.[180]

Q. Do you agree with Mr. Gatewood's comparison of the average DCF results and beta coefficients for the companies that own nuclear generation relative to the companies that do not own nuclear generation?

A. No. I disagree because the DCF results and betas would reflect not only a company's risk with respect to nuclear generation, but also other business and financial risks such that it would not be possible to isolate the specific effect of nuclear generation risk. However, as I discussed in my direct testimony, I evaluated various business risks (*i.e.*, wildfire, nuclear generation risk, regulatory risk, capital expenditures) of the Company relative to the proxy group to determine where amongst the range of results, including the results of the DCF analyses, that the Company's ROE should fall. This approach is similar to the comparison recommended by Mr. Gatewood, but is more appropriate because it considers multiple business risks faced by the Company and the proxy companies as opposed to just nuclear risk. Further, it does not appear as though Mr. Gatewood opposes such an approach since he recommends considering the range of DCF results and betas when considering nuclear generation risk.

[180] *Id.,* at 56-58.

Q. While Mr. Gatewood references the S&P credit supportiveness rating for Kansas as support for his contention that EKC has less regulatory risk than the proxy group, is Mr. Gatewood's review complete?

A. No. Inexplicably, Mr. Gatewood only references Exhibit AEB-10 in my direct testimony, which shows that the proxy group average S&P credit supportiveness rating is slightly below the rating for Kansas. However, Mr. Gatewood fails to reference the analysis also presented in my direct testimony on Exhibit AEB-9 that compares the RRA regulatory rating of Kansas relative to the proxy group. As shown on Exhibit AEB-9, the Company's jurisdictional rating of "Average / 3" is below the proxy group's average rating of between "Average / 1" and "Average / 2." Therefore, the RRA regulatory rankings clearly indicate that the regulatory risk in Kansas is greater on average than the regulatory risk faced by the proxy group. It is unclear why Mr. Gatewood does not acknowledge the regulatory rankings from RRA when he considers RRA's report on regulatory mechanisms, and regulatory mechanisms are a factor considered in the rankings developed by RRA.

Q. Do you have any concern with Mr. Gatewood's comparison of the regulatory mechanisms of the Company as compared to the companies in the proxy group?

A. Yes. While I agree with Mr. Gatewood that the Company has regulatory mechanisms[181] and that the types of mechanisms approved for the Company are prevalent among the proxy group, Mr. Gatewood fails to consider that EKC relies on a historical test year adjusted for known and measurable changes. As shown in Exhibit AEB-8 of my direct testimony, a majority of the proxy group companies (*i.e.,* 51.70 percent of the utility operating

[181] These regulatory mechanisms are a fuel and purchased power recovery mechanism, partial decoupling through an energy efficiency rider, and mechanisms to recover a portion of capital costs between rate cases.

subsidiaries of the companies in the proxy group) rely on either fully forecasted or partially forecasted test years. As discussed in my direct testimony, forecast test years produce cost estimates that are more reflective of future costs, which results in more accurate recovery of incurred costs and mitigates the regulatory lag associated with historical test years.[182] Therefore, while the Company has regulatory mechanisms that are similar to those utilized by the proxy group companies, the Company's use of a historical test year indicates greater risk with respect to timely cost recovery for the Company relative to the proxy group.

XIII. CAPITAL STRUCTURE

Q. What have the parties recommended regarding the appropriate capital structure for the Company?

A. Mr. Gatewood recommends a capital structure consisting of 48.70 percent common equity, and 51.30 percent long-term debt. Mr. Gatewood arrives at his recommendation by adjusting the capital structure proposal of the Company to include an allocation of the long-term debt held at EKC's, parent company, Evergy, Inc.[183] Dr. Woolridge proposes a capital structure that is composed of 50 percent debt and 50 percent equity stating that it is appropriate to consider the common equity ratios of the utility holding companies in his proxy group. Mr. Gorman recommends a capital structure composed of 51.25 percent equity and 48.75 percent long-term debt.[184] Even though the authorized equity ratio was not specified in EKC's last rate proceeding, he ties his recommendation to what he says is the equity ratio of 51.24 percent that was approved in the Company's 2018 rate proceeding.

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[182] Bulkley Direct, at 44.

[183] Gatewood Direct, at 18-20.

[184] Gorman Direct, at 41.

Q. Why is it incorrect to include the holding company capitalization in setting the capital structure for the Company, as Mr. Gatewood has done?

A. The holding company capital structure is based on the risk profile of that entity, which differs from the risk profile of the individual operating companies. The holding company invests in multiple utility operating companies, with different risk profiles related to the composition of the customer base, the regulatory construct and the operating risks of the utility. In contrast, the risk associated with an individual operating company is concentrated in one customer base, geography, regulatory construct and the specific operating risks of that entity. Therefore, it is reasonable to expect that a holding company could be financed with greater leverage than an operating company.

In this proceeding, however, we are estimating the cost of capital for the Company on a stand-alone basis, consistent with the principles established by the U.S. Supreme Court decisions, *Hope* and *Bluefield*. This approach is also consistent with: (a) the Commission's policy that a utility's regulatory capital structure must be "representative of utility operations"[185] -- a requirement that Mr. Gatewood's analysis ignores --; and (b) Kansas court decisions indicating that any hypothetical or consolidated capital structure adopted by the Commission should be "directly related to the actual conditions and operations of the utility."[186] A more detailed explanation of the policy and legal analysis can be found in the rebuttal testimonies of Company witnesses Ives and Ley. An analysis that is consistent with the stand-alone principle considers the financial risk of the individual operating company, EKC, on a stand-alone basis. It is the use of funds and the operating risk of the

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[185] Gatewood Direct, at 16-17.

[186] Kansas Industrial Consumers v. State Corp. Comm'n, 30 Kan. App. 2d 332 ,340, 42 P.3d 110 (2002)

utility that is reflected in the capital structure and the cost of capital, not the source of the funds. Therefore, it is not appropriate to impute debt from the parent company into the capital structure of the operating utility.

Q. What are the criteria that Dr. Woolridge implies must be met in order to rely on the actual equity ratio of a utility for ratemaking purposes?

A. According to Dr. Woolridge, if the proposed equity ratio is higher than the capital structures of the proxy group as well as the parent company's capital structure, the Commission should either impute a capital structure that is comparable to the capital structures of the proxy group or authorize an ROE that is below the cost of equity indicated by the proxy group to reflect the reduced financial risk associated with the proposed equity ratio.[187] This implies that Dr. Woolridge believes if the proposed equity ratio of a utility is comparable to the capital structure of the proxy group as well as its parent, then the proposed equity ratio can be used for ratemaking purposes.

Q. Are the criteria that Dr. Woolridge relies on to determine the reasonableness of the Company's capital structure consistent with criteria he relied on in the Company's last rate proceeding?

A. No. In the Company's last rate proceeding, while Dr. Woolridge required that the Company's proposed equity ratio be comparable to the proxy group, he did not require EKC's equity ratio to be comparable to the Company's parent company Evergy, Inc.[188]

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[187] Woolridge Direct, at 30.

[188] Kansas Corporation Commission, Docket No. 23-EKCE-775-RTS, Direct Testimony of Dr. J. Randall Woolridge, August 29, 2023, at 29.

Q. Are you aware of any more recent rate proceedings where Dr. Woolridge did not require the proposed equity ratio be consistent with the equity ratio of the parent company?

A. Yes. In his recent testimony filed in the United Illuminating Company ("UI") rate proceeding, Dr. Woolridge did not compare the proposed equity ratio of UI to its parent company, AVANGRID, Inc.[189]

Q. Is it reasonable for Dr. Woolridge to consider the capital structure of the parent company in the determination of the capital structure of the operating subsidiary?

A. No. First, as just discussed, Dr. Woolridge's consideration of the equity ratio of EKC's parent company, Evergy, Inc. in the determination of the reasonableness of the Company's proposed equity ratio is inconsistent with the criteria he has relied on previously, including the Company's last rate proceeding.

Q. Do you agree with Dr. Woolridge and Mr. Gorman that the Company's proposed equity ratio should be benchmarked against the equity ratios of the proxy group companies?

A. Yes. I agree that in order to assess the financial risk of the Company as compared to the proxy group, it is reasonable to benchmark the Company's proposed equity ratio to the equity ratios of the proxy group companies. However, there are two fundamental problems with these witnesses' comparison of the Company's proposed equity ratio to the equity ratios of the proxy group. First, it is not appropriate to compare the proposed equity ratio of the Company to the average equity ratio of the proxy group at holding company level.

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[189] Connecticut Public Utilities Regulatory Authority, Docket No. 24-10-04, Direct Testimony of Dr. J. Randall Woolridge, February 13, 2025, at 26.

Second, if the capital structures at the holding company level are to be considered such as suggested by these witnesses, then the *market* value of debt and equity must be used to estimate the percentage of debt and equity in the capital structure, not the *book* value of debt and equity as was used by Dr. Woolridge and Mr. Gorman.

Q. Why is it inappropriate to compare the proposed equity ratio of the Company to the average equity ratio of the proxy group at the holding company level?

A. The holding company data for the proxy group companies, on which Dr. Woolridge and Mr. Gorman rely includes corporate-level debt that is not part of the regulated or financial capital structure of the operating utilities. Simply because the parent companies in the proxy group are used to estimate the Company's cost of equity does not mean that the *holding company* capital structures are the relevant comparators for establishing the Company's authorized capital structure. There is no question that the utility subsidiaries of those holding companies are *more* comparable to the Company in terms of risk. As discussed previously, holding companies have multiple regulated utility subsidiaries, including in multiple jurisdictions, as well as unregulated operations or other business activities, which differs from the Company's purely regulated utility operations in a single jurisdiction. Therefore, the appropriate comparison for the Company's proposed capital structures is a comparison to the capital structures of the utility subsidiaries of the proxy group companies. As shown in my direct testimony, EKC's proposed equity ratio of 52.05 percent is well within the range of equity ratios for the utility subsidiaries of the proxy

group companies and is generally consistent with the average and median equity ratios of 51.85 percent and 50.80 percent, respectively.[190]

Q. Please explain why the book value of the capital structures of the proxy group companies should not be relied upon in benchmarking the proxy group capital structures to the Company's capital structure.

A. The use of the book value of debt and equity for the proxy group companies at the holding company level creates a mismatch between the capital structure data that is being used to determine the reasonableness of the Company's equity ratio and the data that is being used to estimate the DCF and the CAPM analyses to determine the cost of equity for the Company. For example, both Dr Woolridge and Mr. Gorman consider the constant growth DCF model to determine the cost of equity for the Company, and in their respective DCF models, the cost of equity is determined using the expected dividends and the *market value* of equity (*i.e.*, the share price).[191] Similarly, Dr. Woolridge and Mr. Gorman also rely on the CAPM to estimate the cost of equity for the Company, and in their respective analyses, they each rely on beta coefficients using the returns of each company in the proxy group based on that company's *market value*. Therefore, the cost of equity developed by Dr. Woolridge and Mr. Gorman represents the percentage return required by investors on the market value of equity not the book value.

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[190] Bulkley Direct, at 58 and Exhibit AEB-11.

[191] Woolridge Direct, at 43; Gorman Direct, at 48-49.

Q. What is the effect of relying on the required return on the market value of equity for assessing the cost of equity, but then the book value of debt and equity for assessing the capital structure?

A. If the market value of debt and equity are substantially different than the book value of debt and equity, then the resulting cost of equity estimate would not reflect the financial risk of the book value capital structure. This is illustrated in the following set of equations found readily in corporate finance textbooks.[192] As shown in Equation [5], the value of a company (or asset) is determined as follows:

$$V = D + E \qquad [5]$$

Where:

V = Market value of a company/asset

D = Market value of debt

E = Market value of equity

For simplicity, if it is assumed that there are no taxes, based on Equation [5], the total return on V can be estimated as follows:

$$r_V = \frac{D}{D + E} \text{ x } r_D + \frac{E}{E + D} \text{ x } r_E \qquad [6]$$

Where:

r_V = expected return on assets / weighted-average cost of capital

r_D = expected return on debt

r_E = expected return on equity

Then, Equation [6] can be rearranged into the following form to solve for the expected return on equity, r_E:

[192] Brealey, Myers, and Allen. *Principles of Corporate Finance.* 13th Ed., 2020, at 452-462.

$$r_E = r_V + (r_V - r_D)\frac{D}{\mathrm{E}} \qquad [7]$$

As shown in Equation [7], the expected return on the market value of equity is a function of the market value debt-to-equity ratio. As the percentage of debt increases, the financial risk of the firm increases, and thus investors require a higher return to compensate for the additional financial risk. Therefore, if the book value debt-to-equity ratio for the proxy group is substantially different than market value debt-to-equity ratio, the expected return on equity will also be substantially different.

Q. Is the book value debt-to-equity ratio different from the market value debt-to-equity ratio for the proxy group?

A. Yes. As shown in Rebuttal Exhibit AEB-24, the median market value common equity ratio for Dr. Woolridge's and my proxy groups as of December 31, 2024 was 56.80 percent and 55.07 percent, respectively. Therefore, based on Equation [7] above, the cost of equity estimated by Dr. Woolridge reflects the financial risk of a market value common equity ratio of 55.07 percent, while the cost of equity estimated by Mr. Gorman reflects the financial risk of a market value common equity ratio of 56.80 percent. Further, the market value common equity ratios of my and Dr. Woolridge's proxy group are significantly greater than the average book value equity ratios calculated by Dr. Woolridge and Mr. Gorman. For example, Dr. Woolridge calculates an average book equity ratio for his and my proxy group of 38.8 percent and 39.9 percent, respectively, and Mr. Gorman calculates an average book equity ratio for the proxy group of 39.6 percent (including short-term debt) and 43.6 percent (excluding short-term debt). Given the greater financial risk associated with the increased leverage of the book value capital structures relied on by each of these witnesses, investors would require a much higher cost of equity than estimated by their

respective DCF and CAPM analyses. In this case, relying on a cost of equity estimate based on market values, but then a capital structure based on book value, results in the incorrect conclusion that a return reflecting the financial risk of the market value equity ratio would be sufficient to compensate investors for a much more highly levered capital structure based on book value.

Q. Have you compared the Company's proposed equity ratio to the market value equity ratio of the proxy group?

A. Yes. As noted, the median market value common equity ratio for my proxy group as of December 31, 2024 was 56.80 percent. Therefore, EKC's proposed equity ratio of 52.05 percent is well below the average market value common equity ratio for the proxy group. Therefore, while I disagree that evaluating the capital structures of the proxy group at the holding company level relative to the Company is appropriate, when the comparison is done correctly based on the approaches supported by Dr. Woolridge and Mr. Gorman, it demonstrates that the Company's proposed equity ratio is reasonable.

Q. Had Dr. Woolridge correctly relied on the market value of debt and equity when estimating the capital structures of the companies in his proxy group, would he have concluded that Company's proposed equity ratio is reasonable?

A. Yes. When determining the reasonableness of the proposed equity ratio, if (1) Dr. Woolridge's approach in this proceeding was consistent with the approach he has relied on in other rate proceedings, including the Company's last rate case where he required the proposed equity ratio be consistent with the equity ratio of the companies in the proxy group, and (2) he correctly estimated the capital structures of the proxy group companies at the holding company level using the market value of debt and equity, then Dr. Woolridge

would have concluded that the Company's proposed equity ratio of 52.05 percent is conservative and, in fact, results in increased financial risk when compared to the median equity ratio of 55.07 percent for the companies in his proxy group.

Q. Mr. Gorman compares the Company's proposed equity ratio with authorized equity ratios nationally. What did he conclude from his review of authorized equity ratios for electric utilities?

A. Mr. Gorman concludes that "the industry average and median common equity ratios for electric utilities over the last 10 years have been consistently around 50.0%- 51.0%."[193] As a result, Mr. Gorman contends that the Company's proposed equity ratio is greater than the range indicated by the mean and median authorized equity ratios over the last ten years for electric utilities. I note, however, even at his arbitrarily reduced 50-51% range, his analysis indicates an equity ratio well above Staff's recommendation of 48.70%.

Q. Is Mr. Gorman's conclusion in this proceeding regarding the mean and median authorized equity ratios over the last ten years for electric utilities consistent with his conclusion in other recent testimony that he has filed?

A. No. For example, in his recent testimony related to the rate proceeding of Northern Indiana Public Service Company ("NIPSCO"), Mr. Gorman similarly reviewed the authorized equity ratios for electric utilities since 2013 to determine the reasonableness of NISPCO's proposed equity ratio. Based on this analysis, Mr. Gorman concluded that:

> [a]s shown in this table, the electric utility industry average and median common equity ratios have generally fallen to around 51% over the last 10

[193] Gorman Direct, at 40.

years. ***The industry medians generally support common equity ratios of 50.00% up to 52.00%***.[194]

Therefore, while Mr. Gorman has recently testified that authorized equity ratios for electric utilities support an equity ratio of up to 52 percent, he now arbitrarily and inexplicably suggests that same history now only supports an equity ratio up to 51 percent. It appears that Mr. Gorman has arbitrarily reduced his range without support in order to conclude that the Company's proposed equity ratio of 52.05 percent is unreasonable. As a result of this inconsistency, I recommend the Commission disregard Mr. Gorman's conclusion from his review of historical authorized equity ratios for electric utilities since 2013.

Q. Do you have any other concerns with Mr. Gorman's review of authorized equity ratios nationally for electric utilities?

A. Yes. There are a number of problems with Mr. Gorman's analysis:

- He incorrectly includes cases for transmission and distribution-only ("T&D") electric utilities, as only vertically-integrated cases should be included due to the incremental risk of generation for vertically integrated electric utilities.
- He incorrectly includes limited-issue rider cases; however, these cases should be excluded as they address only a specific issue or issues, and not a utility's entire operations.
- He relies solely on the mean and/or median authorized equity ratios for electric utilities and fails to consider the range of equity ratios that have been authorized for electric utilities.

[194] Indiana Utility Regulatory Commission, Cause No. 46120, Verified Direct Testimony of Michael P. Gorman, December 19, 2024, at 75; emphasis added.

Q. Did you compare the Company's proposed equity ratios with the equity ratios that have been authorized for vertically-integrated electric utilities from 2013 through 2025?

Yes. Specifically, I reviewed the authorized equity ratios for vertically-integrated electric utilities across the U.S. from 2013 through 2025, excluding both limited-issue rider cases and authorizations in Arkansas, Indiana, Michigan and Florida due to the inclusion of zero-cost capital in the capital structure in those jurisdictions. As shown in Figure 26, EKC's proposed equity ratio of 52.05 percent is within the range of the annual mean and median equity ratios for vertically-integrated electric utilities across the U.S. from 2013 through 2025 of 50.00 percent to 52.41 percent. Furthermore, EKC's proposed equity ratio is well below the high-end of the range of the authorized equity ratios for vertically integrated electric utilities from 2013 through 2025.

Figure 26: Authorized Equity Ratios for Vertically Integrated Electric Utilities for 2013-2025

Year	Mean	Median	Minimum	Maximum
2013	51.09%	52.30%	43.50%	56.86%
2014	51.24%	51.43%	42.89%	58.96%
2015	50.99%	50.74%	47.16%	56.00%
2016	50.04%	50.00%	40.25%	57.16%
2017	50.99%	50.03%	48.00%	58.18%
2018	51.29%	51.62%	41.68%	57.10%
2019	52.16%	52.00%	49.38%	57.02%
2020	51.94%	52.25%	46.00%	56.83%
2021	51.12%	51.92%	43.25%	55.00%
2022	52.35%	52.00%	48.90%	58.22%
2023	52.41%	52.25%	48.02%	60.70%
2024	51.10%	51.21%	41.25%	56.54%
2025	50.58%	51.00%	44.42%	57.00%

Q. What is your conclusion regarding the appropriate capital structure for EKC?

A. I continue to conclude that EKC's proposed capital structures is reasonable. The Company's proposed equity ratio of 52.05 percent is: (1) generally consistent with the average and median actual equity ratio of the utility subsidiaries of the proxy group companies (*i.e.*, utilities with risk profiles that are similar to the Company's risk profile); and (2) well within the range of equity ratios authorized for vertically-integrated electric utilities across the U.S. since 2013. Furthermore, while I disagree with the approach supported by Dr. Woolridge and Mr. Gorman in comparing the Company's proposed equity ratio to the average equity ratios of the proxy group holding companies, if that analysis is done correctly, it also demonstrates that the Company's proposed equity ratio is reasonable.

Q. Does this conclude your rebuttal testimony?

A. Yes.

COST OF EQUITY ANALYSES
SUMMARY OF RESULTS

Constant Growth DCF

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Mean Results:			
30-Day Avg. Stock Price	9.21%	10.16%	10.80%
90-Day Avg. Stock Price	9.26%	10.21%	10.84%
180-Day Avg. Stock Price	9.35%	10.29%	10.93%
Average	9.27%	10.22%	10.86%
Median Results:			
30-Day Avg. Stock Price	9.50%	10.21%	10.95%
90-Day Avg. Stock Price	9.51%	10.22%	10.99%
180-Day Avg. Stock Price	9.66%	10.44%	11.06%
Average	9.56%	10.29%	11.00%

CAPM / ECAPM / Bond Yield Risk Premium

	30-Year Treasury Bond Yield		
	Current 30-Day Avg	Near-Term Projected	Longer-Term Projected
CAPM:			
Current *Value Line* Beta	11.26%	11.23%	11.20%
Current Bloomberg Beta	10.60%	10.54%	10.50%
Long-term Avg. *Value Line* Beta	10.62%	10.56%	10.52%
ECAPM:			
Current *Value Line* Beta	11.53%	11.50%	11.48%
Current Bloomberg Beta	11.04%	10.99%	10.96%
Long-term Avg. *Value Line* Beta	11.05%	11.01%	10.97%
Bond Yield Risk Premium:	10.80%	10.65%	10.54%

30-DAY CONSTANT GROWTH DCF

Company	Ticker	[1] Annualized Dividend	[2] Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Value Line Projected EPS Growth Rate	[6] S&P Projected EPS Growth Rate	[7] Zacks Projected EPS Growth Rate	[8] Average Projected EPS Growth Rate	[9] Cost of Equity: Minimum Growth Rate	[10] Cost of Equity: Mean Growth Rate	[11] Cost of Equity: Maximum Growth Rate
Alliant Energy Corporation	LNT	$2.03	$61.19	3.32%	3.42%	6.00%	6.54%	6.60%	6.38%	9.42%	9.80%	10.03%
Ameren Corporation	AEE	$2.84	$97.64	2.91%	3.01%	6.50%	6.95%	7.00%	6.82%	9.50%	9.82%	10.01%
American Electric Power Company, Inc.	AEP	$3.72	$104.28	3.57%	3.68%	6.50%	6.80%	6.40%	6.57%	10.08%	10.25%	10.49%
Avista Corporation	AVA	$1.96	$39.73	4.93%	5.08%	5.50%	5.98%	6.10%	5.86%	10.57%	10.94%	11.18%
CMS Energy Corporation	CMS	$2.17	$71.46	3.04%	3.14%	6.00%	7.31%	7.80%	7.04%	9.13%	10.18%	10.96%
DTE Energy Company	DTE	$4.36	$135.92	3.21%	3.31%	4.50%	7.62%	7.60%	6.57%	7.78%	9.89%	10.95%
Duke Energy Corporation	DUK	$4.18	$117.97	3.54%	3.65%	6.00%	6.38%	6.30%	6.23%	9.65%	9.88%	10.04%
Entergy Corporation	ETR	$2.40	$82.84	2.90%	3.00%	3.00%	9.12%	9.50%	7.21%	5.94%	10.21%	12.53%
IDACORP, Inc.	IDA	$3.44	$115.84	2.97%	3.08%	6.00%	8.09%	8.10%	7.40%	9.06%	10.48%	11.19%
NextEra Energy, Inc.	NEE	$2.27	$68.19	3.32%	3.46%	8.50%	7.81%	7.70%	8.00%	11.15%	11.46%	11.96%
NorthWestern Corporation	NWE	$2.64	$56.85	4.64%	4.78%	4.50%	5.80%	6.90%	5.73%	9.25%	10.51%	11.70%
OGE Energy Corporation	OGE	$1.69	$44.56	3.78%	3.90%	6.50%	6.53%	6.30%	6.44%	10.20%	10.35%	10.44%
Pinnacle West Capital Corporation	PNW	$3.58	$92.11	3.89%	3.96%	5.00%	4.76%	2.10%	3.95%	6.03%	7.92%	8.98%
Portland General Electric Company	POR	$2.00	$42.29	4.73%	4.84%	6.50%	4.76%	3.40%	4.89%	8.21%	9.73%	11.38%
PPL Corporation	PPL	$1.09	$35.34	3.08%	3.20%	7.50%	7.40%	7.50%	7.47%	10.60%	10.67%	10.70%
Southern Company	SO	$2.96	$89.40	3.31%	3.42%	6.50%	6.29%	6.50%	6.43%	9.70%	9.85%	9.92%
Xcel Energy Inc.	XEL	$2.28	$70.26	3.25%	3.37%	7.00%	7.73%	7.50%	7.41%	10.36%	10.78%	11.10%
Mean				3.55%	3.67%	6.00%	6.82%	6.66%	6.49%	9.21%	10.16%	10.80%
Median				3.32%	3.42%	6.00%	6.80%	6.90%	6.57%	9.50%	10.21%	10.95%

Notes:
[1] Bloomberg Professional
[2] Bloomberg Professional, equals 30-day average as of May 30, 2025.
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Value Line
[6] S&P Capital IQ Pro
[7] Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

90-DAY CONSTANT GROWTH DCF

Company	Ticker	[1] Annualized Dividend	[2] Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Value Line Projected EPS Growth Rate	[6] S&P Projected EPS Growth Rate	[7] Zacks Projected EPS Growth Rate	[8] Average Projected EPS Growth Rate	[9] Cost of Equity: Minimum Growth Rate	[10] Cost of Equity: Mean Growth Rate	[11] Cost of Equity: Maximum Growth Rate
Alliant Energy Corporation	LNT	$2.03	$61.21	3.32%	3.42%	6.00%	6.54%	6.60%	6.38%	9.42%	9.80%	10.03%
Ameren Corporation	AEE	$2.84	$97.49	2.91%	3.01%	6.50%	6.95%	7.00%	6.82%	9.51%	9.83%	10.02%
American Electric Power Company, Inc.	AEP	$3.72	$103.05	3.61%	3.73%	6.50%	6.80%	6.40%	6.57%	10.13%	10.29%	10.53%
Avista Corporation	AVA	$1.96	$38.73	5.06%	5.21%	5.50%	5.98%	6.10%	5.86%	10.70%	11.07%	11.32%
CMS Energy Corporation	CMS	$2.17	$70.76	3.07%	3.17%	6.00%	7.31%	7.80%	7.04%	9.16%	10.21%	10.99%
DTE Energy Company	DTE	$4.36	$131.49	3.32%	3.42%	4.50%	7.62%	7.60%	6.57%	7.89%	10.00%	11.06%
Duke Energy Corporation	DUK	$4.18	$115.97	3.60%	3.72%	6.00%	6.38%	6.30%	6.23%	9.71%	9.94%	10.10%
Entergy Corporation	ETR	$2.40	$82.57	2.91%	3.01%	3.00%	9.12%	9.50%	7.21%	5.95%	10.22%	12.54%
IDACORP, Inc.	IDA	$3.44	$113.78	3.02%	3.14%	6.00%	8.09%	8.10%	7.40%	9.11%	10.53%	11.25%
NextEra Energy, Inc.	NEE	$2.27	$68.92	3.29%	3.42%	8.50%	7.81%	7.70%	8.00%	11.11%	11.42%	11.93%
NorthWestern Corporation	NWE	$2.64	$55.47	4.76%	4.90%	4.50%	5.80%	6.90%	5.73%	9.37%	10.63%	11.82%
OGE Energy Corporation	OGE	$1.69	$44.03	3.83%	3.95%	6.50%	6.53%	6.30%	6.44%	10.25%	10.39%	10.48%
Pinnacle West Capital Corporation	PNW	$3.58	$90.66	3.95%	4.03%	5.00%	4.76%	2.10%	3.95%	6.09%	7.98%	9.05%
Portland General Electric Company	POR	$2.00	$42.58	4.70%	4.81%	6.50%	4.76%	3.40%	4.89%	8.18%	9.70%	11.35%
PPL Corporation	PPL	$1.09	$34.64	3.15%	3.26%	7.50%	7.40%	7.50%	7.47%	10.66%	10.73%	10.77%
Southern Company	SO	$2.96	$87.86	3.37%	3.48%	6.50%	6.29%	6.50%	6.43%	9.76%	9.91%	9.98%
Xcel Energy Inc.	XEL	$2.28	$69.08	3.30%	3.42%	7.00%	7.73%	7.50%	7.41%	10.42%	10.83%	11.16%
Mean				3.60%	3.71%	6.00%	6.82%	6.66%	6.49%	9.26%	10.21%	10.84%
Median				3.32%	3.42%	6.00%	6.80%	6.90%	6.57%	9.51%	10.22%	10.99%

Notes:
[1] Bloomberg Professional
[2] Bloomberg Professional, equals 90-day average as of May 30, 2025.
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Value Line
[6] S&P Capital IQ Pro
[7] Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

180-DAY CONSTANT GROWTH DCF

Company	Ticker	[1] Annualized Dividend	[2] Stock Price	[3] Dividend Yield	[4] Expected Dividend Yield	[5] Value Line Projected EPS Growth Rate	[6] S&P Projected EPS Growth Rate	[7] Zacks Projected EPS Growth Rate	[8] Average Projected EPS Growth Rate	[9] Cost of Equity: Minimum Growth Rate	[10] Cost of Equity: Mean Growth Rate	[11] Cost of Equity: Maximum Growth Rate
Alliant Energy Corporation	LNT	$2.03	$60.06	3.38%	3.49%	6.00%	6.54%	6.60%	6.38%	9.48%	9.87%	10.09%
Ameren Corporation	AEE	$2.84	$92.69	3.06%	3.17%	6.50%	6.95%	7.00%	6.82%	9.66%	9.99%	10.17%
American Electric Power Company, Inc.	AEP	$3.72	$99.08	3.75%	3.88%	6.50%	6.80%	6.40%	6.57%	10.27%	10.44%	10.68%
Avista Corporation	AVA	$1.96	$37.52	5.22%	5.38%	5.50%	5.98%	6.10%	5.86%	10.87%	11.24%	11.48%
CMS Energy Corporation	CMS	$2.17	$69.06	3.14%	3.25%	6.00%	7.31%	7.80%	7.04%	9.24%	10.29%	11.06%
DTE Energy Company	DTE	$4.36	$126.51	3.45%	3.56%	4.50%	7.62%	7.60%	6.57%	8.02%	10.13%	11.19%
Duke Energy Corporation	DUK	$4.18	$113.18	3.69%	3.81%	6.00%	6.38%	6.30%	6.23%	9.80%	10.04%	10.19%
Entergy Corporation	ETR	$2.40	$76.50	3.14%	3.25%	3.00%	9.12%	9.50%	7.21%	6.18%	10.46%	12.79%
IDACORP, Inc.	IDA	$3.44	$110.23	3.12%	3.24%	6.00%	8.09%	8.10%	7.40%	9.21%	10.63%	11.35%
NextEra Energy, Inc.	NEE	$2.27	$72.51	3.13%	3.25%	8.50%	7.81%	7.70%	8.00%	10.95%	11.25%	11.76%
NorthWestern Corporation	NWE	$2.64	$54.40	4.85%	4.99%	4.50%	5.80%	6.90%	5.73%	9.46%	10.72%	11.92%
OGE Energy Corporation	OGE	$1.69	$42.30	3.98%	4.11%	6.50%	6.53%	6.30%	6.44%	10.41%	10.56%	10.64%
Pinnacle West Capital Corporation	PNW	$3.58	$88.42	4.05%	4.13%	5.00%	4.76%	2.10%	3.95%	6.19%	8.08%	9.15%
Portland General Electric Company	POR	$2.00	$43.87	4.56%	4.67%	6.50%	4.76%	3.40%	4.89%	8.04%	9.56%	11.21%
PPL Corporation	PPL	$1.09	$33.49	3.25%	3.38%	7.50%	7.40%	7.50%	7.47%	10.77%	10.84%	10.88%
Southern Company	SO	$2.96	$86.66	3.42%	3.53%	6.50%	6.29%	6.50%	6.43%	9.81%	9.95%	10.03%
Xcel Energy Inc.	XEL	$2.28	$67.24	3.39%	3.52%	7.00%	7.73%	7.50%	7.41%	10.51%	10.93%	11.25%
Mean				3.68%	3.80%	6.00%	6.82%	6.66%	6.49%	9.35%	10.29%	10.93%
Median				3.42%	3.53%	6.00%	6.80%	6.90%	6.57%	9.66%	10.44%	11.06%

Notes:
[1] Bloomberg Professional
[2] Bloomberg Professional, equals 180-day average as of May 30, 2025.
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.50 x [8])
[5] Value Line
[6] S&P Capital IQ Pro
[7] Zacks
[8] Equals Average ([5], [6], [7])
[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])
[10] Equals [4] + [8]
[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

CAPITAL ASSET PRICING MODEL
CURRENT RISK-FREE RATE & VL BETA

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta	Market Return	Market Risk Premium	Cost of Equity: CAPM	Cost of Equity: ECAPM
Alliant Energy Corporation	LNT	4.86%	0.95	12.34%	7.48%	11.97%	12.06%
Ameren Corporation	AEE	4.86%	0.90	12.34%	7.48%	11.59%	11.78%
American Electric Power Company, Inc.	AEP	4.86%	0.85	12.34%	7.48%	11.22%	11.50%
Avista Corporation	AVA	4.86%	0.75	12.34%	7.48%	10.47%	10.94%
CMS Energy Corporation	CMS	4.86%	0.90	12.34%	7.48%	11.59%	11.78%
DTE Energy Company	DTE	4.86%	1.00	12.34%	7.48%	12.34%	12.34%
Duke Energy Corporation	DUK	4.86%	0.70	12.34%	7.48%	10.10%	10.66%
Entergy Corporation	ETR	4.86%	1.00	12.34%	7.48%	12.34%	12.34%
IDACORP, Inc.	IDA	4.86%	0.75	12.34%	7.48%	10.47%	10.94%
NextEra Energy, Inc.	NEE	4.86%	0.90	12.34%	7.48%	11.59%	11.78%
NorthWestern Corporation	NWE	4.86%	0.80	12.34%	7.48%	10.85%	11.22%
OGE Energy Corporation	OGE	4.86%	1.05	12.34%	7.48%	12.71%	12.62%
Pinnacle West Capital Corporation	PNW	4.86%	0.80	12.34%	7.48%	10.85%	11.22%
Portland General Electric Company	POR	4.86%	0.80	12.34%	7.48%	10.85%	11.22%
PPL Corporation	PPL	4.86%	0.90	12.34%	7.48%	11.59%	11.78%
Southern Company	SO	4.86%	0.75	12.34%	7.48%	10.47%	10.94%
Xcel Energy Inc.	XEL	4.86%	0.75	12.34%	7.48%	10.47%	10.94%
Mean			0.86			11.26%	11.53%
Median			0.85			11.22%	11.50%

Notes:
[1] Bloomberg Professional, as of May 30, 2025
[2] Value Line
[3] Rebuttal Exhibit AEB-17
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
NEAR-TERM PROJECTED RISK-FREE RATE & VL BETA

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Alliant Energy Corporation	LNT	4.60%	0.95	12.34%	7.74%	11.95%	12.05%
Ameren Corporation	AEE	4.60%	0.90	12.34%	7.74%	11.57%	11.76%
American Electric Power Company, Inc.	AEP	4.60%	0.85	12.34%	7.74%	11.18%	11.47%
Avista Corporation	AVA	4.60%	0.75	12.34%	7.74%	10.41%	10.89%
CMS Energy Corporation	CMS	4.60%	0.90	12.34%	7.74%	11.57%	11.76%
DTE Energy Company	DTE	4.60%	1.00	12.34%	7.74%	12.34%	12.34%
Duke Energy Corporation	DUK	4.60%	0.70	12.34%	7.74%	10.02%	10.60%
Entergy Corporation	ETR	4.60%	1.00	12.34%	7.74%	12.34%	12.34%
IDACORP, Inc.	IDA	4.60%	0.75	12.34%	7.74%	10.41%	10.89%
NextEra Energy, Inc.	NEE	4.60%	0.90	12.34%	7.74%	11.57%	11.76%
NorthWestern Corporation	NWE	4.60%	0.80	12.34%	7.74%	10.79%	11.18%
OGE Energy Corporation	OGE	4.60%	1.05	12.34%	7.74%	12.73%	12.63%
Pinnacle West Capital Corporation	PNW	4.60%	0.80	12.34%	7.74%	10.79%	11.18%
Portland General Electric Company	POR	4.60%	0.80	12.34%	7.74%	10.79%	11.18%
PPL Corporation	PPL	4.60%	0.90	12.34%	7.74%	11.57%	11.76%
Southern Company	SO	4.60%	0.75	12.34%	7.74%	10.41%	10.89%
Xcel Energy Inc.	XEL	4.60%	0.75	12.34%	7.74%	10.41%	10.89%
Mean						11.23%	11.50%
Median						11.18%	11.47%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 44, No. 6, June 2, 2025, at 2
[2] Value Line
[3] Rebuttal Exhibit AEB-17
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
LONG-TERM PROJECTED RISK-FREE RATE & VL BETA

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2027 - 2031)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Alliant Energy Corporation	LNT	4.40%	0.95	12.34%	7.94%	11.94%	12.04%
Ameren Corporation	AEE	4.40%	0.90	12.34%	7.94%	11.55%	11.75%
American Electric Power Company, Inc.	AEP	4.40%	0.85	12.34%	7.94%	11.15%	11.45%
Avista Corporation	AVA	4.40%	0.75	12.34%	7.94%	10.36%	10.85%
CMS Energy Corporation	CMS	4.40%	0.90	12.34%	7.94%	11.55%	11.75%
DTE Energy Company	DTE	4.40%	1.00	12.34%	7.94%	12.34%	12.34%
Duke Energy Corporation	DUK	4.40%	0.70	12.34%	7.94%	9.96%	10.55%
Entergy Corporation	ETR	4.40%	1.00	12.34%	7.94%	12.34%	12.34%
IDACORP, Inc.	IDA	4.40%	0.75	12.34%	7.94%	10.36%	10.85%
NextEra Energy, Inc.	NEE	4.40%	0.90	12.34%	7.94%	11.55%	11.75%
NorthWestern Corporation	NWE	4.40%	0.80	12.34%	7.94%	10.75%	11.15%
OGE Energy Corporation	OGE	4.40%	1.05	12.34%	7.94%	12.74%	12.64%
Pinnacle West Capital Corporation	PNW	4.40%	0.80	12.34%	7.94%	10.75%	11.15%
Portland General Electric Company	POR	4.40%	0.80	12.34%	7.94%	10.75%	11.15%
PPL Corporation	PPL	4.40%	0.90	12.34%	7.94%	11.55%	11.75%
Southern Company	SO	4.40%	0.75	12.34%	7.94%	10.36%	10.85%
Xcel Energy Inc.	XEL	4.40%	0.75	12.34%	7.94%	10.36%	10.85%
Mean						11.20%	11.48%
Median						11.15%	11.45%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 44, No. 6, June 2, 2025, at 14
[2] Value Line
[3] Rebuttal Exhibit AEB-17
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
CURRENT RISK-FREE RATE & BLOOMBERG BETA

Company	Ticker	[1] Current 30-day average of 30-year U.S. Treasury bond yield	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Alliant Energy Corporation	LNT	4.86%	0.75	12.34%	7.48%	10.47%	10.93%
Ameren Corporation	AEE	4.86%	0.72	12.34%	7.48%	10.26%	10.78%
American Electric Power Company, Inc.	AEP	4.86%	0.71	12.34%	7.48%	10.16%	10.71%
Avista Corporation	AVA	4.86%	0.71	12.34%	7.48%	10.17%	10.71%
CMS Energy Corporation	CMS	4.86%	0.70	12.34%	7.48%	10.09%	10.65%
DTE Energy Company	DTE	4.86%	0.77	12.34%	7.48%	10.66%	11.08%
Duke Energy Corporation	DUK	4.86%	0.68	12.34%	7.48%	9.93%	10.53%
Entergy Corporation	ETR	4.86%	0.84	12.34%	7.48%	11.11%	11.42%
IDACORP, Inc.	IDA	4.86%	0.74	12.34%	7.48%	10.41%	10.89%
NextEra Energy, Inc.	NEE	4.86%	0.88	12.34%	7.48%	11.47%	11.68%
NorthWestern Corporation	NWE	4.86%	0.82	12.34%	7.48%	11.00%	11.33%
OGE Energy Corporation	OGE	4.86%	0.87	12.34%	7.48%	11.39%	11.63%
Pinnacle West Capital Corporation	PNW	4.86%	0.78	12.34%	7.48%	10.72%	11.13%
Portland General Electric Company	POR	4.86%	0.74	12.34%	7.48%	10.42%	10.90%
PPL Corporation	PPL	4.86%	0.89	12.34%	7.48%	11.51%	11.72%
Southern Company	SO	4.86%	0.74	12.34%	7.48%	10.37%	10.86%
Xcel Energy Inc.	XEL	4.86%	0.71	12.34%	7.48%	10.14%	10.69%
Mean						10.60%	11.04%
Median						10.42%	10.90%

Notes:
[1] Bloomberg Professional, as of May 30, 2025
[2] Bloomberg Professional, based on 10-year weekly returns
[3] Rebuttal Exhibit AEB-17
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Alliant Energy Corporation	LNT	4.60%	0.75	12.34%	7.74%	10.40%	10.88%
Ameren Corporation	AEE	4.60%	0.72	12.34%	7.74%	10.18%	10.72%
American Electric Power Company, Inc.	AEP	4.60%	0.71	12.34%	7.74%	10.09%	10.65%
Avista Corporation	AVA	4.60%	0.71	12.34%	7.74%	10.09%	10.65%
CMS Energy Corporation	CMS	4.60%	0.70	12.34%	7.74%	10.01%	10.59%
DTE Energy Company	DTE	4.60%	0.77	12.34%	7.74%	10.60%	11.03%
Duke Energy Corporation	DUK	4.60%	0.68	12.34%	7.74%	9.85%	10.47%
Entergy Corporation	ETR	4.60%	0.84	12.34%	7.74%	11.07%	11.39%
IDACORP, Inc.	IDA	4.60%	0.74	12.34%	7.74%	10.34%	10.84%
NextEra Energy, Inc.	NEE	4.60%	0.88	12.34%	7.74%	11.44%	11.66%
NorthWestern Corporation	NWE	4.60%	0.82	12.34%	7.74%	10.95%	11.30%
OGE Energy Corporation	OGE	4.60%	0.87	12.34%	7.74%	11.36%	11.60%
Pinnacle West Capital Corporation	PNW	4.60%	0.78	12.34%	7.74%	10.67%	11.08%
Portland General Electric Company	POR	4.60%	0.74	12.34%	7.74%	10.35%	10.85%
PPL Corporation	PPL	4.60%	0.89	12.34%	7.74%	11.48%	11.70%
Southern Company	SO	4.60%	0.74	12.34%	7.74%	10.30%	10.81%
Xcel Energy Inc.	XEL	4.60%	0.71	12.34%	7.74%	10.06%	10.63%
Mean						10.54%	10.99%
Median						10.35%	10.85%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 44, No. 6, June 2, 2025, at 2
[2] Bloomberg Professional, based on 10-year weekly returns
[3] Rebuttal Exhibit AEB-17
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2027 - 2031)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Alliant Energy Corporation	LNT	4.40%	0.75	12.34%	7.94%	10.35%	10.85%
Ameren Corporation	AEE	4.40%	0.72	12.34%	7.94%	10.13%	10.68%
American Electric Power Company, Inc.	AEP	4.40%	0.71	12.34%	7.94%	10.03%	10.61%
Avista Corporation	AVA	4.40%	0.71	12.34%	7.94%	10.03%	10.61%
CMS Energy Corporation	CMS	4.40%	0.70	12.34%	7.94%	9.95%	10.55%
DTE Energy Company	DTE	4.40%	0.77	12.34%	7.94%	10.55%	11.00%
Duke Energy Corporation	DUK	4.40%	0.68	12.34%	7.94%	9.78%	10.42%
Entergy Corporation	ETR	4.40%	0.84	12.34%	7.94%	11.04%	11.36%
IDACORP, Inc.	IDA	4.40%	0.74	12.34%	7.94%	10.29%	10.80%
NextEra Energy, Inc.	NEE	4.40%	0.88	12.34%	7.94%	11.41%	11.64%
NorthWestern Corporation	NWE	4.40%	0.82	12.34%	7.94%	10.91%	11.27%
OGE Energy Corporation	OGE	4.40%	0.87	12.34%	7.94%	11.33%	11.58%
Pinnacle West Capital Corporation	PNW	4.40%	0.78	12.34%	7.94%	10.62%	11.05%
Portland General Electric Company	POR	4.40%	0.74	12.34%	7.94%	10.30%	10.81%
PPL Corporation	PPL	4.40%	0.89	12.34%	7.94%	11.46%	11.68%
Southern Company	SO	4.40%	0.74	12.34%	7.94%	10.25%	10.77%
Xcel Energy Inc.	XEL	4.40%	0.71	12.34%	7.94%	10.00%	10.59%
Mean						10.50%	10.96%
Median						10.30%	10.81%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 44, No. 6, June 2, 2025, at 14
[2] Bloomberg Professional, based on 10-year weekly returns
[3] Rebuttal Exhibit AEB-17
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
CURRENT RISK-FREE RATE & VALUE LINE LT AVERAGE BETA

Company	Ticker	[1] Current 30-day average of 30-year U.S. Treasury bond yield	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Alliant Energy Corporation	LNT	4.86%	0.78	12.34%	7.48%	10.66%	11.08%
Ameren Corporation	AEE	4.86%	0.75	12.34%	7.48%	10.50%	10.96%
American Electric Power Company, Inc.	AEP	4.86%	0.70	12.34%	7.48%	10.07%	10.64%
Avista Corporation	AVA	4.86%	0.81	12.34%	7.48%	10.91%	11.27%
CMS Energy Corporation	CMS	4.86%	0.72	12.34%	7.48%	10.22%	10.75%
DTE Energy Company	DTE	4.86%	0.79	12.34%	7.48%	10.78%	11.17%
Duke Energy Corporation	DUK	4.86%	0.70	12.34%	7.48%	10.13%	10.68%
Entergy Corporation	ETR	4.86%	0.78	12.34%	7.48%	10.72%	11.13%
IDACORP, Inc.	IDA	4.86%	0.75	12.34%	7.48%	10.47%	10.94%
NextEra Energy, Inc.	NEE	4.86%	0.78	12.34%	7.48%	10.69%	11.10%
NorthWestern Corporation	NWE	4.86%	0.78	12.34%	7.48%	10.72%	11.13%
OGE Energy Corporation	OGE	4.86%	0.95	12.34%	7.48%	12.00%	12.08%
Pinnacle West Capital Corporation	PNW	4.86%	0.77	12.34%	7.48%	10.63%	11.06%
Portland General Electric Company	POR	4.86%	0.78	12.34%	7.48%	10.69%	11.10%
PPL Corporation	PPL	4.86%	0.86	12.34%	7.48%	11.28%	11.55%
Southern Company	SO	4.86%	0.70	12.34%	7.48%	10.13%	10.68%
Xcel Energy Inc.	XEL	4.86%	0.69	12.34%	7.48%	10.00%	10.59%
Mean						10.62%	11.05%
Median						10.66%	11.08%

Notes:
[1] Bloomberg Professional, as of May 30, 2025
[2] Rebuttal Exhibit AEB-16
[3] Rebuttal Exhibit AEB-17
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
NEAR-TERM PROJECTED RISK-FREE RATE & VALUE LINE LT AVERAGE BETA

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q3 2025 - Q3 2026)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Alliant Energy Corporation	LNT	4.60%	0.78	12.34%	7.74%	10.60%	11.03%
Ameren Corporation	AEE	4.60%	0.75	12.34%	7.74%	10.44%	10.91%
American Electric Power Company, Inc.	AEP	4.60%	0.70	12.34%	7.74%	9.99%	10.57%
Avista Corporation	AVA	4.60%	0.81	12.34%	7.74%	10.86%	11.23%
CMS Energy Corporation	CMS	4.60%	0.72	12.34%	7.74%	10.15%	10.70%
DTE Energy Company	DTE	4.60%	0.79	12.34%	7.74%	10.73%	11.13%
Duke Energy Corporation	DUK	4.60%	0.70	12.34%	7.74%	10.05%	10.62%
Entergy Corporation	ETR	4.60%	0.78	12.34%	7.74%	10.66%	11.08%
IDACORP, Inc.	IDA	4.60%	0.75	12.34%	7.74%	10.41%	10.89%
NextEra Energy, Inc.	NEE	4.60%	0.78	12.34%	7.74%	10.63%	11.06%
NorthWestern Corporation	NWE	4.60%	0.78	12.34%	7.74%	10.66%	11.08%
OGE Energy Corporation	OGE	4.60%	0.95	12.34%	7.74%	11.99%	12.07%
Pinnacle West Capital Corporation	PNW	4.60%	0.77	12.34%	7.74%	10.57%	11.01%
Portland General Electric Company	POR	4.60%	0.78	12.34%	7.74%	10.63%	11.06%
PPL Corporation	PPL	4.60%	0.86	12.34%	7.74%	11.24%	11.52%
Southern Company	SO	4.60%	0.70	12.34%	7.74%	10.05%	10.62%
Xcel Energy Inc.	XEL	4.60%	0.69	12.34%	7.74%	9.92%	10.53%
Mean						10.56%	11.01%
Median						10.60%	11.03%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 44, No. 6, June 2, 2025, at 2
[2] Rebuttal Exhibit AEB-16
[3] Rebuttal Exhibit AEB-17
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPITAL ASSET PRICING MODEL
LONG-TERM PROJECTED RISK-FREE RATE & VALUE LINE LT BETA

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2027 - 2031)	[2] Beta	[3] Market Return	[4] Market Risk Premium	[5] Cost of Equity: CAPM	[6] Cost of Equity: ECAPM
Alliant Energy Corporation	LNT	4.40%	0.78	12.34%	7.94%	10.55%	11.00%
Ameren Corporation	AEE	4.40%	0.75	12.34%	7.94%	10.39%	10.88%
American Electric Power Company, Inc.	AEP	4.40%	0.70	12.34%	7.94%	9.93%	10.53%
Avista Corporation	AVA	4.40%	0.81	12.34%	7.94%	10.82%	11.20%
CMS Energy Corporation	CMS	4.40%	0.72	12.34%	7.94%	10.09%	10.65%
DTE Energy Company	DTE	4.40%	0.79	12.34%	7.94%	10.69%	11.10%
Duke Energy Corporation	DUK	4.40%	0.70	12.34%	7.94%	9.99%	10.58%
Entergy Corporation	ETR	4.40%	0.78	12.34%	7.94%	10.62%	11.05%
IDACORP, Inc.	IDA	4.40%	0.75	12.34%	7.94%	10.36%	10.85%
NextEra Energy, Inc.	NEE	4.40%	0.78	12.34%	7.94%	10.59%	11.03%
NorthWestern Corporation	NWE	4.40%	0.78	12.34%	7.94%	10.62%	11.05%
OGE Energy Corporation	OGE	4.40%	0.95	12.34%	7.94%	11.98%	12.07%
Pinnacle West Capital Corporation	PNW	4.40%	0.77	12.34%	7.94%	10.52%	10.98%
Portland General Electric Company	POR	4.40%	0.78	12.34%	7.94%	10.59%	11.03%
PPL Corporation	PPL	4.40%	0.86	12.34%	7.94%	11.22%	11.50%
Southern Company	SO	4.40%	0.70	12.34%	7.94%	9.99%	10.58%
Xcel Energy Inc.	XEL	4.40%	0.69	12.34%	7.94%	9.86%	10.48%
Mean						10.52%	10.97%
Median						10.55%	11.00%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 44, No. 6, June 2, 2025, at 14
[2] Rebuttal Exhibit AEB-16
[3] Rebuttal Exhibit AEB-17
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

HISTORICAL BETA - 2013 - 2024

Company	Ticker	[1] 12/31/2013	[2] 12/31/2014	[3] 12/31/2015	[4] 12/31/2016	[5] 12/31/2017	[6] 12/31/2018	[7] 12/31/2019	[8] 12/31/2020	[9] 12/31/2021	[10] 12/31/2022	[11] 12/31/2023	[12] 12/31/2024	[13] Average
Alliant Energy Corporation	LNT	0.75	0.80	0.80	0.70	0.70	0.60	0.60	0.85	0.85	0.85	0.90	0.90	0.78
Ameren Corporation	AEE	0.80	0.75	0.75	0.65	0.70	0.55	0.55	0.85	0.80	0.85	0.90	0.90	0.75
American Electric Power Company, Inc.	AEP	0.70	0.70	0.70	0.65	0.65	0.55	0.55	0.75	0.75	0.75	0.80	0.80	0.70
Avista Corporation	AVA	0.75	0.80	0.80	0.70	0.75	0.65	0.60	0.95	0.95	0.90	0.90	0.95	0.81
CMS Energy Corporation	CMS	0.70	0.70	0.75	0.65	0.65	0.55	0.50	0.80	0.80	0.80	0.85	0.85	0.72
DTE Energy Company	DTE	0.80	0.75	0.75	0.65	0.65	0.55	0.55	0.95	0.95	0.95	0.95	1.00	0.79
Duke Energy Corporation	DUK	0.65	0.60	0.65	0.60	0.60	0.50	0.50	0.85	0.85	0.85	0.90	0.90	0.70
Entergy Corporation	ETR	0.70	0.70	0.70	0.65	0.65	0.60	0.60	0.95	0.95	0.95	0.95	1.00	0.78
IDACORP, Inc.	IDA	0.75	0.80	0.80	0.75	0.70	0.55	0.55	0.80	0.80	0.80	0.85	0.85	0.75
NextEra Energy, Inc.	NEE	0.70	0.70	0.75	0.65	0.65	0.55	0.55	0.90	0.90	0.95	1.00	1.05	0.78
NorthWestern Corporation	NWE	0.70	0.70	0.70	0.70	0.70	0.55	0.60	0.95	0.95	0.90	0.95	1.00	0.78
OGE Energy Corporation	OGE	0.85	0.90	0.95	0.90	0.95	0.85	0.75	1.10	1.05	1.00	1.05	1.10	0.95
Pinnacle West Capital Corporation	PNW	0.75	0.70	0.75	0.70	0.70	0.55	0.50	0.90	0.90	0.90	0.95	0.95	0.77
Portland General Electric Company	POR	0.75	0.80	0.80	0.70	0.70	0.60	0.55	0.85	0.90	0.85	0.90	0.95	0.78
PPL Corporation	PPL	0.65	0.60	0.70	0.70	0.75	0.70	0.70	1.15	1.10	1.05	1.10	1.10	0.86
Southern Company	SO	0.55	0.55	0.60	0.55	0.55	0.50	0.50	0.90	0.95	0.90	0.95	0.95	0.70
Xcel Energy Inc.	XEL	0.65	0.65	0.65	0.60	0.60	0.50	0.50	0.80	0.80	0.80	0.85	0.85	0.69
Mean		0.72	0.72	0.74	0.68	0.69	0.58	0.57	0.90	0.90	0.89	0.93	0.95	0.77

Notes:
[1] Value Line, dated December 26, 2013.
[2] Value Line, dated December 31, 2014.
[3] Value Line, dated December 30, 2015.
[4] Value Line, dated December 29, 2016.
[5] Value Line, dated December 28, 2017.
[6] Value Line, dated December 27, 2018.
[7] Value Line, dated December 26, 2019.
[8] Value Line, dated December 30, 2020.
[9] Value Line, dated December 29, 2021.
[10] Value Line, dated December 30, 2022.
[11] Value Line, Dated December 29, 2023.
[12] Value Line, Dated December 27, 2024.
[13] Average ([1] - [12])

MARKET RISK PREMIUM DERIVED FROM ANALYSTS' LONG-TERM GROWTH ESTIMATES

[1] Estimated Weighted Average Dividend Yield	1.52%
[2] Estimated Weighted Average Long-Term Growth Rate	10.74%
[3] S&P 500 Estimated Required Market Return	12.34%

STANDARD AND POOR'S 500 INDEX

		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Name	Ticker	Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	321.40	59.44	19,104.02	0.05%	9.22%	0.00%	6.30%	0.00%
American Express Co	AXP	700.59	264.81	185,522.94	0.51%	1.24%	0.01%	14.67%	0.07%
Verizon Communications Inc	VZ	4,216.25	41.91	176,703.24	0.48%	6.47%	0.03%	2.62%	0.01%
Texas Pacific Land Corp	TPL	22.98	1,334.63	30,676.20		0.48%			
Broadcom Inc	AVGO	4,701.95	192.31	904,231.76		1.23%		23.48%	
Boeing Co/The	BA	754.01	177.95	134,175.27				31.75%	
Solventum Corp	SOLV	173.00	66.07	11,430.30				-0.25%	
Caterpillar Inc	CAT	477.93	306.45	146,462.27	0.40%	1.84%	0.01%	3.10%	0.01%
JPMorgan Chase & Co	JPM	2,783.00	243.55	677,798.75	1.85%	2.30%	0.04%	6.34%	0.12%
Chevron Corp	CVX	1,746.72	138.73	242,322.36	0.66%	4.93%	0.03%	11.58%	0.08%
Coca-Cola Co/The	KO	4,303.57	71.91	309,469.49	0.84%	2.84%	0.02%	5.69%	0.05%
AbbVie Inc	ABBV	1,768.98	186.06	329,136.10	0.90%	3.53%	0.03%	12.90%	0.12%
Walt Disney Co/The	DIS	1,807.79	90.28	163,207.18	0.44%	1.11%	0.00%	12.81%	0.06%
Corpay Inc	CPAY	70.25	322.03	22,622.58	0.06%			11.99%	0.01%
Extra Space Storage Inc	EXR	212.23	141.05	29,934.39	0.08%	4.59%	0.00%	3.10%	0.00%
Exxon Mobil Corp	XOM	4,325.29	108.57	469,597.13	1.28%	3.65%	0.05%	11.37%	0.15%
Phillips 66	PSX	407.44	103.97	42,361.25		4.62%		25.92%	
General Electric Co	GE	1,066.39	198.43	211,603.10	0.58%	0.73%	0.00%	18.48%	0.11%
HP Inc	HPQ	942.70	25.28	23,831.53		4.58%			
Home Depot Inc/The	HD	993.93	357.58	355,408.83	0.97%	2.57%	0.02%	5.00%	0.05%
Monolithic Power Systems Inc	MPWR	47.88	583.72	27,946.97		1.07%			
International Business Machines Corp	IBM	929.40	232.41	216,001.06	0.59%	2.89%	0.02%	3.70%	0.02%
Johnson & Johnson	JNJ	2,406.07	154.58	371,930.81	1.01%	3.36%	0.03%	7.00%	0.07%
Lululemon Athletica Inc	LULU	115.52	267.90	30,948.14					
McDonald's Corp	MCD	715.07	316.74	226,491.94	0.62%	2.24%	0.01%	8.40%	0.05%
Merck & Co Inc	MRK	2,516.39	82.74	208,206.45	0.57%	3.92%	0.02%	14.62%	0.08%
3M Co	MMM	538.18	137.32	73,903.06	0.20%	2.13%	0.00%	6.18%	0.01%
American Water Works Co Inc	AWK	195.01	143.97	28,075.73	0.08%	2.30%	0.00%	8.00%	0.01%
Bank of America Corp	BAC	7,602.80	39.69	301,755.07		2.62%			
Pfizer Inc	PFE	5,671.45	22.92	129,989.74	0.35%	7.50%	0.03%	0.85%	0.00%
Procter & Gamble Co/The	PG	2,344.54	161.02	377,518.16	1.03%	2.63%	0.03%	3.76%	0.04%
AT&T Inc	T	7,178.18	26.81	192,447.09	0.52%	4.14%	0.02%	3.95%	0.02%
Travelers Cos Inc/The	TRV	226.57	259.16	58,717.57	0.16%	1.70%	0.00%	2.44%	0.00%
RTX Corp	RTX	1,335.95	125.22	167,288.13	0.46%	2.17%	0.01%	7.41%	0.03%
Analog Devices Inc	ADI	495.98	194.59	96,512.06	0.26%	2.04%	0.01%	16.72%	0.04%
Walmart Inc	WMT	8,000.89	95.09	760,804.34	2.07%	0.99%	0.02%	8.01%	0.17%
Cisco Systems Inc	CSCO	3,978.29	56.71	225,608.96	0.61%	2.89%	0.02%	5.02%	0.03%
Intel Corp	INTC	4,362.00	20.05	87,458.10	0.24%			15.96%	0.04%
General Motors Co	GM	966.28	47.11	45,521.47	0.12%	1.27%	0.00%	0.47%	0.00%
Microsoft Corp	MSFT	7,433.98	391.85	2,913,005.94	7.93%	0.85%	0.07%	13.38%	1.06%
Dollar General Corp	DG	219.95	93.56	20,578.25	0.06%	2.52%	0.00%	5.74%	0.00%
Cigna Group/The	CI	271.11	335.36	90,918.81	0.25%	1.80%	0.00%	10.86%	0.03%
Kinder Morgan Inc	KMI	2,222.07	26.85	59,662.55		4.36%			
Citigroup Inc	C	1,882.16	68.43	128,796.21		3.27%		23.17%	
American International Group Inc	AIG	583.77	81.22	47,414.05	0.13%	2.22%	0.00%	14.77%	0.02%
Altria Group Inc	MO	1,686.34	58.26	98,246.25	0.27%	7.00%	0.02%	4.37%	0.01%
HCA Healthcare Inc	HCA	246.20	327.92	80,734.99	0.22%	0.88%	0.00%	9.24%	0.02%
International Paper Co	IP	527.88	47.35	24,994.92		3.91%		54.45%	
Hewlett Packard Enterprise Co	HPE	1,313.58	16.24	21,332.51	0.06%	3.20%	0.00%	4.02%	0.00%
Abbott Laboratories	ABT	1,734.32	128.85	223,467.57	0.61%	1.83%	0.01%	9.85%	0.06%
Aflac Inc	AFL	545.81	107.94	58,915.23	0.16%	2.15%	0.00%	4.59%	0.01%
Air Products and Chemicals Inc	APD	222.48	267.11	59,425.48	0.16%	2.68%	0.00%	4.61%	0.01%
Super Micro Computer Inc	SMCI	596.75	36.47	21,763.54					
Royal Caribbean Cruises Ltd	RCL	271.51	211.97	57,551.83		1.42%		21.82%	
Hess Corp	HES	309.31	132.34	40,934.05		1.51%			
Lennox International Inc	LII	35.48	527.31	18,711.51		0.99%			
Archer-Daniels-Midland Co	ADM	480.16	48.25	23,167.51	0.06%	4.23%	0.00%	4.44%	0.00%
Automatic Data Processing Inc	ADP	406.87	291.76	118,708.65	0.32%	2.11%	0.01%	9.70%	0.03%
Verisk Analytics Inc	VRSK	139.94	286.05	40,031.16	0.11%	0.63%	0.00%	10.35%	0.01%
AutoZone Inc	AZO	16.73	3,609.33	60,379.25	0.16%			8.70%	0.01%
Linde PLC	LIN	472.91	448.40	212,053.57	0.58%	1.34%	0.01%	6.94%	0.04%
Avery Dennison Corp	AVY	78.97	170.75	13,483.44	0.04%	2.20%	0.00%	6.53%	0.00%
Enphase Energy Inc	ENPH	131.21	46.83	6,144.42				42.49%	
MSCI Inc	MSCI	77.60	535.36	41,544.81	0.11%	1.34%	0.00%	9.73%	0.01%
Ball Corp	BALL	282.38	50.56	14,277.08	0.04%	1.58%	0.00%	10.58%	0.00%
Axon Enterprise Inc	AXON	77.85	603.78	47,003.16					
Dayforce Inc	DAY	158.26	57.81	9,149.15					
Carrier Global Corp	CARR	863.99	60.06	51,891.09	0.14%	1.50%	0.00%	13.47%	0.02%
Bank of New York Mellon Corp/The	BK	717.97	78.65	56,468.65	0.15%	2.39%	0.00%	13.11%	0.02%
Otis Worldwide Corp	OTIS	394.68	92.93	36,677.30		1.81%			
Baxter International Inc	BAX	512.92	30.22	15,500.57	0.04%	2.25%	0.00%	13.59%	0.01%
Becton Dickinson & Co	BDX	287.14	205.08	58,885.73	0.16%	2.03%	0.00%	8.66%	0.01%
Berkshire Hathaway Inc	BRK/B	1,339.91	530.96	711,436.30					
Best Buy Co Inc	BBY	211.37	67.71	14,311.84	0.04%	5.61%	0.00%	4.17%	0.00%
Boston Scientific Corp	BSX	1,479.07	101.90	150,717.25	0.41%			12.56%	0.05%
Bristol-Myers Squibb Co	BMY	2,035.08	47.90	97,480.37		5.18%		80.00%	
Brown-Forman Corp	BF/B	303.54	33.96	10,308.22		2.67%		-2.71%	
Coterra Energy Inc	CTRA	764.10	25.37	19,385.12		3.47%		29.09%	
Hilton Worldwide Holdings Inc	HLT	239.61	219.62	52,624.03	0.14%	0.27%	0.00%	12.38%	0.02%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Carnival Corp	CCL	1,166.61	18.60	21,698.89				22.81%	
Builders FirstSource Inc	BLDR	113.74	121.35	13,802.69	0.04%			1.84%	0.00%
UDR Inc	UDR	331.13	41.30	13,675.81	0.04%	4.16%	0.00%	1.20%	0.00%
Clorox Co/The	CLX	123.19	138.27	17,033.46	0.05%	3.53%	0.00%	6.13%	0.00%
Paycom Software Inc	PAYC	57.85	227.60	13,167.19	0.04%	0.66%	0.00%	9.16%	0.00%
CMS Energy Corp	CMS	299.12	72.18	21,590.75	0.06%	3.01%	0.00%	7.60%	0.00%
Colgate-Palmolive Co	CL	810.42	93.91	76,106.55	0.21%	2.21%	0.00%	4.43%	0.01%
EPAM Systems Inc	EPAM	57.27	159.12	9,112.83	0.02%			8.81%	0.00%
Conagra Brands Inc	CAG	477.36	24.45	11,671.51		5.73%		-3.22%	
Airbnb Inc	ABNB	440.00	122.51	53,904.66	0.15%			9.86%	0.01%
Consolidated Edison Inc	ED	360.20	110.45	39,784.12	0.11%	3.08%	0.00%	4.89%	0.01%
Corning Inc	GLW	856.78	44.18	37,852.41	0.10%	2.54%	0.00%	17.67%	0.02%
GoDaddy Inc	GDDY	142.44	183.40	26,122.67					
Cummins Inc	CMI	137.74	293.26	40,394.39	0.11%	2.48%	0.00%	8.11%	0.01%
Caesars Entertainment Inc	CZR	208.86	28.44	5,940.03				58.74%	
Danaher Corp	DHR	715.67	197.14	141,087.10	0.38%	0.65%	0.00%	8.67%	0.03%
Target Corp	TGT	455.58	96.58	43,999.57		4.64%			
Williams-Sonoma Inc	WSM	123.51	151.19	18,673.40	0.05%	1.75%	0.00%	4.50%	0.00%
Deere & Co	DE	271.41	459.30	124,660.42		1.41%			
Dominion Energy Inc	D	852.22	52.95	45,124.79		5.04%		23.30%	
Dover Corp	DOV	137.10	169.01	23,172.01	0.06%	1.22%	0.00%	10.05%	0.01%
Alliant Energy Corp	LNT	256.87	60.74	15,602.48	0.04%	3.34%	0.00%	6.09%	0.00%
Steel Dynamics Inc	STLD	149.90	127.34	19,087.86		1.57%			
Duke Energy Corp	DUK	777.02	119.85	93,126.05	0.25%	3.49%	0.01%	8.00%	0.02%
Regency Centers Corp	REG	181.53	71.42	12,964.58	0.04%	3.95%	0.00%	4.52%	0.00%
Eaton Corp PLC	ETN	391.77	288.82	113,150.83	0.31%	1.44%	0.00%	12.42%	0.04%
Ecolab Inc	ECL	283.63	238.14	67,544.26	0.18%	1.09%	0.00%	13.24%	0.02%
Revvity Inc	RVTY	120.15	94.29	11,328.69	0.03%	0.30%	0.00%	8.52%	0.00%
Dell Technologies Inc	DELL	358.71	94.89	34,038.03	0.09%	2.21%	0.00%	13.18%	0.01%
Emerson Electric Co	EMR	563.90	105.28	59,367.39	0.16%	2.00%	0.00%	9.10%	0.01%
EOG Resources Inc	EOG	551.54	113.07	62,363.13		3.61%		-7.26%	
Aon PLC	AON	216.00	335.85	72,543.97	0.20%	0.89%	0.00%	9.99%	0.02%
Entergy Corp	ETR	446.34	84.61	37,764.90	0.10%	2.84%	0.00%	5.80%	0.01%
Equifax Inc	EFX	124.20	256.48	31,854.57	0.09%	0.78%	0.00%	14.23%	0.01%
EQT Corp	EQT	598.63	50.24	30,074.97		1.25%		46.31%	
IQVIA Holdings Inc	IQV	176.32	150.28	26,496.62	0.07%			9.22%	0.01%
Gartner Inc	IT	77.06	416.09	32,063.56					
FedEx Corp	FDX	239.60	211.56	50,689.55	0.14%	2.61%	0.00%	11.06%	0.02%
Brown & Brown Inc	BRO	286.63	114.44	32,801.66	0.09%	0.52%	0.00%	8.98%	0.01%
Ford Motor Co	F	3,905.70	10.04	39,213.18	0.11%	5.98%	0.01%	0.18%	0.00%
NextEra Energy Inc	NEE	2,058.63	66.09	136,054.93	0.37%	3.43%	0.01%	7.40%	0.03%
Franklin Resources Inc	BEN	525.40	18.72	9,835.45		6.84%		-3.45%	
Garmin Ltd	GRMN	192.64	198.96	38,327.90	0.10%	1.81%	0.00%	11.16%	0.01%
Freeport-McMoRan Inc	FCX	1,437.07	37.35	53,674.68	0.15%	1.61%	0.00%	16.50%	0.02%
Expand Energy Corp	EXE	237.97	105.30	25,058.67		2.18%		62.31%	
Dexcom Inc	DXCM	392.11	71.66	28,098.42				21.20%	
General Dynamics Corp	GD	268.40	271.97	72,995.70	0.20%	2.21%	0.00%	13.82%	0.03%
General Mills Inc	GIS	547.60	56.14	30,742.29		4.28%		-2.42%	
Genuine Parts Co	GPC	138.79	116.64	16,188.42		3.53%			
Atmos Energy Corp	ATO	158.73	158.14	25,101.28	0.07%	2.20%	0.00%	7.14%	0.00%
WW Grainger Inc	GWW	48.17	1,013.87	48,839.57	0.13%	0.89%	0.00%	5.89%	0.01%
Halliburton Co	HAL	859.72	20.85	17,925.06		3.26%		-2.39%	
L3Harris Technologies Inc	LHX	186.95	216.08	40,395.21	0.11%	2.22%	0.00%	11.51%	0.01%
Healthpeak Properties Inc	DOC	698.60	17.83	12,455.97	0.03%	6.84%	0.00%	4.74%	0.00%
Insulet Corp	PODD	70.23	260.71	18,308.65				25.86%	
Fortive Corp	FTV	339.88	68.92	23,424.27	0.06%	0.46%	0.00%	6.28%	0.00%
Hershey Co/The	HSY	147.95	163.28	24,157.19		3.36%		-9.26%	
Synchrony Financial	SYF	380.65	51.42	19,573.06	0.05%	2.33%	0.00%	17.55%	0.01%
Hormel Foods Corp	HRL	549.91	29.70	16,332.40	0.04%	3.91%	0.00%	5.97%	0.00%
Arthur J Gallagher & Co	AJG	255.73	322.30	82,423.33		0.81%			
Mondelez International Inc	MDLZ	1,295.54	65.59	84,974.14		2.87%			
CenterPoint Energy Inc	CNP	652.73	38.19	24,927.63	0.07%	2.30%	0.00%	8.05%	0.01%
Humana Inc	HUM	120.69	264.40	31,911.13	0.09%	1.34%	0.00%	10.76%	0.01%
Willis Towers Watson PLC	WTW	99.15	302.19	29,962.08	0.08%	1.22%	0.00%	7.08%	0.01%
Illinois Tool Works Inc	ITW	293.37	239.50	70,261.15	0.19%	2.51%	0.00%	2.25%	0.00%
CDW Corp/DE	CDW	131.77	157.95	20,812.55	0.06%	1.58%	0.00%	6.38%	0.00%
Trane Technologies PLC	TT	223.18	347.97	77,658.53	0.21%	1.08%	0.00%	10.09%	0.02%
Interpublic Group of Cos Inc/The	IPG	369.73	24.56	9,080.68		5.37%			
International Flavors & Fragrances Inc	IFF	255.74	76.24	19,497.24	0.05%	2.10%	0.00%	4.29%	0.00%
Generac Holdings Inc	GNRC	59.61	112.89	6,729.83	0.02%			17.92%	0.00%
NXP Semiconductors NV	NXPI	253.62	193.55	49,088.17	0.13%	2.10%	0.00%	4.83%	0.01%
Kellanova	K	345.22	82.62	28,521.74	0.08%	2.76%	0.00%	3.02%	0.00%
Broadridge Financial Solutions Inc	BR	117.02	237.72	27,817.68		1.48%			
Kimberly-Clark Corp	KMB	331.82	131.61	43,670.31	0.12%	3.83%	0.00%	3.40%	0.00%
Kimco Realty Corp	KIM	679.50	20.35	13,827.80	0.04%	4.91%	0.00%	3.80%	0.00%
Oracle Corp	ORCL	2,804.23	138.49	388,358.37	1.06%	1.44%	0.02%	8.44%	0.09%
Kroger Co/The	KR	660.89	70.00	46,262.54	0.13%	1.83%	0.00%	6.11%	0.01%
Lennar Corp	LEN	232.18	107.63	24,990.01		1.86%		-4.18%	
Eli Lilly & Co	LLY	947.99	884.54	838,534.32	2.28%	0.68%	0.02%	19.30%	0.44%
Charter Communications Inc	CHTR	140.36	373.65	52,447.09				20.49%	
Loews Corp	L	210.34	85.27	17,935.85		0.29%			
Lowe's Cos Inc	LOW	559.71	220.91	123,644.61	0.34%	2.17%	0.01%	6.22%	0.02%
Hubbell Inc	HUBB	53.57	359.84	19,277.84		1.47%			
IDEX Corp	IEX	75.54	173.00	13,069.13		1.64%			
Marsh & McLennan Cos Inc	MMC	492.73	219.24	108,025.63	0.29%	1.49%	0.00%	8.52%	0.03%
Masco Corp	MAS	210.94	60.42	12,745.12	0.03%	2.05%	0.00%	7.38%	0.00%
S&P Global Inc	SPGI	313.84	480.00	150,643.23	0.41%	0.80%	0.00%	14.70%	0.06%
Medtronic PLC	MDT	1,282.54	84.16	107,938.86	0.29%	3.37%	0.01%	5.30%	0.02%
Viatris Inc	VTRS	1,193.69	8.13	9,704.69		5.90%		-3.79%	
CVS Health Corp	CVS	1,262.38	65.32	82,458.91	0.22%	4.07%	0.01%	14.85%	0.03%
DuPont de Nemours Inc	DD	418.50	65.69	27,491.17	0.07%	2.50%	0.00%	6.89%	0.01%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Micron Technology Inc	MU	1,117.57	79.78	89,159.86		0.58%			
Motorola Solutions Inc	MSI	166.96	430.22	71,831.06	0.20%	1.01%	0.00%	7.41%	0.01%
Cboe Global Markets Inc	CBOE	104.71	213.59	22,365.54	0.06%	1.18%	0.00%	10.54%	0.01%
Newmont Corp	NEM	1,113.00	53.94	60,035.05	0.16%	1.85%	0.00%	14.18%	0.02%
NIKE Inc	NKE	1,178.10	57.62	67,882.28		2.78%		-6.80%	
NiSource Inc	NI	470.61	39.45	18,565.38	0.05%	2.84%	0.00%	7.22%	0.00%
Norfolk Southern Corp	NSC	225.44	221.71	49,983.08	0.14%	2.44%	0.00%	11.89%	0.02%
Principal Financial Group Inc	PFG	224.97	73.46	16,526.42	0.05%	4.14%	0.00%	12.17%	0.01%
Eversource Energy	ES	367.08	57.86	21,239.36	0.06%	5.20%	0.00%	4.47%	0.00%
Northrop Grumman Corp	NOC	143.93	473.20	68,106.81	0.19%	1.95%	0.00%	4.19%	0.01%
Wells Fargo & Co	WFC	3,265.16	69.73	227,679.53	0.62%	2.29%	0.01%	14.29%	0.09%
Nucor Corp	NUE	230.75	115.72	26,701.94		1.90%			
Occidental Petroleum Corp	OXY	939.78	40.36	37,929.62		2.38%			
Omnicom Group Inc	OMC	195.11	74.92	14,617.60	0.04%	3.74%	0.00%	4.99%	0.00%
ONEOK Inc	OKE	624.62	86.31	53,911.09		4.77%			
Raymond James Financial Inc	RJF	204.91	137.37	28,148.49	0.08%	1.46%	0.00%	8.07%	0.01%
PG&E Corp	PCG	2,675.43	17.14	45,856.85		0.58%			
Parker-Hannifin Corp	PH	128.76	598.02	77,003.95	0.21%	1.20%	0.00%	7.09%	0.01%
Rollins Inc	ROL	484.65	55.31	26,805.80		1.19%			
PPL Corp	PPL	739.05	35.93	26,554.12		3.03%			
Aptiv PLC	APTV	229.45	55.93	12,832.94					
ConocoPhillips	COP	1,264.17	91.72	115,949.25		3.40%			
PulteGroup Inc	PHM	200.43	101.88	20,419.52		0.86%		-1.13%	
Pinnacle West Capital Corp	PNW	119.21	93.75	11,176.40		3.82%			
PNC Financial Services Group Inc/The	PNC	395.75	158.46	62,710.48	0.17%	4.04%	0.01%	7.49%	0.01%
PPG Industries Inc	PPG	226.97	102.57	23,280.82	0.06%	2.65%	0.00%	5.76%	0.00%
DoorDash Inc	DASH	398.14	187.76	74,755.03				150.66%	
Progressive Corp/The	PGR	586.24	265.01	155,358.43	0.42%	0.15%	0.00%	13.88%	0.06%
Veralto Corp	VLTO	248.05	92.31	22,897.66		0.48%			
Public Service Enterprise Group Inc	PEG	498.56	81.03	40,398.44	0.11%	3.11%	0.00%	8.56%	0.01%
Cooper Cos Inc/The	COO	199.98	80.89	16,176.48	0.04%			10.21%	0.00%
Edison International	EIX	385.02	57.96	22,315.96	0.06%	5.71%	0.00%	9.71%	0.01%
Schlumberger NV	SLB	1,360.16	34.52	46,952.78		3.30%		-0.49%	
Charles Schwab Corp/The	SCHW	1,815.92	79.94	145,164.48	0.40%	1.35%	0.01%	19.69%	0.08%
Sherwin-Williams Co/The	SHW	251.51	331.62	83,405.80	0.23%	0.95%	0.00%	5.91%	0.01%
West Pharmaceutical Services Inc	WST	71.85	214.55	15,414.42	0.04%	0.39%	0.00%	6.27%	0.00%
J M Smucker Co/The	SJM	106.42	115.23	12,262.39	0.03%	3.75%	0.00%	3.28%	0.00%
Snap-on Inc	SNA	52.29	308.76	16,145.38	0.04%	2.77%	0.00%	3.46%	0.00%
AMETEK Inc	AME	230.75	166.69	38,463.20	0.10%	0.74%	0.00%	8.18%	0.01%
Uber Technologies Inc	UBER	2,091.26	77.75	162,595.32				-5.22%	
Southern Co/The	SO	1,100.19	90.43	99,490.51	0.27%	3.27%	0.01%	6.42%	0.02%
Truist Financial Corp	TFC	1,305.39	37.67	49,174.07	0.13%	5.52%	0.01%	7.53%	0.01%
Southwest Airlines Co	LUV	569.87	26.49	15,095.75		2.72%		57.29%	
W R Berkley Corp	WRB	379.31	70.48	26,733.97	0.07%	0.45%	0.00%	6.85%	0.00%
Stanley Black & Decker Inc	SWK	154.54	61.58	9,516.42		5.33%			
Public Storage	PSA	175.42	290.91	51,030.70	0.14%	4.12%	0.01%	3.96%	0.01%
Arista Networks Inc	ANET	1,255.63	77.91	97,825.78	0.27%			14.97%	0.04%
Sysco Corp	SYY	489.23	70.93	34,701.06		3.05%			
Corteva Inc	CTVA	683.01	61.47	41,984.91	0.11%	1.11%	0.00%	16.85%	0.02%
Texas Instruments Inc	TXN	908.47	162.86	147,953.76	0.40%	3.34%	0.01%	11.66%	0.05%
Textron Inc	TXT	180.54	68.42	12,352.46	0.03%	0.12%	0.00%	10.03%	0.00%
Thermo Fisher Scientific Inc	TMO	377.49	424.24	160,147.33	0.44%	0.41%	0.00%	8.08%	0.04%
TJX Cos Inc/The	TJX	1,117.10	126.56	141,380.24	0.38%	1.34%	0.01%	8.16%	0.03%
Globe Life Inc	GL	83.24	122.96	10,235.53		0.88%			
Johnson Controls International plc	JCI	660.14	81.07	53,517.48	0.15%	1.83%	0.00%	9.92%	0.01%
Ulta Beauty Inc	ULTA	45.15	383.67	17,321.89	0.05%			3.57%	0.00%
Union Pacific Corp	UNP	597.48	213.29	127,435.57	0.35%	2.51%	0.01%	9.19%	0.03%
Keysight Technologies Inc	KEYS	172.81	144.01	24,886.44	0.07%			12.93%	0.01%
UnitedHealth Group Inc	UNH	910.22	418.64	381,056.09	1.04%	2.01%	0.02%	6.78%	0.07%
Blackstone Inc	BX	729.42	132.86	96,910.20		2.80%		21.63%	
Ventas Inc	VTR	437.70	68.16	29,833.48	0.08%	2.82%	0.00%	10.12%	0.01%
Labcorp Holdings Inc	LH	83.67	228.31	19,102.32	0.05%	1.26%	0.00%	10.11%	0.01%
Vulcan Materials Co	VMC	132.10	247.04	32,634.28	0.09%	0.79%	0.00%	13.07%	0.01%
Weyerhaeuser Co	WY	725.85	24.81	18,008.31	0.05%	3.39%	0.00%	1.24%	0.00%
Williams Cos Inc/The	WMB	1,220.69	59.03	72,057.14		3.39%			
Constellation Energy Corp	CEG	315.12	222.99	70,268.82	0.19%	0.70%	0.00%	12.06%	0.02%
WEC Energy Group Inc	WEC	319.09	107.73	34,375.48	0.09%	3.31%	0.00%	7.53%	0.01%
Adobe Inc	ADBE	426.20	367.72	156,722.26	0.43%			13.49%	0.06%
Vistra Corp	VST	340.16	126.64	43,077.49	0.12%	0.71%	0.00%	3.01%	0.00%
AES Corp/The	AES	711.90	10.05	7,154.60	0.02%	7.00%	0.00%	3.46%	0.00%
Expeditors International of Washington Inc	EXPD	137.76	108.58	14,957.62	0.04%	1.42%	0.00%	3.54%	0.00%
Amgen Inc	AMGN	537.65	280.84	150,993.80	0.41%	3.39%	0.01%	4.92%	0.02%
Apple Inc	AAPL	15,022.07	209.28	3,143,819.44	8.56%	0.50%	0.04%	12.77%	1.09%
Autodesk Inc	ADSK	213.00	269.93	57,495.09	0.16%			14.58%	0.02%
Cintas Corp	CTAS	403.79	208.40	84,149.20	0.23%	0.75%	0.00%	14.37%	0.03%
Comcast Corp	CMCSA	3,724.26	33.90	126,252.40	0.34%	3.89%	0.01%	3.20%	0.01%
Molson Coors Beverage Co	TAP	190.29	56.80	10,808.59	0.03%	3.31%	0.00%	6.21%	0.00%
KLA Corp	KLAC	132.89	694.61	92,304.47	0.25%	1.09%	0.00%	15.89%	0.04%
Marriott International Inc/MD	MAR	275.37	236.20	65,043.05	0.18%	1.13%	0.00%	10.45%	0.02%
Fiserv Inc	FI	554.43	177.53	98,428.64	0.27%			15.52%	0.04%
McCormick & Co Inc/MD	MKC	252.68	74.54	18,834.90	0.05%	2.41%	0.00%	6.37%	0.00%
PACCAR Inc	PCAR	524.93	91.89	48,236.26		1.44%			
Costco Wholesale Corp	COST	443.68	977.16	433,549.63	1.18%	0.53%	0.01%	8.86%	0.10%
Stryker Corp	SYK	381.69	365.06	139,339.33	0.38%	0.92%	0.00%	10.33%	0.04%
Tyson Foods Inc	TSN	286.19	60.62	17,348.56	0.05%	3.30%	0.00%	19.57%	0.01%
Lamb Weston Holdings Inc	LW	141.12	51.94	7,329.55		2.85%			
Applied Materials Inc	AMAT	812.44	151.55	123,125.41	0.34%	1.21%	0.00%	9.44%	0.03%
Cardinal Health Inc	CAH	241.57	137.56	33,230.09	0.09%	1.49%	0.00%	9.69%	0.01%
Cincinnati Financial Corp	CINF	156.56	133.69	20,931.14	0.06%	2.60%	0.00%	2.85%	0.00%
Paramount Global	PARA	630.01	11.73	7,389.99		1.71%			
DR Horton Inc	DHI	307.18	124.56	38,262.50	0.10%	1.28%	0.00%	1.58%	0.00%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Electronic Arts Inc	EA	260.62	146.60	38,206.54	0.10%	0.52%	0.00%	10.27%	0.01%
Erie Indemnity Co	ERIE	46.19	361.85	16,713.51		1.51%			
Fair Isaac Corp	FICO	24.42	1,952.31	47,671.78				27.55%	
Fastenal Co	FAST	573.62	80.73	46,308.39	0.13%	1.09%	0.00%	10.52%	0.01%
M&T Bank Corp	MTB	164.29	167.39	27,500.56	0.07%	3.23%	0.00%	11.79%	0.01%
Xcel Energy Inc	XEL	576.76	69.00	39,796.48		3.30%			
Fifth Third Bancorp	FITB	668.10	35.28	23,570.53		4.20%			
Gilead Sciences Inc	GILD	1,245.16	103.17	128,463.45		3.06%		28.62%	
Hasbro Inc	HAS	139.89	60.99	8,532.09	0.02%	4.59%	0.00%	8.59%	0.00%
Huntington Bancshares Inc/OH	HBAN	1,460.75	14.40	21,034.86	0.06%	4.31%	0.00%	12.92%	0.01%
Welltower Inc	WELL	651.54	146.96	95,749.79	0.26%	1.82%	0.00%	16.89%	0.04%
Biogen Inc	BIIB	146.37	118.84	17,395.20	0.05%			1.22%	0.00%
Northern Trust Corp	NTRS	194.97	91.59	17,857.45	0.05%	3.28%	0.00%	9.64%	0.00%
Packaging Corp of America	PKG	89.93	184.82	16,620.52	0.05%	2.71%	0.00%	7.40%	0.00%
Paychex Inc	PAYX	360.19	143.21	51,582.91	0.14%	3.02%	0.00%	6.24%	0.01%
QUALCOMM Inc	QCOM	1,106.00	148.56	164,307.36	0.45%	2.40%	0.01%	15.26%	0.07%
Ross Stores Inc	ROST	328.83	139.71	45,941.43	0.13%	1.16%	0.00%	5.78%	0.01%
IDEXX Laboratories Inc	IDXX	81.04	437.44	35,449.72	0.10%			11.51%	0.01%
Starbucks Corp	SBUX	1,135.90	83.81	95,199.78	0.26%	2.91%	0.01%	8.60%	0.02%
KeyCorp	KEY	1,095.72	14.72	16,128.96	0.04%	5.57%	0.00%	19.35%	0.01%
Fox Corp	FOXA	217.85	49.35	10,750.74	0.03%	1.09%	0.00%	10.12%	0.00%
Fox Corp	FOX	235.58	45.79	10,787.26	0.03%	1.18%	0.00%	10.12%	0.00%
State Street Corp	STT	288.59	87.38	25,217.08	0.07%	3.48%	0.00%	10.63%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	443.22	17.23	7,636.67	0.02%			13.70%	0.00%
US Bancorp	USB	1,558.01	39.92	62,195.78	0.17%	5.01%	0.01%	10.38%	0.02%
A O Smith Corp	AOS	117.66	64.99	7,646.66		2.09%			
Gen Digital Inc	GEN	616.30	25.26	15,567.77	0.04%	1.98%	0.00%	10.56%	0.00%
T Rowe Price Group Inc	TROW	222.24	88.44	19,655.12		5.74%		-4.02%	
Waste Management Inc	WM	402.33	228.31	91,856.51	0.25%	1.45%	0.00%	10.48%	0.03%
Constellation Brands Inc	STZ	177.99	185.35	32,991.01	0.09%	2.20%	0.00%	1.36%	0.00%
Invesco Ltd	IVZ	447.41	13.93	6,232.47	0.02%	6.03%	0.00%	3.37%	0.00%
Intuit Inc	INTU	279.56	624.12	174,480.24	0.48%	0.67%	0.00%	15.57%	0.07%
Morgan Stanley	MS	1,608.51	116.01	186,602.99	0.51%	3.19%	0.02%	10.29%	0.05%
Microchip Technology Inc	MCHP	537.82	46.89	25,218.33		3.88%		30.33%	
Crowdstrike Holdings Inc	CRWD	247.87	424.88	105,316.46				24.67%	
Chubb Ltd	CB	400.69	279.11	111,835.22	0.30%	1.39%	0.00%	4.24%	0.01%
Hologic Inc	HOLX	225.72	58.02	13,096.45	0.04%			6.51%	0.00%
Citizens Financial Group Inc	CFG	437.13	37.06	16,200.18		4.53%		23.45%	
Jabil Inc	JBL	107.35	146.92	15,771.18	0.04%	0.22%	0.00%	12.83%	0.01%
O'Reilly Automotive Inc	ORLY	57.24	1,347.00	77,102.97	0.21%			9.80%	0.02%
Allstate Corp/The	ALL	265.14	192.91	51,147.98	0.14%	2.07%	0.00%	14.13%	0.02%
Equity Residential	EQR	379.84	68.53	26,030.48	0.07%	4.04%	0.00%	3.64%	0.00%
Keurig Dr Pepper Inc	KDP	1,358.18	34.40	46,721.33	0.13%	2.67%	0.00%	6.20%	0.01%
Host Hotels & Resorts Inc	HST	698.67	13.88	9,697.56		5.76%		-1.61%	
Incyte Corp	INCY	193.52	59.16	11,448.90				25.00%	
Simon Property Group Inc	SPG	326.24	156.66	51,109.29	0.14%	5.36%	0.01%	1.22%	0.00%
Eastman Chemical Co	EMN	115.46	75.84	8,756.50	0.02%	4.38%	0.00%	4.52%	0.00%
AvalonBay Communities Inc	AVB	142.37	205.76	29,293.77	0.08%	3.40%	0.00%	5.91%	0.00%
Prudential Financial Inc	PRU	354.43	102.90	36,470.55	0.10%	5.25%	0.01%	7.66%	0.01%
United Parcel Service Inc	UPS	733.69	97.91	71,835.27	0.20%	6.70%	0.01%	7.16%	0.01%
Walgreens Boots Alliance Inc	WBA	864.74	11.01	9,520.76				-21.75%	
STERIS PLC	STE	98.25	225.00	22,106.43		1.01%			
McKesson Corp	MCK	125.33	695.00	87,101.83	0.24%	0.41%	0.00%	10.84%	0.03%
Lockheed Martin Corp	LMT	234.30	477.64	111,909.12	0.30%	2.76%	0.01%	11.65%	0.04%
Cencora Inc	COR	193.71	285.90	55,382.43	0.15%	0.77%	0.00%	9.97%	0.02%
Capital One Financial Corp	COF	381.48	182.73	69,707.74		1.31%		22.43%	
The Campbell's Company	CPB	298.18	36.29	10,821.02	0.03%	4.30%	0.00%	1.17%	0.00%
Waters Corp	WAT	59.50	337.89	20,103.03	0.05%			8.83%	0.00%
Nordson Corp	NDSN	56.91	188.22	10,711.93		1.66%			
Dollar Tree Inc	DLTR	215.08	80.57	17,329.24	0.05%			8.42%	0.00%
Darden Restaurants Inc	DRI	117.03	199.10	23,299.93	0.06%	2.81%	0.00%	9.10%	0.01%
Evergy Inc	EVRG	229.75	67.88	15,595.15	0.04%	3.93%	0.00%	5.71%	0.00%
Match Group Inc	MTCH	246.68	30.07	7,417.62	0.02%	2.53%	0.00%	11.57%	0.00%
NVR Inc	NVR	2.97	7,071.42	20,995.05	0.06%			4.50%	0.00%
NetApp Inc	NTAP	203.41	88.45	17,991.75	0.05%	2.35%	0.00%	4.98%	0.00%
Old Dominion Freight Line Inc	ODFL	212.15	146.74	31,130.46	0.08%	0.76%	0.00%	7.72%	0.01%
DaVita Inc	DVA	76.86	139.56	10,727.05	0.03%			10.59%	0.00%
Hartford Insurance Group Inc/The	HIG	284.10	118.76	33,740.07	0.09%	1.75%	0.00%	9.44%	0.01%
Iron Mountain Inc	IRM	294.97	87.72	25,874.61		3.58%			
Estee Lauder Cos Inc/The	EL	234.17	59.39	13,907.56	0.04%	2.36%	0.00%	5.02%	0.00%
Cadence Design Systems Inc	CDNS	274.31	289.63	79,449.45	0.22%			13.72%	0.03%
Tyler Technologies Inc	TYL	43.12	524.64	22,624.34					
Universal Health Services Inc	UHS	57.95	171.68	9,949.19	0.03%	0.47%	0.00%	11.12%	0.00%
Skyworks Solutions Inc	SWKS	153.57	61.52	9,447.92		4.55%		-9.34%	
Quest Diagnostics Inc	DGX	111.64	173.76	19,397.78	0.05%	1.84%	0.00%	8.44%	0.00%
Rockwell Automation Inc	ROK	113.07	248.38	28,085.06	0.08%	2.11%	0.00%	10.92%	0.01%
Kraft Heinz Co/The	KHC	1,193.40	29.49	35,193.32		5.43%		-4.68%	
American Tower Corp	AMT	468.12	210.82	98,688.60		3.23%		25.83%	
Regeneron Pharmaceuticals Inc	REGN	106.95	602.64	64,453.26	0.18%	0.58%	0.00%	7.64%	0.01%
Amazon.com Inc	AMZN	10,612.36	188.99	2,005,630.67	5.46%			13.43%	0.73%
Jack Henry & Associates Inc	JKHY	72.90	170.93	12,460.40	0.03%	1.36%	0.00%	10.10%	0.00%
Ralph Lauren Corp	RL	39.88	219.96	8,772.65	0.02%	1.66%	0.00%	9.62%	0.00%
BXP Inc	BXP	158.21	65.85	10,418.10	0.03%	5.95%	0.00%	1.33%	0.00%
Amphenol Corp	APH	1,211.78	75.85	91,913.76	0.25%	0.87%	0.00%	18.81%	0.05%
Howmet Aerospace Inc	HWM	404.46	135.76	54,910.00	0.15%	0.29%	0.00%	14.14%	0.02%
Valero Energy Corp	VLO	313.21	113.87	35,664.78		3.97%			
Synopsys Inc	SNPS	154.62	446.62	69,056.42	0.19%			13.88%	0.03%
CH Robinson Worldwide Inc	CHRW	118.23	89.75	10,610.88	0.03%	2.76%	0.00%	15.23%	0.00%
Accenture PLC	ACN	626.03	293.39	183,669.72	0.50%	2.02%	0.01%	7.12%	0.04%
TransDigm Group Inc	TDG	56.08	1,378.13	77,291.86	0.21%			13.51%	0.03%
Yum! Brands Inc	YUM	278.50	147.30	41,023.05	0.11%	1.93%	0.00%	10.40%	0.01%

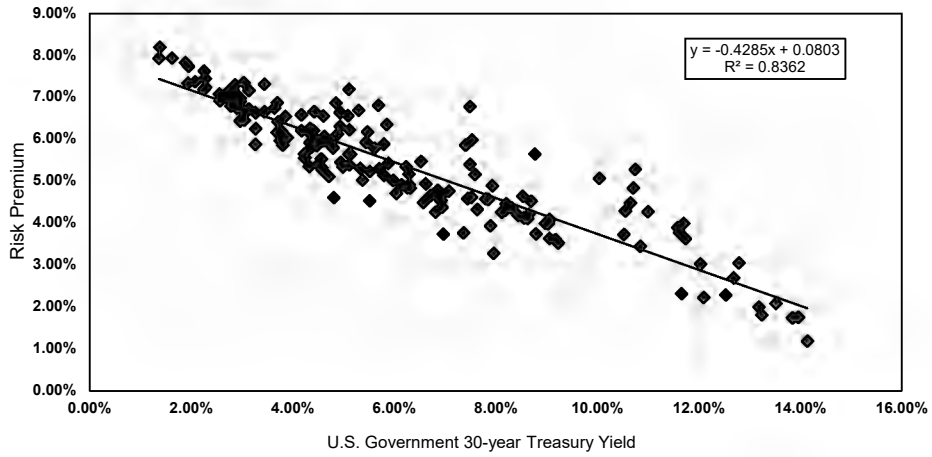
STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Prologis Inc	PLD	926.18	102.24	94,692.13	0.26%	3.95%	0.01%	5.83%	0.02%
FirstEnergy Corp	FE	577.13	42.34	24,435.52	0.07%	4.20%	0.00%	0.83%	0.00%
VeriSign Inc	VRSN	93.90	272.79	25,614.98		1.13%			
Quanta Services Inc	PWR	148.26	287.34	42,602.07	0.12%	0.14%	0.00%	13.51%	0.02%
Henry Schein Inc	HSIC	122.51	65.17	7,984.10	0.02%			7.63%	0.00%
Ameren Corp	AEE	270.16	98.28	26,551.10		2.89%			
ANSYS Inc	ANSS	87.65	320.68	28,108.17	0.08%			11.10%	0.01%
FactSet Research Systems Inc	FDS	37.95	424.47	16,107.39		1.04%			
NVIDIA Corp	NVDA	24,400.00	111.01	2,708,644.00		0.04%		34.22%	
Cognizant Technology Solutions Corp	CTSH	492.94	72.17	35,575.43	0.10%	1.72%	0.00%	7.13%	0.01%
Intuitive Surgical Inc	ISRG	358.42	514.59	184,438.45	0.50%			13.49%	0.07%
Take-Two Interactive Software Inc	TTWO	176.50	225.38	39,778.60				58.00%	
Republic Services Inc	RSG	312.50	243.56	76,111.77	0.21%	0.95%	0.00%	9.36%	0.02%
eBay Inc	EBAY	466.00	67.83	31,608.78	0.09%	1.71%	0.00%	8.60%	0.01%
Goldman Sachs Group Inc/The	GS	310.79	544.86	169,337.25	0.46%	2.20%	0.01%	13.24%	0.06%
SBA Communications Corp	SBAC	108.03	222.09	23,991.97	0.07%	2.00%	0.00%	10.84%	0.01%
Sempra	SRE	651.91	74.68	48,684.89	0.13%	3.45%	0.00%	6.51%	0.01%
Moody's Corp	MCO	179.90	438.62	78,907.74	0.21%	0.86%	0.00%	12.82%	0.03%
ON Semiconductor Corp	ON	422.05	39.63	16,725.82					
Booking Holdings Inc	BKNG	32.70	4,838.44	158,212.83	0.43%	0.79%	0.00%	16.03%	0.07%
F5 Inc	FFIV	57.65	270.03	15,567.84	0.04%			6.89%	0.00%
Akamai Technologies Inc	AKAM	146.11	79.79	11,658.50				-0.21%	
Charles River Laboratories International Inc	CRL	49.12	114.66	5,631.61	0.02%			3.37%	0.00%
MarketAxess Holdings Inc	MKTX	37.20	219.00	8,147.10		1.39%		-0.46%	
Devon Energy Corp	DVN	643.33	31.35	20,168.37	0.05%	3.06%	0.00%	3.42%	0.00%
Bio-Techne Corp	TECH	158.09	50.24	7,942.33		0.64%			
Alphabet Inc	GOOGL	5,820.00	161.96	942,607.20	2.57%	0.52%	0.01%	12.96%	0.33%
Allegion plc	ALLE	86.05	136.49	11,744.87	0.03%	1.49%	0.00%	4.57%	0.00%
Netflix Inc	NFLX	425.57	1,101.53	468,779.52				25.26%	
Agilent Technologies Inc	A	285.10	106.28	30,300.72	0.08%	0.93%	0.00%	5.90%	0.00%
Warner Bros Discovery Inc	WBD	2,473.84	8.59	21,250.25				41.31%	
Trimble Inc	TRMB	238.58	61.71	14,722.99					
Elevance Health Inc	ELV	225.93	421.68	95,272.10	0.26%	1.62%	0.00%	9.30%	0.02%
CME Group Inc	CME	360.38	266.30	95,969.08	0.26%	1.88%	0.00%	7.82%	0.02%
Juniper Networks Inc	JNPR	334.28	35.60	11,900.26	0.03%	2.47%	0.00%	12.36%	0.00%
DTE Energy Co	DTE	207.52	134.76	27,965.09	0.08%	3.24%	0.00%	5.90%	0.00%
Nasdaq Inc	NDAQ	574.12	75.36	43,265.81	0.12%	1.43%	0.00%	12.82%	0.02%
Philip Morris International Inc	PM	1,556.52	170.24	264,981.48	0.72%	3.17%	0.02%	11.22%	0.08%
Ingersoll Rand Inc	IR	403.08	74.98	30,223.18		0.11%			
Salesforce Inc	CRM	959.47	267.85	256,995.00	0.70%	0.62%	0.00%	11.67%	0.08%
Roper Technologies Inc	ROP	107.39	557.70	59,888.73		0.59%			
Huntington Ingalls Industries Inc	HII	39.24	226.05	8,869.20	0.02%	2.39%	0.00%	13.94%	0.00%
MetLife Inc	MET	681.23	75.19	51,221.54	0.14%	3.02%	0.00%	13.76%	0.02%
Tapestry Inc	TPR	207.02	68.88	14,259.23	0.04%	2.03%	0.00%	9.81%	0.00%
CSX Corp	CSX	1,878.55	27.84	52,298.72	0.14%	1.87%	0.00%	7.13%	0.01%
Edwards Lifesciences Corp	EW	587.86	76.04	44,701.25	0.12%			7.04%	0.01%
Ameriprise Financial Inc	AMP	95.81	465.94	44,643.56	0.12%	1.37%	0.00%	7.28%	0.01%
Zebra Technologies Corp	ZBRA	51.14	246.24	12,593.53					
Zimmer Biomet Holdings Inc	ZBH	197.84	101.51	20,082.87	0.05%	0.95%	0.00%	2.16%	0.00%
Camden Property Trust	CPT	108.80	114.00	12,403.11	0.03%	3.68%	0.00%	1.91%	0.00%
CBRE Group Inc	CBRE	298.10	120.73	35,990.20					
Mastercard Inc	MA	902.49	533.48	481,458.87	1.31%	0.57%	0.01%	13.19%	0.17%
CarMax Inc	KMX	152.68	65.03	9,929.06					
Intercontinental Exchange Inc	ICE	574.50	163.23	93,775.31	0.26%	1.18%	0.00%	16.39%	0.04%
Fidelity National Information Services Inc	FIS	529.69	79.26	41,983.36	0.11%	2.02%	0.00%	9.37%	0.01%
Smurfit WestRock PLC	SW	521.98	42.23	22,043.18		4.08%			
Chipotle Mexican Grill Inc	CMG	1,347.36	51.78	69,766.51	0.19%			16.26%	0.03%
Wynn Resorts Ltd	WYNN	106.17	82.11	8,717.40	0.02%	1.22%	0.00%	7.84%	0.00%
Live Nation Entertainment Inc	LYV	234.09	132.76	31,077.72	0.08%			3.98%	0.00%
Assurant Inc	AIZ	50.87	190.83	9,707.13		1.68%			
NRG Energy Inc	NRG	203.67	108.33	22,063.24	0.06%	1.62%	0.00%	3.60%	0.00%
Monster Beverage Corp	MNST	973.16	58.67	57,095.23	0.16%			12.95%	0.02%
Regions Financial Corp	RF	905.47	20.28	18,362.83	0.05%	4.93%	0.00%	6.18%	0.00%
Baker Hughes Co	BKR	990.75	36.45	36,112.84	0.10%	2.52%	0.00%	8.81%	0.01%
Mosaic Co/The	MOS	317.23	29.13	9,240.90		3.02%			
Expedia Group Inc	EXPE	122.04	160.11	19,540.05	0.05%	1.00%	0.00%	16.27%	0.01%
CF Industries Holdings Inc	CF	166.47	78.47	13,062.68		2.55%		-4.82%	
APA Corp	APA	361.66	16.35	5,913.20	0.02%	6.12%	0.00%	1.05%	0.00%
Leidos Holdings Inc	LDOS	128.21	145.71	18,682.04	0.05%	1.10%	0.00%	7.40%	0.00%
Alphabet Inc	GOOG	5,459.00	163.85	894,457.15	2.44%	0.51%	0.01%	12.96%	0.32%
TKO Group Holdings Inc	TKO	81.55	157.10	12,812.11		0.97%			
First Solar Inc	FSLR	107.24	141.86	15,213.13				35.90%	
Discover Financial Services	DFS	251.60	184.86	46,511.54	0.13%			1.61%	0.00%
Visa Inc	V	1,723.36	335.17	577,619.36	1.57%	0.70%	0.01%	13.00%	0.20%
Mid-America Apartment Communities Inc	MAA	116.90	159.38	18,631.66	0.05%	3.80%	0.00%	1.92%	0.00%
Xylem Inc/NY	XYL	243.35	116.10	28,252.87		1.38%			
Marathon Petroleum Corp	MPC	311.53	137.44	42,816.87	0.12%	2.65%	0.00%	8.59%	0.01%
Tractor Supply Co	TSCO	531.62	49.92	26,538.24	0.07%	1.84%	0.00%	8.70%	0.01%
Advanced Micro Devices Inc	AMD	1,624.63	96.65	157,012.69				27.19%	
ResMed Inc	RMD	146.63	235.88	34,586.47	0.09%	0.90%	0.00%	12.63%	0.01%
Mettler-Toledo International Inc	MTD	20.84	1,061.79	22,128.71	0.06%			8.14%	0.00%
VICI Properties Inc	VICI	1,056.70	32.22	34,046.96	0.09%	5.37%	0.00%	5.05%	0.00%
Copart Inc	CPRT	966.09	60.90	58,835.06					
Jacobs Solutions Inc	J	122.54	121.57	14,897.63	0.04%	1.05%	0.00%	12.70%	0.01%
Albemarle Corp	ALB	117.65	57.73	6,791.97		2.81%		83.76%	
Fortinet Inc	FTNT	768.97	101.80	78,281.56	0.21%			10.06%	0.02%
Moderna Inc	MRNA	386.62	27.22	10,523.87				22.11%	
Essex Property Trust Inc	ESS	64.33	275.50	17,721.70	0.05%	3.73%	0.00%	3.01%	0.00%
CoStar Group Inc	CSGP	421.76	82.82	34,930.39				40.81%	
Realty Income Corp	O	891.77	56.89	50,732.75	0.14%	5.66%	0.01%	3.67%	0.01%
Westinghouse Air Brake Technologies Corp	WAB	171.13	184.03	31,492.38	0.09%	0.54%	0.00%	15.51%	0.01%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4] Shares Outst'g	[5] Price	[6] Market Capitalization	[7] Weight in Index	[8] Estimated Dividend Yield	[9] Cap-Weighted Dividend Yield	[10] Bloomberg Long-Term Growth Est.	[11] Cap-Weighted Long-Term Growth Est.
Palantir Technologies Inc	PLTR	2,262.68	112.78	255,185.36				32.33%	
Pool Corp	POOL	37.72	291.59	10,998.25	0.03%	1.71%	0.00%	6.39%	0.00%
Western Digital Corp	WDC	347.82	40.78	14,184.26		0.98%			
PepsiCo Inc	PEP	1,371.08	133.38	182,874.59	0.50%	4.27%	0.02%	3.13%	0.02%
TE Connectivity PLC	TEL	298.35	144.37	43,073.25	0.12%	1.97%	0.00%	8.35%	0.01%
Diamondback Energy Inc	FANG	294.08	136.76	40,218.78		2.92%		-9.04%	
Palo Alto Networks Inc	PANW	662.10	178.98	118,502.66	0.32%			14.73%	0.05%
ServiceNow Inc	NOW	207.00	945.26	195,668.82					
Church & Dwight Co Inc	CHD	246.11	99.31	24,441.08	0.07%	1.19%	0.00%	6.71%	0.00%
Federal Realty Investment Trust	FRT	85.78	94.38	8,095.92	0.02%	4.66%	0.00%	3.86%	0.00%
MGM Resorts International	MGM	282.95	31.67	8,961.05	0.02%			7.19%	0.00%
American Electric Power Co Inc	AEP	533.99	106.74	56,997.85	0.16%	3.49%	0.01%	5.10%	0.01%
Invitation Homes Inc	INVH	612.88	33.78	20,703.19	0.06%	3.43%	0.00%	3.59%	0.00%
PTC Inc	PTC	120.32	154.03	18,533.43	0.05%			16.34%	0.01%
JB Hunt Transport Services Inc	JBHT	99.19	129.73	12,868.51	0.04%	1.36%	0.00%	14.67%	0.01%
Lam Research Corp	LRCX	1,283.66	71.42	91,679.14	0.25%	1.29%	0.00%	17.27%	0.04%
Mohawk Industries Inc	MHK	62.52	106.87	6,681.04	0.02%			3.61%	0.00%
GE HealthCare Technologies Inc	GEHC	457.84	68.42	31,325.63	0.09%	0.20%	0.00%	6.15%	0.01%
Pentair PLC	PNR	164.53	90.00	14,807.43	0.04%	1.11%	0.00%	9.53%	0.00%
Vertex Pharmaceuticals Inc	VRTX	257.08	493.84	126,956.80					
Amcor PLC	AMCR	1,445.34	9.54	13,788.57	0.04%	5.35%	0.00%	4.99%	0.00%
Meta Platforms Inc	META	2,181.27	547.27	1,193,743.85	3.25%	0.38%	0.01%	14.45%	0.47%
T-Mobile US Inc	TMUS	1,135.45	232.77	264,297.56		1.51%			
United Rentals Inc	URI	65.00	633.60	41,183.39	0.11%	1.13%	0.00%	6.76%	0.01%
Alexandria Real Estate Equities Inc	ARE	172.99	75.88	13,126.41	0.04%	6.96%	0.00%	1.29%	0.00%
Honeywell International Inc	HON	643.26	199.16	128,111.06	0.35%	2.27%	0.01%	7.57%	0.03%
Delta Air Lines Inc	DAL	652.96	41.58	27,149.88	0.07%	1.44%	0.00%	1.02%	0.00%
United Airlines Holdings Inc	UAL	327.70	68.20	22,349.40	0.06%			4.96%	0.00%
Seagate Technology Holdings PLC	STX	211.71	82.70	17,508.20		3.48%		111.36%	
News Corp	NWS	189.34	31.23	5,913.11		0.64%			
Centene Corp	CNC	497.60	57.69	28,706.72	0.08%			7.97%	0.01%
Apollo Global Management Inc	APO	570.48	133.40	76,102.09	0.21%	1.53%	0.00%	12.87%	0.03%
Martin Marietta Materials Inc	MLM	60.60	504.44	30,569.21		0.63%			
Teradyne Inc	TER	161.54	77.12	12,457.88	0.03%	0.62%	0.00%	7.23%	0.00%
PayPal Holdings Inc	PYPL	977.40	65.34	63,863.00	0.17%			12.15%	0.02%
Tesla Inc	TSLA	3,220.96	284.95	917,811.47					
Blackrock Inc	BLK	155.02	907.69	140,711.97	0.38%	2.30%	0.01%	2.09%	0.01%
KKR & Co Inc	KKR	888.25	113.63	100,931.91		0.65%			
Arch Capital Group Ltd	ACGL	375.72	90.68	34,069.93	0.09%			1.83%	0.00%
Dow Inc	DOW	705.76	30.02	21,187.05	0.06%	9.33%	0.01%	14.77%	0.01%
Everest Group Ltd	EG	47.78	353.15	16,875.23		2.27%		28.16%	
Teledyne Technologies Inc	TDY	46.84	458.60	21,479.59	0.06%			9.92%	0.01%
Domino's Pizza Inc	DPZ	34.30	487.58	16,722.55	0.05%	1.43%	0.00%	9.09%	0.00%
GE Vernova Inc	GEV	272.93	372.42	101,646.36		0.27%		97.71%	
News Corp	NWSA	378.06	27.13	10,256.63		0.74%			
Exelon Corp	EXC	1,009.54	46.22	46,660.74	0.13%	3.46%	0.00%	8.10%	0.01%
Global Payments Inc	GPN	245.88	72.48	17,821.11	0.05%	1.38%	0.00%	9.10%	0.00%
Crown Castle Inc	CCI	435.43	100.19	43,626.11		4.24%		32.66%	
Align Technology Inc	ALGN	73.21	183.35	13,423.11	0.04%			11.22%	0.00%
Kenvue Inc	KVUE	1,918.69	23.01	44,149.08		3.56%		35.21%	
Targa Resources Corp	TRGP	217.59	177.62	38,647.51		2.25%			
Bunge Global SA	BG	133.97	80.91	10,839.35	0.03%	3.46%	0.00%	2.61%	0.00%
LKQ Corp	LKQ	258.15	37.41	9,657.30		3.21%			
Deckers Outdoor Corp	DECK	151.77	109.19	16,572.16	0.05%			16.41%	0.01%
Workday Inc	WDAY	216.64	239.53	51,890.66					
Zoetis Inc	ZTS	446.18	153.47	68,475.24	0.19%	1.30%	0.00%	8.92%	0.02%
Equinix Inc	EQIX	97.82	838.10	81,981.48		2.24%		29.36%	
Digital Realty Trust Inc	DLR	336.75	159.88	53,839.39	0.15%	3.05%	0.00%	6.61%	0.01%
Molina Healthcare Inc	MOH	54.20	314.51	17,046.44	0.05%			11.34%	0.01%
Las Vegas Sands Corp	LVS	706.63	35.89	25,360.86	0.07%	2.79%	0.00%	5.45%	0.00%

Notes:
[1] Equals sum of Col. [9]
[2] Equals sum of Col. [11]
[3] Equals ([1] x (1 + (0.5 x [2]))) + [2]
[4] Bloomberg Professional as of May 30, 2025
[5] Bloomberg Professional as of May 30, 2025
[6] Equals [4] x [5]
[7] Equals weight in S&P 500 based on market capitalization [6] if Growth Rate >0% and ≤20%
[8] Bloomberg Professional, as of May 30, 2025
[9] Equals [7] x [8]
[10] Bloomberg Professional, as of May 30, 2025
[11] Equals [7] x [10]



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9144356
R Square	0.8361925
Adjusted R Square	0.8352824
Standard Error	0.0057682
Observations	182

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.03057	0.03057	918.85070	0.00000
Residual	180	0.00599	0.00003		
Total	181	0.03656			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.0803	0.00	84.12	0.0000	0.0784	0.0821	0.0784	0.0821
U.S. Govt. 30-year Treasury	(0.4285)	0.01	(30.31)	0.0000	(0.4564)	(0.4006)	(0.4564)	(0.4006)

	[7]	[8]	[9]
	U.S. Govt. 30-year Treasury	Risk Premium	ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	4.86%	5.94%	10.80%
Blue Chip Near-Term Projected Forecast (Q3 2025 - Q3 2026) [5]	4.60%	6.05%	10.65%
Blue Chip Long-Term Projected Forecast (2027-2031) [6]	4.40%	6.14%	10.54%
AVERAGE			10.67%

Notes:
[1] Regulatory Research Associates, rate cases through May 30, 2025
[2] S&P Capital IQ Pro, quarterly bond yields are the average of each trading day in the quarter
[3] Equals Column [1] − Column [2]
[4] S&P Capital IQ Pro, 30-day average as of May 30, 2025
[5] Blue Chip Financial Forecasts, Vol. 44, No. 6, June 2, 2025, at 2
[6] Blue Chip Financial Forecasts, Vol. 44, No. 6, June 2, 2025, at 14
[7] See notes [4], [5] & [6]
[8] Equals 0.080254 + (-0.428533 x Column [7])
[9] Equals Column [7] + Column [8]

BOND YIELD PLUS RISK PREMIUM

Quarter	[1] Average Authorized VI Electric ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
1980.1	13.97%	11.66%	2.31%
1980.2	14.25%	10.52%	3.73%
1980.3	14.30%	10.85%	3.45%
1980.4	14.32%	12.10%	2.23%
1981.1	14.82%	12.53%	2.28%
1981.2	15.05%	13.24%	1.81%
1981.3	15.31%	14.13%	1.17%
1981.4	15.59%	13.85%	1.74%
1982.1	15.71%	13.96%	1.75%
1982.2	15.60%	13.52%	2.08%
1982.3	15.85%	12.79%	3.06%
1982.4	16.03%	10.75%	5.28%
1983.1	15.54%	10.71%	4.83%
1983.2	15.13%	10.65%	4.48%
1983.3	15.39%	11.62%	3.77%
1983.4	15.37%	11.74%	3.63%
1984.1	15.06%	12.04%	3.02%
1984.2	15.18%	13.18%	2.00%
1984.3	15.38%	12.69%	2.69%
1984.4	15.69%	11.70%	3.99%
1985.1	15.48%	11.58%	3.90%
1985.2	15.27%	11.00%	4.27%
1985.3	14.84%	10.55%	4.29%
1985.4	15.11%	10.04%	5.07%
1986.1	14.42%	8.77%	5.65%
1986.2	14.27%	7.49%	6.78%
1986.3	13.26%	7.40%	5.86%
1986.4	13.52%	7.53%	5.99%
1987.1	12.90%	7.49%	5.40%
1987.2	13.17%	8.53%	4.64%
1987.3	13.14%	9.06%	4.08%
1987.4	12.76%	9.23%	3.53%
1988.1	12.74%	8.63%	4.11%
1988.2	12.70%	9.06%	3.63%
1988.3	12.78%	9.18%	3.60%
1988.4	12.97%	8.97%	4.00%
1989.1	13.02%	9.04%	3.99%
1989.2	13.22%	8.70%	4.52%
1989.3	12.38%	8.12%	4.26%
1989.4	12.83%	7.93%	4.90%
1990.1	12.62%	8.44%	4.19%
1990.2	12.85%	8.65%	4.20%
1990.3	12.54%	8.79%	3.75%
1990.4	12.68%	8.56%	4.12%
1991.1	12.66%	8.20%	4.46%
1991.2	12.67%	8.31%	4.36%
1991.3	12.49%	8.19%	4.30%
1991.4	12.42%	7.85%	4.57%
1992.1	12.38%	7.81%	4.58%
1992.2	11.83%	7.90%	3.93%
1992.3	12.03%	7.45%	4.59%
1992.4	12.14%	7.52%	4.62%
1993.1	11.84%	7.07%	4.76%
1993.2	11.64%	6.86%	4.78%
1993.3	11.15%	6.32%	4.84%
1993.4	11.04%	6.14%	4.91%
1994.1	11.07%	6.58%	4.49%
1994.2	11.13%	7.36%	3.77%
1994.3	12.75%	7.59%	5.16%
1994.4	11.24%	7.96%	3.28%
1995.1	11.96%	7.63%	4.33%
1995.2	11.32%	6.94%	4.37%
1995.3	11.37%	6.72%	4.65%

BOND YIELD PLUS RISK PREMIUM

Quarter	[1] Average Authorized VI Electric ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
1995.4	11.58%	6.24%	5.35%
1996.1	11.46%	6.29%	5.17%
1996.2	11.46%	6.92%	4.54%
1996.3	10.70%	6.97%	3.73%
1996.4	11.56%	6.62%	4.94%
1997.1	11.08%	6.82%	4.26%
1997.2	11.62%	6.94%	4.68%
1997.3	12.00%	6.53%	5.47%
1997.4	11.06%	6.15%	4.91%
1998.1	11.31%	5.88%	5.43%
1998.2	12.20%	5.85%	6.35%
1998.3	11.65%	5.48%	6.17%
1998.4	12.30%	5.11%	7.19%
1999.1	10.40%	5.37%	5.03%
1999.2	10.94%	5.80%	5.14%
1999.3	10.75%	6.04%	4.71%
1999.4	11.10%	6.26%	4.84%
2000.1	11.21%	6.30%	4.92%
2000.2	11.00%	5.98%	5.02%
2000.3	11.68%	5.79%	5.89%
2000.4	12.50%	5.69%	6.81%
2001.1	11.38%	5.45%	5.93%
2001.2	11.00%	5.70%	5.30%
2001.3	10.76%	5.53%	5.23%
2001.4	11.99%	5.30%	6.69%
2002.1	10.05%	5.52%	4.53%
2002.2	11.41%	5.62%	5.79%
2002.3	11.65%	5.09%	6.56%
2002.4	11.57%	4.93%	6.63%
2003.1	11.72%	4.85%	6.87%
2003.2	11.16%	4.60%	6.56%
2003.3	10.50%	5.11%	5.39%
2003.4	11.34%	5.11%	6.23%
2004.1	11.00%	4.88%	6.12%
2004.2	10.64%	5.34%	5.30%
2004.3	10.75%	5.11%	5.64%
2004.4	11.24%	4.93%	6.31%
2005.1	10.63%	4.71%	5.92%
2005.2	10.31%	4.47%	5.84%
2005.3	11.08%	4.42%	6.66%
2005.4	10.63%	4.65%	5.98%
2006.1	10.70%	4.63%	6.07%
2006.2	10.79%	5.14%	5.64%
2006.3	10.35%	5.00%	5.35%
2006.4	10.65%	4.74%	5.91%
2007.1	10.59%	4.80%	5.79%
2007.2	10.33%	4.99%	5.34%
2007.3	10.40%	4.95%	5.45%
2007.4	10.65%	4.61%	6.04%
2008.1	10.62%	4.41%	6.21%
2008.2	10.54%	4.57%	5.96%
2008.3	10.43%	4.45%	5.98%
2008.4	10.39%	3.64%	6.74%
2009.1	10.75%	3.44%	7.31%
2009.2	10.75%	4.17%	6.58%
2009.3	10.50%	4.32%	6.18%
2009.4	10.59%	4.34%	6.25%
2010.1	10.59%	4.62%	5.97%
2010.2	10.18%	4.37%	5.81%
2010.3	10.40%	3.86%	6.55%
2010.4	10.38%	4.17%	6.20%

BOND YIELD PLUS RISK PREMIUM

Quarter	[1] Average Authorized VI Electric ROE	[2] U.S. Govt. 30-year Treasury	[3] Risk Premium
2011.1	10.09%	4.56%	5.53%
2011.2	10.26%	4.34%	5.92%
2011.3	10.57%	3.70%	6.88%
2011.4	10.39%	3.04%	7.35%
2012.1	10.30%	3.14%	7.17%
2012.2	9.95%	2.94%	7.01%
2012.3	9.90%	2.74%	7.16%
2012.4	10.16%	2.86%	7.30%
2013.1	9.85%	3.13%	6.72%
2013.2	9.86%	3.14%	6.72%
2013.3	10.12%	3.71%	6.41%
2013.4	9.97%	3.79%	6.18%
2014.1	9.86%	3.69%	6.16%
2014.2	10.10%	3.44%	6.66%
2014.3	9.90%	3.27%	6.63%
2014.4	9.94%	2.96%	6.98%
2015.1	9.64%	2.55%	7.08%
2015.2	9.83%	2.88%	6.94%
2015.3	9.40%	2.96%	6.44%
2015.4	9.86%	2.96%	6.90%
2016.1	9.70%	2.72%	6.98%
2016.2	9.48%	2.57%	6.91%
2016.3	9.74%	2.28%	7.46%
2016.4	9.83%	2.83%	7.00%
2017.1	9.72%	3.05%	6.67%
2017.2	9.64%	2.90%	6.75%
2017.3	10.00%	2.82%	7.18%
2017.4	9.91%	2.82%	7.09%
2018.1	9.69%	3.02%	6.66%
2018.2	9.75%	3.09%	6.66%
2018.3	9.69%	3.06%	6.63%
2018.4	9.52%	3.27%	6.25%
2019.1	9.72%	3.01%	6.70%
2019.2	9.58%	2.78%	6.79%
2019.3	9.53%	2.29%	7.25%
2019.4	9.89%	2.26%	7.63%
2020.1	9.72%	1.89%	7.83%
2020.2	9.58%	1.38%	8.19%
2020.3	9.30%	1.37%	7.93%
2020.4	9.56%	1.62%	7.94%
2021.1	9.45%	2.07%	7.38%
2021.2	9.47%	2.26%	7.21%
2021.3	9.27%	1.93%	7.34%
2021.4	9.69%	1.95%	7.74%
2022.1	9.45%	2.25%	7.20%
2022.2	9.50%	3.05%	6.45%
2022.3	9.14%	3.26%	5.88%
2022.4	9.94%	3.89%	6.04%
2023.1	9.72%	3.75%	5.97%
2023.2	9.67%	3.81%	5.86%
2023.3	9.79%	4.23%	5.55%
2023.4	9.85%	4.58%	5.27%
2024.1	9.67%	4.32%	5.35%
2024.2	9.90%	4.58%	5.32%
2024.3	9.88%	4.23%	5.65%
2024.4	9.90%	4.50%	5.40%
2025.1	9.83%	4.72%	5.11%
2025.2	9.42%	4.81%	4.60%
AVERAGE	11.47%	6.03%	5.44%
MEDIAN	11.00%	5.13%	5.60%

Dr. Woolridge Adjusted Contant Growth DCF Analysis
30-Day Average Stock Prices

Company	Ticker	[1] Dividend Yield	[2] Expected Dividend Yield	[3] *Yahoo! Finance*	[4] *Zacks*	[5] *S&P*	[6] Average	[7] Cost of Equity
Alliant Energy Corporation	LNT	3.10%	3.21%	7.80%	6.70%	6.50%	7.00%	10.21%
Ameren Corporation	AEE	2.70%	2.80%	8.10%	7.00%	7.00%	7.37%	10.17%
American Electric Power Co.	AEP	3.30%	3.43%	11.20%	6.40%	6.80%	8.13%	11.57%
Avista Corporation	AVA	4.70%	4.84%	5.50%	6.10%	6.00%	5.87%	10.70%
CenterPoint Energy Inc.	CNP	2.10%	2.19%	10.00%	7.80%	8.00%	8.60%	10.79%
CMS Energy Corporation	CMS	2.90%	3.01%	8.30%	7.80%	7.30%	7.80%	10.81%
Consolidated Edison, Inc.	ED	3.10%	3.17%	2.10%	5.60%	5.80%	4.50%	7.67%
Dominion Resources, Inc.	D	4.90%	5.17%	8.40%	13.60%	11.40%	11.13%	16.31%
DTE Energy Company	DTE	3.00%	3.12%	9.00%	7.60%	7.50%	8.03%	11.15%
Duke Energy Corporation	DUK	3.40%	3.51%	7.20%	6.30%	6.40%	6.63%	10.15%
Edison International	EIX	5.50%	5.78%	15.20%	7.00%	8.60%	10.27%	16.05%
Entergy Corporation	ETR	2.70%	2.79%	2.50%	9.50%	9.10%	7.03%	9.83%
Evergy, Inc.	EVRG	3.80%	3.91%	NA	5.70%	5.70%	5.70%	9.61%
Eversource Energy	ES	4.80%	4.94%	6.20%	5.70%	5.60%	5.83%	10.77%
Exelon Corporation	EXC	3.30%	3.41%	6.50%	6.40%	6.40%	6.43%	9.84%
FirstEnergy Corp.	FE	4.10%	4.26%	11.50%	6.40%	6.10%	8.00%	12.26%
IDACORP, Inc.	IDA	2.90%	3.02%	9.00%	8.10%	8.10%	8.40%	11.42%
Nextera Energy, Inc.)	NEE	3.00%	3.10%	5.30%	7.70%	7.70%	6.90%	10.00%
NorthWestern Corporation	NWE	4.50%	4.64%	6.00%	6.90%	5.80%	6.23%	10.87%
OGE Energy Corp.	OGE	3.80%	3.91%	4.60%	6.30%	6.50%	5.80%	9.71%
Pinnacle West Capital Corp.	PNW	3.80%	3.88%	6.10%	2.10%	4.80%	4.33%	8.22%
Portland General Electric Company	POR	4.70%	4.84%	9.30%	3.40%	4.80%	5.83%	10.67%
PPL Corporation	PPL	2.90%	3.04%	14.50%	7.50%	7.40%	9.80%	12.84%
Public Service Enterprise Group Inc	PEG	3.00%	3.08%	2.40%	6.80%	6.60%	5.27%	8.35%
Southern Company	SO	3.20%	3.30%	6.90%	6.60%	6.10%	6.53%	9.84%
WEC Energy Group	WEC	3.10%	3.21%	7.80%	7.00%	7.00%	7.27%	10.48%
Xcel Energy Inc.	XEL	3.10%	3.22%	8.10%	7.50%	7.80%	7.80%	11.02%
Mean		3.53%	3.66%	7.67%	6.87%	6.92%	7.13%	10.79%
Median		3.20%	3.30%	7.80%	6.80%	6.60%	7.00%	10.67%

Notes:
[1] Exhibit JRW-5 pg. 2
[2] Equals [1] x (1 + 0.5 x [6])
[3] Exhibit JRW-5 pg. 5
[4] Exhibit JRW-5 pg. 5
[5] Exhibit JRW-5 pg. 5
[6] Equals average of [3], [4], [5]
[7] Equals [2] + [6]

Dr. Woolridge Adjusted Contant Growth DCF Analysis
90-Day Average Stock Prices

Company	Ticker	[1] Dividend Yield	[2] Expected Dividend Yield	[3] *Yahoo! Finance*	[4] *Zacks*	[5] *S&P*	[6] Average	[7] Cost of Equity
Alliant Energy Corporation	LNT	3.10%	3.21%	7.80%	6.70%	6.50%	7.00%	10.21%
Ameren Corporation	AEE	2.80%	2.90%	8.10%	7.00%	7.00%	7.37%	10.27%
American Electric Power Co.	AEP	3.40%	3.54%	11.20%	6.40%	6.80%	8.13%	11.67%
Avista Corporation	AVA	4.90%	5.04%	5.50%	6.10%	6.00%	5.87%	10.91%
CenterPoint Energy Inc.	CNP	2.30%	2.40%	10.00%	7.80%	8.00%	8.60%	11.00%
CMS Energy Corporation	CMS	2.90%	3.01%	8.30%	7.80%	7.30%	7.80%	10.81%
Consolidated Edison, Inc.	ED	3.20%	3.27%	2.10%	5.60%	5.80%	4.50%	7.77%
Dominion Resources, Inc.	D	4.90%	5.17%	8.40%	13.60%	11.40%	11.13%	16.31%
DTE Energy Company	DTE	3.10%	3.22%	9.00%	7.60%	7.50%	8.03%	11.26%
Duke Energy Corporation	DUK	3.50%	3.62%	7.20%	6.30%	6.40%	6.63%	10.25%
Edison International	EIX	5.60%	5.89%	15.20%	7.00%	8.60%	10.27%	16.15%
Entergy Corporation	ETR	2.70%	2.79%	2.50%	9.50%	9.10%	7.03%	9.83%
Evergy, Inc.	EVRG	3.90%	4.01%	NA	5.70%	5.70%	5.70%	9.71%
Eversource Energy	ES	4.80%	4.94%	6.20%	5.70%	5.60%	5.83%	10.77%
Exelon Corporation	EXC	3.50%	3.61%	6.50%	6.40%	6.40%	6.43%	10.05%
FirstEnergy Corp.	FE	4.20%	4.37%	11.50%	6.40%	6.10%	8.00%	12.37%
IDACORP, Inc.	IDA	2.90%	3.02%	9.00%	8.10%	8.10%	8.40%	11.42%
Nextera Energy, Inc.)	NEE	3.00%	3.10%	5.30%	7.70%	7.70%	6.90%	10.00%
NorthWestern Corporation	NWE	4.70%	4.85%	6.00%	6.90%	5.80%	6.23%	11.08%
OGE Energy Corp.	OGE	3.80%	3.91%	4.60%	6.30%	6.50%	5.80%	9.71%
Pinnacle West Capital Corp.	PNW	3.90%	3.98%	6.10%	2.10%	4.80%	4.33%	8.32%
Portland General Electric Company	POR	4.70%	4.84%	9.30%	3.40%	4.80%	5.83%	10.67%
PPL Corporation	PPL	3.00%	3.15%	14.50%	7.50%	7.40%	9.80%	12.95%
Public Service Enterprise Group Inc	PEG	2.90%	2.98%	2.40%	6.80%	6.60%	5.27%	8.24%
Southern Company	SO	3.30%	3.41%	6.90%	6.60%	6.10%	6.53%	9.94%
WEC Energy Group	WEC	3.20%	3.32%	7.80%	7.00%	7.00%	7.27%	10.58%
Xcel Energy Inc.	XEL	3.20%	3.32%	8.10%	7.50%	7.80%	7.80%	11.12%
Mean		3.61%	3.74%	7.67%	6.87%	6.92%	7.13%	10.87%
Median		3.30%	3.41%	7.80%	6.80%	6.60%	7.00%	10.67%

Notes:
[1] Exhibit JRW-5 pg. 2
[2] Equals [1] x (1 + 0.5 x [6])
[3] Exhibit JRW-5 pg. 5
[4] Exhibit JRW-5 pg. 5
[5] Exhibit JRW-5 pg. 5
[6] Equals average of [3], [4], [5]
[7] Equals [2] + [6]

Dr. Woolridge Adjusted Contant Growth DCF Analysis
180-day Average Stock Prices

Company	Ticker	[1] Dividend Yield	[2] Expected Dividend Yield	[3] *Yahoo! Finance*	[4] *Zacks*	[5] *S&P*	[6] Average	[7] Cost of Equity
Alliant Energy Corporation	LNT	3.20%	3.31%	7.80%	6.70%	6.50%	7.00%	10.31%
Ameren Corporation	AEE	2.90%	3.01%	8.10%	7.00%	7.00%	7.37%	10.37%
American Electric Power Co.	AEP	3.50%	3.64%	11.20%	6.40%	6.80%	8.13%	11.78%
Avista Corporation	AVA	4.90%	5.04%	5.50%	6.10%	6.00%	5.87%	10.91%
CenterPoint Energy Inc.	CNP	2.40%	2.50%	10.00%	7.80%	8.00%	8.60%	11.10%
CMS Energy Corporation	CMS	2.90%	3.01%	8.30%	7.80%	7.30%	7.80%	10.81%
Consolidated Edison, Inc.	ED	3.30%	3.37%	2.10%	5.60%	5.80%	4.50%	7.87%
Dominion Resources, Inc.	D	4.80%	5.07%	8.40%	13.60%	11.40%	11.13%	16.20%
DTE Energy Company	DTE	3.20%	3.33%	9.00%	7.60%	7.50%	8.03%	11.36%
Duke Energy Corporation	DUK	3.60%	3.72%	7.20%	6.30%	6.40%	6.63%	10.35%
Edison International	EIX	4.50%	4.73%	15.20%	7.00%	8.60%	10.27%	15.00%
Entergy Corporation	ETR	3.00%	3.11%	2.50%	9.50%	9.10%	7.03%	10.14%
Evergy, Inc.	EVRG	4.00%	4.11%	NA	5.70%	5.70%	5.70%	9.81%
Eversource Energy	ES	4.60%	4.73%	6.20%	5.70%	5.60%	5.83%	10.57%
Exelon Corporation	EXC	3.70%	3.82%	6.50%	6.40%	6.40%	6.43%	10.25%
FirstEnergy Corp.	FE	4.10%	4.26%	11.50%	6.40%	6.10%	8.00%	12.26%
IDACORP, Inc.	IDA	3.00%	3.13%	9.00%	8.10%	8.10%	8.40%	11.53%
Nextera Energy, Inc.)	NEE	2.80%	2.90%	5.30%	7.70%	7.70%	6.90%	9.80%
NorthWestern Corporation	NWE	4.70%	4.85%	6.00%	6.90%	5.80%	6.23%	11.08%
OGE Energy Corp.	OGE	3.90%	4.01%	4.60%	6.30%	6.50%	5.80%	9.81%
Pinnacle West Capital Corp.	PNW	3.90%	3.98%	6.10%	2.10%	4.80%	4.33%	8.32%
Portland General Electric Company	POR	4.50%	4.63%	9.30%	3.40%	4.80%	5.83%	10.46%
PPL Corporation	PPL	3.10%	3.25%	14.50%	7.50%	7.40%	9.80%	13.05%
Public Service Enterprise Group Inc	PEG	2.80%	2.87%	2.40%	6.80%	6.60%	5.27%	8.14%
Southern Company	SO	3.30%	3.41%	6.90%	6.60%	6.10%	6.53%	9.94%
WEC Energy Group	WEC	3.30%	3.42%	7.80%	7.00%	7.00%	7.27%	10.69%
Xcel Energy Inc.	XEL	3.20%	3.32%	8.10%	7.50%	7.80%	7.80%	11.12%
Mean		3.60%	3.72%	7.67%	6.87%	6.92%	7.13%	10.85%
Median		3.30%	3.42%	7.80%	6.80%	6.60%	7.00%	10.57%

Notes:
[1] Exhibit JRW-5 pg. 2
[2] Equals [1] x (1 + 0.5 x [6])
[3] Exhibit JRW-5 pg. 5
[4] Exhibit JRW-5 pg. 5
[5] Exhibit JRW-5 pg. 5
[6] Equals average of [3], [4], [5]
[7] Equals [2] + [6]

Calculation of Long-Term GDP Growth Rate
Consistent with *Ibbotson* Methodology

Description	Notes	Year	Amount
Change in Real GDP			
Real GDP ($ Billions)	[1]	1929	$ 1,191.1
Real GDP ($ Billions)	[1]	2024	$ 23,305.0
Compound Annual Growth Rate			**3.18%**
Projected Inflation			
Consumer Price Index (YoY % Change)	[2]	2032-2036	2.20%
Consumer Price Index (All-Urban)	[3]	2035	3.86
Consumer Price Index (All-Urban)	[3]	2050	5.37
Compound Annual Growth Rate			2.23%
GDP Chain-type Price Index (2012=1.000)	[3]	2035	1.66
GDP Chain-type Price Index (2012=1.000)	[3]	2050	2.30
Compound Annual Growth Rate			2.18%
Average Inflation Forecast	[4]		**2.20%**
Long-Term GDP Growth Rate	[5]		**5.45%**

Notes:
[1] Bureau of Economic Analysis, Accessed June 16, 2025
[2] Blue Chip Financial Forecasts, Vol. 44, No. 6, June 2, 2025, at 14
[3] Energy Information Administration, Annual Energy Outlook 2025 at Table 20, April 15, 2025
[4] Average of 3 inflation sources
[5] Equals (1+3.18%) x (1+2.20%)-1

MR. GATEWOOD'S TWO GROWTH DCF ANALYSIS
AS ADJUSTED TO RELY ON PROJECTED EPS GROWTH AND *IBBOTSON* LONG-TERM GROWTH, WITH FERC WEIGHTINGS OF EACH

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
		Expected Dividend Yld		Projected EPS Growth			Average Proj'd	Long Term Growth	Wgtd Avg Growth	Expected Dividend Yld	
Company	Ticker	Min	Max	Value Line	Zacks	Fact Set	EPS Gwth	Rate	Rate	Min	Max
Alliant Energy Corporation	LNT	3.25%	3.85%	6.00%	6.73%	6.71%	6.48%	5.45%	6.27%	9.52%	10.13%
Ameren Corporation	AEE	2.91%	3.55%	6.50%	6.95%	6.95%	6.80%	5.45%	6.53%	9.44%	10.08%
American Electric Power Company, Inc.	AEP	3.60%	4.43%	6.50%	6.43%	6.80%	6.58%	5.45%	6.35%	9.95%	10.78%
Avista Corporation	AVA	4.87%	6.03%	5.50%	6.43%	5.98%	5.97%	5.45%	5.87%	10.74%	11.90%
CMS Energy Corporation	CMS	3.01%	3.60%	6.00%	7.84%	7.31%	7.05%	5.45%	6.73%	9.74%	10.33%
DTE Energy Company	DTE	3.35%	4.07%	4.50%	7.64%	7.50%	6.55%	5.45%	6.33%	9.68%	10.40%
Duke Energy Corporation	DUK	3.43%	4.09%	6.00%	6.33%	6.38%	6.24%	5.45%	6.08%	9.51%	10.17%
Entergy Corporation	ETR	2.89%	3.81%	3.00%	9.46%	9.12%	7.19%	5.45%	6.85%	9.73%	10.66%
IDACORP, Inc.	IDA	3.02%	3.65%	6.00%	8.47%	8.26%	7.58%	5.45%	7.15%	10.17%	10.80%
NextEra Energy, Inc.	NEE	3.13%	4.05%	8.50%	7.72%	7.70%	7.97%	5.45%	7.47%	10.60%	11.52%
NorthWestern Corporation	NWE	4.47%	5.31%	4.50%	6.87%	5.85%	5.74%	5.45%	5.68%	10.16%	11.00%
OGE Energy Corporation	OGE	3.69%	4.42%	6.50%	6.32%	6.53%	6.45%	5.45%	6.25%	9.94%	10.67%
Pinnacle West Capital Corporation	PNW	3.80%	4.50%	5.00%	2.12%	4.83%	3.98%	5.45%	4.28%	8.08%	8.78%
Portland General Electric Company	POR	6.03%	5.52%	6.50%	3.44%	4.82%	4.92%	5.45%	5.03%	11.05%	10.54%
PPL Corporation	PPL	3.19%	3.75%	7.50%	7.46%	7.40%	7.45%	5.45%	7.05%	10.24%	10.80%
Southern Company	SO	3.26%	3.79%	6.50%	6.55%	6.26%	6.44%	5.45%	6.24%	9.50%	10.03%
Xcel Energy Inc.	XEL	3.30%	3.87%	7.00%	7.52%	7.84%	7.45%	5.45%	7.05%	10.35%	10.92%
Mean				6.00%	6.72%	6.84%	6.52%			9.91%	10.56%
Mean of All Observations										10.23%	

Notes:
[1] Gatewood Direct, at 67.
[2] Gatewood Direct, at 67
[3] Gatewood Direct, at 77.
[4] Gatewood Direct, at 77.
[5] Gatewood Direct, at 77.
[6] Equals average of [3], [4], [5]
[7] Rebuttal Exhibit AEB-20
[8] Equals (80% x [6]) + (20% x [7])
[9] Equals [1] + [8]
[10] Equals [2] + [8]

Gatewood - Internal Rate of Return Analysis
As-Filed

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
			Stock Prices			First Stage Growth Rate						
Company	Ticker	Annualized Dividend (2026)	Min	Max	Mean	Value Line Proj. DPS Growth Rate	Value Line Proj. EPS Growth Rate	Zacks Proj. EPS Growth Rate	Fact Set Proj. EPS Growth Rate	Average	Second Stage Growth Rate	Cost of Equity
Alliant Energy Corporation	LNT	$2.16	$56.08	$66.54	$61.31	6.00%	6.00%	6.73%	6.71%	6.36%	4.09%	8.04%
Ameren Corporation	AEE	$3.03	$85.27	$104.10	$94.69	6.50%	6.50%	6.95%	6.95%	6.73%	4.09%	7.71%
American Electric Power Company, Inc.	AEP	$3.98	$89.91	$110.48	$100.20	5.50%	6.50%	6.43%	6.80%	6.31%	4.09%	8.55%
Avista Corporation	AVA	$2.10	$34.80	$43.09	$38.95	4.00%	5.50%	6.43%	5.98%	5.48%	4.09%	10.06%
CMS Energy Corporation	CMS	$2.30	$63.97	$76.45	$70.21	5.00%	6.00%	7.84%	7.31%	6.54%	4.09%	7.78%
DTE Energy Company	DTE	$4.71	$115.59	$140.39	$127.99	3.00%	4.50%	7.64%	7.50%	5.66%	4.09%	8.12%
Duke Energy Corporation	DUK	$4.30	$105.20	$125.27	$115.24	3.50%	6.00%	6.33%	6.38%	5.55%	4.09%	8.17%
Entergy Corporation	ETR	$2.55	$66.85	$88.38	$77.62	5.50%	3.00%	9.46%	9.12%	6.77%	4.09%	7.82%
IDACORP, Inc.	IDA	$3.65	$100.10	$120.84	$110.47	5.50%	6.00%	8.47%	8.26%	7.06%	4.09%	7.88%
NextEra Energy, Inc.	NEE	$2.50	$61.72	$79.89	$70.81	9.50%	8.50%	7.72%	7.70%	8.36%	4.09%	8.33%
NorthWestern Corporation	NWE	$2.68	$50.43	$59.89	$55.16	1.50%	4.50%	6.87%	5.85%	4.68%	4.09%	9.30%
OGE Energy Corp.	OGE	$1.73	$39.10	$46.91	$43.01	3.00%	6.50%	6.32%	6.53%	5.59%	4.09%	8.50%
Pinnacle West Capital Corporation	PNW	$3.67	$81.47	$96.50	$88.99	1.50%	5.00%	2.12%	4.83%	3.36%	4.09%	8.28%
Portland General Electric Company	POR	$2.21	$40.05	$36.66	$38.36	5.50%	6.50%	3.44%	4.82%	5.07%	4.09%	10.41%
PPL Corporation	PPL	$1.17	$31.22	$36.66	$33.94	6.50%	7.50%	7.46%	7.40%	7.22%	4.09%	8.07%
The Southern Company	SO	$3.05	$80.46	$93.65	$87.06	3.50%	6.50%	6.55%	6.26%	5.70%	4.09%	7.93%
Xcel Energy Inc.	XEL	$2.42	$62.58	$73.38	$67.98	6.50%	7.00%	7.52%	7.84%	7.22%	4.09%	8.20%
Mean												8.42%
Median												8.17%
Minimum												7.71%
Maximum												10.41%

Notes:
[1] Gatewood Direct, at 67.
[2] Gatewood Direct, at 67
[3] Gatewood Direct, at 67.
[4] Equals average of [2], [3]
[5] Gatewood Direct, at 77.
[6] Gatewood Direct, at 77.
[7] Gatewood Direct, at 77.
[8] Gatewood Direct, at 77.
[9] Equals average of [5], [6], [7], [8]
[10] Gatewood Direct, at 77.
[11] Equals internal rate of return of cash flows for Year 0 through Year 250

Gatewood - Internal Rate of Return Analysis
As-Adjusted to rely on Projected EPS Growth and *Ibbotson* Long-term Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
			Stock Prices			First Stage Growth Rate					
Company	Ticker	Annualized Dividend (2026)	Min	Max	Mean	Value Line Proj. EPS Growth Rate	Zacks Proj. EPS Growth Rate	Fact Set Proj. EPS Growth Rate	Average	Second Stage Growth Rate	Cost of Equity
Alliant Energy Corporation	LNT	$2.16	$56.08	$66.54	$61.31	6.00%	6.73%	6.71%	6.48%	5.45%	9.24%
Ameren Corporation	AEE	$3.03	$85.27	$104.10	$94.69	6.50%	6.95%	6.95%	6.80%	5.45%	8.92%
American Electric Power Company, Inc.	AEP	$3.98	$89.91	$110.48	$100.20	6.50%	6.43%	6.80%	6.58%	5.45%	9.75%
Avista Corporation	AVA	$2.10	$34.80	$43.09	$38.95	5.50%	6.43%	5.98%	5.97%	5.45%	11.25%
CMS Energy Corporation	CMS	$2.30	$63.97	$76.45	$70.21	6.00%	7.84%	7.31%	7.05%	5.45%	9.03%
DTE Energy Company	DTE	$4.71	$115.59	$140.39	$127.99	4.50%	7.64%	7.50%	6.55%	5.45%	9.42%
Duke Energy Corporation	DUK	$4.30	$105.20	$125.27	$115.24	6.00%	6.33%	6.38%	6.24%	5.45%	9.43%
Entergy Corporation	ETR	$2.55	$66.85	$88.38	$77.62	3.00%	9.46%	9.12%	7.19%	5.45%	9.06%
IDACORP, Inc.	IDA	$3.65	$100.10	$120.84	$110.47	6.00%	8.47%	8.26%	7.58%	5.45%	9.13%
NextEra Energy, Inc.	NEE	$2.50	$61.72	$79.89	$70.81	8.50%	7.72%	7.70%	7.97%	5.45%	9.44%
NorthWestern Corporation	NWE	$2.68	$50.43	$59.89	$55.16	4.50%	6.87%	5.85%	5.74%	5.45%	10.61%
OGE Energy Corp.	OGE	$1.73	$39.10	$46.91	$43.01	6.50%	6.32%	6.53%	6.45%	5.45%	9.79%
Pinnacle West Capital Corporation	PNW	$3.67	$81.47	$96.50	$88.99	5.00%	2.12%	4.83%	3.98%	5.45%	9.54%
Portland General Electric Company	POR	$2.21	$40.05	$36.66	$38.36	6.50%	3.44%	4.82%	4.92%	5.45%	11.46%
PPL Corporation	PPL	$1.17	$31.22	$36.66	$33.94	7.50%	7.46%	7.40%	7.45%	5.45%	9.28%
The Southern Company	SO	$3.05	$80.46	$93.65	$87.06	6.50%	6.55%	6.26%	6.44%	5.45%	9.21%
Xcel Energy Inc.	XEL	$2.42	$62.58	$73.38	$67.98	7.00%	7.52%	7.84%	7.45%	5.45%	9.41%
Mean											9.64%
Median											9.42%
Minimum											8.92%
Maximum											11.46%

Notes:
[1] Gatewood Direct, at 67.
[2] Gatewood Direct, at 67
[3] Gatewood Direct, at 67.
[4] Equals average of [2], [3]
[5] Gatewood Direct, at 77.
[6] Gatewood Direct, at 77.
[7] Gatewood Direct, at 77.
[8] Equals average of [5], [6], [7]
[9] Rebuttal Exhibit AEB-20
[10] Equals internal rate of return of cash flows for Year 0 through Year 250

Mr. Gorman Multi-Stage DCF
As-Filed

Company	Ticker	[1] Annualized Dividend	[2] Stock Price	[3] First Stage Growth Rate (Mean)	[4] Year 6	[5] Year 7	[6] Year 8	[7] Year 9	[8] Year 10	[9] Third Stage Growth Rate	[10] Cost of Equity
Alliant Energy Corporation	LNT	$1.92	$61.86	6.63%	6.21%	5.79%	5.37%	4.94%	4.52%	4.10%	7.89%
Ameren Corporation	AEE	$2.84	$98.20	6.90%	6.43%	5.97%	5.50%	5.03%	4.57%	4.10%	7.70%
American Electric Power Company, Inc.	AEP	$3.72	$104.63	6.40%	6.02%	5.63%	5.25%	4.87%	4.48%	4.10%	8.37%
Avista Corporation	AVA	$1.96	$39.56	6.30%	5.93%	5.57%	5.20%	4.83%	4.47%	4.10%	9.99%
CMS Energy Corporation	CMS	$2.17	$71.97	7.62%	7.03%	6.45%	5.86%	5.27%	4.69%	4.10%	8.02%
DTE Energy Company	DTE	$4.36	$131.73	7.69%	7.09%	6.49%	5.90%	5.30%	4.70%	4.10%	8.41%
Duke Energy Corporation	DUK	$4.18	$117.67	6.45%	6.06%	5.67%	5.28%	4.88%	4.49%	4.10%	8.38%
Entergy Corporation	ETR	$2.40	$83.11	9.40%	8.52%	7.63%	6.75%	5.87%	4.98%	4.10%	8.29%
IDACORP, Inc.	IDA	$3.44	$114.86	7.84%	7.22%	6.59%	5.97%	5.35%	4.72%	4.10%	8.05%
NextEra Energy, Inc.	NEE	$2.06	$69.30	7.81%	7.19%	6.57%	5.96%	5.34%	4.72%	4.10%	8.01%
NorthWestern Corporation	NWE	$2.64	$55.77	6.52%	6.12%	5.71%	5.31%	4.91%	4.50%	4.10%	9.80%
OGE Energy Corp.	OGE	$1.69	$44.42	6.15%	5.81%	5.47%	5.13%	4.78%	4.44%	4.10%	8.60%
Pinnacle West Capital Corporation	PNW	$3.58	$91.83	3.11%	3.28%	3.44%	3.61%	3.77%	3.94%	4.10%	7.91%
Portland General Electric Company	POR	$2.00	$43.01	3.86%	3.90%	3.94%	3.98%	4.02%	4.06%	4.10%	8.87%
PPL Corporation	PPL	$1.03	$34.83	7.49%	6.93%	6.36%	5.80%	5.23%	4.67%	4.10%	7.91%
The Southern Company	SO	$2.88	$89.01	6.84%	6.38%	5.93%	5.47%	5.01%	4.56%	4.10%	8.10%
Xcel Energy Inc.	XEL	$2.28	$69.29	7.92%	7.28%	6.65%	6.01%	5.37%	4.74%	4.10%	8.45%
Mean				6.76%							8.40%
Median				6.84%							8.29%

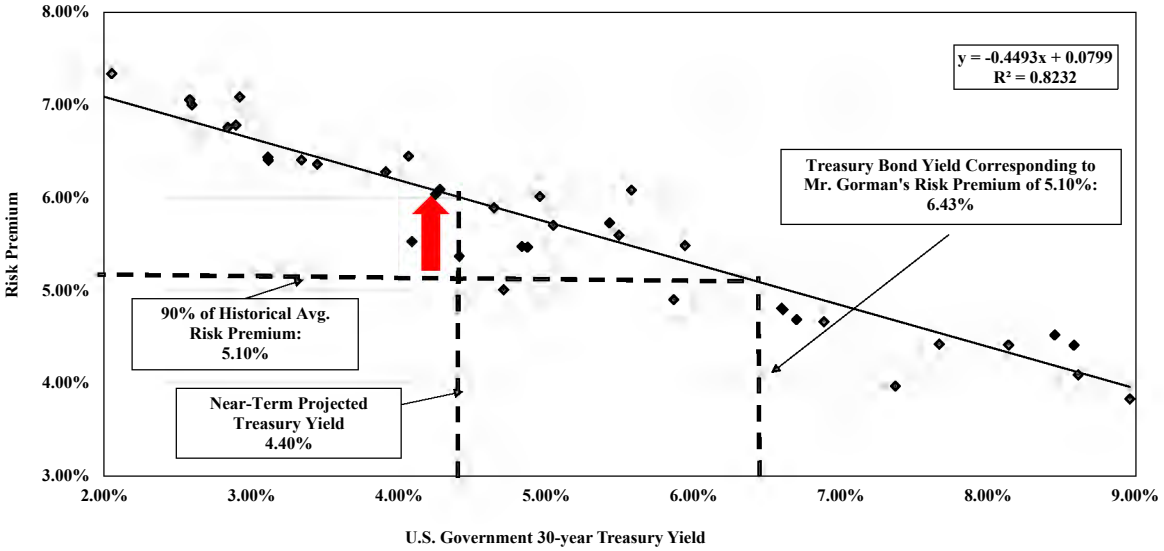
Notes:
All data from Exhibit MPG-14; results are not exact due to rounding

Mr. Gorman Multi-Stage DCF
As-Adjusted to rely on Projected EPS Growth and *Ibbotson* Long-term Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Company	**Ticker**	**Annualized Dividend**	**Stock Price**	**First Stage Growth Rate (Mean)**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Third Stage Growth Rate**	**Cost of Equity**
Alliant Energy Corporation	LNT	$1.92	$61.86	6.63%	6.43%	6.24%	6.04%	5.84%	5.65%	5.45%	8.97%
Ameren Corporation	AEE	$2.84	$98.20	6.90%	6.66%	6.42%	6.18%	5.93%	5.69%	5.45%	8.79%
American Electric Power Company, Inc.	AEP	$3.72	$104.63	6.40%	6.24%	6.08%	5.93%	5.77%	5.61%	5.45%	9.43%
Avista Corporation	AVA	$1.96	$39.56	6.30%	6.16%	6.02%	5.88%	5.73%	5.59%	5.45%	10.95%
CMS Energy Corporation	CMS	$2.17	$71.97	7.62%	7.26%	6.90%	6.54%	6.17%	5.81%	5.45%	9.09%
DTE Energy Company	DTE	$4.36	$131.73	7.69%	7.32%	6.94%	6.57%	6.20%	5.83%	5.45%	9.46%
Duke Energy Corporation	DUK	$4.18	$117.67	6.45%	6.28%	6.12%	5.95%	5.78%	5.62%	5.45%	9.44%
Entergy Corporation	ETR	$2.40	$83.11	9.40%	8.74%	8.08%	7.43%	6.77%	6.11%	5.45%	9.35%
IDACORP, Inc.	IDA	$3.44	$114.86	7.84%	7.44%	7.04%	6.65%	6.25%	5.85%	5.45%	9.12%
NextEra Energy, Inc.	NEE	$2.06	$69.30	7.81%	7.42%	7.02%	6.63%	6.24%	5.85%	5.45%	9.09%
NorthWestern Corporation	NWE	$2.64	$55.77	6.52%	6.34%	6.16%	5.99%	5.81%	5.63%	5.45%	10.78%
OGE Energy Corp.	OGE	$1.69	$44.42	6.15%	6.03%	5.92%	5.80%	5.68%	5.57%	5.45%	9.64%
Pinnacle West Capital Corporation	PNW	$3.58	$91.83	3.11%	3.50%	3.89%	4.28%	4.67%	5.06%	5.45%	8.99%
Portland General Electric Company	POR	$2.00	$43.01	3.86%	4.13%	4.39%	4.66%	4.92%	5.19%	5.45%	9.89%
PPL Corporation	PPL	$1.03	$34.83	7.49%	7.15%	6.81%	6.47%	6.13%	5.79%	5.45%	9.00%
The Southern Company	SO	$2.88	$89.01	6.84%	6.61%	6.38%	6.15%	5.91%	5.68%	5.45%	9.17%
Xcel Energy Inc.	XEL	$2.28	$69.29	7.92%	7.51%	7.10%	6.69%	6.27%	5.86%	5.45%	9.50%
Mean				6.76%							9.45%
Median				6.84%							9.35%

Notes:
Data in [1] through [3] from Exhibit MPG-14, data in [8] from Rebuttal Exhibit AEB-20

Gorman Risk Premium Analysis
As-Adjusted Treasury Bond Approach



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.907288593
R Square	0.823172591
Adjusted R Square	0.818519238
Standard Error	0.004265912
Observations	40

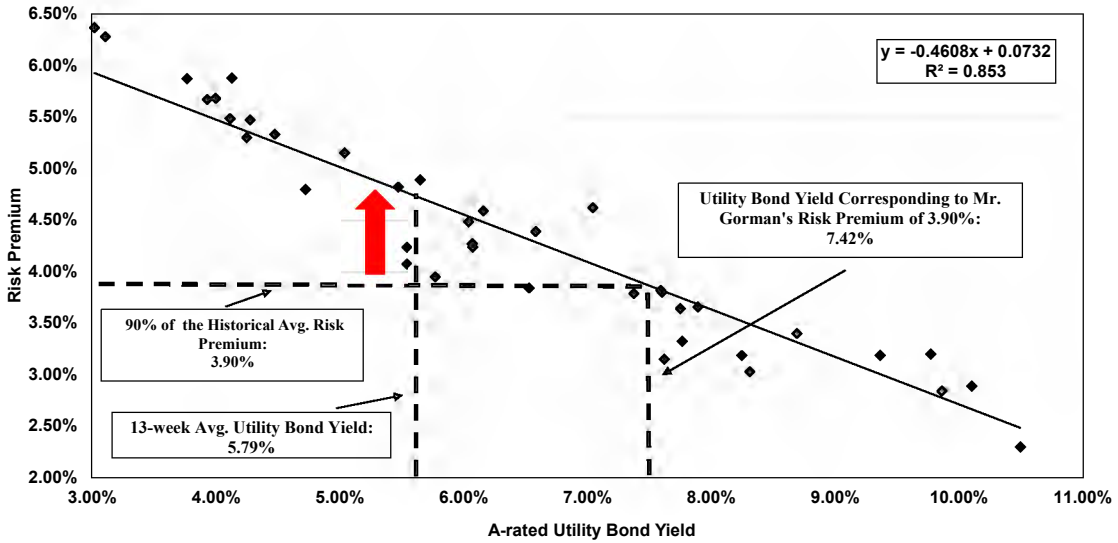
ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.003219206	0.003219206	176.8988116	7.12171E-16
Residual	38	0.000691524	1.8198E-05		
Total	39	0.00391073			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.07988633	0.001859633	42.95811983	8.04217E-34	0.0761217	0.08365096	0.0761217	0.08365096
30 yr. Treasury Bond Yld	-0.449279753	0.033779591	-13.30033126	7.12171E-16	-0.51766296	-0.380896546	-0.51766296	-0.380896546

	30-year Treasury Bond Yield	Risk Premium	ROE
Mr. Gorman Adjusted Treasury Bond Approach Using Regression	4.40%	6.01%	10.41%

Gorman Risk Premium Analysis
As-Adjusted Utility Bond Approach



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.923565418
R Square	0.852973081
Adjusted R Square	0.849103951
Standard Error	0.004033933
Observations	40

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.003587397	0.003587397	220.4560717	2.10093E-17
Residual	38	0.000618359	1.62726E-05		
Total	39	0.004205756			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.073191446	0.002110595	34.67810914	2.25258E-30	0.06891877	0.077464122	0.06891877	0.077464122
"A"-rated Utility Bond Yld	-0.460844939	0.031038004	-14.84776319	2.10093E-17	-0.523678093	-0.398011784	-0.523678093	-0.398011784

	A-Rated Utility Bond Yield	Risk Premium	ROE
Mr. Gorman Adjusted Utility Bond Approach Using Regression	5.79%	4.65%	10.44%

Market Value of the Capital Structure

Expressed in ($000s)

				[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
				Debt												**Preferred Equity**		**Common Equity**		**Market Value**			
Company	Ticker	Woolridge Proxy Group	Bulkley Proxy Group	Current Assets	Current Liabilities	Current Long-Term Debt and Leases	Net Working Capital	Short-Term Debt	Short-Term Debt Adj'd for Net Working Capital	Long-Term Debt	Book Value of Total Debt	Market Value of Long-Term Debt	Carrying Amount of Long-Term Debt	Adjustment to Book Value of Long-Term Debt	Market Value of Total Debt	Book Value of Preferred Equity	Market Value of Preferred Equity	Book Value of Common Equity	Market Value of Common Equity	Market Value Of the Firm	Debt Ratio	Preferred Equity Ratio	Common Equity Ratio
Alliant Energy Corp.	LNT	Y	Y	$1,184,000	$2,715,000	$1,173,000	($358,000)	$558,000	$358,000	$8,886,000	$10,417,000	$9,848,000	$9,577,000	$271,000	$10,688,000	$0	$0	$7,004,000	$15,277,916	$25,965,916	41.16%	0.00%	58.84%
Ameren Corp.	AEE	Y	Y	$2,264,000	$3,413,000	$325,000	($824,000)	$1,143,000	$824,000	$17,326,000	$18,475,000	$15,933,000	$17,579,000	-$1,646,000	$16,829,000	$0	$0	$12,114,000	$24,055,530	$40,884,530	41.16%	0.00%	58.84%
American Electric Power	AEP	Y	Y	$5,788,800	$13,009,300	$3,509,700	($3,710,800)	$2,523,800	$2,523,800	$39,964,500	$45,998,000	$38,964,700	$42,642,800	-$3,678,100	$42,319,900	$0	$0	$26,943,800	$49,267,619	$91,587,519	46.21%	0.00%	53.79%
Avista Corp	AVA	Y	Y	$656,000	$771,000	$8,000	($107,000)	$354,000	$107,000	$2,787,000	$2,902,000	$2,183,000	$2,725,000	-$542,000	$2,360,000	$0	$0	$2,591,000	$2,892,548	$5,252,548	44.93%	0.00%	55.07%
Centerpoint Energy	CNP	Y		$4,381,000	$4,045,000	$69,000	$405,000	$500,000	$0	$20,422,000	$20,491,000	$19,597,000	$20,961,000	-$1,364,000	$19,127,000	$0	$0	$10,666,000	$20,992,136	$40,119,136	47.68%	0.00%	52.32%
CMS Energy Corp.	CMS	Y	Y	$2,790,000	$3,521,000	$1,198,000	$467,000	$65,000	$0	$15,327,000	$16,525,000	$14,876,000	$16,386,000	-$1,510,000	$15,015,000	$224,000	$224,000	$8,006,000	$20,036,513	$35,275,513	42.56%	0.64%	56.80%
Consolidated Edison	ED	Y		$6,664,000	$6,433,000	$119,000	$350,000	$2,670,000	$0	$25,040,000	$25,159,000	$21,997,000	$24,651,000	-$2,654,000	$22,505,000	$0	$0	$21,962,000	$31,028,810	$53,533,810	42.04%	0.00%	57.96%
Dominion Energy, Inc.	D	Y		$6,613,000	$9,289,000	$1,783,000	($893,000)	$2,500,000	$893,000	$38,344,000	$41,020,000	$32,167,000	$34,533,000	-$2,366,000	$38,654,000	$991,000	$991,000	$26,262,000	$45,301,719	$84,946,719	45.50%	1.17%	53.33%
DTE Energy Company	DTE	Y	Y	$3,607,000	$5,106,000	$1,317,000	($182,000)	$1,067,000	$182,000	$20,857,000	$22,356,000	$20,136,000	$21,963,000	-$1,827,000	$20,529,000	$0	$0	$11,699,000	$25,131,656	$45,660,656	44.96%	0.00%	55.04%
Duke Energy	DUK	Y	Y	$12,950,000	$19,357,000	$4,557,000	($1,850,000)	$3,584,000	$1,850,000	$77,297,000	$83,704,000	$73,440,000	$80,689,000	-$7,249,000	$76,455,000	$973,000	$973,000	$49,154,000	$83,690,744	$161,118,744	47.45%	0.60%	51.94%
Edison International	EIX	Y		$7,155,000	$8,439,000	$2,173,000	$889,000	$998,000	$0	$34,590,000	$36,763,000	$33,160,000	$35,583,000	-$2,423,000	$34,340,000	$1,645,000	$1,645,000	$13,920,000	$30,890,720	$66,875,720	51.35%	2.46%	46.19%
Entergy Corp.	ETR	Y	Y	$4,396,237	$6,111,037	$1,462,250	($252,550)	$927,291	$252,550	$26,921,331	$28,636,131	$25,181,802	$27,991,595	-$2,809,793	$25,826,338	$0	$0	$15,083,908	$32,487,102	$58,313,440	44.29%	0.00%	55.71%
Evergy Inc.	EVRG	Y		$1,839,300	$3,662,400	$679,600	($1,143,500)	$1,608,600	$1,143,500	$11,927,300	$13,750,400	$11,535,000	$12,460,900	-$925,900	$12,824,500	$0	$0	$9,955,000	$14,189,530	$27,014,030	47.47%	0.00%	52.53%
Eversource	ES	Y		$5,076,073	$6,720,957	$1,062,360	($582,524)	$2,042,793	$582,524	$26,133,499	$27,778,383	$24,791,400	$26,704,800	-$1,913,400	$25,864,983	$0	$0	$15,039,387	$21,002,168	$46,867,151	55.19%	0.00%	44.81%
Exelon Corporation	EXC	Y		$8,384,000	$9,611,000	$1,492,000	$265,000	$1,859,000	$0	$43,554,000	$45,046,000	$39,057,000	$44,400,000	-$5,343,000	$39,703,000	$0	$0	$26,921,000	$37,610,924	$77,313,924	51.35%	0.00%	48.65%
FirstEnergy Corp	FE	Y		$2,776,000	$4,997,000	$1,028,000	($1,193,000)	$550,000	$550,000	$22,688,000	$24,266,000	$22,128,000	$23,594,000	-$1,466,000	$22,800,000	$0	$0	$12,455,000	$22,862,496	$45,662,496	49.93%	0.00%	50.07%
IDACORP, Inc.	IDA	Y	Y	$988,455	$700,801	$19,885	$307,539	$0	$0	$3,053,777	$3,073,662	$2,807,803	$3,073,662	-$265,859	$2,807,803	$0	$0	$3,330,954	$5,844,764	$8,652,567	32.45%	0.00%	67.55%
NextEra Energy, Inc.	NEE	Y	Y	$11,951,000	$25,355,000	$8,061,000	($5,343,000)	$1,887,000	$1,887,000	$73,612,000	$83,560,000	$76,428,000	$80,446,000	-$4,018,000	$79,542,000	$0	$0	$50,101,000	$148,287,331	$227,829,331	34.91%	0.00%	65.09%
NorthWestern Energy Group	NWE	Y	Y	$418,186	$802,200	$303,546	($80,468)	$100,000	$80,468	$2,697,208	$3,081,222	$2,645,779	$2,995,293	-$349,514	$2,731,708	$0	$0	$2,857,700	$3,249,654	$5,981,362	45.67%	0.00%	54.33%
OGE Energy Corp.	OGE	Y	Y	$895,100	$1,229,800	$37,300	($297,400)	$469,300	$297,400	$5,048,700	$5,383,400	$4,735,000	$5,053,300	-$318,300	$5,065,100	$0	$0	$4,640,900	$8,299,147	$13,364,247	37.90%	0.00%	62.10%
Pinnacle West Capital	PNW	Y	Y	$1,689,404	$2,843,797	$900,367	($254,026)	$568,450	$254,026	$9,579,525	$10,733,918	$7,405,000	$8,405,000	-$1,000,000	$9,733,918	$0	$0	$6,754,311	$9,658,800	$19,392,718	50.19%	0.00%	49.81%
Portland General Electric	POR	Y	Y	$1,025,000	$1,119,000	$223,000	$129,000	$0	$0	$4,948,000	$5,171,000	$3,963,000	$4,524,000	-$561,000	$4,610,000	$0	$0	$3,794,000	$4,589,427	$9,199,427	50.11%	0.00%	49.89%
PPL Corporation	PPL	Y	Y	$2,880,000	$3,333,000	$575,000	$122,000	$303,000	$0	$16,087,000	$16,662,000	$15,562,000	$16,503,000	-$941,000	$15,721,000	$0	$0	$14,077,000	$23,998,785	$39,719,785	39.58%	0.00%	60.42%
Public Service Enterprise Group Inc.	PEG	Y		$4,235,000	$6,505,000	$2,178,000	($92,000)	$1,593,000	$92,000	$19,117,000	$21,387,000	$19,341,000	$21,114,000	-$1,773,000	$19,614,000	$0	$0	$16,114,000	$42,314,285	$61,928,285	31.67%	0.00%	68.33%
Southern Co.	SO	Y	Y	$10,694,000	$15,993,000	$4,918,000	($381,000)	$1,338,000	$381,000	$60,021,000	$65,320,000	$57,700,000	$63,200,000	-$5,500,000	$59,820,000	$0	$0	$33,208,000	$91,095,183	$150,915,183	39.64%	0.00%	60.36%
WEC Energy Group	WEC	Y		$2,911,700	$4,841,900	$1,733,300	($196,900)	$1,116,600	$196,900	$17,518,900	$19,449,100	$17,840,800	$18,907,100	-$1,066,300	$18,382,800	$0	$0	$12,395,000	$29,996,729	$48,379,529	38.00%	0.00%	62.00%
Xcel Energy, Inc.	XEL	Y	Y	$4,325,000	$6,459,000	$1,332,000	($802,000)	$695,000	$695,000	$28,243,000	$30,270,000	$25,115,000	$28,419,000	-$3,304,000	$26,966,000	$0	$0	$19,522,000	$39,128,833	$66,094,833	40.80%	0.00%	59.20%
Woolridge Proxy Group Median																					44.93%	0.00%	55.07%
Bulkley Proxy Group Median																					42.56%	0.00%	56.80%

Notes:

[1] S&P Capital IQ Pro.
[2] S&P Capital IQ Pro.
[3] S&P Capital IQ Pro.
[4] Equals [1] - ([2] -[3])
[5] S&P Capital IQ Pro.
[6] Equals:
- [A] 0 if [4] > 0
- [B] ABS of [4] if [4] < 0 and ABS of [4] < [5]
- [C] [5] if [4] < 0 and ABS of [4] > [5]

[7] S&P Capital IQ Pro.
[8] Equals [3] + [6] + [7]
[9] Company 10-Ks
[10] Company 10-Ks
[11] Equals [9] - [10]
[12] Equals [8] + [11]
[13] S&P Capital IQ Pro.
[14] Equals [13]
[15] S&P Capital IQ Pro.
[16] S&P Capital IQ Pro.
[17] Equals [12] + [14] + [16]
[18] Equals [12] / [17]
[19] Equals [14] / [17]
[20] Equals [16] / [17]

COMMONWEALTH OF MASSACHUSETTS)
) ss:
COUNTY OF SUFFOLK)

VERIFICATION

Ann Bulkley, being duly sworn upon her oath deposes and states that she is a Principal with The Brattle Group, that she has read and is familiar with the foregoing Testimony, and attests that the statements contained therein are true and correct to the best of her knowledge, information and belief.

Ann Bulkley

Subscribed and sworn to before me this 3rd day of July 2025.

Notary Public

My Appointment Expires:
6/30/2028

Gerard M. Rooney
NOTARY PUBLIC
Commonwealth of
Massachusetts
My Commission Expires
6/30/2028

GERARD M. ROONEY NOTARY PUBLIC COMMONWEALTH OF MASSACHUSETTS MY COMMISSION EXPIRES 6/30/2028

Public

CERTIFICATE OF SERVICE

I do hereby certify that a true and correct copy of the foregoing document has been emailed, this 3rd day of July 2025, to all parties of record as listed below:

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