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Witness:	Ann E. Bulkley
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Case No.:	ER-2024-0189
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. ER-2024-0189

SURREBUTTAL TESTIMONY

OF

ANN E. BULKLEY

ON BEHALF OF

EVERGY MISSOURI WEST, INC.

Kansas City, Missouri

September 2024

TABLE OF CONTENTS

SURREBUTTAL TESTIMONY

OF

ANN E. BULKLEY

Case No. ER-2024-0189

I. INTRODUCTION

Q: Are you the same Ann E. Bulkley that previously filed direct testimony on February 2, 2024 and rebuttal testimony on August 6, 2024 in this proceeding ("Bulkley Direct Testimony" and "Bulkley Rebuttal Testimony," respectively)?

A: Yes. I previously submitted direct testimony and rebuttal testimony before the Missouri Public Service Commission ("Commission") in this proceeding on behalf of Evergy Missouri West, Inc. d/b/a Evergy Missouri West ("Evergy West" or the "Company"), a wholly-owned subsidiary of Evergy, Inc. ("Evergy").

Q: What is the purpose of your surrebuttal testimony?

A: The purpose of my surrebuttal testimony is to respond to the issues raised in the rebuttal testimonies of Seoung Joun Won on behalf of the Missouri Public Service Commission Staff ("Staff"),[1] and David Murray on behalf of the Missouri Office of Public Counsel ("OPC")[2] regarding the just and reasonable ROE and the appropriate capital structure for the Company in this proceeding. To the extent that I do not address a particular issue raised

[1] Missouri Public Service Commission, Case No. ER-2024-0189, Rebuttal Testimony of Seoung Joun Won, PhD, August 6, 2024 ("Won Rebuttal Testimony").

[2] Missouri Public Service Commission, Case No. ER-2024-0189, Direct Testimony of David Murray, August 6, 2024 ("Murray Rebuttal Testimony").

by these witnesses in my rebuttal testimony should not be viewed as acceptance of that issue.

Q: Are you sponsoring any schedules in support of surrebuttal testimony?

A: Yes. I am sponsoring Schedules AEB-SR1 through AEB-SR5, which were prepared by me or under my direction.

II. SUMMARY OF ANALYSES AND CONCLUSIONS

Q: Please briefly summarize your surrebuttal testimony and your key conclusions and recommendations regarding the appropriate ROE and capital structure for Evergy West in this proceeding?

A: My key conclusions are as follows:

Cost of Equity / Authorized ROE

- It is not credible for Dr. Won and Mr. Murray to suggest that I should have relied on the assumptions used by their cost of equity estimation models when they do not directly rely on the results of those models to support their recommended ROEs.
- Neither Dr. Won nor Mr. Murray have demonstrated that their suggested changes to my proxy group are supported.
    - As a practical matter, they have identified only two out of the sixteen companies in my proxy group that they believe have significant unregulated operations – one of which is now excluded because it has become involved in a transformative transaction and no longer meets the screening criteria – thus leaving only a single company of which they are concerned.
    - Regardless, there is no basis to exclude utilities with unregulated operations but that derive the majority of their operating income from regulated electric operations and thus are comparable to Evergy West.
    - In addition, there is no discernible trend in the constant growth discounted case flow ("DCF") results for the companies in my proxy group that would indicate companies with a relatively higher percentage of unregulated operations have a higher cost of equity than companies with a relatively lower percentage of unregulated operations, and neither Dr. Won nor Mr. Murray have conducted any analysis or provided evidence that supports this view.

- There is no basis to Mr. Murray's claim that regulators, including the Commission, have incorrectly authorized ROEs for years that are substantially higher than the cost of equity.
- While Dr. Won and Mr. Murray dispute various assumptions that are used in my cost of equity estimation models, nothing in their rebuttal testimonies has caused me to modify or adjust my analyses or ROE recommendation.
    - Dr. Won's and Mr. Murray's criticism regarding the use of projected earnings growth rates in the constant growth DCF model is unfounded.
        - While both Dr. Won and Mr. Murray essentially suggest that I should have relied on the multi-stage DCF model using their assumptions, neither of them directly rely on the output of their DCF models.
        - Earnings are the fundamental driver of dividend growth rates, and there is significant academic research demonstrating that EPS growth rates are most relevant in stock price valuation.
        - Mr. Murray's proposed adjustment to my DCF analyses conflicts with the equity analysts reports that he cites throughout his testimony.
    - Dr. Won's and Mr. Murray's allegation that the market return in my Capital Asset Pricing Model ("CAPM") and Empirical CAPM ("ECAPM") analyses is too high is contradicted by the fact that the methodology I have used to estimate the market return is consistent with (1) historical average returns; (2) the approach accepted by various regulators, and (3) the results of a study by the Federal Reserve Bank of New York that evaluated various market risk premium estimates.
        - There is a critical error in Dr. Won's "adjustment" to my CAPM and ECAPM analyses, that when corrected, continues to support an ROE of 10.50 percent and fails to support Dr. Won's conclusion. Thus, Dr. Won's "adjustment" to my CAPM and ECAPM analyses cannot be relied upon.
    - Neither Dr. Won nor Mr. Murray have provided any evidence that the results of my Bond Yield Plus Risk Premium analysis ("BYRP") are unreliable.
        - The regression analysis that I have conducted demonstrates a strong inverse relationship between interest rates and the equity risk premium for utilities.
        - Dr. Won's concern regarding the data used in my BYRP analysis applies equally to his own analysis and given that his ROE recommendation in this proceeding is equivalent to the result of his BYRP analysis, the concern that he raises invalidates his ROE recommendation in this proceeding.

- Dr. Won and Mr. Murray fail to consider the relevant comparison point when evaluating the Company's business and regulatory risks. While Dr. Won and Mr. Murray review Evergy West's regulatory mechanisms to conclude that Evergy West has reduced business and regulatory risk, they fail to recognize that the appropriate comparison is not the Company's risk with or without regulatory mechanisms, but rather the Company's risk as compared to the proxy group companies.
    - The data that is relied upon to estimate Evergy West's cost of equity is market data for the proxy group companies. Therefore, it is important to evaluate Evergy West's risk profile *relative to this group* to determine whether the market data for the proxy group adequately addresses the Company's risk profile. Dr. Won and Mr. Murray fail to evaluate the Company's risk from this perspective and therefore cannot conclude anything meaningful about the Company's ROE as compared to the data relied upon.
    - All else equal, while I agree that regulatory mechanisms that reduce a utility's regulatory lag in cost recovery help to mitigate risk, the appropriate analysis for purposes of establishing the Company's ROE in this proceeding is not to identify whether Evergy West has regulatory mechanisms that mitigate its regulatory lag, but rather how does Evergy West's regulatory risk compare to the other companies in the proxy group.

Capital Structure

- The Company's proposed 52.04 percent equity ratio is reasonable.
    - The Company's proposed equity ratio is below the average 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).
    - The Company's proposed equity ratio is consistent with the average equity ratios authorized for vertically-integrated electric utilities across the U.S. over the past three years.
- While I disagree with Mr. Murray that it is appropriate to compare the Company's proposed capital structure to the average equity ratios of the proxy group holding companies, if that analysis is performed correctly, it also demonstrates that, contrary to his conclusion, the Company's proposed equity ratio is well below those of the proxy group and thus reasonable.

III. CAPITAL MARKETS

Q: What is Mr. Murray's concern with your position on how current market conditions affect the cost of equity for utilities?

A: Mr. Murray suggests that share prices reflect all known information about a stock, essentially the efficient market hypothesis ("EMH").[3] Based on this theory, he concludes that the analyst views I have provided about the performance of the utility sector price are not relevant.[4] Rather, he suggests that the prices used in the DCF model will reflect all known information and therefore the DCF model results should be relied upon to estimate the cost of equity.[5]

Q: What is the EMH?

A: The theory of the EMH contends that all information that is currently known by investors is already reflected in current stock prices.[6] For example, as shown in Equation 1 in my direct testimony, the theory of the DCF model is that the current share price is equal to the present value of all expected future dividends.[7] Therefore, if markets were fully efficient as espoused by Mr. Murray, changes in share prices could only be explained by new information that results in a change to the expected dividends.

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3 Murray Rebuttal Testimony, at 23.

4 Murray Rebuttal Testimony at 16-24.

5 Murray Rebuttal Testimony, at 21-22.

6 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.

7 Bulkley Direct Testimony, at 34.

Q: Have economists evaluated the theory of the EMH using historical market data?

A: Yes, they have. In fact, Nobel Prize-winning economist Dr. Robert Shiller tested the theory of the EMH in his 1981 study titled "Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?" where he examined if the volatility in share prices could be fully explained by new information regarding future dividends. Dr. Shiller found that the historical volatility of share prices has been far too high to be fully explained by changes in expectations for future dividends:

> We have seen that measures of stock price volatility over the past century appear to be far too high – five to thirteen times too high – to be attributed to new information about future real dividends if uncertainty about future dividends is measured by the sample standard deviations of real dividends around their long-run exponential growth path. The lower bound of a 95 percent one-sided x^2 confidence interval for the standard deviation of annual changes in real stock prices is over five times higher than the upper bound allowed by our measure of the observed variability of real dividends. The failure of the efficient markets model is thus so dramatic that it would seem impossible to attribute the failure to such things as data errors, price index problems, or changes in tax laws.[8]

Thus, Dr. Shiller concluded that the DCF model does not fully explain stock prices.

Q: How does Dr. Shiller's work affect the estimation of the cost of equity?

A: Because the theory of the EMH and the DCF model did not hold based on Dr. Shiller's examination of actual market data, it is reasonable to conclude that Mr. Murray's estimates of the cost of equity for Evergy West likely do not reflect the true cost of equity for Evergy West as he alleges.[9]

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[8] 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.

[9] *See also* Werner F. M. De Bondt and Richard Thaler, "Does the Stock Market Overreact?," *The Journal of Finance*, Vol. 40, No. 3, 1985, at 793-805; and Andrei Shleifer and Lawrence H. Summers, "The Noise Trader Approach to Finance," *Journal of Economic Perspectives*, Vol. 4, No. 2, 1990, at 19-33.

Q: Are there practical examples that show the DCF model does not entirely explain share prices?

A: Yes. Large sudden declines in the market such as Black Monday in 1987, the Great Recession of 2008/09, and the COVID-19 crash in March 2020 would not be explained by new information regarding dividends. Moreover, 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.[10]

Q: Does the CAPM also rely on the EMH?

A: Yes, it does. As discussed in my direct testimony, the CAPM develops an estimate of the expected return for an asset based on the level of systematic/non-diversifiable risk (*i.e.*, beta). Assuming securities are correctly priced (*i.e.*, markets are efficient, and that all information is equally available to investors), the expected return produced by the CAPM should be equivalent to the actual returns achieved in the market. However, as has been documented in academic literature, the returns produced by the CAPM have not accurately predicted the returns achieved by investors in the market either.[11] Specifically, there are two primary reasons why the CAPM under-predicts returns: (1) as noted in my direct testimony, the CAPM is mis-specified and alternative models such as the ECAPM better reflect returns achieved in the market; and, (2) as shown by Dr. Shiller, share prices are not priced consistent with the EMH, in which case the CAPM will not fully explain the actual returns in the market.

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[10] R.J. Shiller, "From Efficient Markets Theory to Behavioral Finance," *Journal of Economic Perspectives*, Vol. 17, No. 1, 2003, at 83-104.

[11] Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Reports, Inc., 2021, at 206-208.

Q: Is there a cost of equity estimation model that will produce the actual cost of equity for Evergy West?

A: No, each of the models that Dr. Won, Mr. Murray, and I have relied on can only be used to *estimate* the cost of equity. Each model has limiting assumptions that make it incorrect to conclude that any one model produces the actual cost of equity for Evergy West.

Q: What does this mean for establishing the ROE in this proceeding?

A: Because each model can be affected by the assumptions relied upon, and the market data used for these assumptions cannot factor in all information consistently, it is important that the analyst consider multiple models to estimate the cost of equity. Therefore, I consider the results of multiple models, along with qualitative information such as capital market conditions that can have an effect on the assumptions and thus the cost of equity estimate produced by the models, to determine where within the range of results I recommend that the Commission establish the ROE in a given proceeding. Mr. Murray dismisses consideration of market conditions based on the incorrect assumption that all information is accurately reflected in current share prices and bond yields. However, Dr. Shiller's conclusion regarding the failure of the efficient market hypothesis (EMH) demonstrates that it is important to consider multiple models, as well as overall market conditions and the effect of those conditions on the models.

Q: Has Mr. Murray's reliance on the EMH resulted in an incorrect conclusion regarding the prospective cost of equity for utilities in a prior rate proceeding?

A: Yes. In the Company's last rate proceeding in 2022, Mr. Murray stated:

> Ms. Bulkley's suggestions to use projected market data violates a fundamental tenet of the efficient market hypothesis, which dictates that

> security prices reflect all known information at the time, whether that information is certain or not, such as changes in earnings, dividends, interest rates, economic growth, etc. Ms. Bulkley goes as far as to suggest that investors have mispriced utility stocks to the point that she believes they may deflate causing dividend yields to increase.[12]

Mr. Murray concluded that it was incorrect to rely on forecast data and instead should have relied on current share prices, which more appropriately reflect investors' expectations of the cost of equity for the Company over the near-term. However, as Mr. Murray acknowledges in the current proceeding, interest rates increased substantially in 2022 and 2023 subsequent to the filing of his rebuttal testimony in the Company's 2022 rate proceeding, which ultimately resulted in a "contraction in utility P/E ratios" or a decline in the share prices of utilities.[13] This is important because in a rate proceeding the cost of equity is being estimated for the future period when rates will be in effect. Because Mr. Murray relied on the EMH, he understated Evergy West's cost of equity during the period that the Company's rate from the last rate proceeding were in effect.

Q: Can you provide an example of how Mr. Murray's reliance on the EMH could result in an incorrect conclusion regarding the cost of equity for Every West in the current proceeding?

A: Yes. As I discussed in my rebuttal testimony, the Federal Open Market Committee ("FOMC") forecasts one 25 basis point cut in the federal funds rate in 2024. This is further supported by Atlanta Federal Reserve President Raphael Bostic, who recently commented that he would need "a little more data" before supporting a reduction in the federal funds

[12] Case No. ER-2022-0129, Rebuttal Testimony of David Murray, July 13, 2022, at 16.

[13] Murray Rebuttal Testimony, at 16-17.

rate.[14] However, the CME Group, which publishes a "FedWatch" probability chart of FOMC activity, reported as of August 20, 2024, that the federal funds rate futures contracts reflect an expectation of rate cuts totaling approximately 100 basis points by the end of 2024.[15] Therefore, the market is currently assuming that the federal funds rate will be reduced by 75 basis points more than what is predicted by the FOMC. Because changes in the federal funds rate are viewed as an indicator of the FOMC's view of the economy, this expectation as reflected in the CME Group data would be reflected in investment decisions, which would have an effect on both the long-term government bond yields relied on in the CAPM and share prices of utilities relied on in the DCF model. Given that the market expectation deviates substantially than what is predicted by the FOMC, if the FOMC only reduces the federal funds rate by 25 basis points instead of the 100 basis points expected, investment strategies will be altered causing changes in the yields on long-term government bonds and the share prices of utilities.[16]

Q: Have you reviewed any projections by equity analysts regarding the federal funds rate?

A: Yes. The consensus estimate of the average federal funds rate reported by *Blue Chip Financial Forecasts* is 5.00 percent as of the end of 2024.[17] Given that the current federal funds rate range is 5.25 percent to 5.50 percent, this would imply a decrease of 25 to 50

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[14] Steve Matthews, "Fed's Bostic Says More Data Needed, Rate Cut Likely By Year-End," Bloomberg, August 13, 2024.

[15] CME Group, FedWatch Tool, accessed on August 20, 2024.

[16] The market responded similarly in December 2023 when the CME group projected significant rate reductions in 2024, despite the Federal Reserve indicating that it would need to closely watch market data before making any changes in interest rates. This resulted in a short-term decline in the yields on Treasury bonds and an increase in utility stock prices in December 2023, both of which reversed in January 2024.

[17] *Blue Chip Financial Forecasts*, Vol. 43, No. 8, August 1, 2024, at 2.

basis points, which is much more consistent with the forecast of the FOMC. *Blue Chip Financial Forecasts* also reports a consensus estimate of the yield on the 10-year Treasury bond, which is 4.20 percent as of the end of 2024, or higher than the yield on the 10-year Treasury bond of 3.80 percent as of August 2, 2024, noted by Mr. Murray.[18]

Q: What do you conclude from these differences between what is reflected in current market conditions relative to other experts' expectations?

A: These differences highlight the importance of considering both current and projected data, and the effect of these assumptions on the estimates of the cost of equity. The FOMC has been clear that changes in monetary policy will be based on market data and will be measured. Therefore, it is reasonable to rely on the FOMC's forecast of the federal funds rate that it published at its June 12, 2024 meeting, which is more consistent with equity analysts' views. as reported by *Blue Chip Financial Forecasts,* than the expectations reflected in futures contracts as reported by the CME Group.

IV. PROXY GROUP

Q: Please summarize Dr. Won's and Mr. Murray's positions with respect to the proxy group that you relied on for Evergy West.

A: Dr. Won concludes that I have inappropriately included ALLETE, Inc. ("ALE") and NextEra Energy, Inc. ("NEE") in my proxy group because each has regulated assets that represent less than 80 percent of total assets.[19]

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[18] *Id*.

[19] Won Rebuttal Testimony, at 7-8.

Mr. Murray also raises the inclusion of ALE and NEE in the proxy group, suggesting that I do not recognize that some of the companies contained in my proxy group have "significant exposure" to unregulated operations.[20] Mr. Murray believes that companies with a higher percentage of unregulated operations have greater risk, and therefore, concludes that I have not accounted for the increased risk of unregulated operations when comparing the business risk of Evergy West to the proxy group.[21] Finally, Mr. Murray contends that my cost of equity analysis is "incomplete" because I have not considered Evergy in my assessment of Evergy West's cost of equity.[22]

Q: Is ALE excluded from the proxy group that you have used in the updated cost of equity analyses presented herein?

A: Yes. While I disagree with Dr. Won and Mr. Murray that ALE should be excluded due to its unregulated operations for the reasons discussed below, I have removed ALE from my proxy group because ALE is currently being acquired and therefore no longer meets my screening criterion that requires a company to not be involved in a transformative transaction.[23]

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[20] Murray Rebuttal Testimony, at 9.

[21] *Id.*, at 9-10.

[22] *Id.*, at 10.

[23] Bulkley Rebuttal Testimony, at 7-8.

Q: Do you agree with Dr. Won's and Mr. Murray's position that your proxy group includes companies with significant unregulated operations that result in greater risk for the proxy group companies?

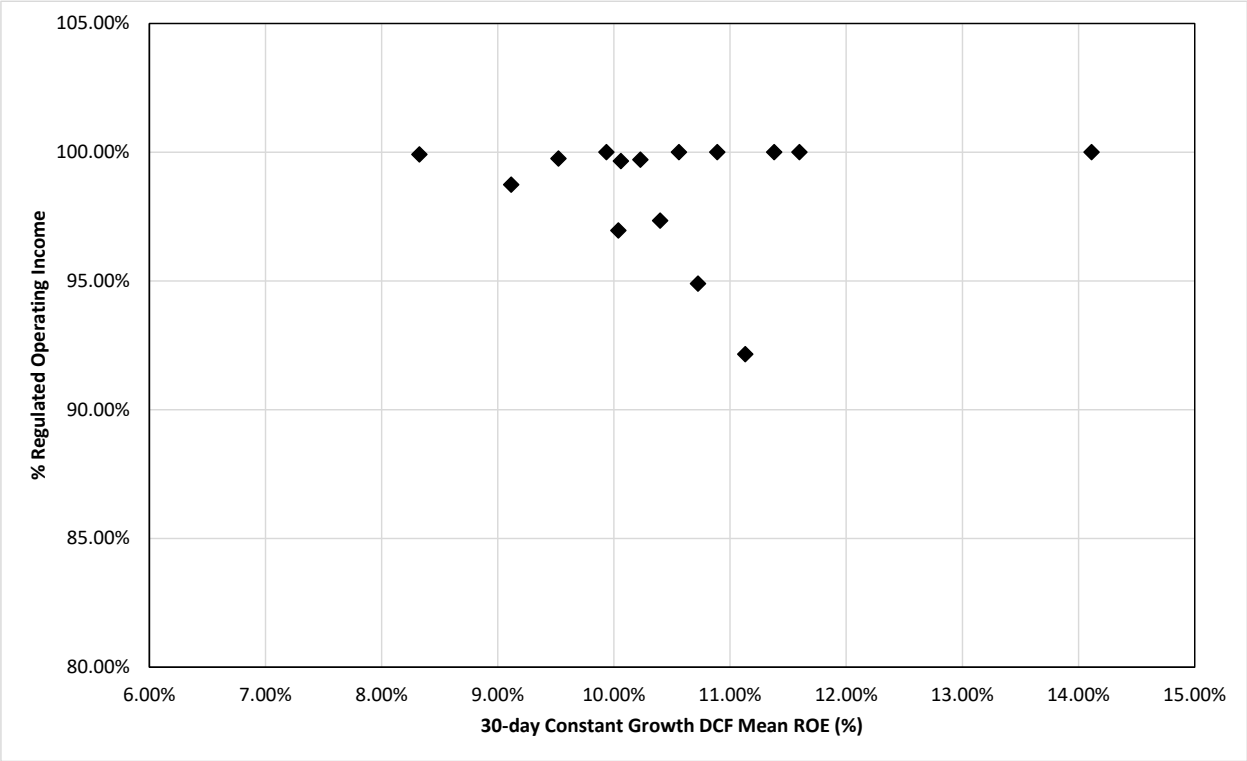
A: No. First, Dr. Won and Mr. Murray have identified only two out of the sixteen companies in my proxy group that they believe have significant unregulated operations and therefore should have been excluded from my proxy group. However, as just noted, ALE has been removed from the proxy group for purposes of my updated cost of equity analyses because the company is currently being acquired. Therefore, NEE is the only company included in my updated proxy group that is disputed by Dr. Won and Mr. Murray. However, as I discussed in my direct testimony, I apply a screening criterion that requires a company to derive at least 60 percent of its operating income from regulated electric operations, which ensures that, together with my other screening criteria, the companies used in my cost of equity analyses have operating and financial risk characteristics that are substantially comparable to Evergy West, including substantial regulated electric operations.[24] In fact, as shown in Schedule AEB-2 of my direct testimony, NEE derived 92.16 percent of its operating income from regulated electric operations over the three-year period of 2020-2022. Therefore, I disagree with Dr. Won and Mr. Murray that NEE should not be included in the proxy group based on its unregulated operations.

Second, as shown in Figure 1, there was no discernible trend in the constant growth DCF results for the companies in my proxy group that would indicate companies with a relatively higher percentage of unregulated operations have a higher cost of equity

[24] Bulkley Direct Testimony, at 30.

than companies with a relatively lower percentage of unregulated operations. This further supports that the operating risk of companies with a relatively higher percentage of unregulated operations in the proxy group are not perceived to have greater risk than companies in the proxy group with a relatively lower percentage of unregulated operations.

Figure 1: Comparison of 30-Day Constant Growth DCF Results as of June 30, 2024 and Percentage of Regulated Operating Income[25]



Third, while I have both screened the proxy group to limit unregulated operations and shown that there is no evidence that companies in my proxy group with unregulated operations are perceived to have higher risk, neither Dr. Won nor Mr. Murray have conducted any analysis to support their conclusions that the companies such as NEE with a higher percentage of unregulated operations in my proxy group have greater risk than

[25] Bulkley Rebuttal Testimony, Exhibit AEB-R2.

Evergy West. As discussed in my direct testimony, I compared the business and financial risk of Evergy West to the proxy group,[26] and based on these analyses, I concluded that Evergy has relatively greater overall risk as compared to the proxy group overall.

Q: Do you agree with Mr. Murray that the cost of equity for Evergy should be used to determine the cost of equity for Evergy West?

A: No. First, while Evergy West is a subsidiary of Evergy, it is important to treat Evergy West as a stand-alone entity and evaluate the Company based on its utility operations in Missouri. The *Hope* and *Bluefield* decisions require that the return that is established for a regulated utility be based on the returns for other entities of comparable risk. It does not suggest that the return be based on the return available to the parent company or affiliates. As Dr. Roger Morin states:

> A utility operating company, segment, division, or line of business must be treated as a separate stand-alone entity, distinct from its parent company because it is the cost of capital for the division that we are attempting to measure and not the cost of capital for the parent company's consolidated activities.[27]

Second, as I discussed in my direct testimony, I excluded Evergy from the proxy group used to estimate the cost of equity for Evergy West because of the circularity that results from the use of the parent company market return to establish the return for the operating utility, which in turn contributes to the ROE of the parent company.[28]

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[26] *Id*., at 48-66.

[27] Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Reports, Inc., 2021, at 252.

[28] Bulkley Direct Testimony, at 30.

V. COST OF EQUITY ESTIMATES VERSUS AUTHORIZED ROES

Q: What is Mr. Murray's position regarding the cost of equity for utilities and authorized ROEs?

A: Mr. Murray contends that that the Commission has authorized ROEs that exceed the cost of equity because the market-to-book ratios for utilities have exceeded 1.0.[29]

Q: Do you agree with Mr. Murray that authorized ROEs are above investors' required returns because the market-to-book ratios for utilities are greater than 1.0?

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. For example, Dr. Lawrence Kolbe and Dr. Michael Vilbert outlined a few factors in a 2016 presentation to the California Public Utilities Commission. As Drs. Kolbe and Vilbert noted, even if one assumes that the theory of the EMH holds, there are several important conditions that must hold before one can assume that the ROE equals the cost of equity at a market-to-book ratio of 1.0 for regulated utilities. Those conditions include:

- 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.[30]

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

[29] Murray Rebuttal Testimony, at 12; Murray Direct Testimony, at 3.

[30] 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.

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.

Moreover, as also noted by Dr. Kolbe and Dr. Vilbert: (1) there is no consensus among economists regarding whether the theory of the EMH holds and share prices are rationally priced; and (2) even if the EMH holds, there is also no consensus regarding which model (*i.e.*, DCF, CAPM, ECAPM) produces reasonable estimates of the cost of equity. As noted previously, Dr. Robert Shiller and others have provided compelling evidence against the EMH, 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.[31] Moreover, if share prices are not rationally priced and cannot be explained by the DCF model, then a market-to-book ratio greater than 1.0 cannot be attributed to the ROE exceeding the cost of equity as Mr. Murray suggests (*i.e.*, the DCF model will not produce an accurate estimate of the return required by investors given the level of prices and as a result, the resulting cost of equity estimate produced by the DCF model, if set as the allowed ROE, would not produce a market-to-book ratio of 1.0 – prices would not adjust in the way described by Mr. Murray).

VI. DCF ANALYSIS

Q: Please summarize Dr. Won's and Mr. Murray's criticisms of your DCF analyses.

A: Dr. Won and Mr. Murray both criticize the use of projected earnings growth rates in the DCF model and suggest that the use of 3- to 5-year earnings growth rates in the constant

[31] 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.

growth DCF model overstates the cost of equity.[32] Dr. Won suggests that it would be more appropriate to rely on a long-term growth rate that approximates the level of long-term gross domestic product ("GDP") growth.[33] Mr. Murray suggests that, by relying on projected EPS growth rates, I have assumed that 58.5 percent of total returns will be in form of capital gains with the remaining portion related to dividends, which he testifies is "illogical" since utility companies pay out 66 percent of their earnings as dividends to investors.[34]

Q: Do you agree with these assessments of your DCF analyses?

A: No. It is important to recognize that while both Dr. Won and Mr. Murray essentially suggest that I should have relied on the multi-stage DCF model using their assumptions, neither of them directly rely on the output of their DCF models. Dr. Won's DCF result is 8.70 percent and Mr. Murray's DCF results range from 8.63 percent to 9.15 percent, however, Dr. Won recommends that the Commission authorize an ROE for Evergy West of 9.74 percent while Mr. Murray recommends an ROE of 9.50 percent. Since both Dr. Won and Mr. Murray essentially abandon their DCF cost of equity estimates for purposes of their ROE recommendation, it is unreasonable to suggest that their assumptions or the methodologies they relied on are superior to the DCF analyses I have presented in my testimonies.

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[32] Won Rebuttal Testimony, at 10-12; Murray Rebuttal Testimony, at 24.

[33] Won Rebuttal Testimony, at 11-12.

[34] Murray Rebuttal Testimony, at 24.

Q: How do you respond to these witnesses regarding the use of projected EPS growth rates in the constant growth DCF model?

A: First, as discussed in my rebuttal testimony, there are several reasons why earnings growth rates are the appropriate measure of growth in the DCF model including, but not limited to, the fact that earnings are the fundamental driver of dividend growth rates (*i.e.*, over the long-term, dividend growth can only be sustained by earnings growth) and there is significant academic research demonstrating that EPS growth rates are most relevant in stock price valuation.[35] Second, as discussed in my direct and rebuttal testimonies, I have not relied exclusively on the results of the constant growth DCF model. Rather, I have considered the results of multiple cost of equity estimation models in determining the range of ROEs that are appropriate to consider for the Company. Finally, while each of these witnesses criticizes the use of analysts' projected EPS growth rates in the constant growth DCF model, their preferred specification of the DCF model produces cost of equity estimates for their respective proxy groups that are below any authorized ROE since 1980 for a vertically-integrated electric utility in a jurisdiction with a comparable regulatory framework to Missouri and also approximately 100 basis points below their own ROE recommendations for Evergy West.

Q: Did you review the academic research Dr. Won references to support the use of a GDP growth rate in the DCF model?

A: Yes. Dr. Won references Dr. Roger A. Morin's text *New Regulatory Finance,* in which Dr. Morin notes that all growth rates eventually converge to a level consistent with the

[35] Bulkley Rebuttal Testimony, at 21-22.

growth in GDP.[36] However, while Dr. Won relies on Dr. Morin for this assumption, he fails to discuss and chooses not to rely on the methodology that Dr. Morin employs to estimate the long-term growth in GDP in his multi-stage DCF analysis.

Dr. Morin estimates the long-term growth rate in nominal GDP by first calculating the growth in real GDP and then adding the expected inflation rate.[37] In his text, Dr. Morin indicates that the growth rate in real GDP is estimated by calculating the compound annual growth rate in real GDP from 1929 through the present, and the expected inflation rate is estimated as the difference between the yield on the 20-year Treasury bond and the yield on the 20-year Treasury Inflation Protected bond, resulting in a long-term GDP growth rate of 6.5 percent in 2006.[38]

In contrast, Dr. Won relies on the projected GDP growth rate of 4.10 percent reported by the Congressional Budget Office ("CBO") for the period of 2023-2033 as the estimate of long-term growth in his two-stage DCF model.[39] Therefore, Dr. Won is relying on a long-term growth rate that only reflects growth for a ten-year period, and he applies this growth rate for a long-term period that is inconsistent with the period for which the CBO has established this estimate.

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[36] Won Rebuttal Testimony, at 11.

[37] Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc., 2006, at 311.

[38] *Id*.

[39] Congressional Budget Office, "The Budget and Economic Outlook 2024 to 2024," February 2024, at 66.

Q: Have you reviewed any additional academic research that supports Dr. Morin's methodology for estimating the long-term nominal GDP growth rate?

A: Yes. As discussed in my rebuttal testimony, similar to Dr. Morin's methodology, *Morningstar* recommends estimating the projected long-term nominal GDP growth rate by first calculating the historical growth in real GDP and then adding the expected inflation rate.[40]

Q: Did you develop an estimate of GDP growth consistent with the methodology outlined by *Morningstar*?

A: Yes. As shown in Schedule AEB-SR1,[41] I estimated a long-term nominal GDP growth rate of 5.49 percent using the methodology outlined by Dr. Morin and *Morningstar*. The long-term nominal GDP growth rate is based on the real GDP growth rate of 3.17 percent from 1929 through 2023, and a projected inflation rate of 2.25 percent.

Q: Have you compared the long-term GDP growth rate that is consistent with the methodology outlined by Dr. Morin and *Morningstar* to the EPS growth rates you relied on in your constant growth DCF model?

A: Yes. The long-term GDP growth rate consistent with the methodology outlined by Dr. Morin and *Morningstar* is 5.49 percent. The proxy group average EPS growth rate was 5.90 percent in my direct testimony as shown on Schedule AEB-3, and 6.31 percent in my rebuttal testimony as shown on Exhibit AEB-R2. Therefore, the long-term GDP growth

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[40] Bulkley Rebuttal Testimony, at 53.

[41] The calculation of the GDP growth rate using the methodology outlined by Dr. Morin and *Morningstar* was referenced in my rebuttal testimony as being provided in Exhibit AEB-R7; however, it was inadvertently omitted from this exhibit. As a result, I am providing the calculation of the GDP growth rate using the methodology outlined by Dr. Morin and *Morningstar* in Schedule AEB-SR1.

rate is more supportive of the average analysts' projected EPS growth rates that I have relied on as opposed to the GDP growth rate assumed by Dr. Won, which is approximately 140 basis points lower.

Q: Why does Mr. Murray conclude that your reliance on projected EPS growth rates is "illogical"?[42]

A: Mr. Murray states that by relying on projected EPS growth rates, I have assumed that 58.5 percent of investors' returns will be in the form of capital gains (*i.e.*, price appreciation) with the remaining portion attributable to dividends.[43] According to Mr. Murray, this assumption is illogical given that utilities have a payout ratio of approximately 66 percent and therefore, payout 66 percent of earnings as dividends. Mr. Murray contends that if it is assumed that instead 58.5 percent of an investor's return is attributable to dividends (*i.e.*, closer to the payout ratio), the cost of equity would be 7.17 percent, which is closer to the investors' return requirements than a cost of equity of 10.09 percent.[44]

Q: Is there any merit to Mr. Murray's contention?

A: No. First, it is important to note that a cost of equity estimate of 7.17 percent is significantly lower than any authorized return for a vertically-integrated electric utility since at least 1980 in a jurisdiction with a comparable regulatory framework to Missouri. A return of 7.17 percent is clearly unreasonable, more than 230 basis points lower than Mr. Murray's

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[42] Murray Rebuttal Testimony, at 24.

[43] 58.5 percent calculated as the proxy group median projected EPS growth rate of 5.9 percent divided by the proxy group median constant growth DCF result of 10.09 percent.

[44] Murray Rebuttal Testimony, at 24.

own ROE recommendation in this proceeding, and clearly would not satisfy the comparable return standard of *Hope* and *Bluefield.*

Second, Mr. Murray's analysis is in direct conflict with the equity analysts reports that he cites throughout his testimony. For example, Mr. Murray quoted a recent report from Wells Fargo regarding Ameren Corporation ("Ameren"):

> For example, Wells Fargo lowered its forward annual EPS expectations for Ameren by approximately $0.20/year for each year from 2024 to 2027. Based on Ameren's P/E ratio of around 16.5x in the week prior to the ICC's [Illinois Commerce Commission's] decision in the AIC [Ameren Illinois Co.] electric rate case, a 20-cent reduction in EPS accounts for a $3.30 decline in Ameren's share price. This compares to Ameren's actual stock price decline of around $6. ***Additionally, Wells Fargo lowered its projected long-term CAGR [compound annual growth rate] in EPS for Ameren from 7% to 6%, which also caused assignment of a lower value to Ameren's stock***.[45]

Thus, Wells Fargo relied on a projected long-term EPS growth rate of 6 percent to develop its price target for Ameren, which is generally consistent with the average EPS growth rate used in my constant growth DCF analysis of Ameren and other companies in my rebuttal testimony (Exhibit AEB-R2). In addition, Mr. Murray also references a report from Bank of America in which it relied on a long-term projected EPS growth rate of 5 percent for Ameren.[46] Therefore, the stock prices targets of these equity analysts are based on long-term projected EPS growth rates that are consistent with the proxy group average EPS growth rate of 5.90 percent in my direct testimony as shown in Schedule AEB-3, and 6.31 percent in my rebuttal testimony as shown in Exhibit AEB-R2.

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[45] *Id.*, at 14.

[46] *Id.*, at 15.

Further, both Wells Fargo and Bank of America noted that the current projected long-term EPS growth rates are the result of *downward* revisions due to the Illinois Commerce Commission's ("ICC") decision in December 2023 in Ameren Illinois's rate proceeding. As Mr. Murray notes, for Wells Fargo, the reduction in projected EPS resulted in a $3.30 decline in their target price for Ameren, which means, changes in projected EPS growth rates can have a significant effect on the share price of a company. Given that growth rates in earnings relied on by the equity analysts are much greater than Mr. Murray's long-term growth rate assumption of 3.00 percent, it is reasonable to conclude that the investor-required return on electric utilities is higher than estimated by Mr. Murray's model assumptions. In other words, if Mr. Murray's long-term growth rate assumption were reflected, utility stock prices would have to be significantly lower and thus their dividend yields higher – meaning an increase in the cost of equity.

VII. CAPM ANALYSIS

Q: Please summarize Dr. Won's criticism of your CAPM analyses.

A: Dr. Won states that my CAPM analyses rely on unreasonably high market risk premiums due to the market return on which I have relied.[47] Specifically, Dr. Won suggests that the calculation of the market return should exclude companies that do not pay dividends and should not rely on short-term growth rates. Dr. Won states that the market return of 12.56 percent that is used in my direct testimony would be a "reasonable" 10.42 percent when

[47] Won Rebuttal Testimony, at 12.

calculated by including only companies in the S&P 500 that pay dividends.[48] Dr. Won also states that taking into account all three risk-free rates that I have relied on would result in the market risk premiums being less than 7.00 percent.[49] Ultimately, Dr. Won states that using "more reasonable assumptions," such as a market return of 10.42 percent, the average CAPM result for my proxy group would be 9.25 percent.[50]

Q: What does Mr. Murray state regarding your CAPM analyses?

A: Mr. Murray states that he is unaware of any authoritative sources that calculate the market return such as I have done (*i.e.*, using a constant growth DCF model with projected earnings growth rates as the estimate of growth).[51] Mr. Murray states that the sources he has reviewed recommend using a growth rate no higher than the growth rate of GDP when estimating the long-term return for the market.[52] Finally, Mr. Murray asserts that the Wilshire 5000, which is an index of the value of all American stocks traded in the United States, would be approximately 45 times the value of GDP in 50 years if the index grew at the earnings growth rate that I relied on to calculate my market return.[53]

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[48] *Id*., at 14.
[49] *Id*.
[50] *Id*., at 16.
[51] *Id*.
[52] *Id*., at 25-26.
[53] *Id*., at 26-27.

Q: Overall, do you agree with the change that Dr. Won suggests be made to your CAPM analyses?

A: No. Dr. Won attempts to recalculate the market return used in my CAPM analysis, however, his calculation contains an error that renders his adjustment to my CAPM and ECAPM unreliable and unusable as estimates of the cost of equity.

The market return calculation relied upon in my direct testimony, which Dr. Won modifies for his "adjusted" CAPM and ECAPM analyses, is a market capitalization weighted return. However, as shown on Dr. Won's rebuttal testimony workpaper "6 Market Return," in the calculation of his "adjusted" market return of 10.42 percent Dr. Won removes the growth rates for the non-dividend paying companies, but he fails to adjust the weight of the market capitalization for the remaining companies in the index.

In order for this calculation to be performed correctly, it is necessary that the dividend yield and growth rate are weighted by the market capitalization of the companies that are included in the calculation. Therefore, when the non-dividend paying companies are removed from the calculation, the market capitalization of the non-dividend paying companies also must be removed from the weighting factor as it affects both the dividend yield and growth rate.

The consequence of Dr. Won's error is that he calculates a lower "adjusted" weighted average growth rate, but his "adjusted" weighted average dividend yield remains the same as in my direct testimony (*i.e.*, 1.69 percent) when it should have correctly increased with the removal of the non-dividend paying companies from the weighting in the index. Accordingly, because of this critical error, Dr. Won's adjustment to my CAPM and ECAPM analyses simply cannot be relied upon.

Q: While Dr. Won suggests that the use of the projected EPS growth rates for each of the companies is one of the "critical faults" of your CAPM, are you aware of any other regulatory commissions that calculate the market return in the manner Dr. Won suggests?

A: No. The FERC has continued to rely on the constant growth DCF model to calculate the market return, as opposed to the use of a multi-stage DCF model using GDP growth as suggested by Dr. Won:

> We also continue to find that the CAPM should use a one-step DCF for its risk premium. This is because the rationale for using a two-step DCF methodology for a specific group of utilities does not apply when conducting a DCF study of the dividend-paying companies in the S&P 500, as the Commission found in Opinion Nos. 531-B and 569. *A long-term component is unnecessary because of the regular updates to the S&P 500, which allows it to continue to grow at a short-term growth rate and because S&P 500 companies include stocks that are both new and mature, the latter of which have a moderating effect on the short-term growth rates*.[54]

The U.S. Court of Appeals for the District of Columbia recently addressed this issue in its review of FERC Opinion No. 569-B. In the Court's decision, it acknowledged that the FERC has relied on the use of EPS growth rates in the calculation of the market return on the S&P 500 because the S&P 500 is regularly updated to include companies with high market capitalization and it includes companies at all stages of growth, including lower and higher growth potential. The Court determined that FERC's rationale for using projected EPS growth rates was sufficient and rejected the challenge to this assumption.[55]

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[54] *Ass'n. of Businesses Advocating Tariff Equity, et. al. v. Midcontinent Indep. Sys. Operator, Inc., et. al.*, 171 FERC ¶ 61,154 (2020) ("Opinion No. 569-A"), at ¶ 85; emphasis added; footnotes omitted.

[55] *MISO Transmission Owners v. FERC*, 45 F.4th 248, 259-60, (D.C. Cir. 2022).

Q: Have you corrected Dr. Won's calculation of the market return to properly reflect the exclusion of non-dividend paying companies?

A: Yes. While I do not agree with excluding non-dividend paying companies from the calculation of the overall market return, correcting the error in Dr. Won's market return calculation only reduces the market return and the CAPM results marginally, and, in fact, still support an ROE of 10.50 percent as is proposed by the Company in this proceeding.

As shown on Schedule AEB-SR2, the market return as filed in my direct testimony was 12.56 percent. Removing non-dividend paying companies from the calculation results in a market return of 12.33 percent. This estimate is generally consistent with the long-term historical market return from 1926 through 2023 is 12.04 percent,[56] as well as the market return of 12.65 percent reflected in my CAPM analysis based on the most recent market data. As discussed in my rebuttal testimony, while I do not agree that the use of a historical market return is an appropriate proxy for the forward-looking market return, it nonetheless indicates that my projected market return, and resulting costs of equity from the CAPM and ECAPM analyses, is not an "extreme outlier" as suggested by Dr. Won.[57]

Q: How would the results of your analyses change if you relied on this adjusted market return calculation?

A: Schedule AEB-SR3 compares the calculation of the CAPM and ECAPM results using (1) the market return of 12.56 percent in my direct testimony; and (2) the market return of 12.33 percent, which removes non-dividend paying companies from the market return

[56] *Kroll*, Cost of Capital Navigator.

[57] Won Rebuttal Testimony, at 16.

calculation presented in my direct testimony. The CAPM and ECAPM results from these scenarios are summarized in Schedule AEB-SR4, and as shown therein, continue to support an ROE of 10.50 percent.

Q: Do you agree with Dr. Won and Mr. Murray that the forward-looking market risk premium in your CAPM analysis is overstated?

A: No. The market risk premium is the difference between the market return, discussed previously, and the risk-free rate assumption. The market return that I have relied upon is reasonable when compared to several other data points discussed in my direct and surrebuttal testimonies. [58] The risk-free rate used in my direct testimony is generally consistent with the risk-free rate relied upon by Dr. Won and Mr. Murray. Therefore, because I have demonstrated that the market return is reasonable, the market risk premium must also be reasonable.

Q: What is your response to Mr. Murray's contention that he is not "aware of any authoritative sources" that use your approach to estimating the market return?

A: I don't believe that is a true statement. I have filed testimony in this jurisdiction in numerous cases in response to Mr. Murray and have discussed the regulatory support for the calculation of the market return that I have relied upon.[59] For example, I am aware of multiple authoritative sources that have relied on the constant growth DCF to estimate the market return in the CAPM. As noted previously, the FERC relies on the constant growth

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[58] Bulkley Direct Testimony, at 42.

[59] See In re Union Elec. Co., No. ER-2022-0337, Surrebuttal Testimony of Ann E. Bulkley, March 13, 2023, at 35-36; In re Missouri-American Water Co., No. WR-2022-0303, Surrebuttal Testimony of Ann E. Bulkley, at 46-48.

DCF model to estimate the market return. In addition, I am aware and have made Mr. Murray aware, that in prior proceedings the Illinois Commerce Commission ("ICC"), the Pennsylvania Public Utilities Commission ("PPUC"), and the Maine Public Utilities Commission ("Maine PUC") have all relied upon similar calculations.

As shown in Figure 2, the Staff of the ICC, the Bureau of Investigation and Enforcement ("I&E") of the PPUC, and the Staff of the Maine PUC have all supported the forward-looking market risk premium. In each case, the market return was estimated using the constant growth DCF model and analysts' earnings growth rate projections, which resulted in a range of market return estimates from 11.33 percent to 13.94 percent. As also shown in Figure 2, the regulatory commissions in each of those cases relied on the estimated CAPM results of those parties to determine the authorized ROE and did not dispute the use of the constant growth DCF model to calculate the market return.

Figure 2: Regulatory Commissions – 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	Docket 20-0810	CGDCF of the dividend-paying companies in the S&P 500 (11.95%)[60]	9/8/21	Yes[61]
I&E	Aqua Pennsylvania, Inc.	Docket No. R-2021-3027385	CGDCF of the Value Line Universe and S&P 500 (12.14%)[62]	5/12/22	Yes, the PPUC placed primary weight on I&E's CAPM[63]
Staff of the Maine PUC	Northern Utilities, Inc.	Docket No. 2019-00092	CGDCF of the dividend-paying companies in the S&P 500 (11.33%-13.49%)[64]	4/1/20	Yes[65]

Q: Dr. Won suggests that your market risk premium is an extreme outlier relative to other financial institutions' estimates of the market risk premium. Is Dr. Won's comparison reasonable?

A: No. The decisions of other regulators contradict Dr. Won's conclusion of my market return being an outlier. Further, the estimates that Dr. Won summarizes in Figure 2 have been addressed in my rebuttal testimony,[66] as they are used in his and Mr. Murray's CAPM analyses. The additional estimates that he provides in his rebuttal testimony are misleading,

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

61 *Id.*, at 86-87.

62 Pennsylvania Public Utility Commission, Aqua Pennsylvania, Inc., Opinion and Order, Public Meeting held May 12, 2022, at 147.

63 *Id.*, at 178.

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

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

66 Bulkley Rebuttal, at 28-39.

in that they were proposed by parties in a FERC proceeding, but not accepted by the FERC. Therefore, Dr. Won has provided no evidence demonstrating that a regulator has relied on these estimates. Specifically, Dr. Won presents forward-looking market risk premium estimates from *Value Line*, Duff & Phelps, and American Appraisal in Figure 2 of his rebuttal testimony, and he cites the FERC's Opinion No. 569 as the source for those estimate.[67] However, Dr. Won fails to acknowledge that the market risk premia that he cites from Opinion No. 569 and presents in Figure 3 of his rebuttal testimony were not agreed upon by the FERC in that proceeding. Rather, these estimates were raised by a specific intervenor group in that proceeding and summarized as such in Opinion No. 569 as part of the summary of the record.[68] However, the FERC did not agree with that intervenor's position in calculating the market return and thus market risk premium and it instead adopted an approach that is similar to the methodology I use to estimate the market risk premium.[69] Further, Dr. Won fails to acknowledge that Opinion No. 569 was issued in November 2019, approximately five years ago, which means that the specific estimates of the market risk premia that he summarizes are outdated and not relevant for purposes of determining the cost of equity in the current proceeding.

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[67] Won Rebuttal Testimony, at 14, footnote 48.

[68] *Ass'n. of Businesses Advocating Tariff Equity, et. al. v. Midcontinent Indep. Sys. Operator, Inc., et. al.*, 169 FERC ¶ 61,129 (2019) ("Opinion No. 569"), at ¶ 249.

[69] *Id.*, at ¶ 260-261.

Q: What is your response to Dr. Won's reference to the market risk premium resulting from the survey conducted by Dr. Fernandez?

A: Dr. Won ignores the fact that the author of this study cautions against the use of survey data estimate the market return and market risk premium. Specifically, Dr. Fernandez notes:

> We can find out the REP [Required Equity Premium] and the EEP [Expected Equity Premium] of an investor by asking him, although for many investors the REP is not an explicit parameter but, rather, it is implicit in the price they are prepared to pay for the shares. However, it is not possible to determine the REP for the market as a whole, because it does not exist: even if we knew the REPs of all the investors in the market, it would be meaningless to talk of a REP for the market as a whole. There is a distribution of REPs and we can only say that some percentage of investors have REPs contained in a range. The average of that distribution cannot be interpreted as the REP of the market nor as the REP of a representative investor.[70]

Q: Have you reviewed any studies that have evaluated the reasonableness of market risk premium estimates?

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.[71] This analysis included several studies that were referenced by Dr. Won in Figure 2 of his rebuttal testimony such as the historical market risk premium, survey results similar to the survey conducted by Dr. Pablo Fernandez, and the methodology relied on by Dr. Damodaran. The results of this study demonstrate that the market risk premium

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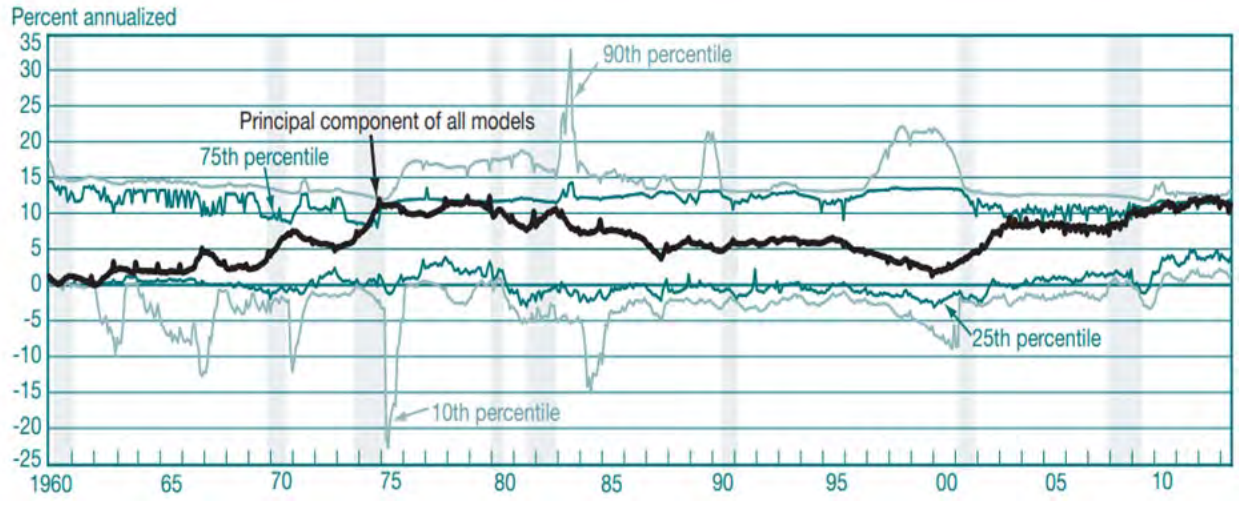
[70] Pablo Fernandez, Sofia Bañuls and Pablo F. Acin, "Survey: Market Risk Premium and Risk-Free Rate used for 88 countries in 2021," IESE Business School, June 2021, at 10.

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

estimates that I relied on in my direct testimony, which are in the range of 7.78 percent to 8.46 percent, 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 3, 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 percent to over 10 percent from 1960 through 2013.
- The one-year-ahead market risk premium was consistently greater than 10 percent following the financial crisis of 2008/09.

Figure 3: The Federal Reserve Bank of New York, One-Year-Ahead Market Risk Premium[72]



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

[72] *Id.*, at 50.

> 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.[73]

In summary, the Federal Reserve Bank of New York noted that the market risk premium is higher during periods of recession, financial turmoil and higher inflation.

Q: Please summarize the analysis that Mr. Murray performed using the Wilshire 5000 Index.

A: Mr. Murray calculated the market capitalization of the Wilshire 5000 index in 50 years using the earnings growth rate that I relied on to calculate my market return, as well as GDP in 50 years using a long-term GDP growth rate of 4.00 percent. Mr. Murray concluded that in 50 years the value of the Wilshire 5000 would be approximately 45 times higher than GDP which he noted was not reasonable.[74]

Q: Is this analysis meaningful?

A: No. First, Mr. Murray has ignored the fact that the annualized ten year total return on the Wilshire 5000 as of July 31, 2024 was 12.31 percent, which is consistent with my market return estimate.

Further, Mr. Murray's comparison is entirely dependent on his selection of an assumed GDP growth rate of 4.00 percent. This analysis has no probative value, as he has not provided any support for his GDP growth rate, which is fundamental to the point of his

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

[74] Murray Rebuttal at 26-27.

analysis. It is simply a demonstration in compound annual growth at two different rates. As shown in Schedule AEB-SR1, Mr. Murray's assumed growth rate is significantly below a long-term projected GDP growth rate of 5.49 percent, which is based on the real historical GDP growth rate of 3.17 percent from 1929 through 2023, plus a projected inflation rate of 2.25 percent.[75]

VIII. ECAPM ANALYSIS

Q: What is Dr. Won's position regarding your ECAPM analysis?

A: Dr. Won states that my ECAPM analyses rely on a market risk premium that is too high. In addition, Dr. Won disagrees with the adjustment made in the ECAPM to account for the tendency of the CAPM to underestimate the cost of equity for companies with betas less than 1.00.[76] Specifically, Dr. Won states that there is a fairly wide range of alpha estimates between academic studies primarily due to the methodologies employed and time periods used which means the estimates of alpha are not strictly comparable.[77] Further, Dr. Won contends that Dr. Morin presented other studies that produced returns between -9.61 percent to 13.56 percent, which Dr. Won claims means that the CAPM overestimated the return in some instances and that such findings do not lend credibility to the use of the ECAPM.[78]

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[75] The 5.49 percent equals (1 + 3.17 percent) x (1 + 2.25 percent) - 1.

[76] Won Rebuttal Testimony, at 17.

[77] *Id*.

[78] *Id*.

Q: Does Mr. Murray discuss your ECAPM analysis?

A: Not specifically. Mr. Murray discusses my ECAPM in the context of his concern regarding the market risk premium of my CAPM, which I have already addressed; however, he does not specifically discuss the ECAPM.[79]

Q: Do you agree with Dr. Won's conclusions on the ECAPM studies?

A: No, I do not. The concept of the ECAPM and the conclusion that the risk-return relationship is flatter than predicted by the CAPM is generally accepted in financial literature. In *Modern Regulatory Finance*, Dr. Morin provides a list of studies each of which concludes that the CAPM understates the returns for companies with betas less than 1.0 (which is typically utilities) and overstates the return for companies with betas greater than 1.0.[80] It is these empirical studies that formed the basis of the development of alternative models such as the ECAPM that would better predict the risk return-relationship observed when reviewing actual market data.

Academics and researchers use the equation shown below to determine the value of the constant term (α) or "alpha factor" using historical market data:

$$K_e = r_f + \alpha + \beta\left(\left(r_m - r_f\right) - \alpha\right) \quad [1]$$

Where:

K_e = the required market ROE;

α = a 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.

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[79] Murray Rebuttal Testimony, at 33.

[80] Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Reports, Inc., 2021, at 206-208.

There have been numerous additional studies published to estimate the value of the constant term or alpha factor in the ECAPM equation. Figure 4 provides the list of studies summarized by Dr. Morin and referenced by Dr. Won as support for his conclusion that the ECAPM is not credible. However, Dr. Won's conclusion improperly masks the fact that, as shown, six of the eight studies estimated positive values of the constant term, which indicates that the consensus among the studies is that the CAPM understates the observed return. Additionally, among the six studies that estimate only positive values of the constant term, the range of the constant term was 1.63 percent to 13.56 percent. Dr. Morin relied on a constant term in the range of 1 to 2 percent to develop the 0.25 and 0.75 factors included in the ECAPM and considering the range of the constant term provided in Figure 4, it would appear Dr. Morin's estimate is conservative.

Figure 4: Empirical Evidence on the Alpha Factor (Constant Term)[81]

Author	Range of Alpha
Fischer (1993)	-3.6% to 3.6%
Fischer, Jensen and Scholes (1972)	-9.61% to 12.24%
Fama and McBeth (1972)	4.08% to 9.36%
Fama and French (1992)	10.08% to 13.56%
Litzenberger and Ramaswamy (1979)	5.32% to 8.17%
Litzenberger, Ramaswamy and Sosin (1980)	1.63% to 5.04%
Pettengill, Sundaram and Mathur (1995)	4.6%
Morin (1989)	2.0%

[81] *Id*., at 222.

Q: Do any of the studies cited by Dr. Morin examine the ability of the CAPM to estimate the return of utilities?

A: Yes. Litzenberger, Ramaswamy, and Howard (1980) studied the ability of the CAPM to estimate the returns for utilities.[82] The authors found that the CAPM tends to understate the return for stocks such as utilities, which have a beta less than 1.00. 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

[82] 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.[83] 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 to 2 percent to develop the 0.25 and 0.75 factors included in the ECAPM that I rely on in both my direct and rebuttal testimonies.

Q: Are you aware of any more recent academic studies that have examined the ability of the CAPM to estimate the return of utilities?

A: Yes. Specifically, 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.[84] Chrétien and Coggins considered the CAPM, the Fama-French three-factor model and a model similar to the ECAPM used in my direct testimony. The study shows that the ECAPM significantly outperformed the traditional CAPM at predicting the observed risk premium for the various utility subgroups.

Q: Is Dr. Won's recalculation of your ECAPM analyses reasonable? [85]

A: No. Dr. Won's recalculation relies on the same market risk premium "adjustment" that he developed in response to my CAPM. Similar to his "adjustment" to my CAPM, the error in the calculation of the market return renders his ECAPM unusable as an estimate of the

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[83] (1.00163)^12-1 = 1.97 percent

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

[85] Won Rebuttal Testimony, Workpaper "4 CAPM."

cost of equity. Further, as summarized on Schedule AEB-SR4, when the error in Dr. Won's recalculation of my ECAPM analysis is corrected, the results of the ECAPM analysis support an ROE of 10.50 percent as proposed by the Company in this proceeding.

IX. RISK PREMIUM ANALYSIS

Q: What is Dr. Won's position regarding your Bond Yield Plus Risk Premium ("BYRP") analysis?

A: Dr. Won's primary concerns with the BYRP analysis are that: (1) the analysis is determined based on the yield on the 30-year Treasury bond yield, which is affected by government intervention through the Federal Reserve's monetary policy and not solely through the financial market; (2) the 30-year Treasury yield increased too much as a result of the COVID-19 pandemic to accurately estimate an ROE; and (3) the relationship between the 30-year Treasury bond yield and the ROE is not constant over time.[86] In addition, Dr. Won states that he agrees with the FERC that the BYRP is likely to provide a less accurate current ROE estimate than the DCF or CAPM models because it relies on previous ROE determinations that may not be directly determined by a market-based methodology.[87]

Q: What is Mr. Murray's position regarding your BYRP analysis?

A: Mr. Murray contends that I have concluded from my BYRP analysis that ROEs have not changed as much as interest rates, and thus an adjustment needs to be made to recognize

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[86] Won Rebuttal Testimony, at 20-21.

[87] *Id*., at 21.

that regulators have been hesitant to adjust authorized ROEs as much as interest rates would suggest. Mr. Murray states that this is circular because the regression coefficient is dependent on regulatory commissions' decisions and not on market required returns.[88]

Q: Is there any merit to Dr. Won's concerns that your BYRP analysis?

A: No. Regardless of my use of authorized ROE and Treasury bond yield data back to 1980 and the changes in that data over time, the regression analysis that I have conducted nonetheless demonstrates a strong inverse relationship between interest rates and the equity risk premium for utilities. As shown in Exhibit AEB-R6 of my rebuttal testimony, the regression in my BYRP analysis has an R^2 of approximately 0.85, which means that 85 percent of the variation in historical implied utility equity risk premia can be explained by changes in interest rates. 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.

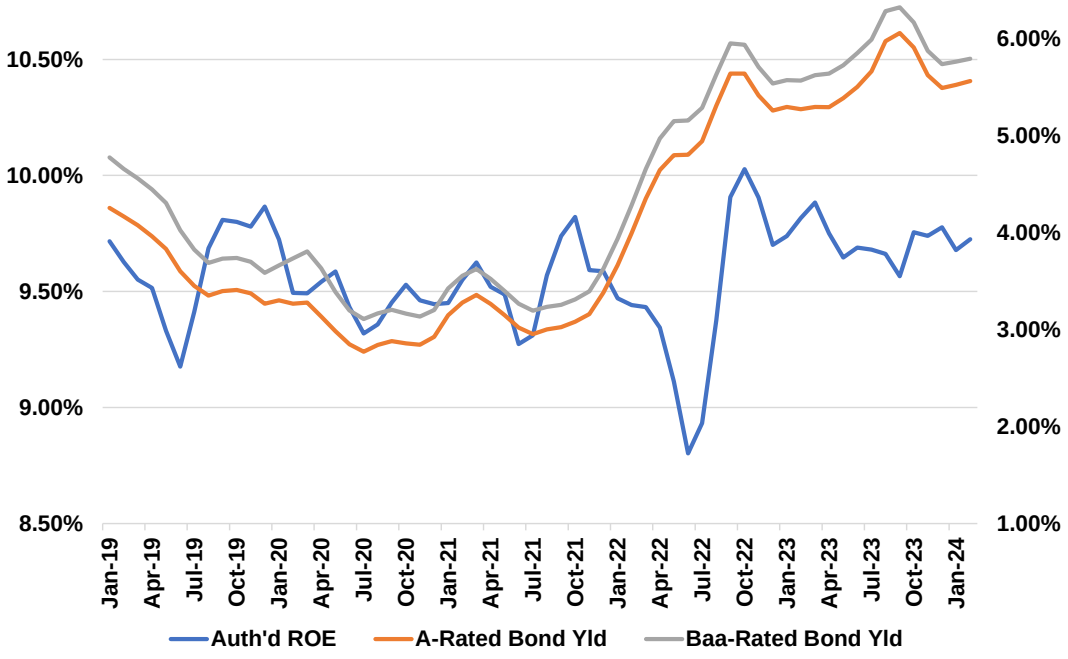
Q: Is Dr. Won's criticism of your BYRP analysis inconsistent with his own BYRP analysis?

A: Yes. In Figure 3 of Dr. Won's rebuttal testimony, he claims that the results of my BYRP analysis are unreliable because of a divergence in the relationship between authorized ROEs and 30-year Treasury bond yields post-COVID. However, as shown in Figure 5 below, the same divergence is present in the authorized ROE and utility bond yield data that Dr. Won relies on for his BYRP analysis. Further, if Dr. Won believes that such a

[88] Murray Rebuttal Testimony, at 27-28.

divergence in the authorized ROE and utility bond yield data produces an unreliable result, then he has invalidated the result of his own BYRP analysis. More importantly, given that Dr. Won's ROE recommendation in this proceeding is equivalent to the result of his BYRP analysis, he has also invalidated his ROE recommendation in this proceeding.

Figure 5: Dr. Won's Authorized ROE and Moody's Utility Bond Yield Data[89]



Q: Is Mr. Murray's position regarding your BYRP analysis consistent with his own analyses?

A: No. While Mr. Murray suggests that the relationship between authorized ROEs and bond yields does not reflect investor behavior,[90] he evaluates authorized ROEs and long-term Treasury bond yields as support for his recommended ROE.[91] Therefore, to the extent that

[89] Data sourced from Dr. Won's "BYRP Model.xls" workpaper.

[90] Murray Rebuttal at 27-28.

[91] Murray Direct at 7-14.

Mr. Murray believes that my BYRP analysis cannot be relied upon, he has invalidated his own analyses.

It is unquestionable that both credit rating agencies and investors consider the authorized ROE data in their determination of the valuation of utility stocks. As I discussed in my direct and rebuttal testimonies, both credit rating agencies and investors have responded negatively to authorized ROEs deemed to be too low.[92] 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.

Lastly, while Mr. Murray criticizes my BYRP analysis for not reflecting a market required return, his own "rule of thumb" risk premium analysis is simply that – a rule of thumb – which is certainly not derived based on current or projected market conditions.

Therefore, for all of these reasons, there is no basis to Mr. Murray's criticism regarding my BYRP analysis.

X. BUSINESS RISK FACTORS

Q: What are Dr. Won's and Mr. Murray's positions regarding the Company's business risks and the effect on the Company's ROE?

A: Dr. Won states that he considers Evergy West's business and regulatory risks when recommending his ROE in this proceeding; however, he alleges that I have a biased

[92] Bulkley Direct Testimony, at 12-15; Bulkley Rebuttal Testimony, at 15-18.

approach that inflates the Company's business and regulatory risks.[93] While acknowledging that the Company does have some regulatory lag and time limits, Dr. Won contends that Evergy West does not have greater risk than the proxy group, stating that the Company takes advantage of several alternative regulatory mechanisms such as Plant-In-Service Accounting ("PISA") and the Renewable Energy Standard Rate Adjustment Mechanism ("RESRAM"), and that he has not found any evidence that Evergy West has significantly greater risk than the proxy group that requires an upward adjustment to the ROE to be authorized in this proceeding.[94]

Similarly, Mr. Murray contends that Evergy West has reduced business risk related to its ability to utilize PISA. Mr. Murray states that the Commission should explicitly recognize this reduced risk by authorizing an equity ratio for Evergy West that is based on its parent's more leveraged capital structure.[95] In addition, Mr. Murray states that I have failed to recognize that my proxy group contains companies with significant non-regulated business risk exposure, specifically ALLETE, Inc. and NextEra Energy Inc.[96]

Q: What is your response to the positions of Dr. Won and Mr. Murray regarding the Company's business and regulatory risks?

A: Dr. Won and Mr. Murray fail to recognize the purpose for the business risk analysis in the estimation of the appropriate ROE for a company from within the range of cost of equity estimates developed. Since the cost of equity estimates are based on market data for the

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93 Won Rebuttal Testimony, at 26.

94 *Id*., at 29.

95 Murray Rebuttal, at 30-31.

96 *Id*., at 28.

proxy group companies, which reflects the risk profiles of these companies, it is necessary to evaluate the Company's business and regulatory risk *relative to the proxy group*. This analysis allows the analyst to make a more informed determination as to where, within the range of returns established for the proxy group, the return on equity should reasonably be established.

Mr. Murray does not evaluate the Company's business and regulatory risks *relative to the proxy group*, while Dr. Won also largely omits this comparative analysis with the exception of his discussion regarding Evergy West's expected capital expenditures as a percentage of net utility plant relative to the average ratio of the proxy group. Rather, both Dr. Won and Mr. Murray simply claim that the Company's business risk has been reduced in absolute terms because of PISA and RESRAM, which provides no information as to where in the range of market data the authorized ROE should be established. Thus, these witnesses focus solely or nearly solely on the ratemaking mechanisms in use by Evergy West to support their conclusions that the Company has reduced overall business risk. In contrast, I evaluated various regulatory and business risks to which Evergy West is subject relative to the proxy group in my direct testimony and concluded that the Company has relatively greater regulatory and business risk than the proxy group.

Q: Do you agree with Dr. Won that consideration of Evergy West's business and regulatory risk is unnecessary because the Company's credit ratings already reflects these risks?[97]

A: No, I do not agree with Dr. Won's comparison of credit ratings as being dispositive of Evergy West's relative risk to the proxy group. Credit ratings are assessments of the likelihood that a company could default on its *debt*, whereas the topic of estimating the cost of equity 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.

Q: Is there any basis to Dr. Won's claim that the RRA jurisdictional ranking and S&P credit supportiveness ranking for Missouri do not indicate a greater risk for Missouri relative to the proxy group?[98]

A: No. First, while Dr. Won references the RRA jurisdictional ranking, he does not actually discuss this ranking but rather focuses solely on the S&P credit supportiveness ranking. As shown on Schedule AEB-10 of my direct testimony, Missouri has an RRA ranking of "Average/3," which is the sixth ranking out of a total of nine rankings. In comparison, the operating utilities of the proxy group companies have an average ranking of between "Average/1" and "Average/2," or the fourth and fifth rankings of the nine. Thus, contrary

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97 Won Rebuttal Testimony, at 30.

98 *Id*.

to Dr. Won's contention, the RRA regulatory ranking for Missouri is lower than the proxy group.

Second, Dr. Won appears to conclude that the S&P credit supportiveness ranking for Missouri is not indicative of a relatively greater risk simply because S&P's ranking for Missouri is "Very Credit Supportive." However, the naming convention that S&P utilizes for its ranking system provides no information as to the *relative* risk of Missouri as compared to the proxy group. As noted on Schedule AEB-11 of my direct testimony, S&P's credit supportiveness ranking consists of five categories, with the highest ranking being "Most Credit Supportive," and the lowest ranking being "Credit Supportive." As discussed in my direct testimony, while the S&P credit supportiveness ranking for Missouri is "Very Credit Supportive," which is the third ranking out of five, the average ranking for the proxy group is higher, as it is between "Very Credit Supportive" and the next highest category of "Highly Credit Supportive."

Q: Do you agree with Dr. Won that a significant portion of the Company's capital investment is related to its sustainability and transformation plan which benefits shareholders, not customers?[99]

A: No, I do not. While the proceeding undertaken to obtain approval of investments is addressed in the testimony of Geoff Ley, assets in rate base have been determined by the Commission to be beneficial to customers. Consistent with the regulatory compact, the Company is eligible to earn a return on and of the rate base assets made on behalf of customers.

[99] Won Rebuttal, at 28.

Q: Do you agree with Mr. Murray that you have failed to consider the non-regulated business risk exposure of your proxy group?

A: No. As discussed previously, Mr. Murray contends that my proxy group contains significant non-regulated business risk exposure, but only identifies 2 companies out of the 16 companies in my proxy group, and one of those companies, ALLETE, Inc., has been removed from the proxy group because it has become involved in a material acquisition since the filing of my direct testimony. In developing a 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, and thus it is always the case that the proxy companies do not have exactly the same risk profile as the subject company. However, as stated in my direct testimony, I have developed the proxy group to ensure that all of the companies used in my cost of equity analyses possess a set of operating and financial risk characteristics that are substantially comparable to Evergy West, and, therefore, provide a reasonable basis to estimate the appropriate cost of equity for the Company. This includes a screening criterion that requires a substantial portion of a utility's total operating income to be from regulated electric operations.[100]

Q: What is your conclusion regarding the Company's business and regulatory risks and its effect on the ROE to be authorized in this proceeding?

A: The results of the cost of equity analyses alone do not provide an appropriate estimate of the cost of equity, and several additional factors must be considered when determining where the Company's cost of equity falls within the range of analytical results. However,

[100] Bulkley Direct Testimony, at 29-30.

neither Dr. Won nor Mr. Murray have evaluated the Company's business and regulatory risk relative to the proxy group, and thus cannot simply conclude that Evergy West has lower risk because it has regulatory mechanisms such as PISA and RESRAM.

All else equal, I agree that regulatory mechanisms that reduce a utility's regulatory lag in cost recovery help to mitigate risk. However, in setting the ROE, the data relied upon is based on the risk profile of a proxy group of companies. Therefore, the appropriate analysis for purposes of establishing the Company's ROE in this proceeding is not to identify whether Evergy West has regulatory mechanisms that mitigate its regulatory lag, but rather how does Evergy West's regulatory risk compare to the other companies in the proxy group. Both Dr. Won and Mr. Murray highlight the regulatory mechanisms that Evergy West has for cost recovery, yet neither evaluates Evergy West's cost recovery risk relative to the proxy group.

XI. CAPITAL STRUCTURE

Q: What does Dr. Won state regarding the Company's capital structure?

A: Dr. Won states that he is currently reviewing changes in the Company's capital structure and cost of debt through June 30, 2024 and that he will address its final recommended capital structure in surrebuttal testimony and true-up testimony at a later point in the proceeding.[101]

[101] Won Rebuttal Testimony, at 32.

Q: Does Dr. Won agree with Mr. Murray's proposed use of Evergy's consolidated capital structure to establish the ratemaking capital structure for Evergy West in this proceeding?

A: No. Dr. Won and I agree that Mr. Murray's capital structure proposal is not reasonable or appropriate.[102] Dr. Won states that Mr. Murray's recommendation is "not compatible with typical regulatory practices," and is "based on conjectures that are not supported by conclusive evidence," and thus recommends that the Commission not consider Mr. Murray's capital structure proposal.

Q: What does Mr. Murray state regarding your comparison of Evergy West's proposed equity ratio relative to the operating companies of the proxy group holding companies?

A: Mr. Murray contends that utility operating companies are not a good proxy for market-based holding company capital structures.[103] Mr. Murray states that since the cost of equity in this proceeding is based on a proxy group of publicly-traded holding companies of utility subsidiaries, these are the capital structures that influence investors' required returns on the publicly-traded entity.[104] To support the reasonableness of his proposed 47.2 percent equity ratio for Evergy West, Mr. Murray states that the average equity ratio of the holding companies in my proxy group was 41.79 percent excluding short-term debt, and 40.89 percent including short-term debt.[105]

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[102] *Id*., at 34-39.

[103] Murray Rebuttal Testimony, at 6.

[104] *Id*.

[105] *Id*.

Q: Is Mr. Murray's comparison of the Company's proposed equity ratio to the actual equity ratios of the holding companies in the proxy group reasonable?

A: No. There are two problems with Mr. Murray's comparison of the Company's proposed equity ratio to the average equity ratio of the proxy group holding companies. First, it is not appropriate to compare the proposed equity ratios of the Company to the average equity ratio of the proxy group at the holding company level. Second, even though it is not appropriate, if the capital structures at the holding company level are considered for comparison to the Company's proposal, 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.

Q: First, why is it inappropriate to rely on the holding company capital structures to set the capital structure for the utility subsidiary?

A: The holding company data on which Mr. Murray relies 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. 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 since they are the most comparable to the Company.

Q: Is the Company's proposed equity ratio consistent with the actual capital structures of the operating utilities of the proxy group companies?

A: Yes. As shown on Schedule AEB-12 of my direct testimony, the average actual equity ratio over the past two years for the utility operating subsidiaries of my group was 52.41 percent, and ranged from 45.73 percent to 60.71 percent. The Company's proposed equity ratio of 52.04 percent is clearly consistent with and well within the range of equity ratios of the proxy group, and is slightly below the average.

Q: Second, why is it inappropriate for Mr. Murray to rely on the book value of the capital structure of the proxy group companies at the holding company level as a comparison to Evergy West's proposed 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 proposed equity ratios 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, Mr. Murray considers the multi-stage DCF model to determine the cost of equity for the Company, which relies on the current stock prices of the proxy group companies, or in other words the current *market value* of their equity. Similarly, Mr. Murray also relies on the CAPM to estimate the cost of equity for the Company, and in doing so, relies on beta coefficients – which reflect the returns of each proxy group company based on that company's respective *market value*. Therefore, the

cost of equity developed by Mr. Murray is intended to represent the percentage return required by investors on the *market* value of equity not the book value.

Q: Does Mr. Murray acknowledge in his testimony that the cost of equity is the return on the market value of common equity?

A: Yes. When discussing his contention that authorized ROEs are in excess of utilities' costs of equity, he states that this alleged dynamic increases the *market* value of the original equity invested.[106]

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.

Q: Can you illustrate why this is the case?

A: Yes. This is illustrated in the following set of equations found readily in corporate finance textbooks.[107] As shown in Equation [4], the value of a company (or asset) is determined as follows:

$$V = D + E \qquad [4]$$

Where:

V = market value of a company/asset

[106] Murray Rebuttal Testimony, at 12.

[107] Richard A. Brealey, Stewart Myers, and Franklin Allen, *Principles of Corporate Finance*, 13th Ed., 2020, at 452-462.

D = market value of debt

E = market value of equity

For simplicity, if it is assumed that there are no taxes, based on Equation [4], the total return on V can be estimated as follows:

$$r_V = \frac{\mathrm{D}}{\mathrm{D}+\ \mathrm{E}} \text{ x } r_D \ + \ \frac{\mathrm{E}}{\mathrm{E}+\mathrm{D}} \text{ x } r_E \qquad [5]$$

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

$$r_E = \ r_V \ + (r_V - r_D) \ \frac{D}{\mathrm{E}} \qquad [6]$$

As shown in Equation [6], 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 your proxy group in this proceeding?

A: Yes, quite different. As shown in Schedule AEB-SR5, the average market value common equity ratio for the holding companies in my proxy group as of December 31, 2023 was

55.36 percent. This means that the cost of equity estimated by Mr. Murray, when using my proxy group, reflects the financial risk of a market value common equity ratio of 55.36 percent. This market value common equity ratio is significantly greater than the average book value common equity ratios referenced by Mr. Murray for my proxy group of 41.79 percent excluding short-term debt, and 40.89 percent including short-term debt. Given the greater financial risk of the book value capital structures relied on by Mr. Murray because of the higher amount of leverage, investors would require a much higher cost of equity than estimated by his DCF and CAPM analyses. In fact, Mr. Murray acknowledges that increased levels of leverage result in greater financial risk and thus increased required returns.[108] In other words, Mr. Murray's reliance on a cost of equity estimate based on market values, but then a capital structure based on book values, is a mismatch that results in the incorrect conclusion that an ROE 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: How does the Company's proposed equity ratio compare to the market value equity ratio of the proxy group?

A: Evergy West's proposed equity ratio of 52.04 percent is much lower than the average market value common equity ratio for my proxy group as of December 31, 2023 of 55.36 percent. Therefore, while evaluating the capital structures of the holding companies of the proxy group relative to the Company is not appropriate for the reasons discussed, when the

[108] Murray Rebuttal Testimony, at 6.

comparison based on this approach as supported by Mr. Murray is done correctly, it demonstrates that the Company's proposed equity ratio is reasonable.

Q: Is the Company's proposed equity ratio also consistent with the equity ratios that have been previously authorized for vertically-integrated electric utilities?

A: Yes. Figure 6 presents the authorized equity ratios for vertically-integrated electric utilities across the U.S. for the last three years, properly excluding both limited issue rider cases and authorizations in Arkansas, Indiana, Michigan and Florida due to the inclusion of zero cost capital items in the capital structure.[109] As shown, the Company's proposed equity ratio of 52.04 is consistent with both the mean and median equity ratios for utilities across the U.S. in the past three years.

Figure 6: Authorized Equity Ratios for Vertically-Integrated Electric Utilities for 2021-2023[110]

Year	Avg.	Median	Min	Max
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%

[109] The average annual authorized equity ratios reflected in Figure 6 differ from the average authorized equity ratios presented in Table 4 of Dr. Won's rebuttal testimony. The workpaper that Dr. Won provides does not indicate how his average annual authorized equity ratios are developed. His workpaper does not contain an average formula for each year and instead simply reflects the values of the annual authorized equity ratios for 2010-2024. However, it appears that his analysis is incorrect and has, at a minimum, included utilities in jurisdictions that include zero cost of capital items in the capital structure. In addition, it is unclear whether Dr. Won's analysis also includes authorized equity ratios for limited issue rider cases and transmission and distribution-only electric utilities instead of just for vertically-integrated electric utilities.

[110] S&P Capital IQ Pro; data through August 15, 2024.

Q: What is your conclusion regarding the appropriate capital structure for the Company?

A: I continue to conclude that that the Company's proposed capital structure is reasonable. The Company's proposed equity ratio of 52.04 percent is both: (1) below the average 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) consistent with the average equity ratios authorized for vertically-integrated electric utilities across the U.S. over the past three years. Further, while I disagree with the approach supported by Mr. Murray to compare 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, contrary to his conclusion, the Company's proposed equity ratio is well below those of the proxy group and thus reasonable.

Q: Does this conclude your surrebuttal testimony?

A: Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West's Request for Authority to Implement A General Rate Increase for Electric Service	))))	Case No. ER-2024-0189

AFFIDAVIT OF ANN E. BULKLEY

COMMONWEALTH OF MASSACHUSETTS)
) **ss**
COUNTY OF SUFFOLK)

Ann E. Bulkley, being first duly sworn on his oath, states:

1. My name is Ann E. Bulkley. I work in Boston, Massachusetts, and I am employed by The Brattle Group, Inc. as Principal.

2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Evergy Missouri West consisting of fifty-nine (59) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

Ann E. Bulkley

Subscribed and sworn before me this 10th day of September 2024.

Notary Public

My commission 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

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

Description	Notes	Year	Amount
Change in Real GDP			
Real GDP ($ Billions)	[1]	1929	$ 1,191.1
Real GDP ($ Billions)	[1]	2023	$ 22,374.3
Compound Annual Growth Rate			**3.17%**
Projected Inflation			
Consumer Price Index (YoY % Change)	[2]	2031-2035	2.20%
Consumer Price Index (All-Urban)	[3]	2035	3.96
Consumer Price Index (All-Urban)	[3]	2050	5.54
Compound Annual Growth Rate			2.26%
GDP Chain-type Price Index (2012=1.000)	[3]	2035	1.73
GDP Chain-type Price Index (2012=1.000)	[3]	2050	2.43
Compound Annual Growth Rate			2.30%
Average Inflation Forecast	[4]		**2.25%**
Long-Term GDP Growth Rate	[5]		**5.49%**

Notes:

[1] Bureau of Economic Analysis, July 25, 2024

[2] Blue Chip Financial Forecasts, Vol. 43, No. 6, May 31, 2024, at 14

[3] Energy Information Administration, Annual Energy Outlook 2023, Table 20, March 16, 2023

[4] Average of 3 inflation sources

[5] Equals (1+3.17%) x (1+2.25%)-1

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

Bulkley As-Filed Direct Testimony

Estimated Weighted Average Dividend Yield:	1.69%	[1]
Estimated Weighted Average Long-Term Growth Rate:	10.78%	[2]
Estimated S&P 500 Required Market Return:	**12.56%**	[3]

Dr. Won "Adjustments" Corrected

Estimated Weighted Average Dividend Yield:	1.99%	[12]
Estimated Weighted Average Long-Term Growth Rate:	10.23%	[13]
Estimated S&P 500 Required Market Return:	**12.33%**	[14]

		[4]	[5]	[6]	Bulkley Direct Testimony As-Filed [7]	[8]	[9]	[10]	[11]	[15]	Bulkley Direct Testimony *Excluding* Non-Dividend Paying Companies [16]	[17]	[18]	[19]
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.	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	324.36	95.10	30,847	0.11%	5.26%	0.01%	8.00%	0.01%	0.12%	5.26%	0.01%	8.00%	0.01%
American Express Co	AXP	728.75	170.77	124,448	0.42%	1.41%	0.01%	14.01%	0.06%	0.50%	1.41%	0.01%	14.01%	0.07%
Verizon Communications Inc	VZ	4,204.10	38.33	161,143		6.94%					6.94%			
Broadcom Inc	AVGO	469.43	925.73	434,562	1.48%	1.99%	0.03%	13.89%	0.21%	1.75%	1.99%	0.03%	13.89%	0.24%
Boeing Co/The	BA	604.98	231.63	140,131				183.61%					183.61%	
Caterpillar Inc	CAT	509.09	250.72	127,638	0.43%	2.07%	0.01%	20.00%	0.09%	0.51%	2.07%	0.01%	20.00%	0.10%
JPMorgan Chase & Co	JPM	2,891.01	156.08	451,229	1.54%	2.69%	0.04%	1.00%	0.02%	1.82%	2.69%	0.05%	1.00%	0.02%
Chevron Corp	CVX	1,887.75	143.60	271,081	0.92%	4.21%	0.04%	7.27%	0.07%	1.09%	4.21%	0.05%	7.27%	0.08%
Coca-Cola Co/The	KO	4,323.41	58.44	252,660	0.86%	3.15%	0.03%	6.51%	0.06%	1.02%	3.15%	0.03%	6.51%	0.07%
AbbVie Inc	ABBV	1,765.54	142.39	251,395	0.86%	4.35%	0.04%	0.19%	0.00%	1.01%	4.35%	0.04%	0.19%	0.00%
Walt Disney Co/The	DIS	1,830.32	92.69	169,652	0.58%	0.65%	0.00%	18.88%	0.11%	0.68%	0.65%	0.00%	18.88%	0.13%
FleetCor Technologies Inc	FLT	72.20	240.50	17,365	0.06%			12.92%	0.01%				12.92%	
Extra Space Storage Inc	EXR	211.28	130.17	27,502	0.09%	4.98%	0.00%	1.10%	0.00%	0.11%	4.98%	0.01%	1.10%	0.00%
Exxon Mobil Corp	XOM	4,006.13	102.74	411,590		3.70%		45.59%			3.70%		45.59%	
Phillips 66	PSX	439.96	128.89	56,706	0.19%	3.26%	0.01%	15.21%	0.03%	0.23%	3.26%	0.01%	15.21%	0.03%
General Electric Co	GE	1,088.39	121.80	132,565		0.26%		22.50%			0.26%		22.50%	
HP Inc	HPQ	988.27	29.34	28,996	0.10%	3.76%	0.00%	3.00%	0.00%	0.12%	3.76%	0.00%	3.00%	0.00%
Home Depot Inc/The	HD	995.26	313.49	312,005	1.06%	2.67%	0.03%	1.69%	0.02%	1.26%	2.67%	0.03%	1.69%	0.02%
Monolithic Power Systems Inc	MPWR	47.91	548.72	26,290	0.09%	0.73%	0.00%	8.00%	0.01%	0.11%	0.73%	0.00%	8.00%	0.01%
International Business Machines Corp	IBM	913.12	158.56	144,784	0.49%	4.19%	0.02%	2.77%	0.01%	0.58%	4.19%	0.02%	2.77%	0.02%
Johnson & Johnson	JNJ	2,407.28	154.66	372,310	1.27%	3.08%	0.04%	3.86%	0.05%	1.50%	3.08%	0.05%	3.86%	0.06%
Lululemon Athletica Inc	LULU	121.43	446.80	54,253	0.18%			16.00%	0.03%				16.00%	
McDonald's Corp	MCD	725.34	281.84	204,430	0.70%	2.37%	0.02%	9.34%	0.07%	0.82%	2.37%	0.02%	9.34%	0.08%
Merck & Co Inc	MRK	2,534.02	102.48	259,687	0.88%	3.01%	0.03%	9.08%	0.08%	1.05%	3.01%	0.03%	9.08%	0.09%
3M Co	MMM	552.32	99.07	54,718	0.19%	6.06%	0.01%	4.00%	0.01%	0.22%	6.06%	0.01%	4.00%	0.01%
American Water Works Co Inc	AWK	194.71	131.84	25,670	0.09%	2.15%	0.00%	8.00%	0.01%	0.10%	2.15%	0.00%	8.00%	0.01%
Bank of America Corp	BAC	7,913.73	30.49	241,290		3.15%		-5.00%			3.15%		-5.00%	
Pfizer Inc	PFE	5,646.41	30.47	172,046		5.38%		50.40%			5.38%		50.40%	
Procter & Gamble Co/The	PG	2,356.89	153.52	361,829	1.23%	2.45%	0.03%	7.51%	0.09%	1.46%	2.45%	0.04%	7.51%	0.11%
AT&T Inc	T	7,150.02	16.57	118,476	0.40%	6.70%	0.03%	3.36%	0.01%	0.48%	6.70%	0.03%	3.36%	0.02%
Travelers Cos Inc/The	TRV	228.40	180.62	41,253	0.14%	2.21%	0.00%	15.33%	0.02%	0.17%	2.21%	0.00%	15.33%	0.03%
RTX Corp	RTX	1,437.90	81.48	117,160	0.40%	2.90%	0.01%	8.61%	0.03%	0.47%	2.90%	0.01%	8.61%	0.04%
Analog Devices Inc	ADI	496.26	182.52	90,578	0.31%	1.88%	0.01%	4.50%	0.01%	0.36%	1.88%	0.01%	4.50%	0.02%
Walmart Inc	WMT	2,692.23	155.69	419,154	1.43%	1.46%	0.02%	3.00%	0.04%	1.69%	1.46%	0.02%	3.00%	0.05%
Cisco Systems Inc	CSCO	4,063.48	48.38	196,591	0.67%	3.22%	0.02%	10.00%	0.07%	0.79%	3.22%	0.03%	10.00%	0.08%
Intel Corp	INTC	4,216.00	44.70	188,455		1.12%		-1.82%			1.12%		-1.82%	
General Motors Co	GM	1,369.48	31.60	43,276		1.14%		-4.65%			1.14%		-4.65%	
Microsoft Corp	MSFT	7,432.26	378.91	2,816,158	9.59%	0.79%	0.08%	15.72%	1.51%	11.34%	0.79%	0.09%	15.72%	1.78%
Dollar General Corp	DG	219.48	131.12	28,778		1.80%		-2.50%			1.80%		-2.50%	
Cigna Group/The	CI	292.62	262.88	76,924	0.26%	1.87%	0.00%	9.80%	0.03%	0.31%	1.87%	0.01%	9.80%	0.03%
Kinder Morgan Inc	KMI	2,222.77	17.57	39,054	0.13%	6.43%	0.01%	2.00%	0.00%	0.16%	6.43%	0.01%	2.00%	0.00%
Citigroup Inc	C	1,913.88	46.10	88,230		4.60%		-9.70%			4.60%		-9.70%	
American International Group Inc	AIG	702.04	65.81	46,201	0.16%	2.19%	0.00%	10.00%	0.02%	0.19%	2.19%	0.00%	10.00%	0.02%
Altria Group Inc	MO	1,768.65	42.04	74,354	0.25%	9.32%	0.02%	4.50%	0.01%	0.30%	9.32%	0.03%	4.50%	0.01%
HCA Healthcare Inc	HCA	267.66	250.48	67,044	0.23%	0.96%	0.00%	7.56%	0.02%	0.27%	0.96%	0.00%	7.56%	0.02%
International Paper Co	IP	346.02	36.94	12,782		5.01%		-2.00%			5.01%		-2.00%	
Hewlett Packard Enterprise Co	HPE	1,283.00	16.91	21,696	0.07%	3.08%	0.00%	3.03%	0.00%	0.09%	3.08%	0.00%	3.03%	0.00%
Abbott Laboratories	ABT	1,736.06	104.29	181,054	0.62%	1.96%	0.01%	3.27%	0.02%	0.73%	1.96%	0.01%	3.27%	0.02%
Aflac Inc	AFL	584.38	82.71	48,334	0.16%	2.42%	0.00%	8.04%	0.01%	0.19%	2.42%	0.00%	8.04%	0.02%
Air Products and Chemicals Inc	APD	222.21	270.55	60,118	0.20%	2.59%	0.01%	12.55%	0.03%	0.24%	2.59%	0.01%	12.55%	0.03%
Royal Caribbean Cruises Ltd	RCL	256.24	107.46	27,535										
Hess Corp	HES	307.15	140.56	43,173	0.15%	1.25%	0.00%	13.00%	0.02%	0.17%	1.25%	0.00%	13.00%	0.02%
Archer-Daniels-Midland Co	ADM	533.38	73.73	39,326		2.44%		-7.07%			2.44%		-7.07%	
Automatic Data Processing Inc	ADP	411.31	229.92	94,567	0.32%	2.44%	0.01%	16.00%	0.05%	0.38%	2.44%	0.01%	16.00%	0.06%
Verisk Analytics Inc	VRSK	144.99	241.43	35,004	0.12%	0.56%	0.00%	12.15%	0.01%	0.14%	0.56%	0.00%	12.15%	0.02%
AutoZone Inc	AZO	17.63	2,609.93	46,024	0.16%			13.72%	0.02%				13.72%	
Linde PLC	LIN	484.89	412.50	200,015	0.68%	1.24%	0.01%	14.00%	0.10%	0.81%	1.24%	0.01%	14.00%	0.11%
Avery Dennison Corp	AVY	80.53	194.50	15,663	0.05%	1.67%	0.00%	7.00%	0.00%	0.06%	1.67%	0.00%	7.00%	0.00%
Enphase Energy Inc	ENPH	136.55	101.02	13,794				28.59%					28.59%	
MSCI Inc	MSCI	79.09	520.85	41,195	0.14%	1.06%	0.00%	14.48%	0.02%	0.17%	1.06%	0.00%	14.48%	0.02%
Ball Corp	BALL	315.30	55.29	17,433	0.06%	1.45%	0.00%	10.30%	0.01%	0.07%	1.45%	0.00%	10.30%	0.01%
Axon Enterprise Inc	AXON	74.93	229.87	17,225										
Ceridian HCM Holding Inc	CDAY	156.13	68.90	10,757										
Carrier Global Corp	CARR	839.05	51.96	43,597	0.15%	1.42%	0.00%	10.80%	0.02%	0.18%	1.42%	0.00%	10.80%	0.02%
Bank of New York Mellon Corp/The	BK	769.07	48.32	37,162	0.13%	3.48%	0.00%	10.00%	0.01%	0.15%	3.48%	0.01%	10.00%	0.01%
Otis Worldwide Corp	OTIS	409.26	85.79	35,110	0.12%	1.59%	0.00%	9.00%	0.01%	0.14%	1.59%	0.00%	9.00%	0.01%
Baxter International Inc	BAX	507.32	36.08	18,304		3.22%		-1.17%			3.22%		-1.17%	
Becton Dickinson & Co	BDX	290.41	236.18	68,588		1.61%		-2.02%			1.61%		-2.02%	
Berkshire Hathaway Inc	BRK/B	1,308.41	360.00	471,029										
Best Buy Co Inc	BBY	217.64	70.94	15,439	0.05%	5.19%	0.00%	2.93%	0.00%	0.06%	5.19%	0.00%	2.93%	0.00%
Boston Scientific Corp	BSX	1,464.98	55.89	81,878	0.28%			12.10%	0.03%				12.10%	
Bristol-Myers Squibb Co	BMY	2,034.76	49.38	100,476	0.34%	4.62%	0.02%	9.92%	0.03%	0.40%	4.62%	0.02%	9.92%	0.04%
Brown-Forman Corp	BF/B	310.14	58.74	18,217	0.06%	1.48%	0.00%	6.42%	0.00%	0.07%	1.48%	0.00%	6.42%	0.00%
Coterra Energy Inc	CTRA	752.19	26.25	19,745		3.05%		55.04%			3.05%		55.04%	
Campbell Soup Co	CPB	297.62	40.18	11,958	0.04%	3.68%	0.00%	2.81%	0.00%	0.05%	3.68%	0.00%	2.81%	0.00%
Hilton Worldwide Holdings Inc	HLT	256.44	167.52	42,959	0.15%	0.36%	0.00%	17.09%	0.03%	0.17%	0.36%	0.00%	17.09%	0.03%
Carnival Corp	CCL	1,119.45	15.06	16,859										
Qorvo Inc	QRVO	97.35	96.50	9,394	0.03%			10.04%	0.00%				10.04%	
UDR Inc	UDR	328.93	33.40	10,986	0.04%	5.03%	0.00%	6.08%	0.00%	0.04%	5.03%	0.00%	6.08%	0.00%
Clorox Co/The	CLX	124.06	143.35	17,784	0.06%	3.35%	0.00%	11.53%	0.01%	0.07%	3.35%	0.00%	11.53%	0.01%
Paycom Software Inc	PAYC	60.23	181.66	10,941	0.04%	0.83%	0.00%	15.19%	0.01%	0.04%	0.83%	0.00%	15.19%	0.01%
CMS Energy Corp	CMS	291.76	56.76	16,561	0.06%	3.44%	0.00%	7.75%	0.00%	0.07%	3.44%	0.00%	7.75%	0.01%
Colgate-Palmolive Co	CL	823.37	78.77	64,857	0.22%	2.44%	0.01%	7.21%	0.02%	0.26%	2.44%	0.01%	7.21%	0.02%
EPAM Systems Inc	EPAM	57.70	258.19	14,898	0.05%			4.87%	0.00%				4.87%	
Comerica Inc	CMA	131.87	45.22	5,963	0.02%	6.28%	0.00%	10.63%	0.00%	0.02%	6.28%	0.00%	10.63%	0.00%
Conagra Brands Inc	CAG	477.97	28.29	13,522	0.05%	4.95%	0.00%	0.84%	0.00%	0.05%	4.95%	0.00%	0.84%	0.00%
Airbnb Inc	ABNB	434.75	126.34	54,926	0.19%			18.20%	0.03%				18.20%	
Consolidated Edison Inc	ED	344.92	90.11	31,081	0.11%	3.60%	0.00%	4.88%	0.01%	0.13%	3.60%	0.00%	4.88%	0.01%
Corning Inc	GLW	853.18	28.49	24,307	0.08%	3.93%	0.00%	1.57%	0.00%	0.10%	3.93%	0.00%	1.57%	0.00%
Cummins Inc	CMI	141.75	224.16	31,774	0.11%	3.00%	0.00%	9.15%	0.01%	0.13%	3.00%	0.00%	9.15%	0.01%
Caesars Entertainment Inc	CZR	215.71	44.72	9,647				110.92%					110.92%	
Danaher Corp	DHR	738.93	223.31	165,010		0.48%		-7.03%			0.48%		-7.03%	
Target Corp	TGT	461.66	133.81	61,775	0.21%	3.29%	0.01%	0.15%	0.00%	0.25%	3.29%	0.01%	0.15%	0.00%
Deere & Co	DE	288.00	364.41	104,950	0.36%	1.48%	0.01%	3.96%	0.01%	0.42%	1.48%	0.01%	3.96%	0.02%
Dominion Energy Inc	D	836.77	45.34	37,939		5.89%		-0.72%			5.89%		-0.72%	
Dover Corp	DOV	139.89	141.16	19,747	0.07%	1.45%	0.00%	10.00%	0.01%	0.08%	1.45%	0.00%	10.00%	0.01%
Alliant Energy Corp	LNT	252.72	50.57	12,780	0.04%	3.58%	0.00%	6.26%	0.00%	0.05%	3.58%	0.00%	6.26%	0.00%
Steel Dynamics Inc	STLD	161.82	119.13	19,277		1.43%		-13.17%			1.43%		-13.17%	
Duke Energy Corp	DUK	771.00	92.28	71,148	0.24%	4.44%	0.01%	6.06%	0.01%	0.29%	4.44%	0.01%	6.06%	0.02%
Regency Centers Corp	REG	184.58	62.78	11,588	0.04%	4.27%	0.00%	4.64%	0.00%	0.05%	4.27%	0.00%	4.64%	0.00%
Eaton Corp PLC	ETN	399.30	227.69	90,917	0.31%	1.51%	0.00%	15.00%	0.05%	0.37%	1.51%	0.01%	15.00%	0.05%

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

Bulkley As-Filed Direct Testimony		
Estimated Weighted Average Dividend Yield:	1.69%	[1]
Estimated Weighted Average Long-Term Growth Rate:	10.78%	[2]
Estimated S&P 500 Required Market Return:	**12.56%**	[3]

Dr. Won "Adjustments" Corrected		
Estimated Weighted Average Dividend Yield:	1.99%	[12]
Estimated Weighted Average Long-Term Growth Rate:	10.23%	[13]
Estimated S&P 500 Required Market Return:	**12.33%**	[14]

					Bulkey Direct Testimony As-Filed					Bulkey Direct Testimony *Excluding* Non-Dividend Paying Companies				
		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[15]	[16]	[17]	[18]	[19]
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.	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Ecolab Inc	ECL	285.14	191.73	54,670	0.19%	1.11%	0.00%	16.00%	0.03%	0.22%	1.11%	0.00%	16.00%	0.04%
Revvity Inc	RVTY	123.41	88.90	10,971		0.31%		-26.69%			0.31%		-26.69%	
Emerson Electric Co	EMR	570.10	88.90	50,682	0.17%	2.36%	0.00%	12.01%	0.02%	0.20%	2.36%	0.00%	12.01%	0.02%
EOG Resources Inc	EOG	583.15	123.07	71,768	0.24%	2.96%	0.01%	17.83%	0.04%	0.29%	2.96%	0.01%	17.83%	0.05%
Aon PLC	AON	200.22	328.49	65,769	0.22%	0.75%	0.00%	11.58%	0.03%	0.26%	0.75%	0.00%	11.58%	0.03%
Entergy Corp	ETR	211.46	101.41	21,444	0.07%	4.46%	0.00%	6.22%	0.00%	0.09%	4.46%	0.00%	6.22%	0.01%
Equifax Inc	EFX	123.22	217.71	26,826	0.09%	0.72%	0.00%	12.33%	0.01%	0.11%	0.72%	0.00%	12.33%	0.01%
EQT Corp	EQT	411.33	39.96	16,437		1.58%		20.04%			1.58%		20.04%	
IQVIA Holdings Inc	IQV	182.50	214.10	39,073				-13.67%					-13.67%	
Gartner Inc	IT	77.95	434.84	33,895	0.12%			7.35%	0.01%				7.35%	
FedEx Corp	FDX	251.42	258.83	65,075	0.22%	1.95%	0.00%	14.50%	0.03%	0.26%	1.95%	0.01%	14.50%	0.04%
FMC Corp	FMC	124.76	53.66	6,695		4.32%		-4.00%			4.32%		-4.00%	
Brown & Brown Inc	BRO	284.60	74.74	21,271	0.07%	0.70%	0.00%	11.00%	0.01%	0.09%	0.70%	0.00%	11.00%	0.01%
Ford Motor Co	F	3,932.10	10.26	40,343		5.85%		-2.52%			5.85%		-2.52%	
NextEra Energy Inc	NEE	2,023.71	58.51	118,408	0.40%	3.20%	0.01%	8.10%	0.03%	0.48%	3.20%	0.02%	8.10%	0.04%
Franklin Resources Inc	BEN	494.58	24.80	12,266		4.84%		-9.00%			4.84%		-9.00%	
Garmin Ltd	GRMN	191.33	122.24	23,388	0.08%	2.39%	0.00%	5.60%	0.00%	0.09%	2.39%	0.00%	5.60%	0.01%
Freeport-McMoRan Inc	FCX	1,433.98	37.32	53,516		1.61%		-15.66%			1.61%		-15.66%	
Dexcom Inc	DXCM	386.37	115.52	44,634				30.59%					30.59%	
General Dynamics Corp	GD	272.90	246.97	67,397	0.23%	2.14%	0.00%	10.40%	0.02%	0.27%	2.14%	0.01%	10.40%	0.03%
General Mills Inc	GIS	581.28	63.66	37,004	0.13%	3.71%	0.00%	8.00%	0.01%	0.15%	3.71%	0.01%	8.00%	0.01%
Genuine Parts Co	GPC	140.20	132.78	18,615	0.06%	2.86%	0.00%	9.49%	0.01%	0.07%	2.86%	0.00%	9.49%	0.01%
Atmos Energy Corp	ATO	148.50	113.81	16,900	0.06%	2.83%	0.00%	7.25%	0.00%	0.07%	2.83%	0.00%	7.25%	0.00%
WW Grainger Inc	GWW	49.63	786.19	39,022		0.95%					0.95%			
Halliburton Co	HAL	895.05	37.03	33,144		1.73%		24.14%			1.73%		24.14%	
L3Harris Technologies Inc	LHX	189.54	190.81	36,166	0.12%	2.39%	0.00%	3.50%	0.00%	0.15%	2.39%	0.00%	3.50%	0.01%
Healthpeak Properties Inc	PEAK	547.07	17.32	9,475	0.03%	6.93%	0.00%	1.24%	0.00%	0.04%	6.93%	0.00%	1.24%	0.00%
Insulet Corp	PODD	69.83	189.09	13,204				41.08%					41.08%	
Catalent Inc	CTLT	180.27	38.85	7,004	0.02%			9.24%	0.00%				9.24%	
Fortive Corp	FTV	351.43	68.98	24,242	0.08%	0.46%	0.00%	8.68%	0.01%	0.10%	0.46%	0.00%	8.68%	0.01%
Hershey Co/The	HSY	149.89	187.92	28,166	0.10%	2.54%	0.00%	9.00%	0.01%	0.11%	2.54%	0.00%	9.00%	0.01%
Synchrony Financial	SYF	413.80	32.36	13,391		3.09%					3.09%			
Hormel Foods Corp	HRL	546.48	30.59	16,717	0.06%	3.69%	0.00%	1.08%	0.00%	0.07%	3.69%	0.00%	1.08%	0.00%
Arthur J Gallagher & Co	AJG	215.90	249.00	53,759	0.18%	0.88%	0.00%	14.11%	0.03%	0.22%	0.88%	0.00%	14.11%	0.03%
Mondelez International Inc	MDLZ	1,360.90	71.06	96,705	0.33%	2.39%	0.01%	9.17%	0.03%	0.39%	2.39%	0.01%	9.17%	0.04%
CenterPoint Energy Inc	CNP	629.43	28.27	17,794	0.06%	2.83%	0.00%	8.02%	0.00%	0.07%	2.83%	0.00%	8.02%	0.01%
Humana Inc	HUM	123.11	484.86	59,692	0.20%	0.73%	0.00%	12.32%	0.03%	0.24%	0.73%	0.00%	12.32%	0.03%
Willis Towers Watson PLC	WTW	103.26	246.30	25,433	0.09%	1.36%	0.00%	11.19%	0.01%	0.10%	1.36%	0.00%	11.19%	0.01%
Illinois Tool Works Inc	ITW	300.89	242.21	72,878	0.25%	2.31%	0.01%	3.91%	0.01%	0.29%	2.31%	0.01%	3.91%	0.01%
CDW Corp/DE	CDW	133.96	210.88	28,249	0.10%	1.18%	0.00%	13.10%	0.01%	0.11%	1.18%	0.00%	13.10%	0.01%
Trane Technologies PLC	TT	227.56	225.41	51,294	0.17%	1.33%	0.00%	13.29%	0.02%	0.21%	1.33%	0.00%	13.29%	0.03%
Interpublic Group of Cos Inc/The	IPG	383.00	30.74	11,774	0.04%	4.03%	0.00%	5.71%	0.00%	0.05%	4.03%	0.00%	5.71%	0.00%
International Flavors & Fragrances Inc	IFF	255.28	75.38	19,243	0.07%	4.30%	0.00%	5.50%	0.00%	0.08%	4.30%	0.00%	5.50%	0.00%
Generac Holdings Inc	GNRC	61.43	117.07	7,192	0.02%			5.00%	0.00%				5.00%	
NXP Semiconductors NV	NXPI	257.76	204.08	52,604		1.99%		34.00%			1.99%		34.00%	
Kellanova	K	342.52	52.54	17,996	0.06%	4.26%	0.00%	1.69%	0.00%	0.07%	4.26%	0.00%	1.69%	0.00%
Broadridge Financial Solutions Inc	BR	117.65	193.82	22,802		1.65%					1.65%			
Kimberly-Clark Corp	KMB	337.94	123.73	41,813	0.14%	3.81%	0.01%	9.64%	0.01%	0.17%	3.81%	0.01%	9.64%	0.02%
Kimco Realty Corp	KIM	619.89	19.32	11,976	0.04%	4.97%	0.00%	4.35%	0.00%	0.05%	4.97%	0.00%	4.35%	0.00%
Oracle Corp	ORCL	2,739.38	116.21	318,343	1.08%	1.38%	0.01%	14.45%	0.16%	1.28%	1.38%	0.02%	14.45%	0.19%
Kroger Co/The	KR	719.32	44.27	31,844	0.11%	2.62%	0.00%	4.21%	0.00%	0.13%	2.62%	0.00%	4.21%	0.01%
Lennar Corp	LEN	250.15	127.92	31,999	0.11%	1.17%	0.00%	1.00%	0.00%	0.13%	1.17%	0.00%	1.00%	0.00%
Eli Lilly & Co	LLY	949.31	591.04	561,078		0.76%		21.47%			0.76%		21.47%	
Bath & Body Works Inc	BBWI	227.38	32.62	7,417	0.03%	2.45%	0.00%	6.51%	0.00%	0.03%	2.45%	0.00%	6.51%	0.00%
Charter Communications Inc	CHTR	147.92	400.13	59,187	0.20%			12.31%	0.02%				12.31%	
Loews Corp	L	223.25	70.29	15,692		0.36%					0.36%			
Lowe's Cos Inc	LOW	575.11	198.83	114,350		2.21%		20.20%			2.21%		20.20%	
Hubbell Inc	HUBB	53.62	300.00	16,087		1.63%					1.63%			
IDEX Corp	IEX	75.63	201.68	15,252	0.05%	1.27%	0.00%	11.00%	0.01%	0.06%	1.27%	0.00%	11.00%	0.01%
Marsh & McLennan Cos Inc	MMC	493.07	199.42	98,328	0.33%	1.42%	0.00%	11.53%	0.04%	0.40%	1.42%	0.01%	11.53%	0.05%
Masco Corp	MAS	224.50	60.55	13,594	0.05%	1.88%	0.00%	4.36%	0.00%	0.05%	1.88%	0.00%	4.36%	0.00%
S&P Global Inc	SPGI	316.80	415.83	131,735	0.45%	0.87%	0.00%	13.66%	0.06%	0.53%	0.87%	0.00%	13.66%	0.07%
Medtronic PLC	MDT	1,329.65	79.27	105,402	0.36%	3.48%	0.01%	4.33%	0.02%	0.42%	3.48%	0.01%	4.33%	0.02%
Viatris Inc	VTRS	1,199.67	9.18	11,013		5.23%		-2.58%			5.23%		-2.58%	
CVS Health Corp	CVS	1,286.90	67.95	87,445	0.30%	3.56%	0.01%	6.99%	0.02%	0.35%	3.56%	0.01%	6.99%	0.02%
DuPont de Nemours Inc	DD	430.04	71.54	30,765	0.10%	2.01%	0.00%	11.43%	0.01%	0.12%	2.01%	0.00%	11.43%	0.01%
Micron Technology Inc	MU	1,098.03	76.12	83,582		0.60%		-11.00%			0.60%		-11.00%	
Motorola Solutions Inc	MSI	165.97	322.87	53,586	0.18%	1.21%	0.00%	10.82%	0.02%	0.22%	1.21%	0.00%	10.82%	0.02%
Cboe Global Markets Inc	CBOE	105.56	182.19	19,231	0.07%	1.21%	0.00%	10.21%	0.01%	0.08%	1.21%	0.00%	10.21%	0.01%
Laboratory Corp of America Holdings	LH	84.90	216.91	18,416		1.33%		-32.45%			1.33%		-32.45%	
Newmont Corp	NEM	1,152.49	40.19	46,319	0.16%	3.98%	0.01%	11.58%	0.02%	0.19%	3.98%	0.01%	11.58%	0.02%
NIKE Inc	NKE	1,224.01	109.90	134,519	0.46%	1.35%	0.01%	16.07%	0.07%	0.54%	1.35%	0.01%	16.07%	0.09%
NiSource Inc	NI	413.42	25.64	10,600	0.04%	3.90%	0.00%	7.65%	0.00%	0.04%	3.90%	0.00%	7.65%	0.00%
Norfolk Southern Corp	NSC	226.14	218.16	49,334	0.17%	2.48%	0.00%	0.73%	0.00%	0.20%	2.48%	0.00%	0.73%	0.00%
Principal Financial Group Inc	PFG	238.41	73.83	17,602	0.06%	3.63%	0.00%	8.98%	0.01%	0.07%	3.63%	0.00%	8.98%	0.01%
Eversource Energy	ES	349.09	59.41	20,739	0.07%	4.54%	0.00%	5.21%	0.00%	0.08%	4.54%	0.00%	5.21%	0.00%
Northrop Grumman Corp	NOC	150.79	475.16	71,651	0.24%	1.57%	0.00%	2.53%	0.01%	0.29%	1.57%	0.00%	2.53%	0.01%
Wells Fargo & Co	WFC	3,631.64	44.59	161,935	0.55%	3.14%	0.02%	13.41%	0.07%	0.65%	3.14%	0.02%	13.41%	0.09%
Nucor Corp	NUE	245.84	169.97	41,785		1.20%		-10.84%			1.20%		-10.84%	
Occidental Petroleum Corp	OXY	880.37	59.15	52,074		1.22%					1.22%			
Omnicom Group Inc	OMC	197.93	80.63	15,959	0.05%	3.47%	0.00%	4.72%	0.00%	0.06%	3.47%	0.00%	4.72%	0.00%
ONEOK Inc	OKE	582.55	68.85	40,109	0.14%	5.55%	0.01%	6.93%	0.01%	0.16%	5.55%	0.01%	6.93%	0.01%
Raymond James Financial Inc	RJF	208.61	105.15	21,935		1.71%					1.71%			
PG&E Corp	PCG	2,133.51	17.17	36,632	0.12%	0.23%	0.00%	6.26%	0.01%	0.15%	0.23%	0.00%	6.26%	0.01%
Parker-Hannifin Corp	PH	128.48	433.18	55,653	0.19%	1.37%	0.00%	15.28%	0.03%	0.22%	1.37%	0.00%	15.28%	0.03%
Rollins Inc	ROL	484.04	40.74	19,720	0.07%	1.47%	0.00%	14.86%	0.01%	0.08%	1.47%	0.00%	14.86%	0.01%
PPL Corp	PPL	737.09	26.12	19,253	0.07%	3.68%	0.00%	4.20%	0.00%	0.08%	3.68%	0.00%	4.20%	0.00%
ConocoPhillips	COP	1,187.41	115.57	137,229	0.47%	0.50%	0.00%	6.00%	0.03%	0.55%	0.50%	0.00%	6.00%	0.03%
PulteGroup Inc	PHM	215.60	88.42	19,063	0.06%	0.90%	0.00%	2.04%	0.00%	0.08%	0.90%	0.00%	2.04%	0.00%
Pinnacle West Capital Corp	PNW	113.31	74.94	8,492	0.03%	4.70%	0.00%	5.95%	0.00%	0.03%	4.70%	0.00%	5.95%	0.00%
PNC Financial Services Group Inc/The	PNC	398.34	133.96	53,362	0.18%	4.63%	0.01%	12.87%	0.02%	0.21%	4.63%	0.01%	12.87%	0.03%
PPG Industries Inc	PPG	235.80	141.99	33,481	0.11%	1.83%	0.00%	12.91%	0.01%	0.13%	1.83%	0.00%	12.91%	0.02%
Progressive Corp/The	PGR	585.04	164.03	95,964		0.24%		39.34%			0.24%		39.34%	
Veralto Corp	VLTO	246.31	77.25	19,027										
Public Service Enterprise Group Inc	PEG	499.11	62.43	31,159	0.11%	3.65%	0.00%	5.47%	0.01%	0.13%	3.65%	0.00%	5.47%	0.01%
Robert Half Inc	RHI	105.90	81.98	8,681	0.03%	2.34%	0.00%	1.26%	0.00%	0.03%	2.34%	0.00%	1.26%	0.00%
Cooper Cos Inc/The	COO	49.52	336.92	16,686	0.06%	0.02%	0.00%	7.54%	0.00%	0.07%	0.02%	0.00%	7.54%	0.01%
Edison International	EIX	383.57	66.99	25,695	0.09%	4.40%	0.00%	4.80%	0.00%	0.10%	4.40%	0.00%	4.80%	0.00%
Schlumberger NV	SLB	1,423.42	52.04	74,075		1.92%		33.41%			1.92%		33.41%	
Charles Schwab Corp/The	SCHW	1,771.68	61.32	108,640	0.37%	1.63%	0.01%	3.60%	0.01%	0.44%	1.63%	0.01%	3.60%	0.02%
Sherwin-Williams Co/The	SHW	255.97	278.80	71,363	0.24%	0.87%	0.00%	10.90%	0.03%	0.29%	0.87%	0.00%	10.90%	0.03%

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

Bulkley As-Filed Direct Testimony

Estimated Weighted Average Dividend Yield:	1.69%	[1]
Estimated Weighted Average Long-Term Growth Rate:	10.78%	[2]
Estimated S&P 500 Required Market Return:	**12.56%**	[3]

Dr. Won "Adjustments" Corrected

Estimated Weighted Average Dividend Yield:	1.99%	[12]
Estimated Weighted Average Long-Term Growth Rate:	10.23%	[13]
Estimated S&P 500 Required Market Return:	**12.33%**	[14]

		[4]	[5]	[6]	Bulkley Direct Testimony As-Filed [7]	[8]	[9]	[10]	[11]	[15]	Bulkley Direct Testimony *Excluding* Non-Dividend Paying Companies [16]	[17]	[18]	[19]
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.	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
West Pharmaceutical Services Inc	WST	73.99	350.76	25,953	0.09%	0.23%	0.00%	5.80%	0.01%	0.10%	0.23%	0.00%	5.80%	0.01%
J M Smucker Co/The	SJM	106.13	109.73	11,646	0.04%	3.86%	0.00%	5.95%	0.00%	0.05%	3.86%	0.00%	5.95%	0.00%
Snap-on Inc	SNA	52.78	274.69	14,498	0.05%	2.71%	0.00%	4.85%	0.00%	0.06%	2.71%	0.00%	4.85%	0.00%
AMETEK Inc	AME	230.80	155.23	35,827	0.12%	0.64%	0.00%	6.36%	0.01%	0.14%	0.64%	0.00%	6.36%	0.01%
Southern Co/The	SO	1,091.52	70.98	77,476	0.26%	3.94%	0.01%	5.05%	0.01%	0.31%	3.94%	0.01%	5.05%	0.02%
Truist Financial Corp	TFC	1,333.67	32.14	42,864	0.15%	6.47%	0.01%	16.00%	0.02%	0.17%	6.47%	0.01%	16.00%	0.03%
Southwest Airlines Co	LUV	596.12	25.57	15,243	0.05%	2.82%	0.00%	10.15%	0.01%	0.06%	2.82%	0.00%	10.15%	0.01%
W R Berkley Corp	WRB	257.87	72.55	18,709	0.06%	0.61%	0.00%	13.00%	0.01%	0.08%	0.61%	0.00%	13.00%	0.01%
Stanley Black & Decker Inc	SWK	153.31	90.90	13,936	0.05%	3.56%	0.00%	9.00%	0.00%	0.06%	3.56%	0.00%	9.00%	0.01%
Public Storage	PSA	175.83	258.76	45,498	0.15%	4.64%	0.01%	3.77%	0.01%	0.18%	4.64%	0.01%	3.77%	0.01%
Arista Networks Inc	ANET	311.10	219.71	68,352	0.23%			19.72%	0.05%				19.72%	
Sysco Corp	SYY	504.37	72.17	36,401	0.12%	2.77%	0.00%	13.00%	0.02%	0.15%	2.77%	0.00%	13.00%	0.02%
Corteva Inc	CTVA	704.88	45.20	31,861	0.11%	1.42%	0.00%	16.17%	0.02%	0.13%	1.42%	0.00%	16.17%	0.02%
Texas Instruments Inc	TXN	908.20	152.71	138,692	0.47%	3.41%	0.02%	10.00%	0.05%	0.56%	3.41%	0.02%	10.00%	0.06%
Textron Inc	TXT	196.01	76.66	15,026	0.05%	0.10%	0.00%	11.73%	0.01%	0.06%	0.10%	0.00%	11.73%	0.01%
Thermo Fisher Scientific Inc	TMO	386.37	495.76	191,548		0.28%		-5.00%			0.28%		-5.00%	
TJX Cos Inc/The	TJX	1,139.68	88.11	100,417	0.34%	1.51%	0.01%	6.38%	0.02%	0.40%	1.51%	0.01%	6.38%	0.03%
Globe Life Inc	GL	94.12	123.13	11,589		0.73%					0.73%			
Johnson Controls International plc	JCI	680.32	52.80	35,921	0.12%	2.80%	0.00%	13.36%	0.02%	0.14%	2.80%	0.00%	13.36%	0.02%
Ulta Beauty Inc	ULTA	48.56	425.99	20,687	0.07%			6.41%	0.00%				6.41%	
Union Pacific Corp	UNP	609.60	225.27	137,324	0.47%	2.31%	0.01%	11.00%	0.05%	0.55%	2.31%	0.01%	11.00%	0.06%
Keysight Technologies Inc	KEYS	174.60	135.89	23,726	0.08%			1.81%	0.00%				1.81%	
UnitedHealth Group Inc	UNH	924.93	551.09	509,717	1.74%	1.36%	0.02%	13.40%	0.23%	2.05%	1.36%	0.03%	13.40%	0.27%
Blackstone Inc	BX	710.55	112.37	79,844	0.27%	2.85%	0.01%	7.63%	0.02%	0.32%	2.85%	0.01%	7.63%	0.02%
Marathon Oil Corp	MRO	585.25	25.43	14,883	0.05%	1.73%	0.00%	8.00%	0.00%	0.06%	1.73%	0.00%	8.00%	0.00%
Bio-Rad Laboratories Inc	BIO	24.06	304.92	7,336	0.02%			4.00%	0.00%				4.00%	
Ventas Inc	VTR	402.38	45.84	18,445	0.06%	3.93%	0.00%	8.02%	0.01%	0.07%	3.93%	0.00%	8.02%	0.01%
VF Corp	VFC	388.88	16.73	6,506	0.02%	2.15%	0.00%	3.10%	0.00%	0.03%	2.15%	0.00%	3.10%	0.00%
Vulcan Materials Co	VMC	132.87	213.56	28,376		0.81%		23.22%			0.81%		23.22%	
Weyerhaeuser Co	WY	730.00	31.35	22,886		2.42%					2.42%			
Whirlpool Corp	WHR	54.85	108.90	5,973		6.43%		-2.33%			6.43%		-2.33%	
Williams Cos Inc/The	WMB	1,216.50	36.79	44,755	0.15%	4.87%	0.01%	3.50%	0.01%	0.18%	4.87%	0.01%	3.50%	0.01%
Constellation Energy Corp	CEG	319.38	121.04	38,658		0.93%		26.33%			0.93%		26.33%	
WEC Energy Group Inc	WEC	315.44	83.62	26,377	0.09%	3.73%	0.00%	6.41%	0.01%	0.11%	3.73%	0.00%	6.41%	0.01%
Adobe Inc	ADBE	455.30	611.01	278,193	0.95%			17.33%	0.16%				17.33%	
AES Corp/The	AES	669.63	17.21	11,524	0.04%	3.86%	0.00%	10.12%	0.00%	0.05%	3.86%	0.00%	10.12%	0.00%
Expeditors International of Washington Inc	EXPD	145.39	120.34	17,496		1.15%		-16.00%			1.15%		-16.00%	
Amgen Inc	AMGN	535.18	269.64	144,305	0.49%	3.16%	0.02%	4.88%	0.02%	0.58%	3.16%	0.02%	4.88%	0.03%
Apple Inc	AAPL	15,552.75	189.95	2,954,245	10.06%	0.51%	0.05%	13.00%	1.31%	11.89%	0.51%	0.06%	13.00%	1.55%
Autodesk Inc	ADSK	213.76	218.43	46,692	0.16%			12.48%	0.02%				12.48%	
Cintas Corp	CTAS	101.85	553.25	56,351	0.19%	0.98%	0.00%	11.84%	0.02%	0.23%	0.98%	0.00%	11.84%	0.03%
Comcast Corp	CMCSA	4,015.64	41.89	168,215	0.57%	2.77%	0.02%	9.26%	0.05%	0.68%	2.77%	0.02%	9.26%	0.06%
Molson Coors Beverage Co	TAP	200.96	61.54	12,367	0.04%	2.66%	0.00%	12.99%	0.01%	0.05%	2.66%	0.00%	12.99%	0.01%
KLA Corp	KLAC	135.93	544.62	74,031	0.25%	1.06%	0.00%	9.93%	0.03%	0.30%	1.06%	0.00%	9.93%	0.03%
Marriott International Inc/MD	MAR	293.69	202.70	59,531	0.20%	1.03%	0.00%	17.38%	0.04%	0.24%	1.03%	0.00%	17.38%	0.04%
Fiserv Inc	FI	600.19	130.61	78,390	0.27%			14.08%	0.04%				14.08%	
McCormick & Co Inc/MD	MKC	251.29	64.83	16,291	0.06%	2.59%	0.00%	7.01%	0.00%	0.07%	2.59%	0.00%	7.01%	0.00%
PACCAR Inc	PCAR	523.08	91.82	48,029	0.16%	1.18%	0.00%	12.00%	0.02%	0.19%	1.18%	0.00%	12.00%	0.02%
Costco Wholesale Corp	COST	442.74	592.74	262,430	0.89%	0.69%	0.01%	13.06%	0.12%	1.06%	0.69%	0.01%	13.06%	0.14%
Stryker Corp	SYK	379.90	296.33	112,574	0.38%	1.01%	0.00%	7.62%	0.03%	0.45%	1.01%	0.00%	7.62%	0.03%
Tyson Foods Inc	TSN	285.23	46.84	13,360		4.18%		46.71%			4.18%		46.71%	
Lamb Weston Holdings Inc	LW	144.93	100.03	14,497	0.05%	1.12%	0.00%	13.32%	0.01%	0.06%	1.12%	0.00%	13.32%	0.01%
Applied Materials Inc	AMAT	836.53	149.78	125,296	0.43%	0.85%	0.00%	5.50%	0.02%	0.50%	0.85%	0.00%	5.50%	0.03%
American Airlines Group Inc	AAL	653.54	12.43	8,124				54.64%					54.64%	
Cardinal Health Inc	CAH	246.47	107.08	26,392	0.09%	1.87%	0.00%	13.32%	0.01%	0.11%	1.87%	0.00%	13.32%	0.01%
Cincinnati Financial Corp	CINF	156.91	102.79	16,129	0.05%	2.92%	0.00%	18.21%	0.01%	0.06%	2.92%	0.00%	18.21%	0.01%
Paramount Global	PARA	610.70	14.37	8,776		1.39%		-20.36%			1.39%		-20.36%	
DR Horton Inc	DHI	333.18	127.67	42,538	0.14%	0.94%	0.00%	1.70%	0.00%	0.17%	0.94%	0.00%	1.70%	0.00%
Electronic Arts Inc	EA	268.97	138.01	37,120	0.13%	0.55%	0.00%	10.32%	0.01%	0.15%	0.55%	0.00%	10.32%	0.02%
Fair Isaac Corp	FICO	24.71	1,087.60	26,879				22.00%					22.00%	
Fastenal Co	FAST	571.41	59.97	34,268		2.33%					2.33%			
M&T Bank Corp	MTB	165.96	128.17	21,271	0.07%	4.06%	0.00%	11.59%	0.01%	0.09%	4.06%	0.00%	11.59%	0.01%
Xcel Energy Inc	XEL	551.82	60.84	33,572	0.11%	3.42%	0.00%	6.12%	0.01%	0.14%	3.42%	0.00%	6.12%	0.01%
Fifth Third Bancorp	FITB	681.02	28.95	19,715		4.84%		25.00%			4.84%		25.00%	
Gilead Sciences Inc	GILD	1,246.04	76.60	95,447	0.33%	3.92%	0.01%	2.10%	0.01%	0.38%	3.92%	0.02%	2.10%	0.01%
Hasbro Inc	HAS	138.76	46.41	6,440		6.03%		-3.49%			6.03%		-3.49%	
Huntington Bancshares Inc/OH	HBAN	1,448.08	11.26	16,305		5.51%		-7.69%			5.51%		-7.69%	
Welltower Inc	WELL	556.09	89.10	49,548	0.17%	2.74%	0.00%	10.96%	0.02%	0.20%	2.74%	0.01%	10.96%	0.02%
Biogen Inc	BIIB	144.90	234.08	33,918	0.12%			0.87%	0.00%				0.87%	
Northern Trust Corp	NTRS	207.04	79.25	16,408	0.06%	3.79%	0.00%	5.93%	0.00%	0.07%	3.79%	0.00%	5.93%	0.00%
Packaging Corp of America	PKG	89.62	168.01	15,058	0.05%	2.98%	0.00%	5.00%	0.00%	0.06%	2.98%	0.00%	5.00%	0.00%
Paychex Inc	PAYX	361.23	121.97	44,059	0.15%	2.92%	0.00%	7.00%	0.01%	0.18%	2.92%	0.01%	7.00%	0.01%
QUALCOMM Inc	QCOM	1,113.00	129.05	143,633	0.49%	2.48%	0.01%	11.61%	0.06%	0.58%	2.48%	0.01%	11.61%	0.07%
Ross Stores Inc	ROST	338.63	130.38	44,151	0.15%	1.03%	0.00%	10.00%	0.02%	0.18%	1.03%	0.00%	10.00%	0.02%
IDEXX Laboratories Inc	IDXX	83.05	465.82	38,687	0.13%			17.98%	0.02%				17.98%	
Starbucks Corp	SBUX	1,136.70	99.30	112,874	0.38%	2.30%	0.01%	17.41%	0.07%	0.45%	2.30%	0.01%	17.41%	0.08%
KeyCorp	KEY	936.26	12.39	11,600	0.04%	6.62%	0.00%	7.08%	0.00%	0.05%	6.62%	0.00%	7.08%	0.00%
Fox Corp	FOXA	247.23	29.54	7,303	0.02%	1.76%	0.00%	6.24%	0.00%	0.03%	1.76%	0.00%	6.24%	0.00%
Fox Corp	FOX	235.58	27.66	6,516	0.02%	1.88%	0.00%	6.24%	0.00%	0.03%	1.88%	0.00%	6.24%	0.00%
State Street Corp	STT	308.58	72.82	22,471	0.08%	3.79%	0.00%	6.92%	0.01%	0.09%	3.79%	0.00%	6.92%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	425.43	15.27	6,496										
US Bancorp	USB	1,557.01	38.12	59,353	0.20%	5.04%	0.01%	7.50%	0.02%	0.24%	5.04%	0.01%	7.50%	0.02%
A O Smith Corp	AOS	122.83	75.36	9,256		1.70%					1.70%			
Gen Digital Inc	GEN	640.72	22.08	14,147	0.05%	2.26%	0.00%	12.98%	0.01%	0.06%	2.26%	0.00%	12.98%	0.01%
T Rowe Price Group Inc	TROW	223.47	100.13	22,376		4.87%		-4.09%			4.87%		-4.09%	
Waste Management Inc	WM	402.78	170.99	68,870	0.23%	1.64%	0.00%	10.05%	0.02%	0.28%	1.64%	0.00%	10.05%	0.03%
Constellation Brands Inc	STZ	183.66	240.49	44,169	0.15%	1.48%	0.00%	9.75%	0.01%	0.18%	1.48%	0.00%	9.75%	0.02%
DENTSPLY SIRONA Inc	XRAY	211.86	31.75	6,727	0.02%	1.76%	0.00%	7.93%	0.00%	0.03%	1.76%	0.00%	7.93%	0.00%
Zions Bancorp NA	ZION	148.15	35.63	5,279		4.60%		-9.73%			4.60%		-9.73%	
Alaska Air Group Inc	ALK	128.05	37.81	4,842	0.02%			3.56%	0.00%				3.56%	
Invesco Ltd	IVZ	449.55	14.27	6,415		5.61%		-0.68%			5.61%		-0.68%	
Intuit Inc	INTU	279.94	571.46	159,972	0.54%	0.63%	0.00%	18.96%	0.10%	0.64%	0.63%	0.00%	18.96%	0.12%
Morgan Stanley	MS	1,641.31	79.34	130,222	0.44%	4.29%	0.02%	3.64%	0.02%	0.52%	4.29%	0.02%	3.64%	0.02%
Microchip Technology Inc	MCHP	541.05	83.44	45,145		2.10%		-1.00%			2.10%		-1.00%	
Chubb Ltd	CB	407.99	229.43	93,605	0.32%	1.50%	0.00%	15.50%	0.05%	0.38%	1.50%	0.01%	15.50%	0.06%
Hologic Inc	HOLX	240.00	71.30	17,112				-8.76%					-8.76%	
Citizens Financial Group Inc	CFG	466.22	27.27	12,714		6.16%		-10.63%			6.16%		-10.63%	
O'Reilly Automotive Inc	ORLY	59.16	982.38	58,120	0.20%			11.39%	0.02%				11.39%	
Allstate Corp/The	ALL	261.69	137.87	36,079		2.58%		50.02%			2.58%		50.02%	
Equity Residential	EQR	379.72	56.84	21,584	0.07%	4.66%	0.00%	4.75%	0.00%	0.09%	4.66%	0.00%	4.75%	0.00%
BorgWarner Inc	BWA	235.06	33.69	7,919	0.03%	1.31%	0.00%	4.33%	0.00%	0.03%	1.31%	0.00%	4.33%	0.00%

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

Bulkley As-Filed Direct Testimony

Estimated Weighted Average Dividend Yield:	1.69%	[1]
Estimated Weighted Average Long-Term Growth Rate:	10.78%	[2]
Estimated S&P 500 Required Market Return:	**12.56%**	[3]

Dr. Won "Adjustments" Corrected

Estimated Weighted Average Dividend Yield:	1.99%	[12]
Estimated Weighted Average Long-Term Growth Rate:	10.23%	[13]
Estimated S&P 500 Required Market Return:	**12.33%**	[14]

					Bulkey Direct Testimony As-Filed					Bulkey Direct Testimony *Excluding* Non-Dividend Paying Companies				
		[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[15]	[16]	[17]	[18]	[19]
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.	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Keurig Dr Pepper Inc	KDP	1,398.34	31.57	44,145	0.15%	2.72%	0.00%	6.85%	0.01%	0.18%	2.72%	0.00%	6.85%	0.01%
Host Hotels & Resorts Inc	HST	705.40	17.47	12,323		4.12%					4.12%			
Incyte Corp	INCY	224.11	54.34	12,178				36.36%					36.36%	
Simon Property Group Inc	SPG	326.25	124.89	40,745	0.14%	6.09%	0.01%	1.71%	0.00%	0.16%	6.09%	0.01%	1.71%	0.00%
Eastman Chemical Co	EMN	118.56	83.83	9,939	0.03%	3.77%	0.00%	4.75%	0.00%	0.04%	3.77%	0.00%	4.75%	0.00%
AvalonBay Communities Inc	AVB	142.02	172.94	24,560	0.08%	3.82%	0.00%	6.27%	0.01%	0.10%	3.82%	0.00%	6.27%	0.01%
Prudential Financial Inc	PRU	361.00	97.78	35,299	0.12%	5.11%	0.01%	10.47%	0.01%	0.14%	5.11%	0.01%	10.47%	0.01%
United Parcel Service Inc	UPS	723.26	151.61	109,653	0.37%	4.27%	0.02%	1.64%	0.01%	0.44%	4.27%	0.02%	1.64%	0.01%
Walgreens Boots Alliance Inc	WBA	863.92	19.94	17,226	0.06%	9.63%	0.01%	0.25%	0.00%	0.07%	9.63%	0.01%	0.25%	0.00%
STERIS PLC	STE	98.80	200.94	19,853		1.04%					1.04%			
McKesson Corp	MCK	133.06	470.56	62,614	0.21%	0.53%	0.00%	10.04%	0.02%	0.25%	0.53%	0.00%	10.04%	0.03%
Lockheed Martin Corp	LMT	248.10	447.77	111,091	0.38%	2.81%	0.01%	7.04%	0.03%	0.45%	2.81%	0.01%	7.04%	0.03%
Cencora Inc	COR	199.43	203.37	40,559	0.14%	1.00%	0.00%	9.04%	0.01%	0.16%	1.00%	0.00%	9.04%	0.01%
Capital One Financial Corp	COF	380.85	111.66	42,525		2.15%		-6.30%			2.15%		-6.30%	
Waters Corp	WAT	59.13	280.61	16,592	0.06%			4.44%	0.00%				4.44%	
Nordson Corp	NDSN	57.01	235.34	13,418		1.16%					1.16%			
Dollar Tree Inc	DLTR	217.87	123.59	26,927	0.09%			7.77%	0.01%				7.77%	
Darden Restaurants Inc	DRI	120.32	156.47	18,826	0.06%	3.35%	0.00%	10.45%	0.01%	0.08%	3.35%	0.00%	10.45%	0.01%
Evergy Inc	EVRG	229.58	51.04	11,718	0.04%	5.04%	0.00%	4.82%	0.00%	0.05%	5.04%	0.00%	4.82%	0.00%
Match Group Inc	MTCH	271.81	32.38	8,801				43.48%					43.48%	
Domino's Pizza Inc	DPZ	34.88	392.89	13,704	0.05%	1.23%	0.00%	13.97%	0.01%	0.06%	1.23%	0.00%	13.97%	0.01%
NVR Inc	NVR	3.18	6,155.39	19,568				-4.57%					-4.57%	
NetApp Inc	NTAP	206.03	91.39	18,829	0.06%	2.19%	0.00%	7.40%	0.00%	0.08%	2.19%	0.00%	7.40%	0.01%
Old Dominion Freight Line Inc	ODFL	109.11	389.06	42,452	0.14%	0.41%	0.00%	5.83%	0.01%	0.17%	0.41%	0.00%	5.83%	0.01%
DaVita Inc	DVA	91.30	101.46	9,263				21.67%					21.67%	
Hartford Financial Services Group Inc/The	HIG	300.77	78.16	23,508	0.08%	2.41%	0.00%	7.00%	0.01%	0.09%	2.41%	0.00%	7.00%	0.01%
Iron Mountain Inc	IRM	291.99	64.15	18,731	0.06%	4.05%	0.00%	4.00%	0.00%	0.08%	4.05%	0.00%	4.00%	0.00%
Estee Lauder Cos Inc/The	EL	232.31	127.69	29,663	0.10%	2.07%	0.00%	13.86%	0.01%	0.12%	2.07%	0.00%	13.86%	0.02%
Cadence Design Systems Inc	CDNS	272.06	273.27	74,346	0.25%			18.56%	0.05%				18.56%	
Tyler Technologies Inc	TYL	42.12	408.84	17,222										
Universal Health Services Inc	UHS	61.01	137.48	8,387	0.03%	0.58%	0.00%	9.41%	0.00%	0.03%	0.58%	0.00%	9.41%	0.00%
Skyworks Solutions Inc	SWKS	159.96	96.93	15,504		2.81%		-7.11%			2.81%		-7.11%	
Quest Diagnostics Inc	DGX	112.44	137.23	15,429		2.07%		-1.27%			2.07%		-1.27%	
Rockwell Automation Inc	ROK	114.67	275.44	31,586	0.11%	1.82%	0.00%	12.16%	0.01%	0.13%	1.82%	0.00%	12.16%	0.02%
Kraft Heinz Co/The	KHC	1,226.54	35.11	43,064	0.15%	4.56%	0.01%	4.03%	0.01%	0.17%	4.56%	0.01%	4.03%	0.01%
American Tower Corp	AMT	466.17	208.78	97,326	0.33%	3.10%	0.01%	10.93%	0.04%	0.39%	3.10%	0.01%	10.93%	0.04%
Regeneron Pharmaceuticals Inc	REGN	107.13	823.81	88,254	0.30%			4.00%	0.01%				4.00%	
Amazon.com Inc	AMZN	10,334.03	146.09	1,509,699				86.99%					86.99%	
Jack Henry & Associates Inc	JKHY	72.83	158.69	11,557	0.04%	1.31%	0.00%	7.06%	0.00%	0.05%	1.31%	0.00%	7.06%	0.00%
Ralph Lauren Corp	RL	39.75	129.38	5,143	0.02%	2.32%	0.00%	10.38%	0.00%	0.02%	2.32%	0.00%	10.38%	0.00%
Boston Properties Inc	BXP	156.94	56.93	8,935	0.03%	6.89%	0.00%	2.82%	0.00%	0.04%	6.89%	0.00%	2.82%	0.00%
Amphenol Corp	APH	598.31	90.99	54,440	0.19%	0.97%	0.00%	4.04%	0.01%	0.22%	0.97%	0.00%	4.04%	0.01%
Howmet Aerospace Inc	HWM	411.74	52.60	21,658		0.38%		20.41%			0.38%		20.41%	
Pioneer Natural Resources Co	PXD	233.31	231.64	54,044		5.53%		-3.00%			5.53%		-3.00%	
Valero Energy Corp	VLO	340.45	125.36	42,679		3.25%		35.66%			3.25%		35.66%	
Synopsys Inc	SNPS	152.05	543.23	82,600	0.28%			16.68%	0.05%				16.68%	
Etsy Inc	ETSY	119.75	75.81	9,078	0.03%			2.74%	0.00%				2.74%	
CH Robinson Worldwide Inc	CHRW	116.65	82.05	9,571	0.03%	2.97%	0.00%	5.00%	0.00%	0.04%	2.97%	0.00%	5.00%	0.00%
Accenture PLC	ACN	664.79	333.14	221,467	0.75%	1.55%	0.01%	10.00%	0.08%	0.89%	1.55%	0.01%	10.00%	0.09%
TransDigm Group Inc	TDG	55.31	962.87	53,260	0.18%			15.56%	0.03%				15.56%	
Yum! Brands Inc	YUM	280.31	125.55	35,193	0.12%	1.93%	0.00%	11.93%	0.01%	0.14%	1.93%	0.00%	11.93%	0.02%
Prologis Inc	PLD	923.86	114.93	106,179	0.36%	3.03%	0.01%	8.00%	0.03%	0.43%	3.03%	0.01%	8.00%	0.03%
FirstEnergy Corp	FE	573.82	36.94	21,197		4.44%		-0.33%			4.44%		-0.33%	
VeriSign Inc	VRSN	102.10	212.20	21,666	0.07%			11.50%	0.01%				11.50%	
Quanta Services Inc	PWR	145.29	188.31	27,359	0.09%	0.17%	0.00%	8.00%	0.01%	0.11%	0.17%	0.00%	8.00%	0.01%
Henry Schein Inc	HSIC	130.59	66.73	8,714	0.03%			3.44%	0.00%				3.44%	
Ameren Corp	AEE	262.48	77.59	20,365	0.07%	3.25%	0.00%	7.11%	0.00%	0.08%	3.25%	0.00%	7.11%	0.01%
ANSYS Inc	ANSS	86.87	293.36	25,485	0.09%			10.77%	0.01%				10.77%	
FactSet Research Systems Inc	FDS	37.99	453.46	17,226	0.06%	0.86%	0.00%	10.45%	0.01%	0.07%	0.86%	0.00%	10.45%	0.01%
NVIDIA Corp	NVDA	2,470.00	467.70	1,155,219		0.03%		50.82%			0.03%		50.82%	
Sealed Air Corp	SEE	144.44	33.38	4,821	0.02%	2.40%	0.00%	0.01%	0.00%	0.02%	2.40%	0.00%	0.01%	0.00%
Cognizant Technology Solutions Corp	CTSH	501.41	70.38	35,289	0.12%	1.65%	0.00%	12.00%	0.01%	0.14%	1.65%	0.00%	12.00%	0.02%
Intuitive Surgical Inc	ISRG	352.07	310.84	109,438	0.37%			11.57%	0.04%				11.57%	
Take-Two Interactive Software Inc	TTWO	170.07	158.20	26,905				58.00%					58.00%	
Republic Services Inc	RSG	314.64	161.84	50,921	0.17%	1.32%	0.00%	9.97%	0.02%	0.20%	1.32%	0.00%	9.97%	0.02%
eBay Inc	EBAY	519.00	41.01	21,284	0.07%	2.44%	0.00%	0.32%	0.00%	0.09%	2.44%	0.00%	0.32%	0.00%
Goldman Sachs Group Inc/The	GS	326.11	341.54	111,380	0.38%	3.22%	0.01%	7.71%	0.03%	0.45%	3.22%	0.01%	7.71%	0.03%
SBA Communications Corp	SBAC	107.89	246.96	26,644	0.09%	1.38%	0.00%	8.00%	0.01%	0.11%	1.38%	0.00%	8.00%	0.01%
Sempra	SRE	629.33	72.87	45,859	0.16%	3.27%	0.01%	5.49%	0.01%	0.18%	3.27%	0.01%	5.49%	0.01%
Moody's Corp	MCO	183.00	364.96	66,788	0.23%	0.84%	0.00%	14.08%	0.03%	0.27%	0.84%	0.00%	14.08%	0.04%
ON Semiconductor Corp	ON	430.70	71.33	30,722	0.10%			3.72%	0.00%				3.72%	
Booking Holdings Inc	BKNG	34.89	3,125.70	109,056	0.37%			15.00%	0.06%				15.00%	
F5 Inc	FFIV	59.71	171.19	10,221	0.03%			5.45%	0.00%				5.45%	
Akamai Technologies Inc	AKAM	150.83	115.53	17,426										
Charles River Laboratories International Inc	CRL	51.30	197.08	10,110	0.03%			9.00%	0.00%				9.00%	
MarketAxess Holdings Inc	MKTX	37.91	240.12	9,102		1.20%					1.20%			
Devon Energy Corp	DVN	640.70	44.97	28,812		6.85%		51.35%			6.85%		51.35%	
Bio-Techne Corp	TECH	158.15	62.90	9,948	0.03%	0.51%	0.00%	4.50%	0.00%	0.04%	0.51%	0.00%	4.50%	0.00%
Alphabet Inc	GOOGL	5,918.00	132.53	784,313	2.67%			16.65%	0.44%				16.65%	
Teleflex Inc	TFX	46.99	225.69	10,606	0.04%	0.60%	0.00%	7.00%	0.00%	0.04%	0.60%	0.00%	7.00%	0.00%
Netflix Inc	NFLX	437.68	473.97	207,447				30.96%					30.96%	
Allegion plc	ALLE	87.79	106.09	9,313	0.03%	1.70%	0.00%	5.93%	0.00%	0.04%	1.70%	0.00%	5.93%	0.00%
Agilent Technologies Inc	A	292.12	127.80	37,333	0.13%	0.74%	0.00%	8.00%	0.01%	0.15%	0.74%	0.00%	8.00%	0.01%
Warner Bros Discovery Inc	WBD	2,438.57	10.45	25,483				91.04%					91.04%	
Elevance Health Inc	ELV	234.96	479.49	112,660	0.38%	1.23%	0.00%	10.85%	0.04%	0.45%	1.23%	0.01%	10.85%	0.05%
Trimble Inc	TRMB	248.77	46.40	11,543										
CME Group Inc	CME	359.99	218.36	78,607	0.27%	2.02%	0.01%	11.10%	0.03%	0.32%	2.02%	0.01%	11.10%	0.04%
Juniper Networks Inc	JNPR	318.87	28.45	9,072	0.03%	3.09%	0.00%	7.96%	0.00%	0.04%	3.09%	0.00%	7.96%	0.00%
BlackRock Inc	BLK	148.76	751.23	111,754	0.38%	2.66%	0.01%	6.72%	0.03%	0.45%	2.66%	0.01%	6.72%	0.03%
DTE Energy Co	DTE	206.11	104.11	21,458	0.07%	3.66%	0.00%	7.00%	0.01%	0.09%	3.66%	0.00%	7.00%	0.01%
Nasdaq Inc	NDAQ	576.97	55.84	32,218	0.11%	1.58%	0.00%	2.68%	0.00%	0.13%	1.58%	0.00%	2.68%	0.00%
Celanese Corp	CE	108.86	138.66	15,094	0.05%	2.02%	0.00%	2.27%	0.00%	0.06%	2.02%	0.00%	2.27%	0.00%
Philip Morris International Inc	PM	1,552.41	93.36	144,933	0.49%	5.57%	0.03%	9.19%	0.05%	0.58%	5.57%	0.03%	9.19%	0.05%
Salesforce Inc	CRM	968.00	251.90	243,839				21.67%					21.67%	
Ingersoll Rand Inc	IR	404.80	71.43	28,915	0.10%	0.11%	0.00%	14.00%	0.01%	0.12%	0.11%	0.00%	14.00%	0.02%
Huntington Ingalls Industries Inc	HII	39.72	237.02	9,415		2.19%		40.00%			2.19%		40.00%	
Roper Technologies Inc	ROP	106.82	538.25	57,497		0.56%		-1.00%			0.56%		-1.00%	
MetLife Inc	MET	740.19	63.63	47,098	0.16%	3.27%	0.01%	9.17%	0.01%	0.19%	3.27%	0.01%	9.17%	0.02%
Tapestry Inc	TPR	229.19	31.67	7,258	0.02%	4.42%	0.00%	11.00%	0.00%	0.03%	4.42%	0.00%	11.00%	0.00%
CSX Corp	CSX	1,976.13	32.30	63,829	0.22%	1.36%	0.00%	6.39%	0.01%	0.26%	1.36%	0.00%	6.39%	0.02%
Edwards Lifesciences Corp	EW	606.50	67.71	41,066	0.14%			9.23%	0.01%				9.23%	

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

Bulkley As-Filed Direct Testimony

Estimated Weighted Average Dividend Yield:	1.69%	[1]
Estimated Weighted Average Long-Term Growth Rate:	10.78%	[2]
Estimated S&P 500 Required Market Return:	**12.56%**	[3]

Dr. Won "Adjustments" Corrected

Estimated Weighted Average Dividend Yield:	1.99%	[12]
Estimated Weighted Average Long-Term Growth Rate:	10.23%	[13]
Estimated S&P 500 Required Market Return:	**12.33%**	[14]

		[4]	[5]	[6]	Bulkey Direct Testimony As-Filed [7]	[8]	[9]	[10]	[11]	Bulkey Direct Testimony *Excluding* Non-Dividend Paying Companies [15]	[16]	[17]	[18]	[19]
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.	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Ameriprise Financial Inc	AMP	101.20	353.51	35,774	0.12%	1.53%	0.00%	15.82%	0.02%	0.14%	1.53%	0.00%	15.82%	0.02%
Zebra Technologies Corp	ZBRA	51.36	236.98	12,171										
Zimmer Biomet Holdings Inc	ZBH	208.98	116.31	24,307	0.08%	0.83%	0.00%	7.12%	0.01%	0.10%	0.83%	0.00%	7.12%	0.01%
CBRE Group Inc	CBRE	304.79	78.96	24,066										
Camden Property Trust	CPT	106.77	90.26	9,637	0.03%	4.43%	0.00%	6.17%	0.00%	0.04%	4.43%	0.00%	6.17%	0.00%
Mastercard Inc	MA	930.44	413.83	385,043	1.31%	0.55%	0.01%	17.35%	0.23%	1.55%	0.55%	0.01%	17.35%	0.27%
CarMax Inc	KMX	158.67	63.94	10,145	0.03%			16.34%	0.01%				16.34%	
Intercontinental Exchange Inc	ICE	572.36	113.84	65,158	0.22%	1.48%	0.00%	8.66%	0.02%	0.26%	1.48%	0.00%	8.66%	0.02%
Fidelity National Information Services Inc	FIS	592.48	58.64	34,743	0.12%	3.55%	0.00%	5.51%	0.01%	0.14%	3.55%	0.00%	5.51%	0.01%
Chipotle Mexican Grill Inc	CMG	27.45	2,202.25	60,441				25.41%					25.41%	
Wynn Resorts Ltd	WYNN	112.95	84.42	9,535		1.18%		153.24%			1.18%		153.24%	
Live Nation Entertainment Inc	LYV	230.33	84.22	19,398										
Assurant Inc	AIZ	52.59	168.02	8,836	0.03%	1.71%	0.00%	14.60%	0.00%	0.04%	1.71%	0.00%	14.60%	0.01%
NRG Energy Inc	NRG	225.76	47.84	10,801		3.16%					3.16%			
Regions Financial Corp	RF	930.07	16.68	15,513	0.05%	5.76%	0.00%	0.99%	0.00%	0.06%	5.76%	0.00%	0.99%	0.00%
Monster Beverage Corp	MNST	1,040.44	55.15	57,380				21.32%					21.32%	
Mosaic Co/The	MOS	326.84	35.89	11,730	0.04%	2.23%	0.00%	7.00%	0.00%	0.05%	2.23%	0.00%	7.00%	0.00%
Baker Hughes Co	BKR	1,006.23	33.75	33,960	0.12%	2.37%	0.00%	16.00%	0.02%	0.14%	2.37%	0.00%	16.00%	0.02%
Expedia Group Inc	EXPE	133.33	136.18	18,156	0.06%			17.50%	0.01%				17.50%	
CF Industries Holdings Inc	CF	191.06	75.15	14,358		2.13%		46.00%			2.13%		46.00%	
Leidos Holdings Inc	LDOS	137.51	107.32	14,757	0.05%	1.42%	0.00%	8.12%	0.00%	0.06%	1.42%	0.00%	8.12%	0.00%
APA Corp	APA	306.72	36.00	11,042	0.04%	2.78%	0.00%	0.72%	0.00%	0.04%	2.78%	0.00%	0.72%	0.00%
Alphabet Inc	GOOG	5,725.00	133.92	766,692	2.61%			16.65%	0.43%				16.65%	
First Solar Inc	FSLR	106.84	157.78	16,858				43.22%					43.22%	
TE Connectivity Ltd	TEL	310.78	131.00	40,712		1.80%					1.80%			
Discover Financial Services	DFS	250.06	93.00	23,255		3.01%		56.16%			3.01%		56.16%	
Visa Inc	V	1,580.68	256.68	405,729	1.38%	0.81%	0.01%	14.32%	0.20%	1.63%	0.81%	0.01%	14.32%	0.23%
Mid-America Apartment Communities Inc	MAA	116.69	124.48	14,525	0.05%	4.50%	0.00%	1.77%	0.00%	0.06%	4.50%	0.00%	1.77%	0.00%
Xylem Inc/NY	XYL	241.08	105.13	25,345		1.26%					1.26%			
Marathon Petroleum Corp	MPC	379.70	149.19	56,647		2.21%					2.21%			
Advanced Micro Devices Inc	AMD	1,615.50	121.16	195,734				30.65%					30.65%	
Tractor Supply Co	TSCO	108.11	203.01	21,948	0.07%	2.03%	0.00%	3.81%	0.00%	0.09%	2.03%	0.00%	3.81%	0.00%
ResMed Inc	RMD	147.09	157.73	23,201		1.22%					1.22%			
Mettler-Toledo International Inc	MTD	21.68	1,091.93	23,677	0.08%			5.01%	0.00%				5.01%	
Jacobs Solutions Inc	J	126.02	127.18	16,028	0.05%	0.82%	0.00%	12.31%	0.01%	0.06%	0.82%	0.00%	12.31%	0.01%
Copart Inc	CPRT	960.23	50.22	48,223										
VICI Properties Inc	VICI	1,034.53	29.89	30,922	0.11%	5.55%	0.01%	7.09%	0.01%	0.12%	5.55%	0.01%	7.09%	0.01%
Fortinet Inc	FTNT	767.91	52.56	40,361	0.14%			15.03%	0.02%				15.03%	
Albemarle Corp	ALB	117.35	121.27	14,231	0.05%	1.32%	0.00%	18.79%	0.01%	0.06%	1.32%	0.00%	18.79%	0.01%
Moderna Inc	MRNA	381.28	77.70	29,626				-29.33%					-29.33%	
Essex Property Trust Inc	ESS	64.18	213.46	13,701	0.05%	4.33%	0.00%	5.71%	0.00%	0.06%	4.33%	0.00%	5.71%	0.00%
CoStar Group Inc	CSGP	408.36	83.04	33,910	0.12%			20.00%	0.02%				20.00%	
Realty Income Corp	O	723.92	53.96	39,063	0.13%	5.69%	0.01%	0.68%	0.00%	0.16%	5.69%	0.01%	0.68%	0.00%
Westrock Co	WRK	256.47	41.17	10,559	0.04%	2.94%	0.00%	4.20%	0.00%	0.04%	2.94%	0.00%	4.20%	0.00%
Westinghouse Air Brake Technologies Corp	WAB	179.16	116.56	20,883	0.07%	0.58%	0.00%	12.86%	0.01%	0.08%	0.58%	0.00%	12.86%	0.01%
Pool Corp	POOL	38.68	347.32	13,434		1.27%		-5.49%			1.27%		-5.49%	
Western Digital Corp	WDC	324.24	48.31	15,664				-11.96%					-11.96%	
PepsiCo Inc	PEP	1,374.86	168.29	231,376	0.79%	3.01%	0.02%	8.70%	0.07%	0.93%	3.01%	0.03%	8.70%	0.08%
Diamondback Energy Inc	FANG	178.99	154.41	27,637		8.73%		21.94%			8.73%		21.94%	
Palo Alto Networks Inc	PANW	315.30	295.09	93,042				30.00%					30.00%	
ServiceNow Inc	NOW	205.00	685.74	140,577										
Church & Dwight Co Inc	CHD	246.38	96.63	23,808	0.08%	1.13%	0.00%	5.95%	0.00%	0.10%	1.13%	0.00%	5.95%	0.01%
Federal Realty Investment Trust	FRT	81.62	95.59	7,802	0.03%	4.56%	0.00%	5.77%	0.00%	0.03%	4.56%	0.00%	5.77%	0.00%
MGM Resorts International	MGM	341.58	39.44	13,472										
American Electric Power Co Inc	AEP	515.18	79.55	40,982	0.14%	4.42%	0.01%	4.83%	0.01%	0.16%	4.42%	0.01%	4.83%	0.01%
SolarEdge Technologies Inc	SEDG	56.81	79.38	4,510				27.00%					27.00%	
Invitation Homes Inc	INVH	611.96	33.36	20,415	0.07%	3.12%	0.00%	3.15%	0.00%	0.08%	3.12%	0.00%	3.15%	0.00%
PTC Inc	PTC	119.25	157.36	18,764	0.06%			19.31%	0.01%				19.31%	
JB Hunt Transport Services Inc	JBHT	103.14	185.27	19,109		0.91%		27.00%			0.91%		27.00%	
Lam Research Corp	LRCX	131.79	715.92	94,353	0.32%	1.12%	0.00%	5.44%	0.02%	0.38%	1.12%	0.00%	5.44%	0.02%
Mohawk Industries Inc	MHK	63.68	88.31	5,624				-3.08%					-3.08%	
Pentair PLC	PNR	165.30	64.54	10,668	0.04%	1.36%	0.00%	6.22%	0.00%	0.04%	1.36%	0.00%	6.22%	0.00%
GE HealthCare Technologies Inc	GEHC	455.24	68.46	31,166	0.11%	0.18%	0.00%	12.70%	0.01%	0.13%	0.18%	0.00%	12.70%	0.02%
Vertex Pharmaceuticals Inc	VRTX	257.68	354.81	91,429	0.31%			13.38%	0.04%				13.38%	
Amcor PLC	AMCR	1,445.34	9.48	13,702	0.05%	5.27%	0.00%	1.33%	0.00%	0.06%	5.27%	0.00%	1.33%	0.00%
Meta Platforms Inc	META	2,219.61	327.15	726,144				24.05%					24.05%	
T-Mobile US Inc	TMUS	1,156.48	150.45	173,992		1.73%		38.46%			1.73%		38.46%	
United Rentals Inc	URI	67.78	476.02	32,265	0.11%	1.24%	0.00%	17.87%	0.02%	0.13%	1.24%	0.00%	17.87%	0.02%
Honeywell International Inc	HON	659.25	195.92	129,160	0.44%	2.20%	0.01%	7.69%	0.03%	0.52%	2.20%	0.01%	7.69%	0.04%
Alexandria Real Estate Equities Inc	ARE	173.78	109.40	19,011	0.06%	4.53%	0.00%	5.28%	0.00%	0.08%	4.53%	0.00%	5.28%	0.00%
Delta Air Lines Inc	DAL	643.46	36.93	23,763		1.08%		30.85%			1.08%		30.85%	
Seagate Technology Holdings PLC	STX	209.18	79.10	16,546	0.06%	3.54%	0.00%	6.11%	0.00%	0.07%	3.54%	0.00%	6.11%	0.00%
United Airlines Holdings Inc	UAL	328.02	39.40	12,924				46.54%					46.54%	
News Corp	NWS	191.39	23.04	4,410		0.87%					0.87%			
Centene Corp	CNC	534.20	73.68	39,360	0.13%			8.43%	0.01%				8.43%	
Martin Marietta Materials Inc	MLM	61.81	464.59	28,715		0.64%		21.60%			0.64%		21.60%	
Teradyne Inc	TER	152.88	92.23	14,100	0.05%	0.48%	0.00%	7.82%	0.00%	0.06%	0.48%	0.00%	7.82%	0.00%
PayPal Holdings Inc	PYPL	1,078.14	57.61	62,112	0.21%			6.26%	0.01%				6.26%	
Tesla Inc	TSLA	3,178.92	240.08	763,195	2.60%			11.00%	0.29%				11.00%	
Arch Capital Group Ltd	ACGL	373.17	83.69	31,231	0.11%			10.00%	0.01%				10.00%	
Dow Inc	DOW	701.40	51.75	36,297		5.41%		-4.72%			5.41%		-4.72%	
Everest Group Ltd	EG	43.39	410.55	17,814		1.71%		37.66%			1.71%		37.66%	
Teledyne Technologies Inc	TDY	47.19	402.96	19,014	0.06%			8.03%	0.01%				8.03%	
News Corp	NWSA	380.67	22.04	8,390		0.91%					0.91%			
Exelon Corp	EXC	994.30	38.51	38,290	0.13%	3.74%	0.00%	4.00%	0.01%	0.15%	3.74%	0.01%	4.00%	0.01%
Global Payments Inc	GPN	260.39	116.44	30,320	0.10%	0.86%	0.00%	13.33%	0.01%	0.12%	0.86%	0.00%	13.33%	0.02%
Crown Castle Inc	CCI	433.69	117.28	50,863	0.17%	5.34%	0.01%	7.00%	0.01%	0.20%	5.34%	0.01%	7.00%	0.01%
Aptiv PLC	APTV	282.86	82.84	23,432	0.08%			11.44%	0.01%				11.44%	
Align Technology Inc	ALGN	76.59	213.80	16,375										
Illumina Inc	ILMN	158.80	101.95	16,190				-51.00%					-51.00%	
Kenvue Inc	KVUE	1,915.00	20.44	39,142		3.91%					3.91%			
Targa Resources Corp	TRGP	222.98	90.45	20,168	0.07%	2.21%	0.00%	15.00%	0.01%	0.08%	2.21%	0.00%	15.00%	0.01%
Bunge Global SA	BG	161.43	109.87	17,736		2.41%		-5.00%			2.41%		-5.00%	
LKQ Corp	LKQ	267.60	44.53	11,916		2.69%					2.69%			
Zoetis Inc	ZTS	459.11	176.67	81,112	0.28%	0.85%	0.00%	10.91%	0.03%	0.33%	0.85%	0.00%	10.91%	0.04%
Digital Realty Trust Inc	DLR	302.85	138.78	42,029	0.14%	3.52%	0.01%	6.80%	0.01%	0.17%	3.52%	0.01%	6.80%	0.01%
Equinix Inc	EQIX	93.88	815.01	76,516	0.26%	2.09%	0.01%	16.67%	0.04%	0.31%	2.09%	0.01%	16.67%	0.05%
Las Vegas Sands Corp	LVS	764.49	46.12	35,258		1.73%					1.73%			
Molina Healthcare Inc	MOH	58.30	365.56	21,312	0.07%			11.24%	0.01%				11.24%	

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

Bulkley As-Filed Direct Testimony			**Dr. Won "Adjustments" Corrected**		
Estimated Weighted Average Dividend Yield:	1.69%	[1]	Estimated Weighted Average Dividend Yield:	1.99%	[12]
Estimated Weighted Average Long-Term Growth Rate:	10.78%	[2]	Estimated Weighted Average Long-Term Growth Rate:	10.23%	[13]
Estimated S&P 500 Required Market Return:	**12.56%**	[3]	Estimated S&P 500 Required Market Return:	**12.33%**	[14]

						Bulkey Direct Testimony As-Filed					Bulkey Direct Testimony *Excluding* Non-Dividend Paying Companies				
		[4]	[5]	[6]		[7]	[8]	[9]	[10]	[11]	[15]	[16]	[17]	[18]	[19]
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.	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Bloomberg Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.

Notes:
[1] Equals sum of Col. [9]
[2] Equals sum of Col. [11]
[3] Equals ([1] x (1 + (0.5 x [2]))) + [2]
[4] Source: Bloomberg Professional as of November 30, 2023
[5] Source: Bloomberg Professional as of November 30, 2023
[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 November 30, 2023
[9] Equals [7] x [8]
[10] Bloomberg Professional, as of November 30, 2023
[11] Equals [7] x [10]
[12] Equals sum of Col. [17]
[13] Equals sum of Col. [19]
[14] Equals ([12] x (1 + (0.5 x [13]))) + [13]
[15] Equals weight in S&P 500 based on market capitalization [6] if Dividend Yield >0% & Growth Rate >0% and ≤20%
[16] Bloomberg Professional, as of November 30, 2023
[17] Equals [15] x [16]
[18] Bloomberg Professional, as of November 30, 2023
[19] Equals [15] x [18]

CAPM / ECAPM MODELS

CURRENT RISK-FREE RATE & VL BETA
BULKLEY AS-FILED MARKET RETURN

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.77%	0.90	12.56%	7.78%	11.78%	11.97%
Alliant Energy Corporation	LNT	4.77%	0.85	12.56%	7.78%	11.39%	11.68%
Ameren Corporation	AEE	4.77%	0.85	12.56%	7.78%	11.39%	11.68%
American Electric Power Company, Inc.	AEP	4.77%	0.80	12.56%	7.78%	11.00%	11.39%
Avista Corporation	AVA	4.77%	0.90	12.56%	7.78%	11.78%	11.97%
CMS Energy Corporation	CMS	4.77%	0.80	12.56%	7.78%	11.00%	11.39%
Duke Energy Corporation	DUK	4.77%	0.85	12.56%	7.78%	11.39%	11.68%
Entergy Corporation	ETR	4.77%	0.95	12.56%	7.78%	12.17%	12.26%
IDACORP, Inc.	IDA	4.77%	0.85	12.56%	7.78%	11.39%	11.68%
NextEra Energy, Inc.	NEE	4.77%	0.95	12.56%	7.78%	12.17%	12.26%
NorthWestern Corporation	NWE	4.77%	0.95	12.56%	7.78%	12.17%	12.26%
OGE Energy Corporation	OGE	4.77%	1.05	12.56%	7.78%	12.95%	12.85%
Pinnacle West Capital Corporation	PNW	4.77%	0.95	12.56%	7.78%	12.17%	12.26%
Portland General Electric Company	POR	4.77%	0.90	12.56%	7.78%	11.78%	11.97%
Southern Company	SO	4.77%	0.90	12.56%	7.78%	11.78%	11.97%
Xcel Energy Inc.	XEL	4.77%	0.85	12.56%	7.78%	11.39%	11.68%
Mean						11.73%	11.94%

Notes:
[1] Bloomberg Professional, as of November 30, 2023
[2] Source: Value Line
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

CURRENT RISK-FREE RATE & VL BETA
BULKLEY AS-FILED MARKET RETURN, EXCLUDING NON-DIVIDEND PAYING COMPANIES

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.77%	0.90	12.33%	7.55%	11.57%	11.76%
Alliant Energy Corporation	LNT	4.77%	0.85	12.33%	7.55%	11.20%	11.48%
Ameren Corporation	AEE	4.77%	0.85	12.33%	7.55%	11.20%	11.48%
American Electric Power Company, Inc.	AEP	4.77%	0.80	12.33%	7.55%	10.82%	11.20%
Avista Corporation	AVA	4.77%	0.90	12.33%	7.55%	11.57%	11.76%
CMS Energy Corporation	CMS	4.77%	0.80	12.33%	7.55%	10.82%	11.20%
Duke Energy Corporation	DUK	4.77%	0.85	12.33%	7.55%	11.20%	11.48%
Entergy Corporation	ETR	4.77%	0.95	12.33%	7.55%	11.95%	12.04%
IDACORP, Inc.	IDA	4.77%	0.85	12.33%	7.55%	11.20%	11.48%
NextEra Energy, Inc.	NEE	4.77%	0.95	12.33%	7.55%	11.95%	12.04%
NorthWestern Corporation	NWE	4.77%	0.95	12.33%	7.55%	11.95%	12.04%
OGE Energy Corporation	OGE	4.77%	1.05	12.33%	7.55%	12.71%	12.61%
Pinnacle West Capital Corporation	PNW	4.77%	0.95	12.33%	7.55%	11.95%	12.04%
Portland General Electric Company	POR	4.77%	0.90	12.33%	7.55%	11.57%	11.76%
Southern Company	SO	4.77%	0.90	12.33%	7.55%	11.57%	11.76%
Xcel Energy Inc.	XEL	4.77%	0.85	12.33%	7.55%	11.20%	11.48%
Mean						11.53%	11.73%

Notes:
[1] Bloomberg Professional, as of November 30, 2023
[2] Source: Value Line
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

NEAR-TERM PROJECTED RISK-FREE RATE & VL BETA
BULKLEY AS-FILED MARKET RETURN

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q1 2024 - Q1 2025)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.48%	0.90	12.56%	8.08%	11.75%	11.95%
Alliant Energy Corporation	LNT	4.48%	0.85	12.56%	8.08%	11.34%	11.65%
Ameren Corporation	AEE	4.48%	0.85	12.56%	8.08%	11.34%	11.65%
American Electric Power Company, Inc.	AEP	4.48%	0.80	12.56%	8.08%	10.94%	11.34%
Avista Corporation	AVA	4.48%	0.90	12.56%	8.08%	11.75%	11.95%
CMS Energy Corporation	CMS	4.48%	0.80	12.56%	8.08%	10.94%	11.34%
Duke Energy Corporation	DUK	4.48%	0.85	12.56%	8.08%	11.34%	11.65%
Entergy Corporation	ETR	4.48%	0.95	12.56%	8.08%	12.15%	12.25%
IDACORP, Inc.	IDA	4.48%	0.85	12.56%	8.08%	11.34%	11.65%
NextEra Energy, Inc.	NEE	4.48%	0.95	12.56%	8.08%	12.15%	12.25%
NorthWestern Corporation	NWE	4.48%	0.95	12.56%	8.08%	12.15%	12.25%
OGE Energy Corporation	OGE	4.48%	1.05	12.56%	8.08%	12.96%	12.86%
Pinnacle West Capital Corporation	PNW	4.48%	0.95	12.56%	8.08%	12.15%	12.25%
Portland General Electric Company	POR	4.48%	0.90	12.56%	8.08%	11.75%	11.95%
Southern Company	SO	4.48%	0.90	12.56%	8.08%	11.75%	11.95%
Xcel Energy Inc.	XEL	4.48%	0.85	12.56%	8.08%	11.34%	11.65%
Mean						11.70%	11.91%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 2
[2] Source: Value Line
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

NEAR-TERM PROJECTED RISK-FREE RATE & VL BETA
BULKLEY AS-FILED MARKET RETURN, EXCLUDING NON-DIVIDEND PAYING COMPANIES

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q1 2024 - Q1 2025)	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm − Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	4.48%	0.90	12.33%	7.85%	11.54%	11.74%
Alliant Energy Corporation	LNT	4.48%	0.85	12.33%	7.85%	11.15%	11.45%
Ameren Corporation	AEE	4.48%	0.85	12.33%	7.85%	11.15%	11.45%
American Electric Power Company, Inc.	AEP	4.48%	0.80	12.33%	7.85%	10.76%	11.15%
Avista Corporation	AVA	4.48%	0.90	12.33%	7.85%	11.54%	11.74%
CMS Energy Corporation	CMS	4.48%	0.80	12.33%	7.85%	10.76%	11.15%
Duke Energy Corporation	DUK	4.48%	0.85	12.33%	7.85%	11.15%	11.45%
Entergy Corporation	ETR	4.48%	0.95	12.33%	7.85%	11.94%	12.03%
IDACORP, Inc.	IDA	4.48%	0.85	12.33%	7.85%	11.15%	11.45%
NextEra Energy, Inc.	NEE	4.48%	0.95	12.33%	7.85%	11.94%	12.03%
NorthWestern Corporation	NWE	4.48%	0.95	12.33%	7.85%	11.94%	12.03%
OGE Energy Corporation	OGE	4.48%	1.05	12.33%	7.85%	12.72%	12.62%
Pinnacle West Capital Corporation	PNW	4.48%	0.95	12.33%	7.85%	11.94%	12.03%
Portland General Electric Company	POR	4.48%	0.90	12.33%	7.85%	11.54%	11.74%
Southern Company	SO	4.48%	0.90	12.33%	7.85%	11.54%	11.74%
Xcel Energy Inc.	XEL	4.48%	0.85	12.33%	7.85%	11.15%	11.45%
Mean						11.49%	11.70%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 2
[2] Source: Value Line
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

LONG-TERM PROJECTED RISK-FREE RATE & VL BETA
BULKLEY AS-FILED MARKET RETURN

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.10%	0.90	12.56%	8.46%	11.71%	11.92%
Alliant Energy Corporation	LNT	4.10%	0.85	12.56%	8.46%	11.29%	11.60%
Ameren Corporation	AEE	4.10%	0.85	12.56%	8.46%	11.29%	11.60%
American Electric Power Company, Inc.	AEP	4.10%	0.80	12.56%	8.46%	10.86%	11.29%
Avista Corporation	AVA	4.10%	0.90	12.56%	8.46%	11.71%	11.92%
CMS Energy Corporation	CMS	4.10%	0.80	12.56%	8.46%	10.86%	11.29%
Duke Energy Corporation	DUK	4.10%	0.85	12.56%	8.46%	11.29%	11.60%
Entergy Corporation	ETR	4.10%	0.95	12.56%	8.46%	12.13%	12.24%
IDACORP, Inc.	IDA	4.10%	0.85	12.56%	8.46%	11.29%	11.60%
NextEra Energy, Inc.	NEE	4.10%	0.95	12.56%	8.46%	12.13%	12.24%
NorthWestern Corporation	NWE	4.10%	0.95	12.56%	8.46%	12.13%	12.24%
OGE Energy Corporation	OGE	4.10%	1.05	12.56%	8.46%	12.98%	12.87%
Pinnacle West Capital Corporation	PNW	4.10%	0.95	12.56%	8.46%	12.13%	12.24%
Portland General Electric Company	POR	4.10%	0.90	12.56%	8.46%	11.71%	11.92%
Southern Company	SO	4.10%	0.90	12.56%	8.46%	11.71%	11.92%
Xcel Energy Inc.	XEL	4.10%	0.85	12.56%	8.46%	11.29%	11.60%
Mean						11.66%	11.88%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14
[2] Source: Value Line
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

LONG-TERM PROJECTED RISK-FREE RATE & VL BETA
BULKLEY AS-FILED MARKET RETURN, EXCLUDING NON-DIVIDEND PAYING COMPANIES

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2025 - 2029)	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm − Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	4.10%	0.90	12.33%	8.23%	11.51%	11.71%
Alliant Energy Corporation	LNT	4.10%	0.85	12.33%	8.23%	11.09%	11.40%
Ameren Corporation	AEE	4.10%	0.85	12.33%	8.23%	11.09%	11.40%
American Electric Power Company, Inc.	AEP	4.10%	0.80	12.33%	8.23%	10.68%	11.09%
Avista Corporation	AVA	4.10%	0.90	12.33%	8.23%	11.51%	11.71%
CMS Energy Corporation	CMS	4.10%	0.80	12.33%	8.23%	10.68%	11.09%
Duke Energy Corporation	DUK	4.10%	0.85	12.33%	8.23%	11.09%	11.40%
Entergy Corporation	ETR	4.10%	0.95	12.33%	8.23%	11.92%	12.02%
IDACORP, Inc.	IDA	4.10%	0.85	12.33%	8.23%	11.09%	11.40%
NextEra Energy, Inc.	NEE	4.10%	0.95	12.33%	8.23%	11.92%	12.02%
NorthWestern Corporation	NWE	4.10%	0.95	12.33%	8.23%	11.92%	12.02%
OGE Energy Corporation	OGE	4.10%	1.05	12.33%	8.23%	12.74%	12.64%
Pinnacle West Capital Corporation	PNW	4.10%	0.95	12.33%	8.23%	11.92%	12.02%
Portland General Electric Company	POR	4.10%	0.90	12.33%	8.23%	11.51%	11.71%
Southern Company	SO	4.10%	0.90	12.33%	8.23%	11.51%	11.71%
Xcel Energy Inc.	XEL	4.10%	0.85	12.33%	8.23%	11.09%	11.40%
Mean						11.45%	11.67%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14
[2] Source: Value Line
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

CURRENT RISK-FREE RATE & BLOOMBERG BETA
BULKLEY AS-FILED MARKET RETURN

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.77%	0.83	12.56%	7.78%	11.20%	11.54%
Alliant Energy Corporation	LNT	4.77%	0.79	12.56%	7.78%	10.92%	11.33%
Ameren Corporation	AEE	4.77%	0.75	12.56%	7.78%	10.61%	11.10%
American Electric Power Company, Inc.	AEP	4.77%	0.76	12.56%	7.78%	10.65%	11.13%
Avista Corporation	AVA	4.77%	0.76	12.56%	7.78%	10.70%	11.16%
CMS Energy Corporation	CMS	4.77%	0.75	12.56%	7.78%	10.58%	11.08%
Duke Energy Corporation	DUK	4.77%	0.72	12.56%	7.78%	10.34%	10.89%
Entergy Corporation	ETR	4.77%	0.86	12.56%	7.78%	11.46%	11.73%
IDACORP, Inc.	IDA	4.77%	0.80	12.56%	7.78%	10.99%	11.38%
NextEra Energy, Inc.	NEE	4.77%	0.81	12.56%	7.78%	11.10%	11.46%
NorthWestern Corporation	NWE	4.77%	0.87	12.56%	7.78%	11.52%	11.78%
OGE Energy Corporation	OGE	4.77%	0.92	12.56%	7.78%	11.90%	12.06%
Pinnacle West Capital Corporation	PNW	4.77%	0.82	12.56%	7.78%	11.14%	11.50%
Portland General Electric Company	POR	4.77%	0.79	12.56%	7.78%	10.92%	11.33%
Southern Company	SO	4.77%	0.77	12.56%	7.78%	10.80%	11.24%
Xcel Energy Inc.	XEL	4.77%	0.74	12.56%	7.78%	10.51%	11.02%
Mean						10.96%	11.36%

Notes:
[1] Bloomberg Professional, as of November 30, 2023
[2] Source: Bloomberg Professional, based on 10-year weekly returns, as of November 30, 2023
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

CURRENT RISK-FREE RATE & BLOOMBERG BETA
BULKLEY AS-FILED MARKET RETURN, EXCLUDING NON-DIVIDEND PAYING COMPANIES

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

Company	Ticker	[1] Current 30-day average of 30-year U.S. Treasury bond yield	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm − Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	4.77%	0.83	12.33%	7.55%	11.01%	11.34%
Alliant Energy Corporation	LNT	4.77%	0.79	12.33%	7.55%	10.74%	11.13%
Ameren Corporation	AEE	4.77%	0.75	12.33%	7.55%	10.44%	10.91%
American Electric Power Company, Inc.	AEP	4.77%	0.76	12.33%	7.55%	10.48%	10.94%
Avista Corporation	AVA	4.77%	0.76	12.33%	7.55%	10.53%	10.98%
CMS Energy Corporation	CMS	4.77%	0.75	12.33%	7.55%	10.41%	10.89%
Duke Energy Corporation	DUK	4.77%	0.72	12.33%	7.55%	10.18%	10.71%
Entergy Corporation	ETR	4.77%	0.86	12.33%	7.55%	11.26%	11.53%
IDACORP, Inc.	IDA	4.77%	0.80	12.33%	7.55%	10.81%	11.19%
NextEra Energy, Inc.	NEE	4.77%	0.81	12.33%	7.55%	10.92%	11.27%
NorthWestern Corporation	NWE	4.77%	0.87	12.33%	7.55%	11.32%	11.58%
OGE Energy Corporation	OGE	4.77%	0.92	12.33%	7.55%	11.69%	11.85%
Pinnacle West Capital Corporation	PNW	4.77%	0.82	12.33%	7.55%	10.96%	11.30%
Portland General Electric Company	POR	4.77%	0.79	12.33%	7.55%	10.74%	11.14%
Southern Company	SO	4.77%	0.77	12.33%	7.55%	10.63%	11.05%
Xcel Energy Inc.	XEL	4.77%	0.74	12.33%	7.55%	10.34%	10.84%
Mean						10.78%	11.16%

Notes:
[1] Bloomberg Professional, as of November 30, 2023
[2] Source: Bloomberg Professional, based on 10-year weekly returns, as of November 30, 2023
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA
BULKLEY AS-FILED MARKET RETURN

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q1 2024 - Q1 2025)	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm − Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	4.48%	0.83	12.56%	8.08%	11.15%	11.50%
Alliant Energy Corporation	LNT	4.48%	0.79	12.56%	8.08%	10.85%	11.28%
Ameren Corporation	AEE	4.48%	0.75	12.56%	8.08%	10.53%	11.04%
American Electric Power Company, Inc.	AEP	4.48%	0.76	12.56%	8.08%	10.58%	11.07%
Avista Corporation	AVA	4.48%	0.76	12.56%	8.08%	10.63%	11.11%
CMS Energy Corporation	CMS	4.48%	0.75	12.56%	8.08%	10.51%	11.02%
Duke Energy Corporation	DUK	4.48%	0.72	12.56%	8.08%	10.26%	10.83%
Entergy Corporation	ETR	4.48%	0.86	12.56%	8.08%	11.42%	11.70%
IDACORP, Inc.	IDA	4.48%	0.80	12.56%	8.08%	10.93%	11.34%
NextEra Energy, Inc.	NEE	4.48%	0.81	12.56%	8.08%	11.05%	11.42%
NorthWestern Corporation	NWE	4.48%	0.87	12.56%	8.08%	11.48%	11.75%
OGE Energy Corporation	OGE	4.48%	0.92	12.56%	8.08%	11.87%	12.04%
Pinnacle West Capital Corporation	PNW	4.48%	0.82	12.56%	8.08%	11.09%	11.46%
Portland General Electric Company	POR	4.48%	0.79	12.56%	8.08%	10.86%	11.28%
Southern Company	SO	4.48%	0.77	12.56%	8.08%	10.74%	11.19%
Xcel Energy Inc.	XEL	4.48%	0.74	12.56%	8.08%	10.43%	10.96%
Mean						10.90%	11.31%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 2
[2] Source: Bloomberg Professional, based on 10-year weekly returns, as of November 30, 2023
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

NEAR-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA
BULKLEY AS-FILED MARKET RETURN, EXCLUDING NON-DIVIDEND PAYING COMPANIES

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q1 2024 - Q1 2025)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.48%	0.83	12.33%	7.85%	10.96%	11.30%
Alliant Energy Corporation	LNT	4.48%	0.79	12.33%	7.85%	10.67%	11.09%
Ameren Corporation	AEE	4.48%	0.75	12.33%	7.85%	10.36%	10.85%
American Electric Power Company, Inc.	AEP	4.48%	0.76	12.33%	7.85%	10.41%	10.89%
Avista Corporation	AVA	4.48%	0.76	12.33%	7.85%	10.45%	10.92%
CMS Energy Corporation	CMS	4.48%	0.75	12.33%	7.85%	10.34%	10.84%
Duke Energy Corporation	DUK	4.48%	0.72	12.33%	7.85%	10.09%	10.65%
Entergy Corporation	ETR	4.48%	0.86	12.33%	7.85%	11.22%	11.50%
IDACORP, Inc.	IDA	4.48%	0.80	12.33%	7.85%	10.75%	11.14%
NextEra Energy, Inc.	NEE	4.48%	0.81	12.33%	7.85%	10.86%	11.23%
NorthWestern Corporation	NWE	4.48%	0.87	12.33%	7.85%	11.28%	11.55%
OGE Energy Corporation	OGE	4.48%	0.92	12.33%	7.85%	11.66%	11.83%
Pinnacle West Capital Corporation	PNW	4.48%	0.82	12.33%	7.85%	10.90%	11.26%
Portland General Electric Company	POR	4.48%	0.79	12.33%	7.85%	10.68%	11.09%
Southern Company	SO	4.48%	0.77	12.33%	7.85%	10.56%	11.00%
Xcel Energy Inc.	XEL	4.48%	0.74	12.33%	7.85%	10.26%	10.78%
Mean						10.72%	11.12%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 2
[2] Source: Bloomberg Professional, based on 10-year weekly returns, as of November 30, 2023
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA
BULKLEY AS-FILED MARKET RETURN

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2025 - 2029)	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm − Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	4.10%	0.83	12.56%	8.46%	11.08%	11.45%
Alliant Energy Corporation	LNT	4.10%	0.79	12.56%	8.46%	10.77%	11.22%
Ameren Corporation	AEE	4.10%	0.75	12.56%	8.46%	10.44%	10.97%
American Electric Power Company, Inc.	AEP	4.10%	0.76	12.56%	8.46%	10.49%	11.01%
Avista Corporation	AVA	4.10%	0.76	12.56%	8.46%	10.54%	11.04%
CMS Energy Corporation	CMS	4.10%	0.75	12.56%	8.46%	10.41%	10.95%
Duke Energy Corporation	DUK	4.10%	0.72	12.56%	8.46%	10.15%	10.75%
Entergy Corporation	ETR	4.10%	0.86	12.56%	8.46%	11.36%	11.66%
IDACORP, Inc.	IDA	4.10%	0.80	12.56%	8.46%	10.85%	11.28%
NextEra Energy, Inc.	NEE	4.10%	0.81	12.56%	8.46%	10.97%	11.37%
NorthWestern Corporation	NWE	4.10%	0.87	12.56%	8.46%	11.43%	11.71%
OGE Energy Corporation	OGE	4.10%	0.92	12.56%	8.46%	11.84%	12.02%
Pinnacle West Capital Corporation	PNW	4.10%	0.82	12.56%	8.46%	11.02%	11.41%
Portland General Electric Company	POR	4.10%	0.79	12.56%	8.46%	10.78%	11.22%
Southern Company	SO	4.10%	0.77	12.56%	8.46%	10.65%	11.13%
Xcel Energy Inc.	XEL	4.10%	0.74	12.56%	8.46%	10.33%	10.89%
Mean						10.82%	11.25%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14
[2] Source: Bloomberg Professional, based on 10-year weekly returns, as of November 30, 2023
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

LONG-TERM PROJECTED RISK-FREE RATE & BLOOMBERG BETA
BULKLEY AS-FILED MARKET RETURN, EXCLUDING NON-DIVIDEND PAYING COMPANIES

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2025 - 2029)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.10%	0.83	12.33%	8.23%	10.89%	11.25%
Alliant Energy Corporation	LNT	4.10%	0.79	12.33%	8.23%	10.59%	11.03%
Ameren Corporation	AEE	4.10%	0.75	12.33%	8.23%	10.27%	10.78%
American Electric Power Company, Inc.	AEP	4.10%	0.76	12.33%	8.23%	10.32%	10.82%
Avista Corporation	AVA	4.10%	0.76	12.33%	8.23%	10.36%	10.86%
CMS Energy Corporation	CMS	4.10%	0.75	12.33%	8.23%	10.24%	10.76%
Duke Energy Corporation	DUK	4.10%	0.72	12.33%	8.23%	9.98%	10.57%
Entergy Corporation	ETR	4.10%	0.86	12.33%	8.23%	11.17%	11.46%
IDACORP, Inc.	IDA	4.10%	0.80	12.33%	8.23%	10.67%	11.09%
NextEra Energy, Inc.	NEE	4.10%	0.81	12.33%	8.23%	10.79%	11.17%
NorthWestern Corporation	NWE	4.10%	0.87	12.33%	8.23%	11.23%	11.51%
OGE Energy Corporation	OGE	4.10%	0.92	12.33%	8.23%	11.63%	11.80%
Pinnacle West Capital Corporation	PNW	4.10%	0.82	12.33%	8.23%	10.84%	11.21%
Portland General Electric Company	POR	4.10%	0.79	12.33%	8.23%	10.60%	11.03%
Southern Company	SO	4.10%	0.77	12.33%	8.23%	10.47%	10.94%
Xcel Energy Inc.	XEL	4.10%	0.74	12.33%	8.23%	10.16%	10.70%
Mean						10.64%	11.06%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14
[2] Source: Bloomberg Professional, based on 10-year weekly returns, as of November 30, 2023
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

CURRENT RISK-FREE RATE & VALUE LINE LT AVERAGE BETA
BULKLEY AS-FILED MARKET RETURN

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.77%	0.79	12.56%	7.78%	10.88%	11.30%
Alliant Energy Corporation	LNT	4.77%	0.75	12.56%	7.78%	10.61%	11.10%
Ameren Corporation	AEE	4.77%	0.73	12.56%	7.78%	10.42%	10.95%
American Electric Power Company, Inc.	AEP	4.77%	0.68	12.56%	7.78%	10.03%	10.66%
Avista Corporation	AVA	4.77%	0.79	12.56%	7.78%	10.88%	11.30%
CMS Energy Corporation	CMS	4.77%	0.69	12.56%	7.78%	10.14%	10.75%
Duke Energy Corporation	DUK	4.77%	0.67	12.56%	7.78%	9.95%	10.60%
Entergy Corporation	ETR	4.77%	0.75	12.56%	7.78%	10.57%	11.07%
IDACORP, Inc.	IDA	4.77%	0.73	12.56%	7.78%	10.46%	10.98%
NextEra Energy, Inc.	NEE	4.77%	0.73	12.56%	7.78%	10.46%	10.98%
NorthWestern Corporation	NWE	4.77%	0.75	12.56%	7.78%	10.57%	11.07%
OGE Energy Corporation	OGE	4.77%	0.93	12.56%	7.78%	12.01%	12.15%
Pinnacle West Capital Corporation	PNW	4.77%	0.74	12.56%	7.78%	10.49%	11.01%
Portland General Electric Company	POR	4.77%	0.75	12.56%	7.78%	10.61%	11.10%
Southern Company	SO	4.77%	0.66	12.56%	7.78%	9.87%	10.54%
Xcel Energy Inc.	XEL	4.77%	0.66	12.56%	7.78%	9.87%	10.54%
Mean						10.49%	11.01%

Notes:
[1] Bloomberg Professional, as of November 30, 2023
[2] Source: Exhibit AEB-4
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

CURRENT RISK-FREE RATE & VALUE LINE LT AVERAGE BETA
BULKLEY AS-FILED MARKET RETURN, EXCLUDING NON-DIVIDEND PAYING COMPANIES

$$K = Rf + \beta (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Current 30-day average of 30-year U.S. Treasury bond yield	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.77%	0.79	12.33%	7.55%	10.70%	11.11%
Alliant Energy Corporation	LNT	4.77%	0.75	12.33%	7.55%	10.44%	10.91%
Ameren Corporation	AEE	4.77%	0.73	12.33%	7.55%	10.25%	10.77%
American Electric Power Company, Inc.	AEP	4.77%	0.68	12.33%	7.55%	9.87%	10.49%
Avista Corporation	AVA	4.77%	0.79	12.33%	7.55%	10.70%	11.11%
CMS Energy Corporation	CMS	4.77%	0.69	12.33%	7.55%	9.99%	10.57%
Duke Energy Corporation	DUK	4.77%	0.67	12.33%	7.55%	9.80%	10.43%
Entergy Corporation	ETR	4.77%	0.75	12.33%	7.55%	10.40%	10.88%
IDACORP, Inc.	IDA	4.77%	0.73	12.33%	7.55%	10.29%	10.80%
NextEra Energy, Inc.	NEE	4.77%	0.73	12.33%	7.55%	10.29%	10.80%
NorthWestern Corporation	NWE	4.77%	0.75	12.33%	7.55%	10.40%	10.88%
OGE Energy Corporation	OGE	4.77%	0.93	12.33%	7.55%	11.80%	11.93%
Pinnacle West Capital Corporation	PNW	4.77%	0.74	12.33%	7.55%	10.33%	10.83%
Portland General Electric Company	POR	4.77%	0.75	12.33%	7.55%	10.44%	10.91%
Southern Company	SO	4.77%	0.66	12.33%	7.55%	9.72%	10.37%
Xcel Energy Inc.	XEL	4.77%	0.66	12.33%	7.55%	9.72%	10.37%
Mean						10.32%	10.82%

Notes:
[1] Bloomberg Professional, as of November 30, 2023
[2] Source: Exhibit AEB-4
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

NEAR-TERM PROJECTED RISK-FREE RATE & VALUE LINE LT AVERAGE BETA
BULKLEY AS-FILED MARKET RETURN

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q1 2024 - Q1 2025)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm − Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	4.48%	0.79	12.56%	8.08%	10.82%	11.25%
Alliant Energy Corporation	LNT	4.48%	0.75	12.56%	8.08%	10.54%	11.04%
Ameren Corporation	AEE	4.48%	0.73	12.56%	8.08%	10.34%	10.89%
American Electric Power Company, Inc.	AEP	4.48%	0.68	12.56%	8.08%	9.93%	10.59%
Avista Corporation	AVA	4.48%	0.79	12.56%	8.08%	10.82%	11.25%
CMS Energy Corporation	CMS	4.48%	0.69	12.56%	8.08%	10.05%	10.68%
Duke Energy Corporation	DUK	4.48%	0.67	12.56%	8.08%	9.85%	10.53%
Entergy Corporation	ETR	4.48%	0.75	12.56%	8.08%	10.50%	11.01%
IDACORP, Inc.	IDA	4.48%	0.73	12.56%	8.08%	10.38%	10.92%
NextEra Energy, Inc.	NEE	4.48%	0.73	12.56%	8.08%	10.38%	10.92%
NorthWestern Corporation	NWE	4.48%	0.75	12.56%	8.08%	10.50%	11.01%
OGE Energy Corporation	OGE	4.48%	0.93	12.56%	8.08%	11.99%	12.13%
Pinnacle West Capital Corporation	PNW	4.48%	0.74	12.56%	8.08%	10.42%	10.95%
Portland General Electric Company	POR	4.48%	0.75	12.56%	8.08%	10.54%	11.04%
Southern Company	SO	4.48%	0.66	12.56%	8.08%	9.77%	10.47%
Xcel Energy Inc.	XEL	4.48%	0.66	12.56%	8.08%	9.77%	10.47%
Mean						10.41%	10.95%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 2
[2] Source: Exhibit AEB-4
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

NEAR-TERM PROJECTED RISK-FREE RATE & VALUE LINE LT AVERAGE BETA
BULKLEY AS-FILED MARKET RETURN, EXCLUDING NON-DIVIDEND PAYING COMPANIES

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

Company	Ticker	[1] Near-term projected 30-year U.S. Treasury bond yield (Q1 2024 - Q1 2025)	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm − Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	4.48%	0.79	12.33%	7.85%	10.64%	11.06%
Alliant Energy Corporation	LNT	4.48%	0.75	12.33%	7.85%	10.37%	10.86%
Ameren Corporation	AEE	4.48%	0.73	12.33%	7.85%	10.17%	10.71%
American Electric Power Company, Inc.	AEP	4.48%	0.68	12.33%	7.85%	9.78%	10.42%
Avista Corporation	AVA	4.48%	0.79	12.33%	7.85%	10.64%	11.06%
CMS Energy Corporation	CMS	4.48%	0.69	12.33%	7.85%	9.90%	10.50%
Duke Energy Corporation	DUK	4.48%	0.67	12.33%	7.85%	9.70%	10.36%
Entergy Corporation	ETR	4.48%	0.75	12.33%	7.85%	10.33%	10.83%
IDACORP, Inc.	IDA	4.48%	0.73	12.33%	7.85%	10.21%	10.74%
NextEra Energy, Inc.	NEE	4.48%	0.73	12.33%	7.85%	10.21%	10.74%
NorthWestern Corporation	NWE	4.48%	0.75	12.33%	7.85%	10.33%	10.83%
OGE Energy Corporation	OGE	4.48%	0.93	12.33%	7.85%	11.78%	11.92%
Pinnacle West Capital Corporation	PNW	4.48%	0.74	12.33%	7.85%	10.25%	10.77%
Portland General Electric Company	POR	4.48%	0.75	12.33%	7.85%	10.37%	10.86%
Southern Company	SO	4.48%	0.66	12.33%	7.85%	9.62%	10.30%
Xcel Energy Inc.	XEL	4.48%	0.66	12.33%	7.85%	9.62%	10.30%
Mean						10.24%	10.76%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 2
[2] Source: Exhibit AEB-4
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

LONG-TERM PROJECTED RISK-FREE RATE & VALUE LINE LT BETA
BULKLEY AS-FILED MARKET RETURN

$K = Rf + \beta (Rm - Rf)$
$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2025 - 2029)	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm − Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	4.10%	0.79	12.56%	8.46%	10.74%	11.19%
Alliant Energy Corporation	LNT	4.10%	0.75	12.56%	8.46%	10.44%	10.97%
Ameren Corporation	AEE	4.10%	0.73	12.56%	8.46%	10.23%	10.81%
American Electric Power Company, Inc.	AEP	4.10%	0.68	12.56%	8.46%	9.81%	10.49%
Avista Corporation	AVA	4.10%	0.79	12.56%	8.46%	10.74%	11.19%
CMS Energy Corporation	CMS	4.10%	0.69	12.56%	8.46%	9.93%	10.59%
Duke Energy Corporation	DUK	4.10%	0.67	12.56%	8.46%	9.72%	10.43%
Entergy Corporation	ETR	4.10%	0.75	12.56%	8.46%	10.40%	10.94%
IDACORP, Inc.	IDA	4.10%	0.73	12.56%	8.46%	10.27%	10.84%
NextEra Energy, Inc.	NEE	4.10%	0.73	12.56%	8.46%	10.27%	10.84%
NorthWestern Corporation	NWE	4.10%	0.75	12.56%	8.46%	10.40%	10.94%
OGE Energy Corporation	OGE	4.10%	0.93	12.56%	8.46%	11.96%	12.11%
Pinnacle West Capital Corporation	PNW	4.10%	0.74	12.56%	8.46%	10.32%	10.88%
Portland General Electric Company	POR	4.10%	0.75	12.56%	8.46%	10.44%	10.97%
Southern Company	SO	4.10%	0.66	12.56%	8.46%	9.64%	10.37%
Xcel Energy Inc.	XEL	4.10%	0.66	12.56%	8.46%	9.64%	10.37%
Mean						10.31%	10.87%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14
[2] Source: Exhibit AEB-4
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

CAPM / ECAPM MODELS

LONG-TERM PROJECTED RISK-FREE RATE & VALUE LINE LT BETA
BULKLEY AS-FILED MARKET RETURN, EXCLUDING NON-DIVIDEND PAYING COMPANIES

$$K = Rf + \beta\ (Rm - Rf)$$
$$K = Rf + 0.25 \times (Rm - Rf) + 0.75 \times \beta \times (Rm - Rf)$$

Company	Ticker	[1] Projected 30-year U.S. Treasury bond yield (2025 - 2029)	[2] Beta (β)	[3] Market Return (Rm)	[4] Market Risk Premium (Rm − Rf)	[5] ROE (K)	[6] ECAPM ROE (K)
ALLETE, Inc.	ALE	4.10%	0.79	12.33%	8.23%	10.56%	11.00%
Alliant Energy Corporation	LNT	4.10%	0.75	12.33%	8.23%	10.27%	10.79%
Ameren Corporation	AEE	4.10%	0.73	12.33%	8.23%	10.07%	10.63%
American Electric Power Company, Inc.	AEP	4.10%	0.68	12.33%	8.23%	9.65%	10.32%
Avista Corporation	AVA	4.10%	0.79	12.33%	8.23%	10.56%	11.00%
CMS Energy Corporation	CMS	4.10%	0.69	12.33%	8.23%	9.78%	10.42%
Duke Energy Corporation	DUK	4.10%	0.67	12.33%	8.23%	9.57%	10.26%
Entergy Corporation	ETR	4.10%	0.75	12.33%	8.23%	10.23%	10.75%
IDACORP, Inc.	IDA	4.10%	0.73	12.33%	8.23%	10.11%	10.66%
NextEra Energy, Inc.	NEE	4.10%	0.73	12.33%	8.23%	10.11%	10.66%
NorthWestern Corporation	NWE	4.10%	0.75	12.33%	8.23%	10.23%	10.75%
OGE Energy Corporation	OGE	4.10%	0.93	12.33%	8.23%	11.75%	11.90%
Pinnacle West Capital Corporation	PNW	4.10%	0.74	12.33%	8.23%	10.15%	10.69%
Portland General Electric Company	POR	4.10%	0.75	12.33%	8.23%	10.27%	10.79%
Southern Company	SO	4.10%	0.66	12.33%	8.23%	9.49%	10.20%
Xcel Energy Inc.	XEL	4.10%	0.66	12.33%	8.23%	9.49%	10.20%
Mean						10.14%	10.69%

Notes:
[1] Blue Chip Financial Forecasts, Vol. 42, No. 12, December 1, 2023, at 14
[2] Source: Exhibit AEB-4
[3] Exhibit AEB-SR2
[4] Equals [3] - [1]
[5] Equals [1] + [2] x [4]
[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

COMPARISON OF CAPM/ECAPM RESULTS
BULKLEY AS-FILED v.EXCLUDING NON-DIVIDEND PAYING COMPANIES

	Current 30-Day Avg 30-Year Treasury Yield	Near-Term Projected 30-Year Treasury Yield	Longer-Term Projected 30-Year Treasury Yield
BULKEY AS-FILED			
CAPM:			
Current *Value Line* Beta	11.73%	11.70%	11.66%
Current Bloomberg Beta	10.96%	10.90%	10.82%
Long-term Avg. *Value Line* Beta	10.49%	10.41%	10.31%
ECAPM:			
Current *Value Line* Beta	11.94%	11.91%	11.88%
Current Bloomberg Beta	11.36%	11.31%	11.25%
Long-term Avg. *Value Line* Beta	11.01%	10.95%	10.87%
BULKEY AS-FILED, *EXCEPT EXCL. NON-DIVIDEND PAYING COMPANIES*			
CAPM:			
Current *Value Line* Beta	11.53%	11.49%	11.45%
Current Bloomberg Beta	10.78%	10.72%	10.64%
Long-term Avg. *Value Line* Beta	10.32%	10.24%	10.14%
ECAPM:			
Current *Value Line* Beta	11.73%	11.70%	11.67%
Current Bloomberg Beta	11.16%	11.12%	11.06%
Long-term Avg. *Value Line* Beta	10.82%	10.76%	10.69%

Market Value of the Capital Structure of the Proxy Group

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	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 Corporation	LNT	$1,272,000	$2,304,000	$811,000	($221,000)	$475,000	$221,000	$ 8,418,000	$9,450,000	$8,677,000	$9,034,000	-$357,000	$9,093,000	$0	$0	$ 6,777,000	$ 13,090,687	$22,183,687	40.99%	0.00%	59.01%
Ameren Corporation	AEE	$2,181,000	$3,345,000	$849,000	($315,000)	$536,000	$315,000	$ 15,121,000	$16,285,000	$14,833,000	$15,970,000	-$1,137,000	$15,148,000	$0	$0	$ 11,349,000	$ 19,021,445	$34,169,445	44.33%	0.00%	55.67%
American Electric Power Corr	AEP	$6,082,100	$11,583,600	$2,722,400	($2,779,100)	$2,830,200	$2,779,100	$ 38,368,900	$43,870,400	$37,325,700	$40,143,200	-$2,817,500	$41,052,900	$0	$0	$ 25,246,700	$ 42,711,619	$83,764,519	49.01%	0.00%	50.99%
Avista Corporation	AVA	$661,842	$775,205	$22,890	($90,473)	$349,000	$90,473	$ 2,693,311	$2,806,674	$2,221,103	$2,644,042	-$422,939	$2,383,735	$0	$0	$ 2,485,323	$ 2,765,118	$5,148,853	46.30%	0.00%	53.70%
CMS Energy Corporation	CMS	$2,839,000	$2,895,000	$984,000	$928,000	$93,000	$0	$ 14,592,000	$15,576,000	$14,316,000	$15,494,000	-$1,178,000	$14,398,000	$224,000	$224,000	$ 7,320,000	$ 16,942,710	$31,564,710	45.61%	0.71%	53.68%
Duke Energy Corporation	DUK	$12,769,000	$17,283,000	$2,988,000	($1,526,000)	$4,288,000	$1,526,000	$ 73,369,000	$77,883,000	$69,790,000	$75,252,000	-$5,462,000	$72,421,000	$1,962,000	$1,962,000	$ 47,150,000	$ 74,789,866	$149,172,866	48.55%	1.32%	50.14%
Entergy Corporation	ETR	$3,660,869	$6,396,492	$2,176,517	($559,106)	$1,138,171	$559,106	$ 23,227,681	$25,963,304	$22,489,174	$25,107,896	-$2,618,722	$23,344,582	$0	$0	$ 14,622,647	$ 21,398,960	$44,743,542	52.17%	0.00%	47.83%
IDACORP, Inc.	IDA	$1,004,054	$634,076	$49,800	$419,778	$0	$0	$ 2,775,790	$2,825,590	$2,684,278	$2,825,590	-$141,312	$2,684,278	$0	$0	$ 2,907,569	$ 4,976,490	$7,660,768	35.04%	0.00%	64.96%
NextEra Energy, Inc.	NEE	$15,361,000	$27,963,000	$6,901,000	($5,701,000)	$4,905,000	$4,905,000	$ 62,261,000	$74,067,000	$64,103,000	$68,306,000	-$4,203,000	$69,864,000	$0	$0	$ 47,468,000	$ 124,620,728	$194,484,728	35.92%	0.00%	64.08%
NorthWestern Corporation	NWE	$407,006	$534,898	$103,288	($24,604)	$0	$0	$ 2,690,096	$2,793,384	$2,521,030	$2,784,585	-$263,555	$2,529,829	$0	$0	$ 2,785,314	$ 3,116,617	$5,646,446	44.80%	0.00%	55.20%
OGE Energy Corporation	OGE	$771,500	$1,179,200	$3,700	($404,000)	$499,200	$404,000	$ 4,367,300	$4,775,000	$4,114,800	$4,340,500	-$225,700	$4,549,300	$0	$0	$ 4,511,600	$ 6,996,038	$11,545,338	39.40%	0.00%	60.60%
Pinnacle West Capital Corpor	PNW	$1,926,967	$2,889,347	$942,883	($19,497)	$609,500	$19,497	$ 8,750,811	$9,713,191	$6,767,000	$7,680,000	-$913,000	$8,800,191	$0	$0	$ 6,177,664	$ 8,146,537	$16,946,728	51.93%	0.00%	48.07%
Portland General Electric Con	POR	$935,000	$1,112,000	$103,000	($74,000)	$146,000	$74,000	$ 4,237,000	$4,414,000	$3,705,000	$3,999,000	-$294,000	$4,120,000	$0	$0	$ 3,319,000	$ 4,382,710	$8,502,710	48.46%	0.00%	51.54%
Southern Company	SO	$10,432,000	$13,467,000	$2,659,000	($376,000)	$2,314,000	$376,000	$ 58,517,000	$61,552,000	$55,000,000	$59,400,000	-$4,400,000	$57,152,000	$0	$0	$ 31,444,000	$ 76,474,229	$133,626,229	42.77%	0.00%	57.23%
Xcel Energy Inc.	XEL	$4,069,000	$5,652,000	$797,000	($786,000)	$785,000	$785,000	$ 26,013,000	$27,595,000	$22,927,000	$25,465,000	-$2,538,000	$25,057,000	$0	$0	$ 17,616,000	$ 34,162,948	$59,219,948	42.31%	0.00%	57.69%
																		AVERAGE:	**44.51%**	**0.13%**	**55.36%**

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]