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MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. ER-2022-0129 / 0130

SURREBUTTAL TESTIMONY

OF

ANN E. BULKLEY

ON BEHALF OF

EVERGY MISSOURI METRO and EVERGY MISSOURI WEST

Kansas City, Missouri

August 2022

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1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

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

5 **Q. On whose behalf are you submitting this Prepared Surrebuttal Testimony?**

6 A. I am submitting this testimony before the Missouri Public Service Commission
7 (“Commission”) on behalf of Evergy Metro, Inc., d/b/a Evergy Missouri Metro (“Evergy
8 Missouri Metro”) and Evergy Missouri West, Inc. d/b/a Evergy Missouri West (“Evergy
9 Missouri West”) (collectively the “Companies”) both wholly-owned subsidiaries of
10 Evergy, Inc. (“Evergy”).

11 **Q. Did you previously provide Direct Testimony and Rebuttal Testimony in this**
12 **proceeding?**

13 A. Yes. I submitted Direct Testimony regarding the appropriate Return on Equity (“ROE”)¹
14 and overall rate of return to be used for ratemaking purpose for Evergy Missouri Metro and
15 Evergy Missouri West in this proceeding on January 7, 2022. I also addressed the
16 appropriateness of the Company’s proposed capital structure, as supported by Company

¹ Throughout my Direct Testimony, I interchangeably use the terms “ROE” and “cost of equity”.

1 witness Kirkland B. Andrews. I also submitted Rebuttal Testimony on the same topics on
2 July 13, 2022.

3 **Q. Please describe the purpose of your testimony.**

4 A. The purpose of my Surrebuttal Testimony is to respond to the Rebuttal Testimony of the
5 Missouri Public Service Commission Staff (“Staff”) witness Dr. Seoung Joun Won relating
6 to the authorized ROE and capital structure, the Rebuttal Testimonies of Staff Witnesses
7 Francisco Del Pozo and Sarah L. K. Lange as they relate to the Companies business risk,
8 and the Rebuttal Testimony of David Murray on behalf of the Office of the Public Counsel
9 (“OPC”).

10 **II. SUMMARY AND OVERVIEW**

11 **Q. Please briefly summarize your Surrebuttal Testimony and your key conclusions and**
12 **recommendations regarding the appropriate ROE and capital structure for Evergy**
13 **Missouri Metro and Evergy Missouri West in this proceeding.**

14 A. My key conclusions are as follows:

- 15 1. The objective in this proceeding is to provide the Commission with market-
16 based estimates of the ROE that should be considered for the Companies in this
17 proceeding. While the analyses that I have prepared provide the Commission
18 with ROE estimates, both Dr. Won and Mr. Murray have testified that their
19 analyses do not reflect the ROE. Rather than developing market-based analyses
20 to estimate the ROE, these witnesses have developed subjective estimates of the
21 cost of equity (“COE”) and have provide the Commission with no meaningful
22 link between the COE and the ROE.

1 a. In lieu of any relationship between the COE and the ROE Mr. Murray
2 simply provides the Commission with his judgment as to the ROE that is
3 appropriate for the Companies.

4 b. Dr. Won uses his COE estimates to develop an adjustment to an ROE
5 established in the 2019 Empire case. We know that the Commission did
6 not rely on either of the “market-based” analyses prepared by Dr. Won to
7 develop his adjustment factor because neither was filed in the Empire case.
8 Dr. Won developed both ROE analyses in this case; the first based on
9 current market data and the second as a retrospective view of the ROE at
10 the time of the Empire Case. Dr. Won’s reliance on this benchmarking
11 approach, based on market data that was not considered in the determination
12 of the ROE for the 2019 Empire case is fundamentally undermined by Dr.
13 Won’s criticism of the use of previous ROE determinations in the Bond
14 Yield Risk Premium (“BYRP”) analysis. Dr. Won states that the
15 Commission should not rely on the BYRP approach because it ‘is likely to
16 provide less accurate current COE estimate... because it relies on previous
17 ROE determinations, whose resulting ROE may not necessarily be directly
18 determined by a market-based methodology.’²

19 2. Staff’s recommended ROE of 9.62 percent is 38 basis points below the Company
20 request of 10.00 percent. Staff has recognized that interest rates have increased

² Rebuttal Testimony of Seoung Joun Won, PhD, at 19.

1 and that the cost of equity has increased as compared with the market conditions
2 that prevailed at the time of the Empire decision.

3 3. Since the date of Staff’s analysis, additional information further demonstrates
4 that the rising interest rate environment makes the Company’s requested ROE
5 reasonable.

6 a. Staff’s analysis was prepared as of the end of the first quarter of this year.
7 The 3-month average of the 30-year Treasury bond used in Staff’s analysis
8 was 2.25 percent. Since that time, the 3-month average yield on the 30-year
9 Treasury bond has increased to 3.14 percent, an increase of 89 basis points.

10 b. Inflation continues to escalate, increasing from 8.5 percent in March 2022
11 to 9.1 percent as of July 2022.

12 c. The Federal Reserve has increased the Federal Funds rate three times since
13 the end of the first quarter of this year; a total of 200 basis points. Further,
14 in its July meeting, the Federal Reserve indicated further increases would
15 be necessary to address persistent inflationary pressures. The June and July
16 increases, of 75 basis points each, were of significance. The last increase
17 of this magnitude in one month has not been seen since November 1994,
18 when it moved the Federal Funds rate from 4.75 percent to 5.50 percent.³
19 Therefore, it is reasonable to expect that the COE and the ROE are
20 increasing – even during the pendency of this proceeding. Current market
21 conditions and the results of the ROE estimation methodologies

³ CNBC “Fed hikes its benchmark interest rate by 0.75 percentage point, the biggest increase since 1994,” June 15, 2022.

1 demonstrate that the Companies' requested ROE of 10.00 percent is
2 reasonable.

3 4. Dr. Won uses a review of authorized ROEs to suggest that my ROE
4 recommendation is above the average of recently authorized ROEs in 2022. This
5 criticism lacks credibility, as the same is true of Dr. Won's recommendation. As
6 discussed in my testimony, it is reasonable to expect that the recommended
7 ROEs in this proceeding would be higher than recently authorized ROEs.
8 Recently authorized ROEs rely on data reflecting historical market conditions.
9 Over the pendency of this case, market conditions have been changing rapidly,
10 with the Federal Reserve increasing interest rates four times (by 225 basis points
11 in aggregate) since the data used in my Direct Testimony. Therefore, it is
12 reasonable and appropriate that both Dr. Won's recommendation and the
13 Company's request be higher than recently authorized ROEs, which were set
14 based on lower interest rate environments.

15 5. In contrast, as noted by Dr. Won, Mr. Murray's recommendation of 9.00 percent
16 is 47 basis points lower than the average authorized ROE for vertically integrated
17 electric utilities completed in the first half of 2022,⁴ is unsupported by any of
18 the analyses he has presented in this case, and ignores the rising cost of capital
19 that his own research supports.⁵

20 6. Both Dr. Won and Mr. Murray spend many pages of their respective Rebuttal
21 Testimonies disputing my selection of Discounted Cash Flow ("DCF") models

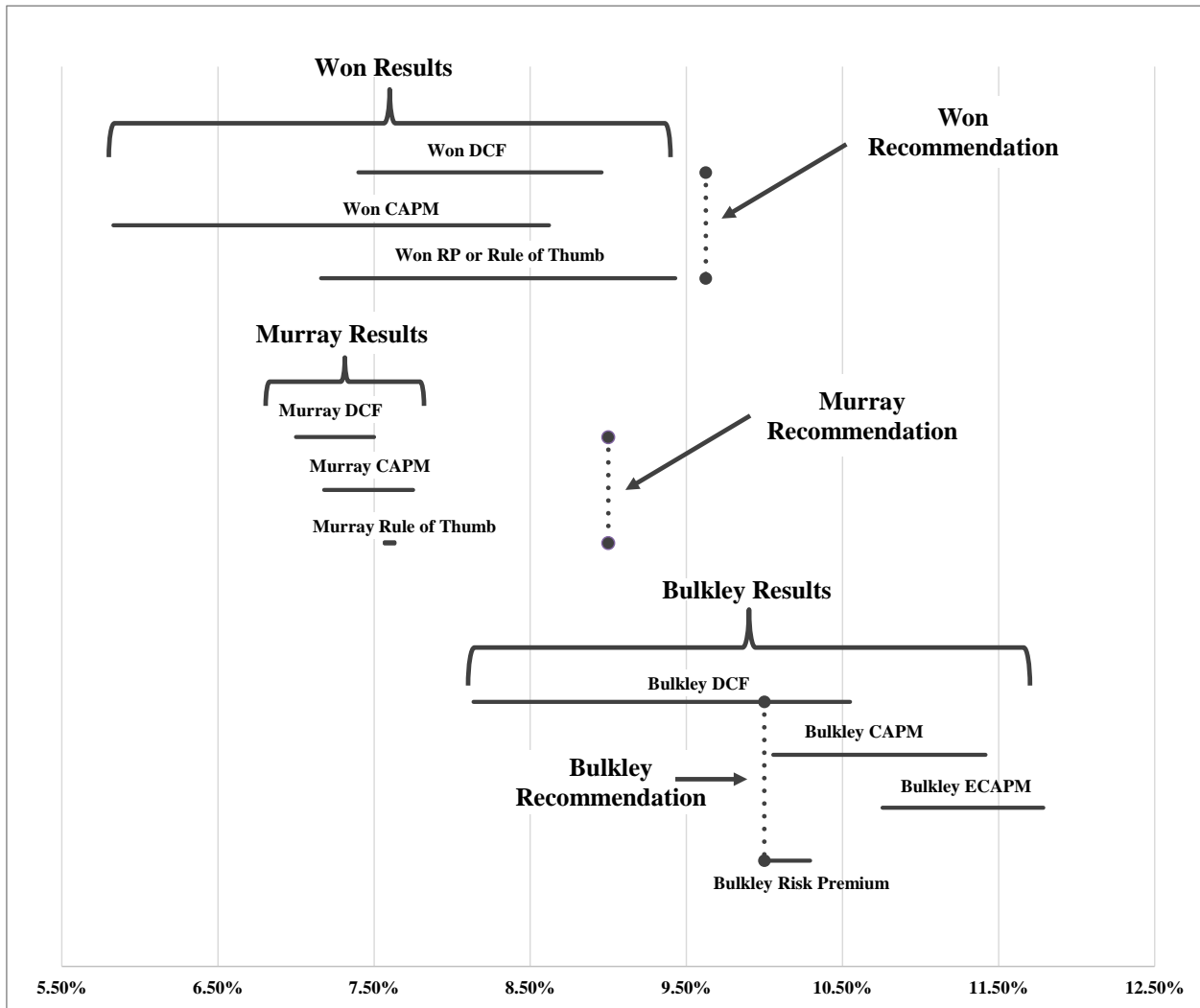
⁴ Rebuttal Testimony of Seoung Joun Won, PhD at 26.

⁵ Ibid at 27-28.

1 and the assumptions used in the DCF and Capital Asset Pricing Model
2 (“CAPM”) analyses. Their criticisms should be viewed, however, in the context
3 that both Dr. Won and Mr. Murray acknowledge that their models do not produce
4 estimates of the ROE, but rather a COE and that neither Dr. Won nor Mr. Murray
5 have provided the Commission any way to bridge the gap between their model
6 results and their ultimate ROE recommendations. Their respective 9.62 percent
7 and 9.00 percent recommendations are not based on any of the assumptions they
8 used to establish their ROE analyses. Rather, each of these witnesses comes to
9 their recommendations by relying completely on subjective analyses. By
10 contrast, my recommended ROE is supported on the results of my ROE
11 estimation methodologies, as shown in Figure 1 below.

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Figure 1: Results Comparisons⁶



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7. Both Dr. Won and Mr. Murray suggest that the model results estimate the COE, which they do not recommend the Commission adopt in this proceeding. By developing models that cannot be relied upon, and suggesting that the results of my models (which are within the range of recommended results in this proceeding) are overstated, both witnesses in this proceeding appear to be asking the Commission to reject all analytical bases for estimating the ROE and simply rely on Dr. Won and Mr. Murray’s subjective judgment as to the appropriate

⁶ AEB-SR7 Results Range

1 ROE for the Companies. In contrast, my results demonstrate that when relying
2 on reasonable assumptions, the ROE estimation methodologies produce results
3 that are within the range established by Dr. Won's recommendation and my
4 recommendation. Dr. Won's criticism of my ROE recommendation and range
5 are inconsistent with his own recommendations and therefore should be rejected.

6 8. Dr. Won's suggestion that he agrees with most of Mr. Murray's COE⁷ analysis
7 is irreconcilable with his conclusion that Mr. Murray's recommended ROE is
8 too low and is unsupported by Dr. Won's view of current market conditions and
9 Mr. Murray's own analysis of current market conditions. The results of Mr.
10 Murray's Multi-Stage DCF results are 40 to 146 basis points below the results
11 presented by Dr. Won and would suggest that the appropriate ROE for the
12 Companies is lower than in the Empire case. This conclusion contradicts Dr.
13 Won's results, conclusions and final recommendation. Therefore, it is unclear
14 how Dr. Won could support Mr. Murray's analytical framework in any context.
15 Further, the explanation that the COE and the ROE differ by hundreds of basis
16 points is unrealistic and ignores the obvious conclusion that the ROE estimation
17 models that produce results in the 7.00 percent to 7.75 percent range do not rely
18 on reasonable assumptions. In contrast, the ROE estimation methodologies that
19 I have specified, using reasonable assumptions that would be considered by
20 investors, result in a reasonable range of returns that are consistent with the range
21 of recently authorized ROEs across state regulatory jurisdictions.

⁷ Rebuttal Testimony of Seoung Joun Won, PhD at 30.

1 9. The suggestion that my specification of the Constant Growth DCF model is
2 biased when it produces results within the range established by Staff and OPC's
3 own ROE recommendations lacks credibility. The Staff and OPC witnesses in
4 this proceeding have not provided the Commission with any analytical tools that
5 they themselves deem credible for providing an estimate of the ROE. These
6 witnesses have discarded the results of their own analyses and have instead relied
7 on judgment and baseless comparisons that do not reflect the comparable return
8 standard and do not provide a reasonable ROE given current market conditions.
9 It is disingenuous to suggest that I should have relied on the assumptions used
10 by these witnesses in their DCF and CAPM estimation models when the fact is
11 that each of these witnesses has abandoned the results of their models that rely
12 on these assumptions. Further, Mr. Murray's suggestion that the Multi-Stage
13 model should be preferred over the Constant Growth DCF model, when he
14 rejects the results of that model in developing the ROE recommendation, lacks
15 credibility.

16 **Q. How is the remainder of your Surrebuttal Testimony organized?**

17 A. The remainder of my Surrebuttal Testimony is organized as follows:

- 18 • In Section III, I discuss the changing capital markets conditions that Dr. Won and
19 Mr. Murray fail to discern.
- 20 • In Section IV, I discuss my proxy group.
- 21 • In Section V, I respond to Staff witness Dr. Won's DCF analyses and
22 recommendations and OPC witness Mr. Murray's DCF analyses and
23 recommendations.

- 1 • In Section VI, I respond to Staff witness Dr. Won’s CAPM analyses and
2 recommendations and OPC witness Mr. Murray’s CAPM analyses and
3 recommendations.
- 4 • In Section VII, I respond to Staff witness Dr. Won’s risk premium and rule of
5 thumb analyses and recommendations and OPC witness Mr. Murray’s rule of
6 thumb analyses and recommendations.
- 7 • In Section VIII, I discuss authorized returns in other jurisdictions.
- 8 • In Section IX, I respond to Staff witness Dr. Won’s capital structure analyses and
9 recommendations and OPC witness Mr. Murray’s capital structure analyses and
10 recommendations.
- 11 • In Section X, I discuss the Companies’ business risk factors.
- 12 • Finally, in Section XI, I summarize my conclusions and recommendations.

13 **III. CAPITAL MARKETS**

14 **Q. Do the Staff and OPC witnesses in this proceeding agree as to recent capital market**
15 **conditions?**

16 A: Yes. All of the witnesses in this proceeding recognize the recent changes in capital market
17 conditions based on the time period used for their testimony. Dr. Won recognizes a rising
18 interest rate environment and reflects that in his analysis, though not to the degree that is
19 warranted given the continued escalation in interest rates during this case. Mr. Murray’s
20 research regarding market conditions demonstrates that the cost of capital is increasing.
21 However the conclusions from his research cannot be reconciled with his recommendation
22 that the Commission authorize an ROE in this case that is lower than this Commission, and

1 other commissions across the country have authorized in recent lower interest rate
2 environments.⁸

3 **Q. Why do you believe that Staff’s ROE recommendation is insufficient given current**
4 **market conditions?**

5 Staff’s recommendation of 9.62 percent is based on data through the first quarter of 2022.
6 Since the date of Staff’s analysis, capital market conditions have changed considerably, as
7 shown in the figure below. For example, interest rates have increased by approximately 89
8 basis points. Inflation has increased from 8.5 percent in March 2022 to 9.1 percent as of
9 July 2022. The Federal Reserve has increased the Federal Funds rate 200 basis points since
10 March 2022 (the most recent date in Dr. Won’s analysis). The June and July increases of
11 75 basis points each are notable in that an increase of this magnitude in one month has not
12 been seen since November 1994, when it moved the Federal Funds rate from 4.75 percent
13 to 5.50 percent.⁹

14 Further, at his July 27, 2022 press conference, Federal Reserve Chairman Powell
15 indicated that it is critical to address rising inflation in order to stabilize economic
16 conditions. Therefore, the COE and the ROE have increased – even during the pendency
17 of this proceeding and should be expected to increase over the period when the rates that
18 are decided in this case will be in effect. Given that Dr. Won’s analysis of changes in the
19 COE is based solely on a comparative DCF analysis from the time of the Empire 2019
20 Case and the first quarter of 2022. A DCF analysis alone may not capture the dynamics of
21 the considerable changes in capital market conditions, therefore Dr. Won’s analysis of

⁸ Rebuttal Testimony of Seoung Joun Won, PhD at 27-28.

⁹ CNBC “Fed hikes its benchmark interest rate by 0.75 percentage point, the biggest increase since 1994,” June 15, 2022.

1 changes in the COE may be oversimplified. As discussed in my Rebuttal Testimony,
 2 reasonable changes to Staff’s analysis resulted in a range of ROEs from 51 basis points to
 3 226 basis points above Empire’s 2019 authorized ROE of 9.25 percent, rather than Dr.
 4 Won’s estimate of 37 basis points. Current market conditions and the results of the ROE
 5 estimation methodologies demonstrate that the Companies’ requested ROE of 10.00
 6 percent is reasonable.

7 **Figure 2: Comparison of Current Capital Markets to Capital Markets during the Empire**
 8 **2019 Case**

Methodology	2019 Empire Case	March 2022	Current Evergy Missouri Metro and Evergy Missouri West Case (July 2022)
30-day Average yield on 30-year Treasury Bond	2.21% (3-month ending November 2019) 2.25% (30-day ending January 31, 2020) ¹⁰	2.25% (3-month ending March 31, 2022) ¹¹ 2.37% (30-day ending March 31, 2022) ¹²	3.14% (3-month ending July 31, 2022) 3.16% (30-day ending July 31, 2022)
Inflation (as measured by Y-o-Y change in CPI ¹³)	2.5% (as of January 2020)	8.5% (as of March 31, 2022)	9.1% (as of July 31, 2022)
Long-term Growth Rate Assumption	N/A Won GDP interpretation: 3.90% (as of May 2022) Dividend-based: 4.2%-5.0% ¹⁴ GDP: 4.10%-4.40% ¹⁵	GDP: 3.90% ¹⁶ GDP: 6.22% ¹⁷	
Federal Funds Rate ¹⁸	1.50%-1.75% (as of November 30, 2019)	0.25-0.50% (as of March 31, 2022)	2.25%-2.50 percent as of July 29, 2022

¹⁰ Bloomberg Professional as of March 31, 2022.

¹¹ Schedule SJW-d14.

¹² Bloomberg Professional as of March 31, 2022.

¹³ Consumer Price Index for All Urban Consumers: All Items in U.S. City Average (12-month percent change). Available [here](#).

¹⁴ Empire District Case No. ER-2019-0374, Amended Report and Order at 29.

¹⁵ Empire District Case No. ER-2019-0374. Chari Rebuttal at 7 and Staff Direct Report at 16.

¹⁶ Empire District Case No. ER-2019-0374, Staff Direct Testimony Appendix 2, Schedule PC-10-1.

¹⁷ Schedule AEB-R10 GDP Growth

¹⁸ Federal Reserve Bank of St. Louis. Federal Reserve Economic Data: Federal Funds Effective Rate, Percent, Daily, Not Seasonally Adjusted.

1 **IV. PROXY GROUP**

2 **Q. Please summarize Dr. Won’s position with respect to the proxy group that you relied**
3 **on for Evergy Missouri.**

4 A: Dr. Won suggests that my analysis of the Pinnacle West Capital Corporations (“Pinnacle
5 West”) stock price is incorrect and that as a result I have inappropriately excluded this
6 company from the proxy group.

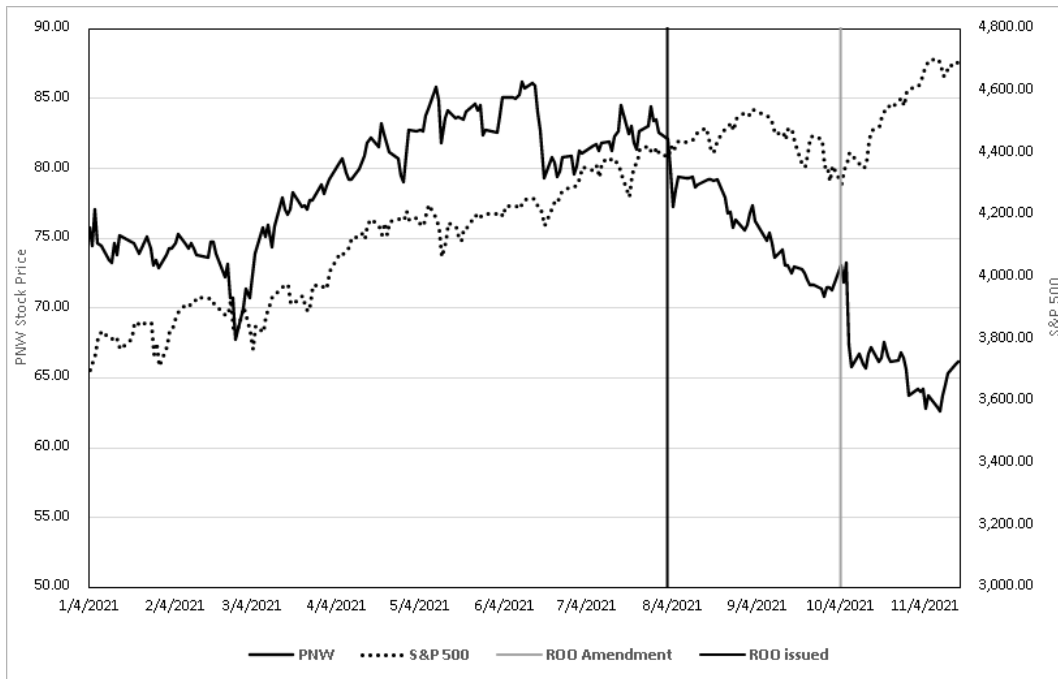
7 **Q. Do you agree with their conclusions?**

8 A. No, I do not. Dr. Won’s critique of my Pinnacle West analysis misrepresents my Rebuttal
9 Testimony. Despite requesting and being provided the analysis that supports Figure 4 of
10 my Rebuttal Testimony¹⁹, Dr. Won incorrectly suggests that my testimony examines the
11 prices of the stock over the period from October to November 2021. In fact, my testimony
12 correctly examines the period from the initial Administrative Law Judge (“ALJ”) decision
13 in August 2021 through November 4, 2021, when the final decision was issued in the
14 Arizona Public Service (“APS”) case. As shown in Figure 4 of my Rebuttal Testimony,
15 and provided as Figure 3 below, the decline in stock price over this period was 24 percent.

¹⁹ MPSC 0514-Response Attachment 1.

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Figure 3: Pinnacle West Stock Price Analysis



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Further, the growth rates for Pinnacle West declined substantially following the ALJ decision in the APS case in August 2021. On August 1, 2021, the IBES projected growth rate for Pinnacle West was 3 percent. The ALJ decision was issued on August 4, 2021. The September IBES growth rates for Pinnacle West declined to 0.01 percent where it has remained since. Based on the changes in stock price and expected growth rates for Pinnacle West over this period, it is entirely unreasonable to consider Pinnacle West a risk-comparable proxy group company for Evergy Missouri West and Evergy Missouri Metro.

Q. Do you agree with Dr. Won that your 7 percent low end screening criterion resulted in “inflated” COE estimates from your DCF model?

A. No, I do not. This is another mischaracterization of my testimony. As discussed in my Rebuttal Testimony, I developed *two* estimates of the return resulting from my DCF analysis. I included both the median result, which includes *all* observations, and a mean result that excludes results below 7.00 percent. As shown in Schedule AEB-3 in my Direct

1 testimony, the median result using 30-day average stock prices and mean growth rates was
2 9.58 percent. The median results using the high growth rate estimates over the same time
3 period was 10.03 percent. In my Rebuttal Testimony, the median and median high results
4 for 30-day average price scenario were 9.29 percent and 9.83 percent, respectively. Dr.
5 Won has failed to acknowledge these results in my analyses.

6 **Q. Why did you consider a 7 percent risk premium screen when determining your proxy**
7 **group?**

8 A. An equity investment is considered riskier than a bond or debt investment due to the fact
9 that equity investors are the residual claimants on a utility's cash flows. Therefore, the
10 return on an equity investment must be greater than the return on a bond/debt investment
11 to compensate investors for the additional risk. The risk premium (i.e., the incremental
12 return of an equity investment over the return on utility bonds) must be sufficient to
13 compensate investors for the additional risk of an equity investment otherwise a utility's
14 ability to attract capital could be affected. I determined that a 7.00 percent equity return
15 would not provide equity investors a sufficient return increment above the yield on A-rated
16 utility bonds. While Dr. Won indicates that a typical risk premium is in the range of 3.50
17 to 5.50 percent, this risk premium range is inconsistent with the historical risk premium
18 from 1926-2021 of 7.46 percent as reported by Duff and Phelps and the inverse relationship
19 between interest rates and the market risk premium which indicates that as interest rates
20 decline, the risk premium increases.²⁰ For example, since current interest rates are below
21 the historical income-only return on government bonds of 4.87 percent used to calculate
22 the historical risk premium, the inverse relationship would imply that the current risk

²⁰ Source: Duff & Phelps, Valuation Handbook: Guide to Cost of Capital, 2022.

1 premium should be well above the historical risk premium of 7.46 percent.²¹ As a result,
2 my conclusion that investors would not view a risk premium of 217 basis points above the
3 yield on the Moody's A-rated utility bond as a sufficient return increment is reasonable.

4 **V. DCF ANALYSES**

5 **Q. Please summarize Dr. Won's and Mr. Murray's criticism of your DCF results.**

6 A: Dr. Won and Mr. Murray both criticize the use of projected earnings growth rates in the
7 DCF model and suggest that the use of 3–5-year earnings growth rates in the Constant
8 Growth DCF model overstate the COE.²² Dr. Won suggests that it would be more
9 appropriate to rely on a long-term growth rate that approximates the level of long-term
10 GDP growth.²³ Mr. Murray suggests, without any support, that the use of projected EPS
11 growth rates in the DCF analysis “is not how equity analysts determine fair prices to pay
12 for utility stocks”.²⁴

13 **Q. Do you agree with this assessment?**

14 A. No, I do not. First, it is important to recognize that while each of these witnesses essentially
15 suggests that I should have relied on the multi-stage DCF model using their assumptions,
16 neither of the witnesses actually rely on the output of their models. Since each of these
17 witnesses essentially abandons their COE estimates (including models and assumptions),
18 it is unreasonable to suggest that their assumptions or the methodologies they relied on are
19 superior to the analyses I have presented in my testimonies. Further, as shown in Figure
20 4, below the results of my Constant Growth DCF model are the only results that are within

²¹ Source: Duff & Phelps, Valuation Handbook: Guide to Cost of Capital, 2022.

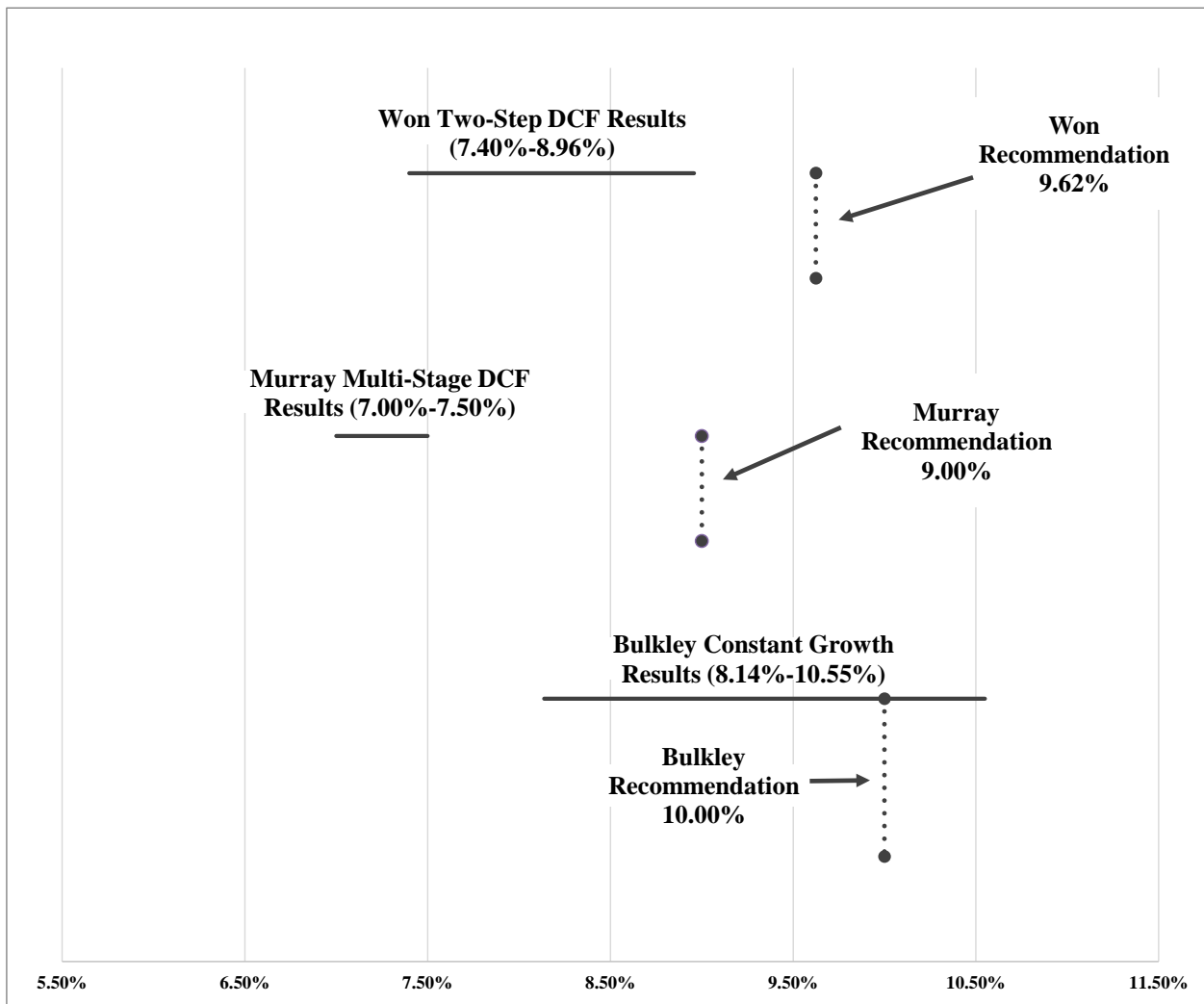
²² Rebuttal Testimony of Seoung Joun Won, PhD at 8-9.

²³ Ibid.

²⁴ Rebuttal Testimony of David Murray at 16.

1 the range of the recommendations offered by all witnesses in this proceeding. Therefore,
2 it is reasonable to conclude that the results of my model demonstrate that the ROE
3 estimation methodologies, when properly specified, can produce reasonable results. Mr.
4 Murray's opinion that the DCF model, as I have specified it, is not relied upon by equity
5 analysts is unsupported and should be rejected. Further, it seems less reasonable to suggest,
6 as Mr. Murray does, that equity analysts develop model results consistent with his DCF
7 estimates and then abandon those results, as Mr. Murray does, to set their required return.

8 **Figure 4: Comparison of DCF Results**



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1 **Q. What is the difference between the COE and the ROE?**

2 A. The Cost of Equity is the investor-required return on equity. The estimation
3 methodologies, which use market data for a proxy group of companies estimate the COE.
4 The ROE is the return that is authorized (or earned) on the equity invested in the utility.
5 Dr. Won and Mr. Murray suggest that the model results, which estimate the COE are
6 entirely different than the ROEs that have been determined by regulatory commissions
7 across the country. The model results relate to the assumptions used to specify the models.
8 As shown in my analyses in my Direct, Rebuttal and Surrebuttal testimonies, these models
9 can be used to provide regulatory commissions with COE estimates that can be relied upon
10 to determine the appropriate ROE for the utility operating companies they regulate.

11 **Q. How do you respond to these witnesses regarding the use of projected EPS growth**
12 **rate in the Constant Growth DCF model?**

13 A. Earnings growth rates are the fundamental driver of dividend growth rates and therefore
14 are appropriately relied upon in the DCF model. As discussed in my Rebuttal Testimony
15 at 52, Brigham and Houston note:

16 Growth in dividends occurs primarily as a result of growth in earnings per
17 share (EPS). Earnings growth, in turn, results from a number of factors,
18 including (1) inflation, (2) the amount of earnings the company retains and
19 invests, and (3) the rate of return the company earns on its equity (ROE).²⁵

20 Thus, as explained in my Rebuttal Testimony at 52-53, use of the Constant Growth DCF
21 is reasonable given that utilities are a mature industry.

22 Further, as discussed in my Direct and Rebuttal Testimonies, I have not relied
23 exclusively on the results of the Constant Growth DCF model. Rather, I have considered

²⁵ Eugene F. Brigham and Joel F. Houston, *Fundamentals of Financial Management*, at 317 (Concise Fourth Edition, Thomson South-Western, 2004).

1 the results of multiple ROE estimation models in determining the range of ROEs that are
2 appropriate to consider for the Companies. Furthermore, while each of these witnesses
3 criticizes the use of analysts' projected EPS growth rates in the Constant Growth DCF
4 model, their preferred specification of the DCF model produced ROE estimates that were
5 below any recently authorized ROE for a vertically-integrated electric utility and well
6 below their own recommendations.

7 **Q. Please explain what you mean when you say that Dr. Won is not relying on the results**
8 **of his Two-Stage DCF model.**

9 A. Dr. Won does not rely on the absolute results of his Two-Stage DCF model using current
10 market data. Rather, he uses this model and a retrospective estimation of the Two-Stage
11 DCF model using market data as of 2019 to reflect the COE at the time of Empire District's
12 rate case –to estimate a change in the cost of equity from 2019 to the current market. Dr.
13 Won applies that change to the Commission's authorized ROE of 9.25 percent established
14 in the 2019 rate case for Empire District. Therefore, Dr. Won has not used the results of
15 his models in either time period. He has used only the change in these model results to
16 estimate an adjustment to a Commission authorized ROE in the Empire case.

17 **Q. Why is this methodology inappropriate to use to set the ROE for the Companies?**

18 A. Dr. Won's approach has several flaws that render it inappropriate as the basis for setting
19 the ROE in this proceeding.

- 20 1. The Commission never considered the retrospective analysis that Dr. Won uses
21 to set the "market" in the Empire 2019 Case. Therefore, it cannot have been
22 considered as a factor in the Commission's determination of the ROE for Empire.

- 1 2. Adjusting the Empire ROE assumes that Empire and the Companies have similar
2 risk profiles, however Dr. Won presents no analysis to demonstrate that he has
3 considered the risk differentials between Empire District and the Companies.
- 4 3. Dr. Won’s actual Two-Stage DCF model results using current market data are
5 7.40 to 8.96 percent. He specifically criticizes Mr. Murray’s ROE
6 recommendation of 9.00 percent indicating that it is too low and does not
7 directionally reflect changes in market conditions since the Empire case. Dr. Won
8 recommends an ROE of 9.62 percent, which is approximately 66 to 222 basis
9 points above the results of his model. Based on these facts, it is reasonable to
10 conclude that Dr. Won himself does not believe that the results of his models.
11 Therefore, it is disingenuous to suggest that the assumptions Dr. Won has used in
12 these models are more reasonable and appropriate than my choice of DCF model
13 or assumptions.
- 14 4. Dr. Won’s use of this comparative approach is in direct conflict with his criticism
15 of my Bond Yield Risk Premium analysis. Dr. Won suggest that the Bond Yield
16 Risk Premium approach should not be used because he has found no theoretical
17 conclusions that the relationship between the 30-year Treasury yield and
18 authorized ROEs is constant over time. Further, he states that “These stale
19 authorized ROEs might not provide a proper up to date COE estimate”.²⁶ Dr.
20 Won’s adjustments to the authorized ROE for Empire are in direct contradiction
21 to his stated concerns about the Bond Yield Risk Premium analysis. Even if Dr.
22 Won was directly comparing the results of models that were used to set the ROE

²⁶ Rebuttal Testimony of Seoung Joun Won, PD. at 18.

1 for Empire, which as discussed previously, he is not, comparing the model results
2 between the two time periods and making an adjustment for the difference in
3 those results implies a constant relationship over time- which he suggests is a
4 flaw in the Bond Yield Risk Premium approach.

5 **Q. How do you respond to Dr. Won's criticism of your 7-percent threshold for mean**
6 **DCF estimates?**

7 A. Dr. Won has mischaracterized my testimony, only referencing the cases where the low-end
8 outliers are removed from the mean results. However, as discussed in my Rebuttal
9 Testimony, I included two measures of central tendency; the median, which includes *all*
10 observations, and the mean results excluding outliers. As shown in my Rebuttal Testimony,
11 at pages 9 and 35, the median result were 9.29 percent and the median results using the
12 high growth rates was 10.02 percent, including *all* observations.

13 **Q. What is your response to Dr. Won's assessment of Mr. Murray's analysis and**
14 **recommendation?**

15 A. It is surprising that Dr. Won can offer support for the analytical results that Mr. Murray
16 develops when they differ substantially from the results upon which he bases his
17 recommendation and, in fact, they suggest exactly the opposite from the conclusions he
18 reached. Comparing against Dr. Won's Two-step model results (which is a comparative
19 analysis of the Empire case and the current market conditions) of 7.40 percent to 8.96
20 percent, Mr. Murray's results are 40 to 146 basis points below Dr. Won's and would
21 suggest that the ROE for the Companies was lower than in the Empire case. This
22 conclusion contradicts Dr. Won's results, conclusions and final recommendation.

1 Therefore, it is unclear how Dr. Won could support Mr. Murray's analytical framework in
2 any context.

3 **Q. What are your conclusions regarding Dr. Won and Mr. Murray's criticisms of your**
4 **DCF analyses?**

5 A. These criticisms lack merit and should be rejected. While Dr. Won and Mr. Murray argue
6 theoretical reasons why I should have relied on a different DCF methodology with different
7 assumptions, the fact remains that neither Dr. Won nor Mr. Murray use the results based
8 on the methodologies and assumptions that they recommend. Further, Mr. Murray's
9 opinion regarding the methodology that analysts use is unsupported.

10 By developing models that cannot be relied upon, and suggesting that the results of
11 my models (which are within the range of all recommended ROEs in this proceeding) are
12 overstated, both witnesses appear to be asking the Commission to reject all analytical bases
13 for estimating the ROE and simply rely on their judgment as to the appropriate ROE for
14 the Companies.

15 Dr. Won does this by suggesting that the Commission simply benchmark against
16 the Empire ROE, without consideration of any differences in business risk between the
17 companies and through the use of a retrospective comparison of two DCF models, one
18 back-dated to the Empire 2019 case as compared to Staff's current analyses. It is clear that
19 the Commission could not have relied upon the Staff's Two-Stage DCF in the Empire case,
20 because it was never introduced in that case. Dr. Won has simply created that model today
21 as a point of comparison with a past case. Therefore, the benchmarking Staff performs has
22 nothing to do with the Commission's prior determination in Empire's rate case and cannot
23 be relied upon to represent the change in market from then to now.

1 Mr. Murray's results range from 7.00 percent to 7.50 percent which he discards.
2 He then proposes a range of 8.5 percent to 9.5 percent, with an ROE recommendation of
3 9.0 percent, which based on nothing more than his subjective personal opinion.

4 In contrast, the results developed in the analyses presented in my Direct, Rebuttal
5 and Surrebuttal testimony consistently include a range of recommendations which I have
6 not abandoned. These ROE estimation methodologies produce results that the Commission
7 can rely on in determining the appropriate ROE in these cases. As shown in Figure 4
8 above, my updated DCF analyses as of July 29, 2022 result in a median ROE (including
9 *all* observations) of 9.36 percent and a median high result of 9.93 percent. This range,
10 taken together with the remainder of my updated ROE estimation methodologies, supports
11 the Company's requested ROE.

12 VI. CAPM ANALYSES

13 **Q. Please summarize Dr. Won's and Mr. Murray's criticisms of your CAPM results.**

14 A. Dr. Won's primary concern with my the CAPM methodology is the calculation of the
15 projected market return.²⁷ Dr. Won suggests that the market risk return should not include
16 companies that do not pay dividends and should not rely on "short-term" growth rates. Dr.
17 Won suggests that the market return should be 9.57 percent. Mr. Murray also suggests that

²⁷ Rebuttal Testimony of Seoung Joun Won, PhD at 8-9.

1 the market return is not sustainable and suggests that GDP growth be used for the purposes
2 of determining the long-term expected return for the S&P 500.²⁸

3 **Q. How do you respond to Dr. Won's criticism?**

4 A. Dr. Won's recommended changes to my CAPM model would render the results of this
5 model unusable as an estimate of the ROE, by his own account. As noted in his testimony,
6 his suggested use of an MRP of 5.50 percent would result in a CAPM COE estimate of
7 6.22 percent. Dr. Won has suggested that Mr. Murray's recommended ROE of 9.00 percent
8 is too low. Therefore, Dr. Won's "correction" to my CAPM would render this result
9 unreasonable as an estimate of the ROE and would further reduce the analytical tools
10 available to the Commission to set the ROE for the Companies.

11 **Q. How do you respond to Mr. Murray's position regarding the growth in the S&P 500?**

12 A. Mr. Murray's views are based on his own interpretation of a formula used in the 2010 CFA
13 Institute curriculum. Mr. Murray's cite to that curriculum is quite narrow, only providing
14 the definition of earnings growth. The conclusion that the growth rate that I have relied
15 upon is excessive is not the conclusion of the CFA Institute, but simply Mr. Murray's
16 opinion.²⁹

17 In contrast, US State Court of Appeals for the District of Columbia recently
18 addressed this issue in its review of the MISO Transmission Owners case and FERC
19 Opinion No. 569B. In that decision, the Court acknowledged that the FERC has relied on
20 the use of EPS growth rates in the calculation of the return on the S&P 500 because the
21 S&P 500 is regularly updated to include companies with high market capitalization and it
22 includes companies at all stages of growth, including lower and higher growth potential.

²⁸ Rebuttal Testimony of David Murray at 17.

²⁹ Rebuttal Testimony of David Murray at 17.

1 The Court determined that FERC’s rationale for using projected EPS growth rates was
2 sufficient and did not accept the Customers’ challenge to this assumption.³⁰

3 Further, the Court did not accept the Customers’ challenge to the FERC placing
4 much less weight on the GDP growth used in the DCF model. On this point, the Court

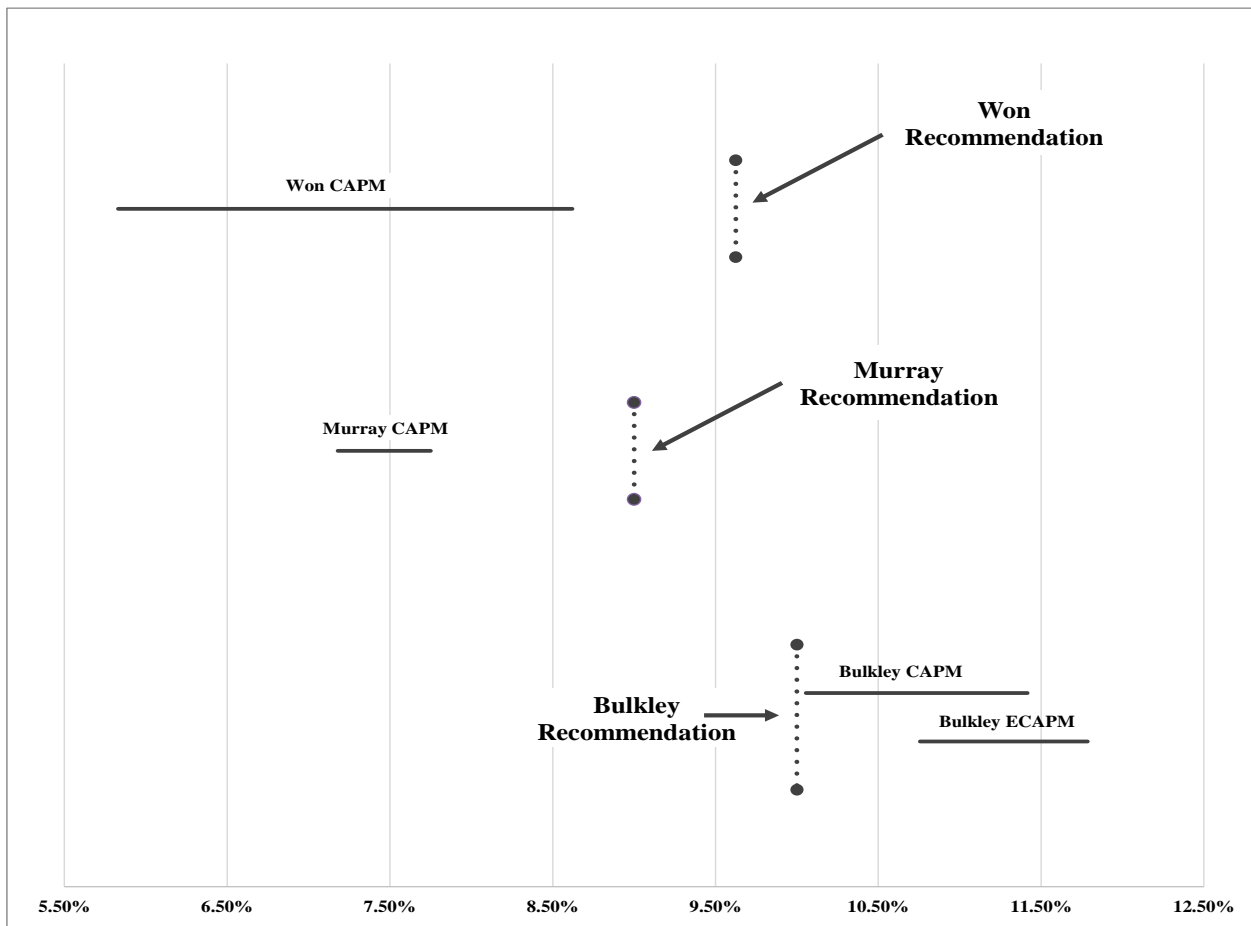
³⁰ United States Court of Appeals Case No. 16-1325, Decision No. 16-1325, August 9, 2022 at 19.

1 concluded that “recently, the normalizing value of long-term growth rates has declined as
2 short and long-term projections have converged”.³¹

3 **Q. How to the results of Dr. Won’s and Mr. Murray’s CAPM results compare with their
4 recommendations?**

5 A. As shown in Figure 5, the results of their CAPM results are between 100 and 379 basis
6 points below their recommendations - once again falling back on the argument that the
7 models produce a COE that is substantially lower than the ROEs they recommend.

8 **Figure 5: Comparison of CAPM Results**



9
10 Despite their criticisms of the assumptions used in my models, in favor of their own
11 assumptions, neither Dr. Won nor Mr. Murray rely on the results of their CAPM models.

1 In contrast, my results demonstrate that when relying on reasonable assumptions, the ROE
2 estimation methodologies produce results that are within the range established by Dr.
3 Won's recommendation and my recommendation. In summary, Dr. Won's criticism of my
4 ROE recommendation and range are inconsistent with his own recommendations and
5 should be rejected.

6 VII. RISK PREMIUM AND RULE OF THUMB ANALYSES

7 **Q. Please summarize Dr. Won's and Mr. Murray's criticisms regarding the Bond Yield
8 Plus Risk Premium analysis.**

9 A. Dr. Won's primary concerns with the Bond Yield Plus Risk Premium analysis are that (1)
10 the analysis relies on projected interest rates, (2) the analysis is determined based on the
11 yield on the 30-year Treasury bond yield, and (3) he is concerned that the relationship
12 between the 30-year Treasury bond yield and the ROE is not constant over time. Dr. Won
13 suggests that he agrees with the FERC that the BYRP is likely to provide a less accurate
14 current ROE estimate than the DCF or CAPM models because it relies on previous ROE
15 determinations that may not be directly determined by a market-based methodology³². Mr.
16 Murray suggests that the Bond Yield Plus Risk Premium analysis does not allow sufficient
17 compression of allowed ROEs versus the utility industry COE.³³

18 **Q. How do you respond to Dr. Won's criticism of the use of projected interest rates?**

19 A. I have addressed Dr. Won's concerns about the use of projected interest rates in my review
20 of the changes in market conditions that have occurred since the filing of his Direct
21 Testimony at the end of the first quarter of this year. As discussed previously, interest rates

³¹ *Ibid.*, at 16.

³² Rebuttal Testimony of Seoung Joun Won, PhD at 18.

³³ Rebuttal Testimony of David Murray at 19.

1 increased 89 basis points since the 3-month average relied on by Dr. Won as of March
2 2022. The current 30-day average yield on the 30-year Treasury bond is approximately
3 3.16 percent (which is approximately equal to the 3-month average as of the end of July
4 2022). This current yield is higher than the projected yield that I relied upon in my Direct
5 Testimony of 2.50 percent.³⁴ Therefore, the use of the projected Treasury bond yield in
6 my Direct Testimony actually understated the ROE under current market conditions.

7 Further, Dr. Won recognized at page 18 of his Rebuttal Testimony, that the Federal
8 Reserve began increasing interest rates with “unusual speed” “to combat the highest
9 inflation in four decades.” Interest rate projections are not keeping pace with the actual
10 increases in interest rates. In an environment where interest rates are rising rapidly and the
11 Fed has indicated its intention to continue to increase interest rates - at the fastest pace
12 since November 1994, as discussed in Section III - it would be irresponsible and likely
13 violate the *Hope* and *Bluefield* principles to rely on analyses that do not consider rising
14 interest rates.

15 **Q. Do you agree with Dr. Won’s conclusion that the BYRP is unreliable because it**
16 **considers only the yield on the 30-year Treasury bond?**

17 A. No. Dr. Won’s characterization of the Bond Yield Risk Premium analysis is inaccurate.
18 The risk premium analysis considers the relationship between interest rates and historical
19 ROEs using quarterly historical data from 1992 through 2022. As shown in Schedule AEB-
20 SR6, the regression statistics for the Bond Yield Risk Premium analysis demonstrate that
21 the coefficients are significant and the R² shows that there is a reasonable fit to the data.

³⁴ Schedule AEB-7 of my Direct Testimony, the Blue Chip Financial Forecast projected 30-year average Treasury Bond yield for the period through Q1 2023 was 2.50 percent.

1 Therefore, the Bond Yield Risk Premium analysis is a reasonable methodology to be
2 considered in estimating the ROE.

3 **Q. Has the FERC relied on this methodology as one of the approaches used to set the**
4 **ROE for electric utilities?**

5 A. Yes. Through a series of proceedings, the FERC recognized that sole reliance on the results
6 of the DCF model was not producing reliable results. In FERC Opinion No. 569-A the
7 FERC established the equal weighting of three methodologies for setting the ROE, the
8 DCF the CAPM, and the Bond Yield Plus Risk Premium. In affording this methodology
9 a one-third weighting, the FERC has considered the results of the Risk-Premium analysis
10 as meaningful as the other ROE estimation methodologies.³⁵

11 **Q. How do you respond to Dr. Won’s concern that the BYRP is likely to be less accurate**
12 **because it relies on previous ROE determinations that may not be directly determined**
13 **by a market-based methodology?**

14 A. Dr. Won’s concern is that ROE determinations may be made without respect to market-
15 based methodologies and therefore cannot be used to inform the current ROE. This
16 suggestion directly contradicts his comparative analysis of the Empire case. If Dr, Won
17 has concerns with the use of previous ROE determinations to establish any relationship
18 between the ROEs over differing time periods because the ROE determination may not
19 have been based on market data, then the entire basis of his own recommendation in this
20 proceeding is without merit. In the current case, Dr. Won assumes a linear relationship
21 between the model results from one period to the next. This analysis relies on two models
22 – neither of which could have been used by the Commission in the Empire case, because

³⁵ As discussed in Section VI, I am aware that on August 9, 2022 the U.S. Court of Appeals vacated the FERC Order 569 decisions that related to its risk premium model and remanded the case to FERC to reopen proceedings.

1 Dr. Won developed both models in the current case. Therefore, the ROE that was set in the
2 Empire case could not be based on the “market data” that he uses for comparison to develop
3 his adjustment to the ROE that was determined by the Commission for Empire. Dr. Won’s
4 proposed ROE is, in fact, based on the suggestion that there would be a linear relationship
5 between his two models, the 2019 model that the Commission never considered, and his
6 2022 ROE model. Dr. Won relies on a consistent relationship between two models, neither
7 of which has been considered by this Commission, to develop an adjustment to the Empire
8 ROE. Dr. Won’s suggestion that the Commission should rely on that “relationship” to
9 adjust the Empire ROE and reject a statistical model such as the Bond Yield Risk Premium
10 lacks credibility and should be rejected.

11 **Q. What is your response to Mr. Murray’s criticism of your Bond Yield Risk Premium**
12 **analysis?**

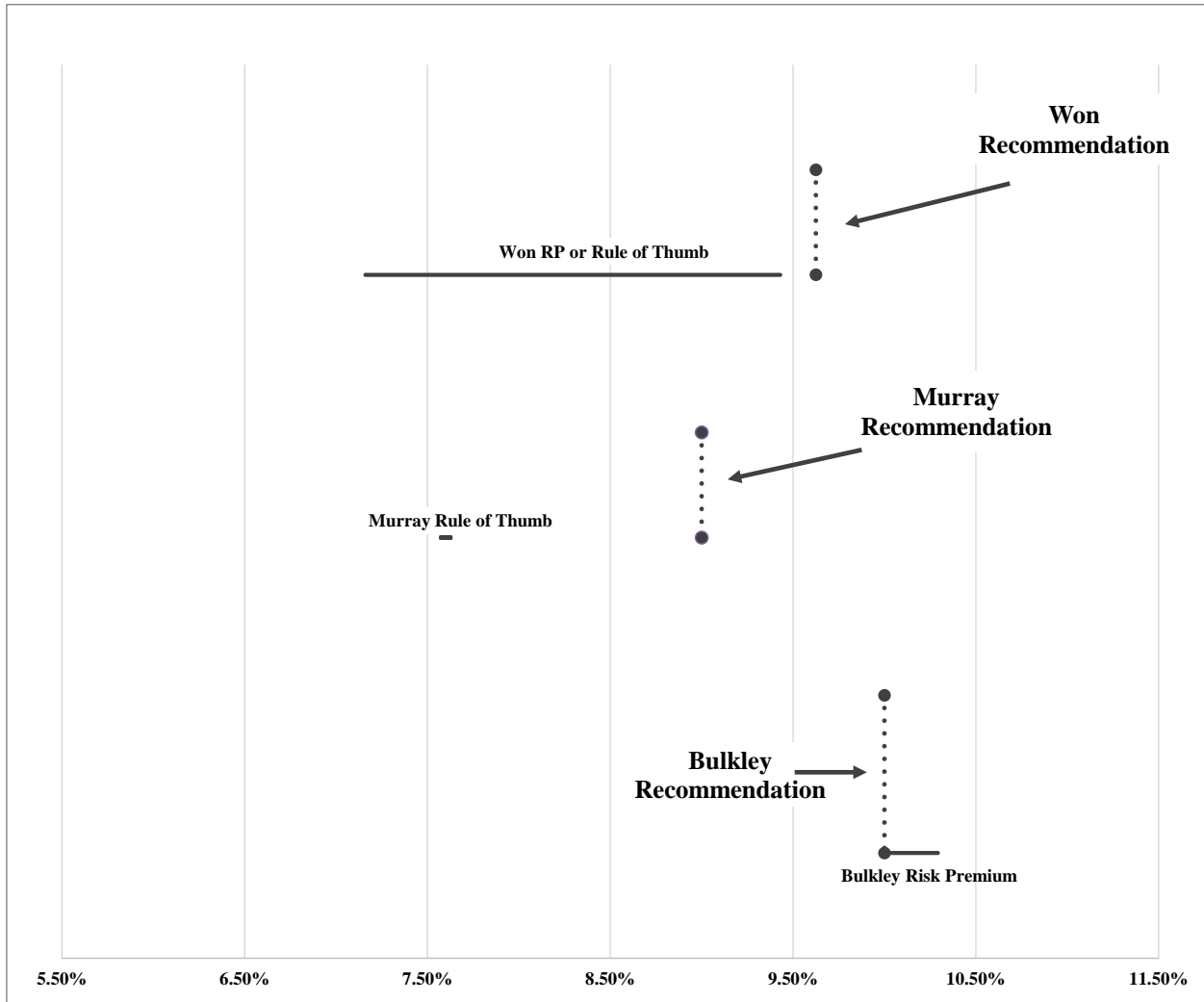
13 A. Mr. Murray’s criticism of my analysis ignores the well documented inverse relationship
14 between interest rates and the utility risk premium. Further, while Mr. Murray uses a rule
15 of thumb BYRP analysis to estimate the COE, his result from this analysis is 7.6 percent.
16 Mr. Murray only leaves the Commission with the explanation that his analysis has nothing
17 to do with the ROE that should be set in this proceeding. He has estimated a COE and has
18 developed no meaningful relationship between this COE estimate and the ROE for the
19 Companies.

1 **Q. Please summarize the results of your updated Bond Yield Risk Premium analysis.**

2 **A.** As shown in Schedule AEB-SR6, and Figure 6 below, my updated bond yield risk premium
3 results range from 10.02 percent to 10.29 percent.

4 **Figure 6: Comparison of Risk Premium and Rule of Thumb Results**

5



1 **VIII. AUTHORIZED RETURNS**

2 **Q. Please summarize Dr. Won’s review of authorized ROEs for electric utilities.**

3 A. Dr. Won suggests that the Commission’s last determined ROE of 9.25 percent in 2020 for
4 Empire was not at the low end of the returns authorized in 2020.³⁶ Further, Dr Won reviews
5 2022 authorized ROEs and suggests that Mr. Murray’s ROE recommendation is
6 unreasonably low³⁷and that my ROE is above the average authorized ROE for 2022.³⁸

7 **Q. Do you agree with Dr. Won’s calculation of the average authorized ROE for electric**
8 **utilities in 2020?**

9 A. No, I do not. Dr. Won suggests that in 2020 of the 55 electric cases, 20 authorized ROEs
10 were less than or equal to 9.25 percent. However, data from S&P Global, as shown in
11 Figure 7, below indicates vertically-integrated (“VI”) and distribution electric cases with
12 publicly available ROEs total 42 that completed in 2020. When removing distribution-only
13 electric utility cases, only 27 cases remain, five of which were at or below 9.25 percent.
14 When removing Vermont cases, which uses formula rates, and thus, are not an appropriate
15 comparison of returns for the Companies, the number of cases decided was 26, resulting in
16 an ROE average of 9.60 percent. Further, when removing Vermont, just four cases are at
17 or below 9.25 percent, rather than the 20 authorized ROEs that Dr. Won indicates.

³⁶ Rebuttal Testimony of Seoung Joun Won, PhD at 23..

³⁷ Rebuttal Testimony of Seoung Joun Won, PhD at 26.

³⁸ Rebuttal Testimony of Seoung Joun Won, PhD at 19.

1

Figure 7: 2020 Electric Case Findings

2020 Cases	Cases (No.)	ROE (%)	ROE ≤ 9.25% (No.)	Proportion Below 9.25% ROE (%)
VI and Distribution Total	53			
VI and Distribution (with ROE)	42	9.39%	12	28.6%
VI Only Cases Total	36			
VI Only Cases (with ROE)	27	9.55%	5	18.5%
VI Only Cases w/ ROE (excl. VT)	26	9.60%	4	15.4%

2

IX. CAPITAL STRUCTURE ANALYSES

3

Q. Please summarize OPC’s position with respect to the appropriate capital structure for the Companies.

4

5

A. OPC witness Murray continues to propose that Evergy Missouri Metro’s and Evergy Missouri West’s capital structures be composed of 48 percent common equity and 52 percent long-term debt.³⁹ In support of his position, Mr. Murray points to Evergy’s short-term borrowing capacity and claims that Evergy’s use of short-term debt has been used to make equity infusions into its subsidiaries. He asserts that the use of “short-term borrowings allows for nimbleness in managing subsidiary capital structures to ratios desired for ratemaking.”⁴⁰ However, Mr. Murray’s contention is inconsistent with corporate financing principles, which hold that it is the use of funds, not the source of funds, that determine the capital structure and the cost of capital for subsidiaries. Specifically, Mr. Murray’s claim is inconsistent with the financing principle of duration matching, where financing sources are matched in duration to the service lives of the underlying assets. While Mr. Murray claims that Evergy’s short-term debt is being used to make equity infusions into its subsidiaries, it is not practical to trace one source of

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³⁹ Rebuttal Testimony of David Murray at 30.

⁴⁰ Rebuttal Testimony of David Murray at 3.

1 financing to individual assets. Short-term debt may be used as a temporary source of
2 funding, but consistent with corporate financing principles, such borrowing will be
3 financed with long-term financing as market circumstances allow. As noted by Brigham
4 and Houston:

5 In practice, firms don't finance each specific asset with a type of capital that
6 has a maturity equal to the asset's life. However, academic studies do show
7 that most firms tend to finance short-term assets from short-term sources
8 and long-term assets from long-term sources.⁴¹

9 Overall, the combined company, Evergy, must provide a return reflecting the risks
10 of the company's constituent parts as external investors view the combined company on a
11 sum-of-the-part basis. Each segment must provide an appropriate risk-adjusted return.
12 Therefore, the Companies' operating risk will define the capital structure and the cost of
13 capital. The Evergy Missouri West capitalization which includes 51.81 percent equity and
14 48.19 percent long-term debt and the Evergy Missouri Metro capital structure which
15 includes 51.19 percent equity and 48.81 percent long-term debt are consistent with the
16 Commission's long-standing use of the "stand-alone" operating company capital structure
17 that I discussed in my Rebuttal Testimony.⁴²

⁴¹ Brigham, Eugene F. and Joel F. Houston, *Fundamentals of Financial Management, Concise 4th Ed.*, Thomson South-Western, 2004, at 574.

⁴² Rebuttal Testimony of Ann E. Bulkley at 15-16.

1 **X. BUSINESS RISK FACTORS**

2 **Q. Please summarize the testimonies of Staff Witness Lange and Staff Witness Del Pozo**
3 **as they relate to your review of the regulatory risk posed by the Companies’ rate**
4 **design.**

5 A. Staff witness Del Pozo suggests that I have not provided enough information to assess the
6 relative risk of the Companies and the proxy group related to residential rate design.”⁴³
7 Mr. Del Pozo provides an analysis of the annual sales per customer for the proxy group
8 companies and suggests that this sales data demonstrates that EMW is in the top of the
9 middle tier of sales per customer. Mr. Del Pozo concludes that this sales data demonstrates
10 that “EMM” and EMW” are relatively stable as compared with the proxy group.⁴⁴ Staff
11 witness Lange testifies that she is not an expert on ROE, but provides an analysis of
12 Evergy’s exposure to volumetric risk associated with the existing and proposed inclining
13 block designs. Ms. Lange concludes that the exposure that is being proposed by the change
14 in the inclining block rate is less than 1 percent.⁴⁵

15 **Q. What is your response to these staff witnesses?**

16 A. First, Ms. Lange’s analysis of the relative change in Evergy’s revenues resulting from
17 Staff’s proposal is not a relevant comparison in setting the ROE. The use of data for a
18 proxy group of companies sets a range of market-based ROE estimates. The relative
19 position of the Company’s ROE within that range should be based on a comparison of the
20 risks of the Company and the proxy group. Therefore Ms. Lange’s comparison of the risk

⁴³ Rebuttal Testimony of Francisco Del Pozo at 2.

⁴⁴ *Ibid.* at 4.

⁴⁵ Rebuttal Testimony of Sarah L.K. Lange at 76-77.

1 of the Staff's proposal with status quo is not necessary or useful in the determination of the
2 ROE.

3 Mr. Del Pozo's analysis provides some information about the volumetric sales of
4 the companies in the proxy group, but nothing about the recovery of those costs. As noted
5 in my Direct Testimony at pages 63-64, an inclining block rate design would create greater
6 recovery risk for companies than a flat or declining block rate structure. Further, companies
7 with higher fixed charges have less recovery risk than companies that recover costs through
8 variable charges. Neither Ms. Lange nor Mr. Del Pozo dispute these facts. Evergy's Class
9 Cost of Service (CCOS) study filed in this case confirms that 90% of residential customer
10 costs are recovered through the energy charge.⁴⁶ It is my understanding that adjustments
11 to further sharpen the existing incline will only serve to exacerbate Evergy's recovery risk.
12 I compared Evergy Missouri Metro's rate design to the proxy group and found that
13 approximately 78.48 percent of the proxy group had flat or declining block rate structures,
14 which have less risk than an inclining block structure. I also compared the fixed charges
15 implemented by the proxy group companies to the Companies and concluded that the
16 Evergy Missouri Metro's fixed customer charge was slightly below the average customer
17 charge. Therefore, Evergy Missouri Metro's recovery mechanisms have the potential for
18 greater risk than the proxy group companies.

19 **XI. CONCLUSIONS AND RECOMMENDATION**

20 **Q. What is your conclusion regarding a fair ROE for the Companies?**

21 A: Figure 8 below provides a summary of my analytical results. Based on these results and
22 the qualitative analyses presented in my Direct Testimony, a reasonable range of ROE

⁴⁶ Surrebuttal testimony, Craig Brown, pg. 23.

1 results for the Companies is from 9.90 percent to 10.50 percent and the Company's
2 requested rate of return on common equity of 10.00 percent is reasonable taking into
3 consideration company-specific risks relative to the proxy group, as discussed in my Direct
4 Testimony. This ROE would enable the company to maintain its financial integrity and
5 therefore its ability to attract capital at reasonable terms under a variety of economic and
6 financial market conditions, while continuing to provide safe, reliable and affordable
7 electric service to customers in Missouri.

Figure 8: Summary of Analytical Results

<i>Constant Growth DCF - Median</i>			
	Median Low	Median	Median High
30-Day Average	8.17%	9.38%	9.98%
90-Day Average	8.07%	9.33%	9.86%
180-Day Average	8.17%	9.38%	9.95%
Constant Growth Average	8.14%	9.36%	9.93%
<i>Constant Growth DCF - Average w/ exclusions⁴⁷</i>			
	Mean Low	Mean	Mean High
30-Day Average	8.78%	9.70%	10.60%
90-Day Average	8.83%	9.59%	10.50%
180-Day Average	8.89%	9.65%	10.55%
Constant Growth Average	8.83%	9.65%	10.55%
<i>CAPM</i>			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.31%	11.36%	11.42%
Bloomberg Beta	10.86%	10.92%	10.99%
Long-term Avg. Beta	10.06%	10.18%	10.27%
<i>ECAPM</i>			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.71%	11.75%	11.79%
Bloomberg Beta	11.36%	11.42%	11.47%
Long-term Avg. Beta	10.76%	10.86%	10.93%
<i>Treasury Yield Plus Risk Premium</i>			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Risk Premium Results	10.02%	10.15%	10.29%

2 **Q. What is your conclusion with respect to the Companies' proposed capital structures?**

3 A. I conclude that the Companies proposed capital structures are reasonable. Every Missouri
4 West's proposal consists of 51.81 percent common equity, and 48.19 percent long-term

⁴⁷ Constant Growth DCF analysis - Average w/ Exclusions represents the DCF results excluding the results for individual companies that did not meet the minimum threshold of 7 percent.

1 debt. Evergy Missouri Metro's proposed capitalization is 51.19 percent common equity
2 and 48.81 percent long-term debt. Both of these recommendations are reasonable. This
3 conclusion is supported by comparing this proposal to the capital structures of the
4 companies in the proxy group and taking in consideration the changes in coverage ratios
5 resulting from the permanent effects of the TCJA, as well as the effect of increased capital
6 expenditures and COVID-19 on cash flows and therefore should be adopted.

7 Further, I recommend that the Commission dismiss Mr. Murray's recommendation to rely
8 on the parent company capitalization, including short-term debt as the capitalization for the
9 Companies. As noted in my Rebuttal Testimony, the Commission has well established
10 precedent for relying on the utility-specific capitalization rather than the consolidated
11 capital structure when a holding company has more than one subsidiary operating
12 company.⁴⁸ Evergy, Inc. has multiple operating subsidiaries. In addition, both Evergy
13 Missouri West and Evergy Missouri Metro issue debt. Therefore, Mr. Murray's proposal
14 to rely on the parent company capitalization is inconsistent with Commission past
15 precedent and should be rejected.

16 **Q. Does this conclude your Direct Testimony?**

17 A. Yes, it does.

⁴⁸ Bulkley Rebuttal Testimony at 15 citing to Commission decision in GR-2021-0180.

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Evergy Metro, Inc. d/b/a Evergy)
Missouri Metro's Request for Authority to) Case No. ER-2022-0129
Implement A General Rate Increase for Electric)
Service)

In the Matter of Evergy Missouri West, Inc. d/b/a)
Evergy Missouri West's Request for Authority to) Case No. ER-2022-0130
Implement A General Rate Increase for Electric)
Service)

AFFIDAVIT OF ANN E. BULKLEY

COMMONWEALTH OF MASSACHUSETTES)
) ss
COUNTY OF MIDDLESEX)

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

1. My name is Ann E. Bulkley and I am employed by The Brattle Group as Principal.

2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Evergy Missouri Metro and Evergy Missouri West consisting of forty-one (41) 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 Bulkley

Ann E. Bulkley

Subscribed and sworn before me this 15 day of August 2022.

Laureen G. Sasseville

My commission expires: October 19, 2023



SUMMARY OF ROE ANALYSES RESULTS¹

Constant Growth DCF - Median			
	Median Low	Median	Median High
30-Day Average	8.17%	9.38%	9.98%
90-Day Average	8.07%	9.33%	9.86%
180-Day Average	8.17%	9.38%	9.95%
Constant Growth Average	8.14%	9.36%	9.93%
Constant Growth DCF - Average w/ exclusions			
	Mean Low	Mean	Mean High
30-Day Average	8.78%	9.70%	10.60%
90-Day Average	8.83%	9.59%	10.50%
180-Day Average	8.89%	9.65%	10.55%
Constant Growth Average	8.83%	9.65%	10.55%
CAPM			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.31%	11.36%	11.42%
Bloomberg Beta	10.86%	10.92%	10.99%
Long-Term Avg. Beta	10.06%	10.18%	10.27%
ECAPM			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.71%	11.75%	11.79%
Bloomberg Beta	11.36%	11.42%	11.47%
Long-Term Avg. Beta	10.76%	10.86%	10.93%
Treasury Yield Plus Risk Premium			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Risk Premium Analysis	10.02%	10.15%	10.29%
Risk Premium Mean Result	10.15%		

Notes:

[1] Constant Growth DCF analysis - Average w/ Exclusions represents the DCF results excluding the results for individual companies that did not meet the minimum threshold of 7 percent.

30-DAY CONSTANT GROWTH DCF -- EVERGY

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	All Proxy Group			With Exclusions		
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.60	\$58.61	4.44%	4.61%	6.00%	8.70%	8.70%	7.80%	10.57%	12.41%	13.33%	10.57%	12.41%	13.33%
Alliant Energy Corporation	LNT	\$1.71	\$57.62	2.97%	3.05%	6.00%	5.40%	5.70%	5.70%	8.45%	8.75%	9.06%	8.45%	8.75%	9.06%
Ameren Corporation	AEE	\$2.36	\$87.59	2.69%	2.78%	6.50%	6.46%	7.20%	6.72%	9.24%	9.50%	9.99%	9.24%	9.50%	9.99%
American Electric Power Company, Inc.	AEP	\$3.12	\$94.16	3.31%	3.42%	6.50%	6.35%	6.20%	6.35%	9.62%	9.77%	9.92%	9.62%	9.77%	9.92%
Avista Corporation	AVA	\$1.76	\$41.86	4.20%	4.31%	3.00%	5.90%	5.90%	4.93%	7.27%	9.24%	10.23%	7.27%	9.24%	10.23%
CMS Energy Corporation	CMS	\$1.84	\$65.59	2.81%	2.91%	6.50%	8.48%	8.10%	7.69%	9.40%	10.61%	11.40%	9.40%	10.61%	11.40%
Duke Energy Corporation	DUK	\$3.94	\$105.44	3.74%	3.85%	6.00%	5.82%	6.00%	5.94%	9.67%	9.79%	9.85%	9.67%	9.79%	9.85%
Entergy Corporation	ETR	\$4.04	\$109.93	3.68%	3.78%	4.00%	6.04%	6.70%	5.58%	7.75%	9.36%	10.50%	7.75%	9.36%	10.50%
IDACORP, Inc.	IDA	\$3.00	\$105.05	2.86%	2.90%	4.00%	2.80%	2.80%	3.20%	5.70%	6.10%	6.91%			
MGE Energy, Inc.	MGEE	\$1.55	\$76.89	2.02%	2.06%	n/a	4.20%	4.20%	4.20%	6.26%	6.26%	6.26%			
NextEra Energy, Inc.	NEE	\$1.70	\$78.53	2.16%	2.28%	12.50%	9.07%	9.30%	10.29%	11.33%	12.57%	14.80%	11.33%	12.57%	14.80%
NorthWestern Corporation	NWE	\$2.52	\$56.70	4.44%	4.52%	3.00%	4.50%	2.30%	3.27%	6.80%	7.78%	9.04%		7.78%	9.04%
Otter Tail Corporation	OTTR	\$1.65	\$66.18	2.49%	2.58%	4.50%	9.00%	n/a	6.75%	7.05%	9.33%	11.61%	7.05%	9.33%	11.61%
Portland General Electric Company	POR	\$1.81	\$48.76	3.71%	3.79%	4.50%	3.23%	4.40%	4.04%	7.00%	7.83%	8.30%	7.00%	7.83%	8.30%
Southern Company	SO	\$2.72	\$71.17	3.82%	3.93%	6.50%	6.12%	4.00%	5.54%	7.90%	9.47%	10.45%	7.90%	9.47%	10.45%
Xcel Energy Inc.	XEL	\$1.95	\$69.09	2.82%	2.91%	6.00%	7.04%	6.40%	6.48%	8.91%	9.39%	9.96%	8.91%	9.39%	9.96%
Mean				3.26%	3.35%	5.70%	6.19%	5.86%	5.91%	8.31%	9.26%	10.10%	8.78%	9.70%	10.60%
Median				3.14%	3.24%	6.00%	6.08%	6.00%	5.82%	8.17%	9.38%	9.98%			

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 30-day average as of July 29, 2022
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))
- [12] - [14] Excludes companies with ROEs less than 7.00%.

90-DAY CONSTANT GROWTH DCF -- EVERGY

Company		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	With Exclusions		
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.60	\$61.08	4.26%	4.42%	6.00%	8.70%	8.70%	7.80%	10.38%	12.22%	13.14%	10.38%	12.22%	13.14%
Alliant Energy Corporation	LNT	\$1.71	\$59.96	2.85%	2.93%	6.00%	5.40%	5.70%	5.70%	8.33%	8.63%	8.94%	8.33%	8.63%	8.94%
Ameren Corporation	AEE	\$2.36	\$91.50	2.58%	2.67%	6.50%	6.46%	7.20%	6.72%	9.12%	9.39%	9.87%	9.12%	9.39%	9.87%
American Electric Power Company, Inc.	AEP	\$3.12	\$98.05	3.18%	3.28%	6.50%	6.35%	6.20%	6.35%	9.48%	9.63%	9.79%	9.48%	9.63%	9.79%
Avista Corporation	AVA	\$1.76	\$42.95	4.10%	4.20%	3.00%	5.90%	5.90%	4.93%	7.16%	9.13%	10.12%	7.16%	9.13%	10.12%
CMS Energy Corporation	CMS	\$1.84	\$68.40	2.69%	2.79%	6.50%	8.48%	8.10%	7.69%	9.28%	10.49%	11.28%	9.28%	10.49%	11.28%
Duke Energy Corporation	DUK	\$3.94	\$109.18	3.61%	3.72%	6.00%	5.82%	6.00%	5.94%	9.53%	9.66%	9.72%	9.53%	9.66%	9.72%
Entergy Corporation	ETR	\$4.04	\$115.79	3.49%	3.59%	4.00%	6.04%	6.70%	5.58%	7.56%	9.17%	10.31%	7.56%	9.17%	10.31%
IDACORP, Inc.	IDA	\$3.00	\$108.18	2.77%	2.82%	4.00%	2.80%	2.80%	3.20%	5.61%	6.02%	6.83%			
MGE Energy, Inc.	MGEE	\$1.55	\$79.09	1.96%	2.00%	n/a	4.20%	4.20%	4.20%	6.20%	6.20%	6.20%			
NextEra Energy, Inc.	NEE	\$1.70	\$77.74	2.19%	2.30%	12.50%	9.07%	9.30%	10.29%	11.36%	12.59%	14.82%	11.36%	12.59%	14.82%
NorthWestern Corporation	NWE	\$2.52	\$58.81	4.29%	4.36%	3.00%	4.50%	2.30%	3.27%	6.63%	7.62%	8.88%		7.62%	8.88%
Otter Tail Corporation	OTTR	\$1.65	\$64.28	2.57%	2.65%	4.50%	9.00%	n/a	6.75%	7.12%	9.40%	11.68%	7.12%	9.40%	11.68%
Portland General Electric Company	POR	\$1.81	\$50.16	3.61%	3.68%	4.50%	3.23%	4.40%	4.04%	6.90%	7.72%	8.19%		7.72%	8.19%
Southern Company	SO	\$2.72	\$72.94	3.73%	3.83%	6.50%	6.12%	4.00%	5.54%	7.80%	9.37%	10.35%	7.80%	9.37%	10.35%
Xcel Energy Inc.	XEL	\$1.95	\$71.94	2.71%	2.80%	6.00%	7.04%	6.40%	6.48%	8.79%	9.28%	9.85%	8.79%	9.28%	9.85%
Mean				3.16%	3.25%	5.70%	6.19%	5.86%	5.91%	8.20%	9.16%	10.00%	8.83%	9.59%	10.50%
Median				3.02%	3.11%	6.00%	6.08%	6.00%	5.82%	8.07%	9.33%	9.86%			

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 90-day average as of July 29, 2022
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))
- [12] - [14] Excludes companies with ROEs less than 7.00%.

180-DAY CONSTANT GROWTH DCF -- EVERGY

Company		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	With Exclusions		
		Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Low ROE	Mean ROE	High ROE	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.60	\$62.41	4.17%	4.33%	6.00%	8.70%	8.70%	7.80%	10.29%	12.13%	13.05%	10.29%	12.13%	13.05%
Alliant Energy Corporation	LNT	\$1.71	\$59.37	2.88%	2.96%	6.00%	5.40%	5.70%	5.70%	8.36%	8.66%	8.97%	8.36%	8.66%	8.97%
Ameren Corporation	AEE	\$2.36	\$89.09	2.65%	2.74%	6.50%	6.46%	7.20%	6.72%	9.19%	9.46%	9.94%	9.19%	9.46%	9.94%
American Electric Power Company, Inc.	AEP	\$3.12	\$93.08	3.35%	3.46%	6.50%	6.35%	6.20%	6.35%	9.66%	9.81%	9.96%	9.66%	9.81%	9.96%
Avista Corporation	AVA	\$1.76	\$42.74	4.12%	4.22%	3.00%	5.90%	5.90%	4.93%	7.18%	9.15%	10.14%	7.18%	9.15%	10.14%
CMS Energy Corporation	CMS	\$1.84	\$65.92	2.79%	2.90%	6.50%	8.48%	8.10%	7.69%	9.38%	10.59%	11.39%	9.38%	10.59%	11.39%
Duke Energy Corporation	DUK	\$3.94	\$105.77	3.73%	3.84%	6.00%	5.82%	6.00%	5.94%	9.65%	9.78%	9.84%	9.65%	9.78%	9.84%
Entergy Corporation	ETR	\$4.04	\$111.89	3.61%	3.71%	4.00%	6.04%	6.70%	5.58%	7.68%	9.29%	10.43%	7.68%	9.29%	10.43%
IDACORP, Inc.	IDA	\$3.00	\$108.23	2.77%	2.82%	4.00%	2.80%	2.80%	3.20%	5.61%	6.02%	6.83%			
MGE Energy, Inc.	MGEE	\$1.55	\$77.74	1.99%	2.04%	n/a	4.20%	4.20%	4.20%	6.24%	6.24%	6.24%			
NextEra Energy, Inc.	NEE	\$1.70	\$80.59	2.11%	2.22%	12.50%	9.07%	9.30%	10.29%	11.28%	12.51%	14.74%	11.28%	12.51%	14.74%
NorthWestern Corporation	NWE	\$2.52	\$58.17	4.33%	4.40%	3.00%	4.50%	2.30%	3.27%	6.68%	7.67%	8.93%		7.67%	8.93%
Otter Tail Corporation	OTTR	\$1.65	\$64.54	2.56%	2.64%	4.50%	9.00%	n/a	6.75%	7.11%	9.39%	11.67%	7.11%	9.39%	11.67%
Portland General Electric Company	POR	\$1.81	\$50.93	3.55%	3.63%	4.50%	3.23%	4.40%	4.04%	6.84%	7.67%	8.13%		7.67%	8.13%
Southern Company	SO	\$2.72	\$69.56	3.91%	4.02%	6.50%	6.12%	4.00%	5.54%	7.99%	9.56%	10.54%	7.99%	9.56%	10.54%
Xcel Energy Inc.	XEL	\$1.95	\$69.69	2.80%	2.89%	6.00%	7.04%	6.40%	6.48%	8.88%	9.37%	9.94%	8.88%	9.37%	9.94%
Mean				3.21%	3.30%	5.70%	6.19%	5.86%	5.91%	8.25%	9.21%	10.05%	8.89%	9.65%	10.55%
Median				3.12%	3.21%	6.00%	6.08%	6.00%	5.82%	8.17%	9.38%	9.95%			

Notes:

- [1] Source: Bloomberg Professional
- [2] Source: Bloomberg Professional, equals 180-day average as of July 29, 2022
- [3] Equals [1] / [2]
- [4] Equals [3] x (1 + 0.50 x [8])
- [5] Source: Value Line
- [6] Source: Yahoo! Finance
- [7] Source: Zacks
- [8] Equals Average ([5], [6], [7])
- [9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7]))
- [10] Equals [4] + [8]
- [11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7]))
- [12] - [14] Excludes companies with ROEs less than 7.00%.

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

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[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	3.16%	0.90	12.89%	9.73%	11.92%	12.16%
Alliant Energy Corporation	LNT	3.16%	0.80	12.89%	9.73%	10.95%	11.43%
Ameren Corporation	AEE	3.16%	0.80	12.89%	9.73%	10.95%	11.43%
American Electric Power Company, Inc.	AEP	3.16%	0.75	12.89%	9.73%	10.46%	11.07%
Avista Corporation	AVA	3.16%	0.90	12.89%	9.73%	11.92%	12.16%
CMS Energy Corporation	CMS	3.16%	0.75	12.89%	9.73%	10.46%	11.07%
Duke Energy Corporation	DUK	3.16%	0.85	12.89%	9.73%	11.43%	11.80%
Entergy Corporation	ETR	3.16%	0.90	12.89%	9.73%	11.92%	12.16%
IDACORP, Inc.	IDA	3.16%	0.80	12.89%	9.73%	10.95%	11.43%
MGE Energy, Inc.	MGEE	3.16%	0.70	12.89%	9.73%	9.97%	10.70%
NextEra Energy, Inc.	NEE	3.16%	0.90	12.89%	9.73%	11.92%	12.16%
NorthWestern Corporation	NWE	3.16%	0.95	12.89%	9.73%	12.41%	12.53%
Otter Tail Corporation	OTTR	3.16%	0.85	12.89%	9.73%	11.43%	11.80%
Portland General Electric Company	POR	3.16%	0.85	12.89%	9.73%	11.43%	11.80%
Southern Company	SO	3.16%	0.90	12.89%	9.73%	11.92%	12.16%
Xcel Energy Inc.	XEL	3.16%	0.80	12.89%	9.73%	10.95%	11.43%
Mean						11.31%	11.71%

Notes:

[1] Source: Bloomberg Professional, as of July 29, 2022

[2] Source: Value Line

[3] Source: Schedule AEB-6

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q4 2022 - Q4 2023)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.48%	0.90	12.89%	9.41%	11.95%	12.19%
Alliant Energy Corporation	LNT	3.48%	0.80	12.89%	9.41%	11.01%	11.48%
Ameren Corporation	AEE	3.48%	0.80	12.89%	9.41%	11.01%	11.48%
American Electric Power Company, Inc.	AEP	3.48%	0.75	12.89%	9.41%	10.54%	11.13%
Avista Corporation	AVA	3.48%	0.90	12.89%	9.41%	11.95%	12.19%
CMS Energy Corporation	CMS	3.48%	0.75	12.89%	9.41%	10.54%	11.13%
Duke Energy Corporation	DUK	3.48%	0.85	12.89%	9.41%	11.48%	11.84%
Entergy Corporation	ETR	3.48%	0.90	12.89%	9.41%	11.95%	12.19%
IDACORP, Inc.	IDA	3.48%	0.80	12.89%	9.41%	11.01%	11.48%
MGE Energy, Inc.	MGEE	3.48%	0.70	12.89%	9.41%	10.07%	10.78%
NextEra Energy, Inc.	NEE	3.48%	0.90	12.89%	9.41%	11.95%	12.19%
NorthWestern Corporation	NWE	3.48%	0.95	12.89%	9.41%	12.42%	12.54%
Otter Tail Corporation	OTTR	3.48%	0.85	12.89%	9.41%	11.48%	11.84%
Portland General Electric Company	POR	3.48%	0.85	12.89%	9.41%	11.48%	11.84%
Southern Company	SO	3.48%	0.90	12.89%	9.41%	11.95%	12.19%
Xcel Energy Inc.	XEL	3.48%	0.80	12.89%	9.41%	11.01%	11.48%
Mean						11.36%	11.75%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 8, August 1, 2022 at 2

[2] Source: Value Line

[3] Source: Schedule AEB-6

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2024 - 2028)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.80%	0.90	12.89%	9.09%	11.98%	12.21%
Alliant Energy Corporation	LNT	3.80%	0.80	12.89%	9.09%	11.08%	11.53%
Ameren Corporation	AEE	3.80%	0.80	12.89%	9.09%	11.08%	11.53%
American Electric Power Company, Inc.	AEP	3.80%	0.75	12.89%	9.09%	10.62%	11.19%
Avista Corporation	AVA	3.80%	0.90	12.89%	9.09%	11.98%	12.21%
CMS Energy Corporation	CMS	3.80%	0.75	12.89%	9.09%	10.62%	11.19%
Duke Energy Corporation	DUK	3.80%	0.85	12.89%	9.09%	11.53%	11.87%
Entergy Corporation	ETR	3.80%	0.90	12.89%	9.09%	11.98%	12.21%
IDACORP, Inc.	IDA	3.80%	0.80	12.89%	9.09%	11.08%	11.53%
MGE Energy, Inc.	MGEE	3.80%	0.70	12.89%	9.09%	10.17%	10.85%
NextEra Energy, Inc.	NEE	3.80%	0.90	12.89%	9.09%	11.98%	12.21%
NorthWestern Corporation	NWE	3.80%	0.95	12.89%	9.09%	12.44%	12.55%
Otter Tail Corporation	OTTR	3.80%	0.85	12.89%	9.09%	11.53%	11.87%
Portland General Electric Company	POR	3.80%	0.85	12.89%	9.09%	11.53%	11.87%
Southern Company	SO	3.80%	0.90	12.89%	9.09%	11.98%	12.21%
Xcel Energy Inc.	XEL	3.80%	0.80	12.89%	9.09%	11.08%	11.53%
Mean						11.42%	11.79%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2022, at 14

[2] Source: Value Line

[3] Source: Schedule AEB-6

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[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	3.16%	0.81	12.89%	9.73%	11.09%	11.54%
Alliant Energy Corporation	LNT	3.16%	0.80	12.89%	9.73%	10.98%	11.46%
Ameren Corporation	AEE	3.16%	0.76	12.89%	9.73%	10.58%	11.16%
American Electric Power Company, Inc.	AEP	3.16%	0.77	12.89%	9.73%	10.66%	11.22%
Avista Corporation	AVA	3.16%	0.75	12.89%	9.73%	10.50%	11.10%
CMS Energy Corporation	CMS	3.16%	0.75	12.89%	9.73%	10.50%	11.10%
Duke Energy Corporation	DUK	3.16%	0.72	12.89%	9.73%	10.22%	10.89%
Entergy Corporation	ETR	3.16%	0.87	12.89%	9.73%	11.61%	11.93%
IDACORP, Inc.	IDA	3.16%	0.82	12.89%	9.73%	11.11%	11.56%
MGE Energy, Inc.	MGEE	3.16%	0.69	12.89%	9.73%	9.83%	10.60%
NextEra Energy, Inc.	NEE	3.16%	0.81	12.89%	9.73%	11.09%	11.54%
NorthWestern Corporation	NWE	3.16%	0.88	12.89%	9.73%	11.77%	12.05%
Otter Tail Corporation	OTTR	3.16%	0.86	12.89%	9.73%	11.56%	11.90%
Portland General Electric Company	POR	3.16%	0.79	12.89%	9.73%	10.85%	11.36%
Southern Company	SO	3.16%	0.79	12.89%	9.73%	10.88%	11.39%
Xcel Energy Inc.	XEL	3.16%	0.75	12.89%	9.73%	10.43%	11.05%
Mean						10.86%	11.36%

Notes:

[1] Source: Bloomberg Professional, as of July 29, 2022

[2] Source: Bloomberg Professional, based on 10-year weekly returns

[3] Source: Schedule AEB-6

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q4 2022 - Q4 2023)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.48%	0.81	12.89%	9.41%	11.15%	11.59%
Alliant Energy Corporation	LNT	3.48%	0.80	12.89%	9.41%	11.05%	11.51%
Ameren Corporation	AEE	3.48%	0.76	12.89%	9.41%	10.66%	11.22%
American Electric Power Company, Inc.	AEP	3.48%	0.77	12.89%	9.41%	10.73%	11.27%
Avista Corporation	AVA	3.48%	0.75	12.89%	9.41%	10.58%	11.16%
CMS Energy Corporation	CMS	3.48%	0.75	12.89%	9.41%	10.58%	11.16%
Duke Energy Corporation	DUK	3.48%	0.72	12.89%	9.41%	10.30%	10.95%
Entergy Corporation	ETR	3.48%	0.87	12.89%	9.41%	11.65%	11.96%
IDACORP, Inc.	IDA	3.48%	0.82	12.89%	9.41%	11.17%	11.60%
MGE Energy, Inc.	MGEE	3.48%	0.69	12.89%	9.41%	9.94%	10.68%
NextEra Energy, Inc.	NEE	3.48%	0.81	12.89%	9.41%	11.15%	11.59%
NorthWestern Corporation	NWE	3.48%	0.88	12.89%	9.41%	11.81%	12.08%
Otter Tail Corporation	OTTR	3.48%	0.86	12.89%	9.41%	11.61%	11.93%
Portland General Electric Company	POR	3.48%	0.79	12.89%	9.41%	10.91%	11.41%
Southern Company	SO	3.48%	0.79	12.89%	9.41%	10.95%	11.44%
Xcel Energy Inc.	XEL	3.48%	0.75	12.89%	9.41%	10.51%	11.11%
Mean						10.92%	11.42%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 8, August 1, 2022 at 2

[2] Source: Bloomberg Professional, based on 10-year weekly returns

[3] Source: Schedule AEB-6

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2024 - 2028)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.80%	0.81	12.89%	9.09%	11.21%	11.63%
Alliant Energy Corporation	LNT	3.80%	0.80	12.89%	9.09%	11.11%	11.55%
Ameren Corporation	AEE	3.80%	0.76	12.89%	9.09%	10.74%	11.28%
American Electric Power Company, Inc.	AEP	3.80%	0.77	12.89%	9.09%	10.80%	11.33%
Avista Corporation	AVA	3.80%	0.75	12.89%	9.09%	10.66%	11.22%
CMS Energy Corporation	CMS	3.80%	0.75	12.89%	9.09%	10.66%	11.22%
Duke Energy Corporation	DUK	3.80%	0.72	12.89%	9.09%	10.39%	11.02%
Entergy Corporation	ETR	3.80%	0.87	12.89%	9.09%	11.70%	12.00%
IDACORP, Inc.	IDA	3.80%	0.82	12.89%	9.09%	11.23%	11.65%
MGE Energy, Inc.	MGEE	3.80%	0.69	12.89%	9.09%	10.04%	10.75%
NextEra Energy, Inc.	NEE	3.80%	0.81	12.89%	9.09%	11.21%	11.63%
NorthWestern Corporation	NWE	3.80%	0.88	12.89%	9.09%	11.84%	12.11%
Otter Tail Corporation	OTTR	3.80%	0.86	12.89%	9.09%	11.65%	11.96%
Portland General Electric Company	POR	3.80%	0.79	12.89%	9.09%	10.98%	11.46%
Southern Company	SO	3.80%	0.79	12.89%	9.09%	11.02%	11.49%
Xcel Energy Inc.	XEL	3.80%	0.75	12.89%	9.09%	10.59%	11.17%
Mean						10.99%	11.47%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2022, at 14

[2] Source: Bloomberg Professional, based on 10-year weekly returns

[3] Source: Schedule AEB-6

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[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	3.16%	0.77	12.89%	9.73%	10.61%	11.18%
Alliant Energy Corporation	LNT	3.16%	0.74	12.89%	9.73%	10.31%	10.96%
Ameren Corporation	AEE	3.16%	0.72	12.89%	9.73%	10.17%	10.85%
American Electric Power Company, Inc.	AEP	3.16%	0.67	12.30%	9.28%	9.15%	9.94%
Avista Corporation	AVA	3.16%	0.76	12.89%	9.73%	10.51%	11.11%
CMS Energy Corporation	CMS	3.16%	0.69	12.89%	9.73%	9.83%	10.59%
Duke Energy Corporation	DUK	3.16%	0.64	12.89%	9.73%	9.39%	10.27%
Entergy Corporation	ETR	3.16%	0.72	12.89%	9.73%	10.17%	10.85%
IDACORP, Inc.	IDA	3.16%	0.73	12.89%	9.73%	10.22%	10.89%
MGE Energy, Inc.	MGEE	3.16%	0.68	12.89%	9.73%	9.73%	10.52%
NextEra Energy, Inc.	NEE	3.16%	0.71	12.89%	9.73%	10.02%	10.74%
NorthWestern Corporation	NWE	3.16%	0.73	12.89%	9.73%	10.22%	10.89%
Otter Tail Corporation	OTTR	3.16%	0.86	12.89%	9.73%	11.48%	11.84%
Portland General Electric Company	POR	3.16%	0.75	12.89%	9.73%	10.41%	11.03%
Southern Company	SO	3.16%	0.62	12.89%	9.73%	9.19%	10.12%
Xcel Energy Inc.	XEL	3.16%	0.65	12.89%	9.73%	9.49%	10.34%
Mean						10.06%	10.76%

Notes:

[1] Source: Bloomberg Professional, as of July 29, 2022

[2] Source: Schedule AEB-5

[3] Source: Schedule AEB-6

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Near-term projected 30-year U.S. Treasury bond yield (Q4 2022 - Q4 2023)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.48%	0.77	12.89%	9.41%	10.68%	11.23%
Alliant Energy Corporation	LNT	3.48%	0.74	12.89%	9.41%	10.40%	11.02%
Ameren Corporation	AEE	3.48%	0.72	12.89%	9.41%	10.26%	10.92%
American Electric Power Company, Inc.	AEP	3.48%	0.67	12.89%	9.41%	9.74%	10.53%
Avista Corporation	AVA	3.48%	0.76	12.89%	9.41%	10.59%	11.16%
CMS Energy Corporation	CMS	3.48%	0.69	12.89%	9.41%	9.93%	10.67%
Duke Energy Corporation	DUK	3.48%	0.64	12.89%	9.41%	9.51%	10.35%
Entergy Corporation	ETR	3.48%	0.72	12.89%	9.41%	10.26%	10.92%
IDACORP, Inc.	IDA	3.48%	0.73	12.89%	9.41%	10.31%	10.95%
MGE Energy, Inc.	MGEE	3.48%	0.68	12.89%	9.41%	9.83%	10.60%
NextEra Energy, Inc.	NEE	3.48%	0.71	12.89%	9.41%	10.12%	10.81%
NorthWestern Corporation	NWE	3.48%	0.73	12.89%	9.41%	10.31%	10.95%
Otter Tail Corporation	OTTR	3.48%	0.86	12.89%	9.41%	11.53%	11.87%
Portland General Electric Company	POR	3.48%	0.75	12.89%	9.41%	10.49%	11.09%
Southern Company	SO	3.48%	0.62	12.89%	9.41%	9.32%	10.21%
Xcel Energy Inc.	XEL	3.48%	0.65	12.89%	9.41%	9.60%	10.42%
Mean						10.18%	10.86%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 8, August 1, 2022 at 2

[2] Source: Schedule AEB-5

[3] Source: Schedule AEB-6

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

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

$$K = R_f + \beta (R_m - R_f)$$

$$K = R_f + 0.25 \times (R_m - R_f) + 0.75 \times \beta \times (R_m - R_f)$$

		[1]	[2]	[3]	[4]	[5]	[6]
Company	Ticker	Projected 30-year U.S. Treasury bond yield (2024 - 2028)	Beta (β)	Market Return (Rm)	Market Risk Premium (Rm - Rf)	ROE (K)	ECAPM ROE (K)
ALLETE, Inc.	ALE	3.80%	0.77	12.89%	9.09%	10.76%	11.29%
Alliant Energy Corporation	LNT	3.80%	0.74	12.89%	9.09%	10.48%	11.09%
Ameren Corporation	AEE	3.80%	0.72	12.89%	9.09%	10.35%	10.98%
American Electric Power Company, Inc.	AEP	3.80%	0.67	12.89%	9.09%	9.85%	10.61%
Avista Corporation	AVA	3.80%	0.76	12.89%	9.09%	10.67%	11.22%
CMS Energy Corporation	CMS	3.80%	0.69	12.89%	9.09%	10.03%	10.75%
Duke Energy Corporation	DUK	3.80%	0.64	12.89%	9.09%	9.62%	10.44%
Entergy Corporation	ETR	3.80%	0.72	12.89%	9.09%	10.35%	10.98%
IDACORP, Inc.	IDA	3.80%	0.73	12.89%	9.09%	10.39%	11.02%
MGE Energy, Inc.	MGEE	3.80%	0.68	12.89%	9.09%	9.94%	10.68%
NextEra Energy, Inc.	NEE	3.80%	0.71	12.89%	9.09%	10.21%	10.88%
NorthWestern Corporation	NWE	3.80%	0.73	12.89%	9.09%	10.39%	11.02%
Otter Tail Corporation	OTTR	3.80%	0.86	12.89%	9.09%	11.58%	11.91%
Portland General Electric Company	POR	3.80%	0.75	12.89%	9.09%	10.58%	11.15%
Southern Company	SO	3.80%	0.62	12.89%	9.09%	9.44%	10.30%
Xcel Energy Inc.	XEL	3.80%	0.65	12.89%	9.09%	9.71%	10.51%
Mean						10.27%	10.93%

Notes:

[1] Source: Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2022, at 14

[2] Source: Schedule AEB-5

[3] Source: Schedule AEB-6

[4] Equals [3] - [1]

[5] Equals [1] + [2] x [4]

[6] Equals [1] + 0.25 x ([4]) + 0.75 x ([2] x [4])

HISTORICAL BETA - 2012 - 2021

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019	12/31/2020	12/31/2021	Average
ALLETE, Inc.	ALE	0.70	0.75	0.80	0.80	0.75	0.80	0.65	0.65	0.85	0.90	0.77
Alliant Energy Corporation	LNT	0.70	0.75	0.80	0.80	0.70	0.70	0.60	0.60	0.85	0.85	0.74
Ameren Corporation	AEE	0.80	0.80	0.75	0.75	0.65	0.70	0.55	0.55	0.85	0.80	0.72
American Electric Power Company, Inc	AEP	0.65	0.70	0.70	0.70	0.65	0.65	0.55	0.55	0.75	0.75	0.67
Avista Corporation	AVA	0.70	0.70	0.80	0.80	0.70	0.75	0.65	0.60	0.90	0.95	0.76
CMS Energy Corporation	CMS	0.75	0.70	0.70	0.75	0.65	0.65	0.55	0.50	0.80	0.80	0.69
Duke Energy Corporation	DUK	0.60	0.65	0.60	0.65	0.60	0.60	0.50	0.50	0.85	0.85	0.64
Entergy Corporation	ETR	0.70	0.70	0.70	0.70	0.65	0.65	0.60	0.60	0.95	0.95	0.72
IDACORP, Inc.	IDA	0.70	0.70	0.80	0.80	0.75	0.70	0.60	0.55	0.80	0.85	0.73
MGE Energy, Inc.	MGEE	0.60	0.65	0.70	0.75	0.70	0.75	0.60	0.55	0.70	0.75	0.68
NextEra Energy, Inc.	NEE	0.70	0.70	0.70	0.75	0.65	0.65	0.55	0.55	0.90	0.90	0.71
NorthWestern Corporation	NWE	0.70	0.70	0.70	0.70	0.70	0.70	0.60	0.60	0.90	0.95	0.73
Otter Tail Corporation	OTTR	0.90	0.95	0.90	0.85	0.85	0.90	0.75	0.70	0.85	0.90	0.86
Portland General Electric Company	POR	0.75	0.75	0.80	0.80	0.70	0.70	0.60	0.60	0.85	0.90	0.75
Southern Company	SO	0.55	0.55	0.55	0.60	0.55	0.55	0.50	0.50	0.90	0.95	0.62
Xcel Energy Inc.	XEL	0.65	0.65	0.70	0.65	0.60	0.60	0.55	0.50	0.80	0.80	0.65
Mean		0.70	0.71	0.73	0.74	0.68	0.69	0.59	0.57	0.84	0.87	0.71

Notes:

[1] Value Line, dated November 2, 2012, November 23, 2012, and December 21, 2012.

[2] Value Line, dated November 1, 2013, November 22, 2013, and December 20, 2013.

[3] Value Line, dated October 31, 2014, November 21, 2014, and December 19, 2014.

[4] Value Line, dated October 30, 2015, November 20, 2015, and December 18, 2015.

[5] Value Line, dated October 28, 2016, November 18, 2016, and December 16, 2016.

[6] Value Line, dated October 27, 2017, November 17, 2017, and December 15, 2017.

[7] Value Line, dated October 18, 2018, November 16, 2018, and December 14, 2018.

[8] Value Line, dated October 25, 2019, November 15, 2019, and December 13, 2019.

[9] Value Line, dated October 23, 2020, November 13, 2020, and December 11, 2020.

[10] Value Line, dated October 22, 2021, November 12, 2021, and December 10, 2021

[11] Average ([1] - [10])

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

[1] Estimated Weighted Average Dividend Yield	1.71%
[2] Estimated Weighted Average Long-Term Growth Rate	11.09%
[3] S&P 500 Estimated Required Market Return	12.89%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
LyondellBasell Industries NV	LYB	326.21	89.12	29,071.48	0.10%	5.34%	0.01%	3.50%	0.00%
Signature Bank/New York NY	SBNY	62.93	185.57	11,677.73		1.21%		21.50%	
American Express Co	AXP	749.75	154.02	115,476.19	0.40%	1.35%	0.01%	10.00%	0.04%
Verizon Communications Inc	VZ	4,199.72	46.19	193,984.84	0.68%	5.54%	0.04%	3.00%	0.02%
Broadcom Inc	AVGO	403.82	535.48	216,236.46		3.06%		23.00%	
Boeing Co/The	BA	593.81	159.31	94,600.03		n/a			
Caterpillar Inc	CAT	533.37	198.25	105,741.40	0.37%	2.42%	0.01%	8.00%	0.03%
JPMorgan Chase & Co	JPM	2,937.05	115.36	338,818.09	1.18%	3.47%	0.04%	5.00%	0.06%
Chevron Corp	CVX	1,964.81	163.78	321,797.07		3.47%		26.00%	
Coca-Cola Co/The	KO	4,324.63	64.17	277,511.44	0.97%	2.74%	0.03%	7.50%	0.07%
AbbVie Inc	ABBV	1,767.11	143.51	253,597.96	0.89%	3.93%	0.03%	4.50%	0.04%
Walt Disney Co/The	DIS	1,821.48	106.10	193,259.45		n/a		30.50%	
FleetCor Technologies Inc	FLT	77.34	220.09	17,021.98	0.06%	n/a		10.50%	0.01%
Extra Space Storage Inc	EXR	134.28	189.52	25,448.75	0.09%	3.17%	0.00%	4.00%	0.00%
Exxon Mobil Corp	XOM	4,212.54	96.93	408,321.79		3.63%			
Phillips 66	PSX	481.05	89.00	42,813.54		4.36%		85.00%	
General Electric Co	GE	1,096.55	73.91	81,046.23	0.28%	0.43%	0.00%	14.00%	0.04%
HP Inc	HPQ	1,034.14	33.39	34,529.87	0.12%	2.99%	0.00%	12.50%	0.02%
Home Depot Inc/The	HD	1,027.76	300.94	309,292.59	1.08%	2.53%	0.03%	9.00%	0.10%
Monolithic Power Systems Inc	MPWR	46.64	464.72	21,675.93	0.08%	0.65%	0.00%	18.00%	0.01%
International Business Machines Corp	IBM	903.18	130.79	118,126.91	0.41%	5.05%	0.02%	3.00%	0.01%
Johnson & Johnson	JNJ	2,629.18	174.52	458,844.49	1.60%	2.59%	0.04%	8.00%	0.13%
McDonald's Corp	MCD	739.55	263.37	194,774.49	0.68%	2.10%	0.01%	10.50%	0.07%
Merck & Co Inc	MRK	2,528.81	89.34	225,923.44	0.79%	3.09%	0.02%	8.00%	0.06%
3M Co	MMM	569.60	143.24	81,590.08	0.29%	4.16%	0.01%	6.50%	0.02%
American Water Works Co Inc	AWK	181.79	155.44	28,256.82	0.10%	1.69%	0.00%	3.00%	0.00%
Bank of America Corp	BAC	8,035.24	33.81	271,671.43	0.95%	2.60%	0.02%	8.50%	0.08%
Pfizer Inc	PFE	5,610.90	50.51	283,406.36	0.99%	3.17%	0.03%	6.50%	0.06%
Procter & Gamble Co/The	PG	2,399.30	138.91	333,286.35	1.17%	2.63%	0.03%	6.50%	0.08%
AT&T Inc	T	7,126.00	18.78	133,826.28	0.47%	5.91%	0.03%	0.50%	0.00%
Travelers Cos Inc/The	TRV	237.31	158.70	37,661.57	0.13%	2.34%	0.00%	8.00%	0.01%
Raytheon Technologies Corp	RTX	1,476.51	93.21	137,625.87	0.48%	2.36%	0.01%	7.50%	0.04%
Analog Devices Inc	ADI	519.81	171.96	89,385.84	0.31%	1.77%	0.01%	14.00%	0.04%
Walmart Inc	WMT	2,741.15	132.05	361,968.86	1.27%	1.70%	0.02%	7.50%	0.09%
Cisco Systems Inc	CSCO	4,140.96	45.37	187,875.54	0.66%	3.35%	0.02%	8.00%	0.05%
Intel Corp	INTC	4,106.00	36.31	149,088.86	0.52%	4.02%	0.02%	6.00%	0.03%
General Motors Co	GM	1,458.05	36.26	52,868.86	0.18%	n/a		11.00%	0.02%
Microsoft Corp	MSFT	7,457.89	280.74	2,093,728.60	7.32%	0.88%	0.06%	16.50%	1.21%
Dollar General Corp	DG	227.00	248.43	56,392.86	0.20%	0.89%	0.00%	10.00%	0.02%
Cigna Corp	CI	317.27	275.36	87,364.29	0.31%	1.63%	0.00%	10.00%	0.03%
Kinder Morgan Inc	KMI	2,253.00	17.99	40,531.49	0.14%	6.17%	0.01%	19.00%	0.03%
Citigroup Inc	C	1,937.00	51.90	100,530.30	0.35%	3.93%	0.01%	5.50%	0.02%
American International Group Inc	AIG	792.19	51.77	41,011.78		2.47%			
Altria Group Inc	MO	1,800.82	43.86	78,984.10	0.28%	8.21%	0.02%	5.50%	0.02%
HCA Healthcare Inc	HCA	295.48	212.42	62,766.71	0.22%	1.05%	0.00%	12.50%	0.03%
International Paper Co	IP	362.02	42.77	15,483.47	0.05%	4.33%	0.00%	12.50%	0.01%
Hewlett Packard Enterprise Co	HPE	1,299.33	14.24	18,502.46	0.06%	3.37%	0.00%	7.50%	0.00%
Abbott Laboratories	ABT	1,750.94	108.84	190,572.53	0.67%	1.73%	0.01%	8.00%	0.05%
Aflac Inc	AFL	644.17	57.30	36,910.65	0.13%	2.79%	0.00%	9.00%	0.01%
Air Products and Chemicals Inc	APD	221.77	248.23	55,050.71	0.19%	2.61%	0.01%	12.00%	0.02%
Royal Caribbean Cruises Ltd	RCL	255.06	38.71	9,873.33		n/a			
Hess Corp	HES	311.26	112.47	35,007.75		1.33%			
Archer-Daniels-Midland Co	ADM	560.56	82.77	46,397.72	0.16%	1.93%	0.00%	13.00%	0.02%
Automatic Data Processing Inc	ADP	416.10	241.12	100,330.03	0.35%	1.73%	0.01%	10.00%	0.04%
Verisk Analytics Inc	VRSK	157.90	190.25	30,040.86	0.11%	0.65%	0.00%	10.50%	0.01%
AutoZone Inc	AZO	19.49	2,137.39	41,653.46	0.15%	n/a		14.00%	0.02%
Avery Dennison Corp	AVY	81.71	190.46	15,563.25	0.05%	1.58%	0.00%	12.00%	0.01%
Enphase Energy Inc	ENPH	135.46	284.18	38,494.17		n/a		26.50%	
MSCI Inc	MSCI	80.50	481.34	38,749.31	0.14%	1.04%	0.00%	14.50%	0.02%
Ball Corp	BALL	319.79	73.42	23,478.91		1.09%		21.50%	
Ceridian HCM Holding Inc	CDAY	152.65	54.77	8,360.37		n/a			
Carrier Global Corp	CARR	841.58	40.53	34,109.36		1.48%			
Bank of New York Mellon Corp/The	BK	808.10	43.46	35,120.16	0.12%	3.41%	0.00%	6.00%	0.01%
Otis Worldwide Corp	OTIS	420.23	78.17	32,849.54		1.48%			
Baxter International Inc	BAX	503.61	58.66	29,541.82	0.10%	1.98%	0.00%	10.00%	0.01%
Becton Dickinson and Co	BDX	285.07	244.31	69,644.23	0.24%	1.42%	0.00%	5.50%	0.01%
Berkshire Hathaway Inc	BRK/B	1,285.75	300.60	386,496.75	1.35%	n/a		6.00%	0.08%
Best Buy Co Inc	BBY	225.17	76.99	17,335.68	0.06%	4.57%	0.00%	9.50%	0.01%
Boston Scientific Corp	BSX	1,429.57	41.05	58,683.89	0.21%	n/a		16.00%	0.03%
Bristol-Myers Squibb Co	BMY	2,135.26	73.78	157,539.11		2.93%			
Fortune Brands Home & Security Inc	FBHS	129.32	69.68	9,010.81	0.03%	1.61%	0.00%	10.00%	0.00%
Brown-Forman Corp	BF/B	309.90	74.22	23,000.78	0.08%	1.02%	0.00%	14.00%	0.01%
Coterra Energy Inc	CTRA	805.81	30.59	24,649.57		1.96%			
Campbell Soup Co	CPB	300.58	49.35	14,833.43	0.05%	3.00%	0.00%	5.00%	0.00%
Hilton Worldwide Holdings Inc	HLT	274.29	128.07	35,127.94		0.47%			
Carnival Corp	CCL	1,096.76	9.06	9,936.61		n/a			
Qorvo Inc	QRVO	103.73	104.07	10,794.87	0.04%	n/a		14.50%	0.01%
Lumen Technologies Inc	LUMN	1,033.06	10.89	11,249.97	0.04%	9.18%	0.00%	3.50%	0.00%
UDR Inc	UDR	324.92	48.40	15,726.27	0.05%	3.14%	0.00%	10.50%	0.01%
Clorox Co/The	CLX	123.08	141.84	17,457.67	0.06%	3.33%	0.00%	4.50%	0.00%

STANDARD AND POOR'S 500 INDEX

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Name	Ticker	Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Paycom Software Inc	PAYC	60.25	330.49	19,913.34		n/a		21.00%	
CMS Energy Corp	CMS	290.20	68.73	19,945.17	0.07%	2.68%	0.00%	6.50%	0.00%
Newell Brands Inc	NWL	413.50	20.21	8,356.84		4.55%			
Colgate-Palmolive Co	CL	834.12	78.74	65,678.61	0.23%	2.39%	0.01%	6.50%	0.01%
EPAM Systems Inc	EPAM	57.15	349.25	19,959.99		n/a		20.50%	
Comerica Inc	CMA	130.82	77.77	10,173.87	0.04%	3.50%	0.00%	6.00%	0.00%
Conagra Brands Inc	CAG	480.09	34.21	16,423.95	0.06%	3.86%	0.00%	4.00%	0.00%
Consolidated Edison Inc	ED	354.30	99.27	35,170.86	0.12%	3.18%	0.00%	4.50%	0.01%
Corning Inc	GLW	845.32	36.76	31,073.89	0.11%	2.94%	0.00%	17.50%	0.02%
Cummins Inc	CMI	141.10	221.31	31,226.40	0.11%	2.84%	0.00%	8.00%	0.01%
Caesars Entertainment Inc	CZR	214.37	45.69	9,794.38		n/a			
Danaher Corp	DHR	727.45	291.47	212,028.39	0.74%	0.34%	0.00%	17.00%	0.13%
Target Corp	TGT	463.70	163.38	75,758.65	0.26%	2.64%	0.01%	13.00%	0.03%
Deere & Co	DE	305.64	343.18	104,888.16	0.37%	1.32%	0.00%	15.00%	0.05%
Dominion Energy Inc	D	811.27	81.98	66,507.91	0.23%	3.26%	0.01%	14.00%	0.03%
Dover Corp	DOV	143.55	133.68	19,189.63	0.07%	1.50%	0.00%	9.00%	0.01%
Alliant Energy Corp	LNT	250.81	60.93	15,282.10	0.05%	2.81%	0.00%	6.00%	0.00%
Duke Energy Corp	DUK	770.00	109.93	84,646.10	0.30%	3.66%	0.01%	6.00%	0.02%
Regency Centers Corp	REG	172.36	64.43	11,105.28	0.04%	3.88%	0.00%	12.50%	0.00%
Eaton Corp PLC	ETN	399.00	148.39	59,207.61	0.21%	2.18%	0.00%	12.00%	0.02%
Ecolab Inc	ECL	285.66	165.17	47,181.64	0.16%	1.24%	0.00%	10.50%	0.02%
PerkinElmer Inc	PKI	126.15	153.17	19,322.09	0.07%	0.18%	0.00%	5.00%	0.00%
Emerson Electric Co	EMR	594.00	90.07	53,501.58	0.19%	2.29%	0.00%	10.00%	0.02%
EOG Resources Inc	EOG	585.71	111.22	65,143.00	0.23%	2.70%	0.01%	18.00%	0.04%
Aon PLC	AON	210.93	291.04	61,387.90	0.21%	0.77%	0.00%	6.50%	0.01%
Entergy Corp	ETR	203.37	115.13	23,414.45	0.08%	3.51%	0.00%	4.00%	0.00%
Equifax Inc	EFX	122.40	208.91	25,570.58	0.09%	0.75%	0.00%	10.00%	0.01%
IQVIA Holdings Inc	IQV	186.51	240.27	44,812.28	0.16%	n/a		14.50%	0.02%
Gartner Inc	IT	80.54	265.48	21,381.49	0.07%	n/a		15.50%	0.01%
FedEx Corp	FDX	259.85	233.09	60,567.50	0.21%	1.97%	0.00%	13.00%	0.03%
FMC Corp	FMC	125.94	111.10	13,991.82	0.05%	1.91%	0.00%	11.00%	0.01%
Brown & Brown Inc	BRO	282.45	65.10	18,387.76	0.06%	0.63%	0.00%	8.00%	0.01%
Ford Motor Co	F	3,949.39	14.69	58,016.47		4.08%		33.50%	
NextEra Energy Inc	NEE	1,964.78	84.49	166,004.18	0.58%	2.01%	0.01%	12.50%	0.07%
Franklin Resources Inc	BEN	498.36	27.45	13,679.90	0.05%	4.23%	0.00%	9.00%	0.00%
Garmin Ltd	GRMN	192.86	97.62	18,826.51	0.07%	2.99%	0.00%	8.00%	0.01%
Freeport-McMoRan Inc	FCX	1,449.26	31.55	45,724.22		1.90%		29.00%	
Dexcom Inc	DXCM	392.58	82.08	32,223.13		n/a			
General Dynamics Corp	GD	274.25	226.67	62,163.34	0.22%	2.22%	0.00%	8.00%	0.02%
General Mills Inc	GIS	597.16	74.79	44,661.45	0.16%	2.89%	0.00%	3.50%	0.01%
Genuine Parts Co	GPC	141.43	152.87	21,620.56	0.08%	2.34%	0.00%	8.50%	0.01%
Atmos Energy Corp	ATO	139.02	121.39	16,875.03	0.06%	2.24%	0.00%	7.50%	0.00%
WW Grainger Inc	ATW	50.87	543.53	27,649.91	0.10%	1.27%	0.00%	7.00%	0.01%
Halliburton Co	HAL	906.94	29.30	26,573.46		1.64%		31.00%	
L3Harris Technologies Inc	LHX	191.35	239.97	45,918.98	0.16%	1.87%	0.00%	18.50%	0.03%
Healthpeak Properties Inc	PEAK	539.56	27.63	14,907.96	0.05%	4.34%	0.00%	17.00%	0.01%
Catalent Inc	CTLT	179.21	113.10	20,268.99		n/a		21.00%	
Fortive Corp	FTV	355.70	64.45	22,924.67	0.08%	0.43%	0.00%	12.00%	0.01%
Hershey Co/The	HSY	146.87	227.96	33,480.49	0.12%	1.82%	0.00%	6.50%	0.01%
Synchrony Financial	SYF	481.76	33.48	16,129.29	0.06%	2.75%	0.00%	9.50%	0.01%
Hormel Foods Corp	HRL	546.06	49.34	26,942.40	0.09%	2.11%	0.00%	6.00%	0.01%
Arthur J Gallagher & Co	AJG	210.30	178.99	37,641.60	0.13%	1.14%	0.00%	17.50%	0.02%
Mondelez International Inc	MDLZ	1,370.57	64.04	87,771.05	0.31%	2.40%	0.01%	9.50%	0.03%
CenterPoint Energy Inc	CNP	629.43	31.69	19,946.70	0.07%	2.27%	0.00%	6.50%	0.00%
Humana Inc	HUM	126.55	482.00	60,999.03	0.21%	0.65%	0.00%	11.00%	0.02%
Willis Towers Watson PLC	WTW	109.97	206.94	22,756.36	0.08%	1.59%	0.00%	8.50%	0.01%
Illinois Tool Works Inc	ITW	311.44	207.76	64,705.40	0.23%	2.35%	0.01%	11.00%	0.02%
CDW Corp/DE	CDW	135.12	181.53	24,527.61	0.09%	1.10%	0.00%	8.50%	0.01%
Trane Technologies PLC	TT	233.86	146.99	34,375.08		1.82%			
Interpublic Group of Cos Inc/The	IPG	391.03	29.87	11,680.01	0.04%	3.88%	0.00%	10.00%	0.00%
International Flavors & Fragrances Inc	IFF	254.84	124.05	31,612.65	0.11%	2.55%	0.00%	7.50%	0.01%
Jacobs Engineering Group Inc	J	128.63	137.30	17,660.49	0.06%	0.67%	0.00%	15.00%	0.01%
Generac Holdings Inc	GNRC	63.83	268.30	17,125.59		n/a		23.50%	
NXP Semiconductors NV	NXPI	262.60	183.88	48,286.52	0.17%	1.84%	0.00%	12.00%	0.02%
Kellogg Co	K	337.87	73.92	24,975.57	0.09%	3.19%	0.00%	3.50%	0.00%
Broadridge Financial Solutions Inc	BR	117.23	160.55	18,820.79	0.07%	1.59%	0.00%	9.00%	0.01%
Kimberly-Clark Corp	KMB	337.62	131.79	44,495.20	0.16%	3.52%	0.01%	5.50%	0.01%
Kimco Realty Corp	KIM	618.48	22.11	13,674.64	0.05%	3.98%	0.00%	8.50%	0.00%
Oracle Corp	ORCL	2,664.93	77.84	207,437.84	0.73%	1.64%	0.01%	9.00%	0.07%
Kroger Co/The	KR	715.56	46.44	33,230.61	0.12%	2.24%	0.00%	5.50%	0.01%
Lennar Corp	LEN	254.99	85.00	21,673.90	0.08%	1.76%	0.00%	9.00%	0.01%
Eli Lilly & Co	LLY	950.16	329.69	313,258.25	1.10%	1.19%	0.01%	11.50%	0.13%
Bath & Body Works Inc	BBWI	228.74	35.54	8,129.28		2.25%		26.50%	
Charter Communications Inc	CHTR	160.66	432.10	69,419.03		n/a		21.50%	
Lincoln National Corp	LNC	171.95	51.34	8,827.76	0.03%	3.51%	0.00%	11.50%	0.00%
Loews Corp	L	246.11	58.25	14,335.79	0.05%	0.43%	0.00%	18.50%	0.01%
Lowe's Cos Inc	LOW	639.13	191.53	122,412.38	0.43%	2.19%	0.01%	12.50%	0.05%
IDEX Corp	IEX	75.48	208.75	15,755.62	0.06%	1.15%	0.00%	11.00%	0.01%
Marsh & McLennan Cos Inc	MMC	499.02	163.96	81,818.99	0.29%	1.44%	0.00%	12.00%	0.03%
Masco Corp	MAS	225.52	55.38	12,489.30	0.04%	2.02%	0.00%	8.50%	0.00%
S&P Global Inc	SPGI	339.90	376.93	128,118.51	0.45%	0.90%	0.00%	9.50%	0.04%
Medtronic PLC	MDT	1,328.71	92.52	122,932.16	0.43%	2.94%	0.01%	8.50%	0.04%
Viatis Inc	VTRS	1,212.33	9.69	11,747.45		4.95%			
CVS Health Corp	CVS	1,311.31	95.68	125,466.05	0.44%	2.30%	0.01%	6.00%	0.03%
DuPont de Nemours Inc	DD	508.53	61.23	31,137.11	0.11%	2.16%	0.00%	10.00%	0.01%
Micron Technology Inc	MU	1,103.15	61.86	68,240.55		0.74%		24.00%	
Motorola Solutions Inc	MSI	167.30	238.59	39,915.39	0.14%	1.32%	0.00%	8.00%	0.01%
Cboe Global Markets Inc	CBOE	106.06	123.38	13,085.93		1.56%			
Laboratory Corp of America Holdings	LH	93.18	262.19	24,429.82	0.09%	1.10%	0.00%	6.00%	0.01%
Newmont Corp	NEM	793.68	45.28	35,937.83	0.13%	4.86%	0.01%	9.50%	0.01%
NIKE Inc	NKE	1,263.65	114.92	145,219.00		1.06%		24.00%	

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
NiSource Inc	NI	405.80	30.40	12,336.26	0.04%	3.09%	0.00%	9.50%	0.00%
Norfolk Southern Corp	NSC	234.87	251.17	58,993.30	0.21%	1.97%	0.00%	10.00%	0.02%
Principal Financial Group Inc	PFG	252.68	66.94	16,914.67	0.06%	3.82%	0.00%	6.00%	0.00%
Eversource Energy	ES	344.88	88.22	30,425.14	0.11%	2.89%	0.00%	6.00%	0.01%
Northrop Grumman Corp	NOC	154.71	478.90	74,091.10	0.26%	1.44%	0.00%	7.50%	0.02%
Wells Fargo & Co	WFC	3,790.35	43.87	166,282.74	0.58%	2.74%	0.02%	11.50%	0.07%
Nucor Corp	NUE	266.00	135.80	36,122.80	0.13%	1.47%	0.00%	10.00%	0.01%
PVH Corp	PVH	66.96	61.92	4,146.23	0.01%	0.24%	0.00%	13.50%	0.00%
Occidental Petroleum Corp	OXY	937.19	65.75	61,620.31		0.79%			
Omnicom Group Inc	OMC	204.84	69.84	14,306.24	0.05%	4.01%	0.00%	6.50%	0.00%
ONEOK Inc	OKE	446.62	59.74	26,680.84	0.09%	6.26%	0.01%	11.00%	0.01%
Raymond James Financial Inc	RJF	215.50	98.47	21,220.29	0.07%	1.38%	0.00%	10.50%	0.01%
Parker-Hannifin Corp	PH	128.37	289.09	37,111.06	0.13%	1.84%	0.00%	13.50%	0.02%
Rollins Inc	ROL	492.42	38.57	18,992.52	0.07%	1.04%	0.00%	10.50%	0.01%
PPL Corp	PPL	735.90	29.08	21,400.06		3.09%			
ConocoPhillips	COP	1,293.45	97.43	126,020.83	0.44%	1.89%	0.01%	20.00%	0.09%
PulteGroup Inc	PHM	231.50	43.62	10,097.94	0.04%	1.38%	0.00%	11.00%	0.00%
Pinnacle West Capital Corp	PNW	113.00	73.47	8,302.18	0.03%	4.63%	0.00%	0.50%	0.00%
PNC Financial Services Group Inc/The	PNC	413.58	165.94	68,629.63	0.24%	3.62%	0.01%	12.00%	0.03%
PPG Industries Inc	PPG	235.00	129.29	30,382.76	0.11%	1.92%	0.00%	4.00%	0.00%
Progressive Corp/The	PGR	584.90	115.06	67,298.59	0.24%	0.35%	0.00%	4.50%	0.01%
Public Service Enterprise Group Inc	PEG	499.26	65.67	32,786.34	0.11%	3.29%	0.00%	4.00%	0.00%
Robert Half International Inc	RHI	110.51	79.14	8,746.08	0.03%	2.17%	0.00%	7.50%	0.00%
Edison International	EIX	381.43	67.77	25,849.65		4.13%			
Schlumberger NV	SLB	1,414.39	37.03	52,374.79		1.89%		23.00%	
Charles Schwab Corp/The	SCHW	1,817.06	69.05	125,467.79	0.44%	1.27%	0.01%	9.00%	0.04%
Sherwin-Williams Co/The	SHW	259.18	241.94	62,706.74	0.22%	0.99%	0.00%	11.50%	0.03%
West Pharmaceutical Services Inc	WST	74.05	343.56	25,439.93	0.09%	0.21%	0.00%	17.00%	0.02%
J M Smucker Co/The	SJM	106.56	132.32	14,099.75	0.05%	3.08%	0.00%	4.00%	0.00%
Snap-on Inc	SNA	53.27	224.05	11,934.70	0.04%	2.54%	0.00%	4.50%	0.00%
AMETEK Inc	AME	230.91	123.50	28,517.39	0.10%	0.71%	0.00%	10.00%	0.01%
Southern Co/The	SO	1,062.53	76.89	81,697.55	0.29%	3.54%	0.01%	6.50%	0.02%
Truist Financial Corp	TFC	1,331.41	50.47	67,196.46	0.23%	4.12%	0.01%	6.50%	0.02%
Southwest Airlines Co	LUV	592.96	38.12	22,603.48		n/a		29.50%	
W R Berkley Corp	WRB	265.27	62.53	16,587.52	0.06%	0.64%	0.00%	15.50%	0.01%
Stanley Black & Decker Inc	SWK	147.82	97.33	14,386.93	0.05%	3.29%	0.00%	6.00%	0.00%
Public Storage	PSA	175.53	326.41	57,294.42	0.20%	2.45%	0.00%	8.00%	0.02%
Arista Networks Inc	ANET	308.26	116.63	35,952.83	0.13%	n/a		8.50%	0.01%
Sysco Corp	SY	509.48	84.90	43,254.51	0.15%	2.31%	0.00%	16.50%	0.02%
Corteva Inc	CTVA	725.32	57.55	41,742.17	0.15%	1.04%	0.00%	16.50%	0.02%
Texas Instruments Inc	TXN	913.71	178.89	163,453.05	0.57%	2.57%	0.01%	9.00%	0.05%
Textron Inc	TXT	211.53	65.64	13,884.96	0.05%	0.12%	0.00%	8.50%	0.00%
Thermo Fisher Scientific Inc	TMO	391.46	598.41	234,254.78	0.82%	0.20%	0.00%	15.50%	0.13%
TJX Cos Inc/The	TJX	1,171.64	61.16	71,657.26	0.25%	1.93%	0.00%	20.00%	0.05%
Globe Life Inc	GL	98.60	100.73	9,931.98	0.03%	0.82%	0.00%	8.00%	0.00%
Johnson Controls International plc	JCI	695.67	53.91	37,503.52	0.13%	2.60%	0.00%	12.50%	0.02%
Ulta Beauty Inc	ULTA	51.82	388.91	20,152.54	0.07%	n/a		15.00%	0.01%
Union Pacific Corp	UNP	624.48	227.30	141,944.08	0.50%	2.29%	0.01%	9.50%	0.05%
Keysight Technologies Inc	KEYS	179.95	162.60	29,259.22	0.10%	n/a		13.00%	0.01%
UnitedHealth Group Inc	UNH	938.17	542.34	508,808.20	1.78%	1.22%	0.02%	12.00%	0.21%
Marathon Oil Corp	MRO	707.69	24.80	17,550.74		1.29%			
Bio-Rad Laboratories Inc	BIO	24.63	563.26	13,875.35	0.05%	n/a		11.50%	0.01%
Ventas Inc	VTR	399.70	53.78	21,495.65	0.08%	3.35%	0.00%	10.50%	0.01%
VF Corp	VFC	388.48	44.68	17,357.29	0.06%	4.48%	0.00%	9.50%	0.01%
Vornado Realty Trust	VNO	191.74	30.39	5,827.07		6.98%		-20.50%	
Vulcan Materials Co	VMC	132.90	165.33	21,971.70	0.08%	0.97%	0.00%	8.50%	0.01%
Weyerhaeuser Co	WY	744.50	36.32	27,040.17	0.09%	1.98%	0.00%	6.00%	0.01%
Whirlpool Corp	WHR	54.51	172.87	9,422.80	0.03%	4.05%	0.00%	6.00%	0.00%
Williams Cos Inc/The	WMB	1,218.01	34.09	41,522.03	0.15%	4.99%	0.01%	8.50%	0.01%
Constellation Energy Corp	CEG	326.66	66.10	21,592.49		0.85%			
WEC Energy Group Inc	WEC	315.44	103.81	32,745.31	0.11%	2.80%	0.00%	6.00%	0.01%
Adobe Inc	ADBE	468.00	410.12	191,936.16	0.67%	n/a		14.50%	0.10%
AES Corp/The	AES	667.86	22.22	14,839.85	0.05%	2.84%	0.00%	14.00%	0.01%
Amgen Inc	AMGN	534.20	247.47	132,198.47	0.46%	3.14%	0.01%	5.50%	0.03%
Apple Inc	AAPL	16,070.75	162.51	2,611,657.91	9.13%	0.57%	0.05%	14.00%	1.28%
Autodesk Inc	ADSK	217.27	216.32	47,000.28	0.16%	n/a		14.00%	0.02%
Cintas Corp	CTAS	101.19	425.49	43,054.48	0.15%	1.08%	0.00%	13.50%	0.02%
Comcast Corp	CMCSA	4,403.79	37.52	165,230.35	0.58%	2.88%	0.02%	9.50%	0.05%
Molson Coors Beverage Co	TAP	200.53	59.75	11,981.49		2.54%		49.50%	
KLA Corp	KLAC	149.24	383.54	57,237.59		1.10%		21.00%	
Marriott International Inc/MD	MAR	327.30	158.82	51,981.47	0.18%	0.76%	0.00%	17.50%	0.03%
McCormick & Co Inc/MD	MKC	250.47	87.35	21,878.73	0.08%	1.69%	0.00%	5.50%	0.00%
PACCAR Inc	PCAR	347.70	91.52	31,821.50	0.11%	1.49%	0.00%	5.00%	0.01%
Costco Wholesale Corp	COST	442.96	541.30	239,775.87	0.84%	0.67%	0.01%	10.50%	0.09%
First Republic Bank/CA	FRC	179.68	162.71	29,236.38	0.10%	0.66%	0.00%	11.50%	0.01%
Stryker Corp	SYK	378.32	214.75	81,244.43	0.28%	1.29%	0.00%	8.50%	0.02%
Tyson Foods Inc	TSN	291.54	88.01	25,658.35	0.09%	2.09%	0.00%	6.00%	0.01%
Lamb Weston Holdings Inc	LW	143.75	79.66	11,450.97	0.04%	1.23%	0.00%	5.00%	0.00%
Applied Materials Inc	AMAT	869.95	105.98	92,196.98	0.32%	0.98%	0.00%	14.50%	0.05%
American Airlines Group Inc	AAL	649.85	13.71	8,909.39		n/a			
Cardinal Health Inc	CAH	272.43	59.56	16,225.75	0.06%	3.33%	0.00%	5.00%	0.00%
Cincinnati Financial Corp	CINF	159.20	97.34	15,496.43	0.05%	2.84%	0.00%	7.00%	0.00%
Paramount Global	PARA	608.40	23.65	14,388.54	0.05%	4.06%	0.00%	4.50%	0.00%
DR Horton Inc	DHI	347.48	78.03	27,113.94	0.09%	1.15%	0.00%	13.00%	0.01%
Electronic Arts Inc	EA	279.31	131.23	36,653.33	0.13%	0.58%	0.00%	11.50%	0.01%
Expeditors International of Washington Inc	EXPD	167.75	106.25	17,823.86	0.06%	1.26%	0.00%	10.00%	0.01%
Fastenal Co	FAST	574.68	51.36	29,515.51	0.10%	2.41%	0.00%	8.50%	0.01%
M&T Bank Corp	MTB	175.97	177.45	31,225.70	0.11%	2.70%	0.00%	8.00%	0.01%
Xcel Energy Inc	XEL	546.99	73.18	40,028.80	0.14%	2.66%	0.00%	6.00%	0.01%
Fiserv Inc	FISV	639.58	105.68	67,591.24	0.24%	n/a		11.00%	0.03%
Fifth Third Bancorp	FITB	686.15	34.12	23,411.51	0.08%	3.52%	0.00%	11.00%	0.01%

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Gilead Sciences Inc	GILD	1,254.31	59.75	74,945.20	0.26%	4.89%	0.01%	13.50%	0.04%
Hasbro Inc	HAS	138.09	78.72	10,870.52	0.04%	3.56%	0.00%	11.50%	0.00%
Huntington Bancshares Inc/OH	HBAN	1,442.19	13.29	19,166.76	0.07%	4.67%	0.00%	12.50%	0.01%
Welltower Inc	WELL	453.97	86.34	39,195.60	0.14%	2.83%	0.00%	3.50%	0.00%
Biogen Inc	BIIB	145.11	215.06	31,208.00		n/a		-10.50%	
Northern Trust Corp	NTRS	208.39	99.78	20,792.85	0.07%	3.01%	0.00%	8.00%	0.01%
Packaging Corp of America	PKG	93.70	140.61	13,175.30	0.05%	3.56%	0.00%	11.00%	0.01%
Paychex Inc	PAYX	359.91	128.28	46,168.87	0.16%	2.46%	0.00%	10.00%	0.02%
QUALCOMM Inc	QCOM	1,123.00	145.06	162,902.38	0.57%	2.07%	0.01%	19.00%	0.11%
Roper Technologies Inc	ROP	105.91	436.67	46,249.03	0.16%	0.57%	0.00%	8.50%	0.01%
Ross Stores Inc	ROST	349.93	81.26	28,434.99	0.10%	1.53%	0.00%	14.00%	0.01%
IDEXX Laboratories Inc	IDXX	84.01	399.18	33,533.91	0.12%	n/a		12.00%	0.01%
Starbucks Corp	SBUX	1,146.90	84.78	97,234.18	0.34%	2.31%	0.01%	16.50%	0.06%
KeyCorp	KEY	932.40	18.30	17,062.88	0.06%	4.26%	0.00%	9.00%	0.01%
Fox Corp	FOXA	311.68	33.11	10,319.86	0.04%	1.45%	0.00%	11.00%	0.00%
Fox Corp	FOX	245.07	30.90	7,572.51		1.55%			
State Street Corp	STT	367.62	71.04	26,115.65	0.09%	3.55%	0.00%	9.50%	0.01%
Norwegian Cruise Line Holdings Ltd	NCLH	419.10	12.15	5,092.08		n/a			
US Bancorp	USB	1,486.00	47.20	70,139.20	0.25%	3.90%	0.01%	6.00%	0.01%
A O Smith Corp	AOS	128.48	63.27	8,128.74	0.03%	1.77%	0.00%	11.50%	0.00%
NortonLifeLock Inc	NLOK	571.37	24.53	14,015.68	0.05%	2.04%	0.00%	9.50%	0.00%
T Rowe Price Group Inc	TROW	225.69	123.47	27,866.19	0.10%	3.89%	0.00%	9.50%	0.01%
Waste Management Inc	WM	413.34	164.56	68,018.57	0.24%	1.58%	0.00%	6.50%	0.02%
Constellation Brands Inc	STZ	159.34	246.31	39,245.80	0.14%	1.30%	0.00%	5.00%	0.01%
DENTSPLY SIRONA Inc	XRAY	215.45	36.16	7,790.74	0.03%	1.38%	0.00%	12.00%	0.00%
Zions Bancorp NA	ZION	150.47	54.55	8,208.19	0.03%	3.01%	0.00%	6.50%	0.00%
Alaska Air Group Inc	ALK	126.76	44.33	5,619.27		n/a			
Invesco Ltd	IVZ	454.90	17.74	8,069.93	0.03%	4.23%	0.00%	14.00%	0.00%
Linde PLC	LIN	498.37	302.00	150,506.53	0.53%	1.55%	0.01%	12.00%	0.06%
Intuit Inc	INTU	282.08	456.17	128,675.07	0.45%	0.60%	0.00%	17.50%	0.08%
Morgan Stanley	MS	1,749.28	84.30	147,464.64	0.52%	3.68%	0.02%	10.50%	0.05%
Microchip Technology Inc	MCHP	552.48	68.86	38,044.05	0.13%	1.60%	0.00%	10.00%	0.01%
Chubb Ltd	CB	417.64	188.64	78,783.80	0.28%	1.76%	0.00%	11.00%	0.03%
Hologic Inc	HOLX	249.65	71.38	17,820.23		n/a		25.00%	
Citizens Financial Group Inc	CFG	495.45	37.97	18,812.08	0.07%	4.42%	0.00%	9.00%	0.01%
O'Reilly Automotive Inc	ORLY	63.75	703.59	44,855.97	0.16%	n/a		13.00%	0.02%
Allstate Corp/The	ALL	274.98	116.97	32,164.76	0.11%	2.91%	0.00%	4.50%	0.01%
Equity Residential	EQR	376.12	78.39	29,483.89		3.19%		-6.00%	
BorgWarner Inc	BWA	239.58	38.46	9,214.05	0.03%	1.77%	0.00%	9.50%	0.00%
Keurig Dr Pepper Inc	KDP	1,416.07	38.74	54,858.55	0.19%	1.94%	0.00%	11.50%	0.02%
Organon & Co	OGN	253.64	31.72	8,045.37		3.53%			
Host Hotels & Resorts Inc	HST	714.78	17.81	12,730.18		1.35%		57.00%	
Incyte Corp	INCY	221.51	77.68	17,206.51		n/a		25.50%	
Simon Property Group Inc	SPG	328.64	108.64	35,703.34	0.12%	6.26%	0.01%	3.00%	0.00%
Eastman Chemical Co	EMN	128.95	95.93	12,370.17	0.04%	3.17%	0.00%	9.50%	0.00%
Twitter Inc	TWTR	765.25	41.61	31,841.89		n/a			
AvalonBay Communities Inc	AVB	139.82	213.94	29,912.66	0.10%	2.97%	0.00%	6.50%	0.01%
Prudential Financial Inc	PRU	375.00	99.99	37,496.25	0.13%	4.80%	0.01%	5.50%	0.01%
United Parcel Service Inc	UPS	734.44	194.89	143,134.62	0.50%	3.12%	0.02%	11.50%	0.06%
Walgreens Boots Alliance Inc	WBA	864.26	39.62	34,241.86	0.12%	4.85%	0.01%	7.50%	0.01%
STERIS PLC	STE	100.08	225.65	22,583.05	0.08%	0.83%	0.00%	11.50%	0.01%
McKesson Corp	MCK	143.58	341.58	49,044.40	0.17%	0.63%	0.00%	10.00%	0.02%
Lockheed Martin Corp	LMT	265.15	413.81	109,722.55	0.38%	2.71%	0.01%	7.00%	0.03%
AmerisourceBergen Corp	ABC	209.46	145.93	30,567.08	0.11%	1.26%	0.00%	8.50%	0.01%
Capital One Financial Corp	COF	383.82	109.83	42,154.73		2.19%			
Waters Corp	WAT	60.24	364.03	21,927.35	0.08%	n/a		6.00%	0.00%
Nordson Corp	NDSN	57.51	230.99	13,284.70	0.05%	0.88%	0.00%	12.00%	0.01%
Dollar Tree Inc	DLTR	224.56	165.36	37,132.58	0.13%	n/a		12.00%	0.02%
Darden Restaurants Inc	DRI	123.95	124.49	15,430.04	0.05%	3.89%	0.00%	19.50%	0.01%
Match Group Inc	MTCH	285.59	73.31	20,936.82		n/a		21.00%	
Dominos Pizza Inc	DPZ	35.89	392.11	14,070.87	0.05%	1.12%	0.00%	15.50%	0.01%
NVR Inc	NVR	3.28	4,393.10	14,426.94	0.05%	n/a		5.50%	0.00%
NetApp Inc	NTAP	219.74	71.33	15,673.70	0.05%	2.80%	0.00%	8.00%	0.00%
Citrix Systems Inc	CTXS	126.89	101.41	12,867.41	0.04%	n/a		9.00%	0.00%
DXC Technology Co	DXC	229.66	31.60	7,257.10	0.03%	n/a		12.00%	0.00%
Old Dominion Freight Line Inc	ODFL	113.35	303.51	34,404.07	0.12%	0.40%	0.00%	12.00%	0.01%
DaVita Inc	DVA	94.60	84.16	7,961.54	0.03%	n/a		12.00%	0.00%
Hartford Financial Services Group Inc/The	HIG	323.14	64.47	20,832.96	0.07%	2.39%	0.00%	6.50%	0.00%
Iron Mountain Inc	IRM	290.56	48.49	14,089.35	0.05%	5.10%	0.00%	11.00%	0.01%
Estee Lauder Cos Inc/The	EL	231.81	273.10	63,305.95	0.22%	0.88%	0.00%	14.00%	0.03%
Cadence Design Systems Inc	CDNS	273.87	186.08	50,961.73	0.18%	n/a		12.00%	0.02%
Tyler Technologies Inc	TYL	41.58	399.00	16,590.82	0.06%	n/a		12.00%	0.01%
Universal Health Services Inc	UHS	67.13	112.47	7,549.89	0.03%	0.71%	0.00%	9.00%	0.00%
Skyworks Solutions Inc	SKKS	160.93	108.88	17,521.62	0.06%	2.06%	0.00%	15.50%	0.01%
Quest Diagnostics Inc	DGX	116.61	136.57	15,924.88	0.06%	1.93%	0.00%	7.00%	0.00%
Activision Blizzard Inc	ATVI	781.88	79.95	62,511.39	0.22%	0.59%	0.00%	14.00%	0.03%
Rockwell Automation Inc	ROK	115.44	255.28	29,468.25	0.10%	1.75%	0.00%	9.50%	0.01%
Kraft Heinz Co/The	KHC	1,225.44	36.83	45,132.96	0.16%	4.34%	0.01%	5.50%	0.01%
American Tower Corp	AMT	465.59	270.83	126,094.93	0.44%	2.11%	0.01%	9.00%	0.04%
Regeneron Pharmaceuticals Inc	REGN	108.03	581.69	62,838.81	0.22%	n/a		3.00%	0.01%
Amazon.com Inc	AMZN	10,187.56	134.95	1,374,810.55		n/a		26.50%	
Jack Henry & Associates Inc	JKHY	72.86	207.77	15,138.54	0.05%	0.94%	0.00%	9.00%	0.00%
Ralph Lauren Corp	RL	44.83	98.63	4,421.39	0.02%	3.04%	0.00%	12.50%	0.00%
Boston Properties Inc	BXP	156.73	91.16	14,287.14		4.30%		-1.00%	
Amphenol Corp	APH	594.83	77.13	45,879.08	0.16%	1.04%	0.00%	12.50%	0.02%
Howmet Aerospace Inc	HWMT	417.91	37.13	15,517.15	0.05%	0.22%	0.00%	12.00%	0.01%
Pioneer Natural Resources Co	PXD	241.96	236.95	57,332.19		12.46%		21.00%	
Valero Energy Corp	VLO	393.97	110.77	43,640.06	0.15%	3.54%	0.01%	11.00%	0.02%
Synopsys Inc	SNPS	152.97	367.50	56,216.48	0.20%	n/a		12.50%	0.02%
Etsy Inc	ETSY	126.61	103.72	13,131.89		n/a		24.50%	
CH Robinson Worldwide Inc	CHRW	123.88	110.70	13,713.85	0.05%	1.99%	0.00%	8.00%	0.00%

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Accenture PLC	ACN	664.19	306.26	203,414.22	0.71%	1.27%	0.01%	12.50%	0.09%
TransDigm Group Inc	TDG	54.61	622.34	33,983.50	0.12%	n/a		18.00%	0.02%
Yum! Brands Inc	YUM	285.16	122.54	34,944.00	0.12%	1.86%	0.00%	10.50%	0.01%
Prologis Inc	PLD	739.75	132.56	98,060.60	0.34%	2.38%	0.01%	6.00%	0.02%
FirstEnergy Corp	FE	571.40	41.10	23,484.33	0.08%	3.80%	0.00%	7.50%	0.01%
VeriSign Inc	VRSN	107.28	189.16	20,293.65	0.07%	n/a		11.00%	0.01%
Quanta Services Inc	PWR	143.71	138.73	19,936.75	0.07%	0.20%	0.00%	12.50%	0.01%
Henry Schein Inc	HSIC	138.05	78.83	10,882.56	0.04%	n/a		7.00%	0.00%
Ameren Corp	AEE	258.09	93.12	24,033.53	0.08%	2.53%	0.00%	6.50%	0.01%
ANSYS Inc	ANSS	86.99	278.99	24,269.34	0.08%	n/a		8.50%	0.01%
FactSet Research Systems Inc	FDS	37.98	429.68	16,319.25	0.06%	0.83%	0.00%	10.50%	0.01%
NVIDIA Corp	NVDA	2,500.00	181.63	454,075.00		0.09%		23.00%	
Sealed Air Corp	SEE	146.08	61.12	8,928.65	0.03%	1.31%	0.00%	10.00%	0.00%
Cognizant Technology Solutions Corp	CTSH	517.79	67.96	35,188.67	0.12%	1.59%	0.00%	7.50%	0.01%
SVB Financial Group	SIVB	59.08	403.55	23,842.14	0.08%	n/a		6.50%	0.01%
Intuitive Surgical Inc	ISRG	357.11	230.17	82,196.24	0.29%	n/a		12.50%	0.04%
Take-Two Interactive Software Inc	TTWO	166.49	132.73	22,098.08	0.08%	n/a		10.50%	0.01%
Republic Services Inc	RSG	315.89	138.66	43,801.45	0.15%	1.43%	0.00%	12.50%	0.02%
eBay Inc	EBAY	559.84	48.63	27,225.12	0.10%	1.81%	0.00%	15.50%	0.01%
Goldman Sachs Group Inc/The	GS	343.45	333.39	114,501.80	0.40%	3.00%	0.01%	5.00%	0.02%
SBA Communications Corp	SBAC	107.83	335.79	36,207.90		0.85%		35.50%	
Sempra Energy	SRE	314.31	165.80	52,111.77	0.18%	2.76%	0.01%	7.50%	0.01%
Moody's Corp	MCO	183.50	310.25	56,930.88	0.20%	0.90%	0.00%	8.00%	0.02%
ON Semiconductor Corp	ON	434.51	66.78	29,016.31		n/a		23.00%	
Booking Holdings Inc	BKNG	40.62	1,935.69	78,633.53		n/a		22.00%	
F5 Inc	FFIV	59.56	167.36	9,967.29	0.03%	n/a		10.00%	0.00%
Akamai Technologies Inc	AKAM	160.31	96.22	15,424.55	0.05%	n/a		5.50%	0.00%
Charles River Laboratories International Inc	CRL	50.81	250.54	12,728.68	0.04%	n/a		12.00%	0.01%
MarketAxess Holdings Inc	MKTX	37.64	270.78	10,192.16	0.04%	1.03%	0.00%	10.50%	0.00%
Devon Energy Corp	DVN	660.00	62.85	41,481.00		8.08%		30.00%	
Bio-Techne Corp	TECH	39.23	385.28	15,116.08	0.05%	0.33%	0.00%	17.50%	0.01%
Alphabet Inc	GOOGL	5,996.00	116.32	697,454.72		n/a			
Teleflex Inc	TFX	46.91	240.46	11,278.78	0.04%	0.57%	0.00%	13.50%	0.01%
Netflix Inc	NFLX	444.71	224.90	100,014.38	0.35%	n/a		10.50%	0.04%
Allegion plc	ALLE	87.84	105.70	9,284.48	0.03%	1.55%	0.00%	14.50%	0.00%
Agilent Technologies Inc	A	298.71	134.10	40,056.74		0.63%			
Warner Bros Discovery Inc	WBD	2,426.84	15.00	36,402.66	0.13%	n/a		11.50%	0.01%
Elevance Health Inc	ELV	240.00	477.10	114,504.48	0.40%	1.07%	0.00%	10.00%	0.04%
Trimble Inc	TRMB	250.14	69.43	17,367.36	0.06%	n/a		12.50%	0.01%
CME Group Inc	CME	359.42	199.48	71,696.70	0.25%	2.01%	0.01%	8.50%	0.02%
Juniper Networks Inc	JNPR	322.61	28.03	9,042.73	0.03%	3.00%	0.00%	9.00%	0.00%
BlackRock Inc	BLK	151.50	669.18	101,382.78	0.35%	2.92%	0.01%	10.00%	0.04%
DTE Energy Co	DTE	193.74	130.30	25,244.58	0.09%	2.72%	0.00%	4.50%	0.00%
Nasdaq Inc	NDAQ	164.68	180.90	29,790.25	0.10%	0.44%	0.00%	7.50%	0.01%
Celanese Corp	CE	108.35	117.51	12,732.09	0.04%	2.31%	0.00%	6.00%	0.00%
Philip Morris International Inc	PM	1,550.16	97.15	150,598.34	0.53%	5.15%	0.03%	7.00%	0.04%
Salesforce Inc	CRM	995.00	184.02	183,099.90		n/a			
Ingersoll Rand Inc	IR	405.93	49.80	20,215.31	0.07%	0.16%	0.00%	16.50%	0.01%
Huntington Ingalls Industries Inc	HII	40.05	216.84	8,683.79	0.03%	2.18%	0.00%	10.00%	0.00%
MetLife Inc	MET	813.21	63.25	51,435.28	0.18%	3.16%	0.01%	7.50%	0.01%
Tapestry Inc	TPR	251.80	33.63	8,468.10	0.03%	2.97%	0.00%	10.00%	0.00%
CSX Corp	CSX	2,141.24	32.33	69,226.32	0.24%	1.24%	0.00%	10.00%	0.02%
Edwards Lifesciences Corp	EW	619.94	100.54	62,329.07	0.22%	n/a		12.50%	0.03%
Ameriprise Financial Inc	AMP	109.90	269.92	29,665.29	0.10%	1.85%	0.00%	12.50%	0.01%
Zebra Technologies Corp	ZBRA	52.51	357.69	18,783.73	0.07%	n/a		11.50%	0.01%
Zimmer Biomet Holdings Inc	ZBH	209.58	110.39	23,135.21	0.08%	0.87%	0.00%	7.00%	0.01%
CBRE Group Inc	CBRE	326.86	85.62	27,985.84	0.10%	n/a		2.50%	0.00%
Camden Property Trust	CPT	106.53	141.10	15,031.10	0.05%	2.66%	0.00%	8.50%	0.00%
Mastercard Inc	MA	958.68	353.79	339,169.98	1.19%	0.55%	0.01%	18.50%	0.22%
CarMax Inc	KMX	159.17	99.54	15,843.38	0.06%	n/a		13.00%	0.01%
Intercontinental Exchange Inc	ICE	558.27	101.99	56,937.55	0.20%	1.49%	0.00%	6.50%	0.01%
Fidelity National Information Services Inc	FIS	607.95	102.16	62,107.76		1.84%		52.00%	
Chipotle Mexican Grill Inc	CMG	27.77	1,564.22	43,430.57	0.15%	n/a		16.50%	0.03%
Wynn Resorts Ltd	WYNN	115.97	63.48	7,361.46		n/a		27.00%	
Live Nation Entertainment Inc	LYV	228.06	93.99	21,435.74		n/a			
Assurant Inc	AIZ	54.09	175.78	9,507.06	0.03%	1.55%	0.00%	15.50%	0.01%
NRG Energy Inc	NRG	237.28	37.75	8,957.47		3.71%		-10.50%	
Regions Financial Corp	RF	934.50	21.18	19,792.71	0.07%	3.78%	0.00%	11.50%	0.01%
Monster Beverage Corp	MNST	529.67	99.62	52,765.83	0.18%	n/a		11.50%	0.02%
Mosaic Co/The	MOS	361.99	52.66	19,062.55		1.14%			
Baker Hughes Co	BKR	1,011.75	25.69	25,991.96		2.80%		33.00%	
Expedia Group Inc	EXPE	151.57	106.05	16,074.42		n/a			
Evergy Inc	EVRG	229.48	68.26	15,664.17	0.05%	3.35%	0.00%	7.50%	0.00%
CF Industries Holdings Inc	CF	208.60	95.49	19,919.40		1.68%		26.50%	
Leidos Holdings Inc	LDOS	136.66	107.00	14,622.83		1.35%			
APA Corp	APA	338.23	37.17	12,572.08	0.04%	1.35%	0.00%	9.00%	0.00%
Alphabet Inc	GOOG	6,163.00	116.64	718,852.32	2.51%	n/a		18.50%	0.46%
TE Connectivity Ltd	TEL	319.84	133.73	42,772.07	0.15%	1.68%	0.00%	16.00%	0.02%
Cooper Cos Inc/The	COO	49.34	327.00	16,132.87	0.06%	0.02%	0.00%	10.50%	0.01%
Discover Financial Services	DFS	273.17	101.00	27,590.27	0.10%	2.38%	0.00%	16.00%	0.02%
Visa Inc	V	1,635.02	212.11	346,803.03	1.21%	0.71%	0.01%	13.50%	0.16%
Mid-America Apartment Communities Inc	MAA	115.44	185.73	21,440.49	0.07%	2.69%	0.00%	4.50%	0.00%
Xylem Inc/NY	XYL	180.09	92.03	16,573.96	0.06%	1.30%	0.00%	6.50%	0.00%
Marathon Petroleum Corp	MPC	541.00	91.66	49,587.60		2.53%			
Tractor Supply Co	TSCO	111.88	191.48	21,423.17		1.92%		25.50%	
Advanced Micro Devices Inc	AMD	1,620.51	94.47	153,089.39	0.54%	n/a		12.50%	0.07%
ResMed Inc	RMD	146.29	240.52	35,184.47	0.12%	0.70%	0.00%	8.50%	0.01%
Mettler-Toledo International Inc	MTD	22.51	1,349.73	30,378.37	0.11%	n/a		13.50%	0.01%
VICI Properties Inc	VICI	963.09	34.19	32,928.15	0.12%	4.21%	0.00%	12.00%	0.01%
Copart Inc	CPRT	237.67	128.10	30,445.91	0.11%	n/a		8.50%	0.01%
Albemarle Corp	ALB	117.11	244.31	28,611.88		0.65%		21.50%	

STANDARD AND POOR'S 500 INDEX

Name	Ticker	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Shares Outst'g	Price	Market Capitalization	Weight in Index	Estimated Dividend Yield	Cap-Weighted Dividend Yield	Value Line Long-Term Growth Est.	Cap-Weighted Long-Term Growth Est.
Fortinet Inc	FTNT	802.64	59.65	47,877.24	0.17%	n/a		15.00%	0.03%
Moderna Inc	MRNA	397.76	164.09	65,268.44		n/a		-2.50%	
Essex Property Trust Inc	ESS	65.12	286.53	18,659.98		3.07%		-4.00%	
Realty Income Corp	O	601.60	73.99	44,512.24	0.16%	4.01%	0.01%	6.00%	0.01%
Westrock Co	WRK	254.85	42.36	10,795.53	0.04%	2.36%	0.00%	20.00%	0.01%
Westinghouse Air Brake Technologies Corp	WAB	182.65	93.47	17,072.11	0.06%	0.64%	0.00%	9.00%	0.01%
Pool Corp	POOL	39.59	357.70	14,161.70	0.05%	1.12%	0.00%	14.00%	0.01%
Western Digital Corp	WDC	313.17	49.10	15,376.55	0.05%	n/a		20.00%	0.01%
PepsiCo Inc	PEP	1,380.09	174.96	241,459.67	0.84%	2.63%	0.02%	6.00%	0.05%
Diamondback Energy Inc	FANG	173.63	128.02	22,227.60		9.53%			
ServiceNow Inc	NOW	202.00	446.66	90,225.32		n/a		45.50%	
Church & Dwight Co Inc	CHD	242.91	87.97	21,368.70	0.07%	1.19%	0.00%	6.00%	0.00%
Duke Realty Corp	DRE	384.82	62.56	24,074.34		1.79%		-2.50%	
Federal Realty OP LP	FRT	79.42	105.61	8,387.55	0.03%	4.05%	0.00%	2.50%	0.00%
MGM Resorts International	MGM	426.05	32.73	13,944.68		0.03%		25.00%	
American Electric Power Co Inc	AEP	513.73	98.56	50,633.62	0.18%	3.17%	0.01%	6.50%	0.01%
SolarEdge Technologies Inc	SEDG	55.39	360.13	19,946.52		n/a		22.00%	
PTC Inc	PTC	116.98	123.38	14,432.50		n/a		29.00%	
JB Hunt Transport Services Inc	JBHT	103.81	183.27	19,025.81	0.07%	0.87%	0.00%	11.50%	0.01%
Lam Research Corp	LRCX	136.98	500.51	68,557.36		1.20%		21.50%	
Mohawk Industries Inc	MHK	63.53	128.48	8,162.85	0.03%	n/a		10.50%	0.00%
Pentair PLC	PNR	164.46	48.89	8,040.45	0.03%	1.72%	0.00%	13.00%	0.00%
Vertex Pharmaceuticals Inc	VRTX	255.76	280.41	71,716.54	0.25%	n/a		18.50%	0.05%
Amcor PLC	AMCR	1,502.77	12.95	19,460.83	0.07%	3.71%	0.00%	15.00%	0.01%
Meta Platforms Inc	META	2,280.67	159.10	362,854.92	1.27%	n/a		16.00%	0.20%
T-Mobile US Inc	TMUS	1,254.04	143.06	179,403.11	0.63%	n/a		9.50%	0.06%
United Rentals Inc	URI	69.99	322.67	22,582.06	0.08%	n/a		18.00%	0.01%
ABIOMED Inc	ABMD	45.63	293.01	13,368.87	0.05%	n/a		10.00%	0.00%
Honeywell International Inc	HON	673.69	192.46	129,658.76	0.45%	2.04%	0.01%	11.00%	0.05%
Alexandria Real Estate Equities Inc	ARE	163.17	165.78	27,049.99	0.09%	2.85%	0.00%	7.50%	0.01%
Delta Air Lines Inc	DAL	641.20	31.80	20,390.10		n/a			
Seagate Technology Holdings PLC	STX	214.84	79.98	17,183.22		3.50%			
United Airlines Holdings Inc	UAL	326.73	36.75	12,007.29	0.04%	n/a		15.00%	0.01%
News Corp	NWS	197.27	17.28	3,408.88		1.16%			
Centene Corp	CNC	580.07	92.97	53,929.20	0.19%	n/a		10.00%	0.02%
Martin Marietta Materials Inc	MLM	62.37	352.08	21,960.64	0.08%	0.69%	0.00%	5.50%	0.00%
Teradyne Inc	TER	160.20	100.89	16,162.88	0.06%	0.44%	0.00%	8.50%	0.00%
PayPal Holdings Inc	PYPL	1,158.04	86.53	100,205.20	0.35%	n/a		12.00%	0.04%
Tesla Inc	TSLA	1,044.49	891.45	931,110.61		n/a		50.50%	
DISH Network Corp	DISH	291.56	17.37	5,064.40	0.02%	n/a		2.50%	0.00%
Dow Inc	DOW	718.17	53.21	38,213.67	0.13%	5.26%	0.01%	19.50%	0.03%
Penn National Gaming Inc	PENN	166.80	34.55	5,763.04	0.02%	n/a		15.00%	0.00%
Everest Re Group Ltd	RE	39.20	261.35	10,244.92	0.04%	2.53%	0.00%	17.50%	0.01%
Teledyne Technologies Inc	TDY	46.84	391.40	18,334.35	0.06%	n/a		11.50%	0.01%
News Corp	NWSA	388.47	17.14	6,658.36		1.17%			
Exelon Corp	EXC	980.14	46.49	45,566.57		2.90%			
Global Payments Inc	GPN	281.54	122.32	34,437.97	0.12%	0.82%	0.00%	17.00%	0.02%
Crown Castle International Corp	CCI	433.00	180.66	78,225.78	0.27%	3.25%	0.01%	12.00%	0.03%
Aptiv PLC	APTIV	270.93	104.89	28,417.95		n/a		27.50%	
Advance Auto Parts Inc	AAP	60.64	193.62	11,741.12	0.04%	3.10%	0.00%	16.00%	0.01%
Align Technology Inc	ALGN	78.81	280.97	22,142.12	0.08%	n/a		17.00%	0.01%
Illumina Inc	ILMN	157.10	216.68	34,040.43	0.12%	n/a		6.50%	0.01%
LKQ Corp	LKQ	276.60	54.84	15,168.74	0.05%	1.82%	0.00%	13.00%	0.01%
Nielsen Holdings PLC	NLSN	359.83	23.95	8,618.02		1.00%			
Zoetis Inc	ZTS	470.63	182.55	85,913.32	0.30%	0.71%	0.00%	11.00%	0.03%
Equinix Inc	EQIX	91.08	703.74	64,093.12		1.76%		-3.50%	
Digital Realty Trust Inc	DLR	284.73	132.45	37,713.02	0.13%	3.68%	0.00%	15.00%	0.02%
Las Vegas Sands Corp	LVS	764.16	37.69	28,801.04	0.10%	n/a		11.00%	0.01%
Molina Healthcare Inc	MOH	58.10	327.72	19,040.53	0.07%	n/a		13.50%	0.01%

Notes:

[1] Equals sum of Col. [9]

[2] Equals sum of Col. [11]

[3] Equals $([1] \times (1 + (0.5 \times [2]))) + [2]$

[4] Source: Bloomberg Professional as of June 15, 2022

[5] Source: Bloomberg Professional as of June 15, 2022

[6] Equals [4] x [5]

[7] Equals weight in S&P 500 based on market capitalization [6] if Growth Rate >0% and ≤20%

[8] Source: Bloomberg Professional, as of June 15, 2022

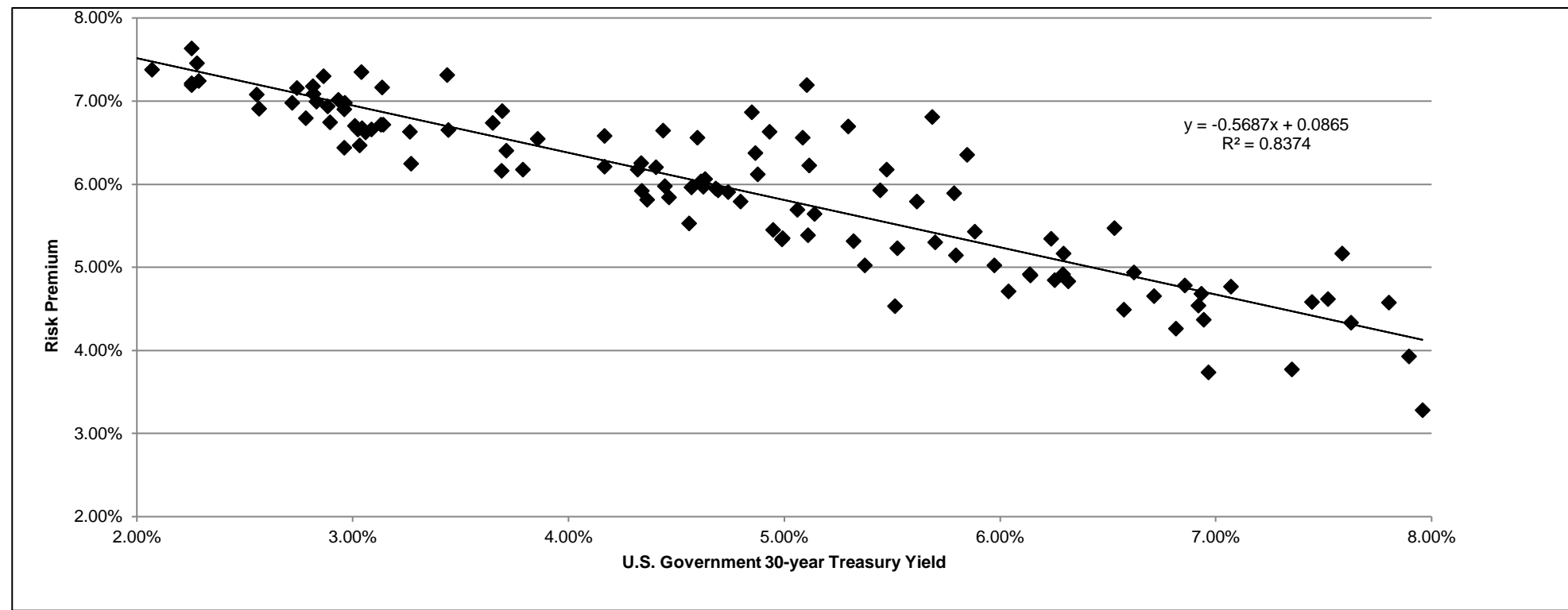
[9] Equals [7] x [8]

[10] Source: Value Line, as of June 15, 2022

[11] Equals [7] x [10]

Risk Premium -- Vertically Integrated Electric Utilities (US)

	[1]	[2]	[3]
	Average Authorized VI Electric ROE	U.S. Govt. 30-year Treasury	Risk Premium
1992.1	12.38%	7.80%	4.58%
1992.2	11.83%	7.89%	3.93%
1992.3	12.03%	7.45%	4.59%
1992.4	12.14%	7.52%	4.62%
1993.1	11.84%	7.07%	4.77%
1993.2	11.64%	6.86%	4.79%
1993.3	11.15%	6.31%	4.84%
1993.4	11.04%	6.14%	4.90%
1994.1	11.07%	6.57%	4.49%
1994.2	11.13%	7.35%	3.78%
1994.3	12.75%	7.58%	5.17%
1994.4	11.24%	7.96%	3.28%
1995.1	11.96%	7.63%	4.34%
1995.2	11.32%	6.94%	4.37%
1995.3	11.37%	6.71%	4.66%
1995.4	11.58%	6.23%	5.35%
1996.1	11.46%	6.29%	5.17%
1996.2	11.46%	6.92%	4.54%
1996.3	10.70%	6.96%	3.74%
1996.4	11.56%	6.62%	4.94%
1997.1	11.08%	6.81%	4.27%
1997.2	11.62%	6.93%	4.68%
1997.3	12.00%	6.53%	5.47%
1997.4	11.06%	6.14%	4.92%
1998.1	11.31%	5.88%	5.43%
1998.2	12.20%	5.85%	6.35%
1998.3	11.65%	5.47%	6.18%
1998.4	12.30%	5.10%	7.20%
1999.1	10.40%	5.37%	5.03%
1999.2	10.94%	5.79%	5.15%
1999.3	10.75%	6.04%	4.71%
1999.4	11.10%	6.25%	4.85%
2000.1	11.21%	6.29%	4.92%
2000.2	11.00%	5.97%	5.03%
2000.3	11.68%	5.79%	5.89%
2000.4	12.50%	5.69%	6.81%
2001.1	11.38%	5.44%	5.93%
2001.2	11.00%	5.70%	5.30%
2001.3	10.76%	5.52%	5.23%
2001.4	11.99%	5.30%	6.70%
2002.1	10.05%	5.51%	4.54%
2002.2	11.41%	5.61%	5.79%
2002.3	11.65%	5.08%	6.57%
2002.4	11.57%	4.93%	6.64%
2003.1	11.72%	4.85%	6.87%
2003.2	11.16%	4.60%	6.56%
2003.3	10.50%	5.11%	5.39%
2003.4	11.34%	5.11%	6.23%
2004.1	11.00%	4.88%	6.12%
2004.2	10.64%	5.32%	5.32%
2004.3	10.75%	5.06%	5.69%
2004.4	11.24%	4.86%	6.38%
2005.1	10.63%	4.69%	5.93%
2005.2	10.31%	4.47%	5.85%
2005.3	11.08%	4.44%	6.65%
2005.4	10.63%	4.68%	5.95%
2006.1	10.70%	4.63%	6.06%
2006.2	10.79%	5.14%	5.65%
2006.3	10.35%	4.99%	5.35%
2006.4	10.65%	4.74%	5.91%
2007.1	10.59%	4.80%	5.80%
2007.2	10.33%	4.99%	5.34%
2007.3	10.40%	4.95%	5.45%
2007.4	10.65%	4.61%	6.04%
2008.1	10.62%	4.41%	6.21%
2008.2	10.54%	4.57%	5.97%
2008.3	10.43%	4.44%	5.98%
2008.4	10.39%	3.65%	6.74%
2009.1	10.75%	3.44%	7.31%
2009.2	10.75%	4.17%	6.58%
2009.3	10.50%	4.32%	6.18%



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.915080777
R Square	0.8374
Adjusted R Square	0.836017602
Standard Error	0.0041915
Observations	122

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.0108554	0.0108554	617.8840756	3.72291E-49
Residual	120	0.00210824	1.75687E-05		
Total	121	0.012963641			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.086532673	0.001111877	77.82578507	1.4807E-104	0.084331234	0.08873411	0.084331234	0.08873411
X Variable 1	-0.568661677	0.022877073	-24.8572741	3.72291E-49	-0.61395669	-0.5233667	-0.61395669	-0.523366664

	[7]	[8]	[9]
	U.S. Govt. 30-year Treasury	Risk Premium	ROE
Current 30-day average of 30-year U.S. Treasury bond yield [4]	3.16%	6.86%	10.02%
Blue Chip Near-Term Projected Forecast (Q4 2022 - Q4 2023) [5]	3.48%	6.67%	10.15%
Blue Chip Long-Term Projected Forecast (2024-2028) [6]	3.80%	6.49%	10.29%
AVERAGE			10.15%

Notes:

- [1] Source: Regulatory Research Associates, rate cases through July 31, 2022
- [2] Source: Bloomberg Professional, quarterly bond yields are the average of each trading day in the quarter
- [3] Equals Column [1] - Column [2]
- [4] Source: Bloomberg Professional, 30-day average as of July 31, 2022
- [5] Source: Blue Chip Financial Forecasts, Vol. 41, No. 8, August 1, 2022 at 2
- [6] Source: Blue Chip Financial Forecasts, Vol. 41, No. 6, June 1, 2022 at 14
- [7] See notes [4], [5] & [6]
- [8] Equals $0.086533 + (-0.568662 \times \text{Column [7]})$
- [9] Equals Column [7] + Column [8]

Risk Premium -- Vertically Integrated Electric Utilities (US)

	[1]	[2]	[3]
	Average Authorized VI Electric ROE	U.S. Govt. 30-year Treasury	Risk Premium
2009.4	10.59%	4.34%	6.26%
2010.1	10.59%	4.62%	5.97%
2010.2	10.18%	4.36%	5.82%
2010.3	10.40%	3.86%	6.55%
2010.4	10.38%	4.17%	6.21%
2011.1	10.09%	4.56%	5.53%
2011.2	10.26%	4.34%	5.92%
2011.3	10.57%	3.69%	6.88%
2011.4	10.39%	3.04%	7.35%
2012.1	10.30%	3.14%	7.17%
2012.2	9.95%	2.93%	7.02%
2012.3	9.90%	2.74%	7.16%
2012.4	10.16%	2.86%	7.30%
2013.1	9.85%	3.13%	6.72%
2013.2	9.86%	3.14%	6.72%
2013.3	10.12%	3.71%	6.41%
2013.4	9.97%	3.79%	6.18%
2014.1	9.86%	3.69%	6.17%
2014.2	10.10%	3.44%	6.66%
2014.3	9.90%	3.26%	6.64%
2014.4	9.94%	2.96%	6.98%
2015.1	9.64%	2.55%	7.08%
2015.2	9.83%	2.88%	6.94%
2015.3	9.40%	2.96%	6.44%
2015.4	9.86%	2.96%	6.90%
2016.1	9.70%	2.72%	6.98%
2016.2	9.48%	2.57%	6.91%
2016.3	9.74%	2.28%	7.46%
2016.4	9.83%	2.83%	7.00%
2017.1	9.72%	3.04%	6.67%
2017.2	9.64%	2.90%	6.75%
2017.3	10.00%	2.82%	7.18%
2017.4	9.91%	2.82%	7.09%
2018.1	9.69%	3.02%	6.66%
2018.2	9.75%	3.09%	6.66%
2018.3	9.69%	3.06%	6.63%
2018.4	9.52%	3.27%	6.25%
2019.1	9.72%	3.01%	6.71%
2019.2	9.58%	2.78%	6.79%
2019.3	9.53%	2.29%	7.24%
2019.4	9.89%	2.25%	7.63%
2020.1	9.72%	1.89%	7.83%
2020.2	9.58%	1.38%	8.20%
2020.3	9.30%	1.37%	7.93%
2020.4	9.56%	1.62%	7.94%
2021.1	9.45%	2.07%	7.38%
2021.2	9.47%	2.25%	7.21%
2021.3	9.27%	1.93%	7.34%
2021.4	9.67%	1.94%	7.73%
2022.1	9.45%	2.25%	7.20%
2022.2	9.50%	3.03%	6.47%
AVERAGE	10.62%	4.57%	6.06%
MEDIAN	10.59%	4.62%	6.18%

