STATE OF CONNECTICUT
PUBLIC UTILITIES REGULATORY AUTHORITY

Docket No. 26-05-10

APPLICATION OF THE CONNECTICUT LIGHT AND POWER COMPANY
D/B/A EVERSOURCE ENERGY
TO AMEND ITS RATE SCHEDULES

REBUTTAL TESTIMONY OF

ANN E. BULKLEY

Return on Equity and Capital Structure

On behalf of

The Connecticut Light and Power Company
d/b/a Eversource Energy

November 18, 2026

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REBUTTAL TESTIMONY OF

ANN E. BULKLEY

I. Introduction

Q. Are you the same Ann E. Bulkley who previously submitted direct testimony in this proceeding on behalf of CL&P?

A. Yes. I am submitting rebuttal testimony before the Public Utilities Regulatory Authority ("PURA") on behalf of The Connecticut Light & Power Company d/b/a Eversource Energy ("CL&P," "Eversource," or the "Company").

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to the direct testimonies of Aaron L. Rothschild on behalf of the PURA Office of Education, Outreach, and Enforcement ("EOE"),[1] David J. Garrett on behalf of the Connecticut Office of Consumer Counsel ("OCC"),[2] Christopher Little on behalf of Allco Finance Limited ("Allco"),[3] and Michael Marchand on behalf of Walmart Inc. ("Walmart")[4] (collectively the "Intervenor Witnesses") regarding the just and reasonable return on equity ("ROE") and the appropriate capital

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[1] Direct Testimony of Aaron L. Rothschild, Docket No. 26-05-10, October 21, 2026 ("Rothschild Direct").

[2] Direct Testimony of David J. Garrett, Docket No. 26-05-10, October 21, 2026 ("Garrett Direct").

[3] Direct Testimony of Christopher Little, Docket No. 26-05-10, October 21, 2026 ("Little Direct"). Note, the Little Direct has no pagination, so PDF page numbers are used herein to reference to citations.

[4] Direct Testimony of Michael Marchand, Docket No. 26-05-10, October 21, 2026 ("Marchand Direct").

structure for CL&P. I have not attempted to respond to every position offered by these witnesses, and the fact that I may not have responded to any particular position or statement made by these witnesses does not indicate my agreement with that position or statement.

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

A. Yes. I am sponsoring Exhibit CLP-ROE-REBUTTAL-2 through CLP-ROE-REBUTTAL-18, which have been prepared by me or under my direct supervision.

Q. Have you prepared cost of equity analyses to support your rebuttal testimony that reflect current market conditions?

A. Yes. As discussed in detail herein, I have prepared updated cost of equity analyses based on market data through September 30, 2026, to rebut the cost of equity analyses submitted by Mr. Rothschild, on behalf of PURA's Office of Education, Outreach and Enforcement ("EOE"), and Mr. Garrett on behalf of the Office of Consumer Counsel ("OCC").[5] These updated analyses validate the reasonableness of CL&P's requested ROE of 10.25 percent. My conclusion remains based not only on the results of multiple cost of equity models, but also on other factors, including capital market conditions, the capital attraction and comparable return standards and Company-specific risks.

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

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

- Section II provides a summary and overview of my rebuttal testimony and the important factors to be considered in establishing the authorized ROE for CL&P.

[5] Mr. Marchand and Mr. Little do not present their own cost of equity analyses yet, as described later herein, offer recommendations regarding the ROE that should be authorized in this proceeding.

- Section III provides cost of equity analyses based on market data as of September 30, 2026.
- Section IV discusses the changes in capital market conditions since my direct testimony and their effect on the cost of equity and authorized ROEs for comparable utilities nationwide relative to the Intervenor Witnesses' ROE recommendations in this proceeding.
- Section V provides my response to issues raised regarding the cost of equity and authorized ROEs.
- Section VI provides my response to EOE witness Mr. Rothschild's cost of equity analyses and recommendations.
- Section VII provides my response to OCC witness Mr. Garrett's cost of equity analyses and recommendations.
- Section VIII provides my response to Allco witness Mr. Little's ROE recommendations.
- Section IX provides my response to Walmart witness Mr. Marchand's ROE recommendations.
- Section X provides my response regarding the reasonableness of the CL&P's proposed capital structure.

II. Summary of Analysis and Conclusions

Q. What factors should be considered in evaluating the results of the cost of equity analyses and establishing the authorized ROE?

A. The primary factors that should be considered are: (1) the importance of providing a return that is comparable to returns on alternative investments with commensurate risk; (2) the need for a return that supports a utility's ability to attract needed capital at reasonable terms; (3) the effect of current and expected capital market conditions; and (4) achieving a reasonable balance between the interests of investors and customers.

Q. What do the other witnesses in this proceeding recommend for authorized ROEs for the Company?

A. Figure 1 summarizes the results of the cost of equity analyses and ROE recommendations of Mr. Rothschild and Mr. Garrett. Neither Mr. Little nor Mr. Marchand conduct cost of equity analyses; however, Mr. Little states that the Company's ROE should be set at no more than the currently authorized level of 9.25 percent,[6] and Mr. Marchand states that PURA only should grant an ROE higher than 9.50 percent if the Company can sufficiently and substantially demonstrate that a higher ROE is required.[7] Mr. Marchand does not provide any criteria that can be used to determine the sufficiency of the Company's demonstration.

Figure 1: Summary of Cost of Equity Models Results and ROE Recommendations

	Mr. Rothschild (EOE)	**Mr. Garrett (OCC)**
Constant Growth DCF		
Sustainable Growth Rates	8.47% - 8.67%	6.4% - 10.0%
Option-Implied Growth Rates	7.00% - 7.35%	n/a
Analysts' Growth Rates	n/a	5.3% - 12.3%
Non-Constant Growth DCF	8.21% - 8.56%	n/a
CAPM	5.22% - 7.11%	7.6% - 8.5%
Recommended Range	**7.43% - 8.53%**	**n/a**
Overall Recommendation	**8.31%**	**8.70%**

[6] Little Direct at 6.

[7] Marchand Direct at 16.

Q. What are your key conclusions and recommendations regarding the appropriate ROE and capital structure?

Nothing in the direct testimonies of the Intervenor Witnesses has caused me to change my conclusions or recommendations. My key conclusions and recommendations in this proceeding are as follows:

Cost of Equity / Authorized ROE

- The results of my updated cost of equity analyses based on data through September 30, 2026, continue to support the reasonableness of the Company's proposed ROE of 10.25 percent.
- Long-term interest rates have increased by over 200 basis points since the Company's last rate proceeding and are expected to remain elevated, which indicates that the cost of equity has increased since CL&P's last rate proceeding. However, the ROE recommendations of Mr. Rothschild, Mr. Garrett, and Mr. Little, are either consistent with or below the currently authorized ROE of 9.25 percent, which is directionally inconsistent with current and expected market conditions.
- Mr. Rothschild, Mr. Garrett and Mr. Little have provided no evidence demonstrating that regulatory commissions have incorrectly authorized ROEs substantially higher than the cost of equity for decades.
- All of the cost of equity estimates developed by Mr. Rothschild and Mr. Garrett are at or below any authorized ROE for an electric distribution utility in a regulatory jurisdiction comparable to Connecticut since at least 1980. Specifically, the following cost of equity estimates are at or below any authorized ROE for an electric distribution utility since at least 1980:
    - All of Mr. Rothchild's models, which include constant growth DCF, non-constant growth DCF, and all his versions of his CAPM analysis.
    - All of Mr. Garrett's models, including his CAPM and DCF models.

- Considering current market conditions, these results are inconsistent with the comparable return standard established in *Hope* and *Bluefield*.

- When the cost of equity analyses of Mr. Rothschild and Mr. Garrett are revised to account for the issues that I have identified and discuss herein, the results of those models support the Company's proposed ROE of 10.25 percent.

- Mr. Little provides no cost of equity analysis to support his recommendation that CL&P's ROE remain at or below 9.25 percent.

  - The yields on CL&P's preferred stock and first mortgage bonds do not establish the cost of equity. Further, my updated CAPM analysis implies a risk premium for utilities of 4.79 percent to 5.63 percent over CL&P's bond yields, substantially overlapping the range 3.76 percent to 5.69 percent that Mr. Little states is implied by the proposed 10.25 percent ROE.

  - Mr. Little's reliance on Eversource Energy's dividend yield does not establish CL&P's cost of equity as it only considered one component, the dividend yield, and does not also consider growth which is required to estimate the cost of equity. Furthermore, consideration of Eversource Energy's cost of equity violates the stand-alone principle of ratemaking, which requires that regulated rates be based on the risks and benefits of the regulated utility, not its investors, parent or affiliates.

- Mr. Marchand has not independently evaluated the comparative risk of the Company relative to the proxy group, and thus absent this comparison, has no basis to conclude that the Company's authorized ROE in this proceeding should be reduced due to its proposed Performance Based Ratemaking ("PBR") mechanism.

Capital Structure

- The Company's proposed capital structure consisting of 53.86 percent common equity and 45.24 percent long-term debt is reasonable:

- The Company's proposed equity ratio is well within the range of equity ratios of the utility operating subsidiaries of the proxy group (*i.e.*, utilities with risk profiles that are similar to CL&P's risk profile).

- Comparatively, Mr. Rothschild's and Mr. Garrett's recommended equity ratios of 41.61 percent and 41.90 percent, respectively, are not appropriate recommendations as they rely on the *book value* capital structures of the proxy group holding companies.

- It is not appropriate to rely on holding company capital structures as a comparator to operating company capital structures, or to impute the holding company capital structure into the operating companies capital structure for reasons presented in my direct testimony. However, when evaluating capital structures of holding companies in the context of the cost of equity, which relieson market data for the proxy group companies, it is more appropriate to calculate the capitalization on a consistent basis; using the market value of the debt and equity of the proxy group companies, not the book value capital structures relied on by Mr. Rothschild and Mr. Garrett.[8]

- As shown in CLP-ROE-R-17, the average *market value* common equity ratio for the holding company proxy group as of December 31, 2025, is 54.93 percent. Given that Mr. Rothschild and Mr. Garrett estimate the cost of equity using the DCF and CAPM analyses based on the *market value* of the proxy group companies' equity, the costs of equity that they estimate for the proxy group reflect the financial risk of a *market value* common equity ratio of 54.93 percent, which is significantly higher than the Company's requested equity ratio of 53.86 percent. Mr. Rothschild's and Garrett's consideration of the capital structure of CL&P's parent company, Eversource Energy, essentially suggests that Eversource Energy has engaged in double leverage (using debt to finance equity in CL&P).

    - The double leverage argument suggests that the required return should be based on the source of funds, not the risk of the investment. The fundamental flaw in this theory is that it suggests that the required return for bearing the risk of

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

holding equity in a company differs based on the investor's source of funds, which is illogical. For example, an investor who borrows funds to invest in a stock such as Apple Inc. would expect to achieve an equivalent return over the same investment period afforded to all investors of Apple, Inc. However, Mr. Rothschild and Garrett incorrectly suggest that the investor using debt to finance its Apple stock should only be afforded a return equivalent to the interest rate on the debt that the investor borrowed.

- Mr. Rothschild's and Mr. Garrett's consideration of Eversource Energy's capital structure ignores financial theory which states that each project should be evaluated at its own opportunity cost of capital; based on the risk of the project.[9] This suggests the use of the operating company capital structure.
- Further, Mr. Rothschilds and Mr. Garrett ignore academic research that demonstrates that it is inappropriate to consider double leverage in establishing the capitalization of the operating company.[10]

III. Updated Cost of Equity Analyses

Q. Have you prepared cost of equity analyses to support your rebuttal testimony.

A. Yes. I have updated the results of the cost of equity analyses conducted in my direct testimony based on market data through September 30, 2026. The updated cost of equity analyses summarized in my rebuttal testimony are based on the same methodologies used in

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[9] Richard A. Brealey, Stewart C. Myers, Franklin Allen, Principles of Corporate Finance, McGraw-Hill Irwin, 8th Ed., 2006, at 234.

[10] Richard H. Pettway and Bradford D. Jordan, "Diversification, Double Leverage, and the Cost of Capital," *The Journal of Financial Research*, Vol VI, No. 4 Winter 1983. Eugene M. Lerner, "What are the Real Double Leverage Problems," Public Utilities Reports, Inc., June 7, 1973.

my direct testimony. It is important to note that long-term interest rates are currently higher than they have been at any point since July 2003[11] and are expected to remain elevated.[12]

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

A. Figure 2 summarizes the results of my updated analyses as of September 30, 2026, which are also presented in Exhibit CLP-ROE-REBUTTAL-2 through Exhibit CLP-ROE-REBUTTAL-7. As shown, the updated cost-of-equity analyses continue to support CL&P's requested ROE of 10.25 percent. Specifically, my DCF, CAPM, ECAPM, and Risk Premium analyses have all increased since the filing of my direct testimony.

[11] Federal Reserve Bank of St. Louis. The 30-year Treasury yield as of October 30, 2026, was 5.31 percent.

[12] Exhibit CLP-ROE-REBUTTAL-4.

Figure 2: Updated Cost of Equity Model Results

	Minimum Growth Rate	Average Growth Rate	Maximum Growth Rate
Constant Growth DCF			
Mean Results			
30-Day Avg. Stock Price	9.60%	10.87%	12.10%
90-Day Avg. Stock Price	9.43%	10.70%	11.93%
180-Day Avg. Stock Price	9.43%	10.70%	11.93%
Average	9.49%	10.76%	11.99%
Median Results			
30-Day Avg. Stock Price	9.69%	10.62%	11.84%
90-Day Avg. Stock Price	9.31%	10.41%	11.67%
180-Day Avg. Stock Price	9.34%	10.36%	11.66%
Average	9.45%	10.46%	11.72%

	30-Year Treasury Bond Yield		
	Current 30-Day Avg.	Near-Term Forecast	Longer-Term Forecast
CAPM			
Current *Value Line* Beta	11.32%	11.29%	11.17%
Long-term Avg. *Value Line* Beta	11.53%	11.50%	11.39%
ECAPM			
Current *Value Line* Beta	11.84%	11.82%	11.72%
Long-term Avg. *Value Line* Beta	12.00%	11.97%	11.89%
Bond Yield Risk Premium	10.96%	10.89%	10.60%

IV. Capital Market Conditions and a Comparable Return

Q. Do changes in capital market conditions since CL&P's last rate proceeding indicate an increase in the cost of equity since that time?

A. Yes. As indicated in my direct testimony, short-term, long-term, and core inflation have all increased since the Company's last rate proceeding, indicating a higher cost of capital. As

shown in Figure 3, since the decision was issued in the previous rate proceeding long-term interest rates have increased by approximately 227 basis points. Furthermore, both short-term and long-term interest rates have increased since the filing of direct testimony in the current proceeding, indicating that the cost of capital has further increased.

Figure 3: Change in Market Conditions Since CL&P's Last Rate Proceeding[13]

Docket	Date	Federal Funds Rate	30-Day Avg of 30-Year Treasury Bond Yield	Core Inflation Rate	Auth'd ROE
Docket No. 17-10-46					
Decision on 2017 Rate Proceeding	2018-04-18	1.69%	3.05%	2.15%	9.25%
Docket No. 26-05-10					
Company Direct	2026-05-29	3.62%	4.99%	2.82%	
Company Rebuttal	2026-09-30	3.88%	5.32%	2.45%	
Change since Apr-18 to Direct:		*1.93%*	*1.94%*	*0.67%*	
Change since Apr-18 to Rebuttal:		*2.19%*	*2.27%*	*0.30%*	

Q. Do the ROE recommendations of Mr. Rothschild, Mr. Garrett, and Mr. Little adequately reflect the implications of current and prospective capital market conditions on the cost of equity?

A. No. While interest rates have increased more than 225 basis points since the decision in CL&P's last rate proceeding, the ROE recommendations of Mr. Rothschild, Mr. Garrett, and Mr. Little are directionally inconsistent with the market conditions, as compared with Company's currently authorized ROE of 9.25 percent. As noted, Mr. Rothschild's recommendation is 94 basis points lower than CL&P's currently authorized ROE, Mr.

[13] St. Louis Federal Reserve Bank; Bureau of Labor Statistics; Bloomberg Professional.

Garrett's recommendation is 55 basis points lower, while Mr. Little is recommending an ROE no greater than the currently authorized 9.25 percent.

Q. What is the expected path of monetary policy over the near term?

A. Based on the Summary of Economic Projections issued by the FOMC in conjunction with its September 16, 2026 meeting, the median view of the participants of the FOMC is the expectation that the federal funds rate will increase by an additional 25 basis points in 2026 and then hold steady at the range of 4.00 to 4.25 percent throughout 2027. The median range for 2027 represents a 100-basis point increase in the range expected a year ago for the federal funds rate in 2027,[14] and a 50-basis point increase relative to the June 2026 projections.[15]

Q. What are the expectations going forward for long-term interest rates?

A. Economists expect long-term interest rates to remain elevated. In the most recently published report by *Blue Chip Financial Forecasts*, the consensus estimate of economists is that the 30-year treasury bond yield will remain relatively stable and decrease only slightly from 5.35 percent in Q1/2027 to 5.05 percent in Q1/2028.[16] Additionally, the consensus estimate over the longer term (*i.e.*, 2028-2032) is 4.70 percent.[17] This is important because it means that long-term interest rates are expected to remain elevated during the period that the Company's rates will be in effect.

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[14] Brian Scheid, "Fed hikes rates with expectations of minimal inflation impact," *S&P Market Intelligence*, September 17, 2026.

[15] *Id*., at 9.

[16] *Blue Chip Financial Forecasts*, October 2026 Edition, October 1, 2026, at 9.

[17] *Blue Chip Financial Forecasts*, Vol. 45, No. 6, June 1, 2026, at 14.

Q. What do you conclude from this market data?

A. As discussed in my direct testimony, there is a positive relationship between long-term bond yields and authorized ROEs, meaning that as bond yields increase, the investor-required ROE also increases. Therefore, considering that long-term interest rates have increased substantially since CL&P's last rate proceeding, and there is no longer an expectation that the Federal Reserve will be lowering short-term interest rates in the near term, it is reasonable to expect that investors' equity return requirements have increased since CL&P's ROE was established in its last rate proceeding. Therefore, the recommendations of Mr. Rothschild, Mr. Garrett, and Mr. Little are inconsistent with what can reasonably be expected to be investors' expectations in the current market.

V. The Cost of Equity and the Return on Equity

Q. What are the positions of Mr. Rothschild, Mr. Garrett and Mr. Little regarding previously authorized ROEs?

A. Mr. Rothschild and Mr. Little both contend that since utilities' market-to-book ratios have been greater than 1.0, that the market-based cost of equity is necessarily lower than the authorized book ROEs.[18] Similarly, Mr. Garrett concludes that there has been a "trend" of authorized returns "failing to closely track" the cost of equity.[19]

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[18] Rothschild Direct at 86; Little Direct at 9-10.

[19] Garrett Direct at 11-12.

Q. Do you agree with Mr. Rothschild and Mr. Little because the market-to-book ratios for utilities have exceeded 1.0, authorized ROEs exceed the cost of equity?

A. No. Mr. Rothschild's and Mr. Little's position that the market-to-book ratio demonstrates that authorized ROEs have been higher than utilities' cost of equity rests on the belief that capital markets are perfectly efficient (*i.e.,* what is referred to as the Efficient Market Hypothesis ("EMH")). However, there are several reasons why the market-to-book ratio for utilities may exceed 1.0 other than the authorized ROE exceeding the cost of equity. First, there is no consensus among economists regarding whether the theory of the EMH is valid and that share prices are rationally priced. Second, even if one assumes, as Mr. Rothschild and Mr. Little do, that the EMH holds, the correct asset pricing model is not known.

Q. What is the theory of the EMH?

The theory of the EMH contends that all information that is currently known by investors is already reflected in current stock prices.[20] Therefore, the EMH assumes that markets are efficient, and if one assumes that is the case, if the authorized ROE is set equal to the cost of equity, the share price will adjust so that the expected return is equivalent to the cost of equity, at which point the market-to-book ratio is 1.0. Based on this theory, Mr. Rothschild and Mr. Little conclude that because utility stocks have historically traded at a market-to-book ratio greater than 1.0, the authorized ROEs are greater than the cost of equity.

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[20] Robert J. Shiller, Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?. 71 Am. Econ. Rev. 421 (1981).

Q. What is the underlying problem with the EMH?

A. There are two issues. First, there is no consensus among economists regarding whether the theory of the EMH holds true. Second, it is not possible to test the theory of the EMH on its own. It must be tested with the use of an asset pricing model such as the DCF and CAPM and there is no consensus about which model should be used to test the theory. In the text *Behavioral Finance: The Second Generation*, Meir Statman noted that it is difficult to test the EMH because of the "joint hypothesis" problem (*i.e.*, trying to solve for two variables). One can either assume market efficiency and determine the asset pricing model or assume an asset pricing model and determine market efficiency.[21] The problem can be illustrated as follows – if the returns predicted by the CAPM deviate from those achieved in the market, one could conclude either that the market is not efficient or the CAPM is not the appropriate model. Therefore, as Dr. Lawrence Kolbe and Dr. Michael Vilbert outlined in their 2016 presentation to the California Public Utilities Commission, the problem with assuming that authorized ROEs have exceeded the cost of equity, which is predicated on the theory of the EMH, is: (1) it is unclear whether the theory of the EMH holds true; and (2) even assuming for the sake of argument that the EMH theory does in fact hold true, there is also no consensus regarding which model produces reasonable estimates of the cost of equity.[22]

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[21] Meir Statman, *Behavioral Finance: The Second Generation*, CFA Institute Research Foundation, 2019, at 162.

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

Q. Have economists identified inefficiencies in the market using historical market data?

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

> We have seen that measures of stock price volatility over the past century appear to be far too high – five to thirteen times too high – to be attributed to new information about future real dividends if uncertainty about future dividends is measured by the sample standard deviations of real dividends around their long-run exponential growth path. The lower bound of a 95 percent one-sided x^2 confidence interval for the standard deviation of annual changes in real stock prices is over five times higher than the upper bound allowed by our measure of the observed variability of real dividends. ***The failure of the efficient markets model is thus so dramatic that it would seem impossible to attribute the failure to such things as data errors, price index problems, or changes in tax laws***.[23]

Thus, Dr. Shiller concluded that the DCF model does not fully explain stock prices, which, as noted, could be either an indication that markets are not efficient (the conclusion reached by Dr. Shiller) and/or the DCF model is not the correct asset pricing model.[24]

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

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

Q. Are there other practical examples of inefficiencies in the market that indicate markets are not efficient or that the DCF model does not explain share prices?

A. Yes. Large sudden declines in the market such as Black Monday in 1987, the Great Recession of 2008/09, and the COVID-19 crash in March 2020 are each an example where substantial changes in share prices would not be explained by new information regarding dividends. Moreover, Dr. Shiller contended that there were "asset bubbles" such as the "tech boom" from 1994 to 2000 that resulted in substantial increases in share prices that could not be explained by market fundamentals.[25] In fact, as Brealey, Myers and Allen noted in *Principles of Corporate Finance:*

> Extensive empirical testing of the efficient market hypothesis began around 1970. By 2009, after almost 40 years of work, the tests have uncovered dozens of statistically significant anomalies. Sorry, but this work does not translate into dozens of ways to make easy money. Superior returns are elusive. For example, only a few mutual fund managers can generate superior returns for a few years in a row, and then only in small amounts. Statisticians can beat the market, but real investors have a much harder time of it.[26]

Q. Are you aware of practical examples where market inefficiencies were also identified using the share prices of individual stocks?

A. Yes. There are many examples where market inefficiencies were identified using the share prices of individual stocks. For example, Statman noted the following example:

> Direct evidence refuting the value-efficiency hypothesis comes from Palm Computing's spinoff from its parent, 3Com, as reported by economist Owen Lamont and Nobel Prize–winning economist Richard Thaler. (Palm Computing manufactured the Palm Pilot personal digital assistant.) The spinoff occurred at the height of the internet boom.

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

[26] Richard A. Brealey, Stewart C. Myers, Franklin Allen, *Principles of Corporate Finance*, 10th ed., McGraw-Hill/Irwin, 2011, at 867.

> Initially, only 5% of Palm Computing shares were sold to investors. The other 95% remained with 3Com. Enthusiasm for the shares of Palm Computing was so great and their price shot up so high that the total value of the 95% of Palm Computing shares still owned by 3Com greatly exceeded the total value of all 3Com shares, implying the absurd conclusion that the rest of 3Com's business had negative value. The more likely conclusion is that the price of 3Com shares was far below their value, the price of Palm Computing shares was far above their value, or both.[27]

Similarly, Sushma Karnati (2024) noted the example of the share price for GameStop in 2021 where retail investors influenced by herd dynamics drove up the share price in response to hedge funds that had short positions in GameStop.[28] The same applies for various other individual stocks that have experienced significant price increases and volatility when no new material financial information is made available that would otherwise justify such pricing changes.

Q. Although it is evident that inefficiencies exist in the market, is it correct that this could be due to either markets being inefficient as assumed by Dr. Shiller and/or that the asset pricing model used is not appropriate for determining the share price?

A. Yes. While the examples discussed above provide evidence of market inefficiencies that could very well prove that the EMH does not hold true and that stocks are not always rationally priced, it could also be that the correct asset pricing model to determine expected returns is not known by economists. For example, in the text *Corporate Finance*, finance professor Ivo Welch states:

> Of course, few people doubt that big U.S. financial markets are, to such a first approximation, efficient – we all know that you just can't earn that

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[27] Meir Statman, *Behavioral Finance: The Second Generation*, CFA Institute Research Foundation, 2019, at 148.

[28] Sushma Karnati, "The Role of Behavioral Finance in Market Anomalies and Investor Biases," International Journal for Multidisciplinary Research, June 2024.

> much. But there is a large gray zone where it is difficult to distinguish between model error and market inefficiency. Because no one knows for sure what the correct model of expected returns is, no one can tell you affirmatively whether the stock market set the price of ABC stock so as to offer investors an expected rate of return on ABC of, say, 10 percent a year or 12 percent a year.[29]

Welch further noted that "we are not sure and cannot agree whether ABC should earn 10 percent, 20 percent, or 30 percent a year."[30] Similarly, Statman noted:

> The CAPM was accepted as the correct asset pricing model as long as it served to show that markets are hard to beat and value efficient. But the CAPM was largely replaced by the three-factor model when the former indicated that markets are not efficient, yielding abnormal returns to investors in small-capitalization and value stocks.
>
> The three-factor model was judged as faulty when it failed to account for abnormal returns yielded by the momentum factor. And the four-factor model was declared faulty when it failed to account for abnormal returns associated with investment and profitability, idiosyncratic volatility, and net stock issues, among many others.[31]

This is important because it shows that existing asset pricing models are continually being adjusted to better predict prices in the market and explain deficiencies and that currently there is not one correct asset pricing model.

Q. What is your conclusion regarding market-to-book ratios, authorized returns, and the cost of equity?

A. Since markets are not fully efficient and the correct asset pricing model is not known, it is unreasonable for Mr. Rothschild or Mr. Little to claim that a market-to-book ratio greater than 1.0 demonstrates that the authorized return exceeds the cost of equity. As discussed

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[29] Ivo Welch, *Corporate Finance*, 5th edition, at 319-320.

[30] *Id.,* at 319.

[31] Meir Statman, *Behavioral Finance: The Second Generation*, CFA Institute Research Foundation, 2019, at 163.

previously, it is possible that the selected cost of equity model may not produce an accurate estimate of the return required by investors given the level of prices. There is no irrefutable evidence that demonstrates whether stock prices reflect all information (*i.e.,* the EMH) or whether the models precisely reflect the return required by investors. Therefore, Mr. Rothschild and Mr. Little cannot say with certainty that a market-to-book ratio of 1.0 necessarily means that the ROE is equivalent to the cost of equity or that a ratio above 1.0 means the ROE is above the cost of equity.

Q. Do Mr. Garrett and Mr. Little rely on authorized ROEs to check the reasonableness of their model results?

A. No. Mr. Garrett and Mr. Little suggest that reviewing authorized ROEs creates circular reasoning that has resulted in ROEs that do not track the market-based cost of equity.[32] Further, Mr. Little references a University of California Berkeley's Energy Institute at Haas whitepaper as support for a view that authorized ROEs have cost customers because commissions have not tended to let returns fall below 10 percent.[33]

Q. Do you agree with Mr. Garrett that there is "a trend in which awarded returns fail to closely track with actual market-based cost of capital"?[34]

A. No. I agree that: (1) there is a distinction between the cost of equity and the ROE authorized by regulatory commissions in setting just and reasonable rates; (2) the cost of equity cannot be definitively determined and therefore must be estimated by analysts; and (3) there is significant disagreement as to the way in which to estimate the cost of equity. However,

[32] Garrett Direct at 11. Little Direct at Section V, p. 10.

[33] Little Direct, Section V, p.10.

[34] Garrett Direct at 11.

neither Mr. Garrett nor Mr. Little has provided evidence that supports the position that regulatory commissions, including the PURA, have consistently erred for decades in authorizing utilities' ROEs.[35]

Q. Why is this disagreement so fundamental?

A. Regulatory commissions have an obligation to establish rates that balance the interests of customers and shareholders and that are just and reasonable. There is no evidence that Mr. Garrett's estimate of the cost of equity is in fact reasonable and that regulatory commissions have been consistently approving unjust and unreasonable rates. Further, the results of Mr. Garrett's DCF and CAPM analyses are either substantially below or at the low-end of the range of ROEs that have been authorized by a U.S. regulatory commission in a jurisdiction comparable to Connecticut in at least the past half century. Mr. Little states that he is "*not* a cost-of-capital modeler" and that he does "not sponsor a discounted-cash-flow or capital-asset-pricing study"; therefore, relies solely on an article he references to conclude that authorized returns have exceeded the cost of equity.[36] I will discuss my concerns with the article reference by Mr. Little below but it appears unreasonable for someone who acknowledges that he is not a "cost-of-capital modeler" to draw any conclusions regarding whether or not authorized returns have exceed the cost of equity.

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[35] The University of California Berkeley Energy Institute at Haas, Energy Institute WP 329R, Werner, Karl, and Jarvis, Stephen, Rate of Return Regulation Revisited. September 2024 p.3 states: "Over the past three decades our CAPM benchmarks find a premium in approved returns on equity ranging from one to five percentage points."

[36] Little Direct at 4.

Q. As a threshold matter, are you aware of any other regulatory jurisdiction in the United States that has adopted the views of Mr. Garrett and Mr. Little that authorized ROEs have been set higher than the cost of equity?

A. No. I am not aware of any regulatory commission in the United States – state or federal – that has adopted this position, though it has been advanced by several intervenor witnesses in many rate proceedings. Adoption of their theory would represent a significant departure from all forms of utility rate regulation in the United States, and likely would be viewed adversely by credit rating agencies and equity analysts.

Q. Are you aware of any regulatory commissions that have specifically disagreed with Mr. Garrett's and Mr. Little's claim that there is and has been a substantial difference between authorized ROEs and the cost of equity for utilities?

A. Yes. The Minnesota Public Utilities Commission has considered testimony offered by witnesses on behalf of the Minnesota Department of Commerce, Division of Energy Resources ("Department") and the Citizens Utility Board that contended authorized ROEs have historically exceeded the cost of equity. Nevertheless, the Minnesota Public Utilities Commission has continued, however, to rely on its long-standing cost of equity estimation methodologies and other industry information to inform its decisions and has not specifically relied on the viewpoint that the cost of equity is lower than authorized ROEs. For example:

> The Department's recommended cost of equity of 9.30% is informed by an underlying assumption that the cost of equity and the return on equity are distinct concepts in the sense that utility earnings exceed the cost of equity over time. This understanding, according to the Department, undermines the reliability of earnings' estimates in predicting long-term growth and instead justifies the use of a multi-stage DCF analysis that

> uses GDP to forecast the long-term cost of equity. ***The Commission does not share this concern***.[37]

In addition, the North Carolina Utilities Commission ("NCUC") has also rejected the claim, similar to Mr. Garrett's and Mr. Little's position in this proceeding, that the cost of equity is much lower than what regulatory commissions have authorized in the past. For example, in a proceeding for Duke Energy Carolina ("DEC"), the NCUC concluded that model results and an ROE recommendation of 6.15 percent of one witness in the proceeding was inconsistent with the *Hope* and *Bluefield* decisions and would not allow the Companies' to attract capital at reasonable terms:

> In this case, the Commission considered the application of these models in the context of the witnesses' testimony and other evidence, in order to ensure that its rate of return on equity conclusion of 10.1% is adequately supported by the evidentiary record. However, the Commission first will discuss — and reject — the recommendations of witness Ellis. In sum, both his individual model results and his overall recommendation of a rate of return on equity of 6.15% show that witness Ellis' cost of equity estimate is an outlier, entitled to no weight, and should be rejected. Aside from being more than 300 basis points below any rate of return on equity ever approved by this Commission for DEC, a rate of return on equity at that level, is scarcely 150 basis points above DEC's embedded cost of debt, a premium that is clearly insufficient to compensate investors for the added risks associated with equity ownership relative to a debtholder's claim on the same enterprise. Worse, DEC witness Newlin testified that that the interest rate DEC could expect today in issuing a 30-year bond is 5.72%. … This is a mere 43 basis points below witness Ellis' rate of return on common equity recommendation of 6.15%. ***The Commission finds it inconceivable that an investor would make an equity investment in DEC to realize a 6.15% expected return when that same investor could obtain a much less risky return merely 43 basis points lower simply by purchasing bonds issued by DEC. The Commission does not believe that a 6.15% rate of return on common***

[37] Minnesota Public Utilities Commission, Docket No. E-015/GR-21-335, Findings of Fact, Conclusions, and Order, February 28, 2023, at 45 (emphasis added).

equity will allow DEC to attract equity capital on reasonable terms, which is the essence of the Bluefield/Hope test.[38]

Q. How does Mr. Little support his claim that awarded ROEs are too high?

A. The primary source that Mr. Little references is an article written by a cost of equity witness who testifies on behalf of consumer advocate groups and specifically advocates for the ROE to be reduced.[39] This source does not credibly support Mr. Little's claim that authorized returns should not be considered because authorized ROEs has exceeded the cost of equity.

Q. Is the Synapse Energy Economics, Inc. ("Synapse") article referenced by Mr. Little an academic work?

A. No. The Synapse article is not a peer reviewed analytical paper or academic study of utility regulation, or the investor-required return on utility equity, it is simply the view of the author of the article. The author of the Synapse article does not provide any quantitative analysis that demonstrates his views, he merely suggests that the cost of equity for utilities has been and is significantly lower than utilities' authorized ROEs. Therefore, this article has no probative value and cannot be relied upon to support a conclusion that returns authorized for utilities have been higher than necessary for investors.

Q. Has the position offered by the author of the Synapse article been considered by any regulatory commissions?

A. Yes. Mr. Little references San Diego Gas & Electric's ("SDG&E") 2025 cost of capital proceeding where the California Public Utilities Commission ("CPUC") authorized an ROE

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[38] North Carolina Utilities Commission, Docket No. E-7, Sub 1276, Order Accepting Stipulations, Granting Partial Rate Increase, Requiring Public Notice and Modifying Lincoln CT CPCN Conditions, December 15, 2023, at 200 (emphasis added). *See, also*, North Carolina Utilities Commission, Docket No. E-2, Sub 1300, Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Public Notice, August 18, 2023, at 159.

[39] Little Direct at 10-11.

of 9.93 percent. While Mr. Little states that this authorized ROE was below SG&E's requested ROE of 11.25 percent and higher than the author's recommended ROE of 8.87 percent,[40] he fails to recognize the important conclusions about the model results established by the CPUC:

> After considering the evidence on market conditions, trends, creditworthiness, interest rate forecasts, quantitative financial models, additional risk factors, and interest coverage presented by the parties and applying our informed judgement, we find that SDG&E's ROE should be within the range 9.60% to 10.15%and that the just and reasonable ROE for SDG&E's authorized test year 2026 is 9.93%. ***This ROE is the lowest amount that is reasonably sufficient to assure confidence in the financial soundness of the utility and to improve and maintain investment grade credit ratings and so balances the interests between shareholders and ratepayers***.[41]

The CPUC concluded that the 9.93 percent was the lowest possible value that would ensure confidence in the "financial soundness of the utility" and therefore, balances the interests of both shareholders and customers. The CPUC clearly determined that the recommendation of the author of the Synapse article was unreasonable and would not ensure confidence in the "financial soundness of the utility" since the 8.87 percent recommendation was over 100 basis points below the authorized return of 9.93 percent. Therefore, the CPUC's decision supports my conclusion that the Synapse article should be given no weight as supporting Mr. Little's position in this proceeding.

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[40] *Id.,* at 11.

[41] California Public Utilities Commission, Application 25-03-010, Decision 25-12-043, December 18, 2025, at 52.

Q. What is your response to Mr. Little's reliance on the study by Werner and Jarvis (2026) included in the Synapse article?

A. The Werner and Jarvis (2026) study contains several limitations with respect to its assumptions that undermine the reliability of the study's conclusions.[42]

The 2026 study, benchmarks authorized returns to corporate bond yields and Treasury bond yields, as well as each utility's approved cost of debt. The study runs several scenarios, the first of which incorrectly assumes that a 1.00 percentage point change in the bond yields will result in a 1.00 percentage point change in the authorized returns, which they state demonstrates an ROE gap (authorized ROE higher than the cost of equity). The authors provide no references to studies or other information to support their assumption of the 1-to-1 relationship. The authors calculated an alternative scenario that assumed the authorized return would change at only half the rate of change in the Treasury yield (*i.e.*, a 100 basis point increase in the Treasury yield would result in a 50 basis point increase in the authorized ROE), the spread between the estimated benchmark returns and the authorized returns decreased significantly and was only 10 basis points as of 2022. This demonstrates that the initial assumption of a 1-to-1 relationship between the change in the yield on Treasury bonds and the change in authorized ROEs is flawed.[43]

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[42] Karl Dunkle Werner and Stephen Jarvis, "Rate of return regulation revisited," *Journal of Public Economics*, Vol. 259, July 2026.

[43] Karl Dunkle Werner and Stephen Jarvis, "Rate of return regulation revisited," *Journal of Public Economics*, Vol. 259, July 2026, Online Supplemental Appendix, at 15.

Q. Do Werner and Jarvis also identify other aspects of their analysis that weaken their conclusions?

A. Yes. The authors acknowledged that their analysis, which compares authorized returns to the cost of equity estimates resulting from the CAPM, is highly dependent on the assumptions used to calculate the CAPM. Further, their analyses demonstrated the sensitivity of their results to the assumptions relied on in the CAPM. The authors used three CAPM analyses, with significantly different assumptions for beta and the market risk premium, demonstrating that the spread between the cost of equity results of these models and authorized returns were dramatically different. For example, the low CAPM analysis resulted in a spread between the estimated cost of equity and the authorized return of 3.99 percentage points in 2022, the central CAPM produced a spread of 2.31 percentage points, while the high CAPM analysis produced a spread of only 1.24 percentage points.[44] Therefore, this test demonstrated that their analysis was highly dependent on the assumptions used in the CAPM and did not support a conclusion that authorized ROEs were systematically higher than the cost of equity.

Q. What limitations do the authors highlight in their analyses?

A. The authors concluded that their "results are necessarily uncertain"[45] and:

> It is possible that the economic models used for assessing the cost of capital do not adequately capture the true cost of capital utilities face. This certainly remains an important area for further research. There may

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[44] *Id*.

[45] Karl Dunkle Werner and Stephen Jarvis, "Rate of return regulation revisited," *Journal of Public Economics*, Vol. 259, July 2026, at 12.

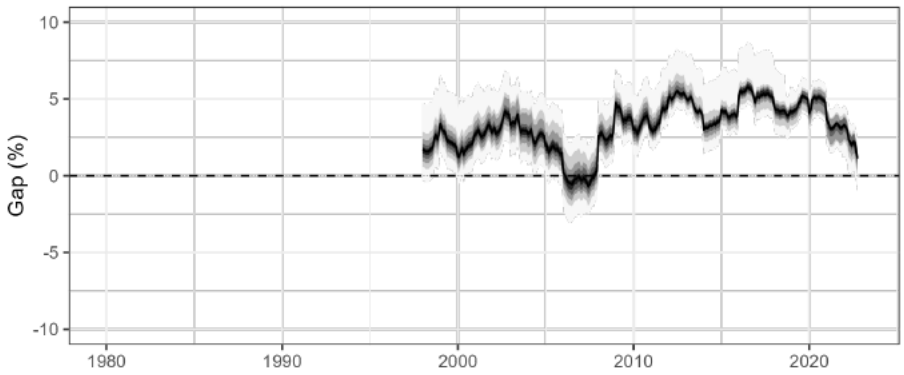
also be other, hard-to-quantify benefits that justify regulators allowing rates of return with a premium over traditional benchmarks.[46]

Q. What conclusions can be drawn from the "return on equity gap" analysis that the authors conducted?

A. The authors reference a "return on equity gap," which is the difference between the authorized ROE and a measure of the cost of equity. They conducted several scenarios using different CAPM assumptions in this analysis and provided figures in the appendices of the report summarizing the results. The analyses show that in their central scenario, which relies on betas and market risk premium assumptions that are in the middle of the range of data used the "return on equity gap" has declined substantially since 2020 and was nearly nonexistent as of the end of 2023. The chart summarizing the result of this analysis is presented in Figure 4 below.

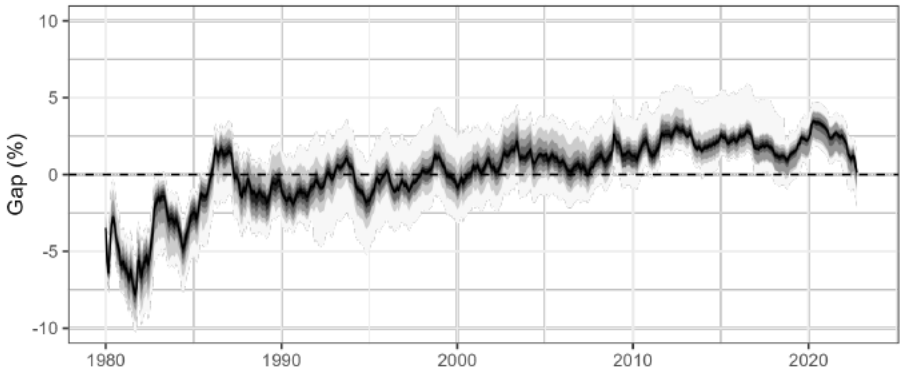
[46] *Id*.

Figure 4: Return on Equity Gap Estimated by Werner and Jarvis (2026) to Their Benchmarked CAPM (Central Scenario)[47]



Similarly, the study shows that the "return on equity gap" in the high scenario, which the authors state relies on beta and market risk premium data that is generally on the higher end of what has been historically used in the industry, has also fallen and appears to have gone negative by the end of 2023, meaning that the authorized returns were set *below* the cost of equity. Figure 5 below summarizes the results from that scenario.

Figure 5: Return on Equity Gap Estimated by Werner and Jarvis (2026) to Their Benchmarked CAPM (High Scenario)[48]



[48] *Id*., at 10 (Figure B.2).

Q. What limitations do the authors identify in their comparison of authorized equity returns in the U.S. and the United Kingdom ("UK")?

A. The authors acknowledged that there are many differences between the UK and US utility sectors and the investor environment, there is no reason to suggest that the UK regulators have set the correct ROE, or that the US PUC's should adopt the UK returns:

> Of course there's no particular reason to think the UK regulator is setting the correct ROE, and there are good reasons to think that US PUCs should not simply adopt UK rates of return – there are many differences between the utility sector and investor environment in the US and UK.[49]

In addition, although the authors acknowledge the differences in the risk factors between utility operations in the U.S. and the UK, they are not addressed in the study. Given that the authors acknowledge there are differences in the regulatory environments, yet have not considered the effect of those differences on the cost of equity for the electric and natural gas utilities in either the U.S. or the UK, it is not reasonable to conclude that the authorized ROEs in the U.S. are too high based on a comparison to the returns authorized for utilities in the United Kingdom.

Q. What are your conclusions regarding the Werner and Jarvis study?

A. In light of the study's limitations, unsupported assumptions, and apparent conclusions that the "return on equity gap" was minimal or non-existent as of the end of 2023, the Werner and Jarvis (2026) study does not support Mr. Little's contention that authorized ROEs historically have exceeded the cost of equity for utilities.

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[49] *Id*., at 8.

Q. Is it reasonable to consider recently authorized ROEs to assess the reasonableness of the ROE recommendations of the other witnesses in this proceeding?

A. Yes. As I have discussed, there are significant flaws in the support relied on by Mr. Rothschild, Mr. Garrett and Mr. Little to conclude that authorized returns have exceeded the cost of equity. Because markets may have inefficiencies and the true asset pricing model is not known, it is important to consider multiple models along with the consideration of qualitative factors such as market conditions in determination of the cost of equity. Consideration of multiple models balances the limiting assumptions of any one model. Historically, regulatory commissions across the U.S. have evaluated the evidence presented in rate proceedings, including the results of multiple cost of equity estimation models, capital market conditions, and the returns that have been authorized for comparable utilities, in order to establish an authorized return that the regulatory commission believes balances the interests of customers and shareholders and best approximates the cost of equity that allows the utility the ability to access capital at reasonable terms. Therefore, it is reasonable to conclude that the returns authorized by utility regulatory commissions in similar market conditions do not exceed the cost of equity and provide a reasonable benchmark for evaluating if an ROE recommendation would satisfy the comparable return standard of *Hope* and *Bluefield*.

Q. Are Mr. Rothschild's, Mr. Garrett's and Mr. Little's ROE recommendations for the Company in this proceeding reasonable and consistent with the comparable return standard?

A. No. Mr. Rothchild's ROE recommendation of 8.31 percent is clearly well below what investors consider to be a reasonable return as it is below any authorized ROE for either an

electric or natural gas utility in a comparable regulatory jurisdiction over at least the past half century. Similarly, Mr. Garrett's ROE recommendation of 8.70 percent and Mr. Little's recommendation of 9.25 percent are at the low-end of the range of authorized ROE for either an electric or natural gas utility in a comparable regulatory jurisdiction over at least the past half century. The unreasonableness of both Mr. Garrett's and Mr. Little's recommendation can further be seen in the change in market conditions since the Company's last rate case in 2017. As shown in Figure 3, interest rates are significantly higher now than at the time of CL&P's last rate proceeding indicating an increase in the cost of equity. Therefore, it is reasonable to expect that the investor-required return would be higher than the return of 9.25 percent authorized in the Company's last rate proceeding. Despite these changes in market conditions, Mr. Garrett and Mr. Rothschild recommend a decrease in the authorized ROE while Mr. Little recommends that the authorized ROE remain the same at 9.25 percent.

VI. Response to Mr. Rothschild

Q. Please summarize Mr. Rothschild's analyses and recommendations.

A. Mr. Rothschild recommends an 8.31 percent ROE and a recommended ROE range of 7.43 percent to 8.53 percent.[50] To arrive at this recommended range Mr. Rothschild relies on two forms of the constant growth DCF one utilizing sustainable growth rates and the other utilizing option-implied growth rates, a non-constant growth DCF, and four forms of the CAPM that utilize various spot and three month weighted average risk-free rates. The results of Mr. Rothschild's constant growth DCF analyses range from 7.00 percent to 8.67 percent,

[50] Rothschild Direct at 9.

his non-constant growth DCF results range from 8.21 percent to 8.56 percent, and his CAPM analyses results range from 5.22 percent to 7.11 percent. Mr. Rothschild's recommended ROE is based on the 80th percentile of his cost of equity model results, with a recommended range of based on the 70th and 90th percentile.[51]

Q. As a threshold matter, are the results of Mr. Rothschild's DCF or CAPM analyses reliable or reasonable?

A. No. As noted, the results of Mr. Rothschild's constant growth and non-constant DCF analyses range from 7.00 percent to 8.67 percent. These results are significantly below any authorized ROE for an electric distribution utility in a regulatory jurisdiction comparable to Connecticut since at least 1980. Further, the results of his CAPM range from 5.22 percent to 7.11 percent. The low end of this range is at or near the current yield on the 30-year Treasury bond, which is considered a risk-free investment and therefore is unreasonable as an estimate of an equity return given that equity bears greater risk. The high end of his CAPM range overlaps the low end of his DCF model results and is significantly below any return authorized for an electric distribution utility under similar forms of regulation as the Company.

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[51] Note that Mr. Rothschild has several inconsistencies within his testimony regarding his recommended ROE and cost of equity range. Mr. Rothschild states that he selects the 87th percentile of the results and obtains a recommendation of 8.25 percent (Rothschild Direct at 11, fn. 12); he also states that his ROE recommendation of 8.31 percent is the midpoint of his range of 7.43 percent to 8.53 percent, however, the midpoint between those two ranges is actually 7.98 percent (Rothschild Direct at 9). Based on Exhibit ALR-2, his ultimate ROE recommendation of 8.31 is based on the 80th percentile, with range being the 70th and 90th percentile, respectively, which is not stated within his direct testimony.

A. Constant Growth DCF

Q. Please summarize Mr. Rothschild's constant growth DCF analysis.

A. Mr. Rothschild calculates four constant growth DCF scenarios – two that utilize sustainable growth rates and two that use option-implied growth rates. For two of Mr. Rothschild's scenarios, he calculates the dividend yields using average high and low stock prices for the 12 months ended September 30, 2026, while the other two scenarios utilize closing stock prices as of September 30, 2026. Mr. Rothschild calculates his sustainable growth rate as the sum of his dividend yield, the growth in dividend yield in the next year, a retention growth rate,[52] and a new financing growth rate.

Q. Do you agree with Mr. Rothschild's sustainable growth rates used in his constant growth DCF?

A. No. The use of a sustainable growth rate in the DCF analysis suggests there is a positive relationship between future earnings and the retention ratio; however, the assumption that future earnings growth is inversely related to the dividend payout ratio does not necessarily hold in practice, and academic research has found the opposite to be true (*i.e.*, there is a negative relationship between earnings growth rates and payout ratios). Specifically:

- Management decisions to conserve cash for capital investments, to manage the dividend payout for the purpose of minimizing future dividend reductions, or to signal future earnings prospects, can influence dividend growth rates in near-term periods. These decisions affect the dividends and the payout ratio in the short term but are not necessarily indicative of a firm's long-term earnings growth.

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[52] For his retention growth rate, Mr. Rothschild assumes a one-third weight on the median of the average historical return on the book value equity for the proxy companies for 2023-2025, a one-third weight on the projected return on the book value equity reported by *Value Line*, and a one-third weight on the projected implied return on the book value equity reported by *Zacks*.

- For example, forty S&P 500 companies suspended dividend payments in 2020 due to the increased uncertainty associated with the COVID-19 pandemic.[53] These dividend suspensions occurred because companies anticipated that earnings over the short term would decline and, therefore, elected to conserve cash to offset the financial effects of the COVID-19 pandemic.

These decisions can and do influence the dividend payout (and therefore earnings retention) in the near-term, and such decisions have been seen recently in the market. Counter to Mr. Rothschild's assumption, it is reasonable to expect that a company's management will alter dividend policy to respond to changes in earnings, and therefore dividend growth will not always reflect earnings growth (and vice versa).

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

A. Yes. There are several studies that have found that there is a negative, not a positive, relationship between earnings growth rates and retention ratios. Zhou and Ruland (2006), Gwilym, *et al*. (2006), and Vivian (2006) discuss the theory that high dividend payouts (*i.e*., low retention ratios) are associated with low future earnings growth and found the opposite to be true (*i.e*., future earnings growth is associated with high payout ratios/low retention ratios).[54] Each of these studies also cite Arnott and Asness (2003), which found that, over

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

[54] Ping Zhou and William Ruland, "Dividend Payout and Future Earnings Growth," *Financial Analysts Journal*, Vol. 62, No. 3, 2006; Owain Gwilym, James Seaton, Karina Suddason, and Stephen Thomas, "International Evidence on the Payout Ratio, Earnings, Dividends and Returns," *Financial Analysts Journal*, Vol. 62, No. 1, 2006; and A Vivian, "The Payout Ratio, Earnings Growth Returns: UK Industry Evidence," Working Paper, School of Economics, Finance and Business, University of Durham, 2006.

the course of 130 years of data, future earnings growth is associated with high, rather than low, payout ratios.[55] Specifically, Arnott and Asness (2003) concluded:

> Unlike optimistic new-paradigm advocates, we found that low payout ratios (high retention rates) historically precede low earnings growth. This relationship is statistically strong and robust. We found that the empirical facts conform to a world in which managers possess private information that causes them to pay out a large share of earnings when they are optimistic that dividend cuts will not be necessary and to pay out a small share when they are pessimistic, perhaps so that they can be confident of maintaining the dividend payouts. Alternatively, the facts also fit a world in which low payout ratios lead to, or come with, inefficient empire building and the funding of less than-ideal projects and investments, leading to poor subsequent growth, whereas high payout ratios lead to more carefully chosen projects. The empire-building story also fits the initial macroeconomic evidence quite well. At this point, these explanations are conjectures; more work on discriminating among competing stories is appropriate.[56]

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

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

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

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

[56] *Id.*

market-to-book ratio that exceeds unity, reflected as the "v" variable. This means that the growth estimate includes the potential forecasting error of the four separate variables.

Q. Using inputs selected by Mr. Rothschild, can you provide an example of how forecasting error could affect the calculation of the sustainable growth rate?

A. Yes. Mr. Rothschild uses his own judgment weight projected and historical data in the calculation of his assumptions, but provides no support that this process would be consistent with the expectations of investors. The effect of analyst judgment can be seen in how Mr. Rothschild develops estimates of *r* and *b* in his calculation of the sustainable growth rate.

Mr. Rothschild's *r* is based primarily on analysts' projections of *r.* Unlike his estimate of *r,* Mr. Rothschild's calculation of the retention ratio "b" relies more heavily on historical data.

For example, Mr. Rothschild calculates an *r* of 10.60 percent based on a two-thirds weighting of analysts' projected return on book value equity as reported by *Zacks* and *Value Lin*e and a one-third weighting of the historical average return on book value equity for the period from 2023 through 2025.

Even though Value Line also projects *b*, and Mr. Rothschild could have been applied the same methodology used to estimate *r* to estimate *b*, Mr. Rothschild develops a different approach to estimate *b* that relies more heavily on historical data.[57] By placing more weight on the historical data in his estimate of *b*, Mr. Rothschild has understated his retention ratio

[57] To estimate *b*, Mr. Rothschild divided the historical average dividend yield on book value by his estimate of *r*, which results in a retention ratio of 35.46 percent (based on the average of the high and low stock price for the year ending September 30, 2026) and 36.44 percent (based on spot stock prices as of September 30, 2026). Mr. Rothschild fails to consider that *Value Line*, the source he relies on to calculate *r*, also provides a projection of *b* for the period of 2029-2031.

and thus his sustainable growth rate by comparison to the projections provided by *Value Line*.

As shown in Exhibit CLP-ROE-REBUTTAL-8, using the projections from *Value Line* for 2029-2031 that were available as of September 30, 2026 (*i.e.*, the date through which Mr. Rothschild calculates his analyses), the average retention ratio, *r*, for Mr. Rothschild's proxy group was 40.24 percent, which is greater than either of the retention ratios that he relies on for his constant growth DCF analyses (*i.e.*, 35.46 percent and the 36.44 percent).

This example highlights the significant judgment that must be used to estimate the four variables used to calculate the sustainable growth rate. The judgment applied can result in significant forecast error thereby biasing the sustainable growth rate and the cost of equity results produced by the constant growth DCF model using such a growth rate.

Q. Are there reasons why PURA should not consider the results of Mr. Rothschild's constant growth DCF analyses using his option-implied growth rate?

A. Yes. There are several reasons why his analysis should not be relied upon to estimate the cost of equity. Mr. Rothschild suggests that his methodology relies on market data and methodologies that are used by market participants; however, the market data he relies upon is insufficient to provide credible analyses. His remedy for this deficiency is to create significant amounts of data to perform the analyses. The amount of data created demonstrates that he is not relying on the market and the methodologies used to create the data are inconsistent.[58]

[58] Rothschild Direct at 10.

- ***Lack of Academic Support:*** Mr. Rothschild has provided no academic support for the use of option-implied growth rates in the constant growth DCF model, nor has he provided any evidence that investors would rely on option-implied growth in the DCF model to estimate their required return.

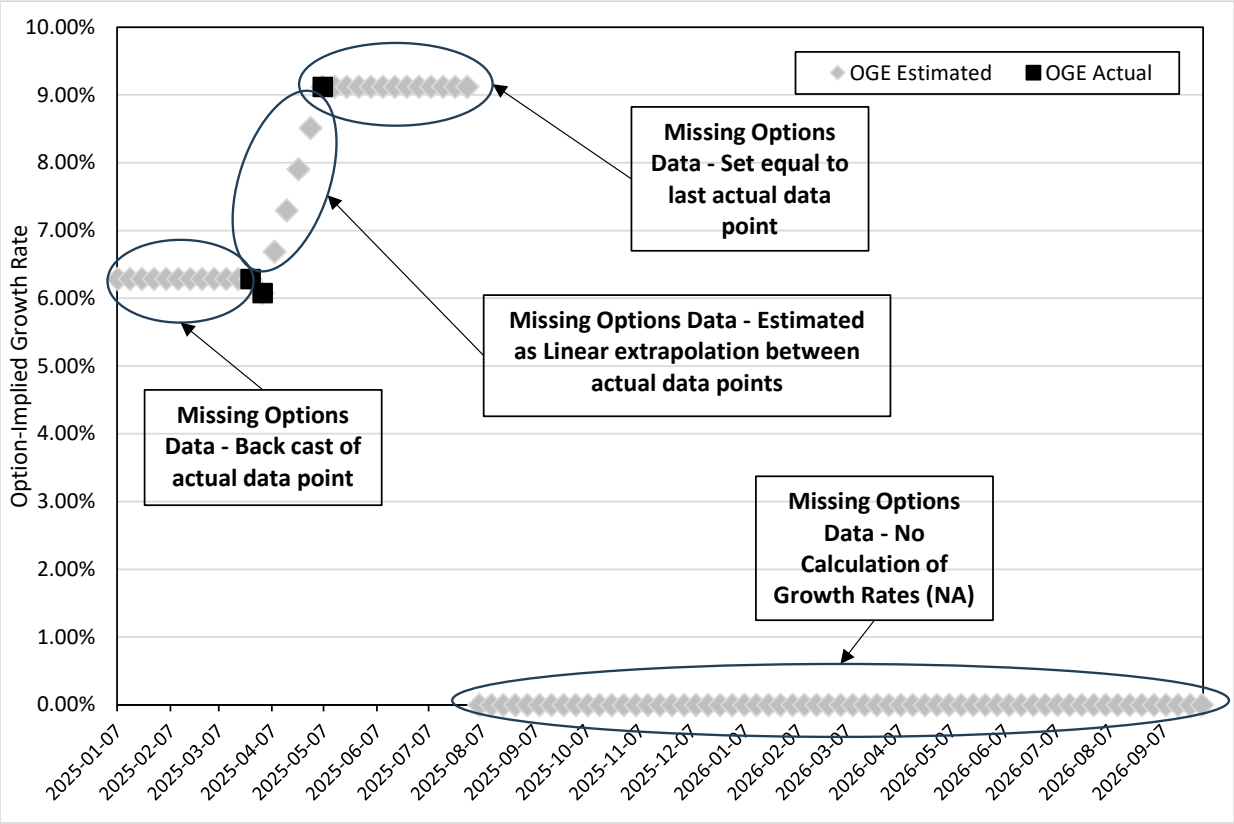
- ***Scarcity of Option Data:*** As shown in Exhibit CLP-ROE-REBUTTAL-9, Mr. Rothschild was unable to estimate an option-implied growth rate for three out of the 17 companies included in his proxy group, and for one week he was unable to estimate the option-implied growth rate for four of the 17 companies. Specifically, Mr. Rothschild was unable to calculate an option-implied growth rate for the entire period of June 30, 2026 through September 29, 2026 (*i.e.* fourteen weeks) for Avista Corporation and OGE Energy Corporation. In fact, Mr. Rothschild has been unable to calculate an option-implied growth rate for Avista Corporation since January of 2025.[59]

- ***Creation of Data:*** Mr. Rothschild simply fabricates data for weeks where options contract data is not available. Mr. Rothschild relies on different methods to calculate the growth rates: (1) linear extrapolation to estimate the growth rates for the missing weeks using the actual option implied growth rates that are between actual observations; (2) setting growth rates equal to the last actual data point; and (3) back casting of actual data points. This creation of data is problematic for several reasons. First, there is no basis to assume that a linear extrapolation, setting growth rates equal to the last data point, or back casting of actual data points are appropriate for options data and second, and more importantly, Mr. Rothschild uses these methods to create data for a significant number of weeks where options contract data is missing. As shown in Figure 6, Mr. Rothschild was unable to calculate an option implied growth rate for OGE Energy Corporation ("OGE") for 88 of the 91 weeks between January 7, 2025 and September 29, 2026. Mr. Rothschild simply did not estimate a value for 61 of the missing weeks; however, for ***27 missing weeks***, Mr. Rothschild estimated the growth rate using either linear extrapolation, setting the value equal to the last data

[59] Rothschild Workpaper: 2026.09 – RFC Electric PG Betas – SELECT – BULKLEY.xlsx

point, or back casting of actual data points. It is evident from the actual data points, that there is no basis for relying on a linear assumption or setting the value equal to the last data point as representative of investors' expectations.

Figure 6: Option-Implied Growth Rates – OGE – January 7, 2025 – September 29, 2026[60]

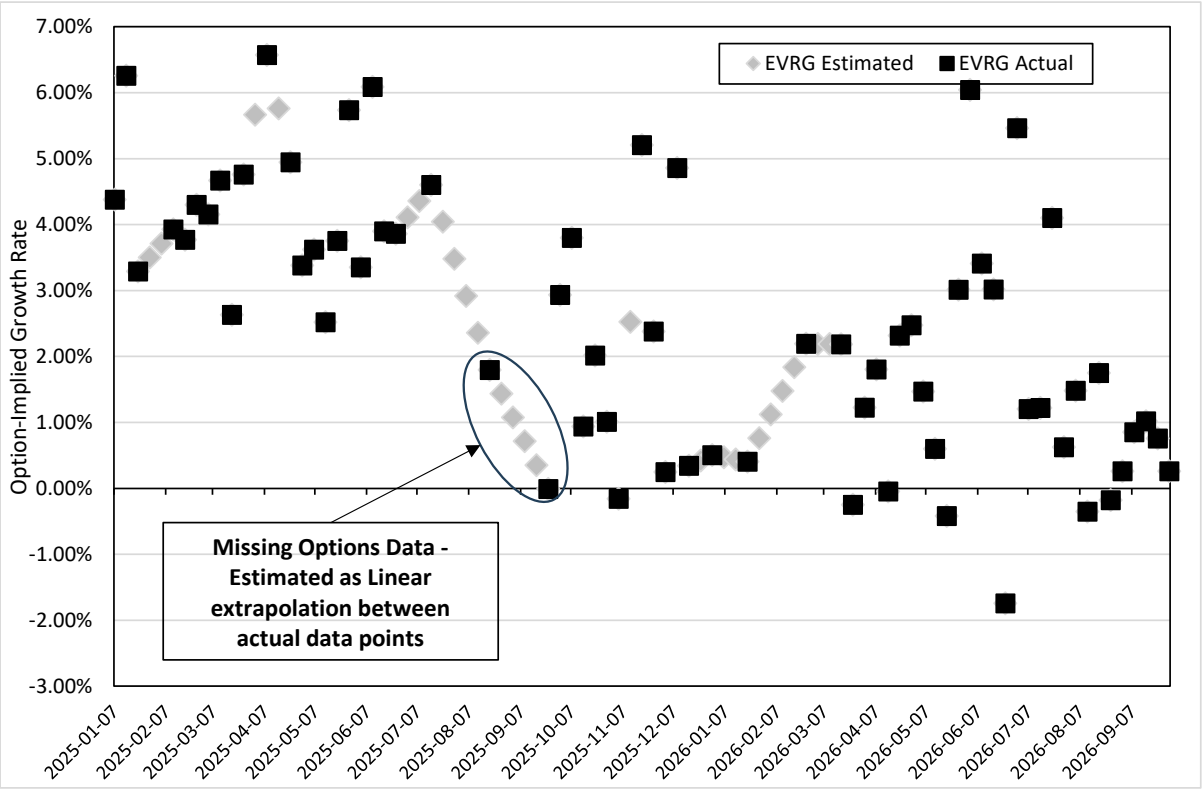


- Additionally, Figure 7 outlines how Mr. Rothschild estimates missing data for Evergy, Inc. ("EVRG") over the same period of January 7, 2025, through June 30, 2026. As shown, Mr. Rothschild also utilizes linear extrapolation to calculate missing data points. However, between the calculated growth rates for August 19, 2025 (of 1.80 percent) and for September 23, 2025 of ***negative*** 0.01 percent, resulting in four weeks of progressively decreasing growth rates. Mr. Rothschild also calculates an option-implied growth rate for September 30, 2025, of 2.93 percent (*i.e.,* the next data point

[60] Rothschild Workpaper: 2026.09 – RFC Electric PG Betas – SELECT – BULKLEY.xlsx

following the negative growth rate for September 23, 2025), which indicates that a linear extrapolation to a negative growth rate may not be an appropriate estimation method. The approach Mr. Rothschild utilizes to estimate missing data between points is inconsistent between companies and he has provided no evidence that this is a supported methodology for estimating between data observations. These examples demonstrate that Mr. Rothschild's construction of the data sets he uses in his analyses is arbitrary, inconsistent and unreliable. Further, the result of this analysis does not produce a market cost of equity.

Figure 7: Option-Implied Growth Rates – EVRG – January 7, 2025 – September 29, 2026[61]



- ***Growth Rates Inconsistent with Constant Growth DCF Model:*** Mr. Rothschild is relying on a constant growth DCF model. This form of the model requires a growth

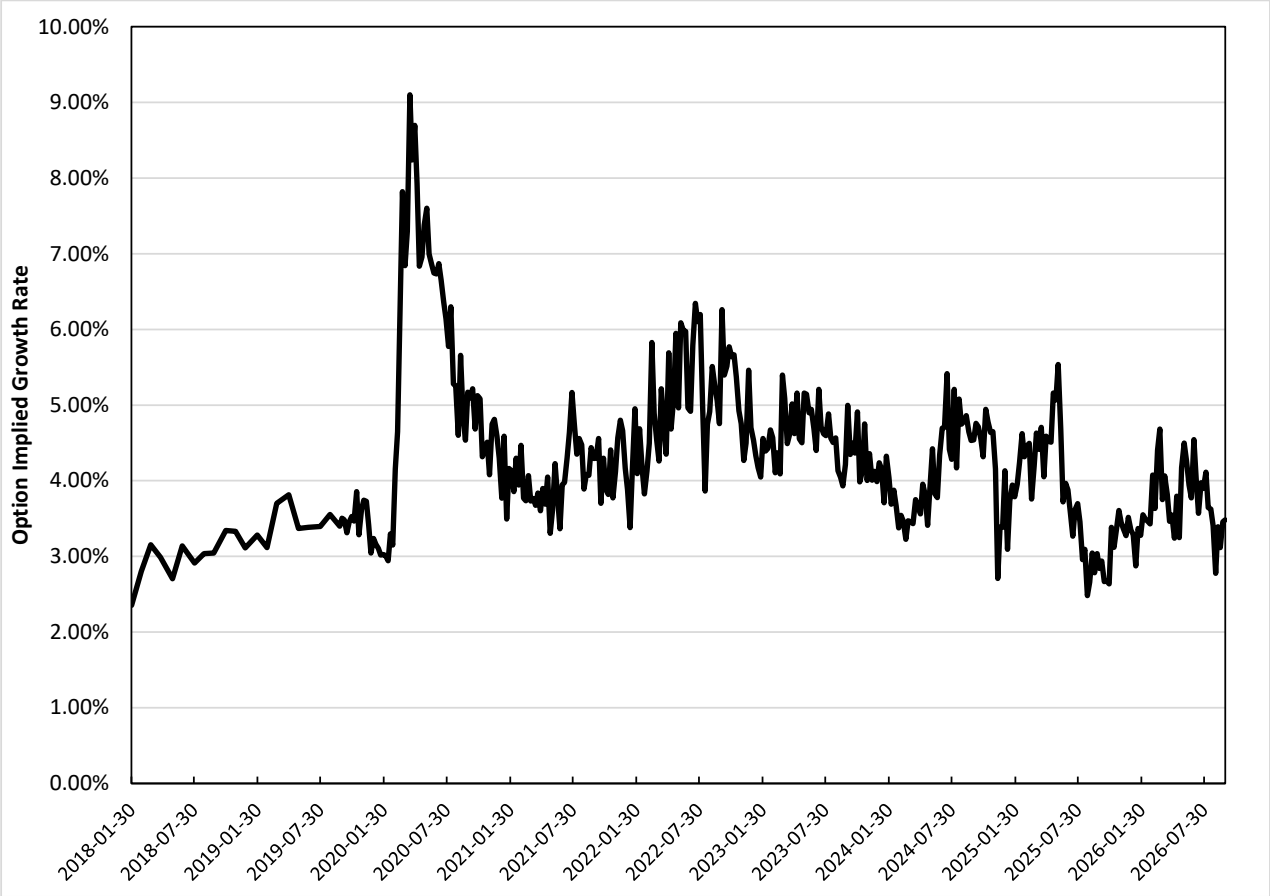
[61] Rothschild Workpaper: 2026.09 – RFC Electric PG Betas – SELECT – BULKLEY.xlsx

rate that can be considered sustainable in perpetuity. There is no basis to conclude that a growth rate estimated using options contracts that expire in six months is sustainable over the long-term. In past proceedings, Mr. Rothschild has provided options contract data utilized to determine his option-implied growth rates, which demonstrate that his estimated growth rate is very sensitive to the expiration date of the options contract. While this information was requested in this proceeding, Mr. Rothschild did not provide this underlying calculation and therefore it is not possible to verify the calculation of his option-implied growth rates. [62]

- ***Substantial Variability from Week-to-Week***: Mr. Rothschild estimates the option-implied growth rates weekly based on an average of the daily growth rates in the week. However, as shown in Figure 8, Mr. Rothschild's methodology results in a significant difference in the growth rate from week to week. Moreover, while Mr. Rothschild does also develop a constant growth DCF model using a weighted three-month average option-implied growth rate, as I will discuss in more detail below, Mr. Rothschild has provided no evidence for the weekly weighting factors he applies.

[62] In prior proceedings, Mr. Rothschild has provided work papers that include working excel files that are linked to his exhibits and support his calculations (RFC FULL Electric Proxy Group OptIVA Results.xlsx.). In this proceeding, he provided 800 pages of workpapers that did not include those calculations. Therefore, it was not possible to review all of Mr. Rothschild's calculations to establish the accuracy of the remainder of his analyses that are not already addressed in my Rebuttal Testimony.

**Figure 8: Option-Implied Growth Rates –Proxy Group –
January 30, 2018 – September 29, 2026**



Given these various issues discussed, PURA should not consider the results of Mr. Rothschild's constant growth DCF analysis using his option-implied growth rates.

Q. Please summarize Mr. Rothschild's primary criticism of your DCF analyses.

A. In general, Mr. Rothschild's main criticism of my constant growth DCF analyses is the application of the growth rates. Specifically, Mr. Rothschild contends that my use of five-year projected EPS growth rates is not appropriate for a constant growth DCF, as these

growth rates do not represent sustainable growth rates and overstate or misrepresent the true cost of equity.[63]

Q. Do you agree with Mr. Rothschild that EPS growth rates are not appropriate to use in a constant growth DCF?[64]

A. No. There are numerous reasons why projected EPS growth rates are the more appropriate growth rates to be relied upon in the DCF analysis:

- Earnings are the fundamental determinant of a company's ability to pay dividends, and over the long-term dividend growth can only be sustained by earnings growth.[65]

- There is significant academic research demonstrating that EPS growth rates are most relevant in stock price valuation.[66] For example, Liu, *et al*. (2002) examined "the valuation performance of a comprehensive list of value drivers" and found that "forward earnings explain stock prices remarkably well" and were generally superior to other value drivers analyzed. Gleason, *et al*. (2012) found that the sell-side analysts with the most accurate stock price targets were those whom the researchers found to have more accurate earnings forecasts.

- Investment analysts report predominant reliance on EPS growth projections. In a survey completed by 297 members of the Association for Investment Management

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[63] Rothschild Direct at 70-76.

[64] *Id.*, at 72-73.

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

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

and Research, most respondents ranked earnings as the most important variable in valuing a security (more important than cash flow, dividends, or book value).[67]

- Projected EPS growth rates such as those available from *Zacks* and *S&P Capital* are based on consensus estimates from multiple sources and thus the results are less likely to be biased in one direction or another. Moreover, the fact that projected EPS growth estimates are available from multiple sources on a consensus basis attests to the importance of projected EPS growth rates to investors when developing long-term growth expectations.

- Considering the empirical studies comparing the total factor productivity ("TFP") growth of the utility industry relative to the economy, it is not unreasonable to assume that earnings growth for utilities could exceed GDP growth over a long time period. For example, in a study filed as part of the Rate Regulation Initiative of the Alberta Utilities Commission, the authors calculated TFP growth[68] for 72 U.S. electric and combination electric and natural gas utilities and for the U.S. economy for the period of 1972 through 2009. For the U.S. utility group, TFP growth averaged 0.96 percent over the period of 1972 to 2009,[69] while TFP growth for the U.S. economy was 0.91 percent,[70] indicating that electric and combination electric and natural gas utilities were approximately 5 percent more productive than the U.S. economy over the study period. Therefore, the authors showed that utility growth exceeded growth for the U.S. economy for approximately 40 years.

For all these reasons, projected EPS growth rates should be used for purposes of estimating the cost of equity using the DCF analysis.

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

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

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

[70] Alberta Utilities Commission, Jeff Makholm, and Agustin Ros, "Total Factor Productivity Study for Use in AUC Proceeding 566 – Rate Regulation Initiative," December 30, 2010, at 19.

Q. Do you agree with Mr. Rothschild that Analysts' Projected EPS growth rates are biased?[71]

A. No. The 2003 Global Analysts Research Settlement (the "Global Settlement") served to significantly reduce the bias referred to by Mr. Rothschild. The Global Settlement required financial institutions to insulate investment banking from analysis, prohibited analysts from participating in "road shows," and required the settling financial institutions to fund independent third-party research. In addition, analysts covering the common stock of the proxy companies certify that their analyses and recommendations are not related, either directly or indirectly, to their compensation. Thus, it is unclear why the EPS growth rates for the proxy companies would be susceptible to an upward bias.

Q. Have you reviewed academic studies that evaluate the potential bias in analysts growth rates prior to and following the Global Settlement?

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

> Introduced in 2002, the Global Settlement and related regulations had an even bigger impact than Reg FD on analyst behavior. After the Global Settlement, the mean forecast bias declined significantly, whereas the median forecast bias essentially disappeared. Although disentangling the impact of the Global Settlement from that or related rules and regulations aimed at mitigating analysts' conflicts of interest is impossible, forecast bias clearly declined around the time the Global Settlement was announced.

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[71] Rothschild Direct, at 72-74.

> These results suggest that the recent efforts of regulators have helped neutralize analysts' conflicts of interest.[72]

Other studies such as Hribar and McInnis (2012)[73] and Michel and Pandes (2012)[74] found that analyst earnings forecasts turn out to be too optimistic for stocks that are more difficult to value, for instance, stocks of smaller firms, firms with high volatility or turnover, younger firms, or firms whose prospects are uncertain. These characteristics describe companies that are more volatile and/or less transparent than the average firm – none of which is applicable to the more mature and stable utility companies in the proxy group relied on by both Mr. Rothschild and I, where all companies had at least two analysts providing estimates and who, due to their regulated nature, have information transparency. Consequently, optimism bias is not expected to be an issue for utilities.

Q. Have you reviewed the study cited by Mr. Rothschild that examined the potential bias in Analysts' growth projections?

A. Yes. Mr. Rothschild references a study by Szakmary, Conover, and Lancaster (2008) that found that *Value Line*'s projected EPS growth rates exhibit a positive bias.[75] This study however relied on projected EPS growth rates from 1969 through 1997 and was therefore before the 2003 Global Settlement which, as previously stated, served to significantly reduce

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

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

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

[75] Andrew C. Szakmary, C. Mitchell Conover & Carol Lancaster, "An examination of Value Line's long-term projections," Journal of Banking & Finance 32 (2008); Rothschild Direct, at 73.

bias in growth rates. Therefore, since this study does not find bias in *Value Line*'s projected EPS growth rates post 2003 Global Settlement it cannot be relied upon to state that current projected EPS growth rates are biased.

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

A. Yes. Behn, Choi and Kang (2008) examined the relationship between financial audit quality and the accuracy of earning growth projections. Ultimately, the authors concluded that the accuracy of analysts' earnings growth projections were higher if the company was audited by a "Big 5" accounting firm.[76] At the time of the study, the Big 5 account firms were Deloitte & Touche, Price Waterhouse, KPMG, Ernst and Young and Coopers and Lybrand. However, because of the merger of Price Waterhouse and Coopers and Lybrand, there are currently four big accounting firms. As shown in Figure 9, all of the companies included in the proxy group are audited by a "Big 4" accounting firm, thus indicating a higher forecast accuracy of earnings growth projections for the proxy group companies.

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

Figure 9: Auditors of the Proxy Group Companies

Company	Ticker	Auditor
Alliant Energy Corporation	LNT	Deloitte & Touche LLP
Ameren Corporation	AEE	PricewaterhouseCoopers LLP
American Electric Power Company, Inc.	AEP	PricewaterhouseCoopers LLP
Avista Corporation	AVA	Deloitte & Touche LLP
Consolidated Edison, Inc.	ED	PricewaterhouseCoopers LLP
Duke Energy Corporation	DUK	Deloitte & Touche LLP
Edison International	EIX	PricewaterhouseCoopers LLP
Entergy Corporation	ETR	Deloitte & Touche LLP
Evergy, Inc.	EVRG	Deloitte & Touche LLP
Exelon Corporation	EXC	PricewaterhouseCoopers LLP
FirstEnergy Corporation	FE	PricewaterhouseCoopers LLP
IDACORP, Inc.	IDA	Deloitte & Touche LLP
OGE Energy Corporation	OGE	Ernst & Young LLP
Pinnacle West Capital Corporation	PNW	Deloitte & Touche LLP
PPL Corporation	PPL	Deloitte & Touche LLP
Southern Company	SO	Deloitte & Touche LLP
Xcel Energy Inc.	XEL	Deloitte & Touche LLP

Q. Do you agree with Mr. Rothschild that EPS growth rates are only useful for calculating sustainable growth rates to be used in the constant growth DCF?[77]

A. No. Mr. Rothschild states that growth rates used in the constant growth DCF should consider future sustainable growth in cash flow anticipated by investors and that this approach is similar to the approach relied upon by financial firms like J.P. Morgan Chase.[78] However, as previously stated, there is substantial empirical evidence and academic research demonstrating that key assumptions in the use of sustainable growth rates (*i.e.* the assumed positive relationship between retention and future earnings growth) does not necessarily hold and therefore renders the use of sustainable growth rates in the constant growth DCF not

[77] Rothschild Direct at 74-76.

[78] *Id*.

appropriate. Furthermore, Mr. Rothschild offers no evidence from major financial institutions or otherwise that utilizes or endorses his option-implied growth rate version of the constant growth DCF.

Q. Have you adjusted Mr. Rothschild's constant growth DCF analysis?

A. Yes. Since earnings are the fundamental determinant of a company's ability to pay dividends, I adjust Mr. Rothschild's constant growth DCF analysis to rely on the average projected EPS growth rates from *Value Line*, *S&P*, and *Zacks* instead of his calculated sustainable growth rates. As shown in Exhibit CLP-ROE-REBUTTAL-10, the resulting cost of equity ranges from 10.73 percent (12-month average market price) to 11.06 percent (spot market price). These results are substantially higher than his constant growth DCF results and consistent with the range of cost of equity estimates presented in my constant growth DCF analyses updated with current data and presented herein.

B. Non-Constant Growth DCF

Q. Please summarize Mr. Rothschild's non-constant growth DCF analysis.

A. Mr. Rothschild presents a non-constant growth DCF analysis using both an average of the high and low stock prices through September 30, 2026, and the closing spot market stock prices as of September 30, 2026. His non-constant growth model is based on projected capital appreciation, forecasted DPS growth rates, and projected book values for his proxy group as reported by *Value Line*.[79]

[79] Exhibit ALR-3, pages 3-4.

Q. Does the non-constant form of the DCF model increase the number of subjective inputs required to estimate the cost of equity?

A. Yes. The non-constant DCF model (sometimes also determined through a multi-stage DCF model) introduces additional assumptions and potential analyst bias. Specifically, the non-constant DCF model presented by Mr. Rothschild in this proceeding results in the following additional assumptions that require subjective judgment:

- Specification of the Model: Mr. Rothschild utilizes a non-constant DCF analysis using both closing stock price data and the average of the high and low stock prices through September 30, 2026. However, a multi-stage model could also be utilized with different stages of growth (*e.g.*, two-stage or three-stage DCF models).

- Selection of the Growth Rates: Mr. Rothschild uses *Value Line* projected DPS and assumes that the terminal stock price grows at the rate at which *Value Line* projects that book value will grow.

- Duration of the Stages of the DCF Model: Mr. Rothschild does not specify discrete growth stages of differing durations. Instead, his model assumes that an investor purchases the stock on October 1, 2026, receives dividends through September 30, 2030, and sells the stock on September 30, 2030. However, a multi-stage model could also have multiple growth periods with varying assumptions on the duration of each growth stage.

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

Q. Is Mr. Rothschild's specification of his non-constant growth DCF model inconsistent with his criticism of your use of analysts' projections?

A. Yes. Although Mr. Rothschild suggests that my analysis is flawed for relying on analysts' projected growth rates, his non-constant growth DCF also relies on analyst growth rates. As

shown on Exhibit ALR-3, pages 3 and 4, the assumptions used in Mr. Rothschild's non-constant growth DCF model are entirely based on *Value Line*'s projections (analyst's projections), including: (1) projected dividends per share; (2) a projected stock price based on *Value Line*'s projected book value; and (3) a projected cash flow resulting from the sale of stock based on *Value Line*'s projected stock price.

Q. Has Mr. Rothschild expressed concerns with the reliability of the non-constant growth DCF model in his prior testimony?

A. Yes. In testimony that he submitted in July 2022 in a rate proceeding filed by Pennsylvania American Water Company ("PAWC"), Mr. Rothschild did not rely on the results of his non-constant growth DCF and stated that it could understate the cost of equity:

> I did not rely on the results of my non constant growth DCF model, which range between 6.08% and 6.21% because this method does not incorporate the growth from the sale of new common stock and therefore could understate PAWC's cost of equity.[80]

Given the unreasonable results of Mr. Rothschild's non-constant growth DCF discussed previously, as well as the fact that he acknowledges his non-constant growth DCF can understate the cost of equity, demonstrates that his analysis should not be used for determining the cost of equity for the Company in this proceeding.

C. **CAPM Analyses**

Q. Please summarize Mr. Rothschild's CAPM analysis.

A. Mr. Rothschild's CAPM utilizes risk-free rates that are the spot yields for the 3-month Treasury bill and the 30-year Treasury bond as of September 30, 2026, as well as weighted

[80] Pennsylvania Public Utilities Commission, Docket Nos. R-2022-3031672 R-2022-3031673, Rothschild Direct Testimony, July 29, 2022, at 9.

averages over the three months ending September 30, 2026 for both yields. Mr. Rothschild utilizes a "forward beta" and a "historical blended" beta, whereby the forward beta is an option-implied beta calculated using options data with a maximum expiration period of six months for the companies in his proxy group and the S&P 500 Index. Mr. Rothschild calculates his market risk premium based on an estimate of the option-implied growth rate of the S&P 500 Index minus his risk-free rate.[81]

Q. Please summarize the areas of Mr. Rothschild's CAPM analysis with which you disagree?

A. The primary areas of disagreement are: (1) the 3-month Treasury bill selected as the risk-free rates; (2) the option-implied betas relied on; and (3) the assumed market risk premia estimate derived from option-implied growth rates.

1. Risk Free Rate

Q. Do you agree with Mr. Rothschild's use of the yield on the 3-month Treasury bill as the risk-free rate in his CAPM?

A. No. In determining the security most relevant to the application of the CAPM, it is important to select the term (or maturity) that best matches the life of the underlying investment. As noted by *Morningstar*:

> The horizon of the chosen Treasury security should match the horizon of whatever is being valued… If an investor plans to hold stock in a company for only five years, the yield on a five year Treasury note would not be appropriate since the company will continue to exist beyond those five years.[82]

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[81] Rothschild Direct at 43-61.

[82] *Morningstar*, *Inc*., 2010 Ibbotson Stocks, Bonds, Bills and Inflation, Valuation Yearbook, at 44.

Because utility companies represent long duration investments, the 30-year Treasury yield, not the 3-month Treasury bill, is the appropriate measure of the risk free rate for the purpose of the CAPM. In addition, based on principles of prudent financial management, the term of the debt financing should match the useful life of the asset being financed. Utility plant assets generally have useful lives beyond 25 years, meaning that, under prudent financial management, those assets should be financed with bonds of longer duration than 3 months.

Q. Is Mr. Rothschild's use of historical data to estimate the risk-free rate consistent with his views on estimating the investor-required return on equity?

A. No. Mr. Rothschild's use of historical and spot yields for the risk-free rate is inconsistent with the forward-looking nature of the CAPM, which he agrees is a forward-looking methodology. In addition, the cost of equity being estimated in this proceeding is for the forward-looking period when the Company's rates will be in effect, and therefore it is important for the Commission to consider projected risk-free rates in the CAPM.

Q. Mr. Rothschild contends that it is not appropriate to use a risk-free rate based on interest rate forecasts.[83] Is this consistent with his other cost of equity analyses?

A. No. Mr. Rothschild's argument regarding the accuracy of projected interest rates is not compelling and is inconsistent with his use of projected data elsewhere in his analyses. Although Mr. Rothschild argues against the use of a projected risk-free rate in his CAPM analysis, as noted previously, his constant growth DCF using sustainable growth rates and his non-constant growth DCF analysis both rely on forecasts for the development of many of the assumptions used in those analyses.

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[83] Rothschild Direct at 45 and 79.

Q. Do you agree with Mr. Rothschild that the use of interest rate forecasts to determine the risk-free rate is flawed because current market yields on U.S. Treasury bonds already reflect investor expectations?[84]

A. No. I utilize analysts' consensus near-term and longer-term projected 30-year Treasury yield for two of my risk-free rate scenarios as reported by *Blue Chip Financial Forecast*. *Blue Chip Financial Forecast* is a consensus estimate based on estimates from major investment firms (*e.g.*, JP Morgan Chase, Goldman, Sachs & Co., Barclays, and Bank of America). In fact, the *Blue Chip Financial Forecast* relies on data from some of the same sources that Mr. Rothschild relies on to support his criticisms of my analysis. A fundamental tenet in Mr. Rothschild's testimony is that he relies on market data based on the behavior of market participants, and it is undeniable that the opinions of these institutions are considered by equity investors and therefore can reasonably be relied upon as estimates of the risk-free rate in the CAPM. Furthermore, Mr. Rothschild fails to mention that one of my CAPM scenarios uses the current 30-day average of the 30-year Treasury yield as the risk-free rate.

2. Beta

Q. Is Mr. Rothschild's approach to estimating option-implied beta coefficients in this proceeding reasonable?

A. No. There are several reasons why Mr. Rothschild's beta estimates are unreasonable:

- Mr. Rothschild's forward option-implied beta varies significantly from week-to-week.
- Mr. Rothschild's short-term beta analyses (*i.e.*, his forward option-implied beta using options contracts with expirations six months in the future and his six-month

[84] *Id.*, at 79.

historical beta) overemphasize market dislocations and show significant variation over very short time periods.

- Mr. Rothschild arbitrarily selects the weighting factors for the historical beta coefficients in his "historical blended" betas.

Q. Why do you disagree with Mr. Rothschild's use of forward option-implied betas in his CAPM?

A. Mr. Rothschild calculates a weekly forward option-implied beta based on the options contract for a single day. However, daily market volatility can be significant, which affects his calculation of the weekly option-implied beta resulting in substantial variations in his option-implied betas from week-to-week.

Q. Does Mr. Rothschild's testimony demonstrate significant week-to-week variation in his option-implied betas?

A. Yes. As shown on Exhibit ALR-4, page 3, the forward option-implied beta for his proxy group is 0.69 on June 30, 2026, while later on September 1, 2026, it is 0.49. Utilizing a beta of 0.69 versus 0.49 in the CAPM, all else equal, would result in significantly different cost of equity estimates. This demonstrates that the approach Mr. Rothschild relies on to estimate his option-implied beta used in the calculation of his forward betas is highly variable.

Q. How does Mr. Rothschild's calculation of historical betas overemphasize market dislocations?

A. Mr. Rothschild calculates betas over three time periods: 6 months; 2 years; and 5 years. He places the greatest weight (*i.e.*, 50 percent) on his 6-month historical betas, despite recognizing that changes in market dynamics, such as macroeconomic events (*e.g.,*

COVID-19) can have a larger effect on 6-month historical betas.[85] Although Mr. Rothschild acknowledges that changes in market dynamics have a larger effect on 6-month historical betas, he dismisses this fact by concluding that there are always numerous factors affecting markets and that "it is a good idea to use 6-month historical betas to measure recent and current market dynamics regardless of recent developments."[86]

Q. Is there wide variation in the 6-month beta estimates calculated by Mr. Rothschild?

A. Yes. As shown in Exhibit ALR-4, page 3, the 6-month historical beta ranged from 0.08 to 0.17 over a 14-week period, while the 5-year historical betas show much less fluctuation. Specifically, over the same time-period, the 5-year betas range from 0.58 to 0.60. Thus, short term fluctuations in the market can have a significant effect on the 6-month historical beta from week-to-week. Given that a 6-month historical beta calculation can be greatly affected by short-term changes in the market, it is reasonable to place greater weight on the historical betas calculated using 5 years of market data – which is exactly the opposite of what Mr. Rothschild does.

Q. How does Mr. Rothschild arrive at his final blended beta?

A. Mr. Rothschild relies on the forward and "historical blended" betas for both the most recent week (*i.e.*, September 30, 2026) and a three-month weighted average (*i.e.*, June 30, 2026, through September 30, 2026).[87] For his weighted average, Mr. Rothschild calculates a

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[85] Rothschild Direct at 52-53.

[86] *Id.*, at 53.

[87] Exhibit ALR-4, page 3.

weekly time series for both the option-implied betas and historical betas over that three-month period, giving the greatest weight to the more recent data in the series.

Q. Is there any empirical or academic support for weighting the time series of beta calculations as Mr. Rothschild has done?

A. No. This methodology lacks empirical support and appears to be entirely Mr. Rothschild's own methodology. Although Mr. Rothschild relies on the Chang, Christoffersen, Jacobs, and Vainberg (2011) study to suggest that his calculation is superior to the use of published betas,[88] this study does not discuss the use of a weighted time series. Further, Mr. Rothschild provides no other empirical studies or academic support that suggests calculating a 3-month weighted average of the time series will produce a more accurate estimate of beta to be used in a forward-looking CAPM analysis.

Q. Are Mr. Rothschild's options-implied betas biased by the limited availability of data for his proxy group?

A. Yes. Consistent with his option-implied growth rate analysis, reviewing the underlying data relied upon by Mr. Rothschild, it is clear that the actual option data is sparse, the trading of these contracts is limited, and the data is volatile. The combination of limited data, illiquid trading, and volatility in settlements demonstrates that this data cannot reasonably be relied upon to estimate a forward-looking beta.

Q. Please summarize the limitations you have identified in the underlying data used in Mr. Rothschild's option analysis.

A. In reviewing Mr. Rothschild's workpapers, the following limitations were identified:

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[88] Rothschild Direct at 49-50 and 55.

- In past proceedings, Mr. Rothschild has provided options contract data utilized to determine his option-implied betas, which demonstrates that the duration of his options contracts for his proxy group have expiration dates that are no longer than 1 year forward-looking with a majority of the proxy group companies having expiration dates of no longer than 1 year, whereas the S&P 500 has option contracts out approximately 5 years. Therefore, his beta calculations could not be relied upon because the utility options contracts used in the calculation are not similar in term to the S&P 500 contracts. While this information was requested in this proceeding, Mr. Rothschild did not provide this underlying calculation and therefore it is not possible to verify the calculation of his option-implied betas.

- Similar to his option-implied growth rates, as shown in Exhibit CLP-ROE-REBUTTAL-9, the options contract data for his proxy group companies is limited. Mr. Rothschild was unable to estimate an option-implied beta for three out of the seventeen companies included in his proxy group, and for one week he was unable to estimate the option-implied beta for four of the seventeen companies. Specifically, Mr. Rothschild was unable to calculate an option-implied beta for the entire period of June 30, 2026 through September 29, 2026 (*i.e.* fourteen weeks) for Avista Corporation and OGE Energy Corporation.

- Similar to his option-implied growth rates, for weeks where options contract data was not available, Mr. Rothschild creates data by relying on one of his estimation methods including: (1) linear extrapolation to estimate the betas for the missing weeks using the actual option-implied betas from before and after the missing observations; (2) holding the prior data point constant; or (3) back-casting from an actual data point. It is clear that Mr. Rothschild has provided no basis to assume that these methods are appropriate, which is particularly important because of the significant number of weeks where options contract data is missing. Further, none of the data that has been created by Mr. Rothschild is market data.

- Lastly, as discussed previously in regard to his option-implied growth rates, his option-implied betas are very sensitive to the expiration date of the contract. However, as previously discussed, while this information was requested in this proceeding, Mr. Rothschild did not provide this underlying calculation and therefore it is not possible to verify the calculation of his option-implied betas.

Q. What are your conclusions regarding the option contract data relied upon by Mr. Rothschild?

A. As discussed previously, there is limited options contract data available for utilities. Further, Mr. Rothschild has made several simplifying and inconsistent assumptions to fill in large gaps in the data set on which he relies and his beta estimates vary significantly depending on the contract expiration date. Therefore, the analysis he performs is not market-based and cannot be used to estimate the cost of equity for the proxy group companies.

Q. Have the various methodologies that Mr. Rothschild has used to estimate beta over time produced consistent results?

A. No. As shown in Exhibit CLP-ROE-REBUTTAL-11, Mr. Rothschild has relied on a variety of approaches to estimate beta; using option-implied and hybrid beta estimates between mid-2020 and the end of 2022, with a range of betas varying widely over time from 0.38 to 0.82. Since that time, Mr. Rothschild has relied on option-implied betas and historical blended betas, with the calculation of his option-implied betas continually evolving over this period. The results using these more recent approaches still produce a range that is extremely wide, ranging from 0.27 to 0.94. A proxy group beta of 0.27 will produce a substantially different CAPM result than a proxy group beta of 0.94.

Q. Mr. Rothschild states that your *Value Line* beta coefficients overstate the cost of equity because they are based on historical data and are greater than Mr. Rothschild's option-implied betas.[89] Do you agree?

A. No. There is no basis for Mr. Rothschild's claim that my *Value Line* historical betas overstate the cost of equity. First, as previously discussed, Mr. Rothschild's option-implied betas suffer from various issues including a lack of academic support, significant variation in week-to-week beta calculations, and data scarcity. Therefore, they are not a relevant comparator and provide no basis from which to draw any meaningful conclusion regarding the betas used in my CAPM and ECAPM analyses.

Second, Mr. Rothschild also relies on historical beta estimation in his own CAPM analyses (*i.e.*, a six-month, two-year, and five-year historical period), and thus it is not reasonable for Mr. Rothschild to claim the *Value Line* betas on which I rely overstate the cost of equity when he himself utilizes historical betas calculated over the same historical period in his blended historical beta. Mr. Rothschild, as part of his historical blended beta, utilizes historical betas calculated using five-year historical weekly stock returns, which is the same period over which my *Value Line* betas are calculated.

3. Market Risk Premium

Q. Do Mr. Rothschild's market risk premium estimates suffer similar flaws to those identified in his beta estimates?

A. Yes. Mr. Rothschild uses options contracts that expire up to 68 months in the future for his market risk premium calculation, however these contracts are for a single trading day, which, as discussed, are sensitive to trading day volatility and do not produce consistent results.

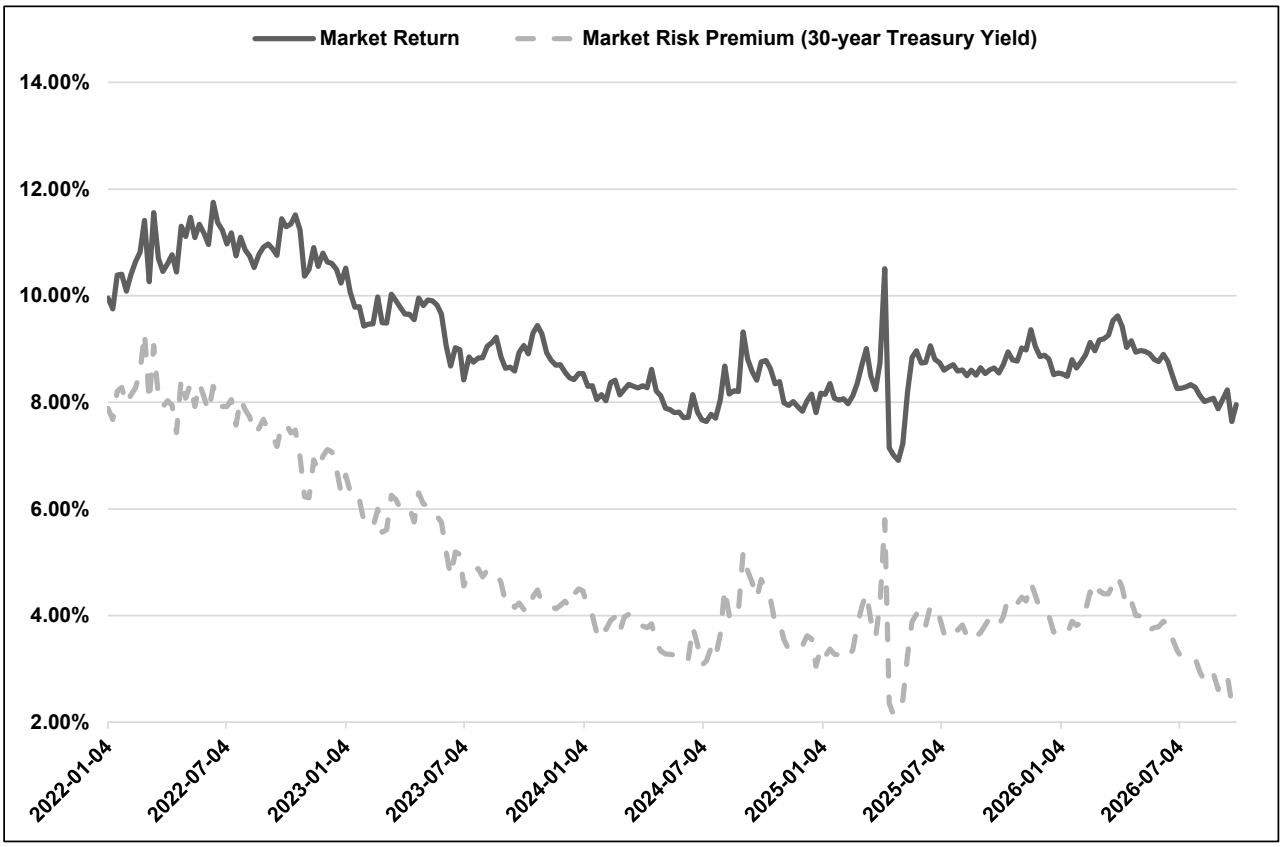
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[89] *Id.*, at 79-80.

Depending on the day chosen, this type of volatility will result in significant changes in the market return using Mr. Rothschild's estimation process. Accordingly, it is not appropriate to estimate the cost of equity for the Company using a calculation that can vary greatly from day-to-day.

As shown in Figure 10, Mr. Rothschild's market return calculation has varied significantly since January 2022, from a low of 6.91 percent to a high of 11.75 percent. This demonstrates that it is not appropriate to estimate the cost of equity for the Company using an approach that can vary so greatly in such a short period of time.

Figure 10: Variability in Mr. Rothschild's Market Return and Market Risk Premium, January 2022 through September 2026[90]

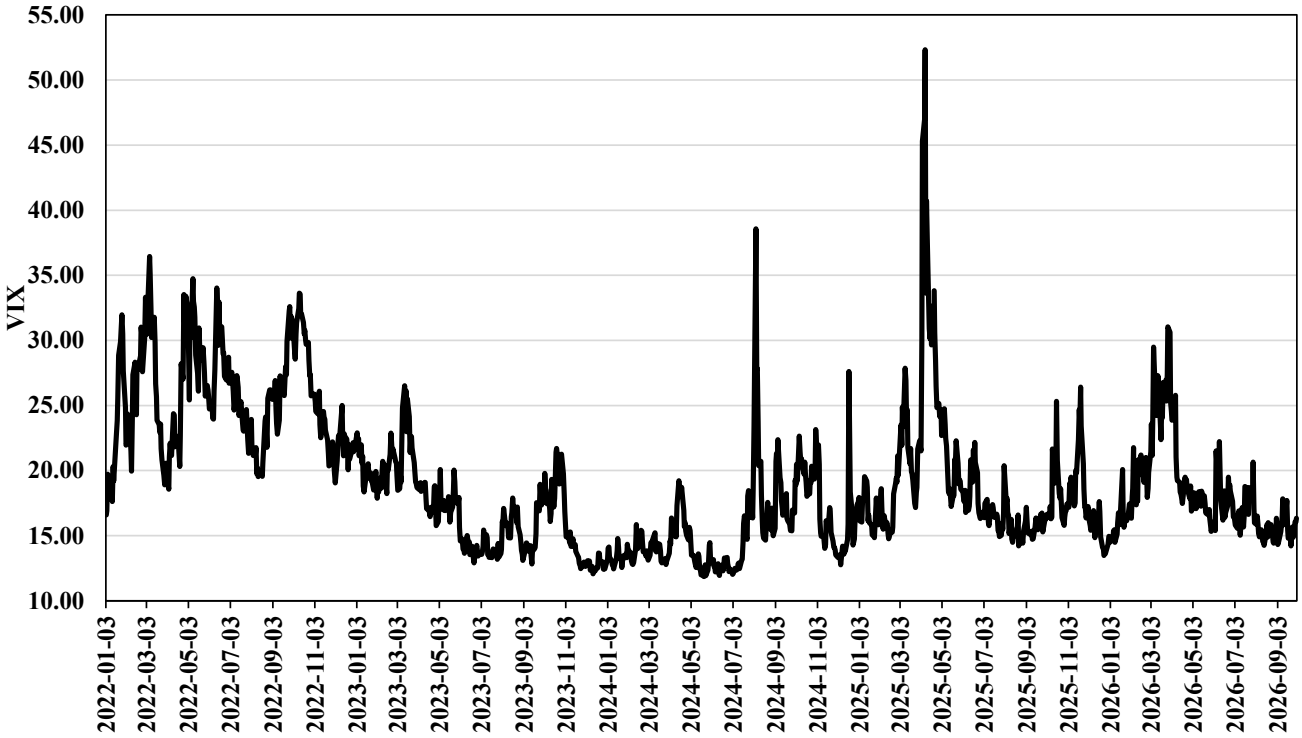


Q. Does Mr. Rothschild's estimate of the market risk premium using a three-month average address the deficiency of using spot market data?

A. No. Although Mr. Rothschild indicates he uses a three-month average, it is my understanding that the calculation represents the average of options contract data for a single day for each week in each of the three months. This average will be highly dependent on the days selected given that options data are highly correlated with the VIX, which, as shown in Figure 11, has been quite volatile.

[90] Rothschild Workpaper: 2026.09.30 – CL&P Cost of Capital (RFC Electric PG).xlsx.

Figure 11: VIX Index



Q. Are there other reasons why it is not appropriate to rely on options data to estimate the market return?

A. Yes. Although Mr. Rothschild is relying on traded options contracts, this data represents options investors' *predictions* as to the direction of the market over the near-term, which could be incorrect. In fact, an article published in *Forbes* casts doubt on the accuracy of options investors' expectations, suggesting that options buyers lose 90 percent of the time, which suggests that the options market has worse odds than a casino:

> Mood is one thing – it may well be dark – but the significance of it is altogether different. The PCR [Put/Call ratio] signal is a huge Green Light for investors.
>
> This is because, like almost all measures of broad investor sentiment, the Put/Call Ratio is contrarian. It has to be interpreted as the opposite of

> what it seems to say. If negative sentiment predominates – with so many more Puts than Calls – it is historically a reliable signal of an upturn in the market in the not-too-distant future.
>
> How can this be so? thousands or tens of thousands of options buyers are convinced that their bets on a continued decline will pay off. Aren't we urged to respect the "wisdom of crowds"?
>
> Yet this crowd is not just wrong. It is precisely, spectacularly and persistently wrong.
>
> It is widely known that options traders, especially option buyers, are not the most successful traders. Option buyers lose about 90% of the time.
>
> This is an overlooked truism in finance. The options market has even worse odds than a casino. Practically every option buyer loses money.[91]

If options traders' views regarding the direction of the market over the near-term are considered incorrect, it is likely that the market return calculated using options data will not be reflective of the return requirements of all investors.

For example, if options investors are purchasing significantly more puts (*i.e.*, options that grant investors the right to sell an equity at a specified price in the future) than calls (*i.e.*, options that grant investors the right to buy an equity at a specified price in the future), options investors are bearish on the market and expect it to decline. This would indicate increased risk in the market and thus an increase in investors' required return and the market risk premia. However, as noted by the *Forbes* article, this is likely an indicator for non-options investors to instead buy equities as the market has likely bottomed and will increase over the near-term. Likewise, the converse is true if options investors are buying significantly more calls than puts expecting the market to increase. Therefore, if non-options

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[91] George Calhoun, "The Put/Call Ratio Says 'Get In The Market Now!," *Forbes*, September 22, 2022.

investors are taking a "contrarian" approach to the trends in options, a market return based on options data will not accurately reflect the broader expectations of all investors over the near term.

Q. Is there academic support for this conclusion?

A. Yes. I have reviewed two studies that support my conclusion. De Silva, So, and Smith (2023) note an increase in the proportion of retail investors trading options since the COVID-19 pandemic; however, these retail investors have lost money trading options. This shows that retail traders in options markets have been consistently incorrect regarding near-term expectations.

> This combination of behaviors translates to retail losses of 5-to-9% around earnings announcements on average, and 10-to-14% for high expected volatility announcements. This has led to significant capital transfers from retail investors to market makers, especially during the COVID pandemic. Our results complement the findings in Poteshman and Serbin (2003) that unsophisticated investors exercise options early by showing that not only do these investors misunderstand the mechanics of options, but also they trade these options at times when and in stocks where they have exceptionally high prices.[92]

Additionally, Cao, Li, Zhan, and Zhou (2023) examined how equity options trading affects the market risk premium. Cao, Li, Zhan, and Zhou found that higher (lower) levels of call option volume would lead to lower (higher) stock market returns in the next days, weeks, and months:

> We find ACIB [aggregate equity call option order imbalance] strongly and negatively predict future stock market returns from days to months. Higher (lower) ACIB leads to lower (higher) stock market returns in next

[92] Tim de Silva, Kevin Smith, Eric C. So, "Losing is Optional: Retail Option Trading and Expected Announcement Volatility," June 8, 2023.

> couple of days, weeks, and months respectively. Interestingly, we do not find such predictive power from using a similar aggregate equity put option order imbalance (APIB). Moreover, we conduct robustness checks by decomposing equity option trading into different groups based on trading size, option moneyness, option time to maturity, option traders, alternative aggregation method, and alternative data resources. We find the predictive power of ACIB remains strong and robust in most cases, and is more prominent among options driven by retail investors.
>
> ******
>
> Overall, we argue that the predictive power of ACIB forecasting market risk premium comes from general sentiment trading behaviour among equity option traders, especially the retail investors who are overly optimistic or pessimistic. Our evidence is consistent with the view that retail investors are sensitive to the underlying stocks' current performance, thus leading to overbought (too bullish) or oversold (too bearish) reactions of option trading.[93]

Both studies provide support for a "contrarian" approach where if the put/call ratio is significantly greater (less) than 1.0, the market is likely to increase (decrease). These studies provide evidence that Mr. Rothschild's market return based on options data is likely not aligned with overall investors' near-term expectations regarding the market return.

Q. Is Mr. Rothschild's methodology for estimating the market return in this proceeding consistent with the approach he has applied in prior proceedings?

A. No. Mr. Rothschild has admitted that he made a change in his methodology for estimating the option-implied market return in late 2020 to rely on a log-normal function and a cumulative probability of 50 percent, but states that he has relied on this updated methodology since 2021.[94] Although it may be true that each of his testimonies since 2021

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[93] Jie Cao, Gang Li, Xintong Zhan, and Guofu Zhou, "Betting Against the Crowd: Option Trading and Market Risk Premium," *SSRN*, September 1, 2022.

[94] Connecticut Public Utilities Regulatory Authority, Docket No. 24-10-04, Direct Testimony of Aaron L. Rothschild, February 14, 2025, at 150-151.

have relied on a log-normal function to estimate the option-implied market return, Mr. Rothschild has nonetheless made additional changes to his calculation of the option-implied market return. Reviewing Mr. Rothschild's analyses that rely on historical data, his results change from case to case, demonstrating that he is not consistently applying his own methodology.

For example, as shown in Figure 12, Mr. Rothschild calculated a different option-implied market return for the same December 28, 2021 period in three separate rate cases in 2022; ranging from 9.98 percent to 10.41 percent, or a difference of 43 basis points. Similarly, in his testimony in a United Illuminating rate proceeding in Connecticut in late 2022,[95] Mr. Rothschild estimated a spot option-implied market return of 11.45 percent as of September 27, 2022, whereas just six weeks prior in Docket No. 22-07-01 for Aquarion Water, Mr. Rothschild calculated a spot option-implied market return for this exact same date of 10.98 percent, a difference of 47 basis points.

These discrepancies continued in the analyses presented in his testimonies in 2024. In Docket No 23-11-02 for Connecticut Natural Gas Corporation, Mr. Rothschild estimated a spot option-implied market return of 8.57 percent as of December 26, 2023; however, later that year in Docket No. 24-00032 for Tennessee-American Water Company, Mr. Rothschild calculated a spot option-implied market return for the same date of 8.54 percent. Therefore, despite Mr. Rothschild's contention that he has used the same methodology since 2021, his calculations of the option-implied market return belie that statement and are not consistent

[95] Connecticut Public Utilities Regulatory Authority, Docket No. 22-08-08, Direct Testimony of Aaron L. Rothschild.

from case-to-case even when purportedly using data as of the same date. These examples demonstrate that even Mr. Rothschild cannot reproduce his own analytical results. It is not appropriate to rely on a methodology to estimate the cost of equity that cannot be reproduced or verified, even by the original analyst, and is highly variable.

Figure 12: Summary of Mr. Rothschild's Market Return Calculations

Company	Docket No.	Date of Testimony	As of 12/28/2021	As of 6/28/2022	As of 9/27/2022	As of 12/26/2023
San Jose Water Company[96]	A.21.05.001 *et. al.*	1/31/22	10.41%	N/A	N/A	N/A
Pennsylvania American Water[97]	R-2022-3031672 (Water) R-2022-3031673 (Wastewater)	7/29/22	10.28%	11.22%	N/A	N/A
Aquarion Water[98]	22-07-01	10/26/22	9.98%	10.96%	10.98%	N/A
United Illuminating[99]	22-08-08	12/13/22	10.28%	11.22%	11.45%	N/A
Connecticut Natural Gas Corporation[100]	23-11-02	2/8/24	10.28%	11.22%	11.45%	8.57%
Tennessee-American[101]	24-00032	9/17/24	10.28%	11.22%	11.44%	8.54%

Q. Does Mr. Rothschild claim that your market return calculation is overstated?

A. Yes. Mr. Rothschild validates his cost of equity model results against the long-term market expectations of financial institutions and investors. Mr. Rothschild notes that the expected returns on the broader U.S. equity market reflected in these sources range from

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96 CPUC, Docket A.21.05.001 *et. al.,* January 31, 2022, at 87. Workpaper titled "2021.12.31 – CA4 Cost of Capital (RFC Water PG)".

97 Pennsylvania Public Utilities Commission, Docket No. R-2022-3031672, Rothschild Direct Testimony, July 29, 2022, at 94. Workpaper titled "2022.06.30 - PAWC Cost of Capital (RFC Water PG)".

98 Connecticut Public Utilities Regulatory Authority, Docket No. 22-07-01, Direct Testimony of Aaron L. Rothschild, October 26, 2022, Workpaper titled: 2022.09.30 - Aquarion Cost of Capital (RFC Water PG).

99 Connecticut Public Utilities Regulatory Authority, Docket No. 22-08-08, Direct Testimony of Aaron L. Rothschild, December 13, 2022, Workpaper titled: 2022.10.31 - UI Cost of Capital (Bulkley Electric PG).

100 Connecticut Public Utilities Regulatory Authority, Docket No. 23-11-02, Direct Testimony of Aaron L. Rothschild, February 8, 2024, Workpaper titled: 2023.12.31 - CNG Cost of Capital (RFC Gas PG).

101 Tennessee Public Utility Commission, Docket No. 24-00032, Direct Testimony of Aaron L. Rothschild, September 17, 2024, Workpaper titled: 2024.08.31 - TAWC Cost of Capital (RFC Water PG).

approximately 5.90 percent to 10.68 percent and contends that these estimates support his recommendation.[102] Similarly, Mr. Rothschild states that the market risk premium included in my direct testimony, which is derived from a market return of 13.38 percent, is excessive compared to Dr. Damodaran's implied equity risk premium of 4.20 percent, as well as a publication by Hammond and Leibowitz, *Revisiting the Equity Risk Premium*, where they note that the equity risk premium forums fell within a range of 3 percent to 5 percent.[103]

Q. What is your response to Mr. Rothschild comparison of the equity return expectations of financial institutions?

A. I have two primary concerns. First, studies have shown that investment firms have not accurately forecasted actual market returns. For example, the investment firm Dimensional Fund Advisors LP compared the return forecasts of investment firms published in their capital market assumption reports (*i.e.,* the same reports referenced by Mr. Rothschild) for various asset classes for the ten-year period of 2014-2023 to the returns that were actually achieved over the same time period. This comparison showed that the forecasted returns from investment firms for U.S. equities ranged from 5.5 percent to 7.7 percent for the period of 2014-2023; however, the actual return for U.S. equities over this period was 11.50 percent, or substantially greater than the range projected by the various investment firms. Given the inaccuracy of the forecasts, the recommendation was to not rely on the forecasts of investment firms when building investment portfolios:

> Rather than relying on a crystal ball that does not exist, planning for the possible range of outcomes can better prepare investors for what's ahead. When setting expectations about potential outcomes, we believe a

[102] Rothschild Direct at 13.

[103] *Id.*, at 80-81.

> sensible starting point is to look at the long-term historical performance of asset classes, to incorporate information from real-time market prices when relevant, and to consider a wide range of possible values.[104]

Second, while Mr. Rothschild has classified the referenced returns as the expectations of the investment firms; he fails to indicate that investment firms often also provide a ***range of return*** expectations and that those ranges highlight the significant degree of uncertainty associated with their forecast estimates. For example, Mr. Rothschild cites BlackRock, which currently (as of August 2026) provides annual return expectations for the next 10 years of 8.97 percent for U.S. equities. However, BlackRock also provides a range of annual return expectations for the next 10 years for U.S. equities, which is currently 4.14 percent to 14.98 percent. Moreover, BlackRock specifically notes that their return expectations should not be used as an estimate of future performance:

> This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise - or even estimate - of future performance.[105]

Given the inaccuracy of forecasting actual returns using the projected returns of investments firms and the large range of returns provided by the investment firms, it is not reasonable for Mr. Rothschild to conclude that my forward-looking market return, and therefore my market risk premium, is overstated.

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[104] Matt Wicker, "Reality Check: Capital Market Assumptions vs. Actual Returns," December 20, 2024.

[105] BlackRock Investment Institute, Capital Market Assumptions, August 2026.

Q. What is the primary disagreement that Mr. Rothschild has regarding your calculation of the market risk premium?

A. Mr. Rothschild contends that the forward-looking market return, and thus market risk premium, in my CAPM analyses are overstated.

Q. Is the methodology that you have used to estimate the market return in the CAPM supported by regulatory commissions?

A. Yes. Various state utility regulatory commissions have supported the use of a constant growth DCF model to estimate the market return in the CAPM. As shown in Figure 13, the Staff of the Illinois Commerce Commission ("ICC"), the Bureau of Investigation and Enforcement ("I&E") of the Pennsylvania Public Utility Commission ("Pennsylvania PUC"), and the Staff of the Maine Public Utilities Commission ("Maine PUC") have each supported the forward-looking market risk premium, and the market return estimates using the constant growth DCF model. In each of these cases, the respective regulatory commission relied on the estimated CAPM results, using the methodology that I have relied upon in this case, to determine the authorized ROE and did not dispute the use of the constant growth DCF model to calculate the market return.

Figure 13: Examples of Jurisdictions Where Market Return Estimated Using the Constant Growth DCF Model

Intervening Party	Applicant	Docket No.	Approach of Intervening Party to Calculating the Market Return	Date of Order	Did the Commission Rely on the Intervening Party's CAPM?
Staff of the ICC	North Shore Gas Company	20-0810	CGDCF of the dividend-paying companies in the S&P 500 (11.95%)[106]	9/8/21	Yes[107]
I&E	Aqua Pennsylvania, Inc.	R-2021-3027385	CGDCF of the Value Line Universe and S&P 500 (12.14%)[108]	5/12/22	Yes, the regulator placed primary weight on I&E's CAPM[109]
Staff of the Maine PUC	Northern Utilities, Inc.	2019-00092	CGDCF of the dividend-paying companies in the S&P 500 (11.33%-13.49%)[110]	4/1/20	Yes[111]

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

A. Yes. The Federal Reserve Bank of New York published an analysis in 2015 that reviewed 20 methodologies over the period 1960 through 2013 for estimating the market risk premium.[112] The results of this study demonstrate that my market risk premium estimates, which, as shown on Exhibit CLP-ROE-REBUTTAL-4, are in the range of 8.07 percent to 8.69 percent, are reasonable. Specifically, the key conclusions from this study are:

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106 Illinois Commerce Commission, Docket No. 20-0810, Order at 71 (Sept. 8, 2021).

107 *Id*. at 86-87.

108 Pennsylvania Public Utility Commission, Docket No. R-2021-3027385, Opinion and Order at 147, (May 16, 2022).

109 *Id*. at 178.

110 Maine Public Utilities Commission, Docket No. 2019-00092, Bench Analysis at 21 (Oct. 29, 2019).

111 *Id*., Order Part II at 58 (April 1, 2020).

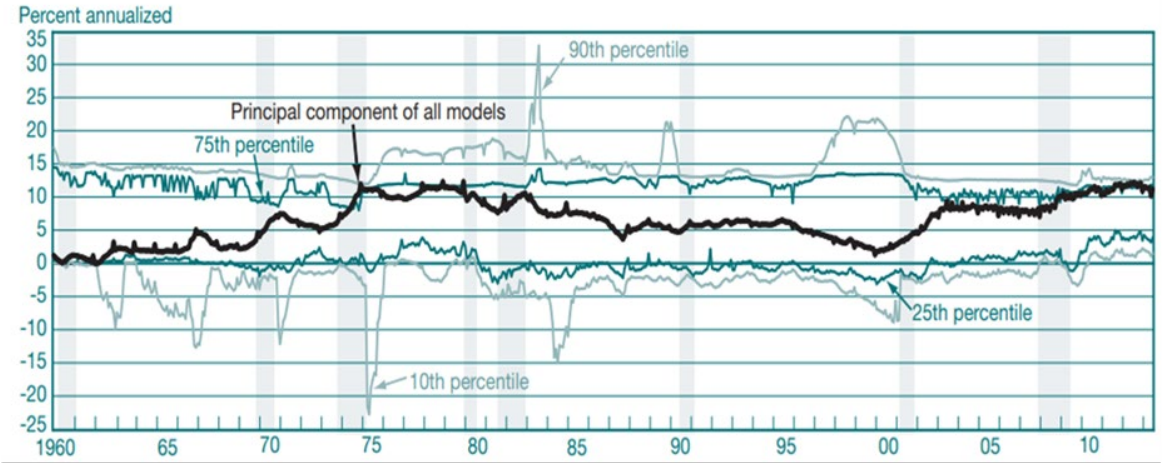
112 Fernando Duarte and Carla Rosa, "The Equity Risk Premium: A Review of Models," Federal Reserve Bank of New York (2015).

- The 20 methodologies reviewed reflected a range for the market risk premium between -1.00 percent to 14.50 percent.

- As shown in Figure 14, the principal component analysis of the 20 models (*i.e.*, the bold black line) produced a range for the market risk premium of approximately 0.00 percent to over 10.00 percent from 1960 through 2013.

- The one-year-ahead market risk premium was consistently greater than 10.00 percent following the financial crisis of 2008/09.

Figure 14: The Federal Reserve Bank of New York, One-Year-Ahead Market Risk Premium[113]



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

> Chart 2 shows the first principal component of all twenty models in black (the black line is the same principal component shown in black in each of the panels of Chart 1). ***As expected, the principal component tends to peak during financial turmoil, recessions, and periods of low real GDP growth or high inflation***. It tends to bottom out after periods of sustained bullish stock markets and high real GDP growth. Evaluated by the first principal component, the one-year ahead ERP [*equity risk premium*] reaches a local peak in June 2012 at 12.2 percent. The surrounding months have ERP estimates of similar magnitude, with the most recent estimate in June 2013 at 11.2 percent. This behavior is not so clearly seen

[113] *Id.,* at 50.

> by simply looking at the collection of individual models in Chart 1, a finding that highlights the usefulness of principal component analysis. Similarly high levels were observed in the mid- and late 1970s, during a period of stagflation, while the recent financial crisis had slightly lower ERP estimates, closer to 10 percent.[114]

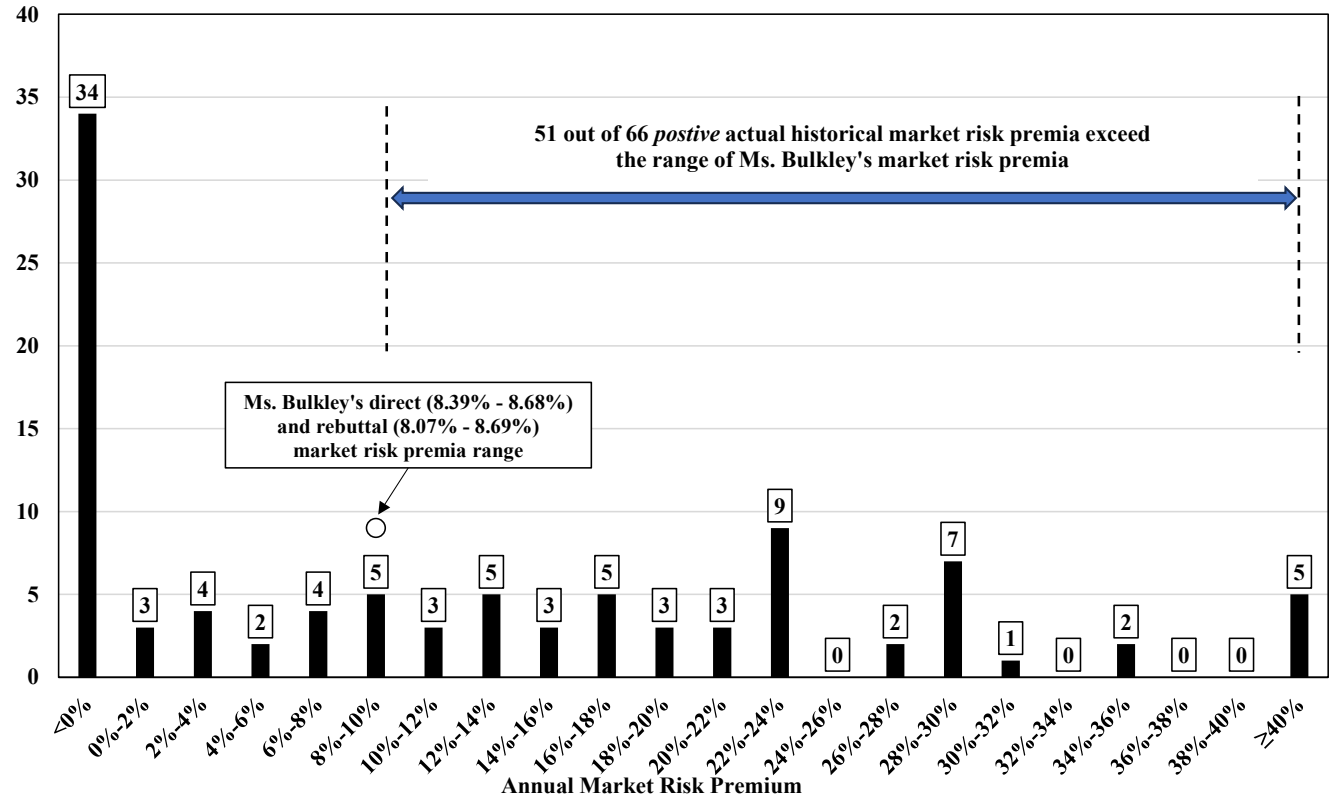
Thus, the Federal Reserve Bank of New York noted that the market risk premium is higher during periods of increased inflation. Although inflation has declined significantly in the past two years, it remains above the Federal Reserve's target of 2.00 percent.

Q. Is the market return, and thus the market risk premia, you have relied on consistent with historical market risk premia?

A. Yes. As shown in Figure 15, the vast majority of the positive historical market risk premium observations are at or above the range of market risk premia used in my direct (8.39 percent to 8.68 percent) and rebuttal testimonies (8.07 percent to 8.69 percent).

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

Figure 15: Distribution of Historical Market Risk Premia (1926-2025)[115]



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

A. For all the reasons just discussed, the market return, and thus market risk premium, in my CAPM analyses are reasonable and consistent with the findings of the Federal Reserve and other utility regulatory commissions. Therefore, there is no basis to conclude that the market return, and thus market risk premium, in my CAPM analyses is overstated.

[115] Depicts the risk premia as calculated as the difference between total annual returns on large company stocks and income only returns on long-term government bonds, as reported in the 2023 Kroll SBBI Yearbook for 1926-2022 and from S*&P Capital IQ Pro* (market returns) and *Kroll* (long-term government bond yields) for 2023-2025.

4. Adjustments to Mr. Rothschild's CAPM analysis

Q. Did you recalculate Mr. Rothschild's CAPM analysis to address your concerns?

A. Yes. As shown on Exhibit CLP-ROE-REBUTTAL-12, I adjusted Mr. Rothschild's CAPM analysis to rely on: (1) only the 30-year Treasury bond yield as the estimate of the risk free rate; (2) only relying on Mr. Rothschild's calculation of the 3-month average of five-year historical beta coefficients; and (3) the current forward-looking market return of 13.39 percent.[116] These adjustments increase Mr. Rothschild's CAPM results that as filed ranged from 5.22 percent to 7.11 percent to a range of 10.12 percent to 10.21 percent.

D. **ECAPM Analysis**

Q. Please summarize Mr. Rothschild's position regarding your ECAPM analyses.

A. Mr. Rothschild contends that the use of an adjusted beta in the ECAPM is double counting and thus produces overstated results. Mr. Rothschild also asserts that the academic support underpinning the ECAPM is biased and that the ECAPM adjustment is not necessary. Lastly, Mr. Rothschild contends that the ECAPM results violate the economic boundary of the return on the overall equity market.[117]

Q. Do you agree with Mr. Rothschild that the ECAPM inappropriately adjusts betas and thus produces overstated results?

A. No. The CAPM and the ECAPM are adjusting for different factors. The purpose of adjusting beta in the CAPM is to account for the tendency of beta to trend back over time to the market

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[116] Although I also disagree with Mr. Rothschild's use of the 3-month historical average Treasury Bond yield and a spot 30-year Treasury Bond yield as the risk-free rate, the selection of the market return and beta represents the most significant methodological difference in our CAPM analyses. Therefore, I have not calculated a revised version of Mr. Rothschild's CAPM analysis using projected Treasury Bond yields.

[117] Rothschild Direct at 82-85.

beta of 1.00. The betas published by *Value Line* include this adjustment, which was first proposed by Marshall E. Blume in 1975.[118] The use of adjusted betas in the CAPM is important because if beta trends towards 1.00, as Blume noted, then the adjusted beta will be more reflective of the beta that can be expected over the near-term. This is equally important in the specification of the CAPM in this case since we are estimating the cost of equity for the Company over the near term.

The ECAPM does not account for the tendency of beta to trend toward 1.00. The purpose of the ECAPM is to account for the fact that the risk-return relationship is flatter than what is estimated by the CAPM, *even when using adjusted betas*. While beta is not observable and must be estimated, the theory behind the ECAPM is that even if the true value of a stock's beta were observable, the CAPM would understate the results for stocks with betas less than 1.00 and overstate the results for stocks with betas greater than 1.00. Therefore, contrary to Mr. Rothschild's view, the purpose of each adjustment is different, and thus applying both adjustments in the ECAPM is not duplicative.

The concept of the ECAPM and the conclusion that the risk-return relationship is flatter than predicted by the CAPM is generally accepted in financial literature. For example, in *Modern Regulatory Finance*, Dr. Morin provides a list of studies, each of which concludes that the CAPM understates the returns for companies with betas less than 1.0 and overstates the return for companies with betas greater than 1.0.[119] It is these empirical studies that formed

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[118] Marshall E. Blume, "Betas And Their Regression Tendencies," *The Journal of Finance*, Vol. 30, No. 3 at 785–795 (1975), available at https://www.scribd.com/document/419756244/Betas-and-Their-Regression-Tendencies.

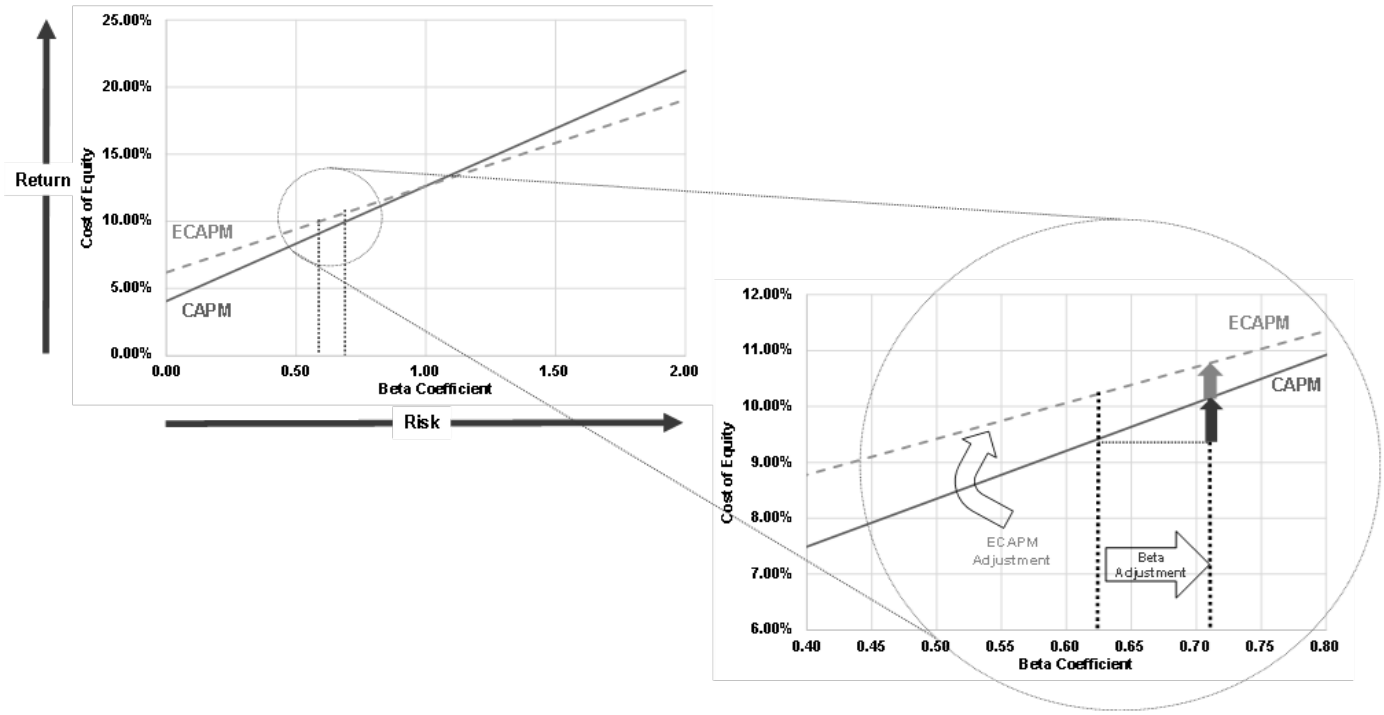
[119] Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Reports, Inc., 2021, at 206-208.

the basis of the development of alternative models such as the ECAPM that would better predict the risk return-relationship observed when reviewing actual market data.

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

A. Yes. Figure 16 demonstrates that adjusting betas and adjusting the slope of the risk/return relationship through the ECAPM are two distinct adjustments and are not duplicative. As shown in Figure 16, when beta is adjusted to recognize that betas revert to the market mean of 1.0 over time and used in the CAPM, the resulting adjustment is shown by the darker gray arrow in the lower right-hand corner. Separately, when the ECAPM is employed to recognize that the risk/return relationship is flatter than predicted by the CAPM, the resulting adjustment is shown by the lighter gray arrow (on top of the darker gray arrow) in the lower right-hand corner. To the extent that a company with a beta greater than 1.0 were being evaluated, the same process of two separate adjustments would apply, albeit in the opposite direction from what is shown in Figure 16 and would result in a decrease in the cost of equity otherwise predicted by the CAPM.

Figure 16: Risk/Return Relationship between CAPM and ECAPM



Q. Is Mr. Rothschild correct that you only rely on academic support of Dr. Morin for the use of the ECAPM?[120]

A. No. There are several academic sources that support the use of the ECAPM. Specifically, Chrétien and Coggins (2011) studied the CAPM and its ability to estimate the risk premium for the utility industry in particular subgroups of utilities for a data set that included market data through the end of 2006.[121] Chrétien and Coggins (2011) considered the CAPM, the Fama-French three-factor model and a model similar to the ECAPM. The study shows that

[120] Rothschild Direct at 82.

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

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

Additionally, Litzenberger, Ramaswamy, and Howard (1980) found that the CAPM tends to understate the return for stocks such as utilities that have a beta less than 1.00.[122] To develop their analysis, the authors used historical (*i.e.,* "raw") betas to estimate the "alpha" factor in the ECAPM. However, the authors also showed that an "alpha" factor can be derived for betas adjusted using the Blume procedure discussed above and the results of their analysis for raw betas. The Blume adjustment is shown in the following equation:

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

Where:

β_i = adjusted beta

β_i [historical] = raw beta

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

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

$$a = a' - b'\left(\frac{1-\omega}{\omega}\right) = 0.326 - 0.330\left(\frac{0.33}{0.67}\right) = 0.163 \qquad [2]$$

Where:

a = estimated alpha factor for Blume adjusted betas

[122] Robert Litzenberger, *et al*., "On the CAPM Approach to the Estimation of A Public Utility's Cost of Equity Capital," *The Journal of Finance*, Vol. 35, No. 2, 1980, at 369-383, available at https://www.icc.illinois.gov/docket/P2020-0308/documents/303195/files/528715.pdf.

a' = estimated alpha factor using raw betas

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

Because the authors relied on monthly returns for stocks in the New York Stock Exchange, the estimated "alpha" factor using adjusted betas of 0.163 percent must be annualized.[123] When annualized, the estimated "alpha" factor is 1.97 percent using Blume-adjusted betas, which is consistent with the "alpha" factor relied on by Dr. Morin of 1 to 2 percent to develop the 0.25 and 0.75 factors included in the ECAPM that I rely on in both my direct and rebuttal testimonies. Therefore, the Litzenberger, *et al.* (1980) study shows that the adjustment to beta and the use of the ECAPM are not duplicative, but rather account for two different factors in the CAPM.

Additionally, Mr. Rothschild's concern with the ECAPM analysis is addressed directly by Dr. Morin in his 2021 text *Modern Regulatory Finance* as follows:

> Because of this adjustment, some critics of the ECAPM argue that the use of Value Line adjusted betas in the traditional CAPM amounts to using an ECAPM. This is incorrect. The use of adjusted betas in a CAPM analysis is not equivalent to the ECAPM. Betas are adjusted because of the regression tendency of betas to converge towards 1.0 over time. We have seen that numerous empirical studies have determined that the SML [Security Market Line] described by the CAPM formula at *any given moment* in time is not as steeply sloped as the predicted SML. The slope of the SML should not be confused with Beta. On the point, Eugene F. Brigham, finance professor and the author of many financial textbooks states:
>
> > The Slope of the SML (5% in Figure 6-16) reflects the degree of risk aversion in the economy. The greater the

[123] (1.00163)^12-1 = 1.97 percent

> average investor's aversion to risk, then (a) the steeper the slope of the line, (b) the greater the risk premium for all stocks, and (c) the higher required rate of return on all stocks. Students sometimes confuse beta with the slope of the SML. This is a mistake.
>
> The use of an adjusted beta by Value Line is correcting for a different problem than the ECAPM. The adjusted beta captures the fact that betas regress towards one over time. The ECAPM corrects for the fact that the CAPM under-predicts observed returns when beta is less than one and over-predicts observed returns when beta is greater than one.[124]

Q. Do you agree with Mr. Rothschild that the results of your ECAPM violate an economic boundary by estimating a cost of equity greater than that of the market return for the S&P 500?[125]

A. No. Mr. Rothschild states that the results of my ECAPM are roughly 300 basis points higher than the 7.04 percent to 8.89 percent required market return for the S&P 500 that he calculated using his DCF with option-implied growth rates.[126] As previously described, there are various reasons why the Commission should not consider Mr. Rothschild's calculation of the market return, which uses his DCF with option-implied growth rates, to be credible. Exhibit CLP-ROE-REBUTTAL-6 calculates the estimated market return of the S&P 500 using a constant growth DCF and results in an estimated 13.39 percent, which is above the ECAPM results in both my direct and rebuttal testimonies.

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[124] Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Report, Inc. (2021), at 223-224 (emphasis added).

[125] Rothschild Direct at 84-85.

[126] Id.

Q. Are you aware of any state regulatory commissions that have accepted the use of the ECAPM in the manner you have conducted?

A. Yes. There are various regulatory commissions that have supported the use of the ECAPM in establishing an authorized ROE, including when adjusted betas are used in the ECAPM analysis. For example, the New York Public Service Commission ("NYPSC") and the NCUC have accepted the ECAPM analysis with the use of adjusted beta coefficients in establishing the authorized ROE for regulated utilities. Specifically, the NYPSC gives equal weight to the CAPM and ECAPM (which it refers to as the "Zero Beta" CAPM) results,[127] and the NCUC has recently found that both the adjustment to beta in the CAPM and the adjustment in the ECAPM were needed because they correct for different things.[128]

E. **Bond Yield Risk Premium**

Q. Please summarize Mr. Rothschild's position regarding your BYRP Analysis.

A. Mr. Rothschild disagrees with using the BYRP approach because it does not consider the market-to-book ratio. It is Mr. Rothschild's view that since the market-to-book ratio of the proxy group companies is greater than 1.0 that investors will require a lower ROE than the results of my BYRP analysis.[129]

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

[128] North Carolina Utilities Commission, Docket No. E-2, SUB 1300, Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Public Notice, August 18, 2023, at 162-63.

[129] Rothschild Direct at 86.

Q. Do you agree with Mr. Rothschild that the BYRP methodology is not valid because it does not measure investor behavior?

A. No. Unquestionably, both credit rating agencies and investors consider authorized ROE data in determining the valuation of utility stocks. Therefore, the relationship between recently authorized ROEs and the prevailing interest rates at the time the ROE was authorized is reasonable to consider when setting the ROE in the context of a rate proceeding. To the extent returns in a jurisdiction are lower than returns authorized more broadly, credit rating agencies consider this in their overall risk assessment of the regulatory jurisdiction in which the company operates. As discussed in my direct testimony, both credit rating agencies and investors have responded negatively to authorized ROEs deemed to be low.

F. Summary of Adjusted Results

Q. Have you considered how Mr. Rothschild's ROE recommendation would change if his cost of equity analyses were corrected for the issues you have identified and previously discussed?

A. Yes. Figure 17 presents the results of Mr. Rothschild's cost of equity analyses as filed and based on the corrections to his analyses that I have discussed. As shown, adjusting the results of his DCF and CAPM analyses for the issues addressed in my response to Mr. Rothschild and taking the average midpoint of these adjusted results, which is the method he uses to derive his ROE recommendation, supports the Company's requested ROE in this proceeding.

Figure 17: Mr. Rothschild's As Filed and Adjusted Model Results

	As Filed				Adjusted			
	Range			Midpoint	Range			Midpoint
Constant Growth DCF								
CG DCF - Sustainable Growth	8.47%	-	8.67%	8.57%	10.73%	-	11.06%	10.90%
CG DCF - Option-Implied Growth	7.00%	-	7.35%	7.18%		n/a		n/a
Non-Constant DCF	8.21%	-	8.56%	8.39%		n/a		n/a
CAPM	5.22%	-	7.11%	6.17%	10.12%	-	10.21%	10.16%
Average Midpoint Results			**7.57%**				**10.53%**	

G. **Business and Regulatory Risk**

Q. What is Mr. Rothschild's position regarding the regulatory environment in Connecticut identified and discussed in your direct testimony?

A. Mr. Rothschild states that my assessment of the Connecticut regulatory environment is incomplete and does not justify a "premium return" for the Company.[130]

Q. Has Mr. Rothschild conducted any analysis of the specific risks of the Company relative to the proxy group?

A. No. Mr. Rothschild has not independently evaluated the comparative risk of the Company relative to the proxy group.

Q. Do you agree with Mr. Rothschild that your direct testimony recommended a "premium return"?[131]

A. No. As discussed in my direct testimony, I conclude that CL&P has greater than average regulatory risk when compared to the proxy group.[132] The Company's requested ROE was

[130] Rothschild Direct at 89-91.

[131] Rothschild Direct at 91.

[132] Bulkley Direct at 67.

10.25 percent, which is at the low end of recommended range of 10.25 percent to 11.25 percent, even Mr. Rothschild acknowledges this.[133] Even though a higher business and regulatory risk consideration for the Company may warrant an ROE in the upper portion of the recommended range, the Company's request of 10.25 is at the bottom of that range, therefore I am not aware of what Mr. Rothschild considers as a "premium return."

Q. Why do you disagree with Mr. Rothschild's claim that CL&P's regulatory risk is not greater than that of the proxy group?

A. First, as discussed in my direct testimony, although the Company has certain similar regulatory mechanisms as the utility operating subsidiaries of the proxy group, it operates with a historical test year and both credit rating agencies and equity analysts have highlighted the challenges associated with the regulatory environment in Connecticut, ranking it as one of the most challenging jurisdictions in the United States in which to operate a regulated utility. Therefore, on balance, CL&P has relatively greater regulatory risk as compared to the utility operating subsidiaries of the proxy group.

Second, Mr. Rothschild's statement that the RRA ranking for Connecticut is based only on authorized returns being lower than national averages,[134] is inaccurate. RRA considers a broad range of factors affecting the regulatory environment, including regulatory commission decisions, legislative and judicial actions, and various aspects of the ratemaking framework.[135] In its assessment of Connecticut, RRA specifically identified concerns

[133] Rothschild Direct at 87-88.

[134] Rothschild Direct at 90.

[135] Bulkley Direct at 64.

regarding regulatory lag, the use of historical test years, uncertainty surrounding alternative ratemaking proceedings, in addition to below-average authorized ROEs.[136] Therefore, Mr. Rothschild's characterization of the RRA ranking for Connecticut overlooks many factors underlying RRA's assessment and the fact that RRA's ranking of the regulatory environment in Connecticut is significantly lower than the average ranking of the proxy group companies, despite the improvements to the Connecticut regulatory environment as noted by RRA.[137]

Q. Do you agree with Mr. Rothschild that earning a return lower than the authorized is not relevant in evaluating regulatory risk?

A. No. Mr. Rothschild states that an authorized ROE represents an opportunity and not a guaranteed return, and that the Company's historical actual returns being below authorized returns should not be considered.[138] Further he suggests that I am recommending increasing the ROE to make up for past earnings shortfalls, which is not required by investors.[139] I agree with Mr. Rothschild that an authorized ROE is not a guaranteed return; however, this does not mean the Company's inability to earn its authorized return is not relevant to its regulatory risk and investors' perceptions of the regulatory environment. In fact, as noted in my direct testimony, S&P specifically noted the regulatory environment in Connecticut as a factor contributing to cash flow volatility and reduced financial stability when CL&P's credit rating was downgraded.[140] Therefore, the inability to earn the return is a signal of

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136 *Id.*, at 53-55.

137 *Id.*, at 65.

138 Rothschild Direct at 91.

139 *Id.*

140 Bulkley Direct at 57-58.

regulatory risk that rating agencies consider in credit ratings and both RRA and S&P consider in ranking regulatory jurisdictions, which is considered by investors. The evaluation of regulatory risk is not assigning a higher ROE for not earning the return in prior periods. It is an assessment of the factors that contributed to under earnings, which represent regulatory risk. The Company's historical actual return being below its authorized ROE, particularly when considered together with the concerns identified by the credit rating agencies, are relevant to assessing CL&P's regulatory risk.

VII. Response to Mr. Garrett

A. DCF Analyses

Q. Please summarize Mr. Garrett's DCF analyses.

A. Mr. Garrett develops two constant growth DCF models, one using a sustainable growth rate of 3.80 percent based on the Congressional Budget Office's February 2026 forecast of long-term nominal U.S. GDP growth from 2026 through 2056, and another using projected DPS growth rates published by *Value Line*. Mr. Garrett relies on forward-looking annualized dividends, which he then divides by the average adjusted closing stock prices for the 30 days ended October 2, 2026. His constant growth DCF analysis using projected DPS growth rates reported by *Value Line* produces a cost of equity estimate of 8.50 percent, while his analysis using the sustainable growth rate produces a cost of equity estimate of 7.60 percent.[141]

[141] Garrett Direct at 3, 21-39.

Q. As a threshold matter, are the results of either of Mr. Garrett's DCF analyses reasonable?

A. No. As noted, the results of Mr. Garrett's DCF analyses are 8.50 percent and 7.60 percent, which are below and substantially below, respectively, any authorized ROE for an electric distribution utility in a regulatory jurisdiction comparable to Connecticut since at least 1980. I recognize that Mr. Garrett claims that previously authorized ROEs are not a relevant benchmark; however, as discussed, there is no basis to Mr. Garrett's claims in this regard, and his position has been previously rejected by various regulatory commissions.

Q. Do you agree with Mr. Garrett's use of projected DPS growth rates?

A. No. As discussed in my response to Mr. Rothschild, there are many reasons why the use of analysts' projected EPS growth rates, not DPS growth rates including that earnings is a fundamental driver of a company's ability to pay dividends, EPS growth rates are most relevant in stock valuation, and management decisions affect dividend policy.

Q. Are the projected DPS growth rates from *Value Line* consistent with the assumptions underlying Mr. Garrett's constant growth DCF analysis?

A. No. One of the primary assumptions of the constant growth DCF model is that the growth rate needs to be constant. Further, as I have already noted, since earnings are the fundamental determinant of a company's ability to pay dividends, over the long term, dividend growth can only be sustained by earnings growth. From this fact, it can be reasonably concluded that: (1) since DPS growth is sustained by EPS growth, DPS growth cannot exceed the growth in EPS over the long term; and (2) while DPS growth can grow at a lower rate than EPS, if a company is retaining a larger portion of earnings, eventually DPS

growth will increase in the future if EPS and DPS are expected to grow at a constant rate.[142] Additionally, if either condition were to exist, then the projected DPS growth rate would be expected to change and thus could not be assumed to remain static in perpetuity as required by the constant growth DCF model.

Q. Are *Value Line's* projected DPS and EPS growth rates equivalent?

A. No. As shown in Figure 18, *Value Line's* projected DPS growth rates are only equivalent to its projected EPS growth rates for one of the seventeen companies included in the proxy group relied on by Mr. Garrett. As a result, it is not reasonable to assume *Value Line's* projected DPS growth rate in perpetuity for the companies included in his proxy group.

[142] Bente Villadsen, Michael J. Vilbert, Dan Harris, and A. Lawrence Kolbe, *Risk and Return for Regulated Industries*, 2017, at 99.

Figure 18: Comparison of *Value Line*'s Projected EPS and DPS Growth Rates

		Value Line Projected		Difference
		EPS	**DPS**	**(EPS - DPS)**
Alliant Energy Corporation	LNT	6.0%	6.0%	0.0%
Ameren Corporation	AEE	7.5%	5.0%	2.5%
American Electric Power Company, Inc.	AEP	5.0%	3.0%	2.0%
Avista Corporation	AVA	4.5%	4.0%	0.5%
Consolidated Edison, Inc.	ED	6.5%	5.5%	1.0%
Duke Energy Corporation	DUK	6.5%	4.0%	2.5%
Edison International	EIX	6.0%	6.0%	0.0%
Entergy Corporation	ETR	11.0%	7.5%	3.5%
Evergy, Inc.	EVRG	6.5%	3.0%	3.5%
Exelon Corporation	EXC	11.0%	5.0%	6.0%
FirstEnergy Corporation	FE	5.5%	5.0%	0.5%
IDACORP, Inc.	IDA	5.5%	4.5%	1.0%
OGE Energy Corporation	OGE	6.0%	1.5%	4.5%
Pinnacle West Capital Corporation	PNW	6.0%	3.5%	2.5%
PPL Corporation	PPL	8.0%	6.0%	2.0%
Southern Company	SO	5.0%	3.5%	1.5%
Xcel Energy Inc.	XEL	8.0%	6.0%	2.0%

Q. Have other regulatory commissions relied on projected EPS growth rates as the estimate of perpetual growth in the constant growth DCF model?

A. Yes. For example, the Pennsylvania PUC has historically preferred the use of analysts' projected EPS growth rates in the constant growth DCF analysis.[143] The Pennsylvania PUC has noted the following:

> Upon our consideration of the record evidence, we find that I&E's DCF calculation correctly used forecasted earnings growth rates instead of considering historical growth rates. The record indicates that growth rate forecasts are made by analysts who already factor historical data into their forecasts of earnings per share growth. Although past performance can yield valuable information, relying on it for a DCF analysis results

[143] *See, e.g.,* Pennsylvania Public Utility Commission, Opinion and Order, October 4, 2018, at 93. *See, also*, Docket No. M-2018-3006643, Public Meeting held January 17, 2018, at 16, in which the Commission discusses the method it uses to set the ROE for the Distribution System Improvement Charge.

in placing too much weight on past performance. ***Thus, the best measure of growth for use in the DCF model are forecasted earnings growth rates***.[144]

Q. What is Mr. Garrett's position regarding his constant growth DCF model that relies on a nominal GDP growth rate as the growth rate for all of the proxy companies?

A. Mr. Garrett states that it is reasonable to use nominal GDP as the growth rate in the constant growth DCF model because the terminal growth rate used in the DCF model should not exceed the aggregate economic growth rate, and the fact that utilities are a mature industry and their real growth opportunities are primarily constrained by their physical service territories and by customer and load growth within such service territories.[145]

Q. Setting aside the unreasonableness of the results of Mr. Garrett's DCF analysis using a sustainable growth rate, is the premise of his analysis reasonable?

A. No. Mr. Garrett's DCF analysis assumes a single sustainable growth rate applicable to each proxy group company of 3.80 percent. It is clear the utility industry is in a robust capital investment cycle that is expected to last for some time. It is unreasonable to suggest as Mr. Garrett has done that the growth in the industry would immediately reflect his assumed GDP growth rate. By assuming utilities immediately only grow at his assumed long term growth rate is inconsistent with market reality and the expectation of investors, and as a result, understates the cost of equity.

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[144] Pennsylvania Public Utility Commission, Docket No. R-2020-3018929, Opinion and Order, June 17, 2021, at 160 (emphasis added).

[145] Garrett Direct at 25-29.

Q. Why is Mr. Garrett's assumed GDP growth rate inconsistent with the stock prices he relies on to conduct his DCF analysis?

A. The current stock prices for each of the proxy group companies relied on by Mr. Garrett are only sustainable if current long-term EPS growth rates are assumed to continue over the longer term – not the nominal GDP growth rate of 3.80 percent assumed by Mr. Garrett. The only way to maintain the current stock price valuations with a relatively low long-term growth rate is to assume an extremely low cost of equity, which is what Mr. Garrett has done; however, that is inconsistent with the market's expectation of utility stock prices. If Mr. Garrett were to assume a long-term growth rate more consistent with current earnings growth projections, he would have obtained a much higher cost of equity estimate.

It is important to note that the current share prices of utilities take into consideration projected earnings growth rates, which are higher than the nominal GDP growth rate of 3.80 percent assumed by Mr. Garrett. Therefore, if investors believed that each of the companies in the proxy group were going to grow at a rate equal to Mr. Garrett's long-term growth rate, the share prices for each of the proxy group companies would decrease and the result of the DCF model would increase, all else equal. Further, since Mr. Garrett has assumed the same long-term growth rate for each proxy group company, it is likely that all proxy group companies would converge to the same dividend yield and therefore have the same cost of equity. This is because, as assumed in Mr. Garrett's sustainable DCF model, proxy group companies are differentiated only by their dividend yield. Investors would invest in companies with the highest dividend yield, which drives up price until all prices are set such that the proxy group

companies have identical dividend yields. This logic is clearly flawed as each proxy group company has different growth prospects and thus different prices and dividend yields.

Q. Is there academic research that challenges the use of GDP growth as the long-term estimate of growth in the DCF model?

A. Yes. For example, *Modern Regulatory Finance* notes the following:

> One central assumption in Multi-Stage DCF models, and a potential Achilles' heel, in my view, is that utility growth rates will eventually match the growth of the macroeconomy usually measured by the growth of the Gross Domestic Product (GDP). I am not aware of any financial literature supporting the notion that utility earnings per share are expected to grow at the average growth of the economy, or GDP.
>
> … based upon the wealth of empirical and academic literature that supports the superiority of analyst's forecasts as a measure of investor expectations for the use of such forecasts in the DCF model, current earnings growth forecasts are the appropriate growth rates to use in a DCF analysis. Besides, to the extent that economic trends influence growth, it is reasonable to assume that they are already captured in analysts' growth estimates for utilities.
>
> Multi-stage DCF applications appear somewhat disconnected from the assumptions of the method and the consensus expectations of investors. The investment community does not look to GDP growth over the next several decades when evaluating an investment in utility stocks, nor does it anticipate a series of discrete muti-stage decennial stages. *I am not aware of any evidence that investors evaluate the future based on the assumptions and data sources required to apply the two-stage or three-stage DCF model*.[146]

Q. Is the GDP growth rate that Mr. Garrett relies on consistent with the methodology established by *Morningstar*, which is a source that Mr. Garrett has relied on elsewhere in his cost of equity analyses?

A. No. Mr. Garrett relies on a projected nominal GDP growth rate reported by the CBO of 3.80 percent; however, his assumed long-term growth rate is inconsistent with the analyst

[146] Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Reports, Inc., 2021, at 486 (emphasis added).

literature he cites in his testimony.[147] *Morningstar* recommends estimating a projected long-term nominal GDP growth rate by first calculating the historical growth in real GDP and then adding the expected inflation rate:

> Growth in real GDP (with only a few exceptions) has been reasonably stable over time; therefore, its historical performance is a good estimate of expected long-term future performance. By combining the inflation estimate with the real growth rate estimate, a long-term estimate of nominal growth is formed.[148]

Therefore, *Morningstar* recommends that the long-term growth rate reflect the sum of the long-term historical average real GDP growth rate and the expected inflation rate. As shown on Exhibit CLP-ROE-REBUTTAL-13, had Mr. Garrett used the *Morningstar* approach based on the full citation referenced in his testimony, the resulting long-term growth would be 5.28 percent, or 148 basis points higher than his long-term GDP growth rate assumption. As a result, Mr. Garrett understates the long-term growth rate consistent with *Morningstar's* methodology.

Q. Is Mr. Garrett's sustainable growth rate DCF analysis consistent with his use of a proxy group to estimate the cost of equity?

A. No. Mr. Garrett's reliance on a single nominal GDP growth rate in his constant growth DCF model for all his proxy group companies disregards the specific circumstances and growth prospects of each company in the proxy group and instead assumes the same growth rate to each company in perpetuity. While Mr. Garrett supports the development of a proxy group of comparable risk companies to estimate the cost of equity for the Company, he essentially

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[147] Garrett Direct, Appendix B, at 4. When discussing his CAPM theory, Mr. Garrett cites the Ibbotson SBBI Valuation Yearbook, which was published by *Morningstar*.

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

overrides the variations that occur among companies in the proxy group by applying the same one-size-fits-all nominal GDP growth rate to each proxy group company.

Q. What are Mr. Garrett's primary criticisms of your constant growth DCF analysis?

A. In general, Mr. Garrett disagrees with the growth rates and how they are applied in my constant growth DCF analysis. Mr. Garrett contends that my use of five-year projected EPS growth rates is not appropriate for a constant growth DCF, as these growth rates cannot last indefinitely and overstate or misrepresent the true cost of equity.[149] Mr. Garrett takes issue specifically with the analysts' projected growth rate of Entergy being included in my constant growth DCF analysis.[150] Mr. Garrett also suggests that my growth rates are also inconsistent with the Company's own load and customer growth, and thus overstate the long-term growth of the Company and thus the cost of equity results.[151]

Q. What is your response to Mr. Garrett's contention that the use of projected EPS growth rates is not appropriate for a constant growth DCF as they cannot last indefinitely?

A. There are multiple reasons why there is no basis for this claim:

- Mr. Garrett attempts to support his conclusion that EPS growth rates cannot be relied upon in a constant growth DCF model by suggesting that it is not reasonable to assume that utilities can grow at a rate that is greater than the economy over the long term. He attempts to prove this point by comparing the projected growth rate in the constant growth DCF to his respective projected GDP growth rates, which relies entirely on the accuracy of the estimate of the long-term GDP growth rate assumed. As I discussed previously, there are several concerns with his estimate of the long-term GDP growth rate.

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[149] Garrett Direct at 31-32.

[150] *Id*., at 32.

[151] *Id*., at 28.

- As noted in my response to Mr. Rothschild, empirical studies comparing the TFP growth of the utility industry relative to the economy demonstrate that it is not unreasonable to assume that earnings growth for utilities could exceed GDP growth over a long time period.

- Mr. Garrett contends that projected EPS growth rates for certain companies such as Entergy have biased upwards the average projected EPS growth rate for the proxy group. However, Mr. Garrett does not respond to the fact that in addition to the average for the proxy group, I also calculated the median projected EPS growth rate for the proxy group. In general, the median is not affected to a large degree by the presence of outliers on both the high and low end. The average projected EPS growth rate for the proxy group as shown in Exhibit CLP-ROE-4 was 7.17 percent, which is generally consistent with the median growth rate of 7.12 percent. Thus, it is incorrect that projected EPS growth rates for individual companies have biased upwards the average projected EPS growth rate for my proxy group.

Q. How do you respond to Mr. Garrett's contention that the Company's customer growth and load growth do not support the analysts' projected EPS growth rates that you rely on in your DCF analysis?

A. I disagree with Mr. Garrett's comparisons. Historical customer and load growth rates are not the only factors which establish analysts projected EPS growth rates. As Mr. Garrett acknowledges, regulated utilities can increase earnings through investments in rate base even without corresponding increases in customer demand. Analysts' projected EPS growth rates consider the specific investment opportunities, capital expenditure requirements, and other factors affecting the future earnings of the proxy group companies. Therefore, CL&P's historical customer and load growth rates do not demonstrate that the projected EPS growth rates used in my DCF analysis are unreasonable.

Q. Have you adjusted Mr. Garrett's constant growth DCF analyses to account for the issues you have addressed?

A. Yes. For the reasons discussed previously regarding the use of projected DPS growth rates and sustainable growth rates, I do not consider the results of either of Mr. Garrett's constant growth DCF analyses to be reasonable estimates of the cost of equity. As shown on Exhibit CLP-ROE-REBUTTAL-14, I have adjusted Mr. Garrett's DCF analysis to rely on an average of the projected DPS growth rates relied on by Mr. Garrett and the projected EPS growth rates relied on in my constant growth DCF analyses, which results in a cost of equity of 10.38 percent. This is significantly greater than the DCF results of 7.6 percent (constant growth DCF using Mr. Garrett's assumed sustainable growth rate) and 8.5 percent (constant growth DCF using projected DPS growth rates) that Mr. Garrett presents in his testimony.

B. CAPM Analyses

Q. Please summarize Mr. Garrett's CAPM analyses.

A. Mr. Garrett relies on a risk-free rate of 4.94 percent that is the 30-day average of the 10-year U.S. Treasury note yield as of October 2, 2026.[152] He relies on the beta coefficients published by *Value Line* for the proxy group companies, which have an average beta of 0.74.[153] Mr. Garrett calculates his market risk premium as the average of four approaches:

- The average U.S. market risk premium of 5.30 percent reported in the 2026 IESE Business School survey of market risk premiums and risk-free rates;
- The U.S. equity risk premium of 5.00 percent recommended by *Kroll;*

[152] Exhibit DJG-7.

[153] Exhibit DJG-8.

- The midpoint of two implied equity risk premium estimates published by Dr. Damodaran in September 2026, resulting in a market risk premium of 4.70 percent; and,

- An implied equity risk premium of 5.40 percent derived by Mr. Garrett using an analysis of the S&P 500 Index that incorporates historical dividend yields, share repurchases, earnings growth, and the current market value of the index.

These four approaches produce an average market risk premium of 5.10 percent. Based on these inputs, Mr. Garrett's traditional CAPM analysis produces a cost of equity estimate of 8.70 percent.[154] Mr. Garrett also presents an alternative CAPM analysis using a Hamada adjustment to account for the financial leverage associated with the Company's proposed capital structure, which produces a cost of equity estimate of 7.90 percent.[155]

Q. As a threshold matter, are the results of Mr. Garrett's CAPM analyses reasonable?

A. No. Mr. Garrett's CAPM results of 8.70 percent and 7.90 percent are at or below significantly below, respectively, any authorized ROE for an electric distribution-only utility since at least 1980 in a jurisdiction with a comparable regulatory framework to Connecticut. Given that the *Hope* and *Bluefield* decisions that Mr. Garrett agrees provides guidance for establishing fair and reasonable rates require an authorized ROE to be comparable to the returns of other utilities of similar risk,[156] it is clear Mr. Garrett's CAPM results would not meet the *Hope* and *Bluefield* standard. As such, it would be reasonable for the Commission

[154] Garrett Direct at 42.

[155] *Id*., at 54-57.

[156] *Id*., at 8-9.

to disregard the results of these CAPM analyses in establishing the ROE for CL&P in this proceeding.

Q. Do you agree with Mr. Garrett's reliance on the 10-year Treasury note yield as the estimate of the risk-free rate in his CAPM analyses?

A. No. As discussed in my response to Mr. Rothschild, Morningstar agrees that in determining the Treasury security most relevant to the application of the CAPM, it is important to select the term (or maturity) that best matches the life of the underlying investment.

Q. Is Mr. Garrett's reliance on the 10-year Treasury note yield as the estimate of the risk-free rate consistent with the risk-free rate he has relied on in prior proceedings?

A. No. Mr. Garrett provided testimony in at least two other rate case proceedings this year where he used the 30-day average yield on the 30-year Treasury bond as the risk-free rate for his CAPM analyses.[157] In this proceeding, Mr. Garrett attempts to justify the change to the 10-year Treasury notes based on unsupported statements about analysts' preferences, that the 10-year Treasury is a more accurate indication of the market's expectations, and that it aligns with actual investment time frames, among other statements.[158] However, while offering these justifications for his change in assumptions, there has not been a fundamental shift in investor expectations, investment horizons or a demonstration that analysts' preferences have changed since February of 2026 when relied he relied on the 30-year

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[157] *See, e.g.,* Arizona Corporation Commission, Docket No. E-01933A-25-0103, Direct Testimony of David J. Garrett, February 9, 2026, at 31 ("I considered a 30-day average of daily Treasury yield curve rates on 30-year Treasury bonds in my risk-free rate estimate, which resulted in a risk-free rate of 4.71%.") and Exhibit DJG-7; Pennsylvania Public Utility Commission, Docket No. R-2025-3057983 / R-2025-3058051, Corrected Direct Testimony of David J. Garrett, February 2, 2026, at 29 ("I considered a 30-day average of daily Treasury yield curve rates on 30-year Treasury bonds in my risk-free rate estimate, which resulted in a risk-free rate of 4.66%.") and Exhibit DJG-7.

[158] Garrett Direct at 34.

Treasury bonds in prior proceedings. As shown in Figure 19, his selection of the 10-year Treasury note yield is the only significant change in the assumptions used in his CAPM analysis in the current proceeding as compared to these two recent prior proceedings. When Mr. Garrett's risk-free rate assumption in this proceeding is revised to reflect the 30-year Treasury bond yield consistent with his prior approach but all other assumptions in his CAPM are held constant, the result is a cost of equity of 9.1 percent, or 40 basis points higher than the estimate he presents in his testimony based on the 10-year Treasury note yield.

Figure 19: Inconsistencies in Mr. Garrett's Risk-Free Rate Assumptions

	Arizona	Montana	Connecticut	Connecticut Updated
Docket No.:	E-01933A-25-0103	2025.09.072	Dkt No. 26-05-10	Using 30-Year
Filed:	2/9/2026	2/20/2026	10/21/2026	Treas. Bond Yld.
Rf Rate (30-year Treasury bond yield)	4.71%	4.83%	-	5.35%
Rf Rate (10-year Treasury bond yield)	-	-	4.94%	-
Market Risk Premium	5.0%	5.0%	5.1%	5.1%
Beta	0.75	0.75	0.74	0.74
Cost of Equity	**8.5%**	**8.6%**	**8.7%**	**9.1%**

Q. The data on which Mr. Garrett relies for his risk-free rate is based on the 30-days ending October 2, 2026. Have interest rates increased since that time?

A. Yes. The average yield on the 30-year Treasury bond for the 30-days ending October 26, 2026 was 5.47 percent, or 12 basis points higher than the yield on this same bond for the period considered by Mr. Garrett. Although Mr. Garrett's use of the yield on the 10-year Treasury note is not appropriate for the reasons discussed, the average yield on the 10-year Treasury note for the 30-days ending October 26, 2026 was 5.13 percent, or approximately 20 basis points higher than the risk-free rate Mr. Garrett assumes in his CAPM analyses.

Q. Do you agree with Mr. Garrett that *Value Line*'s use of the Blume adjustment may overestimate the beta coefficients for utilities?[159]

A. No. The use of Vasicek-adjusted betas that Mr. Garrett references in Appendix B of his testimony but does not actually rely on ignores the extensive empirical evidence that has shown beta is not stable over time and in fact tends to trend back over time to the market beta of 1.00.[160] The stability of beta is an important assumption in the estimation of the cost of equity for utilities in the context of a rate proceeding. In the current proceeding, the cost of equity for the Company is being estimated for the future period when the Company's rates will be in effect. If betas are not stable and trend towards the market beta of 1.0 over time, then relying on a beta that does not reflect the Blume adjustment in the CAPM will not provide an accurate assessment of investors' required return during the future rate period.

Q. Is it important to use the Blume adjustment on utility betas?

A. Yes. The Blume adjustment applied by *Value Line* adjusts the raw beta coefficients toward the market average of 1.0, thus likely better reflecting the true beta of the utility sector inclusive of interest rate risk.[161] The use of betas that do not reflect the Blume adjustment is not appropriate for regulated utilities because these beta coefficients likely understate the true beta of utility stocks given that the utility sector is not only correlated to the broader market, but is also sensitive to changes in interest rates, which are not factored into the raw beta calculations.

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[159] Garrett Direct at 35-36 and Appendix B at 3-6.

[160] Roger A. Morin, *Modern Regulatory Finance*, 2021, at 81-83.

[161] The Blume adjustment (Marshall Blume; 1975) is an adjustment to the betas in the CAPM to account for the empirical tendency of betas to drift over time toward 1.0 (2/3 * raw betas + 1/3 *1.0).

Q. Have studies demonstrated that interest rate risk is an important factor in estimating betas?

A. Yes. Kolbe and Read (1984) showed that raw betas estimated using a "conventional" approach, such as five years of monthly returns against the S&P 500, understate the beta for utility stocks. The authors found that the betas for utility stocks increased significantly when betas were estimated using an "augmented" market index that considered fixed income securities such as corporate and government bonds in addition to common stocks instead of the S&P 500 Index.[162]

Q. Are Mr. Garrett's assumed market risk premia consistent with the historical relationship between market risk premia and interest rates?

A. No. Each of Mr. Garrett's assumed market risk premia are inconsistent with the well-established inverse relationship between interest rates and the market risk premium (*i.e.*, as interest rates increase, the market risk premium decreases, and vice versa) and thus understate the cost of equity. As shown in Figure 20, the risk-free rate that Mr. Garrett assumes in his CAPM analyses (*i.e.*, 4.94 percent) is generally consistent with the long-term average risk-free rate, meaning that one would expect the market risk premium to be generally consistent with the long-term historical average; however, contrary to the inverse relationship between interest rates and the market risk premium, each of Mr. Garrett's assumed market risk premia are significantly less than the long-term average market risk premium.

[162] A. L. Kolbe and J. A. Read, "Choice of Discount Rates in Utility Planning: A critique of Conventional Betas as Risk Indicators for Electric Utilities," Electric Power Research Institute, 1984.

Figure 20: Misalignment of Market Risk Premia Relied on by Mr. Garrett

Source	Market Risk Premium	Amount Below Long-Term Avg.	Risk-Free Rate	Amount Above / (Below) Long-Term Avg.
Long-Term Historical Avg.	**7.37%**		**4.86%**	
IESE Business School Survey	5.30%	-2.07%	4.94%	0.08%
Kroll Normalized	5.00%	-2.37%	4.94%	0.08%
Dr. Damodaran	4.70%	-2.67%	4.94%	0.08%
Garrett Implied ERP	5.40%	-1.97%	4.94%	0.08%

Q. What are the drawbacks of relying on survey data as Mr. Garrett has done to determine the risk premium?

A. The drawbacks of survey data include biased responses and biased sampling as noted by Brigham, Shome, and Vinson (1985).[163] Further, Professor Damodaran, whose market risk premium estimate Mr. Garrett also considers, noted that very few practitioners were inclined to use survey results, because, among other things, they were affected by how and of whom the questions were asked and by recent stock price movements.[164] Additionally, response rates to surveys can be extremely limited, as Graham and Harvey (2018) noted in their Duke CFO survey where the response rate was only 5.00 percent to 8.00 percent.[165] Finally, and most importantly, even Professor Fernandez, the author of the survey relied on by Mr.

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

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

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

Garrett, specifically states in reference to the required equity premium that "[t]he average of that distribution *cannot be interpreted as the REP [required equity premium] of the market nor as the REP of a representative investor*.[166]

Q. Mr. Garrett's derivation of the implied market return and market risk premium reasonable?

A. No. There are multiple reasons why Mr. Garrett's derivation of an implied market return is not reasonable:

- Mr. Garrett condemns his own assumption of using historical growth rates by acknowledging that "past growth is not always a good indicator of future growth."[167]
- Mr. Garrett has provided no evidence that his assumed risk-free rate is an appropriate estimate of long-term growth in his estimation of an implied market return.
  - As noted previously, Mr. Garrett uses the 10-year Treasury note yield in this proceeding for the risk-free rate when he has consistently relied on the yield on the 30-year treasury bond in prior proceedings. Mr. Garrett has provided no explanation or support for this change, which results in a decrease in his risk-free rate of approximately 40 basis points, which is the difference in the yields on the 10-year Treasury note and 30-year Treasury bond as shown previously in Figure 19.
  - Furthermore, as discussed previously, Mr. Garrett's assumed risk-free rate is also understated given the increase in interest rates relative to his assumption.
- Mr. Garrett's use of his assumed risk-free rate of 4.94 percent as the estimate of long-term growth is also inconsistent with his reliance on a nominal GDP growth

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[166] Pablo Fernandez, Amir Habibian, and Antonio Fdez. Acin, "Survey: Market Risk Premium and Risk-Free Rate used for 97 countries in 2026," IESE Business School, April 13, 2026, at 12 (emphasis and clarification added).

[167] Garrett Direct, at 24-25.

rate of 3.80 percent as his estimate of a sustainable growth rate for the proxy group in one of his constant growth DCF models.

- The market return derived from this model is sensitive to changes in the number of years that are averaged to develop the growth rates. Moreover, Mr. Garrett has provided no basis that his assumed historical period is representative or reflects a reasonable proxy for current market conditions.

Q. How would Mr. Garrett's estimate of the market return on the S&P 500 change if he had relied on projected EPS growth rates in his two-stage DCF for purposes of calculating his implied market risk premium instead of his arbitrarily selected historical market risk premium?

A. Exhibit CLP-ROE-REBUTTAL-15 shows how Mr. Garrett's estimate of the market return would change if he had properly relied on a projected EPS growth rate of the S&P 500 Index as the estimate of the first stage growth rate. As shown on CLP-ROE-REBUTTAL-15, page 2, if Mr. Garrett had properly relied on a projected, not historical, EPS growth rate of the S&P 500 Index as the estimate of the first stage growth rate, his market return estimate would increase from 10.35 percent to 13.19 percent.[168]

Q. What is Mr. Garrett's position regarding the market return and market risk premia in your CAPM analyses?

A. Mr. Garrett contends that the use of a DCF-derived expected market return is unreasonably high, and as a result, produces a market risk premium that is inflated.[169]

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[168] The projected EPS growth rate of the S&P 500 Index reflects an average of current projections reported by Yardeni Research, State Street, and Bloomberg.

[169] Garrett Direct at 43-45.

Q. Is it reasonable to rely on forecasted EPS growth rates in the calculation of the market return that exceeds U.S. GDP growth?

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

As stated in *Seeking Alpha* article, "the most obvious difference between GDP growth and S&P 500 earnings growth is international earnings growth." Additionally, it has been noted that between 1950-2014, the median S&P 500 return was 13.00%, while GDP grew less than 3.00%.[170] The effects of the global economy were also noted by Morgan Stanley: "U.S. companies now get more of their sales from outside the U.S. than they did in the past. GDP does not include those sales."[171] Wellington Management also provides an intuitive example of how the disconnect between GDP and EPS growth can be observed between the U.S. and China:

> China EPS growth has stagnated while U.S. EPS growth has been exceptional, despite China's economy growing at twice the speed of the U.S.…. When EPS is diluted by additional company share issuance, it can further exacerbate this misalignment with GDP growth.[172]

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

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

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

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

Q. Have other regulatory commissions supported the use of a forward-looking market return and market-risk premium in the CAPM analysis such as you have relied upon?

A. Yes. As previously discussed, various other regulatory commissions have supported the use of a constant growth DCF model to estimate the market return in the CAPM including Staff of the ICC, the I&E of the Pennsylvania PUC, and the Staff of the Maine PUC. Another example is the FERC which has supported the use of a constant growth DCF model to estimate the market return in the CAPM as I have done. Recently, in Opinion No. 594, the FERC continued to support the use of the constant growth DCF model to calculate the market return for the CAPM noting:

> As NETOs propose and, consistent with Opinion Nos. 569 and 569-A, we find that estimating the CAPM expected market return using a forward-looking approach based on applying the DCF model to the dividend paying members of the S&P 500 is reasonable. No participant opposes the use of a DCF analysis of the dividend-paying members of the S&P 500 to estimate the expected market return. However, CAPs,

EMCOS, and Trial Staff disagree with the use of the one-step DCF model for the CAPM without any long-term growth projection based on GDP. As discussed below, we are not persuaded by CAPs' and Trial Staff's arguments in support of a two-step DCF analysis to calculate the CAPM expected market return.[173]

Q. Have courts addressed these witnesses' assertion that your forward-looking market return is inflated?

A. Yes. In its review of FERC Opinion No. 569-B, the U.S. Court of Appeals for the District of Columbia addressed the concern regarding the use of projected EPS growth rates in a constant growth DCF model to estimate the market return. In the Court's decision, it acknowledged that FERC has relied on the use of projected EPS growth rates in the calculation of the market return on the S&P 500 because the S&P 500 is regularly updated to include companies with high market capitalization and it includes companies at all stages of growth, including lower and higher growth potential. The Court determined that FERC's rationale for using projected EPS growth rates was sufficient and did not accept the challenge to this assumption.[174]

Q. Are there studies that demonstrate that the market risk premia used in your CAPM analysis are reasonable?

A. Yes. As noted previously in my response to Mr. Rothschild, the Federal Reserve Bank of New York published an analysis in 2015 that reviewed 20 methodologies over the period 1960 through 2013 for estimating the market risk premium.[175] The result of this study

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[173] *Coakley Mass. Attorney Gen. v. Bangor Hydro-Elec. Co*., 194 FERC ¶ 61,208 at P 232 (2026) (internal footnote omitted).

[174] United States Court of Appeals, District of Columbia Circuit, Opinion, Docket No. 16-1325, August 9, 2022, at 19.

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

demonstrates that the market risk premium estimates in my direct testimony (which, as shown on Exhibit CLP-ROE-5, ranged from 8.39 percent to 8.68 percent) and in my rebuttal testimony (which, as shown on Exhibit CLP-ROE-REBUTTAL-4, range from 8.07 percent to 8.69 percent), are reasonable.

Q. Have you demonstrated that the risk premia on your CAPM are reasonable based on historical data?

A. Yes. As shown in Figure 15, in my response to Mr. Rothschild, the vast majority of the positive historical market risk premia observations (51 out of 66, or 77 percent) are at or above the range of market risk premia in my direct and rebuttal testimonies (*i.e.*, 8.07 percent to 8.69 percent). Reviewing Mr. Garrett's market risk premium against historical data, there are very few positive historical market risk premia observations (7 out of 66, or 11 percent) that are below the low-end of the market risk premium range relied on by Mr. Garrett (*i.e.*, 5.00 percent to 5.50 percent).

Q. What is the purpose of the Hamada adjustment to the CAPM that Mr. Garrett has applied?

A. The Hamada equation allows an analyst to first "unlever" beta to remove the effect of the debt ratio of a company and then "relever" beta at different debt ratios to examine the effect of changes in the debt ratio on the cost of equity produced by the CAPM. The Hamada equation is as follows:[176]

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[176] *See* Villadsen, Vilbert, Harris and Kolbe, *Risk and Return for Regulated Utilities,* 2017, at 146-154; Brealey, Myers, and Allen, *Principles of Corporate Finance,* 13th Ed., 2020, at 452-462; and Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*, 3rd ed., John Wiley & Sons, Inc., 2012.

$$\beta_l = \beta_u \left[1 + (1 - T)\frac{D}{E}\right] \qquad [3]$$

Where:

β_l = Levered beta of a company

β_u = Unlevered beta of a company

T = Corporate income tax rate

D = Market value of debt

E = Market value of equity

In his analysis, Mr. Garrett unlevers the proxy group beta to remove the effect of the debt ratios of the proxy group based on the average beta and then relevers beta to reflect the Company's proposed capital structure to determine the effect on the cost of equity.

Q. Do you agree with Mr. Garrett's application of the Hamada equation?

A. No. In applying the Hamada equation, Mr. Garrett incorrectly relies on the *book value* of debt and equity for each of the proxy group companies at the holding company level as published by *Value Line,* instead of the *market value* of debt and equity as required in applying the Hamada equation. I discuss the error of relying on the book value of debt and equity for each of the proxy group companies at the holding company level in more detail herein regarding my response to the parties' positions on capital structure. This error has a substantial effect on the debt-to-equity ratio used to unlever and relever beta given the fact that the market value of debt and equity in this instance deviates significantly from the book value.

Q. Have you estimated the equity ratio and debt ratio for the proxy group based on the market value of debt and equity to illustrate the problem with Mr. Garrett's analysis?

A. Yes. In applying the Hamada equation, Mr. Garrett relies on an average debt ratio of 58.10 percent and equity ratio of 41.90 percent,[177] which is the average book value of debt and equity for the holding companies in his proxy group. Mr. Garrett contends that, since the Company's proposed debt ratio of 45.2 percent consists of relatively less debt than his proxy group average debt ratio of 58.10 percent, the Company has less risk and that applying the Hamada equation results in a downward adjustment to his CAPM result from 8.70 percent to 7.90 percent to reflect the decreased financial risk of the Company's proposed capital structure.[178] However, as shown on Exhibit CLP-ROE-REBUTTAL-16, if Mr. Garrett had instead correctly relied on the *market value* of debt for the proxy companies, he would have estimated average debt ratio for the proxy group of 44.99 percent, not 58.10 percent. Therefore, the debt ratio for the proxy group is actually *lower* than the Company's proposed debt ratio when correctly based on market value as required in the Hamada formula. Thus, when specified and applied correctly, the Hamada formula implies that Mr. Garrett's CAPM result of 8.70 percent should *increase* slightly – not *decrease* substantially – to reflect the increased financial risk associated with the Company's proposed debt ratio relative to the proxy group. As discussed later herein, given that the capital structures of the proxy group companies at the holding company level should not be used to evaluate the reasonableness of the Company's proposed capital structure, and regardless, Mr. Garrett's Hamada

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[177] Garrett Direct at 56 and Exhibit DJG-15.

[178] *Id*., at 56-57.

adjustment is nonetheless incorrect, the Commission should disregard the result of Mr. Garrett's CAPM scenario in which he applies a Hamada adjustment.

Q. Have you adjusted Mr. Garrett's CAPM analyses to address the issues that you have identified?

A. Yes. Although each of Mr. Garrett's market risk premia are also inconsistent with the inverse relationship between interest rates and the market risk premium, Mr. Garrett's derivation of an implied return can be revised to properly account for a projected EPS growth rate of the S&P 500 Index as the estimate of the first stage growth rate as opposed to an historical EPS growth rate, which is also over an arbitrarily-selected period. As shown on Exhibit CLP-ROE-REBUTTAL-17, when an average of three current sources of projected EPS growth rates for the S&P 500 Index are used as the first stage growth rate in Mr. Garrett's derivation of the market return, the resulting cost of equity from the CAPM is 11.08 percent, or substantially greater than the cost of equity results of 8.7 percent and 7.9 percent that Mr. Garrett presents in his testimony.[179] As previously discussed, Mr. Garrett has inexplicably changed his risk-free rate from the 30-year Treasury bond yield to a 10-year Treasury note yield, which has also understated the cost of equity; however, the revision to Mr. Garrett's CAPM shown on Exhibit CLP-ROE-REBUTTAL-17 does not modify or update the risk-free rate.

[179] Note, Mr. Garrett does not separately present a cost of equity based on his derived implied equity risk premium presented on Exhibit DJG-11, but rather includes it in an average of his three other assumed equity risk premia. The cost of equity results presented on Exhibit CLP-ROE-R-16, page 1 that are characterized as Mr. Garrett's "as-filed" position reflect his assumed risk-free rate, beta coefficients, and only his derived implied equity risk premium estimate as presented on Exhibit DJG-9.

C. **ECAPM Analysis**

Q. Does Mr. Garrett conduct an ECAPM analysis to estimate the cost of equity?

A. No.

Q. What is Mr. Garrett's position regarding your ECAPM analyses?

A. Mr. Garrett contends that, similar to my CAPM, my market risk premium is overstated and therefore the results of my ECAPM are unreasonably high. In addition, Mr. Garrett also contends that the use of an adjusted beta in the ECAPM is double counting and thus produces overstated results.[180] Since I have already addressed in my response to Mr. Garrett his unfounded criticism regarding my market risk premium, I will not address that issue further. Likewise, I have also already addressed Mr. Garrett's unsupported contention that the ECAPM amounts to double counting in my response to Mr. Rothschild.

D. **BYRP Analysis**

Q. Does Mr. Garrett utilize a BYRP analysis to estimate the cost of equity?

A. No.

Q. What is Mr. Garrett's positions regarding your BYRP analysis?

A. Mr. Garrett contends that my BYRP analyses do not estimate the cost of equity because it relies on previously authorized ROEs, which he argues does not reflect investors' required returns. Mr. Garrett also claims that my BYRP analyses are not forward-looking because they rely on historical data.[181]

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[180] Garrett Direct, at 43.

[181] Garrett Direct, at 45-46.

Q. Do you agree with Mr. Garrett that the BYRP methodology is not valid because it does not measure the cost of equity and investor behavior?

A. No. As discussed in my response to Mr. Rothschild, credit rating agencies and investors consider authorized ROE data in determining the valuation of utility stocks and therefore it is reasonable to consider the BYRP as a benchmark on the reasonableness of returns.

Q. Is there any basis to Mr. Garrett's criticism that BYRP analyses are not forward-looking because they rely on historical data?

A. No. Mr. Garrett's claim that my BYRP analysis is inconsistent with estimating a forward-looking cost of equity in this proceeding is incorrect. As discussed in my direct testimony, I analyze *historical* implied equity risk premia (which are calculated as the difference between *historical* authorized ROEs and *historical* bond yields) and develop a regression analysis, which demonstrates the inverse relationship between interest rates and the equity risk premium, such that a *forward-looking* estimate of the cost of equity can be calculated. By specifying the interest rate projected for the period during which the Company's rates established in this proceeding will be in effect, one can reasonably estimate an equity risk premium (and thus an ROE) for the *forward-looking* time period that corresponds with the rates that are set in this proceeding.

As shown on Exhibit CLP-ROE-8, the regression in my BYRP analysis has an F-statistic that is significant at the 99.00 percent confidence level indicating that the regression model is statistically significant, and has an R^2 of approximately 0.82, meaning that 82 percent of the variation in historical implied utility equity risk premia can be explained by changes in interest rates. The same circumstances exist with my BYRP analysis updated to reflected

current data presented in Exhibit CLP-ROE-REBUTTAL-7. Therefore, the regression indicates that there indeed exists a strong negative correlation between utility equity risk premia and interest rates.

E. Summary of Adjusted Results

Q. Have you considered how the ROE recommendation of Mr. Garrett would change if his cost of equity analyses were revised for the issues you have identified and previously discussed?

A. Yes, I have evaluated how Mr. Garrett's ROE recommendation would change once his analyses are reasonably revised to address the issues with those analyses that I have identified. As shown in Figure 21, the revised results of Mr. Garrett's analyses average 10.73 percent and thus fully support the Company's requested ROE of 10.25 percent in this proceeding.

Figure 21: Mr. Garrett's as Filed and Adjusted Results

	Mr. Garrett As Filed	Mr. Garrett As Adjusted
CAPM		
CAPM at Proxy Group Debt Ratio	8.70%	11.08%
Hamada CAPM	7.90%	n/a
DCF		
Constant Growth DCF (DPS)	8.50%	n/a
Constant Growth DCF (Avg. Bulkley EPS and Garrett DPS)	n/a	10.38%
Constant Growth DCF (Sustainable)	7.60%	n/a
Average	**8.18%**	**10.73%**
Recommended ROE	8.70%	
Company's Proposed ROE		10.25%

Q. Mr. Garrett references a recent recommended decision from an Administrative Law Judge ("ALJ") in a proceeding Pennsylvania as support for his recommended ROE for the Company in this proceeding.[182] What is your response?

A. As Mr. Garrett acknowledges, the ALJ's decision is only preliminary and does not establish the authorized ROE of the Pennsylvania PUC, so I disagree with Mr. Garrett that it provides "regulatory support" as he suggests for certain of his positions in this proceeding.[183] I would also point out that the ROE in the ALJ's recommended decision is substantially lower than the national average authorized ROE for electric distribution utilities. In addition, although very few utilities in Pennsylvania have stated authorized ROEs as a result of black-box settlements, the electric division of UGI Utilities (the same utility referenced by Mr. Garrett) was authorized an ROE of 9.85 percent in 2018, a time at which long-term interest rates were approximately 265 basis points *lower* than the current level of long-term interest rates.[184]

VIII. Response to Mr. Little

Q. Please summarize Mr. Little's recommendations with respect to the Company's authorized ROE?

A. Mr. Little recommends that the Company's ROE be set to no greater than the currently authorized 9.25 percent, and that the Company be directed to file, with any future ROE

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[182] Garrett Direct at 57.

[183] *Id*.

[184] S&P Capital IQ. The 30-day average of the yield on the 30-year Treasury bond as of the Pennsylvania PUC's decision in UGI Utilities' Docket No. R-2017-2640058 was 2.83 percent, but as of October 28, 2026 is 5.47 percent.

request, an analysis of the yields of its own traded securities and the market-to-book ratio of its parent's common stock.[185]

Q. Does Mr. Little conduct any cost of equity estimate analysis to reach his recommendation of 9.25 percent?

A. No. In fact, Mr. Little acknowledges that he is not a "cost-of-capital modeler" and has not performed any cost of equity analysis to arrive at his recommendation.[186] Instead Mr. Little relies on the Company's traded securities, the Company's ability to raise capital, and what the authorized returns are for the Company's affiliates.

Q. Please summarize Mr. Little's comparison of the yield on preferred stock and first mortgage bonds to the Company's requested ROE.

A. According to Mr. Little, the Company's requested ROE of 10.25 percent is unreasonable because it results in a risk premium over CL&P's preferred equity and first mortgage bonds[187] of 3.76 percent to 5.69 percent.[188]

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185 Little Direct at 6 and 13.

186 *Id.*, at 4.

187 Mr. Little also compares the Company's requested ROE of 10.25 percent to the yield of 4.981 percent on the CL&P's 2025 Series A first mortgage bond when it was issued in January 2025. However, as shown in Exhibit CL-6 reports, as of October 2, 2026, the Company's 2025 Series A first mortgage bonds had a 5.45 percent yield, approximately 47 basis points higher than at the time of issuance. As a result, this comparison should be disregarded because it incorrectly compares the Company's requested ROE of 10.25 percent in the current market to the yield on first mortgage from almost 2 years ago.

188 Mr. Little conducts his yield comparison by estimating a yield on the Company's preferred stock using price of $52.81 for CL&P's $3.24 Series G preferred stock as of August 12, 2026 divided by the annual dividend by $52.81 to produce a current yield of 6.14 percent. Mr. Little also states that as of October 2, 2026, the Company's fifteen outstanding first mortgage bond series have yields between 4.56 and 6.49 percent.

Q. Do you agree with Mr. Little that the yields on CL&P's preferred stock and first mortgage bonds demonstrate that the cost of equity is less than the Company's requested ROE of 10.25 percent?[189]

A. No. Mr. Little fails to acknowledge that preferred equity and first mortgage bonds are entirely different financing instruments than common equity, with different risk profiles and as a result it is reasonable that investors would require different returns. Mr. Little makes no attempt to address the risk differential between these instruments in his analysis. Instead, his analysis very simplistically calculates the difference in yields. Further, as he notes he is not a "cost-of-capital modeler", Mr. Little has presented no evidence that the resulting risk premium range of 3.76 percent to 5.69 percent is unreasonable in the current market environment for the differences in the risks of these instruments. Therefore, his analysis is inapt and should be disregarded.

Q. Do your cost of equity analyses provide evidence that the risk premium range of 3.76 percent to 5.69 percent implied by the Company's requested ROE of 10.25 percent is reasonable?

A. Yes. As shown in Figure 22, I relied on the market return, risk-free rate and proxy group average beta from my updated CAPM analysis shown in Exhibit CLP- ROE-REBUTTAL-4 to estimate risk premium for my proxy group of 6.00 percent. Since my CAPM analysis relies on the 30-year Treasury bond as the estimate of the risk-free rate, my calculated risk premium for the proxy group represents the return required by investors above the yield on 30-year Treasury bonds to compensate for the added risk of a utility equity investment. In order to compare to the risk premium range referenced by Mr. Little, my proxy group risk

[189] Little Direct. at 5.

premium must be adjusted so that it represents the risk premium required above the yield on CL&P's first mortgage bonds. Mr. Little stated that the Company's fifteen outstanding first mortgage bond series have yields between 4.56 and 6.49 percent, which were 0.37 percent to 1.21 percent greater than the yields on Treasuries. The spread between CL&P's first mortgage bonds and Treasuries can be subtracted from my proxy group risk premium to estimate the risk premium over CL&P's bonds required by investors. As shown in Figure 22, my CAPM analysis implies that investors would require a risk premium over the yields on the Company's first mortgage bonds of 4.79 percent to 5.63 percent which is very similar to the range implied by the Company's requested ROE of 10.25 percent which Mr. Little stated was 3.76 percent to 5.69 percent. Therefore, considering the yields on the Company's preferred equity and first mortgage bonds, the Company's requested ROE of 10.25 percent is reasonable.

Figure 22: Implied Utility Risk Premium – CAPM Analysis

	Low	High
Market Return[190]	13.39%	
Risk-Free Rate[191]	5.32%	
Market Risk Premium[192]	8.07%	
Value Line Beta[193]	0.74	
Utility Risk Premium (Treasuries)[194]	6.00%	

[190] Source: Exhibit CLP- ROE-REBUTTAL-4

[191] Source: Exhibit CLP- ROE-REBUTTAL-4, 30-day Avg. of 30-year Treasury Bond Yield.

[192] Equals Market Return minus Risk-free Rate.

[193] Source: Exhibit CLP- ROE-REBUTTAL-4

[194] Equals Market Risk Premium multiplied by Beta.

Spread (Utility Bonds - Treasuries)[195]	1.21%	to	0.37%
Utility Risk Premium (Utility Bonds)[196]	4.79%		5.63%

Q. Does Mr. Little's analysis of Eversource Energy's publicly traded common stock establish the return investors require for CL&P?

A. No. First, Mr. Little's consideration of only Eversource Energy's dividend yield understates the investor required return. Mr. Little relies on Eversource Energy's annualized dividend of $3.15 per share and its October 20, 2026 stock price of $65.44 to estimate a current dividend yield of 4.81 percent, which he contends implies that the Company's requested ROE of 10.25 percent is unreasonable. However, Mr. Little fails to consider the value of expected growth. The return required by investors includes both future dividends and potential appreciation in the share price. Therefore, the current dividend yield is only one component of the value investors expect from holding the stock. For example, as shown in Equation 2 of my Direct Testimony, in the constant growth DCF model, the cost of equity is the sum of the expected dividend yield plus the long-term growth rate.[197] This demonstrates that the 4.81 percent current dividend yield for Eversource Energy alone cannot establish the investor-required return and should be disregarded by the Commission.

Second, Mr. Little's consideration of the investor required return for CL&P's parent company, Eversource Energy, would violate the stand-alone principle of ratemaking, which requires that regulated rates be based on the risks and benefits of the regulated utility, not its

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[195] Little Direct at 9.

[196] Equals Utility Risk Premium (Treasuries) minus Spread (Utility Bonds - Treasuries)

[197] Bulkley Direct at 2.

investors, parent or affiliates. This is because Eversource Energy's cost of equity would reflect the risk associated with all of Eversource Energy's operations not the risks of CL&P. Eversource Energy's operations have the benefit of diversification of its business operations across multiple regulatory jurisdictions, whereas CL&P's operations are consolidated in a single jurisdiction, with the risks of its business operations also in that one jurisdiction. It is likely that the risks of all of Eversource Energy's operations as a whole would not be reflective of the risks of CL&P, as if it were operating as a standalone entity as required by the stand-alone principle.

Lastly, I am not aware of any regulatory jurisdiction within the U.S. that solely relies on the securities of the subject company's parent company to set a regulated utilities authorized ROE and completely foregoes any cost of equity analysis.

Q. Should the authorized ROE for the Company's affiliates influence the authorized return for CL&P?

A. No. First, the PURA makes its decisions based on the information that is provided on the record in each individual rate proceeding. Therefore, it would be unreasonable to simply benchmark against the result from an individual case, since that one case may not have comparable data to the current proceeding.

Second, consistent with the stand-alone ratemaking principle the relevant measure of investor-required return in this proceeding is for CL&Ps electric distribution operations in Connecticut. While authorized ROEs in other jurisdictions provide a useful point of comparison, the purpose of this proceeding is to establish a cost of equity and capital

structure that provide the Company with the opportunity to attract capital on reasonable terms, both on a stand-alone basis and within Eversource.

Lastly, the authorized returns cited by Mr. Little for the Company's affiliates are 9.50 percent (Public Service Company of New Hampshire) and 9.80 percent (NSTAR Electric) are both greater than the ROE threshold Mr. Little recommends for CL&P in this proceeding, and both were established in July 2025 and November 2022, respectively, and capital market conditions since the filing of my direct testimony in this proceeding indicate that the cost of equity has increased. Mr. Little did not make any attempt to evaluate whether the information relied upon by the respective commissions in those proceedings was relevant in the current market conditions. It is unreasonable to rely on an individual ROE authorized in prior market conditions, without consideration of changes from that time period, to establish an ROE that is intended to reflect the forward-looking investor-required return on an investment in the Company based on current market information. Moreover, based on Mr. Little's own logic, the prior authorizations for the Company's affiliates that he references in conjunction with current capital market conditions indicate that his ROE recommendation is understated.

Nonetheless, the relevant consideration for establishing the Company's authorized ROE is the results of the cost of equity analyses that reflect current capital market conditions and investor expectations, rather than authorized ROEs that were established for different utilities under a different set of market conditions.

Q. Should PURA require CL&P to file market-to-book ratio information during any future ROE request?

A. No. As previously discussed herein, Mr. Little's claim that market-to-book ratios greater than 1.0 indicate that authorized returns exceed the cost of equity are unfounded. Therefore, there is no basis for the Company to be required to file such information for purposes of establishing future authorized ROEs.

IX. Response to Mr. Marchand

Q. Please summarize Mr. Marchand's position regarding the Company's proposed ROE in this proceeding?

A. Mr. Marchand recommends that PURA reject the Company's proposed ROE of 10.25 percent and that PURA should not authorize an ROE for the Company in this proceeding that is greater than 9.50 percent based on previously authorized ROEs in Connecticut and elsewhere throughout the United States over the past few years.[198] Further, Mr. Marchand recommends that when determining the authorized ROE for CL&P, PURA should consider that the Company's proposed PBR mechanism reduces the Company's risk[199]

Q. Does Mr. Marchand conduct any independent cost of equity analyses?

A. No.

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[198] Marchand Direct at 10-16.

[199] *Id.,* at 8.

Q. Does Mr. Marchand acknowledge that market conditions have changed significantly since PURA's prior authorized ROE for CL&P in 2018?

A. No. While acknowledging that PURA previously authorized an ROE for CL&P of 9.25 percent in April 2018, Mr. Marchand fails to acknowledge that long-term interest rates have increased materially since the prior proceeding. As shown in Figure 3, since the decision was issued in the previous rate proceeding, long-term interest rates have increased by approximately 227 basis points, which indicates that the cost of equity should be significantly higher than 9.25 percent. However, despite the increase in the cost of equity indicated by the change in market conditions since the Company's last rate proceeding, Mr. Marchand recommends that PURA authorize a return no higher than 9.50 percent, which is only 25 basis points greater than the Company's currently authorized ROE of 9.25 percent. Thus, Mr. Marchand's recommended ROE does not reasonably reflect the change in market conditions since the completion of the CL&P's last rate proceeding in 2018.

Q. Has Mr. Marchand conducted any analysis demonstrating that the Company's ROE should be adjusted based on its proposed PBR mechanism?

A. No. The evaluation of the effect of a mechanism on the Company's ROE is not a review of the Company's risk with and without the mechanism. Since the cost of equity analyses rely on market data for the proxy group companies, the evaluation of a change in the Company's risk and ultimately its ROE should be as compared with the proxy group. To the extent that the proxy group companies have similar mechanisms as the Company, the effects of those mechanisms are reflected in the market data that has been used in the analysis. Mr. Marchand has not conducted an analysis comparing the Company's risk to the proxy group. In fact, Mr. Marchand states that "Walmart has not completed an assessment of the net effect

of the proposed PBRM and related mechanisms, and that issue should be evaluated based on the complete evidentiary record."[200] Absent this comparison, Mr. Marchand has no basis to conclude that the Company's authorized ROE in this proceeding should be reduced due to its proposed PBR.

As discussed in my direct testimony, I evaluated CL&P's business and regulatory risk relative to the operating utilities of the proxy group. Based on that analysis, I determined that while the Company has timely cost recovery through regulatory adjustment mechanisms similar to the proxy group if the Company's proposed PBR is approved, Regulatory Research Associates' ("RRA") jurisdictional rankings and S&P's credit supportiveness rankings for Connecticut were both significantly below the averages of the proxy group and the authorized ROEs within Connecticut have been significantly below the U.S. national average for electric and natural gas utilities for a number of years. As a result, I concluded that the Company's business and regulatory risk is greater than the proxy group.[201]

X. Capital Structure

Q. What have the parties in this proceeding stated regarding the appropriate capital structure for CL&P in this proceeding?

A. The parties in this proceeding have stated the following regarding CL&P's proposed capital structure consisting of 53.86 percent equity and 45.24 percent long-term debt:

- Mr. Rothschild opposes the Company's proposed capital structure and instead recommends a capital structure consisting of 41.61 percent common equity, 0.9 percent preferred equity and 57.49 percent long-term debt which he states is based

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[200] *Id.*

[201] Bulkley Direct at 66-67.

on the average equity ratio for the proxy group at the holding company level.[202] Further, Mr. Rothschild states that his recommended capital structure is closer to the capital structure of the Company's parent company, Eversource Energy, which raises equity for CL&P.[203]

- Mr. Garrett states that the Company's proposed capital structure results in the Company having less financial risk than the proxy group.[204] As such, if his primary ROE recommendation of 8.70 percent is accepted, Mr. Garrett recommends a long-term debt ratio of 58.1 percent, which he contends is consistent with the average debt ratio of the proxy group companies.[205]

- Mr. Marchand states that the Company's proposed equity ratio of 53.86 percent is greater than the average equity ratio of 51.69 percent that I calculated for my proxy group at the operating subsidiary level, which, according to Mr. Marchand, indicates that the Company has less financial risk than the proxy group.[206] As a result, Mr. Marchand recommends that the PURA consider the Company's proposed "above-average" equity ratio when determining the ROE.[207]

Q. Are Mr. Rothschild's and Mr. Garrett's comparisons of the average actual utility holding company equity ratios to the company's proposed capital structure accurate?

A. No. There are two problems with these witnesses' comparisons of the Company's proposed equity ratio to the equity ratios of the proxy group holding companies. First, it is not appropriate to compare the projected equity ratio of the Company to the average equity ratio of the proxy group at the holding company level. Second, even though it is not appropriate, if the capital structures at the holding company level are considered, the *market value* of debt

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[202] Rothschild Direct at 22.

[203] *Id.,* at 23.

[204] Garrett Direct at 55-57.

[205] *Id.*, at 3-4, 54 and 56. In addition, as discussed previously, Mr. Garrett recommends that if PURA adopts the Company's proposed capital structure, which he contends has a greater proportion of equity and thus lower risk relative to the proxy group, the cost of equity using the CAPM should be lower at 7.90 percent.

[206] Marchand Direct at 14-15.

[207] *Id.,* at 15-16.

and equity must be used to estimate the percentage of debt and equity in the capital structure, not the *book value* of debt and equity.

Q. Why is it inappropriate to rely on the holding company capital structures to establish the capital structure for the operating companies?

A. The holding company data that Mr. Rothschild and Mr. Garrett rely on includes corporate-level debt that is not part of the regulated or financial capital structure of the operating utilities. The capital structures of the holding companies are financing more than an individual utility operating company, often across multiple regulatory jurisdictions, and therefore have somewhat different risk profiles and thus can maintain a different degree of leverage. Because the business risk is more diversified at the holding company level, it is possible that a holding company could maintain a higher degree of leverage. Therefore, it is not reasonable to rely on the capital structures of the holding companies when assessing the reasonableness of the Company's proposed capital structure.

The relevant capital structure for comparison purposes to the Company is at the operating company level, not the holding company. The PURA should establish rates in this proceeding based on CL&P's capital structure on a stand-alone basis. Therefore, it is reasonable and appropriate to rely on the operating company capital structures that have been used to fund utility operations for the comparison of the Company to other electric utilities.

Q. Is the Company's proposed equity ratio reasonable when compared with the equity ratios of the operating utilities of the proxy group holding companies?

A. Yes. As shown in my direct testimony, CL&P's proposed equity ratio of 53.86 percent is well within the range of equity ratios for the utility operating subsidiaries of the proxy group companies.[208]

Q. Why is the market value of the proxy group companies' capital structures more appropriate than the book value at the holding company level?

A. The analysis of the cost of equity relies on market data for the proxy group companies. Therefore, it is more appropriate to calculate the capitalization on a consistent basis; using the market value of the debt and equity. The use of the *book value* of debt and equity for the proxy group companies at the holding company level creates a mismatch between the capital structure data that is being used to determine the reasonableness of the Company's equity ratio and the data that is being used in the models to determine the cost of equity for the Company. For example, Mr. Rothchild and Mr. Garrett consider a DCF model to determine the cost of equity for the Company and estimate the dividend yield based on the expected dividends of the proxy group companies and their respective current stock prices – which is the current *market value* of their equity. Similarly, Mr. Rothchild and Mr. Garrett also rely on the CAPM to estimate the cost of equity for the Company, and in doing so, rely on beta coefficients – which reflect the returns of each proxy group company based on that company's respective *market value*. Therefore, the costs of equity developed by these

[208] Bulkley Direct at 69.

witnesses are intended to represent the percentage return required by investors on the *market* value of equity not the *book* value.

Q. What inconsistencies are created by relying on the market cost of equity and the book value of debt and equity for assessing the capital structure?

A. Since market data is used to estimate the cost of equity, if the *book value* of debt and equity differ substantially from the *market value*, then the financial risk of the book value capital structure is not reflected in the cost of equity. This is illustrated in the following set of equations found readily in corporate finance textbooks.[209] As shown in Equation [4], the value of a company (or asset) is determined as follows:

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

Where:

V = Market value of a company/asset

D = Market value of debt

E = Market value of equity

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

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

Where:

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

r_D = expected return on debt

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

r_E = expected return on equity

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

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

As shown in Equation [6], the expected return on the market value of equity is a function of the market value debt-to-equity ratio. As the percentage of debt increases, the financial risk of the firm increases, and thus investors require a higher return to compensate for the additional financial risk. Therefore, if the book value debt-to-equity ratio for the proxy group is substantially different than market value debt-to-equity ratio, the expected return on equity will also be substantially different.

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

A. Yes. As shown in CLP-ROE-R-17, the average *market value* common equity ratio for the proxy group as of December 31, 2025, is 54.93 percent. Given that Mr. Rothschild and Mr. Garrett estimate the cost of equity using the DCF and CAPM analyses based on the *market value* of the proxy group companies' equity, the costs of equity that they estimate for the proxy group reflect the financial risk of a *market value* common equity ratio of 54.93 percent based on Equation [6]. This means that the *market value* common equity ratio of the proxy group is significantly greater than the average book value equity ratios cited by Mr.

Rothschild (41.61 percent)[210] and Mr. Garrett (41.9 percent).[211] Likewise, when the analysis is done correctly, this also means that the Company's proposed equity ratio of 53.86 percent is below the average market value common equity ratio for the holding companies of the proxy group.

Q. Do you agree with Mr. Marchand that the Company's proposed equity ratio of 53.86 percent results in CL&P having less financial risk than the proxy group?

A. No, I do not. While the Company's proposed equity ratio of 53.86 percent is slightly greater than the proxy group average at the operating subsidiary level of 51.69 percent, it is still well within the range of 38.40 percent to 59.92 percent. Further, as noted above, the average *market value* common equity ratio for the proxy group at the holding company level as of December 31, 2025 is 54.93 percent, which is greater than the Company's proposed equity ratio of 53.86 percent.

Q. Does financial theory require aligning the Company's equity ratio to the proxy group equity ratio used to determine the ROE?

A. Yes. Mr. Rothschild's proposed equity ratio of 41.61 percent and Mr. Garrett's proposed equity ratio of 41.00 percent, both of which consist of more debt than the Company's proposed capital structure, result in significantly greater leverage on average than the proxy group measured using data at both the holding company and operating subsidiary levels. Thus, the capital structure recommendations of Mr. Rothschild and Mr. Garrett would result in the Company's financial risk being substantially greater than that of the proxy group

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[210] Rothschild Direct at 22 and Exhibit ALR-5, page 4.

[211] Garrett Direct at 4 and Exhibit DJG-13.

warranting a common equity cost rate well above the proxy group average. It is a fundamental tenet of finance that the greater the amount of financial risk borne by common shareholders, the greater the return required by shareholders in order to be compensated for the added financial risk imparted by the greater use of senior debt financing. In other words, the greater the debt ratio, the greater is the return required by equity investors. The cost of equity must be adjusted to reflect the additional risk associated with the more debt-heavy capital structure.

Q. Do you agree with Mr. Rothschild and Mr. Garrett that the capital structure of CL&P's parent company, Eversource Energy is relevant when assessing the reasonableness of the Company's proposed capital structure?

A. No. The basis for Mr. Rothschild's and Mr. Garrett's consideration of Eversource Energy's capital structure is that Eversource Energy uses double leverage; however, this logic runs counter to financial theory.[212] The capital structure and the cost of capital are intended to reflect the risks of the operations of the company, which in this case is CL&P. Thus, the double leverage argument suggests that the required return should be based on the *source of funds*, not the *risk of the investment*. The double leverage argument, therefore, suggests that the value of the equity in a company would differ based on the investor's source of funds, which is illogical.

Q. Would you provide an example to explain why the double leverage argument is flawed?

A. Yes. Consider the scenario where an investor borrows funds to invest in a stock, such as Apple Inc. ("AAPL"). The expected return to that investor on the AAPL stock is not the

[212] *See, e.g.*, Dr. Roger A. Morin, *Modern Regulatory Finance*, Public Utilities Reports, Inc., 2021, Chapter 20.

cost of the debt that the investor undertook to make the investment, but rather the return afforded all AAPL investors for that same period of investment.[213] In contrast, Mr. Rothschild's and Mr. Garrett's position as applied to this example suggests that the required return to that investor would be a debt return because of the source of the funds, which is irrational, given that this investor would bear all the risk of repayment that is inherent in holding equity in AAPL. Consistent with financial theory, the proper return in this example is based on the risk associated with the use of funds, which is the equity return, not the source of the funds, which is the debt cost.

Q. Why would it be inappropriate to rely on the Eversource Energy capitalization for CL&P?

A. Eversource Energy's capitalization reflects the business risks of the holding company, not CL&P. Specifically, using the market value discussed previously in response to Mr. Rothschild and Mr. Garrett's estimates of the capital structures for the proxy group companies, Eversource's equity ratio is 46.7 percent. This equity ratio is significantly affected by the financing of the unregulated operations and other regulated operations owned at the holding company. For example, Eversource Energy invested approximately $318 million in the Northern Pass Transmission project and experienced an after-tax impairment loss of approximately $204.4 million related to the abandonment of that project. In addition, in the third quarter of 2026, Eversource took after-tax charges of $111.4 million related to the sale of Aquarion Water Company, $164 million South Fork Wind and Revolution Wind,

[213] Assumes stock investments occurred at the same time period.

and $43.9 million related to the transmission business return on equity.[214] Each of these adjustments affects the capitalization of the holding company as a result of unregulated investments and should have no effect whatsoever on the capitalization of CL&P, up or down. These examples demonstrate that it is inappropriate to rely on the Eversource holding company capital structure for CL&P.

Q. To that end, are there other provisions between the holding company and the operating companies that support the use of a stand-alone capital structure?

A. Yes. CL&P's credit ratings are based on its financial performance and its own capitalization. In addition, there are debt covenants and ring-fencing provisions that distinguish the holding company from the operating companies. For example, debt holders at the parent company level do not have a claim on the assets of the operating utilities. CL&P does not have a legal obligation to pay a dividend to the parent company. Further, there are provisions which separate claims on the assets of the operating companies owned by Eversource. Therefore, in addition to the financing of unregulated operations that makes the capitalization of the holding company different than CL&P's capital structure, based on the corporate structure and legal separation of the holding company and the operating companies' assets it is unreasonable to suggest that the capitalization of the holding company should be used for CL&P.

[214] Eversource Energy Reports Third Quarter 2026 Results, November 4, 2026.

Q. Are there academic publications that support the view that the cost of capital should be established for each investment on a stand-alone basis?

A. Yes. Several financial textbooks support this position. For example, in *Principles of Corporate Finance,* Brealey, Myers and Allen note:

> In principle, each project should be evaluated at its own opportunity cost of capital; the true cost of capital depends on the use to which the capital is put. If we wish to estimate the cost of capital for a particular project, it is project risk that counts.[215]

Similarly, Modern Corporate Finance indicates:

> Each project has its own required return, reflecting three basic elements: (1) the real or inflation-adjusted risk-free interest rate; (2) an inflation premium approximately equal to the amount of expected inflation; and (3) a premium for risk. The first two cost elements are shared by all projects and reflect the time value of money, whereas the third component varies according to the risks borne by investors in the different projects. For a project to be acceptable to the firm's shareholders, its return must be sufficient to compensate them for all three cost components. This minimum or required return is the project's cost of capital and is sometimes referred to as a hurdle rate. In discussing how to calculate the project's cost of capital, we begin by assuming the firm is all-equity financed and later relax that assumption.
>
> The preceding paragraph bears a crucial message: The cost of capital for a project depends on the riskiness of the assets being financed, not on the identity of the firm undertaking the project. … the risk-required return trade-off is set in the financial marketplace is based on the yields available to investors on other investments with similar risk characteristics. Consequently, the required return on a project (the project's cost of capital) is an opportunity cost, which depends on the alternative market investment that investors must forgo.[216]

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[215] Richard A. Brealey, Stewart C. Myers, Franklin Allen, Principles of Corporate Finance, McGraw-Hill Irwin, 8th Ed., 2006, at 234.

[216] Alan C. Shapiro, Modern Corporate Finance, Wiley, 1st Ed., 1990, at 276.

Lastly, the use of double leverage versus an independent capital structure was studied by Pettway and Jordan (1983)[217] and Lerner (1973).[218] Pettway and Jordan (1983) evaluated the use of these two capital structures in achieving three goals of rate of return regulation, which are that the allowed return must: (1) be sufficiently low as to eliminate monopoly rents or producer's surplus; (2) be sufficiently high to attract capital and guide the allocation of capital resources in a socially desired fashion; and (3) exactly compensate the investors of capital for the risk of their investment in the public utility. The conclusions reached by Pettway and Jordan (1983) were as follows:

> The "double leverage" approach to estimate the allowed rate of return would be incorrect and inappropriate when parents diversify into subsidiaries of unequal risk and/or use parent debt. The use of "double leverage" (1) does not eliminate "monopoly rents" or "producer's surplus" in the regulated operating company, (2) does not provide the proper rate of return to attract capital and to guide the allocation of capital resources in a socially desirable fashion, and (3) does not correctly compensate the investors of capital for the riskiness of their investments in the public utility. In the section, the two approaches are compared in a theoretical framework with tax effects specifically considered. The "independent company" approach is found to be universally correct, whereas the "double leverage" approach is only correct in specific areas. When a public utility holding company has a diversified group of subsidiaries of unequal risk and/or parent debt, a "double leverage" approach which uses the parent's WACC as an estimate of the cost of equity capital of the regulated subsidiary is incorrect and should not be employed. The results of this paper, using both a series of examples and a theoretical framework analysis, reaffirm the "independent company" approach as satisfying the three standards of rate of return regulation. The analysis finds no valid support for the "double leverage" approach; the "independent company" approach is shown to be universally correct.[219]

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[217] Richard H. Pettway and Bradford D. Jordan, "Diversification, Double Leverage, and the Cost of Capital," *The Journal of Financial Research*, Vol VI, No. 4 Winter 1983.

[218] Eugene M. Lerner, "What are the Real Double Leverage Problems," Public Utilities Reports, Inc., June 7, 1973.

[219] *Id.*

Lerner (1973) concluded that the double leverage adjustment should be rejected because it discriminates among classes of security holders, is contrary to the basic principles of financial theory and, if applied, would lead to consequences that are not in the public interest. The author, who was a finance professor at Northwestern University at the time the report was published, noted that it is well-established in financial theory that the cost of equity capital is the risk-adjusted opportunity cost to the investor and that the sources of shareholder funds do not enter into the cost of equity calculation. Further, Lerner (1973) recognized that it is:

> illogical to equate a corporation's cost of equity with its shareholders' sources or costs of funds. The relevant considerations are the alternatives available to the shareholders and the returns and risks associated with those alternatives. Where or how the shareholder obtained the funds used to purchase the shares, or the cost of those funds to the shareholder, are totally irrelevant to the calculation of the cost of equity to the corporation.
>
> This is also true whether the corporation has one or many shareholders and whether the shareholders are individuals or corporations. There is no basis in financial theory for estimating the cost of equity by one procedure for corporations whose shares are owned by individuals and by a different procedure - e.g., using the double leverage adjustment - for corporations whose shares are owned by a holding company. To do so is discriminatory. The mere transfer of ownership of an operating company from the public to a holding company or the reverse should not logically in and of itself result in a change in the operating company's allowable rate of return. Nor should the cost of capital of a parent holding company determine the cost of equity of the subsidiary.[220]

Q. What is your conclusion regarding an appropriate capital structure for CL&P?

A. I continue to conclude that CL&P's proposed capital structure is reasonable. The Company's proposed equity ratio of 53.86 percent is well within the range of equity ratios

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[220] Eugene M. Lerner, "What are the Real Double Leverage Problems," Public Utilities Reports, Inc., June 7, 1973, at 22.

of the utility operating subsidiaries of the proxy group (*i.e.*, utilities with risk profiles that are similar to the Company's risk profile). Furthermore, although I disagree with the approach supported by Mr. Rothchild and Mr. Garrett in comparing the Company's proposed equity ratio to the average equity ratios of the proxy group holding companies, if that analysis is done correctly, it also demonstrates that the Company's proposed equity ratio is reasonable.

Q. Does this conclude your rebuttal testimony?

A. Yes.