Exhibit No.___(AEB-4Tr)
Docket No. UG-200568
Witness: Ann E. Bulkley

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. CASCADE NATURAL GAS CORPORATION, Respondent.	DOCKET UG-200568

CASCADE NATURAL GAS CORPORATION

REBUTTAL TESTIMONY OF ANN E. BULKLEY

January 8, 2021

Revised February 26, 2021

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I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Ann E. Bulkley. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

Q. What is your position with Concentric Energy Advisors, Inc. ("Concentric")?

A. I am employed by Concentric as a Senior Vice President.

Q. On whose behalf are you submitting this Rebuttal Testimony?

A. I am submitting this Rebuttal Testimony before the Washington Utilities and Transportation Commission ("Commission") on behalf of Cascade Natural Gas Corporation ("Cascade" or the "Company"), which is a wholly-owned subsidiary of MDU Resources Group, Inc. ("MDU Resources").

Q. Have you previously provided testimony in this docket?

A. Yes, I provided Direct Testimony on June 19, 2020, in support of my recommended return on equity ("ROE") for Cascade and the Company's proposed capital structure.

Q. What is the purpose of your Rebuttal Testimony?

A. The purpose of my Rebuttal Testimony is to respond to the Testimony provided by Mr. David C. Parcell on behalf of Staff of the Washington Utilities and Transportation Commission ("Staff"), the Response Testimony of Dr. J. Randall Woolridge on behalf of the Washington State Office of the Attorney General, Public Counsel Unit, ("Public Counsel"), and the Response Testimony of Mr. Bradley G. Mullins on behalf of the Alliance of Western Energy Consumers ("AWEC") (collectively, "Opposing ROE witnesses") as it relates to the authorized ROE and capital structure for Cascade in this proceeding.

Q. Have you prepared any schedules to support your Rebuttal Testimony?

A. Yes. My rebuttal analyses and recommendations are supported by the data presented in Exhibit No.___(AEB-5), Schedules 1 through 10, which were prepared by me or under my direction.

Q. How is the remainder of your Rebuttal Testimony organized?

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

- In Section II, I provide a summary and overview of my Rebuttal Testimony and the important factors to be considered in establishing the ROE for Cascade's natural gas operations in Washington.
- In Section III, I provide a comparison of the Opposing ROE witnesses' recommendations in this proceeding to the comparable returns for natural gas distribution utilities nationwide.
- In Section IV, I update the ROE analysis from my Direct Testimony using market data as of November 30, 2020.
- In Section V, I discuss capital market conditions and the implications for the models used to estimate the cost of equity for Cascade.
- In Section VI, I respond to Staff witness Mr. Parcell's testimony regarding a just and reasonable ROE and capital structure for Cascade.
- In Section VII, I respond to Public Counsel witness Dr. Woolridge's testimony regarding a just and reasonable ROE and capital structure for Cascade.
- In Section VIII, I respond to AWEC witness Mr. Mullins' testimony as it relates to the authorized ROE and capital structure for Cascade.
- Finally, in Section IX, I summarize my conclusions and recommendations.

II. SUMMARY AND OVERVIEW

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

A. My key conclusions and recommendations are as follows:

1) Capital market conditions have changed dramatically in 2020. Heightened volatility in equity markets and substantially higher beta coefficients (the measure of risk in the Capital Asset Pricing Model ("CAPM")) from both Bloomberg and Value Line suggest that the cost of equity has risen since I prepared my Direct Testimony. While yields on U.S. Treasury bonds have declined as a result of actions of the Federal Reserve and the U.S. Congress to provide unprecedented support for the U.S. economy during the COVID-19 pandemic, the Commission should not rely on this as the sole determining factor in setting the authorized ROE for Cascade in this proceeding.

2) Recent market indicators such as the Treasury yield curve indicate that over the near-term, or the period that Cascade's rates will be in effect, investors expect the economy to enter the early expansion phase of the business cycle. Historically, the utility sector has underperformed during this phase of the business cycle, as investors rotate out of defensive stocks into more cyclical sectors. The expected underperformance of utilities could result in a decline in the valuations of utilities, which means the current ROE estimates from the Discounted Cash Flow ("DCF") model will likely understate the cost of capital during the period that Cascade's rates will be in effect.

3) As a result of the uncertainty of the effect of COVID-19 on utilities, utilities have not performed as a traditional defensive sector. The increase in my updated DCF results highlights the underperformance of the utility sector in these market conditions.

4) Mr. Parcell acknowledges that "stock prices have been extremely volatile" since the latter days of February 2020, while Dr. Woolridge acknowledges the "weeks of chaos" that resulted from the pandemic and recognizes that utility stocks have underperformed as compared to the overall market over this period. However, both Mr. Parcell and Dr. Woolridge recommend ROEs that remain essentially unchanged from pre-pandemic levels for companies of similar risk. While Mr. Parcell and Dr. Woolridge recognize that market conditions have affected the assumptions used in the ROE estimation models, neither witness has accurately reflected how these conditions have affected the DCF and CAPM methods. Through over-reliance on the DCF model results, and by failing to use forward-looking assumptions in the CAPM, Mr. Parcell and Dr. Woolridge fail to account for current market conditions and understate the forward-looking cost of equity.

5) Despite providing 92 pages of testimony and analyses that Dr. Woolridge purports reflect current market conditions; his recommendation of 9.00 percent continues to be within the same band of 8.15 percent to 9.05 percent that he has presented in testimony over the last 9 years.

6) An authorized ROE of 9.00 percent as recommended by Public Counsel witness Dr. Woolridge would place the return for Cascade toward the very low-end of authorized returns for natural gas distribution companies in the U.S. since 2018.

This is not reasonable, especially given the evidence regarding Cascade's business and financial risks in Washington. As discussed in my Direct Testimony, Cascade has above average risk relative to the proxy group companies. Dr. Woolridge recognizes Cascade's higher business risk and suggests that investors should be compensated for that risk through a higher than average return.

7) The credit rating agencies' responses to the recent Commission decision in the Puget Sound Energy ("PSE") case, where the company was authorized an ROE of 9.40 percent, demonstrates that credit rating agencies continue to have concerns that utility credit metrics are being weakened through regulatory decisions.

8) The concerns outlined by credit rating agencies further support the Company's revised requested ROE of 9.80 percent.

9) While Mr. Parcell and Dr. Woolridge each provide a CAPM analysis, it is appropriate that each witness disregards the results of their analyses. Despite their criticism of the assumptions that I have relied upon in my CAPM analysis, the assumptions relied on by both witnesses produce results that are well below the authorized ROE for any U.S. natural gas utility in the past 35 years.[1]

10) Mr. Mullins offers no quantitative analyses for the Commission to consider and bases his recommended ROE entirely on ROEs established in the context of broad settlement agreements, despite acknowledging that each term in a settlement needs to be considered in the context of the entirety of the agreement.[2]

[1] Source: Regulatory Research Associates.
[2] *See* Exhibit No. ___(AEB-6), AWEC Response to Cascade Data Request 7.

11) The Opposing ROE witnesses oppose the Company's proposed capital structure of 50.40 percent common equity and 49.60 percent long-term debt. Mr. Parcell recommends a capital structure for Cascade consisting of 48.50 percent common equity and 51.50 percent long-term debt; Dr. Woolridge recommends a capital structure consisting of 49.10 percent common equity and 50.90 percent long-term debt; and Mr. Mullins recommends a capital structure comprised on 47.10 percent common equity and 52.90 percent long-term debt. All three recommendations are well below the average common equity ratio of 56.67 percent for the companies in my proxy group at the operating subsidiary level. Moreover, the Opposing ROE witnesses' recommended equity ratios fail to consider the overall risk related to the Tax Cuts and Jobs Act ("TCJA") for utilities. For those reasons, the Opposing ROE Witnesses' recommended equity ratios for Cascade are not reasonable. However, if the Commission were to adopt any of these alternative common equity ratios, it is necessary to make a corresponding upward adjustment to the authorized ROE to compensate investors for the additional financial risk created by using a more highly leveraged capital structure.

12) The CAPM and Empirical CAPM ("ECAPM") are producing higher return estimates based on market data as of November 30, 2020, than at the time the analysis in my Direct Testimony was conducted (based on market data as of April 30, 2020). In addition, the median and median high DCF model results have also increased as compared to April 2020. These higher results are consistent with other market indicators suggesting that the cost of equity has increased in recent months as a result of the volatility created in the market by the COVID-19 pandemic.

13) The Commission's adherence to the *Hope* and *Bluefield* decisions suggests that the methodology is not what is to be determined, but rather a "just and reasonable" return that is comparable to the return available on investments of similar risk. Utility commissions across the nation are looking beyond the results of the traditional ROE estimation models to establish returns that are reasonable under current market conditions. The majority of authorized ROEs for natural gas distribution companies since 2018 have been within a range from 9.40 percent to 9.80 percent, which suggests that regulators are relying on more than just the results of the traditional models. As shown in Figure 2 of my Rebuttal Testimony, the majority of authorized ROEs for natural gas distribution companies since 2018 have been within the range of results established in my Direct Testimony.

14) In market conditions where ROE estimation models are producing return estimates as low as 6.00 percent (Parcell CAPM) to 9.00 percent (Woolridge DCF), utility regulators recognize that such low returns are not compensatory for investors. Rather than endorsing the results of a specific methodology, the Commission should consider how current market conditions affect the risks for equity investors as well as the results of a broader range of ROE estimation methodologies.

15) Finally, the Opposing ROE witnesses' recommendations fail to consider the risks identified by the credit rating agencies with respect to the weakening of credit metrics for utility companies over the last several years resulting from the TCJA and the current market conditions, nor do they specifically address the impact of their below-average recommendations on Cascade's current credit ratings. Standard & Poor's ("S&P") has downgraded the outlook on the industry overall in

response to recent market conditions. Moody's Investors Service ("Moody's") has continued to downgrade utilities throughout 2019 and 2020 related to the negative cash flow implications of tax reform.[3] In each case, the credit rating agencies have expressed concerns about financial metrics that could be resolved through constructive regulation with respect to the authorized ROE and the equity ratio. As I noted in my Direct Testimony, Cascade was downgraded by FitchRatings ("Fitch") in 2018 because of its weaker financial profile resulting from the TCJA and Cascade's below-average cost of capital in Washington (9.4 percent ROE and 49.1 percent common equity ratio). Fitch recently noted a concern about weakened credit metrics resulting from the Company's elevated capex program focused on pipe replacement and high leverage, indicating that the balanced rate orders will be the key to maintaining the Company's existing ratings.[4] These statements from the rating agencies demonstrate that the risk of downgrades is real for Cascade in the current financial environment.[5]

Q. Have you updated your ROE analyses in rebuttal?

A. Yes. As discussed in Section IV of my Rebuttal Testimony, I have updated my analytical results based on market data as of November 30, 2020. The updated DCF and CAPM results have increased compared to those in my Direct Testimony. These updated results provide additional support for my ROE recommendation of 10.30 percent. The Company, however, has reduced its requested ROE to 9.80 percent, which is within the range

[3] While Cascade is not rated by Moody's, Moody's view of the industry as a whole is relevant to assessing credit risk to Cascade.
[4] See Exhibit No. __ (TJN-5) (*FitchRatings, Fitch Affirms Ratings of MDU, Montana-Dakota, Cascade and Centennial Energy; Outlooks Stable* (Dec. 23, 2020)).
[5] Direct Testimony of Ann E. Bulkley, Exh. AEB-1T at 33.

established by the results of my ROE estimation models and the recently authorized returns in other jurisdictions, in an effort to mitigate the rate impact on customers in these difficult economic conditions. In addition, while the analytical results of ROE estimation models provide a starting point, my recommendation continues to appropriately consider the results of multiple methodologies, as well as other factors, including company-specific risks, capital market conditions, and the capital attraction and comparable return standards. Further, I support Cascade's proposed capital structure consisting of 50.40 percent common equity and 49.60 percent long-term debt as reasonable relative to the operating utility companies held by the proxy group.

III. COMPARABLE RETURN STANDARD

Q. Please summarize the results of the Opposing ROE witnesses' ROE analyses in this proceeding.

A. Figure 1 summarizes the results of Mr. Parcell's and Dr. Woolridge's ROE analyses in this proceeding and their final recommendation. Mr. Parcell recommends an ROE of 9.25 percent based on the results of his DCF, Comparable Earnings and Risk Premium analysis. Dr. Woolridge recommends an ROE of 9.00 percent based primarily on the results of his DCF analysis while also considering the results of his CAPM analysis and authorized returns for natural gas distribution companies across the country.

Figure 1: Summary of Opposing ROE Witnesses' Model Results[6]

	Mr. Parcell (Staff)	Dr. Woolridge (Public Counsel)	Mr. Mullins (AWEC)
Constant Growth DCF	9.50%	9.00%	N/A
CAPM	6.20%	7.30%	N/A
Risk Premium	9.00%	N/A	N/A
Expected (Comparable) Earnings	9.00%	N/A	N/A
Recommendation	9.25%	9.00%	9.40%

Q. Do the Opposing ROE witnesses discuss current market conditions?

A. Yes. Although Mr. Parcell recognizes the extreme volatility that has characterized financial markets in 2020, he contends that 1) current economic conditions are resulting in lower profit levels, equity returns, and interest rates, 2) the cost of capital for regulated utilities has declined in recent years, and 3) the results of the traditional ROE models are lower than was the case prior to the Great Recession.[7] Dr. Woolridge disputes my conclusion regarding the effect of market conditions on the ROE estimation models, asserting that the DCF model is producing reliable estimates of the current market cost of equity for utility companies.[8] Despite this view, Dr. Woolridge relies on a normalized risk-free rate in his CAPM analysis to compensate for the current low interest rate environment without considering the relationship between interest rates and investment in utility stocks and how the availability of interest rates at the normalized level would likely affect investments in the utility sector. In addition, Mr. Parcell and Dr. Woolridge ultimately

[6] Mr. Mullins did not conduct any of the traditional ROE models to estimate the cost of equity for Cascade. Therefore, there are no individual model results to include in Table 1 from his testimony.
[7] Direct Testimony of David C. Parcell, Exh. DCP-1T at 15-16.
[8] Response Testimony of Dr. J. Randall Woolridge, Exh. JRW-1T at 65.

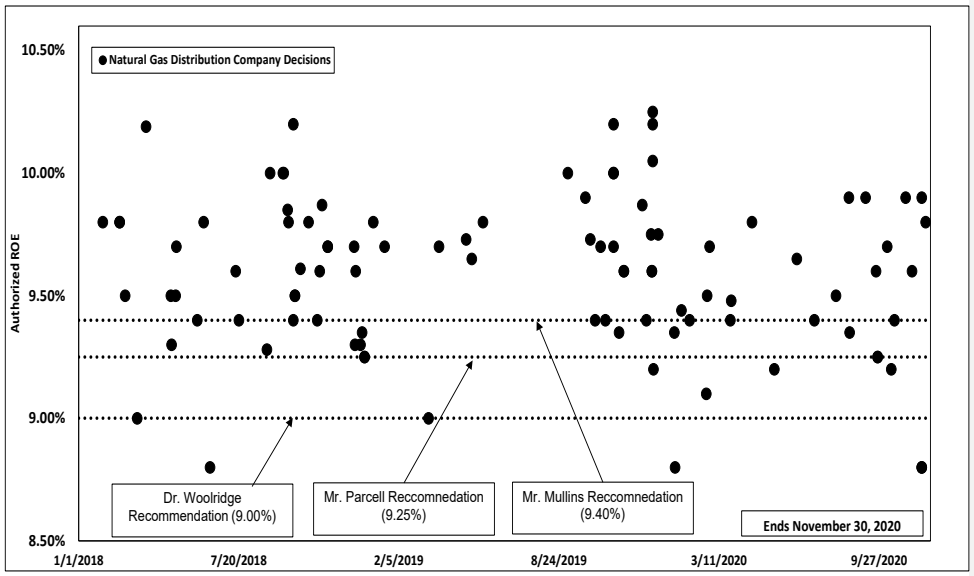
recognize that the assumptions used in the models can produce results that are too low as neither witness relies on the results of their CAPM analysis, essentially acknowledging that these results do not meet the fair return standards of *Hope* and *Bluefield*. Therefore, while Mr. Parcell and Dr. Woolridge contend that market conditions have not affected the model results, and both witnesses offer criticism of my consideration of the reasonableness of the results in the DCF model, in the development of their own analyses and their review of the results of these models, both Mr. Parcell and Dr. Woolridge recognize that there are model results that are so low that they cannot be relied upon.

Q. Are authorized returns in other jurisdictions a relevant benchmark that investors consider?

A. Yes. The regulatory decisions of other commissions provide a basic test of reasonableness and a benchmark that investors consider in assessing the authorized ROE against the returns available from other regulated utilities with comparable risk. Dr. Woolridge and Mr. Mullins present evidence regarding authorized returns for natural gas distribution companies in other jurisdictions, suggesting that these returns are relevant for purposes of establishing the authorized ROE for Cascade in this proceeding.

Figure 2 shows the distribution of authorized returns for natural gas distribution companies from January 2018 through November 2020. The range of authorized ROEs has been from 8.80 percent to 10.25 percent over this period, with an average authorized ROE of 9.59 percent and a median of 9.60 percent.

Figure 2: U.S. Authorized Natural Gas Returns: January 2018 – November 2020[9]



As shown in Figure 2, the majority of authorized returns for natural gas utilities (76 out of 98 decisions) from 2018 through November 2020 have been between 9.40 percent and 10.25 percent. As discussed in my Direct Testimony and agreed to by Dr. Woolridge, Cascade faces above average business risk, as compared with the proxy group. Dr. Woolridge and I also agree that investors must be compensated for that risk. Despite Dr. Woolridge's recognition that Cascade's business risk is above average, the ROE that he recommends of 9.00 percent and Mr. Parcell's recommendation (9.25 percent) are well below most authorized ROEs over this period.[10] Mr. Mullins proposes an ROE that is consistent with recent settlements of 9.40 percent, which is still below the average authorized ROE for natural gas utilities over this time-period particularly considering the

[9] Source: Regulatory Research Associates.
[10] Woolridge, Exh. JRW-1T at 55-56.

recently authorized ROEs. Comparing the recommendations of these witnesses to recently authorized ROEs, the recommendations do not meet the comparable return standard.

Q. How did the credit rating agencies respond to the Commission's recent decision in the PSE case?

A. In July 2020, the Commission authorized an ROE of 9.40 percent for PSE, which was 10 basis points lower than the return that the company was authorized in its last rate proceeding and an equity ratio of 48.50 percent, resulting in a rate of return for PSE of 7.39 percent. Each of the credit rating agencies responded negatively to this decision. Fitch downgraded the outlook on PSE and its parent company Puget Energy ("PE") to negative, indicating that the rate order would:

> [s]ignificantly impair PE's consolidated credit metrics, raising FFO leverage to be approximately 6.0x through 2021, exceeding the downgrade guideline ratio of 5.5x. PE and PSE could be downgraded if mitigating actions are not forthcoming or insufficient to strengthen their credit metrics. Sustained lack of constructive regulatory relationship will also be a catalyst for a downgrade.[11]

S&P's ratings outlook for PSE and PE is negative, reflecting expectations that the FFO to debt ratio for PE would be 13.00 percent. S&P also stated that "[t]he decision is inconsistent with our current assessment and should the company continue to exhibit substantial regulatory lag, we would likely revise our assessment of the company's business risk profile downward."[12]

Moody's indicated that the outcome of the rate case was credit negative, recognizing a

[11] FitchRatings, Rating Action Commentary, *Fitch Affirms Puget Energy and Puget Sound Energy; Outlook Revised to Negative* (July 27, 2020).
[12] S&P Global Market Intelligence, *S&P removes Puget Energy, Puget Sound Energy from CreditWatch* (Aug. 24, 2020).

below average return on equity that was lower than the prior authorized ROE.[13]

Q. Has Fitch commented on the expectations from this rate proceeding for Cascade?

A. Yes. Fitch noted that the Company has been earning below its authorized ROE for several years and focused on the need for balanced regulatory outcomes to improve earned returns and alleviate persistent regulatory lag.[14] Fitch also noted that the Washington regulatory compact is somewhat challenging, noting below average authorized ROEs and the use of the average rate base and historical test years resulting in regulatory lag.

Q. Is it also important to consider the recommended ROE in conjunction with the recommended equity ratio to determine if the overall cost of capital recommendation meets the comparable return standard?

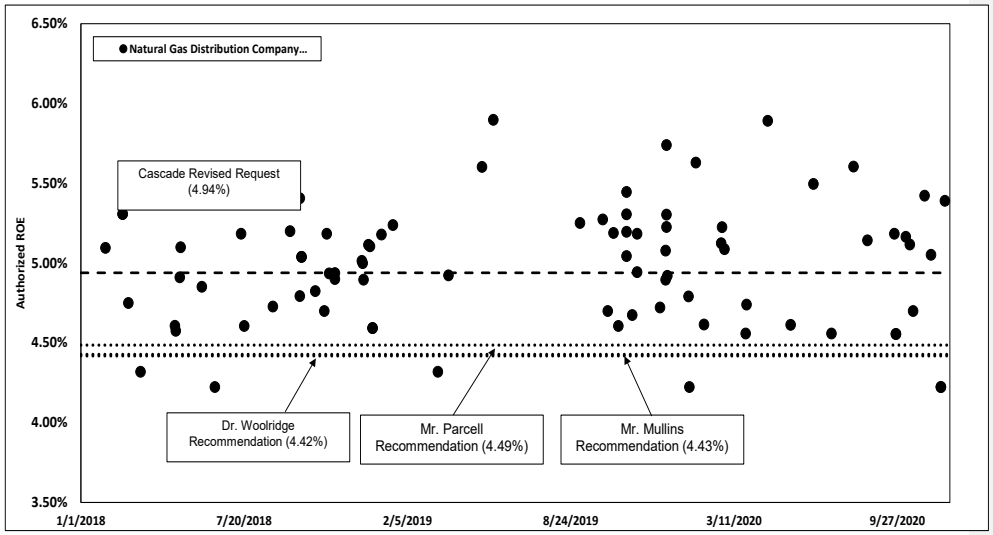
A. Yes. As discussed above, a fundamental aspect of the financial regulation of utilities is assuring that the subject utility has a reasonable opportunity to earn a return on capital consistent with the return available on investments of similar risk. While this principle is most often discussed in terms of the allowed ROE, it is equally applicable to all aspects of overall Rate of Return ("ROR"). The equity return, which is the product of the ROE and the equity ratio, (i.e., the Weighted Return on Equity ("WROE")), ultimately defines the return to shareholders and the product of the cost of debt and the debt ratio ensures that a company's debt obligations are met. Therefore, it is necessary to consider both the costs that are applied to debt and equity and the composition of the capital structure to determine the reasonableness of the ROR.

[13] Moody's Investor Service, *Puget Sound Energy, Inc. Puget Sound Energy's rate case outcome is credit negative* (July 17, 2020).
[14] See Exhibit No. __ (TJN-5) (FitchRatings, *Fitch Affirms Ratings of MDU, Montana-Dakota, Cascade and Centennial Energy; Outlooks Stable* (Dec. 23, 2020)).

Q. What common equity ratio have the Opposing ROE witnesses recommended for Cascade?

A. Mr. Parcell recommends a common equity ratio of 48.50 percent; Dr. Woolridge recommends a common equity ratio of 49.10 percent; and Mr. Mullins recommends a common equity ratio of 47.10 percent. Taken together, Mr. Parcell's proposed common equity ratio of 48.50 percent and recommended ROE of 9.25 percent, results in a WROE of only 4.49 percent, Dr. Woolridge's proposed common equity ratio of 49.10 percent and recommended ROE of 9.00 percent, results in a WROE of 4.42 percent and Mr. Mullins' proposed common equity ratio of 47.10 percent and recommended ROE of 9.40 percent, results in a WROE of 4.43 percent.

Figure 3: Comparison of Weighted ROEs



Q. Have you conducted an analysis to compare the Opposing ROE witnesses' proposed WROE to the recently authorized WROEs in other jurisdictions?

A. Yes. I compared Mr. Parcell's, Dr. Woolridge's and Mr. Mullins' recommended WROE to the average authorized WROE of 4.99 percent for natural gas distribution companies from January 2018 through November 2020. As shown in Figure 3 above, the recommended WROEs of Mr. Parcell (4.49 percent), Dr. Woolridge (4.42 percent), and Mr. Mullins (4.43 percent) are significantly below the average WROE for natural gas distributors over this period, while Cascade's revised WROE request is within the range. This provides further evidence that Mr. Parcell's, Dr. Woolridge's and Mr. Mullins' cost of equity and capital structure recommendations are unreasonably low and do not meet the comparable return standard of *Hope* and *Bluefield*.

Additionally, it is important to consider the WROE given the effect that the TCJA has had on utility cash flows and the rating agencies concerns about weakening credit metrics due to expanded necessary capital investment and persistent regulatory lag. As discussed in my Direct Testimony, several utilities and utility holding companies have been downgraded due to the effects of tax reform on utility ratemaking.[15] Therefore, it is very important that the Commission authorize a WROE for Cascade that is comparable to investments of similar risk so that the decision is not viewed as credit negative by the rating agencies.

Q. Are you aware of any utilities that have experienced a credit downgrade related to the financial effects of a rate case decision?

A. Yes. Moody's recently downgraded ALLETE, Inc. from A3 to Baa1 for reasons that

[15] Bulkley, Exh. AEB-1T at 32-33.

included the less than favorable outcome in Minnesota Power's last rate case in Minnesota. Moody's viewed Minnesota Power's recent rate case decision as credit negative for reasons including: (1) the below average authorized ROE of 9.25 percent, which resulted in a reduction of approximately $20 million between the requested and approved revenue requirement; (2) the disallowance of certain expenses such as prepaid pension expenses; and (3) the decision to not adopt the annual rate review mechanism which, if adopted, would have mitigated the effect of industrial customers scaling back production in response to changes in economic conditions.[16]

Mr. Parcell's recommended ROE reflects the same below average return that ALLETE was authorized, and Dr. Woolridge's ROE recommendation of 9.00 percent is 25 basis points below the recently authorized ROE for ALLETE, Inc. Therefore, it is reasonable to conclude that these returns would likely be viewed negatively by the credit rating agencies.

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

A. The primary factors that should be considered are: (i) the importance of investors' actual return requirements and the critical role of judgment in selecting the appropriate ROE; (ii) the importance of providing a return that is comparable to returns on alternative investments with commensurate risk; (iii) the need for a return that supports a utility's ability to attract needed capital at reasonable terms; and (iv) the effect of current and expected capital market conditions.

Q. What factors support Cascade's requested ROE in this case?

[16] Moody's Investors Service, *Credit Opinion: ALLETE, Inc. Update following downgrade* at 3 (Apr. 3, 2019).

A. Although my updated analyses continue to provide support for my recommended ROE of 10.30 percent, Cascade has revised its requested ROE to 9.80 percent in order to mitigate the rate impact on customers in these difficult economic conditions. A return at the level requested by Cascade is:

1. Supported by the analyses contained in my Direct Testimony and updated in my Rebuttal Testimony;
2. Consistent with current and prospective financial market conditions;
3. Supported by the methodologies considered by the Commission as well as other regulatory jurisdictions;
4. Consistent with the range of ROEs awarded for natural gas distribution companies in other state jurisdictions, considering the unique business and operating risks of Cascade relative to the proxy group; and
5. Will support Cascade's ability to attract capital to finance investments at reasonable rates, which will provide long-term benefits to ratepayers by limiting the long-term cost of capital.

IV. UPDATED ROE ANALYSIS

Q. Have you updated your ROE analyses?

A. Yes. As shown in Exhibit No.___(AEB-5), Schedules 1 through 6, I have updated my ROE analyses using market data as of November 30, 2020. All the methodologies in my updated analysis have been developed in a manner that is consistent with the approach taken in my Direct Testimony. I have continued to exclude results below 7.00 percent because such returns do not provide a sufficient risk premium above the long-term debt cost to compensate equity investors for the risks associated with ownership. Finally, I have

included an additional Constant Growth DCF model using an adjusted Value Line projected earnings growth rate for Northwest Natural Holding Company ("NWN") of 5.97 percent shown in Exhibit No.___(AEB-5), Schedule 3. This adjusted growth rate excludes the one-time financial event referenced by Mr. Parcell and Dr. Woolridge that affected the earnings per share data for NWN in 2017.[17] Figure 4 summarizes the results of my updated analyses.

As shown in Figure 4, and Exhibit No.___(AEB-5), Schedules 2 through 6, the results of my ROE estimation models continue to support a recommendation of 10.30 percent, though the Company is reducing its request to 9.80 percent.

[17] Parcell, Exh. DCP-1T at 33-34; Woolridge, Exh. JRW-1T at 63-64.

Figure 4: Updated Analytical Results[18]

Constant Growth DCF			
	Median Low	Median	Median High
30-Day Average	8.77%	9.74%	12.49%
90-Day Average	8.82%	9.70%	12.58%
180-Day Average	9.35%	9.68%	12.46%
Constant Growth DCF - NWN Adjusted Value Line Growth Rate			
	Median Low	Median	Median High
30-Day Average	8.77%	9.44%	10.16%
90-Day Average	8.82%	9.52%	10.45%
180-Day Average	9.35%	9.41%	10.33%
Capital Asset Pricing Model			
	Current Risk-Free Rate (1.61%)	Q1 2021 – Q1 2022 Projected Risk-Free Rate (1.82%)	2022-2026 Projected Risk-Free Rate (2.80%)
Value Line Beta	12.67%	12.70%	12.81%
Bloomberg Beta	11.72%	11.76%	11.95%
Empirical Capital Asset Pricing Model			
Value Line Beta	13.03%	13.05%	13.13%
Bloomberg Beta	12.32%	12.35%	12.49%
Bond Yield Plus Risk Premium			
	Current Risk-Free Rate (1.61%)	Q1 2021 – Q1 2022 Projected Risk-Free Rate (1.82%)	2022-2026 Projected Risk-Free Rate (2.80%)
Risk Premium Results	9.20%	9.29%	9.70%
Expected Earnings Analysis			
	Mean		Median
Expected Earnings Results	9.59%		9.46%

V. UPDATED CAPITAL MARKET CONDITIONS

Q. Do the Opposing ROE witnesses discuss the volatility that has occurred in capital markets since mid-February 2020?

[18] The analytical results included in the table reflect the results of the Constant Growth analysis excluding the results for individual companies that did not meet the minimum threshold of 7.0 percent.

A. Yes. Both Mr. Parcell and Dr. Woolridge recognize the extreme volatility that has occurred in the market since February 2020. In addition, each witness recognizes the effect of that volatility on the utilities industry through higher Beta coefficients, however, neither witness reflects this increased risk to equity in their recommended ROEs. Mr. Parcell observes that stock prices have been extremely volatile since the latter days of February 2020, and declined dramatically in March in response to the COVID-19 pandemic and the corresponding uncertainty in financial markets regarding the economic consequences of the governmental, commercial and social measures designed to limit the spread of the virus.[19] However, according to Mr. Parcell, current economic conditions resulting from shut-downs of many large and small businesses in response to COVID-19 are resulting in lower profit levels, equity returns and interest rates.[20] Dr. Wooldridge notes the Chicago Board Options Exchange ("CBOE") Volatility Index ("VIX") traded over 50, which is a level the VIX had not reached since the Great Recession of 2008/09.[21] However, Dr. Wooldridge also notes that while the VIX "topped out over 50", it is currently close to 25.[22] Thus, Dr. Woolridge appears to dismiss the effects of the elevated levels of the VIX on the risk to equity holders.

Q. Please explain the importance of market volatility and the implications for the cost of equity.

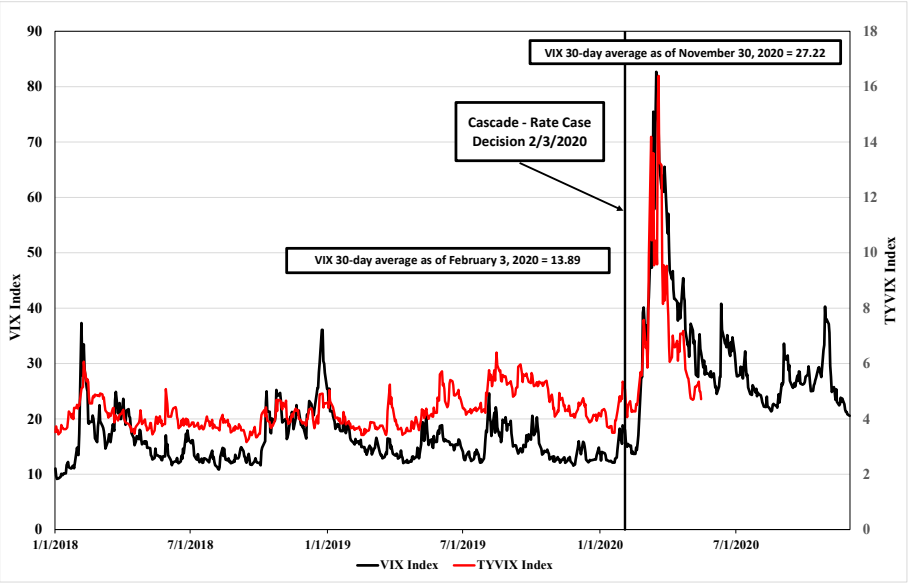
A. As discussed in my Direct Testimony, capital market conditions have been extremely volatile in 2020, approaching levels similar to those experienced in the Great Recession of

[19] Parcell, Exh. DCP-1T at 15.
[20] *Id*. at 15-16.
[21] Woolridge, Exh. JRW-1T at 11.
[22] *Id.*

2008/09.[23] I have updated Figure 3 from my Direct Testimony, which contained two separate measures of volatility, the VIX and the U.S. Treasury Note Volatility Index ("TYVIX"). As shown in Figure 5 below, the VIX has remained well above its long-term average in the months following the filing of my Direct Testimony in June 2020. Furthermore, the VIX as of November 30, 2020 is much greater than it was at the time of the Commission's decision in Cascade's last rate case in February 2020. While Dr. Woolridge has acknowledged the "weeks of chaos," he only notes that the VIX has declined without further recognizing that it is still well above pre-COVID-19 levels.[24]

[23] Bulkley, Exh. AEB-1T at 14-22.
[24] Woolridge, Exh. JRW-1T at 10-11.

Figure 5: CBOE VIX and TYVIX – January 2018 – November 2020[25]



Q. What should the Commission consider when reviewing the change in volatility since the filing of your Direct Testimony?

A. It is important to recognize that while the VIX is below its peak in February 2020, it remains well above the historical median for this index. Furthermore, it is important to view the decline in the VIX in the context of the unprecedented response by the Federal Reserve and Congress. As discussed in more detail below, the Federal Reserve and the U.S. Congress have taken unprecedented steps to stabilize corporate bond buying programs and to support credit access for consumers and businesses. Despite the magnitude of these programs, there is still uncertainty regarding the near-term effect of COVID-19 on the

[25] Source: Bloomberg Professional. The Chicago Board of Exchange ("CBOE") did not renew the contract for the TYVIX, therefore the data for this index is not available after May 15, 2020. However, while CBOE is not using the TYVIX for trading purposes, the measure of volatility is still a relevant data point over the period summarized in Figure 5.

economy and the financial markets, and the VIX remains above its long-term historical level.

Q. What steps have the Federal Reserve and the U.S. Congress taken to stabilize financial markets and support the economy?

A. The Federal Reserve has taken several steps since the beginning of the pandemic:

1) decreasing the Federal Funds rate twice in March 2020,
2) announcing plans to increase its holdings of both Treasury and mortgaged-back securities,[26]
3) implementing expansive programs to support credit to large employers: the Primary Market Corporate Credit Facility ("PMCCF") to provide liquidity for new issuances of corporate bonds; and the Secondary Market Corporate Credit Facility ("SMCCF") to provide liquidity for outstanding corporate debt issuances, [27] and
4) supporting the flow of credit to consumers and businesses through the Term Asset-Backed Securities Loan Facility ("TALF").[28]

In addition to the Federal Reserve's response, the U.S. Congress also passed fiscal stimulus programs. On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security ("CARES") Act was signed into law, which provided a large fiscal stimulus package aimed at also mitigating the economic effects of COVID-19.

Dr. Woolridge fails to mention these programs in his testimony, and Mr. Parcell fails to recognize the level of risk in the market to warrant such extreme measures. While these expansive monetary and fiscal programs have provided for greater price stability, as shown

[26] Bulkley, Exh. AEB-1T at 22-23.
[27] *Id.*
[28] *Id.* at 16-17.

in Figure 5 above, the VIX remains above long-term historical levels.

Q. Mr. Parcell and Dr. Woolridge contend that interest rates and capital costs have remained historically low in 2020 and that the Federal Reserve has indicated that it will keep interest rates low over the next few years.[29] Do you agree?

A. No, I do not. Mr. Parcell and Dr. Woolridge are correct that the Federal Reserve has indicated that they will keep the federal funds rate near zero for the near-term. The goal of the accommodative monetary policy is to achieve the Federal Reserve's dual mandate of maximum employment and stable prices. However, while the current accommodative monetary policy will keep short-term interest rates low, the Federal Reserve has not committed to keeping long-term interest rates low, which Dr. Woolridge acknowledges in his response to Cascade Data Request No. 3.[30] Long-term interest rates can increase even though monetary policy is accommodative. In fact, one of the leading indicators used by investors to determine what stage of the business cycle the economy is in is to review the yield curve, which shows the difference between long-term and short-term interest rates. A flat or inverted yield curve occurs when long-term interest rates are equivalent to or less than short-term interest rates and usually occurs prior to a recession, while a steepening yield curve, which occurs when the difference between long-term interest rates and short-term interest rates is increasing, indicates that the economy is entering a period of economic expansion following a recession.[31]

[29] Parcell, Exh. DCP-1T at 13-14; Woolridge, Exh. JRW-1T at 6.
[30] *See* Exhibit No. ___(AEB-6), Public Counsel Response to Cascade Data Request No. 3.
[31] Fidelity, *What is a yield curve?* https://www.fidelity.com/learning-center/investment-products/fixed-income-bonds/bond-yield-curve (last accessed Jan. 3, 2021).

Q. Have you reviewed the yield curve to determine investors' expectations regarding the economy over the near-term?

A. Yes, I have. Specifically, I calculated the difference between the yield on the 10-year Treasury Bond and the yield on the 2-year Treasury Bond from January 2018 to November 2020. I selected the 10-year Treasury Bond yield to represent long-term interest rates and the yield on the 2-year Treasury Bond to represent short-term interest rates. As shown in Figure 6, the yield curve has been steepening and has increased to approximately 80 basis points, which is a level not seen since the beginning of 2018. The steepening of the yield curve indicates that investors expect economic growth and inflation to increase in the near-term. As a result, they rotate out of long-term government bonds to avoid being locked into low interest rates for the long-term. The steep yield curve signals that higher yields are required by investors to invest in long-term government bonds.

Figure 6: 10-year Treasury Bond Yield Minus 2-year Treasury Bond Yield – January 2018 – November 2020[32]

Q. What have equity analysts said about the steepening of the yield curve?

A. Several equity analysts have noted that the yield curve is steepening and is expected to continue to steepen into 2021, which is an indicator that the economy is entering the early expansion phase of the business cycle. For example, in a recent Bloomberg article, Morgan Stanley indicated that they expected a "V-shaped" economic recovery and therefore advised investors to underweight government bonds and overweight equities.[33] Similarly, in a recent Bloomberg article, Goldman Sachs noted:

> "As the economic recovery consolidates next year, we expect to see more differentiation across the curve, with policymakers committing to keeping front-end rates low, but higher expectations for real growth and inflation

[32] Federal Reserve Bank of St. Louis, *10-Year Treasury Constant Maturity Minus 2-Year Treasury Constant Maturity [T10Y2Y]*, retrieved from FRED, Federal Reserve Bank of St. Louis (Dec. 1, 2020) https://fred.stlouisfed.org/series/T10Y2Y.

[33] Joanna Ossinger, *Morgan Stanley Says Go Risk-On and 'Trust the Recovery' in 2021*, retrieved from *Bloomberg.com* (Nov. 15, 2020), www.bloomberg.com/news/articles/2020-11-16/morgan-stanley-says-go-risk-on-and-trust-the-recovery-in-2021.

> driving long-end rates higher," Goldman strategists including Zach Pandl wrote in the report, released Tuesday.
>
> This should be especially true in the U.S. due to the Federal Reserve's new average inflation targeting framework, which commits the central bank to holding off on rate hikes until inflation has reached its target and is on track to overshoot it.[34]

Finally, in a recent Barron's article, Citigroup also projected that the yield on the 10-year Treasury bond is expected to increase in 2021, which prompted Citigroup's recommendation to overweight equities and favor cyclical sectors over defensive sectors such as utilities.[35]

Q. How has the utility sector performed historically during periods when the yield curve is steepening, and the economy is in the early stage of the business cycle?

A. In a recent report, Fidelity noted that the utility sector has historically been one of the worst performing sectors during the early phase of the business cycle with a geometric average return of -10.5 percent.[36] This is important because, if the utility sector underperforms over the near-term, then the DCF model which relies on historical averages of share prices is likely to understate the cost of equity for Cascade over the near-term or the period that the Company's rates will be in effect.

Q. What are your conclusions regarding the effect of volatility, the policies of the Federal Reserve and the effect of a steepening yield curve on the cost of equity for Cascade?

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[34] Liz McCormick, *Goldman Goes All-In for Steeper U.S. Yield Curves as 2021 Theme*, retrieved from *Bloomberg.com* (Nov. 10, 2020) www.bloomberg.com/news/articles/2020-11-10/goldman-goes-all-in-for-steeper-u-s-yield-curves-as-2021-theme.

[35] Callum Keown, *10-Year Treasury Yields Will Rise Into 2021, Citi Says. This 'Aggressive' Equity Strategy Can Outperform*, retrieved from *Barrons.com* (Nov.16, 2020) www.barrons.com/articles/10-year-treasury-yields-will-rise-into-2021-citi-says-this-aggressive-equity-strategy-can-outperform-51605543920.

[36] Fidelity, *The Business Cycle Approach to Equity Sector Investing*, (2020) https://institutional.fidelity.com/app/literature/view?itemCode=943044&renditionType=pdf&pos=na.

A. I conclude that the risk to equity in recent market conditions has been higher than in prior periods, which should be reflected in the return to equity. First, as shown in Figure 5 above, volatility as measured by the VIX, is still above the long-term median. This demonstrates that there is still uncertainty in the market, which means greater risk and thus higher return requirements for investors. Second, while the Federal Reserve has indicated it will keep the Federal Funds rate (a short-term interbank lending rate) low over the next few years to support the economic recovery, this does not mean that long-term interest rates cannot increase. In fact, many equity analysts believe long-term interest rates will increase in 2021 as the economy enters the early expansion phase of the business cycle. Historically, the utility sector has underperformed as compared to the broader market as interest rates increase and the economy recovers.

Investors' current expectations regarding the economy highlight the importance of using forward-looking inputs in the models used to estimate the cost of equity. For example, while the growth rate in the DCF model can be estimated using projections, the DCF model relies on historical average of share prices. If utilities underperform the broader market, as expected by investors, then the DCF model will understate the cost of equity for Cascade during the period that rates will be in effect. While the DCF relies on historical pricing data that may not reflect the forward-looking market, two out of three inputs (i.e., risk-free rate and market risk premium) in the CAPM can be estimated using forward-looking projections. Therefore, the CAPM, using reasonable forward-looking assumptions, may more effectively capture the economic conditions expected by investors over the near-term.

Q. Mr. Parcell and Dr. Woolridge comment on the high market-to-book ratios in the utilities sector.[37] What is your response?

A. As discussed in my Direct Testimony, I agree with Mr. Parcell and Dr. Woolridge that the valuations of public utilities have increased well above historical average levels in recent years, as demonstrated by their elevated Price-to-Earnings ("P/E") ratios.[38] Mr. Parcell and Dr. Woolridge contend that these high valuations, which are reflected in data on market-to-book ratios, are an indication that authorized returns for utilities are higher than what is required by investors. However, they fail to recognize how these high valuations affect the results of the DCF model.

The DCF model generally produces reasonable and reliable estimates of the cost of equity for companies in stable, mature industries, such as regulated utilities; however, the results of the DCF model are being distorted by the high valuations and low dividend yields of utilities.

Q. Do Mr. Parcell and Dr. Woolridge recognize the significance of the current, high valuations in the utilities sector?

A. No, they do not. Mr. Parcell and Dr. Woolridge have ignored the fact that equity analysts continue to observe the unusually high valuations of utility shares compared to historical levels and the effect that high valuations have on the DCF model.

Dr. Woolridge places primary weight on the results of the DCF model, which is estimated using current stock prices, while Mr. Parcell's ROE recommendation is set at the lower end of his DCF range (i.e., 9.00 percent to 10.00 percent). Both witnesses contend

[37] Parcell, Exh. DCP-1T at 45; Woolridge, Exh. JRW-1T at 9; Exhibit No.__(JRW-5).
[38] Bulkley, Exh. AEB-1T at 27-28.

that authorized returns for regulated utilities have exceeded their cost of equity, resulting in market-to-book ratios well over 1.0. What Mr. Parcell and Dr. Woolridge fail to consider is that these high valuations affect the dividend yield component on the DCF model. To the extent these high valuations are not sustainable, the DCF model understates the forward-looking cost of equity for regulated utilities such as Cascade.

Further, the recent underperformance of utilities was due in part to the excessive valuations that existed prior to the pandemic. These valuations are still well above historical averages. As a result, Charles Schwab has classified the Utilities sector as "Underperform," noting:

> The Utilities sector has tended to perform relatively better when concerns about slowing economic growth resurface, and to underperform when those worries fade. That's partly because of the sector's traditional defensive nature, given its steady revenues—people need water, gas and electric services during all phases of the business cycle. And low interest rates that typically come with a weak economy provide cheap funding for the large capital expenditures required in this industry.
>
> However, valuations have been driven up to well above their historical average in recent years, as investors reached for yield in this era of low interest rates. We think that these high valuations may decrease the sector's traditional defensive characteristics in the event of a market downturn.[39]

As Schwab notes, the utility sector typically underperforms during periods of economic growth; however, Schwab also observes that, given the high valuations of the utility sector, even if volatility were to increase again, the utility sector might still underperform in a market setting where utilities have traditionally outperformed.

Mr. Parcell's and Dr. Woolridge's failure to take into consideration that the current, high valuations in the utilities sector, which are expected to result in underperformance

[39] David Kastner, *Schwab Sector Views: Election, Vaccine News Change the Picture – Maintaining Utilities at underperform*, Charles Schwab (Nov. 12, 2020) https://www.schwab.com/resource-center/insights/content/schwab-sector-views-election-vaccine-news-change-picture.

over the near-term, results in the inappropriate conclusion that the DCF model is producing reasonable results.

Q. What are your conclusions regarding the recent valuations of utilities and the effect on the cost of equity for Cascade in this proceeding?

A. The current high valuations of utilities result in low dividend yields for utilities, which means that DCF models using recent historical stock price data likely underestimate investors' required returns. This consideration regarding the DCF model is important especially in light of the expectation that the utility sector will underperform relative to the broader market as the economy recovers from the COVID-19 pandemic. Alternatively, my CAPM analysis includes estimated returns based on near-term and longer-term projected interest rates, considers Beta coefficients that reflect the increased risk of utilities as a result of the COVID-19 pandemic, and relies on a forward-looking estimate of the market return. Therefore, it is important to consider the results of each of the models to reflect investors' expectations of market conditions over the period that the rates established in this proceeding will be in effect.

Q. Have the Opposing ROE witnesses considered the effects of the TCJA when developing their respective ROE recommendations?

A. No, they have not. Because the Opposing ROE witnesses have not considered the TCJA, it appears they believe that any effect of the TCJA is already taken into consideration in the share prices that are used in the DCF model. It is reasonable to expect that investors have reviewed the reports published by the credit rating agencies such as Moody's, S&P and Fitch and are therefore considering the effects of the TCJA. However, utilities are still working with regulators to determine appropriate solutions to mitigate the effect of the

TCJA on cash flows. As shown in Figure 9 of my Direct Testimony, Moody's has continued to downgrade utilities in 2020 as a result of tax reform, which suggests that Moody's is continuing to evaluate the effect of the TCJA on the cash flows of individual utilities.

Q. What are your conclusions regarding the effect of the TCJA on Cascade's capital structure and ROE?

A. The issue with respect to the TCJA is not whether this policy has been internalized in the DCF model. Rather, the issue is how to consider this policy when determining the appropriate ROE for the Company from within the range of ROE results that are produced using all the ROE estimation models. The TCJA has been identified by the credit rating agencies as credit negative due to the increase to the financial risk of the utilities sector. This is an important factor to consider in setting the appropriate ROE and equity ratio for Cascade.

VI. RESPONSE TO STAFF WITNESS PARCELL

Q. Please summarize Staff witness Mr. Parcell's ROE recommendation.

A. Mr. Parcell recommends an ROE for Cascade of 9.25 percent based on the results of his DCF and Comparable Earnings analyses, which were supported by a Risk Premium analysis. While Mr. Parcell also performed a CAPM analysis, his recommendation does not directly incorporate the results of that analysis. Mr. Parcell's recommended ROE is 15 basis points lower than the Company's currently authorized ROE of 9.40 percent. As support for his ROE recommendation, Mr. Parcell cites the low interest rate environment in recent years and contends that "it cannot be maintained that low interest rates (and low

CAPM results) are temporary and do not reflect investor expectations."[40]

Q. Please summarize your response to Mr. Parcell's testimony and recommendation concerning the cost of equity.

A. Mr. Parcell's recommendation of 9.25 percent is unduly low in light of current and projected economic and capital market conditions discussed in Section V above and is not consistent with recently-authorized ROEs for gas distribution companies in other jurisdictions as summarized in Figure 2 above. Mr. Parcell's recommended ROE does not appear to rely on several of his analyses. Mr. Parcell indicates that the overall range of his results is from 6.00 percent to 10.00 percent, and from within that range he establishes a recommended range of 9.00 percent to 9.50 percent, which he indicates is based on the mid-point of the range of results for his DCF, Comparable Earnings and Risk Premium models.[41] His recommendation of 9.25 percent is simply the midpoint of these values. It appears that Mr. Parcell does not place any weight on the results of his CAPM analysis. Furthermore, it is not clear whether Mr. Parcell has considered the full extent of Cascade's operating risks. While Mr. Parcell identifies Cascade's regulatory mechanisms,[42] he does not provide an analysis that compares these mechanisms to those of the proxy group companies.

Q. What are the primary areas of disagreement between you and Mr. Parcell?

A. The primary areas in which Mr. Parcell and I disagree are: 1) the growth rates to be used in the DCF model and the relevance of the results produced by that model under current market conditions; 2) the inputs and assumptions used in the CAPM and the relevance of

[40] Parcell, Exh. DCP-1T at 52.
[41] *Id.* at 51.
[42] *Id.* at 19.

the results of Mr. Parcell's CAPM analysis; 3) the application of the Risk Premium analysis; 4) the relevance of the Comparable Earnings analysis provided by Mr. Parcell, which is based on historical equity returns for gas distribution companies over the past 17 years; and 5) the appropriate capital structure for Cascade in this proceeding.

Q. Is Mr. Parcell's ROE recommendation of 9.25 percent consistent with returns for gas distribution companies in other jurisdictions across the U.S.?

A. No, it is not. As shown in Figure 2, Mr. Parcell's ROE recommendation of 9.25 percent is in the lower half of the range of recent authorized equity returns for gas distribution companies. From January 2018 through November 2020, the range of authorized ROEs for gas distributors was 8.80 percent to 10.25 percent, with an average return of 9.59 percent. Forward-looking economic and capital market conditions, as well as Cascade's additional business risks, support my recommended ROE which is above the proxy group average and higher than the average for gas distribution utilities nationwide. As discussed in my Direct Testimony, Cascade has greater risk than the proxy group companies due to its relatively small size, higher customer concentration, elevated level of projected capital expenditures, and above average regulatory risk in Washington resulting from regulatory lag resulting from the use of modified historical test years and use of average rate base unless a utility can justify the use of end of period rate base, such as Cascade has proposed in this case.[43]

A. Constant Growth DCF Model

Q. Please summarize Mr. Parcell's Constant Growth DCF analyses.

A. Mr. Parcell performs a Constant Growth DCF analysis with several indicators of expected

[43] Bulkley, Exh. AEB-1T at 62-90.

dividend growth, including:

1) Years 2015 to 2019 (five-year average) earnings retention, or fundamental growth (per Value Line);
2) Five-year average of historic growth in Earnings per Share ("EPS"), Dividends per Share ("DPS"), and Book Value Per Share ("BVPS") (per Value Line);
3) Years 2020, 2021 and 2023 to 2025 projections of earnings retention growth (per Value Line);
4) Years 2017 through 2019 to 2023 through 2025 projections of EPS, DPS, and BVPS (per Value Line); and
5) Five-year projections of EPS growth (per First Call, Value Line and Zacks).[44]

The return estimates from Mr. Parcell's DCF analysis range from 7.0 percent to 10.9 percent, depending on the source of the growth rate. Within those results, Mr. Parcell selects a range from 9.0 percent to 10.0 percent, with a 9.5 percent mid-point, which represents his DCF-derived cost of equity for the proxy group.[45]

Q. In his critique of your DCF analysis, Mr. Parcell states that "it is not realistic to believe that investors rely exclusively on a single factor, such as analysts' EPS forecasts, in making their investment decisions."[46] How do you respond?

A. As explained in my Direct Testimony, dividend growth can only be sustained by earnings growth.[47] Earnings are the fundamental determinant of a company's ability to pay dividends. Further, both dividends and book value per share may be directly affected by

[44] Parcell, Exh. DCP-1T at 30.
[45] *Id*. at 31-32.
[46] *Id.* at 34.
[47] Bulkley, Exh. AEB-1T at 48.

short run management decisions. As a result, dividend growth rates and book value growth rates may not accurately reflect a company's long-term growth. In contrast, earnings growth rates are not affected by short-run cash management decisions and are the only forward-looking growth rates available on a consensus basis.

While Mr. Parcell criticizes my use of EPS growth projections as the measure of growth, it is in effect the sole growth rate that he also relies upon when establishing his ROE recommendation. As discussed previously, Mr. Parcell states that the upper end of his recommended ROE range is based on the midpoint of his DCF results of 9.5 percent. As shown in Exhibit No.__(DCP-9), page 5, Mr. Parcell ignores the low end of his DCF results, which are scenarios that use only the historic retention and projected retention growth rates. Mr. Parcell's DCF range appears to be set using the median DCF result using all growth rates on the low end and forecast EPS growth rates at the high end. Mr. Parcell appears to be relying on dividend and retention growth rates only in the average of all growth rates, while he appears to use the forecast EPS growth rate scenario to set the upper limit on his ROE range. Therefore, Mr. Parcell's criticism of my sole reliance on EPS growth rates is disingenuous.

Q. What is your response to Mr. Parcell's assertions that "investors are now very much aware of recent inabilities of securities analysts to accurately predict EPS growth," and that "these problems clearly call into question the exclusive reliance on analysts' forecasts of EPS as the source of growth in a DCF context"?[48]

A. As noted previously, the top end of Mr. Parcell's range appears to be set based on EPS growth rates. Further, without directly claiming that analysts' projected EPS growth rates

[48] Parcell, Exh. DCP-1T at 35.

are biased upward, he is essentially arguing against my reliance on EPS growth rate forecasts for that reason. As I have noted previously in response to Mr. Parcell in other cases, the Global Analysts Research Settlement of 2003 (the "Global Settlement") served to remove all incentives for analyst bias in the financial industry. Specifically, 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 must certify that their analyses and recommendations are not related, either directly or indirectly, to their compensation.

A 2010 article in Financial Analysts Journal, which was published seven years after the Global Settlement, found that analyst forecast bias has significantly declined or disappeared entirely:

> 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. These results suggest that the recent efforts of regulators have helped neutralize analysts' conflicts of interest.[49]

Q. Have other regulators offered an opinion on the use of EPS growth rates in the DCF model?

A. Yes. The Federal Energy Regulatory Commission ("FERC") addressed the concern about analyst growth rate forecasts over *five years ago* in its March 2015 Order on Rehearing,

[49] 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/Aug, 2010).

Opinion No. 531-B, where it reaffirmed its rejection of the argument that analyst growth rates should not be used in the DCF analysis because the analysts making those projections allegedly are overly-optimistic in their growth rate projections.[50] FERC also noted that the appropriate dividend growth rate to include in a DCF analysis is the growth rate expected by the market. In that case, FERC indicated that while the market may be wrong in its expectations, as reflected in the IBES growth projections, the cost of common equity to a regulated enterprise depends upon what the market expects, not upon precisely what is actually going to happen.[51] Since that time, FERC has re-evaluated the appropriate methodologies to establish the ROE in many opinions; however, the use of earnings growth rates has been consistently applied in all FERC opinions, including the most recent decision in May 2020, Opinion No. 569-A.

Q. Has Mr. Parcell excluded any of the reported growth rates for his proxy group companies?

A. Yes. Mr. Parcell notes that the Value Line projected EPS growth rate for NWN is 22.5 percent, which he characterizes as an "outlier" and as not sustainable. Instead of including the Value Line growth rate for NWN and using a median DCF result, as I did in my Direct Testimony, Mr. Parcell excludes the Value Line growth rate for NWN in his DCF analysis, while continuing to include relatively low EPS growth rate estimates for NWN from Zacks and Yahoo! Finance, and using a mean result. Mr. Parcell notes in his Testimony that NWN's earnings were skewed in 2017 by a significant asset impairment, which resulted in

[50] FERC Order on Rehearing, Opinion No. 531-B, 150 FERC ¶ 61,165, 62,135 at para. 71 (March 3, 2015).
[51] *Id.*

substantial negative EPS that year.[52]

Q. Has Mr. Parcell been consistent in his treatment of the Value Line growth rate for NWN?

A. No. While Mr. Parcell argues that this growth rate cannot be relied upon in the DCF model, Mr. Parcell includes that negative earned ROE for NWN in 2017 in his Comparable Earnings approach.

Q. Do you agree with the exclusion of the Value Line earnings per share growth rate for NWN?

A. No, I do not. As shown in Exhibit No.___(AEB-2), Schedule 3, I have calculated the median DCF results for my proxy group companies, not the mean DCF results, as Mr. Parcell suggests. In statistics, the use of the median as the measure of central tendency rather than the mean allows for more reasonable results when the data set includes both high and low outliers. In response to Mr. Parcell's concerns that the high DCF result is dominated by the growth rate for NWN[53], my updated ROE analysis also includes an additional DCF model scenario in which I adjust the Value Line growth rate for NWN to remove the effect of the negative earnings per share in 2017. Those alternative DCF results continue to support my recommended range and point recommendation for Cascade.

Q. Mr. Parcell contends that investors consider both forecasted and historical data for growth rates, such as that published by Value Line.[54] What is your response?

A. The Constant Growth DCF model is a forward-looking model that evaluates investors' required returns based on future cash flows. As such, the appropriate measure of growth

[52] Parcell, Exh. DCP-1T at 33-34.
[53] *Id.* at 33.
[54] *Id.* at 34-35.

is investors' expectations, not historical results. Historical growth rates are less relevant because past growth may not reflect future growth potential. Furthermore, securities analysts' forecasted EPS growth rates incorporate historical performance to the extent the analysts believe that historical performance is relevant and applicable for the future. Additional consideration of historical growth rates provides no meaningful incremental information regarding the proxy companies' future growth potential and places unwarranted weight on historical events.

Q. Do you agree with Mr. Parcell's "retention growth" DCF analysis?

A. No, I do not. The underlying premise of the "retention growth" calculation is that future earnings will increase as the retention ratio (*i.e.*, the portion of earnings not paid out in dividends) increases. There are, however, several reasons why that may not be the case. 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 and do influence dividend payout (and therefore earnings retention) decisions in the near-term.

Q. Is there academic research that supports your position?

A. Yes, there is. Almost fourteen years ago, two articles appeared in Financial Analysts Journal, which addressed the theory that high dividend payouts (*i.e.*, low retention ratios) are associated with low future earnings growth.[55] Both of those articles cite a 2003 study by Arnott and Asness,[56] who found that, over the course of 130 years of data, future

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

[56] Robert Arnott, Clifford Asness, *Surprise: Higher Dividends = Higher Earnings Growth*, Financial Analysts Journal, Vol. 59, No. 1 (Jan./Feb. 2003).

earnings growth is associated with high, rather than low payout ratios.[57] In essence, the findings of all three studies are that there is a negative, not a positive relationship between earnings growth rates and payout ratios. Therefore, I disagree with Mr. Parcell's use of the retention growth model.

Q. Do you have other concerns regarding Mr. Parcell's retention growth rates?

A. Yes, I do. However, as discussed previously, it is important to note that Mr. Parcell ultimately does not rely on the results of his retention growth rate DCF scenarios. As shown in Exhibit No. ___(DCP-9), page 5, the results of Mr. Parcell's DCF analysis using the retention growth rates are 7.4 percent (historical) and 7.0 percent (prospective). Mr. Parcell establishes a range for his DCF results of 9.00 percent to 10.00 percent.[58] The low end of this range is established using an average of all the growth rates shown in Exhibit No. ___(DCP-9), p. 5, including retention growth. The high end of this range appears to be based on the mean result of the projected EPS growth rates. Since it appears that Mr. Parcell excludes the retention growth rate DCF scenarios from his analysis, presumably due to the low results from these models, it would also be reasonable to consider a scenario where these low growth rates were omitted from the analysis entirely. Excluding the retention growth rates from the analysis presented in Exhibit No. ___(DCP-9), page 5 results in an average growth rate of 6.0 percent, a mean DCF result of 9.90 percent and a median result of 10.30 percent, which is significantly higher than the 9.80 percent ROE that is being requested by the Company.

In addition, in developing the retention growth rates, it is necessary to estimate the

[57] 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.
[58] Parcell, Exh. DCP-1T at 32.

earned return on common equity. While Mr. Parcell has not shown the full calculation of the retention growth rates in Exhibit No.___(DCP-9), page 2, the calculation requires the use of Value Line's projected ROEs for the proxy group companies. Thus, Mr. Parcell effectively pre-supposes the return on common equity projected by Value Line for the proxy group companies. As shown in Exhibit No.___(DCP-12), page 1, the average Value Line earned ROE estimates from 2015-2019 ranged from 8.9 percent to 10.5 percent for the proxy group companies.[59] Yet, the median results of his DCF analyses using historical retention growth rates are 7.4 percent—a difference of 150 to 310 basis points. Similarly, his projected retention growth rates produce a median DCF result of 7.0 percent, but as shown in Exhibit No.___(DCP-12), page 1, the projected earned ROEs (upon which those retention growth rates were calculated) range from 7.6 percent to 9.2 percent, a difference of 60 to 220 basis points.

In summary, Mr. Parcell's DCF analysis using retention growth rates is not reflective of market conditions, and since Mr. Parcell himself has not relied on these estimates to inform his ROE recommendation, it would be reasonable to disregard these analyses.

Q. Please summarize your conclusions regarding Mr. Parcell's DCF analysis.

A. While Mr. Parcell develops DCF results using the mean and median of each growth rate shown in Exhibit No.__(DCP-9), page 5, it appears that he does not believe the retention growth rates result in meaningful ROEs because he excludes these results from his final range of results. The low end of the range that Mr. Parcell establishes (i.e., 9.00 percent) is understated because, while he appears to disregard his retention growth DCF models, he

[59] This range excludes the 7.2 percent average for 2017 because it is biased downward by the inclusion of an earned ROE for NWN of – 7.0 percent that year.

uses these growth rates in the average growth rate in his analysis. Updating Mr. Parcell's analysis to exclude those growth rates from his average growth rate results in a range of DCF results from 9.90 percent to 10.30 percent, which is within the range established by his individual growth rate DCF estimates using per share growth rates and EPS growth rates of 9.50 percent to 10.90 percent. Only by including the DCF results using retention growth rates can Mr. Parcell arrive at mean and median DCF results of 8.80 percent and 9.00 percent, respectively. Discarding the retention growth rates is reasonable and appropriate based on the academic reasons discussed above and the fact that Mr. Parcell essentially acknowledges that these growth rates are unreasonably low by excluding the results of his retention growth rate DCF models from his final range of results.

B. CAPM Analysis

Q. Please summarize the results of Mr. Parcell's CAPM analysis.

A. The mean and median results for Mr. Parcell's CAPM analysis are 6.40 percent and to 6.00 percent, respectively.[60] His CAPM analysis is based on a current average yield on 20-year U.S. Treasury bonds as the risk-free rate of 1.15 percent, Value Line Beta coefficients, and a historical market risk premium of 6.10 percent using data from Duff & Phelps.

Q. How do Mr. Parcell's CAPM results compare to authorized ROEs for gas distribution companies?

A. No regulatory commission has authorized an ROE at these levels for a gas distribution utility in the last 35 years. As shown in Figure 2, the range of authorized returns for gas distributors from January 2018 through November 2020 has been 8.80 percent to 10.25 percent, with an average authorized ROE of 9.59 percent. Mr. Parcell's CAPM results are

[60] Parcell, Exh. DCP-1T at 39.

319 to 359 basis points below the average authorized return and 240 to 280 basis points lower than the lowest authorized return for a gas distribution utility over this period.

Q. How does Mr. Parcell use his CAPM analysis?

A. Mr. Parcell's testimony is entirely inconsistent with respect to the use of his CAPM results. On page 51 of his Direct Testimony Mr. Parcell states that he does not give the CAPM results weight in making his ROE recommendation because he considers the results an outlier, and he acknowledges recent Commission decisions that have confirmed "it is appropriate for cost of capital witnesses to remove results that are truly outliers from their recommendations." However, on page 52, Mr. Parcell argues that "the CAPM results should be considered as one factor in determining the cost of equity for Cascade within the Commission's chosen range of reasonableness."

Q. Do you agree with Mr. Parcell's argument that his CAPM should be considered in setting the cost of equity for Cascade?

A. No, I do not. Mr. Parcell contends that interest rates have declined and remained low for an extended period of time, and that risk premiums are lower in this case than in prior years due to "lower equity returns that have been experienced over the past several years."[61] In addition, he suggests that investors' expectations are lower today than in recent years as a result of the actions of the Federal Reserve to stimulate the economy.[62]

Mr. Parcell's position on lower risk premium ignores the market volatility that has characterized capital markets in 2020. In addition, contrary to Mr. Parcell's claim that lower equity returns have been experienced in recent years, the average return on the S&P

[61] *Id.* at 52.
[62] *Id.*

500 for the 10-year period from 2010-2019 was 14.15 percent, as compared to the long-term average since 1926 of 12.10 percent. While I agree that yields on government bonds have declined due to the aggressive monetary policy of the Federal Reserve to support the economy during the COVID-19 pandemic, I do not agree that investors have permanently reduced their return expectations. In fact, yields on government and corporate bonds are projected to increase over the next five years, according to Blue Chip Financial Forecasts.

Q. Are Mr. Parcell's CAPM results meaningfully different in his current testimony than in prior cases?

A. No, they are not. While Mr. Parcell attempts to validate the results of his CAPM by stating that current market conditions have driven the risk premium lower today than in recent cases, based on my review of other cases where he has filed testimony, his CAPM results in this proceeding are generally consistent with what he estimated over the last five years. Therefore, Mr. Parcell's suggestion that recent conditions have lowered the risk premium is not supported in his own work. In fact, the assumptions used to develop his CAPM analyses have not produced results that reflected the range of authorized ROEs in the last five years.[63] Therefore, I do not believe it is reasonable to afford his CAPM results any weight in setting the ROE for Cascade in this proceeding.

Q. What points did Mr. Parcell rely on in his range for his final recommended ROE?

A. Mr. Parcell relies on the midpoints of the ranges set by his DCF, Comparable Earnings and Risk Premium analyses. Using the table of results presented on page 51 of his testimony, the midpoints of the ranges set for those methodologies would be 9.50 percent, 9.00 percent

[63] *See* Mr. Parcell's Direct Testimony before the Commission in Docket Nos. UE-190334, UE-170485, and UE-152253. *See also* the Direct Testimony of Mr. Parcell before the Arizona Public Utilities Commission in Docket E-01933A-15-0322.

and 8.95 percent. These results are 255 to 350 basis points above the range established by his CAPM results. Within that range, Mr. Parcell recommends an ROE for Cascade of 9.25 percent. It is unclear from this range and point estimate how Mr. Parcell could have considered the results of his CAPM analysis.

Q. Do you agree with the assumptions used in Mr. Parcell's CAPM analysis?

A. No, I do not. Furthermore, I do not agree that any commission should be considering the results from a model that are in the range of 6.00 percent to 6.40 percent as credible expectations of the investor required return for a regulated gas distribution company. As discussed previously, no commission has authorized an ROE at this level for a gas distribution utility over the last 35 years, which is the time-period for which data have been collected. Furthermore, as discussed in Section V, market conditions have been extremely volatile in response to the pandemic, and therefore it is unreasonable to suggest that in these volatile conditions the risk premium for holding equity would be lower than in more stable economic times. Therefore, I disagree with Mr. Parcell's model development and his conclusions justifying the results of this model. However, since these results do not factor into his final recommended range, I have narrowed the scope of my response to Mr. Parcell and have not addressed each assumption in his CAPM modeling.

Q. What concerns does Mr. Parcell express regarding your CAPM analyses?

A. Mr. Parcell disagrees with my use of projected interest rates and my market risk premium estimates and suggests that the results of my CAPM analyses, ranging from 9.21 percent to 11.73 percent, greatly exceed the CAPM results supported by his testimony.[64]

[64] Parcell, Exh. DCP-1T at 39.

Q. How do you respond to Mr. Parcell's general observations about the range of your CAPM results?

A. Mr. Parcell's observations about the range of results produced by my CAPM analysis are remarkable for two reasons. First, Mr. Parcell does not, himself, support the results of his own CAPM analysis. Second, the results of my CAPM analysis generally overlap the results presented in Mr. Parcell's DCF analysis of 9.50 percent to 10.90 percent, excluding as Mr. Parcell does, the results of his retention growth rate DCF models.

Q. Do you agree with Mr. Parcell's concerns about the assumptions used in your CAPM analysis?

A. No, I do not. Mr. Parcell and I each performed a CAPM analysis. As noted previously, the results of my CAPM analysis, using the assumptions he is critiquing, overlapped the results of his DCF analysis. Using the assumptions specified by Mr. Parcell for the CAPM, the model suggests an ROE that is up to 300 basis points below his DCF results, presumably a factor in his decision to place no weight on his CAPM analysis. On this basis alone, I find it somewhat disingenuous that Mr. Parcell would suggest the underlying assumptions used in his model are more appropriate than what I have used in my analysis.

Responding to Mr. Parcell's specific concerns regarding the use of projected interest rates, and forward-looking market returns, the estimation of the cost of equity should be forward-looking since it is the return that investors would receive over the future rate period. Therefore, the inputs and assumptions used in the CAPM analysis should reflect the expectations of the market at that time. As explained in my Direct Testimony, I estimated the market risk premium based on the expected total return on the S&P 500 Index less the 30-year Treasury bond yield. The historical market risk premium that Mr. Parcell

uses fails to consider the inverse relationship between interest rates and the market risk premium. As such, it is more appropriate to use a forward-looking market risk premium that reflects projected total returns for the S&P 500 less the current and projected yield on Treasury securities.

Q. Mr. Parcell states that it is "not proper to use projected interest rates as the risk-free rate" and that the current yield is the proper rate because it is "known and measurable and reflects investor's collective assessment of all capital market conditions."[65] Do you agree?

A. No, I do not. First, I disagree that current interest rates reflect investors' collective assessment of all capital market conditions. As I have stated previously in this Rebuttal Testimony, current yields on U.S. Treasury securities are being driven by the Federal Reserve's monetary policy, not by typical bond market participants. Today's low interest rates are not reliable indicators of investment risk or the cost of capital in equity markets over the period that the rates in this case will be in effect. It is common practice for analysts to use normalized interest rates (as I have done by using a forecast bond yield), particularly in volatile market conditions, because forecasted bond yields provide a more reliable indication of investment risk and the cost of capital over the expected rate period.

Q. Please summarize Mr. Parcell's concerns with your forward-looking market risk premium ("MRP").

A. Mr. Parcell disagrees with the methodology I have used to calculate a forward-looking MRP. Specifically, he disputes my use of a Constant Growth DCF analysis of the S&P 500 companies to determine the total market return because he believes that the EPS

[65] *Id.* at 40.

growth rates for these companies are over-stated. In addition, he contends that it is not appropriate to subtract current yields on Treasury bonds from the total market return due to the effect of the Federal Reserve's Quantitative Easing on U.S. Treasury yields.[66]

Q. What is your response?

A. First, I disagree with Mr. Parcell that projected EPS growth rates for companies in the S&P 500 are overstated. I have previously addressed Mr. Parcell's concern with analyst bias. Furthermore, I have used the aggregate growth rate for the S&P 500 Index provided in Standard and Poor's Earnings and Estimates report (as shown in Exhibit No.__(AEB-2), Schedule 4 CAPM 2). These growth rates come directly from S&P, which is the creator of the S&P 500 Index. The growth rates are corroborated by a report published monthly by State Street Global Advisors, an investment advisory firm that manages an index fund designed to track the S&P 500 Index. According to State Street, the projected EPS growth rate for the S&P 500 as of November 30, 2020 was 14.59 percent.[67]

Second, in response to Mr. Parcell's concern with comparing the total market return for the S&P 500 to current Treasury bond yields, I have used both current yields on 30-year Treasury bonds as well as near-term and longer-term projected yields on 30-year Treasury bonds to compute the market risk premium in my CAPM analysis.

Q. Are there other regulatory agencies that have offered opinions on a forward-looking CAPM?

A. Yes. In Opinion No. 531-B, FERC specifically addressed the assumptions used in a projected CAPM analysis. FERC concluded that estimates of the market risk premium

[66] *Id.* at 41.
[67] State Street Global Advisors, Inc.

using the same Constant Growth DCF methodology that was used in my Direct Testimony are appropriate. Specifically, FERC stated:

> …As an initial matter, we reject EMCOS's argument that the NETOs' CAPM analysis is flawed because it used a DCF study to determine the market risk premium. As explained above, using a DCF study is the standard method of calculating the market risk premium in a forward-looking CAPM analysis. We are, therefore, unpersuaded that the use of a DCF study renders the NETOs' CAPM analysis deficient.
>
> We also disagree with Petitioners' argument that the NETOs' CAPM analysis relied on an overly optimistic growth rate input in determining the market risk premium. The growth rate in the NETOs' CAPM analysis is based on IBES data, which the Commission has long relied upon as a reliable source of growth rate data.[68]

In its recent decision in Opinion No. 569-A, FERC continued to rely on a forward-looking CAPM analysis, weighing the results of that analysis equally with the DCF and the Risk Premium approach.[69]

Q. What are your conclusions regarding the use of the CAPM analysis in this case?

A. My conclusion is that it is reasonable and necessary to consider the results of alternative models, such as the CAPM, when those models are properly specified. The use of the forward-looking CAPM provides another estimate of the investor-required return on equity that, when properly specified, results in ROEs that are within a reasonable range of results that should be considered. However, CAPM results based on historical market data are not a reliable indicator of the forward-looking cost of equity for Cascade and should be given no weight.

[68] FERC Order on Rehearing, Opinion No. 531-B, 150 FERC ¶ 61,165, 62,144 at para. 110 (March 3, 2015).
[69] FERC Order on Rehearing, Opinion No. 569-A, 171 FERC ¶ 61,154 (May 21, 2020).

C. Comparable Earnings Analysis

Q. Please explain your concerns with Mr. Parcell's Comparable Earnings analysis.

A. Mr. Parcell presents a Comparable Earnings analysis from which he derives a range of results from 8.5 percent to 9.5 percent. According to Mr. Parcell, recent returns for the proxy group companies of 9.8 percent to 11.3 percent have been sufficient to maintain market/book ratios greater than 174 percent.[70]

One of my concerns with Mr. Parcell's Comparable Earnings analysis is that it presents "realized returns" over a historical period that is too long (from 2002 - 2019) to be relevant in this proceeding. Several of the proxy companies would not have met my screening criteria during those historical periods, particularly those that had credit ratings below investment grade. For example, according to Mr. Parcell's Exhibit No.__(DCP-12), page 1, NWN had an earned ROE of -7.0 percent in 2017. As Mr. Parcell notes elsewhere in his Direct Testimony, this negative return was not attributable to ongoing utility operations, but rather due to a large asset impairment. It makes little sense to incorporate such factors into a forward-looking return estimate, particularly when these are one-time, non-recurring events that do not reflect the utility operations of NWN on a going-forward basis. It is not appropriate to bring historical accounting returns into an analysis that is intended to set the forward-looking ROE. Mr. Parcell's review of the historical returns of the proxy group companies is a backward-looking measure with no consideration of or relevance to current market conditions.

Q. Does Mr. Parcell also perform a Comparable Earnings analysis using projected returns on equity?

[70] Parcell, Exh. DCP-1T at 45.

A. Yes. In addition to historical returns on equity, Mr. Parcell also considers projected returns on equity for the proxy group companies using Value Line data for 2020, 2021, and 2023-2025. However, Mr. Parcell does not adjust those projected equity returns for changes in the shares outstanding for each company over the period of the analysis, as explained in my Direct Testimony.[71] As such, Mr. Parcell's Comparable Earnings analysis using projected equity returns understates the projected returns expected by investors for the proxy group companies.

Q. Mr. Parcell criticizes your Expected Earnings analysis because you have not considered the high market/book ratios that result from equity returns at the levels projected by Value Line.[72] What is your response?

A. Although Mr. Parcell criticizes my Expected Earnings analysis for not considering the high market/book ratios for the proxy group companies, he also does not make any adjustment to his Comparable Earnings analysis for market/book ratios. Further, the high market/book ratios cited by Mr. Parcell provide additional support for my position that current utility valuations are unusually high relative to historical levels, which causes the DCF model to understate the forward-looking cost of equity if the dividend yield is calculated based on high stock valuations that are not sustainable over the period during which the rates set in this proceeding will remain in effect.

D. Risk Premium Analysis

Q. Please summarize Mr. Parcell's concerns with your Risk Premium analysis.

A. Mr. Parcell contends that the regression analysis used to estimate the ROE under my Risk

[71] Bulkley, Exh. AEB-1T at 61.
[72] Parcell, Exh. DCP-1T at 46.

Premium analysis does not consider any changes in the risk premium that may have occurred due to increased use of regulatory mechanisms such as revenue decoupling and cost recovery mechanisms.[73] In addition, he asserts that my Risk Premium analysis improperly uses U.S. Treasury bond yields to develop the risk premium, and he claims that it is more appropriate to use public utility bond yields to determine the risk premium.[74]

Q. What is your response to Mr. Parcell's first point?

A. The regression equation in my Risk Premium analysis has an R^2 of approximately 0.84, which means that the analysis can be used to estimate the ROE at varying levels of yields on U.S. Treasury bonds.[75] In particular, 84 percent of the change in the estimated ROE can be explained by changes in the level of government bond yields. While other factors may influence the authorized return, the regression equation indicates that government bond yields have been an important variable over the period from 1992-2020.

Q. Please continue with your response to Mr. Parcell's second concern.

A. In order to test Mr. Parcell's assertion that it is more reasonable to use utility bond yields in the Risk Premium analysis, I have revised my Risk Premium analysis to substitute the yield on Moody's Baa rated utility bond yields for the U.S. Treasury bond yield. I am not aware of a source that provides near term or longer-term projected utility bond yields, so I have added the average spread between 30-year Treasury bonds and Baa utility bond yields since 2018 to the projected Treasury bond yields from Blue Chip. As shown in Exhibit No.___(AEB-5), Schedule 7, the ROE estimates under this alternative scenario are only 1-4 basis points lower than those indicated by the Risk Premium analysis in my Direct

[73] Parcell, Exh. DCP-1T at 47.
[74] *Id.* at 47-48.
[75] *See* Exhibit No.___(AEB-2), Schedule 5.

Testimony, which used 30-year Treasury bond yields. My conclusion is that the results of my Risk Premium analysis and the statistics of the regression equation are similar regardless of whether utility bond yields or government bond yields are used.

Q. Do you have any comments on Mr. Parcell's Risk Premium analysis?

A. Yes. Mr. Parcell simply adds the average risk premium, which is the difference between authorized ROEs for gas distribution companies over the past five years and the BBB utility bond yield, to the current yield on utility bonds. My concern with this approach is that it does not take into consideration the inverse relationship between interest rates and the equity risk premium. In other words, as interest rates decrease (increase), the equity risk premium increases (decreases). Mr. Parcell assumes that this relationship remains static, despite the decline in interest rates that has occurred over this five-year period. As such, the Risk Premium results shown on page 49 of his Direct Testimony are understated.

E. Conclusions Regarding Mr. Parcell's ROE Recommendation

Q. What is your conclusion regarding Mr. Parcell's ROE recommendation of 9.25 percent?

A. While I present several results in my testimony, I consider the effect of market conditions on the models in my determination of the appropriate ROE. In contrast, while Mr. Parcell criticizes the assumptions used in my analyses in support of his own methodologies, he discards many of his own results. Specifically, Mr. Parcell offers extensive criticism of the assumptions used in my CAPM analysis, offering instead his view on the appropriate specification of this model, and then discards the results of the CAPM entirely. With respect to the DCF model, Mr. Parcell spends several pages criticizing my exclusive use of EPS growth rates, yet his range of DCF results from 9.00 percent to 10.00 percent is based

on projected and historical EPS growth rates, not dividend growth rates or retention growth rates.

F. Capital Structure

Q. Please summarize Mr. Parcell's proposed capital structure.

A. Mr. Parcell recommends a capital structure for Cascade consisting of 48.5 percent common equity and 51.5 percent long-term debt.[76] As support for this recommendation, Mr. Parcell states that Cascade's actual capital structure as of December 31, 2019, contained 46.6 percent common equity and that the common equity ratios for Cascade have been below 50.0 percent for the last five years. Company witness Ms. Tammy Nygard explains why Mr. Parcell's testimony on this issue is incorrect. In addition, ignoring the fact that Cascade's current authorized common equity ratio is 49.1 percent, Mr. Parcell argues that his 48.5 percent hypothetical common equity ratio is the same as that used by the Commission in establishing the cost of capital for both Avista and Puget Sound Energy.[77]

Q. Do you agree with Mr. Parcell's recommendation?

A. No, I do not. It is important to note that Mr. Parcell's analysis of the proxy group companies was conducted at the holding company level, rather than the utility operating company level. As discussed in my response to Dr. Woolridge, the appropriate comparison for Cascade would be the capital structures of the utility operating companies of the proxy group companies. Furthermore, Mr. Parcell's own data indicate that the common equity ratios for the proxy group companies averaged 54.3 percent from 2015-2019 and are projected to average 54.6 percent from 2023-2025.[78] Mr. Parcell also notes that the

[76] Parcell, Exh. DCP-1T at 23.
[77] *Id.* at 24.
[78] *Id.* at 22.

average common equity ratio for regulated gas distribution companies in 2019 was 52.07 percent.[79] As shown in Exhibit No.___(AEB-2), Schedule 10 to my Direct Testimony, the average common equity ratio for the operating companies held by my proxy group is 56.67 percent, within a range from 48.52 percent to 63.05 percent.

Q. Do you have any additional concerns with Mr. Parcell's capital structure recommendation?

A. Yes. The combination of Mr. Parcell's recommended ROE of 9.25 percent and his recommended equity ratio of 48.50 percent would provide a weighted equity cost rate of only 4.49 percent for Cascade. As shown in Figure 3 above, this WROE for Cascade is well below the average WROE of 4.99 percent for gas distribution companies in other jurisdictions from January 2018 – November 2020.

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 debt financing. In other words, the greater the debt ratio, the greater is the return required by equity investors. Cascade's proposed equity ratio of 50.40 percent is approximately six percentage points lower than the average equity ratio for the proxy group companies that are used to establish the ROE estimates for Cascade. Mr. Parcell recommends a common equity ratio for Cascade of 48.50 percent, which is approximately eight percentage points below the average for the proxy group companies. While I am not proposing an adjustment to the authorized ROE to reflect Cascade's higher financial risk relative to the proxy group, such an adjustment may be appropriate to compensate investors for the additional financial

[79] *Id.*

leverage.

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

A. I continue to support Cascade's proposed capital structure of 50.40 percent common equity and 49.60 percent long-term debt as reasonable, if not conservative, relative to the capital structures of the proxy group companies.

VII. RESPONSE TO PUBLIC COUNSEL WITNESS DR. WOOLRIDGE

Q. Please summarize Dr. Woolridge's testimony and recommendations.

A. Dr. Woolridge develops a range of results from 7.30 percent to 9.00 percent based on the results of the Constant Growth DCF and CAPM methods for his proxy groups. He recommends an ROE for Cascade of 9.00 percent, which is at the high-end of his range of results and is based primarily on his DCF model. His Constant Growth DCF results are based on a dividend yield of 3.65 percent and a growth rate of 5.25 percent for his Gas proxy group. Dr. Woolridge indicates that his DCF results consider historical earnings growth rates, historical and projected dividend and book value growth rates, and retention growth rates, as well as projected earnings growth rates from Value Line, Yahoo!, and Zack's, with a primary weight on the projected earnings growth rates.[80] Dr. Woolridge also presents a CAPM analysis, which produces an ROE estimate of 7.30 percent for his Gas proxy group. Dr. Woolridge recommends an imputed capital structure comprised of 49.10 percent common equity and 50.90 percent long-term debt, rather than Cascade's proposed capital structure consisting of 50.40 percent common equity and 49.60 percent long-term debt.[81]

[80] Woolridge, Exh. JRW-1T at 40.
[81] *Id*. at 21-22.

Q. Is Dr. Woolridge's 9.00 percent ROE recommendation fair and reasonable for Cascade?

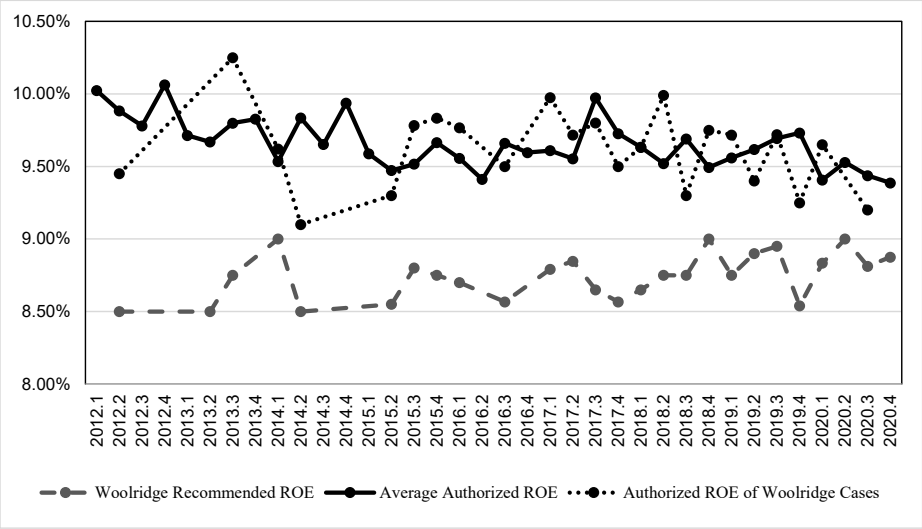
A. No. The rates set in this case, including the ROE and capital structure, will directly affect Cascade's cash flows in the period during which rates are in effect. The Company's cash flows, in turn, have a direct bearing on its credit quality and investors' perception of the riskiness of the enterprise. While Dr. Woolridge acknowledges the uncertainty and volatility that have characterized capital markets since February 2020, he does not appropriately reflect these conditions in his assessment of the results of his ROE models or in the development of his final recommended ROE. Dr. Woolridge has provided no justification for why it would be appropriate to authorize an ROE for Cascade that is, as shown in Figure 2 above, at the very low-end of the range of authorized ROEs for natural gas distribution companies from January 2018 through November 2020. As discussed in Section III above, credit rating agencies recently have reacted negatively to authorized ROEs that are significantly below the national average and higher than Dr. Woolridge's recommendation for Cascade. Therefore, it is likely that adopting Dr. Woolridge's recommended ROE of 9.00 percent would result in a similar response from rating agencies and the market overall.

Q. Do Dr. Woolridge's ROE recommendations typically meet the comparable return standard?

A. No. I have compiled Dr. Woolridge's recommendations in various cases from June 2012 through the fourth quarter of 2020. As shown in Figure 7, Dr. Woolridge's ROE recommendations have been significantly lower than the return that is actually authorized by the state regulatory commissions, as well as lower than the average authorized return

for electric and natural gas utilities at the same approximate time as his recommendation was made. Since the second quarter of 2012, Dr. Woolridge's ROE recommendation has been as much as 138 basis points below the average authorized return in the same quarter.

Figure 7: Average Authorized ROEs vs. Dr. Woolridge's Recommendations 2012-2020



Q. What are the principal areas of disagreement between you and Dr. Woolridge?

A. As discussed in more detail below, there are several areas in which Dr. Woolridge and I disagree, including: 1) the composition of the proxy group; 2) the use of the mean DCF results without consideration of how current market conditions are affecting the DCF model; 3) the appropriate growth rates to be relied on in the Constant Growth DCF model; 4) the reasonableness of applying a 7.00 percent outlier screen to the results of the Constant Growth DCF model; 5) the inputs and assumptions in the CAPM analysis and the reasonableness of Dr. Woolridge's CAPM results; 6) the relevance of the Bond Yield Plus Risk Premium approach; 7) the applicability of the Expected Earnings analysis; and 8)

whether the business risks of Cascade relative to the proxy group companies support an ROE higher than the mean/median for the proxy group.

A. Composition of the Proxy Group

Q. Please explain your disagreement with Dr. Woolridge regarding the appropriate proxy group for Cascade.

A. Dr. Woolridge and I have each developed a proxy group of natural gas utilities to estimate the cost of equity for Cascade. Dr. Woolridge's proxy group consists of nine natural gas distribution companies, while my proxy group consists of seven companies. Additionally, Dr. Woolridge notes that the proxy group that I have relied on is small due to the screening criteria that I have applied which results in the exclusion of two companies (Chesapeake Utilities Corporation and NiSource Inc.) which Dr. Wooldridge believes should be included in the proxy group.[82]

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

A. Dr. Woolridge does not appear to rely on a specific set of screening criteria to develop his natural gas proxy group. In fact, the only requirement that Dr. Wooldridge cites regarding the development of his proxy group is that a company be classified by Value Line as part of the natural gas distribution company industry group. Dr. Woolridge notes the average credit rating for the group, the average percent of revenue from regulated operations for the group and the average common equity ratio for the group; however, it does not appear that this information was used to select the companies included in his group.

Q. Do you have any concerns with Dr. Woolridge's proxy group screening criteria?

A. Yes, I disagree with Dr. Woolridge's sole reliance on the single criterion that a company

[82] Woolridge, Exh. JRW-1T at 19.

be classified by Value Line as part of the natural gas distribution company industry group. First, it is unclear how Dr. Woolridge applied this criterion since UGI Corporation is classified by Value Line as part of the natural gas distribution company industry group but was excluded from Dr. Woolridge's proxy group. Second, the criterion results in the inclusion of two companies, Chesapeake Utilities Corporation ("Chesapeake") and NiSource Inc. ("NiSource") that were excluded from the proxy group established in my Direct Testimony. Chesapeake was excluded from my proxy group because: (a) the company does not currently have a credit rating from either S&P or Moody's and therefore would not meet my investment grade credit rating screen; and (b) does not generate 60 percent of regulated operating income from natural gas operations since the company has both regulated electric and natural gas transmission operations. NiSource was excluded due to its $1.1 billion sale of Columbia Gas of Massachusetts to Eversource Energy which just recently closed on October 9, 2020.[83] Therefore, I continue to believe that it is appropriate to exclude both Chesapeake and NiSource from the proxy group.

Q. Has Dr. Woolridge applied credit rating and mergers and acquisitions ("M&A") screens to select his proxy group in prior rate cases?

A. Yes. Similar to the credit rating and M&A screen that I have applied to my proxy group in the current proceeding for Cascade, Dr. Woolridge has applied both a credit rating screen and a M&A screen to develop his proxy group in prior cases. In Docket No. 20-035-04 involving Rocky Mountain Power in Utah, Dr. Woolridge required the companies included in his electric proxy group to have "[a]n investment grade issuer credit rating by Moody's

[83] Kirong Nephele, *NiSource closes $1.1B sale of Columbia Gas to Eversource*, S&P Global Market Intelligence (Oct. 9, 2020) https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/nisource-closes-1-1b-sale-of-columbia-gas-to-eversource-60681487.

and/or S&P" and not be "involved in an acquisition of another utility, the target of an acquisition, or in the sale or spin-off of utility assets, in the past six months."[84] Moreover, in Docket No. 18-05-10 involving Yankee Gas Services Company in Connecticut, Dr. Woolridge noted that he relied on the same proxy group of natural gas utilities that I relied on which was developed using both a credit rating and M&A screen.[85] In the 2018 rate case for Yankee Gas Services Company, Chesapeake was excluded from the proxy group because the company did not have an investment grade credit rating from either Moody's or S&P. If Dr. Woolridge applied similar screening criteria in the current proceeding for Cascade as he applied in the cases for Rocky Mountain Power and Yankee Gas Services Company, he would have excluded both Chesapeake and NiSource from his proxy group.

Q. Do you have any additional observations regarding Dr. Woolridge's proxy group screening criteria?

A. Yes. Dr. Woolridge assesses the investment risk of Cascade relative to his proxy group by comparing the average S&P credit rating for his proxy group to Cascade's S&P credit rating. Therefore, Dr. Wooldridge understands that credit ratings are an important factor in determining the comparability of the proxy group to the subject company, which in this case is Cascade. However, in developing his comparison, Dr. Woolridge does not specifically note that the proxy group average excludes Chesapeake because the company does not have a credit rating from either S&P or Moody's. Therefore, it is not possible for

[84] *Application of Rocky Mountain Power for Authority to Increase its Retail Electric Utility Service Rates in Utah and for Approval of its Proposed Electric Service Schedules and Electric Service Regulations*, Public Service Commission of Utah, Docket No. 20-035-04, Direct Testimony of Dr. J. Randall Woolridge at 24 (Aug. 20, 2020).

[85] *Application of Yankee Gas Services Company d/b/a Eversource Energy to Amend its Rate Schedules*, Connecticut Public Utilities Regulatory Authority, Docket No. 18-05-10, Direct Testimony of Dr. J. Randall Woolridge at 19-20 (Aug. 3, 2018).

Dr. Woolridge to assess the investment risk of Chesapeake as compared to Cascade or to assess how Chesapeake affects the overall investment risk of the proxy group. This provides further support for the exclusion of Chesapeake from the proxy group.

Q. Do you agree with Dr. Woolridge that what he characterizes as "errors" in your DCF analysis are "magnified by the fact that she [Ms. Bulkley] has used a small proxy group?"[86]

A. No, I do not. First, I do not agree with Dr. Woolridge that there are "errors" in my DCF analysis. Further, comparability of the group is more important than the number of companies included in the proxy group. While my proxy group is slightly smaller than Dr. Woolridge's (i.e., seven companies vs. nine for Dr. Woolridge's group), my proxy group contains a sufficient number of companies to estimate the cost of equity. In addition, my proxy group is superior to Dr. Woolridge's group since it does not include companies engaged in transformative transactions or companies which, unlike Cascade, do not generate a substantial portion of their regulated operating income from natural gas operations.

Q. What is your conclusion with respect to the proxy group used to estimate the cost of equity for Cascade?

A. My primary conclusion is that the composition of the proxy group is not a significant driver in the differences between Dr. Woolridge's recommended ROE and mine. While I continue to believe that my screening criteria result in a more risk comparable proxy group to Cascade, I have limited my response on this issue to focus more attention on what is causing the substantial differences in our respective ROE analyses and recommendations.

[86] Woolridge, Exh. JRW-1T at 7.

B. Constant Growth DCF Analysis

Q. Please summarize the results of Dr. Woolridge's Constant Growth DCF analysis.

A. Dr. Woolridge performs a single Constant Growth DCF analysis that produces an ROE result of 9.00 percent. This analysis is based on the mean dividend yield for the proxy companies of 3.65 percent and Dr. Woolridge's selected growth rate of 5.50 percent.[87] Dr. Woolridge does not provide an exhibit that develops the ROE estimates for each individual company in the proxy group.

Q. What are the major differences in methodology and opinions that drive the differences in your respective DCF analyses?

A. The major methodological differences between the DCF analyses performed by Dr. Woolridge and me are: 1) the development of the growth rate; 2) the application of the DCF model to the proxy group; and 3) the weight placed on the DCF results in the final recommendation.

1. Development of the Growth Rate

Q. Please summarize Dr. Woolridge's criticism of the growth rate upon which you have relied.

A. Dr. Woolridge criticizes my DCF analysis for the exclusive use of "overly optimistic and upwardly biased EPS growth rate forecasts of Wall Street analysts and *Value Line*"[88] and devotes many pages to the summary and discussion of several alternative growth rates.

Q. Please summarize Dr. Woolridge's growth rate analysis.

A. Dr. Woolridge considers several growth rate assumptions including historical and

[87] Woolridge, Exh. JRW-1T at 41, Table 2.
[88] *Id.* at 7.

projected growth in EPS, historical and projected DPS (dividends per share) and BVPS (book value per share), and the internal growth rate. While Dr. Woolridge expresses many concerns with the use of EPS growth rates and suggests that the use of EPS growth rates in my DCF analysis is one of his primary concerns with the analysis presented in my Direct Testimony, he ultimately gives "primary weight to the projected EPS growth rate of Wall Street analysts."[89]

Q. What is your response to Dr. Woolridge's assertion that you "exclusively used the overly optimistic and upwardly biased EPS growth rate forecasts of Wall Street analysts and Value Line"?[90]

A. I fail to understand Dr. Woolridge's definition of what he considers an "overly optimistic and upwardly biased EPS growth rate forecast." First, Dr. Woolridge indicates that the overall growth rate range indicated by his projected growth rates is 4.3 percent to 7.2 percent.[91] The median growth rate for my proxy group that I relied on in my Direct Testimony is 7.23 percent based on EPS growth rate forecasts from Yahoo!, Zacks and Value Line, which is just slightly greater than the high-end of the range established by Dr. Woolridge.[92] Moreover, the median growth rate for my proxy group that I rely on in my Rebuttal testimony is 7.07 percent if the unadjusted Value Line growth rate for NWN is used and 6.00 percent if the adjusted NWN growth rate is used. In each case, the median growth rate is well within the range established by Dr. Woolridge. Second, in selecting his proxy group average growth rate of 5.25 percent, Dr. Woolridge notes that he relied

[89] *Id.* at 40.
[90] *Id.* at 7.
[91] *Id.* at 40.
[92] Exhibit No.__(AEB-2), Schedule 3.

primarily on the projected EPS growth rates from Wall Street analysts.[93] Therefore, we both have relied primarily on the same sources to derive our growth rate estimates for the Constant Growth DCF model.

Q. Why do you believe that EPS growth rates are the most appropriate growth rates to use in the DCF model?

A. As discussed in my Direct Testimony and in my response to Mr. Parcell, earnings are the fundamental determinant of a company's ability to pay dividends.[94] Further, both dividends and book value per share may be directly affected by short run management decisions. Despite his criticism of the use of EPS growth rates, it is Dr. Woolridge's view that "over the very long term, dividends and earnings will have to grow at a similar growth rate."[95]

In addition to the theoretical basis for the use of earnings growth rates, there is the practical consideration of the availability of market data. EPS growth rates are the only forward-looking growth rates available on a consensus basis. Except for his EPS growth rates, the source for all of Dr. Woolridge's growth rates is Value Line. Dr. Woolridge's reliance on Value Line's historical and forecasted DPS and BVPS growth rates, as well as Value Line's estimates of projected ROE and retention rates for his internal growth rate, unnecessarily introduces "sole source" bias into his calculations. By contrast, my Constant Growth DCF analysis uses earnings growth rates from multiple sources, including Zack's and Thomson First Call, both of which provide consensus estimates from multiple analysts.

[93] Woolridge, Exh. JRW-1T at 40.
[94] Bulkley, Exh. AEB-1T at 48.
[95] Woolridge, Exh. JRW-1T at 36.

Q. Do you share Dr. Woolridge's concern that "long-term EPS growth rate forecasts of Wall Street securities analysts are overly optimistic and upwardly biased"?[96]

A. No, I do not. As discussed in my response to Mr. Parcell, the Global Settlement served to significantly reduce the bias referred to by Dr. Woolridge.

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

A. Yes. Dr. Woolridge references several articles that he asserts prove the potential bias in analysts' EPS projections.[97] However, only one of the studies that Dr. Woolridge cites analyzes the period after the Global Settlement on October 31, 2003. That April 2010 McKinsey and Company study notes:

> Exceptions to the long pattern of excessively optimistic forecasts are rare, as a progression of consensus earnings estimates for the S&P 500 shows (Exhibit 1). Only in years such as 2003 to 2006, when strong economic growth generated actual earnings that caught up with earlier predictions, do forecasts actually hit the mark. This pattern confirms our earlier findings that analysts typically lag behind events in revising their forecasts to reflect new economic conditions. When economic growth accelerates, the size of the forecast error declines; when economic growth slows, it increases. So as economic growth cycles up and down, the actual earnings S&P 500 companies report occasionally coincide with the analysts' forecasts, as they did, for example, in 1988, from 1994 to 1997, and from 2003 to 2006.[98]

The earnings reported by S&P 500 companies met and exceeded the growth rate projected by analysts between 2003 and 2006.[99] The period analyzed in the study extends through 2008, and analysts' projections did exceed actual earnings growth in 2007 and

[96] *Id*. at 37.
[97] *Id.*
[98] Marc Goedhart, Rishi Raj, and Abhishek Saxena, *Equity analysts: Still too bullish*, McKinsey and Company (Apr. 1, 2010) https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/equity-analysts-still-too-bullish#.
[99] *Id.*

2008. However, this time-period reflected the start of the Great Recession and does not indicate analyst bias, but rather shows that analysts were unable to predict the severity and magnitude of the financial crisis. Furthermore, the McKinsey study examines analysts' EPS forecasts for a given year at one, two and three years out. It does not review the 3- to 5-year EPS growth rates that I used in my Constant Growth DCF analysis, which are meant to represent average growth for a company over a longer period of time. In summary, Dr. Woolridge has provided no evidence that the EPS growth rates for the companies in my DCF analysis are the result of consistent and pervasive analyst bias.

Q. Please summarize Dr. Woolridge's concern with your approach of averaging the projected EPS growth rates from Yahoo!, Zacks and Value Line.[100]

A. Dr. Woolridge contends that Value Line's approach to estimating projected EPS growth, which involves calculating the growth rate from a three-year historical base period to a three-year projected base period, can have a significant effect on the results if the "base period includes years with abnormally high or low earnings."[101] For example, Dr. Woolridge notes that NWN had negative EPS in 2017 which reduced the average EPS for the base period and resulted in an unreasonable EPS growth rate of 22.50 percent.[102] Furthermore, Dr. Woolridge notes that the average Value Line EPS growth rate for my proxy group is approximately 200 basis points higher than the proxy group average growth rate from Yahoo! and Zacks.[103] As a result, Dr. Woolridge concludes that I have inflated my DCF results by averaging the Value Line projected EPS growth rates with the projected

[100] Woolridge, Exh. JRW-1T at 63-64.
[101] *Id.* at 63.
[102] *Id.* at 63-64.
[103] *Id.* at 64.

EPS growth rates from Zacks and Yahoo!.

Q. Do you agree with Dr. Woolridge that the inclusion of the EPS growth rates from Value Line "inflates" your DCF results?[104]

A. No, I do not. First, while Dr. Wooldridge has isolated NWN's growth rate from Value Line as being unreasonably high, it does not appear that Dr. Wooldridge has reviewed the growth rates for the other proxy group companies from Value Line to determine if they reflect events that positively or negatively affect the expected earnings growth rates. Second, Dr. Woolridge has only considered the growth rates published by Value Line; he has not conducted a detailed review of the projected earnings growth rates from either Yahoo! or Zacks. Finally, if outliers are identified, an analyst could use an alternative measure of central tendency such as the median, which is not affected to a large degree by the presence of outliers the way the mean is affected.

Q. Are you aware of any other earnings growth projections from Value Line that were also affected by a one-time financial event?

A. Yes. In 2018, New Jersey Resources experienced a one-time financial event that increased the Company's earnings per share. Specifically, New Jersey Resources noted in the company's 2019 Annual Form 10-K filing that:

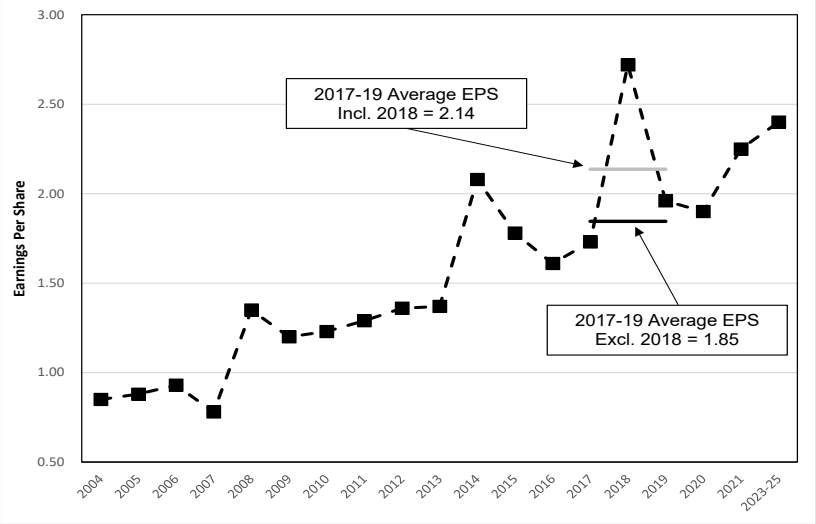
> The decrease in net income of $63.9 million during fiscal 2019, compared with fiscal 2018, was driven primarily by decreased earnings at Energy Services and an income tax benefit of $59.6 million associated with the revaluation of deferred income taxes resulting from the Tax Act during fiscal 2018 that did not recur during fiscal 2019.[105]

The effect of this one-time increase in the earnings per share data for New Jersey

[104] *Id.*
[105] New Jersey Resources, 2019 Annual Form 10-K at 34.

Resources in 2018 is shown in Figure 8. Since, as discussed by Dr. Woolridge, Value Line calculates the earnings growth rate using the 3-year average EPS from 2017-2019 and the 3-year projected average EPS for 2023-2025, the projected earnings growth rate is biased downwards by the one-time financial event which increased New Jersey Resources' average EPS for the period of 2017-2019. As a result, Value Line projected earnings growth of only 2.00 percent for New Jersey Resources, which was much lower than the 6.00 percent earnings growth projected by Yahoo! and Zacks as shown in Exhibit No.__(JRW-8). Therefore, Value Line's projected EPS growth rates are not always overstated and greater than the projected earnings growth rate reported by Yahoo! and Zacks.

Figure 8: New Jersey Resources' Earnings Per Share - 2004 – 2023/25[106]



[106] Source: Value Line, dated November 27, 2020.

Q. Do you have any observations regarding the projected earnings growth rates from Yahoo! and Zacks that were relied on by Dr. Woolridge?

A. Yes. Dr. Woolridge relies on a projected earnings growth rate from Yahoo! of 1.7 percent for NiSource. This growth rate is slightly below the rate of inflation which Dr. Woolridge notes has been approximately 2.00 percent over the past 5 years.[107] The Constant Growth DCF model assumes growth in perpetuity; therefore, it seems unlikely that investors would invest in stock that has a negative real growth rate in perpetuity. In addition, the earnings growth rate reported by Yahoo! is well below the 5.6 percent earnings growth rate reported by Zacks for NiSource. Thus, there can be variations in the earnings growth rates reported by Yahoo! and Zacks.

Q. What approach have you applied to account for variations in the earnings growth rates reported by Yahoo!, Zacks and Value Line?

A. When reviewing a data set such as earnings growth rates for a proxy group of companies, it is important to check for outliers. However, it is only appropriate to remove an outlier if it is determined that the data point is the result of an error. Absent an error, there are other alternatives for addressing disparate data. One approach, which is shown in Exhibit No.___(AEB-5), Schedule 3, is specific to the methodology applied by Value Line to calculate projected earnings growth rates. This approach involves recalculating the Value Line earnings growth rate to exclude the historical annual EPS data that is causing the low or high earnings growth rate. For example, in my alternative Constant Growth DCF analysis shown in Exhibit No.___(AEB-5), Schedule 3, I calculated an adjusted earnings growth rate for NWN that excludes the negative EPS for 2017 of 5.97 percent.

[107] Woolridge, Exh. JRW-1T at 73.

Another alternative, if the observation cannot be adjusted as is the case with the earnings growth rates reported by Zacks and Yahoo!, would be to select another measure of central tendency other than the mean such as the median. In general, the median is not affected to a large degree by the presence of outliers on both the high and the low end. Therefore, it is more appropriate to include all the growth rate estimates in the Constant Growth DCF analysis and rely on the median as the measure of central tendency if outliers are identified. As discussed in my Direct Testimony, I relied on the median to calculate the results of my Constant Growth DCF model to reduce the effect of outlier growth rates. In fact, Dr. Woolridge also notes that he has relied on the median growth rate for the proxy group from each of his growth rate sources to mitigate the effect of outliers.[108] However, after calculating the median growth rates, Dr. Woolridge abandons that calculation and subjectively selects a growth rate based entirely on his own judgment.

Q. Do you agree with Dr. Woolridge that historical measures of growth are relevant to a forward-looking evaluation of the cost of equity?

A. As discussed in my response to Mr. Parcell, the appropriate measure of growth in the DCF analysis is investors' expectations because the Constant Growth DCF model is forward-looking and evaluates investors' required returns based on expected future cash flows. Furthermore, while I agree that historical measures of growth are relevant, these historical growth rates are likely already incorporated into investors' forward-looking growth rates. Dr. Woolridge also observes that historical growth rates must be treated with caution because "[i]n some cases, past growth may not reflect future growth potential."[109] As

[108] Woolridge, Exh. JRW-1T at 64, n. 53.
[109] *Id.* at 35.

discussed previously, Dr. Woolridge relies primarily on long-term EPS growth rate estimates.

Q. Why do you disagree with Dr. Woolridge's calculation of the retention growth rate?

A. Dr. Woolridge's calculation of retention growth rates (also known as "internal growth rates" or "sustainable growth rates") considers only the product of earnings retention rates and earned returns on common equity, or what are commonly known as internally-generated funds. In the sustainable growth formula, this is commonly referred to as the product of "b x r", where "b" is the retention ratio, or the portion of net income not paid in dividends, and "r" is the expected ROE on the portion of net income that is retained within the company as a means for future growth.

Dr. Woolridge fails to consider that earnings growth also occurs as a result of new equity issuances, or what are commonly known as externally-generated funds. In the sustainable growth formula, this is shown as the product of "s" x "v", where "s" represents the growth in shares outstanding and "v" is that portion of the market-to-book (M/B) ratio that exceeds unity. This methodology is recognized as a common approach to calculating the sustainable growth rate.[110]

By only considering the funds from internally-generated sources, Dr. Woolridge's sustainable growth rate calculation understates the prospective growth rates for his proxy group companies. As shown in Exhibit No.___(AEB-5), Schedule 8, had Dr. Woolridge included the "s" x "v" component in his computation, the mean sustainable growth rate for his Gas proxy group would increase by approximately 219 basis points from 4.23 percent to 6.42 percent while the median sustainable growth rate would increase by approximately

[110] *See* Roger Morin, *New Regulatory Finance*, Public Utilities Reports, Inc. at 306 (2006).

29 basis points from 4.29 percent to 4.58 percent.

Q. Is Dr. Woolridge's sustainable growth rate calculation consistent with his criticism of your Expected Earnings analysis?

A. No. While Dr. Woolridge dismisses my Expected Earnings analysis because it relies on Value Line's ROE projections, his calculation of the sustainable growth rate relies on that same projection. The "r" in Dr. Woolridge's "b x r" approach refers to the projected ROE. In his specification of this growth rate, Dr. Woolridge relies on the same Value Line projected ROE that is used in my Expected Earnings approach. In developing his sustainable growth rate measure, Dr. Woolridge has assumed that Value Line's ROE projections are reasonable, even though he criticizes my use of this data.[111] Further, as shown on page 4 of Exhibit No.__(JRW-8), the mean and median ROE projections for the companies in Dr. Woolridge's Gas proxy group are 9.40 percent and 9.50 percent, respectively, which are significantly higher than his recommended ROE for Cascade of 9.00 percent.

Q. As a practical matter, does Dr. Woolridge rely on these alternative growth rates?

A. No, he does not. Despite his criticism of my DCF methodology, Dr. Woolridge has also relied primarily on projected EPS growth rates. Therefore, Dr. Woolridge's criticism of my DCF analysis because it relies on EPS growth rates is invalidated by his own views and his ultimate reliance on EPS growth rates.

Q. Have you reviewed Dr. Woolridge's growth rate recommendations in other cases?

A. Yes. Figure 9 summarizes the dividend yields and growth rates that Dr. Woolridge has relied on in the development of his Constant Growth DCF models for 69 cases since June

[111] Woolridge, Exh. JRW-1T at 83-86.

2012. As shown in Figure 9, as the dividend yields for his proxy groups have declined in response to capital market conditions, Dr. Woolridge simply selects a higher projected growth rate in the Constant Growth DCF model. Conversely, when the dividend yields for his proxy group increase, Dr. Woolridge selects a lower projected growth rate.

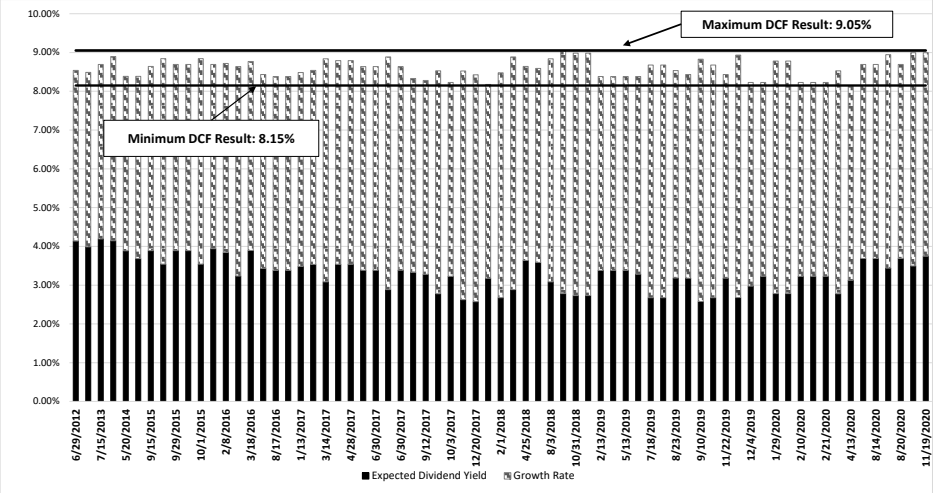
Q. Please explain your analysis in Figure 9.

A. The solid black portion of each observation (recommendation made by Dr. Woolridge) is the calculated dividend yield. The remainder of each bar (observation) indicates the growth rate that Dr. Woolridge selected. As can be seen in the figure, as the calculated dividend yield changes, it is offset by the selection of the growth rate to remain within a very narrow band from 8.15 percent to 9.05 percent over nine years.

In addition to reviewing the data graphically, I calculated the correlation between these two assumptions over time in Dr. Woolridge's analysis. The correlation coefficient between the dividend yield used in Dr. Woolridge's DCF analysis and the growth rate using the 69 cases from the last nine years is (0.88), which suggests a high degree of correlation between the dividend yield and the growth rate.[112] Furthermore, the correlation coefficient is negative, which implies that as the dividend yield increases (decreases), the growth rate decreases (increases). This supports my conclusion that Dr. Woolridge's selected growth rate in his DCF analysis appears to be related to whether the dividend yield for his proxy group has increased or decreased.

[112] A correlation coefficient with an absolute value of 0.8 or higher indicates a very strong relationship.

Figure 9: Woolridge Historical Dividend Yields and Growth Rates



Q. What do you conclude from this analysis?

A. Despite changes in interest rates and the price of utility stocks over this period, all of which should have an effect on the results of the ROE estimation models, as shown in Figure 9, by selecting the growth rate used in the DCF model, Dr. Woolridge has maintained DCF results in a tight range, never exceeding 9.05 percent over the last nine years.

Q. Have you compared Dr. Woolridge's selected growth rate in this case to the growth rate he has selected in other recent cases?

A. Yes. Figure 10 compares the growth rates and yields relied on by Dr. Woolridge in this case to his analysis presented in a case for Montana-Dakota Utilities Co. in Montana (Docket No. 2020.06.076) where he filed testimony on October 30, 2020. As shown in Figure 10, Dr. Woolridge's selected growth rate was 25 basis points higher in the case for Montana-Dakota Utilities Co., offsetting the dividend yield, which was 25 basis points lower, but maintaining an ROE estimate of close to 9.00 percent. Dr. Woolridge has

provided no information in his testimony to suggest that market conditions for natural gas utilities have changed markedly in the few weeks between these cases to support a reduction in the long-term expected growth rate of 25 basis points for the natural gas utility benchmark group.

Figure 10: Comparison of Dr. Woolridge's DCF Assumptions

Case	State	Dividend Yield	Growth Rate Selected	DCF Result
Montana-Dakota Utilities Co. (Docket No. 2020.06.076)[113]	Montana	3.40%	5.50%	8.95%
Cascade	Washington	3.65%	5.25%	9.00%

2. Application of the DCF model to the proxy group

Q. Why is it important to consider the ROE results for each proxy company?

A. As discussed in the *Hope* decision, developing a return that reflects investor expectations should be of primary importance, not the model or methodology employed to derive that result. As such, it is important to consider whether the return estimates for each individual company are reasonable.

Q. Does Dr. Woolridge develop ROE estimates for each individual company in his Gas proxy group?

A. No. Unlike the DCF analyses presented in my Direct Testimony, Dr. Woolridge's DCF analysis does not provide the result for each individual company. Thus, he has not provided the opportunity to review the reasonableness of his DCF model results on a company-specific basis.

[113] *Montana-Dakota Utilities Co.'s Application for Interim Increase in Natural Gas Rates*, Montana Public Service Commission, Docket No. 2020.06.076, Direct Testimony of Dr. J. Randall Woolridge at 48 (Oct. 30, 2020).

Q. How does the growth rate selected by Dr. Woolridge affect his DCF analysis?

A. As previously discussed, Dr. Woolridge simply chooses the growth rate that he relies on from within the projections he has summarized. Because he is selecting a value, rather than relying directly on the consensus estimates from industry analysts, Dr. Woolridge's DCF analysis is entirely subjective and judgment based.

It is also important to recognize that Dr. Woolridge's DCF analysis is not performed at the individual company level, but rather is one growth rate, that he has selected, and the average dividend yield for the proxy companies. As noted in both our Direct Testimonies, the Constant Growth form of the DCF model is as follows:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + ... + \frac{D_\infty}{(1+k)^\infty} \quad [1]$$

Where P_0 represents the current stock price, D1…D∞ are all expected future dividends, and k is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the following form:

$$k = \frac{D_0(1+g)}{P_0} + g \quad [2]$$

In this form of the DCF model, the dividend yield is also affected by the growth rate to develop the next year's cash flow. Therefore, Dr. Woolridge's method of selecting the growth rate imposes his judgment on both terms of the Constant Growth DCF model.

Q. How does your application of the Constant Growth DCF model differ from Dr. Woolridge's approach?

A. As discussed in my Direct Testimony, my Constant Growth DCF model relies on projected EPS growth rates reported by Value Line, as well EPS consensus estimates reported by Zacks and Yahoo! Finance. I then consider the mean growth rates, as well as the low and

high reported growth rates, to develop individual DCF results for each proxy group member. In sum, my Constant Growth DCF analysis relies directly on the EPS growth estimates for each proxy company.

Q. Have you reviewed the ROE results for each of the companies in Dr. Woolridge's proxy group using the dividend yields and earnings growth rates assumed by Dr. Woolridge?

A. Yes. Exhibit No.___(AEB-5), Schedule 9 provides the DCF result for each of the companies in Dr. Woolridge's Gas proxy group based on the dividend yields calculated by Dr. Woolridge and the earnings growth rates from Value Line, Yahoo! and Zacks relied on by Dr. Woolridge. Applying my risk premium screen, which excludes individual proxy group results below 7.00 percent, the median ROE estimates for Dr. Woolridge's Gas proxy group are 9.60 percent (30-day), 9.52 percent (90-day), and 9.45 percent (180-day).

3. Weighting of the DCF results in the final recommendation

Q. Please explain how Dr. Woolridge establishes his ROE recommendation.

A. Dr. Woolridge states that he is relying primarily on the DCF model and that, because Cascade's business risk is at the high-end of the Gas proxy group, he selects an ROE at the high-end of the range as the equity cost rate.[114] Thus, Dr. Woolridge recommends an ROE of 9.00 percent, which is equivalent to the result of his DCF analysis of 9.00 percent.[115]

Q. Do you agree with Dr. Woolridge's primary reliance on the result of the DCF model?

A. No. As discussed in this section, Dr. Woolridge's DCF analysis is based entirely on his judgment. I have demonstrated, through a review of 69 cases where Dr. Woolridge has

[114] Woolridge, Exh. JRW-1T at 55-56.
[115] *Id.*

offered his ROE recommendation over the past nine years, that Dr. Woolridge's selection of the EPS growth rate in his DCF model is subjective and appears to have a high negative correlation with the dividend yield at the time the analysis was prepared. Comparing his recommendation to authorized ROEs over time demonstrates that Dr. Woolridge's DCF results are well below the average authorized ROEs for gas distribution utilities, demonstrating that his judgment is not considering all the necessary risk factors for the subject companies.

C. CAPM Analysis

Q. Please summarize Dr. Woolridge's CAPM results and explain how he uses that analysis.

A. As shown in Table 3 of Dr. Woolridge's Direct Testimony, his CAPM results are 7.30 percent for his Gas proxy group. These results are based on a risk-free rate of 2.50 percent, a Beta coefficient of 0.80 for his Gas proxy group, and an MRP of 6.00 percent. The results of Dr. Woolridge's CAPM analysis form the lower boundary of his range of results for Cascade. Dr. Woolridge ultimately relies primarily on the results of his Constant Growth DCF model in establishing his ROE recommendation. The results of Dr. Woolridge's CAPM analysis are well below the authorized ROE for any U.S. natural gas distribution utility in the past 35 years.[116]

Q. What are your areas of disagreement with Dr. Woolridge's CAPM analysis?

A. I have three areas of concern with the inputs and assumptions that Dr. Woolridge has relied on to derive his CAPM results. First, in spite of the fact that Dr. Woolridge discusses the low interest rate environment and his concern with the reliability of interest rate forecasts

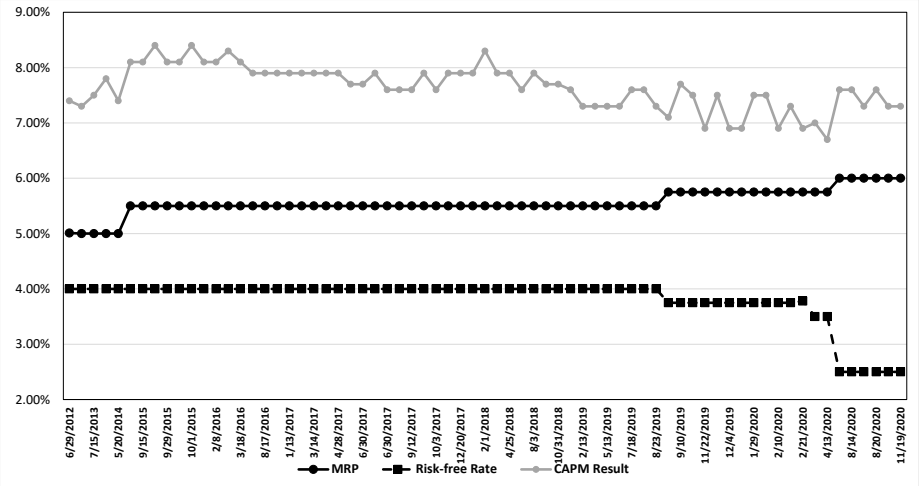
[116] Source: Regulatory Research Associates.

over the past decade,[117] he uses a "normalized" risk-free rate of 2.50 percent in his CAPM analysis.[118] Second, Dr. Woolridge relies on Value Line's Beta coefficients for the companies in his Gas proxy group. However, he questions the Value Line method for calculating the Beta coefficient, and in particular he expresses concern with the formula that Value Line uses to adjust the raw Beta. Finally, I take issue with Dr. Woolridge's use of an MRP of 6.00 percent because it is based primarily on the results of investor surveys and academic research rather than forward-looking market data and does not reflect the inverse relationship between interest rates and the equity risk premium.

As shown in Figure 11, two of the three inputs used in Dr. Woolridge's CAPM analysis have remained relatively constant since 2012, not recognizing any of the market fluctuations that have occurred over that period. Furthermore, it appears that Dr. Woolridge has not evaluated the results of his CAPM for reasonableness. Comparing the results in Figure 11 to recently authorized ROEs shown in Figure 11 it is clear that the CAPM results, as specified by Dr. Woolridge, are unreasonably low compared to returns authorized by regulatory commissions over this time period.

[117] Woolridge, Exh. JRW-1T at 16-17.
[118] *Id.* at 43.

Figure 11: Risk-free Rate and MRP relied on by Dr. Woolridge



Q. What is your response to Dr. Woolridge's criticism of your use of projected interest rates?

A. Dr. Woolridge's criticism of the use of projected interest rates in my analysis has no bearing on the results of the analysis. In the current case, Dr. Woolridge indicates that one of his issues with my CAPM analysis is the use of projected interest rates which he notes are "well in excess" of current interest rates.[119] As shown in Exhibit No.___(AEB-2), Schedule 4, my interest rate projections range from 1.60 percent to 3.20 percent. These projections range from 90 basis points *lower* than his normalized interest rate to 70 basis points *higher* than his recommended normalized interest rate. It is also important to note that while Dr. Woolridge contends that the yield on the 30-year Treasury Bond should be used as the estimate of the risk-free rate, he cites to the normalized 20-year Treasury Bond yield from Duff and Phelps as support for his selection of the risk-free rate. Therefore, had

[119] Woolridge, Exh. JRW-1T at 7.

Dr. Woolridge implemented his own recommendation and relied on the normalized 30-year Treasury Bond yield, his normalized risk-free rate, which already exceeds my current risk-free rate and near-term projected risk-free rate assumption, would be higher.

Q. What concerns do you have with the risk-free rate relied on by Dr. Woolridge in his CAPM analysis?

A. The methodology that Dr. Woolridge uses to support his normalized risk-free rate is unclear at best and does not appear to reflect current or expected market conditions. First, it is unclear what Dr. Woolridge believes his normalized risk-free rate represents. Dr. Woolridge states that he has reviewed historical yields on the 30-year Treasury bond from 2013-2020, which range from 1.3 percent to 4.0 percent, referencing Exhibit No.__(JRW-9) for this analysis. Exhibit No.__(JRW-9.2) shows that the yield on the 30-year Treasury bond has been above 2.50 percent for much of the time-period that Dr. Woolridge reviewed. The rationale he provides for selecting 2.50 percent is as follows: "Given the recent range of yields, I have chosen to use a yield toward the middle of the range as my risk-free interest rate."[120] In fact, in response to Cascade Data Request No. 8, Dr. Woolridge confirms that the normalized risk-free rate is an estimate of the expected long-term risk-free rate.[121] This suggests that Dr. Woolridge recognizes and is reflecting potentially higher interest rates when he selects the risk-free rate from within his historical data set. However, he then directly contradicts this rationale in the following statements in his Response Testimony:

[120] *Id*. at 43.
[121] *See* Exhibit No. ___(AEB-6), Public Counsel Response to Cascade Data Request No. 8.

Q. Does your 2.50% risk-free interest rate take into consideration forecasts of higher interest rates?

A. No, it does not. As I stated before, forecasts of higher interest rates have been notoriously wrong for a decade. My 2.50% risk-free interest rate takes into account the range of interest rates in the past and effectively synchronizes the risk-free rate with the market risk premium. The risk-free rate and the market risk premium are interrelated in that the market risk premium is developed in relation to the risk-free rate. As discussed below, my market risk premium is based on the results of many studies and surveys that have been published over time. Therefore, my risk-free interest rate of 2.50% is effectively a normalized risk-free rate of interest.[122]

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In addition to being inconsistent with his prior statement on the basis for the 2.50 percent risk-free rate, it is concerning that Dr. Woolridge suggests that the MRP and the risk-free rate he has chosen are somehow synchronized. As discussed in more detail later in my Rebuttal Testimony, Dr. Woolridge selects his MRP from within a range that he develops from survey data.[123] He provides no explanation regarding how the selected "normalized" 2.50 percent risk-free rate is "synchronized" with the selected MRP. Furthermore, the estimation of the cost of equity is forward-looking; therefore, synchronizing the risk-free rate to historical survey data is not reflective of the expected return over the rate period.

Q. What Beta coefficients are relied on by Dr. Woolridge?

A. Dr. Woolridge relies on the average Value Line estimate of Beta coefficients for the companies in his Gas proxy group. However, Dr. Woolridge questions the sharp increase in the Value Line Beta coefficients that has occurred since February 2020, and suggests that this increase is due in part to Value Line's methodology for calculating Beta.[124] Specifically, Dr. Woolridge expresses concern with three aspects of Value Line's Beta

[122] Woolridge, Exh. JRW-1T at 43.
[123] *Id.* at 54-55.
[124] *Id.* at 44-47.

coefficient calculation: a) Value Line uses weekly returns which were affected to a large extent by the volatility in March; b) Value Line uses the New York Stock Exchange ("NYSE") as the estimate of the market which does not include most technology stocks and therefore understates overall market volatility; and c) Value Line adjusts raw Beta coefficients for the tendency of Beta to revert to the market mean of 1.0 over time. [125]

Q. What is your response to Dr. Woolridge's concern with Value Line Beta coefficients?

A. Dr. Woolridge has consistently relied on Value Line as the source of his Beta coefficients in his CAPM analysis for many years. Now, when those Beta coefficients have increased to reflect the higher correlation between utility stocks and the broader market since February 2020, Dr. Woolridge takes issue with the methodology used by Value Line to calculate the Beta coefficients. As discussed in Section V of my Rebuttal Testimony, utilities have traditionally been a "safe-haven" for investors, but that has not been true since the onset of the market's response to the COVID-19 pandemic. The Value Line Beta coefficients have appropriately increased to reflect the higher correlation between utility stocks and the broader market, as measured by the NYSE Composite Index. It is not reasonable for Dr. Woolridge to suddenly call into question the methodology used by Value Line to estimate Beta coefficients when he has consistently relied on Value Line as the source of his Betas for many years when the relative risk of utility stocks was much lower than it is in today's market.

[125] *Id.*

Q. Do you agree with Dr. Woolridge that Value Line's Beta coefficients for the proxy group are overstated because the NYSE is used as the estimate of the market?

A. No, I do not. Dr. Woolridge contends that the NYSE does not include technology stocks, which have historically been more volatile than the market and thus results in volatility for the market being understated. According to Dr. Woolridge, this results in higher Beta coefficients for utilities. However, Dr. Woolridge has not provided any support for his contention. To review the effect of Value Line's use of the NYSE as the market, I compared the adjusted Beta coefficients reported by Bloomberg using five years of weekly returns relative to the S&P 500 to the adjusted Beta coefficients reported by Value Line using five years of weekly returns relative to the NYSE. As noted by Dr. Woolridge, technology stocks "make up about 25% of the S&P 500".[126] Additionally, in response to Cascade Data Request No. 9, Dr. Woolridge acknowledges that a Beta coefficient estimated using the S&P 500 as the market index would reflect the effect of technology stocks.[127] Therefore, for Dr. Woolridge's contention to be accurate, the Bloomberg Beta coefficients should be well below those reported by Value Line. As shown in Figure 12, the difference between the Bloomberg and Value Line Beta coefficients is small. Thus, Value Line's use of the NYSE as the market index does not result in overstated estimates of Beta for utilities.

[126] *Id.* at 45.
[127] *See* Exhibit No. ___(AEB-6), Public Counsel Response to Cascade Data Request No. 9.

Figure 12: Bloomberg and Value Line Adjusted Beta Coefficients as of November 30, 2020 for Dr. Woolridge's Proxy Group[128]

Company	Ticker	Bloomberg	Value Line
Atmos Energy Corporation	ATO	0.79	0.80
Chesapeake Utilities Corporation	CPK	0.78	0.80
New Jersey Resources Corporation	NJR	0.87	0.95
NiSource Inc.	NI	0.85	0.85
Northwest Natural Holding Company	NWN	0.77	0.80
One Gas, Inc.	OGS	0.86	0.80
South Jersey Industries, Inc.	SJI	0.90	1.05
Southwest Gas Corporation	SWX	0.93	0.95
Spire, Inc.	SR	0.83	0.85

Q. Please respond to Dr. Woolridge's assertion that Value Line's use of the Blume adjustment results in Beta coefficients for utilities that are overstated.

A. Dr. Woolridge contends that another reason Value Line's Beta coefficient may be currently overstated is Value Line's use of the Blume adjustment to calculate an adjusted Beta.[129] As discussed by Dr. Woolridge, the Blume adjustment accounts for the tendency of Beta to trend back over time to the market Beta of 1.00.[130] According to Dr. Woolridge, the Beta coefficients for utilities may not trend back to the market Beta of 1.00 over time; therefore, the use of the Blume adjustment could overstate the Beta for utilities. First, it is important to note that Dr. Woolridge has historically relied on Value Line Betas in his CAPM without any challenge to the Blume adjustment and has only recently questioned

[128] Source: Bloomberg Professional as of November 30, 2020 and Value Line dated November 27, 2020.
[129] Woolridge, Exh. JRW-1T at 45-47.
[130] *Id.*

the use of the Blume adjustment in current market conditions, as the Beta coefficients of utilities have increased. Second, Dr. Woolridge's conclusion regarding the Blume adjustment is counter to the actual application of the Blume adjustment. Since the Blume adjustment accounts for the tendency of Beta to trend back to the market Beta of 1.00 over time, the size of the Blume adjustment should decrease as Beta approaches the market Beta of 1.00, which Dr. Woolridge confirms in his response to Cascade Date Request No. 10.[131] Therefore, if Dr. Woolridge was concerned with the Blume adjustment, it should have been when the Betas for utilities were lower and the Blume adjustment accounted for a larger portion of the adjusted Beta, not in the current market conditions.

Q. Have you developed an analysis to calculate the effect of the Blume adjustment on the Beta coefficient for the companies in Dr. Woolridge's Gas proxy group?

A. Yes. I used Bloomberg Professional to calculate raw and adjusted Betas using five years of weekly returns relative to the S&P 500 as of January 31, 2020 and November 30, 2020. I selected January 31, 2020 since this period excludes the effects of the COVID-19 pandemic. As shown in Figure 13, the average size of the Blume adjustment for the companies included in Dr. Woolridge's Gas proxy group was 0.19 as of January 31, 2020 but decreased to 0.08 as of November 30, 2020. Dr. Woolridge has incorrectly identified the Blume adjustment as a cause of the recent high Beta coefficients instead of accepting the fundamental shift in the market that has occurred due to the COVID-19 pandemic.

[131] *See* Exhibit No. ___(AEB-6), Public Counsel Response to Cascade Data Request No. 10.

Figure 13: Comparison of Bloomberg Beta Coefficients as of January 31, 2020 and November 30, 2020[132]

Company	Ticker	January 31, 2020			November 30, 2020		
		Adjusted	Raw	Blume Adjustment	Adjusted	Raw	Blume Adjustment
Atmos Energy Corporation	ATO	0.56	0.34	0.22	0.79	0.68	0.11
Chesapeake Utilities Corp.	CPK	0.62	0.44	0.19	0.78	0.67	0.11
New Jersey Resources Corp.	NJR	0.69	0.54	0.15	0.87	0.81	0.06
NiSource Inc.	NI	0.57	0.36	0.21	0.85	0.77	0.08
Northwest Natural Holding Co.	NWN	0.58	0.37	0.21	0.77	0.66	0.11
One Gas, Inc.	OGS	0.61	0.42	0.19	0.86	0.79	0.07
South Jersey Industries, Inc.	SJI	0.71	0.57	0.14	0.90	0.85	0.05
Southwest Gas Corp.	SWX	0.60	0.40	0.20	0.93	0.90	0.03
Spire, Inc.	SR	0.59	0.38	0.21	0.83	0.75	0.08
Average		**0.61**	**0.42**	**0.19**	**0.84**	**0.76**	**0.08**

Q. Why is it reasonable to also rely on Bloomberg's Beta coefficients?

A. In my view, it is reasonable to consider several measures of market conditions in estimating the ROE. Bloomberg is a respected source of financial information, and Beta coefficients from Bloomberg are widely used by investors. In addition, Bloomberg Beta coefficients can be calculated on any given day, which makes them quicker to reflect important changes in market conditions than those Betas published by Value Line. Both the Bloomberg and Value Line Beta coefficients have increased sharply since February 2020, which appropriately reflects the higher correlation between utility stocks and the broader market noted by Dr. Woolridge.[133]

[132] Source: Bloomberg Professional.
[133] Woolridge, Exh. JRW-1T at 44-45.

Q. What MRP does Dr. Woolridge use in his CAPM analysis?

A. Dr. Woolridge estimates the MRP as being in the range of 4.00 percent to 6.00 percent. From within that range, he chooses an MRP of 6.00 percent.[134]

Q. What is the basis for Dr. Woolridge's MRP of 6.00 percent?

A. Dr. Woolridge presents a significant amount of information about the MRP; however, he does not explain how he weighs this information when he selects an MRP of 6.00 percent. Dr. Woolridge summarizes historical estimates of the MRP that range from 4.40 percent to 6.43 percent, but he is somewhat dismissive of historical data because ex-post returns are not the same as ex-ante expectations, MRPs can change over time, and market conditions can change such that historical returns are poor estimates of future returns. [135]

Dr. Woolridge also presents the results of several surveys and ex-ante models that have been published since January 2010. The ex-ante estimates of the MRP range from 5.24 percent to 6.75 percent, while the survey estimates of the MRP range from 3.36 percent to 5.70 percent.[136] In particular, Dr. Woolridge highlights a March 2020 survey conducted by Professor Pablo Fernandez which found that the mean MRP for the U.S. was 5.6 percent,[137] and the MRP calculated by Professor Damodaran, which was 5.35 percent in November 2020 and has primarily been in the range of 5.0 percent to 6.0 percent since 2010.[138] Finally, Dr. Woolridge cites Duff & Phelps, which has recommended MRPs in the range of 5.0 percent to 6.0 percent over the past decade and recently raised its MRP for the U.S. to 6.0 percent.[139]

[134] *Id.* at 54-55.
[135] *Id.* at 52.
[136] *Id.*
[137] *Id.*
[138] *Id.* at 52-53.
[139] *Id.* at 53-54.

Q. Why do you disagree with Dr. Woolridge's MRP estimate of 6.00 percent?

A. Given the current low yields on Treasury bonds, and the inverse relationship between interest rates and the MRP that is shown in my Bond Yield Plus Risk Premium analysis, Dr. Woolridge's MRP estimate of 6.00 percent is understated. First, from a practical standpoint, the results of his CAPM analysis are significantly below any return that has been authorized by any U.S. regulatory jurisdiction in at least 35 years. The primary reason for the unreasonably low results from Dr. Woolridge's CAPM is due to his selection of the MRP. Based on historical data from Duff & Phelps, the market risk premium from 1926-2019 is 7.15 percent.[140] The historical income-only return on government bonds used to calculate the historical MRP over the same period has been approximately 4.94 percent, while the 30-day average risk-free rate on long-term government bonds as of November 30, 2020 is 1.61 percent. Because interest rates on long-term government bonds are well below the historical average of 4.94 percent, the inverse relationship between interest rates and the MRP implies that the MRP should be well above the long-term historical average of 7.15 percent. The MRP used by Dr. Woolridge of 6.00 percent suggests that the expected MRP is currently 115 basis points lower than the historical average MRP of 7.15 percent.

Q. What are your concerns with the surveys that Dr. Woolridge has relied upon to derive his MRP range of 4.00 percent to 6.00 percent?

A. Despite Dr. Woolridge's concern with the ability of economists to accurately forecast

[140] The market risk premium from 1926-2019 is calculated as the average return on large company stocks from 1926-2019 minus the average income only return on long-term government bonds from 1926-2019 (i.e., 12.09 percent – 4.94 percent = 7.15 percent). Source: Duff & Phelps, *Valuation Handbook: Guide to Cost of Capital, 2020*, CRSP Deciles Size Study – Supplementary Data Exhibits.

interest rates, which are more directly observable data, he relies on investor surveys from Pablo Fernandez and research from Dr. Damodaran to develop his estimate of the MRP. It is unclear why Dr. Woolridge believes the use of surveys is appropriate for purposes of deriving the MRP in his CAPM analysis, but not appropriate in an overall assessment of economic conditions and their effect on the models used to estimate the cost of equity.

Q. What MRP is suggested by the survey results summarized by Dr. Woolridge?

A. The March 2020 survey by Pablo Fernandez reports a mean MRP for the U.S. of 5.6 percent. However, it is important to note that Dr. Fernandez collected data from 2,156 respondent regarding the MRP for the U.S., which resulted in a wide range of estimated MRPs from 2.0 percent to 13.4 percent. Given the wide dispersion of responses, investors' required returns can vary substantially. Thus, taking the average of a sample of investors' required returns may not be a reasonable assumption when calculating the required return of the market. In fact, Dr. Fernandez cautioned against this approach:

> We can find out the REP [Required Equity Premium] and the EEP [Expected Equity Premium] of an investor by asking him, although for many investors the REP is not an explicit parameter but, rather, it is implicit in the price they are prepared to pay for the shares. However, it is not possible to determine the REP for the market as a whole, because it does not exist: even if we knew the REPs of all the investors in the market, it would be meaningless to talk of a REP for the market as a whole. There is a distribution of REPs and we can only say that some percentage of investors have REPs contained in a range. The average of that distribution cannot be interpreted as the REP of the market nor as the REP of a representative investor.[141]

Q. Do you have any concerns with the implied MRPs that Dr. Woolridge has cited to support his 6.00 percent MRP?

[141] Pablo Fernandez, Eduardo de Appellaniz, and Javier F. Acín, *Market Risk Premium and Risk-Free Rate used for 81 countries in 2020: a survey*, IESE Business School at 10 (March 2020).

A. Yes. As discussed above, Dr. Woolridge cites to implied MRPs calculated by Professor Damodaran and Duff & Phelps as support for the 6.00 percent MRP. However, as shown in Figure 14, the implied market return for the sources cited by Dr. Woolridge range from 6.23 percent to 8.50 percent. These returns, while not only unreasonably low, are inconsistent with the results produced by Dr. Woolridge's DCF analysis. As Dr. Wooldridge notes, the Constant Growth DCF result for his Gas proxy group was 9.00 percent. Since Dr. Woolridge has acknowledged that his Gas proxy group is less risky than the market by relying on a Beta coefficient of 0.80 in his CAPM analysis, it would stand to reason that the market returns that Dr. Woolridge has relied on to select his MRP would be higher than his Constant Growth DCF results for a group of natural gas distribution companies. However, as shown in Figure 14, the market returns cited by Dr. Woolridge range from 277 basis points below his Constant Growth DCF result to 50 basis points below his Constant Growth DCF result. This highlights an important inconsistency that the Commission should consider between the inputs used to calculate Dr. Woolridge's CAPM analysis and his Constant Growth DCF analysis.

Figure 14: Implied Market Returns cited by Dr. Woolridge

Source	Implied MRP	Risk-Free Rate	Implied Market Return
Professor Damodaran[142]	5.35%	0.88%	6.23%
Duff & Phelps	6.00%	2.50%	8.50%

Q. What is Dr. Woolridge's concern with the MRP you have used in your CAPM analysis?

A. Dr. Woolridge expresses concern that my forward-looking MRP is over-stated because it

[142] Professor Aswath Damodaran's implied MRP and risk-free rate for November 2020 were included in Figure 14.

is developed using the expected return for the S&P 500 based on forecasted EPS growth rates. In particular, Dr. Woolridge testifies that "a long-term EPS growth rate of 11.33 percent is inconsistent with both historic and projected economic and earnings growth in the U.S."[143]

Q. Does Dr. Woolridge agree that the MRP can be estimated based on expected returns for the S&P 500?

A. Yes. According to Dr. Woolridge: "The market risk premium is equal to the expected return on the stock market (e.g., the expected return on the S&P 500, $E(R_m)$ minus the risk-free rate of interest (R_f)."[144] This is consistent with the approach I have used to estimate the forward-looking MRP in my CAPM analysis.

Q. Do you agree with Dr. Woolridge that the forward-looking MRP in your CAPM analysis is "excessive" because it relies on EPS growth rates from Wall Street analysts for the S&P 500? [145]

A. No, I do not. Dr. Woolridge supports this assertion by arguing that the EPS growth rate for the S&P 500 of 11.33 percent is significantly higher than long-term EPS growth for the S&P 500 and more recent trends in GDP growth, as well as projections of GDP growth.[146] However, the forecasted growth rate used in my CAPM analysis is a market-based growth rate provided by S&P for the companies in the S&P 500 Index. In other words, 11.33 percent is not my estimate of the expected growth rate; it is based on forecasted earnings growth rates for the companies in the S&P 500 as reported by S&P.

[143] Woolridge, Exh. JRW-1T at 70.
[144] *Id*. at 47.
[145] *Id*. at 68-69.
[146] *Id*. at 71-74.

Dr. Woolridge supports the use of the Constant Growth DCF model to estimate the cost of equity for Cascade and relies primarily on projected EPS growth rates. However, he dismisses the expected EPS growth rate for the S&P 500 as overstated, even though the model upon which he relies assumes that investors set stock prices based on expectations for future growth in dividends and share price. As discussed previously in my Rebuttal Testimony, recent academic research has found that analyst bias has been reduced or eliminated, if it ever existed, after the financial market reforms of the early 2000s.

Q. Is there support for the use of a forward-looking MRP in the CAPM analysis?

A. Yes. In addition to the Maine Public Utilities Commission which I reference in my Direct Testimony,[147] FERC and the Minnesota Public Utilities Commission ("Minnesota PUC") have also relied on the Constant Growth DCF model to estimate the market return. In Opinion No. 569-A, FERC continued to support the use of the Constant Growth DCF model to calculate the market return for the CAPM noting:

> [w]e also continue to find that the CAPM should use a one-step DCF for its risk premium. This is because the rationale for using a two-step DCF methodology for a specific group of utilities does not apply when conducting a DCF study of the dividend-paying companies in the S&P 500, as the Commission found in Opinion Nos. 531-B and 569.172 A long-term component is unnecessary because of the regular updates to the S&P 500, which allows it to continue to grow at a short-term growth rate and because S&P 500 companies include stocks that are both new and mature, the latter of which have a moderating effect on the short-term growth rates.[148]

Additionally, in Docket No. G-004/GR-19-511 for Great Plains Natural Gas Company, the Department of Commerce in Minnesota ("Minnesota DOC") relied on a Constant Growth DCF analysis for the S&P 500 to estimate the market return for the CAPM.

[147] Bulkley, Exh. AEB-1T at 53-54.
[148] FERC Order on Rehearing, Opinion No. 569-A, 171 FERC ¶ 61,154, 62,195 at para. 85 (May 21, 2020).

Specifically, the Minnesota DOC relied on the dividend yield reported by S&P for the S&P 500 and the three to five-year earnings growth estimate for the State Street Global Advisors S&P 500 exchange traded fund ("ETF") which resulted in a market return of 13.44 percent.[149] The Minnesota DOC has historically relied on the Constant Growth DCF model to estimate the market return for the CAPM, which has in turn been considered by the Minnesota PUC in prior proceedings.[150]

Q. How does your forward-looking market return estimate compare to recent historical returns for Large Company Stocks?

A. As shown in Figure 15, my estimate of the market return of 13.45 percent is lower than the actual average market return for Large Company Stocks from 2009 to 2019 (i.e., the period for the Great Recession of 2008/09) of 15.27 percent as reported by Duff & Phelps. Furthermore, the market return estimates of 8.50 percent from Duff & Phelps and 6.23 percent from Professor Damodaran considered by Dr. Woolridge are well below the average return achieved by Large Company Stocks from 2009 to 2019.

Additionally, as shown in Exhibit No.___(AEB-5), Schedule 10, I calculated the compound annual EPS growth rate and annual average EPS growth rate for the S&P 500 from 2009 through 2019 based on the data provided by Dr. Woolridge in Exhibit No.__(JRW-11). The compound annual EPS growth rate was 10.11 percent while the

[149] *In the Matter of the Petition by Great Plains Natural Gas Co., a Division of Montana-Dakota Utilities Co., for Authority to Increase Natural Gas Rates in Minnesota*, Minnesota Public Utilities Commission, Docket No. G-004/GR-19-511, Surrebuttal Testimony of Craig M. Addonizio at Ex. DER-9, CMA-S-8 (March 3, 2020).

[150] *See In the Matter of the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Service in Minnesota*, Minnesota Public Utilities Commission, Docket No. E017/GR-15-1033, Findings of Fact, Conclusions and Order at 54-56 (May 1, 2017); *In the Matter of the Application of Minnesota Power for Authority to Increase Rates for Electric Service in Minnesota*, Minnesota Public Utilities Commission, Docket No. E015/GR-16-664, Findings of Fact, Conclusions and Order at 60-61 (March 12, 2018).

average annual EPS growth rate was 10.72 percent both of which were only slightly lower than the projected earnings growth rate for the S&P 500 of 11.33 percent that I rely on to calculate my market return.

Figure 15: Duff and Phelps – Total Return for Large Company Stocks – 2009-2019[151]

Year	Large Company Stock Total Return
2009	26.46%
2010	15.06%
2011	2.11%
2012	16.00%
2013	32.39%
2014	13.69%
2015	1.38%
2016	11.96%
2017	21.83%
2018	-4.38%
2019	31.49%
Average	**15.27%**

Q. What is your conclusion regarding the appropriate MRP in the context of current market data?

A. It is reasonable to expect that the uncertainty in current market conditions would result in a MRP that is higher than the historical average MRP. Dr. Woolridge's estimated MRP of 6.00 percent is substantially lower than: (1) the historical MRP using Large Company Stocks (7.15 percent); and (2) the forward-looking MRP in my CAPM analysis, which was derived using forecasted total returns for the S&P 500 less the risk-free rate (between 10.25 percent and 12.14 percent). Dr. Woolridge's MRP of 6.00 percent, when added to the 30-day average yield on the 30-year Treasury as of November 30, 2020 of 1.61 percent,

[151] Source: Duff and Phelps, Cost of Capital Navigator.

suggests that market participants are expecting a total return for equities of 7.61 percent. By contrast, the long-term average total return for large company stocks since 1926, as reported by Duff & Phelps, has been 12.09 percent, or approximately 448 basis points higher than Dr. Woolridge's MRP estimate assumes. For these reasons, I continue to support the method I used to estimate the MRP.

Q. Please summarize Dr. Woolridge's concerns with the Empirical CAPM analysis.

A. Dr. Woolridge claims that the ECAPM has not been empirically or theoretically validated. In addition, Dr. Woolridge also states that he is not aware of any tests of the ECAPM that use adjusted Betas such as those used in my analysis, and that adjusting Betas addresses the empirical issues with the CAPM.[152]

Q. Do you agree with Dr. Woolridge that it is not appropriate to use adjusted Betas in the ECAPM?

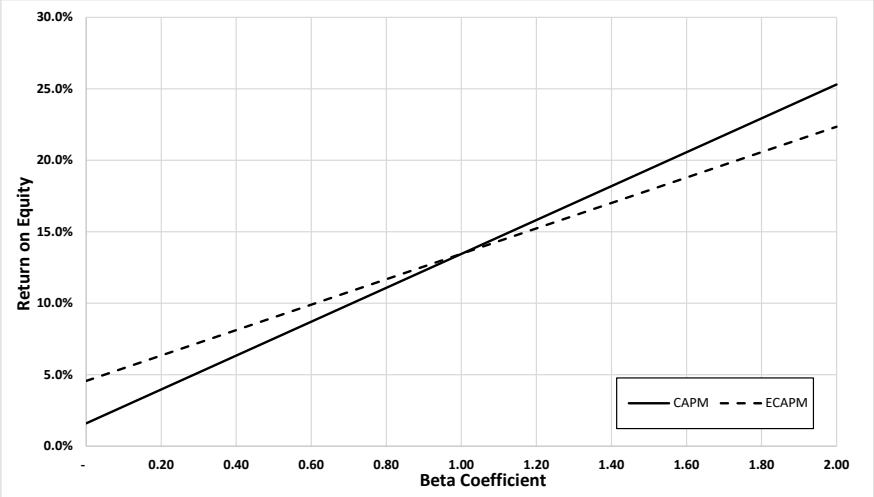
A. No, I do not. The purpose of adjusting Beta is to account for the tendency of Beta to trend back over time to the market Beta of 1.00. As noted by Dr. Woolridge, the Betas published by Value Line and Bloomberg include this adjustment, which was first proposed by Marshall E. Blume in 1975.[153] The use of adjusted Betas in the CAPM is important because if Beta trends towards 1.00, as Dr. 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 Cascade over the near-term or the period when Cascade's rates will be in effect.

[152] Woolridge, Exh. JRW-1T at 66-67.
[153] Blume, Marshall E., *Betas and Their Regression Tendencies*, The Journal of Finance, Vol. 30, No. 3, at 785–795 (1975).

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, not for the tendency of Beta to trend back to 1.00. 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 return for stocks with betas less than 1.00 and overstate the returns for stocks with betas greater than 1.00. In Figure 16, I have calculated the risk-return relationship of the CAPM and ECAPM analyses included in my Direct Testimony. In the example, I rely on the near-term projection of the 30-year Treasury Bond yield of 1.60 percent as the risk-free rate and the market return of 13.35 percent as shown in Exhibit No.___(AEB-2), Schedule 4. I then estimate the returns using different Betas. As shown in Figure 16, the slope of the ECAPM is flatter than the CAPM, indicating that the CAPM is likely understating the return for companies with Betas less than 1.00 and overstating the return for companies with Betas greater than 1.00.

In other words, the adjusted Beta provides a better approximation of the expected Beta over the near-term, while the ECAPM is adjusting for the fact that the actual risk-return relationship observed is flatter than what is predicted by the CAPM. Therefore, contrary to Dr. Woolridge's assertion, the purpose of each adjustment is different and applying both adjustments in the ECAPM is not duplicative.

Figure 16: CAPM and ECAPM Return Estimates



Q. Are you aware of any academic studies that have used adjusted Betas to estimate the ECAPM?

A. Yes. Robert Litzenberger, Krishna Ramaswamy, and Howard Sosin published an article titled "On the CAPM Approach to the Estimation of a Public Utility's Cost of Equity Capital," which studied the ability of the CAPM to estimate the returns for utilities.[154] The authors found that the CAPM tends to understate the return for stocks such as utilities, which have a Beta less than 1.0. To develop the analysis, Litzenberger, et al. utilized both adjusted and raw Betas. In both cases, the CAPM understated the return for utilities with Betas less than 1.0. Therefore, contrary to Dr. Woolridge's assertion, this 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.

[154] 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, at 369–383 (1980).

Similarly, Stephane Chretien and Frank Coggins published a study in 2011 titled "Cost of Equity for Energy Utilities: Beyond the CAPM", where they studied the CAPM and its ability to estimate the risk premium for the utility industry in particular subgroups of utilities. The article considered the CAPM, the Fama-French three-factor model and a model similar to the ECAPM used in my Direct Testimony. In the article, the ECAPM relied on adjusted betas, which were adjusted using the same approach applied by Value Line. As Chretien and Coggins show, the ECAPM significantly outperformed the traditional CAPM at predicting the observed risk premium for the various utility subgroups.[155]

Finally, one of Dr. Woolridge's concerns with the ECAPM analysis is addressed directly by Dr. Roger Morin in his 2006 text New Regulatory Finance as follows:

> Some have argued that the ECAPM is inconsistent with the use of adjusted betas, such as those supplied by Value Line and Bloomberg. This is because the reason for using the CAPM is to allow for the tendency of betas to regress toward the mean value of 1.00 over time, and since Value Line betas are already adjusted for such trend, an ECAPM analysis results in double-counting. This argument is erroneous. Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. The ECAPM and the use of adjusted betas comprised two separate features of asset pricing. Even if a company's beta is estimated accurately, the CAPM still understates the return for low-beta stocks. Even if the ECAPM is used, the return for low-beta securities is understated if the betas are understated. Referring back to Figure 6-1, the ECAPM (vertical axis) is a return adjustment and not a beta (horizontal axis) adjustment. Both adjustments are necessary.[156]

[155] Chrétien, Stéphane, and Frank Coggins, *Cost of Equity for Energy Utilities: Beyond the CAPM*, Energy Studies Review, Vol. 18, No. 2 (2011), doi:10.15173/esr.v18i2.531.
[156] Roger Morin, *New Regulatory Finance*, Public Utilities Report, Inc. at 191 (2006).

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

A. Yes, I am. Both the New York Public Service Commission ("NYPSC") and the Montana Public Service Commission ("Montana PSC") have accepted the ECAPM analysis with the use of adjusted Beta coefficients in establishing the authorized ROE for regulated utilities. In New York, the NYPSC gives equal weight to the CAPM and ECAPM (which it refers to as the "Zero Beta" CAPM) results, while in Montana, the Montana PSC has expressed preference for the ECAPM analysis.[157]

Further, with respect to the use of adjusted betas in the ECAPM, the Montana PSC noted:

> Hill asserts that the use of the ECAPM with the use of adjusted betas is inappropriate as both serve to lower the slope of the Capital Market Line. Test. Hill 65. However, the Commission is persuaded by Morin's representation that "[t]he ECAPM and the use of adjusted betas comprise two separate features of asset pricing. Even if a company's beta is estimated accurately, the CAPM still understates the return for low-beta stocks." See Morin, Roger A. "Chapter 6: Alternative Asset Pricing Models." New Regulatory Finance Vienna: Public Utilities Reports, Inc. 2006.191. The Commission agrees with Scheig that the issue should be remedied by adopting the ECAPM, including his x factor of 0.25, which is intended to approximate the α effect identified by the academic literature reviewed in Morin's textbook.[158]

D. Bond Yield Plus Risk Premium Method

Q. Please summarize Dr. Woolridge's concerns with your Risk Premium analysis.

A. Dr. Woolridge has expressed several concerns with my Bond Yield Plus Risk Premium analysis, including: (1) that I have used historical authorized ROEs and Treasury yields and applied the resulting risk premium to projected Treasury yields; (2) that the analysis is

[157] *In the Matter of the Joint Application for Approval to Change and Establish Natural Gas Delivery Rates for Energy West Montana, Inc. and Cut Bank Gas Company*, Docket No. D2017.9.80, Order No. 7575c at 46 (Sep. 26, 2018).
[158] *Id.* at 42.

a gauge of regulatory commission behavior, not investor behavior; and (3) that natural gas utility stocks are trading above book value; therefore, authorized ROEs are greater than the returns required by investors.[159]

Q. Is Dr. Woolridge's concern about the use of projected Treasury yields valid?

A. No. As shown in Exhibit No.___(AEB-2), Schedule 5 to my Direct Testimony, my Risk Premium analysis determines the appropriate risk premium based on the relationship between historical authorized ROEs for natural gas utilities and bond yields. I disagree with Dr. Woolridge that it is incorrect to apply the historical risk premium from this analysis to projected Treasury yields in order to estimate the ROE at specified interest rates. As discussed in my response to Mr. Parcell, the Risk Premium analysis in my Direct Testimony is supported by a regression equation that has an R^2 of 0.84, meaning that the regression can be used to predict the equity risk premium at different levels of interest rates. In summary, my Bond Yield Plus Risk Premium analysis is designed to use the historical relationship between bond yields and the equity risk premium to predict how investors will react to changes in interest rates.

Q. What is your response to Dr. Woolridge's concern that your Risk Premium analysis is a gauge of regulatory commission behavior rather than investor behavior?

A. While my Risk Premium analysis is based on authorized ROEs and the corresponding Treasury yields at the time the regulatory decisions were issued, I believe that investors are informed by allowed ROEs from hundreds of rate case decisions to frame their return expectations. As Dr. Woolridge observes, one of the fundamental principles in setting a just and reasonable return is that the return must be comparable to returns available to

[159] Woolridge, Exh. JRW-1T at 82.

investors in companies with similar risk. In that regard, the authorized returns for other natural gas utilities are a relevant consideration for investors. My Risk Premium analysis simply shows what those returns are in relation to the risk-free rate, so that it is possible to use historical returns to estimate future returns at various Treasury bond yields.

Q. Do you agree with Dr. Woolridge that authorized ROEs are above investors' required returns because the market-to-book ratio for natural gas utilities is greater than 1.0?

A. No, I do not. According to Dr. Woolridge, a firm that has a return on equity that exceeds the cost of equity will have a market-to-book ratio greater than 1.0.[160] This relationship implies that if the return on equity increases (decreases) then the market-to-book ratio should also increase (decrease). Dr. Woolridge supports the positive correlation between the ROE and the market-to-book ratio by conducting a regression analysis, the results of which are presented in Exhibit No.__(JRW-5). To examine this financial relationship since the Great Recession of 2008/2009, I reviewed the average earned return on equity and market-to-book ratio data for natural gas utilities presented by Dr. Woolridge in a chart on page 3 of Exhibit No.__(JRW-6). Based on the data presented in the chart, it is clear that the average earned return on equity for natural gas utilities has declined slightly from 2010 to 2016 while remaining relatively constant between 2016 and 2019. However, over the same time-period, the market-to-book ratio has continued to increase, reaching its highest point since 2000 in 2019. It appears that Dr. Woolridge's assumption about the relationship between equity returns and the market-to-book ratio is not supported by actual market data. Therefore, it is incorrect to assume that the authorized ROEs for natural gas utilities that I relied on to calculate my Bond Yield Risk Premium analysis are above investors' return

[160] *Id.* at 24-25.

requirements.

Q. Have other regulators considered the results of the Bond Yield Plus Risk Premium analysis when determining the authorized ROE?

A. Yes. On May 21, 2020, FERC issued Opinion No. 569-A in which FERC determined that it would place equal weighting on the results of the DCF, CAPM and Risk Premium methodologies for electric transmission companies.[161] In addition, state regulators have also considered the results of a Risk Premium analysis. For example, in recent orders for Minnesota Power (Docket No. E-015/GR-16-664), Otter Tail Power Company (Docket No. E-017/GR-15-1033) and Minnesota Energy Resources Corporation (Docket No. G011/GR-17-563), the Minnesota Public Utilities Commission ("MPUC") relied on the results of the Risk Premium analysis in addition to the CAPM to check the reasonableness of the DCF model results.[162]

Q. What is your conclusion regarding the Risk Premium analysis?

A. I continue to support the use of the Risk Premium analysis to corroborate the reasonableness of my DCF and CAPM results.

E. Expected Earnings Analysis

Q. Please summarize Dr. Woolridge's position regarding the Expected Earnings analysis presented in your Direct Testimony.

[161] FERC Order on Rehearing, Opinion No. 569-A, 171 FERC ¶ 61,154, 62,177 at para. 2 (May 21, 2020).

[162] *In the Matter of the Application of Minnesota Power for Authority to Increase Rates for Electric Service in Minnesota*, Minnesota Public Utilities Commission, Docket No. E015/GR-16-664, Findings of Fact, Conclusions and Order at 61 (March 12, 2018); *See In the Matter of the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Service in Minnesota*, Minnesota Public Utilities Commission, Docket No. E017/GR-15-1033, Findings of Fact, Conclusions and Order at 54 (May 1, 2017); *In the Matter of the Application of Minnesota Energy Resources Corporation for Authority to Increase Rates for Natural Gas Service in Minnesota*, Minnesota Public Utilities Commission, Docket No. G011/GR-17-563, Findings of Fact, Conclusions and Order at 27 (Dec. 26, 2018).

A. According to Dr. Woolridge, there are a number of significant issues with the Expected Earnings approach, including 1) it does not measure the market cost of equity capital; 2) changes in ROE ratios do not track capital market conditions; 3) the approach is circular; 4) the proxy companies' projected ROEs reflect earnings on business activities that are not representative of Cascade's rate-regulated utility operations; and 5) the Value Line data used to develop the Expected Earnings analysis is biased upward and reflects the views of only one analyst.[163]

Q. Do you agree with Dr. Woolridge's position on this issue?

A. No, I do not. The *Hope* and *Bluefield* standards establish that a utility should be granted the opportunity to earn a return that is commensurate with the return on other investments of similar risk. Therefore, it is reasonable to consider the returns that investors expect to earn on the common equity of the natural gas distribution companies in the proxy group as a benchmark for a just and reasonable return because that is the expected earned return on equity that an investor will consider in determining whether to purchase shares in the company or to seek alternative investments with a better risk/reward profile. As Dr. Morin notes:

> The Comparable Earnings standard has a long and rich history in regulatory proceedings, and finds its origins in the fair return doctrine enunciated by the U.S. Supreme Court in the landmark Hope case. The governing principle for setting a fair return decreed in Hope is that the allowable return on equity should be commensurate with returns on investments in other firms having comparable risks, and that the allowed return should be sufficient to assure confidence in the financial integrity of the firm, in order to maintain creditworthiness and ability to attract capital on reasonable terms. Two distinct standards emerge from this basic premise: a standard of Capital Attraction and a standard of Comparable Earnings. The Capital Attraction standard focuses on investors' return requirements, and is applied through market value methods described in prior chapters, such as DCF, CAPM, or

[163] Woolridge, Exh. JRW-1T at 83-86.

> Risk Premium. The Comparable Earnings standard uses the return earned on book equity investment by enterprises of comparable risks as the measure of fair return.[164]

What Dr. Woolridge fails to note in his critique of the Expected Earnings analysis is that the ROE that is established in this case will be applied to the net book value of the Company's rate base (subject to certain regulatory adjustments). In this regard, the Expected Earnings approach provides valuable insight into the opportunity cost of investing in Cascade's natural gas operations in Washington. If investors devote capital to the Company (which would offer a return of only 9.00 percent on book value if Dr. Woolridge's recommendation were adopted), they forgo the opportunity for that same capital to earn a potentially greater return on book value through investment in the proxy companies. As a result, the Expected Earnings approach is informative because it provides a measure of the return on book value that is available to investors through other investments with comparable risk to Cascade.

Q. Please comment on Dr. Woolridge's references to Dr. Morin's statements in *New Regulatory Finance* as it pertains to the Expected Earnings analysis.

A. Dr. Woolridge references Dr. Morin, who does discuss some of the weaknesses of the Expected Earnings analysis. However, in *New Regulatory Finance*, Dr. Morin discusses the strengths and weaknesses of each of the methodologies used to compute the cost of equity including the DCF and CAPM analyses. Additionally, Dr. Woolridge fails to mention Dr. Morin's conclusion regarding the Expected Earnings analysis. Specifically, Dr. Morin stated:

> The Comparable Earnings approach is far more meaningful in the regulatory arena than in the sphere of competitive firms. Unlike industrial

[164] Roger Morin, *New Regulatory Finance*, Public Utilities Reports, Inc. at 381 (2006).

> companies the earnings requirement of utilities is determined by applying a percentage rate of return to the book value of a utility's investment, and not on the market value of that investment. Therefore, it stands to reason that a different percentage rate of return than the market cost of capital be applied when the investment base is stated in book value terms rather than market value terms. In a competitive market, investment decisions are taken on the basis of market prices, market values, and market cost of capital. **If regulation's role was to duplicate the competitive result perfectly, then the market cost of capital would be applied to the current market value of rate base assets employed by utilities to provide service. But because the investment base for ratemaking purposes is expressed in book value terms, a rate of return on book value, as is the case with Comparable Earnings, is highly meaningful.**[165]

Therefore, contrary to the position of Dr. Woolridge, Dr. Morin believes that the Expected Earnings approach is highly meaningful in a regulatory setting similar to the one being used to set the cost of equity for Cascade.

F. Small Size Risk

Q. Please summarize Dr. Woolridge's position on the consideration of small size risk when determining the ROE for Cascade.

A. Dr. Woolridge contends that any risk related to small size as well as the other factors that I considered in my Direct Testimony such as customer concentration, capital expenditures and regulatory risk are considered in the credit rating process employed by the ratings agencies.[166] Therefore, Dr. Woolridge believes that a comparison of the Company's credit rating to the proxy group average credit rating will provide an adequate assessment of risk. Since Cascade has an S&P credit rating of BBB+, which is at the low-end of the range of his Gas Proxy Group, Dr. Woolridge concludes that Cascade does have a risk level that is at the high-end of his Gas Proxy Group. Consequently, Dr. Woolridge contends no

[165] Roger Morin, *New Regulatory Finance*, Public Utilities Reports, Inc. at 394-95 (emphasis added) (2006).
[166] Woolridge, Exh. JRW-1T at 86.

additional consideration of small size risk is needed. Furthermore, Dr. Woolridge asserts that there is no evidence to conclude that a size premium exists for regulated public utilities.[167] To support his conclusion, Dr. Woolridge cites to several studies including a 1993 journal article by Annie Wong titled "Utility Stocks and the Size Effect: An Empirical Analysis", a 1983 journal article by Richard Roll titled "On Computing Mean Returns and the Small Firm Premium," and research conducted by Professor Damodaran.

Q. Does Dr. Woolridge's credit rating comparison appropriately consider the business and financial risk of Cascade?

A. No, it does not. While Dr. Woolridge concludes that Cascade's business risk is at the high-end of his Gas proxy group, his comparison still understates the business risk of Cascade relative to the proxy group for two reasons. First, according to the stand-alone principle of ratemaking, regulated rates should be based on the risks and benefits of the regulated utility, not its investors, parent or affiliates.[168] In the current proceeding, we are estimating the cost of equity for Cascade's natural gas operations in Washington. However, S&P's credit rating for Cascade also considers that the Company is a subsidiary of MDU Resources. S&P notes:

> Our assessment of Cascade as a core subsidiary of MDUR underpins the rating. Because Cascade is a core subsidiary of MDUR, our issuer credit rating (ICR) on Cascade is in line with our group credit profile for MDUR.[169]

Therefore, S&P's credit rating for Cascade would not be entirely representative of the business and financial risks faced by Cascade's natural gas operations in Washington.

[167] *Id.* at 90.
[168] Roger Morin, *New Regulatory Finance*, Public Utilities Reports, Inc. at 215-16 (2006).
[169] S&P Global Ratings, Ratings Direct, Cascade Natural Gas Corp. at 2 (Jan. 23, 2020).

Second, as shown in Exhibit No.__(JRW-3), three out of the nine companies in Dr. Woolridge's proxy group do not have a credit rating from S&P. The proxy group average calculated by Dr. Woolridge does not reflect the entire proxy group and is therefore incomplete. As a result, it is not reasonable to conclude that Dr. Woolridge's comparison of Cascade's S&P credit rating to the proxy group accurately assesses the business and financial risks of the Company.

Q. Please summarize the academic research that Dr. Woolridge consulted regarding the size premium for regulated utilities.

A. The Wong study cited by Dr. Woolridge analyzed the effect of firm size on monthly, weekly, and daily estimates of the Beta coefficients for a sample of utility companies and a sample of industrial companies over four sub-periods beginning in 1968 and ending in 1987.[170] Wong concludes that utility Beta coefficients do not decrease as firm size increases. Wong attributes this finding to the possibility that utility regulation reduces risk regardless of firm size.[171] The second study cited by Dr. Woolridge was conducted by Richard Roll and concluded that the size premium decreases if the buy-and-hold method (i.e., individual stock returns are compounded over a period of time before being averaged together to estimate a portfolio's return) which better reflects investment experience is used to estimate returns as opposed to the arithmetic method (i.e., daily returns of individual stocks are averaged first before being compounded over a longer period to determine the return).[172] Finally, Dr. Woolridge references Professor Damodaran, who has concluded

[170] Annie Wong, *Utility Stocks and the Size Effect: An Empirical Analysis*, Journal of the Midwest Finance Association at 95-101 (1993).
[171] *Id*.
[172] Richard Roll, *On Computing Mean Returns and the Small Firm Premium*, Journal of Financial Economics at 371-86 (1983).

that a small size premium may not be appropriate since recent evidence suggests that the size premium: 1) has decreased over time; 2) is explained by the January effect; 3) disappears when firms with market capitalization less than $5 million are removed from the data set; and 4) comes and goes over time.[173]

Q. How do you respond to the studies referenced by Dr. Woolridge?

A. First, regarding the Wong study, there are multiple reasons why a smaller company may not always have the highest Beta coefficient. First, smaller companies are traded more infrequently than larger companies. A lower trading frequency can bias the estimate of the Beta coefficient. Thomas Zepp, in his article "Utility stocks and the size effect – revisited," specifically identified this as an issue in Wong's analysis and noted the following:

> Roll (1980) concluded trading infrequency seems to be a powerful cause of bias in beta risk estimates when time intervals of a month or less are used to estimate betas for small stocks. When a small stock is thinly traded, its stock price does not reflect the movement of the market, which drives down the apparent covariance with the market and creates an artificially low beta estimate.[174]

In fact, Zepp showed that Beta coefficients for a sample of water companies were greater when annual data (i.e., the approach employed by Ibbotson Associates) was used to estimate the Beta coefficient than the Beta coefficients reported by Value Line, which uses weekly data.[175]

Second, the Roll study provided an alternative calculation (i.e., the buy-and-hold method) for computing the returns used to estimate the small size premium. However, while the buy-and-hold method decreased the small size premium, the small size premium

[173] Woolridge, Exh. JRW-1T at 88-89.
[174] Thomas M. Zepp, *Utility Stocks and the Size Effect—Revisited*, The Quarterly Review of Economics and Finance, Vol. 43, No. 3 at 578–582 (2003), doi:10.1016/s1062-9769(02)00172-2.
[175] *Id*.

was still positive and statistically significant. Therefore, this study does not support Dr. Woolridge's conclusion that a small size premium should not be considered for Cascade.

Finally, Dr. Woolridge references Professor Damodaran, who believes that the small size premium may not be appropriate based on recent market evidence. However, in a recent report titled "Equity Risk Premiums (ERP): Determinants, Estimation and Implication – The 2020 Edition Updated: March 2020", Professor Damodaran estimated a small cap premium of 3.45 percent using market data from 1926-2019.[176] Additionally, Professor Damodaran noted:

> The small cap premium is firmly entrenched in practice, with analysts generally adding on 3% to 5% to the conventional cost of equity for small companies, with the definition of small shifting from analyst to analyst.[177]

Therefore, while Professor Damodaran may not agree with the application of a small size premium, historical data supports the notion of a risk adder for small size. In addition, as Professor Damodaran acknowledged, the small size premium is readily accepted among analysts and investors. As a result, it is important to consider the small size of Cascade's natural gas operations in Washington when determining the ROE for the Company.

Q. Do you agree with Dr. Woolridge that you have not provided any support for the consideration of a small size premium?

A. No, I do not. In addition to the Duff & Phelp's 2019 Valuation Handbook, which I used to develop my size premium analysis shown in Exhibit No.___(AEB-2), Schedule 7 and the Zepp study discussed above, I also reviewed an article titled "Cost of Equity for Energy

[176] Aswath Damodaran, *Equity Risk Premiums: Determinants, Estimation and Implications - The 2020 Edition*, NYU Stern School of Business at 50 (March 5, 2020) available at SSRN: https://ssrn.com/abstract=3550293 or http://dx.doi.org/10.2139/ssrn.3550293.
[177] *Id.* at 52.

Utilities: Beyond the CAPM" by Stephanie Chretien and Frank Coggins, which I discussed briefly in Section VII.H above.[178] The article studied the CAPM and its ability to estimate the risk premium for the utility industry in particular subgroups of utilities. One of the subgroups was a group of natural gas distribution companies that contained many of the same natural gas distribution companies included in Dr. Woolridge's and my proxy group.[179] The article considered the CAPM, the Fama-French three-factor model and a model similar to the Empirical CAPM. In the article, the Fama-French three-factor model explicitly included an adjustment to the CAPM for risk associated with size. As Chretien and Coggins show, the Beta coefficient on the size variable for the U.S. natural gas utility group was positive and statistically significant, indicating that small size risk was relevant for regulated natural gas utilities.[180] Thus, counter to the Dr. Woolridge's claims, I have provided support for the applicability of the small size premium for regulated natural gas utilities.

Q. What is your conclusion regarding the small size premium?

A. Evaluations of historical return data show that investors require higher returns for investing in a small firm due to the additional risk associated with a firm's small size. While prior studies have evaluated the small size effect for both regulated and unregulated industries, a recent study published by Chretien and Coggins show that the small size premium is directly applicable to regulated natural gas utilities. Furthermore, the studies cited by Dr.

[178] Chrétien, Stéphane, and Frank Coggins, *Cost of Equity for Energy Utilities: Beyond the CAPM*, Energy Studies Review, Vol. 18, No. 2 (2011), doi:10.15173/esr.v18i2.531.
[179] The U.S. natural gas utility group included: AGL Resources Inc., Atmos Energy Corp., Laclede Group, New Jersey Resources Corp., NWN., Piedmont Natural Gas Co., South Jersey Industries, Southwest Gas Corp. and WGL Holdings Inc.
[180] Chrétien, Stéphane, and Frank Coggins, *Cost of Equity for Energy Utilities: Beyond the CAPM*, Energy Studies Review, Vol. 18, No. 2 at 31 (2011), doi:10.15173/esr.v18i2.531.

Woolridge do not provide substantial evidence against the existence of a small size premium. In fact, Professor Damodaran admits that the application of the small size premium is generally accepted among financial analysts. As a result, I continue to believe that it is appropriate to consider the additional risk associated with the Company's small size when establishing the appropriate ROE for Cascade.

G. Flotation Costs

Q. Please summarize Dr. Woolridge's position on flotation costs.

A. Dr. Woolridge contends that it is not appropriate to consider flotation costs when determining the authorized ROE for Cascade because I have not identified any flotation costs that have been paid by the Company.[181] In addition, Dr. Woolridge testifies that it is incorrect to argue that a flotation cost adjustment is necessary to prevent the dilution of the stock price for existing shareholders for a number of reasons including: 1) natural gas utilities currently have market-to-book ratios greater than 2.00, which implies a flotation cost reduction; 2) flotation costs will only dilute existing shareholder value if the market-to-book ratio is less than or equal to 1.00; 3) investors who purchase newly issued common stock are aware that flotation costs are being paid on the new issue; and 4) brokerage costs paid by investors should lower the required return.[182]

Q. How do you respond to Dr. Woolridge's assertion that natural gas utility common stocks are currently selling at a market price of approximately 2.00 times book value and therefore any flotation cost adjustment should be downward, not upward?[183]

A. The DCF estimates of the cost of equity already have been reduced to the extent that any

[181] Woolridge, Exh. JRW-1T at 90.
[182] *Id.* at 90-92
[183] *Id.* at 90-91.

proxy company stocks are selling at a market price above book value. In the same way that a bond that sells at a price above its face value has a lower effective interest rate, a stock that sells above book value yields a lower DCF estimate of the cost of common equity. However, the flotation cost paid on equity issuances creates a gap between the expected DCF return that investors see in the secondary market and the effective return that the issuing company requires in the primary market. As Dr. Morin notes:

> The flotation cost adjustment does not depend on any market-to-book input assumption and is still relevant even when utility companies have stock prices in excess of book value, as they have for over two decades. This is because the flotation cost adjustment applicable to all of the company's book equity is an average of the current allowances required for each past financing, that is, each source of equity. The flotation cost allowance is a buildup of historical floatation cost adjustments. Clearly, over such a long time period, equity issues were made, and will be made in the future, under varying market circumstances and capital market conditions. Some issues were consummated at market-to-book ratios in excess of one, others below one.
>
> The derivation of the conventional flotation cost adjustment formula does not depend on the assumption of a market-to-book ratio equal to 1.00. This can be seen as follows. A company's existing shareholders expect a given stream of dividends to be produced from the firm's existing asset base. Following a stock issue, new shareholders likewise expect the same dividend stream. But the only way the new shareholders can receive the same dividend stream without impairing the dividend stream of old investors is that the new funds from the stock issue be invested at a return sufficiently high to provide a dividend stream whose present value is equal to the net proceeds of the issue.[184]

Q. Do you agree with Dr. Woolridge that dilution of the value of stockholder investment due to issuance expenses can occur only when the utility's stock is selling at a market price at or below book value?

A. No, I do not. The primary difference between our positions is that Dr. Woolridge is

[184] *See* Roger Morin, *New Regulatory Finance*, Public Utilities Reports, Inc. at 336 (2006).

discussing book value, which is not nearly as important as market value in this context. Although the book value can increase when new shares are issued, the effect on the market value of the stock is far more relevant. If MDU Resources invests the funds in regulated natural gas utility assets that have a market value equal to book value, the flotation costs drive down the market value of existing investors' stock. Thus, by not including flotation costs in the authorized return, MDU Resources' investors are essentially cross subsidizing Cascade's natural gas utility operations by forfeiting a portion of the market value of their unregulated operations if there is a need to issue stock to finance Cascade's natural gas utility operations in Washington.

Q. Dr. Woolridge suggests that flotation costs should not be included in the investor-required return because those investors who purchase newly-issued common stock know that flotation costs are being paid on the new issue. Do you agree?

A. No, I do not. This is simply another version of Dr. Woolridge's argument that it is acceptable to set the allowed return at a level that will dilute the market value of existing stockholders' investment. Purchasers of the newly-issued stock know that flotation costs are incurred and will pay a price that provides an adequate expected rate of return on their investment. However, when flotation costs are not included, the value of the existing stockholders' investment is diluted if the proceeds of the stock offering are invested in regulated public utility assets. Because it is the existing shareholders, and not the purchasers of the newly-issued common stock, who suffer the dilution in value, we would not expect the purchasers of the new issue to be concerned so long as they pay a price that reflects their expectations and return requirements. Consequently, Dr. Woolridge's argument concerning the purchasers of the new issue misses the point that it is the existing

shareholders who would suffer the adverse consequences of a failure to include flotation costs in the allowed return.

Q. Do you agree with Dr. Woolridge that, if transaction costs, like issuance costs, raise the required return then other costs like brokerage costs should lower the required return?

A. No. Dr. Woolridge is assuming that when investors make trades in the secondary market, they pay a brokerage fee comparable to the flotation costs associated with a stock issuance. However, individual investors can buy utility common stocks for a brokerage commission as low as one-tenth to one-fortieth of one percent of the stock price, and institutional investors may be able to incur even lower brokerage fees. Although the brokerage fees paid by investors trading stocks in the secondary market generally are *de minimis*, the flotation costs paid by a utility to raise capital funds in the primary market can be quite substantial. Nevertheless, I have not made an explicit adjustment to my ROE recommendation to account for flotation costs. Rather, I have considered this information, along with company-specific business and financial risks, in determining where within the range of results to establish a just and reasonable return.

Q. What is your response to Dr. Woolridge's contention that you have not identified any flotation costs paid by the Company?

A. As discussed in my Direct Testimony, the great majority of a utility's flotation costs is incurred prior to the test year but remains part of the cost structure that exists during the test year and beyond.[185] As such, flotation costs should be recognized for ratemaking purposes. This cost is appropriate regardless of whether an issuance occurs during, or is

[185] Bulkley, Exh. AEB-1T at 68.

planned for, the test year. As shown in Exhibit No.___(AEB-2), Schedule 8, MDU Resources closed on equity in November 2002 and February 2004. Therefore, to the extent Cascade is denied the opportunity to recover prudently incurred flotation costs, the Company's actual returns will fall short of expected (or required) returns, thereby diminishing Cascade's ability to attract adequate capital on reasonable terms.

Q. What is your conclusion with regard to flotation costs?

A. I continue to believe that it is appropriate to consider flotation costs when establishing the appropriate ROE for Cascade.

H. Proposal to Impute Capital Structure

Q. Please summarize Dr. Woolridge's capital structure recommendation.

A. Dr. Woolridge's recommendation is to impute a capital structure consisting of 49.10 percent common equity and 50.90 percent long-term debt as compared to the capital structure proposed by Cascade consisting of 50.40 percent common equity and 49.60 percent long-term debt.[186] As support for his recommendation, Dr. Woolridge states that the average equity ratio for his Gas proxy group was 46.1 percent. He also notes that Cascade has maintained a capital structure consisting of 48.52 percent common equity and 51.48 percent debt between 2018 and 2020, which is consistent with the Company's authorized equity ratio in its two most recent rate cases of 49.0 percent (Docket UG-170929) and 49.1 percent (Docket UG-190210).[187] On that basis, he concludes that an imputed capital structure of 49.10 percent common equity and 50.90 percent long-term debt is more appropriate for Cascade.

[186] Woolridge, Exh. JRW-1T at 21-22.
[187] *Id.* at 22.

Q. Have you reviewed the analysis of proxy company capital structures that Dr. Woolridge relies on?

A. As shown on page 1 of Exhibit No.__(JRW-3), the data relied upon by Dr. Woolridge for his analysis of the proxy company capital structures is reported at the holding company level. As such, Dr. Woolridge's analysis includes corporate-level debt that is not part of the regulated or financial capital structure of the operating utilities. In fact, Dr. Woolridge appears to agree, as he notes that my Expected Earnings analysis should not be relied on because the ROEs calculated by Value Line are at the holding company level and thus reflect each company's unregulated business in addition to the regulated business.[188] For the Expected Earnings analysis, the data used from Value Line is the best available data that even Dr. Woolridge relies on to calculate his sustainable growth rate for his Constant Growth DCF model; however, for the capital structure analysis, the data for the operating companies is readily available and is more appropriate since it reflects the financial capital structure for each company. Therefore, the relevant capital structure for comparison purposes is at the operating company level, not the holding company. The Commission in this case will be setting the capital structure for Cascade, the operating company, which will be used to finance investments in rate base that provide natural gas distribution service to customers.

Exhibit No.___(AEB-2), Schedule 10 provides the actual capital structures for the natural gas companies included in my proxy group at the operating level. As shown, the average equity ratio for the natural gas proxy group companies is 56.67 percent, which is greater than the equity ratio proposed by the Company.

[188] *Id.* at 84.

Q. What effect does the TCJA have on the appropriate capital structure for Cascade?

A. As discussed above and in my Direct Testimony, the TCJA places additional pressure on utility operating company cash flows and has been viewed negatively by credit rating agencies.[189] All three rating agencies have commented on the potential negative implications for utilities from the loss of bonus depreciation and the reduction in taxes collected, both of which affect utility cash flows. As also discussed in my Direct Testimony, in the first quarter of 2018, the credit rating agencies issued reports identifying this risk factor and suggesting mitigation approaches that included increasing the authorized ROE or the equity ratio of utility operating subsidiaries.[190] Moody's has since downgraded the credit rating of several utilities due to concerns about cash flow metrics. The heightened concern from rating agencies highlights the importance of considering the equity ratios of the utility operating subsidiaries as the appropriate benchmark to be used in determining the equity ratio for Cascade in this proceeding.

Q. What are your conclusions with respect to the Company's proposed capital structure?

A. The Company's proposed capital structure is consistent with the range of equity ratios at the operating company level for the natural gas companies in my proxy group, and consistent with the credit rating agencies' guidance for addressing the risks related to the TCJA. For those reasons, I believe that the equity ratio proposed by Cascade is reasonable.

[189] Bulkley, Exh. AEB-1T at 30-31.
[190] *Id*.

VIII. RESPONSE TO AWEC WITNESS MULLINS

Q. Please summarize the ROE testimony of Mr. Mullins.

A. Mr. Mullins does not conduct an ROE analysis using any of the financial models that are typically employed to estimate the cost of equity. Rather, Mr. Mullins recommends that the Commission maintain the authorized ROE of Cascade at 9.40 percent, based primarily on recent decisions for other gas distribution companies in Washington, as well as a settlement agreement in Cascade's recent gas rate case in Oregon.[191]

Q. Is the Commission bound by its recent decisions with respect to the determination of a just and reasonable ROE?

A. No, it is not. First, most if not all of the Washington decisions cited by Mr. Mullins were settlement agreements. Mr. Mullins acknowledges in response to Cascade Data Request 7 that single elements of a settlement agreement, such as the authorized ROE, should be evaluated in the context of the overall settlement agreement.[192] In addition, while the Commission's recent decisions may be informative, the cost of capital is a forward-looking analysis and should be based on current and prospective market conditions. If those conditions are different than the prevailing market conditions at the time of prior decisions, then it is reasonable that the cost of capital might also be different. In response to Cascade Data Request 5, Mr. Mullins admits that he has not prepared a formal analysis comparing the market conditions between the various time periods.[193] As discussed in Section V of my Rebuttal Testimony, capital markets in 2020 have been characterized by uncertainty and volatility. While interest rates on government bonds have declined, it is reasonable to

[191] Response Testimony of Bradley G. Mullins, Exh. BGM-1T at 6.
[192] *See* Exhibit No. ___(AEB-6), AWEC Response to Cascade Data Request No. 7.
[193] *Id*., AWEC Response to Cascade Data Request No. 5.

believe that the equity risk premium required by investors has increased. Further, Beta coefficients for utility companies have increased substantially from levels prior to the pandemic, which is consistent with the higher correlations between utility stock prices and the broader market. Under these conditions, it is reasonable to believe that the cost of equity has increased for regulated gas distribution companies, as compared to the 9.40 percent level that the Commission has found to be just and reasonable in recent years. The models used to estimate the cost of equity support that conclusion.

Q. Mr. Mullins recommends that "the Commission adhere to the regulatory principle of gradualism when setting the cost of capital, and avoid making significant changes in a single case, particularly for a utility whose cost of capital was recently approved only a few months ago."[194] What is your response?

A. While I generally agree with the principle of gradualism, it is also important to keep in mind that the last approved ROE of 9.40 percent for Cascade in Washington was part of a comprehensive settlement agreement. By their nature, settlements involve negotiations and compromises between the parties. The authorized ROE of 9.40 percent was approved within the context of the overall settlement agreement, but it is not possible to know what return would have been set by the Commission if the case had been fully litigated. Given the dramatic change in capital market conditions that has occurred in 2020, I do not agree with Mr. Mullins that the Commission should simply rely on the current authorized ROE of 9.40 percent, when there is evidence that investors are requiring a higher cost of equity.

[194] Mullins, Exh. BGM-1T at 9.

Q. Do you agree with Mr. Mullins that the sole justification for increasing Cascade's ROE to 10.30 percent is the results of your ECAPM analysis?

A. No, I do not. As shown in my updated ROE analysis, many of the models used to estimate the cost of equity for Cascade support a return of 10.30 percent. Considering only the Constant Growth DCF results, which I do not think is appropriate for reasons discussed previously in my Direct Testimony and the remainder of my Rebuttal Testimony, the range of returns from the mean to the mean high is 9.40 percent to 10.40 percent. As discussed in Ms. Kivisto's Rebuttal Testimony, the Company is revising its requested ROE to 9.80 percent, which is at the lower end of the range of reasonable results shown in Figure 4. The average CAPM results have increased substantially since the analysis in my Direct Testimony was prepared, primarily due to the fact that Value Line's Beta coefficients have increased to the same approximate level as those computed by Bloomberg. In addition, the Constant Growth DCF model produces median results of 9.74 percent and median high results of 12.49 percent (when the NWN growth rate is not adjusted). Therefore, I do not agree with Mr. Mullins that the results of the various models do not support my ROE recommendation.

Q. Do you agree with Mr. Mullins that the ECAPM analysis is "nothing more than a way to underweight the impact of the beta coefficient on the traditional CAPM calculation?"[195]

A. No, I do not. As discussed in my Direct Testimony, the purpose of the ECAPM analysis is to address the tendency of the CAPM to understate the cost of equity for companies with

[195] *Id.* at 10.

lower Beta coefficients such as regulated utilities.[196] In particular, the ECAPM recognizes the results of academic research indicating that the risk-return relationship is different (in essence, flatter) than estimated by the CAPM, and that the CAPM underestimates the "alpha," or the constant return term. Moreover, as discussed in my response to Dr. Woolridge, it is appropriate to use adjusted Beta coefficients in the ECAPM analysis.

Q. What capital structure does Mr. Mullins recommend for Cascade in this proceeding?

A. Mr. Mullins recommends a capital structure consisting of 47.1 percent equity and 52.9 percent debt, which he acknowledges is a two percent (200 basis point) reduction in the current common equity ratio for Cascade of 49.1 percent.[197]

Q. Do you agree with Mr. Mullins' position that considering the capital structure of a peer group does not necessarily result in a reliable or reasonable capital structure that is applicable to Cascade?[198]

A. No, I do not. As discussed in my Direct Testimony, my analysis of Cascade's capital structure is based on a comparison to the actual capital structures of the proxy group companies at the operating company level.[199] Since it is those proxy group companies that are being used to establish the range of reasonable returns on equity for Cascade using the DCF and CAPM methods, it is entirely appropriate to assess the reasonableness of Cascade's proposed equity ratio by comparison to the actual equity ratios of those same companies. Further, in assessing the reasonableness of Cascade's capital structure, it is appropriate to consider factors such as the capital structures of other similarly situated gas

[196] Bulkley, Exh. AEB-1T at 55.
[197] Mullins, Exh. BGM-1T at 16.
[198] Mullins, Exh. BGM-1T at 14.
[199] Bulkley, Exh. AEB-1T at 91.

distribution companies. If Cascade has more or less financial leverage than those companies, that may also influence the appropriate cost of equity for Cascade. For example, if the capital structure of Cascade contains a lower percentage of common equity than those of the proxy group companies, as Mr. Mullins recommends, then it may be necessary to increase the authorized ROE in order to compensate investors for higher financial risk at Cascade.

IX. CONCLUSIONS AND RECOMMENDATIONS

Q. Please summarize your conclusions and recommendations regarding a just and reasonable ROE for Cascade in this proceeding.

A. It is important for the Commission to consider more than just the results of the ROE estimation models in determining the appropriate ROE for Cascade in this proceeding. As discussed in my Rebuttal Testimony, the capital markets have demonstrated more significant differences in the overall risk to equity than were present in the Company's last rate case, which should be addressed in determining the ROE in this proceeding. In addition, it is important to consider the concerns expressed by the rating agencies regarding weakening credit metrics and unbalanced rate case decisions. In particular, it is relevant to consider how rating agencies have responded to these concerns in this jurisdiction recently, and necessary to consider that the rating agencies are focused on the outcome from this case in the assessment of Cascade's financial strength.

My updated ROE analyses demonstrate that the cost of equity for Cascade has increased since the filing of my Direct Testimony. In particular, the results of the CAPM analysis using Value Line beta coefficients have increased substantially and are now generally consistent with the CAPM results using Beta coefficients from Bloomberg. The

median results of my Constant Growth DCF model also have increased slightly since the filing of my Direct Testimony. While my updated analyses continue to support my ROE recommendation of 10.30 percent, Cascade has reduced its requested ROE to 9.80 percent, which is within the range established by my results and also within the range of recently authorized ROEs, in an effort to mitigate the rate impact on customers in these difficult economic times.

Q. What is your conclusion with respect to the capital structure for Cascade?

A. The Company's proposed equity ratio of 50.40 percent is well below the average equity ratio for the proxy group companies used to estimate the cost of equity for Cascade and toward the lower end of the range for those companies. As such, I conclude that the Company's proposed capital structure is reasonable, if not conservative, and should be approved by the Commission. If the Commission were to adopt a capital structure with less common equity, then a corresponding upward adjustment to the authorized ROE may be necessary in order to compensate equity holders for the higher financial risk created by a more highly leveraged capital structure.

Q. Does this conclude your Rebuttal Testimony?

A. Yes, it does.