Exhibit No.	
Issues:	Return on Equity and Capital Structure
Witness:	Ann E. Bulkley
Exhibit Type:	Surrebuttal
Sponsoring Party:	Missouri-American Water Company
Case No.	WR-2022-0303
Date:	February 8, 2023

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2022-0303

SURREBUTTAL TESTIMONY

OF

ANN E. BULKLEY

ON BEHALF OF

MISSOURI-AMERICAN WATER COMPANY

AFFIDAVIT

I, Ann E. Bulkley, under penalty of perjury, and pursuant to Section 509.030, RSMo, state that I am a Principal for The Brattle Group, that the accompanying testimony has been prepared by me or under my direction and supervision; that if inquiries were made as to the facts in said testimony, I would respond as therein set forth; and that the aforesaid testimony is true and correct to the best of my knowledge and belief.

Ann E. Bulkley

February 8, 2023
Dated

SURREBUTTAL TESTIMONY
ANN E. BULKLEY
MISSOURI-AMERICAN WATER COMPANY
CASE NO. WR-2022-0303

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SURREBUTTAL TESTIMONY

ANN E. BULKLEY

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Ann E. Bulkley. I am employed by The Brattle Group as a Principal. My business address is One Beacon Street, Suite 2600, Boston, Massachusetts 02108.

Q. On whose behalf are you submitting this testimony?

A. I am testifying on behalf of Missouri-American Water Company ("MAWC", "Missouri-American", or the "Company"), a wholly-owned subsidiary of American Water Works Company, Inc. ("AWK" or "American Water").

Q. Did you previously provide direct and rebuttal testimonies in this proceeding?

A. Yes. I filed direct testimony in this proceeding on July 1, 2022. I filed rebuttal testimony on January 18, 2023.

Q. What is the purpose of your Surrebuttal Testimony?

A. The purpose of my Surrebuttal Testimony is to respond to the Rebuttal Testimony of the Missouri Public Service Commission Staff ("Staff") witness Randall Jennings, and the Rebuttal Testimony of David Murray on behalf of the Missouri Office of Public Counsel ("OPC") relating to the authorized return on equity ("ROE") and capital structure.

Q. Are you sponsoring any schedules as part of your Rebuttal Testimony?

A. Yes, I am sponsoring Schedules AEB-1ST through AEB-5ST.

Q. Please briefly summarize your Surrebuttal Testimony and your key conclusions and recommendations regarding the appropriate ROE and capital structure for MAWC in this proceeding.

A. My key conclusions are as follows:

1. Neither Mr. Jennings nor Mr. Murray provide compelling evidence to support the use of AWK's consolidated capital structure as the ratemaking capital structure of MAWC.
2. The Company's actual capital structure is consistent with the actual capital structures of the operating utility companies in the proxy group and also represents the manner in which MAWC is actually capitalized. A lower imputed equity ratio such as proposed by Mr. Jennings and Mr. Murray would require a commensurate increase to the Company's ROE, negatively affect MAWC's ability to attract discretionary capital, and would present negative incentives for the Company to adjust its equity ratio, reducing investment in Missouri and weakening the credit metrics for the Company.
3. Mr. Jennings's and Mr. Murray's equity ratios and the resulting weighted ROEs are well below the weighted equity returns approved for similarly-situated water utilities.
4. Mr. Jennings and Mr. Murray recommend imputing the consolidated capital structure of the American Water affiliated companies on MAWC for ratemaking purposes. The risk profile of MAWC differs considerably from the risk profile of American Water. American Water is a diversified utility with operations in 14 jurisdictions serving a broad range of customers in various geographic locations, with diversified economic circumstances and diversified regulatory risk. MAWC's risk profile is not consistent with American Water's profile, as it is a single operating company that receives no diversification benefits from the broader company, operating in one regulatory jurisdiction. There is no basis to suggest that the profile of MAWC should resemble that of American Water or that the MAWC capital structure should reflect that different risk profile.
5. Both Mr. Jennings and Mr. Murray dispute my application of the DCF and CAPM models. Their criticism should be viewed, however, in the context that neither Mr. Jennings nor Mr. Murray rely on the results of any of their own ROE estimation models. Their respective 9.73 percent and 9.00 percent recommendations are divorced from the results of their methodologies and are based on subjective and comparative analyses.
6. A proxy group composed only of water companies is too small to be material. My proxy group of water and gas utilities is both representative and of sufficient size to provide meaningful results. I demonstrate Mr. Jennings's analysis of the results and the relative risk of the electric and gas proxy companies and the water proxy

companies is flawed and does not validate his conclusion that the electric and gas utilities should not be included in the proxy group.

7. Finally, Mr. Murray recommends a downward adjustment to MAWC's ROE or equity ratio if the Company's proposed Revenue Stabilization Mechanism ("RSM") and Plant in Service Accounting ("PISA") are approved to account for the reduction in business risk associated with these mechanisms. Mr. Murray does not conduct any analysis to demonstrate that MAWC has less risk than the proxy group, which would be the appropriate basis on which to establish such a proposal. As shown in my Direct Testimony, the proxy companies have implemented capital cost recovery mechanisms and decoupling mechanisms. Therefore, since the proxy group companies have similar mechanisms, the addition of any discrete adjustment to the ROE or capital structure would be an unwarranted double counting of the effect of the clause.

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

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

- Section II provides my response to the capital structure issues addressed by Mr. Jennings and Mr. Murray.
- Section III provides my response to the cost of equity issues addressed by Mr. Jennings and Mr. Murray.

To the extent that I have not addressed an issue in my Surrebuttal Testimony, it should not be interpreted that I agree with Mr. Jennings or Mr. Murray on the issue.

II. CAPITAL STRUCTURE

Q. What do Mr. Jennings and Mr. Murray state regarding capital structure in their respective rebuttal testimonies?

A. Mr. Jennings and Mr. Murray largely reassert their positions made in their respective direct testimonies, namely that MAWC receives almost all of its debt financing from American Water Capital Corporation ("AWCC") and is not an independent company from a financial perspective. Based on these views Mr. Jennings and Mr. Murray recommend that the

Commission utilize the consolidated capital structure of American Water for MAWC's ratemaking capital structure.

Q. Mr. Murray states that the Commission has not developed a capital structure that it "requires/expects" for utilities.[1] Do you agree?

A. While I am not aware of an instance in which the Commission has enunciated a specific capital structure that it requires or expects from the utilities it regulates, the Commission has developed and articulated criteria it uses when assessing and determining a utility's capital structure for ratemaking purposes. These criteria start with the Commission's adherence to the precedents of *Hope* and *Bluefield*, which developed standards for determining the reasonableness of a utility's authorized return. For example, the Commission has noted the following:

> To determine a return on equity, the Commission must consider the expectations and requirements of investors when they choose to invest their money in Spire Missouri rather than in some other investment opportunity. As a result, the Commission cannot simply find a rate of return on equity that is unassailably scientifically, mathematically, or legally correct. Such a "correct" rate does not exist. Instead, the Commission must use its judgment to establish a rate of return on equity attractive enough to investors to allow the utility to fairly compete for the investors' dollar in the capital market without permitting an excessive rate of return on equity that would drive up rates for Spire's ratepayers. To obtain guidance about the appropriate rate of return on equity, the Commission considers the testimony of expert witnesses.[2]

Therefore, the Commission has understood that the authorized return must be attractive enough to ensure a utility can compete for capital with other investments of comparable risk. While this principle is most often discussed in terms of the allowed ROE, it is also

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1 Murray RT, p. 5.

2 Missouri Public Service Commission. File Nos. GR-2017-0215 and GR-2017-0216. March 7, 2018, at 28.

necessary to consider the rates that are applied to debt and equity and the composition of the capital structure to assess whether an authorized return will allow a utility to compete for capital with other investments of comparable risk at reasonable terms. 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, while the product of the cost of debt and the debt ratio ensures that a company's debt obligations are met. This process for managing the capital structure would be consistent with this Commission's prior decisions and the precedent of *Hope* and *Bluefield*.

Q. Are either of Mr. Jennings's or Mr. Murray's capital structure recommendations for MAWC consistent with the comparable return standard set forth in *Hope* and *Bluefield*?[3]

A. No. As I discussed in my Rebuttal Testimony, "[i]t is a fundamental tenet of finance that the greater the amount of financial risk borne by common shareholders, the greater the return required by shareholders in order to be compensated for the added financial risk imparted by the greater use of senior debt financing. In other words, the greater the debt ratio, the greater is the return required by equity investors."[4] Mr. Jennings's and Mr. Murray's recommended equity ratios, in combination with their ROE recommendations, do not meet the standards of *Hope* and *Bluefield* including (1) consistency with other

[3] *Bluefield*, 262 U.S. at 692-93; *Hope*, 320 U.S., at 603.
[4] Bulkley RT, p. 37.

businesses having similar or comparable risks; and (2) adequacy of the return to support credit quality and access capital.

As shown in Figure 4 of my Rebuttal Testimony,[5] regardless of whether comparing to only water utilities such as the proxy groups relied on by Mr. Jennings and Mr. Murray, or both water and natural gas utilities such as I have done, Mr. Jennings's and Mr. Murray's proposed equity ratios for MAWC are substantially lower than any equity ratio that has been authorized by a regulatory commission in the U.S. in the past three years. Moreover, as shown in Figure 5 of my rebuttal testimony,[6] Mr. Jennings's and Mr. Murray's proposed WROEs are also substantially lower than an equity return that has been authorized by a regulatory commission in the U.S. in the past three years.

Q. Have you reviewed prior WROEs authorized by the Commission?

A. Yes. Figure 1 presents the distribution of authorized WROEs for water, electric and natural gas companies in Missouri over the past decade (*i.e.*, 2013 through 2022). The range of authorized WROEs has been from 4.59 percent to 6.16 percent over this period, with an average authorized WROE of 5.01 percent.

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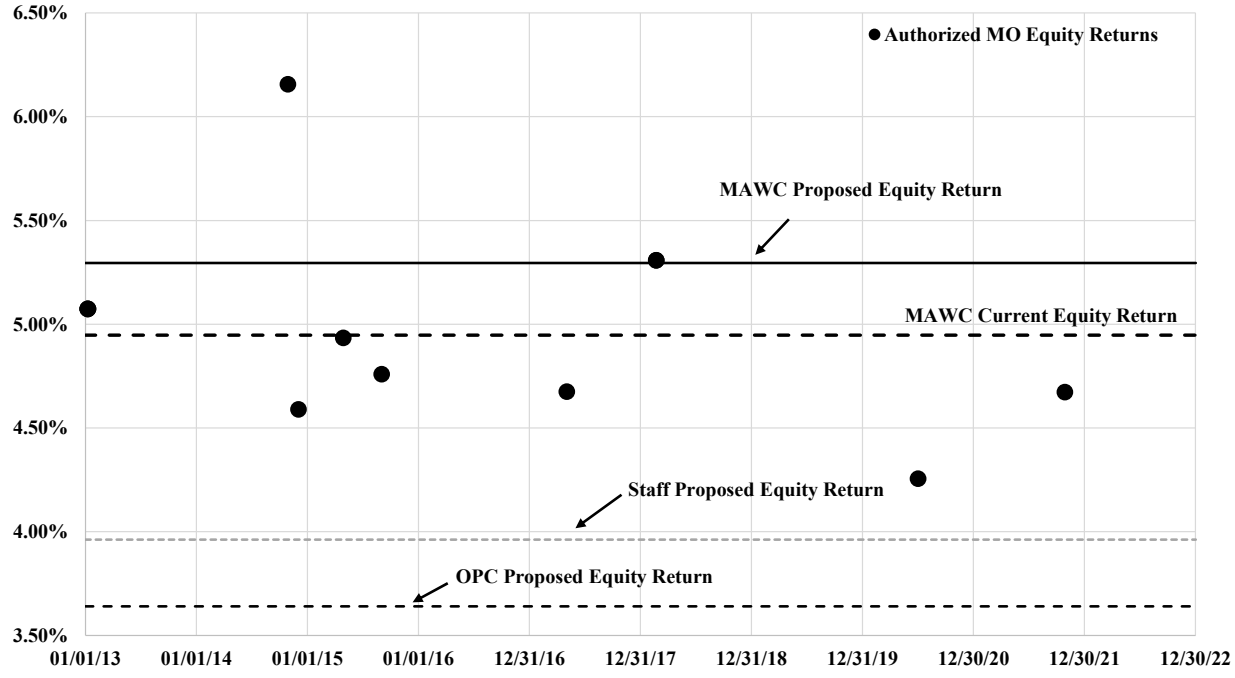
5 Bulkley RT, p. 27.
6 *Id.*, at 28.

Figure 1: Authorized WROEs for Water, Electric and Natural Gas Utilities in Missouri from 2013-2022[7]



Q. Are MAWC's capital structure and proposed ROE reasonable and consistent with this Commission's prior decisions?

A. Yes. As shown in Figure 1, the Company's proposed WROE in this proceeding is consistent with the prior authorizations by the Commission and satisfies the standards of *Hope* and *Bluefield*. The Company's proposed equity ratio of 51.80 percent taken together with an ROE of 10.50 percent results in a WROE of 5.44 percent. Furthermore, the range of authorized equity ratios has been from 47.44 percent to 60.04 percent with an average of 55.63 percent. The Company's proposed equity ratio of 51.80 percent is well within the

[7] S&P Capital IQ Pro. The actual equity ratio and ROE for MAWC in File No. WR-2017-0285 and File Nos. WR-2020-0344/SR-2020-0345 were not disclosed in the settlement agreement or the Commission's order. Therefore, the equity ratio and ROE listed for MAWC reflects MAWC's view of the equity ratio and ROE allowed in the case.

range of equity ratios authorized by the Commission over the past ten years. Conversely, the proposed equity ratios of Mr. Jennings and Mr. Murray of 40.71 percent and 40.45 percent, respectively, are well below the equity ratios authorized by the Commission over the past ten years.

Q. Are either Mr. Jennings's or Mr. Murray's proposed WROEs consistent with the Commission's prior decisions?

A. No. The average equity ratio approved by the Commission in the past decade has been 51.40 percent, while the lowest equity ratio over this same time period was 45.89 percent. In contrast, the equity ratios proposed by Mr. Jennings and Mr. Murray of 40.71 percent and 40.45 percent, respectively, are over 1,000 basis points below the average equity ratio authorized by the Commission over the past ten years and 544 basis points below the lowest equity ratio authorized by the Commission over the same time period. The average WROE approved by the Commission in the past decade has been 5.01 percent. However, when considering Mr. Jennings's and Mr. Murray's proposed equity ratios in combination with their respective ROE recommendations, their WROE recommendations of 3.96 percent and 3.64 percent, respectively, are also well below the prior average authorized WROEs by the Commission. As such, their extremely low recommendations do not meet the *Hope* and *Bluefield* standards.

Q. How do you respond to Mr. Murray's criticism of Mr. Jennings's recommended ROE in this case, as compared with prior Staff recommendations?

A. Mr. Murray's analysis of prior case recommendations does not consider differences in the interest rate and inflationary environments at the time of those proceedings as compared

with the current proceeding.[8] As discussed in my Direct and Rebuttal testimonies, current market conditions include high interest rates and inflation. Further, while Mr. Murray suggests that the Staff calculated a COE for Spire Missouri in 2022 of 8.25 percent, Staff does not specifically use the results of its models, but rather the change in its models over time. Therefore, the actual result of Staff's model does not provide any information regarding the appropriate ROE for the Company that is the subject of this proceeding. Therefore, Mr. Murray's reference to the COE calculated in the Spire case does not inform the appropriate ROE in this proceeding.

Q. Does Mr. Murray rely on his COE results to set his ROE recommendation?

A. No. Mr. Murray states that MAWC's COE is in the range of 6.0 percent to 6.5 percent, and suggests that the cost of equity is decreasing. Further, as Mr. Jennings notes, when comparing Mr. Murray's analysis from the 2020 MAWC case to the current case, it is clear that Mr. Murray's analysis demonstrates an increase in the COE, whereas his recommended ROE decreases.[9]

A. Capital Structures of the Proxy Companies

Q. Does Mr. Murray compare his recommended common equity ratio to the common equity ratios of the water utilities included in your proxy group?

A. Yes. On Schedule DM-R-3, Mr. Murray evaluates the common equity ratios for the water utility holding companies included in my proxy group for the period June 30, 2021 through

[8] Murray RT, p. 37.
[9] Jennings RT, pp. 24-29.

June 30, 2022. According to Mr. Murray, the common equity ratios for the water utilities included in my proxy group range from 39.02 percent to 53.59 percent (including short-term debt) and from 40.46 percent to 55.15 percent (excluding short-term debt).[10] Mr. Murray concludes that his recommended common equity ratio of 40.46 percent falls within the range equity ratios for the water utilities included in my proxy group.

Q. Is the group of water utilities considered by Mr. Murray consistent with the water utilities included in your proxy group?

A. No, Mr. Murray's analysis includes American Water, the parent company of MAWC. However, as discussed in my Rebuttal Testimony, it is not appropriate to include American Water in the proxy group because of the circular logic that occurs from using the parent company to determine the ROE for the subject company, which in turn contributes to the ROE of the parent company.[11]

Q. Did you adjust Mr. Murray's analysis of the capital structures of the water utilities included in your proxy group?

A. Yes, I did. While I do not agree with a review of the capital structures of the water utilities included in my proxy group at the holding company level for reasons I will discuss below, I have adjusted Mr. Murray's analysis to exclude American Water and only consider the results of his analysis excluding short-term debt. As shown in Figure 2, these adjustments result in a common equity ratio range of 40.71 percent to 55.15 percent with an average of 49.97 percent. As a result, Mr. Murray's recommended equity ratio of 40.25 is below even

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[10] Murray RT, p. 17.
[11] Bulkley RT, p. 7.

the low-end of his range, while the Company's proposed equity ratio of 50.43 percent is well within the range and generally consistent with the average equity ratio of the water utility holding companies included in my proxy group of 49.97 percent.

Figure 2: Murray Capital Structure excluding AWK

	Total Equity	Long-Term Debt	Preferred Stock	Total
American States	52.18%	47.82%	0.00%	100.00%
California Water	51.60%	48.40%	0.00%	100.00%
Essential Utilities	46.59%	53.41%	0.00%	100.00%
Middlesex	55.15%	44.53%	0.31%	100.00%
SJW	40.71%	59.29%	0.00%	100.00%
York Water	53.59%	46.41%	0.00%	100.00%
Mean	49.97%	49.98%	0.05%	100.00%
Median	51.89%	48.11%	0.00%	100.00%

Q. Do you agree with Mr. Murray's use of the holding company capital structures to determine the capital structure for an operating company?

A. No, I do not. Mr. Murray relies on the capitalizations of the water utility holding companies included in my proxy group. The holding company data on which Mr. Murray relies, however, includes corporate-level debt that is not part of the regulated or financial capital structure of the operating utilities. Thus, it is not appropriate to compare the capital structure of the parent corporations to the proposed equity ratio of MAWC, which is a utility operating subsidiary of American Water. Rather, the relevant capital structures for comparison purposes to MAWC are at the operating company level that have been used to fund utility operations, not the holding company. The capital structure analysis reflected in my Direct Testimony evaluates the capital structures of the proxy group companies at the operating utility level.

Q. Please provide an example as to how Mr. Murray's use of holding company capital structures affects the results of his capital structure analysis.

A. Mr. Murray concludes that his recommended equity ratio of 40.25 percent is reasonable based the range of equity ratios of the water utilities included in my proxy group at the holding company level. Included in that range is an equity ratio for SJW Group ("SJW") of 40.71 percent and for Essential Utilities ("WTRG") of 46.59 percent.[12] However, each of these companies contains long-term debt at the holding company level that was issued to fund acquisitions that are not part of the regulated or financial capital structure of the operating utilities of either SJW or WTRG.

Q. Does the equity ratio presented by Mr. Murray for SJW accurately reflect the capital structure of its water utilities?

A. No. On October 19, 2019, SJW completed its acquisition of Connecticut Water Service, Inc. ("CTWS"). To fund the acquisition, SJW issued long-term debt totaling approximately $510 million.[13] The long-term debt issuances were unsecured obligations of the parent company, SJW, and not the operating subsidiaries. Prior to the acquisition, SJW had a long-term debt issuance totaling only $50 million.[14] However, as shown in Figure 3, the debt issuances associated with the acquisition had a substantial effect on the capitalization of SJW and were the primary reason the debt ratio increased from 37.40 percent in 2018 to 61.52 percent in 2019.

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12 Schedule DM-R-3.
13 SJW, 2019 10-K, at 23 and 75.
14 SJW, 2019 10-K, at 70.

Figure 3: SJW Capitalization – 2018-2021[15]

	2018	2019	2020	2021
Capital Structure Data ($000)				
Total Debt	$531,424	$1,423,078	$1,538,915	$1,595,037
Total Equity	$889,312	$889,984	$917,160	$1,034,519
Total Capital	$1,420,736	$2,313,062	$2,456,075	$2,629,556
Capital Structure Ratios				
Total Debt	37.40%	61.52%	62.66%	60.66%
Total Equity	62.60%	38.48%	37.34%	39.34%
Total Capital	100.00%	100.00%	100.00%	100.00%

In fact, SJW noted that the additional indebtedness may increase risk and borrowing costs:

> To finance the merger, we incurred an aggregate of $510 million of additional indebtedness, a substantial increase compared to our indebtedness prior to the merger. Our increased indebtedness and higher debt-to-equity ratio in comparison to that of our recent historical basis may have the effect, among other things, of: reducing our flexibility to respond to changing business, industry and economic conditions; increasing borrowing costs; placing us at a competitive disadvantage relative to other companies in our industry with less debt; potentially having an adverse affect on our issuer and issue ratings; requiring additional cash flow to be used to service debt instead of for other purposes; and potentially impairing our ability to obtain other financing.[16]

The debt used to finance the acquisition of CTWS is not a part of the regulated or financial capital structures of the operating subsidies of SJW. Therefore, a review of SJW's capital structure that includes the parent company debt - as conducted by Mr. Murray - is inappropriate because SJW's capital structure at the holding company is not reflective of how comparable regulated water utilities are being financed.

[15] S&P Capital IQ Pro.
[16] SJW 2019 10-K, at 23.

Q. Does the equity ratio presented by Mr. Murray for WTRG also suffer from the same issue?

A. Yes. On March 16, 2020, WTRG completed the acquisition of Peoples Natural Gas Company, which expanded the company's regulated utility business to include natural gas distribution operations of approximately 750,000 customers in Pennsylvania, West Virginia and Kentucky.[17] WTRG issued long-term and short-term debt totaling $1.1 billion to fund part of the acquisition.[18] As shown in Figure 4, the debt issuances associated with the acquisition were the primary reason the debt ratio for WTRG increasing from 44.39 percent in 2019 to 55.23 percent in 2020.

Figure 4: WTRG Capitalization – 2019-2021[19]

	2019	2020	2021
Capital Structure Data ($000)			
Total Debt	$3,097,913	$5,777,606	$6,114,443
Total Equity	$3,880,860	$4,683,877	$5,184,450
Total Capital	$6,978,773	$10,461,483	$11,298,893
Capital Structure Ratios			
Total Debt	44.39%	55.23%	54.12%
Total Equity	55.61%	44.77%	45.88%
Total Capital	100.00%	100.00%	100.00%

Regarding the additional debt issued to fund the Peoples Natural Gas acquisition, WTRG noted:

> The Company has incurred significant additional indebtedness in connection with the Peoples Gas Acquisition. As a result, it may be more

[17] WTRG 2020 10-K, at 85.
[18] WTRG 2020 10-K, at 85.
[19] S&P Capital IQ Pro.

> difficult for the Company to pay or refinance its debts or take other actions, and the Company may need to divert cash to fund debt service payments.[20]

Similar to SJW, Mr. Murray's consideration of WTRG's capitalization at the holding company level is inappropriate because it does not reflect how comparable regulated water utilities are being financed and would incorrectly reflect the additional risks and capital costs of WTRG in the ratemaking capital structure for MAWC.

Q. If the Commission were to apply a consolidated capital structure for purposes of MAWC's rate, how should this affect Mr. Murray's ROE recommendation?

A. Mr. Murray's recommended ROE of 9.00 percent would need to be adjusted upward to reflect the difference in proposed leverage from the average leverage of the proxy group. As discussed in my Rebuttal Testimony, it is a fundamental financial tenet that increased financial risk through a lower equity ratio must be compensated by a higher ROE.

Q. What is your response to Mr. Murray's suggestion that American Water's capital structure should be imputed to MAWC for ratemaking purposes because American Water is using debt to purchase equity in MAWC? [21]

A. Mr. Murray's recommendation is an iteration of the "double leverage" argument based on the existence of debt at the American Water holding company level. However, the double leverage approach has been largely abandoned in regulatory arenas. To the best of my knowledge, only Tennessee and Iowa have relied on this approach in the past, and in a recent prior Iowa-American Water rate case, the Iowa Utilities Board expressly rejected

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[20] WTRG 2020 10-K, at 31.
[21] Murray RT, p. 13.

continued use of a double leverage adjustment on the utility.[22] Modern regulation recognizes that it is axiomatic in finance that the source of the funds should not determine the return on those funds; rather, it is the risk posed by an investment that determines the return.[23] The cost of capital is determined using the subsidiary's capital structure and cost of debt, and the cost of equity is estimated by reference to a proxy group of firms with comparable risk. Consistent with that principle, the ownership structure should not determine the operating company's capital structure or cost of equity.

Q. Please explain further why it is unreasonable to claim that the *perceived* source of funds should dictate the cost rate on an investment?

A. Mr. Murray's position suggests that an equity investment in an operating company should enjoy a higher return when it is funded with parent company equity than when it is funded by debt. If this were true, it would mean that two different equity investments in the same asset could result in two different equity returns. This result is unreasonable:

> Carrying the double leverage standard to its logical conclusion leads to even more unreasonable prescriptions. If the common shares of a subsidiary were held by both the parent and by individual investors, the equity contributed by the parent would have one cost under the double leverage computation while the equity contributed by the public would have another.[24]

Another major flaw in the "double leverage" argument is that it confuses the direction of cause and effect.[25] It is not the parent company's weighted average cost of capital that

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[22] State of Iowa Department of Commerce Utilities Board, In re: Iowa-American Water Company, Docket No. RPU-2016-0002, "Final Order", pp. 41-42 (Iowa U.B. February 27, 2017).
[23] Morin, Dr. Roger A. *Modern Regulatory Finance*. Public Utilities Reports, Inc., 2021, at 251-252.
[24] Morin, Dr. Roger A. *Modern Regulatory Finance*. Public Utilities Reports, Inc., 2021, at 581.
[25] Beranek, William and James A. Miles. "The Excess Return Argument and Double Leverage." The Financial Review, Vol. 23, No. 2, May 1988.

determines the subsidiary's cost of equity because the parent's weighted average cost of capital is itself a weighted average of equity costs of all subsidiaries. As Dr. Morin notes in *Modern Regulatory Finance:*

> The last nail in the double leverage coffin is that the approach is a tautology. A tautology, by definition, is unnecessary redundancy, i.e., saying the same thing twice. The double leverage approach is a tautology because it is not the parent's overall cost of capital that determines the subsidiary's overall cost of capital because the parent's overall cost of capital is itself a weighted average of capital costs of all subsidiaries. **A holding company is like a mutual fund, but one which holds its operating subsidiaries in its portfolio of assets instead of capital markets, i.e., stocks and bonds. A mutual fund's required return, based upon portfolio theory, is the weighted average of the returns of the individual securities in the fund. Each security in the fund has its own unique required return which is a function of its individual risk profile. The concept of double leverage, if it were to be applied to a mutual fund, would indicate that the required return on any given individual security held by the mutual fund is the weighted average required return on the mutual fund as a whole. <u>This defies common sense</u>**.[26]

In short, the double leverage argument violates the core notion that an investment's required return depends on its particular risks and not on its perceived funding source. Cost of capital has to do with the use of funds and *not* with the source of funds, and the same is true for the appropriate capital structure. The appropriate return on any investment and capital structure are dictated by the risk of that investment and not by the manner in which that investment is financed. The proper return and capital structure for that investment must be reflective of that investment's risk, regardless of the source of funding and regardless of the identity of the investor.

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[26] Morin, Dr. Roger A. *Modern Regulatory Finance*. Public Utilities Reports, Inc., 2021, at 584. (emphasis added).

B. Financial and Business Risks

Q. Mr. Murray states that MAWC has not provided any sound and objective evidence to prove that it cannot issue debt independently at a lower cost than it is charged by AWCC. What is your response?

A. As Mr. Murray acknowledges, MAWC has the ability to issue its own third-party debt; however, as discussed in my Rebuttal Testimony, MAWC has consistently been able to access debt on more favorable terms through AWCC as compared with the utility bond indexes at the time of issuance.[27] Further, Mr. Merante provided an analysis in his Direct Testimony that demonstrates that $30 million in savings have been passed on to MAWC customers as a result of the use of AWCC financing as compared with accessing the private placement bond market.[28] Mr. Merante estimated the difference in cost between accessing capital through AWCC and MAWC accessing capital on a stand-alone basis conservatively assuming a Moody's credit rating of Baa3 to account for a 39 percent equity ratio. That analysis demonstrated that issuing first mortgage bonds or issuing debt through private placement would result in significantly greater cost for MAWC, in the range of 223-237 basis points higher. In addition, using private placement debt could make access to capital difficult to secure when it is required to meet the Company's capital investment requirements. In addition, as discussed in my Rebuttal Testimony, I reviewed the interest rates obtained by AWCC as compared with the yield on the Moody's Utility Bond Index

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[27] Bulkley RT, p. 34.
[28] Merante DT, p. 13.

that corresponds to the AWCC rating at the time of issue and demonstrated that issuing debt through AWCC has consistently been the lowest cost resource available to MAWC.[29]

Q. Mr. Jennings states that the implication of MAWC not issuing its own debt is that MAWC does not need to manage its financial risk to appease potential debt investors, and that considering 97 percent of MAWC's long-term debt since 2020 has been obtained from AWCC, it is proper to use AWCC's consolidated capital structure for ratemaking purposes for MAWC.[30] Do you agree with this assessment?

A. No. There is no basis to suggest that, since MAWC has obtained the vast majority of its debt financing from AWCC in the past few years, MAWC does not need to manage its financial risk. MAWC has issued its own debt, and its debt holders would have no confidence in, nor rely upon, MAWC's financial statements if it completely disregarded managing its financial risk as Mr. Jennings suggests. Ironically, while Mr. Jennings suggests that MAWC does not need to manage its financial risk, Mr. Murray assumes that MAWC would be able to issue debt at a lower cost than AWCC. These two conclusions are clearly at odds with one another, as it is difficult to believe that MAWC would be able to issue relatively lower cost debt if it failed to manage its financial risk.

[29] Bulkley RT, p. 16.
[30] Jennings RT, p. 22.

III. RETURN ON EQUITY

A. Capital Market Conditions

Q. Please summarize Mr. Murray's concern with your position on how current market conditions affect the cost of equity for utilities.

A. Mr. Murray disagrees with my conclusion that the utility sector may underperform over the near-term given the recent increase in interest rates and the expectation that interest rates will remain elevated over the period that the Company's rates will be in effect. Mr. Murray believes that investors have factored in expected market conditions into the current share prices of utilities.

Q. Can you provide an example of why it is important to consider interest rate projections?

A. Yes. Reviewing the changes in market conditions since I filed my Direct Testimony in July 2022 demonstrates why it is important to consider projected interest rates at a time when the Federal policy initiatives are clear that rates will be changing. In the analysis presented in my Direct Testimony, I relied on a near-term projected yield on the 30-year Treasury bond for Q3/2022 through Q3/2023 of 3.34 percent. However, as of December 31, 2022, the current 30-day average yield on the 30-year Treasury bond was 3.71 percent, or 37 basis points higher than the near-term projected yield that I relied on in the CAPM analysis in my Direct Testimony filed. Had I not considered the near-term projected interest rates in my CAPM analysis, I would have understated the cost of equity only several months into the rate proceeding.

Q. Do the recent increases in interest rates have any effect on the share prices of utilities?

A. Yes. As discussed in my Direct Testimony, interest rates and utility share prices are inversely correlated, which means that an increase in interest rates will result in a decline in the share prices of utilities.[31]

Q. Did Mr. Murray conclude in his direct testimony that interest rates and the share prices of utilities are inversely related?

A. Yes, he did. Mr. Murray noted that the valuation levels of utility stocks are inversely related to bond yields, which means that the valuation levels of utilities will decline (increase) as interest rates increase (decrease).[32]

Q. Since Mr. Murray acknowledges the inverse relationship between interest rates and utility share prices, does that mean he agrees utility share prices will decline as a result of the recent increase in interest rates?

A. No. Mr. Murray concludes that the historical inverse relationship has not been evident in the market data for 2022. According to Mr. Murray, the share prices for the companies in my proxy group have had a positive correlation with long-term government bond yields in 2022.[33]

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[31] Bulkley DT, pp. 26-27.
[32] Murray DT, p. 10.
[33] Murray RT, p. 24-25.

Q. Is Mr. Murray correct that utility share prices and interest rates have been positively correlated in 2022?

A. No, he is not. On page 25 of Mr. Murray's rebuttal testimony, he compares a stock price index of my proxy group to the Moody's "Baa" corporate bond yield. As shown in this chart, the stock prices of my proxy group are inversely related to the yield on this index. Mr. Murray's analysis appears to contradict his contention that there is a positive correlation between interest rates and utility share prices. As Mr. Murray noted, Moody's Baa corporate bond yields increased by 74 percent in 2022, while during that same time period the share prices for my proxy group declined by 3.94 percent.[34] Therefore, this is evidence of a negative correlation not a positive correlation.

Q. Are interest rates expected to remain elevated over the near-term?

A. Yes. The projected 30-year Treasury bond yield as reported by *Blue Chip Financial Forecasts* for the period of 2023 Q2 to 2024 Q2 is 3.88 percent.[35] *Blue Chip Financial Forecasts* is also projecting a yield on the 30-year Treasury bond of 3.90 percent for the period of 2024 to 2028.[36] Therefore, long-term Treasury bond yields are projected to remain elevated for the near-term.

Q. Have other regulatory commission acknowledged the effect of current capital market conditions in establishing the ROE for utilities?

A. Yes. For example, in its May 2022 decision in establishing the cost of equity for Aqua Pennsylvania, Inc., the Pennsylvania Public Utility Commission specifically concluded

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[34] Murray RT, p. 25.
[35] *Blue Chip Financial Forecasts*, Vol. 42, No. 1, January 1, 2023, at 2
[36] *Blue Chip Financial Forecasts*, Vol. 41, No. 12, December 2, 2022, at 14

that the current capital market conditions of high inflation and increasing interest rates have resulted in the DCF model understating the utility cost of equity, and that weight should be placed on risk premium models, such as the CAPM, in the determination of the ROE:

> To help control rising inflation, the Federal Open Market Committee has signaled that it is ending its policies designed to maintain low interest rates. Aqua Exc. at 9. Because the DCF model does not directly account for interest rates, consequently, it is slow to respond to interest rate changes. However, I&E's CAPM model uses forecasted yields on ten-year Treasury bonds, and accordingly, its methodology captures forward looking changes in interest rates.
>
> Therefore, our methodology for determining Aqua's ROE shall utilize both I&E's DCF and CAPM methodologies. As noted above, the Commission recognizes the importance of informed judgment and information provided by other ROE models. In the 2012 PPL Order, the Commission considered PPL's CAPM and RP methods, tempered by informed judgment, instead of DCF-only results. We conclude that methodologies other than the DCF can be used as a check upon the reasonableness of the DCF derived ROE calculation. Historically, we have relied primarily upon the DCF methodology in arriving at ROE determinations and have utilized the results of the CAPM as a check upon the reasonableness of the DCF derived equity return. As such, where evidence based on other methods suggests that the DCF-only results may understate the utility's ROE, we will consider those other methods, to some degree, in determining the appropriate range of reasonableness for our equity return determination. In light of the above, we shall determine an appropriate ROE for Aqua using informed judgement based on I&E's DCF and CAPM methodologies.
>
> …..
>
> We have previously determined, above, that we shall utilize I&E's DCF and CAPM methodologies. I&E's DCF and CAPM produce a range of reasonableness for the ROE in this proceeding from 8.90% [DCF] to 9.89% [CAPM]. Based upon our informed judgment, which includes consideration of a variety of factors, including increasing inflation leading to increases in interest rates and capital costs since the rate filing, we determine that a base ROE of 9.75% is reasonable and appropriate for Aqua.[37]

[37] Pennsylvania Public Utility Commission, Docket Nos. R-2021-3027385 and R-2021-3027386, Opinion and Order, May 12, 2022, pp. 154-155 and 177-178.

It is important to note that the final authorized ROE for Aqua was 10.00 percent (9.75 percent base ROE plus 0.25 percent for management performance) with an equity ratio of 53.95 percent.

B. Proxy Group

Q. Please summarize Mr. Jennings's and Mr. Murray's positions with respect to the proxy group that you relied on for MAWC.

A. Mr. Jennings and Mr. Murray both suggest that electric utilities and natural gas companies are not risk comparable to water companies and therefore should not be included in the proxy group for MAWC. Mr. Jennings concludes that the inclusion of natural gas distribution and electric companies overstates the costs of equity estimates in my Direct Testimony.[38]

Q. Do you agree with the analyses that Mr. Jennings and Mr. Murray conducted to determine that natural gas and electric utilities were not suitable proxy companies?

A. No, I do not. Mr. Jennings conducts a comparison of the results of the cost of equity estimation models that I developed in my Direct Testimony for the water companies and separately for the electric and natural gas utilities with the intention of demonstrating that natural gas and electric utilities are not comparable in risk to water utilities. This analysis has significant flaws and should not be relied upon by the Commission.

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[38] Jennings RT, p. 7-11.

Q. Why should the Commission reject Mr. Jennings's comparison of the DCF model results for the water utilities and the electric and natural gas utilities shown in Table 2 of his rebuttal testimony?

A. Mr. Jennings's analysis has one critical flaw that makes this analysis unreliable – he has misrepresented the constant growth DCF model results presented in my Direct Testimony. Specifically, Mr. Jennings's analysis reflects the mean cost of equity from the constant growth DCF model ***including*** the individual DCF result for Middlesex Water Company ("MSEX"); however, as shown in Schedule AEB-1ST, I relied on the mean results from the constant growth DCF model *excluding* the individual DCF results for MSEX. As shown in Schedule AEB-1ST, MSEX had individual DCF results that ranged from 4.73 percent to 4.79 percent, which are only slightly greater than the 30-day average yields of 4.23 percent and 4.52 percent as of April 29, 2022 on the Moody's A-rated and Baa-rated utility bonds, respectively.[39] A DCF result consistent with the cost of debt is clearly unrealistic because it violates the fundamental financial tenet that equity investors require a higher return than bondholders to compensate them for the additional risks associated with owning common equity. I exclude MSEX from the calculation of the mean result of the proxy group given that the individual DCF results for MSEX would not compensate investors for the added risk of an equity investment. By incorrectly including the results for MSEX, which I did not do, Mr. Jennings has biased the average constant growth DCF results downwards. Therefore, it is only because Mr. Jennings misrepresents my DCF analysis and the results for the water utilities that he creates the illusion that the results for

[39] Bloomberg Professional.

the electric and natural gas utilities are significantly greater than the ROEs for the water utilities.

As shown in Figure 5, excluding the DCF results for MSEX from the calculation of the mean result of the proxy group demonstrates that the returns for the electric and natural gas utilities were only slightly higher than the cost of equity for water utilities as of the time of the filing of my Direct Testimony.

Figure 5: Comparison of Constant Growth DCF Results for Water vs. Electric/Natural Gas in Bulkley Direct Testimony

	Water Utilities Mean Result (*excl. MSEX*)	**Electric/Gas Utilities Mean Result**
30-Day average	9.31%	9.39%
90-day average	9.27%	9.57%
180-Day average	9.24%	9.74%
Constant Growth DCF	9.27%	9.56%

Moreover, as previously discussed herein, I have updated my cost of equity analyses based on data through November 30, 2022. As shown in Schedule AEB-1ST and provided in Figure 6, the mean results excluding MSEX are greater than the mean results for the natural gas and electric utilities. Therefore, it is reasonable to conclude that, when presented correctly, the constant growth DCF results presented in both my direct and rebuttal testimonies are not upwardly biased by the inclusion of electric and natural gas utilities in my proxy group.

Figure 6: Comparison of Constant Growth DCF Results – Rebuttal Testimony – Water vs. Electric/Natural Gas

	Water Mean (Excl. MSEX)	Electric/Gas Utilities Mean
30-Day average	10.48%	10.03%
90-day average	10.53%	9.96%
180-Day average	10.58%	9.89%
Constant Growth DCF	10.53%	9.96%

Q. Do you agree with Mr. Jennings that the results of your CAPM are overstated because you have included natural gas and electric utilities in your proxy group?

A. No, I do not. Mr. Jennings contends that the average cost of equity estimates for the natural gas and electric companies included in my proxy using the CAPM are consistently higher than the average cost of equity estimates for the water utilities included in my proxy group.[40] However, Mr. Jennings has again misrepresented the results of my analysis. Specifically, in Table 2 of Mr. Jennings testimony, he fails to include all of the CAPM analyses that I developed, specifically, he excludes the results of my analyses using the long-term average betas for the proxy companies. Further, when reviewing the results that he does present in Table 2 of his testimony, his conclusion is inaccurate. While the CAPM results using Value Line Betas are higher for natural gas and electric utilities than the water utility group, the results using Bloomberg betas are generally comparable. Therefore, Mr.

[40] Jennings RT, p. 11.

Jennings's conclusion that the CAPM results are ***consistently*** higher for the gas and electric utilities is false.

As shown in Figure 7 (and also Schedule AEB-3ST), I have updated the CAPM results presented in Table 2 of Mr. Jennings's testimony to include the results of each of my CAPM analyses, including those that relied on long-term average betas. As shown, when reviewing the full panel of results, a reasonable conclusion is that using Bloomberg Betas and the long-term average Value Line Betas, results in ROE estimates for the two groups; water utilities and gas and electric utilities that are very similar. As a result, Mr. Jennings's conclusion that the average CAPM result for the natural gas and electric utilities is consistently greater than average CAPM result for the water utilities is again, false.

Figure 7: Average CAPM COE Comparison between Water and Natural Gas / Electric[41]

	Water	Natural Gas / Electric	Basis Points Difference
CAPM - Value Line Beta			
30-day Average Treasury Bond Yield	10.40%	11.31%	91
Near-Term Blue Chip Forecast Yield	10.54%	11.39%	85
Long-Term Blue Chip Forecast Yield	10.56%	11.40%	84
CAPM - Bloomberg Beta			
30-day Average Treasury Bond Yield	10.51%	10.55%	5
Near-Term Blue Chip Forecast Yield	10.65%	10.69%	4
Long-Term Blue Chip Forecast Yield	10.66%	10.70%	4
CAPM - Long-term Average Value Line Beta			
30-day Average Treasury Bond Yield	10.05%	10.02%	-2
Near-Term Blue Chip Forecast Yield	10.21%	10.19%	-2
Long-Term Blue Chip Forecast Yield	10.23%	10.21%	-2
ECAPM - Value Line Beta			
30-day Average Treasury Bond Yield	10.98%	11.66%	68
Near-Term Blue Chip Forecast Yield	11.09%	11.73%	64
Long-Term Blue Chip Forecast Yield	11.10%	11.74%	63
ECAPM - Bloomberg Beta			
30-day Average Treasury Bond Yield	11.06%	11.10%	3
Near-Term Blue Chip Forecast Yield	11.17%	11.20%	3
Long-Term Blue Chip Forecast Yield	11.18%	11.21%	3
ECAPM - Long-term Average Value Line Beta			
30-day Average Treasury Bond Yield	10.72%	10.70%	-2
Near-Term Blue Chip Forecast Yield	10.84%	10.83%	-2
Long-Term Blue Chip Forecast Yield	10.86%	10.84%	-2

Q. Is there other data that supports your conclusion regarding the results of these analyses?

A. Yes. The primary reason for any differences between the CAPM results for water utilities versus electric and natural gas utilities is the beta coefficient. As shown in **Error! Reference source not found.**, the average beta coefficient for the water utilities is nearly

[41] Schedule AEB-3ST.

identical to the average beta coefficient for the electric and natural gas utilities for two of the three estimates of beta that I rely on in my CAPM. Mr. Murray also acknowledges in his rebuttal testimony that the average Bloomberg betas and average long-term average betas for the water, electric and natural gas utilities included in my proxy group are nearly identical.[42]

Figure 8: Comparison of Beta Coefficients for Water vs. Electric/Natural Gas Utilities in Bulkley Direct Testimony

	Water Utilities Mean	Electric/ Natural Gas Utilities Mean
Value Line Beta	0.77	0.86
Bloomberg Beta	0.78	0.78
Long-term Average Beta	0.73	0.73

Furthermore, while the average *Value Line* beta for the water utilities was slightly lower than the average for the electric and natural gas utilities in my proxy group, there have been points in time in the past where the average *Value Line* beta for these waters utilities was greater than the average *Value Line* beta for these electric and natural gas utilities. For example, as noted above, I relied on a long-term average beta coefficient calculated as an average of the *Value Line* beta coefficients for the companies in my proxy group from 2013 through 2021. As shown in Schedule AEB-3ST, while the betas for the water utilities are currently slightly lower than the betas for the electric and natural gas utilities in my proxy group, in other years such as 2016-2019, the opposite occurred and the water utilities had

[42] Murray RT, p. 19.

higher betas, and on average over this historical period, the betas for these industry segments were essentially the same (*i.e.,* 0.73). Therefore, Mr. Jennings's conclusion that water utilities have consistently lower COE estimates than the natural gas and electric utilities is incorrect.

Q. Is Mr. Jennings's and Mr. Murray's comparison of the *Value Line* beta coefficients for the water and electric and natural gas utilities in your proxy group tantamount to applying a beta screening criteria to develop the proxy group?

A. Yes, it is. It appears that both Mr. Jennings and Mr. Murray are applying a beta screen to an industry as opposed to an individual company when they suggest non-water utilities should be excluded from the proxy group. However, the *Value Line* beta coefficients that I have relied on would not only reflect the risk of operating in either the electric or natural gas industry, but they would also be reflective of the risk associated with the individual company. This can be seen by the fact that the electric and natural gas utilities in my proxy group do not have equivalent betas. In fact, as shown in Schedule AEB-3ST, the betas for the electric and natural gas utilities range from 0.80 to 1.00. The goal in developing a proxy group is to determine a set of companies that are generally comparable to the subject company, which, in this proceeding, is MAWC. By relying on a beta screen to exclude an entire industry, Mr. Jennings and Mr. Murray are incorrectly assuming that each of those companies has the same set of risk factors that are greater than the risk associated with a water utility. However, both Mr. Jennings and Mr. Murray provide no evidence that is the case because the betas for each of the electric and natural gas utilities are different.

Furthermore, as shown in Schedule AEB-3ST, the *Value Line* betas for the water utilities range from 0.65 to 0.95, with the beta for Essential Utilities, Inc. ("WTRG") setting the

high end of the range. WTRG's *Value Line* beta is clearly greater than the average beta for the electric and natural gas utilities of 0.86. In fact, WTRG has the second highest beta coefficient in my proxy group. According to the criteria applied by Mr. Jennings and Mr. Murray, this means that WTRG would have greater risk than the electric and natural gas utilities included in my proxy group and should also be excluded from the proxy group. However, neither witness has proposed excluding WTRG from my proxy group.

Finally, as shown in Schedule AEB-3ST, New Jersey Resources Corporation ("NJR") has a *Value Line* beta of 1.00, which is the highest in my proxy group. The application of a beta screen such as Mr. Jennings and Mr. Murray's position suggests that NJR be eliminated from the proxy, which would also be consistent with both witnesses recommendation to exclude all electric and natural gas utilities from my proxy group. However, as shown in Schedule AEB-1ST, NJR has a 30-day average constant growth DCF result of 8.78 percent, which is below the mean for the water utilities excluding MSEX of 9.31 percent. According to the result of the constant growth DCF model, NJR would have less risk than the water utilities due to the lower DCF cost of equity estimate. This contradicts both Mr. Murray's and Mr. Jennings's assessment of comparative risk based on beta. As a result, Mr. Jennings's and Mr. Murray's application of a beta screen results in the exclusion of companies that investors consider comparable to MAWC. Moreover, neither Mr. Jennings nor Mr. Murray have provided credible evidence to conclude that my inclusion of electric and natural gas utilities in my proxy group upwardly biases the results of my cost of equity estimates for MAWC.

Q. Have you considered any additional analyses that compare the relative risk of the water versus natural gas utilities included in your proxy group?

A. Yes, I have. As discussed in my Rebuttal Testimony, I used the data provided in Mr. Jennings's Schedule RTJ-d17 to compare the authorized ROEs for water and natural gas utilities from 2010 through 2022.[43] Figure 11 of my Rebuttal Testimony demonstrates that authorized ROEs for water and natural gas utilities have varied relative to one another over time and have generally been very similar. As a result, this analysis supports my determination that the electric and natural gas utilities have a similar risk profile to the water utilities and therefore are reasonable to include in the proxy group.

C. DCF

Q. What does Mr. Jennings say regarding your DCF analysis?

A. Mr. Jennings objects to the use of the use of analysts' projected earnings per share ("EPS") growth rates in the constant growth DCF model, suggesting that applying short-term growth rates in perpetuity overstates the cost of equity.[44] In addition, Mr. Jennings states that my recommended ROE does not reflect all the results of my DCF analysis, excluding a series of results less than my selected range and omitting MSEX from the DCF analyses.[45]

Q. What does Mr. Murray say regarding your DCF analysis?

A. Similar to Mr. Jennings, Mr. Murray states that that my DCF analysis overestimates the cost of equity by assuming that the dividends per share of the proxy group can grow in

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[43] Bulkley RT, pp. 47-48.
[44] Jennings RT, pp. 12-13.
[45] *Id.*, at 14.

perpetuity at the same rate as equity analysts' projected five-year EPS growth rates.[46] In addition, Mr. Murray suggests the use of the "Grinold-Kroner" form of the DCF model could be used to consider expected changes in the price-to-earnings ("P/E") ratio of utilities.[47]

Q. What is your response to Mr. Jennings and Mr. Murray regarding the use of the constant growth DCF model and projected EPS growth rates?

A. First, while Mr. Jennings and Mr. Murray criticize the use of the constant growth DCF model and advocate instead for the use of a multi-stage DCF model, their preferred specification of the DCF model produces cost of equity estimates that are substantially below any recently authorized ROE for a water utility and well below their own ROE recommendations in this proceeding. Specifically, Mr. Jennings's two-step DCF model results in a cost of equity estimate for the period ending June 30, 2022 of 7.93 percent. However, Mr. Jennings recommends an ROE for MAWC in this proceeding of 9.73 percent, or 180 basis points higher than his two-step DCF result. Likewise, Mr. Murray's multi-stage DCF model based on his mid-point long-term growth rate results in a cost of equity estimate of 6.22 percent. However, Mr. Murray recommends an ROE for MAWC in this proceeding of 9.00 percent, or 278 basis points higher than his two-step DCF result Both Mr. Jennings's and Mr. Murray's DCF results clearly fail to meet the comparable return standard of *Hope* and *Bluefield*.[48] Considering that both of these witnesses demonstrate no confidence in the results of their own multi-stage DCF models, it is

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[46] Murray RT, p. 31.
[47] *Id*., at 30.
[48] *Bluefield*, 262 U.S. at 692-93; *Hope*, 320 U.S., at 603.

unreasonable to suggest that the use of their multi-stage models is a more appropriate estimate of the cost of equity for MAWC than the results of the constant growth DCF model that I have conducted.

Q. Do you agree with Mr. Murray that in a declining valuation scenario, using the Grinold-Kroner DCF model will decrease the cost of equity?

A. No, Mr. Murray has misinterpreted my position. I have noted that equity analysts expect the share prices of utility stocks to decline over the near-term as a result of the recent significant increase in interest rates, the fact that the yields on long-term government bonds are higher than the dividend yields of utilities, and that interest rates are expected to remain elevated for a number of years. Therefore, if the DCF model is estimated at a point in time during the period that MAWC rates will be in effect, the DCF results would likely be higher due to the decline in share prices. Mr. Murray's conclusion regarding the Grinold-Kroner model is that if an investor were to estimate the Grinold-Kroner DCF model today, the expected decline in utility P/E ratios over the near-term would reduce the return the investor would expect to earn over the investment period. In other words, Mr. Murray's use of the Grinold-Kroner model still relies on current market data to estimate the cost of equity during the period MAWC's rates will be in effect, which does not invalidate my point. In fact, it provides further support because, if an investor expects a lower return over the near-term due to an expected decline in the P/E ratio, they may not invest in the stock or sell the stock if they are a current owner of the stock. This would result in a decline in the stock price. As a result, it is likely that the results of the DCF model and the Grinold-Kroner model would be greater during the period that MAWC's rates are in effect.

Q. While Mr. Murray suggests that it may be appropriate to rely on use of the Grinold-Kroner form of the DCF model to determine the ROE for MAWC, has he conducted such an analysis using the proxy group?

A. No. Mr. Murray simply states that the cost of equity using the Grinold-Kroner form of the DCF model would produce a cost of equity result that is lower than the constant growth DCF model. However, Mr. Murray has not provided any support for his position.

Q. In MAWC's prior rate case, did Mr. Murray also suggest the use of the Grinold-Kroner form of the DCF model to determine the ROE for MAWC?

A. Yes. However, in that proceeding, Mr. Murray conducted an analysis using the Grinold-Kroner model as applied to the proxy group. furthermore, the resulting cost of equity from Mr. Murray's Grinold-Kroner model was lower any of his other cost of equity model results, and importantly, substantially lower than any ROE authorized by a utility commission in the past 40 years.

Q. Are you aware of any regulatory commission that has relied on the Grinold-Kroner form of the DCF model to establish the authorized ROE for a regulated utility?

A. No. I am unaware of any regulatory commission that has relied on this methodology to establish the ROE for a regulated utility company.

D. CAPM

Q. What does Mr. Jennings state regarding your CAPM?

A. Mr. Jennings has two concerns with my CAPM analysis. First, Mr. Jennings states that projected risk-free rates bear no relationship to the current cost of capital, and argues that

the current interest rates already consider expectations of future interest rates.[49] According to Mr. Jennings, the use of projected interest rates results in "double counting" and overstates the cost of equity.[50] Mr. Jennings contends that if investors expected the yields on long-term government bonds to increase, they would not purchase long-term government bonds today as investors would experience a capital loss if the yields on long-term government bonds were to increase. Thus, it is Mr. Jennings's position is that current interest rates are superior to forecast bond yields for the purpose of estimating the risk-free rate.

Second, Mr. Jennings states that my CAPM analysis relies on unreasonably high market risk premiums due to the market return on which I have relied.[51] Specifically, Mr. Jennings states that my market return of 12.74 percent is unrealistic considering that the geometric average historical return from 1963 through 2021 is approximately 10.81 percent, and that projected GDP growth is not expected to be higher than 4.00 percent in 2023 and not higher than 4.40 percent over the next ten years.[52] To support his erroneous position that my estimated market risk premiums are too high, Mr. Jennings references market risk premium estimates from sources such as American Appraisal Risk Premium Quarterly, *Value Line*, Duff & Phelps, and Geometric Mean of Duff & Phelps, which range from 4.50 percent to 6.00 percent, as well as an average risk premium for 2022 of 5.60 percent based on survey.[53]

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49 Jennings RT, p.17.
50 *Id*.
51 Jennings RT, p. 14.
52 Jennings RT, p. 15.
53 Jennings RT, p. 16.

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

A. Similar to Mr. Jennings, Mr. Murray also claims that my market risk premiums are unreasonable. Specifically, Mr. Murray states that the expected market returns in my CAPM that are irrationally high, resulting in my estimated market risk premiums to be approximately double the equity risk premiums relied on by utility equity analysts to determine the fair value of utility stocks.[54] Mr. Murray indicates that he is unaware of any authoritative sources that calculate the market return such as I have done (*i.e.*, using a constant growth DCF model with projected earnings growth rates as the estimate of growth). Mr. Murray states that the sources he reviewed recommended using a growth rate no higher than the growth rate of gross domestic product ("GDP") when estimating the long-term return for the market.[55] Finally, Mr. Murray asserts that the Wilshire 5000, which is an index of the value of all American stocks traded in the United States, would be approximately 37 times the value of gross domestic product ("GDP") in 50 years if the index grew at the earnings growth rate that I relied on to calculate my market return.[56]

1. Risk-Free Rate

Q. Do you agree with Mr. Jennings that relying on projected Treasury bond yields as the risk-free rate in the CAPM is "double counting" and overstates the cost of equity?

A. No, I do not. First, as reflected in Schedules AEB-R-4 and AEB-R-5 of my Rebuttal Testimony, the current interest rate as of the end of November 2022 was consistent with the near-term projected interest rate and higher than the long-term projected risk-free rate.

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54 Murray RT, pp. 31-32.
55 *Id*.
56 *Id*., at 33.

Therefore, the results of the CAPM analyses relying on the current interest rate were higher than the results relying on the projected interest rates, demonstrating that reliance on projected Treasury bond yields is not "double counting" nor overstating the cost of equity as Mr. Jennings suggests.

In addition, I disagree with Mr. Jennings's proposition that if investors expected the yields on long-term government bonds to increase, they would not purchase long-term government bonds today as investors would experience a capital loss if the yields on long-term government bonds were to increase. Trading occurs in the market because investors have different expectations and strategies with respect to individual stocks and bonds and overall portfolios at any point in time. For example, a buy and hold strategy would not result in a capital loss if the yields on long-term government bonds increased and may be reasonable for a risk-averse investor. Based on the theory of supply and demand, the price of a bond will decline if more investors want to sell the bond than buy the bond, and vice versa. In the past few years, as investors have been trying to determine the economic effects of COVID-19 and the war in Ukraine, uncertainty and volatility increased in the market, which resulted in investors purchasing safer assets such as long-term government bonds. However, as discussed in my Direct Testimony, and in Section II herein, equity market analysts continue to project that the utilities sector will underperform the broader market as interest rates remain elevated. In fact, Mr. Jennings states in his direct testimony that interest rates are expected to increase.[57]

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[57] Jennings DT, p. 10.

Furthermore, by suggesting that current bond yields or stock prices fully internalize the market's expectations with respect to future market conditions, like I discussed previously regarding Mr. Murray, Mr. Jennings is also suggesting the strongest form of the efficient market hypothesis. However, as discussed in my response to Mr. Murray, this form of the efficient market hypothesis is proven to be false and Mr. Jennings's strict reliance on current interest rates because such rates reflect all current market information is misplaced.

Q. Is Mr. Jennings's critique of your use of projected data for the risk-free rate consistent with his own cost of equity analyses?

A. No. In his DCF analyses, Mr. Jennings relied on projected growth rates. Therefore, it is unclear why Mr. Jennings finds these projected inputs reasonable for his estimates of the cost of equity, yet suggests that the use of projected Treasury bond yields in my CAPM analysis should not be considered.

Q. Mr. Jennings also states that "the fallacy of using projected interest rates in her CAPM analysis is similar to her error of using projected input variables in her expected earnings analysis."[58] Is there any validity to Mr. Jennings's statement?

A. No. I have not conducted an expected earnings analysis, so it is unclear what Mr. Jennings is referring to in his testimony.

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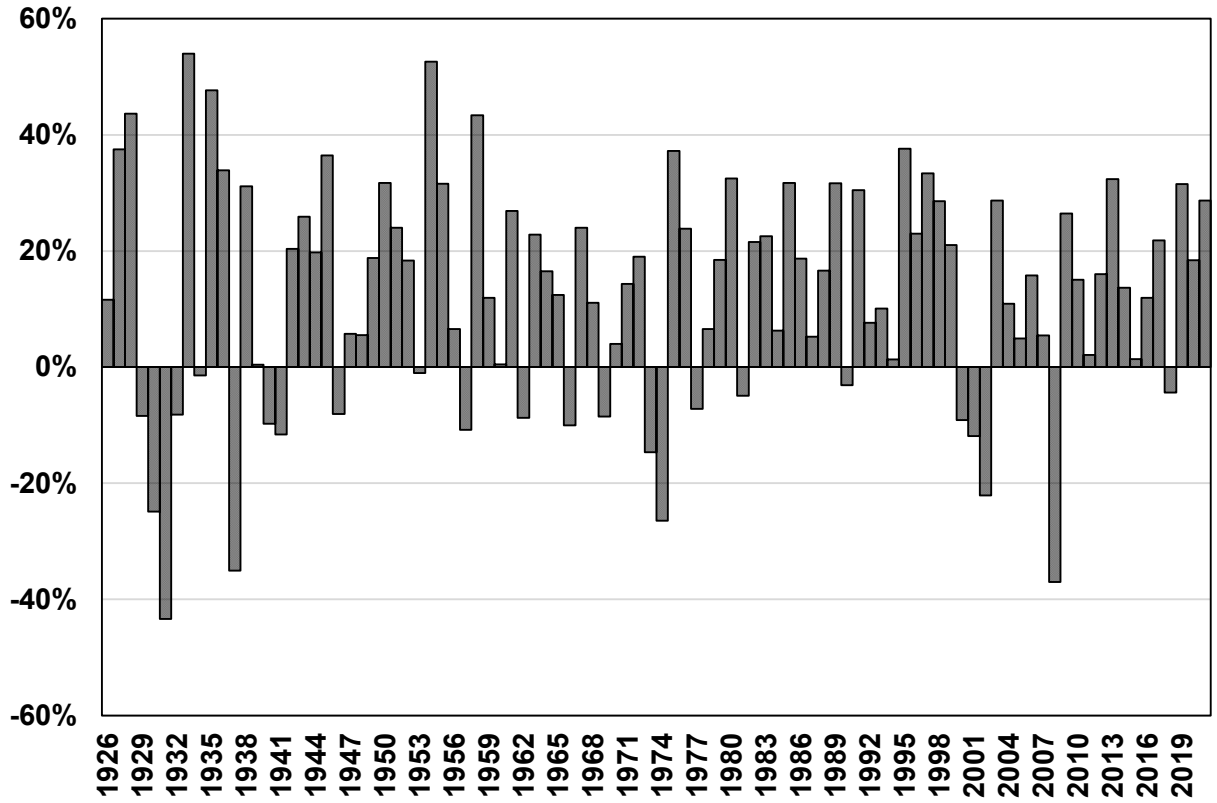
[58] Jennings RT, p. 17.

2. Market Risk Premium

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

A. No, I do not for multiple reasons. First, as I discussed in my Direct Testimony, the expected market return is reasonable and consistent with the range of annual equity returns that have been observed over the past century. Specifically, in 50 out of the past 96 years (or approximately 52 percent of the observations), the realized equity return was at least 12.64 percent or greater, which is the market return in my updated cost of equity analyses as shown in Schedule AEB-R-7. This demonstrates that an actual return in the range that I have estimated is not uncommon.

Figure 9: Historical Equity Market Returns (1926-2021)[59]



Mr. Jennings's statement that my market return is unrealistic considering the geometric average total return for large company stocks has been 10.81 percent from 1963 to 2021[60] fails to consider that annual returns are independent observations, unrelated to the prior year return. Therefore, the compound annual return over the historical time period does not recognize the wide range in returns over that period.

Furthermore, as shown in Figure 10, my estimate of the market return is well below the actual average market return for Large Company Stocks from 2009 to 2021 (*i.e.*, the period

[59] *Kroll*.
[60] Jennings RT, p. 15.

after the Great Recession of 2008/09) as reported by *Kroll*, which is same data that both Mr. Jennings and Mr. Murray reference for their market risk premium.

Figure 10: Total Return for Large Company Stocks, 2009-2021[61]

Year	Total Return Lg. Company Stock
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%
2020	18.40%
2021	28.71%
Average	**16.55%**

Second, in a recent cost of capital proceeding for the electric utilities in California, the California Public Utilities Commission noted that all parties recognized that historical market returns and economically logical projections fall within the range of 12 percent.[62] This recognition is generally consistent with the market return that is estimated in my CAPM analyses.

Third, the FERC has continued to rely on the constant growth DCF model to calculate the market return as opposed to the use of a multi-stage DCF model using GDP growth:

> [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

[61] *Kroll*, Cost of Capital Navigator.
[62] California Public Utilities Commission. Decision 22-12-031. December 15, 2022, at 23.

> 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.[63]

Q. Do you agree with Mr. Jennings's comparison of your market return to the geometric average historical market return?

A. The geometric mean is the compound rate that equates a beginning value to its ending value. It is used to determine the exact rate of compounded return between a specific starting and ending point. In contrast, the arithmetic mean is the simple average of single period rates of return and best approximates the uncertainty associated with returns from year to year. The important distinction between the two methods is that the arithmetic mean assumes that each periodic return is an independent observation and, therefore, incorporates uncertainty into the calculation of the long-term average. The geometric mean does not incorporate the same degree of uncertainty because it assumes that returns remain constant from year to year. Cooper (2006) reviewed the literature on the topic and noted the following rationale for using the arithmetic mean:

> Note that the arithmetic mean, not the geometric mean is the relevant value for this purpose. The quantity desired is the rate of return that investors expect over the next year for the random annual rate of return on the market. The arithmetic mean, or simple average, is the unbiased measure of the expected value of repeated observations of a random variable, not the geometric mean.…[The] geometric mean underestimates the expected annual rate of return.[64]

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[63] FERC Docket No. EL-14-12-004, Opinion No. 569-A (May 21, 2020), at para. 85.

[64] Cooper, Ian. "Arithmetic versus geometric mean estimators: Setting discount rates for capital budgeting." *European Financial Management 2.2*. 1996, at 158.

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

> The choice between which average to use is a matter of disagreement among practitioners. The arithmetic average receives the most support in the literature, though other authors recommend a geometric average. The use of the arithmetic average relies on the assumption that (1) market returns are serially independent (not correlated) and (2) the distribution of market returns is stable (not time-varying). Under these assumptions, an arithmetic average gives an unbiased estimate of expected future returns assuming expected conditions in the future are similar to conditions during the observation period. Moreover, the more observations available, the more accurate will be the estimate.[65]

Q. Have you compared your market return to the arithmetic average historical return for large company stocks?

A. Yes. As reported by *Kroll*, the historical arithmetic average return for large company stocks from 1926-2021 was 12.34 percent. This return is much higher than the geometric average of 10.81 percent reported by Mr. Jennings and is consistent with my market return estimate of 12.64 percent. Moreover, the historical arithmetic average market return is also significantly greater than the implied market returns (*i.e.*, the market risk premium plus their risk-free rate) relied on by either Mr. Jennings or Mr. Murray in their respective CAPM analyses. Specifically, the implied market returns that Mr. Jennings relies on for his CAPM analysis range from 7.65 percent to 9.75 percent.[66] Likewise, the implied

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

[66] Schedule RTJ-d14; Mr. Jennings' four estimates of market risk premium in columns [11] through [14] plus Mr. Jennings' estimate of the risk-free rate in column [1].

market returns that Mr. Murray relies on for his CAPM range from 9.58 percent to 9.82 percent.[67]

Q. What is your response to Mr. Murray's contention that he is not "aware of any authoritative sources" that use your approach to estimating the market return?[68]

A. I am aware of multiple authoritative sources that have relied on the constant growth DCF to estimate the market return in the CAPM. For example, Standard & Poor's publishes an expected market return each month, and its most recent market return is 12.65 percent, which is nearly identical to my market return estimate.[69]

In addition, the FERC, the Illinois Commerce Commission ("ICC"), the Pennsylvania Public Utilities Commission ("PPUC"), and the Maine Public Utilities Commission ("Maine PUC") have also relied on the constant growth DCF model to estimate the market return. In Opinion No. 569-A, the 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

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67 Schedules DM-D-7 through DM-D-9; Mr. Murray's market risk premium in column [3] of 6.00 percent plus Mr. Jennings' three estimates of the risk-free rate in column [1].

68 Murray RT, p. 32.

69 S&P's market return estimate consist of a dividend yield of 1.71 percent plus projected growth of 10.94 percent.

> 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.[70]

As shown in Figure 11, the Staff of the ICC, the Bureau of Investigation and Enforcement ("I&E") of the PPUC and the Staff of the Maine PUC have all supported the forward-looking market risk premium. In each case, the market return was estimated using the constant growth DCF model and analysts' earnings growth rate projections, which resulted in a range of market return estimates from 11.33 percent to 13.94 percent. As also shown in Figure 11, the regulatory commissions in each of those cases relied on the estimated CAPM results of those parties to determine the authorized ROE and did not dispute the use of the constant growth DCF model to calculate the market return.

[70] *Ass'n. of Businesses Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc.*, 171 FERC ¶ 61,154 (2020), at ¶ 85.

Figure 11: Regulatory Commissions – Market Return Estimated Using the Constant Growth DCF Model

Intervening Party	Company	Docket No.	Market Return	Date of Order	Did the Commission rely on the Party's CAPM?
Staff of the ICC	North Shore Gas Company	Docket 20-0810	CGDCF of the dividend-paying companies in the S&P 500 (11.95%)[71]	9/8/21	Yes[72]
I&E	Aqua Pennsylvania, Inc.	Docket No. R-2021-3027385	CGDCF of the Value Line Universe and S&P 500 (12.14%)[73]	5/12/22	Yes, the PPUC placed primary weight on I&E's CAPM[74]
Staff of the MPUC	Northern Utilities, Inc.	Docket No. 2019-00092	CGDCF of the dividend-paying companies in the S&P 500 (11.33%-13.49%)[75]	4/1/20	Yes[76]

Q. How do you respond to Mr. Murray's comparison to the Wilshire 5000 Index to GDP?

A. As noted, Mr. Murray asserts that assuming a 4.00 percent long-term growth rate in GDP, the Wilshire 5000 would be approximately 37 times the value of GDP in 50 years if the index grew at the earnings growth rate that I relied on to calculate my market return.[77] However, the Wilshire 5000 had a ten-year annualized total return as of December 31, 2022

71 Wisconsin Public Service Commission, Docket No. 20-0810, Order, September 8, 2021, at 71.
72 *Id.*, at 86-87.
73 Pennsylvania Public Utility Commission, Aqua Pennsylvania, Inc., Opinion and Order, Public Meeting held May 12, 2022, at 147.
74 *Id.*, at 178.
75 Maine Public Utilities Commission, Docket No. 2019-00092, Bench Analysis, October 29, 2019, at 21.
76 New Hampshire Public Utilities Commission, Docket No. 2019-00092, Order Part II, April 1, 2020, at 58.
77 Murray RT, p. 33.

of 11.91. Therefore, the Wilshire 5000 had a total return over the past 10 years that is consistent with my market return estimate.

Lastly, Mr. Murray's analysis is dependent on the selection of the GDP growth rate which he assumes is 4.00 percent. However, as shown in Schedule AEB-5ST, Mr. Murray's assumed growth rate is significantly below a long-term projected GDP growth rate of 5.51 percent, which is based on the real historical GDP growth rate of 3.17 percent from 1929 through 2021,[78] plus a projected inflation rate of 2.27 percent.[79]

3. Mr. Jennings's Adjustments to CAPM Results

Q. Mr. Jennings recalculates the results of your CAPM analyses, and states that once adjusted, your CAPM results would range from 7.72 percent to 8.01 percent, and thus overlap with his cost of equity estimates.[80] Is Mr. Jennings's recalculation of your CAPM analyses reasonable?

A. No. Mr. Jennings adjusts my CAPM analysis by applying his water-only proxy group, a risk-free rate of 3.04 percent, and a market return of 9.43 percent.[81] However, there are problems with each of Mr. Jennings's adjustments. First, as discussed, Mr. Jennings's water-only proxy group incorrectly includes MAWC's parent company, American Water Works Company. Second, as shown in Schedule AEB-R-11 of my Rebuttal Testimony, Mr. Jennings's risk-free rate of 3.04 percent is based on outdated data through June 2022, and when updated to reflect current data, the risk-free rate is 3.86 percent. Lastly, Mr.

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78 U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts Tables, Table 1.1.6, March 30, 2022.

79 The 5.51 percent equals (1 + 3.17 percent) x (1 + 2.27 percent) - 1.

80 Jennings RT, p. 18.

81 *Id*.

Jennings cites a market return of 9.43 percent for purposes of adjusting my CAPM analysis; however, this is neither the market return that Mr. Jennings has relied on in his CAPM nor does he explain or support the use of this market return in his rebuttal testimony. Thus, there is no basis for Mr. Jennings's use of this market return to adjust my CAPM.

E. ECAPM

Q. Please summarize Mr. Jennings's stated criticism of the Empirical CAPM ("ECAPM") analysis.

A. Mr. Jennings states that my ECAPM analyses have the same issues that he identified with the CAPM (*i.e.*, should not rely on a projected risk-free rate and the market risk premium is too high), plus an additional concern with the adjustment made in the ECAPM to account for the tendency of the CAPM to underestimate the cost of equity for companies with betas less than 1.00.[82] Specifically regarding the ECAPM adjustment, Mr. Jennings states such adjustment is based on the findings of Dr. Morin who developed the model based on data between 1926 and 1984, and Mr. Jennings asserts that there is no evidence that Dr. Morin's findings would still be relevant based on data after 1984.[83] Furthermore, Mr. Jennings contends that Dr. Morin presented other studies that produced returns between -9.61 percent to 13.56 percent, which Mr. Jennings claims means that the CAPM overestimated the return in some instances and that such findings do not lend credibility to the use of the ECAPM.[84]

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82 Jennings RT, p. 18.
83 *Id.*, at 19.
84 *Id.*

Q. Does Mr. Murray discuss your ECAPM analysis?

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

Q. Do you agree with Mr. Jennings's conclusion based on the studies cited by Dr. Morin regarding the ECAPM?

A. No, I do not. The concept of the ECAPM and the conclusion that the risk-return relationship is flatter than predicted by the CAPM is generally accepted in financial literature. Dr. Morin, in *Modern Regulatory Finance*, provides a list of studies each of which concludes that the CAPM understates the returns for companies with betas less than 1.0 and overstates the return for companies with betas greater than 1.0.[85] It is these empirical studies referenced by Dr. Morin that formed the basis of the development of alternative models such as the ECAPM that would better predict the risk return-relationship observed when reviewing actual market data.

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

$$K_e = r_f + \alpha + \beta\left(\left(r_m - r_f\right) - \alpha\right)$$

Where:

K_e = the required market ROE;

α = a constant term;

β = Beta coefficient of an individual security;

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

r_f = the risk-free ROR; and

r_m = the required return on the market as a whole.

There have been numerous additional studies published to estimate the value of the constant term or alpha factor in the ECAPM equation. Figure 12 provides the list of studies summarized by Dr. Morin and referenced by Mr. Jennings as support for his conclusion that the ECAPM is not credible. However, Mr. Jennings's conclusion improperly masks the fact that, as shown, six of the eight studies estimated positive values of the constant term, which indicates that the consensus among the studies is that the CAPM understates the observed return. Additionally, among the six studies that estimate only positive values of the constant term, the range of the constant term was 1.63 percent to 13.56 percent. Dr. Morin relied on a constant term in the range of 1 to 2 percent to develop the 0.25 and 0.75 factors included in the ECAPM, and considering the range of the constant term provided in Figure 12, it would appear Dr. Morin's estimate is conservative.

Figure 12: Empirical Evidence on the Alpha Factor (Constant Term)[86]

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

[86] Morin, Dr. Roger A. Modern Regulatory Finance. Public Utilities Reports, Inc., 2021, at 222.

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

A. Yes. Litzenberger, Ramaswamy, and Howard (1980) studied the ability of the CAPM to estimate the returns for utilities.[87] The authors found that the CAPM tends to understate the return for stocks such as utilities, which have a beta less than 1.00. To develop the analysis, Litzenberger, *et al*. utilized both adjusted and raw betas, and in both cases, the CAPM understated the return for utilities with betas less than 1.00.

Q. What is your response to Mr. Jennings's contention that the ECAPM proposed by Dr. Morin may not be applicable if more recent market data is considered?

A. Mr. Jennings's claim is incorrect as there has been a study published after the publication of Dr. Morin's book, New Regulatory Finance, that considered the use of the ECAPM based on more recent market data. Specifically, Chretien and Coggins (2011) studied the CAPM and its ability to estimate the risk premium for the utility industry in particular subgroups of utilities for a data set that included market data through the end of 2006.[88] Chretian and Coggins considered the CAPM, the Fama-French three-factor model and a model similar to the ECAPM used in my Direct Testimony. The study shows that the ECAPM significantly outperformed the traditional CAPM at predicting the observed risk premium for the various utility subgroups.

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

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

Q. As he did with your CAPM analyses, Mr. Jennings also recalculates the results of your ECAPM analyses, and states that once adjusted, your CAPM results would range from 8.15 percent to 8.37 percent.[89] Is Mr. Jennings's recalculation of your CAPM analyses reasonable?

A. No. Mr. Jennings makes the same adjustments to my ECAPM analyses as he made to my CAPM analysis. For the same reasons previously discussed regarding Mr. Jennings's unreasonable adjustments to my CAPM analysis, his adjustments to my ECAPM are also improper for the same reasons..

F. Revenue Stabilization Mechanism ("RSM") / Plant in Service Accounting ("PISA")

Q. What is Mr. Murray's position regarding the Company's proposed RSM and PISA tracking?

A. OPC witness Ms. Mantle recommends that the Commission should not approve the RSM.[90] However, if the Commission approves the proposed RSM and PISA, Mr. Murray's position is that the business risk of MAWC would be reduced. Accordingly, Mr. Murray recommends that, if the Company's proposed RSM and PISA are approved, then the Commission should either: (1) adjust the Company's equity ratio in the authorized capital structure to recognize the additional debt capacity this implies MAWC would realize if it were a stand-alone entity; or (2) lower the allowed ROE by an amount consistent with an

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89 Jennings RT, p. 19.
90 Mantle RT, p. 1

improvement in MAWC's assumed credit rating.[91] Mr. Murray suggests that MAWC's capital structure could consist of 35 percent equity and 65 percent long-term debt and achieve a pro forma funds from operations-to-debt ratio that exceeds 11 percent in order to retain its current "A-" stand-alone credit profile.[92]

Q. If the Commission approves the Company's proposed RSM and PISA, are either of Mr. Murray's proposed adjustments reasonable?

A. No. Mr. Murray's proposed adjustments are based on his conclusion that the Company will have less risk with an RSM and the PISA than it currently does without an RSM. However, Mr. Murray's assessment of risk is incorrect because it simply reviews the company's risk before and after the implementation of the RSM, or a capital recovery mechanism. This is not the correct analysis for the purposes of determining the appropriate investor-required return. Estimating the COE is based on data for a comparable group of companies. Therefore, the appropriate relative risk analysis is a comparison of the regulatory mechanisms authorized for the Company to the regulatory mechanisms in effect for the companies of the proxy group being used to develop the ROE and capital structure. This comparison determines if the Company has greater regulatory risk than the proxy group. If the Company is determined to have greater risk than the proxy group due to having fewer comprehensive regulatory mechanisms, then an ROE towards the higher end of the cost of equity results may be warranted because investors would require a higher return on equity for investing in a utility with limited ratemaking adjustment mechanisms.

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91 Murray RT, p. 34.
92 *Id*., at 35.

Likewise, if the Company is determined to have lower risk relative to the proxy group, then an ROE towards the lower end of the cost of equity results may be warranted.

Mr. Murray has conducted no analysis nor provided any evidence of the Company's level of business risk relative to the proxy group. Instead, he focused on MAWC in isolation and did not develop an analysis to determine which companies in the proxy group have an RSM or other mechanisms to determine how MAWC's risk compares to the proxy group. Absent this comparison, there is no basis to conclude that MAWC has less relative risk and that either of the adjustments that Mr. Murray recommends are appropriate.

As shown in Schedule AEB-6 to my direct testimony, approximately 59 percent of the operating companies in my proxy group have some form of revenue stabilization or decoupling mechanism. Therefore, Mr. Murray's assertion that the Company's proposed RSM would reduce MAWC's risk is misplaced because the RSM would provide revenue stabilization, while the majority of the companies in the proxy group already have revenue stabilization mechanisms. Conversely, MAWC's ROE should be at the higher end of the range if its proposed RDM and PISA are not authorized by the Commission because its risk would be elevated relative to the proxy group.

Q. Does this conclude your Surrebuttal Testimony?

A. Yes, it does.