BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF SOUTH DAKOTA

IN RE:	)	
MIDAMERICAN ENERGY COMPANY	)	**DOCKET NO. NG22-_____**
	)	
	)	

DIRECT TESTIMONY
OF
ANN E. BULKLEY

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I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Ann E. Bulkley. My business address is One Beacon Street, Suite 2600, Boston, Massachusetts 02108. I am a Principal at The Brattle Group ("Brattle"), a consulting firm that advises clients on regulatory finance and ratemaking issues.

Q. On whose behalf are you submitting this Prepared Direct Testimony?

A. I am submitting this testimony before the South Dakota Public Utilities Commission ("Commission") on behalf of MidAmerican Energy Company ("MidAmerican" or "Company").

Q. Please describe your education and experience.

A. I hold a Bachelor's degree in Economics and Finance from Simmons College and a Master's degree in Economics from Boston University, with more than 25 years of experience consulting to the energy industry. I have advised numerous energy and utility clients on a wide range of financial and economic issues with primary concentrations in valuation and utility rate matters. Many of these assignments have included the determination of the cost of capital for valuation and ratemaking purposes. I have included my resume and a summary of testimony that I have filed in other proceedings as Exhibit AEB 1.1, Schedule 1.

II. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY

Q. Please describe the purpose of your testimony.

A. I have been asked by MidAmerican to estimate the cost of common equity capital for the Company's natural gas distribution operations in the state of South Dakota[1] and to provide analysis and recommendations on the appropriate return on equity ("ROE") and capital structure to be used for ratemaking purposes.

Q. Are you sponsoring any schedules in support of your Direct Testimony?

A. Yes, my analysis and recommendations are supported by the data presented in Exhibit AEB 1.1, Schedule 2 through Schedule 11 which were prepared by me or under my direction.

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

A. Section III provides a summary of my analyses and conclusions. Section IV reviews the regulatory guidelines pertinent to the development of the cost of capital. Section V discusses current and projected capital market conditions and the effect of those conditions on the cost of equity. Section VI explains the selection of a proxy group of natural gas distribution utilities. Section VII describes the analyses and analytical basis for the recommendation of an appropriate ROE for MidAmerican.[2] Section VIII provides a discussion of specific regulatory, business, and financial risks that directly affect the ROE to be authorized for the Company in this case. Section IX addresses the Company's capital structure as compared with the capital structures of the utility operating company

[1] In this testimony I use "MidAmerican" and "Company" to identify MidAmerican's natural gas distribution operations in the state of South Dakota, unless otherwise indicated.

[2] In this testimony I use the terms "ROE" and "cost of equity" interchangeably.

subsidiaries of the proxy group companies. Section X presents my conclusions and recommendations.

III. SUMMARY OF ANALYSIS AND CONCLUSIONS

Q. How did you estimate the reasonableness of the Company's requested ROE?

A. I estimated the Company's cost of equity by applying several traditional ROE estimation methodologies to a proxy group of comparable utilities, including Discounted Cash Flow ("DCF"), Capital Asset Pricing Model ("CAPM"), Empirical CAPM ("ECAPM"), and Bond Yield Risk Premium ("BYRP" or "Risk Premium") analysis. My recommendation also takes into consideration: (1) the Company's small size, relative to the proxy group, (2) the Company's actual and anticipated capital expenditure requirements, and (3) the Company's regulatory risk as compared with the proxy group. While I did not make any specific adjustments to the ROE recommendation for any of these factors individually, I did take them into consideration in aggregate when determining where the Company's ROE falls within the range of analytical results. Finally, I considered the Company's capital structure as compared with the capital structures of the proxy companies.

Q. Please summarize the key factors considered in your analyses and upon which you base your recommended ROE.

A. In developing my recommended ROE for MidAmerican, I considered the following:

- The United States Supreme Court's *Hope* and *Bluefield*[3] decisions that established the standards for determining a fair and reasonable allowed ROE, including consistency of the allowed return with the returns of other businesses having similar

[3]Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1994).

risk, adequacy of the return to provide access to capital and support credit quality, and the requirement that the result lead to just and reasonable rates.

- The effect of current and projected capital market conditions on ROE estimation models and on investors' return requirements.
- The results of several analytical approaches that provide estimates of the Company's cost of equity. Because the Company's required ROE should be a forward-looking estimate, these analyses rely on forward-looking inputs and assumptions (e.g., projected analyst growth rates in the DCF model, forecasted risk-free rate and Market Risk Premium in the CAPM analysis, etc.)
- The Company's regulatory, business, financial, and regulatory risks relative to the proxy group of comparable companies, and the implications of those risks in determining an appropriate ROE for the Company over the period during which rates will be in effect.

Q. Please explain how you considered those factors.

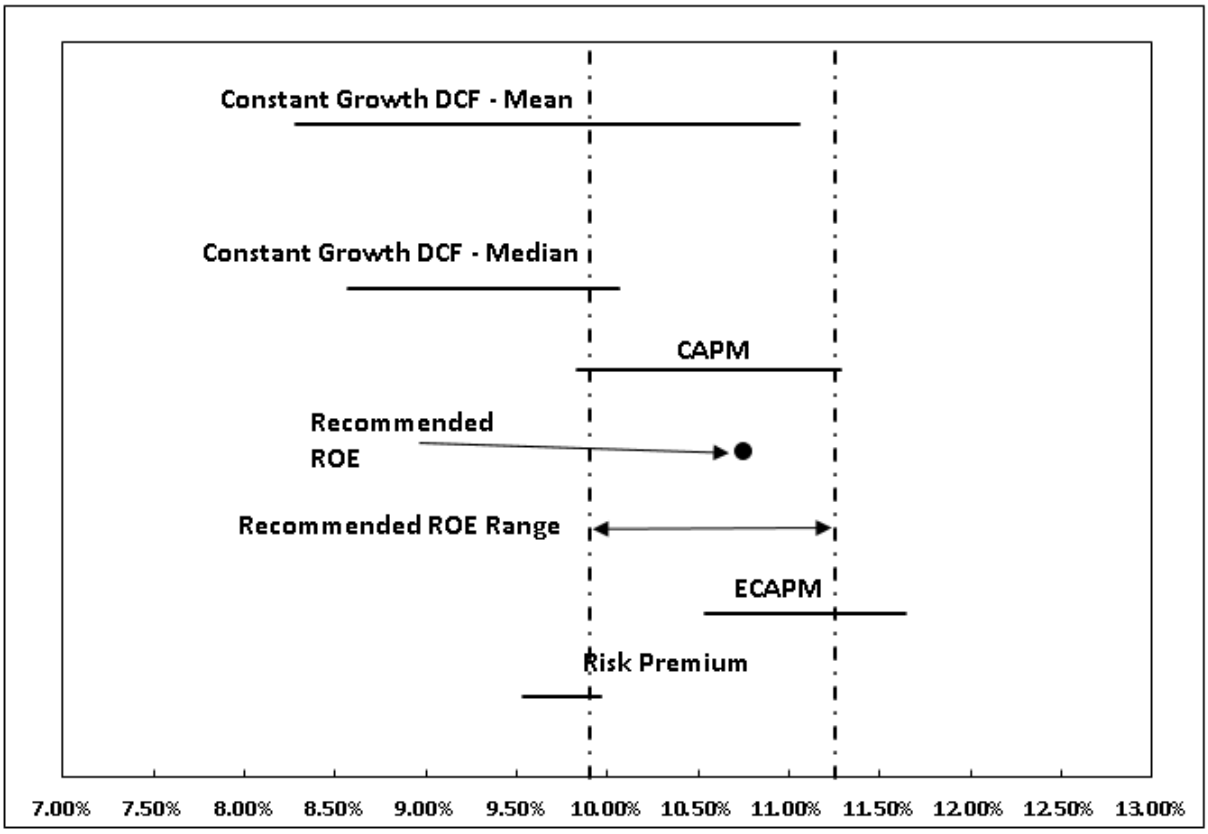
A. I relied on the range of results produced by the Constant Growth DCF model, the CAPM and ECAPM, and a Risk Premium analysis. As shown in Figure 1, these ROE estimation models produce a wide range of results. My conclusion as to where, within that range of results, MidAmerican's cost of equity falls is based on my assessment of market conditions, and the Company's business, financial, and regulatory risk relative to the proxy group. Although the companies in my proxy group are generally comparable to MidAmerican, each company is unique, and no two companies have the exact same business and financial risk profiles. Accordingly, I considered the Company's business, financial, and regulatory risk in aggregate relative to that of the proxy group companies when determining where

the Company's ROE should fall within the reasonable range of analytical results to appropriately account for any residual differences in risk.

Q. Please summarize the results of the ROE estimation models that you considered to establish the range of ROEs for MidAmerican.

A. Figure 1 summarizes the range of results produced by the Constant Growth DCF, CAPM, ECAPM, and Bond Yield Risk Premium analyses.

Figure 1: Summary of Cost of Equity Analytical Results



Q. What is your conclusion regarding the appropriate authorized ROE for MidAmerican in this proceeding?

A. Based on the analytical results presented in Figure 1, my assessment of current and anticipated capital market conditions, and the Company's business, financial, and

regulatory risk relative to proxy group companies, I conclude that a ROE in the range of 9.90 percent to 11.25 percent is reasonable. I also take into consideration underlying capital market conditions, including the expectation that interest rates will increase materially over the near-term because of the Federal Reserve normalizing monetary policy in response to increased inflation. Considering underlying market conditions and the business, financial, and regulatory risk factors facing MidAmerican, including the Company's small size compared to proxy group, significant capital expenditures and lack of any mechanism to provide for recovery between rate cases, I believe that the Company's requested ROE of 10.75 percent is reasonable and appropriate.

IV. REGULATORY GUIDELINES

Q. Please describe the guiding principles to be used in establishing the cost of equity for a regulated utility.

A. The United States Supreme Court's precedent-setting *Hope and Bluefield* cases established the standards for determining the fairness or reasonableness of a utility's allowed ROE. Among the standards established by the Court in those cases are: (1) consistency with other businesses having similar or comparable risks; (2) adequacy of the return to support credit quality and access to capital; and (3) the principle that the result reached, as opposed to the methodology employed, is the controlling factor in arriving at just and reasonable rates.[4]

[4] *Hope*, 320 U.S. 591 (1944); *Bluefield*, 262 U.S. 679 (1923).

Q. Has the Commission provided similar guidance in establishing the appropriate return on common equity?

A. Yes, the Commission follows the precedents of the *Hope* and *Bluefield* cases and acknowledges that utility investors are entitled to a fair and reasonable return. This position has been set forth by the Commission as follows:

> Determining a reasonable ROE rests primarily on sound judgment looking at the overall results of the analysis. Under SDCL 49-34A-8 and relevant case law, rates set in this proceeding must be just and reasonable. *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1994).
>
> The just and reasonableness test focuses on whether the "total effect of the rate order [is] unreasonable." *Duquesne Light Co. v. Barasch*, 488 .S. 299, 310 (1989). Under the just and reasonable test "it is the result reached, not the method employed that is controlling" and "the impact of the rate order which counts." *Hope, supra* at 602. The South Dakota Supreme Court recognized that rates that do not yield a fair return are unreasonable. *In Re Northwestern Bell*, 43 N.W. 2d 553, 555 (S.D. 1950). The rate of return must be 'commensurate with returns on other investments of corresponding risks" and "be sufficient… to attract capital." *Northwestern Public Service v. Cities of Chamberlain* et al, 265 N.W. 2d 867, (1) the Company's actual capital expenditure requirements, (S.D. 1978).[5]

Based on these standards, the authorized ROE should provide the Company with a fair and reasonable return and should provide access to capital on reasonable terms in a variety of market conditions.

Q. Why is it important for a utility to be allowed the opportunity to earn an ROE that is adequate to attract capital at reasonable terms?

A. An ROE that is adequate to attract capital at reasonable terms enables the Company to continue to provide safe, reliable natural gas service while maintaining its financial integrity. That return should be commensurate with returns expected elsewhere in the

[5] The Public Utilities Commission of South Dakota, In the Matter of the Application of Otter Tail Power Company for Authority to Increase its Electric Rates, Final Decision and Order Notice of Entry, EL18-021, at 3-4.

market for investments of equivalent risk. If it is not, debt and equity investors will seek alternative investment opportunities for which the expected return reflects the perceived risks, thereby inhibiting the Company's ability to attract capital at reasonable cost.

Q. Is a utility's ability to attract capital also affected by the ROEs that are authorized for other utilities?

A. Yes, utilities compete directly for capital with other investments of similar risk, which include other natural gas and electric utilities. In the case of MidAmerican's South Dakota operations, there is also competition across operating jurisdictions and with other operating companies for discretionary capital. The ROE awarded to a utility or individual operating company sends an important signal to investors regarding whether there is regulatory support for financial integrity, dividends, growth, and fair compensation for business and financial risk. The cost of capital represents an opportunity cost to investors. If higher returns are available for other investments of comparable risk, investors have an incentive to direct their capital to those investments. Thus, an authorized ROE that is not commensurate with authorized ROEs for other natural gas and electric utilities can inhibit the utility's ability to attract capital for investment.

Q. What are your conclusions regarding these regulatory guidelines?

A. The ratemaking process is premised on the principle that a utility must have a reasonable opportunity to recover the return of, and the market-required return on, its invested capital. Because utility operations are capital-intensive, regulatory decisions should enable the utility to attract capital at reasonable terms under a variety of economic and financial market conditions; doing so balances the long-term interests of the utility and its customers.

The financial community carefully monitors the current and expected financial condition of utility companies and the regulatory frameworks in which they operate. In that respect, the regulatory framework is one of the most important factors in both debt and equity investors' assessments of risk. The Commission's order in this proceeding, therefore, should provide the Company with the opportunity to earn an ROE that is: (1) adequate to attract capital at reasonable terms under a variety of economic and financial market conditions over the period of time that its investment will be recovered; (2) sufficient to reasonably ensure its financial integrity; and (3) commensurate with returns on investments in enterprises with similar risk. Providing the opportunity to earn a market-based cost of capital supports the financial integrity of the Company, which is in the interest of both customers and shareholders.

Q. What is the standard for setting the ROE in any jurisdiction?

A. The stand-alone ratemaking principle is the foundation of jurisdictional ratemaking. This principle requires that the rates that are charged in any operating jurisdiction be for the costs incurred in that jurisdiction. The stand-alone ratemaking principle ensures that customers in each jurisdiction only pay for the costs of the service provided in that jurisdiction, which is not influenced by the business operations in other operating companies. In order to maintain this principle, the cost of equity analysis is performed for an individual operating company as a stand-alone entity. As such, I have evaluated the investor-required return on equity for the MidAmerican natural gas operations in South Dakota.

V. CAPITAL MARKET CONDITIONS

Q. Why is it important to consider capital market conditions in the estimation of the investor-required return on equity?

A. The ROE estimation models rely on market data that are either specific to the proxy group, in the case of the DCF model, or to the expectations of market risk, in the case of the CAPM. The results of the ROE estimation models can be affected by prevailing market conditions at the time the analysis is performed. While the ROE that is established in a rate proceeding is intended to be forward-looking, current market data and projections, specifically stock prices, dividends, growth rates and interest rates, are utilized in the ROE estimation models to determine the subject company's required ROE.

As is discussed in the remainder of this section, current market conditions will likely have a material effect on the results of the ROE estimation models. As a result, it is important to consider the effect of these conditions on the results of ROE estimation models when determining the appropriate range and recommended ROE for a future period. If investors do not expect current market conditions to be sustained, it is possible that the ROE estimation models will not provide an accurate estimate of investors' required return during the period rates established in this proceeding will be in effect. Therefore, it is important to consider projected market data to estimate the return for that forward-looking period.

Q. What factors are affecting the cost of equity for regulated utilities in the current and prospective capital markets?

A. The cost of equity for regulated utility companies is being affected by several factors in the current and prospective capital markets, including: (1) persistently high inflation, (2)

changes in monetary policy, (3) rising interest rates, and (4) volatile market conditions. These factors affect the market data and projections used in the ROE estimation models. In this section, I discuss each of these factors and how it affects the models used to estimate the cost of equity for regulated utilities.

Q. What effect do current and prospective market conditions have on the cost of equity?

A. The combination of persistently high inflation, the Federal Reserve's changes in monetary policy, and the dramatic shifts in market conditions all contribute to an expectation of increased market risk and an increase in the return on equity required by investors. It is essential that these factors be considered in determining an appropriate forward-looking ROE. Inflation is currently at the highest level experienced in approximately 40 years. Interest rates, which have increased significantly from pandemic-related lows in 2020 are expected to continue to increase in direct response to the Federal Reserve's use of monetary policy to address inflation. Because there is a strong historical inverse correlation between interest rates and the share prices of utility stocks (share prices of utility stocks typically fall when interest rates rise), it is reasonable to expect that investors' required ROE for utility companies will also continue to increase. Therefore, ROE estimates based solely on current market conditions will understate the ROE required by investors during the future period that the Company's rates determined in this proceeding will be in effect.

A. The Effect of Monetary Policy on Market Dynamics

Q. Please summarize the monetary policy actions of the Federal Reserve in response to the economic effects of COVID-19.

A. In response to the COVID-19 pandemic, the Federal Reserve:

- decreased the Federal Funds rate twice in March 2020, resulting in a target range of 0.00 percent to 0.25 percent;

- increased its holdings of both Treasury and mortgaged-back securities;
- started expansive programs to support credit to large employers – the Primary Market Corporate Credit Facility to provide liquidity for new issuances of corporate bonds; and the Secondary Market Corporate Credit Facility to provide liquidity for outstanding corporate debt issuances; and
- supported the flow of credit to consumers and businesses through the Term Asset-Backed Securities Loan Facility.

In addition, Congress also passed the Coronavirus Aid, Relief, and Economic Security ("CARES") Act in March 2020, the Consolidated Appropriations Act, 2021 in December 2020, and the American Rescue Plan Act in March 2021, which included $2.2 trillion, $900 billion, and $1.9 trillion, respectively, in fiscal stimulus aimed at also mitigating the economic effects of COVID-19. These expansive monetary and fiscal programs mitigated the economic effects of the COVID-19 pandemic and provided additional support as the economy recovered from the COVID-19 recession.

Q. How did the accommodative monetary and fiscal policy affect the U.S. economy?

A. The expansive monetary and fiscal policy programs resulted in a strong economic recovery in 2021 from the COVID-19 induced recessionary period in 2020. In fact, according to the Bureau of Economic Analysis, real GDP grew by 5.7 percent in 2021 driven primarily by a 7.9 percent increase in personal consumption expenditure.[6] Moreover, the unemployment rate decreased from a high of 14.7 percent in April 2020 to 3.9 percent as of December 2021.[7] Finally, as I will discuss in more detail below, the economic recovery has also

[6] Source: Bureau of Economic Analysis, News Release, February 24, 2022, at 8.

[7] Source: Bureau of Labor Statistics. https://data.bls.gov/timeseries/LNS14000000

brought about a substantial increase in inflation, with the year-over-year ("YOY") change in the Consumer Price Index ("CPI") at 8.5 percent in March 2022, the largest 12-month increase since December 1981.[8]

Q. Is the Federal Reserve normalizing monetary policy?

A. Yes, the dramatic increase in inflation has prompted the Federal Reserve to pursue an aggressive normalization of monetary policy, removing the accommodative policy programs used to mitigate the economic effects of COVID-19. As of the May 4, 2022 meeting, the Federal Reserve has taken the following actions:

- Completed its taper of Treasury bond and mortgage-backed securities purchases, decreasing monthly purchase plans by $60 billion (from $80 billion to $20 billion) since November 2021[9]
- Increased the target federal funds rate from 0.00 – 0.25 percent to 0.25 – 0.50 percent at the March 16, 2022, meeting[10] and then from 0.25 – 0.50 percent to 0.75 – 1.00 percent at the May 4, 2022, meeting;[11]
- Forecasted a total of seven rate increases in 2022 and four rate increases in 2023 which resulted a median forecast of the federal funds rate of 1.9 percent and 2.8 percent in 2022 and 2023, respectively;[12]

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[8] Bureau of Labor Statistics, U.S. Department of Labor, The Economics Daily, Consumer prices up 8.5 percent for year ended March 2022 at https://www.bls.gov/opub/ted/2022/consumer-prices-up-8-5-percent-for-year-ended-march-2022.htm

[9] Source: Federal Reserve Bank of New York, https://www.newyorkfed.org/markets/domestic-market-operations/monetary-policy-implementation/treasury-securities/treasury-securities-operational-details#monthly-details.

[10] Source: Federal Reserve, Press Release, (Mar. 16, 2022).

[11] Source: Federal Reserve, Press Release, (May 4, 2022).

[12] Federal Reserve, Summary of Economic Projections, March 16, 2022, at 2.

- Will begin reducing its holdings of Treasury and mortgage-backed securities on June 1, 2022.[13] The Federal Reserve will reduce the size of its balance sheet by only reinvesting principal payments on owned securities after the total amount of payments received exceeds a defined cap. For Treasury Securities, the cap will be set at $30 billion per month for the first three months and $60 billion per month after the first three months. For mortgage-backed securities, the cap will be set at $17.5 billion per month for the first three months and $35 billion per month after the first three months.[14]

Q. What is the market response to the recent Federal Reserve meetings?

A. The market response is an expectation that interest rates will continue to increase in response to Federal Reserve actions to address inflation. The CME Group uses federal funds rate futures contracts to determine investors' views regarding the probability of the target federal funds rate range at upcoming Federal Reserve meetings.[15] Figure 2 below summarizes investors' expectations regarding the level of the federal funds rate at each of the next eleven meetings as of May 4, 2022, based on The CME Group's methodology. As shown in Figure 2, investors expect the Federal Reserve to increase the federal funds rate at a faster pace than what was indicated in the forecasts released at the Federal Reserve's March 16, 2022, meeting. For example, according to The CME Group, there is a 68.7 percent probability[16] that the target federal funds rate range is 2.75 percent to 3.00 percent

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[13] Source: Federal Reserve, Press Release, (May 4, 2022).

[14] Source: Federal Reserve, Plans for Reducing the Size of the Federal Reserve's Balance Sheet, Press Release, (May 4, 2022).

[15] https://www.cmegroup.com/education/demos-and-tutorials/fed-funds-futures-probability-tree-calculator.html

[16] The probability of a rate hike is calculated by adding the probabilities of all target rate levels above the current target rate.

as of December 2022, which is greater than the Federal Reserve's median forecast of 1.90 percent. This is consistent with expectations of major financial institutions. In particular:

- Citigroup, Inc. is now projecting 50 basis point increases at the next four Federal Reserve meetings followed by 25 basis point increases in October and December, reaching 3.50 to 3.75 percent.
- Bank of America Corp. is projecting a 25 basis point increase in May, followed by two 50 basis point increases, and then a 25 basis point increase at each subsequent meeting through May 2023, reaching a range of 3.00 to 3.25 percent.
- Goldman Sachs Group Inc. is projecting 50 basis point increases at the May and June Federal Reserve meetings with a 25 basis point increase at the four remaining meetings in 2022.[17] Moody's recently noted that the financial markets are close to fully pricing in three 50-basis point rate increases this year.[18]

Thus, the consensus of investors is an expectation that the Federal Reserve will pursue more aggressive monetary policy than indicated at the March 16, 2022, meeting to combat persistent high levels of inflation.

[17] Lanman, Scott, "Wall Street Lifts Fed Forecasts; Citi See Four Half-Point Hikes," Bloomberg, March 25, 2022.

[18] Moody's Analytics, Weekly Market Outlook, "Fed Girds for Stagflation", April 14, 2022.

Figure 2: Investor Expectation of Future Federal Funds Rate Increases[19]

MEETING PROBABILITIES													
MEETING DATE	125-150	150-175	175-200	200-225	225-250	250-275	275-300	300-325	325-350	350-375	375-400	400-425	425-450
6/15/2022	83.9%	16.1%	0.0%	0.0%									
7/27/2022	0.0%	5.7%	79.3%	15.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
9/21/2022	0.0%	0.0%	2.5%	38.1%	51.0%	8.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
11/2/2022	0.0%	0.0%	0.0%	2.1%	32.3%	48.9%	15.3%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%
12/14/2022	0.0%	0.0%	0.0%	0.0%	1.9%	29.4%	47.3%	18.6%	2.7%	0.1%	0.0%	0.0%	0.0%
2/1/2023	0.0%	0.0%	0.0%	0.0%	0.8%	12.8%	36.5%	35.9%	12.3%	1.7%	0.1%	0.0%	0.0%
3/15/2023	0.0%	0.0%	0.0%	0.0%	0.2%	3.2%	17.6%	36.4%	31.1%	10.1%	1.4%	0.1%	0.0%
5/3/2023	0.0%	0.0%	0.0%	0.0%	0.1%	2.2%	13.1%	30.5%	32.8%	16.7%	4.1%	0.5%	0.0%
6/14/2023	0.0%	0.0%	0.0%	0.0%	0.1%	1.7%	10.3%	26.0%	32.2%	20.8%	7.4%	1.4%	0.1%
7/26/2023	0.0%	0.0%	0.0%	0.0%	0.1%	1.5%	9.0%	23.7%	31.2%	22.5%	9.4%	2.3%	0.3%

Q. Has the Federal Reserve provided additional support for investors' expectations regarding the federal funds rate?

A. Yes, specifically, at the May 4, 2022, meeting, when the Federal Reserve increased the federal funds target rate by 50 basis points from a range of 0.25 – 0.50 percent to a range of 0.75 – 1.00 percent, Federal Reserve Chairman Powell noted at his press conference that additional 50 basis point increases may be needed at the next couple of meetings:

> "[w]e are on a path to move our policy rate expeditiously to more normal levels. Assuming that economic and financial conditions evolve in line with expectations, there is a broad sense on the Committee that additional 50 basis point increases should be on the table at the next couple of meetings. We will make our decisions meeting by meeting, as we learn from incoming data and the evolving outlook for the economy. And we will continue to communicate our thinking as clearly as possible. Our overarching focus is using our tools to bring inflation back down to our 2 percent goal."[20]

B. Inflationary Expectations in Current and Projected Market Conditions

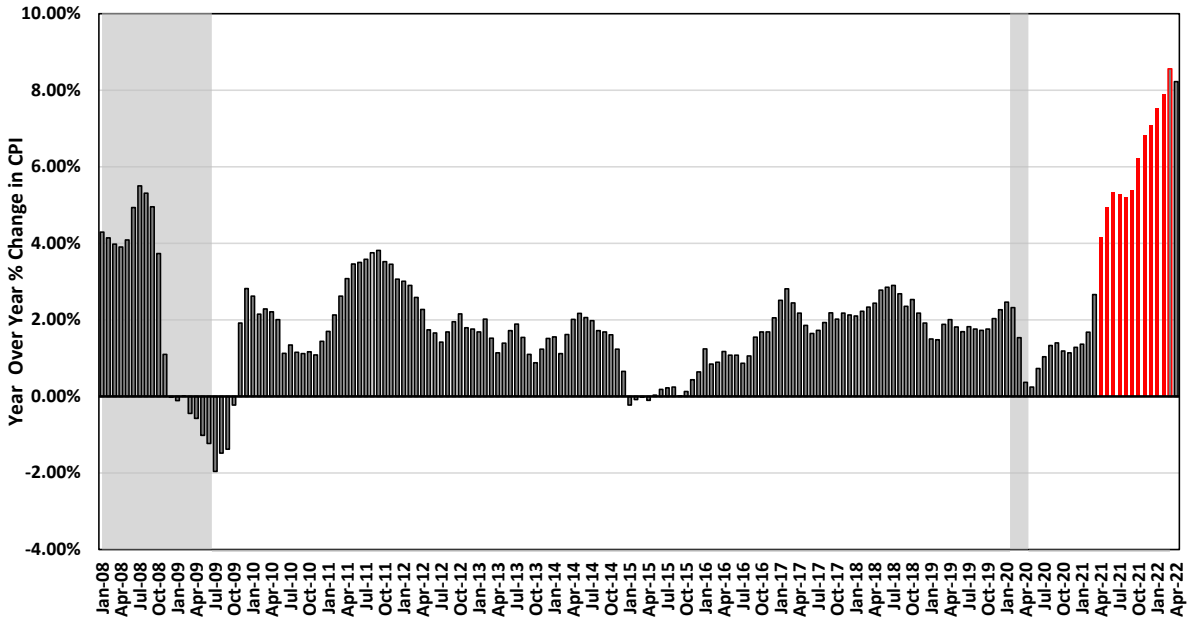
[19] CME Group; FedWatch tool as of May 8, 2022.

[20] Source: Federal Reserve, Transcript of Chair Powell's Press Conference Opening Statement, (May 4, 2022), at 3.

Q. Is the increase in inflation significant?

A. Yes, as shown in Figure 3, the YOY change in the Consumer Price Index ("CPI") published by the Bureau of Labor Statistics has increased steadily over the past year, rising from 1.37 percent in January 2021 to 8.22 percent in April 2022. The 8.22 percent YOY in the CPI in April; 2022 is down slightly from 8.56 percent in March 2022 which was the largest 12-month increase since 1981 and significantly greater than any level seen since January 2008.[21]

Figure 3: Consumer Price Index – YOY Percent Change – January 2008 – April 2022[22]



Q. What are the expectations for inflation over the near-term?

A. In his press conference following the May 4, 2022, meeting, Chairman Powell noted that "[i]nflation is much too high and we understand the hardship it is causing, and we're moving expeditiously to bring it back down".[23] Therefore, investors expect inflation to

[21] Bureau of Labor Statistics, Consumer Price Index News Release, April 12, 2022, data accessed May 12, 2022.

[22] Source: Bureau of Labor Statistics, shaded area indicates a recession.

[23] Source: Federal Reserve, Transcript of Chair Powell's Press Conference Opening Statement, (May 4, 2022), at 1.

remain elevated over the near-term. One measure of investors' expectations regarding inflation is the breakeven inflation rate, which is calculated as the difference between the yield on a Treasury bond and the yield on a Treasury Inflation-Protected bond of the same maturity, since the yield on a Treasury Inflation-Protected bond would account for the effect of inflation. The maturity of the bond selected would then reflect investors' views of inflation during the holding period of the bond. For example, the 10-year breakeven inflation rate calculated as the spread between the 10-year Treasury bond yield and the 10-year Treasury Inflation-Protected bond yield would reflect investors' expectations of inflation over the next 10 years. As shown in Figure 4 below, the 10-year breakeven inflation rate is currently greater than any level seen since January 2003. Furthermore, the 10-year breakeven inflation rate as of March 31, 2022, was 2.84 percent indicating that investors expect inflation will remain well above the Federal Reserve's 2 percent target over the next 10 years. There are many reasons why inflation is expected to remain elevated. For example, Kiplinger recently noted some key factors, including Russia's war in Ukraine, which led them to forecast an inflation rate of 5.5 percent for 2022:

> The surge in gasoline prices in March boosted annual inflation to 8.5%, the highest in 40 years. This is likely to be the peak for the year, with inflation beginning to ease soon. But it will end the year at a still high 5.5%. The inflation rate will ease because oil prices are coming down off their peaks, though they remain high. Even if the war in Ukraine ends soon, disincentives to imports of Russian oil and gas will likely continue for quite a while. Ukraine is also a major world producer of wheat. Those prices have surged 40% this year. Other grain and meat prices are also at double or triple their previous long-term averages. Plus, there are expectations of continued upward price pressures on rent, housing costs and prices of many services, as the pandemic eases and demand rebounds.[24]

[24] Payne, David, "Inflation Rate Will Ease, But Prices Will Remain High," Kiplinger, April 13, 2022.

Figure 4: 10-year Breakeven Inflation Rate – Janaury 2003 – April 2022[25]

C. The Effect of Inflation on Interest Rates and the Investor-Required Return

Q. What effect will inflation have on long-term interest rates?

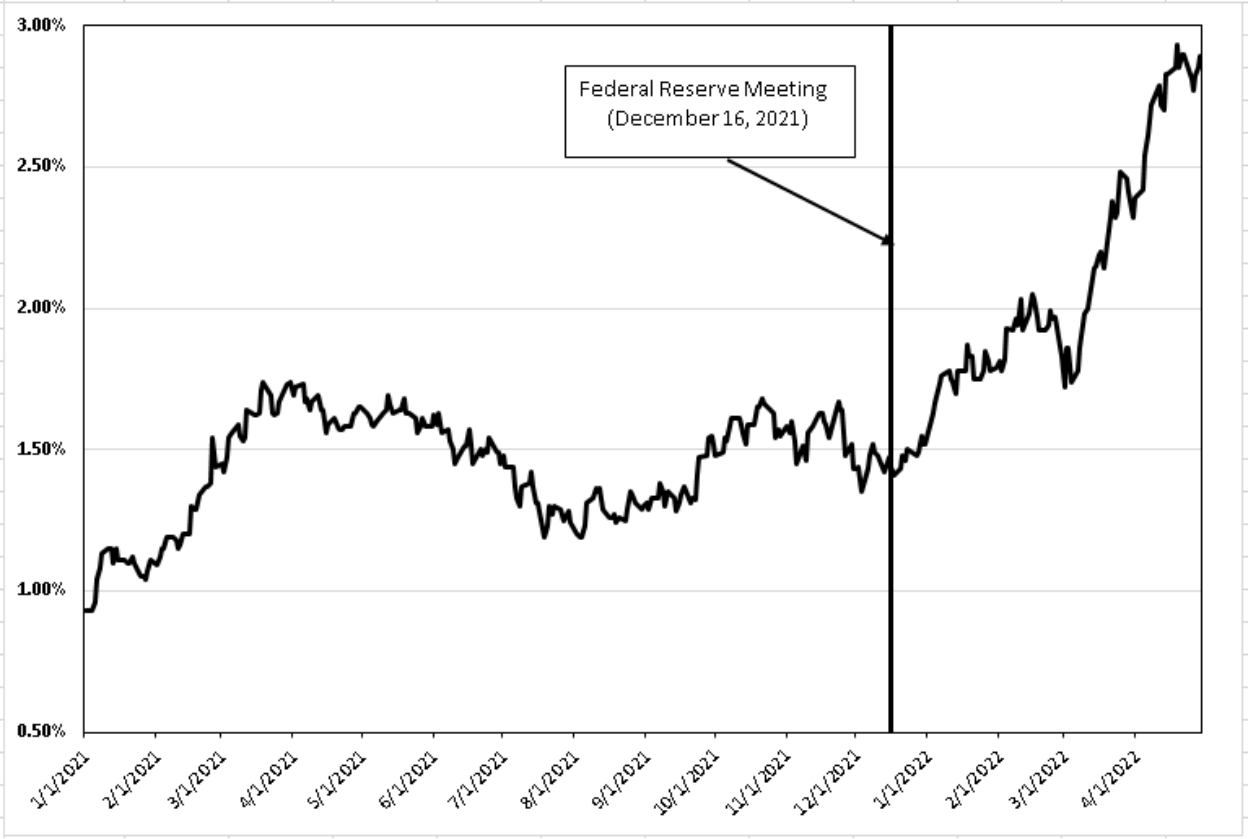
A. Inflation and the Federal Reserve's normalization of monetary policy will likely result in increases in long-term interest rates. Specifically, inflation reduces the purchasing power of the future interest payments an investor expects to receive over the duration of a bond. This risk increases the longer the duration of the bond. As a result, if investors expect increased levels of inflation, they will require higher yields to compensate for the increased risk of inflation, which means interest rates will increase.

[25] Federal Reserve Bank of St. Louis, 10-Year Breakeven Inflation Rate [T10YIE], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/T10YIE, April 29, 2022.

Q. Have the yields on long-term government bonds increased in response to inflation and the Federal Reserve's normalization of monetary policy?

A. Yes, they have. As noted above, at each of the December 2021, January 2022, March 2022, and May 2022 meetings, the Federal Reserve noted its continued concerns over the sustained increased levels of inflation. In addition, starting at the December 2021 meeting and continuing through the May 2022 meeting, the Federal Reserve accelerated the process of normalizing monetary policy to respond to inflation. As shown in Figure 5, since the Federal Reserve's December 2021 meeting, the yield on 10-year Treasury bond has doubled, increasing from 1.47 percent on December 15, 2021, to 2.94 percent on April 29, 2022. The increase is due to the Federal Reserve's announcements at the December 2021, January 2022, March 2022 and May 2022 meetings, actions the Federal Reserve has taken to normalize monetary policy, and the continued increased levels of inflation that are now expected to persist much longer than the Federal Reserve and investors had originally projected.

Figure 5: 10-Year Treasury Bond Yield – Janaury 2021 – April 2022[26]



Q. What views have equity analysts expressed about long-term government bond yields?

A. Leading equity analysts have noted that they expect the yields on long-term government bonds to remain elevated through at least the end of 2022. According to views of equity analysts summarized in Figure 6, the yield on the 10-year Treasury Bond is expected to range from 2.70 percent to 2.80 percent by the end of 2022, which is 62 to 72 basis points greater than the current 30-day average yield on the 10-year Treasury Bond as of March 31, 2022 of 2.08 percent, and in line with the 30-day average of 2.72 percent as of April 29, 2022.

[26] S&P Capital IQ Pro.

A.

Figure 6: Equity Analysts Forecast of the 10-year Treasury Yield

Bank	10-year U.S. Treasury Yield	
	30-day Average as of April 29, 2022	2022 Forecast
Credit Suisse[27]	2.72%	2.70%
Goldman Sachs[28]	2.72%	2.70%
Blue Chip Financial Forecasts (Consensus Estimate)[29]	2.72%	2.80%
BMO Economics[30]	2.72%	2.70%

Q. Have you considered any additional indicators that may imply long-term interest rates are expected to increase?

A. Yes, I have. I considered the net position of commercials (i.e., banks) in U.S. Treasury Bond futures contracts as reported in the Commitment of Traders Report produced by the Commodity Futures Trading Commission. A net position is defined as the total number of long positions in a futures contract minus the total number of short positions in a futures contract. A long position means that an investor agrees to purchase an asset in the future at a predetermined price and therefore profits if the price of the underlying asset increases. Conversely, short position is when an investor agrees to sell an asset at a time in the future at a predetermined price and profits if the price of the underlying asset declines. Therefore, if banks are increasing the number of short positions and thus have a declining net position, the banks are assuming that the price of the asset will decline. As shown in Figure 7, the

[27] Reuters, "U.S. 10-year yield to hit 2.7% this year - Credit Suisse," February 16, 2022.

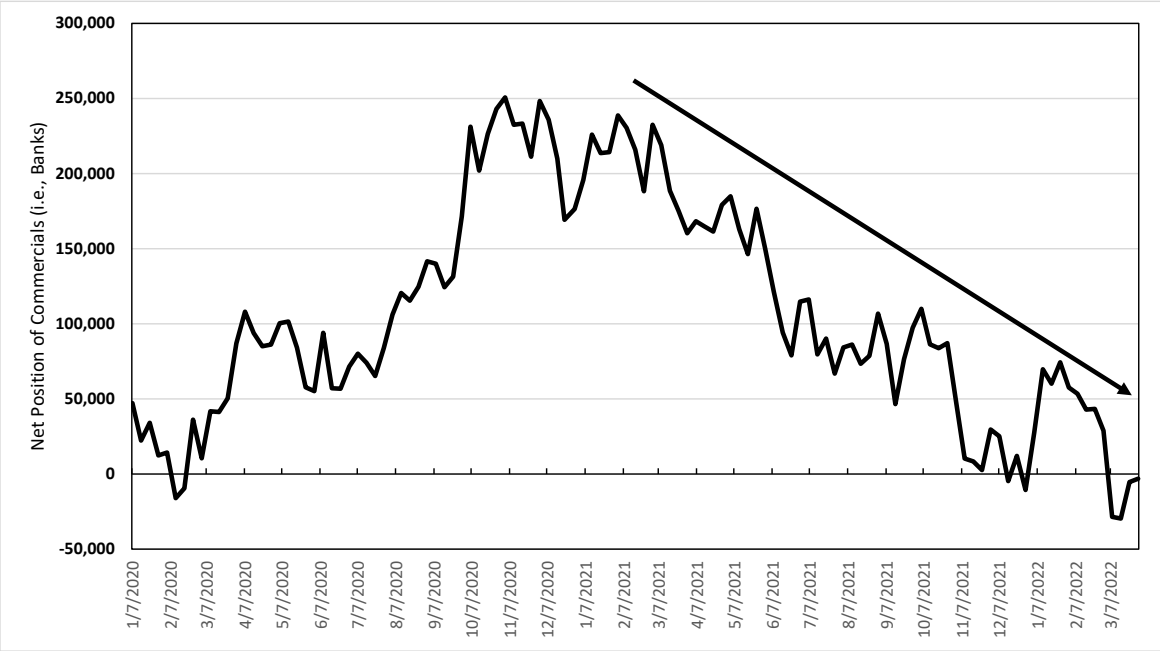
[28] Worrachate, Anchalee. "Goldman Sees Higher U.S. Treasury Yields, Curve Inversion." Bloomberg.com, 25 Mar. 2022, https://www.bloomberg.com/news/articles/2022-03-25/goldman-sees-half-point-fed-hikes-in-may-and-june-higher-yields#:~:text=Its%202022%20forecast%20on%2010,yield%20was%20around%202.49%25%20Friday.

[29] Blue Chip Financial Forecasts, Vol. 41, No. 4, April 1, 2022, at 2.

[30] BMO Economics, "North American Outlook: Out of the Pandemic and Into the Fire," March 31, 2022.

net position of banks in U.S. Treasury Bonds has been decreasing since the end of 2020. Therefore, banks are forecasting a decrease in the price of long-term government bonds and thus the yields (which are inversely related to the price) to increase over the near-term.

Figure 7: Commitment of Traders Report – Net Position of Commercials (i.e., Banks) in U.S. Treasury Bond Futures Contracts[31]



D. Expected Performance of Utility Stocks and the Investor-Required ROE on Utility Investments

Q. Are utility share prices correlated to changes in the yields on long-term government bonds?

A. Yes, interest rates and utility share prices are inversely correlated which means, for example, that an increase in interest rates will generally result in a decline in the share prices of utilities. For example, Goldman Sachs and Deutsche Bank recently examined the sensitivity of share prices of different industries to changes in interest rates over the past

[31] Commitment of Traders Report, as of March 31, 2022 – https://www.cftc.gov/MarketReports/CommitmentsofTraders/HistoricalCompressed/index.htm

five years. Both Goldman Sachs and Deutsche Bank found that utilities had one of the strongest negative relationships with bond yields (i.e., increases in bond yields resulted in the decline of utility share prices).[32]

Q. How do equity analysts expect the utilities sector to perform in an increasing interest rate environment?

A. Notwithstanding recent outperformance by utilities due to investors moving to defensive sectors out of concern about heightened geopolitical risk and broader macroeconomic concerns, equity analysts project that utilities are likely to continue to underperform the broader market as interest rates increase.[33] For example, in its most recent Big Money Poll, which closed in mid-April 2022 and surveyed 112 money managers regarding the outlook for the next twelve months, the professional investors surveyed by Barron's selected the utility sector as the least attractive of all industries for investment.[34]

Q. Have you reviewed any market indicators that may imply that utilities will underperform over the near-term?

A. Yes, I have. As discussed above, the utility sector is considered a "bond proxy" or a sector that investors view as a "safe haven" alternative to bonds, and changes in utility stock prices are therefore inversely related to changes in interest rates. For example, the utility sector tends to perform well when interest rates are low since the dividend yields for utilities offer investors the prospect of higher returns when compared to the yields on long-

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[32] Lee, Justina. "Wall Street Is Rethinking the Treasury Threat to Big Tech Stocks." Bloomberg.com, 11 Mar. 2021, www.bloomberg.com/news/articles/2021-03-11/wall-street-is-rethinking-the-treasury-threat-to-big-tech-stocks.

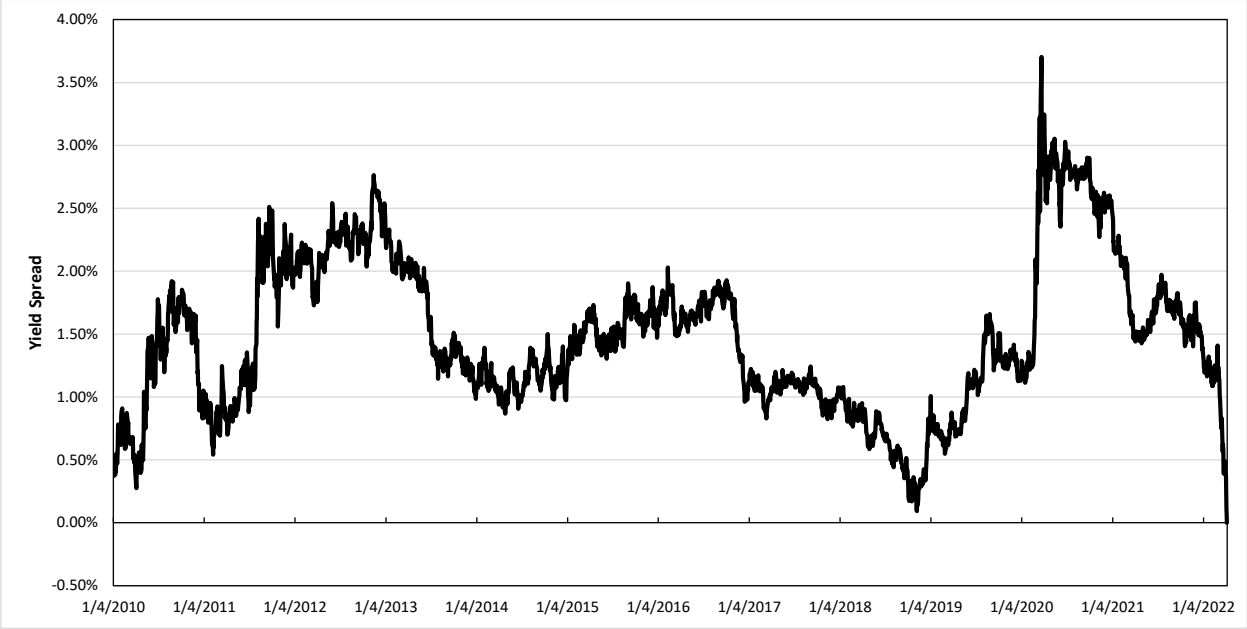
[33] Sonenshine, Jacob. "Utilities Have Been Soaring as Treasuries Get Crushed. That Isn't Supposed to Happen." Barrons.com, April 11, 2022, https://www.barrons.com/articles/utilities-treasury-yields-outlook-51649457572?mod=hp_INTERESTS_bonds&refsec=hp_INTERESTS_bonds

[34] Jasinski, Nicholas. Bullish Later: How Investors Are Sizing up Stocks, Barron's updated April 24, 2022.

term government bonds. Conversely, the utility sector underperforms as the yields on long-term government bonds increase and the spread between the dividend yields on utility stocks and the yields on long-term government bonds decreases. Therefore, I examined the difference ("yield spread") between the dividend yields of utility stocks and the yields on long-term government bonds from January 2010 through April 2022. I selected the dividend yield on the Utilities Select Sector SPDR® Fund ("XLU")[35] as the measure of the dividend yields for the utility sector and the yield on the 10-year Treasury Bond as the estimate of the yield on long-term government bonds. As shown in Figure 8, the yield spread as of April 8, 2022, was 0.00 percent indicating that the yield on the 10-year Treasury Bond is equivalent to the dividend yield for the XLU, which is the smallest yield spread since at least 2010. Furthermore, the current yield spread of 0.00 percent is well below the long-term average since January 2010 of 1.47 percent. Given that the yield spread is currently well below the long-term average as well as the expectation that interest rates will continue to increase, it is reasonable to conclude that utility sector will most likely underperform over the near-term. This is because investors that purchased utility stocks as an alternative to the lower yields on long-term government bonds would otherwise be inclined to rotate back into government bonds, particularly as the yields on long-term government bonds continue to increase, thus resulting in a decrease in the share prices of utilities.

[35] An investment fund with holdings in approximately 30 utility stocks that seeks to provide an effective representation of the utilities sector of the S&P 500 Index.

Figure 8: Yield Spread between the Dividend Yield on the XLU and the Yield on the 10-year Treasury Bond – January 2010 – April 2022[36]

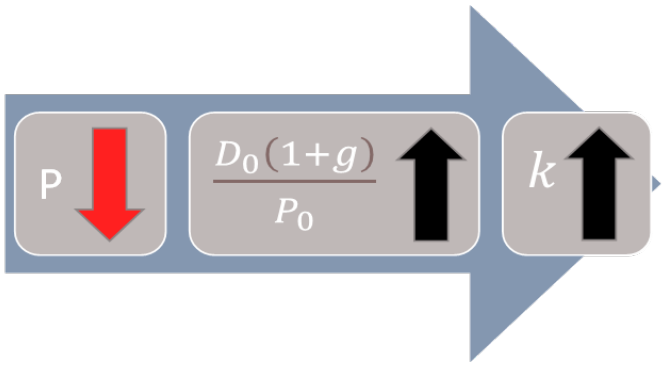


Q. What is the significance of the inverse relationship between interset rates and utility share prices in the current market?

A. As discussed above, the Federal Reserve is currently normalizing monetary policy in response to inflation which is expected to increase long-term government bond yields. If interest rates increase as expected, then the share prices of utilities will decline which results in the DCF model understating the cost of equity. For example, Figure 9 below summarizes the effect of price on the dividend yield in the Constant Growth DCF model.

[36] S&P Capital IQ Pro.

Figure 9: The Effect of a Decline in Stock Prices on the Constant Growth DCF Model



A decline in stock prices will increase the dividend yields and thus the estimate of the ROE produced by the Constant Growth DCF model. Therefore, this expected change in market conditions supports consideration of the range of ROE results produced by the mean to mean-high DCF results since the mean DCF results would likely understate the cost of equity during the period that the Company's rates will be in effect. Moreover, prospective market conditions warrant consideration of other ROE estimation models such as the CAPM and ECAPM, which may better reflect expected market conditions. For example, two out of three inputs to the CAPM (i.e., the market risk premium and risk-free rate) are forward-looking.

E. Conclusion

Q. What are your conclusions regarding the effect of current market conditions on the cost of equity for the Company?

A. Over the near-term, investors expect long-term interest rates to increase in response to continued elevated levels of inflation and the Federal Reserve's normalization of monetary policy. Because the share prices of utilities are inversely correlated to interest rates, an increase in long-term government bond yields will likely result in a decline in utility share prices, which is the reason a number of equity analysts expect the utility sector to

underperform over the near-term. The expected underperformance of utilities means that DCF models using recent historical data likely underestimate investors' required return over the period that rates will be in effect. This change in market conditions also supports the use of other ROE estimation models such as the CAPM and the ECAPM, which may better reflect expected market conditions.

VI. PROXY GROUP SELECTION

Q. Please provide a brief profile of MidAmerican.

A. MidAmerican is a wholly owned indirect subsidiary of Berkshire Hathaway Energy Company, a holding company that owns a highly diversified portfolio of locally-managed businesses principally engaged in the energy industry and is a consolidated subsidiary of Berkshire Hathaway, Inc. MidAmerican provides regulated retail electric service to approximately 800,000 customers in portions of Iowa, Illinois, and South Dakota and retail and transportation of natural gas to over 786,000 customers in Iowa, Illinois, Nebraska, and South Dakota.[37] MidAmerican has long-term issuer ratings of A/Stable from Standard & Poor's and A1/Stable from Moody's.[38] The Company provided natural gas distribution service to over 104,000 customers in the state of South Dakota in 2021.[39]

Q. Why have you used a group of proxy companies to estimate the cost of equity for MidAmerican?

A. In this proceeding, we focus on estimating the cost of equity for a natural gas utility company that is not itself publicly traded. Because the cost of equity is a market-based

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[37] Source: SEC Form 10-K of Berkshire Hathaway Energy Company and MidAmerican Energy Company for the fiscal year ended December 31, 2021

[38] Source: S&P Capital IQ Pro, (December 6, 2021).

[39] Direct Testimony of Nick J. Nation at 4.

concept and because MidAmerican's operations do not make up the entirety of a publicly traded entity, it is necessary to establish a group of companies that is both publicly traded and comparable to the Company in certain fundamental business and financial respects to serve as its "proxy" in the ROE estimation process.

Even if MidAmerican was a publicly traded entity, it is possible that transitory events could bias its market value over a given period. A significant benefit of using a proxy group is that it moderates the effects of unusual events that may be associated with any one company. The proxy companies used in my analyses all possess a set of operating and risk characteristics that are substantially comparable to the Company, and thus provide a reasonable basis to derive and estimate the appropriate ROE for MidAmerican.

Q. How did you select the companies included in your proxy group?

A. I began with the group of 10 publicly traded companies that Value Line classifies as Natural Gas Distribution Utilities and applied the following screening criteria to select a group of risk-comparable companies that:

- pay consistent quarterly cash dividends, because companies that do not cannot be analyzed using the Constant Growth DCF model;
- have investment grade long-term issuer ratings from S&P and/or Moody's;
- are covered by at least two utility industry analysts;
- have positive long-term earnings growth forecasts from at least two utility industry equity analysts;
- derive more than 60.00 percent of their total operating income from regulated operations;

- derive more than 60.00 percent of regulated operating income from gas distribution operations; and
- were not parties to a merger or transformative transaction during the analytical periods relied on.

Q. What is the composition of your proxy group?

A. The screening criteria discussed above resulted in a proxy group consisting of the companies shown in Figure 10 below.

Figure 10: Natural Gas Utility Proxy Group

Company	Ticker
Atmos Energy Corporation	ATO
New Jersey Resources	NJR
NiSource	NI
Northwest Natural Gas Company	NWN
ONE Gas, Inc.	OGS
Spire, Inc.	SR

Q. Do your screening criteria result in a proxy group that is risk comparable to MidAmerican?

A. Yes, they do. The overall purpose of developing a set of screening criteria is to select a proxy group of companies that align with the financial and operational characteristics of MidAmerican and that investors would view as comparable to the Company. I developed the screens and thresholds for each screen based on judgment with the intention of balancing the need to maintain a proxy group that is of sufficient size with establishing a proxy group of companies that are comparable in business and financial risk to MidAmerican. This resulted in the group of seven companies shown in Figure 10 which have business and financial risks that are comparable to MidAmerican.

VII. COST OF EQUITY ESTIMATION

Q. Please briefly discuss the ROE in the context of the regulated rate of return ("ROR").

A. The ROE is the cost rate applied to the equity capital in the ROR. The ROR for a regulated utility is the weighted average cost of capital, in which the costs of the individual sources of capital are weighted by their respective proportion (i.e. book values) in the utility's capital structure. While the costs of debt and preferred stock can be directly observed, the cost of equity is market-based and, therefore, must be estimated based on observable market data.

Q. How is the required ROE determined?

A. The required ROE is estimated by using analytical techniques that rely on market-based data to quantify investor expectations regarding equity returns, adjusted for certain incremental costs and risks. Informed judgment is then applied to determine where the company's cost of equity falls within the range of results produced by multiple analytical techniques. The key consideration in determining the cost of equity is to ensure that the methodologies employed reasonably reflect investors' views of the financial markets in general, as well as the subject company (in the context of the proxy group), in particular.

Q. What methods did you use to estimate the Company's ROE?

A. I considered the results of the Constant Growth DCF model, the CAPM, the ECAPM, and a Bond Yield Plus Risk Premium analysis. As discussed in more detail below, a reasonable ROE estimate appropriately considers alternative methodologies and the reasonableness of their individual and collective results.

A. Importance of Multiple Analytical Approaches

Q. Why is it important to use more than one analytical approach?

A. Because the cost of equity is not directly observable, it must be estimated based on both quantitative and qualitative information. When faced with the task of estimating the cost of equity, analysts and investors are inclined to gather and evaluate as much relevant data as reasonably can be analyzed. Several models have been developed to estimate the cost of equity, and I use multiple approaches to estimate the cost of equity. As a practical matter, however, all the models available for estimating the cost of equity are subject to limiting assumptions or other methodological constraints. Consequently, many well-regarded finance texts recommend using multiple approaches when estimating the cost of equity. For example, Copeland, Koller, and Murrin[40] suggest using the CAPM and Arbitrage Pricing Theory model, while Brigham and Gapenski[41] recommend the CAPM, DCF, and Bond Yield Plus Risk Premium approaches**.**

Q. Do current market conditions increase the importance of using more than one analytical approach?

A. Yes, The effect of the low interest rate environment can be seen in the low dividend yields for utilities which result in DCF cost of equity estimates that are understating the forward-looking cost of equity. The CAPM and Bond Yield Plus Risk Premium method offer some balance to the sensitivity of the DCF model to low Treasury yields. Low interest rates might also affect the CAPM in two ways: (1) the risk-free rate is lower than it is expected to be going forward, and (2) because the market risk premium is a function of interest rates, (*i.e.*,

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[40] Tom Copeland, Tim Koller and Jack Murrin, Valuation: Measuring and Managing the Value of Companies, 3rd Ed. (New York: McKinsey & Company, Inc., 2000), at 214.

[41] Eugene Brigham, Louis Gapenski, Financial Management: Theory and Practice, 7th Ed. (Orlando: Dryden Press, 1994), at 341.

it is the return on the broad stock market less the risk-free interest rate), the risk premium should move higher when interest rates are lower. However, when applied appropriately, the CAPM will take into account the relationship between ROE and interest rates through the market risk premium component. Therefore, it is important to use multiple analytical approaches to moderate the impact that the current low interest rate environment is having on the ROE estimates, especially the DCF analysis, and where possible consider using projected market data in the models to estimate the return for the forward-looking period.

Q. Has the Commission made similar findings regarding the reliance on multiple models?

A. Yes, In a 2018 decision for Otter Tail Power, the Commission noted that determining a reasonable return on equity rests primarily on sound judgment looking at the overall results of the analysis. Further, the Commission noted that under SDCL 49-34A-8 and relevant case law, rates set must be just and reasonable. Under the just and reasonable standard the Commission noted that "it is the result reached, not the method employed that is controlling". Witnesses for both Otter Tail Power and Commission staff relied on multiple models that collectively supported the result reached by the Commission in this proceeding.[42]

Q. Are you aware of any other regulatory commissions that have recognized the importance of considering the results of multiple models?

A. Yes, regulatory commissions routinely consider the results of multiple ROE estimation methodologies such as the DCF, CAPM, ECAPM and Risk Premium in determining the

[42] Before the Public Utilities Commission of the State of South Dakota, In the Matter of the Application of Otter Tail Power Company for Authority to Increase Its Electric Rates, Docket No. EL-18-021, Final Decision and Order; May 30, 2019, at 3.

authorized ROE for utilities in jurisdictional rate proceedings, including the Iowa Utilities Board ("IUB")[43], the Minnesota Public Utilities Commission ("Minnesota PUC")[44], the Michigan Public Service Commission ("Michigan PSC")[45], the Washington Utilities and Transportation Commission ("Washington UTC"),[46] and the New Jersey Board of Public Utilities ("NJBPU").[47] For example, the Washington UTC has repeatedly emphasized that it "places value on each of the methodologies used to calculate the cost of equity and does not find it appropriate to select a single method as being the most accurate or instructive."[48] The Washington UTC has also explained that "[f]inancial circumstances are constantly shifting and changing, and we welcome a robust and diverse record of evidence based on a variety of analytics and cost of capital methodologies."[49]

Additionally, in its recent order for DTE Gas Company ("DTE Gas") in Case No. U-18999, the Michigan PSC considered the results of each of the models presented by the ROE witnesses which included the DCF, CAPM, ECAPM and Risk Premium in the determination of the authorized ROE.[50] The Commission also considered authorized ROEs in other states, increased volatility in capital markets and the company-specific business risks of DTE Gas.

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[43] Docket RPU-2021-0002, Order Approving Settlement, Approving Compliance Filings, and Granting Confidential Treatment Requests; at 10; Docket RPU-2019-0002, Order Regarding Settlement and Requiring Compliance Filings; at 12-13

[44] Docket No. G011/GR-17-563, Findings of Fact, Conclusions and Order, at 27; Docket No. E015/GR-16-664, Findings of Fact, Conclusions and Order, at 60-61

[45] Michigan Public Service Commission Order, DTE Gas Company, Case No. U-18999, at 45-47 (Sept. 13, 2018).

[46] *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-130043, Order 05, n. 89 (Dec. 4, 2013); *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-100749, Order 06, ¶ 91 (March 25, 2011).

[47] NJBPU Docket No. ER12111052, OAL Docket No. PUC16310-12, Order Adopting Initial Decision with Modifications and Clarifications, at 71 (March 18, 2015).

[48] *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-130043, Order 05, n. 89 (Dec. 4, 2013).

[49] *Wash. Utils. & Transp. Comm'n v. PacifiCorp*, Docket UE-100749, Order 06, ¶ 91 (March 25, 2011).

[50] Michigan Public Service Commission Order, DTE Gas Company, Case No. U-18999, at 45-47 (Sept. 13, 2018).

Q. What are your conclusions about the results of the DCF and CAPM models?

A. Recent market data that is used as the basis for the assumptions for both models have been affected by market conditions. As a result, relying exclusively on historical assumptions in these models, without considering whether these assumptions are consistent with investors' future expectations, will underestimate the cost of equity that investors would require over the period that the rates in this case are to be in effect. In this instance, relying on the historically low dividend yields that are not expected to continue over the period that the new rates will be in effect will underestimate the ROE for MidAmerican.

Furthermore, as discussed in Section V. above, long-term interest rates have increased since August 2020, and this trend is expected to continue over the near-term as the economy continues to recover from the economic effects of COVID-19 and the Federal Reserve normalizes monetary policy. Therefore, the use of current averages of Treasury bond yields as the estimate of the risk-free rate in the CAPM is not appropriate since recent market conditions are not expected to continue over the long-term. Instead, analysts should rely on projected yields of Treasury Bonds in the CAPM. The projected Treasury Bond yields results in CAPM estimates that are more reflective of the market conditions that investors expect during the period that the Company's rates will be in effect.

B. Constant Growth DCF Model

Q. Please describe the DCF approach.

A. The DCF approach is based on the theory that a stock's current price represents the present value of all expected future cash flows. In its most general form, the DCF model is expressed as follows:

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

Where P_0 represents the current stock price, $D_1 \ldots D\infty$ are all expected future dividends, and k is the discount rate, or required ROE. Equation [1] is a standard present value calculation that can be simplified and rearranged into the following form:

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

Equation [2] is often referred to as the Constant Growth DCF model in which the first term is the expected dividend yield and the second term is the expected long-term growth rate.

Q. What assumptions are required for the Constant Growth DCF model?

A. The Constant Growth DCF model requires the following four assumptions: (1) a constant growth rate for earnings and dividends; (2) a stable dividend payout ratio; (3) a constant price-to-earnings ("P/E") ratio; and (4) a discount rate greater than the expected growth rate. To the extent that any of these assumptions are violated, considered judgment and/or specific adjustments should be applied to the results.

Q. What market data did you use to calculate the dividend yield in your Constant Growth DCF model?

A. The dividend yield in my Constant Growth DCF model is based on the proxy companies' current annualized dividend and average closing stock prices over the 30-, 90-, and 180-trading days ended March 31, 2022.

Q. Why did you use 30-, 90-, and 180-day averaging periods?

A. In my Constant Growth DCF model, I use an average of recent trading days to calculate the term P_0 in the DCF model to reflect current market data while also ensuring that the ROE is not skewed by anomalous events that may affect stock prices on any given trading day. However, as discussed above, recent market data is not representative of expected

market conditions over the long-term. Therefore, the results of my Constant Growth DCF model using historical data may underestimate the forward-looking cost of equity.

Q. Did you make any adjustments to the dividend yield to account for periodic growth in dividends?

A. Yes, I did. Because utility companies tend to increase their quarterly dividends at different times throughout the year, it is reasonable to assume that dividend increases will be evenly distributed over calendar quarters. Given that assumption, it is reasonable to apply one-half of the expected annual dividend growth rate for purposes of calculating the expected dividend yield component of the DCF model. This adjustment ensures that the expected first-year dividend yield is, on average, representative of the coming twelve-month period, and does not overstate the aggregated dividends to be paid during that time.

Q. Why is it important to select appropriate measures of long-term growth in applying the DCF model?

A. In its Constant Growth form, the DCF model (*i.e.*, Equation [2]) assumes a single growth estimate in perpetuity. To reduce the long-term growth rate to a single measure, one must assume that the payout ratio remains constant and that earnings per share, dividends per share and book value per share all grow at the same constant rate. Over the long run, however, dividend growth can only be sustained by earnings growth. Therefore, it is important to incorporate a variety of sources of long-term earnings growth rates into the Constant Growth DCF model.

Q. Which sources of long-term earnings growth rates did you use?

A. My Constant Growth DCF model incorporates three commonly referenced sources of long-term earnings growth rates: (1) Zacks Investment Research; (2) Yahoo! Finance; and (3) Value Line Investment Survey.

Q. How did you calculate the range of results for the Constant Growth DCF Models?

A. I calculated the low result for my DCF model using the minimum growth rate (*i.e.*, the lowest of the "Value Line", "Yahoo! Finance", and "Zacks" earnings growth rates) for each of the proxy group companies. Thus, the low result reflects the minimum DCF result for the proxy group. I used a similar approach to calculate the high results, using the highest growth rate for each proxy group company.

Q. What were the results of your Constant Growth DCF analyses?

A. Figure 11 (see also Exhibit AEB 1.1, Schedule 3) summarizes the results of my DCF analyses. As shown in Figure 11, the median and mean DCF results range from 9.59 percent to 9.91 percent, and the median high and mean high results are in the range of 9.89 percent to 11.20 percent. Although I also summarize the low DCF results, given the expected underperformance of utility stocks and thus the likelihood that the DCF model is understating the cost of equity, I do not believe it is appropriate to consider the low DCF results at this time.

Figure 11: Constant Growth Discounted Cash Flow Results

Constant Growth DCF - Mean			
	Min Growth Rate	**Mean Growth Rate**	**Max Growth Rate**
30-Day Average	8.10%	9.59%	10.88%
90-Day Average	8.31%	9.80%	11.09%
180-Day Average	8.42%	9.91%	11.20%
Constant Growth DCF – Median			
	Min Growth Rate	**Mean Growth Rate**	**Max Growth Rate**
30-Day Average	8.37%	9.62%	9.89%
90-Day Average	8.63%	9.84%	10.11%
180-Day Average	8.70%	9.91%	10.18%

Q. What are your conclusions about the results of the DCF models?

A. As discussed previously, one primary assumption of the Constant Growth DCF model is a constant P/E ratio. That assumption is heavily influenced by the market price of utility stocks. Because utility stocks are expected to underperform the broader market over the near-term as interest rates increase, it is important to consider the results of the DCF models with caution. This means that the results of the current DCF models are below where they would otherwise be under more normal market conditions. Therefore, while I have given weight to the results of the Constant Growth DCF model, my recommendation also gives weight to the results of other ROE estimation models.

C. CAPM Analysis

Q. Please briefly describe the CAPM.

A. The CAPM is a risk premium approach that estimates the cost of equity for a given security as a function of a risk-free return plus a risk premium to compensate investors for the non-diversifiable, systematic risk of that security. Systematic risk is the risk inherent in the entire market or market segment—which cannot be diversified away using a portfolio of

assets. Unsystematic risk is the risk of a specific company that can, theoretically, be mitigated through portfolio diversification.

The CAPM is defined by four components, each of which must theoretically be a forward-looking estimate:

$$K_e = r_f + \beta(r_m - r_f) \quad [3]$$

Where:

K_e = the required market ROE;

β = Beta coefficient of an individual security;

r_f = the risk-free rate of return; and

r_m = the required return on the market.

In this specification, the term ($r_m - r_f$) represents the market risk premium. According to the theory underlying the CAPM, because unsystematic risk can be diversified away, investors should only be concerned with systematic or non-diversifiable risk. Systematic risk is measured by Beta. Beta is a measure of the volatility of a security as compared to the market as a whole. Beta is defined a:

$$\beta = \frac{Covariance(r_e, r_m)}{Variance(r_m)} \quad [4]$$

The variance of the market return (i.e., Variance (r_m)) is a measure of the uncertainty of the general market, and the covariance between the return on a specific security and the general market (i.e., Covariance (r_e, r_m)) reflects the extent to which the return on that security will respond to a given change in the general market return. Thus, Beta represents the risk of the security relative to the general market.

Q. What risk-free rate did you use in your CAPM analysis?

A. I relied on three sources for my estimate of the risk-free rate: (1) the current 30-day average yield on 30-year U.S. Treasury bonds, which is 2.37 percent;[51] (2) the average projected 30-year U.S. Treasury bond yield for the third quarter of 2022 through the third quarter of 2023, which is 3.12 percent;[52] and (3) the average projected 30-year U.S. Treasury bond yield for 2023 through 2027, which is 3.40 percent.[53]

Q. Would you place more weight on one of these scenarios?

A. Yes, based on current market conditions, I place more weight on the results of the projected yields on the 30-year Treasury bonds. As discussed previously, the estimation of the cost of equity in this case should be forward-looking because it is the return that investors would receive over the future rate period. Therefore, the inputs and assumptions used in the CAPM analysis should reflect the expectations of the market at that time. Although I have included the results of a CAPM analysis that relies on the current average risk-free rate, this analysis fails to take into consideration the effect of the market's expectations for interest rate increases on the cost of equity.

Q. What Beta coefficients did you use in your CAPM analysis?

A. As shown Exhibit AEB 1.1, Schedule 4, I used the Beta coefficients for the proxy group companies as reported by Bloomberg and Value Line. The Beta coefficients reported by Bloomberg were calculated using ten years of weekly returns relative to the S&P 500 Index. Value Line's calculation is based on five years of weekly returns relative to the New York Stock Exchange Composite Index.

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[51] Bloomberg Professional as of March 31, 2022.

[52] Blue Chip Financial Forecasts, Vol. 41, No. 4, at 2 (April 1, 2022).

[53] Blue Chip Financial Forecasts, Vol. 40, No. 12, at 14 (December 1, 2021).

Additionally, as shown in Exhibit AEB 1.1, Schedule 6, I also considered an additional CAPM analysis which relies on the long-term average utility Beta coefficient for the companies in my proxy group. As shown in Exhibit AEB 1.1, Schedule 6, the long-term average utility Beta coefficient was calculated as an average of the Value Line Beta coefficients for the companies in my proxy group from 2016 through 2021.

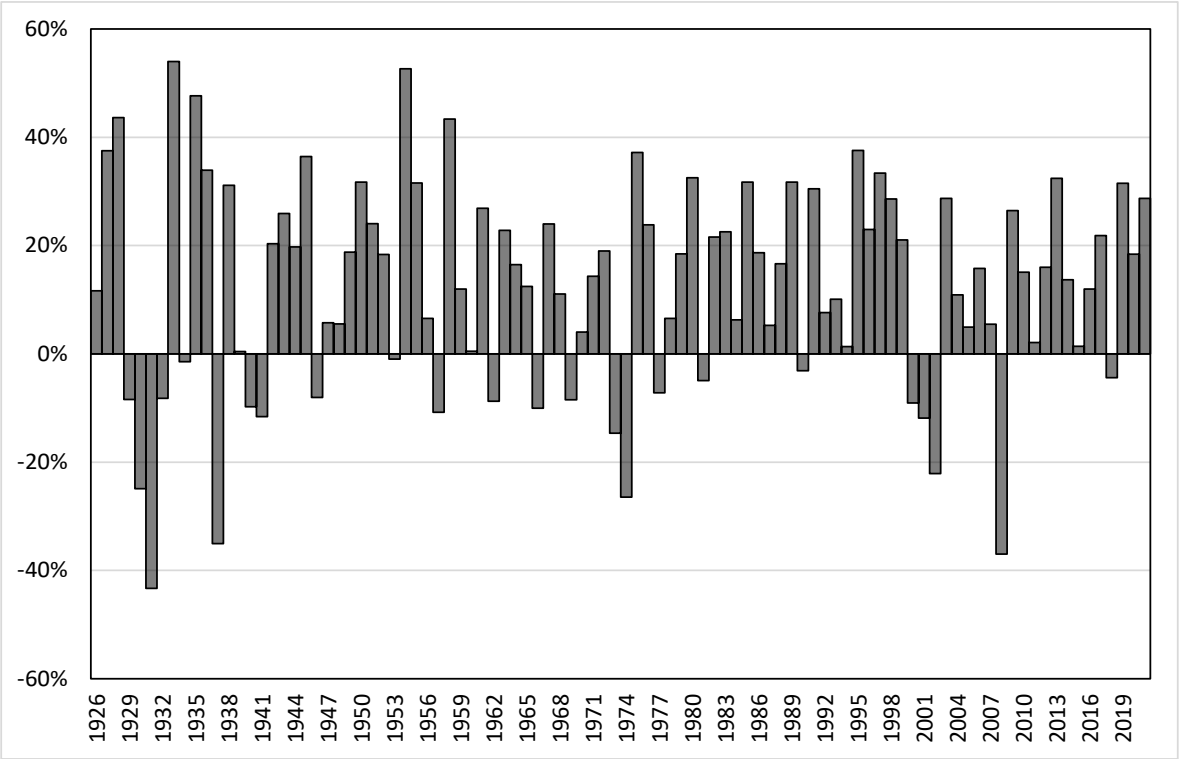
Q. How did you estimate the market risk premium in the CAPM?

A. I estimated the Market Risk Premium ("MRP") as the difference between the implied expected equity market return and the risk-free rate. As shown in Exhibit AEB 1.1, Schedule 5, the expected return on the S&P 500 Index is calculated using the Constant Growth DCF model discussed earlier in my testimony for the companies in the S&P 500 Index. In my calculation of the market return, I included companies in the S&P 500 that: 1) had ether a dividend yield or Value Line long-term earnings projections; and 2) had a Value Line long-term earnings growth rate that was greater than 0 percent and less than or equal to 20 percent. Based on an estimated market capitalization-weighted dividend yield of 1.61 percent and a weighted long-term growth rate of 10.99 percent, the estimated required market return for the S&P 500 Index is 12.68 percent.

Q. How does the current expected market return of 12.68 percent compare to observed historical market returns?

A. Given the range of annual equity returns that have been observed over the past century (shown in Figure 12), a current expected return of 12.68 percent is not unreasonable. In 49 out of the past 95 years (or roughly 52 percent of observations), the realized equity return was at least 12.68 percent or greater**.**

Figure 12: Realized U.S. equity market returns (1926-2021) [54]



Q. Did you consider another form of the CAPM in your analysis?

A. Yes, I have also considered the results of an ECAPM (alternatively referred to as the Zero-Beta CAPM[55]) in estimating the cost of equity for MidAmerican. The ECAPM calculates the product of the adjusted Beta coefficient and the market risk premium and applies a weight of 75.00 percent to that result. The model then applies a 25.00 percent weight to the market risk premium, without any effect from the Beta coefficient. The results of the two calculations are summed, along with the risk-free rate, to produce the ECAPM result, as noted in Equation [5] below:

[54] Depicts total annual returns on large company stocks, as reported in the 2022 Duff and Phelps SBBI Yearbook.

[55] *See* Roger A. Morin, New Regulatory Finance at 189, Public Utilities Reports, Inc. (2006).

$$k_e = r_f + 0.75\beta(r_m - r_f) + 0.25(r_m - r_f) \qquad [5]$$

Where:

k_e = the required market ROE;

β = Adjusted Beta coefficient of an individual security;

rf = the risk-free rate of return; and

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

In essence, the Empirical form of the CAPM addresses the tendency of the "traditional" CAPM to underestimate the cost of equity for companies with low Beta coefficients such as regulated utilities. In that regard, the ECAPM is not redundant to the use of adjusted Betas; rather, it recognizes the results of academic research indicating that the risk-return relationship is different (in essence, flatter) than estimated by the CAPM, and that the CAPM underestimates the "alpha," or the constant return term.[56]

As with the CAPM, my application of the ECAPM uses the forward-looking market risk premium estimates, the three yields on 30-year Treasury securities noted earlier as the risk-free rate, and the Bloomberg, Value Line, and long-term average Beta coefficients.

Q. What are the results of your CAPM analyses?

A. As shown in Figure 13 (see also Exhibit AEB 1.1, Schedule 4), my traditional CAPM analysis produces a range of returns from 9.83 percent to 11.29 percent. The ECAPM analysis results range from 10.54 percent to 11.64 percent.

[56] *Id.*, at 191.

Figure 13: CAPM and ECAPM Results

	Current Risk-Free Rate (2.37%)	Q2 2022 – Q2 2023 Projected Risk-Free Rate (3.12%)	2023-2027 Projected Risk-Free Rate (3.40%)
		CAPM	
Value Line Beta	11.13%	11.25%	11.29%
Bloomberg Beta	10.38%	10.54%	10.61%
Long-term Avg. Beta	9.83%	10.04%	10.11%
		ECAPM	
Value Line Beta	11.52%	11.61%	11.64%
Bloomberg Beta	10.95%	11.08%	11.13%
Long-term Avg. Beta	10.54%	10.70%	10.76%

D. Bond Yield Plus Risk Premium Analysis

Q. Please describe the Bond Yield Plus Risk Premium approach.

A. In general terms, this approach is based on the fundamental principle that equity investors bear the residual risk associated with equity ownership and therefore require a premium over the return they would have earned as a bondholder. That is, because returns to equity holders have greater risk than returns to bondholders, equity investors must be compensated to bear that risk. Risk premium approaches, therefore, estimate the cost of equity as the sum of the equity risk premium and the yield on a particular class of bonds. In my analysis, I used actual authorized returns for natural gas distribution companies as the historical measure of the cost of equity to determine the risk premium.

Q. Are there other considerations that should be addressed in conducting this analysis?

A. Yes, there are. It is important to recognize both academic literature and market evidence indicating that the equity risk premium (as used in this approach) is inversely related to the level of interest rates. That is, as interest rates increase, the equity risk premium decreases, and vice versa. Consequently, it is important to develop an analysis that: (1) reflects the inverse relationship between interest rates and the equity risk premium; and (2) relies on

recent and expected market conditions. Such an analysis can be developed based on a regression of the risk premium as a function of U.S. Treasury bond yields. If we let authorized ROEs for natural gas utilities serve as the measure of required equity returns and define the yield on the long-term U.S. Treasury bond as the relevant measure of interest rates, the risk premium simply would be the difference between those two points.[57]

Q. Is the Bond Yield Plus Risk Premium analysis relevant to investors?

A. Yes, it is. Investors are aware of ROE awards in other jurisdictions, and they consider those awards as a benchmark for a reasonable level of equity returns for utilities of comparable risk operating in other jurisdictions. Because my Bond Yield Plus Risk Premium analysis is based on authorized ROEs for utility companies relative to corresponding Treasury yields, it provides relevant information to assess the return expectations of investors.

Q. What did your Bond Yield Plus Risk Premium analysis reveal?

A. As shown in Figure 14 below, from 1992 through March 2022, there was a strong negative relationship between risk premia and interest rates. To estimate that relationship, I conducted a regression analysis using the following equation.

$$RP = a + b(T) \quad [6]$$

Where:

RP = Risk Premium (difference between allowed ROEs and the yield on 30-year U.S. Treasury bonds)

[57] *See* S. Keith Berry, Interest Rate Risk and Utility Risk Premia during 1982-93, Managerial and Decision Economics, Vol. 19, No. 2 (March, 1998), in which the author used a methodology similar to the regression approach described below, including using allowed ROEs as the relevant data source, and came to similar conclusions regarding the inverse relationship between risk premia and interest rates. *See also* Robert S. Harris, Using Analysts' Growth Forecasts to Estimate Shareholders Required Rates of Return at 66, Financial Management (Spring 1986).

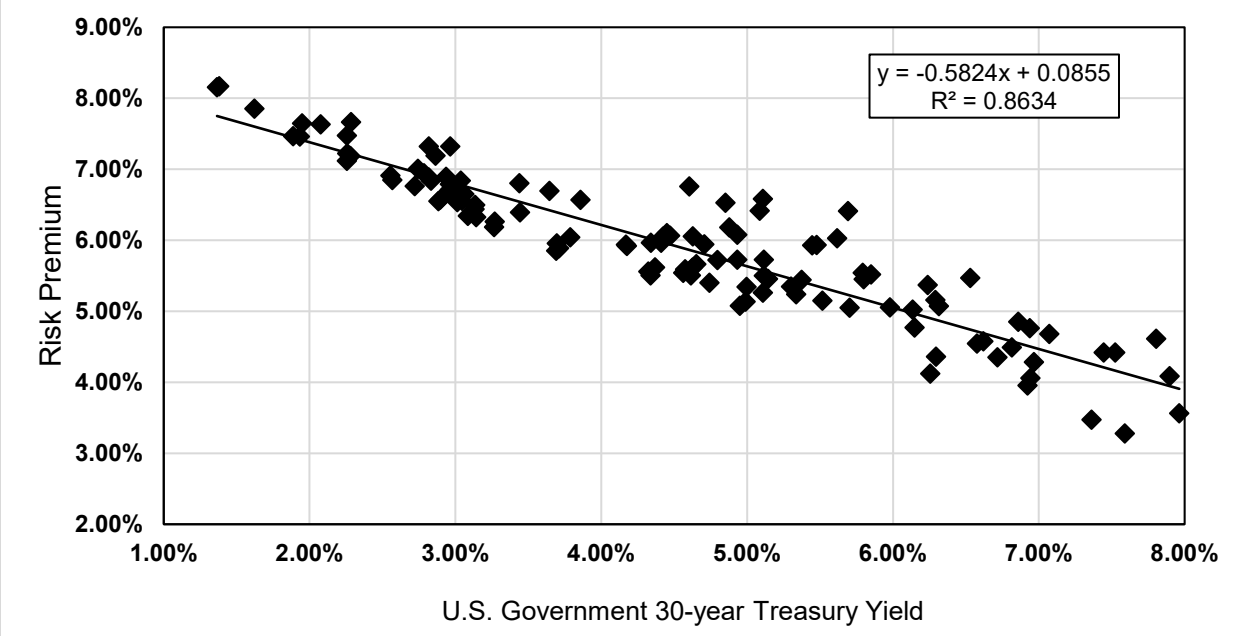
a = intercept term

b = slope term

T = 30-year U.S. Treasury bond yield

Data regarding allowed ROEs were derived from all of natural gas distribution rate cases from 1992 through March 2022 as reported by Regulatory Research Associates ("RRA").[58] This equation's coefficients were statistically significant at the 99.00 percent level.

Figure 14: Risk Premium Results



As shown in Exhibit AEB 1.1, Schedule 7, based on the current 30-day average of the 30-year U.S. Treasury bond yield (i.e., 2.37 percent), the risk premium would be 7.16 percent, resulting in an estimated ROE of 9.54 percent. Based on the near-term (Q3 2022

[58] This analysis began with a total of 1,157 cases and was screened to eliminate limited issue rider cases, transmission-only cases, and cases that were silent with respect to the authorized ROE. After applying those screening criteria, the analysis was based on data for 722 cases.

– Q3 2023) projections of the 30-year U.S. Treasury bond yield (i.e., 3.12 percent), the risk premium would be 6.73 percent, resulting in an estimated ROE of 9.85 percent. Based on longer-term (2023 – 2027) projections of the 30-year U.S. Treasury bond yield (i.e., 3.40 percent), the risk premium would be 6.57 percent, resulting in an estimated ROE of 9.97 percent.

Q. How did the results of the Bond Yield Risk Premium inform your recommended ROE for MidAmerican?

A. I have considered the results of the Bond Yield Risk Premium analysis in setting my recommended ROE for MidAmerican's natural gas distribution operations in South Dakota. As noted above, investors consider the ROE award of a company when assessing the risk of that company as compared to utilities of comparable risk operating in other jurisdictions. The Risk Premium analysis considers this comparison by estimating the return expectations of investors based on the current and past ROE awards of natural gas distribution companies across the U.S.

VIII. REGULATORY AND BUSINESS RISKS

Q. Do the DCF, CAPM, and ECAPM results for the proxy group, taken alone, provide an appropriate estimate of the cost of equity for the Company?

A. No. These results provide only a range of the appropriate estimate of MidAmerican's cost of equity. Several additional factors must also be considered with respect to their overall effect on the Company's risk profile relative to the proxy group when determining where the cost of equity falls within the range of results.

A. Small Size

Q. Please explain the risk associated with small size.

A. Both the financial and academic communities have long accepted the proposition that the Cost of Equity for small firms is subject to a "size effect". While empirical evidence of the size effect often is based on studies of industries other than regulated utilities, utility analysts also have noted the risk associated with small market capitalizations. Specifically, an analyst for Ibbotson Associates noted:

> For small utilities, investors face additional obstacles, such as a smaller customer base, limited financial resources, and a lack of diversification across customers, energy sources, and geography. These obstacles imply a higher investor return.[59]

Q. How does the smaller size of a utility affect its business risk?

A. In general, smaller companies are less able to withstand adverse events that affect their revenues and expenses. The impact of weather variability, the loss of large customers to bypass opportunities, or the destruction of demand as a result of general macroeconomic conditions or fuel price volatility will have a proportionately greater impact on the earnings and cash flow volatility of smaller utilities. Similarly, capital expenditures for non-revenue producing investments, such as system maintenance and replacements, will put proportionately greater pressure on customer costs, potentially leading to customer attrition or demand reduction. Taken together, these risks affect the return required by investors for smaller companies.

[59] Michael Annin, Equity and the Small-Stock Effect, Public Utilities Fortnightly, October 15, 1995.

Q. How do MidAmerican's South Dakota natural gas operations compare in size to the proxy group companies?

A. MidAmerican's South Dakota natural gas operations are substantially smaller than the median for the proxy group companies in terms of market capitalization. Exhibit AEB 1.1, Schedule 8 provides the actual market capitalization for the proxy group companies and estimates the implied market capitalization for MidAmerican's South Dakota natural gas operations (*i.e.*, the implied market capitalization if MidAmerican's South Dakota natural gas operations were a stand-alone publicly traded entity). To estimate the size of the Company's market capitalization relative to the proxy group, I used the Company's proposed capital structure equity component of $81.2 million.[60] I then applied the median market-to-book ratio for the proxy group of 1.88 to the implied common equity balance of MidAmerican's South Dakota natural gas operations and arrived at an implied market capitalization of approximately $152.83 million, or 3.51 percent of the median market capitalization for the proxy group.

Q. How did you estimate the size premium for MidAmerican's South Dakota natural gas operations?

A. Given this relative size information, it is possible to estimate the impact of size on the ROE for MidAmerican's South Dakota natural gas operations using Duff & Phelps Cost of Capital Navigator data that estimates the stock risk premia based on the size of a company's market capitalization.[61] As shown in Exhibit AEB 1.1, Schedule 8, the median market capitalization of the proxy group of approximately $4.35 billion corresponds to the fifth

[60] Exhibit ASR 1.1, Schedule 1, Rate Base Multiplied by 53.326% Common Equity Weight, Exhibit BMG 1.1, Schedule 25.

[61] Duff & Phelps Cost of Capital Navigator – Size Premium. Annual Data as of December 31, 2021.

decile of the Duff & Phelps' market capitalization data.[62] Based on Duff & Phelps' analysis, that decile corresponds to a size premium of 0.89 percent (*i.e.*, 89 basis points). The implied market capitalization of MidAmerican's South Dakota natural gas operations of approximately $152.83 million falls within the tenth decile, which comprises market capitalization levels up to $289.01 million and corresponds to a size premium of 4.80 percent (*i.e.*, 480 basis points). The difference between those size premia is 391 basis points (*i.e.*, 4.80 percent minus 0.89 percent).

Q. Were utility companies included in the size premium study conducted by Duff and Phelps?

A. Yes, In fact, as shown in Exhibit 7.2 of Duff and Phelps' 2019 Valuation Handbook, OGE Energy Corp. had the largest market capitalization of the companies contained in the fourth decile.[63] Therefore, Duff and Phelps did include utility companies in its size risk premium study.

Q. Is the size premium applicable to companies in regulated industries such as natural gas utilities?

A. Yes, it is. For example, Thomas Zepp in his article "Utility stocks and the size effect – revisited" provided the results of two studies which showed evidence of the required risk premium for small water utilities. The first study conducted by the California Public Utilities Commission Staff ("CPUC Staff") computed proxies for Beta risk using accounting data from 1981 through 1991 for 58 water utilities and concluded that smaller water utilities had greater risk and required higher returns on equity than larger water

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[62] *Ibid*.

[63] Duff &Phelps, Valuation Handbook: Guide to Cost of Capital, 2019, Exhibit 7.2.

utilities.[64] The second study referenced by Zepp examined the differences in required returns over the period of 1987-1997 for two large and two small water utilities in California. As Zepp showed, the required return for the two small water utilities calculated using the DCF model was on average 99 basis points higher than the two larger water utilities.[65]

Additionally, Stéphane Chrétien and Frank Coggins in the article "Cost of Equity for Energy Utilities: Beyond the CAPM",[66] recently studied the CAPM and its ability to estimate the risk premium for the utility industry in particular subgroups of utilities. One of the subgroups was a group of natural gas distribution companies that contained many of the same natural gas distribution companies included in my proxy group.[67] The article considered the CAPM, the Fama-French three-factor model and a model similar to the ECAPM that I have also considered above. In the article, the Fama-French three-factor model explicitly included an adjustment to the CAPM for risk associated with size. As Chrétien and Coggins show the Beta coefficient on the size variable for the U.S. natural gas utility group was positive and statistically significant indicating that small size risk was relevant for regulated natural gas utilities.[68] These two studies demonstrate that the size premium is evident in market data and is clearly applicable to natural gas and water utilities.

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64 Zepp, Thomas M. "Utility Stocks and the Size Effect—Revisited." *The Quarterly Review of Economics and Finance*, vol. 43, no. 3, 2003, pp. 578–582., doi:10.1016/s1062-9769(02)00172-2.

65 Ibid.

66 Chrétien, Stéphane, and Frank Coggins. "Cost Of Equity For Energy Utilities: Beyond The CAPM." Energy Studies Review, vol. 18, no. 2, 2011, doi:10.15173/esr.v18i2.531.

67 The U.S. natural gas utility group included: AGL Resources Inc., Atmos Energy Corp., Laclede Group, New Jersey Resources Corp., Northwest Natural Gas Co., Piedmont Natural Gas Co., South Jersey Industries, Southwest Gas Corp. and WGL Holdings Inc.

68 Chrétien, Stéphane, and Frank Coggins. "Cost of Equity For Energy Utilities: Beyond The CAPM." Energy Studies Review, vol. 18, no. 2, 2011, doi:10.15173/esr.v18i2.531.

Q. Have regulators in other jurisdictions made a specific risk adjustment to the ROE results based on a company's small size?

A. Yes, in Order No. 15, the Regulatory Commission of Alaska ("RCA") concluded that Alaska Electric Light and Power Company ("AEL&P") was riskier than the proxy group companies due to small size as well as other business risks. The RCA did "not believe that adopting the upper end of the range of ROE analyses in this case, without an explicit adjustment, would adequately compensate AEL&P for its greater risk."[69] Thus, the RCA awarded AEL&P an ROE of 12.875 percent which was 108 basis points above the highest return on equity estimate from any model presented in the case.[70] Similarly, in Order No. 19, the RCA noted that small size as well as other business risks such as structural regulatory lag, weather risk, alternative rate mechanisms, gas supply risk, geographic isolation and economic conditions increased the risk of ENSTAR Natural Gas Company.[71] Ultimately, the RCA concluded that:

> Although we agree that the risk factors identified by ENSTAR increase its risk, we do not attempt to quantify the amount of that increase. Rather, we take the factors into consideration when evaluating the remainder of the record and the recommendations presented by the parties. After applying our reasoned judgment to the record, we find that 11.875% represents a fair ROE for ENSTAR.[72]

Additionally, in Docket No. E017/GR-15-1033 for Otter Tail Power Company ("Otter Tail"), the Minnesota Public Utilities Commission ("Minnesota PUC") selected an ROE

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69 Docket No. U-10-29, In the Matter of the Revenue Requirement and Cost of Service Study Designated as TA381-1 Filed by Alaska Electric Light and Power Company, Order entered September 2, 2011 (Order No. 15) at 37.

70 *Id.*, at 32 and 37.

71 Docket No. U-16-066, In the Matter of the Tariff Revision Designated as TA285-4 Filed by ENSTAR Natural Gas Company, A Division of Semco Energy, Inc., Order entered September 22, 2017 (Order No. 19) at 50-52.

72 Ibid.

above the mean DCF results, as a result of multiple factors including Otter Tail's small size. The Minnesota PUC stated:

> The record in this case establishes a compelling basis for selecting an ROE above the mean average within the DCF range, given Otter Tail's unique characteristics and circumstances relative to other utilities in the proxy group. These factors include the company's relatively smaller size, geographically diffuse customer base, and the scope of the Company's planned infrastructure investments.[73]

Finally, in Opinion No. 569 and 569-A, the FERC has relied on a size premium adjustment in its CAPM estimates for electric utilities. In those decisions, the FERC noted that "the size adjustment was necessary to correct for the CAPM's inability to fully account for the impact of firm size when determining the cost of equity."[74]

Q. How have you considered the smaller size of MidAmerican's South Dakota natural gas distribution operations in your recommended ROE?

A. While I have estimated the effect of the size of MidAmerican's South Dakota natural gas distribution operations on the ROE, I am not proposing a specific adjustment for this risk factor. Rather, I believe it is important to consider the small size of MidAmerican's South Dakota natural gas distribution operations in the determination of where, within the range of analytical results, the Company's required ROE falls. Therefore, the additional risk associated with small size indicates that the Company's ROE should be established above the mean and median results for the proxy group companies.

B. Capital Expenditures

[73] Order in Docket No. E017/GR-15-1033, In the Matter of the Application of Otter Tail Power Company for Authority to Increase Rates for Electric Service in the State of Minnesota (August 16, 2016) at 55.

[74] Federal Energy Regulatory Commission, Opinion No. 569-A, May 21, 2020, at para 75.

Q. Please summarize the capital expenditure requirements for MidAmerican's South Dakota natural gas distribution operations.

A. The Company has made significant investment in utility plant since its last South Dakota rate case, resulting in total plant increasing from $146.3 million at the end of 2013[75] to $255.1 million at the end of 2021,[76] an increase of $108.1 million. Gross plant additions in 2019 through 2021 totaled over $54.4 million, averaging over $18.1 million per year. As discussed in testimony of Witness Nick J. Nation, the Company expects annual plant additions of at least this magnitude to continue for the foreseeable future, particularly given inflationary pressures previously discussed herein. In fact, the Company's current projections for 2022 through 2026 include approximately $109 million in capital investments for the period.[77] Based on the Company's net utility plant of approximately $167 million as of December 31, 2021,[78] the projected capital expenditures are approximately 65.27 percent of MidAmerican's South Dakota natural gas distribution net utility plant as of December 31, 2021.

Q. How is the Company's risk profile affected by their substantial capital expenditure requirements?

A. As with any utility faced with substantial capital expenditure requirements, the Company's risk profile may be adversely affected in two significant and related ways: (1) the heightened level of investment increases the risk of under-recovery or delayed recovery of the invested capital, particularly since the Company does not have any mechanism to

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75 NG14-005, Schedule D-4, page 2, column (f), line 63.

76 NG22-___, Statement D, column (g), line 1.

77 Direct Testimony of Nick J. Nation at 12.

78 Exhibit ASR 1.1, Workpaper A, Page 13.

provide for recovery between rate cases; (2) an inadequate return would put downward pressure on key credit metrics and (3) concerns regarding the future of natural gas distribution given heightened concern among various communities regarding climate, health and economic impacts of burning natural gas and adoption of specific goals and initiatives to reduce carbon emissions.

Q. Do credit rating agencies recognize the risks associated with elevated levels of capital expenditures?

A. Yes, they do. From a credit perspective, the additional pressure on cash flows associated with high levels of capital expenditures exerts corresponding pressure on credit metrics and, therefore, credit ratings. To that point, S&P explains the importance of regulatory support for large capital projects:

> When applicable, a jurisdiction's willingness to support large capital projects with cash during construction is an important aspect of our analysis. This is especially true when the project represents a major addition to rate base and entails long lead times and technological risks that make it susceptible to construction delays. Broad support for all capital spending is the most credit-sustaining. Support for only specific types of capital spending, such as specific environmental projects or system integrity plans, is less so, but still favorable for creditors. Allowance of a cash return on construction work-in-progress or similar ratemaking methods historically were extraordinary measures for use in unusual circumstances, but when construction costs are rising, cash flow support could be crucial to maintain credit quality through the spending program. Even more favorable are those jurisdictions that present an opportunity for a higher return on capital projects as an incentive to investors.[79]

Therefore, to the extent that MidAmerican's South Dakota natural gas distribution rates do not permit the opportunity to earn an appropriate return and recover its capital investments

[79] S&P Global Ratings, "Assessing U.S. Investor-Owned Utility Regulatory Environments," August 10, 2016, at 7.

on a regular and timely basis, the Company will face increased recovery risk and thus increased pressure on its credit metrics.

Q. Are there examples of sustainability initiatives that could impact the Company?

A. Yes, discussions about the future of natural gas in the industry provide some risk to the Company. For example, recently some communities have prohibited the use of natural gas infrastructure in new building construction.[80] While there have not been specific prohibitions within the Company's service territory, on March 1, 2022, the city of Sioux Falls, South Dakota, which is in the Company's service territory, released a draft Sustainability and Climate Action Plan for public comment.[81] The draft outlined various actions to reduce carbon emissions 45% by 2030 and reach net-zero emissions by 2050, including residential and commercial building electrification targeting 7% of existing community-wide residential units and commercial square footage per year starting in 2023 and 80% of new residential units and commercial square footage starting in 2024. While this plan has not been adopted in final form and does not appear to contemplate a specific ban or mandate related to natural gas infrastructure, it serves as an example of the types of initiatives that communities are considering in efforts to reduce greenhouse gas emissions.

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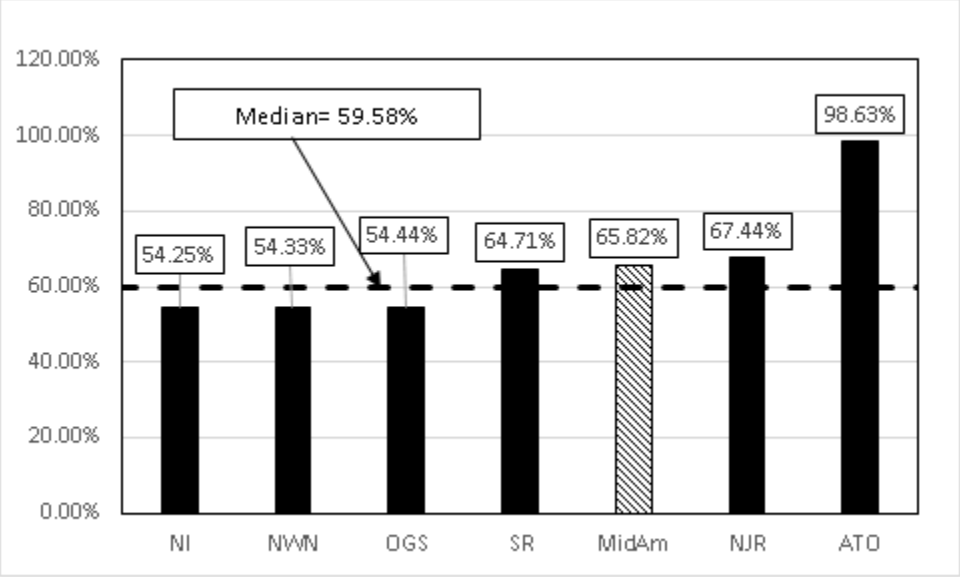
[80] City of Berkeley Ordinance No. 7,672-N.S https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/2019-07-23%20Item%20C%20Prohibiting%20Natural%20Gas%20Infrastructure.pdf, "Denver Looking to Phase Out Natural Gas in Commercial, Multifamily Buildings - Natural Gas". Intelligence" December 11, 2021, www.nautralgas intel.com

[81] City of Sioux Falls Sustainability, City Seeks Out Broader Stakeholder Input for Sustainability and Climate Action Plan, March 21, 2022. https://siouxfalls.org/sustainability

Q. How do MidAmerican's capital expenditure requirements for the South Dakota natural gas operations compare to those of the proxy group companies?

A. As shown in Exhibit AEB 1.1, Schedule 9, I calculated the ratio of expected capital expenditures to net utility plant for MidAmerican's South Dakota natural gas distribution operations and each of the companies in the proxy group by dividing each company's projected capital expenditures for the period from 2022-2026 by its total net utility plant as of December 31, 2020. As shown in Exhibit AEB 1.1, Schedule 9 (see also Figure 15 below), the Company's ratio of capital expenditures as a percentage of net utility plant is 65.82 percent, which is well above the median for the proxy group companies of 59.58 percent. This result indicates a risk level for MidAmerican's South Dakota natural gas distribution operations that is higher than the proxy group companies.

Figure 15: Comparison of Capital Expenditures



Q. Does the Company have a capital tracking mechanism to recover the costs associated with its capital expenditures plan between rate cases?

A. No.

Q. Are capital investment recovery mechanisms common amongst natural gas distribution utilities?

A. Yes, as shown in Exhibit AEB 1.1, Schedule 10, 17 out of 23 (or approximately 74 percent) of the operating companies of the proxy group recover costs through capital investment reconciling mechanisms. Therefore, the Company has significantly greater risk relative to the proxy group from the regulatory lag associated with the recovery of its capital expenditures plan.

C. Regulatory Risk

Q. How does the regulatory environment affect investors' risk assessments?

A. The ratemaking process is premised on the principle that, for investors and companies to commit the capital needed to provide safe and reliable utility service, the subject utility must have the opportunity to recover the return of, and the market-required return on, invested capital. Regulatory authorities recognize that because utility operations are capital intensive, regulatory decisions should enable the utility to attract capital at reasonable terms; doing so balances the long-term interests of investors and customers. To achieve this balance, the Company must be able to finance its operations assuming a reasonable opportunity to earn an appropriate return on invested capital to maintain an acceptable financial profile. In that respect, the regulatory environment is one of the most important factors considered in both debt and equity investors' risk assessments.

From the perspective of debt investors, the authorized return should enable the Company to generate the cash flow needed to meet its near-term financial obligations, make the capital investments needed to maintain and expand its systems, and maintain the necessary levels of liquidity to fund unexpected events, such as the unprecedented increase in gas costs incurred during the polar vortex event of February 2021 and subsequent

recovery of these costs over an extended period of time. This financial liquidity must be derived not only from internally generated funds, but also by efficient access to capital markets. Moreover, because fixed income investors have many investment alternatives, even within a given market sector, the Company's financial profile must be adequate on a relative basis to ensure its ability to attract capital under a variety of economic and financial market conditions.

Equity investors, on the other hand, require that the authorized return be adequate to provide a risk-comparable return on the equity portion of the Company's capital investments. Because equity investors are the residual claimants on the Company's cash flows (which is to say that the equity return is subordinate to interest payments), they are particularly concerned with the strength of regulatory support and its effect on future cash flows.

Q. How do credit rating agencies consider regulatory risk in establishing a company's credit rating?

A. Both S&P and Moody's consider the overall regulatory framework in establishing credit ratings. Moody's establishes credit ratings based on four key factors: (1) regulatory framework; (2) the ability to recover costs and earn returns; (3) diversification; and (4) financial strength, liquidity, and key financial metrics. Of these criteria, regulatory framework, and the ability to recover costs and earn returns are each given a broad rating factor of 25.00 percent. Therefore, Moody's assigns regulatory risk a 50.00 percent weighting in the overall assessment of business and financial risk for regulated utilities.[82]

[82] Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 4.

S&P also identifies the regulatory framework as an important factor in credit ratings for regulated utilities, stating: "One significant aspect of regulatory risk that influences credit quality is the regulatory environment in the jurisdictions in which a utility operates."[83] S&P identifies four specific factors that it uses to assess the credit implications of the regulatory jurisdictions of investor-owned regulated utilities: (1) regulatory stability; (2) tariff-setting procedures and design; (3) financial stability; and (4) regulatory independence and insulation.[84]

Q. How does the regulatory environment in which a utility operates affect its access to and cost of capital?

A. The regulatory environment can significantly affect both the access to, and cost of capital in several ways. First, the proportion and cost of debt capital available to utility companies are influenced by the rating agencies' assessment of the regulatory environment. As noted by Moody's, "[f]or rate regulated utilities, which typically operate as a monopoly, the regulatory environment and how the utility adapts to that environment are the most important credit considerations."[85] Moody's further highlighted the relevance of a stable and predictable regulatory environment to a utility's credit quality, noting: "[b]roadly speaking, the Regulatory Framework is the foundation for how all the decisions that affect utilities are made (including the setting of rates), as well as the predictability and consistency of decision-making provided by that foundation."[86]

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[83] Standard & Poor's Global Ratings, Ratings Direct, U.S. and Canadian Regulatory Jurisdictions Support Utilities' Credit Quality—But Some More So Than Others, June 25, 2018, at 2.

[84] *Id*., at 1.

[85] Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, June 23, 2017, at 6.

[86] *Id*.

Q. Have you evaluated the regulatory framework in South Dakota relative to the jurisdictions in which the operating companies of the proxy group members operate?

A. Yes, I have evaluated the regulatory framework in South Dakota on four factors that are important in terms of providing a regulated utility an opportunity to earn its authorized ROE. These are: (1) test year convention (*i.e.*, forecast vs. historical test year); (2) method for determining rate base (*i.e.*, average vs. year-end); (3) use of revenue decoupling mechanisms or other clauses that mitigate volumetric risk; and (4) prevalence of capital cost recovery between rate cases.

Q. What are the results of your analysis?

A. The results of my regulatory risk assessment are summarized as follows, and the details are shown in Exhibit AEB 1.1, Schedule 10:

Test Year Convention: MidAmerican is relying on a 12-month historical test year ending December 31, 2021. Approximately 57 percent of the proxy group companies provide service in jurisdictions that use a fully or partially forecast test year.

Rate Base: The Company's natural gas distribution rate base in South Dakota is determined based on an average basis for the test year, including pro forma adjustments. Approximately 57 percent of the companies in the proxy group are authorized to use year-end rate base, meaning that the rate base includes capital additions that occurred in the second half of the test year and is more reflective of net utility plant going forward.

Volumetric Risk: MidAmerican does not have protection against volumetric risk in South Dakota, either through a revenue decoupling mechanism or a weather normalization adjustment clause. By comparison, 83 percent of the operating companies in the proxy group have some form of protection against volumetric risk.

Capital Cost Recovery: MidAmerican does not have a capital tracking mechanism to recover capital investment costs between rate cases. However, approximately 74 percent of the operating companies in the proxy group have some form of capital cost recovery mechanism in place.

Q. What is your conclusion regarding the relative regulatory risk of MidAmerican as compared to the proxy group?

A. MidAmerican's South Dakota natural gas distribution operations has somewhat greater volumetric risk and greater risk around cost recovery as compared with the proxy group companies.

IX. CAPITAL STRUCTURE

Q. Is the capital structure of a company an important consideration in the determination of the appropriate ROE?

A. Yes, it is. Assuming other factors equal, a higher debt ratio increases the risk to investors. For debt holders, higher debt ratios result in a greater portion of the available cash flow being required to meet debt service, thereby increasing the risk associated with the payments on debt. The result of increased risk is a higher interest rate. The incremental risk of a higher debt ratio is more significant for common equity shareholders. Common shareholders are the residual claimants on the cash flow of a company. Therefore, the greater the debt service requirement, the less cash flow available for common equity holders.

Q. What is MidAmerican's proposed capital structure?

A. MidAmerican is proposing to establish a capital structure consisting of 53.33 percent common equity and 46.67 percent long-term debt.

Q. Did you conduct any analysis to determine if this requested equity ratio was reasonable?

A. Yes, I reviewed the Company's proposed capital structure relative to the actual capital structures of the utility operating subsidiaries of the companies in the proxy group. Since

the ROE is set based on the return that is derived from the risk-comparable proxy group, it is reasonable to look to the average capital structure for the proxy groups to benchmark the equity ratios for the Company. Specifically, I calculated the mean proportions of common equity and long-term debt over the most recent year for each of companies in the proxy group at the operating subsidiary level.

Exhibit AEB 1.1, Schedule 11 summarize the actual capital structures of the operating subsidiaries. As shown, the average equity ratios for the operating subsidiaries of the proxy group range from 47.44 percent to 60.04 percent, with a mean of 55.70 percent. MidAmerican's proposed equity ratio of 53.33 percent is below the mean established by the capital structures of the utility operating subsidiaries of the proxy group.

Q. What is your conclusion with regard to the Company's proposed capital structure?

A. Considering the actual capital structures of the operating companies in the proxy group, I believe that MidAmerican's proposed common equity ratio of 53.33 percent is reasonable. The proposed equity ratios are well within the range established by the capital structures of the utility operating subsidiaries of the proxy group companies.

X. CONCLUSIONS AND RECOMMENDATION

Q. What is your conclusion regarding a fair ROE for MidAmerican's South Dakota natural gas distribution operations?

A. Figure 16 provides a summary of the analytical results of the ROE estimation methodologies. Based on these results, the qualitative analyses presented herein, the business and financial risks of the Company compared to the proxy group, current conditions in capital markets including the expectation for rising interest rates and increase

in inflationary pressure, it is my view that the Company's requested ROE of 10.75 percent is reasonable and would fairly balance the interests of customers and shareholders.

Figure 16: Summary of Results

Constant Growth DCF			
	Mean Low	Mean	Mean High
30-Day Average	8.10%	9.59%	10.88%
90-Day Average	8.31%	9.80%	11.09%
180-Day Average	8.42%	9.91%	11.20%
	Median Low	Median	Median High
30-Day Average	8.37%	9.62%	9.89%
90-Day Average	8.63%	9.84%	10.11%
180-Day Average	8.70%	9.91%	10.18%
CAPM			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Value Line Beta	11.13%	11.25%	11.29%
Bloomberg Beta	10.38%	10.54%	10.61%
Long-term Avg. Beta	9.83%	10.04%	10.11%
ECAPM			
Value Line Beta	11.52%	11.61%	11.64%
Bloomberg Beta	10.95%	11.08%	11.13%
Long-term Avg. Beta	10.54%	10.70%	10.76%
Bond Yield Risk Premium			
	Current 30-day Average Treasury Bond Yield	Near-Term Blue Chip Forecast Yield	Long-Term Blue Chip Forecast Yield
Results	9.54%	9.85%	9.97%
Size Premium			
	3.91%		

Q. Does this conclude your direct testimony?

A. Yes, it does.