Exhibit No.__(JSG-3)

STATE OF NORTH DAKOTA
BEFORE THE NORTH DAKOTA
PUBLIC SERVICE COMMISSION

Case No. PU-17-295

PREPARED REBUTTAL TESTIMONY OF

J. STEPHEN GASKE

ON BEHALF OF

MONTANA-DAKOTA UTILITIES CO.

Q1. Please state your name, position and business address.

A1. My name is J. Stephen Gaske and I am a Senior Vice President of Concentric Energy Advisors Inc., 1300 19th Street NW, Suite 620, Washington, DC 20036.

Q2. Are you the same J. Stephen Gaske who filed Prepared Direct Testimony earlier in this proceeding?

A2. Yes.

Q3. What is the purpose of your Rebuttal Testimony in this proceeding?

A3. The purpose of my Rebuttal Testimony is to respond to the Direct Testimony of Marlon F. Griffing on behalf of the North Dakota Public Service Commission Staff regarding the return on common equity capital and portions of the Direct Testimony of Michael P. Gorman on behalf of the Federal Executive Agencies ("FEA") related to the return on equity capital.

Q4. Please provide an overview of Dr. Griffing's ROE analyses and recommendation in this proceeding.

A4. Dr. Griffing recommends an allowed rate of return on common equity of 8.91 percent, which is the average of his constant-growth DCF analyses of the same seven natural gas distribution proxy companies that I used in my analysis, plus ONE Gas which began to be covered by Value Line after I completed my analysis. The range of his DCF results is 7.29 – 10.92 percent. Although that was the analysis on which he based his recommendation, he also conducted: (i) a "multi-stage" DCF analysis of the proxy companies in which he assumed that the average growth rate for all proxy companies would drop from analysts' projections of 6.13 percent down to only 4.0 percent, the average growth rate in the U.S. Gross Domestic Product; (ii) a Capital Asset Pricing Model (CAPM) analysis; and (iii) an "Empirical" CAPM (ECAPM).

Q5. Please provide an overview of Mr. Gorman's ROE analyses and recommendation in this proceeding.

A5. Mr. Gorman recommends a narrow range of return on common equity of 8.8 percent to 9.3 percent and recommends a cost of equity of 9.1 percent based on the results of his Constant Growth DCF model using analyst growth rate estimates, his CAPM analysis, and his Risk Premium analysis. Mr. Gorman also performs a Constant Growth DCF analysis using sustainable growth rates and a Multi-Stage DCF analysis using long-term GDP growth, but he does not appear to rely on those results in establishing his range or making his recommendation. In performing his DCF and CAPM analyses, Mr. Gorman used only six proxy companies. Unlike Dr.

Griffing and me, he did not use South Jersey Industries, which announced the acquisition of two nearby gas distribution companies during the period of Mr. Gorman's analysis. Unlike Dr. Griffing, he did not use ONE Gas.

Q6. Please summarize the areas in which you disagree with Dr. Griffing and Mr. Gorman regarding the allowed return on common equity for Montana-Dakota's North Dakota natural gas distribution operations.

A6. These witnesses recommend an allowed return on common equity of 8.91 percent and 9.1 percent, respectively, for Montana-Dakota's North Dakota natural gas distribution operations. However, as shown in my Prepared Direct Testimony, and as discussed herein, a return on common equity of 10.0 percent is required in order for Montana-Dakota's North Dakota gas distribution operations to be in a position to raise capital on reasonable terms. I disagree with several areas presented in the testimony of Dr. Griffing and Mr. Gorman that led them to recommend an equity return well below the level required by investors, including:

1. Failure to recognize that Montana-Dakota's North Dakota gas distribution operations are significantly smaller and riskier than the typical company in the proxy group, which supports a return on equity above the mean for the proxy group;
2. Failure to recognize that the Federal Reserve's intervention in financial markets has distorted yields on government bonds as well as valuations for utility stocks, thereby causing the DCF model to understate investors' required return on common equity in the current market;
3. Failure of Dr. Griffing and Mr. Gorman to consider the entire range of results produced by the DCF model,
4. Dr. Griffing's use of GDP growth as a mid- and long-term growth rate for the proxy companies in his Multi-Stage DCF analysis, and Mr. Gorman's deduction of issuance growth from his expected "sustainable" growth rate in his Multi-stage DCF calculations;

5. Mr. Gorman's use of an understated utility Risk Premium approach that gives partial weight to an out-of-date market risk premium from 1987-1991 rather than giving full weight to the market risk premium for the most recent five-year period;

6. Mr. Gorman's and Dr. Griffing's capital asset pricing model ("CAPM") estimates based on flawed market risk premium data that understate investors' return requirements under current market conditions;[1] and,

7. The recommendation of an inadequate flotation cost adjustment in the case of Dr. Griffing, and Mr. Gorman's recommendation to deny recovery of flotation costs entirely.

I. REASONABLENESS OF ROE RECOMMENDATIONS

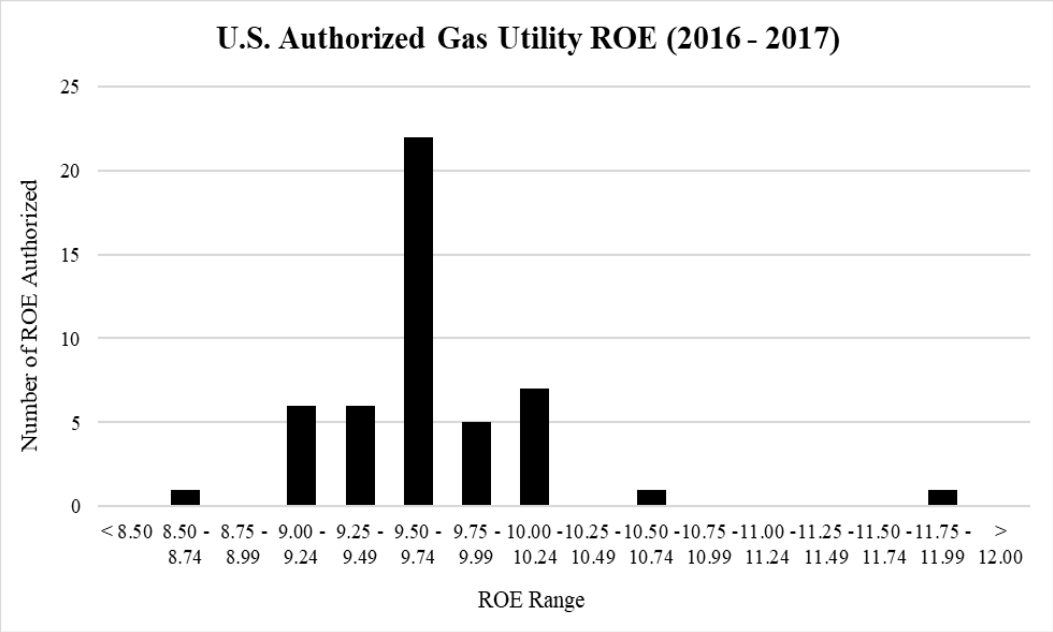
A. Comparison with Allowed Rates of Returns

Q7. Please assess the reasonableness of Mr. Gorman's and Dr. Griffing's recommended returns on common equity.

A7. Chart 1 below, is a histogram of all returns on common equity authorized in natural gas distribution company rate proceedings covered by Regulatory Research Associates in 2016 and 2017.

[1] Dr. Griffing's market DCF uses short-term projected growth in stock prices when the model requires current, forward-looking earnings growth rate expectations, and Mr. Gorman uses historical risk premiums when the model requires current forward-looking risk premiums.

Chart 1: Authorized Returns on Equity for Gas Distribution (2016-2017)[2]



As shown in Chart 1, the range of authorized returns for gas distribution companies in 2016 and 2017 has been from 8.70 percent to 11.88 percent. The median authorized return on common equity for gas distributors in 2016 was 9.50 percent, and in 2017 the median authorized ROE increased to 9.60 percent. Of the 49 rate case decisions with explicit ROE awards, only one has been lower than Dr. Griffing's 8.91 percent recommendation and only six have been lower than Mr. Gorman's 9.10 percent recommendation. This indicates that Dr. Griffing's and Mr. Gorman's ROE recommendations are lower than the vast majority of returns allowed by Commissions during the past two years. The median authorized ROE during this period for gas distribution companies was 9.55 percent. There have been nine decisions (or 18.3 percent of decisions) with explicit ROE awards of 10.0 percent or higher, which

[2] Source: Regulatory Research Associates.

corroborates the reasonableness of my recommended 10.0 percent cost of common equity.

B. Comparison with Expected Returns for Proxy Companies

Q8. Did you review other indicators of the reasonableness of their recommended returns on equity?

A8. Yes. The comparable earnings and capital attraction standards both require that a regulated company have an allowed rate of return that will allow it to compete with other companies to attract capital to its operations. Value Line projects that the proxy companies will earn the following returns on equity:

Company	ROE 2020-2022[3]
Atmos Energy Corporation	11.50%
New Jersey Resources Corporation	11.50%
NiSource Inc.	11.50%
Northwest Natural Gas Company	10.00%
South Jersey Industries, Inc.	9.50%
Southwest Gas Corporation	10.00%
Spire Inc.	9.50%
Average	**10.50%**

Given the higher allowed returns on equity discussed above, as well as the higher returns on equity that the proxy companies are projected to earn, it would be difficult for Montana-Dakota's North Dakota gas distribution operations to meet the

[3] *Value Line*, December 1, 2017.

comparable earnings standard or to compete for capital under the capital attraction standard if the Commission were to adopt the returns proposed by Dr. Griffing or Mr. Gorman.

Q9. On pages 10-19 of his Direct Testimony, Mr. Gorman provides general information on the utility industry, including authorized returns, capital spending trends, credit rating agency commentary, and utility stock price performance. Do you have any comments on this section?

A9. I agree with Mr. Gorman that capital spending forecasts for the natural gas industry are considerably higher than the historical average over the last ten years.[4] As Mr. Gorman states, "this capital investment is exceeding internal sources of funds to the gas utilities, requiring them to seek external capital to fund capital investments."[5] Montana-Dakota's North Dakota gas distribution business is also engaged in a large capital spending program over the next few years in order to replace aging infrastructure. Given this need for ongoing access to capital, it is important that the authorized return on common equity for Montana-Dakota's North Dakota gas distribution operations is set at a level that allows the Company to compete for capital on reasonable terms with comparable risk utilities. That is why the Commission should reject the proposals of Mr. Gorman and Dr. Griffing to set the allowed rate of return below that of most other gas utilities and significantly below the return that Value Line expects the proxy companies to earn.

---

[4] Direct Testimony and Exhibit of Michael P. Gorman, at 15.

[5] *Ibid.*

C. Tax Cuts and Jobs Act Effect on Utilities

Q10. Please summarize the aspects of the December 2017 Tax Cuts and Jobs Act (referred to herein as "Tax Reform") that are most relevant for the utility sector.

A10. Tax Reform legislation reduces the statutory federal income tax rate for major corporations from 35 percent to 21 percent, repeals the corporate alternative minimum tax, and eliminates the tax deduction for bonus depreciation for regulated utility plant in 2018, which is two years earlier than under the former tax code. As a result of Tax Reform, many state utility commissions across the country have opened proceedings to require regulated utilities under their jurisdiction to make a filing to reduce the amount of income taxes that are collected in and recovered through rates.

Q11. What is your understanding of the effect of Tax Reform on regulated utilities?

A11. Although Tax Reform is a benefit to unregulated companies and customers of regulated utilities, it is considered credit negative for investments in regulated utilities due to the reduction in cash flows that will occur. Tax Reform is expected to reduce utility revenues due to the lower federal income taxes and the requirement to return excess accumulated deferred income taxes ("ADIT") to ratepayers. This change in revenues is expected to reduce funds from operations ("FFO") metrics across the sector and, absent regulatory mitigation strategies, is expected to lead to

weaker credit metrics for utilities.[6]

Q12. What have credit rating agencies said about Tax Reform?

A12. Moody's Investors Services ("Moody's") has indicated that although Tax Reform is credit positive for many sectors of the economy, it has an overall negative credit impact on utility holding companies and their regulated operating companies due to the reduction in cash flow and coverage ratios as cost-based ratemaking passes the benefits of reduced taxes through to ratepayers. [7]

Moody's notes that regulated utilities collect revenues from customers on a book tax expense basis, but typically pay much less tax in cash than they collect due to tax deferrals. According to Moody's, the lower federal income tax rate combined with the loss of bonus depreciation will have a negative effect on utility cash flows for three main reasons.

1. Regulated utilities will collect less revenue from customers due to the lower income tax rate. Although the taxes are ultimately paid out as an expense, under the new law, regulated utilities lose much of the timing benefit, thereby reducing cash that may have been carried over many years.

---

[6] FitchRatings, Special Report, What Investors Want to Know, "Tax Reform Impact on the U.S. Utilities, Power & Gas Sector", January 24, 2018.

[7] Moody's Investors Service, "Corporate tax cut is credit positive, while effects of other provisions vary by sector," December 21, 2017.

2. The lower tax rate also means that utilities now have excess accumulated deferred income taxes on their books. As this amount is refunded to customers, it will reduce cash flows, likely spread out over 20 years.
3. The loss of bonus depreciation means that utilities will be paying higher cash taxes starting in 2019 and 2020, earlier than under the prior tax law.

Moody's expects that these changes will result in a decline in key financial metrics. For example, it projects that gas distribution utilities' average cash flow from operations will decline from 18.7 percent of debt to 16.9 percent of debt.[8]

FitchRatings ("Fitch") agrees that Tax Reform legislation is credit negative for regulated utilities. Fitch comments:

> The Tax Cut and Jobs Act signed into law December 22, 2017 has negative credit implications for regulated utilities and utility holding companies over the short to medium term. A reduction in customer bills to reflect lower federal income taxes and return of excess accumulated deferred income taxes (ADIT) is expected to lower revenues and FFO across the sector. [9]

Fitch estimates that regulated utility subsidiaries will, on average, see an approximately 6 percent reduction in net revenues if tax changes are reflected in customer bills right away, assuming that a substantial portion of the excess ADIT will be returned to customers over the life of the utility property. The lower revenue translates into an approximately 15 percent reduction in FFO across Fitch's sample

[8] Ibid, at 6-7.

[9] FitchRatings, Special Report, What Investors Want to Know, "Tax Reform Impact on the U.S. Utilities, Power & Gas Sector", January 24, 2018.

of regulated utilities.

Fitch also indicates that any rating agencies' actions will be guided by the response of regulators and the management of the utilities. Fitch notes that seeking an immediate return of tax savings to customers creates an immediate decline in cash flow for the utilities, and that the outcome of Tax Reform will depend on the ability to manage the cash flow implications. Fitch observes that increasing the authorized ROE and/or equity ratio are measures that can be implemented to provide rate stability and moderate changes to cash flow in the near term.[10]

Q13. Has Moody's reviewed the credit outlook of regulated utilities in light of the effect of Tax Reform?

A13. Yes. Moody's recently reduced the rating outlook for 24 regulated utilities from stable to negative. This action affected three of the gas companies in my proxy group and four of the companies in Dr. Griffing's proxy group. According to Moody's, the changes were made to those utilities that have a limited cushion against deterioration in financial performance within their ratings category. Furthermore, Moody's expects that it will be necessary for utilities to work closely with state regulators to try to mitigate the negative impact of tax reform. Moody's suggests that potential regulatory ratemaking offsets to tax-related cash flow reductions could include:

[10] Ibid.

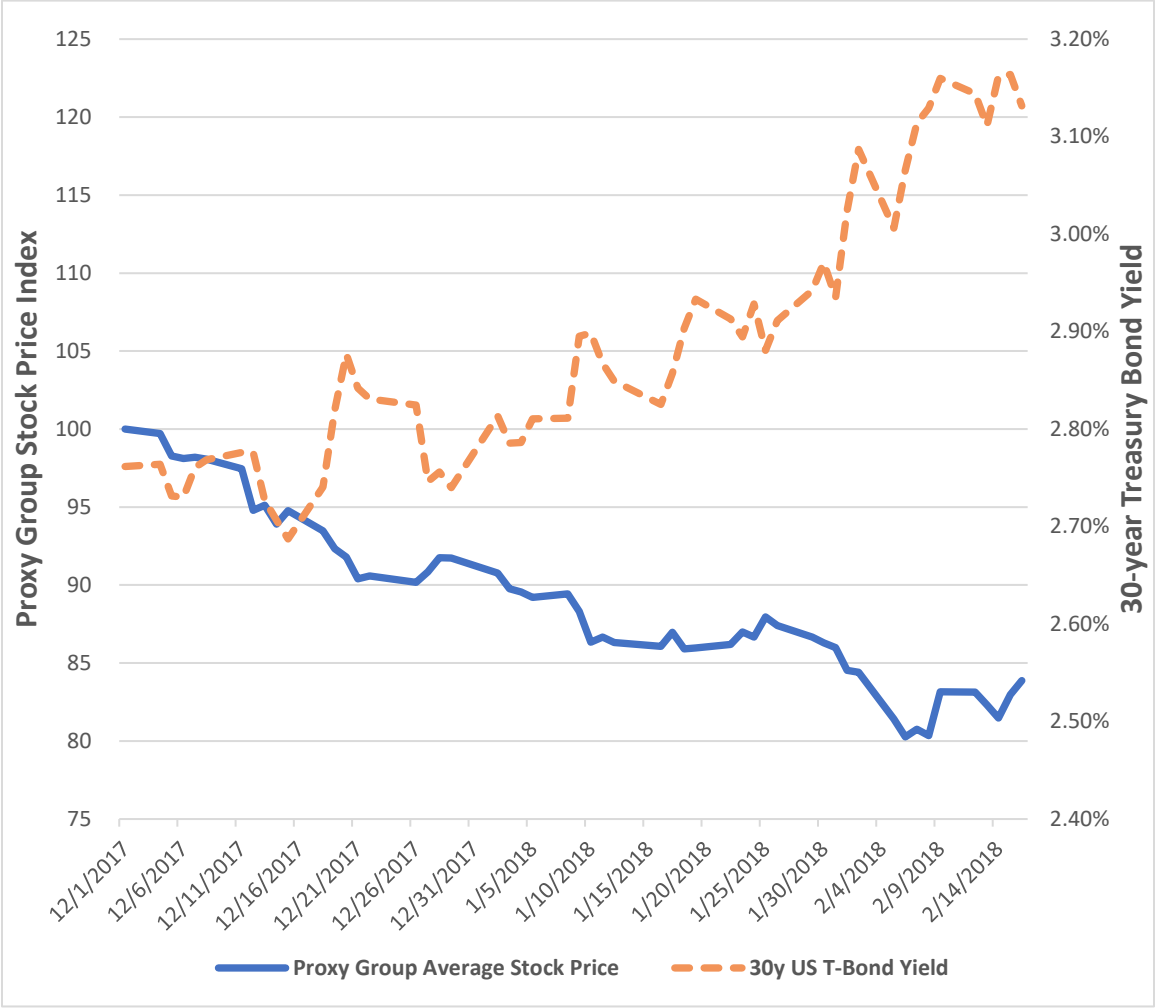
1) Accelerated cost recovery of certain regulatory assets or future investment;
2) Increases in the equity component of the capital structure; or
3) Higher allowed ROEs.[11]

Q14. How have utility stock prices responded to Tax Reform legislation?

A14. The S&P Utilities index declined sharply after mid-November 2017 (when Tax Reform legislation was first approved by the U.S. House of Representatives). At the same time, long-term Treasury bond yields quickly increased as Tax Reform made investments in non-utility common stocks more attractive relative to both bonds and utility stocks. As shown in Chart 2, the share prices of the companies in my gas distribution proxy group have declined significantly since December 1, 2017 and bond yields increased significantly after the passage of Tax Reform.

[11] Moody's Investor Services, "Global Credit Research, Rating Action: Moody's changes outlooks on 25 US regulated utilities primarily impacted by tax reform," January 19, 2018, at 1.

Chart 2: Proxy Group Stock Prices vs. U.S. Treasury Bond Yield[12]



Q15. Have you conducted an analysis of the effect of Tax Reform on the ROE estimation models?

A15. Yes. I updated the Constant Growth DCF analysis performed by Dr. Griffing to determine the effect of declining utility stock prices and increasing dividend yields on the DCF model. As shown in Exhibit No. ___(JSG-4), Schedule 1, in response

[12] Source: SNL Financial.

to the decline in utility stock prices, the flotation-adjusted dividend yield for Dr. Griffing's proxy group increased from 2.78 percent for the 19 trading days ending December 1, 2017 to 3.22 percent for the 20 trading days ending February 14, 2018. This represents an increase in the dividend yield for Dr. Griffing's gas distribution proxy group of 44 basis points since the analysis in his testimony was performed. At the same time, the average earnings growth rate for the proxy group increased by one basis point, from 6.13 percent to 6.14 percent. As a result, updating Dr. Griffing's DCF analysis through February 14, 2018 produces a mean ROE estimate of 9.36 percent, or 45 basis points higher than his mean DCF result of 8.91 percent as of December 1, 2017. This demonstrates the significant effect of Tax Reform on the DCF model results.

Q16. Are you suggesting a change in your recommended ROE or equity ratio as a result of Tax Reform legislation?

A16. No, I am not. However, the effect of Tax Reform provides additional support for the conclusion that a rate of return on common equity of 10.0 percent, and an equity ratio of 50.996 percent, is reasonable and appropriate for Montana-Dakota's North Dakota gas distribution operations in this proceeding.

II. RELATIVE RISK OF MONTANA-DAKOTA'S NORTH DAKOTA GAS OPERATIONS

A. Small size of Montana-Dakota North Dakota gas distribution operations

Q17. Please explain your disagreement with Mr. Gorman's and Dr. Griffing's assessments of the Company's business risk.

A17. In discussing the business risks of Montana-Dakota's North Dakota gas distribution operations, Dr. Griffing fails to recognize the significant risk associated with the small size of the North Dakota gas distribution operations compared to the proxy group. Mr. Gorman argues that the relative risks of Montana-Dakota's North Dakota gas operations discussed in my Direct Testimony are fully absorbed into the credit ratings of the parent company, MDU Resources Group – which has a BBB+ rating while the proxy companies generally have a higher A- rating.[13] However, Mr. Gorman's argument glosses over the fact that the investment in Montana-Dakota's North Dakota gas distribution operation is only a small part of the diversified MDU Resources Group, and that small operation must stand alone as an investment based on its own characteristics. Although I tried to select proxy companies that were as similar as possible to Montana-Dakota's North Dakota gas distribution operations, there were some significant risk differences that remain, which must be reflected by selecting a cost of common equity for these operations that is above the median for the proxy group.

[13] *Ibid*, at 61.

As explained in my Direct Testimony, the typical proxy company is between 16 and 41 times larger than Montana-Dakota's North Dakota jurisdictional gas distribution operations.[14] That is an unavoidable fact because there are no comparably-sized, publicly-traded companies with analysts' consensus growth rate estimates. The higher rate of return required by smaller utility operations has been demonstrated empirically.[15]

There can be many reasons why smaller companies tend to be riskier. For example, smaller companies generally face greater risks due to a limited size of market, which leaves them more vulnerable to a downturn in a local economy. Some smaller companies may have inadequate resources to adapt to changing markets and technologies in the future, or they may lack economies of scale that leave them more vulnerable to competitive alternatives. Similarly, large companies are better able to absorb losses due to accidents, natural disasters, lawsuits, regulatory changes or other sudden losses that could devastate the income and finances of small companies.

In my Direct Testimony, I discussed the significantly higher returns that Duff & Phelps has documented for companies in the same size range as Montana-Dakota's North Dakota gas distribution operations. The effect of size on required returns is well-established in the finance literature. For example, Fama and French found that

---

[14] Prepared Direct Testimony of J. Stephen Gaske, at 32.

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

firm size (with smaller companies requiring higher returns) and market-to-book ratio are the two variables that best explain the returns for common stocks.[16]

The higher cost of capital for smaller companies also applies to regulated public utilities. For example, the higher rate of return required by smaller utility operations was demonstrated empirically by Michael Anin.[17]

Similarly, Moody's Investors Service ("Moody's") considers the size and diversity of utility operations to be a distinguishing factor that makes some utilities riskier than others. Specifically, in "Rating Methodology for Regulated Electric and Gas Utilities" Moody's stated:

> We also consider the diversity of utility operations (e.g., regulated electric, gas, water, steam) when there are material operations in more than one area. Economic diversity is typically a function of the population, size and breadth of the territory and the businesses that drive its GDP and employment. For the size of the territory, we typically consider the number of customers and the volumes of generation and/or throughput. For breadth, we consider the number of sizeable metropolitan areas served, the economic diversity and vitality in those metropolitan areas, and any concentration in a particular area or industry.[18]

Montana-Dakota's North Dakota gas distribution operations are characterized by the small size and small town service territory lack of diversity described by Moody's. Moody's rating methodology confirms that utilities with those attributes have elevated

---

[16] Fama and French, "The Cross-Section of Expected Stock Returns", Journal of Finance, Vol. XLVII, No. 2, June 1992, 427-465.

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

[18] Moody's Investors Service, "Rating Methodology: Regulated Electric and Gas Utilities," December 23, 2013, p. 19.

risk and that an allowed return above the average return required for the typical proxy company is appropriate in this proceeding.

Q18. At pages 44-48 of his testimony, Dr. Griffing argues that a small size adjustment is not appropriate because MDU Resources, Inc. is the entity that is raising equity capital, not Montana-Dakota's North Dakota gas distribution business. What is your response?

A18. I disagree with Dr. Griffing's assertion that a small size adjustment is not required. According to the stand-alone principle, the cost of capital for a regulated utility is to be established as if the operating utility were raising capital in financial markets based on its own individual merits and risks. The importance of this principle is highlighted by the possibility that a utility holding company could sell or spin off its operations in a particular jurisdiction. The risk of laying pipe in the ground specifically to serve North Dakota customers is a stand-alone risk that would not increase if MDU Resources were to spin off these assets as a stand-alone entity. Nor would the risk of providing gas service in North Dakota be reduced if MDU Resources were to purchase a gas utility in another state, or even another country. The risks of investing in the North Dakota service territory are what they are, regardless of what other businesses or jurisdictions that MDU Resources decides to invest in. As discussed in my Direct Testimony, the small size of Montana-Dakota's North Dakota gas distribution operations relative to the proxy group companies supports an adjustment to the allowed return on common equity of at

least 100 basis points.[19]

Q19. Do you agree with Mr. Gorman's conclusion concerning the relative financial risk of Montana-Dakota Utilities?

A19. No. At page 29 he states that Montana-Dakota has lower financial risk relative to the proxy group. That conclusion is based on his comparison of the proposed common equity ratio in this proceeding, 51.0 percent, with the *average* common equity ratio of the proxy group. However, the proxy group average is heavily skewed by a single outlier, NiSource, which has a common equity ratio of only 34 percent. In this circumstance, to get a proper comparison with the typical proxy company it is more appropriate to look at the median and the distribution for the group. As shown in column (3) of his Exh. No. MPG-2, Schedule 4, three of his six proxy companies have common equity ratios between 50.7 and 52.4 percent, and the median for the group is 49.6 percent. Thus, Montana-Dakota's filed common equity ratio of 51.00 percent is similar to the median and the level for a majority of the proxy companies, but his reliance on a skewed average for the group masks that similarity.

[19] Prepared Direct Testimony of J. Stephen Gaske, pp. 33-34.

III. DCF ANALYSES

A. Dr. Griffing's DCF Analyses

Q20. Please describe Dr. Griffing's DCF analyses.

A20. Dr. Griffing makes two different DCF calculations that he refers to as a "Constant Growth DCF" and a "Multi-stage DCF." In his DCF analyses, Dr. Griffing computes the dividend yields by dividing the annualized dividend for each proxy group company by the average stock price for the 19 trading days ended December 1, 2017. He then makes a flotation cost adjustment to the dividend yields and adds an expected growth rate estimate to get his total DCF estimate. For his Constant Growth DCF analysis he uses the average of analysts' growth rate forecasts published by Zacks, Yahoo! Finance, and Value Line. Although this analysis indicates a very wide range of returns between 7.29 and 10.92 percent, Dr. Griffing's recommended rate of return in this proceeding is equal to the simple average return produced from applying his Constant Growth DCF model to the proxy companies.

Q21. Do you agree with Dr. Griffing's reliance on the simple average of the DCF returns for his proxy companies?

A21. No. As I discuss elsewhere, the allowed rate of return in this proceeding should be set well above the average or median for the proxy companies for two reasons. First, Montana-Dakota's North Dakota gas distribution operations have risks that are above the average for the proxy companies and, therefore, should have an allowed rate of return set above the average for the proxy companies. Second,

recent anomalous conditions in the markets have tended to depress utility dividend yields such that DCF analyses of utilities may understate the cost of common equity required for long-term investments in utility assets. My risk premium and CAPM analyses tend to support that opinion.

Q22. Please describe Dr. Griffing's Multi-Stage DCF analysis.

A22. Dr. Griffing performs a Multi-Stage DCF analysis on his proxy group by assigning 2/3 weight to the short-term analysts' earnings per share growth rate and 1/3 weight to a long-term GDP growth rate of 4.0 percent, published by the Congressional Budget Office. Dr. Griffing's Multi-Stage DCF analysis produces an ROE estimate of 8.10 percent.

Q23. Do you agree with Dr. Griffing's use of the growth rate of the United States Gross Domestic Product ("GDP") in his "multi-stage" DCF analysis of the proxy companies?

A23. No. The U.S. GDP growth rate has little or no connection to the growth rates investors expect for these companies. Companies grow at different rates from each other for a variety of reasons related to the economy in their regions, their financing practices, diversification opportunities, and other reasons. Consequently, there is no reason to expect that an estimate based on U.S. GDP growth rates is as reliable as an estimate as one based on analysts' forecasts for the specific companies being analyzed.

It is important to note that the GDP growth rate is an average for all activities in the economy. At any given point in time, some companies or industries grow faster than

the economy, while other companies or industries are declining. Thus, it is not unusual for some companies or industries to exceed the average GDP growth rate for significant periods of time. Moreover, the cost of equity estimate that Dr. Griffing calculates by using a GDP growth rate is far below any return allowed for gas distribution utilities in recent years and should be self-evidently inadequate when compared with the DCF results from analysts' estimates or other reasonable benchmarks.

B. Mr. Gorman's DCF Analyses

Q24. Please summarize Mr. Gorman's DCF analyses.

A24. Mr. Gorman constructed a constant growth DCF model using analyst growth rates, a constant growth DCF model using sustainable growth rates, and a Multi-Stage Growth DCF model. These models produce a range of ROE estimates for individual companies from 6.91 percent to 12.78 percent. Mr. Gorman derives a range of DCF returns from 8.37 percent (based on the median results of his constant growth DCF analysis using analysts' earnings growth rates) to 9.08 percent (based on the average results of his DCF analysis using sustainable growth rates), and he contends that the DCF studies support a return on equity of 8.80 percent.[20]

Q25. Do you agree with Mr. Gorman's conclusion regarding his DCF returns?

A25. No, I do not. Mr. Gorman does not include the required flotation cost adjustment, nor does he make an appropriate adjustment for the greater risk of Montana-

[20] Direct Testimony of Michael P. Gorman, at 42.

Dakota's North Dakota natural gas distribution operations relative to the average proxy company. In fact, Mr. Gorman's DCF analysis based on analysts' estimates shows a range of 7.73 – 9.59 percent, and his DCF analysis based on sustainable growth indicates a range of 6.91 – 12.78 percent. Consequently, my estimate of 10.0 percent is well within the range of Mr. Gorman's reasonable DCF results.

Q26. What growth rate estimates does Mr. Gorman use in his three DCF models?

A26. For his DCF model based on analysts' estimates, Mr. Gorman uses a simple average of three different consensus estimates of earnings growth (Zacks, Reuters, and SNL), whereas I use those reported by Zacks and Yahoo! Finance, which are both based on consensus forecasts. Mr. Gorman's Sustainable Growth DCF model uses a growth rate based on Value Line's three-to-five year projections of earnings, dividends, earned return on book equity, and projected book value growth from stock issuances. The results of these inputs to his analysis are similar to mine. For example, Mr. Gorman's analysts' earnings growth estimate of 5.80 percent is generally consistent with mine and his sustainable growth estimate of 6.40 percent is approximately 100 basis point higher than my corresponding sustainable growth rate estimate.

Mr. Gorman's Multi-Stage DCF model uses growth rates for each proxy company that are a form of the weighted average of the analysts' earnings growth forecasts for each company (in years 1-5) and the nominal GDP growth forecast (in years 11-200). Mr. Gorman assumes that each proxy company's growth rate will converge to the projected growth rate for U.S. GDP of 4.20 percent within 10 years. As a result, his multi-stage growth rate gives minor weight to the analysts' long-term forecasts for

each company, and a significant majority of weight to the projected growth rate in U.S. GDP. For example, as shown in Exhibit No. ___(JSG-4), Schedule 2, his multi-stage growth rate for Atmos is equivalent to a weighted average that gives only 18 percent weight to analysts' growth forecasts for Atmos, and gives U.S. GDP forecasts a weight of 82 percent. For the average proxy company he gives analysts' growth rates a weight of 27 percent, while giving a significantly major weight of 73 percent to U.S. GDP growth. As discussed below, this is inappropriate.

Q27. Are analysts' growth rates generally a superior measure of long-term investor expectations?

A27. Yes. Although analysts' longest-term growth forecasts are typically expressed as five-year forecasts, these forecasts generally represent growth rate expectations for a longer period of time than the five-years expressed in the forecast. There is a large amount of literature that suggests analysts' growth rate forecasts are a superior measure of the long-term growth rate expectations that are reflected in stock prices. For example, Vander Weide and Carleton found that analysts' earnings growth rate forecasts have a very highly significant relationship with stock prices.[21] This indicates that the analysts' earnings growth estimates are an accurate estimator of long-term growth rate expectations implicit in stock prices, even though the analysts' earnings growth estimates are putatively five-year estimates. Similarly, Marston, Harris and Crawford examined publicly-available data from 1982-1985

[21] Vander Weide, J.H. and Carleton, W.T., "Investor Growth Expectations: Analysts vs. History," *The Journal of Portfolio Management*, Spring 1988, pp. 78-82.

and found that plausible measures of risk are more closely related to expected returns derived from a constant growth DCF model than to those derived from multi-stage growth models.[22]

Q28. Did Mr. Gorman provide any assessment of the analysts' estimated growth rates used in his DCF model by comparing them to other benchmarks?

A28. Yes. Mr. Gorman notes that the average analysts' earnings growth estimate of 5.80 percent for his proxy group in his DCF model is "higher than my estimate of a maximum long-term sustainable growth rate of 4.20%."[23] He states that "a long-term sustainable growth rate for a utility stock cannot exceed the growth rate of the economy in which it sells its goods and services"[24] and therefore the long-term GDP growth rate of 4.20 percent is the maximum logical growth rate.

However, it is important to note that the GDP growth rate is an average for all activities in the economy. At any given point in time, some companies or industries grow faster than the economy, while other companies or industries are growing slower or declining. Thus, it is not unusual for the growth rates of some companies or industries to be below or above the average GDP growth rate for significant periods of time. That is why it is important to place primary reliance upon company-specific growth rate information in order to distinguish between sectors and companies with declining,

---

[22] F. Marston, R. Harris, and P. Crawford, "Risk and Return in Equity Markets: Evidence Using Financial Analysts' Forecasts," in *Handbook of Security Analysts' Forecasting and Asset Allocation*, J. Guerard and M. Gultekin (eds.), Greenwich, CT, JAI Press; as described in R. Harris and F. Marston, "Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts," *Financial Management*, Summer 1992, p. 64.

[23] Direct Testimony of Michael P. Gorman, at 32.

[24] *Ibid*, at 33.

or below average, growth and those that are expected to comprise the above-average growth sectors and companies. An important flaw in Mr. Gorman's Multi-Stage DCF analysis is that it assumes all companies in the proxy group will decline to the same low growth rate within a relatively short period of 10 years. He therefore unrealistically implies that investors give very little weight to company-specific growth forecasts and, instead, mostly expect the proxy companies to grow at the same rate as U.S. GDP.

Q29. Do you agree with Mr. Gorman's use of a projected nominal GDP growth rate as the third-stage sustainable growth rate in his analysis?

A29. No. On page 1 of his Exhibit No.___(MPG-2), Schedule 8, Mr. Gorman calculates the long-run "sustainable" growth rate to be 6.40 percent – not 4.20 percent. Mr. Gorman states that "a sustainable long-term earnings retention ratio will help gauge whether analysts current three-to-five-year growth rate projections can be sustained over an indefinite period of time."[25] For some reason, Mr. Gorman now claims that the "sv" portion of his sustainable growth calculation is not sustainable, but he provides no rationale for that opinion.[26] Stock issuance is a common source of earnings per share growth for the proxy companies and there is no reason to think that investors do not expect that to continue to be a source of growth in the future. Because Mr. Gorman's sustainable growth rate, 6.40 percent, exceeds the analysts' growth rate of 5.80 percent, investors reasonably can expect the analysts' growth

[25] *Ibid*, at 34.
[26] *Ibid*, at 34-35.

rates to be sustained over an indefinite period of time. Thus, investors would not expect the proxy companies' average growth rates to decline to the forecasted growth rate in U.S. GDP within any time period that is materially significant for the DCF analysis.

IV. Effect of capital market conditions on DCF model

Q30. At page 10, lines 5-6 of his testimony, Dr. Griffing states that investors "… will choose the opportunity they think will provide the best return …" Is that generalization true in the current market?

A30. While most investors look to maximize their return for a given level of risk, the extraordinary intervention of central banks in the markets in recent years is intended stimulate the economy by *purposely investing to earn returns that are inadequate for the normal "rational" investors that are assumed in the DCF theory*. This has created anomalous conditions in the financial markets and partially undermined the most basic assumption of finance theory. These anomalous conditions have had a significant effect on gas utility stocks and equity analysts have noted that gas distributors are experiencing high valuations as compared to historical levels. For example, Value Line recently commented that utility stocks are "expensively priced," and that:

> "[Interest r]ates remain very low, by historical standards. Returns on cash are negligible, so some investors are 'reaching for yield' by buying stocks with good dividend yields, such as electric utilities.

> This has made the valuations of many of these equities higher than normal."[27]

This same observation applies to gas distribution utility stocks. Value Line observes that "[t]oday, it is not unusual to see a utility stock trading at a market price-earnings multiple," and "it is not unusual to see a utility quotation that is within our [Value Line] 2020-2022 Target Price Range for that issue."[28] These data suggest that utility stock prices are distorted, and that the dividend yield for utilities in the DCF model may be artificially depressed by short-term investors who are "reaching for yield" and are less interested in long-term investment.

An article in the December 11, 2017 edition of Barron's also discussed this condition:

> "… what really is the biggest bubble in the world. That would be the trillions of dollars worth of bonds with negative yields, contends David Rolley, co-team leader of the global fixed-income and emerging debt group at Loomis Sayles.
>
> According to JPMorgan's latest tally, there is some $10.1 trillion in global government bonds with yields below zero … That is down from the peak of $12.7 trillion reached in July 2016 in the wake of the market panic following the Brexit vote.
>
> Of course, this isn't the product of wild-eyed speculators' relentless chase of a market's accelerating assent, but the result of sober central bankers' monetary policies. The European Central Bank has been buying 60 billion euros' ($70.6 billion) of bonds per month. The Bank of Japan, meanwhile, is acquiring Japanese government bonds in sufficient quantity to keep its 10-year yield pegged near zero percent.

---

[27] Value Line Investment Survey, Electric Utility (East) Industry, August 18, 2017, at 138.

[28] *Ibid.*

***

The real effect of the negative bond yields has been to exert a downward gravitational pull on interest rates everywhere, even in places where they never fell below zero, as in the U.S. dollar market. Clearly, however, a security that guarantees a loss (if held to maturity) can't be rationally priced."[29]

An underlying assumption of the DCF model is that investors are rational profit-maximizing (or value-maximizing) players in a competitive market where no single investor has the power to affect the results. However, in recent years central banks, including the U.S. Federal Reserve bank, have exercised market power by printing money and "investing" at expected returns that are insufficient for rational profit-maximizing investors. That disconnect occurs because central banks are motivated to "stimulate" the economy and are explicitly not motivated to earn a reasonable return on their investment. This market distortion extends into utility stocks where investors are investing for the short-term dividend yield as an alternative to government bonds. That is why, as discussed in my Prepared Direct Testimony, FERC concluded that Federal Reserve actions may have artificially reduced current dividend yields for utilities and caused the DCF model to understate the cost of common equity capital for utilities at this time. [30]

Q31. Please discuss how conditions in capital markets have affected the results of the DCF model for utilities.

A31. The monetary policy of recent years has created artificial conditions in the

---

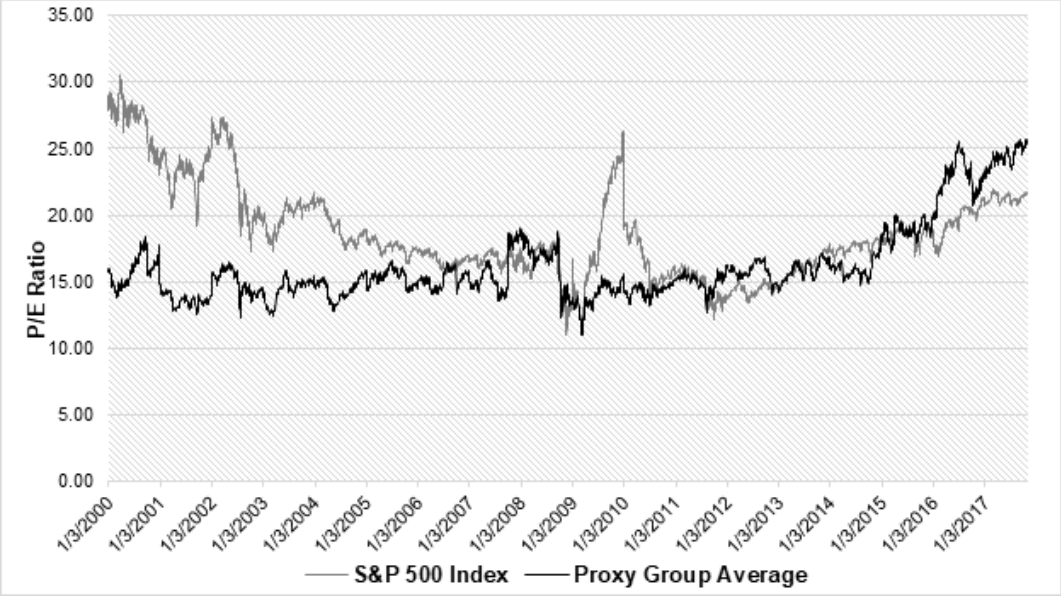
[29] Forsyth, Randall W., "2018's Greatest Risk", *Barron's*, December 11, 2017, pp. 7-8, emphasis added.

[30] Opinion No. 531, 147 FERC ¶ 61,234 (2014); aff'd in Opinion No. 531-B, 150 FERC ¶ 61,165 (March 3, 2015); and Opinion No. 551, 156 FERC, ¶ 61,234 (Sept. 28, 2016), para. 120-122.

secondary market for utility common stocks such that the DCF model may not accurately reflect the cost of capital required for investments in utility assets. For example, some of the abnormal conditions in the financial markets include:

- An exceptionally low federal funds interest rate that represents a *negative* real interest rate. For example, the federal funds rate has been held below 1.25 percent at a time when the GDP implicit price deflator has been increasing at more than 1.6 percent per year.
- Federal Reserve purchases of Treasury Bonds and debts of other federal entities that increased Federal Reserve holdings of securities from $0.75 trillion at the end of 2007, to $4.5 trillion at the end of 2016. These purchases, along with the low federal funds rate, helped drive long-term Treasury Bond interest rates down below 3.0 percent.
- Blue Chip Financial Forecasts projects that the Treasury Bond interest rate will increase by more than 40 percent (from 2.80 percent to 4.10 percent) in the next few years as the Federal Reserve ceases its purchases and attempts to attract private investors to buy those bonds.
- Proxy company P/E ratios, which traditionally have been below the S&P 500 index average, now exceed the S&P 500 index average, as shown in Chart 2:

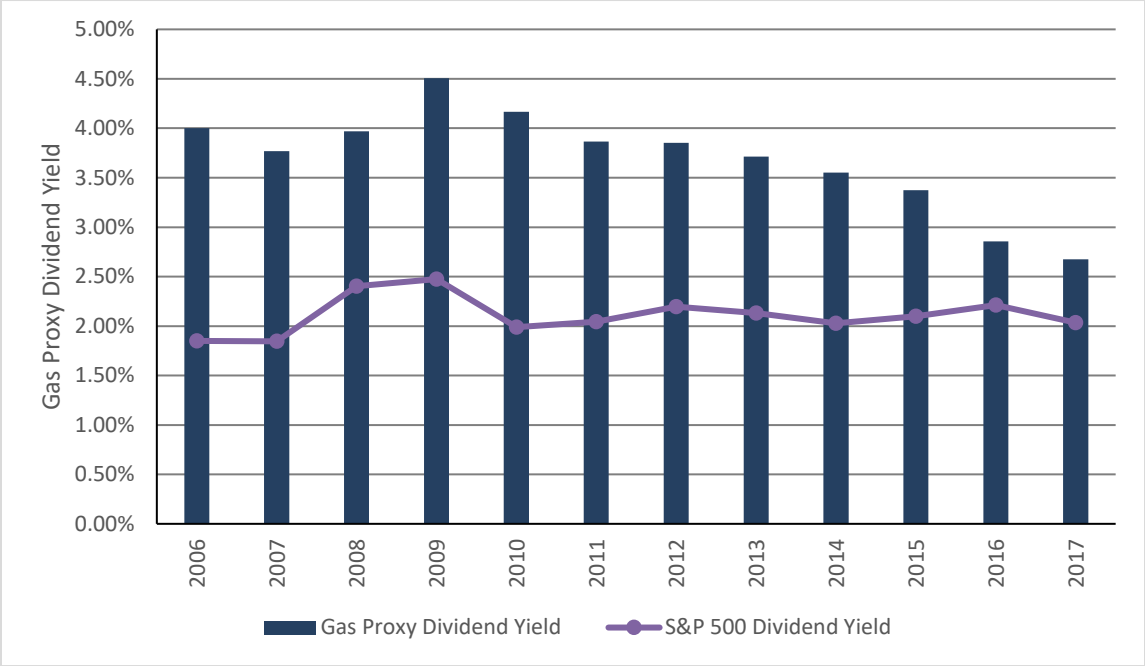
Chart 2: P/E ratios for Proxy Group and S&P 500 Index[31]



Proxy company dividend yields have declined precipitously during the time of the Federal Reserve quantitative easing, while dividend yields of the S&P 500 companies have remained relatively constant. As shown in Chart 3, the average dividend yield for the proxy group companies has declined from 4.50 percent in 2009 to 2.68 percent in 2017. The average dividend yield for the companies in Dr. Griffing's proxy group is 2.60 percent.

[31] Source: Bloomberg Professional.

Chart 3: Dividend Yields of Proxy Group and S&P 500 Index[32]



This suggests that Federal Reserve policies have changed the way that investors value utility stocks relative to other stocks. Consequently, the results of the DCF model are understated because the dividend yields of the proxy group companies have been artificially suppressed due to the low interest rate environment that was created by the Federal Reserve's quantitative easing program.

In general, normal market conditions would have: a positive real interest rate, utility P/E ratios less than the market average, federal debt purchased by real investors instead of large amounts purchased and held by the Federal Reserve, and projected

[32] Source: Bloomberg Professional.

interest rates reasonably close to current rates. As the FERC noted in Opinion No. 551:

> *"… evidence in the record regarding historically low interest rates and Treasury bond yields as well as the Federal Reserve's persistent intervention in markets for debt securities are sufficient to find that capital market conditions are anomalous."*[33]

Capital markets are always affected by monetary policy, but normal monetary policy is intended to accommodate the underlying growth rate in the economy. Under the abnormal policy of recent years, a very large portion of the "investment" in the economy has been the Federal Reserve essentially printing money to purchase large amounts of bonds at yields that are too low to attract real investors. This has had a ripple effect in the market for all assets, including utility stocks.

V. CAPITAL ASSET PRICING MODEL ANALYSES

Q32. Please describe your disagreement with Dr. Griffing's application of the Capital Asset Pricing Model and the relevance of his estimated cost of common equity capital for Montana-Dakota's North Dakota gas distribution operations using that model.

A32. I have several areas of disagreement concerning the Capital Asset Pricing Model ("CAPM"). On a conceptual level, the CAPM is difficult to apply because there is no reliable measure of Beta. Nevertheless, some analysts use the CAPM as a method for estimating the cost of common equity, and I presented a CAPM analysis

[33] 156 FERC, ¶ 61,234 (Sept. 28, 2016), para. 124.

in my Direct Testimony which uses the same method that FERC adopted in several recent decisions.

My primary disagreement with Dr. Griffing is in the development of the market risk premium that Dr. Griffing used in his CAPM analysis. Dr. Griffing develops a market risk premium based on an estimated market return of 8.78 percent that he derives from Value Line's estimated 3-5 year capital appreciation of 30 percent and a dividend yield of 2.0 percent. He then subtracts his risk-free rate of 2.79 percent to arrive at an equity risk premium of 5.99 percent. In contrast, the DCF analysis of the S&P 500 companies contained in Exhibit No. ___(JSG-2), Schedule 5 of my Direct Testimony in this proceeding indicates an average market required rate of return for the S&P 500 of 12.54 percent, and that implies a current market risk premium of 9.02 percent.

Given that large company stocks have historically returned 12.0 percent, and that my own analysis of the S&P 500 indicates a required return of 12.54 percent at this time, Dr. Griffing's estimate of the average required market return of 8.78 percent is significantly understated. Furthermore, given the low government bond yields, coupled with the strong inverse relationship between required risk premiums and bond yields, the forward-looking market risk premium should be well above the historical average of 7.0 percent reported by Duff & Phelps.[34] Thus, Dr. Griffing's market risk premium of 5.99 percent clearly is not reasonable.

[34] Duff & Phelps 2017 Valuation Handbook, U.S. Guide to Cost of Capital, Exhibit 2.3, at 2-4. The total return on large company stocks of 12.0 percent less the income-only return on long-term government bonds of 5.0 percent results in a market risk premium of 7.0 percent.

Q33. Is it appropriate to use the Value Line 3-5 year stock price appreciation forecast as the measure of investors' long-term growth expectations?

A33. No. The DCF model requires an estimate of the long-term growth rate in earnings and dividends that investors expect. However, Dr. Griffing ignores this requirement and incorrectly uses short-term stock price appreciation instead of earnings and dividends growth. Short-term stock price appreciation expectations can vary widely in response to investor sentiment and often can run counter to long-term expectations for earnings and dividend growth. For example, Value Line indicates that the 3-5 year price appreciation forecast as of December 1, 2017 of 30 percent is at the bottom of the range since March 2009, when the 3-5 year price appreciation potential was 185 percent.[35] Use of Dr. Griffing's short-term stock price appreciation method at that time would have implied an implausibly high *long-term* growth rate of 29.9 percent for the average company.[36] Clearly, short-term stock price appreciation is not a reliable method for estimating investors' long-term expected growth in earnings and dividends.

The current short-term stock price forecast used by Dr. Griffing reflects the fact that rapid near-term expected growth in earnings and dividends, largely due to expected changes in the tax laws, was already partially incorporated into the stock prices of many companies at the time of his study, and it will be more difficult for stock prices to increase rapidly until earnings and dividends catch up with this

---

[35] *Value Line Investment Survey*, December 15, 2017, shown on Exhibit MFG-14, Schedule 3.

[36] At a relative high point of the market Dr. Griffing calculated ((1+0.3)^.25)-1 = 6.78%; In 2009, at a relative low point in the market, the calculation would have been ((1+1.185)^.25-1 = 29.93%.

short-term phenomenon. As a result, at some point beyond the short-term 3-5 year period used by Dr. Griffing, investors undoubtedly expect general stock market prices to increase at a rate that is more in line with the long-run expected growth in earnings that I used in my analysis.

Q34. Does Dr. Griffing's CAPM analysis produce plausible results?

A34. No. Dr. Griffing's CAPM estimate of 7.17 percent and ECAPM estimate of 7.57 percent are far lower than any ROE awards for a gas distribution company in at least the last 30 years.[37] At a time when average Baa-rated utility bond yields for the month of November 2017 were approximately 4.16 percent, an estimate that the required return on common equity is as low as 7.17 percent is not plausible.

Q35. Does Dr. Griffing place any weight on his CAPM results in arriving at his recommended return on common equity?

A35. No. Dr. Griffing states that he used the CAPM analyses only to check the reasonableness of his DCF results.

Q36. Please describe your disagreement with Mr. Gorman's use of the Capital Asset Pricing Model to estimate the cost of common equity capital for Montana-Dakota's North Dakota gas distribution operations.

A36. Similar to my disagreement with Dr. Griffing, my primary disagreement with Mr. Gorman's CAPM analysis is his method of estimating the market risk premium. Research studies provide empirical support for the proposition that equity risk

[37] Source: Regulatory Research Associates.

premia generally increase as interest rates decrease, and vice versa. For example, as shown in the Risk Premium analysis in Exhibit No.___(JSG-2), Schedule 5 to my Direct Testimony, there is an inverse relationship between the natural gas utility equity risk premia and interest rates. Despite this fact, Mr. Gorman uses historical average market risk premiums.

For example, Mr. Gorman calculated two alternative estimates for the risk premium. He calls one of his estimates a "forward-looking" estimate, but that number is really derived from the average historical real return on common stocks from 1926-2016, adjusted for projected inflation.[38] From those historical returns, he subtracts the current projected bond yield from *Blue Chip Financial Forecasts* to get a risk premium estimate. Although two of the three elements in his "forward-looking" risk premium are forward-looking, the essential core element of the calculation, the market risk premium, is an historical average that does not reflect current market conditions. Mr. Gorman's other risk premium, which he calls an historical risk premium, is calculated somewhat differently, but it is obviously based on historical averages rather than current forward-looking data.[39]

In my Direct Testimony, I calculated a true forward-looking market risk premium using the S&P 500 companies, which is considerably higher than historical averages.

---

[38] Direct Testimony of Michael P. Gorman, at 52-53.

[39] *Ibid*, at 53.

Thus, Mr. Gorman's historical average data assumes inappropriately low market risk premiums for current market conditions.

Q37. Does Mr. Gorman's CAPM analysis produce plausible results?

A37. No. As shown in Exhibit No.___(MPG-2), Schedule 18, Mr. Gorman's CAPM analysis based on the long-term historical average risk premium produces an implausibly low return estimate of 7.98 percent; a return this low has never been awarded to a gas distribution company in either the last five years or the last 30 years.[40]

Q38. Did you provide a CAPM result in your Direct Testimony?

A38. Yes. As shown in Exhibit_(JSG-2), Schedule 7, of my Prepared Direct Testimony, if one were to use the CAPM as a benchmark of a reasonable return, the most reasonable current estimate would be 11.26 percent for the typical proxy company.[41] This estimate, which includes the Duff & Phelps CAPM size adjustments recommended for each proxy company, is higher than the DCF estimates and far more plausible than either Dr. Griffing's or Mr. Gorman's much lower CAPM estimates that calculate the expected market risk premium based on short-term projected stock price appreciation and unadjusted historical data, respectively. Even without the recommended CAPM size adjustments, the median

---

[40] Source: Regulatory Research Associates.

[41] My CAPM calculation method is identical to the one adopted by the U.S. Federal Energy Regulatory Commission last year. *Martha Coakley, et al. v. Bangor Hydro-Electric Company, et al.*, Opinion No. 531, 147 FERC ¶ 61,234 (2014); aff'd in Opinion No. 531-B, 150 FERC ¶ 61,165 (March 3, 2015). Note that FERC used the CAPM only as a benchmark but set the allowed rate of return above the median indicated by a DCF analysis of proxy companies because of the current abnormal financial market conditions.

CAPM return for the proxy companies is 10.1 percent. Thus, if one were to use the CAPM as a benchmark, a reasonably calculated CAPM benchmark fully supports my recommended ROE of 10.0 percent in this proceeding.

VI. FLOTATION COST ADJUSTMENT

Q39. At page 25, lines 6-12, Dr. Griffing explains his calculation of a flotation cost adjustment. Do you agree with this method?

A39. Although he and I both agree that a flotation cost adjustment is necessary, I disagree with the method he used in applying the adjustment. Dr. Griffing only applies his flotation cost adjustment to the dividend yield component of the Constant Growth DCF results for each company in his proxy group rather than to the total estimated DCF return for each company. Professor Myron Gordon, who is credited with developing the DCF model for estimating rate of return, has stated that a regulatory agency should set the allowed rate of return greater than the secondary market investor return requirement so as to allow the firm to issue stock at a price that will yield net proceeds equal to book value. Professor Gordon advocates the following adjustment:

> *The agency need only estimate the proportion that the proceeds per share on an issue bear to the price of the stock and adjust the allowed rate of return so that the price per share is the indicated ratio of the book value per share. If the proceeds on an issue are 91 percent of market price, the agency should maintain market price at about 110 percent of book value.* [42]

[42] Myron J. Gordon, *The Cost of Capital to a Public Utility*, Michigan State University, 1974, pages 165-166.

In making this adjustment, the allowed rate of return will be equal to the return required in the primary market for funds and should therefore meet the standard that the return is sufficient to enable the utility to raise capital on reasonable terms.

Q40. Why do you advocate a method different from that of Dr. Griffing for making the required flotation cost adjustment?

A40. There is a difference between (i) the flotation cost adjustment that is applied in capital budgeting and (ii) the flotation cost adjustment that is required for setting the allowed rate of return for a regulated company.

For example, in capital budgeting the flotation cost adjustment is used to determine the minimum rate of return, or discount rate, that must be earned on a particular project if a specific company is going to issue common stock to finance the project. The price of the common stock to which the capital budgeting flotation cost adjustment is applied is treated as an exogenous variable that is treated as a "given" price in the capital budgeting analysis. In addition, the rate of return earned by the company's existing investments is of no consequence or interest in the capital budgeting analysis. Regardless of the return earned by the existing investments, the capital budgeting analysis assumes that, because of flotation costs, the new project requires a rate of return that is greater than the return required by the existing investments.

In contrast, the flotation cost adjustment required in setting a regulated rate of return is explicitly designed to increase the stock price by an amount sufficient to allow the regulated utility to issue common stock without diluting the value of the existing investment. Thus, unlike capital budgeting, the flotation cost adjustment used to

calculate the regulated rate does not treat the stock price as a given, exogenous, factor. In addition, because a single allowed rate of return applies to all of the regulated assets of a utility, and it is not different between new investments and existing investments, the flotation cost adjustment needs to be applied to the entire rate of return.

Q41. Can you provide an example of the anomalies that can result from applying a flotation cost adjustment for a regulated utility by applying the capital budgeting method for determining a discount rate for a single project?

A41. The capital budgeting flotation cost adjustment applied by Dr. Griffing produces widely different results for companies with different dividend yields and payout ratios. For example, suppose there are two companies that have identical risks and required rates of return on common equity, but they have different dividend yields and expected future growth rates. According to Dr. Griffing, if the flotation costs are 5 percent of the gross price, the required rate of return in the secondary market and the primary market for these two companies might be as follows:

	Secondary Market	**Primary Market**
	$D_1/P_0 + g = k$	$D_1/(P_0 - f) + g = k$
Company A:	$0.80/$10 + 4% = 12%	$0.80/($10 - $0.50) + 4% = **12.42%**
Company B:	$0.20/$10 + 10% = 12%	$0.20/($10 - $0.50) + 10% = **12.11%**
Difference		**0.33%**

As this comparison demonstrates, the flotation cost adjustment is significantly higher for the company with a high dividend yield, even though each company has the same risks and required rate of return in the secondary market. In these circumstances, both companies should have the same flotation cost adjustment and the adjustment should be applied to the entire DCF rate of return estimate, which is 12 percent for both companies.

Q42. Do you agree with Dr. Griffing's reasons for omitting Gas Natural from his calculation of representative flotation costs for gas distribution companies?

A42. No. At pages 23-25, he argues that Gas Natural is much smaller than the companies in his Comparison Group and is not one of the large gas distribution companies followed by Value Line. However, our ultimate purpose is not to determine a cost of equity for the Comparison Group. Instead, we are using that group of large companies as a proxy to infer a cost of equity for Montana-Dakota's North Dakota gas distribution operations. In fact, Gas Natural and the Montana-Dakota gas distribution operations are similar in size: Gas Natural assets and revenues are $197 million and $99 million, Montana Dakota-North Dakota are $135 million and $118 million.[43] His argument that the small size of Gas Natural causes higher flotation costs than the proxy group is similar to my conclusion that its smaller size gives Montana Dakota-North Dakota natural gas distribution operations greater risks than the typical proxy company. It is perfectly appropriate to include Gas Natural flotation costs in a calculation of flotation costs when the ultimate purpose is to determine the cost of capital for North Dakota operations that are a similar size.

Q43. What are Mr. Gorman's concerns with your estimate of flotation costs?

A43. Mr. Gorman asserts that the flotation cost adjustment for Montana-Dakota's North Dakota gas distribution operations "is not based on known and measurable costs for MDU."[44] In addition, Mr. Gorman believes I should have identified MDU

---

[43] Gaske Direct Testimony, Exhibit No. ___(JSG-2), Schedule 2, page 1.

[44] Direct Testimony of Michael P. Gorman, at 59.

Resources' actual flotation costs that are properly allocated to regulated operations, show the time period over which these costs were incurred, and show how they have been treated for ratemaking purposes in the past.[45]

Q44. How do you respond to these concerns?

A44. Mr. Gorman mis-states the purpose of my flotation cost adjustment. He claims that "if the flotation expenses had been amortized to cost of service, then these costs would already have been recovered in past rates,"[46] and he opposes the proposed adjustment because it is not "based on MDU's actual and verifiable flotation expenses."[47] As I explained in my Direct Testimony:

> A more important purpose of a flotation cost adjustment is to establish a return that is sufficient to enable a company to attract capital on reasonable terms. This fundamental requirement of a fair rate of return is analogous to the well-understood basic principle that a firm, or an individual, should maintain a good credit rating even when they do not expect to be borrowing money in the near future. Regardless of whether a company can confidently predict its need to issue new common stock several years in advance, it should be in a position to do so on reasonable terms at all times without dilution of the book value of the existing investors' common equity.[48]

The primary purpose of the flotation cost adjustment is to be consistent with the capital attraction standard which requires that the return be sufficient to enable the company to raise capital on reasonable terms on a forward-looking basis. In this regard, it is similar to an insurance premium. A company is not required to show that it has had

---

45 *Ibid*, at 60.
46 *Ibid*, at 60.
47 *Ibid*, at 59.
48 Direct Testimony of J. Stephen Gaske, at 15-16.

accidents or catastrophes in the past in order to include an insurance premium in its cost of service. Instead, the point of the insurance premium is to ensure that the company can pay for *future* costs that may or may not ever materialize. Mr. Gorman's suggestion that flotation costs can only be recovered after the fact misses the entire point of the capital attraction standard. Moreover, I am not aware of any ratemaking or regulatory accounting convention that provides for the amortization and recovery of past flotation costs associated with issuing common equity as Mr. Gorman suggests.

Q45. Please summarize your position regarding a flotation cost adjustment as it relates to Mr. Gorman's testimony and your revised results.

A45. For the reasons explained in my Direct Testimony, I continue to believe that a flotation cost adjustment is reasonable in this case. However, to address part of Mr. Gorman's concern, I calculated the actual flotation costs incurred by MDU Resources Group as a result of its three most recent public offerings in 1998, 2002, and 2004. The average flotation cost for these three issuances (shown in Exhibit No. ___(JSG-4), Schedule 3) was 3.6 percent, which is consistent with my flotation cost adjustment of 4.0 percent.

VII. RISK PREMIUM ANALYSIS

Q46. At page 42 of his testimony, Dr. Griffing criticizes your risk premium approach because it is based on historical data. Is this a valid criticism?

A46. No. I examined several risk premium approaches, but the one that should receive the most weight is the natural gas distribution company risk premium approach. This approach uses a regression analysis of historical data to establish a relationship

between current bond yields and the required common equity risk premium for natural gas distribution utilities. As shown on page 27 of my Prepared Direct Testimony, this relationship is given by the following equation:

$$0.08410 + (- 0.5560 \times \text{Bond Yield}) = \text{Risk Premium}$$

Although the regression equation is derived from historical data, the crucial input variable – the bond yield – is based on the current value. Thus, the risk premium calculated using this equation is a good estimate of the "current" required risk premium. As shown on Exhibit No. ___(JSG-2), Schedule 5, page 3, the R-square for this equation is 0.80, which represents a high level of significance for this equation, and a much higher level of significance than one typically finds when calculating Beta coefficients for a CAPM model. Moreover, this equation has the distinct advantage that it applies specifically to regulated natural gas distribution operations. For these reasons, the regression equation provides a good indication that the current required return on common equity for gas distribution operations is approximately 9.96 percent (which rounds to 10.0 percent).

Q47. Please summarize Mr. Gorman's bond yield plus equity risk premium analysis.

A47. In addition to his CAPM analysis, Mr. Gorman includes two additional Risk Premium approaches to estimate the cost of equity for Montana-Dakota's North Dakota gas distribution operations.

Mr. Gorman's first approach calculates the annual risk premium for each year from 1986 through September 2017 by taking the difference between regulatory

commission-authorized equity returns and long-term Treasury bond yields.[49] From that data, Mr. Gorman selected the 1987-1991 5-year average risk premium of 4.17 percent as the low end of his range, and the 2012-2016 5-year average risk premium of 6.68 percent as the high end. He then used a weighted average of these two numbers to derive his risk premium of estimate of 5.93 percent.[50] However, if one wanted to know the most recently required risk premium, it would be more accurate to simply use the 2013-2017 average of 6.64 percent. When added to the U.S. Treasury bond yield of 3.6 percent used by Mr. Gorman, that approach indicates a utility return requirement of 10.24 percent.[51]

Mr. Gorman's second approach calculates the average risk premium for the period 1986 through September 2017 as the difference between the average authorized equity returns for natural gas distribution companies and the concurrent A-rated utility bond yield.[52] From that data, Mr. Gorman again used the 1987-1991 5-year average of 2.80 percent, and the 2012-2016 5-year average of 5.52 percent, to produce a weighted average of 4.7 percent.[53] Again, if one wants to know the most recently required risk premium, it would make more sense to simply use the 2013-2017 average of 5.50 percent. When added to the utility bond yield of 4.22 percent used by Mr. Gorman, that approach indicates a current utility return requirement of 9.72 percent.[54]

---

[49] Exhibit No.___(MPG-2), Schedule 13.
[50] (.30 x 4.17%) + (.70 x 6.68%) = 5.93%
[51] Direct Testimony of Michael P. Gorman, at 49.
[52] Exhibit No.___(MPG-2), Schedule 14.
[53] (0.30 x 2.80%) + (0.70 x 5.52%) = 4.70%.
[54] Direct Testimony of Michael P. Gorman, at 49.

Q48. What would have been the overall result if Mr. Gorman had limited his gas utility risk premium calculations to the most recent five-year period instead of blending in another five-year period that is 25 years out of date?

A48. At page 50, lines 1-3 of his Direct Testimony, Mr. Gorman indicates that the mid-point of his two gas utility Risk Premium analyses is 9.2 percent. However, if he had employed the more reasonable approach of using only the most recent five-years of risk premiums, the mid-point of his two risk premium analyses would have been 10.0 percent:

Table 1
Mr. Gorman's Risk Premium Analysis Using Current Data

	ROE based on T-Bond Yield	Mid-Point	ROE based on Utility Bond Yield
Utility Risk Premium 2012-2016	6.64%		5.50%
Plus: Current Bond Yield	3.60%		4.22%
Required Gas Utility ROE	10.24%	**10.0%**	9.72%

In other words, if Mr. Gorman had not inappropriately mixed 1987-1991 data into his analysis, his gas utility risk premium analysis would have indicated a required rate of return of 10.0 percent, which confirms the reasonableness of my rate of return recommendation.

Q49. Mr. Gorman suggests that your large and small company Risk Premium analysis is flawed because it is based on the overall market or some unregulated market index and does not reflect the below market risk of Montana-Dakota's North

Dakota gas distribution operations and utility operations in general.[55] How do you respond?

A49. As discussed in my Direct Testimony, the purpose of my small company historical Risk Premium analysis is to serve as a benchmark to assess the reasonableness of my DCF analysis and to place in context the Company's requested ROE of 10.0 percent.[56] The small company risk adder serves as a useful indicator of the cost of capital for Montana-Dakota's North Dakota gas distribution operations because a gas distribution utility must offer potential returns that allow it to compete for equity capital with other investments of comparable risk. I indicated that gas distribution companies generally have lower risks than the average of all small publicly-traded companies. However, the significant average risk premiums earned by small companies are informative and provide some relevant context for the authorized return for Montana-Dakota's North Dakota gas distribution operations. Therefore, I believe this information is relevant for purposes of demonstrating the reasonableness of my recommended rate of return. I have not used my small company Risk Premium analysis to establish the recommended cost of common equity capital for the Company, but only as a general benchmark to corroborate the reasonableness of my DCF results and my recommendation.

---

[55] Direct Testimony of Michael P. Gorman, at 63-64.

[56] Direct Testimony of J. Stephen Gaske, at 39.

Q50. In addition to your historical benchmark risk premiums, did you calculate a current risk premium specific to natural gas utilities?

A50. Yes, that calculation is discussed at pages 27-28 of my Prepared Direct Testimony and is shown on Exhibit No. ___(JSG-2), Schedule 5 of that testimony.

Q51. Do you agree with Mr. Gorman that gas utility risk premiums are not inversely related to bond yields?

A51. No, I do not. Mr. Gorman claims that academic research does not support the "simplistic inverse relationship between equity risk premiums and interest rates"[57] that are contained in my Risk Premium analysis. He is incorrect in that claim, and my own analysis indicates that a statistically-significant inverse relationship does exist. Mr. Gorman also argues that:

> "In the 1980's, equity risk premiums were inversely related to interest rates but that was likely attributable to the interest rate volatility that existed at that time. … In today's marketplace, interest rate volatility is not as extreme as it was during the 1980's."[58]

His argument is misplaced since the Risk Premium analysis in Exhibit No.___(JSG-2), Schedule 5 of my Direct Testimony is based on data from 1992 – 2017 and does not include data from the 1980's. This analysis demonstrates that there still is an inverse relationship between natural gas utility equity risk premia and interest rates, and that relationship is unrelated to interest rate volatility in the 1980's as Mr.

---

[57] Direct Testimony of Michael P. Gorman, at 65.

[58] *Ibid.*

Gorman suggests.

Using underlying data similar to the analysis in Schedules 13 and 14 of Mr. Gorman's Exhibit___(MPG-2), my regression produced the following relationship:

Intercept + Coefficient x Bond Yield = Utility Risk Premium

0.08410 – (0.5560 x Bond Yield) = Utility Risk Premium

The regression statistics indicate that this equation is statistically significant and the R-square reveals that approximately 80 percent of the variation in the risk premium is explained by the bond yield. The negative coefficient in the above equation demonstrates the inverse relationship between bond yields and the natural gas utility risk premium. For every change of 100 basis points in the bond yield, the natural gas utility risk premium changes by approximately 56 basis points in the opposite direction. Thus, Mr. Gorman's observations clearly do not apply to natural gas utilities.

VIII. Market DCF Analysis

Q52. How do you respond to Mr. Gorman's concerns regarding your Market DCF Analysis?

A52. Mr. Gorman has concerns with the analysts' projected growth rates for the S&P 500 companies that I use in my Market DCF analysis because those growth rate are

above the average projected growth rate in the U.S. economy of 4.20 percent.[59] However, Mr. Gorman estimates that the long-term "sustainable" growth rate of the proxy companies is 6.40 percent.[60] Thus, there is no reason to think that investors' growth expectations for specific companies is limited to the projected growth in the economy.

Moreover, my current Market DCF rate of return estimate indicated by analysts' growth rate projections is 12.5 percent, which is very close to the 12.0 percent long-term average return earned by large-company common stocks during the period 1926-2016.[61] Thus, a current market DCF rate of return estimate that is nearly identical to the average return achieved during the past 90 years is clearly sustainable in the long run. Like my Risk Premium analysis, the purpose of my Market DCF analysis is to serve as a benchmark to assess the reasonableness of my DCF analysis and provide context for my recommended ROE of 10.0 percent, and also to estimate a current market risk premium for my CAPM analysis.[62]

As noted earlier, analysts' earnings growth rate forecasts are a superior measure of the long-term growth rate expectations that are reflected in stock prices. My approach to conducting a Market DCF analysis is virtually identical to one adopted by the Federal Regulatory Energy Commission ("FERC") in a recent order. In response to

---

[59] Direct Testimony of Michael P. Gorman, at 67.
[60] Gorman Exhibit___(MPG-2), Schedule 8.
[61] See Direct Testimony of Michael P. Gorman, at 53.
[62] Direct Testimony of J. Stephen Gaske, at 39.

arguments similar to those proffered by Mr. Gorman in this proceeding, the FERC concluded:

> We are also unpersuaded that the growth rate projection in the NETOs' CAPM study was skewed by the NETOs' reliance on analysts' projections of non-utility companies' medium-term earnings growth, or that the study failed to consider that those analysts' estimates reflect unsustainable short-term stock repurchase programs and are not long-term projections. As explained above, the NETOs based their growth rate input on data from IBES, which the Commission has found to be a reliable source of such data. Thus, the time periods used for the growth rate projections in the NETOs' CAPM study are the time periods over which IBES forecasts earnings growth. Petitioners' arguments against the time period on which the NETOs' CAPM analysis is based are, in effect, arguments that IBES data are insufficient in a CAPM study. [63]

Thus, the FERC did not agree with the argument that analysts' projections for the S&P 500 are unsustainable and not reliable for estimating the cost of capital for a broad-based market index.

Q53. On page 67 of his Direct Testimony, Mr. Gorman argues that the S&P 500 includes companies that have risk characteristics that are significantly different than the risks encountered by Montana-Dakota and its parent company, MDU Resources. What is your response?

A53. I agree that those companies have different risks, which is why my recommended rate of return for Montana-Dakota's North Dakota gas distribution operations of 10.0 percent is significantly less than the 12.5 percent DCF rate of return estimated

[63] 150 FERC ¶ 61,165, Docket Nos. EL11-66-002, Opinion No. 531-B, para. 112.

for the market as a whole.[64] Moreover, as shown earlier, if one were to use a CAPM beta to adjust for the differences in risk, the result is a median indicated rate of return of 10.1 percent for the proxy companies, and 11.26 percent when the recommended CAPM size adjustment is included.[65]

IX. SUMMARY

Q54. What does your analysis of the other parties' cost of capital testimonies indicate?

A54. The returns on common equity recommended by Dr. Griffing and Mr. Gorman are inadequate to meet the tests of a reasonable rate of return. For example, their recommended returns are near the lowest end of returns allowed in other natural gas distribution proceedings and are well below the returns that Value Line forecasts that the proxy companies will earn in the next few years. Dr. Griffing and Mr. Gorman recommend inadequate returns primarily because they do not recognize the fact that Montana-Dakota's North Dakota gas distribution operations are riskier than the average proxy company group. In addition, both of these witnesses place greater weight on the median or average results of their DCF analyses than current conditions warrant. Market conditions created by central bank interventions in the market suggest that these DCF results may be too low to adequately reflect the cost of common equity that investors require to invest in gas utility mains and other tangible assets required for needed growth and replacement

[64] Gaske Direct Testimony Exhibit No.___(JSG-2), Schedule 6.
[65] Gaske Direct Testimony Exhibit No.___(JSG-2), Schedule 8.

of their system.

In reviewing Mr. Gorman's cost of common equity analyses, I identified several flaws that, when corrected, indicate that my proposed return on equity is reasonable. First, his analysis of gas utility risk premiums mixed current data with data that is 25 years out of date. When only the current data is used, his gas utility risk premium analysis indicates a current required return on equity of 10.0 percent for natural gas utility companies. Second, the core factor in Mr. Gorman's CAPM analysis is based on average historical returns from 1926-2016. When a proper and reasonable current market risk premium is used, the CAPM analysis would suggest a size-adjusted median rate of return of 11.3 percent for the proxy companies. Third, his Multi-Stage DCF analysis assumes that investors expect the growth rate of all proxy companies to decline to equal the average growth rate in the economy within a relatively short time period and gives very little weight to analysts' forecasts that are specific to each company's circumstances.

Dr. Griffing's cost of capital analyses also have several flaws. His multi-stage DCF analysis relies unreasonably on the average growth rate in the economy instead of the expected growth rate for each of the proxy companies. In addition, the average market risk premium used in Dr. Griffing's CAPM is severely flawed by his use of short-term stock price appreciation forecasts as a proxy for investors' expected long-term growth in earnings and dividends. In contrast, my use of analysts' forecasts of long-run earnings growth rates is a more straightforward and reliable method for estimating investors' long-term earnings growth expectations.

Q55. Does this conclude your Rebuttal Testimony?

A55. Yes.

Dr. Griffing's DCF Analysis Updated to February 14, 2018

30-DAY CONSTANT GROWTH DCF -- GRIFFING PROXY GROUP

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Company	Ticker	Annualized Dividend	Stock Price	Dividend Yield	Expected Dividend Yield	Flotation Adjusted Dividend Yield	Value Line Earnings Growth	Yahoo! Finance Earnings Growth	Zacks Earnings Growth	Average Growth Rate	Mean ROE
Atmos Energy Corporation	ATO	$1.98	$81.09	2.44%	2.52%	2.62%	6.00%	7.30%	7.00%	6.77%	9.39%
New Jersey Resources Corporatior	NJR	$1.09	$38.36	2.84%	2.91%	3.02%	2.00%	6.00%	6.00%	4.67%	7.68%
NiSource Inc.	NI	$0.70	$23.71	2.95%	3.05%	3.17%	5.50%	8.69%	6.60%	6.93%	10.10%
Northwest Natural Gas Company	NWN	$1.89	$56.48	3.35%	3.43%	3.56%	7.00%	4.00%	4.50%	5.17%	8.73%
ONE Gas Inc.	OGS	$1.68	$68.55	2.45%	2.54%	2.63%	9.50%	6.00%	5.80%	7.10%	9.73%
South Jersey Industries, Inc.	SJI	$1.09	$28.26	3.86%	4.00%	4.14%	5.50%	6.00%	10.00%	7.17%	11.31%
Southwest Gas Corporation	SWX	$1.98	$71.58	2.77%	2.85%	2.96%	8.00%	4.00%	n/a	6.00%	8.96%
Spire, Inc.	SR	$2.25	$66.01	3.41%	3.50%	3.63%	8.00%	3.58%	4.50%	5.36%	8.99%
Mean				3.01%	3.10%	3.22%	6.44%	5.70%	6.34%	6.14%	**9.36%**

Notes:

[1] Source: Bloomberg Professional.

[2] Source: Bloomberg Professional, equals 20-day average as of February 14, 2018

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.50 x [8])

[5] Source: Value Line

[6] Source: Yahoo! Finance

[7] Source: Zacks

[8] Equals Average ([5], [6], [7])

[9] Equals [3] x (1 + 0.50 x Minimum ([5], [6], [7]) + Minimum ([5], [6], [7])

[10] Equals [4] + [8]

[11] Equals [3] x (1 + 0.50 x Maximum ([5], [6], [7]) + Maximum ([5], [6], [7])

Growth Rate Weighting Factors
Used in Mr. Gorman's Multi-Stage Growth DCF Model

	[1] Price	[2] Dividend	[3] D/P	[4] Analysts' Growth	[5] **Analysts' Weight**	[6] GDP Growth	[7] **GDP Weight**	[8] Weighted Average Growth Rate [4]*[5] + [6]*[7]	[9] ROE [3] + [8]
ATO	$ 86.92	$ 1.80	2.07%	6.67%	**18.2%**	4.20%	**81.8%**	4.65%	6.72%
NJR	$ 43.33	$ 1.02	2.35%	6.50%	**21.1%**	4.20%	**78.9%**	4.69%	7.04%
NI	$ 26.62	$ 0.70	2.63%	6.78%	**23.3%**	4.20%	**76.7%**	4.80%	7.43%
NWN	$ 65.95	$ 1.88	2.85%	4.75%	**39.9%**	4.20%	**60.1%**	4.42%	7.27%
SWX	$ 79.78	$ 1.98	2.48%	5.25%	**26.5%**	4.20%	**73.5%**	4.48%	6.96%
SR	$ 76.70	$ 2.10	2.74%	4.86%	**35.2%**	4.20%	**64.8%**	4.43%	7.17%
Average					**27%**		**73%**		7.10%

Source:
MPG-2, Schedule 11.
Cols. [5] and [7] calculated.

MDU RESOURCES GROUP, INC. COMMON STOCK PUBLIC OFFERINGS

	Company	Date	[1] Shares Issued	[2] Offering Price	[3] Underwriting Discount	[4] Offering Expense	[5] Gross Equity Issue	[6] Total Flotation Cost	[7] Net Proceeds	[8] Flotation Cost as % of Net Proceeds
1	MDU Resources Group, Inc.	2/4/2004	2,300,000	$23.32	$0.793	$350,000	$53,636,000	$2,173,900	$51,462,100	4.2%
2	MDU Resources Group, Inc.	11/19/2002	2,400,000	$24.00	$0.72	$192,500	$57,600,000	$1,920,500	$55,679,500	3.4%
3	MDU Resources Group, Inc.	4/21/1998	2,400,000	$35.625	$0.98	$210,000	$85,500,000	$2,562,000	$82,938,000	3.1%
4										3.6%

[1] Source: Form 424B5 dated 4/22/1998, 11/20/2002, 2/5/2004; includes over-allotments
[2] Source: Form 424B5 dated 4/22/1998, 11/20/2002, 2/5/2004
[3] Source: Form 424B5 dated 4/22/1998, 11/20/2002, 2/5/2004
[4] Source: Form 424B5 dated 4/22/1998, 11/20/2002, 2/5/2004
[5] Equals [1] x [2]
[6] Equals ([1] x [3]) + [4]
[7] Equals [5] − [6]
[8] Equals [6] / [7]