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December 16, 2020

Via Email and U.S. Mail

Executive Director Earl Taylor
c/o Ectory Lawless
Tennessee Public Utility Commission
502 Deaderick Street, Fourth Floor
Nashville, Tennessee 37243

Re: Piedmont Natural Gas Company, Inc. Petition for an Adjustment of Rates, Charges, and Tariffs Applicable to Service in Tennessee; Docket No.: 20-00086

Dear Mr. Taylor:

Enclosed please find for filing the original and four copies of the following documents:

Rebuttal testimony and exhibits of:

- a. Pia Powers
- b. Kally Couzens
- c. Quynh Bowman
- d. Dylan D'Ascendis
- e. Paul Normand

This material is also being filed today by way of email to the Tennessee Public Utility Commission docket manager, Ectory Lawless. Please file the original and provide a "filed" stamped copy of the same via email to my assistant, at denise.guye@wallerlaw.com.

Please do not hesitate to call me if you have any questions.

Very truly yours,

Paul S. Davidson

PSD:cdg

Enclosures

cc: Daniel Whitaker
Bruce Barkley
Pia Powers
James Jeffries

**BEFORE THE TENNESSEE PUBLIC UTILITY COMMISSION
DOCKET NO. 20-00086**

In the Matter of:)	
)	
Petition of Piedmont Natural Gas)	REBUTTAL TESTIMONY OF
Company, Inc. for Approval of an)	DYLAN W. D’ASCENDIS FOR
Adjustment of Rates, Charges, and Tariffs)	PIEDMONT NATURAL GAS
Applicable to Service in Tennessee)	COMPANY, INC.

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, AFFILIATION AND BUSINESS**
3 **ADDRESS.**

4 A. My name is Dylan W. D'Ascendis. I am a Director at ScottMadden, Inc. My
5 business address is 3000 Atrium Way, Suite 241, Mount Laurel, NJ 08054.

6 **Q. DID YOU PREVIOUSLY SUBMIT DIRECT TESTIMONY IN THIS**
7 **PROCEEDING?**

8 A. Yes.

9 **II. PURPOSE, SUMMARY, AND OVERVIEW**

10 **Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?**

11 A. The purpose of my Rebuttal Testimony is two-fold. First, I update my analytical
12 results. Second, I respond to the direct testimony of Dr. Christopher C. Klein, on
13 behalf of the Tennessee Attorney General Consumer Advocate ("Consumer
14 Advocate") concerning Piedmont Natural Gas Company, Inc.'s ("Piedmont" or the
15 "Company") return on common equity ("ROE") on its Tennessee rate base. In
16 addition, I respond to the direct testimony of Mr. David N. Dittmore on behalf of
17 the Consumer Advocate as it relates to the effect of the potential implementation of
18 an Annual Rate Mechanism ("ARM") on the Company's ROE.

1 **III. UPDATED ANALYSIS**

2 **Q. HAVE YOU UPDATED YOUR ANALYSES TO REFLECT CURRENT**
3 **MARKET CONDITIONS?**

4 A. Yes, I have. As noted above, given the passage of time since my Direct Testimony
5 analyses (data as of May 29, 2020), and the significant changes in the market
6 environment since then, I have updated my analyses using data as of November 30,
7 2020. My updated analytical results are summarized in Tables 1 through 4, below.

8 **Table 1: Constant Growth Discounted Cash Flow (“DCF”) Model Results¹**

	Median	Median High
30-Day Average	10.13%	12.49%
90-Day Average	10.10%	12.58%
180-Day Average	10.07%	12.46%

9

¹ Rebuttal Exhibit DWD-1.

1 **Table 2: Summary of Capital Asset Pricing Model (“CAPM”) / Empirical CAPM**
2 **(“ECAPM”) Results²**

	Bloomberg Derived Market Risk Premium	Value Line Derived Market Risk Premium
<i>CAPM - Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (1.61%)	13.46%	13.02%
Near Term Projected 30-Year Treasury (1.78%)	13.64%	13.19%
Long Term Projected 30-Year Treasury (3.20%)	15.05%	14.61%
<i>CAPM - Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (1.61%)	12.70%	12.28%
Near Term Projected 30-Year Treasury (1.78%)	12.87%	12.46%
Long Term Projected 30-Year Treasury (3.20%)	14.29%	13.87%
<i>ECAPM - Average Bloomberg Beta Coefficient</i>		
Current 30-Year Treasury (1.61%)	13.63%	13.18%
Near Term Projected 30-Year Treasury (1.78%)	13.80%	13.35%
Long Term Projected 30-Year Treasury (3.20%)	15.22%	14.77%
<i>ECAPM - Average Value Line Beta Coefficient</i>		
Current 30-Year Treasury (1.61%)	13.06%	12.63%
Near Term Projected 30-Year Treasury (1.78%)	13.23%	12.80%
Long Term Projected 30-Year Treasury (3.20%)	14.65%	14.22%

3

² Rebuttal Exhibit DWD-5.

Table 3: Bond Yield Plus Risk Premium Results³

Treasury Yield	Return on Equity
Current 30-Year Treasury (1.61%)	10.07%
Near Term Projected 30-Year Treasury (1.78%)	9.97%
Long Term Projected 30-Year Treasury (3.20%)	9.83%

Table 4: Expected Earnings⁴

	Return on Equity
Median	9.14%
Average	9.29%

From these results, I maintain that a reasonable range of ROEs between 9.90 percent and 10.70 percent and a point estimate of 10.30 percent is applicable to the Company at this time.

IV. RESPONSE TO DR. KLEIN

Q. PLEASE BRIEFLY SUMMARIZE DR. KLEIN’S ROE ANALYSES AND RECOMMENDATIONS.

A. Dr. Klein estimates the Company’s ROE using the DCF model. As a check on his DCF model, Dr. Klein uses a CAPM analysis.⁵ Dr. Klein estimates those models based on his “preferred” proxy group, as well as presenting certain results based on the proxy group in my Direct Testimony. Dr. Klein notes the results of his DCF

³ Rebuttal Exhibit DWD-6.

⁴ Rebuttal Exhibit DWD-7.

⁵ Direct Testimony of Dr. Christopher C. Klein, at 12.

1 model are within the range of 8.94 percent to 9.612 percent, with a midpoint of 9.27
2 percent.⁶ Dr. Klein concludes that an ROE of 9.30 percent is reasonable for the
3 Company.⁷ Dr. Klein also recommends that the Company's ROE be decreased by
4 50 basis points if the ARM is implemented in the future.⁸

5 **Q. DO YOU HAVE ANY GENERAL COMMENTS REARDING DR. KLEIN'S**
6 **RECOMMENDED ROE?**

7 A. Yes, I do. As previously stated, Dr. Klein relies exclusively on his constant-growth
8 DCF model results for his recommendation of the cost of common equity for the
9 Company. As discussed in my Direct Testimony,⁹ the use of multiple models adds
10 reliability to the estimation of the common equity cost rate, with the prudence of
11 using multiple cost of common equity models supported in both the financial
12 literature and regulatory precedent.

13 **Q. IS THE USE OF MULTIPLE COMMON EQUITY MODELS WELL**
14 **SUPPORTED IN ACADEMIC LITERATURE?**

15 A. Yes, it is. In one example, Morin states:

16 Each methodology requires the exercise of considerable judgment
17 on the reasonableness of the assumptions underlying the
18 methodology and on the reasonableness of the proxies used to
19 validate a theory. The inability of the DCF model to account for
20 changes in relative market valuation, discussed below, is a vivid
21 example of the potential shortcomings of the DCF model when
22 applied to a given company. Similarly, the inability of the CAPM

⁶ Direct Testimony of Dr. Christopher C. Klein, at 14-15.

⁷ Direct Testimony of Dr. Christopher C. Klein, at 14-15.

⁸ Direct Testimony of Dr. Christopher C. Klein, at 21.

⁹ D'Ascendis Direct Testimony, at 5-6, 48.

1 to account for variables that affect security returns other than beta
2 tarnishes its use.

3
4 **No one individual method provides the necessary level of**
5 **precision for determining a fair return, but each method**
6 **provides useful evidence to facilitate the exercise of an informed**
7 **judgment.** Reliance on any single method or preset formula is
8 inappropriate when dealing with investor expectations because of
9 possible measurement difficulties and vagaries in individual
10 companies' market data. (emphasis added)

11 * * *

12 The financial literature supports the use of multiple methods.
13 Professor Eugene Brigham, a widely respected scholar and finance
14 academician, asserts^(footnote omitted):

15
16 Three methods typically are used: (1) the Capital
17 Asset Pricing Model (CAPM), (2) the discounted
18 cash flow (DCF) method, and (3) the bond-yield-
19 plus-risk-premium approach. **These methods are**
20 **not mutually exclusive – no method dominates the**
21 **others,** and all are subject to error when used in
22 practice. Therefore, when faced with the task of
23 estimating a company's cost of equity, we generally
24 use all three methods and then choose among them
25 on the basis of our confidence in the data used for
26 each in the specific case at hand. (emphasis added)

27
28 Another prominent finance scholar, Professor Stewart Myers, in an
29 early pioneering article on regulatory finance, stated^(footnote omitted):

30
31 Use more than one model when you can. Because
32 estimating the opportunity cost of capital is difficult,
33 **only a fool throws away useful information.** That
34 means you should not use any one model or measure
35 mechanically and exclusively. Beta is helpful as one
36 tool in a kit, to be used in parallel with DCF models
37 or other techniques for interpreting capital market
38 data. (emphasis added)

39
40 Reliance on multiple tests recognizes that no single methodology
41 produces a precise definitive estimate of the cost of equity. As stated
42 in Bonbright, Danielsén, and Kamerschen (1988), *'no single or*

1 *group test or technique is conclusive.*’ Only a fool discards relevant
2 evidence. (italics in original) (emphasis added)

3 * * *

4 While it is certainly appropriate to use the DCF methodology to
5 estimate the cost of equity, there is no proof that the DCF produces
6 a more accurate estimate of the cost of equity than other
7 methodologies. Sole reliance on the DCF model ignores the capital
8 market evidence and financial theory formalized in the CAPM and
9 other risk premium methods. **The DCF model is one of many tools**
10 **to be employed in conjunction with other methods to estimate**
11 **the cost of equity.** It is not a superior methodology that supplants
12 other financial theory and market evidence. The broad usage of the
13 DCF methodology in regulatory proceedings in contrast to its virtual
14 disappearance in academic textbooks does not make it superior to
15 other methods. The same is true of the Risk Premium and CAPM
16 methodologies. (emphasis added)¹⁰

17 Additionally, Brigham and Gapenski note:

18 In practical work, *it is often best to use all three methods* – CAPM,
19 bond yield plus risk premium, and DCF – and then apply judgment
20 when the methods produce different results. People experienced in
21 estimating equity capital costs recognize that both careful analysis
22 and some very fine judgments are required. It would be nice to
23 pretend that these judgments are unnecessary and to specify an easy,
24 precise way of determining the exact cost of equity capital.
25 Unfortunately, this is not possible. Finance is in large part a matter
26 of judgment, and we simply must face this fact. (italics in original)¹¹

27 In the academic literature cited above, three methods of estimating the ROE
28 are consistently mentioned: the DCF, the CAPM, and the Bond Yield Plus Risk
29 Premium approach, all of which I used in my analyses.

¹⁰ Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 428-431 (“Morin”).

¹¹ Eugene F. Brigham and Louis C. Gapenski, Financial Management – Theory and Practice, 4th Ed., The Dryden Press, 1985, at 256.

1 **Q. WHY SHOULD THE COMMISSION BE CONCERNED ABOUT THE**
2 **WEIGHT DR. KLEIN GIVES TO THE DCF MODEL?**

3 A. All cost of common equity models have restrictive assumptions that may lead to
4 inaccurate results under different market conditions. One must evaluate the results
5 of multiple models to provide more comprehensive insight into the investor-
6 required return, rather than simply giving a single model, such as the DCF model,
7 the undue weight.

8 **Q. WHY IS THE WEIGHT DR. KLEIN PLACES ON HIS DCF RESULTS**
9 **UNDUE?**

10 A. Traditional rate base / rate of return regulation, where a market-based common
11 equity cost rate is applied to a book value rate base, presumes that market-to-book
12 ("M/B") ratios are at unity or 1.00. However, that is rarely the case. Morin states:

13 The third and perhaps most important reason for caution and
14 skepticism is that application of the DCF model produces estimates
15 of common equity cost that are consistent with investors' expected
16 return only when stock price and book value are reasonably similar,
17 that is, when the M/B is close to unity. As shown below, application
18 of the standard DCF model to utility stocks understates the
19 investor's expected return when the market-to-book (M/B) ratio of
20 a given stock exceeds unity. This was particularly relevant in the
21 capital market environment of the 1990s and 2000s where utility
22 stocks were trading at M/B ratios well above unity and have been
23 for nearly two decades. The converse is also true, that is, the DCF
24 model overstates that investor's return when the stock's M/B ratio
25 is less than unity. The reason for the distortion is that the DCF
26 market return is applied to a book value rate base by the regulator,
27 that is, a utility's earnings are limited to earnings on a book value

1 rate base.¹²

2 As Morin explains, DCF models assume a M/B ratio of 1.0 and therefore
3 under- or over-state equity investors' required return when market value exceeds
4 or is less than book value, respectively. This is because equity investors evaluate
5 and receive their returns on the market value of a utility's common equity, whereas
6 regulators authorize returns on the book value of common equity. This means the
7 results of the market-based DCF, when applied to a book value rate base, will
8 produce the total annual dollar return expected by investors only when market and
9 book values of common equity are equal, a very rare situation.

10 **Q. WHY DO MARKET AND BOOK VALUES DIVERGE?**

11 A. Market values can diverge from book values for a myriad of reasons, such as
12 earnings per share ("EPS"), merger / acquisition expectations, interest rates, etc.

13 As noted by Phillips:

14 Many question the assumption that market price should equal book
15 value, believing that 'the earnings of utilities should be sufficiently
16 high to achieve market-to-book ratios which are consistent with
17 those prevailing for stocks of unregulated companies.'¹³

18 In addition, Bonbright states:

19 In the first place, commissions cannot forecast, except within wide
20 limits, the effect their rate orders will have on the market prices of
21 the stocks of the companies they regulate. In the second place,
22 *whatever the initial market prices may be, they are sure to change*
23 *not only with the changing prospects for earnings, but with the*
24 *changing outlook of an inherently volatile stock market.* In short,

¹² Morin, at 434.

¹³ Charles F. Phillips, The Regulation of Public Utilities, Public Utilities Reports, Inc., 1993, p. 395.

1 market prices are beyond the control, though not beyond the
2 influence of rate regulation. Moreover, even if a commission did
3 possess the power of control, any attempt to exercise it ... would
4 result in harmful, uneconomic shifts in public utility rate levels.¹⁴

5 **Q. CAN THE DCF MODEL'S UNDER- OR OVER-STATEMENT OF EQUITY**
6 **INVESTORS' REQUIRED RETURN BE DEMONSTRATED**
7 **MATHEMATICALLY?**

8 A. Yes, it can. Rebuttal Exhibit DWD-8 demonstrates how a market-based constant
9 growth DCF model cost rate of 9.30 percent,¹⁵ when applied to a book value
10 substantially below market value, will understate investors' required return on
11 market value. As shown, there is no reasonable opportunity to earn the expected
12 market-based rate of return on book value. Yet, the regulatory compact provides
13 utilities the right to collect a reasonable price for service and the right to reasonable
14 rates and regulation. In Column [A] of Rebuttal Exhibit DWD-8, investors expect
15 a return of 9.30 percent on average market price of \$68.35. Column [B] shows that
16 when a return rate of 9.30 percent is applied to a book value of \$40.27,¹⁶ the total
17 annual return opportunity is \$3.745. After subtracting a dividend of \$2.297, the
18 investor only has the opportunity for \$1.448 in market appreciation, or 2.12 percent.
19 The magnitude of the understatement of the investor-required return on market
20 value using Dr. Klein's 9.30 percent cost rate is 3.82 percent, which is calculated

¹⁴ James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, *Principles of Public Utility Rates* (Public Utilities Reports, Inc., 1988), p. 334. (italics added)

¹⁵ Direct Testimony of Dr. Christopher C. Klein, at 6.

¹⁶ Representing a market-to-book ratio of 169.74%.

1 by subtracting the market appreciation based on book value of 2.12 percent from
2 Dr. Klein's expected growth rate of 5.94 percent.

3 **Q. IS THERE ANOTHER WAY TO SHOW THE INACCURACY OF THE DCF**
4 **MODEL WHEN THE M/B RATIO IS NOT AT UNITY?**

5 A. One can quantify the inaccuracy of the DCF model when the M/B ratio is not at
6 unity by estimating the implied DCF model results, when a market-value capital
7 structure is adjusted to reflect a book-value capital structure, which is the reality of
8 utility ratemaking.

9 **Q. PLEASE EXPLAIN.**

10 A. When market values diverge from book values, the inaccuracy of the DCF model
11 can be measured by first calculating the market value of each proxy company's
12 capital structure, which consists of the market value of the proxy company's
13 common equity (*i.e.* shares outstanding multiplied by price) and the fair value of
14 the proxy company's long-term debt and preferred stock. All of these measures,
15 except for price, are reported in each proxy company's SEC Form 10-K.

16 Second, the implied costs of common equity based on the DCF model must
17 be de-leveraged by using the Modigliani-Miller equation,¹⁷ as illustrated in
18 Rebuttal Exhibit DWD-9 and shown below:

¹⁷ The Modigliani-Miller theorem is an influential element of economic theory and forms the basis for modern thinking on capital structure. See, Modigliani, F. and Miller, M. "The Cost of Capital, Corporation Finance and the Theory of Investment", *The American Economic Review*, Vol. 48, No. 3 (June 1958), pp. 261-297.

EQUATION 1

$$k_u = k_e - (((k_u - i)(1 - t)) D/E) - (k_u - d) P/E$$

Where:

k_u = Unlevered (i.e., 100% equity) cost of common equity;

k_e = Market determined cost of common equity;

i = Cost of debt;

t = Income tax rate;

D = Debt ratio;

E = Equity ratio;

d = Cost of preferred stock; and

P = Preferred equity ratio.

Using Dr. Klein's proxy group-specific data, the equation becomes:

$$k_u = 9.30\% - (((k_u - 4.12\%)(1 - 21\%))29.70\%/69.61\%) - (k_u - 5.90\%) 0.69\%/69.61\%$$

Solving for k_u results in an unleveraged cost of common equity of 7.98 percent.

Next, one must re-leverage the cost of common equity by relating them to the proxy group's average book capital structure as shown below:

EQUATION 2

$$k_e = k_u + (((k_u - i)(1 - t)) D/E) + (k_u - d) P/E$$

Once again, using Dr. Klein's proxy group-specific data, the equation becomes:

$$k_e = 7.98\% + (((7.98\% - 4.12\%)(1 - 21\%)) 43.73\%/55.29\%) + (7.98\% - 5.90\%) 0.99\%/55.29\%$$

Solving for k_e results in a 10.43 percent indicated cost of common equity relative to the book capital structure of the utility proxy group, which is 113 basis

1 points higher than Dr. Klein's indicated constant growth DCF model result of 9.30
2 percent.

3 **Q. DO YOU ADVOCATE A SPECIFIC ADJUSTMENT TO THE DCF RESULT**
4 **TO CORRECT FOR ITS MIS-SPECIFICATION OF THE INVESTOR-**
5 **REQUIRED RETURN?**

6 A. No. The purpose of this discussion is to demonstrate that, like all cost of common
7 equity models, the DCF has its limitations and that the use of multiple cost of
8 common equity models in conjunction with informed expert judgment provides a
9 more accurate and reliable estimate of the investor-required ROE than does a
10 narrow evaluation and reliance of the results of the DCF model.

11 **Q. WHAT SHOULD THE COMMISSION CONSIDER IN DETERMINING**
12 **PIEDMONT'S ROE IN THIS PROCEEDING?**

13 A. Because all empirical financial models for determining the cost of common equity
14 are subject to limiting assumptions or other constraints, most finance texts
15 recommend using multiple approaches to estimate the cost of common equity.
16 There is no single approach which is appropriate under all possible market /
17 economic conditions. Therefore, it is both prudent and appropriate to use multiple
18 approaches to mitigate the effects of limiting assumptions and inputs associated
19 with any single approach.

1 a proxy group comparable in risk to the Company reflects the opportunity cost of
2 capital for equity investors in Piedmont. To exclude market results from a carefully
3 selected proxy group defeats the purpose of selecting a comparable risk proxy
4 group and does not add to the accuracy of model results. To mitigate the effects of
5 any abnormally high or low results, one should look at measures of central
6 tendency, such as means and medians. For example, in my Direct Testimony I
7 placed greater weight on the median DCF results.²¹ By excluding NWN and SJI
8 from his proxy group, Dr. Klein's analytical results may not reflect investor
9 expectations.

10 DCF Analysis

11 **Q. PLEASE SUMMARIZE DR. KLEIN'S DCF ANALYSIS.**

12 A. Dr. Klein relies on the dividend yield in the August 28, 2020 Value Line reports for
13 the proxy companies, as well as three more recent estimates of dividend yields from
14 the Wall Street Journal: (1) October 30, 2020; (2) November 9, 2020; and (3)
15 November 13, 2020.²² Dr. Klein relies on projected dividend per share ("DPS")
16 estimates from Value Line as the growth rate component.²³

17 **Q. DO YOU HAVE CONCERNS WITH DR. KLEIN'S DCF ANALYSIS?**

18 A. Yes. My main concerns with Dr. Klein's DCF analysis are his use of an unadjusted
19 dividend yield and his use of projected DPS growth rates.

²¹ Direct Testimony of Dylan W. D'Ascendis, at 39.

²² Direct Testimony of Dr. Christopher C. Klein, at 10-11; Klein Exhibit, page 5.

²³ Direct Testimony of Dr. Christopher C. Klein, at 11; Klein Exhibit, page 4.

1 **Q. WHAT IS YOUR CONCERN WITH DR. KLEIN'S DIVIDEND YIELD**
2 **ESTIMATE?**

3 A. Dr. Klein fails to adjust the dividend yield to reflect the expected dividend yield.
4 As described in my Direct Testimony, I applied an adjustment of one-half of the
5 long-term growth rate to the current dividend yield to ensure that the expected
6 dividend yield is representative of the coming 12-month period.²⁴ It is common
7 practice in the Constant Growth DCF model to account for periodic growth in
8 dividends by applying one-half of the expected annual dividend growth rate to
9 calculate the expected dividend yield. Morin states:

10 The DCF model, and the discipline of finance in general, is forward-
11 looking in nature and based on expected future cash flows.
12 Therefore, the appropriate dividend to use in a DCF model is the
13 prospective dividend rather than the current dividend because an
14 investor expects it to grow over the next year.²⁵

15 **Q. DO YOU AGREE WITH DR. KLEIN THAT PROJECTED DIVIDEND**
16 **GROWTH RATES ARE APPROPRIATE MEASURES OF EXPECTED**
17 **GROWTH FOR THE CONSTANT GROWTH DCF MODEL?**²⁶

18 A. No, I do not. As discussed in my Direct Testimony, over the long run, there can be
19 no growth in DPS without growth in EPS.²⁷ Earnings expectations have a more
20 significant, but not sole, influence on market prices than dividend expectations.
21 Thus, the use of earnings growth rates in a DCF analysis provides a better match

²⁴ Direct Testimony of Dylan W. D'Ascendis, Appendix A, at 2-3.

²⁵ Morin, at 281.

²⁶ Direct Testimony of Dr. Christopher C. Klein, at 10.

²⁷ Direct Testimony of Dylan W. D'Ascendis, Appendix A, at 3.

1 between investors' market appreciation expectations implicit in market prices and
2 the growth rate component of the DCF. Earnings expectations have a significant
3 influence on market prices which affect market price appreciation and hence, the
4 "growth" experienced by investors.

5 Further, although projected EPS growth rates are widely available (my DCF
6 analysis includes projected EPS growth rates from Zacks, First Call, and Value
7 Line, to name a few) I am unaware of any publication, other than Value Line, that
8 reports projected DPS growth rates. If investors singularly relied on projected DPS
9 growth rates to estimate their required returns, it is likely that other sources of
10 growth estimates would report such information.

11 **Q. HAVE YOU UNDERTAKEN ANY ANALYSES TO DETERMINE WHICH**
12 **MEASURES OF GROWTH ARE STATISTICALLY RELATED TO THE**
13 **PROXY COMPANIES' STOCK VALUATION LEVELS?**

14 A. Yes, I have. My analysis is based on the methodological approach used by Carleton
15 and Vander Weide, who compared the predictive capability of historical growth
16 estimates and analysts' forecasts on the valuation levels of 65 utility companies.²⁸
17 I structured the analysis to understand whether projected earnings or dividend
18 growth rates best explain utility stock valuations. In particular, my analysis
19 examined the statistical relationship between the price-to-earnings ("P/E") ratios of
20 the natural gas and electric utilities as classified by Value Line, and the projected

²⁸ Direct Testimony of Dylan W. D'Ascendis, Appendix A, at 4-5.

1 EPS and DPS growth rates as reported by Value Line. To determine which, if any,
2 of those growth rates are statistically related to utility stock valuations, I performed
3 two regression analyses in which the growth rates were explanatory variables and
4 the P/E ratio was the dependent variable. The results of those analyses are
5 presented in Rebuttal Exhibit DWD-10.

6 In that analysis, I performed two separate regressions with the P/E as the
7 dependent variable, and projected EPS and DPS growth rates, as the independent
8 variable. I then reviewed the T- and F-Statistics to determine whether the variables
9 and equations were statistically significant.²⁹

10 **Q. WHAT DID THOSE ANALYSES REVEAL?**

11 A. As shown in Table 5, below, the only growth rate that was statistically significant
12 and positively related to the P/E ratio was projected EPS. Because the projected
13 EPS growth is the only growth rate that is both statistically and positively related
14 to utility valuation, projected earnings is the proper measure of growth in the
15 Constant Growth DCF Model.

16 **Table 5: Significance of Projected Earnings Growth Measures³⁰**

Growth Measure	T-Stat	F-Stat
Projected EPS	4.717	22.247
Projected DPS	-0.365	0.133

²⁹ In general, a T-Statistic of 2.00 or greater indicates that the variable is likely to be different than zero, or “statistically significant.” The F-Statistic is used to determine whether the model as a whole has statistically significant predictive capability.

³⁰ Rebuttal Exhibit DWD-10.

1 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS RELATED TO DR.**
2 **KLEIN’S DCF ANALYSIS.**

3 A. As a general matter, I disagree with the sole reliance Dr. Klein places on his DCF
4 results to estimate the Company’s ROE. In addition, I believe the following
5 adjustments are reasonable: (1) including all proxy companies and looking to a
6 measure of central tendency rather than excluding certain companies; (2) applying
7 the common practice of adjusting the dividend yield by the growth rate to reflect
8 the expected dividend yield; and (3) applying the projected EPS growth rates
9 instead of projected DPS growth rates.

10 As shown in Table 6, below, reflecting just the expected dividend yield in
11 Dr. Klein’s DCF model, assuming his preferred proxy group and projected DPS
12 growth rates, increases his average result nine basis points to 9.47 percent.

13 **Table 6: Dr. Klein’s DCF Results Reflecting Expected Dividend Yield³¹**

Dividend Yield	Adjusted
Value Line (8/28/2020)	9.46%
WSJ (10/30/2020)	9.72%
WSJ (11/9/2020)	9.40%
WSJ (11/13/2020)	9.31%
Average	9.47%

14 Table 7 below, reflects the median DCF results of my seven-member proxy
15 group, using the expected dividend yield and projected EPS growth rates. I also
16 calculated the individual company DCF results instead of relying on the average

³¹ Rebuttal Exhibit DWD-11.

dividend yield and growth rate, as Dr. Klein does. Based on the adjusted DCF estimates, Dr. Klein's average DCF result is 9.79 percent.

Table 7: Dr. Klein's Adjusted DCF Results³²

Dividend Yield	EPS Growth Rate, Expected Dividend Yield
Value Line (8/28/2020)	9.92%
WSJ (10/30/2020)	10.06%
WSJ (11/9/2020)	9.64%
WSJ (11/13/2020)	9.54%
Average	9.79%

CAPM Analysis

Q. PLEASE SUMMARIZE DR. KLEIN'S CAPM ANALYSIS.

A. As noted above, Dr. Klein relies on the CAPM as a check on his DCF results. For his risk-free rate, Dr. Klein relies on the recent peak yields on one-year Treasury bills (0.152 percent) and 10-year Treasury bonds (0.979 percent).³³ For his Market Risk Premium ("MRP"), Dr. Klein relies on historical estimates from Aswath Damodaran of 8.18 percent and 6.43 percent calculated relative to the three-month Treasury bill and 10-year Treasury bond, respectively.³⁴

³² Rebuttal Exhibit DWD-11.

³³ Direct Testimony of Dr. Christopher C. Klein, at 12-13; Klein Exhibit, at 6-7. On pages 6-7 of Dr. Klein's exhibits he notes that the risk-free rates he relies on are as of September 9, 2020 for the one-year Treasury bill yield and November 10, 2020 for the 10-year Treasury bond yield.

³⁴ Direct Testimony of Dr. Christopher C. Klein, at 12.

1 **Q. DO YOU HAVE ANY CONCERNS WITH DR. KLEIN’S CAPM**
2 **ANALYSIS?**

3 A. Yes, I do. My main concerns are related to Dr. Klein’s selection of his risk-free
4 rate and MRP for his CAPM analysis.

5 **Q. DO YOU AGREE THAT THE YIELD ON ONE-YEAR TREASURY BILLS**
6 **AND 10-YEAR TREASURY BONDS ARE APPROPRIATE MEASURES OF**
7 **THE RISK-FREE RATE IN THE CAPM?**

8 A. No, I do not. As noted in my Direct Testimony, the term of the risk-free rate used
9 for cost of capital purposes should match the life (or duration) of the underlying
10 investment (i.e., perpetuity).³⁵ As noted by Morningstar:

11 The traditional thinking regarding the time horizon of the chosen
12 Treasury security is that it should match the time horizon of
13 whatever is being valued. When valuing a business that is being
14 treated as a going concern, the appropriate Treasury yield should be
15 that of a long-term Treasury bond. Note that the horizon is a
16 function of the investment, not the investor. If an investor plans to
17 hold stock in a company for only five years, the yield on a five-year
18 Treasury note would not be appropriate since the company will
19 continue to exist beyond those five years.³⁶

20 Morin also confirms this when he states:

21 [b]ecause common stock is a long-term investment and because the
22 cash flows to investors in the form of dividends last indefinitely, the
23 yield on very long-term government bonds, namely, the yield on 30-
24 year Treasury bonds, is the best measure of the risk-free rate for use
25 in the CAPM (footnote omitted)... The expected common stock

³⁵ Direct Testimony of Dylan W. D’Ascendis, Appendix A, at 11

³⁶ Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 44.

1 return is based on long-term cash flows, regardless of an
2 individual's holding time period.³⁷

3 Pratt and Grabowski recommend a similar approach to selecting the risk-
4 free rate: “[i]n theory, when determining the risk-free rate and the matching ERP
5 you should be matching the risk-free security and the ERP with the period in which
6 the investment cash flows are expected.”³⁸ Similarly, a 2004 paper titled *Applying*
7 *The Capital Asset Pricing Model* by Robert Harris reviews current practices for
8 application of the CAPM and, when summarizing best current practices, concludes
9 “[t]he risk-free rate should match the tenor of the cash flows being valued.”³⁹

10 As a practical matter, equity securities represent a perpetual claim on cash
11 flows; 30-year Treasury bonds are the longest-maturity securities available to
12 approximate that perpetual claim. The average life of Piedmont's utility plant is
13 approximately 42 years based on the composite depreciation rate of the components
14 of its utility plant. Thus, the use of a 30-year Treasury bond yield is a more
15 appropriate risk-free rate as it more accurately reflects the life of the assets it
16 finances.

17 **Q. WHAT ARE YOUR CONCERNS WITH DR. KLEIN'S ESTIMATE OF THE**
18 **MRP?**

19 A. I do not agree with Dr. Klein's sole reliance on the historical MRP based on data

³⁷ Morin, at 151.

³⁸ Shannon P. Pratt and Roger J. Grabowski, Cost of Capital: Applications and Examples, 3rd Ed., John Wiley & Sons, 2008, at 92.

³⁹ Robert Harris, “Applying the Capital Asset Pricing Model”, University of Virginia Darden School Foundation, 2004, at 9.

1 calculated by Aswath Damodaran. Damodaran, himself, raises issues with the
2 historical MRP:

3 There is one more troublesome (or at least counter intuitive)
4 characteristic of historical risk premiums. The geometric average
5 equity risk premium through the end of 2007 was 4.79%, higher than
6 the 3.88% estimated though the end of 2008; in fact, every single
7 equity risk premium number in this table would have been much
8 higher, if we had stopped with 2007 as the last year. Adding the
9 data for 2008, an abysmal year for stocks and a good year for bonds,
10 lowers the historical premium dramatically, even when computed
11 using a long period of history. **In effect, the historical risk**
12 **premium approach would lead investors to conclude, after one**
13 **of worst stock market crisis in several decades, that stocks were**
14 **less risky than they were before the crisis and that investors**
15 **should therefore demand lower premiums.** In contrast, adding
16 the data for 2009, a good year for stocks (+25.94%) and a bad year
17 for bonds (-11.12%) would have increased the equity risk premium
18 from 3.88% to 4.29%. As a general rule, historical risk premiums
19 will tend to rise when markets are buoyant, and investors are less
20 risk averse, and will fall, as markets collapse and investor fears
21 rise.⁴⁰

22 In addition, as described in my Direct Testimony, each component of the
23 CAPM should be forward-looking.⁴¹ Relying solely on a historical MRP does not
24 necessarily represent the market's current forward-looking estimate of the MRP.

⁴⁰ Aswath Damodaran, *Equity Risk Premiums (ERP): Determinants Estimation and Implications – The 2020 Edition Updated: March 2020*, Stern School of Business, at 38. [Emphasis added]

⁴¹ Direct Testimony of Dylan W. D'Ascendis, Appendix A, at 8.

1 **Effect of Annual Review Mechanism on the Cost of Equity**

2 **Q. PLEASE SUMMARIZE DR. KLEIN’S ANALYSIS ESTIMATING THE**
3 **EFFECT OF THE ARM ON THE COMPANY’S ROE.**

4 A. Dr. Klein states that estimating a “risk reduction from an ARM is difficult to
5 quantify with precision,” noting that his analysis estimates the effect of risk on the
6 ROE generally.⁴² Dr. Klein estimates the change in risk assuming the MRPs in his
7 CAPM analysis, Beta coefficients of 1.0, 0.9, and 0.8, and risk reductions of 5.00
8 percent, 10.00 percent, and 15.00 percent.⁴³ Dr. Klein states that a 10.00 percent
9 risk reduction “does not seem unreasonable for implementation of an ARM,”
10 concluding that under that scenario, and assuming a risk premium of 6.43 percent
11 and a Beta coefficient of 0.80, results in a reduction of 51.44 basis points.⁴⁴

12 **Q. WHAT IS YOUR RESPONSE?**

13 A. Dr. Klein’s assumptions are highly subjective and unsupported. His analysis is
14 simply a mathematical exercise and does not demonstrate that an adjustment is
15 warranted, nor does it support the reasonableness of a 50-basis point adjustment.
16 For example, Dr. Klein has not stated the significance of the assumptions that
17 produce a 51.44 basis point decrease other than to state that a 10.00 percent risk
18 reduction “does not seem unreasonable.”⁴⁵ That is only one of 18 estimates

⁴² Direct Testimony of Dr. Christopher C. Klein, at 19.

⁴³ Direct Testimony of Dr. Christopher C. Klein, at 19-20.

⁴⁴ Direct Testimony of Dr. Christopher C. Klein, at 20.

⁴⁵ Direct Testimony of Dr. Christopher C. Klein, at 20.

1 presented on page 8 of Dr. Klein's exhibits. Those estimates range from a change
2 of 26 basis points to 123 basis points.

3 In addition, the analysis is premised on the CAPM, which Dr. Klein
4 disregards in determining his recommended ROE for the Company. Dr. Klein does
5 not believe the results of the model are relevant in estimating the Company's ROE,
6 but they are relevant to determine an adjustment to the ROE.

7 Lastly, the analysis does not consider the wide range of revenue
8 stabilization mechanisms available to the proxy companies and therefore, reflected
9 in their market data. Dr. Klein has simply assumed that investors are likely to lower
10 their return requirements as a result of the ARM.

11 **Q. SHOULD THE ROE IN THIS PROCEEDING BE ADJUSTED TO**
12 **REFLECT THE COMPANY'S RISK PROFILE AS A RESULT OF THE**
13 **ARM?**

14 A. No, it should not. For the purpose of estimating the Cost of Equity, the salient
15 analytical issue is whether the Company is so less risky than its peers as a direct
16 result of the rate mechanisms that investors would specifically and measurably
17 reduce their return requirement.⁴⁶ The fact that the Company's revenues may be
18 affected by the ARM does not bear on the estimated Cost of Equity unless it can be
19 demonstrated that: (1) the Company is materially less risky than the proxy group

⁴⁶ See generally, *Bluefield* and *Hope*.

1 by virtue of the Company's ARM; and (2) the financial markets react to the
2 incremental effect of the mechanisms.

3 **Q. IS IT APPROPRIATE TO CONSIDER THE COMPANY'S RISK PROFILE**
4 **IN THE CONTEXT OF THE ARM WITHOUT CONSIDERING OTHER**
5 **FACTORS THAT AFFECT ITS BUSINESS RISK?**

6 A. No, the ARM should not be considered in isolation, outside the context of the
7 overall risks faced by the Company; doing so would be inconsistent with financial
8 practice. For example, S&P's review includes a broad assessment of business and
9 financial risk, including factors reflecting both qualitative and quantitative risk
10 factors. As S&P explained, its assessment of financial risk is not as simplistic as
11 reviewing a set of financial benchmarks, and its review of business risk includes
12 multiple factors. S&P has identified the following factors for evaluating the
13 business and financial risk of utilities:

14 **Business risk**

- 15 • Industry risk
- 16 • Cyclicalities
- 17 • Competitive risk and growth
- 18 • Effectiveness of barriers to entry - - low risk
- 19 • Level and trend of industry profit margins - - low risk
- 20 • Risk of secular change and substitution of products, services,
21 and technologies - - low risk
- 22 • Risk in industry growth trends - - low risk
- 23 • Country risk
- 24 • Competitive position
- 25 • Regulatory advantage
- 26 • Scale, scope, and diversity
- 27 • Operating efficiency
- 28 • Profitability

- Level of profitability
- Volatility of profitability

Financial risk

- Accounting
- Accounting characteristics
- Purchased power adjustment
- Natural gas inventory adjustment
- Infrastructure renewals adjustment
- Cash flow/leverage analysis

The following “Rating Modifiers” are used by S&P to modify the anchor rating, if necessary:

- Diversification/portfolio effect
- Capital structure
- Liquidity
- Financial policy
- Management and governance
- Comparable ratings analysis

Considering only rate mechanisms, without assessing other risk factors, or reviewing the extent to which other natural gas utilities also have rate mechanisms in place, would suggest the sort of partial and incomplete analysis financial participants tend to avoid.

Q. HOW COMMON ARE REVENUE STABILIZATION MECHANISMS?

A. There is little question that revenue stabilization structures are common among natural gas utilities. As discussed in my Direct Testimony, substantially all of the proxy companies have mechanisms similar to the ARM in place.⁴⁷

⁴⁷ Direct Testimony of Dylan W. D’Ascendis, at 43-44; and Exhibit DWD-8.

1 **Q. WHAT ARE YOUR CONCLUSIONS FROM THAT DATA?**

2 A. The relevant comparison is to view the mechanisms employed by Piedmont relative
3 to the totality of those held by the proxy companies. That is, although other
4 companies may not have a mechanism that is largely similar to the ARM, the proxy
5 companies utilize a wide range of mechanisms to stabilize revenues. Given the
6 breadth of mechanisms and alternative forms of regulation, it is unlikely that the
7 use of the ARM would cause investors to consider the Company so less risky than
8 the proxy companies solely on that basis.

9 **Q. PLEASE EXPLAIN HOW THE VARIABILITY OF PROFIT RELATES TO**
10 **MECHANISMS SUCH AS THE ARM AND MEASURES OF RISK.**

11 A. The argument that mechanisms such as the ARM reduce risk stems from the
12 position that those mechanisms reduce revenue volatility. Because revenue can
13 come from various rate structures (*i.e.*, customer charges, volumetric rates, cost
14 recovery mechanisms, decoupling mechanisms, etc.), it is difficult to discern from
15 publicly available data the extent to which the ARM affects changes in revenue.
16 Even if it were the case that revenue stabilization mechanisms mitigate some
17 measure of “risk,” they would affect the Company’s Cost of Equity only if: (1) the
18 effect of the mechanism was to reduce the Company’s risk below that of its peers;
19 and (2) investors knowingly reduced their return requirements as a direct
20 consequence of the mechanisms.

1 **Q. ARE YOU AWARE OF ANY STUDIES THAT HAVE ADDRESSED THE**
2 **RELATIONSHIP BETWEEN REVENUE STABILIZATION**
3 **MECHANISMS GENERALLY, AND THE COST OF CAPITAL?**

4 A. Yes. In March 2014, The Brattle Group (“Brattle”) published a study addressing
5 the effect of revenue decoupling structures on the cost of capital for electric
6 utilities.⁴⁸ In its report, which extended a prior analysis focused on natural gas
7 distribution utilities, Brattle pointed out that although decoupling structures may
8 affect revenue, net income still can vary.⁴⁹ Brattle further noted that the distinction
9 between diversifiable and non-diversifiable risk is important to equity investors
10 and, as such, the relationship between decoupling and the Cost of Equity should be
11 examined in that context. Further to that point, Brattle noted that while reductions
12 in total risk may be important to bondholders, only reductions in non-diversifiable
13 business risk would justify a reduction to the ROE.⁵⁰ Dr. Vilbert updated the Brattle
14 study, based on data through the fourth quarter of 2015.⁵¹

15 Brattle’s empirical analysis examined the relationship between decoupling
16 and the After-Tax Weighted Average Cost of Capital for a group of electric utilities

⁴⁸ The Brattle Group, *The Impact of Revenue Decoupling on the Cost of Capital for Electric Utilities: An Empirical Investigation*, Prepared for the Energy Foundation, March 20, 2014. Please note that Brattle also addressed its analysis in Docket No. 2013-0141.

⁴⁹ *Ibid.*, at 7.

⁵⁰ *Ibid.*, at 8.

⁵¹ The Brattle Group whitepaper (updated study), *Effect on the Cost of Capital of Innovative Ratemaking that Relaxes the Linkage between Revenue and kWh Sales – An Updated Empirical Investigation*, by Michael J. Vilbert, Joseph B. Wharton, Shirley Zhang and James Hall, November 2016. Also available at http://files.brattle.com/files/5711_effect_on_the_cost_of_capital_of_ratemaking_that_relaxes_the_linkage_between_revenue_and_kwh_sales.pdf.

1 that had implemented decoupling structures in various jurisdictions throughout the
2 United States. As with Brattle's 2014 study, the updated study found that there was
3 no statistically significant link between the cost of capital and revenue decoupling
4 structures.⁵²

5 **Q. ARE YOU AWARE OF OTHER RESEARCH REGARDING THE**
6 **RELATIONSHIP BETWEEN DECOUPLING AND THE COST OF**
7 **EQUITY?**

8 A. Yes. Dr. Richard A. Michelfelder of the Rutgers School of Business, along with
9 Pauline M. Ahern and myself, examined the relationship between decoupling and
10 the Cost of Equity among electric, gas, and water utilities. Using the generalized
11 consumption asset pricing model, we found decoupling to have no statistically
12 significant effect on investor perceived risk and the Cost of Equity.⁵³

13 **Q. WHAT DO YOU CONCLUDE FROM THOSE STUDIES?**

14 A. Although they apply different methods and are related to decoupling in particular,
15 the studies arrive at a consistent conclusion: There is no empirical relationship
16 between revenue stabilization mechanisms and the Cost of Equity.

⁵² *Ibid.*

⁵³ Dr. Richard A. Michelfelder, Pauline M. Ahern, Dylan W. D'Ascendis, *The Impact of Decoupling on The Cost of Capital of Public Utilities*, Energy Policy, March 2020.

1 **Q. HAVE OTHER REGULATORY COMMISSIONS RECOGNIZED THE**
2 **PREVALANCE OF REVENUE STABILIZATION MECHANISMS?**

3 A. Yes. For example, the Maryland Public Service Commission in Case No. 9299
4 stated:

5 We will not further reduce that return as a result of BGE's
6 decoupling mechanism. No party argued that the Company should
7 have a reduced ROE for its natural gas operations because of
8 decoupling. Instead, as the parties testified, decoupling provisions
9 are common among natural gas distribution companies.⁵⁴

10 Similarly, although at one time the Public Service Commission of the District of
11 Columbia ("DCPSC") adjusted the ROE downward by 50 basis points in
12 connection with Pepco's Bill Stabilization Adjustment, the DCPSC has determined
13 an adjustment is no longer necessary.⁵⁵ That is, the two regulatory commissions
14 that at one time had imposed the largest reductions to authorized returns in
15 connection with decoupling mechanisms now make no adjustment. In fact, I am
16 unaware of any regulatory commission that currently applies an adjustment to the
17 ROE due to the use of a revenue stabilization mechanism.

18 **Q. WHAT IS YOUR CONCLUSION REGARDING THE EFFECT OF THE**
19 **ARM ON THE COMPANY'S COST OF EQUITY?**

20 A. As noted above, revenue stabilization structures are common for companies facing
21 the inability to recover prudently incurred fixed costs. In that regard, the proxy

⁵⁴ Public Service Commission of Maryland Case No. 9299, Order No. 85374, at 78.

⁵⁵ Public Service Commission of the District of Columbia, Formal Case No. 1139, Order No. 18846, dated July 25, 2017, at ¶ 294.

1 companies have implemented many forms of rate stabilization mechanisms that
2 provide for risk mitigation similar to that provided by the ARM. Consequently,
3 investors increasingly expect that some form of stabilization will be implemented
4 in utility rate regulation.

5 Moreover, there is no evidence of which I am aware indicating that
6 companies that have implemented such structures either have lower required ROEs
7 or have significantly different market valuations. In fact, the Brattle study, the
8 Michelfelder, Ahern, and D'Ascendis article, and decisions by the Maryland and
9 District of Columbia regulatory commissions support that conclusion. I therefore
10 conclude that the ARM should have no downward effect on the Company's ROE.

11 **Response to Dr. Klein's Criticisms**

12 **Q. PLEASE SUMMARIZE DR. KLEIN'S CONCERNS WITH YOUR DIRECT**
13 **TESTIMONY.**

14 A. Dr. Klein raises the following concerns: (1) projected DPS growth rates are superior
15 to the projected EPS growth rates used in my DCF analysis; (2) the use of the 30-
16 year Treasury bond yield in the CAPM is inappropriate and my estimate of the MRP
17 is inappropriate; (3) the Bond Yield Plus Risk Premium approach is not specific to
18 utilities in Tennessee; (4) the Expected Earnings analysis is unfamiliar to Tennessee
19 regulators; and (5) flotation costs should only be approved when a Company issues
20 new stock and it is inappropriate for Piedmont because it is a subsidiary of Duke
21 Energy. I have addressed concern (1) and partially addressed concern (2) in my

1 response to Dr. Klein's analyses. I address the remainder of concern (2) and the
2 rest of his concerns in turn below.

3 **Q. WHAT ARE DR. KLEIN'S CONCERNS WITH THE MRP COMPONENT**
4 **IN CAPM ANALYSIS?**

5 A. Dr. Klein believes that because the market return component of the MRP is
6 calculated based on the market capitalization weighted Constant Growth DCF
7 result of the companies in the S&P 500, that my CAPM analysis is not an
8 independent model from the Constant Growth DCF analysis of my proxy
9 companies.⁵⁶

10 **Q. DO YOU AGREE WITH DR. KLEIN?**

11 A. I do not agree with Dr. Klein that my CAPM and Constant Growth DCF models
12 are not independent because I have relied on the DCF model to estimate the market
13 return. Calculating the DCF-based market return is a common approach to estimate
14 the *ex-ante* MRP, which is supported by financial literature. The Chartered
15 Financial Analyst ("CFA") Institute Research Foundation states:

16 Approaches to estimating the ERP fall into three broad
17 categories:

18 1. Methods based on a dividend discount model (DDM),
19 earnings discount model, or cash-flow-to-the-investor discount
20 model: forward-looking methods with their roots in discounted
21 cash flow (DCF) analysis, wherein the value of an asset is
22 regarded as the present value of the cash flows the asset is
23 expected to generate... The earliest estimates of the ERP were

⁵⁶ Direct Testimony of Dr. Christopher C. Klein, at 16.

1 derived by estimating the expected return on an equity portfolio
2 using the DDM and then subtracting the expected return or yield
3 on the riskless asset. This “DDM approach” which made a
4 comeback at the end of the 20th century, is the method most
5 widely used today.⁵⁷

6 Morin states:

7 A second approach is to estimate the MRP is prospective in
8 nature and consists of applying the DCF model to a
9 representative market index, such as the Standard & Poor’s 500
10 Index, *Value Line* Composite, or the New York Stock Exchange
11 index... If risk premiums are volatile, this method of directly
12 measuring R_m is preferred. Subtracting the current risk-free rate
13 from that estimate produces a valid estimate of the market risk
14 premium.⁵⁸

15 Finally, Brigham and Daves state:

16 An alternative to the historical risk premium is to estimate a
17 forward-looking, or *ex-ante* risk premium. The most common
18 approach is to use the Discounted Cash Flow (DCF) model to
19 estimate the expected market rate of return, $r^e = r_m$, and then
20 calculate RP_m as $r_m - r_{rf}$.⁵⁹

21 In view of the financial literature above, the use of the DCF model to calculate an
22 MRP is common and does not make the model results dependent on another
23 model’s results. Dr. Klein’s concern should be dismissed.

⁵⁷ CFA Institute Research Foundation, Literature Review, *The Equity Risk Premium: A Contextual Literature Review*, at 2.

⁵⁸ Morin, at 159-160.

⁵⁹ Eugene F. Brigham and Phillip R. Daves, Intermediate Financial Management, 9th Edition, Thomson / Southwestern, 2007, at 325.

1 **Q. WHAT ARE DR. KLEIN’S CONCERNS WITH YOUR BOND YIELD PLUS**
2 **RISK PREMIUM APPROACH?**

3 A. Dr. Klein has the same concern with the use of the 30-year Treasury bond yield in
4 the Bond Yield Plus Risk Premium approach as he does in my CAPM analysis. In
5 addition, Dr. Klein argues that the Bond Yield Plus Risk Premium approach is
6 inappropriate because it considers the authorized returns of natural gas distribution
7 utilities across the U.S. and does not relate specifically to Tennessee.⁶⁰

8 **Q. WHAT IS YOUR RESPONSE TO DR. KLEIN?**

9 A. I have addressed Dr. Klein’s concern with the use of the 30-year Treasury bond
10 yield in my discussion of his CAPM analysis above.

11 The Bond Yield Plus Risk Premium approach considers over 1,150 cases
12 across the U.S. Those cases, and their associated decisions, reflect the same type
13 of market-based analyses at issue in this proceeding. Moreover, because authorized
14 returns are publicly available, it is difficult to imagine they are not reflected, at least
15 to some degree, in investors’ return expectations and requirements (Atmos Energy
16 Corporation, one of Dr. Klein’s proxy companies, discloses authorized returns, by
17 jurisdiction, in its 2019 SEC Form 10-K). Consequently, it is reasonable to assume
18 authorized returns are meaningful to investors, and a reasonable (although not the
19 only) measure of required returns.

⁶⁰ Direct Testimony of Dr. Christopher C. Klein, at 17.

1 Further, I agree with Dr. Klein that every case has its unique set of issues
2 and circumstances, but all of the cases involve pure-play gas distribution utilities,
3 which, by definition, are comparable to the Company. Reviewing over 1,150 cases
4 over many economic cycles, and using that data to develop the relationship between
5 the Equity Risk Premium and interest rates, mitigates that concern.

6 **Q. WHAT ARE DR. KLEIN'S CONCERNS WITH YOUR EXPECTED**
7 **EARNINGS APPROACH?**

8 A. Dr. Klein states that the analysis is unfamiliar to Tennessee regulators and was not
9 adopted by FERC.⁶¹

10 **Q. WHAT IS YOUR RESPONSE TO DR. KLEIN?**

11 A. As discussed in my Direct Testimony, no single method best captures investor
12 expectations at all times and under all conditions.⁶² Market-based models
13 necessarily require us to draw inferences from market data based on the
14 assumptions and construction of methods such as the DCF and CAPM approaches.
15 The simplicity of the Expected Earnings approach is a benefit.

16 Although many factors affect stock returns and M/B ratios, the accounting-
17 based ROE is one of them and cannot be ignored.⁶³ As a practical matter, the

⁶¹ Direct Testimony of Dr. Christopher C. Klein, at 17.

⁶² Direct Testimony of Dylan W. D'Ascendis, at 4, 28.

⁶³ I am not suggesting the M/B ratio necessarily will equal 1.00 when the accounting-based ROE equals the Cost of Equity.

1 Economic Value Added consulting practices⁶⁴ and related value based-
2 management systems⁶⁵ encourage financial managers to focus on elements of the
3 Return on Net Assets, and Return on Invested Capital.

4 In addition, the standard revenue requirements formula applied by the
5 Commission explicitly recognizes the validity of the book value of equity by
6 choosing to measure capital structures based on book values, rather than market
7 value. The Expected Earnings approach provides a direct measure of the book-
8 based return comparable-risk utilities are expected to earn. In that sense, it is a
9 direct measure of the expected opportunity cost on the book value of equity.
10 Equally important, because it looks to the earnings expected of comparable-risk
11 companies, the approach is consistent with the *Hope* and *Bluefield* “comparable
12 return” standard. As Dr. Morin notes, the method “is easily understood, and is
13 firmly anchored in regulatory tradition,” concluding that “because the investment
14 base for ratemaking purposes is expressed in book value terms, a rate of return on
15 book value, as is the case with [Expected] Earnings, is highly meaningful.”⁶⁶

⁶⁴ See, G. Bennett Stewart, *The Quest for Value*, HarperCollins Publishers, Inc., 1990.

⁶⁵ See, Institute of Management Accountants, *Measuring and Managing Shareholder Value Creation*, 1997.

⁶⁶ Morin, at 392-395. [clarification added].

1 **Q. WHAT ARE DR. KLEIN’S CONCERNS WITH YOUR FLOTATION COST**
2 **ADJUSTMENT?**

3 A. Dr. Klein states that the Commission generally does not recognize a flotation cost
4 adjustment “when new stock issues are not anticipated.” He further states that
5 because Piedmont is a subsidiary of Duke Energy and does not issue stock, a
6 flotation cost adjustment is unnecessary.⁶⁷

7 **Q. WHAT IS YOUR RESPONSE?**

8 A. As discussed in my Direct Testimony, flotation costs are reflected on the balance
9 sheet under “paid in capital” and incurred over time. As a result, flotation costs
10 remain part of a company’s cost structure during the test year and beyond even if
11 the costs were incurred prior to the test year.⁶⁸

12 As further discussed in my Direct Testimony, wholly owned subsidiaries
13 such as Piedmont receive capital from their parents, and provide returns on the
14 capital that roll up to the parent, which is designated to attract and raise capital
15 based on the returns of those subsidiaries.⁶⁹ As such, denying recovery of issuance
16 costs would penalize the investors that fund the utility operations. As shown in
17 Rebuttal Exhibit DWD-12, because of flotation costs, an authorized return of 10.85
18 percent would be required to realize an ROE of 10.75 percent (i.e., a 10-basis point

⁶⁷ Direct Testimony of Dr. Christopher C. Klein, at 17.

⁶⁸ Direct Testimony of Dylan W. D’Ascendis, at 44-45.

⁶⁹ Direct Testimony of Dylan W. D’Ascendis, at 45.

1 flotation cost adjustment). If flotation costs are not recovered, the growth rate falls
2 and the ROE decreases to 10.65 percent (i.e., below the required return).⁷⁰

3 **V. RESPONSE TO MR. DITTEMORE**

4 **Q. PLEASE SUMMARIZE MR. DITTEMORE’S TESTIMONY AS IT**
5 **RELATES TO THE RELATIONSHIP BETWEEN THE**
6 **IMPLEMENTATION OF THE ARM AND THE ROE.**

7 A. Mr. Dittemore states that the Commission Chairman at the time “indicated before
8 a legislative committee in 2009 that implementation of ARM legislation would
9 lower the risk for the company resulting in a 25-50 basis point reduction in risk.”⁷¹
10 He further states that the ARM justifies an ROE “in the lower-end of the range
11 supported by Consumer Advocate witness Dr. Klein.”⁷²

12 **Q. WHAT IS YOUR RESPONSE?**

13 A. As discussed in my response to Dr. Klein, there is significant evidence that an
14 adjustment is not appropriate for the Company as a result of the potential
15 implementation of the ARM. As to Commission Chairman Roberson’s comments
16 that a 25-50 basis point adjustment is necessary, again, I disagree with that
17 statement under current market conditions. Since Chairman Roberson’s comments
18 in 2009 there have been numerous revenue stabilization mechanisms and

⁷⁰ Rebuttal Exhibit DWD-12 is provided for illustrative purposes only. Please note that I have not relied on the results of the analysis in determining my recommended ROE or range.

⁷¹ Direct Testimony of David N. Dittemore, at 6-7.

⁷² Direct Testimony of David N. Dittemore, at 7.

1 alternative forms of regulation employed by natural gas utilities, including the
2 proxy companies. Such mechanisms are significantly more common in the natural
3 gas industry now than they were in 2009. As such, I do not think it is appropriate
4 to rely on statements made in 2009 to determine the ROE for the Company in 2021.
5 Further, I am informed by the Company that the legislation upon which then-
6 Chairman Roberson spoke was never enacted. The ARM legislation was enacted
7 in 2013 after testimony in which the Consumer Advocate argued against its passage
8 and for a reduction of risk if the mechanism were approved. Piedmont submits that
9 if the General Assembly intended that the adoption of an ARM be accompanied by
10 lower ROEs, it would have included such intent in the legislation. However, after
11 hearing testimony from then-Chairman Allison, the Consumer Advocate, and
12 TPUC's general counsel in 2013, no such directive was enacted.⁷³

13 VI. CONCLUSION

14 **Q. SHOULD ANY OR ALL OF THE ARGUMENTS MADE BY DR. KLEIN**
15 **PERSUADE THE COMMISSION TO LOWER THE ROE IT APPROVES**
16 **FOR PIEDMONT BELOW YOUR RECOMMENDATION?**

17 **A.** No, they should not. Based on the analyses discussed throughout my Rebuttal
18 Testimony, and given the current capital market conditions, I recommend that the
19 reasonable range of ROE estimates is from 9.90 percent to 10.70 percent, and 10.30

⁷³ Rebuttal Testimony of Pia K. Powers, at 29-30.

1 percent continues to be a reasonable estimate of the Company's Cost of Equity. It
2 will provide Piedmont with sufficient earnings to enable it to attract necessary new
3 capital efficiently and at a reasonable cost.

4 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

5 **A. Yes, it does.**

Rebuttal Exhibit_(DWD-1)

Constant Growth Discounted Cash Flow Model
30 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Company	Ticker	Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Retention Growth Estimate	Average Earnings Growth	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	\$2.50	\$96.87	2.58%	2.68%	7.10%	7.10%	7.00%	8.63%	7.46%	9.67%	10.13%	11.32%
New Jersey Resources Corporation	NJR	\$1.33	\$32.93	4.04%	4.13%	6.00%	6.00%	2.00%	4.04%	4.51%	6.08%	8.64%	10.16%
Northwest Natural Holding Company	NWN	\$1.92	\$47.43	4.05%	4.23%	3.10%	3.10%	24.50%	4.27%	8.74%	7.21%	12.97%	29.04%
ONE Gas, Inc.	OGS	\$2.16	\$74.83	2.89%	2.96%	5.50%	5.00%	6.50%	4.69%	5.42%	7.64%	8.39%	9.48%
South Jersey Industries, Inc.	SJI	\$1.21	\$21.63	5.60%	5.88%	10.40%	10.40%	12.50%	6.96%	10.07%	12.75%	15.94%	18.44%
Southwest Gas Holdings, Inc.	SWX	\$2.28	\$68.21	3.34%	3.45%	5.00%	4.00%	9.00%	7.32%	6.33%	7.41%	9.78%	12.49%
Spire Inc.	SR	\$2.60	\$60.72	4.28%	4.45%	16.50%	5.37%	5.50%	3.79%	7.79%	8.15%	12.24%	21.14%
Proxy Group Mean				3.82%	3.97%	7.66%	5.85%	9.57%	5.67%	7.19%	8.42%	11.16%	16.01%
Proxy Group Median				4.04%	4.13%	6.00%	5.37%	7.00%	4.69%	7.46%	7.64%	10.13%	12.49%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals indicated number of trading day average as of November 30, 2020

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks

[6] Source: Yahoo! Finance

[7] Source: Value Line

[8] Source: Rebuttal Exhibit DWD-2, Value Line

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

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

Constant Growth Discounted Cash Flow Model
90 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Company	Ticker	Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Retention Growth Estimate	Average Earnings Growth	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	\$2.50	\$98.14	2.55%	2.64%	7.10%	7.10%	7.00%	8.63%	7.46%	9.64%	10.10%	11.28%
New Jersey Resources Corporation	NJR	\$1.33	\$30.78	4.32%	4.42%	6.00%	6.00%	2.00%	4.04%	4.51%	6.36%	8.93%	10.45%
Northwest Natural Holding Company	NWN	\$1.92	\$48.79	3.94%	4.11%	3.10%	3.10%	24.50%	4.27%	8.74%	7.10%	12.85%	28.92%
ONE Gas, Inc.	OGS	\$2.16	\$73.51	2.94%	3.02%	5.50%	5.00%	6.50%	4.69%	5.42%	7.70%	8.44%	9.53%
South Jersey Industries, Inc.	SJI	\$1.21	\$21.60	5.60%	5.88%	10.40%	10.40%	12.50%	6.96%	10.07%	12.76%	15.95%	18.45%
Southwest Gas Holdings, Inc.	SWX	\$2.28	\$66.63	3.42%	3.53%	5.00%	4.00%	9.00%	7.32%	6.33%	7.49%	9.86%	12.58%
Spire Inc.	SR	\$2.60	\$58.44	4.45%	4.62%	16.50%	5.37%	5.50%	3.79%	7.79%	8.32%	12.41%	21.32%
Proxy Group Mean				3.89%	4.03%	7.66%	5.85%	9.57%	5.67%	7.19%	8.48%	11.22%	16.08%
Proxy Group Median				3.94%	4.11%	6.00%	5.37%	7.00%	4.69%	7.46%	7.70%	10.10%	12.58%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals indicated number of trading day average as of November 30, 2020

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks

[6] Source: Yahoo! Finance

[7] Source: Value Line

[8] Source: Rebuttal Exhibit DWD-2, Value Line

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

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

Constant Growth Discounted Cash Flow Model
180 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Company	Ticker	Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Retention Growth Estimate	Average Earnings Growth	Low ROE	Mean ROE	High ROE
Atmos Energy Corporation	ATO	\$2.50	\$99.18	2.52%	2.61%	7.10%	7.10%	7.00%	8.63%	7.46%	9.61%	10.07%	11.26%
New Jersey Resources Corporation	NJR	\$1.33	\$31.66	4.20%	4.30%	6.00%	6.00%	2.00%	4.04%	4.51%	6.24%	8.80%	10.33%
Northwest Natural Holding Company	NWN	\$1.92	\$54.28	3.54%	3.69%	3.10%	3.10%	24.50%	4.27%	8.74%	6.69%	12.43%	28.47%
ONE Gas, Inc.	OGS	\$2.16	\$76.42	2.83%	2.90%	5.50%	5.00%	6.50%	4.69%	5.42%	7.58%	8.33%	9.42%
South Jersey Industries, Inc.	SJI	\$1.21	\$23.63	5.12%	5.38%	10.40%	10.40%	12.50%	6.96%	10.07%	12.26%	15.44%	17.94%
Southwest Gas Holdings, Inc.	SWX	\$2.28	\$68.80	3.31%	3.42%	5.00%	4.00%	9.00%	7.32%	6.33%	7.38%	9.75%	12.46%
Spire Inc.	SR	\$2.60	\$64.30	4.04%	4.20%	16.50%	5.37%	5.50%	3.79%	7.79%	7.91%	11.99%	20.88%
Proxy Group Mean				3.65%	3.79%	7.66%	5.85%	9.57%	5.67%	7.19%	8.24%	10.97%	15.82%
Proxy Group Median				3.54%	3.69%	6.00%	5.37%	7.00%	4.69%	7.46%	7.58%	10.07%	12.46%

Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals indicated number of trading day average as of November 30, 2020

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [9])

[5] Source: Zacks

[6] Source: Yahoo! Finance

[7] Source: Value Line

[8] Source: Rebuttal Exhibit DWD-2, Value Line

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

[10] Equals [3] x (1 + 0.5 x Minimum([5], [6], [7], [8])) + Minimum([5], [6], [7], [8])

[11] Equals [4] + [9]

[12] Equals [3] x (1 + 0.5 x Maximum([5], [6], [7], [8])) + Maximum([5], [6], [7], [8])

Rebuttal Exhibit_(DWD-2)

Retention Growth Estimate																			
		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]
Company	Ticker	Projected Earnings per share 2023- 2025	Projected Dividend Declared per share 2023- 2025	Retention Ratio (B)	Projected Book Value per Share 2023-2025	Return on Book Value (R)	B x R	Projected Common Shares Outstanding 2020	Projected Common Shares Outstanding 2023-2025	Common Shares Growth Rate	2020 High Price	2020 Low Price	2020 Price Midpoint	Projected Book Value per Share 2020	Market/ Book Ratio	"S"	"V"	S x V	BR + SV
Atmos Energy Corporation	ATO	6.00	3.15	47.50%	66.20	9.06%	4.31%	124.00	145.00	5.30%	\$ 121.10	\$ 77.90	\$ 99.50	54.80	1.82	9.62%	44.92%	4.32%	8.63%
New Jersey Resources Corporation	NJR	2.40	1.57	34.58%	25.80	9.30%	3.22%	96.00	100.00	1.36%	\$ 44.70	\$ 21.10	\$ 32.90	20.50	1.60	2.18%	37.69%	0.82%	4.04%
Northwest Natural Holding Company	NWN	3.20	1.97	38.44%	38.40	8.33%	3.20%	31.00	32.00	1.05%	\$ 77.30	\$ 42.30	\$ 59.80	29.70	2.01	2.12%	50.33%	1.07%	4.27%
ONE Gas, Inc.	OGS	4.75	2.80	41.05%	54.10	8.78%	3.60%	53.00	55.00	1.23%	\$ 97.00	\$ 63.70	\$ 80.35	42.70	1.88	2.31%	46.86%	1.08%	4.69%
South Jersey Industries, Inc.	SJI	2.50	1.40	44.00%	20.45	12.22%	5.38%	101.00	110.00	2.86%	\$ 33.40	\$ 18.20	\$ 25.80	16.60	1.55	4.44%	35.66%	1.58%	6.96%
Southwest Gas Holdings, Inc.	SWX	6.25	2.65	57.60%	61.55	10.15%	5.85%	57.00	65.00	4.43%	\$ 81.60	\$ 45.70	\$ 63.65	47.80	1.33	5.90%	24.90%	1.47%	7.32%
Spire Inc.	SR	5.15	3.00	41.75%	72.00	7.15%	2.99%	52.00	55.00	1.87%	\$ 88.00	\$ 50.60	\$ 69.30	48.50	1.43	2.67%	30.01%	0.80%	3.79%
																		Average	5.67%

Notes:

[1] Source: Value Line

[2] Source: Value Line

[3] Equals 1 - [2] / [1]

[4] Source: Value Line

[5] Equals [1] / [4]

[6] Equals [3] x [5]

[7] Source: Value Line

[8] Source: Value Line

[9] Equals ([8] / [7]) ^ 0.33 - 1

[10] Source: Value Line

[11] Source: Value Line

[12] Equals Average ([10], [11])

[13] Source: Value Line

[14] Equals [12] / [13]

[15] Equals [9] x [14]

[16] Equals 1 - (1 / [14])

[17] Equals [15] x [16]

[18] Equals [6] + [17]

Rebuttal Exhibit_(DWD-3)

Ex-Ante Market Risk Premium
Market DCF Method Based - Bloomberg

[1]	[2]	[3]
S&P 500	Current 30-Year	
Est. Required	Treasury (30-day	Implied Market
Market Return	average)	Risk Premium
14.13%	1.61%	12.52%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Agilent Technologies Inc	A	35,771.40	0.11%	0.68%	8.50%	9.21%	0.0104%
American Airlines Group Inc	AAL	8,548.63	0.03%	0.93%	-23.38%	-22.55%	-0.0061%
Advance Auto Parts Inc	AAP	10,022.12	0.03%	0.63%	13.85%	14.53%	0.0046%
Apple Inc	AAPL	2,024,064.53	6.38%	0.71%	9.28%	10.02%	0.6388%
AbbVie Inc	ABBV	184,633.26	0.58%	4.52%	3.74%	8.34%	0.0485%
AmerisourceBergen Corp	ABC	21,060.19	0.07%	1.71%	5.57%	7.33%	0.0049%
ABIOMED Inc	ABMD	12,386.55	0.04%	0.00%	17.00%	17.00%	0.0066%
Abbott Laboratories	ABT	191,804.97	0.60%	1.33%	9.70%	11.10%	0.0671%
Accenture PLC	ACN	158,053.97	0.50%	1.39%	9.40%	10.86%	0.0541%
Adobe Inc	ADBE	229,531.14	0.72%	0.00%	15.45%	15.45%	0.1117%
Analog Devices Inc	ADI	51,387.96	0.16%	1.86%	7.53%	9.47%	0.0153%
Archer-Daniels-Midland Co	ADM	27,691.48	0.09%	2.89%	6.70%	9.69%	0.0085%
Automatic Data Processing Inc	ADP	74,562.18	0.23%	2.15%	12.00%	14.28%	0.0335%
Autodesk Inc	ADSK	61,448.61	0.19%	0.00%	27.92%	27.92%	0.0541%
Ameren Corp	AEE	19,191.22	0.06%	2.58%	5.99%	8.65%	0.0052%
American Electric Power Co Inc	AEP	42,138.51	0.13%	3.34%	6.66%	10.11%	0.0134%
AES Corp/The	AES	13,595.28	0.04%	2.83%	7.11%	10.04%	0.0043%
Aflac Inc	AFL	30,858.42	N/A	2.57%	N/A	N/A	N/A
American International Group Inc	AIG	33,117.05	0.10%	3.37%	11.00%	14.55%	0.0152%
Apartment Investment and Management Co	AIV	4,518.08	0.01%	10.54%	-0.76%	9.74%	0.0014%
Assurant Inc	AIZ	7,586.99	0.02%	2.01%	36.60%	38.97%	0.0093%
Arthur J Gallagher & Co	AJG	22,195.88	0.07%	1.56%	23.57%	25.31%	0.0177%
Akamai Technologies Inc	AKAM	16,850.81	0.05%	0.00%	11.85%	11.85%	0.0063%
Albemarle Corp	ALB	14,474.98	0.05%	1.18%	10.23%	11.46%	0.0052%
Align Technology Inc	ALGN	37,949.91	0.12%	0.00%	17.42%	17.42%	0.0208%
Alaska Air Group Inc	ALK	6,303.14	0.02%	0.75%	-17.96%	-17.28%	-0.0034%
Allstate Corp/The	ALL	31,121.36	0.10%	2.11%	28.95%	31.36%	0.0307%
Allegion plc	ALLE	10,496.13	0.03%	1.09%	7.01%	8.13%	0.0027%
Alexion Pharmaceuticals Inc	ALXN	26,723.22	0.08%	0.00%	9.96%	9.96%	0.0084%
Applied Materials Inc	AMAT	75,327.56	0.24%	1.12%	12.91%	14.10%	0.0335%
Amcor PLC	AMCR	17,770.90	0.06%	4.20%	7.81%	12.18%	0.0068%
Advanced Micro Devices Inc	AMD	111,443.26	0.35%	0.00%	19.89%	19.89%	0.0698%
AMETEK Inc	AME	27,269.59	0.09%	0.57%	9.07%	9.66%	0.0083%
Amgen Inc	AMGN	129,264.72	0.41%	2.88%	7.59%	10.58%	0.0431%
Ameriprise Financial Inc	AMP	21,854.21	0.07%	2.22%	90.70%	93.92%	0.0647%
American Tower Corp	AMT	102,702.13	0.32%	1.94%	17.80%	19.92%	0.0644%
Amazon.com Inc	AMZN	1,589,567.82	5.01%	0.00%	38.85%	38.85%	1.9453%
Arista Networks Inc	ANET	20,481.56	0.06%	0.00%	8.58%	8.58%	0.0055%
ANSYS Inc	ANSS	29,033.99	0.09%	0.00%	12.25%	12.25%	0.0112%
Anthem Inc	ANTM	77,476.37	0.24%	1.20%	13.09%	14.38%	0.0351%
Aon PLC	AON	46,841.20	0.15%	0.85%	11.10%	12.00%	0.0177%
A O Smith Corp	AOS	9,092.25	0.03%	1.74%	10.00%	11.83%	0.0034%
Apache Corp	APA	4,865.69	0.02%	2.69%	-15.13%	-12.64%	-0.0019%
Air Products and Chemicals Inc	APD	61,918.39	0.20%	1.98%	11.54%	13.63%	0.0266%
Amphenol Corp	APH	39,132.43	0.12%	0.78%	9.37%	10.19%	0.0126%
Aptiv PLC	APTIV	32,052.01	0.10%	0.15%	11.19%	11.35%	0.0115%
Alexandria Real Estate Equities Inc	ARE	22,094.32	0.07%	2.58%	5.13%	7.78%	0.0054%
Atmos Energy Corp	ATO	12,071.54	0.04%	2.58%	7.25%	9.93%	0.0038%
Activision Blizzard Inc	ATVI	61,426.69	0.19%	0.49%	16.22%	16.75%	0.0324%
AvalonBay Communities Inc	AVB	23,257.46	0.07%	3.82%	4.62%	8.53%	0.0062%
Broadcom Inc	AVGO	162,439.64	0.51%	3.24%	9.62%	13.01%	0.0666%
Avery Dennison Corp	AVY	12,457.60	0.04%	1.58%	4.67%	6.29%	0.0025%
American Water Works Co Inc	AWK	27,803.50	0.09%	1.40%	8.35%	9.81%	0.0086%
American Express Co	AXP	95,488.90	0.30%	1.45%	28.43%	30.09%	0.0905%
AutoZone Inc	AZO	26,365.67	0.08%	0.00%	8.36%	8.36%	0.0069%
Boeing Co/The	BA	118,952.05	N/A	0.97%	N/A	N/A	N/A
Bank of America Corp	BAC	243,606.24	0.77%	2.56%	7.20%	9.85%	0.0756%
Baxter International Inc	BAX	38,857.96	0.12%	1.23%	10.73%	12.02%	0.0147%
Best Buy Co Inc	BBY	28,160.94	0.09%	1.86%	9.57%	11.52%	0.0102%
Becton Dickinson and Co	BDX	68,110.97	0.21%	1.64%	10.27%	11.99%	0.0257%
Franklin Resources Inc	BEN	11,095.97	0.03%	5.15%	6.00%	11.31%	0.0040%
Brown-Forman Corp	BF/B	37,420.09	0.12%	0.88%	5.02%	5.93%	0.0070%
Biogen Inc	BIIB	36,957.74	0.12%	0.00%	3.41%	3.41%	0.0040%
Bio-Rad Laboratories Inc	BIO	16,073.65	0.05%	0.00%	46.50%	46.50%	0.0235%
Bank of New York Mellon Corp/The	BK	34,665.63	0.11%	3.17%	4.83%	8.08%	0.0088%
Booking Holdings Inc	BKNG	83,074.99	0.26%	0.00%	9.93%	9.93%	0.0260%
Baker Hughes Co	BKR	19,380.01	0.06%	3.85%	22.95%	27.24%	0.0166%
BlackRock Inc	BLK	107,180.91	0.34%	2.08%	9.52%	11.70%	0.0395%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Ball Corp	BLL	31,406.12	0.10%	0.61%	6.03%	6.66%	0.0066%
Bristol-Myers Squibb Co	BMJ	141,008.49	0.44%	2.88%	33.06%	36.41%	0.1618%
Broadridge Financial Solutions Inc	BR	16,982.19	0.05%	1.52%	7.40%	8.97%	0.0048%
Berkshire Hathaway Inc	BRK/B	536,941.31	1.69%	0.00%	-15.10%	-15.10%	-0.2554%
Boston Scientific Corp	BSX	47,468.20	0.15%	0.00%	8.42%	8.42%	0.0126%
BorgWarner Inc	BWA	9,499.55	0.03%	1.75%	10.41%	12.25%	0.0037%
Boston Properties Inc	BXP	15,279.54	0.05%	4.00%	2.57%	6.62%	0.0032%
Citigroup Inc	C	114,653.52	0.36%	3.70%	-1.72%	1.94%	0.0070%
Conagra Brands Inc	CAG	17,860.22	0.06%	2.77%	7.30%	10.17%	0.0057%
Cardinal Health Inc	CAH	16,017.83	0.05%	3.63%	4.50%	8.21%	0.0041%
Carrier Global Corp	CARR	32,994.78	0.10%	0.61%	6.20%	6.83%	0.0071%
Caterpillar Inc	CAT	94,304.21	0.30%	2.38%	8.90%	11.39%	0.0338%
Chubb Ltd	CB	66,726.10	0.21%	2.08%	10.00%	12.19%	0.0256%
Cboe Global Markets Inc	CBOE	9,866.39	0.03%	1.70%	8.20%	9.96%	0.0031%
CBRE Group Inc	CBRE	20,509.79	0.06%	0.00%	8.45%	8.45%	0.0055%
Crown Castle International Corp	CCI	72,272.58	0.23%	2.94%	16.53%	19.71%	0.0449%
Carnival Corp	CCL	16,650.51	0.05%	2.53%	-32.01%	-29.89%	-0.0157%
Cadence Design Systems Inc	CDNS	32,439.68	0.10%	0.00%	11.98%	11.98%	0.0122%
CDW Corp/DE	CDW	18,658.53	0.06%	1.18%	13.10%	14.36%	0.0084%
Celanese Corp	CE	15,118.03	0.05%	1.92%	5.05%	7.02%	0.0033%
Cerner Corp	CERN	22,945.19	0.07%	0.53%	11.68%	12.24%	0.0088%
CF Industries Holdings Inc	CF	7,979.07	0.03%	3.22%	5.83%	9.14%	0.0023%
Citizens Financial Group Inc	CFG	13,948.21	0.04%	4.78%	-14.10%	-9.66%	-0.0042%
Church & Dwight Co Inc	CHD	21,806.49	0.07%	1.10%	8.76%	9.91%	0.0068%
CH Robinson Worldwide Inc	CHRW	12,774.86	0.04%	2.21%	8.73%	11.04%	0.0044%
Charter Communications Inc	CHTR	150,959.81	0.48%	0.01%	44.54%	44.56%	0.2119%
Cigna Corp	CI	75,555.44	0.24%	0.03%	10.46%	10.49%	0.0250%
Cincinnati Financial Corp	CINF	12,284.48	N/A	3.14%	N/A	N/A	N/A
Colgate-Palmolive Co	CL	73,407.94	0.23%	2.09%	6.40%	8.55%	0.0198%
Clorox Co/The	CLX	25,583.09	0.08%	2.18%	5.38%	7.62%	0.0061%
Comerica Inc	CMA	6,843.12	0.02%	5.50%	-2.52%	2.91%	0.0006%
Comcast Corp	CMCSA	229,864.24	0.72%	1.83%	9.70%	11.61%	0.0841%
CME Group Inc	CME	62,834.12	0.20%	3.44%	7.29%	10.85%	0.0215%
Chipotle Mexican Grill Inc	CMG	36,078.70	0.11%	0.00%	26.10%	26.10%	0.0297%
Cummins Inc	CMI	34,214.68	0.11%	2.21%	4.78%	7.04%	0.0076%
CMS Energy Corp	CMS	17,621.02	0.06%	2.65%	7.16%	9.90%	0.0055%
Centene Corp	CNC	35,744.53	0.11%	0.00%	12.91%	12.91%	0.0145%
CenterPoint Energy Inc	CNP	12,634.35	0.04%	2.96%	2.11%	5.10%	0.0020%
Capital One Financial Corp	COF	39,171.74	0.12%	1.15%	1.25%	2.41%	0.0030%
Cabot Oil & Gas Corp	COG	6,983.12	0.02%	2.28%	24.11%	26.67%	0.0059%
Cooper Cos Inc/The	COO	17,880.77	0.06%	0.02%	8.80%	8.82%	0.0050%
ConocoPhillips	COP	42,248.39	0.13%	4.27%	-9.15%	-5.07%	-0.0067%
Costco Wholesale Corp	COST	172,859.90	0.54%	0.76%	9.18%	9.98%	0.0543%
Campbell Soup Co	CPB	15,119.60	0.05%	2.89%	8.37%	11.38%	0.0054%
Copart Inc	CPRT	27,261.54	0.09%	0.00%	10.00%	10.00%	0.0086%
salesforce.com Inc	CRM	223,678.00	0.70%	0.00%	18.85%	18.85%	0.1328%
Cisco Systems Inc	CSCO	181,781.63	0.57%	3.38%	4.68%	8.13%	0.0466%
CSX Corp	CSX	68,867.98	0.22%	1.15%	6.06%	7.25%	0.0157%
Cintas Corp	CTAS	37,173.40	0.12%	0.78%	8.80%	9.61%	0.0113%
Catalent Inc	CTLT	15,834.03	0.05%	0.00%	18.34%	18.34%	0.0091%
Cognizant Technology Solutions Corp	CTSH	41,771.50	0.13%	1.11%	9.85%	11.01%	0.0145%
Corteva Inc	CTVA	28,681.95	0.09%	1.32%	13.29%	14.70%	0.0133%
Citrix Systems Inc	CTXS	15,257.47	0.05%	1.12%	9.15%	10.32%	0.0050%
CVS Health Corp	CVS	88,731.25	0.28%	3.43%	6.42%	9.96%	0.0278%
Chevron Corp	CVX	167,822.98	0.53%	5.92%	38.70%	45.77%	0.2420%
Concho Resources Inc	CXO	11,283.59	0.04%	1.40%	14.20%	15.70%	0.0056%
Dominion Energy Inc	D	64,033.64	0.20%	4.42%	4.45%	8.97%	0.0181%
Delta Air Lines Inc	DAL	25,668.81	0.08%	1.00%	4.00%	5.02%	0.0041%
DuPont de Nemours Inc	DD	46,555.42	0.15%	1.89%	2.16%	4.08%	0.0060%
Deere & Co	DE	81,985.11	0.26%	1.21%	14.56%	15.85%	0.0409%
Discover Financial Services	DFS	23,345.83	0.07%	2.29%	22.35%	24.90%	0.0183%
Dollar General Corp	DG	54,433.79	0.17%	0.66%	12.96%	13.66%	0.0234%
Quest Diagnostics Inc	DGX	16,708.29	0.05%	1.79%	8.91%	10.78%	0.0057%
DR Horton Inc	DHI	27,147.13	0.09%	1.08%	12.11%	13.25%	0.0113%
Danaher Corp	DHR	159,572.09	0.50%	0.33%	11.81%	12.16%	0.0611%
Walt Disney Co/The	DIS	267,969.89	0.84%	0.67%	17.21%	17.94%	0.1515%
Discovery Inc	DISCA	16,991.75	0.05%	0.00%	3.70%	3.70%	0.0020%
DISH Network Corp	DISH	18,866.40	0.06%	0.00%	6.55%	6.55%	0.0039%
Digital Realty Trust Inc	DLR	38,894.05	0.12%	3.33%	6.59%	10.03%	0.0123%
Dollar Tree Inc	DLTR	25,692.39	0.08%	0.00%	9.42%	9.42%	0.0076%
Dover Corp	DOV	17,584.93	0.06%	1.62%	9.60%	11.29%	0.0063%
Dow Inc	DOW	39,286.85	0.12%	5.28%	3.13%	8.49%	0.0105%
Domino's Pizza Inc	DPZ	15,467.22	0.05%	0.79%	16.00%	16.86%	0.0082%
Duke Realty Corp	DRE	14,156.46	0.04%	2.50%	-3.03%	-0.57%	-0.0003%
Darden Restaurants Inc	DRI	14,058.99	0.04%	1.32%	18.99%	20.43%	0.0090%
DTE Energy Co	DTE	24,168.74	0.08%	3.23%	6.17%	9.50%	0.0072%
Duke Energy Corp	DUK	68,197.76	0.21%	4.17%	4.10%	8.35%	0.0179%
DaVita Inc	DVA	12,303.20	0.04%	0.00%	16.58%	16.58%	0.0064%
Devon Energy Corp	DVN	5,351.57	0.02%	3.17%	4.41%	7.64%	0.0013%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
DXC Technology Co	DXC	5,574.17	N/A	2.50%	N/A	N/A	N/A
DexCom Inc	DXCM	30,698.10	0.10%	0.00%	30.43%	30.43%	0.0294%
Electronic Arts Inc	EA	37,057.40	0.12%	0.04%	6.40%	6.45%	0.0075%
eBay Inc	EBAY	34,763.34	0.11%	1.26%	18.74%	20.11%	0.0220%
Ecolab Inc	ECL	63,411.65	0.20%	0.85%	12.20%	13.10%	0.0262%
Consolidated Edison Inc	ED	25,532.99	0.08%	4.01%	3.95%	8.04%	0.0065%
Equifax Inc	EFX	20,302.21	0.06%	0.94%	11.58%	12.57%	0.0080%
Edison International	EIX	23,225.61	0.07%	4.14%	3.74%	7.96%	0.0058%
Estee Lauder Cos Inc/The	EL	88,709.10	0.28%	0.81%	14.48%	15.35%	0.0429%
Eastman Chemical Co	EMN	13,194.57	0.04%	2.66%	3.73%	6.45%	0.0027%
Emerson Electric Co	EMR	45,941.39	0.14%	2.64%	9.66%	12.43%	0.0180%
EOG Resources Inc	EOG	27,348.78	0.09%	3.11%	0.74%	3.86%	0.0033%
Equinix Inc	EQIX	62,174.29	0.20%	1.52%	18.29%	19.95%	0.0391%
Equity Residential	EQR	21,560.91	0.07%	4.12%	2.27%	6.44%	0.0044%
Eversource Energy	ES	30,000.57	0.09%	2.59%	6.46%	9.14%	0.0086%
Essex Property Trust Inc	ESS	16,032.51	0.05%	3.37%	2.35%	5.75%	0.0029%
Eaton Corp PLC	ETN	48,274.45	0.15%	2.41%	10.37%	12.90%	0.0196%
Entergy Corp	ETR	21,795.31	0.07%	3.45%	4.18%	7.70%	0.0053%
Etsy Inc	ETSY	20,262.82	0.06%	0.00%	10.00%	10.00%	0.0064%
Evergy Inc	EVRG	12,559.18	0.04%	3.69%	7.43%	11.26%	0.0045%
Edwards Lifesciences Corp	EW	52,284.30	0.16%	0.00%	14.00%	14.00%	0.0231%
Exelon Corp	EXC	39,999.30	0.13%	3.73%	2.92%	6.70%	0.0084%
Expeditors International of Washington I	EXPD	15,127.27	0.05%	1.16%	8.40%	9.60%	0.0046%
Expedia Group Inc	EXPE	17,610.53	0.06%	0.31%	10.73%	11.06%	0.0061%
Extra Space Storage Inc	EXR	14,568.70	0.05%	3.19%	1.94%	5.17%	0.0024%
Ford Motor Co	F	36,124.12	0.11%	1.24%	14.06%	15.39%	0.0175%
Diamondback Energy Inc	FANG	6,312.59	0.02%	3.57%	18.11%	22.00%	0.0044%
Fastenal Co	FAST	28,386.94	0.09%	2.01%	14.60%	16.76%	0.0150%
Facebook Inc	FB	788,891.62	2.49%	0.00%	25.06%	25.06%	0.6228%
Fortune Brands Home & Security Inc	FBHS	11,600.55	0.04%	1.15%	10.60%	11.81%	0.0043%
Freeport-McMoRan Inc	FCX	33,982.59	0.11%	0.15%	139.01%	139.26%	0.1491%
FedEx Corp	FDX	75,253.61	0.24%	0.93%	15.50%	16.50%	0.0391%
FirstEnergy Corp	FE	14,411.20	0.05%	5.87%	2.09%	8.02%	0.0036%
F5 Networks Inc	FFIV	10,029.60	0.03%	0.00%	10.39%	10.39%	0.0033%
Fidelity National Information Services I	FIS	92,089.71	0.29%	0.97%	12.00%	13.02%	0.0378%
Fiserv Inc	FISV	77,221.04	0.24%	0.00%	16.46%	16.46%	0.0400%
Fifth Third Bancorp	FITB	18,052.72	0.06%	4.26%	1.05%	5.33%	0.0030%
FLIR Systems Inc	FLIR	5,014.97	N/A	1.78%	N/A	N/A	N/A
Flowserve Corp	FLS	4,439.38	0.01%	2.35%	5.71%	8.12%	0.0011%
FleetCor Technologies Inc	FLT	22,118.95	0.07%	0.00%	12.06%	12.06%	0.0084%
FMC Corp	FMC	15,053.13	0.05%	1.56%	9.23%	10.87%	0.0052%
Fox Corp	FOXA	17,051.96	0.05%	1.76%	0.85%	2.62%	0.0014%
First Republic Bank/CA	FRC	22,536.11	0.07%	0.61%	11.10%	11.74%	0.0083%
Federal Realty Investment Trust	FRT	6,597.94	0.02%	4.85%	2.78%	7.69%	0.0016%
TechnipFMC PLC	FTI	3,734.58	0.01%	1.62%	7.75%	9.44%	0.0011%
Fortinet Inc	FTNT	20,004.18	0.06%	0.00%	15.08%	15.08%	0.0095%
Fortive Corp	FTV	23,647.54	0.07%	0.35%	-2.51%	-2.16%	-0.0016%
General Dynamics Corp	GD	42,859.29	0.14%	2.93%	4.52%	7.51%	0.0101%
General Electric Co	GE	89,175.51	0.28%	0.39%	5.33%	5.74%	0.0161%
Gilead Sciences Inc	GILD	76,051.55	0.24%	4.40%	0.23%	4.64%	0.0111%
General Mills Inc	GIS	37,181.33	0.12%	3.33%	4.37%	7.77%	0.0091%
Globe Life Inc	GL	9,744.03	0.03%	0.80%	67.50%	68.57%	0.0210%
Corning Inc	GLW	28,589.26	0.09%	2.35%	7.57%	10.01%	0.0090%
General Motors Co	GM	62,748.53	0.20%	0.75%	12.46%	13.25%	0.0262%
Alphabet Inc	GOOGL	1,188,959.16	3.75%	0.00%	17.88%	17.88%	0.6697%
Genuine Parts Co	GPC	14,193.77	0.04%	3.19%	3.64%	6.89%	0.0031%
Global Payments Inc	GPN	58,427.64	0.18%	0.39%	21.66%	22.09%	0.0407%
Gap Inc/The	GPS	7,839.65	0.02%	0.63%	4.40%	5.04%	0.0012%
Garmin Ltd	GRMN	22,328.88	0.07%	2.04%	7.03%	9.15%	0.0064%
Goldman Sachs Group Inc/The	GS	82,701.95	0.26%	2.16%	8.55%	10.81%	0.0282%
WW Grainger Inc	GWW	22,449.35	0.07%	1.43%	9.65%	11.15%	0.0079%
Halliburton Co	HAL	14,665.68	0.05%	1.98%	14.40%	16.53%	0.0076%
Hasbro Inc	HAS	12,747.96	0.04%	2.74%	8.23%	11.08%	0.0045%
Huntington Bancshares Inc/OH	HBAN	12,289.11	0.04%	4.97%	-4.31%	0.55%	0.0002%
Hanesbrands Inc	HBI	4,946.20	0.02%	4.23%	2.25%	6.52%	0.0010%
HCA Healthcare Inc	HCA	50,793.43	0.16%	0.24%	10.32%	10.57%	0.0169%
Home Depot Inc/The	HD	298,659.82	0.94%	1.96%	9.47%	11.53%	0.1085%
Hess Corp	HES	14,487.91	0.05%	2.14%	-23.46%	-21.57%	-0.0098%
HollyFrontier Corp	HFC	3,789.58	0.01%	5.99%	-3.94%	1.93%	0.0002%
Hartford Financial Services Group Inc/Th	HIG	15,838.21	0.05%	2.96%	37.60%	41.12%	0.0205%
Huntington Ingalls Industries Inc	HII	6,486.51	0.02%	2.63%	40.00%	43.16%	0.0088%
Hilton Worldwide Holdings Inc	HLT	28,751.76	0.09%	0.14%	0.12%	0.26%	0.0002%
Hologic Inc	HOLX	17,767.08	0.06%	0.00%	12.56%	12.56%	0.0070%
Honeywell International Inc	HON	143,087.76	0.45%	1.75%	5.22%	7.01%	0.0316%
Hewlett Packard Enterprise Co	HPE	14,201.67	0.04%	4.35%	1.98%	6.37%	0.0029%
HP Inc	HPQ	30,120.78	0.09%	3.60%	8.47%	12.22%	0.0116%
Hormel Foods Corp	HRL	25,458.70	0.08%	2.10%	4.47%	6.62%	0.0053%
Henry Schein Inc	HSIC	9,181.93	0.03%	0.00%	3.15%	3.15%	0.0009%
Host Hotels & Resorts Inc	HST	9,895.79	0.03%	1.82%	-7.40%	-5.64%	-0.0018%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Hershey Co/The	HSY	30,782.34	0.10%	2.11%	7.07%	9.25%	0.0090%
Humana Inc	HUM	53,005.40	0.17%	0.61%	11.87%	12.51%	0.0209%
Howmet Aerospace Inc	HWM	10,172.35	0.03%	0.09%	38.40%	38.50%	0.0123%
International Business Machines Corp	IBM	110,063.37	0.35%	5.29%	-2.02%	3.21%	0.0111%
Intercontinental Exchange Inc	ICE	59,221.05	0.19%	1.13%	10.92%	12.11%	0.0226%
IDEXX Laboratories Inc	IDXX	39,321.54	0.12%	0.00%	15.22%	15.22%	0.0188%
IDEX Corp	IEX	14,622.57	0.05%	1.04%	12.73%	13.83%	0.0064%
International Flavors & Fragrances Inc	IFF	11,987.23	0.04%	2.64%	7.50%	10.24%	0.0039%
Illumina Inc	ILMN	47,025.14	0.15%	0.00%	21.43%	21.43%	0.0317%
Incyte Corp	INCY	18,513.93	0.06%	0.00%	26.77%	26.77%	0.0156%
IHS Markit Ltd	INFO	39,620.74	0.12%	0.58%	12.25%	12.87%	0.0161%
Intel Corp	INTC	198,138.30	0.62%	2.74%	6.97%	9.80%	0.0612%
Intuit Inc	INTU	92,491.78	0.29%	0.66%	14.33%	15.03%	0.0438%
International Paper Co	IP	19,450.36	0.06%	4.12%	5.65%	9.89%	0.0061%
Interpublic Group of Cos Inc/The	IPG	8,689.97	0.03%	4.53%	5.05%	9.69%	0.0027%
IPG Photonics Corp	IPGP	11,033.77	0.03%	0.00%	21.44%	21.44%	0.0075%
IQVIA Holdings Inc	IQV	32,399.74	0.10%	0.00%	12.72%	12.72%	0.0130%
Ingersoll Rand Inc	IR	18,489.61	0.06%	0.24%	11.30%	11.55%	0.0067%
Iron Mountain Inc	IRM	7,924.71	0.02%	9.03%	2.87%	12.02%	0.0030%
Intuitive Surgical Inc	ISRG	85,351.16	0.27%	0.00%	10.30%	10.30%	0.0277%
Gartner Inc	IT	13,571.60	0.04%	0.00%	14.25%	14.25%	0.0061%
Illinois Tool Works Inc	ITW	66,814.26	0.21%	1.99%	6.94%	9.00%	0.0189%
Invesco Ltd	IVZ	7,455.01	0.02%	4.46%	-4.83%	-0.48%	-0.0001%
Jacobs Engineering Group Inc	J	13,978.59	0.04%	0.78%	6.10%	6.90%	0.0030%
JB Hunt Transport Services Inc	JBHT	14,296.25	0.05%	0.78%	11.67%	12.50%	0.0056%
Johnson Controls International plc	JCI	33,328.72	0.10%	2.41%	11.50%	14.05%	0.0148%
Jack Henry & Associates Inc	JKHY	12,276.22	0.04%	1.08%	10.47%	11.61%	0.0045%
Johnson & Johnson	JNJ	380,876.27	1.20%	2.74%	5.57%	8.39%	0.1007%
Juniper Networks Inc	JNPR	7,178.36	0.02%	3.67%	4.74%	8.50%	0.0019%
JPMorgan Chase & Co	JPM	359,322.18	1.13%	3.05%	5.20%	8.33%	0.0943%
Kellogg Co	K	21,966.70	0.07%	3.60%	4.33%	8.01%	0.0055%
KeyCorp	KEY	15,096.27	0.05%	4.81%	5.83%	10.78%	0.0051%
Keysight Technologies Inc	KEYS	22,243.41	0.07%	0.00%	9.16%	9.16%	0.0064%
Kraft Heinz Co/The	KHC	40,273.21	0.13%	4.85%	0.48%	5.35%	0.0068%
Kimco Realty Corp	KIM	6,245.28	0.02%	4.55%	0.65%	5.22%	0.0010%
KLA Corp	KLAC	38,919.24	0.12%	1.47%	9.19%	10.72%	0.0131%
Kimberly-Clark Corp	KMB	47,384.45	0.15%	3.08%	5.10%	8.26%	0.0123%
Kinder Morgan Inc	KMI	32,553.36	0.10%	7.29%	4.85%	12.32%	0.0126%
CarMax Inc	KMX	15,338.84	0.05%	0.00%	9.72%	9.72%	0.0047%
Coca-Cola Co/The	KO	221,747.63	0.70%	3.22%	3.35%	6.62%	0.0463%
Kroger Co/The	KR	25,552.72	0.08%	2.07%	8.70%	10.85%	0.0087%
Kansas City Southern	KSU	17,425.80	0.05%	0.85%	7.85%	8.74%	0.0048%
Loews Corp	L	11,519.92	N/A	0.00%	N/A	N/A	N/A
L Brands Inc	LB	10,784.87	0.03%	1.25%	11.50%	12.83%	0.0044%
Leidos Holdings Inc	LDOS	14,331.72	0.05%	1.29%	10.84%	12.19%	0.0055%
Leggett & Platt Inc	LEG	5,711.57	0.02%	3.71%	1.00%	4.73%	0.0009%
Lennar Corp	LEN	23,153.89	0.07%	0.55%	12.13%	12.72%	0.0093%
Laboratory Corp of America Holdings	LH	19,464.42	0.06%	0.00%	7.08%	7.08%	0.0043%
L3Harris Technologies Inc	LHX	40,339.41	0.13%	1.89%	15.12%	17.16%	0.0218%
Linde PLC	LIN	134,430.92	0.42%	1.48%	10.33%	11.89%	0.0503%
LKQ Corp	LKQ	10,719.04	N/A	0.00%	N/A	N/A	N/A
Eli Lilly and Co	LLY	139,326.11	0.44%	2.03%	15.70%	17.88%	0.0785%
Lockheed Martin Corp	LMT	102,121.07	0.32%	2.70%	6.90%	9.69%	0.0312%
Lincoln National Corp	LNC	9,125.99	0.03%	3.41%	13.96%	17.61%	0.0051%
Alliant Energy Corp	LNT	13,137.41	0.04%	2.89%	5.91%	8.89%	0.0037%
Lowe's Cos Inc	LOW	114,172.88	0.36%	1.46%	16.98%	18.56%	0.0668%
Lam Research Corp	LRCX	65,187.21	0.21%	1.13%	14.50%	15.71%	0.0323%
CenturyLink Inc	LUMN	11,465.02	0.04%	9.59%	0.39%	9.99%	0.0036%
Southwest Airlines Co	LUV	27,353.25	0.09%	0.66%	-5.47%	-4.83%	-0.0042%
Las Vegas Sands Corp	LVS	42,552.86	0.13%	1.62%	14.70%	16.43%	0.0220%
Lamb Weston Holdings Inc	LW	10,592.02	0.03%	1.29%	12.52%	13.89%	0.0046%
LyondellBasell Industries NV	LYB	28,416.51	0.09%	4.96%	5.50%	10.59%	0.0095%
Live Nation Entertainment Inc	LYV	14,253.76	N/A	0.00%	N/A	N/A	N/A
Mastercard Inc	MA	335,475.35	1.06%	0.47%	17.86%	18.37%	0.1941%
Mid-America Apartment Communities Inc	MAA	14,428.90	N/A	3.18%	N/A	N/A	N/A
Marrriott International Inc/MD	MAR	41,147.96	0.13%	0.38%	-6.14%	-5.77%	-0.0075%
Masco Corp	MAS	14,044.15	0.04%	1.01%	12.50%	13.57%	0.0060%
McDonald's Corp	MCD	162,016.93	0.51%	2.32%	8.11%	10.53%	0.0537%
Microchip Technology Inc	MCHP	34,991.95	0.11%	1.09%	12.89%	14.05%	0.0155%
McKesson Corp	MCK	28,887.15	0.09%	0.94%	3.44%	4.40%	0.0040%
Moody's Corp	MCO	53,023.45	0.17%	0.78%	11.30%	12.13%	0.0203%
Mondelez International Inc	MDLZ	82,162.85	0.26%	2.07%	8.32%	10.48%	0.0271%
Medtronic PLC	MDT	152,988.79	0.48%	1.98%	8.66%	10.73%	0.0517%
MetLife Inc	MET	41,550.62	0.13%	3.94%	7.45%	11.53%	0.0151%
MGM Resorts International	MGM	13,953.78	0.04%	0.57%	0.55%	1.12%	0.0005%
Mohawk Industries Inc	MHK	8,958.92	0.03%	0.00%	7.08%	7.08%	0.0020%
McCormick & Co Inc/MD	MKC	24,918.28	0.08%	1.30%	10.04%	11.40%	0.0090%
MarketAxess Holdings Inc	MKTX	20,469.15	N/A	0.45%	N/A	N/A	N/A
Martin Marietta Materials Inc	MLM	16,541.90	0.05%	0.84%	10.55%	11.44%	0.0060%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Marsh & McLennan Cos Inc	MMC	58,144.33	0.18%	1.63%	9.91%	11.62%	0.0213%
3M Co	MMM	99,634.44	0.31%	3.40%	7.50%	11.03%	0.0346%
Monster Beverage Corp	MNST	44,756.78	0.14%	0.00%	12.39%	12.39%	0.0175%
Altria Group Inc	MO	74,020.84	0.23%	8.53%	3.70%	12.39%	0.0289%
Mosaic Co/The	MOS	8,324.82	0.03%	0.92%	39.45%	40.55%	0.0106%
Marathon Petroleum Corp	MPC	25,297.30	0.08%	5.94%	-0.46%	5.47%	0.0044%
Merck & Co Inc	MRK	203,389.47	0.64%	3.00%	8.21%	11.33%	0.0726%
Marathon Oil Corp	MRO	4,673.20	0.01%	1.50%	-9.03%	-7.59%	-0.0011%
Morgan Stanley	MS	111,862.73	0.35%	2.27%	7.52%	9.87%	0.0348%
MSCI Inc	MSCI	33,938.89	0.11%	0.71%	12.15%	12.90%	0.0138%
Microsoft Corp	MSFT	1,618,475.37	5.10%	1.00%	12.67%	13.74%	0.7003%
Motorola Solutions Inc	MSI	29,078.26	0.09%	1.49%	11.10%	12.67%	0.0116%
M&T Bank Corp	MTB	14,944.81	0.05%	3.78%	-1.21%	2.55%	0.0012%
Mettler-Toledo International Inc	MTD	27,364.70	0.09%	0.00%	8.20%	8.20%	0.0071%
Micron Technology Inc	MU	71,346.39	0.22%	0.26%	15.11%	15.39%	0.0346%
Maxim Integrated Products Inc	MXIM	22,196.69	0.07%	1.36%	11.65%	13.09%	0.0092%
Norwegian Cruise Line Holdings Ltd	NCLH	7,218.22	0.02%	0.00%	-84.59%	-84.59%	-0.0192%
Nasdaq Inc	NDAQ	20,995.17	0.07%	1.51%	12.29%	13.90%	0.0092%
NextEra Energy Inc	NEE	144,168.26	0.45%	1.89%	1.77%	3.67%	0.0167%
Newmont Corp	NEM	47,253.52	0.15%	1.97%	8.20%	10.25%	0.0153%
Netflix Inc	NFLX	216,788.81	0.68%	0.00%	28.35%	28.35%	0.1936%
NiSource Inc	NI	9,273.74	0.03%	3.49%	6.15%	9.75%	0.0028%
NIKE Inc	NKE	211,455.63	0.67%	0.76%	24.69%	25.54%	0.1702%
NortonLifeLock Inc	NLOK	10,789.78	0.03%	2.89%	8.60%	11.61%	0.0039%
Nielsen Holdings PLC	NLSN	5,772.67	0.02%	1.48%	12.00%	13.57%	0.0025%
Northrop Grumman Corp	NOC	50,391.57	0.16%	1.88%	20.07%	22.13%	0.0351%
National Oilwell Varco Inc	NOV	4,760.12	0.01%	0.64%	18.80%	19.50%	0.0029%
ServiceNow Inc	NOW	104,290.71	0.33%	0.00%	28.50%	28.50%	0.0936%
NRG Energy Inc	NRG	7,998.23	0.03%	3.66%	-4.69%	-1.11%	-0.0003%
Norfolk Southern Corp	NSC	60,199.60	0.19%	1.60%	6.53%	8.18%	0.0155%
NetApp Inc	NTAP	11,835.09	0.04%	3.61%	7.75%	11.50%	0.0043%
Northern Trust Corp	NTRS	19,380.25	0.06%	2.84%	5.47%	8.38%	0.0051%
Nucor Corp	NUE	16,213.58	0.05%	2.99%	4.95%	8.02%	0.0041%
NVIDIA Corp	NVDA	331,821.14	1.05%	0.12%	21.79%	21.92%	0.2292%
NVR Inc	NVR	14,871.24	0.05%	0.00%	11.98%	11.98%	0.0056%
Newell Brands Inc	NWL	9,020.62	0.03%	4.33%	2.86%	7.25%	0.0021%
News Corp	NWSA	10,455.77	0.03%	1.13%	30.20%	31.50%	0.0104%
Realty Income Corp	O	21,048.88	0.07%	4.58%	3.87%	8.54%	0.0057%
Old Dominion Freight Line Inc	ODFL	23,860.52	0.08%	0.31%	11.10%	11.43%	0.0086%
ONEOK Inc	OKE	15,940.54	0.05%	10.42%	4.37%	15.02%	0.0075%
Omnicom Group Inc	OMC	13,543.33	0.04%	4.14%	1.78%	5.95%	0.0025%
Oracle Corp	ORCL	173,788.46	0.55%	1.70%	7.23%	8.98%	0.0492%
O'Reilly Automotive Inc	ORLY	32,054.08	0.10%	0.00%	11.09%	11.09%	0.0112%
Otis Worldwide Corp	OTIS	28,998.06	0.09%	1.09%	5.20%	6.32%	0.0058%
Occidental Petroleum Corp	OXY	14,675.86	0.05%	8.03%	-8.35%	-0.66%	-0.0003%
Paycom Software Inc	PAYC	24,404.41	0.08%	0.00%	23.20%	23.20%	0.0178%
Paychex Inc	PAYX	33,487.45	0.11%	2.68%	6.15%	8.91%	0.0094%
People's United Financial Inc	PBCT	5,268.35	0.02%	5.81%	2.00%	7.86%	0.0013%
PACCAR Inc	PCAR	30,161.05	0.10%	1.79%	4.50%	6.33%	0.0060%
Healthpeak Properties Inc	PEAK	15,537.09	0.05%	5.13%	1.30%	6.46%	0.0032%
Public Service Enterprise Group Inc	PEG	29,480.82	0.09%	3.36%	4.56%	8.00%	0.0074%
PepsiCo Inc	PEP	199,319.58	0.63%	2.79%	5.55%	8.42%	0.0528%
Pfizer Inc	PFE	212,942.17	0.67%	3.90%	6.43%	10.46%	0.0702%
Principal Financial Group Inc	PFG	13,678.71	0.04%	4.50%	7.07%	11.73%	0.0051%
Procter & Gamble Co/The	PG	344,342.87	1.08%	2.32%	6.71%	9.10%	0.0988%
Progressive Corp/The	PGR	50,994.19	0.16%	2.72%	6.72%	9.53%	0.0153%
Parker-Hannifin Corp	PH	34,423.15	0.11%	1.34%	12.08%	13.50%	0.0146%
PulteGroup Inc	PHM	11,696.93	0.04%	1.09%	12.93%	14.09%	0.0052%
Packaging Corp of America	PKG	12,328.00	0.04%	2.43%	10.00%	12.55%	0.0049%
PerkinElmer Inc	PKI	14,892.61	0.05%	0.21%	14.65%	14.88%	0.0070%
Prologis Inc	PLD	73,895.13	0.23%	2.30%	7.58%	9.96%	0.0232%
Philip Morris International Inc	PM	117,966.68	0.37%	6.26%	6.41%	12.87%	0.0478%
PNC Financial Services Group Inc/The	PNC	58,500.40	0.18%	3.33%	26.54%	30.31%	0.0559%
Pentair PLC	PNR	8,620.07	0.03%	1.46%	8.34%	9.86%	0.0027%
Pinnacle West Capital Corp	PNW	9,216.05	0.03%	3.77%	3.92%	7.76%	0.0023%
Pool Corp	POOL	13,899.29	0.04%	0.66%	17.00%	17.72%	0.0078%
PPG Industries Inc	PPG	34,667.72	0.11%	1.42%	5.62%	7.08%	0.0077%
PPL Corp	PPL	21,848.83	0.07%	5.84%	0.45%	6.30%	0.0043%
Perrigo Co PLC	PRGO	6,581.61	0.02%	1.90%	-2.30%	-0.42%	-0.0001%
Prudential Financial Inc	PRU	29,945.52	0.09%	5.76%	6.93%	12.89%	0.0122%
Public Storage	PSA	39,240.58	0.12%	3.56%	3.23%	6.85%	0.0085%
Phillips 66	PSX	26,461.36	0.08%	5.95%	13.30%	19.64%	0.0164%
PVH Corp	PVH	5,651.18	0.02%	0.05%	1.21%	1.26%	0.0002%
Quanta Services Inc	PWR	9,489.75	N/A	0.23%	N/A	N/A	N/A
Pioneer Natural Resources Co	PXD	16,536.05	0.05%	2.12%	16.70%	18.99%	0.0099%
PayPal Holdings Inc	PYPL	250,882.65	0.79%	0.00%	21.79%	21.79%	0.1722%
QUALCOMM Inc	QCOM	166,449.27	0.52%	1.80%	19.14%	21.10%	0.1107%
Qorvo Inc	QRVO	17,870.00	0.06%	0.00%	15.53%	15.53%	0.0087%
Royal Caribbean Cruises Ltd	RCL	17,680.09	0.06%	1.31%	-85.25%	-84.50%	-0.0471%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Everest Re Group Ltd	RE	9,085.40	0.03%	2.76%	10.11%	13.00%	0.0037%
Regency Centers Corp	REG	7,741.58	0.02%	5.21%	2.94%	8.23%	0.0020%
Regeneron Pharmaceuticals Inc	REGN	55,063.63	0.17%	0.00%	13.75%	13.75%	0.0239%
Regions Financial Corp	RF	14,665.98	0.05%	4.09%	2.67%	6.82%	0.0032%
Robert Half International Inc	RHI	7,315.24	0.02%	2.12%	6.80%	8.99%	0.0021%
Raymond James Financial Inc	RJF	12,453.99	0.04%	1.67%	5.00%	6.72%	0.0026%
Ralph Lauren Corp	RL	6,268.65	0.02%	1.29%	2.95%	4.26%	0.0008%
ResMed Inc	RMD	30,374.22	0.10%	0.74%	12.49%	13.28%	0.0127%
Rockwell Automation Inc	ROK	29,690.64	0.09%	1.67%	10.26%	12.01%	0.0112%
Rollins Inc	ROL	18,740.69	N/A	0.86%	N/A	N/A	N/A
Roper Technologies Inc	ROP	44,780.50	0.14%	0.48%	13.57%	14.08%	0.0199%
Ross Stores Inc	ROST	38,277.73	0.12%	0.39%	9.23%	9.64%	0.0116%
Republic Services Inc	RSG	30,827.05	0.10%	1.71%	8.66%	10.45%	0.0101%
Raytheon Technologies Corp	RTX	108,922.34	0.34%	2.65%	-5.43%	-2.84%	-0.0098%
SBA Communications Corp	SBAC	31,909.90	0.10%	0.64%	28.70%	29.44%	0.0296%
Starbucks Corp	SBUX	115,046.07	0.36%	1.86%	21.73%	23.79%	0.0862%
Charles Schwab Corp/The	SCHW	91,535.96	0.29%	1.43%	0.80%	2.24%	0.0064%
Sealed Air Corp	SEE	6,991.20	0.02%	1.42%	5.18%	6.63%	0.0015%
Sherwin-Williams Co/The	SHW	67,903.13	0.21%	0.71%	9.21%	9.95%	0.0213%
SVB Financial Group	SIVB	17,862.68	0.06%	0.00%	8.00%	8.00%	0.0045%
J M Smucker Co/The	SJM	13,371.66	0.04%	3.08%	0.05%	3.13%	0.0013%
Schlumberger NV	SLB	28,940.30	0.09%	4.50%	35.65%	40.95%	0.0373%
SL Green Realty Corp	SLG	4,261.15	0.01%	5.95%	3.59%	9.65%	0.0013%
Snap-on Inc	SNA	9,533.63	0.03%	2.47%	4.87%	7.40%	0.0022%
Synopsys Inc	SNPS	34,525.78	0.11%	0.00%	14.03%	14.03%	0.0153%
Southern Co/The	SO	63,216.08	0.20%	4.24%	4.53%	8.87%	0.0177%
Simon Property Group Inc	SPG	27,094.18	0.09%	7.49%	-0.06%	7.43%	0.0063%
S&P Global Inc	SPGI	84,638.27	0.27%	0.76%	8.90%	9.70%	0.0259%
Sempra Energy	SRE	36,874.82	0.12%	3.28%	5.88%	9.26%	0.0108%
STERIS PLC	STE	16,536.65	0.05%	0.82%	-4.80%	-4.00%	-0.0021%
State Street Corp	STT	24,865.18	0.08%	2.95%	9.60%	12.69%	0.0099%
Seagate Technology PLC	STX	15,110.19	0.05%	4.51%	5.70%	10.34%	0.0049%
Constellation Brands Inc	STZ	39,852.13	0.13%	1.46%	7.43%	8.93%	0.0112%
Stanley Black & Decker Inc	SWK	29,530.76	0.09%	1.51%	8.89%	10.47%	0.0097%
Skyworks Solutions Inc	SWKS	23,445.76	0.07%	1.42%	14.03%	15.55%	0.0115%
Synchrony Financial	SYF	17,788.15	0.06%	2.89%	19.71%	22.89%	0.0128%
Stryker Corp	SYK	87,709.54	0.28%	1.01%	8.97%	10.03%	0.0277%
Sysco Corp	SYY	36,312.18	0.11%	2.54%	10.25%	12.92%	0.0148%
AT&T Inc	T	204,872.50	0.65%	7.26%	1.93%	9.25%	0.0597%
Molson Coors Beverage Co	TAP	10,047.48	0.03%	1.73%	4.12%	5.88%	0.0019%
TransDigm Group Inc	TDG	31,528.72	0.10%	3.45%	11.12%	14.76%	0.0147%
Teledyne Technologies Inc	TDY	13,939.08	N/A	0.00%	N/A	N/A	N/A
TE Connectivity Ltd	TEL	37,694.73	0.12%	1.69%	9.33%	11.10%	0.0132%
Teradyne Inc	TER	18,322.60	N/A	0.35%	N/A	N/A	N/A
Truist Financial Corp	TFC	62,579.64	0.20%	3.88%	1.29%	5.19%	0.0102%
Teleflex Inc	TFX	17,823.41	0.06%	0.36%	8.85%	9.23%	0.0052%
Target Corp	TGT	89,903.80	0.28%	1.51%	9.56%	11.14%	0.0316%
Tiffany & Co	TIF	15,963.41	0.05%	1.59%	5.50%	7.13%	0.0036%
TJX Cos Inc/The	TJX	76,152.37	0.24%	0.85%	10.00%	10.90%	0.0261%
Thermo Fisher Scientific Inc	TMO	184,287.94	0.58%	0.18%	9.90%	10.09%	0.0586%
T-Mobile US Inc	TMUS	165,003.37	0.52%	0.00%	12.45%	12.45%	0.0647%
Tapestry Inc	TPR	7,856.12	0.02%	1.41%	15.50%	17.02%	0.0042%
T Rowe Price Group Inc	TROW	32,472.73	0.10%	2.51%	7.99%	10.60%	0.0108%
Travelers Cos Inc/The	TRV	32,841.48	0.10%	2.60%	30.76%	33.76%	0.0349%
Tractor Supply Co	TSCO	16,404.00	0.05%	1.04%	12.84%	13.95%	0.0072%
Tyson Foods Inc	TSN	23,741.69	0.07%	2.81%	6.26%	9.15%	0.0068%
Trane Technologies PLC	TT	35,115.87	0.11%	1.46%	6.92%	8.43%	0.0093%
Take-Two Interactive Software Inc	TTWO	20,762.55	0.07%	0.00%	8.96%	8.96%	0.0059%
Twitter Inc	TWTR	36,991.71	0.12%	0.00%	80.00%	80.00%	0.0932%
Texas Instruments Inc	TXN	148,018.17	0.47%	2.30%	10.30%	12.71%	0.0593%
Textron Inc	TXT	10,322.26	0.03%	0.18%	5.37%	5.55%	0.0018%
Tyler Technologies Inc	TYL	17,243.79	0.05%	0.00%	14.03%	14.03%	0.0076%
Under Armour Inc	UAA	7,031.06	0.02%	0.00%	15.62%	15.62%	0.0035%
United Airlines Holdings Inc	UAL	13,305.06	0.04%	0.00%	-24.24%	-24.24%	-0.0102%
UDR Inc	UDR	11,328.70	0.04%	3.74%	2.87%	6.66%	0.0024%
Universal Health Services Inc	UHS	11,000.20	0.03%	0.31%	7.94%	8.26%	0.0029%
Ulta Beauty Inc	ULTA	15,511.38	0.05%	0.00%	6.10%	6.10%	0.0030%
UnitedHealth Group Inc	UNH	319,126.36	1.01%	1.39%	12.33%	13.80%	0.1387%
Unum Group	UNM	4,527.41	0.01%	5.13%	9.00%	14.36%	0.0020%
Union Pacific Corp	UNP	137,523.16	0.43%	1.90%	7.50%	9.47%	0.0410%
United Parcel Service Inc	UPS	147,872.56	0.47%	2.36%	9.03%	11.49%	0.0535%
United Rentals Inc	URI	16,373.57	0.05%	0.00%	6.63%	6.63%	0.0034%
US Bancorp	USB	65,093.20	0.21%	3.89%	5.93%	9.94%	0.0204%
Visa Inc	V	464,600.53	1.46%	0.58%	13.17%	13.79%	0.2018%
Varian Medical Systems Inc	VAR	15,894.02	N/A	0.00%	N/A	N/A	N/A
VF Corp	VFC	32,526.35	0.10%	2.31%	9.69%	12.12%	0.0124%
ViacomCBS Inc	VIAC	21,839.16	0.07%	2.73%	-1.70%	1.00%	0.0007%
Valero Energy Corp	VLO	21,926.83	0.07%	7.30%	-3.91%	3.24%	0.0022%
Vulcan Materials Co	VMC	18,505.21	0.06%	0.97%	15.71%	16.76%	0.0098%

		[4]	[5]	[6]	[7]	[8]	[9]
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Vornado Realty Trust	VNO	7,441.96	0.02%	7.12%	-6.81%	0.07%	0.0000%
Vontier Corp	VNT	5,585.12	0.02%	0.00%	8.60%	8.60%	0.0015%
Verisk Analytics Inc	VRSK	32,243.18	0.10%	0.54%	9.77%	10.34%	0.0105%
VeriSign Inc	VRSN	22,904.13	N/A	0.00%	N/A	N/A	N/A
Vertex Pharmaceuticals Inc	VRTX	59,223.63	0.19%	0.00%	38.85%	38.85%	0.0725%
Ventas Inc	VTR	17,945.69	0.06%	4.51%	1.45%	6.00%	0.0034%
Viatis Inc	VTRS	20,445.87	0.06%	0.00%	-2.46%	-2.46%	-0.0016%
Verizon Communications Inc	VZ	249,982.28	0.79%	4.11%	2.71%	6.87%	0.0541%
Westinghouse Air Brake Technologies Corp	WAB	13,950.93	0.04%	0.66%	9.33%	10.02%	0.0044%
Waters Corp	WAT	14,395.68	0.05%	0.00%	5.97%	5.97%	0.0027%
Walgreens Boots Alliance Inc	WBA	32,913.45	0.10%	5.00%	-0.63%	4.36%	0.0045%
Western Digital Corp	WDC	13,654.52	0.04%	0.42%	3.17%	3.60%	0.0015%
WEC Energy Group Inc	WEC	29,950.51	0.09%	2.66%	6.96%	9.72%	0.0092%
Welltower Inc	WELL	26,281.86	0.08%	4.19%	2.47%	6.72%	0.0056%
Wells Fargo & Co	WFC	113,078.29	0.36%	4.39%	6.01%	10.53%	0.0375%
Whirlpool Corp	WHR	12,172.25	0.04%	2.52%	7.31%	9.92%	0.0038%
Willis Towers Watson PLC	WLTW	26,836.82	0.08%	1.31%	10.00%	11.38%	0.0096%
Waste Management Inc	WM	50,345.08	0.16%	1.83%	7.00%	8.89%	0.0141%
Williams Cos Inc/The	WMB	25,461.03	0.08%	7.63%	9.50%	17.49%	0.0140%
Walmart Inc	WMT	432,969.11	1.36%	1.41%	6.10%	7.55%	0.1030%
W R Berkley Corp	WRB	11,607.53	0.04%	1.38%	10.80%	12.25%	0.0045%
Westrock Co	WRK	11,086.62	0.03%	2.20%	7.76%	10.05%	0.0035%
West Pharmaceutical Services Inc	WST	20,341.81	0.06%	0.23%	16.79%	17.04%	0.0109%
Western Union Co/The	WU	9,274.88	0.03%	3.94%	5.80%	9.85%	0.0029%
Weyerhaeuser Co	WY	21,676.12	0.07%	1.66%	55.20%	57.32%	0.0391%
Wynn Resorts Ltd	WYNN	10,841.00	0.03%	1.00%	-1.60%	-0.61%	-0.0002%
Xcel Energy Inc	XEL	35,394.84	0.11%	2.55%	6.00%	8.63%	0.0096%
Xilinx Inc	XLNX	35,677.47	0.11%	1.04%	6.70%	7.78%	0.0087%
Exxon Mobil Corp	XOM	161,222.57	0.51%	9.14%	9.28%	18.84%	0.0957%
DENTSPLY SIRONA Inc	XRAY	11,122.28	0.04%	0.74%	-0.08%	0.66%	0.0002%
Xerox Holdings Corp	XRX	4,342.65	0.01%	4.63%	-0.60%	4.01%	0.0005%
Xylem Inc/NY	XYL	17,296.86	0.05%	1.09%	9.70%	10.84%	0.0059%
Yum! Brands Inc	YUM	31,916.49	0.10%	1.77%	11.33%	13.20%	0.0133%
Zimmer Biomet Holdings Inc	ZBH	30,909.35	0.10%	0.66%	3.79%	4.47%	0.0043%
Zebra Technologies Corp	ZBRA	20,175.99	0.06%	0.00%	13.10%	13.10%	0.0083%
Zions Bancorp NA	ZION	6,329.21	0.02%	3.52%	-1.27%	2.23%	0.0004%
Zoetis Inc	ZTS	76,223.45	0.24%	0.47%	10.59%	11.08%	0.0266%
Total Market Capitalization:		31,742,028.80					14.13%

Notes:

- [1] Equals sum of Col. [9]
[2] Source: Bloomberg Professional
[3] Equals [1] – [2]
[4] Source: Bloomberg Professional
[5] Equals weight in S&P 500 based on market capitalization
[6] Source: Bloomberg Professional
[7] Source: Bloomberg Professional
[8] Equals ([6] x (1 + (0.5 x [7]))) + [7]
[9] Equals Col. [5] x Col. [8]

Ex-Ante Market Risk Premium
Market DCF Method Based - Value Line

[1]	[2]	[3]
S&P 500	Current 30-Year	
Est. Required	Treasury (30-day	Implied Market
Market Return	average)	Risk Premium
13.66%	1.61%	12.05%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Agilent Technologies Inc	A	35,285.89	0.12%	0.68%	10.50%	11.22%	0.0130%
American Airlines Group Inc	AAL	7,598.54	0.02%	0.00%	-6.50%	-6.50%	-0.0016%
Advance Auto Parts Inc	AAP	10,225.68	0.03%	0.67%	11.00%	11.71%	0.0039%
Apple Inc	AAPL	1,988,262.00	6.52%	0.73%	15.50%	16.29%	1.0615%
AbbVie Inc	ABBV	183,943.70	0.60%	4.99%	10.50%	15.75%	0.0950%
AmerisourceBergen Corp	ABC	21,030.42	0.07%	1.71%	7.00%	8.77%	0.0060%
ABIOMED Inc	ABMD	11,922.03	0.04%	0.00%	9.50%	9.50%	0.0037%
Abbott Laboratories	ABT	188,597.00	0.62%	1.35%	12.00%	13.43%	0.0830%
Accenture PLC	ACN	158,248.00	0.52%	1.41%	7.50%	8.96%	0.0465%
Adobe Inc	ADBE	225,638.40	0.74%	0.00%	19.50%	19.50%	0.1442%
Analog Devices Inc	ADI	50,188.12	0.16%	1.82%	7.00%	8.88%	0.0146%
Archer-Daniels-Midland Co	ADM	28,078.00	0.09%	2.85%	9.00%	11.98%	0.0110%
Automatic Data Processing Inc	ADP	74,732.54	0.24%	2.14%	9.00%	11.24%	0.0275%
Autodesk Inc	ADSK	59,482.93	N/A	0.00%	N/A	N/A	N/A
Ameren Corp	AEE	19,919.38	0.07%	2.59%	6.00%	8.67%	0.0057%
American Electric Power Co Inc	AEP	43,926.88	0.14%	3.47%	6.00%	9.57%	0.0138%
AES Corp/The	AES	13,954.45	0.05%	2.72%	24.00%	27.05%	0.0124%
Aflac Inc	AFL	32,090.01	0.11%	2.89%	8.50%	11.51%	0.0121%
American International Group Inc	AIG	34,561.34	0.11%	3.19%	28.50%	32.14%	0.0364%
Apartment Investment and Management Co	AIV	4,806.87	0.02%	5.21%	-1.50%	3.67%	0.0006%
Assurant Inc	AIZ	8,009.66	0.03%	1.95%	11.50%	13.56%	0.0036%
Arthur J Gallagher & Co	AJG	22,322.82	0.07%	1.55%	13.00%	14.65%	0.0107%
Akamai Technologies Inc	AKAM	16,888.87	0.06%	0.00%	15.00%	15.00%	0.0083%
Albemarle Corp	ALB	14,342.95	0.05%	1.14%	5.50%	6.67%	0.0031%
Align Technology Inc	ALGN	37,349.98	0.12%	0.00%	19.50%	19.50%	0.0239%
Alaska Air Group Inc	ALK	6,488.49	0.02%	0.00%	0.50%	0.50%	0.0001%
Allstate Corp/The	ALL	31,600.80	0.10%	2.08%	9.00%	11.17%	0.0116%
Allegion plc	ALLE	10,628.12	0.03%	1.11%	9.00%	10.16%	0.0035%
Alexion Pharmaceuticals Inc	ALXN	26,921.67	0.09%	0.00%	19.00%	19.00%	0.0168%
Applied Materials Inc	AMAT	74,103.78	0.24%	1.10%	7.50%	8.64%	0.0210%
Amcor PLC	AMCR	18,764.21	N/A	4.75%	N/A	N/A	N/A
Advanced Micro Devices Inc	AMD	104,225.40	0.34%	0.00%	23.00%	23.00%	0.0786%
AMETEK Inc	AME	27,566.39	0.09%	0.60%	12.50%	13.14%	0.0119%
Amgen Inc	AMGN	128,550.90	0.42%	3.18%	7.00%	10.29%	0.0434%
Ameriprise Financial Inc	AMP	22,562.62	0.07%	2.19%	11.00%	13.31%	0.0098%
American Tower Corp	AMT	103,496.30	0.34%	2.16%	10.50%	12.77%	0.0433%
Amazon.com Inc	AMZN	1,598,905.00	5.24%	0.00%	34.00%	34.00%	1.7821%
Arista Networks Inc	ANET	20,462.24	0.07%	0.00%	5.50%	5.50%	0.0037%
ANSYS Inc	ANSS	27,719.68	0.09%	0.00%	10.00%	10.00%	0.0091%
Anthem Inc	ANTM	77,090.66	0.25%	1.38%	14.00%	15.48%	0.0391%
Aon PLC	AON	47,689.64	0.16%	0.88%	7.50%	8.41%	0.0132%
A O Smith Corp	AOS	9,101.90	0.03%	1.85%	5.00%	6.90%	0.0021%
Apache Corp	APA	5,329.74	0.02%	0.71%	3.00%	3.72%	0.0007%
Air Products and Chemicals Inc	APD	61,435.04	0.20%	1.93%	12.50%	14.55%	0.0293%
Amphenol Corp	APH	39,157.41	0.13%	0.89%	10.50%	11.44%	0.0147%
Aptiv PLC	APTIV	31,989.86	0.10%	0.00%	8.00%	8.00%	0.0084%
Alexandria Real Estate Equities Inc	ARE	18,048.33	0.06%	2.61%	16.50%	19.33%	0.0114%
Atmos Energy Corp	ATO	12,262.32	0.04%	2.57%	7.00%	9.66%	0.0039%
Activision Blizzard Inc	ATVI	59,127.38	0.19%	0.59%	14.00%	14.63%	0.0284%
AvalonBay Communities Inc	AVB	24,057.16	0.08%	3.81%	1.50%	5.34%	0.0042%
Broadcom Inc	AVGO	N/A	N/A	0.00%	N/A	N/A	N/A
Avery Dennison Corp	AVY	12,647.83	0.04%	1.66%	11.00%	12.75%	0.0053%
American Water Works Co Inc	AWK	27,757.88	0.09%	1.50%	8.50%	10.06%	0.0092%
American Express Co	AXP	97,066.90	0.32%	1.49%	6.00%	7.53%	0.0240%
AutoZone Inc	AZO	26,373.90	0.09%	0.00%	14.00%	14.00%	0.0121%
Boeing Co/The	BA	122,844.30	0.40%	0.00%	-1.50%	-1.50%	-0.0060%
Bank of America Corp	BAC	251,444.00	0.82%	2.48%	3.50%	6.02%	0.0496%
Baxter International Inc	BAX	38,508.38	0.13%	1.30%	9.00%	10.36%	0.0131%
Best Buy Co Inc	BBY	29,386.20	0.10%	2.02%	8.00%	10.10%	0.0097%
Becton Dickinson and Co	BDX	65,936.50	0.22%	1.46%	9.00%	10.53%	0.0228%
Franklin Resources Inc	BEN	11,056.66	0.04%	5.02%	11.50%	16.81%	0.0061%
Brown-Forman Corp	BF/B	38,825.65	0.13%	0.90%	12.00%	12.95%	0.0165%
Biogen Inc	BIIB	37,205.32	0.12%	0.00%	7.00%	7.00%	0.0085%
Bio-Rad Laboratories Inc	BIO	15,608.47	0.05%	0.00%	12.00%	12.00%	0.0061%
Bank of New York Mellon Corp/The	BK	35,773.31	0.12%	3.07%	3.00%	6.12%	0.0072%
Booking Holdings Inc	BKNG	84,520.86	0.28%	0.00%	7.00%	7.00%	0.0194%
Baker Hughes Co	BKR	13,549.30	0.04%	3.64%	34.50%	38.77%	0.0172%
BlackRock Inc	BLK	107,297.70	0.35%	2.06%	9.50%	11.66%	0.0410%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Ball Corp	BLL	31,488.08	0.10%	0.62%	18.00%	18.68%	0.0193%
Bristol-Myers Squibb Co	BMJ	142,002.80	0.47%	2.86%	12.50%	15.54%	0.0723%
Broadridge Financial Solutions Inc	BR	16,908.81	0.06%	1.57%	10.50%	12.15%	0.0067%
Berkshire Hathaway Inc	BRK/B	-	N/A	0.00%	N/A	N/A	N/A
Boston Scientific Corp	BSX	48,038.97	0.16%	0.00%	12.50%	12.50%	0.0197%
BorgWarner Inc	BWA	9,563.14	0.03%	1.74%	3.50%	5.27%	0.0017%
Boston Properties Inc	BXP	15,842.76	0.05%	3.83%	4.00%	7.91%	0.0041%
Citigroup Inc	C	118,796.60	0.39%	3.58%	3.50%	7.14%	0.0278%
Conagra Brands Inc	CAG	17,469.40	0.06%	3.08%	5.00%	8.16%	0.0047%
Cardinal Health Inc	CAH	15,808.38	0.05%	3.61%	12.50%	16.34%	0.0085%
Carrier Global Corp	CARR	33,462.79	N/A	0.83%	N/A	N/A	N/A
Caterpillar Inc	CAT	94,869.15	0.31%	2.36%	4.00%	6.41%	0.0199%
Chubb Ltd	CB	64,510.43	0.21%	2.05%	9.50%	11.65%	0.0246%
Cboe Global Markets Inc	CBOE	9,944.12	0.03%	1.83%	12.50%	14.44%	0.0047%
CBRE Group Inc	CBRE	20,548.99	0.07%	0.00%	6.50%	6.50%	0.0044%
Crown Castle International Corp	CCI	71,097.76	0.23%	3.23%	14.00%	17.46%	0.0407%
Carnival Corp	CCL	17,139.50	0.06%	0.00%	-10.00%	-10.00%	-0.0056%
Cadence Design Systems Inc	CDNS	31,530.36	0.10%	0.00%	13.00%	13.00%	0.0134%
CDW Corp/DE	CDW	18,841.03	0.06%	1.21%	11.00%	12.28%	0.0076%
Celanese Corp	CE	15,592.76	0.05%	2.00%	5.50%	7.56%	0.0039%
Cerner Corp	CERN	22,706.96	0.07%	0.97%	9.00%	10.01%	0.0075%
CF Industries Holdings Inc	CF	8,164.94	0.03%	3.35%	26.50%	30.29%	0.0081%
Citizens Financial Group Inc	CFG	14,819.43	0.05%	4.50%	1.50%	6.03%	0.0029%
Church & Dwight Co Inc	CHD	21,256.10	0.07%	1.12%	8.00%	9.16%	0.0064%
CH Robinson Worldwide Inc	CHRW	12,642.78	0.04%	2.19%	8.00%	10.28%	0.0043%
Charter Communications Inc	CHTR	130,198.60	0.43%	0.00%	34.00%	34.00%	0.1451%
Cigna Corp	CI	76,012.01	0.25%	0.02%	11.50%	11.52%	0.0287%
Cincinnati Financial Corp	CINF	12,627.62	0.04%	3.06%	10.50%	13.72%	0.0057%
Colgate-Palmolive Co	CL	72,645.07	0.24%	2.08%	5.00%	7.13%	0.0170%
Clorox Co/The	CLX	25,301.93	0.08%	2.21%	4.00%	6.25%	0.0052%
Comerica Inc	CMA	7,412.38	0.02%	5.10%	0.50%	5.61%	0.0014%
Comcast Corp	CMCSA	237,001.80	0.78%	1.78%	8.50%	10.36%	0.0805%
CME Group Inc	CME	62,580.59	0.21%	1.95%	2.50%	4.47%	0.0092%
Chipotle Mexican Grill Inc	CMG	35,720.23	0.12%	0.00%	15.50%	15.50%	0.0181%
Cummins Inc	CMI	34,120.76	0.11%	2.34%	6.00%	8.41%	0.0094%
CMS Energy Corp	CMS	17,951.01	0.06%	2.73%	7.50%	10.33%	0.0061%
Centene Corp	CNC	36,053.16	0.12%	0.00%	13.00%	13.00%	0.0154%
CenterPoint Energy Inc	CNP	13,353.51	0.04%	2.57%	4.00%	6.62%	0.0029%
Capital One Financial Corp	COF	41,119.99	0.13%	0.45%	-0.50%	-0.05%	-0.0001%
Cabot Oil & Gas Corp	COG	7,082.77	0.02%	2.70%	11.50%	14.36%	0.0033%
Cooper Cos Inc/The	COO	16,154.39	0.05%	0.02%	11.00%	11.02%	0.0058%
ConocoPhillips	COP	46,803.73	0.15%	3.94%	3.50%	7.51%	0.0115%
Costco Wholesale Corp	COST	171,200.50	0.56%	0.72%	9.50%	10.25%	0.0575%
Campbell Soup Co	CPB	14,773.84	0.05%	2.86%	4.00%	6.92%	0.0033%
Copart Inc	CPRT	27,096.90	0.09%	0.00%	12.00%	12.00%	0.0107%
salesforce.com Inc	CRM	224,606.20	0.74%	0.00%	34.50%	34.50%	0.2540%
Cisco Systems Inc	CSCO	179,435.00	0.59%	3.44%	7.00%	10.56%	0.0621%
CSX Corp	CSX	70,542.85	0.23%	1.13%	9.00%	10.18%	0.0235%
Cintas Corp	CTAS	37,688.51	0.12%	0.78%	13.50%	14.33%	0.0177%
Catalent Inc	CTLT	15,579.39	0.05%	0.00%	28.00%	28.00%	0.0143%
Cognizant Technology Solutions Corp	CTSH	42,338.45	0.14%	1.12%	5.00%	6.15%	0.0085%
Corteva Inc	CTVA	28,838.24	N/A	1.50%	N/A	N/A	N/A
Citrix Systems Inc	CTXS	14,932.09	0.05%	1.15%	9.00%	10.20%	0.0050%
CVS Health Corp	CVS	88,527.68	0.29%	2.96%	6.00%	9.05%	0.0263%
Chevron Corp	CVX	172,055.10	0.56%	5.60%	9.50%	15.37%	0.0867%
Concho Resources Inc	CXO	12,439.97	0.04%	1.26%	6.00%	7.30%	0.0030%
Dominion Energy Inc	D	64,798.56	0.21%	3.17%	6.00%	9.27%	0.0197%
Delta Air Lines Inc	DAL	26,332.04	0.09%	0.00%	5.00%	5.00%	0.0043%
DuPont de Nemours Inc	DD	47,619.20	N/A	1.94%	N/A	N/A	N/A
Deere & Co	DE	80,358.75	0.26%	1.19%	8.50%	9.74%	0.0257%
Discover Financial Services	DFS	24,302.07	0.08%	2.22%	5.50%	7.78%	0.0062%
Dollar General Corp	DG	54,040.38	0.18%	0.66%	13.00%	13.70%	0.0243%
Quest Diagnostics Inc	DGX	16,784.55	0.06%	1.80%	11.00%	12.90%	0.0071%
DR Horton Inc	DHI	27,685.76	0.09%	1.05%	10.50%	11.61%	0.0105%
Danaher Corp	DHR	154,291.40	0.51%	0.33%	15.50%	15.86%	0.0802%
Walt Disney Co/The	DIS	265,529.30	0.87%	0.00%	6.00%	6.00%	0.0522%
Discovery Inc	DISCA	13,540.80	0.04%	0.00%	15.00%	15.00%	0.0067%
DISH Network Corp	DISH	19,018.93	0.06%	0.00%	2.50%	2.50%	0.0016%
Digital Realty Trust Inc	DLR	28,358.31	0.09%	3.41%	8.50%	12.05%	0.0112%
Dollar Tree Inc	DLTR	26,278.89	0.09%	0.00%	8.50%	8.50%	0.0073%
Dover Corp	DOV	17,886.06	0.06%	1.60%	6.50%	8.15%	0.0048%
Dow Inc	DOW	41,857.07	N/A	5.23%	N/A	N/A	N/A
Domino's Pizza Inc	DPZ	15,104.47	0.05%	0.85%	14.00%	14.91%	0.0074%
Duke Realty Corp	DRE	14,243.34	0.05%	2.64%	-3.00%	-0.40%	-0.0002%
Darden Restaurants Inc	DRI	14,397.52	0.05%	1.09%	7.50%	8.63%	0.0041%
DTE Energy Co	DTE	25,596.37	0.08%	3.28%	6.00%	9.38%	0.0079%
Duke Energy Corp	DUK	70,766.40	0.23%	4.06%	5.00%	9.16%	0.0213%
DaVita Inc	DVA	12,470.40	0.04%	0.00%	13.00%	13.00%	0.0053%
Devon Energy Corp	DVN	5,790.96	0.02%	2.91%	8.00%	11.03%	0.0021%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
DXC Technology Co	DXC	5,988.81	0.02%	0.00%	2.50%	2.50%	0.0005%
DexCom Inc	DXCM	30,004.80	0.10%	0.00%	61.00%	61.00%	0.0600%
Electronic Arts Inc	EA	35,237.90	0.12%	0.56%	9.50%	10.09%	0.0117%
eBay Inc	EBAY	34,760.05	0.11%	1.33%	18.50%	19.95%	0.0227%
Ecolab Inc	ECL	62,235.57	0.20%	0.86%	6.50%	7.39%	0.0151%
Consolidated Edison Inc	ED	26,272.44	0.09%	4.02%	3.00%	7.08%	0.0061%
Equifax Inc	EFX	20,185.60	0.07%	0.94%	6.50%	7.47%	0.0049%
Edison International	EIX	24,115.06	0.08%	4.16%	14.00%	18.45%	0.0146%
Estee Lauder Cos Inc/The	EL	89,234.30	0.29%	0.86%	11.50%	12.41%	0.0363%
Eastman Chemical Co	EMN	13,520.03	0.04%	2.64%	5.00%	7.71%	0.0034%
Emerson Electric Co	EMR	47,816.86	0.16%	2.58%	8.50%	11.19%	0.0175%
EOG Resources Inc	EOG	30,917.34	0.10%	2.98%	7.50%	10.59%	0.0107%
Equinix Inc	EQIX	61,795.80	0.20%	1.61%	14.50%	16.23%	0.0329%
Equity Residential	EQR	22,467.51	0.07%	3.99%	1.00%	5.01%	0.0037%
Eversource Energy	ES	30,313.54	0.10%	2.68%	5.50%	8.25%	0.0082%
Essex Property Trust Inc	ESS	16,813.80	0.06%	3.33%	1.00%	4.35%	0.0024%
Eaton Corp PLC	ETN	48,704.93	0.16%	2.39%	4.00%	6.44%	0.0103%
Entergy Corp	ETR	22,476.04	0.07%	3.44%	3.00%	6.49%	0.0048%
Etsy Inc	ETSY	18,232.01	0.06%	0.00%	28.00%	28.00%	0.0167%
Evergy Inc	EVERG	12,743.42	N/A	3.81%	N/A	N/A	N/A
Edwards Lifesciences Corp	EW	52,454.41	0.17%	0.00%	13.50%	13.50%	0.0232%
Exelon Corp	EXC	41,206.72	0.14%	3.77%	5.00%	8.86%	0.0120%
Expeditors International of Washington I	EXPD	15,281.56	0.05%	1.15%	6.50%	7.69%	0.0039%
Expedia Group Inc	EXPE	17,421.22	0.06%	0.00%	12.00%	12.00%	0.0069%
Extra Space Storage Inc	EXR	14,506.51	0.05%	3.22%	3.00%	6.27%	0.0030%
Ford Motor Co	F	35,480.79	0.12%	0.00%	11.50%	11.50%	0.0134%
Diamondback Energy Inc	FANG	7,163.63	0.02%	3.31%	-8.00%	-4.82%	-0.0011%
Fastenal Co	FAST	27,663.47	0.09%	2.08%	8.00%	10.16%	0.0092%
Facebook Inc	FB	785,431.60	2.57%	0.00%	14.00%	14.00%	0.3605%
Fortune Brands Home & Security Inc	FBHS	11,789.51	0.04%	1.13%	7.00%	8.17%	0.0032%
Freeport-McMoRan Inc	FCX	37,240.28	0.12%	0.00%	17.00%	17.00%	0.0208%
FedEx Corp	FDX	75,705.27	0.25%	0.90%	8.50%	9.44%	0.0234%
FirstEnergy Corp	FE	14,411.19	0.05%	5.87%	8.50%	14.62%	0.0069%
F5 Networks Inc	FFIV	10,076.77	0.03%	0.00%	6.50%	6.50%	0.0021%
Fidelity National Information Services I	FIS	91,741.40	0.30%	0.95%	28.50%	29.59%	0.0890%
Fiserv Inc	FISV	77,071.09	0.25%	0.00%	14.00%	14.00%	0.0354%
Fifth Third Bancorp	FITB	19,004.91	0.06%	4.05%	1.00%	5.07%	0.0032%
FLIR Systems Inc	FLIR	5,241.83	0.02%	1.70%	8.00%	9.77%	0.0017%
Flowserve Corp	FLS	4,576.63	0.02%	2.27%	9.50%	11.88%	0.0018%
FleetCor Technologies Inc	FLT	22,491.34	0.07%	0.00%	14.00%	14.00%	0.0103%
FMC Corp	FMC	15,140.05	0.05%	1.63%	11.00%	12.72%	0.0063%
Fox Corp	FOXA	17,481.81	N/A	1.57%	N/A	N/A	N/A
First Republic Bank/CA	FRC	22,894.12	0.08%	0.60%	9.00%	9.63%	0.0072%
Federal Realty Investment Trust	FRT	6,877.25	0.02%	4.66%	0.50%	5.17%	0.0012%
TechnipFMC PLC	FTI	4,071.56	N/A	0.66%	N/A	N/A	N/A
Fortinet Inc	FTNT	19,453.28	0.06%	0.00%	21.00%	21.00%	0.0134%
Fortive Corp	FTV	24,234.56	0.08%	0.39%	8.50%	8.91%	0.0071%
General Dynamics Corp	GD	43,631.23	0.14%	2.89%	5.00%	7.96%	0.0114%
General Electric Co	GE	91,978.66	0.30%	0.38%	2.50%	2.88%	0.0087%
Gilead Sciences Inc	GILD	74,553.50	0.24%	4.57%	3.50%	8.15%	0.0199%
General Mills Inc	GIS	36,678.00	0.12%	3.43%	4.00%	7.50%	0.0090%
Globe Life Inc	GL	10,153.86	0.03%	0.78%	8.00%	8.81%	0.0029%
Corning Inc	GLW	28,385.30	0.09%	2.36%	13.50%	16.02%	0.0149%
General Motors Co	GM	65,067.26	0.21%	0.00%	4.00%	4.00%	0.0085%
Alphabet Inc	GOOG	1,200,541.00	3.94%	0.00%	14.50%	14.50%	0.5706%
Genuine Parts Co	GPC	14,277.50	0.05%	3.19%	7.00%	10.30%	0.0048%
Global Payments Inc	GPN	58,962.54	0.19%	0.40%	11.50%	11.92%	0.0230%
Gap Inc/The	GPS	8,078.40	0.03%	0.00%	2.50%	2.50%	0.0007%
Garmin Ltd	GRMN	22,254.25	0.07%	2.20%	7.50%	9.78%	0.0071%
Goldman Sachs Group Inc/The	GS	81,386.32	0.27%	2.11%	6.50%	8.68%	0.0232%
WW Grainger Inc	GWW	22,249.68	0.07%	1.48%	7.00%	8.53%	0.0062%
Halliburton Co	HAL	15,770.38	0.05%	1.01%	1.50%	2.52%	0.0013%
Hasbro Inc	HAS	12,625.94	0.04%	2.95%	9.00%	12.08%	0.0050%
Huntington Bancshares Inc/OH	HBAN	12,909.68	0.04%	4.73%	2.50%	7.29%	0.0031%
Hanesbrands Inc	HBI	5,050.18	0.02%	4.14%	3.50%	7.71%	0.0013%
HCA Healthcare Inc	HCA	51,980.40	0.17%	0.59%	11.00%	11.62%	0.0198%
Home Depot Inc/The	HD	294,781.00	0.97%	2.25%	8.00%	10.34%	0.0999%
Hess Corp	HES	16,146.11	N/A	1.90%	N/A	N/A	N/A
HollyFrontier Corp	HFC	4,089.28	0.01%	5.86%	-2.00%	3.80%	0.0005%
Hartford Financial Services Group Inc/Th	HIG	16,686.54	0.05%	2.79%	8.50%	11.41%	0.0062%
Huntington Ingalls Industries Inc	HII	6,703.97	0.02%	2.76%	7.50%	10.36%	0.0023%
Hilton Worldwide Holdings Inc	HLT	29,490.81	0.10%	0.00%	11.00%	11.00%	0.0106%
Hologic Inc	HOLX	17,654.03	0.06%	0.00%	20.50%	20.50%	0.0119%
Honeywell International Inc	HON	145,729.00	0.48%	1.79%	8.00%	9.86%	0.0471%
Hewlett Packard Enterprise Co	HPE	14,454.71	0.05%	4.27%	4.00%	8.36%	0.0040%
HP Inc	HPQ	30,560.31	0.10%	3.51%	8.00%	11.65%	0.0117%
Hormel Foods Corp	HRL	25,281.07	0.08%	2.18%	8.50%	10.77%	0.0089%
Henry Schein Inc	HSIC	9,135.70	0.03%	0.00%	5.00%	5.00%	0.0015%
Host Hotels & Resorts Inc	HST	10,508.38	0.03%	0.00%	-9.00%	-9.00%	-0.0031%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Hershey Co/The	HSY	30,834.01	0.10%	2.17%	5.00%	7.22%	0.0073%
Humana Inc	HUM	52,986.61	0.17%	0.69%	11.00%	11.73%	0.0204%
Howmet Aerospace Inc	HWM	10,644.98	0.03%	0.00%	3.50%	3.50%	0.0012%
International Business Machines Corp	IBM	110,669.30	0.36%	5.25%	0.50%	5.76%	0.0209%
Intercontinental Exchange Inc	ICE	58,304.73	0.19%	1.16%	9.50%	10.72%	0.0205%
IDEXX Laboratories Inc	IDXX	38,084.74	0.12%	0.00%	15.00%	15.00%	0.0187%
IDEX Corp	IEX	14,501.75	0.05%	1.04%	6.50%	7.57%	0.0036%
International Flavors & Fragrances Inc	IFF	12,019.27	0.04%	2.78%	6.00%	8.86%	0.0035%
Illumina Inc	ILMN	44,381.08	0.15%	0.00%	9.50%	9.50%	0.0138%
Incyte Corp	INCY	17,766.17	0.06%	0.00%	62.00%	62.00%	0.0361%
IHS Markit Ltd	INFO	36,772.32	0.12%	0.74%	12.00%	12.78%	0.0154%
Intel Corp	INTC	192,810.90	0.63%	2.81%	7.00%	9.91%	0.0626%
Intuit Inc	INTU	92,070.91	0.30%	0.71%	12.00%	12.75%	0.0385%
International Paper Co	IP	20,075.62	0.07%	4.01%	6.50%	10.64%	0.0070%
Interpublic Group of Cos Inc/The	IPG	9,005.97	0.03%	4.41%	10.00%	14.63%	0.0043%
IPG Photonics Corp	IPGP	10,768.60	0.04%	0.00%	9.00%	9.00%	0.0032%
IQVIA Holdings Inc	IQV	32,564.08	0.11%	0.00%	11.00%	11.00%	0.0117%
Ingersoll Rand Inc	IR	18,711.94	N/A	0.00%	N/A	N/A	N/A
Iron Mountain Inc	IRM	7,760.23	0.03%	9.21%	8.50%	18.10%	0.0046%
Intuitive Surgical Inc	ISRG	85,348.48	0.28%	0.00%	12.50%	12.50%	0.0350%
Gartner Inc	IT	13,757.21	0.05%	0.00%	12.00%	12.00%	0.0054%
Illinois Tool Works Inc	ITW	66,813.15	0.22%	2.16%	9.00%	11.26%	0.0247%
Invesco Ltd	IVZ	7,822.47	0.03%	3.64%	4.50%	8.22%	0.0021%
Jacobs Engineering Group Inc	J	13,844.64	0.05%	0.72%	14.00%	14.77%	0.0067%
JB Hunt Transport Services Inc	JBHT	14,356.49	0.05%	0.82%	6.50%	7.35%	0.0035%
Johnson Controls International plc	JCI	34,531.27	0.11%	2.24%	8.00%	10.33%	0.0117%
Jack Henry & Associates Inc	JKHY	12,046.11	0.04%	1.09%	10.50%	11.65%	0.0046%
Johnson & Johnson	JNJ	378,189.80	1.24%	2.81%	10.00%	12.95%	0.1606%
Juniper Networks Inc	JNPR	7,257.77	0.02%	3.72%	5.50%	9.32%	0.0022%
JPMorgan Chase & Co	JPM	371,972.20	1.22%	2.95%	3.50%	6.50%	0.0793%
Kellogg Co	K	21,743.29	0.07%	3.65%	3.00%	6.70%	0.0048%
KeyCorp	KEY	16,117.14	0.05%	4.48%	3.00%	7.55%	0.0040%
Keysight Technologies Inc	KEYS	22,178.77	0.07%	0.00%	18.50%	18.50%	0.0135%
Kraft Heinz Co/The	KHC	39,796.42	0.13%	4.92%	-0.50%	4.41%	0.0058%
Kimco Realty Corp	KIM	6,593.82	0.02%	4.19%	5.00%	9.29%	0.0020%
KLA Corp	KLAC	38,489.16	0.13%	1.45%	15.50%	17.06%	0.0215%
Kimberly-Clark Corp	KMB	47,894.29	0.16%	3.04%	6.50%	9.64%	0.0151%
Kinder Morgan Inc	KMI	33,616.69	0.11%	7.07%	18.50%	26.22%	0.0289%
CarMax Inc	KMX	15,643.00	0.05%	0.00%	8.50%	8.50%	0.0044%
Coca-Cola Co/The	KO	227,440.20	0.75%	3.16%	6.50%	9.76%	0.0728%
Kroger Co/The	KR	25,048.00	0.08%	2.23%	7.50%	9.81%	0.0081%
Kansas City Southern	KSU	17,767.61	0.06%	0.93%	11.50%	12.48%	0.0073%
Loews Corp	L	12,203.48	0.04%	0.56%	13.00%	13.60%	0.0054%
L Brands Inc	LB	10,828.10	0.04%	0.00%	9.00%	9.00%	0.0032%
Leidos Holdings Inc	LDOS	14,574.88	0.05%	1.33%	10.50%	11.90%	0.0057%
Leggett & Platt Inc	LEG	5,943.48	0.02%	3.57%	8.00%	11.71%	0.0023%
Lennar Corp	LEN	24,093.26	0.08%	1.30%	7.50%	8.85%	0.0070%
Laboratory Corp of America Holdings	LH	19,135.20	0.06%	0.00%	9.50%	9.50%	0.0060%
L3Harris Technologies Inc	LHX	42,290.38	N/A	1.74%	N/A	N/A	N/A
Linde PLC	LIN	132,967.30	N/A	1.66%	N/A	N/A	N/A
LKQ Corp	LKQ	11,022.98	0.04%	0.00%	8.00%	8.00%	0.0029%
Eli Lilly and Co	LLY	138,452.10	0.45%	2.05%	10.00%	12.15%	0.0552%
Lockheed Martin Corp	LMT	105,853.50	0.35%	2.75%	8.50%	11.37%	0.0394%
Lincoln National Corp	LNC	9,699.47	0.03%	3.37%	9.50%	13.03%	0.0041%
Alliant Energy Corp	LNT	13,364.71	0.04%	2.84%	5.50%	8.42%	0.0037%
Lowe's Cos Inc	LOW	116,469.80	0.38%	1.55%	12.00%	13.64%	0.0521%
Lam Research Corp	LRCX	64,601.27	0.21%	1.16%	11.00%	12.22%	0.0259%
CenturyLink Inc	LUMN	11,817.24	0.04%	9.29%	2.50%	11.91%	0.0046%
Southwest Airlines Co	LUV	28,492.48	N/A	0.00%	N/A	N/A	N/A
Las Vegas Sands Corp	LVS	43,196.56	0.14%	0.00%	5.50%	5.50%	0.0078%
Lamb Weston Holdings Inc	LW	10,719.77	0.04%	1.30%	4.00%	5.33%	0.0019%
LyondellBasell Industries NV	LYB	29,828.90	N/A	4.70%	N/A	N/A	N/A
Live Nation Entertainment Inc	LYV	14,826.92	N/A	0.00%	N/A	N/A	N/A
Mastercard Inc	MA	340,637.40	1.12%	0.47%	12.50%	13.00%	0.1452%
Mid-America Apartment Communities Inc	MAA	14,284.18	0.05%	3.20%	1.00%	4.22%	0.0020%
Marriott International Inc/MD	MAR	41,910.18	0.14%	0.00%	4.00%	4.00%	0.0055%
Masco Corp	MAS	14,108.68	0.05%	1.05%	7.50%	8.59%	0.0040%
McDonald's Corp	MCD	163,432.60	0.54%	2.35%	9.00%	11.46%	0.0614%
Microchip Technology Inc	MCHP	34,332.84	0.11%	1.12%	9.00%	10.17%	0.0114%
McKesson Corp	MCK	28,899.50	0.09%	0.94%	9.00%	9.98%	0.0095%
Moody's Corp	MCO	51,950.36	0.17%	0.81%	9.50%	10.35%	0.0176%
Mondelez International Inc	MDLZ	82,201.67	0.27%	2.24%	8.00%	10.33%	0.0278%
Medtronic PLC	MDT	152,211.50	0.50%	2.10%	6.50%	8.67%	0.0433%
MetLife Inc	MET	43,250.12	0.14%	3.85%	6.50%	10.48%	0.0149%
MGM Resorts International	MGM	14,004.99	0.05%	0.04%	30.00%	30.05%	0.0138%
Mohawk Industries Inc	MHK	9,478.72	0.03%	0.00%	-1.50%	-1.50%	-0.0005%
McCormick & Co Inc/MD	MKC	24,759.93	0.08%	1.47%	6.50%	8.02%	0.0065%
MarketAxess Holdings Inc	MKTX	19,527.30	0.06%	0.47%	16.00%	16.51%	0.0106%
Martin Marietta Materials Inc	MLM	16,987.96	0.06%	0.84%	8.50%	9.38%	0.0052%

Company	Ticker	[4]	[5]	[6]	[7]	[8]	[9]
		Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Marsh & McLennan Cos Inc	MMC	58,423.34	0.19%	1.61%	9.00%	10.68%	0.0205%
3M Co	MMM	102,166.50	0.33%	3.32%	5.00%	8.40%	0.0281%
Monster Beverage Corp	MNST	44,385.24	0.15%	0.00%	11.50%	11.50%	0.0167%
Altria Group Inc	MO	75,042.95	0.25%	8.52%	6.00%	14.78%	0.0363%
Mosaic Co/The	MOS	8,556.06	0.03%	1.11%	18.50%	19.71%	0.0055%
Marathon Petroleum Corp	MPC	27,003.48	0.09%	5.59%	3.00%	8.67%	0.0077%
Merck & Co Inc	MRK	202,532.60	0.66%	3.25%	9.00%	12.40%	0.0823%
Marathon Oil Corp	MRO	5,079.70	0.02%	1.87%	14.00%	16.00%	0.0027%
Morgan Stanley	MS	100,072.90	0.33%	2.21%	6.00%	8.28%	0.0272%
MSCI Inc	MSCI	33,544.82	0.11%	0.82%	17.00%	17.89%	0.0197%
Microsoft Corp	MSFT	1,617,713.00	5.30%	1.05%	13.50%	14.62%	0.7753%
Motorola Solutions Inc	MSI	29,158.82	0.10%	1.65%	8.00%	9.72%	0.0093%
M&T Bank Corp	MTB	15,691.46	0.05%	3.60%	4.00%	7.67%	0.0039%
Mettler-Toledo International Inc	MTD	26,773.18	0.09%	0.00%	11.00%	11.00%	0.0097%
Micron Technology Inc	MU	70,534.16	0.23%	0.00%	11.50%	11.50%	0.0266%
Maxim Integrated Products Inc	MXIM	21,753.20	0.07%	0.00%	4.50%	4.50%	0.0032%
Norwegian Cruise Line Holdings Ltd	NCLH	6,394.36	0.02%	0.00%	-4.50%	-4.50%	-0.0009%
Nasdaq Inc	NDAQ	20,884.79	0.07%	1.54%	6.50%	8.09%	0.0055%
NextEra Energy Inc	NEE	148,831.00	0.49%	1.99%	9.50%	11.58%	0.0565%
Newmont Corp	NEM	46,418.02	0.15%	2.77%	19.50%	22.54%	0.0343%
Netflix Inc	NFLX	214,270.60	0.70%	0.00%	24.00%	24.00%	0.1686%
NiSource Inc	NI	9,539.54	0.03%	3.37%	12.50%	16.08%	0.0050%
NIKE Inc	NKE	212,120.10	0.70%	0.81%	23.00%	23.90%	0.1662%
NortonLifeLock Inc	NLOK	10,762.56	0.04%	2.75%	7.00%	9.85%	0.0035%
Nielsen Holdings PLC	NLSN	5,836.93	N/A	1.47%	N/A	N/A	N/A
Northrop Grumman Corp	NOC	52,058.74	0.17%	1.86%	10.50%	12.46%	0.0213%
National Oilwell Varco Inc	NOV	5,280.45	N/A	0.00%	N/A	N/A	N/A
ServiceNow Inc	NOW	101,273.90	0.33%	0.00%	46.00%	46.00%	0.1527%
NRG Energy Inc	NRG	7,873.74	0.03%	3.72%	-1.50%	2.19%	0.0006%
Norfolk Southern Corp	NSC	61,327.21	0.20%	1.56%	10.50%	12.14%	0.0244%
NetApp Inc	NTAP	11,881.44	0.04%	3.74%	6.00%	9.85%	0.0038%
Northern Trust Corp	NTRS	20,162.76	0.07%	2.89%	4.50%	7.46%	0.0049%
Nucor Corp	NUE	16,539.62	0.05%	2.94%	3.00%	5.98%	0.0032%
NVIDIA Corp	NVDA	327,692.40	1.07%	0.12%	11.50%	11.63%	0.1249%
NVR Inc	NVR	15,283.80	0.05%	0.00%	9.00%	9.00%	0.0045%
Newell Brands Inc	NWL	9,063.05	0.03%	4.31%	4.50%	8.91%	0.0026%
News Corp	NWSA	10,630.53	N/A	1.11%	N/A	N/A	N/A
Realty Income Corp	O	20,984.64	0.07%	4.58%	6.50%	11.23%	0.0077%
Old Dominion Freight Line Inc	ODFL	23,807.63	0.08%	0.31%	9.00%	9.32%	0.0073%
ONEOK Inc	OKE	16,682.51	0.05%	10.34%	10.00%	20.86%	0.0114%
Omnicom Group Inc	OMC	13,794.82	0.05%	4.05%	5.50%	9.66%	0.0044%
Oracle Corp	ORCL	173,033.80	0.57%	1.67%	10.50%	12.26%	0.0695%
O'Reilly Automotive Inc	ORLY	32,543.03	0.11%	0.00%	11.50%	11.50%	0.0123%
Otis Worldwide Corp	OTIS	29,189.02	N/A	1.19%	N/A	N/A	N/A
Occidental Petroleum Corp	OXY	15,572.76	0.05%	0.24%	14.50%	14.76%	0.0075%
Paycom Software Inc	PAYC	23,455.03	0.08%	0.00%	23.00%	23.00%	0.0177%
Paychex Inc	PAYX	33,476.64	0.11%	2.73%	6.50%	9.32%	0.0102%
People's United Financial Inc	PBCT	5,610.29	0.02%	5.45%	2.50%	8.02%	0.0015%
PACCAR Inc	PCAR	30,758.37	0.10%	3.15%	3.50%	6.71%	0.0068%
Healthpeak Properties Inc	PEAK	15,414.32	0.05%	4.85%	-15.00%	-10.51%	-0.0053%
Public Service Enterprise Group Inc	PEG	30,224.88	0.10%	3.37%	5.00%	8.45%	0.0084%
PepsiCo Inc	PEP	199,373.30	0.65%	2.84%	6.00%	8.93%	0.0583%
Pfizer Inc	PFE	202,997.20	0.67%	4.16%	8.50%	12.84%	0.0854%
Principal Financial Group Inc	PFG	14,274.00	0.05%	4.31%	4.50%	8.91%	0.0042%
Procter & Gamble Co/The	PG	343,871.80	1.13%	2.28%	8.00%	10.37%	0.1169%
Progressive Corp/The	PGR	52,352.64	0.17%	0.45%	9.50%	9.97%	0.0171%
Parker-Hannifin Corp	PH	35,304.08	0.12%	1.28%	11.50%	12.85%	0.0149%
PulteGroup Inc	PHM	11,963.46	0.04%	1.12%	9.00%	10.17%	0.0040%
Packaging Corp of America	PKG	12,489.90	0.04%	2.47%	4.00%	6.52%	0.0027%
PerkinElmer Inc	PKI	14,264.45	0.05%	0.22%	17.50%	17.74%	0.0083%
Prologis Inc	PLD	62,554.22	0.21%	2.46%	6.00%	8.53%	0.0175%
Philip Morris International Inc	PM	119,740.80	0.39%	6.24%	4.50%	10.88%	0.0427%
PNC Financial Services Group Inc/The	PNC	59,635.60	0.20%	3.27%	3.00%	6.32%	0.0124%
Pentair PLC	PNR	8,681.60	0.03%	1.46%	4.50%	5.99%	0.0017%
Pinnacle West Capital Corp	PNW	9,744.23	0.03%	3.84%	4.50%	8.43%	0.0027%
Pool Corp	POOL	13,394.64	0.04%	0.70%	14.50%	15.25%	0.0067%
PPG Industries Inc	PPG	34,648.77	0.11%	1.47%	3.00%	4.49%	0.0051%
PPL Corp	PPL	22,594.94	0.07%	5.68%	2.50%	8.25%	0.0061%
Perrigo Co PLC	PRGO	6,542.45	0.02%	2.05%	3.50%	5.59%	0.0012%
Prudential Financial Inc	PRU	31,132.36	0.10%	5.59%	5.00%	10.73%	0.0110%
Public Storage	PSA	38,947.76	0.13%	3.58%	4.00%	7.65%	0.0098%
Phillips 66	PSX	28,942.37	0.09%	5.66%	3.50%	9.26%	0.0088%
PVH Corp	PVH	6,022.75	0.02%	0.00%	3.50%	3.50%	0.0007%
Quanta Services Inc	PWR	9,675.97	0.03%	0.29%	12.50%	12.81%	0.0041%
Pioneer Natural Resources Co	PXD	18,077.76	0.06%	2.00%	8.50%	10.59%	0.0063%
PayPal Holdings Inc	PYPL	251,347.10	0.82%	0.00%	17.00%	17.00%	0.1401%
QUALCOMM Inc	QCOM	162,522.20	0.53%	1.81%	12.50%	14.42%	0.0768%
Qorvo Inc	QRVO	16,915.81	0.06%	0.00%	65.50%	65.50%	0.0363%
Royal Caribbean Cruises Ltd	RCL	16,767.79	0.05%	0.00%	-0.50%	-0.50%	-0.0003%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Everest Re Group Ltd	RE	9,492.95	0.03%	2.61%	10.50%	13.25%	0.0041%
Regency Centers Corp	REG	7,974.70	0.03%	5.00%	14.50%	19.86%	0.0052%
Regeneron Pharmaceuticals Inc	REGN	54,198.05	0.18%	0.00%	10.50%	10.50%	0.0187%
Regions Financial Corp	RF	15,123.86	0.05%	3.94%	6.00%	10.06%	0.0050%
Robert Half International Inc	RHI	7,516.47	0.02%	2.16%	6.00%	8.22%	0.0020%
Raymond James Financial Inc	RJF	12,810.56	0.04%	1.82%	6.00%	7.87%	0.0033%
Ralph Lauren Corp	RL	6,434.99	0.02%	0.00%	6.50%	6.50%	0.0014%
ResMed Inc	RMD	29,855.39	0.10%	0.76%	14.50%	15.32%	0.0150%
Rockwell Automation Inc	ROK	29,745.88	0.10%	1.67%	7.00%	8.73%	0.0085%
Rollins Inc	ROL	18,334.28	0.06%	0.56%	13.50%	14.10%	0.0085%
Roper Technologies Inc	ROP	43,885.78	0.14%	0.54%	9.50%	10.07%	0.0145%
Ross Stores Inc	ROST	39,488.18	0.13%	0.00%	7.50%	7.50%	0.0097%
Republic Services Inc	RSG	34,532.74	0.11%	1.78%	9.00%	10.86%	0.0123%
Raytheon Technologies Corp	RTX	112,096.40	0.37%	2.60%	-6.00%	-3.48%	-0.0128%
SBA Communications Corp	SBAC	31,494.90	0.10%	0.77%	36.50%	37.41%	0.0386%
Starbucks Corp	SBUX	114,786.00	0.38%	1.88%	13.50%	15.51%	0.0583%
Charles Schwab Corp/The	SCHW	64,148.64	0.21%	1.51%	5.50%	7.05%	0.0148%
Sealed Air Corp	SEE	7,016.25	0.02%	1.42%	26.00%	27.60%	0.0063%
Sherwin-Williams Co/The	SHW	66,415.78	0.22%	0.76%	9.00%	9.79%	0.0213%
SVB Financial Group	SIVB	18,362.99	0.06%	0.00%	4.50%	4.50%	0.0027%
J M Smucker Co/The	SJM	13,463.45	0.04%	3.07%	3.00%	6.12%	0.0027%
Schlumberger NV	SLB	30,677.05	N/A	2.26%	N/A	N/A	N/A
SL Green Realty Corp	SLG	4,870.00	0.02%	1.95%	-1.50%	0.44%	0.0001%
Snap-on Inc	SNA	9,484.58	0.03%	2.81%	5.00%	7.88%	0.0025%
Synopsys Inc	SNPS	32,934.52	0.11%	0.00%	12.50%	12.50%	0.0135%
Southern Co/The	SO	64,314.57	0.21%	4.30%	3.00%	7.36%	0.0155%
Simon Property Group Inc	SPG	26,755.21	0.09%	5.96%	-1.00%	4.93%	0.0043%
S&P Global Inc	SPGI	81,332.42	0.27%	0.88%	8.50%	9.42%	0.0251%
Sempra Energy	SRE	38,004.48	0.12%	3.35%	10.50%	14.03%	0.0175%
STERIS PLC	STE	16,137.16	0.05%	0.85%	10.00%	10.89%	0.0058%
State Street Corp	STT	25,486.13	0.08%	2.88%	3.50%	6.43%	0.0054%
Seagate Technology PLC	STX	15,028.67	0.05%	4.59%	2.50%	7.15%	0.0035%
Constellation Brands Inc	STZ	39,457.36	0.13%	1.54%	7.00%	8.59%	0.0111%
Stanley Black & Decker Inc	SWK	32,974.72	0.11%	1.50%	6.00%	7.55%	0.0082%
Skyworks Solutions Inc	SWKS	22,717.25	0.07%	1.47%	9.50%	11.04%	0.0082%
Synchrony Financial	SYF	18,318.58	0.06%	2.80%	4.50%	7.36%	0.0044%
Stryker Corp	SYK	87,831.98	0.29%	0.98%	10.50%	11.53%	0.0332%
Sysco Corp	SYK	36,492.21	0.12%	2.51%	11.50%	14.15%	0.0169%
AT&T Inc	T	206,555.10	0.68%	7.28%	5.50%	12.98%	0.0879%
Molson Coors Beverage Co	TAP	10,076.55	0.03%	0.00%	4.50%	4.50%	0.0015%
TransDigm Group Inc	TDG	32,857.89	0.11%	0.00%	10.50%	10.50%	0.0113%
Teledyne Technologies Inc	TDY	14,312.24	0.05%	0.00%	8.00%	8.00%	0.0038%
TE Connectivity Ltd	TEL	37,925.98	0.12%	1.67%	5.00%	6.71%	0.0083%
Teradyne Inc	TER	17,989.10	0.06%	0.37%	13.00%	13.39%	0.0079%
Truist Financial Corp	TFC	65,372.47	0.21%	3.71%	2.00%	5.75%	0.0123%
Teleflex Inc	TFX	17,400.22	0.06%	0.36%	15.00%	15.39%	0.0088%
Target Corp	TGT	90,045.77	0.30%	1.51%	11.00%	12.59%	0.0372%
Tiffany & Co	TIF	15,973.81	0.05%	1.76%	9.50%	11.34%	0.0059%
TJX Cos Inc/The	TJX	75,301.03	0.25%	1.66%	12.00%	13.76%	0.0340%
Thermo Fisher Scientific Inc	TMO	177,736.40	0.58%	0.20%	17.00%	17.22%	0.1003%
T-Mobile US Inc	TMUS	159,696.70	0.52%	0.00%	9.50%	9.50%	0.0497%
Tapestry Inc	TPR	8,236.01	0.03%	0.00%	0.50%	0.50%	0.0001%
T Rowe Price Group Inc	TROW	32,833.43	0.11%	2.59%	8.00%	10.69%	0.0115%
Travelers Cos Inc/The	TRV	34,440.26	0.11%	2.50%	9.50%	12.12%	0.0137%
Tractor Supply Co	TSCO	15,598.95	0.05%	1.20%	10.00%	11.26%	0.0058%
Tyson Foods Inc	TSN	23,721.35	0.08%	2.74%	6.00%	8.82%	0.0069%
Trane Technologies PLC	TT	34,810.92	N/A	1.46%	N/A	N/A	N/A
Take-Two Interactive Software Inc	TTWO	19,995.18	0.07%	0.00%	15.50%	15.50%	0.0102%
Twitter Inc	TWTR	36,886.18	0.12%	0.00%	28.00%	28.00%	0.0339%
Texas Instruments Inc	TXN	144,620.20	0.47%	2.59%	4.50%	7.15%	0.0339%
Textron Inc	TXT	10,798.89	0.04%	0.17%	8.50%	8.68%	0.0031%
Tyler Technologies Inc	TYL	19,975.71	0.07%	0.00%	10.50%	10.50%	0.0069%
Under Armour Inc	UAA	7,665.72	0.03%	0.00%	11.00%	11.00%	0.0028%
United Airlines Holdings Inc	UAL	13,280.78	0.04%	0.00%	2.00%	2.00%	0.0009%
UDR Inc	UDR	11,711.15	0.04%	3.75%	6.00%	9.86%	0.0038%
Universal Health Services Inc	UHS	11,323.85	0.04%	0.00%	11.50%	11.50%	0.0043%
Ulta Beauty Inc	ULTA	15,744.53	0.05%	0.00%	7.00%	7.00%	0.0036%
UnitedHealth Group Inc	UNH	316,197.30	1.04%	1.50%	12.50%	14.09%	0.1461%
Unum Group	UNM	4,716.78	0.02%	4.92%	4.50%	9.53%	0.0015%
Union Pacific Corp	UNP	139,893.80	0.46%	1.87%	10.50%	12.47%	0.0572%
United Parcel Service Inc	UPS	147,243.80	0.48%	2.46%	8.00%	10.56%	0.0510%
United Rentals Inc	URI	16,623.54	0.05%	0.00%	7.00%	7.00%	0.0038%
US Bancorp	USB	67,305.55	0.22%	3.76%	1.50%	5.29%	0.0117%
Visa Inc	V	409,759.30	1.34%	0.63%	14.50%	15.18%	0.2038%
Varian Medical Systems Inc	VAR	15,826.60	0.05%	0.00%	13.50%	13.50%	0.0070%
VF Corp	VFC	34,149.24	0.11%	2.24%	6.00%	8.31%	0.0093%
ViacomCBS Inc	VIAC	21,449.12	0.07%	2.76%	8.00%	10.87%	0.0076%
Valero Energy Corp	VLO	23,010.97	0.08%	6.95%	2.50%	9.54%	0.0072%
Vulcan Materials Co	VMC	19,076.02	0.06%	0.94%	12.50%	13.50%	0.0084%

		[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Market Capitalization	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est.	DCF Result	Weighted DCF Result
Vornado Realty Trust	VNO	7,764.55	0.03%	5.22%	-20.00%	-15.30%	-0.0039%
Vontier Corp	VNT	N/A	N/A	0.00%	N/A	N/A	N/A
Verisk Analytics Inc	VRSK	31,837.35	0.10%	0.58%	11.50%	12.11%	0.0126%
VeriSign Inc	VRSN	22,706.14	0.07%	0.00%	9.50%	9.50%	0.0071%
Vertex Pharmaceuticals Inc	VRTX	56,743.95	0.19%	0.00%	32.00%	32.00%	0.0595%
Ventas Inc	VTR	18,353.49	0.06%	3.66%	1.50%	5.19%	0.0031%
Viatis Inc	VTRS	N/A	N/A	0.00%	N/A	N/A	N/A
Verizon Communications Inc	VZ	249,982.30	0.82%	4.16%	4.00%	8.24%	0.0676%
Westinghouse Air Brake Technologies Corp	WAB	14,099.33	0.05%	0.65%	10.50%	11.18%	0.0052%
Waters Corp	WAT	14,063.32	0.05%	0.00%	10.50%	10.50%	0.0048%
Walgreens Boots Alliance Inc	WBA	35,285.80	0.12%	4.79%	6.00%	10.93%	0.0126%
Western Digital Corp	WDC	13,759.04	0.05%	0.00%	6.00%	6.00%	0.0027%
WEC Energy Group Inc	WEC	30,281.76	0.10%	2.77%	6.00%	8.85%	0.0088%
Welltower Inc	WELL	26,773.57	0.09%	3.74%	3.50%	7.31%	0.0064%
Wells Fargo & Co	WFC	118,148.70	N/A	1.40%	N/A	N/A	N/A
Whirlpool Corp	WHR	12,407.44	0.04%	2.50%	3.00%	5.54%	0.0023%
Willis Towers Watson PLC	WLTW	26,990.74	0.09%	1.30%	11.50%	12.87%	0.0114%
Waste Management Inc	WM	50,558.31	0.17%	1.82%	7.50%	9.39%	0.0156%
Williams Cos Inc/The	WMB	26,225.06	0.09%	7.40%	12.00%	19.84%	0.0171%
Walmart Inc	WMT	430,286.20	1.41%	1.44%	7.00%	8.49%	0.1198%
W R Berkley Corp	WRB	11,577.04	0.04%	0.74%	10.00%	10.78%	0.0041%
Westrock Co	WRK	11,433.57	0.04%	1.82%	5.00%	6.87%	0.0026%
West Pharmaceutical Services Inc	WST	19,893.88	0.07%	0.25%	17.00%	17.27%	0.0113%
Western Union Co/The	WU	9,280.38	0.03%	3.99%	6.00%	10.11%	0.0031%
Weyerhaeuser Co	WY	21,742.57	0.07%	2.33%	20.50%	23.07%	0.0164%
Wynn Resorts Ltd	WYNN	10,830.35	0.04%	0.00%	10.00%	10.00%	0.0036%
Xcel Energy Inc	XEL	35,788.61	0.12%	2.64%	6.00%	8.72%	0.0102%
Xilinx Inc	XLNX	33,220.20	0.11%	1.12%	7.50%	8.66%	0.0094%
Exxon Mobil Corp	XOM	172,544.70	0.57%	8.53%	2.50%	11.14%	0.0630%
DENTSPLY SIRONA Inc	XRAY	11,213.42	0.04%	0.78%	5.50%	6.30%	0.0023%
Xerox Holdings Corp	XRX	4,815.28	0.02%	4.28%	5.50%	9.90%	0.0016%
Xylem Inc/NY	XYL	17,413.87	0.06%	1.08%	8.50%	9.63%	0.0055%
Yum! Brands Inc	YUM	32,132.15	0.11%	1.82%	10.50%	12.42%	0.0131%
Zimmer Biomet Holdings Inc	ZBH	31,028.66	0.10%	0.66%	6.00%	6.68%	0.0068%
Zebra Technologies Corp	ZBRA	19,865.76	0.07%	0.00%	11.00%	11.00%	0.0072%
Zions Bancorp NA	ZION	6,716.17	0.02%	3.32%	3.50%	6.88%	0.0015%
Zoetis Inc	ZTS	76,129.18	0.25%	0.50%	12.00%	12.53%	0.0313%
Total Market Capitalization:		30,505,603.10					13.66%

Notes:

[1] Equals sum of Col. [9]

[2] Source: Bloomberg Professional

[3] Equals [1] – [2]

[4] Source: Value Line

[5] Equals weight in S&P 500 based on market capitalization

[6] Source: Value Line

[7] Source: Value Line

[8] Equals ([6] x (1 + (0.5 x [7]))) + [7]

[9] Equals Col. [5] x Col. [8]

Rebuttal Exhibit_(DWD-4)

Bloomberg and Value Line Beta Coefficients

Company	Ticker	[1]	[2]
		Bloomberg	Value Line
Atmos Energy Corporation	ATO	0.878	0.800
New Jersey Resources Corporation	NJR	0.950	0.950
Northwest Natural Holding Company	NWN	0.849	0.800
ONE Gas, Inc.	OGS	0.966	0.800
South Jersey Industries, Inc.	SJI	0.978	1.050
Southwest Gas Holdings, Inc.	SWX	1.051	0.950
Spire Inc.	SR	0.954	0.850
Mean		0.947	0.886

Notes:

[1] Source: Bloomberg Professional

[2] Source: Value Line

Rebuttal Exhibit_(DWD-5)

Capital Asset Pricing Model Results
Bloomberg and Value Line Derived Market Risk Premium

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
			Ex-Ante Market Risk Premium		CAPM Result		ECAPM Result	
		Average Beta	Bloomberg	Value Line	Bloomberg	Value Line	Bloomberg	Value Line
	Risk-Free Rate	Coefficient	Market DCF	Market DCF	Market DCF	Market DCF	Market DCF	Market DCF
			Derived	Derived	Derived	Derived	Derived	Derived
PROXY GROUP AVERAGE BLOOMBERG BETA COEFFICIENT								
Current 30-Year Treasury [9]	1.61%	0.947	12.52%	12.05%	13.46%	13.02%	13.63%	13.18%
Near Term Projected 30-Year Treasury [10]	1.78%	0.947	12.52%	12.05%	13.64%	13.19%	13.80%	13.35%
Long Term Projected 30-Year Treasury [11]	3.20%	0.947	12.52%	12.05%	15.05%	14.61%	15.22%	14.77%
Mean					14.05%	13.60%	14.22%	13.76%

			Ex-Ante Market Risk Premium		CAPM Result		ECAPM Result	
		Average Beta	Bloomberg	Value Line	Bloomberg	Value Line	Bloomberg	Value Line
	Risk-Free Rate	Coefficient	Market DCF	Market DCF	Market DCF	Market DCF	Market DCF	Market DCF
			Derived	Derived	Derived	Derived	Derived	Derived
PROXY GROUP AVERAGE VALUE LINE AVERAGE BETA COEFFICIENT								
Current 30-Year Treasury [9]	1.61%	0.886	12.52%	12.05%	12.70%	12.28%	13.06%	12.63%
Near Term Projected 30-Year Treasury [10]	1.78%	0.886	12.52%	12.05%	12.87%	12.46%	13.23%	12.80%
Long Term Projected 30-Year Treasury [11]	3.20%	0.886	12.52%	12.05%	14.29%	13.87%	14.65%	14.22%
Mean					13.29%	12.87%	13.65%	13.21%

Notes:

[1] See Notes [9], [10] and, [11]

[2] Source: Rebuttal Exhibit DWD-4

[3] Source: Rebuttal Exhibit DWD-3

[4] Source: Rebuttal Exhibit DWD-3

[5] Equals Col. [1] + (Col. [2] x Col. [3])

[6] Equals Col. [1] + (Col. [2] x Col. [4])

[7] Equals Col. [1] + (0.75 x Col. [2] x Col. [3]) + (0.25 x Col. [3])

[8] Equals Col. [1] + (0.75 x Col. [2] x Col. [4]) + (0.25 x Col. [4])

[9] Source: Bloomberg Professional

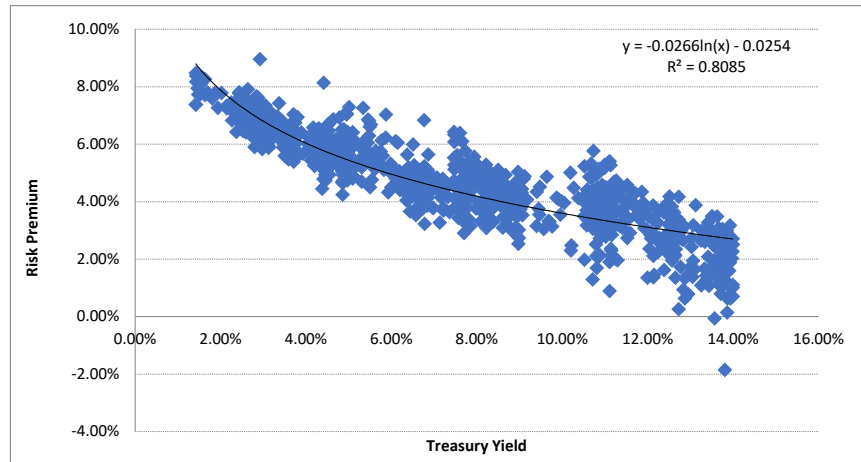
[10] Source: Blue Chip Financial Forecasts, Vol. 39, No. 12, December 1, 2020, at 2.

[11] Source: Blue Chip Financial Forecasts, Vol. 39, No. 12, December 1, 2020, at 14.

Rebuttal Exhibit_(DWD-6)

Bond Yield Plus Risk Premium

[1]	[2]	[3]	[4]	[5]
Constant	Slope	30-Year Treasury Yield	Risk Premium	Return on Equity
-2.54%	-2.66%			
Current 30-Year Treasury		1.61%	8.46%	10.07%
Near Term Projected 30-Year Treasury		1.78%	8.19%	9.97%
Long Term Projected 30-Year Treasury		3.20%	6.63%	9.83%



Notes:

- [1] Constant of regression equation
- [2] Slope of regression equation
- [3] Source: Current = Bloomberg Professional
Near Term Projected = Blue Chip Financial Forecasts, Vol. 39, No. 12, December 1, 2020, at 2.
Long Term Projected = Blue Chip Financial Forecasts, Vol. 39, No. 12, December 1, 2020, at 14.
- [4] Equals $[1] + \ln([3]) \times [2]$
- [5] Equals $[3] + [4]$
- [6] Source: S&P Global Market Intelligence
- [7] Source: S&P Global Market Intelligence
- [8] Source: Bloomberg Professional, equals 186-trading day average (i.e. lag period)
- [9] Equals $[7] - [8]$

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
1/3/1980	12.55%	9.40%	3.15%
1/4/1980	13.75%	9.40%	4.35%
1/14/1980	13.20%	9.45%	3.75%
1/18/1980	14.00%	9.48%	4.52%
1/31/1980	12.61%	9.56%	3.05%
2/8/1980	14.50%	9.63%	4.87%
2/14/1980	13.00%	9.68%	3.32%
2/15/1980	13.00%	9.69%	3.31%
2/29/1980	14.00%	9.86%	4.14%
3/5/1980	14.00%	9.91%	4.09%
3/7/1980	13.50%	9.95%	3.55%
3/14/1980	14.00%	10.04%	3.96%
3/27/1980	12.69%	10.21%	2.48%
4/1/1980	14.75%	10.27%	4.48%
4/29/1980	12.50%	10.51%	1.99%
5/7/1980	14.27%	10.56%	3.71%
5/8/1980	13.75%	10.57%	3.18%
5/19/1980	15.50%	10.63%	4.87%
5/27/1980	14.60%	10.66%	3.94%
5/29/1980	16.00%	10.68%	5.32%
6/10/1980	13.78%	10.72%	3.06%
6/25/1980	14.25%	10.74%	3.51%
7/9/1980	14.51%	10.78%	3.73%
7/17/1980	12.90%	10.79%	2.11%
7/18/1980	13.80%	10.80%	3.00%
7/22/1980	14.10%	10.80%	3.30%
7/23/1980	14.19%	10.79%	3.40%
8/1/1980	12.50%	10.80%	1.70%
8/11/1980	14.85%	10.82%	4.03%
8/21/1980	13.03%	10.85%	2.18%
8/28/1980	13.61%	10.88%	2.73%
8/28/1980	14.00%	10.88%	3.12%
9/4/1980	14.00%	10.90%	3.10%
9/24/1980	15.00%	10.99%	4.01%
10/9/1980	14.50%	11.06%	3.44%
10/9/1980	14.50%	11.06%	3.44%
10/24/1980	14.00%	11.09%	2.91%
10/27/1980	15.20%	11.10%	4.10%
10/27/1980	15.20%	11.10%	4.10%
10/28/1980	12.00%	11.10%	0.90%
10/28/1980	13.00%	11.10%	1.90%
10/31/1980	14.50%	11.12%	3.38%
11/4/1980	15.00%	11.12%	3.88%
11/6/1980	14.35%	11.13%	3.22%
11/10/1980	13.25%	11.14%	2.11%
11/17/1980	15.50%	11.14%	4.36%
11/19/1980	13.50%	11.13%	2.37%
12/5/1980	14.60%	11.13%	3.47%
12/8/1980	16.40%	11.13%	5.27%
12/12/1980	15.45%	11.14%	4.31%
12/17/1980	14.20%	11.15%	3.05%
12/17/1980	14.40%	11.15%	3.25%
12/18/1980	14.00%	11.16%	2.84%
12/22/1980	13.45%	11.15%	2.30%
12/26/1980	14.00%	11.14%	2.86%
12/30/1980	14.50%	11.13%	3.37%
12/31/1980	14.56%	11.13%	3.43%
1/7/1981	14.30%	11.13%	3.17%
1/12/1981	14.95%	11.14%	3.81%
1/26/1981	15.25%	11.20%	4.05%
1/30/1981	13.25%	11.24%	2.01%
2/11/1981	14.50%	11.34%	3.16%
2/20/1981	14.50%	11.40%	3.10%
3/12/1981	15.65%	11.61%	4.04%
3/25/1981	15.30%	11.75%	3.55%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
4/1/1981	15.30%	11.83%	3.47%
4/9/1981	15.00%	11.92%	3.08%
4/29/1981	13.50%	12.13%	1.37%
4/29/1981	14.25%	12.13%	2.12%
4/30/1981	13.60%	12.15%	1.45%
4/30/1981	15.00%	12.15%	2.85%
5/21/1981	14.00%	12.38%	1.62%
6/3/1981	14.67%	12.46%	2.21%
6/22/1981	16.00%	12.58%	3.42%
6/25/1981	14.75%	12.61%	2.14%
7/2/1981	14.00%	12.65%	1.35%
7/10/1981	16.00%	12.70%	3.30%
7/14/1981	16.90%	12.72%	4.18%
7/21/1981	15.78%	12.78%	3.00%
7/27/1981	13.77%	12.83%	0.94%
7/27/1981	15.50%	12.83%	2.67%
7/31/1981	13.50%	12.87%	0.63%
7/31/1981	14.20%	12.87%	1.33%
8/12/1981	13.72%	12.94%	0.78%
8/12/1981	13.72%	12.94%	0.78%
8/12/1981	14.41%	12.94%	1.47%
8/25/1981	15.45%	13.02%	2.43%
8/27/1981	14.43%	13.05%	1.38%
8/28/1981	15.00%	13.06%	1.94%
9/23/1981	14.34%	13.25%	1.09%
9/24/1981	16.25%	13.26%	2.99%
9/29/1981	14.50%	13.31%	1.19%
9/30/1981	15.94%	13.33%	2.61%
10/2/1981	14.80%	13.37%	1.43%
10/12/1981	16.25%	13.43%	2.82%
10/20/1981	15.25%	13.51%	1.74%
10/20/1981	16.50%	13.51%	2.99%
10/20/1981	17.00%	13.51%	3.49%
10/23/1981	15.50%	13.55%	1.95%
10/26/1981	13.50%	13.56%	-0.06%
10/29/1981	16.50%	13.60%	2.90%
11/4/1981	15.33%	13.63%	1.70%
11/6/1981	15.17%	13.64%	1.53%
11/12/1981	15.00%	13.65%	1.35%
11/25/1981	15.25%	13.66%	1.59%
11/25/1981	16.10%	13.66%	2.44%
11/25/1981	16.10%	13.66%	2.44%
11/30/1981	16.75%	13.66%	3.09%
12/1/1981	15.70%	13.66%	2.04%
12/1/1981	16.00%	13.66%	2.34%
12/15/1981	15.81%	13.70%	2.11%
12/17/1981	14.75%	13.71%	1.04%
12/22/1981	15.70%	13.72%	1.98%
12/22/1981	16.00%	13.72%	2.28%
12/30/1981	16.00%	13.75%	2.25%
12/30/1981	16.25%	13.75%	2.50%
1/4/1982	15.50%	13.75%	1.75%
1/14/1982	11.95%	13.81%	-1.86%
1/25/1982	16.25%	13.84%	2.41%
1/27/1982	16.84%	13.85%	2.99%
1/31/1982	14.00%	13.86%	0.14%
2/2/1982	16.24%	13.86%	2.38%
2/8/1982	15.50%	13.88%	1.62%
2/9/1982	14.95%	13.88%	1.07%
2/9/1982	15.75%	13.88%	1.87%
2/11/1982	16.00%	13.89%	2.11%
3/1/1982	15.96%	13.91%	2.05%
3/3/1982	15.00%	13.92%	1.08%
3/8/1982	17.10%	13.92%	3.18%
3/26/1982	16.00%	13.97%	2.03%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
3/31/1982	16.25%	13.98%	2.27%
4/1/1982	16.50%	13.98%	2.52%
4/6/1982	15.00%	13.99%	1.01%
4/9/1982	16.50%	13.99%	2.51%
4/12/1982	15.10%	13.99%	1.11%
4/12/1982	16.70%	13.99%	2.71%
4/18/1982	14.70%	13.99%	0.71%
4/27/1982	15.00%	13.97%	1.03%
5/10/1982	14.57%	13.94%	0.63%
5/14/1982	15.80%	13.92%	1.88%
5/20/1982	15.82%	13.91%	1.91%
5/21/1982	15.50%	13.90%	1.60%
5/25/1982	16.25%	13.89%	2.36%
6/2/1982	14.50%	13.86%	0.64%
6/7/1982	16.00%	13.85%	2.15%
6/23/1982	15.50%	13.81%	1.69%
6/25/1982	16.50%	13.81%	2.69%
7/1/1982	15.55%	13.79%	1.76%
7/1/1982	16.00%	13.79%	2.21%
7/2/1982	15.10%	13.78%	1.32%
7/13/1982	16.80%	13.75%	3.05%
7/22/1982	14.50%	13.71%	0.79%
7/28/1982	16.10%	13.67%	2.43%
7/30/1982	14.82%	13.66%	1.16%
8/4/1982	15.58%	13.64%	1.94%
8/6/1982	16.50%	13.63%	2.87%
8/11/1982	17.11%	13.62%	3.49%
8/25/1982	16.00%	13.59%	2.41%
8/30/1982	16.25%	13.58%	2.67%
9/3/1982	15.50%	13.57%	1.93%
9/9/1982	16.04%	13.55%	2.49%
9/15/1982	16.04%	13.52%	2.52%
9/17/1982	15.25%	13.51%	1.74%
9/29/1982	14.50%	13.43%	1.07%
9/30/1982	14.74%	13.42%	1.32%
9/30/1982	15.50%	13.42%	2.08%
9/30/1982	16.50%	13.42%	3.08%
9/30/1982	16.70%	13.42%	3.28%
10/1/1982	16.50%	13.40%	3.10%
10/8/1982	15.00%	13.33%	1.67%
10/15/1982	15.90%	13.25%	2.65%
10/19/1982	15.90%	13.22%	2.68%
10/27/1982	17.00%	13.12%	3.88%
10/28/1982	14.75%	13.10%	1.65%
11/2/1982	16.25%	13.07%	3.18%
11/4/1982	15.75%	13.02%	2.73%
11/5/1982	14.73%	13.00%	1.73%
11/17/1982	16.00%	12.86%	3.14%
11/23/1982	15.50%	12.79%	2.71%
11/24/1982	14.50%	12.77%	1.73%
11/24/1982	16.02%	12.77%	3.25%
11/30/1982	12.98%	12.72%	0.26%
11/30/1982	15.50%	12.72%	2.78%
11/30/1982	15.50%	12.72%	2.78%
11/30/1982	15.65%	12.72%	2.93%
11/30/1982	16.00%	12.72%	3.28%
11/30/1982	16.10%	12.72%	3.38%
12/3/1982	15.33%	12.68%	2.65%
12/8/1982	15.75%	12.63%	3.12%
12/13/1982	16.00%	12.58%	3.42%
12/14/1982	16.40%	12.56%	3.84%
12/17/1982	16.25%	12.52%	3.73%
12/20/1982	15.00%	12.50%	2.50%
12/21/1982	15.70%	12.49%	3.21%
12/28/1982	15.25%	12.42%	2.83%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
12/28/1982	15.25%	12.42%	2.83%
12/29/1982	16.25%	12.40%	3.85%
12/29/1982	16.25%	12.40%	3.85%
1/11/1983	15.90%	12.25%	3.65%
1/12/1983	15.50%	12.24%	3.26%
1/18/1983	15.00%	12.18%	2.82%
1/24/1983	15.50%	12.13%	3.37%
1/24/1983	16.00%	12.13%	3.87%
1/28/1983	14.90%	12.07%	2.83%
1/31/1983	15.00%	12.06%	2.94%
2/10/1983	15.00%	11.97%	3.03%
2/25/1983	15.70%	11.83%	3.87%
3/2/1983	15.25%	11.78%	3.47%
3/16/1983	16.00%	11.61%	4.39%
3/21/1983	14.96%	11.55%	3.41%
3/23/1983	15.40%	11.52%	3.88%
3/23/1983	16.10%	11.52%	4.58%
3/24/1983	15.00%	11.50%	3.50%
4/12/1983	13.25%	11.29%	1.96%
4/29/1983	15.05%	11.08%	3.97%
5/3/1983	15.40%	11.05%	4.35%
5/9/1983	15.50%	10.99%	4.51%
5/19/1983	14.85%	10.89%	3.96%
5/31/1983	14.00%	10.83%	3.17%
6/2/1983	14.50%	10.81%	3.69%
6/7/1983	14.50%	10.79%	3.71%
6/9/1983	14.85%	10.78%	4.07%
6/20/1983	14.15%	10.73%	3.42%
6/20/1983	16.50%	10.73%	5.77%
6/27/1983	14.50%	10.71%	3.79%
6/30/1983	14.80%	10.70%	4.10%
6/30/1983	15.90%	10.70%	5.20%
7/1/1983	14.80%	10.69%	4.11%
7/5/1983	15.00%	10.69%	4.31%
7/8/1983	15.50%	10.69%	4.81%
7/19/1983	15.00%	10.70%	4.30%
7/19/1983	15.10%	10.70%	4.40%
8/18/1983	15.30%	10.81%	4.49%
8/19/1983	15.79%	10.82%	4.97%
8/29/1983	16.00%	10.85%	5.15%
8/31/1983	14.75%	10.87%	3.88%
8/31/1983	15.25%	10.87%	4.38%
9/8/1983	14.75%	10.90%	3.85%
9/16/1983	15.51%	10.93%	4.58%
9/26/1983	14.50%	10.96%	3.54%
9/28/1983	14.25%	10.97%	3.28%
9/30/1983	16.15%	10.98%	5.17%
9/30/1983	16.25%	10.98%	5.27%
10/1/1983	16.25%	10.98%	5.27%
10/13/1983	15.52%	11.02%	4.50%
10/19/1983	15.20%	11.04%	4.16%
10/26/1983	14.75%	11.07%	3.68%
10/27/1983	14.88%	11.07%	3.81%
10/27/1983	15.33%	11.07%	4.26%
11/9/1983	14.82%	11.10%	3.72%
11/9/1983	16.51%	11.10%	5.41%
11/9/1983	16.51%	11.10%	5.41%
12/1/1983	14.50%	11.17%	3.33%
12/8/1983	15.90%	11.21%	4.69%
12/9/1983	15.30%	11.21%	4.09%
12/12/1983	14.50%	11.22%	3.28%
12/12/1983	15.50%	11.22%	4.28%
12/20/1983	15.40%	11.26%	4.14%
12/20/1983	16.00%	11.26%	4.74%
12/22/1983	15.75%	11.27%	4.48%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
12/29/1983	15.00%	11.30%	3.70%
12/30/1983	15.00%	11.30%	3.70%
1/10/1984	15.90%	11.34%	4.56%
1/13/1984	15.50%	11.37%	4.13%
1/18/1984	15.53%	11.39%	4.14%
1/26/1984	15.90%	11.42%	4.48%
2/14/1984	14.25%	11.52%	2.73%
2/28/1984	14.50%	11.59%	2.91%
3/20/1984	16.00%	11.70%	4.30%
3/23/1984	15.50%	11.73%	3.77%
4/9/1984	15.20%	11.81%	3.39%
4/18/1984	16.20%	11.86%	4.34%
4/27/1984	15.85%	11.90%	3.95%
5/15/1984	13.35%	11.99%	1.36%
5/16/1984	15.00%	12.00%	3.00%
5/22/1984	14.40%	12.04%	2.36%
6/13/1984	15.50%	12.19%	3.31%
7/10/1984	16.00%	12.37%	3.63%
8/7/1984	16.69%	12.51%	4.18%
8/9/1984	15.33%	12.52%	2.81%
8/17/1984	14.82%	12.54%	2.28%
8/21/1984	14.64%	12.55%	2.09%
8/27/1984	14.52%	12.57%	1.95%
8/28/1984	14.75%	12.57%	2.18%
8/30/1984	15.60%	12.58%	3.02%
9/12/1984	15.60%	12.60%	3.00%
9/12/1984	15.90%	12.60%	3.30%
9/25/1984	16.25%	12.62%	3.63%
10/2/1984	14.80%	12.63%	2.17%
10/9/1984	14.75%	12.64%	2.11%
10/10/1984	15.50%	12.64%	2.86%
10/18/1984	15.00%	12.65%	2.35%
10/24/1984	15.50%	12.65%	2.85%
11/7/1984	15.00%	12.64%	2.36%
11/20/1984	15.92%	12.63%	3.29%
11/30/1984	15.50%	12.60%	2.90%
12/18/1984	15.00%	12.55%	2.45%
12/20/1984	15.00%	12.54%	2.46%
12/28/1984	15.75%	12.51%	3.24%
12/28/1984	16.25%	12.51%	3.74%
1/2/1985	16.00%	12.50%	3.50%
1/31/1985	14.75%	12.37%	2.38%
2/7/1985	14.85%	12.32%	2.53%
2/15/1985	15.00%	12.26%	2.74%
2/20/1985	14.50%	12.24%	2.26%
2/22/1985	14.86%	12.24%	2.62%
3/14/1985	15.50%	12.15%	3.35%
3/28/1985	14.80%	12.08%	2.72%
4/9/1985	15.50%	12.01%	3.49%
4/16/1985	15.70%	11.96%	3.74%
6/10/1985	15.75%	11.58%	4.17%
6/26/1985	14.82%	11.46%	3.36%
7/9/1985	15.00%	11.38%	3.62%
7/26/1985	14.50%	11.26%	3.24%
8/29/1985	14.50%	11.11%	3.39%
8/30/1985	14.38%	11.10%	3.28%
9/12/1985	15.25%	11.07%	4.18%
9/23/1985	15.30%	11.03%	4.27%
9/25/1985	14.50%	11.02%	3.48%
9/26/1985	13.80%	11.01%	2.79%
9/26/1985	14.50%	11.01%	3.49%
10/25/1985	15.25%	10.91%	4.34%
11/8/1985	12.94%	10.85%	2.09%
11/20/1985	14.90%	10.81%	4.09%
11/25/1985	13.30%	10.79%	2.51%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
12/6/1985	12.00%	10.71%	1.29%
12/11/1985	14.90%	10.67%	4.23%
12/20/1985	14.88%	10.58%	4.30%
12/20/1985	15.00%	10.58%	4.42%
12/20/1985	15.00%	10.58%	4.42%
12/30/1985	15.75%	10.52%	5.23%
12/31/1985	14.00%	10.51%	3.49%
12/31/1985	14.50%	10.51%	3.99%
1/17/1986	14.50%	10.37%	4.13%
2/11/1986	12.50%	10.20%	2.30%
2/12/1986	15.20%	10.19%	5.01%
3/11/1986	14.00%	9.97%	4.03%
4/2/1986	12.90%	9.76%	3.14%
4/28/1986	13.01%	9.46%	3.55%
5/21/1986	13.25%	9.17%	4.08%
5/28/1986	14.00%	9.11%	4.89%
5/29/1986	13.90%	9.10%	4.80%
6/2/1986	13.00%	9.07%	3.93%
6/11/1986	14.00%	8.96%	5.04%
6/13/1986	13.55%	8.93%	4.62%
6/27/1986	11.88%	8.76%	3.12%
7/14/1986	12.60%	8.57%	4.03%
7/30/1986	13.30%	8.37%	4.93%
8/14/1986	13.50%	8.21%	5.29%
9/5/1986	13.30%	8.01%	5.29%
9/23/1986	12.75%	7.90%	4.85%
10/30/1986	13.00%	7.66%	5.34%
10/31/1986	13.75%	7.65%	6.10%
11/10/1986	14.00%	7.60%	6.40%
11/19/1986	13.75%	7.56%	6.19%
11/25/1986	13.15%	7.54%	5.61%
12/22/1986	13.80%	7.47%	6.33%
12/30/1986	13.90%	7.47%	6.43%
1/20/1987	12.75%	7.47%	5.28%
1/23/1987	13.55%	7.47%	6.08%
1/27/1987	12.16%	7.47%	4.69%
2/13/1987	12.60%	7.47%	5.13%
2/24/1987	12.00%	7.47%	4.53%
3/30/1987	12.20%	7.46%	4.74%
3/31/1987	13.00%	7.47%	5.53%
5/5/1987	12.85%	7.60%	5.25%
5/28/1987	13.50%	7.73%	5.77%
6/15/1987	13.20%	7.81%	5.39%
6/30/1987	12.60%	7.85%	4.75%
7/10/1987	12.90%	7.88%	5.02%
7/27/1987	13.50%	7.94%	5.56%
8/25/1987	11.40%	8.09%	3.31%
9/18/1987	13.00%	8.28%	4.72%
10/20/1987	12.60%	8.55%	4.05%
10/20/1987	12.98%	8.55%	4.43%
11/12/1987	12.75%	8.68%	4.07%
11/13/1987	12.75%	8.69%	4.06%
11/24/1987	12.50%	8.74%	3.76%
12/8/1987	12.50%	8.82%	3.68%
12/22/1987	12.00%	8.91%	3.09%
12/31/1987	12.85%	8.95%	3.90%
12/31/1987	13.25%	8.95%	4.30%
1/15/1988	13.15%	8.99%	4.16%
1/20/1988	12.75%	8.99%	3.76%
1/29/1988	13.20%	8.99%	4.21%
2/4/1988	12.60%	8.99%	3.61%
3/23/1988	13.00%	8.95%	4.05%
5/27/1988	13.18%	9.02%	4.16%
6/14/1988	13.50%	9.00%	4.50%
6/17/1988	11.72%	8.98%	2.74%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
6/24/1988	11.50%	8.97%	2.53%
7/1/1988	12.75%	8.94%	3.81%
7/8/1988	12.00%	8.93%	3.07%
7/18/1988	12.00%	8.90%	3.10%
7/20/1988	13.40%	8.89%	4.51%
8/8/1988	12.74%	8.90%	3.84%
9/20/1988	12.90%	8.93%	3.97%
9/26/1988	12.40%	8.93%	3.47%
9/27/1988	13.65%	8.93%	4.72%
9/30/1988	13.25%	8.94%	4.31%
10/13/1988	13.10%	8.93%	4.17%
10/21/1988	12.80%	8.94%	3.86%
10/25/1988	13.25%	8.94%	4.31%
10/26/1988	13.50%	8.94%	4.56%
10/27/1988	12.95%	8.95%	4.00%
10/28/1988	13.00%	8.95%	4.05%
11/15/1988	12.00%	8.98%	3.02%
11/29/1988	12.75%	9.02%	3.73%
12/19/1988	13.00%	9.05%	3.95%
12/21/1988	12.90%	9.05%	3.85%
12/22/1988	13.50%	9.06%	4.44%
1/26/1989	12.60%	9.06%	3.54%
1/27/1989	13.00%	9.06%	3.94%
2/8/1989	13.37%	9.05%	4.32%
3/8/1989	13.00%	9.04%	3.96%
5/4/1989	13.00%	9.04%	3.96%
6/8/1989	13.50%	8.96%	4.54%
7/19/1989	11.80%	8.84%	2.96%
7/25/1989	12.80%	8.82%	3.98%
7/31/1989	13.00%	8.81%	4.19%
8/14/1989	12.50%	8.76%	3.74%
8/22/1989	12.80%	8.73%	4.07%
8/23/1989	12.90%	8.72%	4.18%
9/21/1989	12.10%	8.62%	3.48%
10/6/1989	13.00%	8.57%	4.43%
10/17/1989	12.41%	8.54%	3.87%
10/18/1989	13.25%	8.54%	4.71%
10/20/1989	12.90%	8.53%	4.37%
10/31/1989	13.60%	8.49%	5.11%
11/3/1989	12.93%	8.48%	4.45%
11/5/1989	13.20%	8.48%	4.72%
11/9/1989	12.60%	8.45%	4.15%
11/9/1989	13.00%	8.45%	4.55%
11/28/1989	12.75%	8.37%	4.38%
12/7/1989	13.25%	8.32%	4.93%
12/15/1989	13.00%	8.27%	4.73%
12/20/1989	12.90%	8.25%	4.65%
12/21/1989	12.80%	8.25%	4.55%
12/21/1989	12.90%	8.25%	4.65%
12/27/1989	12.50%	8.23%	4.27%
1/9/1990	13.00%	8.19%	4.81%
1/18/1990	12.50%	8.16%	4.34%
1/26/1990	12.10%	8.14%	3.96%
3/21/1990	12.80%	8.15%	4.65%
3/28/1990	13.00%	8.16%	4.84%
4/5/1990	12.20%	8.17%	4.03%
4/12/1990	13.25%	8.19%	5.06%
4/30/1990	12.45%	8.24%	4.21%
5/31/1990	12.40%	8.31%	4.09%
6/15/1990	13.20%	8.33%	4.87%
6/27/1990	12.90%	8.34%	4.56%
6/29/1990	13.25%	8.35%	4.90%
7/6/1990	12.10%	8.36%	3.74%
7/19/1990	11.70%	8.39%	3.31%
8/31/1990	12.50%	8.53%	3.97%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
8/31/1990	12.50%	8.53%	3.97%
9/13/1990	12.50%	8.58%	3.92%
9/18/1990	12.75%	8.60%	4.15%
9/20/1990	12.50%	8.61%	3.89%
10/2/1990	13.00%	8.65%	4.35%
10/17/1990	11.90%	8.68%	3.22%
10/31/1990	12.95%	8.70%	4.25%
11/9/1990	13.25%	8.71%	4.54%
11/19/1990	13.00%	8.70%	4.30%
11/21/1990	12.10%	8.70%	3.40%
11/21/1990	12.50%	8.70%	3.80%
11/28/1990	12.75%	8.70%	4.05%
11/29/1990	12.75%	8.70%	4.05%
12/18/1990	13.10%	8.68%	4.42%
12/20/1990	12.50%	8.67%	3.83%
12/21/1990	12.50%	8.67%	3.83%
12/21/1990	13.00%	8.67%	4.33%
12/21/1990	13.60%	8.67%	4.93%
1/3/1991	13.02%	8.66%	4.36%
1/16/1991	13.25%	8.63%	4.62%
1/25/1991	11.70%	8.60%	3.10%
2/15/1991	12.70%	8.56%	4.14%
2/15/1991	12.80%	8.56%	4.24%
4/3/1991	13.00%	8.51%	4.49%
4/30/1991	12.45%	8.47%	3.98%
4/30/1991	13.00%	8.47%	4.53%
6/25/1991	11.70%	8.34%	3.36%
6/28/1991	12.50%	8.33%	4.17%
7/1/1991	11.70%	8.33%	3.37%
7/19/1991	12.10%	8.30%	3.80%
7/19/1991	12.30%	8.30%	4.00%
7/22/1991	12.90%	8.30%	4.60%
8/15/1991	12.25%	8.27%	3.98%
8/29/1991	13.30%	8.26%	5.04%
9/27/1991	12.50%	8.23%	4.27%
9/30/1991	12.40%	8.23%	4.17%
10/3/1991	11.30%	8.22%	3.08%
10/9/1991	11.70%	8.21%	3.49%
10/15/1991	13.40%	8.20%	5.20%
11/1/1991	12.90%	8.20%	4.70%
11/8/1991	12.75%	8.20%	4.55%
11/26/1991	11.60%	8.18%	3.42%
11/26/1991	12.00%	8.18%	3.82%
11/27/1991	12.70%	8.18%	4.52%
12/6/1991	12.70%	8.16%	4.54%
12/10/1991	11.75%	8.15%	3.60%
12/19/1991	12.60%	8.14%	4.46%
12/19/1991	12.80%	8.14%	4.66%
12/30/1991	12.10%	8.11%	3.99%
1/22/1992	12.84%	8.05%	4.79%
1/31/1992	12.00%	8.03%	3.97%
2/20/1992	13.00%	8.00%	5.00%
2/27/1992	11.75%	7.98%	3.77%
3/18/1992	12.50%	7.94%	4.56%
5/15/1992	12.75%	7.86%	4.89%
6/24/1992	12.20%	7.85%	4.35%
6/29/1992	11.00%	7.85%	3.15%
7/14/1992	12.00%	7.83%	4.17%
7/22/1992	11.20%	7.82%	3.38%
8/10/1992	12.10%	7.79%	4.31%
8/26/1992	12.43%	7.75%	4.68%
9/30/1992	11.60%	7.72%	3.88%
10/6/1992	12.25%	7.72%	4.53%
10/13/1992	12.75%	7.71%	5.04%
10/23/1992	11.65%	7.71%	3.94%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
10/28/1992	12.25%	7.71%	4.54%
10/29/1992	12.75%	7.70%	5.05%
10/30/1992	11.40%	7.70%	3.70%
11/9/1992	10.60%	7.70%	2.90%
11/25/1992	11.00%	7.67%	3.33%
11/25/1992	12.00%	7.67%	4.33%
12/3/1992	11.85%	7.66%	4.19%
12/16/1992	11.90%	7.63%	4.27%
12/22/1992	12.30%	7.62%	4.68%
12/22/1992	12.40%	7.62%	4.78%
12/30/1992	12.00%	7.61%	4.39%
12/31/1992	12.00%	7.60%	4.40%
1/12/1993	12.00%	7.58%	4.42%
1/12/1993	12.00%	7.58%	4.42%
2/2/1993	11.40%	7.53%	3.87%
2/22/1993	11.60%	7.47%	4.13%
4/23/1993	11.75%	7.27%	4.48%
5/3/1993	11.50%	7.25%	4.25%
5/3/1993	11.75%	7.25%	4.50%
6/3/1993	12.00%	7.20%	4.80%
6/7/1993	11.50%	7.20%	4.30%
6/22/1993	11.75%	7.16%	4.59%
7/21/1993	11.78%	7.06%	4.72%
7/21/1993	11.90%	7.06%	4.84%
7/23/1993	11.50%	7.05%	4.45%
7/29/1993	11.50%	7.03%	4.47%
8/12/1993	10.75%	6.97%	3.78%
8/24/1993	11.50%	6.91%	4.59%
8/31/1993	11.90%	6.88%	5.02%
9/1/1993	11.25%	6.87%	4.38%
9/1/1993	11.47%	6.87%	4.60%
9/27/1993	10.50%	6.74%	3.76%
9/29/1993	11.00%	6.72%	4.28%
9/30/1993	11.60%	6.71%	4.89%
10/8/1993	11.50%	6.67%	4.83%
10/14/1993	11.20%	6.65%	4.55%
10/15/1993	11.75%	6.64%	5.11%
10/25/1993	11.55%	6.60%	4.95%
10/28/1993	11.50%	6.58%	4.92%
10/29/1993	10.10%	6.57%	3.53%
10/29/1993	10.20%	6.57%	3.63%
10/29/1993	11.25%	6.57%	4.68%
11/2/1993	10.80%	6.56%	4.24%
11/12/1993	11.80%	6.53%	5.27%
11/23/1993	12.50%	6.50%	6.00%
11/26/1993	11.00%	6.50%	4.50%
12/1/1993	11.45%	6.49%	4.96%
12/16/1993	10.60%	6.45%	4.15%
12/16/1993	11.20%	6.45%	4.75%
12/21/1993	11.30%	6.44%	4.86%
12/22/1993	11.00%	6.44%	4.56%
12/23/1993	10.10%	6.43%	3.67%
1/5/1994	11.50%	6.41%	5.09%
1/10/1994	11.00%	6.40%	4.60%
1/25/1994	12.00%	6.37%	5.63%
2/2/1994	10.40%	6.35%	4.05%
2/9/1994	10.70%	6.33%	4.37%
4/6/1994	11.24%	6.34%	4.90%
4/25/1994	11.00%	6.39%	4.61%
6/16/1994	10.50%	6.64%	3.86%
6/23/1994	10.60%	6.68%	3.92%
7/19/1994	10.70%	6.84%	3.86%
9/29/1994	10.90%	7.21%	3.69%
9/29/1994	11.00%	7.21%	3.79%
10/7/1994	11.87%	7.26%	4.61%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
10/18/1994	11.50%	7.32%	4.18%
10/18/1994	11.50%	7.32%	4.18%
10/24/1994	11.00%	7.36%	3.64%
11/22/1994	12.12%	7.53%	4.59%
11/29/1994	11.30%	7.55%	3.75%
12/1/1994	11.00%	7.57%	3.43%
12/8/1994	11.50%	7.59%	3.91%
12/8/1994	11.70%	7.59%	4.11%
12/12/1994	11.82%	7.60%	4.22%
12/14/1994	11.50%	7.61%	3.89%
12/19/1994	11.50%	7.62%	3.88%
4/19/1995	11.00%	7.72%	3.28%
9/11/1995	11.30%	7.16%	4.14%
9/15/1995	10.40%	7.13%	3.27%
9/29/1995	11.50%	7.06%	4.44%
10/13/1995	10.76%	6.98%	3.78%
11/7/1995	12.50%	6.86%	5.64%
11/8/1995	11.10%	6.85%	4.25%
11/8/1995	11.30%	6.85%	4.45%
11/17/1995	10.90%	6.80%	4.10%
11/20/1995	11.40%	6.80%	4.60%
11/27/1995	13.60%	6.76%	6.84%
12/14/1995	11.30%	6.67%	4.63%
12/20/1995	11.60%	6.64%	4.96%
1/31/1996	11.30%	6.45%	4.85%
3/11/1996	11.60%	6.40%	5.20%
4/3/1996	11.13%	6.40%	4.73%
4/15/1996	10.50%	6.40%	4.10%
4/17/1996	10.77%	6.40%	4.37%
4/26/1996	10.60%	6.40%	4.20%
5/10/1996	11.00%	6.40%	4.60%
5/13/1996	11.25%	6.40%	4.85%
7/3/1996	11.25%	6.49%	4.76%
7/22/1996	11.25%	6.54%	4.71%
10/3/1996	10.00%	6.77%	3.23%
10/29/1996	11.30%	6.85%	4.45%
11/26/1996	11.30%	6.86%	4.44%
11/27/1996	11.30%	6.86%	4.44%
11/29/1996	11.00%	6.86%	4.14%
12/12/1996	11.96%	6.85%	5.11%
12/17/1996	11.50%	6.85%	4.65%
1/22/1997	11.30%	6.83%	4.47%
1/27/1997	11.25%	6.83%	4.42%
1/31/1997	11.25%	6.83%	4.42%
2/13/1997	11.00%	6.82%	4.18%
2/13/1997	11.80%	6.82%	4.98%
2/20/1997	11.80%	6.81%	4.99%
3/27/1997	10.75%	6.79%	3.96%
4/29/1997	11.70%	6.81%	4.89%
7/17/1997	12.00%	6.77%	5.23%
10/29/1997	10.75%	6.70%	4.05%
10/31/1997	11.25%	6.70%	4.55%
12/24/1997	10.75%	6.53%	4.22%
4/28/1998	10.90%	6.10%	4.80%
4/30/1998	12.20%	6.10%	6.10%
6/30/1998	11.00%	5.94%	5.06%
8/26/1998	10.93%	5.82%	5.11%
9/3/1998	11.40%	5.80%	5.60%
9/15/1998	11.90%	5.77%	6.13%
10/7/1998	11.06%	5.70%	5.36%
10/30/1998	11.40%	5.63%	5.77%
12/10/1998	12.20%	5.51%	6.69%
12/17/1998	12.10%	5.49%	6.61%
2/19/1999	11.15%	5.31%	5.84%
3/1/1999	10.65%	5.31%	5.34%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
3/1/1999	10.65%	5.31%	5.34%
6/8/1999	11.25%	5.36%	5.89%
11/12/1999	10.25%	5.92%	4.33%
12/14/1999	10.50%	6.00%	4.50%
1/28/2000	10.71%	6.16%	4.55%
2/17/2000	10.60%	6.20%	4.40%
5/25/2000	10.80%	6.20%	4.60%
6/19/2000	11.05%	6.18%	4.87%
6/22/2000	11.25%	6.18%	5.07%
7/17/2000	11.06%	6.15%	4.91%
7/20/2000	12.20%	6.14%	6.06%
8/11/2000	11.00%	6.11%	4.89%
9/27/2000	11.25%	6.00%	5.25%
9/29/2000	11.16%	5.99%	5.17%
10/5/2000	11.30%	5.98%	5.32%
11/28/2000	12.90%	5.87%	7.03%
11/30/2000	12.10%	5.86%	6.24%
2/5/2001	11.50%	5.75%	5.75%
3/15/2001	11.25%	5.66%	5.59%
5/8/2001	10.75%	5.61%	5.14%
10/24/2001	10.30%	5.54%	4.76%
10/24/2001	11.00%	5.54%	5.46%
1/9/2002	10.00%	5.50%	4.50%
1/30/2002	11.00%	5.47%	5.53%
1/31/2002	11.00%	5.47%	5.53%
4/17/2002	11.50%	5.44%	6.06%
4/29/2002	11.00%	5.44%	5.56%
6/11/2002	11.77%	5.47%	6.30%
6/20/2002	12.30%	5.48%	6.82%
8/28/2002	11.00%	5.49%	5.51%
9/11/2002	11.20%	5.45%	5.75%
9/12/2002	12.30%	5.45%	6.85%
10/28/2002	11.30%	5.34%	5.96%
10/30/2002	10.60%	5.34%	5.26%
11/1/2002	12.60%	5.34%	7.26%
11/7/2002	11.40%	5.33%	6.07%
11/8/2002	10.75%	5.33%	5.42%
11/20/2002	10.00%	5.30%	4.70%
11/20/2002	10.50%	5.30%	5.20%
12/4/2002	10.75%	5.26%	5.49%
12/30/2002	11.20%	5.18%	6.02%
1/6/2003	11.25%	5.16%	6.09%
2/28/2003	12.30%	5.00%	7.30%
3/7/2003	9.96%	4.98%	4.98%
3/12/2003	11.40%	4.97%	6.43%
3/20/2003	12.00%	4.95%	7.05%
4/3/2003	12.00%	4.92%	7.08%
5/2/2003	11.40%	4.88%	6.52%
5/15/2003	11.05%	4.87%	6.18%
6/26/2003	11.00%	4.80%	6.20%
7/1/2003	11.00%	4.80%	6.20%
7/29/2003	11.71%	4.78%	6.93%
8/22/2003	10.20%	4.81%	5.39%
9/17/2003	9.90%	4.85%	5.05%
9/25/2003	10.25%	4.85%	5.40%
10/17/2003	10.54%	4.87%	5.67%
10/22/2003	10.46%	4.87%	5.59%
10/22/2003	10.71%	4.87%	5.84%
10/30/2003	11.00%	4.88%	6.12%
10/31/2003	10.20%	4.88%	5.32%
10/31/2003	10.75%	4.88%	5.87%
11/10/2003	10.60%	4.89%	5.71%
12/9/2003	10.50%	4.93%	5.57%
12/18/2003	10.50%	4.94%	5.56%
12/19/2003	12.00%	4.94%	7.06%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
12/19/2003	12.00%	4.94%	7.06%
1/13/2004	10.25%	4.95%	5.30%
1/13/2004	12.00%	4.95%	7.05%
2/9/2004	11.25%	4.99%	6.26%
3/16/2004	10.90%	5.05%	5.85%
3/16/2004	10.90%	5.05%	5.85%
5/25/2004	10.00%	5.06%	4.94%
6/2/2004	11.22%	5.07%	6.15%
6/30/2004	10.50%	5.10%	5.40%
7/8/2004	10.00%	5.10%	4.90%
7/22/2004	10.25%	5.10%	5.15%
8/26/2004	10.50%	5.10%	5.40%
8/26/2004	10.50%	5.10%	5.40%
9/9/2004	10.40%	5.10%	5.30%
9/21/2004	10.50%	5.09%	5.41%
9/27/2004	10.30%	5.09%	5.21%
9/27/2004	10.50%	5.09%	5.41%
10/20/2004	10.20%	5.08%	5.12%
11/30/2004	10.60%	5.08%	5.52%
12/8/2004	9.90%	5.09%	4.81%
12/21/2004	11.50%	5.09%	6.41%
12/22/2004	11.50%	5.09%	6.41%
12/28/2004	10.25%	5.09%	5.16%
2/18/2005	10.30%	4.95%	5.35%
3/29/2005	11.00%	4.86%	6.14%
4/13/2005	10.60%	4.83%	5.77%
4/28/2005	11.00%	4.80%	6.20%
5/17/2005	10.00%	4.76%	5.24%
6/8/2005	10.18%	4.71%	5.47%
6/10/2005	10.90%	4.71%	6.19%
7/6/2005	10.50%	4.65%	5.85%
7/19/2005	11.50%	4.63%	6.87%
8/11/2005	10.40%	4.60%	5.80%
9/19/2005	9.45%	4.53%	4.92%
9/30/2005	10.51%	4.52%	5.99%
10/4/2005	9.90%	4.52%	5.38%
10/4/2005	10.75%	4.52%	6.23%
10/14/2005	10.40%	4.51%	5.89%
10/31/2005	10.25%	4.53%	5.72%
11/2/2005	9.70%	4.53%	5.17%
11/30/2005	10.00%	4.53%	5.47%
12/9/2005	9.70%	4.53%	5.17%
12/12/2005	11.00%	4.53%	6.47%
12/20/2005	10.13%	4.52%	5.61%
12/21/2005	10.40%	4.52%	5.88%
12/21/2005	11.00%	4.52%	6.48%
12/22/2005	10.20%	4.52%	5.68%
12/22/2005	11.00%	4.52%	6.48%
12/28/2005	10.00%	4.52%	5.48%
1/5/2006	11.00%	4.52%	6.48%
1/25/2006	11.20%	4.52%	6.68%
1/25/2006	11.20%	4.52%	6.68%
2/3/2006	10.50%	4.52%	5.98%
2/15/2006	9.50%	4.53%	4.97%
4/26/2006	10.60%	4.65%	5.95%
7/24/2006	9.60%	4.87%	4.73%
7/24/2006	10.00%	4.87%	5.13%
9/20/2006	11.00%	4.93%	6.07%
9/26/2006	10.75%	4.94%	5.81%
10/20/2006	9.80%	4.96%	4.84%
11/2/2006	9.71%	4.97%	4.74%
11/9/2006	10.00%	4.98%	5.02%
11/21/2006	11.00%	4.98%	6.02%
12/5/2006	10.20%	4.97%	5.23%
1/5/2007	10.40%	4.95%	5.45%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
1/9/2007	11.00%	4.94%	6.06%
1/11/2007	10.90%	4.94%	5.96%
1/19/2007	10.80%	4.93%	5.87%
1/26/2007	10.00%	4.92%	5.08%
2/8/2007	10.40%	4.91%	5.49%
3/14/2007	10.10%	4.85%	5.25%
3/20/2007	10.25%	4.84%	5.41%
3/21/2007	11.35%	4.84%	6.51%
3/22/2007	10.50%	4.84%	5.66%
3/29/2007	10.00%	4.83%	5.17%
6/13/2007	10.75%	4.82%	5.93%
6/29/2007	9.53%	4.84%	4.69%
6/29/2007	10.10%	4.84%	5.26%
7/3/2007	10.25%	4.85%	5.40%
7/13/2007	9.50%	4.86%	4.64%
7/24/2007	10.40%	4.87%	5.53%
8/1/2007	10.15%	4.88%	5.27%
8/29/2007	10.50%	4.91%	5.59%
9/10/2007	9.71%	4.92%	4.79%
9/19/2007	10.00%	4.91%	5.09%
9/25/2007	9.70%	4.92%	4.78%
10/8/2007	10.48%	4.92%	5.56%
10/19/2007	10.50%	4.91%	5.59%
10/25/2007	9.65%	4.91%	4.74%
11/15/2007	10.00%	4.89%	5.11%
11/20/2007	9.90%	4.89%	5.01%
11/27/2007	10.00%	4.89%	5.11%
11/29/2007	10.90%	4.88%	6.02%
12/14/2007	10.80%	4.87%	5.93%
12/18/2007	10.40%	4.86%	5.54%
12/19/2007	9.80%	4.86%	4.94%
12/19/2007	9.80%	4.86%	4.94%
12/19/2007	10.20%	4.86%	5.34%
12/21/2007	9.10%	4.86%	4.24%
1/8/2008	10.75%	4.83%	5.92%
1/17/2008	10.75%	4.81%	5.94%
1/17/2008	10.75%	4.81%	5.94%
2/5/2008	9.99%	4.77%	5.22%
2/5/2008	10.19%	4.77%	5.42%
2/13/2008	10.20%	4.76%	5.44%
3/31/2008	10.00%	4.63%	5.37%
5/28/2008	10.50%	4.53%	5.97%
6/24/2008	10.00%	4.52%	5.48%
6/27/2008	10.00%	4.52%	5.48%
7/31/2008	10.70%	4.50%	6.20%
7/31/2008	10.82%	4.50%	6.32%
8/27/2008	10.25%	4.50%	5.75%
9/2/2008	10.25%	4.50%	5.75%
9/19/2008	10.70%	4.48%	6.22%
9/24/2008	10.68%	4.48%	6.20%
9/24/2008	10.68%	4.48%	6.20%
9/24/2008	10.68%	4.48%	6.20%
9/30/2008	10.20%	4.48%	5.72%
10/3/2008	10.30%	4.48%	5.82%
10/8/2008	10.15%	4.47%	5.68%
10/20/2008	10.06%	4.47%	5.59%
10/24/2008	10.60%	4.46%	6.14%
10/24/2008	10.60%	4.46%	6.14%
11/21/2008	10.50%	4.42%	6.08%
11/21/2008	10.50%	4.42%	6.08%
11/21/2008	10.50%	4.42%	6.08%
11/24/2008	10.50%	4.41%	6.09%
12/3/2008	10.39%	4.38%	6.01%
12/24/2008	10.00%	4.26%	5.74%
12/26/2008	10.10%	4.24%	5.86%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
12/29/2008	10.20%	4.23%	5.97%
1/13/2009	10.45%	4.14%	6.31%
2/2/2009	10.05%	4.03%	6.02%
3/9/2009	10.30%	3.89%	6.41%
3/25/2009	10.17%	3.83%	6.34%
4/2/2009	10.75%	3.80%	6.95%
5/5/2009	10.75%	3.71%	7.04%
5/15/2009	10.20%	3.70%	6.50%
5/29/2009	9.54%	3.70%	5.84%
6/3/2009	10.10%	3.70%	6.40%
6/22/2009	10.00%	3.73%	6.27%
6/29/2009	10.21%	3.73%	6.48%
6/30/2009	9.31%	3.74%	5.57%
7/17/2009	9.26%	3.75%	5.51%
7/17/2009	10.50%	3.75%	6.75%
10/16/2009	10.40%	4.09%	6.31%
10/26/2009	10.10%	4.11%	5.99%
10/28/2009	10.15%	4.12%	6.03%
10/28/2009	10.15%	4.12%	6.03%
10/30/2009	9.95%	4.13%	5.82%
11/20/2009	9.45%	4.19%	5.26%
12/14/2009	10.50%	4.25%	6.25%
12/16/2009	10.75%	4.26%	6.49%
12/17/2009	10.30%	4.26%	6.04%
12/18/2009	10.40%	4.27%	6.13%
12/18/2009	10.40%	4.27%	6.13%
12/18/2009	10.50%	4.27%	6.23%
12/22/2009	10.20%	4.28%	5.92%
12/22/2009	10.40%	4.28%	6.12%
12/28/2009	10.85%	4.30%	6.55%
12/29/2009	10.38%	4.30%	6.08%
1/11/2010	10.24%	4.34%	5.90%
1/21/2010	10.23%	4.37%	5.86%
1/21/2010	10.33%	4.37%	5.96%
1/26/2010	10.40%	4.37%	6.03%
2/10/2010	10.00%	4.39%	5.61%
2/23/2010	10.50%	4.40%	6.10%
3/9/2010	9.60%	4.40%	5.20%
3/24/2010	10.13%	4.42%	5.71%
3/31/2010	10.70%	4.43%	6.27%
4/1/2010	9.50%	4.43%	5.07%
4/2/2010	10.10%	4.44%	5.66%
4/8/2010	10.35%	4.44%	5.91%
4/29/2010	9.19%	4.46%	4.73%
4/29/2010	9.40%	4.46%	4.94%
4/29/2010	9.40%	4.46%	4.94%
5/17/2010	10.55%	4.46%	6.09%
5/24/2010	10.05%	4.46%	5.59%
6/3/2010	11.00%	4.46%	6.54%
6/16/2010	10.00%	4.46%	5.54%
6/18/2010	10.30%	4.46%	5.84%
8/9/2010	12.55%	4.41%	8.14%
8/17/2010	10.10%	4.40%	5.70%
9/16/2010	9.60%	4.31%	5.29%
9/16/2010	10.00%	4.31%	5.69%
9/16/2010	10.00%	4.31%	5.69%
9/16/2010	10.30%	4.31%	5.99%
10/21/2010	10.40%	4.20%	6.20%
11/2/2010	9.75%	4.17%	5.58%
11/2/2010	9.75%	4.17%	5.58%
11/3/2010	10.75%	4.17%	6.58%
11/19/2010	10.20%	4.14%	6.06%
12/1/2010	10.00%	4.12%	5.88%
12/6/2010	9.56%	4.12%	5.44%
12/6/2010	10.09%	4.12%	5.97%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
12/9/2010	10.25%	4.12%	6.13%
12/14/2010	10.33%	4.11%	6.22%
12/17/2010	10.10%	4.11%	5.99%
12/20/2010	10.10%	4.11%	5.99%
12/23/2010	9.92%	4.10%	5.82%
1/6/2011	10.35%	4.09%	6.26%
1/12/2011	10.30%	4.08%	6.22%
1/13/2011	10.30%	4.08%	6.22%
3/10/2011	10.10%	4.16%	5.94%
3/31/2011	9.45%	4.20%	5.25%
4/18/2011	10.05%	4.24%	5.81%
5/26/2011	10.50%	4.32%	6.18%
6/21/2011	10.00%	4.36%	5.64%
6/29/2011	8.83%	4.38%	4.45%
8/1/2011	9.20%	4.41%	4.79%
9/1/2011	10.10%	4.32%	5.78%
11/14/2011	9.60%	3.93%	5.67%
12/13/2011	9.50%	3.76%	5.74%
12/20/2011	10.00%	3.71%	6.29%
12/22/2011	10.40%	3.70%	6.70%
1/10/2012	9.06%	3.59%	5.47%
1/10/2012	9.45%	3.59%	5.86%
1/10/2012	9.45%	3.59%	5.86%
1/23/2012	10.20%	3.52%	6.68%
1/31/2012	10.00%	3.48%	6.52%
4/24/2012	9.50%	3.15%	6.35%
4/24/2012	9.75%	3.15%	6.60%
5/7/2012	9.80%	3.13%	6.67%
5/22/2012	9.60%	3.10%	6.50%
5/24/2012	9.70%	3.09%	6.61%
6/7/2012	10.30%	3.06%	7.24%
6/15/2012	10.40%	3.05%	7.35%
6/18/2012	9.60%	3.05%	6.55%
7/2/2012	9.75%	3.04%	6.71%
10/24/2012	10.30%	2.92%	7.38%
10/26/2012	9.50%	2.92%	6.58%
10/31/2012	9.30%	2.91%	6.39%
10/31/2012	9.90%	2.91%	6.99%
10/31/2012	10.00%	2.91%	7.09%
11/1/2012	9.45%	2.91%	6.54%
11/8/2012	10.10%	2.91%	7.19%
11/9/2012	10.30%	2.90%	7.40%
11/26/2012	10.00%	2.88%	7.12%
11/28/2012	10.40%	2.88%	7.52%
11/28/2012	10.50%	2.88%	7.62%
12/4/2012	10.00%	2.87%	7.13%
12/4/2012	10.50%	2.87%	7.63%
12/20/2012	9.50%	2.84%	6.66%
12/20/2012	10.10%	2.84%	7.26%
12/20/2012	10.25%	2.84%	7.41%
12/20/2012	10.30%	2.84%	7.46%
12/20/2012	10.40%	2.84%	7.56%
12/20/2012	10.50%	2.84%	7.66%
12/26/2012	9.80%	2.83%	6.97%
2/22/2013	9.60%	2.86%	6.74%
3/14/2013	9.30%	2.89%	6.41%
3/27/2013	9.80%	2.92%	6.88%
4/23/2013	9.80%	2.96%	6.84%
5/10/2013	9.25%	2.96%	6.29%
6/13/2013	9.40%	3.02%	6.38%
6/18/2013	9.28%	3.02%	6.26%
6/18/2013	9.28%	3.02%	6.26%
6/25/2013	9.80%	3.04%	6.76%
9/23/2013	9.60%	3.33%	6.27%
11/6/2013	10.20%	3.42%	6.78%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
11/13/2013	9.84%	3.44%	6.40%
11/14/2013	10.25%	3.45%	6.80%
11/22/2013	9.50%	3.47%	6.03%
12/5/2013	10.20%	3.50%	6.70%
12/13/2013	9.60%	3.52%	6.08%
12/16/2013	9.73%	3.53%	6.20%
12/17/2013	10.00%	3.53%	6.47%
12/18/2013	9.08%	3.54%	5.54%
12/23/2013	9.72%	3.55%	6.17%
12/30/2013	10.00%	3.58%	6.42%
1/21/2014	9.65%	3.66%	5.99%
1/22/2014	9.18%	3.66%	5.52%
2/20/2014	9.30%	3.72%	5.58%
2/21/2014	9.85%	3.72%	6.13%
2/28/2014	9.55%	3.73%	5.82%
3/16/2014	9.72%	3.74%	5.98%
4/21/2014	9.50%	3.73%	5.77%
4/22/2014	9.80%	3.73%	6.07%
5/8/2014	9.10%	3.71%	5.39%
5/8/2014	9.59%	3.71%	5.88%
6/6/2014	10.40%	3.66%	6.74%
6/12/2014	10.10%	3.66%	6.44%
6/12/2014	10.10%	3.66%	6.44%
6/12/2014	10.10%	3.66%	6.44%
7/7/2014	9.30%	3.63%	5.67%
7/25/2014	9.30%	3.60%	5.70%
7/31/2014	9.90%	3.59%	6.31%
9/4/2014	9.10%	3.50%	5.60%
9/24/2014	9.35%	3.46%	5.89%
9/30/2014	9.75%	3.44%	6.31%
10/29/2014	10.80%	3.37%	7.43%
11/6/2014	10.20%	3.35%	6.85%
11/14/2014	10.20%	3.33%	6.87%
11/14/2014	10.30%	3.33%	6.97%
11/26/2014	10.20%	3.30%	6.90%
12/3/2014	10.00%	3.28%	6.72%
1/13/2015	10.30%	3.16%	7.14%
1/21/2015	9.05%	3.13%	5.92%
1/21/2015	9.05%	3.13%	5.92%
4/9/2015	9.50%	2.88%	6.62%
5/11/2015	9.80%	2.81%	6.99%
6/17/2015	9.00%	2.79%	6.21%
8/21/2015	9.75%	2.78%	6.97%
10/7/2015	9.55%	2.82%	6.73%
10/13/2015	9.75%	2.83%	6.92%
10/15/2015	9.00%	2.84%	6.16%
10/30/2015	9.80%	2.87%	6.93%
11/19/2015	10.00%	2.90%	7.10%
12/3/2015	10.00%	2.91%	7.09%
12/9/2015	9.60%	2.92%	6.68%
12/11/2015	9.90%	2.93%	6.97%
12/18/2015	9.50%	2.94%	6.56%
1/6/2016	9.50%	2.97%	6.53%
1/6/2016	9.50%	2.97%	6.53%
1/28/2016	9.40%	2.97%	6.43%
2/10/2016	9.60%	2.95%	6.65%
2/16/2016	9.50%	2.94%	6.56%
2/29/2016	9.40%	2.92%	6.48%
4/29/2016	9.80%	2.83%	6.97%
5/5/2016	9.49%	2.82%	6.67%
6/1/2016	9.55%	2.80%	6.75%
6/3/2016	9.65%	2.79%	6.86%
6/15/2016	9.00%	2.77%	6.23%
6/15/2016	9.00%	2.77%	6.23%
9/2/2016	9.50%	2.56%	6.94%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
9/23/2016	9.75%	2.51%	7.24%
9/27/2016	9.50%	2.51%	6.99%
9/29/2016	9.11%	2.50%	6.61%
10/13/2016	10.20%	2.48%	7.72%
10/28/2016	9.70%	2.47%	7.23%
11/9/2016	9.80%	2.47%	7.33%
11/18/2016	10.00%	2.49%	7.51%
12/9/2016	10.10%	2.51%	7.59%
12/15/2016	9.00%	2.52%	6.48%
12/15/2016	9.00%	2.52%	6.48%
12/20/2016	9.75%	2.53%	7.22%
12/22/2016	9.50%	2.54%	6.96%
1/24/2017	9.00%	2.59%	6.41%
2/21/2017	10.55%	2.63%	7.92%
3/1/2017	9.25%	2.65%	6.60%
4/11/2017	9.50%	2.77%	6.73%
4/20/2017	8.70%	2.79%	5.91%
4/28/2017	9.50%	2.82%	6.68%
5/23/2017	9.60%	2.88%	6.72%
6/6/2017	9.70%	2.91%	6.79%
6/22/2017	9.70%	2.94%	6.76%
6/30/2017	9.60%	2.95%	6.65%
7/20/2017	9.55%	2.97%	6.58%
7/31/2017	10.10%	2.98%	7.12%
9/13/2017	9.40%	2.93%	6.47%
9/19/2017	9.70%	2.92%	6.78%
9/22/2017	11.88%	2.92%	8.96%
9/27/2017	10.20%	2.92%	7.28%
10/20/2017	9.60%	2.90%	6.70%
10/26/2017	10.20%	2.90%	7.30%
10/30/2017	10.05%	2.90%	7.15%
12/5/2017	9.50%	2.86%	6.64%
12/7/2017	9.80%	2.85%	6.95%
12/13/2017	9.25%	2.85%	6.40%
12/28/2017	9.50%	2.84%	6.66%
1/31/2018	9.80%	2.83%	6.97%
2/21/2018	9.80%	2.84%	6.96%
2/21/2018	9.80%	2.84%	6.96%
2/28/2018	9.50%	2.85%	6.65%
3/15/2018	9.00%	2.87%	6.13%
3/26/2018	10.19%	2.88%	7.31%
4/26/2018	9.50%	2.91%	6.59%
4/27/2018	9.30%	2.91%	6.39%
5/2/2018	9.50%	2.91%	6.59%
5/3/2018	9.70%	2.91%	6.79%
5/29/2018	9.40%	2.95%	6.45%
6/6/2018	9.80%	2.96%	6.84%
6/14/2018	8.80%	2.97%	5.83%
7/16/2018	9.60%	2.98%	6.62%
7/20/2018	9.40%	2.99%	6.41%
8/24/2018	9.28%	3.02%	6.26%
8/28/2018	10.00%	3.03%	6.97%
9/13/2018	10.00%	3.04%	6.96%
9/14/2018	10.00%	3.05%	6.95%
9/19/2018	9.85%	3.05%	6.80%
9/20/2018	9.80%	3.06%	6.74%
9/26/2018	9.40%	3.06%	6.34%
9/26/2018	10.20%	3.06%	7.14%
9/28/2018	9.50%	3.07%	6.43%
9/28/2018	9.50%	3.07%	6.43%
10/5/2018	9.61%	3.08%	6.53%
10/15/2018	9.80%	3.09%	6.71%
10/26/2018	9.40%	3.11%	6.29%
10/29/2018	9.60%	3.11%	6.49%
11/1/2018	9.87%	3.11%	6.76%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
11/8/2018	9.70%	3.12%	6.58%
11/8/2018	9.70%	3.12%	6.58%
12/11/2018	9.70%	3.14%	6.56%
12/12/2018	9.30%	3.14%	6.16%
12/13/2018	9.60%	3.14%	6.46%
12/19/2018	9.30%	3.15%	6.15%
12/21/2018	9.35%	3.15%	6.20%
12/24/2018	9.25%	3.15%	6.10%
12/24/2018	9.25%	3.15%	6.10%
1/4/2019	9.80%	3.14%	6.66%
1/18/2019	9.70%	3.14%	6.56%
3/14/2019	9.00%	3.12%	5.88%
3/27/2019	9.70%	3.12%	6.58%
4/30/2019	9.73%	3.11%	6.62%
5/7/2019	9.65%	3.10%	6.55%
5/21/2019	9.80%	3.10%	6.70%
9/4/2019	10.00%	2.75%	7.25%
9/26/2019	9.90%	2.68%	7.22%
10/2/2019	9.73%	2.66%	7.07%
10/8/2019	9.40%	2.64%	6.76%
10/15/2019	9.70%	2.62%	7.08%
10/21/2019	9.40%	2.60%	6.80%
10/31/2019	9.70%	2.57%	7.13%
10/31/2019	10.00%	2.57%	7.43%
10/31/2019	10.00%	2.57%	7.43%
10/31/2019	10.20%	2.57%	7.63%
11/7/2019	9.35%	2.55%	6.80%
11/13/2019	9.60%	2.54%	7.06%
11/13/2019	9.60%	2.54%	7.06%
12/6/2019	9.87%	2.46%	7.41%
12/11/2019	9.40%	2.45%	6.95%
12/17/2019	9.75%	2.44%	7.31%
12/18/2019	9.60%	2.44%	7.16%
12/18/2019	9.60%	2.44%	7.16%
12/19/2019	10.05%	2.44%	7.61%
12/19/2019	10.20%	2.44%	7.76%
12/19/2019	10.25%	2.44%	7.81%
12/20/2019	9.20%	2.43%	6.77%
12/26/2019	9.75%	2.42%	7.33%
1/15/2020	9.35%	2.37%	6.98%
1/16/2020	8.80%	2.37%	6.43%
1/24/2020	9.44%	2.35%	7.09%
2/3/2020	9.40%	2.32%	7.08%
2/24/2020	9.10%	2.27%	6.83%
2/25/2020	9.50%	2.26%	7.24%
2/28/2020	9.70%	2.25%	7.45%
3/25/2020	9.40%	2.15%	7.25%
3/26/2020	9.48%	2.14%	7.34%
4/21/2020	9.80%	2.02%	7.78%
5/19/2020	9.20%	1.94%	7.26%
6/16/2020	9.65%	1.86%	7.79%
7/8/2020	9.40%	1.80%	7.60%
8/4/2020	9.50%	1.69%	7.81%
8/20/2020	9.90%	1.64%	8.26%
8/21/2020	9.35%	1.63%	7.72%
9/10/2020	9.90%	1.57%	8.33%
9/23/2020	9.60%	1.52%	8.08%
9/25/2020	9.25%	1.51%	7.74%
9/25/2020	9.25%	1.51%	7.74%
10/7/2020	9.70%	1.48%	8.22%
10/12/2020	9.20%	1.47%	7.73%
10/16/2020	9.40%	1.46%	7.94%
10/30/2020	9.90%	1.44%	8.46%
11/7/2020	9.60%	1.42%	8.18%
11/19/2020	8.80%	1.42%	7.38%

[6] Date of Natural Gas Rate Case	[7] Return on Equity	[8] 30-Year Treasury Yield	[9] Risk Premium
11/19/2020	8.80%	1.42%	7.38%
11/19/2020	9.90%	1.42%	8.48%
11/24/2020	9.80%	1.42%	8.38%
		Count	1,173
		Average	4.82%

Rebuttal Exhibit_(DWD-7)

Expected Earnings Analysis

Company	Ticker	[1] Expected ROE 2023-25	[2] 2020	[3] Shares Outstanding 2023-25		[4] % Increase	[5] Adjustment Factor	[6] Adjusted ROE
Atmos Energy Corporation	ATO	9.0%	124.00	145.00		3.18%	1.016	9.14%
New Jersey Resources Corporation	NJR	9.5%	96.00	100.00		0.82%	1.004	9.54%
Northwest Natural Holding Company	NWN	8.5%	31.00	32.00		0.64%	1.003	8.53%
ONE Gas, Inc.	OGS	8.5%	53.00	55.00		0.74%	1.004	8.53%
South Jersey Industries, Inc.	SJI	12.0%	101.00	110.00		1.72%	1.009	12.10%
Southwest Gas Holdings, Inc.	SWX	10.0%	57.00	65.00		2.66%	1.013	10.13%
Spire Inc.	SR	7.0%	52.00	55.00		1.13%	1.006	7.04%
							Median	9.14%
							Average	9.29%

Notes:

[1] Source: Value Line

[2] Source: Value Line

[3] Source: Value Line

[4] Equals $= ([3] / [2])^{(1/5)} - 1$

[5] Equals $(2 \times (1 + [4])) / (2 + [4])$

[6] Equals [1] x [5]

Rebuttal Exhibit_(DWD-8)

Demonstration of the Inadequacy of a DCF Return Rate Related to Book Value
When Market Value is Greater than Book Value

		[A]	[B]
		<u>Based on Dr. Klein's Gas Proxy Group</u>	
<u>Line No.</u>		<u>Market Value</u>	<u>Book Value</u>
1.	Per Share	\$68.35 (1)	\$ 40.27 (2)
2.	DCF Cost Rate (3)	9.30%	9.30%
3.	Return in Dollars (4)	\$ 6.357	\$ 3.745
4.	Dividends (5)	\$ 2.297	\$ 2.297
5.	Growth in Dollars (6)	\$ 4.060	\$ 1.448
6.	Return on Market Value (7)	9.30%	5.48%
7.	Rate of Growth on Market Value (8)	5.94%	2.12%

Notes:

(1) Based on Value Line Summary & Index market prices from 8/28/2020

(2) Average book value dividing total common equity at year-end 2019 by common shares outstanding at year-end 2019 for each proxy group company.

(3) Dr. Klein's Recommended DCF cost rate.

(4) Line 1 x Line 2.

(5) Dividends are based on the average 3.36% dividend yield for Dr. Klein's Gas Proxy Group from page 4 of Klein Exhibit.

(6) Line 3 - Line 4.

(7) Line 3 / Line 1.

(8) Line 5 / Line 1.

Rebuttal Exhibit_(DWD-9)

Calculation of Indicated DCF Applied to Book Value Capital Structure
of Dr. Klein's Gas Proxy Group

Un-lever Indicated Market Capital Structure DCF

$$\begin{aligned}
 K_u &= K_e - \left(\left(K_u - i \right) \frac{1 - t}{D/E} \right) - \left(K_u - d \right) \frac{P}{E} \\
 K_u &= 9.30\% - \left(\left(K_u - 4.12\% \right) \frac{1 - 21\%}{29.70\% / 69.61\%} \right) - \left(K_u - 5.90\% \right) \frac{0.69\%}{69.61\%} \\
 K_u &= 9.30\% - \left(\left(K_u - 4.12\% \right) 79.00\% \right) 42.67\% - \left(K_u - 5.90\% \right) 0.99\% \\
 K_u &= 9.30\% - \left(79.00\% * K_u - 3.2519\% \right) 42.67\% - \left(0.99\% * K_u - 0.06\% \right) \\
 K_u &= 9.30\% - \left(33.71\% * K_u - 1.39\% \right) -0.99\% * K_u + 0.06\% \\
 K_u &= 9.30\% -33.71\% * K_u + 1.39\% -0.99\% * K_u + 0.06\% \\
 K_u &= 10.75\% -34.69\% * K_u \\
 134.69\% * K_u &= 10.75\% \\
 K_u &= \mathbf{7.98\%}
 \end{aligned}$$

Re-lever to Indicated Book Value Capital Structure DCF

$$\begin{aligned}
 K_e &= K_u + \left(\left(K_u - i \right) \frac{1 - t}{D/E} \right) + \left(K_u - d \right) \frac{P}{E} \\
 K_e &= 7.98\% + \left(\left(7.98\% - 4.12\% \right) \frac{1 - 21\%}{43.73\% / 55.29\%} \right) + \left(7.98\% - 5.90\% \right) \frac{0.99\%}{55.29\%} \\
 K_e &= 7.98\% + \left(3.86\% \right) 79\% 79.09\% + \left(2.08\% \right) 1.78\% \\
 K_e &= 7.98\% + \left(3.05\% \right) 79.09\% + \left(0.04\% \right) \\
 K_e &= 7.98\% + \left(2.41\% \right) + 0.04\% \\
 K_e &= \mathbf{10.43\%}
 \end{aligned}$$

Where:

- K_u = Un-levered (i.e., 100% equity) cost of common equity
- K_e = Market determined cost of common equity
- i = Cost of debt
- t = Income tax rate
- D = Debt ratio
- E = Equity ratio
- d = Cost of preferred stock
- P = Preferred equity ratio

Rebuttal Exhibit_(DWD-10)

Growth Rate Regression Analysis

Company	Ticker	Median P/E Ratio	Proj. Earnings Growth Rate	Proj. Dividend Growth Rate
ALLETE, Inc.	ALE	18.00	4.50%	4.50%
Alliant Energy Corporation	LNT	17.00	5.50%	7.00%
Ameren Corporation	AEE	17.00	6.00%	5.00%
American Electric Power Company, Inc.	AEP	15.00	6.00%	5.50%
Avangrid, Inc. [1]	AGR	NMF	4.00%	0.50%
Avista Corporation	AVA	17.00	1.00%	4.00%
Black Hills Corporation	BKH	19.00	3.50%	6.00%
CenterPoint Energy, Inc.	CNP	18.00	4.00%	-5.50%
CMS Energy Corporation	CMS	18.00	7.50%	7.00%
Consolidated Edison, Inc.	ED	16.00	3.00%	3.50%
Dominion Energy Inc.	D	21.00	6.00%	-2.00%
DTE Energy Company	DTE	17.00	6.00%	6.50%
Duke Energy Corporation	DUK	18.00	5.00%	2.50%
Edison International [2]	EIX	14.00	NMF	4.00%
Entergy Corporation	ETR	13.00	3.00%	4.00%
Exelon Corporation	EXC	15.00	3.50%	5.50%
FirstEnergy Corp.	FE	19.00	8.50%	2.00%
Evergy, Inc. [1]	EVERG	NMF	4.50%	5.50%
Hawaiian Electric Industries, Inc.	HE	18.00	1.50%	2.00%
IDACORP, Inc.	IDA	16.00	3.50%	6.50%
MGE Energy, Inc.	MGEE	20.00	4.00%	5.50%
NextEra Energy, Inc.	NEE	18.00	9.50%	10.50%
Eversource Energy	ES	18.00	5.50%	6.00%
NorthWestern Corporation	NWE	17.00	2.50%	4.00%
OGE Energy Corp.	OGE	17.00	3.00%	6.00%
Otter Tail Corporation	OTTR	22.00	5.00%	5.00%
Pinnacle West Capital Corporation	PNW	16.00	4.50%	5.50%
PNM Resources, Inc.	PNM	18.00	7.50%	6.50%
Portland General Electric Company	POR	17.00	4.00%	6.00%
PPL Corporation	PPL	13.00	2.50%	2.00%
Public Service Enterprise Group Incorporated	PEG	14.00	5.00%	4.00%
Sempra Energy	SRE	20.00	10.50%	7.50%
Southern Company	SO	16.00	3.00%	3.00%
WEC Energy Group, Inc.	WEC	18.00	6.00%	6.50%
Xcel Energy Inc.	XEL	16.00	6.00%	6.00%
Atmos Energy Corporation	ATO	18.00	7.00%	7.50%
Chesapeake Utilities Corporation	CPK	19.00	9.00%	8.50%
Spire Inc	SR	18.00	5.50%	5.00%
New Jersey Resources Corporation	NJR	17.00	2.00%	6.00%
NiSource Inc.	NI	21.00	13.00%	7.50%
Northwest Natural Gas Company	NWN	23.00	24.50%	0.50%
ONE Gas, Inc. [1]	OGS	NMF	6.50%	7.50%
South Jersey Industries, Inc.	SJI	19.00	12.50%	3.50%
Southwest Gas Corporation	SWX	18.00	9.00%	4.00%
UGI Corporation	UGI	17.00	5.50%	6.00%

[1] Excluded from all regressions because of 'NMF' Median P/E value

[2] Excluded from Projected Earnings Growth Rate regression because of 'NMF' Projected Earning Growth Rate Value

Source: Value Line Reports as of November 30, 2020

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.60268872
R Square	0.36323369
Adjusted R Square	0.34690635
Standard Error	1.70360924
Observations	41

ANOVA

	df	SS	MS	F	Significance F
Regression	1	64.56700398	64.56700398	22.24695928	3.04904E-05
Residual	39	113.1890936	2.902284451		
Total	40	177.7560976			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	15.7398559	0.477447563	32.96666926	4.29691E-30	14.77412704	16.70558474
Proj.EarningsGrowth Rate	31.3561997	6.647955327	4.716668239	3.04904E-05	17.90944087	44.80295862

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.05756336
R Square	0.00331354
Adjusted R Square	-0.0216036
Standard Error	2.17856053
Observations	42

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.631150456	0.631150456	0.132982238	0.717280708
Residual	40	189.84504	4.746126		
Total	41	190.4761905			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	17.7386579	0.678318185	26.15093956	9.07622E-27	16.36772566	19.10959004
Proj.Dividend Growth Rate	-4.5005635	12.34156053	-0.364667297	0.717280708	-29.4437878	20.44266075

Rebuttal Exhibit_(DWD-11)

Dr. Klein DCF Recreated - Expected Dividend Yield (Value Line)

Company	Ticker	Dividend Yield	Expected Dividend Yield (DPS)	DPS	ROE (DPS)
Atmos Energy Corporation	ATO	2.40%	2.49%	7.50%	
New Jersey Resources Corporation	NJR	3.80%	3.91%	6.00%	
ONE Gas, Inc.	OGS	3.00%	3.11%	7.50%	
Southwest Gas Holdings, Inc.	SWX	3.30%	3.37%	4.00%	
Spire Inc.	SR	4.30%	4.41%	5.00%	
Average		3.36%	3.46%	6.00%	9.46%

Dr. Klein DCF Recreated - Expected Dividend Yield, EPS Growth Rates, Individual Company Results (Value Line)

Company	Ticker	Dividend Yield	Expected Dividend Yield (EPS)	EPS	ROE (EPS)
Atmos Energy Corporation	ATO	2.40%	2.48%	7.00%	9.48%
New Jersey Resources Corporation	NJR	3.80%	3.84%	2.00%	5.84%
Northwest Natural Holding Company	NWN	3.60%	4.04%	24.50%	28.54%
ONE Gas, Inc.	OGS	3.00%	3.10%	6.50%	9.60%
South Jersey Industries, Inc.	SJI	5.10%	5.42%	12.50%	17.92%
Southwest Gas Holdings, Inc.	SWX	3.30%	3.45%	9.00%	12.45%
Spire Inc.	SR	4.30%	4.42%	5.50%	9.92%
Median					9.92%

Source: Klein Exhibit Pages 3-4

Dr. Klein Recreated - Expected Dividend Yield (10/30/2020)

Company	Ticker	Dividend Yield	Expected Dividend Yield (DPS)	DPS	ROE (DPS)
Atmos Energy Corporation	ATO	2.51%	2.60%	7.50%	
New Jersey Resources Corporation	NJR	4.56%	4.70%	6.00%	
ONE Gas, Inc.	OGS	3.13%	3.25%	7.50%	
Southwest Gas Holdings, Inc.	SWX	3.42%	3.49%	4.00%	
Spire Inc.	SR	4.44%	4.55%	5.00%	
Average			3.72%	6.00%	9.72%

Dr. Klein Recreated - Expected Dividend Yield, EPS Growth Rates, Individual Company Results (10/30/2020)

As of 10/30/2020

Company	Ticker	Dividend Yield	Expected Dividend Yield (EPS)	EPS	ROE (EPS)	Dividend	Price
Atmos Energy Corporation	ATO	2.51%	2.60%	7.00%	9.60%		
New Jersey Resources Corporation	NJR	4.56%	4.61%	2.00%	6.61%		
Northwest Natural Holding Company	NWN	4.32%	4.85%	24.50%	29.35%	0.4800	44.44
ONE Gas, Inc.	OGS	3.13%	3.23%	6.50%	9.73%		
South Jersey Industries, Inc.	SJI	6.28%	6.67%	12.50%	19.17%	0.3025	19.27
Southwest Gas Holdings, Inc.	SWX	3.42%	3.57%	9.00%	12.57%		
Spire Inc.	SR	4.44%	4.56%	5.50%	10.06%		
Median					10.06%		

Source: Klein Exhibit Pages 3-5, S&P Global Market Intelligence

Dr. Klein Recreated - Expected Dividend Yield (11/9/2020)

Company	Ticker	Dividend Yield	Expected Dividend Yield (DPS)	DPS	ROE (DPS)
Atmos Energy Corporation	ATO	2.35%	2.44%	7.50%	
New Jersey Resources Corporation	NJR	3.99%	4.11%	6.00%	
ONE Gas, Inc.	OGS	2.94%	3.05%	7.50%	
Southwest Gas Holdings, Inc.	SWX	3.21%	3.27%	4.00%	
Spire Inc.	SR	4.03%	4.13%	5.00%	
Average			3.40%	6.00%	9.40%

Dr. Klein Recreated - Expected Dividend Yield, EPS Growth Rates, Individual Company Results (11/9/2020)

As of 11/9/2020

Company	Ticker	Dividend Yield	Expected Dividend Yield (EPS)	EPS	ROE (EPS)	Dividend	Price
Atmos Energy Corporation	ATO	2.35%	2.43%	7.00%	9.43%		
New Jersey Resources Corporation	NJR	3.99%	4.03%	2.00%	6.03%		
Northwest Natural Holding Company	NWN	4.09%	4.59%	24.50%	29.09%	0.4800	46.97
ONE Gas, Inc.	OGS	2.94%	3.04%	6.50%	9.54%		
South Jersey Industries, Inc.	SJI	5.62%	5.97%	12.50%	18.47%	0.3025	21.54
Southwest Gas Holdings, Inc.	SWX	3.21%	3.35%	9.00%	12.35%		
Spire Inc.	SR	4.03%	4.14%	5.50%	9.64%		
Median					9.64%		

Source: Klein Exhibit Pages 3-5, S&P Global Market Intelligence

Dr. Klein Recreated - Expected Dividend Yield (11/13/2020)

Company	Ticker	Dividend Yield	Expected Dividend Yield (DPS)	DPS	ROE (DPS)
Atmos Energy Corporation	ATO	2.45%	2.54%	7.50%	
New Jersey Resources Corporation	NJR	3.65%	3.76%	6.00%	
ONE Gas, Inc.	OGS	2.83%	2.94%	7.50%	
Southwest Gas Holdings, Inc.	SWX	3.24%	3.30%	4.00%	
Spire Inc.	SR	3.93%	4.03%	5.00%	
Average			3.31%	6.00%	9.31%

Dr. Klein Recreated - Expected Dividend Yield, EPS Growth Rates, Individual Company Results (11/13/2020)

As of 11/13/2020

Company	Ticker	Dividend Yield	Expected Dividend Yield (EPS)	EPS	ROE (EPS)	Dividend	Price
Atmos Energy Corporation	ATO	2.45%	2.54%	7.00%	9.54%		
New Jersey Resources Corporation	NJR	3.65%	3.69%	2.00%	5.69%		
Northwest Natural Holding Company	NWN	3.91%	4.38%	24.50%	28.88%	0.4800	49.15
ONE Gas, Inc.	OGS	2.83%	2.92%	6.50%	9.42%		
South Jersey Industries, Inc.	SJI	5.17%	5.49%	12.50%	17.99%	0.3025	23.42
Southwest Gas Holdings, Inc.	SWX	3.24%	3.39%	9.00%	12.39%		
Spire Inc.	SR	3.93%	4.04%	5.50%	9.54%		
Median					9.54%		

Source: Klein Exhibit Pages 3-5, S&P Global Market Intelligence

Rebuttal Exhibit_(DWD-12)

Hypothetical Example: Flotation Cost Recovery

Return on Equity	10.75%
Flotation Costs	2.75%
Market Value \$	25.00
Dividend Yield	3.50%
Growth Rate	7.25%
Adjusted ROE	10.85%
Flotation Cost Recovery:	No
DCF Estimate	10.65%

	Common Stock	Retained Earnings	Book Value	Market Price	Market/ Book Value	Earnings Per Share	Dividends Per Share	Payout Ratio
1	\$ 24.31		\$ 24.31	\$ 25.00	1.0283	\$ 2.61	\$ 0.88	33.48%
2	\$ 24.31	\$ 1.74	\$ 26.05	\$ 26.79	1.0283	\$ 2.80	\$ 0.94	33.48%
3	\$ 24.31	\$ 3.60	\$ 27.91	\$ 28.70	1.0283	\$ 3.00	\$ 1.00	33.48%
4	\$ 24.31	\$ 5.60	\$ 29.91	\$ 30.76	1.0283	\$ 3.22	\$ 1.08	33.48%
5	\$ 24.31	\$ 7.74	\$ 32.05	\$ 32.96	1.0283	\$ 3.45	\$ 1.15	33.48%
6	\$ 24.31	\$ 10.03	\$ 34.34	\$ 35.31	1.0283	\$ 3.69	\$ 1.24	33.48%
7	\$ 24.31	\$ 12.48	\$ 36.80	\$ 37.84	1.0283	\$ 3.96	\$ 1.32	33.48%
8	\$ 24.31	\$ 15.12	\$ 39.43	\$ 40.54	1.0283	\$ 4.24	\$ 1.42	33.48%
9	\$ 24.31	\$ 17.94	\$ 42.25	\$ 43.44	1.0283	\$ 4.54	\$ 1.52	33.48%
10	\$ 24.31	\$ 20.96	\$ 45.27	\$ 46.55	1.0283	\$ 4.87	\$ 1.63	33.48%
Growth Rate			7.15%	7.15%		7.15%	7.15%	

Return on Equity	10.75%
Flotation Costs	2.75%
Market Value \$	25.00
Dividend Yield	3.50%
Growth Rate	7.25%
Adjusted ROE	10.85%
Flotation Cost Recovery:	Yes
DCF Estimate	10.75%

	Common Stock	Retained Earnings	Book Value	Market Price	Market/ Book Value	Earnings Per Share	Dividends Per Share	Payout Ratio
1	\$ 24.31		\$ 24.31	\$ 25.00	1.0283	\$ 2.64	\$ 0.88	33.17%
2	\$ 24.31	\$ 1.76	\$ 26.08	\$ 26.81	1.0283	\$ 2.83	\$ 0.94	33.17%
3	\$ 24.31	\$ 3.65	\$ 27.97	\$ 28.76	1.0283	\$ 3.03	\$ 1.01	33.17%
4	\$ 24.31	\$ 5.68	\$ 29.99	\$ 30.84	1.0283	\$ 3.25	\$ 1.08	33.17%
5	\$ 24.31	\$ 7.86	\$ 32.17	\$ 33.08	1.0283	\$ 3.49	\$ 1.16	33.17%
6	\$ 24.31	\$ 10.19	\$ 34.50	\$ 35.48	1.0283	\$ 3.74	\$ 1.24	33.17%
7	\$ 24.31	\$ 12.69	\$ 37.00	\$ 38.05	1.0283	\$ 4.01	\$ 1.33	33.17%
8	\$ 24.31	\$ 15.37	\$ 39.68	\$ 40.81	1.0283	\$ 4.31	\$ 1.43	33.17%
9	\$ 24.31	\$ 18.25	\$ 42.56	\$ 43.76	1.0283	\$ 4.62	\$ 1.53	33.17%
10	\$ 24.31	\$ 21.33	\$ 45.65	\$ 46.94	1.0283	\$ 4.95	\$ 1.64	33.17%
Growth Rate			7.25%	7.25%		7.25%	7.25%	