

1           Second, Mr. Baudino’s concern that I had not shown investor acceptance of the  
2 “alpha” factor assumed in my ECAPM analyses is misplaced. If anything, my assumed  
3 “alpha” factor is somewhat conservative; as Chart 20 demonstrates, the ECAPM mitigates  
4 the CAPM’s tendency to under-estimate returns for low-Beta firms, but does not eliminate  
5 it. Consequently, I continue to believe the ECAPM is a reasonable method to be applied  
6 in this proceeding.

7  
8                                   **D.    Bond Yield Plus Risk Premium Approach**

9   **Q.    WHAT CONCERNS DOES MR. BAUDINO EXPRESS REGARDING YOUR**  
10 **BOND YIELD PLUS RISK PREMIUM ANALYSIS?**

11   A.    Mr. Baudino suggests the Bond Yield Plus Risk Premium method is “imprecise and can  
12 only provide very general guidance,” and notes that “[r]isk premiums can change  
13 substantially over time.”<sup>282</sup> In the end, Mr. Baudino sees the approach as a “blunt  
14 instrument”.<sup>283</sup> Regarding its application, Mr. Baudino disagrees with the use of projected  
15 Treasury yields.

16  
17 **Q.    WHAT IS YOUR RESPONSE TO MR. BAUDINO’S OBSERVATIONS?**

18   A.    Turning first to Mr. Baudino’s point that the Risk Premium can change over time, I agree.  
19 As noted in my Direct Testimony, there is a statistically significant negative relationship  
20 between long-term Treasury yields and the Equity Risk Premium.<sup>284</sup> Given Mr. Baudino’s  
21 observation that interest rates have declined since 2008, the Bond Yield Plus Risk Premium  
22 analysis provides an empirically and theoretically sound method of quantifying the  
23 relationship between the Cost of Equity and interest rates. That is, it provides a method to  
24 quantify the change Mr. Baudino has observed.

25           As to Mr. Baudino’s notion that the approach is a “blunt instrument,” I disagree.  
26           As shown in Chart 8 in my Direct Testimony, the R-squared of the Bond Yield Plus Risk

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<sup>282</sup> Direct Testimony of Richard A. Baudino, at 48.

<sup>283</sup> *Ibid.*

<sup>284</sup> Direct Testimony of Robert B. Hevert, at 67-68 (Bates page 522-523).

1 Premium regression analysis is approximately 0.74, indicating a rather high degree of  
2 explanatory value. More importantly (and as discussed in my response to Mr. Gorman),  
3 the relationship is highly statistically significant. Consequently, Bond Yield Plus Risk  
4 Premium approach provides empirically and theoretically sound results that can be used,  
5 at a minimum, to assess the wide range of ROE results produced by Mr. Baudino's analyses  
6 in general, and his 9.20 percent recommendation in particular.  
7

8 **Q. DO YOU AGREE WITH MR. BAUDINO'S CLAIM THAT INCLUDING RATE**  
9 **CASE RESULTS SINCE 1980 IS "AN IRRELEVANT EXERCISE"?**<sup>285</sup>

10 A. No, I do not. Simply, the model focuses on the relationship between interest rates and the  
11 Equity Risk Premium; it does not view the two in isolation. There is no evidence that  
12 excluding data from my analysis would improve the model's ability to estimate expected  
13 returns.

14 **E. Expected Earnings Analysis**

15 **F. PLEASE BRIEFLY SUMMARIZE MR. BAUDINO'S POSITION REGARDING**  
16 **THE EXPECTED EARNINGS ANALYSIS.**

17 A. Mr. Baudino asserts that the "flaw" in the Expected Earnings approach is that it measures  
18 accounting returns on book value, not investor required returns in the marketplace."<sup>286</sup>  
19

20 **Q. WHAT IS YOUR RESPONSE TO MR. BAUDINO ON THAT POINT?**

21 A. Although I agree economic and financial factors, and the market-based models that depend  
22 on them are important, I do not agree those factors invalidate the Expected Earnings  
23 approach. As discussed in my Direct Testimony, no single method best captures investor  
24 expectations at all times and under all conditions. Market-based models necessarily require  
25 us to draw inferences from market data based on the assumptions and construction of  
26 methods such as the DCF and CAPM approaches. The simplicity of the Expected Earnings  
27 approach is a benefit, not a detriment.

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<sup>285</sup> Direct Testimony of Richard A. Baudino, at 42.

<sup>286</sup> *Ibid.*, at 49.

1           In addition, the standard revenue requirements formula applied by the Commission  
2 explicitly recognizes the validity of the book value of equity by choosing to measure capital  
3 structures based on book values, rather than market value. Moreover, although many  
4 factors affect stock returns and market to book ratios, the accounting-based ROE is one of  
5 them and therefore cannot be ignored.<sup>287</sup> As a practical matter, the Economic Value Added  
6 (“EVA”) consulting practices<sup>288</sup> (Stern Stewart & Company) and related value-based-  
7 management systems<sup>289</sup> encourage financial managers to focus on elements of the Return  
8 on Net Assets, and Return on Invested Capital.

9           Dr. Morin summarizes the issue by noting that the method “is easily understood,  
10 and is firmly anchored in regulatory tradition,” and concluding “because the investment  
11 base for ratemaking purposes is expressed in book value terms, a rate of return on book  
12 value, as is the case with [Expected] Earnings, is highly meaningful.”<sup>290</sup>

13           Further, utility rates are set based on the book value of equity. The Expected  
14 Earnings approach provides a direct measure of the book-based return comparable-risk  
15 utilities are expected to earn. In that sense, it is a direct measure of the expected  
16 opportunity cost on the book value of equity. Equally important, because it looks to the  
17 earnings expected of comparable-risk companies, the approach is consistent with the *Hope*  
18 and *Bluefield* “comparable return” standard. As Dr. Morin notes, the method “is easily  
19 understood, and is firmly anchored in regulatory tradition,” concluding that “because the  
20 investment base for ratemaking purposes is expressed in book value terms, a rate of return  
21 on book value, as is the case with [Expected] Earnings, is highly meaningful.”<sup>291</sup>

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<sup>287</sup> We are not suggesting the Market-to-Book ratio necessarily will equal 1.00 when the accounting-based ROE equals the Cost of Equity

<sup>288</sup> See, G. Bennett Stewart, *The Quest for Value*, HarperCollins Publishers, Inc., 1990.

<sup>289</sup> See, Institute of Management Accountants, *Measuring and Managing Shareholder Value Creation*, 1997.

<sup>290</sup> Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc., 2006 at 392. 395. [Clarification added]

<sup>291</sup> Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc., 2006 at 392. 395. [Clarification added].

**F. Capital Market Environment**

1  
2 **Q. MR. BAUDINO ARGUES THAT “SECURITIES MARKETS ARE EFFICIENT**  
3 **AND MOST LIKELY REFLECT INVESTORS’ EXPECTATIONS ABOUT**  
4 **FUTURE INTEREST RATES.”<sup>292</sup> DO YOU AGREE WITH MR. BAUDINO’S**  
5 **ARGUMENT?**

6 A. Mr. Baudino makes that argument in the context of “market efficiency”, suggesting that if  
7 markets are efficient, expectations regarding the direction and level of interest rates already  
8 are embedded in stock prices and Treasury yields. Mr. Baudino points to Dr. Morin’s 2006  
9 reference to the forecast accuracy of naïve extrapolations and “no-change” methods of  
10 projecting interest rates in support of his position that there is no need to consider projected  
11 interest rates in setting the current ROE.<sup>293</sup> I have several responses to Mr. Baudino on  
12 those points.

13         Regarding the suggestion that the “no-change” method of projecting interest rates  
14 is appropriate in the current market, I do not believe that to be the case. As Mr. Baudino  
15 acknowledges,<sup>294</sup> the Federal Reserve’s Quantitative Easing program, which was initiated  
16 after 2006 (that is, after Dr. Morin’s book was published), was designed to put downward  
17 pressure on long-term interest rates. Consequently, the observed Treasury yield in a given  
18 month likely would over-forecast the observed Treasury yield twelve months in the  
19 future.<sup>295</sup> Conversely, when the Federal Reserve completed its Quantitative Easing  
20 program, it would be reasonable to assume the observed Treasury yield would under-  
21 forecast the yield twelve months in the future (as yields increase). That would be the case  
22 even though the Federal Reserve has not yet unwound the \$4 trillion of assets it acquired  
23 during Quantitative Easing. As Chart 17 above demonstrates, that is clearly the case.

24         Mr. Baudino’s data support that position. As shown in Table 13, from February  
25 2007 through the end of Quantitative Easing (October 2015),<sup>296</sup> the 30-year Treasury yield

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<sup>292</sup> Direct Testimony of Richard A. Baudino, at 9.

<sup>293</sup> *Ibid.*, at 9-10.

<sup>294</sup> Direct Testimony of Richard A. Baudino, at 10.

<sup>295</sup> *See, e.g.*, Chart 17.

<sup>296</sup> Because the Treasury Department discontinued issuances of 30-year Treasury bonds from March 2002 to January 2006, February 2007 was the first month for which the forecast yield was available.

1 over-forecast the twelve-month forward yield 71.00 percent of the time. After October  
 2 2015, current yields over-forecast future yields only 36.00 percent of the time; from 2017  
 3 through April 2019, in only 8 of 30 months (about 27.00 percent of the time). That is, from  
 4 2017 through the April 2019, the “no-change” approach under-forecast Treasury yields in  
 5 22 of 30 months.

6 **Table 13: “No-Change” Forecast Error Observations<sup>297</sup>**

	<b>Feb. 2007 – Oct. 2015</b>	<b>Nov. 2015 – Apr. 2019</b>	<b>Jan. 2017 – Apr. 2019</b>
<i>Number of Observations</i>			
Over-Forecast	75	16	8
Under-Forecast	30	28	22
Total	105	44	30
% Over-Forecast	71.00%	36.00%	27.00%
% Under-Forecast	29.00%	64.00%	73.00%

7 If Mr. Baudino wishes to consider current Treasury yields as measures of future  
 8 rates, we can view the market’s expectations based on the current yield curve. Those  
 9 expected rates, often referred to as “forward yields” are derived from the “Expectations”  
 10 theory, which states that (for example) the current 30-year Treasury yield equals the  
 11 combination of the current five-year Treasury yield, and the 25-year Treasury yield  
 12 expected in five years. That is, an investor would be indifferent to (1) holding a 30-year  
 13 Treasury bond to maturity, or (2) holding a five-year Treasury note to maturity, then a 25-  
 14 year Treasury bond, also to maturity.<sup>298</sup> Here, we can apply Mr. Baudino’s data to calculate  
 15 the forward and current (interpolated) 25-year Treasury yield. If the forward 25-year  
 16 Treasury yield exceeds the current 25-year yield, that relationship indicates expectations  
 17 of future rate increases.

<sup>297</sup> Source: Mr. Baudino’s workpapers, Treasury Yields.xls; Federal Reserve Board Schedule H 15.

<sup>298</sup> In addition to Expectations theory, there are other theories regarding the term structure of interest rates including: Liquidity Premium Theory, which asserts that investors require a premium for holding long term bonds, Market Segmentation Theory, which states that securities of different terms are not substitutable and, as such, the supply of and demand for short-term and long-term instruments is developed independently; and Preferred Habitat Theory, which states that in addition to interest rate expectations, certain investors have distinct investment horizons and will require a return premium for bonds with maturities outside of that preference.

1           Based on the data Mr. Baudino’s Schedule RB-3, page 2, forward yields  
 2 consistently exceeded current spot yields throughout 2019 (*see* Table 14, below). That is,  
 3 just as economists’ projections called for increased interest rates, so have forward Treasury  
 4 yields.

5           **Table 14: Forward vs. Interpolated 25-Year Treasury Yields<sup>299</sup>**

	<b>30-Year Treasury Yield</b>	<b>5-Year Treasury Yield</b>	<b>Forward 25-Year Treasury Yield</b>	<b>Interpolated 25-Year Treasury Yield</b>
January 2019	3.04%	2.54%	3.14%	2.94%
February 2019	3.02%	2.49%	3.13%	2.91%
March 2019	2.98%	2.37%	3.10%	2.86%
April 2019	2.94%	2.33%	3.06%	2.82%
May 2019	2.82%	2.19%	2.95%	2.69%
June 2019	2.57%	1.83%	2.72%	2.42%
Average	2.90%	2.29%	3.02%	2.77%

6           Importantly, forward yields assume the current slope of the yield curve will remain  
 7 constant going forward. They therefore assume the conditions supporting the current slope  
 8 also will remain constant. Consequently, the current yield curve may not fully reflect  
 9 market expectations. Nonetheless, implied forward yields certainly are known and  
 10 considered by the professionals that contribute to the consensus long-term bond yield  
 11 projections published by sources such as *Blue Chip Financial Forecasts*. In that case,  
 12 forward yields would be reflected in economists’ projections.

13  
 14 **Q. MR. BAUDINO ALSO POINTS TO INCREASES IN THE DOW JONES UTILITY  
 15 AVERAGE, AND THE DECREASE IN UTILITY DEBT YIELDS AS SUPPORT  
 16 FOR HIS 9.20 PERCENT ROE RECOMMENDATION.<sup>300</sup> WHAT IS YOUR  
 17 RESPONSE TO MR. BAUDINO ON THOSE POINTS?**

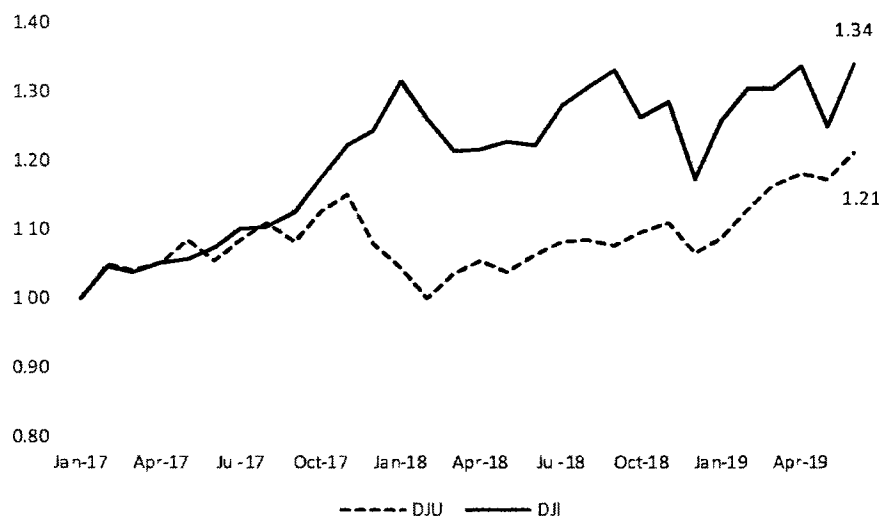
18 **A.** Regarding performance of the Dow Jones Utility Average (“DJU”), an important  
 19 perspective is its performance relative to the overall market. As Chart 21 (below)  
 20 demonstrates, from January 2017 through June 2019 (the period included in Mr. Baudino’s

<sup>299</sup> Source: Schedule RB-3, page 2 of 2

<sup>300</sup> Direct Testimony of Richard A. Baudino, at 10–11.

1 Table 1), the DJU significantly underperformed the overall market as measured by the Dow  
 2 Jones Industrial Average (“DJJ”). Notably, much of that underperformance occurred  
 3 between November 2017 and March 2018, about the time tax reform was enacted, and  
 4 during which the major rating agencies noted its implications for utilities. A reasonable  
 5 inference drawn from that data is that investors began to re-evaluate utilities relative to  
 6 other sectors. That inference, and the related conclusion that required returns for utilities  
 7 has increased, is supported by Mr. Baudino’s data.

8 **Chart 21: Relative Price Performance<sup>301</sup>**



9  
 10 **VII. RESPONSE TO WALMART WITNESS CHRISS**

11 **Q. PLEASE SUMMARIZE MR. CHRISS’ TESTIMONY REGARDING THE**  
 12 **COMPANY’S ROE.**

13 **A.** Mr. Chriss opposes the Company’s proposed ROE based on his review of authorized ROEs  
 14 since 2016, nationwide and in Texas.<sup>302</sup> He recommends the Commission “closely  
 15 examine” the Company’s proposed ROE “in light of a. The customer impact of the  
 16 resulting revenue requirement increases; b. The use of risk reducing structures, including  
 17 the proposal to move all transmission cost recovery to the Transmission Cost Recovery

<sup>301</sup> Source: Direct Testimony of Richard A. Baudino, at 11 Table 1; Yahoo!Finance.

<sup>302</sup> See Direct Testimony and Exhibits of Steve W. Chriss, at 11-15.

Factor ("TCRF"); c. Recent rate case ROEs approved by the Commission; and d. Recent rate case ROEs approved by other Commissions nationwide."<sup>303</sup> Mr. Chriss did not undertake an independent, market-based analysis of the Company's Cost of Equity.

**Q. ARE THERE OTHER DISTINCTIONS THAT ARE IMPORTANT TO CONSIDER WHEN REVIEWING AUTHORIZED RETURNS?**

A. Yes, there are. Utility credit ratings and outlooks depend substantially on the extent to which rating agencies view the regulatory environment credit supportive, or not. For example, that Moody's finds the regulatory environment to be so important that 50.00 percent of the factors that weigh in its ratings determination are determined by the nature of regulation.<sup>304</sup> Given the Company's need to access external capital and the weight rating agencies place on the nature of the regulatory environment, I believe it is important to consider the extent to which the jurisdictions that recently have authorized ROEs for electric utilities are viewed as having constructive regulatory environments.

**Q. HAVE YOU REVIEWED AND UPDATED THE INFORMATION CONTAINED IN MR. CHRISS' EXHIBIT SWC-3?**

A. Yes. As shown in Table 15 (below; *see also*, Exhibit RBH-27R), I analyzed the authorized ROE for electric utilities based on the jurisdiction's ranking by RRA. RRA, which is the source of Mr. Chriss' data, provides an assessment of the extent to which regulatory jurisdictions are constructive from investors' perspectives, or not. As RRA explains, less constructive environments are associated with higher levels of risk:

RRA maintains three principal rating categories, Above Average, Average, and Below Average, with Above Average indicating a relatively more constructive, lower-risk regulatory environment from an investor viewpoint, and Below Average indicating a less constructive, higher-risk regulatory climate from an investor viewpoint. Within the three principal rating categories, the numbers 1, 2, and 3 indicate relative position. The designation 1 indicates a stronger (more

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<sup>303</sup> *Ibid.*, at 6.

<sup>304</sup> *See* Moody's Investors Service, Rating Methodology: Regulated Electric and Gas Utilities, December 23, 2013, at 6.



1 constructive) rating; 2, a mid range rating; and, 3, a weaker (less constructive)  
 2 rating. We endeavor to maintain an approximately equal number of ratings  
 3 above the average and below the average.<sup>305</sup>

4 Texas currently is ranked “Average/3”, which falls in the bottom-third of the 53  
 5 jurisdictions ranked by RRA.

6 Across the 120 electric utility cases for which RRA reports an authorized ROE  
 7 since 2016, there was a 42-basis point difference between the median return for  
 8 jurisdictions ranked “Above Average” and jurisdictions ranked “Below Average” (the  
 9 higher-ranked jurisdictions providing the higher authorized returns, *see* Table 15, below).  
 10 As Table 15 indicates, authorized ROEs for electric utilities in jurisdictions rated “Above  
 11 Average” range from 9.80 percent to 10.55 percent, with an average of 10.01 percent, and  
 12 a median of 10.00 percent.

13 **Table 15: Average Authorized ROE by RRA Ranking<sup>306</sup>**

<b>Authorized ROE (%)</b>			
<b>All Electric Utilities</b>			
<b>RRA Ranking</b>	<b>Above Average</b>	<b>Average</b>	<b>Below Average</b>
Mean	10.01%	9.59%	9.63%
Median	10.00%	9.50%	9.58%
Maximum	10.55%	10.30%	11.95%
Minimum	9.80%	8.75%	9.10%

14 My recommended range, 10.00 percent to 10.75 percent, is consistent with the returns  
 15 authorized in more constructive jurisdictions.

<sup>305</sup> Source: Regulatory Research Associates, accessed August 6, 2019.

<sup>306</sup> Source: Regulatory Research Associates. *See*, also Exhibit RBH-27R. Excludes limited issue riders and Illinois formula rate plan proceedings.

1 **Q. DO YOU AGREE WITH MR. CHRISS' CALCULATION OF THE AVERAGE**  
2 **AUTHORIZED ROE FOR ALL UTILITIES?**<sup>307</sup>

3 A. No, I do not. Mr. Chriss's average authorized ROE for all utilities reported in his Exhibit  
4 SWC-4 includes ROEs authorized as part of the Illinois Formula Rate proceedings,<sup>308</sup>  
5 which bias his calculated average downward. Removing cases under the Illinois Formula  
6 Rate Plans results in mean and median authorized ROE for all utilities of 9.66 percent and  
7 9.60 percent.<sup>309</sup>

8

9 **Q. HAS MR. CHRISS CONSIDERED THE EFFECT OF HIS RECOMMENDATION**  
10 **ON THE COMPANY'S FINANCIAL PROFILE?**

11 A. No, he has not. The financial community carefully monitors utility companies' financial  
12 conditions, both current and expected as well as the regulatory environment in which those  
13 companies operate. Here, Mr. Chriss suggests the Commission should reduce the  
14 Company's ROE by some unspecified amount without the benefit of market-based,  
15 comparative analyses to support that recommendation. The consequence of doing so would  
16 indicate an increased degree of regulatory risk.

17

18 **VIII. RESPONSE TO STEC WITNESS ALLEN**

19 **Q. PLEASE SUMMARIZE MR. ALLEN'S TESTIMONY WITH RESPECT TO THE**  
20 **COMPANY'S ROE AND CAPITAL STRUCTURE.**

21 A. Mr. Allen opposes the Company's proposed ROE and capital structure based on his review  
22 of authorized ROEs in place at the other American Electric Power operating subsidiaries

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<sup>307</sup> Direct Testimony and Exhibits of Steve W. Chriss, at Exhibit SWC-3.

<sup>308</sup> In Illinois, statutes require the ROEs for Commonwealth Edison and Ameren Illinois to be re-set annually, under a formula rate plan ratemaking paradigm where the allowed ROE is set by application of a 580 basis-point premium to the 12-month average 30-year Treasury Bond yield. In the historically low interest rate environment, this framework has resulted in the lowest ROEs in at least 30 years. Source: Regulatory Research Associates.

<sup>309</sup> Source: Regulatory Research Associates. Please note, of the 39 distribution-only cases since 2016, 16 have occurred in jurisdictions ranked "Below Average".

1 and in Texas and his review of prior Commission cases.<sup>310</sup> He asserts that the Company  
2 “has very little risk” and as such, he believes the Company’s proposed ROE is “not  
3 reflective of the market” and should be rejected.<sup>311</sup>  
4

5 **Q. WHAT IS YOUR RESPONSE TO MR. ALLEN ON THOSE POINTS?**

6 A. Whereas I have provided several market-based analyses to support my recommendation,  
7 Mr. Allen did not undertake an independent, market-based analysis of the Company’s Cost  
8 of Equity. In any case, Mr. Allen has not provided any analysis to support his position that  
9 the Company “has very little risk”.  
10

11 **IX. CONCLUSION AND RECOMMENDATION**

12 **Q. WHAT IS YOUR OVERALL CONCLUSION REGARDING THE COMPANY’S**  
13 **COST OF EQUITY?**

14 A. I have updated the Constant Growth Discounted Cash Flow (“DCF”) model, Capital Asset  
15 Pricing Model (“CAPM”), Empirical CAPM (“ECAPM”), Bond Yield Risk Premium, and  
16 Expected Earnings analyses based on data through June 28, 2019 applied to my Updated  
17 Proxy Group. None of these changes have caused me to change my recommendation.  
18 Based on the analyses discussed throughout my Rebuttal Testimony, I find the reasonable  
19 range of ROE estimates is from 10.00 percent to 10.75 percent, and within that range, 10.50  
20 percent is a reasonable and appropriate estimate of AEP Texas’ Cost of Equity. The results  
21 of the updated DCF, CAPM, ECAPM, Bond Yield Plus Risk Premium, and Expected  
22 Earnings analyses, along with my analyses of capital market data, authorized returns in  
23 other regulatory jurisdictions, and assessments of rating agency concerns and criteria

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<sup>310</sup> Direct Testimony of Cory J. Allen, at 12, 14.

<sup>311</sup> *Ibid.*, at 6.

1 support the reasonableness of my range of ROE estimates and my recommendation. My  
 2 updated results are provided in Table 16, below.

3 **Table 16: Summary of Updated Analytical Results**

<b>Discounted Cash Flow</b>	<b>Mean Low</b>	<b>Mean</b>	<b>Mean High</b>
30-day Constant Growth DCF	8.02%	8.82%	9.65%
90-day Constant Growth DCF	8.10%	8.90%	9.74%
180-day Constant Growth DCF	8.24%	9.03%	9.87%
<b>CAPM Results</b>		<b>Bloomberg Derived Market Risk Premium</b>	<b>Value Line Derived Market Risk Premium</b>
Average Bloomberg Beta Coefficient			
Current 30-Year Treasury (2.63%)		8.74%	8.69%
Near Term Projected 30-Year Treasury (2.70%)		8.81%	8.76%
Average Value Line Beta Coefficient			
Current 30-Year Treasury (2.63%)		9.65%	9.59%
Near Term Projected 30-Year Treasury (2.70%)		9.72%	9.66%
<b>Empirical CAPM Results</b>		<b>Bloomberg Derived Market Risk Premium</b>	<b>Value Line Derived Market Risk Premium</b>
Average Bloomberg Beta Coefficient			
Current 30-Year Treasury (2.63%)		10.27%	10.21%
Near Term Projected 30-Year Treasury (2.70%)		10.34%	10.28%
Average Value Line Beta Coefficient			
Current 30-Year Treasury (2.63%)		10.96%	10.89%
Near Term Projected 30-Year Treasury (2.70%)		11.02%	10.96%
	<b>Low</b>	<b>Mid</b>	<b>High</b>
Bond Yield Risk Premium	9.90%	9.90%	10.06%
		<b>Mean</b>	<b>Median</b>
Expected Earnings		10.19%	10.04%

4

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

6 **A.** Yes, it does.

Constant Growth Discounted Cash Flow Model  
30 Day Average Stock Price

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.35	\$83.46	2.82%	2.90%	7.20%	6.00%	5.00%	6.07%	7.89%	8.97%	10.12%
Alliant Energy Corporation	LNT	\$1.42	\$48.76	2.91%	2.99%	5.50%	4.80%	6.50%	5.60%	7.78%	8.59%	9.51%
Amerian Corporation	AEE	\$1.90	\$75.44	2.52%	2.59%	6.20%	4.90%	6.50%	5.87%	7.48%	8.46%	9.10%
Avangrid, Inc.	AGR	\$1.76	\$50.88	3.46%	3.60%	7.60%	6.80%	10.00%	8.13%	10.38%	11.73%	13.63%
Consolidated Edison	ED	\$2.96	\$87.75	3.37%	3.42%	2.00%	3.41%	3.00%	2.80%	5.41%	6.22%	6.84%
CMS Energy Corporation	CMS	\$1.53	\$57.53	2.66%	2.75%	6.40%	7.08%	7.00%	6.83%	9.14%	9.58%	9.83%
DTE Energy Company	DTE	\$3.78	\$128.30	2.95%	3.02%	6.00%	4.05%	5.50%	5.18%	7.06%	8.21%	9.03%
Duke Energy Corporation	DUK	\$3.71	\$87.46	4.24%	4.37%	4.80%	7.13%	6.00%	5.98%	9.14%	10.35%	11.52%
Eergy, Inc.	EVRG	\$1.90	\$59.74	3.18%	3.28%	6.60%	6.15%	NMF	6.38%	9.43%	9.66%	9.89%
Eversource Energy	ES	\$2.14	\$75.50	2.83%	2.91%	5.60%	5.63%	5.50%	5.58%	8.41%	8.49%	8.54%
Hawaiian Electric Industries, Inc.	HE	\$1.28	\$42.67	3.00%	3.08%	5.60%	6.10%	4.50%	5.40%	7.57%	8.48%	9.19%
NextEra Energy, Inc.	NEE	\$5.00	\$203.25	2.46%	2.57%	8.00%	8.23%	10.00%	8.74%	10.56%	11.31%	12.58%
NorthWestern Corporation	NWE	\$2.30	\$72.34	3.18%	3.23%	3.00%	3.51%	3.00%	3.17%	6.23%	6.40%	6.75%
OGE Energy Corp.	OGE	\$1.46	\$42.80	3.41%	3.50%	4.60%	3.80%	6.50%	4.97%	7.28%	8.46%	10.02%
Otter Tail Corporation	OTTR	\$1.40	\$51.45	2.72%	2.82%	7.00%	9.00%	5.00%	7.00%	7.79%	9.82%	11.84%
Pinnacle West Capital Corporation	PNW	\$2.95	\$96.28	3.06%	3.14%	5.00%	5.01%	5.00%	5.00%	8.14%	8.14%	8.15%
PNM Resources, Inc.	PNM	\$1.16	\$49.34	2.35%	2.43%	5.20%	6.15%	8.50%	6.62%	7.61%	9.05%	10.95%
Portland General Electric Company	POR	\$1.54	\$54.19	2.84%	2.91%	4.90%	5.20%	4.50%	4.87%	7.41%	7.78%	8.12%
Southern Company	SO	\$2.48	\$54.74	4.53%	4.61%	4.50%	2.17%	3.50%	3.39%	6.75%	8.00%	9.13%
WEC Energy Group, Inc.	WEC	\$2.36	\$82.81	2.85%	2.93%	5.90%	5.82%	6.00%	5.91%	8.75%	8.84%	8.94%
Xcel Energy Inc	XEL	\$1.62	\$59.22	2.74%	2.81%	5.60%	6.24%	5.50%	5.78%	8.31%	8.59%	9.06%
PROXY GROUP MEAN				3.05%	3.14%	5.58%	5.58%	5.85%	5.68%	8.02%	8.82%	9.65%
PROXY GROUP MEDIAN				2.91%	2.99%	5.60%	5.82%	5.50%	5.78%	7.79%	8.59%	9.19%

## Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 30-trading day average as of June 28, 2019

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [8])

[5] Source: Zacks

[6] Source: Yahoo! Finance

[7] Source: Value Line

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

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

[10] Equals [4] + [8]

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

Constant Growth Discounted Cash Flow Model  
90 Day Average Stock Price

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.35	\$82.32	2.85%	2.94%	7.20%	6.00%	5.00%	6.07%	7.93%	9.01%	10.16%
Alliant Energy Corporation	LNT	\$1.42	\$47.34	3.00%	3.08%	5.50%	4.80%	6.50%	5.60%	7.87%	8.68%	9.60%
Ameren Corporation	AEE	\$1.90	\$73.30	2.59%	2.67%	6.20%	4.90%	6.50%	5.87%	7.56%	8.53%	9.18%
Avangrid, Inc	AGR	\$1.76	\$50.31	3.50%	3.64%	7.60%	6.80%	10.00%	8.13%	10.42%	11.77%	13.67%
Consolidated Edison	ED	\$2.96	\$85.41	3.47%	3.51%	2.00%	3.41%	3.00%	2.80%	5.50%	6.32%	6.93%
CMS Energy Corporation	CMS	\$1.53	\$55.72	2.75%	2.84%	6.40%	7.08%	7.00%	6.83%	9.23%	9.67%	9.92%
DTE Energy Company	DTE	\$3.78	\$125.36	3.02%	3.09%	6.00%	4.05%	5.50%	5.18%	7.13%	8.28%	9.11%
Duke Energy Corporation	DUK	\$3.71	\$88.86	4.18%	4.30%	4.80%	7.13%	6.00%	5.98%	9.08%	10.28%	11.45%
Evergy, Inc	EVRG	\$1.90	\$57.95	3.28%	3.38%	6.60%	6.15%	NMF	6.38%	9.53%	9.76%	9.99%
Eversource Energy	ES	\$2.14	\$72.32	2.96%	3.04%	5.60%	5.63%	5.50%	5.58%	8.54%	8.62%	8.67%
Hawaiian Electric Industries, Inc.	HE	\$1.28	\$41.23	3.10%	3.19%	5.60%	6.10%	4.50%	5.40%	7.67%	8.59%	9.30%
NextEra Energy, Inc.	NEE	\$5.00	\$194.77	2.57%	2.68%	8.00%	8.23%	10.00%	8.74%	10.67%	11.42%	12.70%
NorthWestern Corporation	NWE	\$2.30	\$70.60	3.26%	3.31%	3.00%	3.51%	3.00%	3.17%	6.31%	6.48%	6.83%
OGE Energy Corp.	OGE	\$1.46	\$42.43	3.44%	3.53%	4.60%	3.80%	6.50%	4.97%	7.31%	8.49%	10.05%
Otter Tail Corporation	OTTR	\$1.40	\$50.66	2.76%	2.86%	7.00%	9.00%	5.00%	7.00%	7.83%	9.86%	11.89%
Pinnacle West Capital Corporation	PNW	\$2.95	\$95.03	3.10%	3.18%	5.00%	5.01%	5.00%	5.00%	8.18%	8.19%	8.19%
PNM Resources, Inc.	PNM	\$1.16	\$47.17	2.46%	2.54%	5.20%	6.15%	8.50%	6.62%	7.72%	9.16%	11.06%
Portland General Electric Company	POR	\$1.54	\$52.41	2.94%	3.01%	4.90%	5.20%	4.50%	4.87%	7.50%	7.88%	8.22%
Southern Company	SO	\$2.48	\$52.76	4.70%	4.78%	4.50%	2.17%	3.50%	3.39%	6.92%	8.17%	9.31%
WEC Energy Group, Inc.	WEC	\$2.36	\$79.37	2.97%	3.06%	5.90%	5.82%	6.00%	5.91%	8.88%	8.97%	9.06%
Xcel Energy Inc.	XEL	\$1.62	\$56.98	2.84%	2.93%	5.60%	6.24%	5.50%	5.78%	8.42%	8.71%	9.17%
PROXY GROUP MEAN				3.13%	3.22%	5.58%	5.58%	5.85%	5.68%	8.10%	8.90%	9.74%
PROXY GROUP MEDIAN				3.00%	3.08%	5.60%	5.82%	5.50%	5.78%	7.87%	8.68%	9.31%

## Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 90-trading day average as of June 28, 2019

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [8])

[5] Source: Zacks

[6] Source: Yahoo! Finance

[7] Source: Value Line

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

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

[10] Equals [4] + [8]

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Constant Growth Discounted Cash Flow Model  
180 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Annualized Dividend	Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	First Call Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
ALLETE, Inc.	ALE	\$2.35	\$79.64	2.95%	3.04%	7.20%	6.00%	5.00%	6.07%	8.02%	9.11%	10.26%
Alliant Energy Corporation	LNT	\$1.42	\$45.56	3.12%	3.20%	5.50%	4.80%	6.50%	5.60%	7.99%	8.80%	9.72%
Ameren Corporation	AEE	\$1.90	\$70.25	2.70%	2.78%	6.20%	4.90%	6.50%	5.87%	7.67%	8.65%	9.29%
Avangrd, Inc.	AGR	\$1.76	\$49.85	3.53%	3.67%	7.60%	6.80%	10.00%	8.13%	10.45%	11.81%	13.71%
Consolidated Edison	ED	\$2.96	\$81.61	3.63%	3.68%	2.00%	3.41%	3.00%	2.80%	5.66%	6.48%	7.10%
CMS Energy Corporation	CMS	\$1.53	\$53.26	2.87%	2.97%	6.40%	7.08%	7.00%	6.83%	9.36%	9.80%	10.05%
DTE Energy Company	DTE	\$3.78	\$120.21	3.14%	3.23%	6.00%	4.05%	5.50%	5.18%	7.26%	8.41%	9.24%
Duke Energy Corporation	DUK	\$3.71	\$87.47	4.24%	4.37%	4.80%	7.13%	6.00%	5.98%	9.14%	10.34%	11.52%
Evergy, Inc	EVRG	\$1.90	\$57.81	3.29%	3.39%	6.60%	6.15%	NMF	6.38%	9.54%	9.77%	10.00%
Eversource Energy	ES	\$2.14	\$69.34	3.09%	3.17%	5.60%	5.63%	5.50%	5.58%	8.67%	8.75%	8.80%
Hawaiian Electric Industries, Inc.	HE	\$1.28	\$39.14	3.27%	3.36%	5.60%	6.10%	4.50%	5.40%	7.84%	8.76%	9.47%
NextEra Energy, Inc.	NEE	\$5.00	\$185.45	2.70%	2.81%	8.00%	8.23%	10.00%	8.74%	10.80%	11.56%	12.83%
NorthWestern Corporation	NWE	\$2.30	\$66.24	3.47%	3.53%	3.00%	3.51%	3.00%	3.17%	6.52%	6.70%	7.04%
OGE Energy Corp.	OGE	\$1.46	\$40.85	3.57%	3.66%	4.60%	3.80%	6.50%	4.97%	7.44%	8.63%	10.19%
Otter Tail Corporation	OTTR	\$1.40	\$49.32	2.84%	2.94%	7.00%	9.00%	5.00%	7.00%	7.91%	9.94%	11.97%
Pinnacle West Capital Corporation	PNW	\$2.95	\$90.95	3.24%	3.32%	5.00%	5.01%	5.00%	5.00%	8.32%	8.33%	8.33%
PNM Resources, Inc.	PNM	\$1.16	\$44.33	2.62%	2.70%	5.20%	6.15%	8.50%	6.62%	7.88%	9.32%	11.23%
Portland General Electric Company	POR	\$1.54	\$49.67	3.10%	3.18%	4.90%	5.20%	4.50%	4.87%	7.67%	8.04%	8.38%
Southern Company	SO	\$2.48	\$49.57	5.00%	5.09%	4.50%	2.17%	3.50%	3.39%	7.23%	8.48%	9.62%
WEC Energy Group, Inc.	WEC	\$2.36	\$75.15	3.14%	3.23%	5.90%	5.82%	6.00%	5.91%	9.05%	9.14%	9.23%
Xcel Energy Inc.	XEL	\$1.62	\$53.84	3.01%	3.10%	5.60%	6.24%	5.50%	5.78%	8.59%	8.88%	9.34%
PROXY GROUP MEAN				3.26%	3.35%	5.58%	5.58%	5.85%	5.68%	8.24%	9.03%	9.87%
PROXY GROUP MEDIAN				3.14%	3.23%	5.60%	5.82%	5.50%	5.78%	7.99%	8.80%	9.62%

## Notes:

[1] Source: Bloomberg Professional

[2] Source: Bloomberg Professional, equals 180-trading day average as of June 28, 2019

[3] Equals [1] / [2]

[4] Equals [3] x (1 + 0.5 x [8])

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

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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
14.88%	2.63%	12.25%

[4]	[5]	[6]	[7]	[8]	[9]		
Company	Ticker	Market Capitalization (\$million)	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result
Agilent Technologies Inc	A	23,595.22	0.09%	0.88%	11.00%	11.93%	0.0109%
American Airlines Group Inc	AAL	14,506.07	0.06%	1.48%	14.51%	16.09%	0.0090%
Advance Auto Parts Inc	AAP	11,057.52	0.04%	0.16%	15.68%	15.85%	0.0068%
Apple Inc	AAPL	910,644.76	3.53%	1.51%	9.35%	10.93%	0.3855%
AbbVie Inc	ABBV	107,506.72	0.42%	5.84%	5.12%	11.11%	0.0463%
AmerisourceBergen Corp	ABC	17,919.69	0.07%	1.88%	4.99%	6.92%	0.0048%
ABIOMED Inc	ABMD	11,795.62	0.05%	0.00%	29.00%	29.00%	0.0133%
Abbott Laboratories	ABT	148,367.64	0.57%	1.46%	9.70%	11.23%	0.0645%
Accenture PLC	ACN	124,342.68	0.48%	1.60%	10.43%	12.12%	0.0584%
Adobe Inc	ADBE	143,034.53	0.55%	0.00%	17.16%	17.16%	0.0951%
Analog Devices Inc	ADI	41,734.95	0.16%	1.84%	12.10%	14.06%	0.0227%
Archer-Daniels-Midland Co	ADM	22,854.74	0.09%	3.47%	0.60%	4.08%	0.0036%
Automatic Data Processing Inc	ADP	71,956.28	0.28%	1.74%	13.50%	15.36%	0.0428%
Alliance Data Systems Corp	ADS	7,340.50	0.03%	1.76%	12.47%	14.34%	0.0041%
Autodesk Inc	ADSK	35,776.03	0.14%	0.00%	64.51%	64.51%	0.0894%
Ameren Corp	AEE	18,433.42	0.07%	2.59%	5.81%	8.48%	0.0061%
American Electric Power Co Inc	AEP	43,427.26	0.17%	3.08%	5.98%	9.15%	0.0154%
AES Corp/VA	AES	11,124.07	0.04%	3.29%	8.33%	11.76%	0.0051%
Aflac Inc	AFL	40,859.16	0.16%	1.99%	3.43%	5.45%	0.0086%
Allergan PLC	AGN	54,883.67	0.21%	1.77%	5.37%	7.18%	0.0153%
American International Group Inc	AIG	46,340.47	0.18%	2.44%	11.00%	13.57%	0.0244%
Apartment Investment & Management Co	AIV	7,459.28	0.03%	4.15%	8.76%	13.09%	0.0038%
Assurant Inc	AIZ	6,539.68	N/A	2.33%	N/A	N/A	N/A
Arthur J Gallagher & Co	AJG	16,226.22	0.06%	1.96%	9.63%	11.68%	0.0073%
Akamai Technologies Inc	AKAM	13,150.73	0.05%	0.00%	13.70%	13.70%	0.0070%
Albemarle Corp	ALB	7,460.41	0.03%	2.01%	13.41%	15.56%	0.0045%
Align Technology Inc	ALGN	21,897.34	0.08%	0.00%	22.22%	22.22%	0.0188%
Alaska Air Group Inc	ALK	7,886.49	0.03%	2.15%	13.20%	15.49%	0.0047%
Allstate Corp/The	ALL	33,873.63	0.13%	1.90%	9.00%	10.99%	0.0144%
Allegion PLC	ALLE	10,385.70	0.04%	0.96%	10.49%	11.50%	0.0046%
Alexion Pharmaceuticals Inc	ALXN	29,370.59	0.11%	0.00%	17.50%	17.50%	0.0199%
Applied Materials Inc	AMAT	42,040.47	0.16%	1.85%	9.37%	11.30%	0.0184%
Arcor PLC	AMCR	18,654.36	0.07%	4.05%	5.38%	9.54%	0.0069%
Advanced Micro Devices Inc	AMD	32,848.21	0.13%	0.00%	18.30%	18.30%	0.0233%
AMETEK Inc	AME	20,697.07	0.08%	0.63%	9.13%	9.79%	0.0078%
Affiliated Managers Group Inc	AMG	4,717.51	0.02%	1.39%	9.10%	10.55%	0.0019%
Amgen Inc	AMGN	112,398.95	0.44%	3.10%	5.70%	8.89%	0.0387%
Ameriprise Financial Inc	AMP	19,437.55	0.08%	2.62%	3.20%	5.86%	0.0044%
American Tower Corp	AMT	90,371.69	0.35%	1.83%	20.09%	22.11%	0.0774%
Amazon.com Inc	AMZN	932,294.22	3.61%	0.00%	44.95%	44.95%	1.6232%
Arista Networks Inc	ANET	19,892.74	0.08%	0.00%	21.79%	21.79%	0.0168%
ANSYS Inc	ANSS	17,190.22	0.07%	0.00%	10.60%	10.60%	0.0071%
Anthem Inc	ANTM	72,583.20	0.28%	1.14%	14.85%	16.07%	0.0452%
Aon PLC	AON	46,415.87	0.18%	0.89%	10.00%	10.94%	0.0197%
AO Smith Corp	ACS	7,884.99	0.03%	1.93%	8.00%	10.01%	0.0031%
Apache Corp	APA	10,890.42	0.04%	3.45%	-17.05%	-13.89%	-0.0059%
Anadarko Petroleum Corp	APC	35,429.50	0.14%	1.51%	16.91%	18.54%	0.0254%
Air Products & Chemicals Inc	APD	49,831.41	0.19%	2.02%	12.48%	14.63%	0.0282%
Amphenol Corp	APH	28,660.37	0.11%	0.93%	9.98%	10.96%	0.0122%
Aptiv PLC	APTIV	20,840.83	0.08%	1.12%	8.89%	10.06%	0.0081%
Alexandria Real Estate Equities Inc	ARE	16,644.25	0.06%	2.79%	4.76%	7.61%	0.0049%
Arconic Inc	ARNC	11,583.60	0.04%	0.41%	9.90%	10.33%	0.0046%
Atmos Energy Corp	ATO	12,349.28	0.05%	1.99%	7.00%	9.06%	0.0043%
Activision Blizzard Inc	ATVI	36,155.52	0.14%	0.78%	10.45%	11.27%	0.0158%
AvalonBay Communities Inc	AVB	28,323.96	0.11%	2.98%	5.42%	8.47%	0.0093%
Broadcom Inc	AVGO	114,589.46	0.44%	3.68%	13.31%	17.23%	0.0765%
Avery Dennison Corp	AVY	9,765.23	0.04%	1.81%	5.55%	7.41%	0.0028%
American Water Works Co Inc	AWK	20,940.18	0.08%	1.70%	9.00%	10.77%	0.0087%
American Express Co	AXP	103,082.34	0.40%	1.31%	12.40%	13.78%	0.0550%
AutoZone Inc	AZO	26,968.58	0.10%	0.00%	12.58%	12.58%	0.0131%
Boeing Co/The	BA	204,803.10	0.79%	2.22%	12.26%	14.61%	0.1159%
Bank of America Corp	BAC	275,737.89	1.07%	2.35%	10.10%	12.57%	0.1343%
Baxter International Inc	BAX	41,860.51	0.16%	0.97%	11.90%	12.93%	0.0210%
BB&T Corp	BBT	37,632.72	0.15%	3.45%	8.48%	12.08%	0.0176%
Best Buy Co Inc	BBY	18,620.92	0.07%	2.87%	6.89%	9.85%	0.0071%
Becton Dickinson and Co	BDX	67,975.14	0.26%	1.28%	11.35%	12.71%	0.0335%



Company	Ticker	Market Capitalization (\$million)	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result
Franklin Resources Inc	BEN	17,663 08	0 07%	2 98%	10 00%	13 13%	0 0090%
Brown-Forman Corp	BF/B	26,396 71	0 10%	1 25%	8 41%	9 71%	0 0099%
Baker Hughes a GE Co	BHGE	25,543 81	0 10%	2 67%	41 88%	45 10%	0 0446%
Biogen Inc	BIIB	45,345 85	0 18%	0 00%	5 87%	5 87%	0 0103%
Bank of New York Mellon Corp/The	BK	42,274 39	0 16%	2 70%	6 77%	9 56%	0 0156%
Booking Holdings Inc	BKNG	81,158 72	0 31%	0 00%	16 99%	16 99%	0 0534%
BlackRock Inc	BLK	72,970 71	0 28%	2 84%	9 00%	11 96%	0 0338%
Ball Corp	BLL	23,428 83	0 09%	0 71%	6 77%	7 51%	0 0068%
Bristol-Myers Squibb Co	BMY	74,180 11	0 29%	3 63%	8 63%	12 42%	0 0357%
Broadridge Financial Solutions Inc	BR	14,828 62	N/A	1 51%	N/A	N/A	N/A
Berkshire Hathaway Inc	BRK/B	521,871 81	2 02%	0 00%	60 60%	60 60%	1 2250%
Boston Scientific Corp	BSX	59,770 24	0 23%	0 00%	8 88%	8 88%	0 0206%
BorgWarner Inc	BWA	8,701 05	0 03%	1 62%	4 37%	6 02%	0 0020%
Boston Properties Inc	BXP	19,933 06	0 08%	3 00%	4 91%	7 97%	0 0062%
Citigroup Inc	C	161,942 11	0 63%	2 80%	12 72%	15 69%	0 0984%
Conagra Brands Inc	CAG	12,886 46	0 05%	3 21%	7 17%	10 49%	0 0052%
Cardinal Health Inc	CAH	14,038 62	0 05%	4 16%	14 02%	18 47%	0 0100%
Caterpillar Inc	CAT	77,940 92	0 30%	2 65%	13 23%	16 05%	0 0485%
Chubb Ltd	CB	67,439 78	0 26%	2 06%	10 60%	12 77%	0 0333%
Cboe Global Markets Inc	CBOE	11,568 53	0 04%	1 26%	5 35%	6 64%	0 0030%
CBRE Group Inc	CBRE	17,251 04	0 07%	0 00%	7 30%	7 30%	0 0049%
CBS Corp	CBS	18,706 34	0 07%	1 53%	20 13%	21 81%	0 0158%
Crown Castle International Corp	CCI	54,191 87	0 21%	3 52%	16 33%	20 14%	0 0423%
Carnival Corp	CCL	31,749 45	0 12%	4 34%	8 47%	12 99%	0 0160%
Cadence Design Systems Inc	CDNS	19,899 73	0 08%	0 00%	10 03%	10 03%	0 0077%
Celanese Corp	CE	13,648 83	0 05%	2 24%	7 95%	10 28%	0 0054%
Celgene Corp	CELG	65,194 19	0 25%	0 00%	18 42%	18 42%	0 0465%
Cerner Corp	CERN	23,853 33	0 09%	0 33%	13 65%	14 00%	0 0129%
CF Industries Holdings Inc	CF	10,326 54	0 04%	2 58%	20 27%	23 11%	0 0092%
Citizens Financial Group Inc	CFG	16,207 45	0 06%	3 77%	8 04%	11 96%	0 0075%
Church & Dwight Co Inc	CHD	17,988 77	0 07%	1 26%	7 96%	9 27%	0 0065%
CH Robinson Worldwide Inc	CHRW	11,519 05	0 04%	2 40%	8 93%	11 44%	0 0051%
Charter Communications Inc	CHTR	98,485 91	0 38%	0 00%	44 24%	44 24%	0 1688%
Cigna Corp	CI	59,817 37	0 23%	0 06%	12 74%	12 81%	0 0297%
Cincinnati Financial Corp	CINF	16,922 04	N/A	2 31%	N/A	N/A	N/A
Colgate-Palmolive Co	CL	61,529 76	0 24%	2 40%	4 08%	6 53%	0 0156%
Clorox Co/The	CLX	19,501 29	0 08%	2 52%	4 43%	7 00%	0 0053%
Comerica Inc	CMA	11,198 24	0 04%	3 79%	12 60%	16 62%	0 0072%
Comcast Corp	CMCSA	191,900 08	0 74%	1 97%	11 42%	13 50%	0 1003%
CME Group Inc	CME	69,486 54	0 27%	2 74%	7 90%	10 75%	0 0289%
Chipotle Mexican Grill Inc	CMG	20,310 71	0 08%	0 00%	20 24%	20 24%	0 0159%
Cummins Inc	CMI	26,984 73	0 10%	2 72%	7 15%	9 96%	0 0104%
CMS Energy Corp	CMS	16,432 19	0 06%	2 64%	7 32%	10 06%	0 0064%
Centene Corp	CNC	21,676 96	0 08%	0 00%	13 90%	13 90%	0 0117%
CenterPoint Energy Inc	CNP	14,356 24	0 06%	4 07%	5 92%	10 11%	0 0056%
Capital One Financial Corp	COF	42,611 19	0 17%	1 79%	5 20%	7 04%	0 0116%
Cabot Oil & Gas Corp	COG	9,718 65	0 04%	1 46%	35 02%	36 74%	0 0138%
Cooper Cos Inc/The	COO	16,671 93	0 06%	0 02%	6 18%	6 20%	0 0040%
ConocoPhillips	COP	68,940 73	0 27%	2 04%	5 00%	7 09%	0 0189%
Costco Wholesale Corp	COST	116,218 69	0 45%	0 91%	10 51%	11 47%	0 0516%
Coty Inc	COTY	10,068 73	0 04%	3 69%	8 05%	11 89%	0 0046%
Campbell Soup Co	CPB	12,067 08	0 05%	3 51%	2 74%	6 31%	0 0029%
Capri Holdings Ltd	CPRI	5,234 57	0 02%	0 00%	7 32%	7 32%	0 0015%
Copart Inc	CPRT	17,123 90	0 07%	0 00%	20 00%	20 00%	0 0133%
salesforce com Inc	CRM	117,557 86	0 46%	0 00%	23 01%	23 01%	0 1048%
Cisco Systems Inc	CSCO	234,284 52	0 91%	2 49%	6 96%	9 54%	0 0866%
CSX Corp	CSX	62,604 99	0 24%	1 21%	11 15%	12 42%	0 0301%
Cintas Corp	CTAS	24,813 62	0 10%	0 86%	12 02%	12 94%	0 0124%
CenturyLink Inc	CTL	12,822 09	0 05%	8 50%	1 78%	10 36%	0 0051%
Cognizant Technology Solutions Corp	CTSH	36,086 85	0 14%	1 27%	11 05%	12 39%	0 0173%
Corteva Inc	CTVA	22,142 46	N/A	1 65%	N/A	N/A	N/A
Citrix Systems Inc	CTXS	12,920 31	0 05%	1 43%	37 42%	39 11%	0 0196%
CVS Health Corp	CVS	70,787 53	0 27%	3 65%	6 04%	9 81%	0 0269%
Chevron Corp	CVX	237,025 56	0 92%	3 81%	1 32%	5 15%	0 0473%
Concho Resources Inc	CXO	20,697 29	0 08%	0 40%	11 70%	12 13%	0 0097%
Dominion Energy Inc	D	62,038 81	0 24%	4 73%	4 89%	9 74%	0 0234%
Delta Air Lines Inc	DAL	37,151 18	0 14%	2 60%	12 72%	15 48%	0 0223%
DuPont de Nemours Inc	DD	56,212 11	0 22%	1 36%	65 59%	67 39%	0 1467%
Deere & Co	DE	52,529 33	0 20%	1 83%	9 45%	11 37%	0 0231%
Discover Financial Services	DFS	25,118 12	0 10%	2 12%	7 79%	10 00%	0 0097%
Dollar General Corp	DG	34,914 91	0 14%	0 95%	10 60%	11 59%	0 0157%
Quest Diagnostics Inc	DGX	13,680 73	0 05%	2 06%	7 13%	9 27%	0 0049%
DR Horton Inc	DHI	16,095 12	0 06%	1 39%	12 47%	13 95%	0 0087%
Danaher Corp	DHR	102,321 24	0 40%	0 47%	8 44%	8 93%	0 0354%
Walt Disney Co/The	DIS	251,309 96	0 97%	1 27%	2 08%	3 36%	0 0327%
Discovery Inc	DISCA	21,138 39	0 08%	0 00%	13 35%	13 35%	0 0109%
DISH Network Corp	DISH	18,020 72	0 07%	0 00%	-21 96%	-21 96%	-0 0153%
Digital Realty Trust Inc	DLR	25,649 53	0 10%	3 66%	7 30%	11 09%	0 0110%
Dollar Tree Inc	DLTR	25,513 61	0 10%	0 00%	8 52%	8 52%	0 0084%

Company	Ticker	Market Capitalization (\$million)	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result
Dover Corp	DOV	14,562.01	0.06%	1.99%	11.50%	13.60%	0.0077%
Dow Inc	DOW	36,924.52	0.14%	5.68%	7.15%	13.03%	0.0186%
Duke Realty Corp	DRE	11,361.52	0.04%	2.76%	4.62%	7.45%	0.0033%
Darden Restaurants Inc	DRI	14,969.84	0.06%	2.90%	10.75%	13.80%	0.0080%
DTE Energy Co	DTE	23,429.21	0.09%	2.98%	7.43%	10.52%	0.0095%
Duke Energy Corp	DUK	64,238.72	0.25%	4.29%	5.03%	9.43%	0.0235%
DaVita Inc	DVA	9,361.66	0.04%	0.00%	18.83%	18.83%	0.0068%
Devon Energy Corp	DVN	11,841.50	0.05%	1.19%	5.34%	6.56%	0.0030%
DXC Technology Co	DXC	14,813.14	0.06%	1.48%	5.28%	6.80%	0.0039%
Electronic Arts Inc	EA	30,009.29	0.12%	0.00%	13.20%	13.20%	0.0153%
eBay Inc	EBAY	34,425.33	0.13%	1.42%	10.66%	12.15%	0.0162%
Ecolab Inc	ECL	56,910.53	0.22%	0.94%	13.13%	14.13%	0.0312%
Consolidated Edison Inc	ED	29,188.83	0.11%	3.37%	4.18%	7.62%	0.0086%
Equifax Inc	EFX	16,340.24	0.06%	1.16%	11.63%	12.86%	0.0081%
Edison International	EIX	21,962.93	0.09%	3.64%	5.52%	9.26%	0.0079%
Estee Lauder Cos Inc/The	EL	66,262.49	0.26%	0.90%	11.84%	12.80%	0.0328%
Eastman Chemical Co	EMN	10,801.71	0.04%	3.15%	6.50%	9.75%	0.0041%
Emerson Electric Co	EMR	41,034.57	0.16%	2.94%	8.84%	11.91%	0.0189%
EOG Resources Inc	EOG	54,063.04	0.21%	1.02%	7.79%	8.85%	0.0185%
Equinix Inc	EQIX	42,395.68	0.16%	1.95%	18.37%	20.50%	0.0337%
Equity Residential	EQR	28,131.07	0.11%	2.98%	6.73%	9.80%	0.0107%
Eversource Energy	ES	24,503.90	0.09%	2.83%	5.94%	8.85%	0.0084%
Essex Property Trust Inc	ESS	19,184.63	0.07%	2.67%	5.26%	8.00%	0.0059%
E*TRADE Financial Corp	ETFC	10,912.31	0.04%	1.10%	12.73%	13.90%	0.0059%
Eaton Corp PLC	ETN	35,235.77	0.14%	3.42%	8.95%	12.52%	0.0171%
Entergy Corp	ETR	19,549.13	0.08%	3.58%	0.38%	3.96%	0.0030%
Evergy Inc	EVRG	14,682.52	0.06%	3.19%	8.85%	12.18%	0.0069%
Edwards Lifesciences Corp	EW	38,518.59	0.15%	0.00%	14.75%	14.75%	0.0220%
Exelon Corp	EXC	46,499.51	0.18%	3.02%	2.35%	5.41%	0.0097%
Expeditors International of Washington I	EXPD	13,047.61	0.05%	1.27%	9.80%	11.14%	0.0056%
Expedia Group Inc	EXPE	19,808.50	0.08%	0.95%	21.84%	22.90%	0.0176%
Extra Space Storage Inc	EXR	13,522.83	0.05%	3.34%	5.43%	8.86%	0.0046%
Ford Motor Co	F	40,813.05	0.16%	5.87%	-4.77%	0.96%	0.0015%
Diamondback Energy Inc	FANG	17,944.33	0.07%	0.61%	14.55%	15.20%	0.0106%
Fastenal Co	FAST	18,662.00	0.07%	2.94%	7.55%	10.60%	0.0077%
Facebook Inc	FB	550,957.10	2.13%	0.00%	19.22%	19.22%	0.4101%
Fortune Brands Home & Security Inc	FBHS	7,991.39	0.03%	1.53%	9.47%	11.07%	0.0034%
Freeport-McMoRan Inc	FCX	16,841.87	0.07%	1.72%	-7.91%	-6.26%	-0.0041%
FedEx Corp	FDX	42,783.75	0.17%	1.63%	14.40%	16.15%	0.0268%
FirstEnergy Corp	FE	22,751.05	0.09%	3.56%	3.80%	7.42%	0.0065%
F5 Networks Inc	FFIV	8,693.42	0.03%	0.00%	9.95%	9.95%	0.0034%
Fidelity National Information Services I	FIS	39,728.44	0.15%	1.14%	10.92%	12.12%	0.0186%
Fiserv Inc	FISV	35,774.82	0.14%	0.00%	13.00%	13.00%	0.0180%
Fifth Third Bancorp	FITB	20,489.37	0.08%	3.45%	3.95%	7.47%	0.0059%
Foot Locker Inc	FL	4,598.68	0.02%	3.61%	6.55%	10.28%	0.0018%
FLIR Systems Inc	FLIR	7,326.28	N/A	1.26%	N/A	N/A	N/A
Flowsense Corp	FLS	6,909.68	0.03%	1.48%	19.15%	20.77%	0.0056%
FleetCor Technologies Inc	FLT	24,207.42	0.09%	0.00%	19.67%	19.67%	0.0184%
FMC Corp	FMC	10,921.01	0.04%	1.82%	9.33%	11.23%	0.0048%
Fox Corp	FOXA	22,706.76	0.09%	0.22%	1.67%	1.89%	0.0017%
First Republic Bank/CA	FRC	16,273.49	0.06%	0.77%	12.14%	12.95%	0.0082%
Federal Realty Investment Trust	FRT	9,644.90	0.04%	3.23%	5.61%	8.94%	0.0033%
TechnipFMC PLC	FTI	11,622.76	0.05%	2.00%	17.52%	19.69%	0.0089%
Fortinet Inc	FTNT	13,119.54	0.05%	0.00%	24.04%	24.04%	0.0122%
Fortive Corp	FTV	27,317.30	0.11%	0.38%	11.52%	11.92%	0.0126%
General Dynamics Corp	GD	52,522.71	0.20%	2.20%	8.76%	11.05%	0.0225%
General Electric Co	GE	91,568.48	0.35%	0.38%	8.87%	9.26%	0.0329%
Gilead Sciences Inc	GILD	85,906.23	0.33%	3.71%	8.62%	12.49%	0.0416%
General Mills Inc	GIS	31,614.92	0.12%	3.79%	5.53%	9.42%	0.0115%
Corning Inc	GLW	26,077.38	0.10%	2.43%	11.04%	13.60%	0.0137%
General Motors Co	GM	54,650.68	0.21%	3.99%	11.70%	15.92%	0.0337%
Alphabet Inc	GOOGL	751,025.00	2.91%	0.00%	12.45%	12.45%	0.3622%
Genuine Parts Co	GPC	15,129.30	0.06%	2.95%	5.84%	8.87%	0.0052%
Global Payments Inc	GPN	25,090.58	0.10%	0.02%	16.73%	16.76%	0.0163%
Gap Inc/The	GPS	6,792.15	0.03%	5.44%	5.24%	10.82%	0.0028%
Garmin Ltd	GRMN	15,149.80	0.06%	2.91%	7.00%	10.01%	0.0059%
Goldman Sachs Group Inc/The	GS	77,838.06	0.30%	1.67%	1.14%	2.81%	0.0085%
WW Grainger Inc	GWV	14,871.63	0.06%	2.09%	12.47%	14.68%	0.0085%
Halliburton Co	HAL	19,874.27	0.08%	3.20%	8.84%	12.19%	0.0094%
Hasbro Inc	HAS	13,300.26	0.05%	2.57%	9.47%	12.16%	0.0063%
Huntington Bancshares Inc/OH	HBAN	14,461.80	0.06%	4.23%	8.24%	12.64%	0.0071%
Hanesbrands Inc	HBI	6,224.53	0.02%	3.62%	3.25%	6.93%	0.0017%
HCA Healthcare Inc	HCA	46,269.69	0.18%	0.91%	11.62%	12.59%	0.0226%
HCP Inc	HCP	15,285.90	0.06%	4.63%	2.68%	7.37%	0.0044%
Home Depot Inc/The	HD	228,826.50	0.89%	2.60%	9.37%	12.10%	0.1072%
Hess Corp	HES	19,289.60	0.07%	1.66%	-23.46%	-21.99%	-0.0164%
HollyFrontier Corp	HFC	7,903.02	0.03%	2.89%	1.05%	3.96%	0.0012%
Hartford Financial Services Group Inc/Th	HIG	20,142.73	0.08%	2.23%	9.50%	11.83%	0.0092%
Huntington Ingalls Industries Inc	HII	9,338.45	0.04%	1.53%	40.00%	41.84%	0.0151%

Company	Ticker	Market Capitalization (\$Million)	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result
Hilton Worldwide Holdings Inc	HLT	28,448.46	0.11%	0.62%	13.10%	13.76%	0.0152%
Harley-Davidson Inc	HOG	5,699.58	0.02%	4.31%	8.60%	13.10%	0.0029%
Hologic Inc	HOLX	12,871.77	0.05%	0.00%	8.39%	8.39%	0.0042%
Honeywell International Inc	HON	127,056.48	0.49%	1.90%	8.18%	10.16%	0.0500%
Helmench & Payne Inc	HP	5,538.57	0.02%	5.63%	25.62%	31.97%	0.0069%
Hewlett Packard Enterprise Co	HPE	20,020.27	0.08%	3.06%	5.79%	8.94%	0.0069%
HP Inc	HPQ	31,315.81	0.12%	3.05%	3.11%	6.21%	0.0075%
H&R Block Inc	HRB	5,917.44	0.02%	3.47%	10.00%	13.64%	0.0031%
Hormel Foods Corp	HRL	21,642.06	0.08%	2.07%	5.70%	7.83%	0.0066%
Harris Corp	HRS	22,341.09	N/A	1.45%	N/A	N/A	N/A
Henry Schein Inc	HSIC	10,420.31	0.04%	0.00%	3.25%	3.25%	0.0013%
Host Hotels & Resorts Inc	HST	13,499.08	0.05%	4.62%	15.05%	20.01%	0.0105%
Hershey Co/The	HSY	27,985.40	0.11%	2.24%	7.07%	9.38%	0.0102%
Humana Inc	HUM	35,824.79	0.14%	0.79%	13.47%	14.31%	0.0199%
International Business Machines Corp	IBM	122,268.05	0.47%	4.69%	1.92%	6.65%	0.0315%
Intercontinental Exchange Inc	ICE	48,458.56	0.19%	1.27%	9.35%	10.68%	0.0200%
IDEXX Laboratories Inc	IDXX	23,680.12	0.09%	0.00%	18.30%	18.30%	0.0168%
International Flavors & Fragrances Inc	IFF	15,479.82	0.06%	1.97%	7.80%	9.85%	0.0059%
Illumina Inc	ILMN	54,118.05	0.21%	0.00%	27.09%	27.09%	0.0568%
Incyte Corp	INCY	18,218.70	0.07%	0.00%	43.10%	43.10%	0.0304%
IHS Markit Ltd	INFO	25,555.18	0.10%	0.00%	11.15%	11.15%	0.0110%
Intel Corp	INTC	214,313.99	0.83%	2.60%	8.88%	11.59%	0.0962%
Intuit Inc	INTU	67,748.07	0.26%	0.71%	16.16%	16.93%	0.0444%
International Paper Co	IP	17,212.51	0.07%	4.65%	4.77%	9.53%	0.0064%
Interpublic Group of Cos Inc/The	IPG	8,743.21	0.03%	4.16%	11.75%	16.15%	0.0055%
IPG Photonics Corp	IPGP	8,197.44	0.03%	0.00%	10.49%	10.49%	0.0033%
IQVIA Holdings Inc	IQV	31,736.03	0.12%	0.00%	15.96%	15.96%	0.0196%
Ingersoll-Rand PLC	IR	30,547.51	0.12%	1.71%	9.16%	10.94%	0.0130%
Iron Mountain Inc	IRM	8,979.36	0.03%	7.84%	7.32%	15.45%	0.0054%
Intuitive Surgical Inc	ISRG	60,558.59	0.23%	0.00%	12.30%	12.30%	0.0289%
Gartner Inc	IT	14,499.15	0.06%	0.00%	14.00%	14.00%	0.0079%
Illinois Tool Works Inc	ITW	49,130.14	0.19%	2.66%	7.27%	10.02%	0.0191%
Invesco Ltd	IVZ	9,750.71	0.04%	6.06%	7.12%	13.40%	0.0051%
JB Hunt Transport Services Inc	JBHT	9,939.82	0.04%	1.12%	13.13%	14.32%	0.0055%
Johnson Controls International plc	JCI	37,099.22	0.14%	2.59%	7.80%	10.49%	0.0151%
Jacobs Engineering Group Inc	JEC	11,528.42	0.04%	0.69%	13.10%	13.84%	0.0062%
Jefferies Financial Group Inc	JEF	5,589.91	N/A	2.60%	N/A	N/A	N/A
Jack Henry & Associates Inc	JKHY	10,339.11	0.04%	1.14%	9.03%	10.22%	0.0041%
Johnson & Johnson	JNJ	369,796.20	1.43%	2.70%	5.98%	8.76%	0.1255%
Juniper Networks Inc	JNPR	9,169.39	0.04%	2.84%	7.92%	10.87%	0.0039%
JPMorgan Chase & Co	JPM	362,676.18	1.40%	3.04%	6.80%	9.95%	0.1398%
Nordstrom Inc	JWN	4,927.21	0.02%	4.78%	5.97%	10.89%	0.0021%
Kellogg Co	K	18,240.42	0.07%	4.25%	2.29%	6.58%	0.0046%
KeyCorp	KEY	17,897.12	0.07%	4.01%	6.26%	10.40%	0.0072%
Keysight Technologies Inc	KEYS	16,899.63	N/A	0.00%	N/A	N/A	N/A
Kraft Heinz Co/The	KHC	37,866.90	0.15%	5.15%	0.45%	5.62%	0.0082%
Kimco Realty Corp	KIM	7,799.31	0.03%	6.13%	3.83%	10.08%	0.0030%
KLA-Tencor Corp	KLAC	19,103.51	0.07%	2.52%	9.44%	12.07%	0.0089%
Kimberly-Clark Corp	KMB	45,821.04	0.18%	3.08%	4.17%	7.31%	0.0130%
Kinder Morgan Inc/DE	KMI	47,266.94	0.18%	4.76%	13.90%	18.99%	0.0348%
CarMax Inc	KMX	14,361.26	0.06%	0.00%	10.61%	10.61%	0.0059%
Coca-Cola Co/The	KO	217,230.58	0.84%	3.11%	6.30%	9.51%	0.0800%
Kroger Co/The	KR	17,341.92	0.07%	2.69%	6.00%	8.77%	0.0059%
Kohl's Corp	KSS	7,704.33	0.03%	5.64%	5.55%	11.34%	0.0034%
Kansas City Southern	KSU	12,253.51	0.05%	1.24%	12.50%	13.82%	0.0066%
Loews Corp	L	16,668.23	N/A	0.46%	N/A	N/A	N/A
L Brands Inc	LB	7,212.49	0.03%	4.65%	9.38%	14.25%	0.0040%
Leggett & Platt Inc	LEG	5,036.78	0.02%	4.07%	10.00%	14.27%	0.0028%
Lennar Corp	LEN	15,285.48	0.06%	0.33%	10.09%	10.43%	0.0062%
Laboratory Corp of America Holdings	LH	17,061.46	0.07%	0.00%	7.28%	7.28%	0.0048%
Linde PLC	LIN	108,987.46	0.42%	1.75%	15.05%	16.93%	0.0715%
LKQ Corp	LKQ	8,355.38	0.03%	0.00%	13.30%	13.30%	0.0043%
L3 Technologies Inc	LLL	19,479.04	0.08%	1.42%	5.00%	6.45%	0.0049%
Eli Lilly & Co	LLY	107,558.35	0.42%	2.24%	9.32%	11.66%	0.0486%
Lockheed Martin Corp	LMT	102,714.16	0.40%	2.46%	7.82%	10.38%	0.0413%
Lincoln National Corp	LNC	13,041.02	0.05%	2.34%	9.00%	11.45%	0.0058%
Alliant Energy Corp	LNT	11,651.32	0.05%	2.90%	5.56%	8.54%	0.0039%
Lowe's Cos Inc	LOW	79,004.10	0.31%	2.09%	14.66%	16.90%	0.0517%
Lam Research Corp	LRCX	28,162.20	0.11%	2.22%	9.10%	11.42%	0.0125%
Southwest Airlines Co	LUV	27,576.83	0.11%	1.39%	5.01%	6.44%	0.0069%
Lamb Weston Holdings Inc	LW	9,267.91	0.04%	1.24%	11.83%	13.14%	0.0047%
LyondellBasell Industries NV	LYB	31,896.28	0.12%	4.94%	6.20%	11.29%	0.0139%
Macy's Inc	M	6,628.38	0.03%	7.03%	1.83%	8.92%	0.0023%
Mastercard Inc	MA	270,196.19	1.05%	0.47%	17.28%	17.78%	0.1861%
Mid-America Apartment Communities Inc	MAA	13,424.12	0.05%	3.28%	7.00%	10.39%	0.0054%
Maceron Co/The	MAC	4,730.08	0.02%	8.98%	0.13%	9.12%	0.0017%
Marmott International Inc/MD	MAR	46,715.00	0.18%	1.29%	8.26%	9.61%	0.0174%
Masco Corp	MAS	11,518.86	0.04%	1.21%	11.10%	12.37%	0.0055%
McDonald's Corp	MCD	158,560.12	0.61%	2.26%	8.69%	11.05%	0.0679%

Company	Ticker	Market Capitalization (\$million)	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result
Microchip Technology Inc	MCHP	20,628 23	0 08%	1 69%	10 87%	12 65%	0 0101%
McKesson Corp	MCK	25,047 22	0 10%	1 20%	4 01%	5 23%	0 0051%
Moody's Corp	MCO	37,030 78	0 14%	0 98%	7 05%	8 06%	0 0116%
Mondelez International Inc	MDLZ	77,639 49	0 30%	1 98%	6 94%	8 99%	0 0270%
Medtronic PLC	MDT	130,615 25	0 51%	2 17%	7 34%	9 59%	0 0485%
MetLife Inc	MET	47,204 85	0 18%	3 50%	8 46%	12 11%	0 0221%
MGM Resorts International	MGM	15,347 84	0 06%	1 82%	12 35%	14 28%	0 0085%
Mohawk Industries Inc	MHK	10,679 96	0 04%	0 00%	6 82%	6 82%	0 0028%
McCormick & Co Inc/MD	MKC	20,542 51	0 08%	1 44%	6 20%	7 68%	0 0061%
Martin Manetta Materials Inc	MLM	14,377 15	0 06%	0 86%	13 90%	14 81%	0 0083%
Marsh & McLennan Cos Inc	MMC	51,006 58	0 20%	1 75%	11 73%	13 58%	0 0268%
3M Co	MMM	99,917 81	0 39%	3 27%	7 10%	10 49%	0 0406%
Monster Beverage Corp	MNST	34,696 47	0 13%	0 00%	14 45%	14 45%	0 0194%
Aitna Group Inc	MO	88,588 06	0 34%	6 96%	6 53%	13 71%	0 0471%
Mosaic Co/The	MOS	9,656 28	0 04%	0 76%	14 00%	14 82%	0 0055%
Marathon Petroleum Corp	MPC	37,027 09	0 14%	3 83%	9 33%	13 34%	0 0191%
Merck & Co Inc	MRK	215,883 93	0 84%	2 62%	11 17%	13 94%	0 1166%
Marathon Oil Corp	MRO	11,622 59	0 05%	1 41%	-2 65%	-1 26%	-0 0006%
Morgan Stanley	MS	73,698 70	0 29%	2 97%	9 49%	12 60%	0 0360%
MSCI Inc	MSCI	20,220 42	0 08%	0 97%	10 00%	11 02%	0 0086%
Microsoft Corp	MSFT	1,026,511 09	3 98%	1 35%	11 85%	13 28%	0 5282%
Motorola Solutions Inc	MSI	27,474 82	0 11%	1 38%	9 00%	10 44%	0 0111%
M&T Bank Corp	MTB	23,235 33	0 09%	2 52%	7 28%	9 89%	0 0089%
Mettler-Toledo International Inc	MTD	20,834 76	0 08%	0 00%	12 97%	12 97%	0 0105%
Micron Technology Inc	MU	42,595 77	0 16%	0 00%	-1 90%	-1 90%	-0 0031%
Maxim Integrated Products Inc	MXIM	16,296 47	0 06%	3 08%	8 97%	12 18%	0 0077%
Mylan NV	MYL	9,814 51	0 04%	0 00%	4 71%	4 71%	0 0018%
Noble Energy Inc	NBL	10,712 39	0 04%	2 02%	6 31%	8 39%	0 0035%
Norwegian Cruise Line Holdings Ltd	NCLH	11,551 66	0 04%	0 36%	10 18%	10 56%	0 0047%
Nasdaq Inc	NDAQ	15,935 80	0 06%	1 92%	7 09%	9 08%	0 0056%
NextEra Energy Inc	NEE	98,114 69	0 38%	2 43%	5 31%	7 81%	0 0297%
Newmont Goldcorp Corp	NEM	31,531 30	0 12%	1 46%	5 10%	6 60%	0 0081%
Netflix Inc	NFLX	160,599 63	0 62%	0 00%	43 23%	43 23%	0 2689%
NiSource Inc	NI	10,745 37	0 04%	2 79%	5 51%	8 37%	0 0035%
NIKE Inc	NKE	131,948 38	0 51%	1 10%	17 48%	18 67%	0 0954%
Nektar Therapeutics	NKTR	6,201 84	0 02%	0 00%	-2 40%	-2 40%	-0 0006%
Nielsen Holdings PLC	NLSN	8,034 16	0 03%	6 33%	12 00%	18 71%	0 0058%
Northrop Grumman Corp	NOC	54,863 97	0 21%	1 62%	5 95%	7 62%	0 0162%
National Oilwell Varco Inc	NOV	8,579 01	0 03%	0 90%	24 00%	25 01%	0 0083%
NRG Energy Inc	NRG	9,382 42	0 04%	0 34%	32 57%	32 97%	0 0120%
Norfolk Southern Corp	NSC	53,015 21	0 21%	1 73%	13 37%	15 21%	0 0312%
NetApp Inc	NTAP	14,809 37	0 06%	3 11%	9 73%	12 99%	0 0075%
Northern Trust Corp	NTRS	19,590 89	0 08%	2 74%	8 75%	11 62%	0 0088%
Nucor Corp	NUE	16,793 69	0 07%	2 91%	0 65%	3 57%	0 0023%
NVIDIA Corp	NVDA	100,016 07	0 39%	0 39%	9 76%	10 17%	0 0394%
Newell Brands Inc	NWL	6,524 20	0 03%	5 96%	-4 75%	1 07%	0 0003%
News Corp	NWSA	7,987 66	0 03%	1 53%	-10 26%	-8 81%	-0 0027%
Realty Income Corp	O	21,826 72	0 08%	3 95%	4 69%	8 73%	0 0074%
ONEOK Inc	OKE	28,401 76	0 11%	5 16%	11 96%	17 42%	0 0192%
Omnicom Group Inc	OMC	18,042 74	0 07%	3 17%	4 06%	7 29%	0 0051%
Oracle Corp	ORCL	190,041 61	0 74%	1 60%	7 63%	9 30%	0 0684%
O'Reilly Automotive Inc	ORLY	28,909 16	0 11%	0 00%	15 22%	15 22%	0 0170%
Occidental Petroleum Corp	OXY	37,610 46	0 15%	6 21%	12 23%	18 82%	0 0274%
Paychex Inc	PAYX	29,566 80	0 11%	3 01%	7 15%	10 27%	0 0118%
People's United Financial Inc	PBCT	6,684 49	0 03%	4 22%	2 00%	6 26%	0 0016%
PACCAR Inc	PCAR	24,826 13	0 10%	4 67%	5 00%	9 79%	0 0094%
Public Service Enterprise Group Inc	PEG	29,729 42	0 12%	3 20%	6 14%	9 43%	0 0109%
PepsiCo Inc	PEP	183,820 87	0 71%	2 89%	5 45%	8 42%	0 0600%
Pfizer Inc	PFE	240,856 13	0 93%	3 31%	5 09%	8 48%	0 0791%
Principal Financial Group Inc	PFGE	16,133 51	0 06%	3 81%	4 60%	8 50%	0 0053%
Procter & Gamble Co/The	PG	275,038 36	1 07%	2 65%	7 15%	9 89%	0 1054%
Progressive Corp/The	PGR	46,687 11	0 18%	3 45%	6 23%	9 79%	0 0177%
Parker-Hannifin Corp	PH	21,809 80	0 08%	1 82%	9 02%	10 91%	0 0092%
PulteGroup Inc	PHM	8,763 08	0 03%	1 39%	8 15%	9 59%	0 0033%
Packaging Corp of America	PKG	9,007 17	0 03%	3 35%	8 33%	11 83%	0 0041%
PerkinElmer Inc	PKI	10,685 89	0 04%	0 29%	16 09%	16 41%	0 0068%
Prologis Inc	PLD	50,519 09	0 20%	2 64%	7 04%	9 77%	0 0191%
Philip Morris International Inc	PM	122,177 19	0 47%	5 99%	6 78%	12 97%	0 0614%
PNC Financial Services Group Inc/The	PNC	61,973 40	0 24%	3 00%	7 48%	10 59%	0 0254%
Pentair PLC	PNR	6,394 38	0 02%	1 99%	7 24%	9 30%	0 0023%
Pinnacle West Capital Corp	PNW	10,564 18	0 04%	3 20%	5 29%	8 58%	0 0035%
PPG Industries Inc	PPG	27,550 56	0 11%	1 68%	8 62%	10 36%	0 0111%
PPL Corp	PPL	22,369 71	N/A	5 35%	N/A	N/A	N/A
Perrigo Co PLC	PRGO	6,475 91	0 03%	1 59%	-0 80%	0 78%	0 0002%
Prudential Financial Inc	PRU	41,006 00	0 16%	3 99%	9 00%	13 16%	0 0209%
Public Storage	PSA	41,565 89	0 16%	3 39%	5 23%	8 71%	0 0140%
Phillips 66	PSX	42,425 18	0 16%	3 69%	2 05%	5 78%	0 0085%
PVH Corp	PVH	7,089 78	0 03%	0 16%	8 12%	8 29%	0 0023%
Quanta Services Inc	PWR	5,444 66	0 02%	0 42%	22 00%	22 47%	0 0047%

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Pioneer Natural Resources Co	PXD	25,913.68	0.10%	0.51%	24.90%	25.48%	0.0256%
PayPal Holdings Inc	PYPL	134,482.83	0.52%	0.00%	19.06%	19.06%	0.0993%
QUALCOMM Inc	QCOM	92,478.22	0.36%	3.32%	15.42%	18.99%	0.0680%
Qorvo Inc	QRVO	7,863.51	0.03%	0.25%	9.62%	9.88%	0.0030%
Royal Caribbean Cruises Ltd	RCL	25,411.42	0.10%	2.35%	11.71%	14.19%	0.0140%
Everest Re Group Ltd	RE	10,068.54	0.04%	2.28%	10.00%	12.39%	0.0048%
Regency Centers Corp	REG	11,191.26	0.04%	3.47%	4.32%	7.86%	0.0034%
Regeneron Pharmaceuticals Inc	REGN	34,316.94	0.13%	0.00%	11.92%	11.92%	0.0158%
Regions Financial Corp	RF	15,137.58	0.06%	4.05%	9.22%	13.46%	0.0079%
Robert Half International Inc	RHI	6,758.97	0.03%	2.19%	9.05%	11.34%	0.0030%
Red Hat Inc	RHT	33,438.74	0.13%	0.00%	20.30%	20.30%	0.0263%
Raymond James Financial Inc	RJF	11,905.09	0.05%	1.57%	11.10%	12.75%	0.0059%
Ralph Lauren Corp	RL	8,778.26	0.03%	2.42%	7.84%	10.35%	0.0035%
ResMed Inc	RMD	17,498.20	0.07%	1.33%	11.05%	12.45%	0.0084%
Rockwell Automation Inc	ROK	19,391.25	0.08%	2.34%	11.48%	13.96%	0.0105%
Rollins Inc	ROL	11,748.49	0.05%	1.55%	10.00%	11.63%	0.0053%
Roper Technologies Inc	ROP	38,032.81	0.15%	0.53%	12.93%	13.49%	0.0199%
Ross Stores Inc	ROST	36,148.63	0.14%	1.03%	9.40%	10.48%	0.0147%
Republic Services Inc	RSG	27,862.22	0.11%	1.76%	13.26%	15.13%	0.0163%
Raytheon Co	RTN	48,432.73	0.19%	2.16%	9.31%	11.56%	0.0217%
SBA Communications Corp	SBAC	25,463.98	0.10%	0.00%	42.50%	42.50%	0.0419%
Starbucks Corp	SBUX	101,534.90	0.39%	1.78%	12.72%	14.60%	0.0574%
Charles Schwab Corp/The	SCHW	53,654.03	0.21%	1.69%	11.14%	12.93%	0.0269%
Sealed Air Corp	SEE	6,661.00	0.03%	1.54%	5.73%	7.32%	0.0019%
Sherwin-Williams Co/The	SHW	42,307.59	0.16%	0.94%	9.46%	10.44%	0.0171%
SVB Financial Group	SIVB	11,684.79	0.05%	0.00%	11.00%	11.00%	0.0050%
JM Smucker Co/The	SJM	13,136.20	0.05%	3.06%	4.03%	7.15%	0.0036%
Schlumberger Ltd	SLB	55,044.76	0.21%	5.03%	31.36%	37.18%	0.0793%
SL Green Realty Corp	SLG	6,859.57	0.03%	4.25%	-0.84%	3.39%	0.0009%
Snap-on Inc	SNA	9,177.19	0.04%	2.30%	7.35%	9.73%	0.0035%
Synopsys Inc	SNPS	19,290.52	0.07%	0.00%	13.60%	13.60%	0.0102%
Southern Co/The	SO	57,537.25	0.22%	4.46%	3.75%	8.29%	0.0185%
Simon Property Group Inc	SPG	49,364.82	0.19%	5.17%	4.87%	10.17%	0.0194%
S&P Global Inc	SPGI	56,081.90	0.22%	0.99%	9.20%	10.24%	0.0222%
Sempra Energy	SRE	37,715.37	0.15%	2.82%	8.74%	11.69%	0.0171%
SunTrust Banks Inc	STI	27,895.49	0.11%	3.36%	6.22%	9.68%	0.0105%
State Street Corp	STT	20,919.57	0.08%	3.55%	7.27%	10.94%	0.0089%
Seagate Technology PLC	STX	13,044.83	0.05%	5.34%	4.60%	10.07%	0.0051%
Constellation Brands Inc	STZ	37,804.60	0.15%	1.51%	8.09%	9.86%	0.0142%
Stanley Black & Decker Inc	SWK	21,913.10	0.08%	1.86%	9.10%	11.05%	0.0094%
Skyworks Solutions Inc	SWKS	13,344.03	0.05%	2.00%	10.57%	12.67%	0.0065%
Synchrony Financial	SYF	23,898.60	0.09%	2.61%	4.03%	6.69%	0.0062%
Stryker Corp	SYK	76,847.88	0.30%	1.11%	8.10%	9.26%	0.0276%
Symantec Corp	SYMC	13,451.90	0.05%	1.44%	7.26%	8.76%	0.0046%
Sysco Corp	SYU	36,348.34	0.14%	2.17%	12.13%	14.44%	0.0203%
AT&T Int'l	T	244,555.98	0.95%	6.11%	5.54%	11.82%	0.1119%
Molson Coors Brewing Co	TAP	12,128.28	0.05%	3.69%	-0.23%	3.45%	0.0016%
TransDigm Group Inc	TDG	25,728.44	0.10%	0.00%	13.09%	13.09%	0.0130%
TE Connectivity Ltd	TEL	32,265.04	0.12%	1.86%	9.93%	11.89%	0.0149%
Teleflex Inc	TEF	15,283.93	0.06%	0.41%	12.97%	13.40%	0.0079%
Target Corp	TGT	44,373.29	0.17%	3.04%	6.75%	9.89%	0.0170%
Tiffany & Co	TIF	11,368.59	0.04%	2.48%	9.25%	11.84%	0.0052%
TJX Cos Inc/The	TJX	64,125.86	0.25%	1.72%	10.05%	11.86%	0.0295%
Torchmark Corp	TMK	9,835.28	0.04%	0.75%	7.91%	8.69%	0.0033%
Thermo Fisher Scientific Inc	TMO	117,466.46	0.46%	0.25%	10.83%	11.09%	0.0505%
Tapestry Inc	TPR	9,206.01	0.04%	4.25%	10.20%	14.67%	0.0052%
TripAdvisor Inc	TRIP	6,435.65	0.02%	0.00%	9.34%	9.34%	0.0023%
T Rowe Price Group Inc	TROW	25,943.72	0.10%	2.72%	7.10%	9.92%	0.0100%
Travelers Cos Inc/The	TRV	39,160.52	0.15%	2.16%	13.06%	15.36%	0.0233%
Tractor Supply Co	TSCO	13,125.83	0.05%	1.23%	11.00%	12.29%	0.0062%
Tyson Foods Inc	TSN	29,455.12	0.11%	1.86%	3.10%	4.98%	0.0057%
Total System Services Inc	TSS	22,699.58	0.09%	0.42%	12.14%	12.58%	0.0111%
Take-Two Interactive Software Inc	TTWO	12,776.84	0.05%	0.00%	8.80%	8.80%	0.0044%
Twitter Inc	TWTR	26,825.23	0.10%	0.00%	31.76%	31.76%	0.0330%
Texas Instruments Inc	TXN	107,668.54	0.42%	2.73%	9.87%	12.73%	0.0531%
Textron Inc	TXT	12,345.71	0.05%	0.15%	12.06%	12.21%	0.0058%
Under Armour Inc	UA	10,658.97	0.04%	0.00%	31.19%	31.19%	0.0129%
United Continental Holdings Inc	UAL	23,136.94	0.09%	0.00%	13.81%	13.81%	0.0124%
UDR Inc	UDR	12,649.77	0.05%	3.05%	5.49%	8.62%	0.0042%
Universal Health Services Inc	UHS	11,753.36	0.05%	0.31%	9.38%	9.71%	0.0044%
Ulta Beauty Inc	ULTA	20,278.41	0.08%	0.00%	21.00%	21.00%	0.0165%
UnitedHealth Group Inc	UNH	231,893.22	0.90%	1.59%	13.74%	15.44%	0.1387%
Unum Group	UNM	7,108.60	0.03%	3.18%	9.00%	12.33%	0.0034%
Union Pacific Corp	UNP	119,702.51	0.46%	2.12%	13.02%	15.28%	0.0708%
United Parcel Service Inc	UPS	88,890.23	0.34%	3.70%	8.79%	12.65%	0.0436%
United Rentals Inc	URI	10,427.91	0.04%	0.00%	12.00%	12.00%	0.0048%
US Bancorp	USB	83,424.07	0.32%	3.02%	6.70%	9.82%	0.0317%
United Technologies Corp	UTX	112,350.33	0.44%	2.28%	8.87%	11.25%	0.0489%
Visa Inc	V	346,417.34	1.34%	0.58%	15.54%	16.17%	0.2169%

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Varian Medical Systems Inc	VAR	12,380.44	0.05%	0.00%	8.55%	8.55%	0.0041%
VF Corp	VFC	34,691.72	0.13%	2.22%	-19.07%	-17.05%	-0.0229%
Viacom Inc	VIAB	12,248.94	0.05%	2.70%	3.51%	6.25%	0.0030%
Valero Energy Corp	VLO	35,720.04	0.14%	4.20%	13.02%	17.49%	0.0242%
Vulcan Materials Co	VMC	18,137.57	0.07%	0.88%	16.30%	17.25%	0.0121%
Vornado Realty Trust	VNO	12,231.09	0.05%	4.32%	4.23%	8.63%	0.0041%
Versk Analytics Inc	VRSK	23,970.47	0.09%	0.51%	9.46%	9.99%	0.0093%
VeriSign Inc	VRSN	24,928.39	0.10%	0.00%	8.80%	8.80%	0.0085%
Vertex Pharmaceuticals Inc	VRTX	46,967.53	0.18%	0.00%	51.00%	51.00%	0.0928%
Ventas Inc	VTR	25,249.30	0.10%	4.65%	4.34%	9.09%	0.0089%
Verizon Communications Inc	VZ	236,272.92	0.92%	4.25%	2.34%	6.64%	0.0608%
Wabtec Corp	WAB	13,499.32	0.05%	0.00%	15.00%	15.00%	0.0078%
Waters Corp	WAT	14,953.85	0.06%	0.00%	9.90%	9.90%	0.0057%
Walgreens Boots Alliance Inc	WBA	49,374.85	0.19%	3.31%	5.36%	8.75%	0.0167%
WellCare Health Plans Inc	WCG	14,342.40	0.06%	0.00%	17.22%	17.22%	0.0096%
Western Digital Corp	WDC	13,932.04	0.05%	4.21%	-5.24%	-1.14%	-0.0006%
WEC Energy Group Inc	WEC	26,298.10	0.10%	2.83%	6.13%	9.05%	0.0092%
Welltower Inc	WELL	33,014.81	0.13%	4.27%	6.11%	10.51%	0.0134%
Wells Fargo & Co	WFC	212,672.31	0.82%	3.91%	10.36%	14.47%	0.1192%
Whirlpool Corp	WHR	9,016.98	0.03%	3.33%	4.97%	8.38%	0.0029%
Willis Towers Watson PLC	WLTTW	24,753.90	0.10%	1.32%	13.97%	15.38%	0.0147%
Waste Management Inc	WM	49,004.50	0.19%	1.76%	7.51%	9.34%	0.0177%
Williams Cos Inc/The	WMB	33,978.04	0.13%	5.40%	3.90%	9.40%	0.0124%
Walmart Inc	WMT	315,418.25	1.22%	1.92%	3.56%	5.52%	0.0674%
Westrock Co	WRK	9,374.35	0.04%	4.97%	3.17%	8.21%	0.0030%
Western Union Co/The	WU	8,566.79	0.03%	3.91%	3.36%	7.34%	0.0024%
Weyerhaeuser Co	WY	19,617.67	0.08%	5.17%	5.20%	10.51%	0.0080%
Wynn Resorts Ltd	WYNN	13,348.98	0.05%	2.98%	23.23%	26.56%	0.0137%
Camarex Energy Co	XEC	6,018.03	0.02%	1.21%	29.26%	30.64%	0.0071%
Xcel Energy Inc	XEL	30,617.91	0.12%	2.71%	5.42%	8.20%	0.0097%
Xilinx Inc	XLNX	29,599.38	0.11%	1.26%	9.60%	10.92%	0.0125%
Exxon Mobil Corp	XOM	324,228.73	1.26%	4.45%	15.93%	20.73%	0.2604%
DENTSPLY SIRONA Inc	XRAY	13,654.93	0.05%	0.59%	12.57%	13.20%	0.0070%
Xerox Corp	XRX	7,954.03	0.03%	2.86%	6.50%	9.45%	0.0029%
Xylem Inc/NY	XYL	15,049.60	0.06%	1.15%	13.97%	15.20%	0.0089%
Yum! Brands Inc	YUM	33,862.27	0.13%	1.52%	12.43%	14.05%	0.0184%
Zimmer Biomet Holdings Inc	ZBH	24,112.95	0.09%	0.84%	5.66%	6.52%	0.0061%
Zions Bancorp NA	ZION	8,394.35	0.03%	2.83%	7.60%	10.54%	0.0034%
Zoetis Inc	ZTS	54,322.69	0.21%	0.55%	10.81%	11.39%	0.0240%
Total Market Capitalization		25,816,650.84					14.88%

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 Est Required Market Return	Current 30-Year Treasury (30-day average)	Implied Market Risk Premium				
		14.78%	2.63%	12.15%				
		[4]	[5]	[6]	[7]	[8]	[9]	
Company	Ticker	Market Capitalization (\$million)	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result	
Agilent Technologies Inc	A	23,262.68	0.10%	0.90%	9.50%	10.44%	0.0101%	
American Airlines Group Inc	AAL	14,281.54	0.06%	1.24%	6.50%	7.78%	0.0046%	
Advance Auto Parts Inc	AAP	10,995.13	0.05%	0.16%	14.00%	14.17%	0.0065%	
Apple Inc	AAPL	918,968.80	3.81%	1.57%	12.50%	14.17%	0.5396%	
AbbVie Inc	ABBV	123,639.20	0.51%	5.46%	12.50%	18.30%	0.0938%	
AmersourceBergen Corp	ABC	17,981.89	0.07%	1.92%	8.00%	10.00%	0.0074%	
ABIOMED Inc	ABMD	11,746.87	0.05%	0.00%	24.50%	24.50%	0.0119%	
Abbott Laboratories	ABT	149,849.50	0.62%	1.51%	10.00%	11.59%	0.0719%	
Accenture PLC	ACN	119,105.00	0.49%	1.64%	9.00%	10.71%	0.0529%	
Adobe Inc	ADBE	147,581.90	0.61%	0.00%	19.50%	19.50%	0.1193%	
Analog Devices Inc	ADI	41,620.30	0.17%	1.92%	10.00%	12.02%	0.0207%	
Archer-Daniels-Midland Co	ADM	23,128.00	0.10%	3.39%	9.50%	13.05%	0.0125%	
Automatic Data Processing Inc	ADP	73,865.15	0.31%	2.04%	13.50%	15.68%	0.0480%	
Alliance Data Systems Corp	ADS	7,227.34	0.03%	1.82%	12.00%	13.93%	0.0042%	
Autodesk Inc	ADSK	37,214.61	N/A	0.00%	N/A	N/A	N/A	
Ameren Corp	AEE	18,999.62	0.08%	2.57%	6.50%	9.15%	0.0072%	
American Electric Power Co Inc	AEP	44,837.80	0.19%	3.08%	4.00%	7.14%	0.0133%	
AES Corp/VA	AES	11,236.36	N/A	3.25%	N/A	N/A	N/A	
Afiac Inc	AFL	41,310.59	0.17%	1.97%	7.50%	9.54%	0.0163%	
Allergan PLC	AGN	42,882.80	0.18%	2.26%	4.00%	6.31%	0.0112%	
American International Group Inc	AIG	47,183.23	N/A	2.36%	N/A	N/A	N/A	
Apartment Investment & Management Co	AIV	7,887.84	0.03%	3.02%	-3.00%	-0.03%	0.0000%	
Assurant Inc	AIZ	6,643.45	0.03%	2.23%	6.50%	8.80%	0.0024%	
Arthur J Gallagher & Co	AJG	16,213.75	0.07%	1.97%	15.50%	17.62%	0.0118%	
Akamai Technologies Inc	AKAM	13,060.62	0.05%	0.00%	18.00%	18.00%	0.0097%	
Albemarle Corp	ALB	7,362.47	0.03%	2.12%	5.50%	7.68%	0.0023%	
Align Technology Inc	ALGN	23,653.60	0.10%	0.00%	27.00%	27.00%	0.0265%	
Alaska Air Group Inc	ALK	7,499.16	0.03%	2.31%	5.50%	7.87%	0.0024%	
Allstate Corp/The	ALL	34,482.15	0.14%	1.93%	10.50%	12.53%	0.0179%	
Allegion PLC	ALLE	10,186.40	0.04%	1.00%	8.50%	9.54%	0.0040%	
Alexion Pharmaceuticals Inc	ALXN	28,883.68	0.12%	0.00%	21.00%	21.00%	0.0251%	
Applied Materials Inc	AMAT	40,444.56	0.17%	1.97%	8.50%	10.55%	0.0177%	
Amcor PLC	AMCR	N/A	N/A	0.00%	N/A	N/A	N/A	
Advanced Micro Devices Inc	AMD	32,470.82	0.13%	0.00%	27.50%	27.50%	0.0370%	
AMETEK Inc	AME	20,182.16	0.08%	0.63%	10.50%	11.16%	0.0093%	
Affiliated Managers Group Inc	AMG	5,183.10	0.02%	1.48%	10.00%	11.55%	0.0025%	
Amgen Inc	AMGN	113,098.70	0.47%	3.21%	7.00%	10.32%	0.0484%	
Ameriprise Financial Inc	AMP	20,032.33	0.08%	2.60%	13.00%	15.77%	0.0131%	
American Tower Corp	AMT	96,136.88	0.40%	1.88%	9.50%	11.47%	0.0457%	
Amazon.com Inc	AMZN	943,749.40	3.91%	0.00%	39.00%	39.00%	1.5253%	
Ansta Networks Inc	ANET	19,016.16	0.08%	0.00%	11.00%	11.00%	0.0087%	
ANSYS Inc	ANSS	17,085.95	0.07%	0.00%	11.00%	11.00%	0.0078%	
Anthem Inc	ANTM	74,949.20	0.31%	1.10%	19.00%	20.20%	0.0628%	
Aon PLC	AON	46,618.96	0.19%	0.91%	10.00%	10.96%	0.0212%	
AO Smith Corp	AOS	7,660.92	0.03%	1.92%	9.50%	11.51%	0.0037%	
Apache Corp	APA	11,093.10	0.05%	3.39%	50.00%	54.24%	0.0249%	
Anadarko Petroleum Corp	APC	34,556.34	N/A	1.70%	N/A	N/A	N/A	
Air Products & Chemicals Inc	APD	48,880.53	0.20%	2.09%	9.00%	11.18%	0.0227%	
Amphenol Corp	APH	28,572.24	0.12%	0.96%	9.50%	10.51%	0.0124%	
Aptiv PLC	APTIV	20,232.71	0.08%	1.12%	11.00%	12.18%	0.0102%	
Alexandria Real Estate Equities Inc	ARE	16,644.03	N/A	2.67%	N/A	N/A	N/A	
Arconic Inc	ARNC	10,834.39	N/A	0.33%	N/A	N/A	N/A	
Atmos Energy Corp	ATO	12,388.50	0.05%	2.09%	7.50%	9.67%	0.0050%	
Activision Blizzard Inc	ATVI	34,979.75	0.14%	0.81%	9.50%	10.35%	0.0150%	
AvalonBay Communities Inc	AVB	29,151.78	0.12%	2.93%	4.00%	6.99%	0.0084%	
Broadcom Inc	AVGO	111,340.90	0.46%	3.80%	33.50%	37.94%	0.1750%	
Avery Dennison Corp	AVY	9,523.58	0.04%	2.11%	11.00%	13.23%	0.0052%	
American Water Works Co Inc	AWK	21,334.83	0.09%	1.69%	9.50%	11.27%	0.0100%	
American Express Co	AXP	104,558.00	0.43%	1.37%	10.00%	11.44%	0.0496%	
AutoZone Inc	AZO	27,766.13	0.12%	0.00%	13.50%	13.50%	0.0155%	
Boeing Co/The	BA	211,211.50	0.88%	2.33%	15.50%	18.01%	0.1576%	
Bank of America Corp	BAC	270,498.40	1.12%	2.34%	10.50%	12.96%	0.1453%	
Baxter International Inc	BAX	41,844.34	0.17%	1.07%	10.50%	11.63%	0.0202%	
BB&T Corp	BBT	37,307.96	0.15%	3.61%	8.00%	11.75%	0.0182%	
Best Buy Co Inc	BBY	18,260.13	0.08%	2.92%	10.50%	13.57%	0.0103%	
Becton Dickinson and Co	BDX	66,116.70	0.27%	1.27%	10.00%	11.33%	0.0311%	

Company	Ticker	Market Capitalization (\$million)	Weight in Index	Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result
Franklin Resources Inc	BEN	17,536 44	0 07%	3 19%	7 50%	10 81%	0 0079%
Brown-Forman Corp	BF/B	26,444 87	0 11%	1 21%	13 50%	14 79%	0 0162%
Baker Hughes a GE Co	BHGE	12,545 40	N/A	2 96%	N/A	N/A	N/A
Biogen Inc	BIIB	45,559 04	0 19%	0 00%	5 50%	5 50%	0 0104%
Bank of New York Mellon Corp/The	BK	41,288 14	0 17%	2 60%	8 50%	11 21%	0 0192%
Booking Holdings Inc	BKNG	82,243 84	0 34%	0 00%	11 50%	11 50%	0 0392%
BlackRock Inc	BLK	71,932 11	0 30%	2 84%	9 50%	12 47%	0 0372%
Ball Corp	BLL	22,493 04	0 09%	0 89%	23 00%	23 99%	0 0224%
Bristol-Myers Squibb Co	BMJ	79,969 66	0 33%	3 35%	11 50%	15 04%	0 0499%
Broadridge Financial Solutions Inc	BR	15,117 69	0 06%	1 65%	11 00%	12 74%	0 0080%
Berkshire Hathaway Inc	BRK/B	-	N/A	0 00%	N/A	N/A	N/A
Boston Scientific Corp	BSX	58,209 80	0 24%	0 00%	16 00%	16 00%	0 0386%
BorgWarner Inc	BWA	8,750 77	0 04%	1 61%	7 00%	8 67%	0 0031%
Boston Properties Inc	BXP	21,434 14	0 09%	2 77%	4 50%	7 33%	0 0065%
Citigroup Inc	C	157,479 10	0 65%	2 91%	10 00%	13 06%	0 0852%
Conagra Brands Inc	CAG	14,188 72	0 06%	3 01%	5 50%	8 59%	0 0051%
Cardinal Health Inc	CAH	13,341 46	0 06%	4 29%	17 00%	21 65%	0 0120%
Caterpillar Inc	CAT	76,396 54	0 32%	3 08%	13 00%	16 28%	0 0515%
Chubb Ltd	CB	68,433 61	0 28%	2 01%	10 00%	12 11%	0 0343%
Cboe Global Markets Inc	CBOE	11,953 45	0 05%	1 16%	14 50%	15 74%	0 0078%
CBRE Group Inc	CBRE	16,998 25	0 07%	0 00%	10 50%	10 50%	0 0074%
CBS Corp	CBS	18,987 98	0 08%	1 42%	9 50%	10 99%	0 0086%
Crown Castle International Corp	CCI	56,958 73	0 24%	3 51%	10 50%	14 19%	0 0335%
Carnival Corp	CCL	25,717 60	0 11%	4 10%	10 00%	14 31%	0 0152%
Cadence Design Systems Inc	CDNS	20,422 45	0 08%	0 00%	12 50%	12 50%	0 0106%
Celanese Corp	CE	13,308 19	0 06%	2 36%	11 00%	13 49%	0 0074%
Celgene Corp	CELG	69,162 02	0 29%	0 00%	13 50%	13 50%	0 0387%
Cerner Corp	CERN	23,319 76	0 10%	1 00%	9 00%	10 05%	0 0097%
CF Industries Holdings Inc	CF	10,380 62	N/A	2 60%	N/A	N/A	N/A
Citizens Financial Group Inc	CFG	16,120 65	0 07%	3 72%	12 00%	15 94%	0 0107%
Church & Dwight Co Inc	CHD	18,789 60	0 08%	1 19%	9 00%	10 24%	0 0080%
CH Robinson Worldwide Inc	CHRW	11,498 68	0 05%	2 38%	9 00%	11 49%	0 0055%
Charter Communications Inc	CHTR	89,088 41	0 37%	0 00%	16 00%	16 00%	0 0591%
Cigna Corp	CI	60,618 26	0 25%	0 03%	14 50%	14 53%	0 0365%
Cincinnati Financial Corp	CINF	17,289 41	0 07%	2 11%	8 50%	10 70%	0 0077%
Colgate-Palmolive Co	CL	63,186 71	0 26%	2 34%	6 00%	8 41%	0 0220%
Clorox Co/The	CLX	19,768 93	0 08%	2 74%	6 50%	9 33%	0 0076%
Comerica Inc	CMA	10,882 37	0 05%	3 83%	12 00%	16 06%	0 0072%
Comcast Corp	CMCSA	198,242 30	0 82%	1 92%	13 50%	15 55%	0 1277%
CME Group Inc	CME	70,981 92	0 29%	1 51%	3 00%	4 53%	0 0133%
Chipotle Mexican Grill Inc	CMG	20,481 02	0 08%	0 00%	26 00%	26 00%	0 0221%
Cummins Inc	CMI	27,027 00	0 11%	2 66%	8 00%	10 77%	0 0121%
CMS Energy Corp	CMS	16,766 67	0 07%	2 69%	7 00%	9 78%	0 0068%
Centene Corp	CNC	22,888 83	0 09%	0 00%	15 50%	15 50%	0 0147%
CenterPoint Energy Inc	CNP	15,085 13	0 06%	3 90%	12 50%	16 64%	0 0104%
Capital One Financial Corp	COF	43,029 18	0 18%	1 75%	6 00%	7 80%	0 0139%
Cabot Oil & Gas Corp	COG	9,987 23	0 04%	1 53%	50 00%	51 91%	0 0215%
Cooper Cos Inc/The	COO	16,208 28	0 07%	0 02%	14 50%	14 52%	0 0098%
ConocoPhillips	COP	68,601 68	0 28%	2 01%	37 00%	39 38%	0 1120%
Costco Wholesale Corp	COST	117,583 50	0 49%	0 97%	8 50%	9 51%	0 0463%
Coty Inc	COTY	10,136 39	0 04%	3 71%	9 00%	12 88%	0 0054%
Campbell Soup Co	CPB	12,350 03	0 05%	3 41%	1 00%	4 43%	0 0023%
Capri Holdings Ltd	CPRI	5,275 07	0 02%	0 00%	7 50%	7 50%	0 0016%
Copart Inc	CPRT	17,103 85	0 07%	0 00%	12 50%	12 50%	0 0089%
salesforce com Inc	CRM	121,987 20	0 51%	0 00%	57 00%	57 00%	0 2881%
Cisco Systems Inc	CSCO	247,609 30	1 03%	2 44%	8 00%	10 54%	0 1081%
CSX Corp	CSX	69,196 73	0 29%	1 21%	14 50%	15 80%	0 0453%
Cintas Corp	CTAS	24,410 33	0 10%	0 97%	16 00%	17 05%	0 0172%
CenturyLink Inc	CTL	12,376 55	0 05%	8 81%	1 00%	9 85%	0 0051%
Cognizant Technology Solutions Corp	CTSH	36,512 73	0 15%	1 25%	5 00%	6 28%	0 0095%
Corteva Inc	CTVA	N/A	N/A	0 00%	N/A	N/A	N/A
Citrix Systems Inc	CTXS	13,108 22	0 05%	1 41%	7 00%	8 46%	0 0046%
CVS Health Corp	CVS	69,923 27	0 29%	3 71%	6 50%	10 33%	0 0299%
Chevron Corp	CVX	236,719 30	0 98%	3 83%	16 50%	20 65%	0 2025%
Concho Resources Inc	CXO	21,056 98	0 09%	0 48%	21 00%	21 53%	0 0188%
Dominion Energy Inc	D	62,082 82	0 26%	4 81%	6 50%	11 47%	0 0295%
Delta Air Lines Inc	DL	36,660 13	0 15%	2 75%	9 50%	12 38%	0 0188%
DuPont de Nemours Inc	DD	N/A	N/A	0 00%	N/A	N/A	N/A
Deere & Co	DE	51,594 27	0 21%	1 87%	14 00%	16 00%	0 0342%
Discover Financial Services	DFS	25,507 01	0 11%	2 04%	7 50%	9 62%	0 0102%
Dollar General Corp	DG	35,857 82	0 15%	0 92%	12 50%	13 48%	0 0200%
Quest Diagnostics Inc	DGX	13,445 56	0 06%	2 11%	8 50%	10 70%	0 0060%
DR Horton Inc	DHI	17,048 45	0 07%	1 34%	6 50%	7 88%	0 0056%
Danaher Corp	DHR	102,824 70	0 43%	0 47%	12 50%	13 00%	0 0554%
Walt Disney Co/The	DIS	252,653 60	1 05%	1 24%	6 50%	7 78%	0 0815%
Discovery Inc	DISCA	16,235 62	0 07%	0 00%	15 00%	15 00%	0 0101%
DISH Network Corp	DISH	18,297 13	0 08%	0 00%	-2 00%	-2 00%	-0 0015%
Digital Realty Trust Inc	DLR	25,778 48	0 11%	3 46%	5 00%	8 55%	0 0091%
Dollar Tree Inc	DLTR	26,323 70	0 11%	0 00%	15 50%	15 50%	0 0169%



Company	Ticker	Market		Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result
		Capitalization (\$million)	Weight in Index				
Dover Corp	DOV	14,249.51	0.06%	1.96%	11.00%	13.07%	0.0077%
Dow Inc	DOW	36,639.96	N/A	5.83%	N/A	N/A	N/A
Duke Realty Corp	DRE	11,637.54	0.05%	2.74%	7.00%	9.84%	0.0047%
Darden Restaurants Inc	DRI	14,593.56	0.06%	2.97%	12.00%	15.15%	0.0092%
DTE Energy Co	DTE	24,033.75	0.10%	3.02%	5.50%	8.60%	0.0086%
Duke Energy Corp	DUK	64,486.24	0.27%	4.26%	6.00%	10.41%	0.0278%
DaVita Inc	DVA	8,720.82	0.04%	0.00%	11.00%	11.00%	0.0040%
Devon Energy Corp	DVN	11,663.08	0.05%	1.28%	26.50%	27.95%	0.0135%
DXC Technology Co	DXC	14,684.01	0.06%	1.54%	14.50%	16.15%	0.0098%
Electronic Arts Inc	EA	27,780.59	0.12%	0.00%	10.00%	10.00%	0.0115%
eBay Inc	EBAY	34,969.92	0.14%	1.43%	10.00%	11.50%	0.0167%
Ecolab Inc	ECL	55,438.15	0.23%	0.96%	10.00%	11.01%	0.0253%
Consolidated Edison Inc	ED	29,063.76	0.12%	3.39%	3.00%	6.44%	0.0078%
Equifax Inc	EFX	16,305.58	0.07%	1.16%	8.00%	9.21%	0.0062%
Edison International	EIX	20,780.22	0.09%	3.84%	15.00%	19.13%	0.0165%
Estee Lauder Cos Inc/The	EL	66,189.98	0.27%	0.95%	12.50%	13.51%	0.0371%
Eastman Chemical Co	EMN	10,483.80	0.04%	3.26%	8.00%	11.41%	0.0050%
Emerson Electric Co	EMR	41,218.89	0.17%	3.01%	12.00%	15.19%	0.0259%
EOG Resources Inc	EOG	53,069.80	0.22%	1.26%	34.50%	35.98%	0.0791%
Equinix Inc	EQIX	42,738.66	0.18%	1.97%	25.00%	27.22%	0.0482%
Equity Residential	EQR	29,120.20	0.12%	2.91%	-12.00%	-9.26%	-0.0112%
Eversource Energy	ES	24,603.91	0.10%	2.80%	5.50%	8.38%	0.0085%
Essex Property Trust Inc	ESS	19,958.74	0.08%	2.61%	2.00%	4.64%	0.0038%
E*TRADE Financial Corp	ETFC	11,119.21	0.05%	1.23%	17.50%	18.84%	0.0087%
Eaton Corp PLC	ETN	34,964.98	0.14%	3.44%	9.00%	12.59%	0.0182%
Entergy Corp	ETR	19,644.91	0.08%	3.58%	0.50%	4.09%	0.0033%
Evergy Inc	EVRG	15,011.08	N/A	3.28%	N/A	N/A	N/A
Edwards Lifesciences Corp	EW	40,194.11	0.17%	0.00%	15.00%	15.00%	0.0250%
Exelon Corp	EXC	48,783.04	0.20%	2.93%	10.50%	13.58%	0.0275%
Expeditors International of Washington I	EXPD	13,101.89	0.05%	1.31%	7.50%	8.86%	0.0048%
Expedia Group Inc	EXPE	19,276.45	0.08%	0.99%	24.00%	25.11%	0.0201%
Extra Space Storage Inc	EXR	13,864.50	0.06%	3.35%	6.00%	9.45%	0.0054%
Ford Motor Co	F	39,343.69	0.16%	5.98%	3.50%	9.58%	0.0156%
Diamondback Energy Inc	FANG	17,709.28	0.07%	0.70%	17.00%	17.76%	0.0130%
Fastenal Co	FAST	19,030.96	0.08%	2.59%	8.50%	11.20%	0.0088%
Facebook Inc	FB	541,011.10	2.24%	0.00%	16.50%	16.50%	0.3699%
Fortune Brands Home & Security Inc	FBHS	7,788.52	0.03%	1.58%	10.50%	12.16%	0.0039%
Freeport-McMoRan Inc	FCX	16,512.38	0.07%	1.76%	22.50%	24.46%	0.0167%
FedEx Corp	FDX	43,906.89	0.18%	1.69%	7.50%	9.25%	0.0168%
FirstEnergy Corp	FE	23,208.07	0.10%	3.57%	8.00%	11.71%	0.0113%
F5 Networks Inc	FFIV	8,494.00	0.04%	0.00%	12.00%	12.00%	0.0042%
Fidelity National Information Services I	FIS	40,013.24	0.17%	1.13%	18.00%	19.23%	0.0319%
Fiserv Inc	FISV	35,969.99	0.15%	0.00%	10.50%	10.50%	0.0157%
Fifth Third Bancorp	FITB	20,185.78	0.08%	3.52%	7.00%	10.64%	0.0089%
Foot Locker Inc	FL	4,694.41	0.02%	3.64%	12.00%	15.86%	0.0031%
FLIR Systems Inc	FLIR	7,305.11	0.03%	1.30%	12.00%	13.38%	0.0040%
Flowserve Corp	FLS	6,685.11	0.03%	1.49%	13.50%	15.09%	0.0042%
FleetCor Technologies Inc	FLT	23,940.72	0.10%	0.00%	12.50%	12.50%	0.0124%
FMC Corp	FMC	10,803.86	0.04%	2.01%	15.00%	17.16%	0.0077%
Fox Corp	FOXA	N/A	N/A	0.00%	N/A	N/A	N/A
First Republic Bank/CA	FRC	16,063.03	0.07%	0.79%	10.50%	11.33%	0.0075%
Federal Realty Investment Trust	FRT	9,976.97	0.04%	3.07%	4.00%	7.13%	0.0029%
TechnipFMC PLC	FTI	N/A	N/A	0.00%	N/A	N/A	N/A
Fortinet Inc	FTNT	13,133.66	0.05%	0.00%	25.00%	25.00%	0.0136%
Fortive Corp	FTV	27,074.70	N/A	0.35%	N/A	N/A	N/A
General Dynamics Corp	GD	51,407.66	0.21%	2.29%	6.00%	8.36%	0.0178%
General Electric Co	GE	92,702.18	0.38%	0.38%	3.50%	3.89%	0.0149%
Gilead Sciences Inc	GILD	87,358.19	0.36%	3.68%	-5.50%	-1.92%	-0.0070%
General Mills Inc	GIS	32,336.37	0.13%	3.67%	4.00%	7.74%	0.0104%
Corning Inc	GLW	25,899.84	0.11%	2.42%	15.00%	17.60%	0.0189%
General Motors Co	GM	52,423.80	0.22%	4.22%	2.50%	6.77%	0.0147%
Alphabet Inc	GOOGL	N/A	N/A	0.00%	N/A	N/A	N/A
Genuine Parts Co	GPC	15,159.98	0.06%	2.94%	8.50%	11.56%	0.0073%
Global Payments Inc	GPN	25,417.35	0.11%	0.03%	17.50%	17.53%	0.0185%
Gap Inc/The	GPS	6,841.80	0.03%	5.36%	6.00%	11.52%	0.0033%
Garmin Ltd	GRMN	15,518.09	0.06%	2.79%	10.00%	12.93%	0.0083%
Goldman Sachs Group Inc/The	GS	71,777.09	0.30%	1.74%	8.50%	10.31%	0.0307%
WW Grainger Inc	GWV	15,346.90	0.06%	2.08%	8.50%	10.67%	0.0068%
Halliburton Co	HAL	19,951.36	0.08%	3.15%	24.50%	28.04%	0.0232%
Hasbro Inc	HAS	13,580.72	0.06%	2.52%	7.50%	10.11%	0.0057%
Huntington Bancshares Inc/OH	HBAN	13,875.79	0.06%	4.53%	11.50%	16.29%	0.0094%
Hanesbrands Inc	HBI	6,343.82	0.03%	3.42%	4.00%	7.49%	0.0020%
HCA Healthcare Inc	HCA	43,935.41	0.18%	1.25%	12.50%	13.83%	0.0252%
HCP Inc	HCP	15,895.84	0.07%	4.45%	32.50%	37.67%	0.0248%
Home Depot Inc/The	HD	232,586.30	0.96%	2.58%	9.00%	11.70%	0.1127%
Hess Corp	HES	18,658.51	N/A	1.63%	N/A	N/A	N/A
HollyFrontier Corp	HFC	7,453.89	0.03%	3.14%	18.50%	21.93%	0.0068%
Hartford Financial Services Group Inc/Th	HIG	20,074.92	0.08%	2.16%	11.00%	13.28%	0.0110%
Huntington Ingalls Industries Inc	HII	9,350.02	0.04%	1.53%	7.00%	8.58%	0.0033%

Company	Ticker	Market		Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result
		Capitalization (\$million)	Weight in Index				
Hilton Worldwide Holdings Inc	HLT	28,258.91	0.12%	0.62%	17.00%	17.67%	0.0207%
Harley-Davidson Inc	HOG	5,728.22	0.02%	4.17%	8.50%	12.85%	0.0030%
Hologic Inc	HOLX	13,190.10	0.05%	0.00%	18.50%	18.50%	0.0101%
Honeywell International Inc	HON	128,293.60	0.53%	1.86%	8.00%	9.93%	0.0528%
Helmench & Payne Inc	HP	5,587.67	N/A	5.56%	N/A	N/A	N/A
Hewlett Packard Enterprise Co	HPE	20,193.48	0.08%	3.27%	6.50%	9.88%	0.0083%
HP Inc	HPQ	31,415.16	0.13%	3.21%	8.50%	11.85%	0.0154%
H&R Block Inc	HRB	5,749.35	0.02%	3.71%	7.00%	10.84%	0.0026%
Hormel Foods Corp	HRL	22,280.02	0.09%	2.07%	9.00%	11.16%	0.0103%
Harris Corp	HRS	23,543.56	0.10%	1.39%	12.00%	13.47%	0.0131%
Henry Schein Inc	HSIC	10,569.78	0.04%	0.00%	7.00%	7.00%	0.0031%
Host Hotels & Resorts Inc	HST	13,808.46	0.06%	4.29%	4.00%	8.38%	0.0048%
Hershey Co/The	HSY	28,715.29	0.12%	2.10%	6.00%	8.16%	0.0097%
Humana Inc	HUM	34,951.11	0.14%	0.85%	11.50%	12.40%	0.0180%
International Business Machines Corp	IBM	123,110.40	0.51%	4.69%	2.00%	6.74%	0.0344%
Intercontinental Exchange Inc	ICE	48,832.95	0.20%	1.27%	10.50%	11.84%	0.0240%
IDEXX Laboratories Inc	IDXX	23,482.69	0.10%	0.00%	13.00%	13.00%	0.0127%
International Flavors & Fragrances Inc	IFF	16,073.84	0.07%	2.04%	8.50%	10.63%	0.0071%
Illumina Inc	ILMN	52,709.79	0.22%	0.00%	14.00%	14.00%	0.0306%
Incyte Corp	INCY	18,553.77	N/A	0.00%	N/A	N/A	N/A
IHS Markit Ltd	INFO	23,938.03	0.10%	0.00%	17.00%	17.00%	0.0169%
Intel Corp	INTC	211,269.60	0.88%	2.67%	10.50%	13.31%	0.1165%
Intuit Inc	INTU	69,154.00	0.29%	0.71%	13.00%	13.76%	0.0394%
International Paper Co	IP	17,384.43	0.07%	4.59%	11.50%	16.35%	0.0118%
Interpublic Group of Cos Inc/The	IPG	8,700.64	0.04%	4.32%	11.00%	15.56%	0.0056%
IPG Photonics Corp	IPGP	7,679.95	0.03%	0.00%	10.50%	10.50%	0.0033%
IQVIA Holdings Inc	IQV	30,471.34	0.13%	0.00%	12.50%	12.50%	0.0158%
Ingersoll-Rand PLC	IR	30,412.44	0.13%	1.68%	12.00%	13.78%	0.0174%
Iron Mountain Inc	IRM	9,336.32	0.04%	7.50%	8.50%	16.32%	0.0063%
Intuitive Surgical Inc	ISRG	61,513.98	0.25%	0.00%	14.00%	14.00%	0.0357%
Gartner Inc	IT	14,451.12	0.06%	0.00%	14.00%	14.00%	0.0084%
Illinois Tool Works Inc	ITW	49,580.24	0.21%	2.63%	9.00%	11.75%	0.0241%
Invesco Ltd	IVZ	8,313.80	0.03%	5.98%	7.00%	13.19%	0.0045%
JB Hunt Transport Services Inc	JBHT	9,881.11	0.04%	1.17%	10.00%	11.23%	0.0046%
Johnson Controls International plc	JCI	35,653.34	0.15%	2.62%	2.00%	4.65%	0.0069%
Jacobs Engineering Group Inc	JEC	11,173.78	0.05%	0.83%	12.50%	13.38%	0.0062%
Jefferies Financial Group Inc	JEF	5,491.94	0.02%	2.72%	18.50%	21.47%	0.0049%
Jack Henry & Associates Inc	JKHY	10,676.65	0.04%	1.15%	10.50%	11.71%	0.0052%
Johnson & Johnson	JNJ	377,658.00	1.57%	2.71%	12.00%	14.87%	0.2328%
Juniper Networks Inc	JNPR	9,482.88	0.04%	2.82%	6.00%	8.90%	0.0035%
JPMorgan Chase & Co	JPM	357,453.40	1.48%	2.96%	8.50%	11.59%	0.1716%
Nordstrom Inc	JWN	5,134.27	0.02%	4.46%	6.50%	11.10%	0.0024%
Kellogg Co	K	18,764.60	0.08%	4.13%	4.50%	8.72%	0.0068%
KeyCorp	KEY	17,102.58	0.07%	4.33%	10.50%	15.06%	0.0107%
Keysight Technologies Inc	KEYS	16,583.84	0.07%	0.00%	16.00%	16.00%	0.0110%
Kraft Heinz Co/The	KHC	37,947.47	0.16%	5.20%	3.50%	8.79%	0.0138%
Kimco Realty Corp	KIM	8,061.17	0.03%	5.96%	5.00%	11.11%	0.0037%
KLA-Tencor Corp	KLAC	18,390.74	0.08%	2.64%	11.50%	14.29%	0.0109%
Kimberly-Clark Corp	KMB	46,862.70	0.19%	3.02%	7.00%	10.13%	0.0197%
Kinder Morgan Inc/DE	KMI	47,737.14	0.20%	4.74%	35.50%	41.08%	0.0813%
CarMax Inc	KMX	14,258.16	0.06%	0.00%	11.50%	11.50%	0.0068%
Coca-Cola Co/The	KO	220,484.90	0.91%	3.10%	6.50%	9.70%	0.0886%
Kroger Co/The	KR	18,457.74	0.08%	2.68%	4.50%	7.24%	0.0055%
Kohl's Corp	KSS	7,594.56	0.03%	5.72%	11.00%	17.03%	0.0054%
Kansas City Southern	KSU	11,872.58	0.05%	1.22%	12.00%	13.29%	0.0065%
Loews Corp	L	16,515.60	0.07%	0.46%	12.00%	12.49%	0.0085%
L Brands Inc	LB	6,601.92	0.03%	5.02%	-4.00%	0.92%	0.0003%
Leggett & Platt Inc	LEG	5,031.54	0.02%	4.17%	9.00%	13.36%	0.0028%
Lennar Corp	LEN	17,040.97	0.07%	0.30%	8.50%	8.81%	0.0062%
Laboratory Corp of America Holdings	LH	16,580.61	0.07%	0.00%	8.00%	8.00%	0.0055%
Linde PLC	LIN	110,009.40	N/A	1.85%	N/A	N/A	N/A
LKQ Corp	LKQ	8,373.69	0.03%	0.00%	10.00%	10.00%	0.0035%
L3 Technologies Inc	LLL	20,547.94	0.09%	1.31%	7.00%	8.36%	0.0071%
Eli Lilly & Co	LLY	112,189.20	0.46%	2.23%	11.50%	13.86%	0.0644%
Lockheed Martin Corp	LMT	102,505.10	0.42%	2.54%	11.50%	14.19%	0.0603%
Lincoln National Corp	LNC	12,976.96	0.05%	2.38%	9.00%	11.49%	0.0062%
Alliant Energy Corp	LNT	11,864.95	0.05%	2.84%	6.50%	9.43%	0.0046%
Lowe's Cos Inc	LOW	80,644.80	0.33%	2.17%	11.50%	13.79%	0.0461%
Lam Research Corp	LRCX	27,573.03	0.11%	2.39%	11.00%	13.52%	0.0155%
Southwest Airlines Co	LUV	27,978.71	0.12%	1.40%	11.00%	12.48%	0.0145%
Lamb Weston Holdings Inc	LW	8,979.13	N/A	1.30%	N/A	N/A	N/A
LyondellBasell Industries NV	LYB	32,066.53	0.13%	4.85%	5.50%	10.48%	0.0139%
Macy's Inc	M	6,770.47	0.03%	6.89%	3.50%	10.51%	0.0029%
Mastercard Inc	MA	273,192.90	1.13%	0.50%	16.00%	16.54%	0.1873%
Mid-America Apartment Communities Inc	MAA	13,659.00	0.06%	3.20%	-3.00%	0.15%	0.0001%
Macerich Co/The	MAC	4,815.67	0.02%	8.92%	3.00%	12.05%	0.0024%
Marmott International Inc/MD	MAR	45,682.76	0.19%	1.40%	12.50%	13.99%	0.0265%
Masco Corp	MAS	11,348.61	0.05%	1.29%	10.50%	11.86%	0.0056%
McDonald's Corp	MCD	156,620.60	0.65%	2.34%	8.50%	10.94%	0.0710%

Company	Ticker	Market		Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result
		Capitalization (\$million)	Weight in Index				
Microchip Technology Inc	MCHP	20,332.95	0.08%	1.76%	10.50%	12.35%	0.0104%
McKesson Corp	MCK	25,814.40	0.11%	1.16%	9.00%	10.21%	0.0109%
Moody's Corp	MCO	38,799.60	0.16%	1.01%	11.00%	12.07%	0.0194%
Mondelez International Inc	MDLZ	80,076.86	0.33%	1.98%	8.50%	10.56%	0.0351%
Medtronic PLC	MDT	133,067.30	0.55%	2.11%	7.50%	9.69%	0.0534%
MetLife Inc	MET	46,900.93	0.19%	3.57%	7.50%	11.20%	0.0218%
MGM Resorts International	MGM	15,045.74	0.06%	1.86%	22.50%	24.57%	0.0153%
Mohawk Industries Inc	MHK	10,751.05	0.04%	0.00%	3.50%	3.50%	0.0016%
McCormick & Co Inc/MD	MKC	20,589.29	0.09%	1.48%	8.50%	10.04%	0.0086%
Martin Marietta Materials Inc	MLM	14,021.68	0.06%	0.88%	9.00%	9.92%	0.0058%
Marsh & McLennan Cos Inc	MMC	49,419.05	0.20%	1.87%	9.50%	11.46%	0.0235%
3M Co	MMM	100,263.70	0.42%	3.31%	8.50%	11.95%	0.0497%
Monster Beverage Corp	MNST	34,526.11	0.14%	0.00%	13.50%	13.50%	0.0193%
Altria Group Inc	MO	94,074.36	0.39%	6.37%	8.50%	15.14%	0.0590%
Mosaic Co/The	MOS	9,116.17	0.04%	0.89%	22.00%	22.99%	0.0087%
Marathon Petroleum Corp	MPC	34,650.65	0.14%	4.08%	11.50%	15.81%	0.0227%
Merck & Co Inc	MRK	218,527.80	0.91%	2.60%	8.50%	11.21%	0.015%
Marathon Oil Corp	MRO	11,570.20	N/A	1.84%	N/A	N/A	N/A
Morgan Stanley	MS	73,273.38	0.30%	2.76%	10.00%	12.90%	0.0392%
MSCI Inc	MSCI	20,105.23	0.08%	1.06%	18.50%	19.66%	0.0164%
Microsoft Corp	MSFT	1,049,859.00	4.35%	1.34%	13.50%	14.93%	0.0496%
Motorola Solutions Inc	MSI	27,498.53	0.11%	1.37%	10.50%	11.94%	0.0136%
M&T Bank Corp	MTB	22,654.86	0.09%	2.41%	9.50%	12.02%	0.0113%
Mettler-Toledo International Inc	MTD	20,372.94	0.08%	0.00%	10.00%	10.00%	0.0084%
Micron Technology Inc	MU	40,228.70	0.17%	0.00%	11.50%	11.50%	0.0192%
Maxim Integrated Products Inc	MXIM	15,893.27	0.07%	3.15%	8.00%	11.28%	0.0074%
Mylan NV	MYL	9,404.59	0.04%	0.00%	6.50%	6.50%	0.0025%
Noble Energy Inc	NBL	10,505.25	N/A	2.21%	N/A	N/A	N/A
Norwegian Cruise Line Holdings Ltd	NCLH	11,320.69	0.05%	0.00%	16.00%	16.00%	0.0075%
Nasdaq Inc	NDAA	16,195.62	0.07%	1.92%	8.00%	10.00%	0.0067%
NextEra Energy Inc	NEE	98,856.02	0.41%	2.50%	10.00%	12.63%	0.0517%
Newmont Goldcorp Corp	NEM	20,180.46	0.08%	1.49%	2.50%	4.01%	0.0034%
Netflix Inc	NFLX	159,666.90	0.66%	0.00%	32.00%	32.00%	0.2117%
NiSource Inc	NI	10,973.75	0.05%	2.72%	12.50%	15.39%	0.0070%
NIKE Inc	NKE	134,082.50	0.56%	1.03%	14.50%	15.60%	0.0867%
Nektar Therapeutics	NKTR	6,165.93	N/A	0.00%	N/A	N/A	N/A
Nielsen Holdings PLC	NLSN	8,336.34	0.03%	5.97%	45.50%	52.83%	0.0183%
Northrop Grumman Corp	NOC	55,008.60	0.23%	1.63%	9.50%	11.21%	0.0255%
National Oilwell Varco Inc	NOV	8,382.44	N/A	0.92%	N/A	N/A	N/A
NRG Energy Inc	NRG	9,374.53	N/A	0.34%	N/A	N/A	N/A
Norfolk Southern Corp	NSC	52,211.98	0.22%	1.75%	15.00%	16.88%	0.0365%
NetApp Inc	NTAP	15,479.49	0.06%	3.06%	18.50%	21.84%	0.0140%
Northern Trust Corp	NTRS	18,663.63	0.08%	2.80%	8.50%	11.42%	0.0088%
Nucor Corp	NUE	16,400.53	0.07%	2.97%	13.00%	16.16%	0.0110%
NVIDIA Corp	NVDA	93,846.91	0.39%	0.42%	11.50%	11.94%	0.0465%
Newell Brands Inc	NWL	6,376.12	0.03%	6.11%	4.50%	10.75%	0.0028%
News Corp	NWSA	7,933.62	N/A	1.48%	N/A	N/A	N/A
Realty Income Corp	O	22,261.25	0.09%	3.75%	4.50%	8.33%	0.0077%
ONEOK Inc	OKE	27,968.14	0.12%	5.42%	16.00%	21.85%	0.0253%
Omnicom Group Inc	OMC	17,774.16	0.07%	3.28%	6.50%	9.89%	0.0073%
Oracle Corp	ORCL	196,216.60	0.81%	1.69%	10.00%	11.77%	0.0957%
O'Reilly Automotive Inc	ORLY	29,416.34	0.12%	0.00%	12.00%	12.00%	0.0146%
Occidental Petroleum Corp	OXY	38,366.14	0.16%	6.14%	27.50%	34.48%	0.0548%
Paychex Inc	PAYX	31,469.06	0.13%	2.83%	10.50%	13.48%	0.0176%
People's United Financial Inc	PBCT	6,525.14	0.03%	4.34%	9.00%	13.54%	0.0037%
PACCAR Inc	PCAR	25,027.69	0.10%	4.57%	7.50%	12.24%	0.0127%
Public Service Enterprise Group Inc	PEG	30,809.52	0.13%	3.11%	6.00%	9.20%	0.0118%
PepsiCo Inc	PEP	188,068.30	0.78%	2.85%	6.50%	9.44%	0.0736%
Pfizer Inc	PFE	242,285.20	1.00%	3.30%	11.00%	14.48%	0.1454%
Principal Financial Group Inc	PFG	16,057.70	0.07%	3.74%	5.50%	9.34%	0.0062%
Procter & Gamble Co/The	PG	280,280.80	1.16%	2.67%	8.50%	11.28%	0.1311%
Progressive Corp/The	PGR	47,812.08	0.20%	0.49%	15.50%	16.03%	0.0318%
Parker-Hannifin Corp	PH	22,075.28	0.09%	2.05%	11.50%	13.67%	0.0125%
PulteGroup Inc	PHM	9,074.59	0.04%	1.38%	8.00%	9.44%	0.0035%
Packaging Corp of America	PKG	8,939.70	0.04%	3.34%	6.00%	9.44%	0.0035%
PerkinElmer Inc	PKI	10,652.19	0.04%	0.29%	11.00%	11.31%	0.0050%
Prologis Inc	PLD	51,930.72	0.22%	2.62%	6.50%	9.21%	0.0198%
Philip Morris International Inc	PM	120,153.50	0.50%	5.91%	7.00%	13.12%	0.0653%
PNC Financial Services Group Inc/The	PNC	60,070.80	0.25%	2.86%	8.00%	10.97%	0.0273%
Pentair PLC	PNR	6,390.95	0.03%	1.94%	6.50%	8.50%	0.0023%
Pinnacle West Capital Corp	PNW	11,066.02	0.05%	3.08%	5.00%	8.16%	0.0037%
PPG Industries Inc	PPG	27,191.75	0.11%	1.67%	7.50%	9.23%	0.0104%
PPL Corp	PPL	22,752.04	0.09%	5.23%	1.50%	6.77%	0.0064%
Perrigo Co PLC	PRGO	5,913.28	0.02%	1.93%	2.50%	4.45%	0.0011%
Prudential Financial Inc	PRU	40,787.96	0.17%	4.00%	7.00%	11.14%	0.0188%
Public Storage	PSA	42,223.29	0.17%	3.46%	5.50%	9.06%	0.0158%
Phillips 66	PSX	41,196.04	0.17%	4.07%	10.00%	14.27%	0.0244%
PVH Corp	PVH	6,792.65	0.03%	0.17%	9.50%	9.68%	0.0027%
Quanta Services Inc	PWR	5,578.10	0.02%	0.41%	15.50%	15.94%	0.0037%

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		Capitalization (\$million)	Weight in Index				
Pioneer Natural Resources Co	PXD	25,994.25	0.11%	0.42%	37.50%	38.00%	0.0409%
PayPal Holdings Inc	PYPL	139,221.90	0.58%	0.00%	19.00%	19.00%	0.1096%
QUALCOMM Inc	QCOM	88,306.37	0.37%	3.41%	10.50%	14.09%	0.0516%
Qorvo Inc	QRVO	7,975.38	N/A	0.00%	N/A	N/A	N/A
Royal Caribbean Cruises Ltd	RCL	24,881.97	0.10%	2.36%	12.50%	15.01%	0.0155%
Everest Re Group Ltd	RE	10,297.12	0.04%	2.30%	9.00%	11.40%	0.0049%
Regency Centers Corp	REG	11,736.56	0.05%	3.35%	16.00%	19.62%	0.0095%
Regeneron Pharmaceuticals Inc	REGN	34,506.72	0.14%	0.00%	10.00%	10.00%	0.0143%
Regions Financial Corp	RF	14,788.84	0.06%	3.97%	10.50%	14.68%	0.0090%
Robert Half International Inc	RHI	6,782.16	0.03%	2.20%	9.50%	11.80%	0.0033%
Red Hat Inc	RHT	33,282.79	0.14%	0.00%	15.50%	15.50%	0.0214%
Raymond James Financial Inc	RJF	11,332.02	0.05%	1.74%	10.00%	11.83%	0.0056%
Ralph Lauren Corp	RL	8,974.47	0.04%	2.39%	7.50%	9.98%	0.0037%
ResMed Inc	RMD	17,670.26	0.07%	1.20%	14.50%	15.79%	0.0116%
Rockwell Automation Inc	ROK	19,298.92	0.08%	2.40%	9.50%	12.01%	0.0096%
Rollins Inc	ROL	12,436.31	0.05%	1.11%	13.00%	14.18%	0.0073%
Roper Technologies Inc	ROP	38,172.99	0.16%	0.50%	11.50%	12.03%	0.0190%
Ross Stores Inc	ROST	38,195.24	0.16%	1.00%	11.00%	12.06%	0.0191%
Republic Services Inc	RSG	30,799.44	0.13%	1.81%	11.50%	13.41%	0.0171%
Raytheon Co	RTN	50,999.20	0.21%	2.07%	10.00%	12.17%	0.0257%
SBA Communications Corp	SBAC	26,453.74	0.11%	0.00%	28.50%	28.50%	0.0312%
Starbucks Corp	SBUX	102,474.90	0.42%	1.89%	13.50%	15.52%	0.0659%
Charles Schwab Corp/The	SCHW	53,416.07	0.22%	1.70%	12.00%	13.80%	0.0306%
Sealed Air Corp	SEE	6,801.73	0.03%	1.47%	22.50%	24.14%	0.0068%
Sherwin-Williams Co/The	SHW	43,541.76	0.18%	0.96%	10.50%	11.51%	0.0208%
SVB Financial Group	SIVB	11,214.70	0.05%	0.00%	19.50%	19.50%	0.0091%
JM Smucker Co/The	SJM	13,781.18	0.06%	2.86%	5.50%	8.44%	0.0048%
Schlumberger Ltd	SLB	52,980.92	0.22%	5.23%	24.00%	29.86%	0.0656%
SL Green Realty Corp	SLG	7,292.64	0.03%	4.04%	4.00%	8.12%	0.0025%
Snap-on Inc	SNA	9,307.15	0.04%	2.34%	7.00%	9.42%	0.0036%
Synopsys Inc	SNPS	18,552.95	0.08%	0.00%	10.00%	10.00%	0.0077%
Southern Co/The	SO	58,277.38	0.24%	4.46%	3.50%	8.04%	0.0194%
Simon Property Group Inc	SPG	50,940.13	0.21%	5.28%	5.50%	10.93%	0.0231%
S&P Global Inc	SPGI	56,918.01	0.24%	0.99%	13.00%	14.05%	0.0332%
Sempra Energy	SRE	38,447.68	0.16%	2.82%	11.00%	13.98%	0.0223%
SunTrust Banks Inc	STI	27,763.12	0.12%	3.20%	10.00%	13.36%	0.0154%
State Street Corp	STT	20,874.11	0.09%	3.50%	6.00%	9.61%	0.0083%
Seagate Technology PLC	STX	12,794.63	0.05%	5.46%	6.00%	11.62%	0.0062%
Constellation Brands Inc	STZ	35,264.59	0.15%	1.64%	9.50%	11.22%	0.0164%
Stanley Black & Decker Inc	SWK	22,178.22	0.09%	1.85%	9.50%	11.44%	0.0105%
Skyworks Solutions Inc	SWKS	13,097.57	0.05%	2.00%	7.50%	9.58%	0.0052%
Synchrony Financial	SYF	23,585.81	0.10%	2.57%	10.00%	12.70%	0.0124%
Stryker Corp	SYK	75,988.09	0.31%	1.02%	15.00%	16.10%	0.0507%
Symantec Corp	SYMC	13,137.84	0.05%	1.46%	9.00%	10.53%	0.0057%
Sysco Corp	SYYS	36,086.83	0.15%	2.20%	12.00%	14.33%	0.0214%
AT&T Inc	T	237,451.70	0.98%	6.33%	5.50%	12.00%	0.1181%
Molson Coors Brewing Co	TAP	11,897.67	0.05%	3.18%	5.50%	8.77%	0.0043%
TransDigm Group Inc	TDG	26,396.66	0.11%	0.00%	11.00%	11.00%	0.0120%
TE Connectivity Ltd	TEL	32,361.33	0.13%	1.92%	8.50%	10.50%	0.0141%
Teleflex Inc	TFX	15,845.63	0.07%	0.41%	15.00%	15.44%	0.0101%
Target Corp	TGT	44,166.42	0.18%	3.06%	8.00%	11.18%	0.0205%
Tiffany & Co	TIF	11,668.97	0.05%	2.50%	10.50%	13.13%	0.0063%
TJX Cos Inc/The	TJX	65,277.92	0.27%	1.71%	13.50%	15.33%	0.0415%
Torchmark Corp	TMK	9,824.09	0.04%	0.77%	10.00%	10.81%	0.0044%
Thermo Fisher Scientific Inc	TMO	117,330.40	0.49%	0.26%	10.00%	10.27%	0.0499%
Tapestry Inc	TPR	8,958.29	0.04%	4.37%	12.00%	16.63%	0.0062%
TripAdvisor Inc	TRIP	6,498.25	0.03%	0.00%	18.00%	18.00%	0.0048%
T Rowe Price Group Inc	TROW	25,910.58	0.11%	2.81%	10.00%	12.95%	0.0139%
Travelers Cos Inc/The	TRV	39,858.56	0.17%	2.16%	9.00%	11.26%	0.0186%
Tractor Supply Co	TSCO	12,884.36	0.05%	1.31%	11.50%	12.89%	0.0069%
Tyson Foods Inc	TSN	28,699.95	0.12%	1.97%	6.50%	8.53%	0.0101%
Total System Services Inc	TSS	22,951.28	0.10%	0.40%	10.00%	10.42%	0.0099%
Take-Two Interactive Software Inc	TTWO	12,512.67	0.05%	0.00%	28.00%	28.00%	0.0145%
Twitter Inc	TWTR	27,214.84	N/A	0.00%	N/A	N/A	N/A
Texas Instruments Inc	TXN	105,812.00	0.44%	2.73%	6.00%	8.81%	0.0386%
Textron Inc	TXT	12,213.02	0.05%	0.15%	13.00%	13.16%	0.0067%
Under Armour Inc	UAA	11,985.43	0.05%	0.00%	12.00%	12.00%	0.0060%
United Continental Holdings Inc	UAL	23,028.57	0.10%	0.00%	8.50%	8.50%	0.0081%
UDR Inc	UDR	12,829.42	0.05%	2.94%	1.50%	4.46%	0.0024%
Universal Health Services Inc	UHS	11,209.81	0.05%	0.32%	11.00%	11.34%	0.0053%
Ulta Beauty Inc	ULTA	20,994.07	0.09%	0.00%	19.00%	19.00%	0.0165%
UnitedHealth Group Inc	UNH	236,115.30	0.98%	1.74%	13.50%	15.36%	0.1503%
Unum Group	UNM	6,960.99	0.03%	3.48%	9.00%	12.64%	0.0036%
Union Pacific Corp	UNP	118,616.80	0.49%	2.10%	14.50%	16.75%	0.0823%
United Parcel Service Inc	UPS	89,027.40	0.37%	3.71%	8.50%	12.37%	0.0456%
United Rentals Inc	URI	10,304.80	0.04%	0.00%	14.50%	14.50%	0.0062%
US Bancorp	USB	83,405.77	0.35%	3.01%	6.00%	9.10%	0.0315%
United Technologies Corp	UTX	112,123.70	0.46%	2.26%	9.00%	11.36%	0.0528%
Visa Inc	V	347,132.50	1.44%	0.62%	15.00%	15.67%	0.2254%

Company	Ticker	Market		Estimated Dividend Yield	Long-Term Growth Est	DCF Result	Weighted DCF Result
		Capitalization (\$million)	Weight in Index				
Varian Medical Systems Inc	VAR	12,436 03	0 05%	0 00%	10 00%	10 00%	0 0052%
VF Corp	VFC	35,042 77	0 15%	2 30%	10 00%	12 42%	0 0180%
Viacom Inc	VIAB	12,385 34	0 05%	2 61%	6 00%	8 69%	0 0045%
Valero Energy Corp	VLO	33,273 93	0 14%	4 51%	11 50%	16 27%	0 0224%
Vulcan Materials Co	VMC	17,658 95	0 07%	0 93%	14 00%	15 00%	0 0110%
Vornado Realty Trust	VNO	12,880 18	0 05%	3 91%	-3 50%	0 34%	0 0002%
Versk Analytics Inc	VRSK	23,894 98	0 10%	0 69%	9 50%	10 22%	0 0101%
VersiSign Inc	VRSN	25,193 89	0 10%	0 00%	10 50%	10 50%	0 0110%
Vertex Pharmaceuticals Inc	VRTX	46,699 46	0 19%	0 00%	50 00%	50 00%	0 0968%
Ventas Inc	VTR	25,587 61	0 11%	4 50%	3 00%	7 57%	0 0080%
Verizon Communications Inc	VZ	237,141 40	0 98%	4 27%	4 00%	8 36%	0 0821%
Wabtec Corp	WAB	11,770 11	0 05%	0 66%	13 50%	14 20%	0 0069%
Waters Corp	WAT	14,856 91	0 06%	0 00%	10 50%	10 50%	0 0065%
Walgreens Boots Alliance Inc	WBA	52,439 30	0 22%	3 33%	9 50%	12 99%	0 0282%
WellCare Health Plans Inc	WCG	14,852 17	0 06%	0 00%	21 50%	21 50%	0 0132%
Western Digital Corp	WDC	11,614 52	0 05%	5 05%	0 50%	5 56%	0 0027%
WEC Energy Group Inc	WEC	26,935 25	0 11%	2 85%	6 00%	8 94%	0 0100%
Welltower Inc	WELL	30,687 01	0 13%	4 15%	8 00%	12 32%	0 0157%
Wells Fargo & Co	WFC	206,917 90	0 88%	4 01%	5 00%	9 11%	0 0781%
Whirlpool Corp	WHR	8,898 12	0 04%	3 40%	6 50%	10 01%	0 0037%
Willis Towers Watson PLC	WLTW	24,759 41	0 10%	1 36%	16 50%	17 97%	0 0184%
Waste Management Inc	WM	49,293 82	0 20%	1 77%	8 00%	9 84%	0 0201%
Williams Cos Inc/The	WMB	34,053 18	0 14%	5 56%	20 00%	26 12%	0 0369%
Walmart Inc	WMT	315,735 90	1 31%	1 94%	7 00%	9 01%	0 1179%
Westrock Co	WRK	9,376 85	0 04%	4 99%	9 50%	14 73%	0 0057%
Western Union Co/The	WU	8,610 38	0 04%	4 02%	6 00%	10 14%	0 0036%
Weyerhaeuser Co	WY	19,781 01	0 08%	5 12%	17 50%	23 07%	0 0189%
Wynn Resorts Ltd	WYNN	13,182 97	0 05%	3 27%	18 00%	21 56%	0 0118%
Cimarex Energy Co	XEC	5,770 12	0 02%	1 41%	18 00%	19 54%	0 0047%
Xcel Energy Inc	XEL	31,554 29	0 13%	2 69%	5 50%	8 26%	0 0108%
Xilinx Inc	XLNX	29,053 10	0 12%	1 29%	11 50%	12 86%	0 0155%
Exxon Mobil Corp	XOM	324,144 10	1 34%	4 54%	14 50%	19 37%	0 2602%
DENTSPLY SIRONA Inc	XRAY	12,852 83	0 05%	0 61%	3 00%	3 62%	0 0019%
Xerox Corp	XRX	8,026 27	0 03%	2 82%	10 50%	13 47%	0 0045%
Xylem Inc/NY	XYL	14,985 67	0 06%	1 15%	14 00%	15 23%	0 0095%
Yum! Brands Inc	YUM	33,849 72	0 14%	1 57%	12 00%	13 66%	0 0192%
Zimmer Biomet Holdings Inc	ZBH	24,516 61	0 10%	0 82%	4 50%	5 34%	0 0054%
Zions Bancorp NA	ZION	8,103 58	0 03%	2 84%	10 00%	12 98%	0 0044%
Zoetis Inc	ZTS	54,115 57	0 22%	0 58%	13 00%	13 62%	0 0305%
		24,130,896 91					14 78%

## 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]

Bloomberg and Value Line Beta Coefficients

Company	Ticker	[1]	[2]
		Bloomberg	Value Line
ALLETE, Inc.	ALE	0.461	0.65
Alliant Energy Corporation	LNT	0.537	0.60
Ameren Corporation	AEE	0.465	0.60
Avangrid, Inc.	AGR	0.491	0.40
CMS Energy Corporation	CMS	0.479	0.55
Consolidated Edison	ED	0.485	0.45
DTE Energy Company	DTE	0.505	0.55
Duke Energy Corporation	DUK	0.462	0.50
Evergy, Inc	EVERG	0.440	0.53
Eversource Energy	ES	0.578	0.60
Hawaiian Electric Industries, Inc.	HE	0.488	0.60
NextEra Energy, Inc.	NEE	0.553	0.60
NorthWestern Corporation	NWE	0.494	0.60
OGE Energy Corp.	OGE	0.568	0.80
Otter Tail Corporation	OTTR	0.558	0.70
Pinnacle West Capital Corporation	PNW	0.447	0.55
PNM Resources, Inc.	PNM	0.521	0.65
Portland General Electric Company	POR	0.481	0.60
Southern Company	SO	0.479	0.50
WEC Energy Group, Inc.	WEC	0.483	0.50
Xcel Energy Inc.	XEL	0.497	0.50
Mean		0.499	0.57

Notes:

[1] Source: Bloomberg Professional

[2] Source: Value Line. Value Line does not report a beta coefficient for Evergy, Inc. Therefore, the beta coefficient for Evergy has been manually calculated according to Value Line's methodology.

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

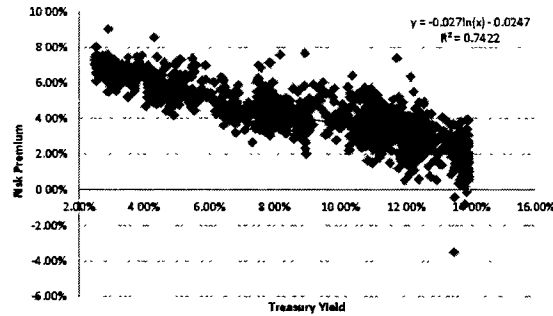
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
			Ex-Ante Market Risk Premium		CAPM Result		ECAPM	
	Risk-Free Rate	Average Beta Coefficient	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg Market DCF Derived	Value Line Market DCF Derived	Bloomberg Market DCF Derived	Value Line Market DCF Derived
<b>PROXY GROUP BLOOMBERG BETA COEFFICIENT</b>								
Current 30-Year Treasury (30-day average) [9]	2.63%	0.499	12.25%	12.15%	8.74%	8.69%	10.27%	10.21%
Near-Term Projected 30-Year Treasury [10]	2.70%	0.499	12.25%	12.15%	8.81%	8.76%	10.34%	10.28%
Mean					8.77%	8.73%	10.31%	10.25%
<b>PROXY GROUP VALUE LINE AVERAGE BETA COEFFICIENT</b>								
Current 30-Year Treasury (30-day average) [9]	2.63%	0.573	12.25%	12.15%	9.65%	9.59%	10.96%	10.89%
Near-Term Projected 30-Year Treasury [10]	2.70%	0.573	12.25%	12.15%	9.72%	9.66%	11.02%	10.96%
Mean					9.68%	9.63%	10.99%	10.92%

Notes:

- [1] See Notes [9] and [10]  
 [2] Source: Exhibit RBH-3R  
 [3] Source: Exhibit RBH-2R  
 [4] Source: Exhibit RBH-2R  
 [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. 38, No. 7, July 1, 2019, at 2.

Bond Yield Plus Risk Premium

	[1]	[2]	[3]	[4]	[5]
	Constant	Slope	30-Year Treasury Yield	Risk Premium	Return on Equity
	-2.47%	-2.68%			
Current 30-Year Treasury			2.63%	7.27%	9.90%
Near-Term Projected 30-Year Treasury			2.70%	7.20%	9.90%
Long-Term Projected 30-Year Treasury			3.70%	6.36%	10.06%



Notes

- [1] Constant of regression equation
- [2] Slope of regression equation
- [3] Source: Current = Bloomberg Professional, Near Term Projected = Blue Chip Financial Forecasts, Vol 38, No 7, July 1, 2019, at 2 Long Term Projected = Blue Chip Financial Forecasts, Vol 38, No 6, June 1, 2019 at 14
- [4] Equals [1] + ln([3]) x [2]
- [5] Equals [3] + [4]
- [6] Source: S&P Global Market Intelligence
- [7] Source: S&P Global Market Intelligence
- [8] Source: Bloomberg Professional, equals 200-trading day average (i.e. lag period)
- [9] Equals [7] - [8]



Bond Yield Plus Risk Premium			
[6]	[7]	[8]	[9]
Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/1/1980	14.50%	9.36%	5.14%
1/7/1980	14.39%	9.38%	5.01%
1/9/1980	15.00%	9.40%	5.60%
1/14/1980	15.17%	9.42%	5.75%
1/17/1980	13.93%	9.44%	4.49%
1/23/1980	15.50%	9.47%	6.03%
1/30/1980	13.86%	9.52%	4.34%
1/31/1980	12.61%	9.53%	3.08%
2/6/1980	13.71%	9.58%	4.13%
2/13/1980	12.80%	9.63%	3.17%
2/14/1980	13.00%	9.65%	3.35%
2/19/1980	13.50%	9.68%	3.82%
2/27/1980	13.75%	9.78%	3.97%
2/29/1980	13.75%	9.81%	3.94%
2/29/1980	14.00%	9.81%	4.19%
2/29/1980	14.77%	9.81%	4.96%
3/7/1980	12.70%	9.89%	2.81%
3/14/1980	13.50%	9.97%	3.53%
3/26/1980	14.16%	10.10%	4.06%
3/27/1980	14.24%	10.12%	4.12%
3/28/1980	14.50%	10.13%	4.37%
4/11/1980	12.75%	10.27%	2.48%
4/14/1980	13.85%	10.29%	3.56%
4/16/1980	15.50%	10.31%	5.19%
4/22/1980	13.25%	10.35%	2.90%
4/22/1980	13.90%	10.35%	3.55%
4/24/1980	16.80%	10.38%	6.43%
4/29/1980	15.50%	10.41%	5.09%
5/6/1980	13.70%	10.45%	3.25%
5/7/1980	15.00%	10.45%	4.55%
5/8/1980	13.75%	10.46%	3.29%
5/9/1980	14.35%	10.47%	3.88%
5/13/1980	13.60%	10.48%	3.12%
5/15/1980	13.25%	10.49%	2.76%
5/19/1980	13.75%	10.51%	3.24%
5/27/1980	13.62%	10.54%	3.08%
5/27/1980	14.60%	10.54%	4.06%
5/29/1980	16.00%	10.56%	5.44%
5/30/1980	13.80%	10.56%	3.24%
6/2/1980	15.63%	10.57%	5.06%
6/9/1980	15.90%	10.60%	5.30%
6/10/1980	13.78%	10.60%	3.18%
6/12/1980	14.25%	10.61%	3.64%
6/19/1980	13.40%	10.62%	2.78%
6/30/1980	13.00%	10.65%	2.35%
6/30/1980	13.40%	10.65%	2.75%
7/9/1980	14.75%	10.67%	4.08%
7/10/1980	15.00%	10.68%	4.32%
7/15/1980	15.80%	10.70%	5.10%
7/18/1980	13.80%	10.71%	3.09%
7/22/1980	14.10%	10.72%	3.38%
7/24/1980	15.00%	10.73%	4.27%
7/25/1980	13.48%	10.73%	2.75%
7/31/1980	14.58%	10.75%	3.83%
8/8/1980	13.50%	10.78%	2.72%
8/8/1980	14.00%	10.78%	3.22%
8/8/1980	15.45%	10.78%	4.67%
8/11/1980	14.85%	10.78%	4.07%
8/14/1980	14.00%	10.79%	3.21%
8/14/1980	16.25%	10.79%	5.46%
8/25/1980	13.75%	10.82%	2.93%
8/27/1980	13.80%	10.83%	2.97%
8/29/1980	12.50%	10.84%	1.66%
9/15/1980	13.50%	10.88%	2.62%
9/15/1980	13.93%	10.88%	3.05%
9/15/1980	15.80%	10.88%	4.92%
9/24/1980	12.50%	10.93%	1.57%
9/24/1980	15.00%	10.93%	4.07%
9/26/1980	13.75%	10.94%	2.81%
9/30/1980	14.10%	10.96%	3.14%
9/30/1980	14.20%	10.96%	3.24%
10/1/1980	13.90%	10.97%	2.93%
10/3/1980	15.50%	10.98%	4.52%
10/7/1980	12.50%	10.99%	1.51%
10/9/1980	13.25%	11.00%	2.25%
10/9/1980	14.50%	11.00%	3.50%
10/9/1980	14.50%	11.00%	3.50%
10/16/1980	16.10%	11.02%	5.08%
10/17/1980	14.50%	11.03%	3.47%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
10/31/1980	13.75%	11.11%	2.64%
10/31/1980	14.25%	11.11%	3.14%
11/4/1980	15.00%	11.12%	3.88%
11/5/1980	13.75%	11.12%	2.63%
11/5/1980	14.00%	11.12%	2.88%
11/8/1980	13.75%	11.14%	2.61%
11/10/1980	14.85%	11.15%	3.70%
11/17/1980	14.00%	11.18%	2.82%
11/18/1980	14.00%	11.19%	2.81%
11/19/1980	13.00%	11.19%	1.81%
11/24/1980	14.00%	11.21%	2.79%
11/26/1980	14.00%	11.21%	2.79%
12/8/1980	14.15%	11.22%	2.93%
12/8/1980	15.10%	11.22%	3.88%
12/9/1980	15.35%	11.22%	4.13%
12/12/1980	15.45%	11.23%	4.22%
12/17/1980	13.25%	11.23%	2.02%
12/18/1980	15.80%	11.23%	4.57%
12/19/1980	14.50%	11.23%	3.27%
12/19/1980	14.64%	11.23%	3.41%
12/22/1980	13.45%	11.23%	2.22%
12/22/1980	15.00%	11.23%	3.77%
12/30/1980	14.50%	11.22%	3.28%
12/30/1980	14.95%	11.22%	3.73%
12/31/1980	13.39%	11.22%	2.17%
1/2/1981	15.25%	11.22%	4.03%
1/7/1981	14.30%	11.21%	3.09%
1/19/1981	15.25%	11.20%	4.05%
1/23/1981	13.10%	11.20%	1.90%
1/23/1981	14.40%	11.20%	3.20%
1/26/1981	15.25%	11.20%	4.05%
1/27/1981	15.00%	11.21%	3.79%
1/31/1981	13.47%	11.22%	2.25%
2/3/1981	15.25%	11.23%	4.02%
2/5/1981	15.75%	11.25%	4.50%
2/11/1981	15.60%	11.28%	4.32%
2/20/1981	15.25%	11.33%	3.92%
3/11/1981	15.40%	11.49%	3.91%
3/12/1981	14.51%	11.50%	3.01%
3/12/1981	16.00%	11.50%	4.50%
3/13/1981	13.02%	11.52%	1.50%
3/18/1981	16.19%	11.55%	4.64%
3/19/1981	13.75%	11.56%	2.19%
3/23/1981	14.30%	11.58%	2.72%
3/25/1981	15.30%	11.60%	3.70%
4/1/1981	14.53%	11.68%	2.85%
4/3/1981	19.10%	11.71%	7.39%
4/9/1981	15.00%	11.78%	3.22%
4/9/1981	15.30%	11.78%	3.52%
4/9/1981	16.50%	11.78%	4.72%
4/9/1981	17.00%	11.78%	5.22%
4/10/1981	13.75%	11.80%	1.95%
4/13/1981	13.57%	11.82%	1.75%
4/15/1981	15.30%	11.85%	3.45%
4/16/1981	13.50%	11.87%	1.63%
4/17/1981	14.10%	11.87%	2.23%
4/21/1981	14.00%	11.90%	2.10%
4/21/1981	16.80%	11.90%	4.90%
4/24/1981	16.00%	11.95%	4.05%
4/27/1981	12.50%	11.97%	0.53%
4/27/1981	13.61%	11.97%	1.64%
4/29/1981	13.65%	12.00%	1.65%
4/30/1981	13.50%	12.02%	1.48%
5/4/1981	16.22%	12.05%	4.17%
5/5/1981	14.40%	12.07%	2.33%
5/7/1981	16.25%	12.11%	4.14%
5/7/1981	16.27%	12.11%	4.16%
5/8/1981	13.00%	12.13%	0.87%
5/8/1981	16.00%	12.13%	3.87%
5/12/1981	13.50%	12.16%	1.34%
5/15/1981	15.75%	12.22%	3.53%
5/18/1981	14.88%	12.23%	2.65%
5/20/1981	16.00%	12.26%	3.74%
5/21/1981	14.00%	12.27%	1.73%
5/26/1981	14.90%	12.30%	2.60%
5/27/1981	15.00%	12.31%	2.69%
5/29/1981	15.50%	12.34%	3.16%
6/1/1981	16.50%	12.35%	4.15%
6/3/1981	14.67%	12.37%	2.30%
6/5/1981	13.00%	12.39%	0.61%
6/10/1981	16.75%	12.42%	4.33%
6/17/1981	14.40%	12.46%	1.94%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
6/18/1981	16.33%	12.47%	3.86%
6/25/1981	14.75%	12.51%	2.24%
6/26/1981	16.00%	12.52%	3.48%
6/30/1981	15.25%	12.54%	2.71%
7/1/1981	15.50%	12.56%	2.94%
7/1/1981	17.50%	12.56%	4.94%
7/10/1981	16.00%	12.62%	3.38%
7/14/1981	16.90%	12.64%	4.26%
7/15/1981	16.00%	12.65%	3.35%
7/17/1981	15.00%	12.67%	2.33%
7/20/1981	15.00%	12.68%	2.32%
7/21/1981	14.00%	12.69%	1.31%
7/28/1981	13.48%	12.74%	0.74%
7/31/1981	13.50%	12.78%	0.72%
7/31/1981	15.00%	12.78%	2.22%
7/31/1981	16.00%	12.78%	3.22%
8/5/1981	15.71%	12.83%	2.88%
8/10/1981	14.50%	12.87%	1.63%
8/11/1981	15.00%	12.88%	2.12%
8/20/1981	13.50%	12.95%	0.55%
8/20/1981	16.50%	12.95%	3.55%
8/24/1981	15.00%	12.97%	2.03%
8/28/1981	15.00%	13.01%	1.99%
9/3/1981	14.50%	13.05%	1.45%
9/10/1981	14.50%	13.11%	1.39%
9/11/1981	16.00%	13.12%	2.88%
9/16/1981	16.00%	13.15%	2.85%
9/17/1981	16.50%	13.16%	3.34%
9/23/1981	15.85%	13.20%	2.65%
9/28/1981	15.50%	13.23%	2.27%
10/9/1981	15.75%	13.33%	2.42%
10/15/1981	16.25%	13.37%	2.88%
10/16/1981	15.50%	13.38%	2.12%
10/16/1981	16.50%	13.38%	3.12%
10/19/1981	14.25%	13.39%	0.86%
10/20/1981	15.25%	13.41%	1.84%
10/20/1981	17.00%	13.41%	3.59%
10/23/1981	16.00%	13.45%	2.55%
10/27/1981	10.00%	13.48%	-3.48%
10/29/1981	14.75%	13.51%	1.24%
10/29/1981	16.50%	13.51%	2.99%
11/3/1981	15.17%	13.53%	1.64%
11/5/1981	16.60%	13.55%	3.05%
11/6/1981	15.17%	13.56%	1.61%
11/24/1981	15.50%	13.61%	1.89%
11/25/1981	15.25%	13.61%	1.64%
11/25/1981	15.35%	13.61%	1.74%
11/25/1981	16.10%	13.61%	2.49%
11/25/1981	16.10%	13.61%	2.49%
12/1/1981	15.70%	13.61%	2.09%
12/1/1981	16.00%	13.61%	2.39%
12/1/1981	16.49%	13.61%	2.88%
12/1/1981	16.50%	13.61%	2.89%
12/4/1981	16.00%	13.61%	2.39%
12/11/1981	16.25%	13.63%	2.62%
12/14/1981	14.00%	13.63%	0.37%
12/15/1981	15.81%	13.63%	2.18%
12/15/1981	16.00%	13.63%	2.37%
12/16/1981	15.25%	13.63%	1.62%
12/17/1981	16.50%	13.63%	2.87%
12/18/1981	15.45%	13.63%	1.82%
12/30/1981	14.25%	13.67%	0.58%
12/30/1981	16.00%	13.67%	2.33%
12/30/1981	16.25%	13.67%	2.58%
12/31/1981	16.15%	13.67%	2.48%
1/4/1982	15.50%	13.67%	1.83%
1/11/1982	14.50%	13.72%	0.78%
1/11/1982	17.00%	13.72%	3.28%
1/13/1982	14.75%	13.74%	1.01%
1/14/1982	15.75%	13.75%	2.00%
1/15/1982	15.00%	13.76%	1.24%
1/15/1982	16.50%	13.76%	2.74%
1/22/1982	16.25%	13.79%	2.46%
1/27/1982	16.84%	13.81%	3.03%
1/28/1982	13.00%	13.81%	-0.81%
1/29/1982	15.50%	13.82%	1.68%
2/1/1982	15.85%	13.82%	2.03%
2/3/1982	16.44%	13.84%	2.60%
2/8/1982	15.50%	13.86%	1.64%
2/11/1982	16.00%	13.88%	2.12%
2/11/1982	16.20%	13.88%	2.32%
2/17/1982	15.00%	13.89%	1.11%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
2/19/1982	15 17%	13 89%	1 28%
2/26/1982	15 25%	13 89%	1 36%
3/1/1982	15 03%	13 89%	1 14%
3/1/1982	16 00%	13 89%	2 11%
3/3/1982	15 00%	13 88%	1 12%
3/8/1982	17 10%	13 88%	3 22%
3/12/1982	16 25%	13 88%	2 37%
3/17/1982	17 30%	13 88%	3 42%
3/22/1982	15 10%	13 89%	1 21%
3/27/1982	15 40%	13 89%	1 51%
3/30/1982	15 50%	13 90%	1 60%
3/31/1982	17 00%	13 91%	3 09%
4/1/1982	14 70%	13 91%	0 79%
4/1/1982	16 50%	13 91%	2 59%
4/2/1982	15 50%	13 91%	1 59%
4/5/1982	15 50%	13 92%	1 58%
4/8/1982	16 40%	13 93%	2 47%
4/13/1982	14 50%	13 94%	0 56%
4/23/1982	15 75%	13 94%	1 81%
4/27/1982	15 00%	13 94%	1 06%
4/28/1982	15 75%	13 94%	1 81%
4/30/1982	14 70%	13 94%	0 76%
4/30/1982	15 50%	13 94%	1 56%
5/3/1982	16 60%	13 94%	2 66%
5/4/1982	16 00%	13 94%	2 06%
5/14/1982	15 50%	13 92%	1 58%
5/18/1982	15 42%	13 92%	1 50%
5/19/1982	14 69%	13 92%	0 77%
5/20/1982	15 00%	13 91%	1 09%
5/20/1982	15 10%	13 91%	1 19%
5/20/1982	15 50%	13 91%	1 59%
5/20/1982	16 30%	13 91%	2 39%
5/21/1982	17 75%	13 91%	3 84%
5/27/1982	15 00%	13 89%	1 11%
5/28/1982	15 50%	13 89%	1 61%
5/28/1982	17 00%	13 89%	3 11%
6/1/1982	13 75%	13 89%	-0 14%
6/1/1982	16 60%	13 89%	2 71%
6/9/1982	17 86%	13 88%	3 98%
6/14/1982	15 75%	13 88%	1 87%
6/15/1982	14 85%	13 88%	0 97%
6/18/1982	15 50%	13 87%	1 63%
6/21/1982	14 90%	13 87%	1 03%
6/23/1982	16 00%	13 86%	2 14%
6/23/1982	16 17%	13 86%	2 31%
6/24/1982	14 85%	13 86%	0 99%
6/25/1982	14 70%	13 86%	0 84%
7/1/1982	16 00%	13 84%	2 16%
7/2/1982	15 62%	13 84%	1 78%
7/2/1982	17 00%	13 84%	3 16%
7/13/1982	14 00%	13 82%	0 18%
7/13/1982	16 80%	13 82%	2 98%
7/14/1982	15 76%	13 82%	1 94%
7/14/1982	16 02%	13 82%	2 20%
7/19/1982	16 50%	13 80%	2 70%
7/22/1982	14 50%	13 77%	0 73%
7/22/1982	17 00%	13 77%	3 23%
7/27/1982	16 75%	13 75%	3 00%
7/29/1982	16 50%	13 74%	2 76%
8/1/1982	17 50%	13 68%	3 82%
8/18/1982	17 07%	13 63%	3 44%
8/20/1982	15 73%	13 60%	2 13%
8/25/1982	16 00%	13 57%	2 43%
8/26/1982	15 50%	13 56%	1 94%
8/30/1982	15 00%	13 55%	1 45%
9/3/1982	16 20%	13 53%	2 67%
9/8/1982	15 00%	13 52%	1 48%
9/15/1982	13 08%	13 50%	-0 42%
9/15/1982	16 25%	13 50%	2 75%
9/16/1982	16 00%	13 50%	2 50%
9/17/1982	15 25%	13 50%	1 75%
9/23/1982	17 17%	13 47%	3 70%
9/24/1982	14 50%	13 46%	1 04%
9/27/1982	15 25%	13 46%	1 79%
10/1/1982	15 50%	13 42%	2 06%
10/15/1982	15 90%	13 32%	2 58%
10/22/1982	15 75%	13 24%	2 51%
10/22/1982	17 15%	13 24%	3 91%
10/29/1982	15 54%	13 16%	2 38%
11/1/1982	15 50%	13 15%	2 35%
11/3/1982	17 20%	13 13%	4 07%
11/4/1982	16 25%	13 11%	3 14%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
11/5/1982	16 20%	13 09%	3 11%
11/9/1982	16 00%	13 05%	2 95%
11/23/1982	15 50%	12 89%	2 61%
11/23/1982	15 85%	12 89%	2 96%
11/30/1982	16 50%	12 81%	3 69%
12/1/1982	17 04%	12 79%	4 25%
12/6/1982	15 00%	12 73%	2 27%
12/6/1982	16 35%	12 73%	3 62%
12/10/1982	15 50%	12 66%	2 84%
12/13/1982	16 00%	12 65%	3 35%
12/14/1982	15 30%	12 63%	2 67%
12/14/1982	16 40%	12 63%	3 77%
12/20/1982	16 00%	12 57%	3 43%
12/21/1982	14 75%	12 56%	2 19%
12/21/1982	15 85%	12 56%	3 29%
12/22/1982	16 25%	12 54%	3 71%
12/22/1982	16 58%	12 54%	4 04%
12/22/1982	16 75%	12 54%	4 21%
12/29/1982	14 90%	12 48%	2 42%
12/29/1982	16 25%	12 48%	3 77%
12/30/1982	16 00%	12 47%	3 53%
12/30/1982	16 35%	12 47%	3 88%
12/30/1982	16 77%	12 47%	4 30%
1/5/1983	17 33%	12 40%	4 93%
1/11/1983	15 90%	12 34%	3 56%
1/12/1983	14 63%	12 33%	2 30%
1/12/1983	15 50%	12 33%	3 17%
1/20/1983	17 75%	12 24%	5 51%
1/21/1983	15 00%	12 22%	2 78%
1/24/1983	14 50%	12 21%	2 29%
1/24/1983	15 50%	12 21%	3 29%
1/25/1983	15 85%	12 19%	3 66%
1/27/1983	16 14%	12 17%	3 97%
2/1/1983	18 50%	12 13%	6 37%
2/4/1983	14 00%	12 10%	1 90%
2/10/1983	15 00%	12 06%	2 94%
2/21/1983	15 50%	11 98%	3 52%
2/22/1983	15 50%	11 97%	3 53%
2/23/1983	15 10%	11 96%	3 14%
2/23/1983	16 00%	11 96%	4 04%
3/2/1983	15 25%	11 89%	3 36%
3/9/1983	15 20%	11 82%	3 38%
3/15/1983	13 00%	11 77%	1 23%
3/18/1983	15 25%	11 73%	3 52%
3/23/1983	15 40%	11 69%	3 71%
3/24/1983	15 00%	11 67%	3 33%
3/29/1983	15 50%	11 63%	3 87%
3/30/1983	16 71%	11 61%	5 10%
3/31/1983	15 00%	11 59%	3 41%
4/4/1983	15 20%	11 58%	3 62%
4/8/1983	15 50%	11 51%	3 99%
4/11/1983	14 81%	11 49%	3 32%
4/19/1983	14 50%	11 38%	3 12%
4/20/1983	16 00%	11 36%	4 64%
4/29/1983	16 00%	11 24%	4 76%
5/1/1983	14 50%	11 24%	3 26%
5/9/1983	15 50%	11 15%	4 35%
5/11/1983	16 46%	11 12%	5 34%
5/12/1983	14 14%	11 11%	3 03%
5/18/1983	15 00%	11 05%	3 95%
5/23/1983	14 90%	11 01%	3 89%
5/23/1983	15 50%	11 01%	4 49%
5/25/1983	15 50%	10 98%	4 52%
5/27/1983	15 00%	10 96%	4 04%
5/31/1983	14 00%	10 95%	3 05%
5/31/1983	15 50%	10 95%	4 55%
6/2/1983	14 50%	10 93%	3 57%
6/17/1983	15 03%	10 84%	4 19%
7/1/1983	14 80%	10 78%	4 02%
7/1/1983	14 90%	10 78%	4 12%
7/8/1983	16 25%	10 76%	5 49%
7/13/1983	13 20%	10 75%	2 45%
7/19/1983	15 00%	10 74%	4 26%
7/19/1983	15 10%	10 74%	4 36%
7/25/1983	16 25%	10 73%	5 52%
7/28/1983	15 90%	10 74%	5 16%
8/3/1983	16 34%	10 75%	5 59%
8/3/1983	16 50%	10 75%	5 75%
8/19/1983	15 00%	10 80%	4 20%
8/22/1983	15 50%	10 80%	4 70%
8/22/1983	16 40%	10 80%	5 60%
8/31/1983	14 75%	10 84%	3 91%

Date of Electnc Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
9/7/1983	15 00%	10 86%	4 14%
9/14/1983	15 78%	10 89%	4 89%
9/16/1983	15 00%	10 90%	4 10%
9/19/1983	14 50%	10 91%	3 59%
9/20/1983	16 50%	10 91%	5 59%
9/28/1983	14 50%	10 94%	3 56%
9/29/1983	15 50%	10 95%	4 55%
9/30/1983	15 25%	10 95%	4 30%
9/30/1983	16 15%	10 95%	5 20%
10/4/1983	14 80%	10 96%	3 84%
10/7/1983	16 00%	10 97%	5 03%
10/13/1983	15 52%	10 99%	4 53%
10/17/1983	15 50%	11 00%	4 50%
10/18/1983	14 50%	11 00%	3 50%
10/19/1983	16 25%	11 01%	5 24%
10/19/1983	16 50%	11 01%	5 49%
10/26/1983	15 00%	11 04%	3 96%
10/27/1983	15 20%	11 04%	4 16%
11/1/1983	16 00%	11 06%	4 94%
11/9/1983	14 90%	11 09%	3 81%
11/10/1983	14 35%	11 10%	3 25%
11/23/1983	16 00%	11 13%	4 87%
11/23/1983	16 15%	11 13%	5 02%
11/30/1983	15 00%	11 14%	3 86%
12/5/1983	15 25%	11 15%	4 10%
12/6/1983	15 07%	11 15%	3 92%
12/8/1983	15 90%	11 16%	4 74%
12/9/1983	14 75%	11 17%	3 58%
12/12/1983	14 50%	11 17%	3 33%
12/15/1983	15 56%	11 19%	4 37%
12/19/1983	14 80%	11 21%	3 59%
12/20/1983	14 69%	11 22%	3 47%
12/20/1983	16 00%	11 22%	4 78%
12/20/1983	16 25%	11 22%	5 03%
12/22/1983	14 75%	11 23%	3 52%
12/22/1983	15 75%	11 23%	4 52%
1/3/1984	14 75%	11 27%	3 48%
1/10/1984	15 90%	11 30%	4 60%
1/12/1984	15 60%	11 31%	4 29%
1/18/1984	13 75%	11 33%	2 42%
1/19/1984	15 90%	11 33%	4 57%
1/30/1984	16 10%	11 37%	4 73%
1/31/1984	15 25%	11 37%	3 88%
2/1/1984	14 80%	11 38%	3 42%
2/6/1984	13 75%	11 40%	2 35%
2/6/1984	14 75%	11 40%	3 35%
2/9/1984	15 25%	11 42%	3 83%
2/15/1984	15 70%	11 44%	4 26%
2/20/1984	15 00%	11 46%	3 54%
2/20/1984	15 00%	11 46%	3 54%
2/22/1984	14 75%	11 47%	3 28%
2/28/1984	14 50%	11 51%	2 99%
3/2/1984	14 25%	11 54%	2 71%
3/20/1984	16 00%	11 64%	4 36%
3/23/1984	15 50%	11 67%	3 83%
3/26/1984	14 71%	11 68%	3 03%
4/2/1984	15 50%	11 71%	3 79%
4/6/1984	14 74%	11 75%	2 99%
4/11/1984	15 72%	11 78%	3 94%
4/17/1984	15 00%	11 81%	3 19%
4/18/1984	16 20%	11 82%	4 38%
4/25/1984	14 64%	11 85%	2 79%
4/30/1984	14 40%	11 87%	2 53%
5/16/1984	14 69%	11 98%	2 71%
5/16/1984	15 00%	11 98%	3 02%
5/22/1984	14 40%	12 02%	2 38%
5/29/1984	15 10%	12 06%	3 04%
6/13/1984	15 25%	12 15%	3 10%
6/15/1984	15 60%	12 17%	3 43%
6/22/1984	16 25%	12 21%	4 04%
6/29/1984	15 25%	12 26%	2 99%
7/2/1984	13 35%	12 27%	1 08%
7/10/1984	16 00%	12 31%	3 69%
7/12/1984	16 50%	12 32%	4 18%
7/13/1984	16 25%	12 33%	3 92%
7/17/1984	14 14%	12 35%	1 79%
7/18/1984	15 30%	12 36%	2 94%
7/18/1984	15 50%	12 36%	3 14%
7/19/1984	14 30%	12 37%	1 93%
7/24/1984	16 79%	12 39%	4 40%
7/31/1984	16 00%	12 43%	3 57%
8/3/1984	14 25%	12 44%	1 81%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
8/17/1984	14 30%	12 49%	1 81%
8/20/1984	15 00%	12 49%	2 51%
8/27/1984	16 30%	12 51%	3 79%
8/31/1984	15 55%	12 52%	3 03%
9/6/1984	16 00%	12 53%	3 47%
9/10/1984	14 75%	12 54%	2 21%
9/13/1984	15 00%	12 55%	2 45%
9/17/1984	17 38%	12 56%	4 82%
9/26/1984	14 50%	12 57%	1 93%
9/28/1984	15 00%	12 57%	2 43%
9/28/1984	16 25%	12 57%	3 68%
10/9/1984	14 75%	12 58%	2 17%
10/12/1984	15 60%	12 59%	3 01%
10/22/1984	15 00%	12 59%	2 41%
10/26/1984	16 40%	12 58%	3 82%
10/31/1984	16 25%	12 58%	3 67%
11/7/1984	15 60%	12 58%	3 02%
11/9/1984	16 00%	12 58%	3 42%
11/14/1984	15 75%	12 58%	3 17%
11/20/1984	15 25%	12 58%	2 67%
11/20/1984	15 92%	12 58%	3 34%
11/23/1984	15 00%	12 58%	2 42%
11/28/1984	16 15%	12 57%	3 58%
12/3/1984	15 80%	12 56%	3 24%
12/4/1984	16 50%	12 56%	3 94%
12/18/1984	16 40%	12 53%	3 87%
12/19/1984	14 75%	12 53%	2 22%
12/19/1984	15 00%	12 53%	2 47%
12/20/1984	16 00%	12 53%	3 47%
12/28/1984	16 00%	12 50%	3 50%
1/3/1985	14 75%	12 49%	2 26%
1/10/1985	15 75%	12 47%	3 28%
1/11/1985	16 30%	12 46%	3 84%
1/23/1985	15 80%	12 43%	3 37%
1/24/1985	15 82%	12 43%	3 39%
1/25/1985	16 75%	12 42%	4 33%
1/30/1985	14 90%	12 40%	2 50%
1/31/1985	14 75%	12 39%	2 36%
2/8/1985	14 47%	12 35%	2 12%
3/1/1985	13 84%	12 31%	1 53%
3/8/1985	16 85%	12 28%	4 57%
3/14/1985	15 50%	12 25%	3 25%
3/15/1985	15 62%	12 25%	3 37%
3/29/1985	15 62%	12 17%	3 45%
4/3/1985	14 60%	12 14%	2 46%
4/9/1985	15 50%	12 11%	3 39%
4/16/1985	15 70%	12 06%	3 64%
4/22/1985	14 00%	12 02%	1 98%
4/26/1985	15 50%	11 98%	3 52%
4/29/1985	15 00%	11 97%	3 03%
5/2/1985	14 68%	11 94%	2 74%
5/8/1985	15 62%	11 89%	3 73%
5/10/1985	16 50%	11 87%	4 63%
5/29/1985	14 61%	11 73%	2 88%
5/31/1985	16 00%	11 71%	4 29%
6/14/1985	15 50%	11 61%	3 89%
7/9/1985	15 00%	11 45%	3 55%
7/16/1985	14 50%	11 39%	3 11%
7/26/1985	14 50%	11 33%	3 17%
8/2/1985	14 80%	11 29%	3 51%
8/7/1985	15 00%	11 27%	3 73%
8/28/1985	14 25%	11 15%	3 10%
8/28/1985	15 50%	11 15%	4 35%
8/29/1985	14 50%	11 15%	3 35%
9/9/1985	14 60%	11 11%	3 49%
9/9/1985	14 90%	11 11%	3 79%
9/17/1985	14 90%	11 08%	3 82%
9/23/1985	15 00%	11 06%	3 94%
9/27/1985	15 50%	11 05%	4 45%
9/27/1985	15 80%	11 05%	4 75%
10/2/1985	14 00%	11 03%	2 97%
10/2/1985	14 75%	11 03%	3 72%
10/3/1985	15 25%	11 03%	4 22%
10/24/1985	15 40%	10 96%	4 44%
10/24/1985	15 82%	10 96%	4 86%
10/24/1985	15 85%	10 96%	4 89%
10/28/1985	16 00%	10 95%	5 05%
10/29/1985	16 65%	10 94%	5 71%
10/31/1985	15 06%	10 93%	4 13%
11/4/1985	14 50%	10 92%	3 58%
11/7/1985	15 50%	10 90%	4 60%
11/8/1985	14 30%	10 89%	3 41%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/12/1985	14.75%	10.73%	4.02%
12/18/1985	15.00%	10.69%	4.31%
12/20/1985	14.50%	10.67%	3.83%
12/20/1985	14.50%	10.67%	3.83%
12/20/1985	15.00%	10.67%	4.33%
1/24/1986	15.40%	10.41%	4.99%
1/31/1986	15.00%	10.35%	4.65%
2/5/1986	15.00%	10.32%	4.68%
2/5/1986	15.75%	10.32%	5.43%
2/10/1986	13.30%	10.29%	3.01%
2/11/1986	12.50%	10.28%	2.22%
2/14/1986	14.40%	10.24%	4.16%
2/18/1986	16.00%	10.23%	5.77%
2/24/1986	14.50%	10.18%	4.32%
2/26/1986	14.00%	10.15%	3.85%
3/5/1986	14.90%	10.08%	4.82%
3/11/1986	14.50%	10.02%	4.48%
3/12/1986	13.50%	10.00%	3.50%
3/27/1986	14.10%	9.86%	4.24%
3/31/1986	13.50%	9.84%	3.66%
4/1/1986	14.00%	9.83%	4.17%
4/2/1986	15.50%	9.81%	5.69%
4/4/1986	15.00%	9.78%	5.22%
4/14/1986	13.40%	9.69%	3.71%
4/23/1986	15.00%	9.57%	5.43%
5/16/1986	14.50%	9.32%	5.18%
5/16/1986	14.50%	9.32%	5.18%
5/29/1986	13.90%	9.19%	4.71%
5/30/1986	15.10%	9.18%	5.92%
6/2/1986	12.81%	9.17%	3.64%
6/11/1986	14.00%	9.07%	4.93%
6/24/1986	16.63%	8.94%	7.69%
6/26/1986	12.00%	8.91%	3.09%
6/26/1986	14.75%	8.91%	5.84%
6/30/1986	13.00%	8.87%	4.13%
7/10/1986	14.34%	8.75%	5.59%
7/11/1986	12.75%	8.73%	4.02%
7/14/1986	12.60%	8.71%	3.89%
7/17/1986	12.40%	8.66%	3.74%
7/25/1986	14.25%	8.57%	5.68%
8/6/1986	13.50%	8.44%	5.06%
8/14/1986	13.50%	8.35%	5.15%
9/16/1986	12.75%	8.06%	4.69%
9/19/1986	13.25%	8.03%	5.22%
10/1/1986	14.00%	7.95%	6.05%
10/3/1986	13.40%	7.93%	5.47%
10/31/1986	13.50%	7.77%	5.73%
11/5/1986	13.00%	7.75%	5.25%
12/3/1986	12.90%	7.58%	5.32%
12/4/1986	14.44%	7.58%	6.86%
12/16/1986	13.60%	7.52%	6.08%
12/22/1986	13.80%	7.51%	6.29%
12/30/1986	13.00%	7.49%	5.51%
1/2/1987	13.00%	7.49%	5.51%
1/12/1987	12.40%	7.47%	4.93%
1/27/1987	12.71%	7.46%	5.25%
3/2/1987	12.47%	7.47%	5.00%
3/3/1987	13.60%	7.47%	6.13%
3/4/1987	12.38%	7.47%	4.91%
3/10/1987	13.50%	7.47%	6.03%
3/13/1987	13.00%	7.47%	5.53%
3/31/1987	13.00%	7.46%	5.54%
4/6/1987	13.00%	7.47%	5.53%
4/14/1987	12.50%	7.49%	5.01%
4/16/1987	14.50%	7.50%	7.00%
4/27/1987	12.00%	7.54%	4.46%
5/5/1987	12.85%	7.58%	5.27%
5/12/1987	12.65%	7.62%	5.03%
5/28/1987	13.50%	7.70%	5.80%
6/15/1987	13.20%	7.78%	5.42%
6/29/1987	15.00%	7.83%	7.17%
6/30/1987	12.50%	7.84%	4.66%
7/8/1987	12.00%	7.86%	4.14%
7/10/1987	12.90%	7.86%	5.04%
7/15/1987	13.50%	7.88%	5.62%
7/16/1987	13.50%	7.88%	5.62%
7/16/1987	15.00%	7.88%	7.12%
7/27/1987	13.00%	7.92%	5.08%
7/27/1987	13.40%	7.92%	5.48%
7/27/1987	13.50%	7.92%	5.58%
7/31/1987	12.98%	7.95%	5.03%
8/26/1987	12.63%	8.06%	4.57%



Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
8/26/1987	12 75%	8 06%	4 69%
8/27/1987	13 25%	8 06%	5 19%
9/9/1987	13 00%	8 14%	4 86%
9/30/1987	12 75%	8 31%	4 44%
9/30/1987	13 00%	8 31%	4 69%
10/2/1987	11 50%	8 33%	3 17%
10/15/1987	13 00%	8 43%	4 57%
11/2/1987	13 00%	8 55%	4 45%
11/19/1987	13 00%	8 64%	4 36%
11/30/1987	12 00%	8 68%	3 32%
12/3/1987	14 20%	8 70%	5 50%
12/15/1987	13 25%	8 77%	4 48%
12/16/1987	13 50%	8 78%	4 72%
12/16/1987	13 72%	8 78%	4 94%
12/17/1987	11 75%	8 79%	2 96%
12/18/1987	13 50%	8 80%	4 70%
12/21/1987	12 01%	8 81%	3 20%
12/22/1987	12 00%	8 81%	3 19%
12/22/1987	12 00%	8 81%	3 19%
12/22/1987	12 75%	8 81%	3 94%
12/22/1987	13 00%	8 81%	4 19%
1/20/1988	13 80%	8 94%	4 86%
1/26/1988	13 90%	8 95%	4 95%
1/29/1988	13 20%	8 96%	4 24%
2/4/1988	12 60%	8 96%	3 64%
3/1/1988	11 56%	8 94%	2 62%
3/23/1988	12 87%	8 92%	3 95%
3/24/1988	11 24%	8 92%	2 32%
3/30/1988	12 72%	8 92%	3 80%
4/1/1988	12 50%	8 92%	3 58%
4/7/1988	13 25%	8 93%	4 32%
4/25/1988	10 96%	8 96%	2 00%
5/3/1988	12 91%	8 97%	3 94%
5/11/1988	13 50%	8 99%	4 51%
5/16/1988	13 00%	8 99%	4 01%
6/30/1988	12 75%	9 00%	3 75%
7/1/1988	12 75%	8 99%	3 76%
7/20/1988	13 40%	8 96%	4 44%
8/5/1988	12 75%	8 92%	3 83%
8/23/1988	11 70%	8 93%	2 77%
8/29/1988	12 75%	8 94%	3 81%
8/30/1988	13 50%	8 94%	4 56%
9/8/1988	12 60%	8 95%	3 65%
10/13/1988	13 10%	8 93%	4 17%
12/19/1988	13 00%	9 02%	3 98%
12/20/1988	12 25%	9 02%	3 23%
12/20/1988	13 00%	9 02%	3 98%
12/21/1988	12 90%	9 02%	3 88%
12/27/1988	13 00%	9 03%	3 97%
12/28/1988	13 10%	9 03%	4 07%
12/30/1988	13 40%	9 04%	4 36%
1/27/1989	13 00%	9 05%	3 95%
1/31/1989	13 00%	9 05%	3 95%
2/17/1989	13 00%	9 05%	3 95%
2/20/1989	12 40%	9 05%	3 35%
3/1/1989	12 76%	9 05%	3 71%
3/8/1989	13 00%	9 05%	3 95%
3/30/1989	14 00%	9 05%	4 95%
4/5/1989	14 20%	9 05%	5 15%
4/18/1989	13 00%	9 05%	3 95%
5/5/1989	12 40%	9 05%	3 35%
6/2/1989	13 20%	9 00%	4 20%
6/8/1989	13 50%	8 98%	4 52%
6/27/1989	13 25%	8 91%	4 34%
6/30/1989	13 00%	8 90%	4 10%
8/14/1989	12 50%	8 77%	3 73%
9/28/1989	12 25%	8 63%	3 62%
10/24/1989	12 50%	8 54%	3 96%
11/9/1989	13 00%	8 49%	4 51%
12/15/1989	13 00%	8 34%	4 66%
12/20/1989	12 90%	8 32%	4 58%
12/21/1989	12 90%	8 31%	4 59%
12/27/1989	12 50%	8 29%	4 21%
12/27/1989	13 00%	8 29%	4 71%
1/10/1990	12 80%	8 24%	4 56%
1/11/1990	12 90%	8 24%	4 66%
1/17/1990	12 80%	8 22%	4 58%
1/26/1990	12 00%	8 20%	3 80%
2/9/1990	12 10%	8 17%	3 93%
2/24/1990	12 86%	8 15%	4 71%
3/30/1990	12 90%	8 16%	4 74%
4/4/1990	15 76%	8 17%	7 59%

Date of Electnc Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
4/12/1990	12.52%	8.18%	4.34%
4/19/1990	12.75%	8.20%	4.55%
5/21/1990	12.10%	8.28%	3.82%
5/29/1990	12.40%	8.30%	4.10%
5/31/1990	12.00%	8.30%	3.70%
6/4/1990	12.90%	8.30%	4.60%
6/6/1990	12.25%	8.31%	3.94%
6/15/1990	13.20%	8.32%	4.88%
6/20/1990	12.92%	8.32%	4.60%
6/27/1990	12.90%	8.33%	4.57%
6/29/1990	12.50%	8.33%	4.17%
7/6/1990	12.10%	8.34%	3.76%
7/6/1990	12.35%	8.34%	4.01%
8/10/1990	12.55%	8.41%	4.14%
8/16/1990	13.21%	8.43%	4.78%
8/22/1990	13.10%	8.45%	4.65%
8/24/1990	13.00%	8.46%	4.54%
9/26/1990	11.45%	8.59%	2.86%
10/2/1990	13.00%	8.61%	4.39%
10/5/1990	12.84%	8.62%	4.22%
10/19/1990	13.00%	8.67%	4.33%
10/25/1990	12.30%	8.68%	3.62%
11/21/1990	12.70%	8.69%	4.01%
12/13/1990	12.30%	8.67%	3.63%
12/17/1990	12.87%	8.67%	4.20%
12/18/1990	13.10%	8.67%	4.43%
12/19/1990	12.00%	8.66%	3.34%
12/20/1990	12.75%	8.66%	4.09%
12/21/1990	12.50%	8.66%	3.84%
12/27/1990	12.79%	8.66%	4.13%
1/2/1991	13.10%	8.65%	4.45%
1/4/1991	12.50%	8.65%	3.85%
1/15/1991	12.75%	8.64%	4.11%
1/25/1991	11.70%	8.63%	3.07%
2/4/1991	12.50%	8.60%	3.90%
2/7/1991	12.50%	8.59%	3.91%
2/12/1991	13.00%	8.58%	4.43%
2/14/1991	12.72%	8.57%	4.15%
2/22/1991	12.80%	8.55%	4.25%
3/6/1991	13.10%	8.53%	4.57%
3/8/1991	12.30%	8.52%	3.78%
3/8/1991	13.00%	8.52%	4.48%
4/22/1991	13.00%	8.49%	4.51%
5/7/1991	13.50%	8.47%	5.03%
5/13/1991	13.25%	8.47%	4.78%
5/30/1991	12.75%	8.44%	4.31%
6/12/1991	12.00%	8.41%	3.59%
6/25/1991	11.70%	8.39%	3.31%
6/28/1991	12.50%	8.38%	4.12%
7/1/1991	12.00%	8.38%	3.62%
7/3/1991	12.50%	8.37%	4.13%
7/19/1991	12.10%	8.34%	3.76%
8/1/1991	12.90%	8.32%	4.58%
8/16/1991	13.20%	8.29%	4.91%
9/27/1991	12.50%	8.23%	4.27%
9/30/1991	12.25%	8.23%	4.02%
10/17/1991	13.00%	8.20%	4.80%
10/23/1991	12.50%	8.20%	4.30%
10/23/1991	12.55%	8.20%	4.35%
10/31/1991	11.80%	8.19%	3.61%
11/1/1991	12.00%	8.19%	3.81%
11/5/1991	12.25%	8.19%	4.06%
11/12/1991	12.50%	8.18%	4.32%
11/12/1991	13.25%	8.18%	5.07%
11/25/1991	12.40%	8.18%	4.22%
11/26/1991	11.60%	8.18%	3.42%
11/26/1991	12.50%	8.18%	4.32%
11/27/1991	12.10%	8.18%	3.92%
12/18/1991	12.25%	8.15%	4.10%
12/19/1991	12.60%	8.15%	4.45%
12/19/1991	12.80%	8.15%	4.65%
12/20/1991	12.65%	8.14%	4.51%
1/9/1992	12.80%	8.09%	4.71%
1/16/1992	12.75%	8.07%	4.68%
1/21/1992	12.00%	8.06%	3.94%
1/22/1992	13.00%	8.06%	4.94%
1/27/1992	12.65%	8.05%	4.60%
1/31/1992	12.00%	8.04%	3.96%
2/11/1992	12.40%	8.03%	4.37%
2/25/1992	12.50%	8.01%	4.49%
3/16/1992	11.43%	7.98%	3.45%
3/18/1992	12.28%	7.98%	4.30%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
4/2/1992	12 10%	7 95%	4 15%
4/9/1992	11 45%	7 94%	3 51%
4/10/1992	11 50%	7 93%	3 57%
4/14/1992	11 50%	7 93%	3 57%
5/5/1992	11 50%	7 89%	3 61%
5/12/1992	11 87%	7 88%	3 99%
5/12/1992	12 46%	7 88%	4 58%
6/1/1992	12 30%	7 87%	4 43%
6/12/1992	10 90%	7 86%	3 04%
6/26/1992	12 35%	7 85%	4 50%
6/29/1992	11 00%	7 85%	3 15%
6/30/1992	13 00%	7 85%	5 15%
7/13/1992	11 90%	7 84%	4 06%
7/13/1992	13 50%	7 84%	5 66%
7/22/1992	11 20%	7 83%	3 37%
8/3/1992	12 00%	7 81%	4 19%
8/6/1992	12 50%	7 80%	4 70%
9/22/1992	12 00%	7 71%	4 29%
9/28/1992	11 40%	7 71%	3 69%
9/30/1992	11 75%	7 70%	4 05%
10/2/1992	13 00%	7 70%	5 30%
10/12/1992	12 20%	7 70%	4 50%
10/16/1992	13 16%	7 70%	5 46%
10/30/1992	11 75%	7 71%	4 04%
11/3/1992	12 00%	7 71%	4 29%
12/3/1992	11 85%	7 68%	4 17%
12/15/1992	11 00%	7 66%	3 34%
12/16/1992	11 90%	7 66%	4 24%
12/16/1992	12 40%	7 66%	4 74%
12/17/1992	12 00%	7 66%	4 34%
12/22/1992	12 30%	7 65%	4 65%
12/22/1992	12 40%	7 65%	4 75%
12/29/1992	12 25%	7 63%	4 62%
12/30/1992	12 00%	7 63%	4 37%
12/31/1992	11 90%	7 63%	4 27%
1/12/1993	12 00%	7 61%	4 39%
1/21/1993	11 25%	7 59%	3 66%
2/2/1993	11 40%	7 56%	3 84%
2/15/1993	12 30%	7 52%	4 78%
2/24/1993	11 90%	7 49%	4 41%
2/26/1993	11 80%	7 48%	4 32%
2/26/1993	12 20%	7 48%	4 72%
4/23/1993	11 75%	7 29%	4 46%
5/1/1993	11 75%	7 25%	4 50%
5/14/1993	11 50%	7 24%	4 26%
5/25/1993	11 50%	7 23%	4 27%
5/28/1993	11 00%	7 22%	3 78%
6/3/1993	12 00%	7 21%	4 79%
6/16/1993	11 50%	7 19%	4 31%
6/18/1993	12 10%	7 18%	4 92%
6/25/1993	11 67%	7 17%	4 50%
7/21/1993	11 38%	7 10%	4 28%
7/23/1993	10 46%	7 09%	3 37%
8/24/1993	11 50%	6 96%	4 54%
9/21/1993	10 50%	6 81%	3 69%
9/29/1993	11 47%	6 77%	4 70%
9/30/1993	11 60%	6 76%	4 84%
11/2/1993	10 80%	6 60%	4 20%
11/12/1993	12 00%	6 57%	5 43%
11/26/1993	11 00%	6 52%	4 48%
12/14/1993	10 55%	6 48%	4 07%
12/16/1993	10 60%	6 48%	4 12%
12/21/1993	11 30%	6 47%	4 83%
1/4/1994	10 07%	6 44%	3 63%
1/13/1994	11 00%	6 42%	4 58%
1/21/1994	11 00%	6 40%	4 60%
1/28/1994	11 35%	6 39%	4 96%
2/3/1994	11 40%	6 38%	5 02%
2/17/1994	10 60%	6 36%	4 24%
2/25/1994	11 25%	6 35%	4 90%
2/25/1994	12 00%	6 35%	5 65%
3/1/1994	11 00%	6 35%	4 65%
3/4/1994	11 00%	6 35%	4 65%
4/25/1994	11 00%	6 41%	4 59%
5/10/1994	11 75%	6 45%	5 30%
5/13/1994	10 50%	6 46%	4 04%
6/3/1994	11 00%	6 54%	4 46%
6/27/1994	11 40%	6 65%	4 75%
8/5/1994	12 75%	6 88%	5 87%
10/31/1994	10 00%	7 33%	2 67%
11/9/1994	10 85%	7 39%	3 46%
11/9/1994	10 85%	7 39%	3 46%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
11/18/1994	11.20%	7.45%	3.75%
11/22/1994	11.60%	7.47%	4.13%
11/28/1994	11.06%	7.49%	3.57%
12/8/1994	11.50%	7.54%	3.96%
12/8/1994	11.70%	7.54%	4.16%
12/14/1994	10.95%	7.56%	3.39%
12/15/1994	11.50%	7.57%	3.93%
12/19/1994	11.50%	7.58%	3.92%
12/28/1994	12.15%	7.61%	4.54%
1/9/1995	12.28%	7.64%	4.64%
1/31/1995	11.00%	7.69%	3.31%
2/10/1995	12.60%	7.70%	4.90%
2/17/1995	11.90%	7.70%	4.20%
3/9/1995	11.50%	7.71%	3.79%
3/20/1995	12.00%	7.72%	4.28%
3/23/1995	12.81%	7.72%	5.09%
3/29/1995	11.60%	7.72%	3.88%
4/6/1995	11.10%	7.71%	3.39%
4/7/1995	11.00%	7.71%	3.29%
4/19/1995	11.00%	7.70%	3.30%
5/12/1995	11.63%	7.68%	3.95%
5/25/1995	11.20%	7.65%	3.55%
6/9/1995	11.25%	7.60%	3.65%
6/21/1995	12.25%	7.56%	4.69%
6/30/1995	11.10%	7.52%	3.58%
9/11/1995	11.30%	7.20%	4.10%
9/27/1995	11.30%	7.12%	4.18%
9/27/1995	11.50%	7.12%	4.38%
9/27/1995	11.75%	7.12%	4.63%
9/29/1995	11.00%	7.11%	3.89%
11/9/1995	11.38%	6.90%	4.48%
11/9/1995	12.36%	6.90%	5.46%
11/17/1995	11.00%	6.86%	4.14%
12/4/1995	11.35%	6.78%	4.57%
12/11/1995	11.40%	6.74%	4.66%
12/20/1995	11.60%	6.70%	4.90%
12/27/1995	12.00%	6.66%	5.34%
2/5/1996	12.25%	6.48%	5.77%
3/29/1996	10.67%	6.42%	4.25%
4/8/1996	11.00%	6.42%	4.58%
4/11/1996	12.59%	6.43%	6.16%
4/11/1996	12.59%	6.43%	6.16%
4/24/1996	11.25%	6.43%	4.82%
4/30/1996	11.00%	6.43%	4.57%
5/13/1996	11.00%	6.44%	4.56%
5/23/1996	11.25%	6.43%	4.82%
6/25/1996	11.25%	6.48%	4.77%
6/27/1996	11.20%	6.48%	4.72%
8/12/1996	10.40%	6.57%	3.83%
9/27/1996	11.00%	6.71%	4.29%
10/16/1996	12.25%	6.76%	5.49%
11/5/1996	11.00%	6.81%	4.19%
11/26/1996	11.30%	6.83%	4.47%
12/18/1996	11.75%	6.83%	4.92%
12/31/1996	11.50%	6.83%	4.67%
1/3/1997	10.70%	6.83%	3.87%
2/13/1997	11.80%	6.82%	4.98%
2/20/1997	11.80%	6.82%	4.98%
3/31/1997	10.02%	6.80%	3.22%
4/2/1997	11.65%	6.80%	4.85%
4/28/1997	11.50%	6.81%	4.69%
4/29/1997	11.70%	6.81%	4.89%
7/17/1997	12.00%	6.77%	5.23%
12/12/1997	11.00%	6.60%	4.40%
12/23/1997	11.12%	6.57%	4.55%
2/2/1998	12.75%	6.39%	6.36%
3/2/1998	11.25%	6.29%	4.96%
3/6/1998	10.75%	6.27%	4.48%
3/20/1998	10.50%	6.22%	4.28%
4/30/1998	12.20%	6.12%	6.08%
7/10/1998	11.40%	5.94%	5.46%
9/15/1998	11.90%	5.78%	6.12%
11/30/1998	12.60%	5.58%	7.02%
12/10/1998	12.20%	5.54%	6.66%
12/17/1998	12.10%	5.52%	6.58%
2/5/1999	10.30%	5.38%	4.92%
3/4/1999	10.50%	5.34%	5.16%
4/6/1999	10.94%	5.32%	5.62%
7/29/1999	10.75%	5.52%	5.23%
9/23/1999	10.75%	5.70%	5.05%
11/17/1999	11.10%	5.90%	5.20%
1/7/2000	11.50%	6.05%	5.45%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/7/2000	11 50%	6 05%	5 45%
2/17/2000	10 60%	6 17%	4 43%
3/28/2000	11 25%	6 20%	5 05%
5/24/2000	11 00%	6 18%	4 82%
7/18/2000	12 20%	6 16%	6 04%
9/29/2000	11 16%	6 03%	5 13%
11/28/2000	12 90%	5 89%	7 01%
11/30/2000	12 10%	5 88%	6 22%
1/23/2001	11 25%	5 79%	5 46%
2/8/2001	11 50%	5 77%	5 73%
5/8/2001	10 75%	5 62%	5 13%
6/26/2001	11 00%	5 62%	5 38%
7/25/2001	11 02%	5 60%	5 42%
7/25/2001	11 02%	5 60%	5 42%
7/31/2001	11 00%	5 59%	5 41%
8/31/2001	10 50%	5 56%	4 94%
9/7/2001	10 75%	5 55%	5 20%
9/10/2001	11 00%	5 55%	5 45%
9/20/2001	10 00%	5 55%	4 45%
10/24/2001	10 30%	5 54%	4 76%
11/28/2001	10 60%	5 49%	5 11%
12/3/2001	12 88%	5 49%	7 39%
12/20/2001	12 50%	5 50%	7 00%
1/22/2002	10 00%	5 50%	4 50%
3/27/2002	10 10%	5 45%	4 65%
4/22/2002	11 80%	5 45%	6 35%
5/28/2002	10 17%	5 46%	4 71%
6/10/2002	12 00%	5 47%	6 53%
6/18/2002	11 16%	5 48%	5 68%
6/20/2002	11 00%	5 48%	5 52%
6/20/2002	12 30%	5 48%	6 82%
7/15/2002	11 00%	5 48%	5 52%
9/12/2002	12 30%	5 45%	6 85%
9/26/2002	10 45%	5 41%	5 04%
12/4/2002	11 55%	5 29%	6 26%
12/13/2002	11 75%	5 27%	6 48%
12/20/2002	11 40%	5 25%	6 15%
1/8/2003	11 10%	5 19%	5 91%
1/31/2003	12 45%	5 13%	7 32%
2/28/2003	12 30%	5 05%	7 25%
3/6/2003	10 75%	5 03%	5 72%
3/7/2003	9 96%	5 02%	4 94%
3/20/2003	12 00%	4 98%	7 02%
4/3/2003	12 00%	4 96%	7 04%
4/15/2003	11 15%	4 94%	6 21%
6/25/2003	10 75%	4 79%	5 96%
6/26/2003	10 75%	4 79%	5 96%
7/9/2003	9 75%	4 79%	4 96%
7/16/2003	9 75%	4 79%	4 96%
7/25/2003	9 50%	4 80%	4 70%
8/26/2003	10 50%	4 83%	5 67%
12/17/2003	9 85%	4 94%	4 91%
12/17/2003	10 70%	4 94%	5 76%
12/18/2003	11 50%	4 94%	6 56%
12/19/2003	12 00%	4 94%	7 06%
12/19/2003	12 00%	4 94%	7 06%
12/23/2003	10 50%	4 94%	5 56%
1/13/2004	12 00%	4 95%	7 05%
3/2/2004	10 75%	4 99%	5 76%
3/26/2004	10 25%	5 02%	5 23%
4/5/2004	11 25%	5 03%	6 22%
5/18/2004	10 50%	5 07%	5 43%
5/25/2004	10 25%	5 08%	5 17%
5/27/2004	10 25%	5 08%	5 17%
6/2/2004	11 22%	5 08%	6 14%
6/30/2004	10 50%	5 10%	5 40%
6/30/2004	10 50%	5 10%	5 40%
7/16/2004	11 60%	5 11%	6 49%
8/25/2004	10 25%	5 10%	5 15%
9/9/2004	10 40%	5 10%	5 30%
11/9/2004	10 50%	5 07%	5 43%
11/23/2004	11 00%	5 06%	5 94%
12/14/2004	10 97%	5 07%	5 90%
12/21/2004	11 25%	5 07%	6 18%
12/21/2004	11 50%	5 07%	6 43%
12/22/2004	10 70%	5 07%	5 63%
12/22/2004	11 50%	5 07%	6 43%
12/29/2004	9 85%	5 07%	4 78%
1/6/2005	10 70%	5 08%	5 62%
2/18/2005	10 30%	4 98%	5 32%
2/25/2005	10 50%	4 96%	5 54%
3/10/2005	11 00%	4 93%	6 07%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
3/24/2005	10 30%	4 90%	5 40%
4/4/2005	10 00%	4 88%	5 12%
4/7/2005	10 25%	4 87%	5 38%
5/18/2005	10 25%	4 78%	5 47%
5/25/2005	10 75%	4 76%	5 99%
5/26/2005	9 75%	4 76%	4 99%
6/1/2005	9 75%	4 75%	5 00%
7/19/2005	11 50%	4 64%	6 86%
8/5/2005	11 75%	4 62%	7 13%
8/15/2005	10 13%	4 61%	5 52%
9/28/2005	10 00%	4 54%	5 46%
10/4/2005	10 75%	4 54%	6 21%
12/12/2005	11 00%	4 55%	6 45%
12/13/2005	10 75%	4 55%	6 20%
12/21/2005	10 29%	4 54%	5 75%
12/21/2005	10 40%	4 54%	5 86%
12/22/2005	11 00%	4 54%	6 46%
12/22/2005	11 15%	4 54%	6 61%
12/28/2005	10 00%	4 54%	5 46%
12/28/2005	10 00%	4 54%	5 46%
1/5/2006	11 00%	4 53%	6 47%
1/27/2006	9 75%	4 52%	5 23%
3/3/2006	10 39%	4 53%	5 86%
4/17/2006	10 20%	4 61%	5 59%
4/26/2006	10 60%	4 64%	5 96%
5/17/2006	11 60%	4 69%	6 91%
6/6/2006	10 00%	4 74%	5 26%
6/27/2006	10 75%	4 80%	5 95%
7/6/2006	10 20%	4 83%	5 37%
7/24/2006	9 60%	4 86%	4 74%
7/26/2006	10 50%	4 86%	5 64%
7/28/2006	10 05%	4 86%	5 19%
8/23/2006	9 55%	4 89%	4 66%
9/1/2006	10 54%	4 90%	5 64%
9/14/2006	10 00%	4 91%	5 09%
10/6/2006	9 67%	4 92%	4 75%
11/21/2006	10 08%	4 95%	5 13%
11/21/2006	10 08%	4 95%	5 13%
11/21/2006	10 12%	4 95%	5 17%
12/1/2006	10 25%	4 95%	5 30%
12/1/2006	10 50%	4 95%	5 55%
12/7/2006	10 75%	4 95%	5 80%
12/21/2006	10 90%	4 95%	5 95%
12/21/2006	11 25%	4 95%	6 30%
12/22/2006	10 25%	4 95%	5 30%
1/5/2007	10 00%	4 95%	5 05%
1/11/2007	10 10%	4 95%	5 15%
1/11/2007	10 10%	4 95%	5 15%
1/11/2007	10 90%	4 95%	5 95%
1/12/2007	10 10%	4 95%	5 15%
1/13/2007	10 40%	4 95%	5 45%
1/19/2007	10 80%	4 94%	5 86%
3/21/2007	11 35%	4 87%	6 48%
3/22/2007	9 75%	4 86%	4 89%
5/15/2007	10 00%	4 81%	5 19%
5/17/2007	10 25%	4 81%	5 44%
5/17/2007	10 25%	4 81%	5 44%
5/22/2007	10 20%	4 80%	5 40%
5/22/2007	10 50%	4 80%	5 70%
5/23/2007	10 70%	4 80%	5 90%
5/25/2007	9 67%	4 80%	4 87%
6/15/2007	9 90%	4 82%	5 08%
6/21/2007	10 20%	4 83%	5 37%
6/22/2007	10 50%	4 83%	5 67%
6/28/2007	10 75%	4 84%	5 91%
7/12/2007	9 67%	4 86%	4 81%
7/19/2007	10 00%	4 87%	5 13%
7/19/2007	10 00%	4 87%	5 13%
8/15/2007	10 40%	4 88%	5 52%
10/9/2007	10 00%	4 91%	5 09%
10/17/2007	9 10%	4 91%	4 19%
10/31/2007	9 96%	4 90%	5 06%
11/29/2007	10 90%	4 87%	6 03%
12/6/2007	10 75%	4 86%	5 89%
12/13/2007	9 96%	4 86%	5 10%
12/14/2007	10 70%	4 86%	5 84%
12/14/2007	10 80%	4 86%	5 94%
12/19/2007	10 20%	4 86%	5 34%
12/20/2007	10 20%	4 85%	5 35%
12/20/2007	11 00%	4 85%	6 15%
12/28/2007	10 25%	4 85%	5 40%
12/31/2007	11 25%	4 85%	6 40%

Date of Electnc Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
1/8/2008	10 75%	4 83%	5 92%
1/17/2008	10 75%	4 81%	5 94%
1/28/2008	9 40%	4 80%	4 60%
1/30/2008	10 00%	4 79%	5 21%
1/31/2008	10 71%	4 79%	5 92%
2/29/2008	10 25%	4 75%	5 50%
3/12/2008	10 25%	4 73%	5 52%
3/25/2008	9 10%	4 68%	4 42%
4/22/2008	10 25%	4 60%	5 65%
4/24/2008	10 10%	4 60%	5 50%
5/1/2008	10 70%	4 59%	6 11%
5/19/2008	11 00%	4 56%	6 44%
5/27/2008	10 00%	4 55%	5 45%
6/10/2008	10 70%	4 54%	6 16%
6/27/2008	10 50%	4 54%	5 96%
6/27/2008	11 04%	4 54%	6 50%
7/10/2008	10 43%	4 52%	5 91%
7/16/2008	9 40%	4 52%	4 88%
7/30/2008	10 80%	4 51%	6 29%
7/31/2008	10 70%	4 51%	6 19%
8/11/2008	10 25%	4 51%	5 74%
8/26/2008	10 18%	4 50%	5 68%
9/10/2008	10 30%	4 50%	5 80%
9/24/2008	10 65%	4 48%	6 17%
9/24/2008	10 65%	4 48%	6 17%
9/24/2008	10 65%	4 48%	6 17%
9/30/2008	10 20%	4 48%	5 72%
10/8/2008	10 15%	4 46%	5 69%
11/13/2008	10 55%	4 45%	6 10%
11/17/2008	10 20%	4 44%	5 76%
12/1/2008	10 25%	4 40%	5 85%
12/23/2008	11 00%	4 27%	6 73%
12/29/2008	10 00%	4 24%	5 76%
12/29/2008	10 20%	4 24%	5 96%
12/31/2008	10 75%	4 22%	6 53%
1/14/2009	10 50%	4 15%	6 35%
1/21/2009	10 50%	4 12%	6 38%
1/21/2009	10 50%	4 12%	6 38%
1/21/2009	10 50%	4 12%	6 38%
1/27/2009	10 76%	4 09%	6 67%
1/30/2009	10 50%	4 08%	6 42%
2/4/2009	8 75%	4 06%	4 69%
3/4/2009	10 50%	3 96%	6 54%
3/12/2009	11 50%	3 93%	7 57%
4/2/2009	11 10%	3 85%	7 25%
4/21/2009	10 61%	3 80%	6 81%
4/24/2009	10 00%	3 79%	6 21%
4/30/2009	11 25%	3 78%	7 47%
5/4/2009	10 74%	3 77%	6 97%
5/20/2009	10 25%	3 74%	6 51%
5/28/2009	10 50%	3 74%	6 76%
6/22/2009	10 00%	3 76%	6 24%
6/24/2009	10 80%	3 77%	7 03%
7/8/2009	10 63%	3 77%	6 86%
7/17/2009	10 50%	3 78%	6 72%
8/31/2009	10 25%	3 82%	6 43%
10/14/2009	10 70%	4 01%	6 69%
10/23/2009	10 88%	4 06%	6 82%
11/2/2009	10 70%	4 09%	6 61%
11/3/2009	10 70%	4 10%	6 60%
11/24/2009	10 25%	4 15%	6 10%
11/25/2009	10 75%	4 16%	6 59%
11/30/2009	10 35%	4 17%	6 18%
12/3/2009	10 50%	4 18%	6 32%
12/7/2009	10 70%	4 18%	6 52%
12/16/2009	10 90%	4 21%	6 69%
12/16/2009	11 00%	4 21%	6 79%
12/18/2009	10 40%	4 22%	6 18%
12/18/2009	10 40%	4 22%	6 18%
12/22/2009	10 20%	4 23%	5 97%
12/22/2009	10 40%	4 23%	6 17%
12/22/2009	10 40%	4 23%	6 17%
12/30/2009	10 00%	4 26%	5 74%
1/4/2010	10 80%	4 28%	6 52%
1/11/2010	11 00%	4 30%	6 70%
1/26/2010	10 13%	4 35%	5 78%
1/27/2010	10 40%	4 35%	6 05%
1/27/2010	10 40%	4 35%	6 05%
1/27/2010	10 70%	4 35%	6 35%
2/9/2010	9 80%	4 38%	5 42%
2/18/2010	10 60%	4 40%	6 20%
2/24/2010	10 18%	4 41%	5 77%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
3/2/2010	9.63%	4.41%	5.22%
3/4/2010	10.50%	4.41%	6.09%
3/5/2010	10.50%	4.41%	6.09%
3/11/2010	11.90%	4.42%	7.48%
3/17/2010	10.00%	4.41%	5.59%
3/25/2010	10.15%	4.42%	5.73%
4/2/2010	10.10%	4.43%	5.67%
4/27/2010	10.00%	4.46%	5.54%
4/29/2010	9.90%	4.46%	5.44%
4/29/2010	10.06%	4.46%	5.60%
4/29/2010	10.26%	4.46%	5.80%
5/12/2010	10.30%	4.45%	5.85%
5/12/2010	10.30%	4.45%	5.85%
5/28/2010	10.10%	4.44%	5.66%
5/28/2010	10.20%	4.44%	5.76%
6/7/2010	10.30%	4.44%	5.86%
6/16/2010	10.00%	4.44%	5.56%
6/28/2010	9.67%	4.43%	5.24%
6/28/2010	10.50%	4.43%	6.07%
6/30/2010	9.40%	4.43%	4.97%
7/1/2010	10.25%	4.43%	5.82%
7/15/2010	10.53%	4.43%	6.10%
7/15/2010	10.70%	4.43%	6.27%
7/30/2010	10.70%	4.41%	6.29%
8/4/2010	10.50%	4.41%	6.09%
8/6/2010	9.83%	4.41%	5.42%
8/25/2010	9.90%	4.37%	5.53%
9/3/2010	10.60%	4.35%	6.25%
9/14/2010	10.70%	4.33%	6.37%
9/16/2010	10.00%	4.33%	5.67%
9/16/2010	10.00%	4.33%	5.67%
9/30/2010	9.75%	4.29%	5.46%
10/14/2010	10.35%	4.24%	6.11%
10/28/2010	10.70%	4.21%	6.49%
11/2/2010	10.38%	4.20%	6.18%
11/4/2010	10.70%	4.20%	6.50%
11/19/2010	10.20%	4.18%	6.02%
11/22/2010	10.00%	4.18%	5.82%
12/1/2010	10.13%	4.16%	5.97%
12/6/2010	9.86%	4.15%	5.71%
12/9/2010	10.25%	4.15%	6.10%
12/13/2010	10.70%	4.15%	6.55%
12/14/2010	10.13%	4.15%	5.98%
12/15/2010	10.44%	4.15%	6.29%
12/17/2010	10.00%	4.15%	5.85%
12/20/2010	10.60%	4.15%	6.45%
12/21/2010	10.30%	4.14%	6.16%
12/27/2010	9.90%	4.14%	5.76%
12/29/2010	11.15%	4.14%	7.01%
1/5/2011	10.15%	4.13%	6.02%
1/12/2011	10.30%	4.12%	6.18%
1/13/2011	10.30%	4.12%	6.18%
1/18/2011	10.00%	4.12%	5.88%
1/20/2011	9.30%	4.12%	5.18%
1/20/2011	10.13%	4.12%	6.01%
1/31/2011	9.60%	4.12%	5.48%
2/3/2011	10.00%	4.12%	5.88%
2/25/2011	10.00%	4.14%	5.86%
3/25/2011	9.80%	4.18%	5.62%
3/30/2011	10.00%	4.18%	5.82%
4/12/2011	10.00%	4.21%	5.79%
4/25/2011	10.74%	4.23%	6.51%
4/26/2011	9.67%	4.23%	5.44%
4/27/2011	10.40%	4.24%	6.16%
5/4/2011	10.00%	4.24%	5.76%
5/4/2011	10.00%	4.24%	5.76%
5/24/2011	10.50%	4.27%	6.23%
6/8/2011	10.75%	4.30%	6.45%
6/16/2011	9.20%	4.32%	4.88%
6/17/2011	9.95%	4.32%	5.63%
7/13/2011	10.20%	4.36%	5.84%
8/1/2011	9.20%	4.39%	4.81%
8/8/2011	10.00%	4.38%	5.62%
8/11/2011	10.00%	4.38%	5.62%
8/12/2011	10.35%	4.37%	5.98%
8/19/2011	10.25%	4.36%	5.89%
9/2/2011	12.88%	4.32%	8.56%
9/22/2011	10.00%	4.24%	5.76%
10/12/2011	10.30%	4.14%	6.16%
10/20/2011	10.50%	4.10%	6.40%
11/30/2011	10.90%	3.87%	7.03%
11/30/2011	10.90%	3.87%	7.03%



Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
12/14/2011	10.00%	3.80%	6.20%
12/14/2011	10.30%	3.80%	6.50%
12/20/2011	10.20%	3.76%	6.44%
12/21/2011	10.20%	3.76%	6.44%
12/22/2011	9.90%	3.75%	6.15%
12/22/2011	10.40%	3.75%	6.65%
12/23/2011	10.19%	3.74%	6.45%
1/25/2012	10.50%	3.57%	6.93%
1/27/2012	10.50%	3.56%	6.94%
2/15/2012	10.20%	3.47%	6.73%
2/23/2012	9.90%	3.44%	6.46%
2/27/2012	10.25%	3.43%	6.82%
2/29/2012	10.40%	3.41%	6.99%
3/29/2012	10.37%	3.32%	7.05%
4/4/2012	10.00%	3.30%	6.70%
4/26/2012	10.00%	3.21%	6.79%
5/2/2012	10.00%	3.18%	6.82%
5/7/2012	9.80%	3.17%	6.63%
5/15/2012	10.00%	3.14%	6.86%
5/29/2012	10.05%	3.11%	6.94%
6/7/2012	10.30%	3.08%	7.22%
6/14/2012	9.40%	3.06%	6.34%
6/15/2012	10.40%	3.06%	7.34%
6/18/2012	9.60%	3.06%	6.54%
6/19/2012	9.25%	3.05%	6.20%
6/26/2012	10.10%	3.04%	7.06%
6/29/2012	10.00%	3.04%	6.96%
7/9/2012	10.20%	3.03%	7.17%
7/16/2012	9.80%	3.02%	6.78%
7/20/2012	9.31%	3.01%	6.30%
7/20/2012	9.81%	3.01%	6.80%
9/13/2012	9.80%	2.94%	6.86%
9/19/2012	9.80%	2.94%	6.86%
9/19/2012	10.05%	2.94%	7.11%
9/26/2012	9.50%	2.94%	6.56%
10/12/2012	9.60%	2.93%	6.67%
10/23/2012	9.75%	2.93%	6.82%
10/24/2012	10.30%	2.93%	7.37%
11/9/2012	10.30%	2.92%	7.38%
11/28/2012	10.40%	2.90%	7.50%
11/29/2012	9.75%	2.89%	6.86%
11/29/2012	9.88%	2.89%	6.99%
12/5/2012	9.71%	2.89%	6.82%
12/5/2012	10.40%	2.89%	7.51%
12/12/2012	9.80%	2.88%	6.92%
12/13/2012	9.50%	2.88%	6.62%
12/13/2012	10.50%	2.88%	7.62%
12/14/2012	10.40%	2.88%	7.52%
12/19/2012	9.71%	2.87%	6.84%
12/19/2012	10.25%	2.87%	7.38%
12/20/2012	9.50%	2.87%	6.63%
12/20/2012	9.80%	2.87%	6.93%
12/20/2012	10.25%	2.87%	7.38%
12/20/2012	10.25%	2.87%	7.38%
12/20/2012	10.30%	2.87%	7.43%
12/20/2012	10.40%	2.87%	7.53%
12/20/2012	10.45%	2.87%	7.58%
12/21/2012	10.20%	2.87%	7.33%
12/26/2012	9.80%	2.86%	6.94%
1/9/2013	9.70%	2.85%	6.85%
1/9/2013	9.70%	2.85%	6.85%
1/9/2013	9.70%	2.85%	6.85%
1/16/2013	9.60%	2.84%	6.76%
1/16/2013	9.60%	2.84%	6.76%
2/13/2013	10.20%	2.84%	7.36%
2/22/2013	9.75%	2.85%	6.90%
2/27/2013	10.00%	2.86%	7.14%
3/14/2013	9.30%	2.88%	6.42%
3/27/2013	9.80%	2.90%	6.90%
5/1/2013	9.84%	2.94%	6.90%
5/15/2013	10.30%	2.96%	7.34%
5/30/2013	10.20%	2.98%	7.22%
5/31/2013	9.00%	2.98%	6.02%
6/11/2013	10.00%	3.00%	7.00%
6/21/2013	9.75%	3.02%	6.73%
6/25/2013	9.80%	3.03%	6.77%
7/12/2013	9.36%	3.07%	6.29%
8/8/2013	9.83%	3.14%	6.69%
8/14/2013	9.15%	3.16%	5.99%
9/11/2013	10.20%	3.26%	6.94%
9/11/2013	10.25%	3.26%	6.99%
9/24/2013	10.20%	3.31%	6.89%

Date of Electric Rate Case	Return on Equity	30-Year Treasury Yield	Risk Premium
10/3/2013	9.65%	3.33%	6.32%
11/6/2013	10.20%	3.41%	6.79%
11/21/2013	10.00%	3.44%	6.56%
11/26/2013	10.00%	3.45%	6.55%
12/3/2013	10.25%	3.47%	6.78%
12/4/2013	9.50%	3.47%	6.03%
12/5/2013	10.20%	3.48%	6.72%
12/9/2013	8.72%	3.48%	5.24%
12/9/2013	9.75%	3.48%	6.27%
12/13/2013	9.75%	3.50%	6.25%
12/16/2013	9.95%	3.50%	6.45%
12/16/2013	9.95%	3.50%	6.45%
12/16/2013	10.12%	3.50%	6.62%
12/17/2013	9.50%	3.51%	5.99%
12/17/2013	10.95%	3.51%	7.44%
12/18/2013	8.72%	3.51%	5.21%
12/18/2013	9.80%	3.51%	6.29%
12/19/2013	10.15%	3.51%	6.64%
12/30/2013	9.50%	3.54%	5.96%
2/20/2014	9.20%	3.68%	5.52%
2/26/2014	9.75%	3.69%	6.06%
3/17/2014	9.55%	3.72%	5.83%
3/26/2014	9.40%	3.73%	5.67%
3/26/2014	9.96%	3.73%	6.23%
4/2/2014	9.70%	3.73%	5.97%
5/16/2014	9.80%	3.70%	6.10%
5/30/2014	9.70%	3.68%	6.02%
6/6/2014	10.40%	3.67%	6.73%
6/30/2014	9.55%	3.64%	5.91%
7/2/2014	9.62%	3.64%	5.98%
7/10/2014	9.95%	3.63%	6.32%
7/23/2014	9.75%	3.61%	6.14%
7/29/2014	9.45%	3.60%	5.85%
7/31/2014	9.90%	3.60%	6.30%
8/20/2014	9.75%	3.57%	6.18%
8/25/2014	9.60%	3.56%	6.04%
8/29/2014	9.80%	3.54%	6.26%
9/11/2014	9.60%	3.51%	6.09%
9/15/2014	10.25%	3.51%	6.74%
10/9/2014	9.80%	3.45%	6.35%
11/6/2014	9.56%	3.37%	6.19%
11/6/2014	10.20%	3.37%	6.83%
11/14/2014	10.20%	3.35%	6.85%
11/26/2014	9.70%	3.33%	6.37%
11/26/2014	10.20%	3.33%	6.87%
12/4/2014	9.68%	3.31%	6.37%
12/10/2014	9.25%	3.29%	5.96%
12/10/2014	9.25%	3.29%	5.96%
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6/17/2015	9.00%	2.82%	6.18%
6/17/2015	9.00%	2.82%	6.18%
9/2/2015	9.50%	2.79%	6.71%
9/10/2015	9.30%	2.79%	6.51%
10/15/2015	9.00%	2.81%	6.19%
11/19/2015	10.00%	2.88%	7.12%
11/19/2015	10.30%	2.88%	7.42%
12/3/2015	10.00%	2.90%	7.10%
12/9/2015	9.14%	2.90%	6.24%
12/9/2015	9.14%	2.90%	6.24%
12/11/2015	10.30%	2.90%	7.40%
12/15/2015	9.60%	2.91%	6.69%
12/17/2015	9.70%	2.91%	6.79%
12/18/2015	9.50%	2.91%	6.59%
12/30/2015	9.50%	2.93%	6.57%
1/6/2016	9.50%	2.94%	6.56%
2/23/2016	9.75%	2.94%	6.81%
3/16/2016	9.85%	2.91%	6.94%
4/29/2016	9.80%	2.83%	6.97%
6/3/2016	9.75%	2.80%	6.95%
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11/9/2016	9.80%	2.48%	7.32%
11/10/2016	9.50%	2.48%	7.02%
11/15/2016	9.55%	2.49%	7.06%
11/18/2016	10.00%	2.50%	7.50%
11/29/2016	10.55%	2.51%	8.04%
12/1/2016	10.00%	2.51%	7.49%
12/6/2016	8.64%	2.52%	6.12%
12/6/2016	8.64%	2.52%	6.12%
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12/28/2017	9.50%	2.85%	6.65%
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3/15/2018	9.00%	2.87%	6.13%
3/29/2018	10.00%	2.88%	7.12%
4/12/2018	9.90%	2.89%	7.01%
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4/18/2018	10.00%	2.89%	7.11%
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12/4/2018	8.69%	3.14%	5.55%
12/13/2018	9.30%	3.14%	6.16%
12/14/2018	9.50%	3.14%	6.36%
12/19/2018	9.84%	3.14%	6.70%
12/20/2018	9.65%	3.14%	6.51%
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4/30/2019	9.73%	3.11%	6.62%
5/1/2019	9.50%	3.11%	6.39%
5/2/2019	10.00%	3.11%	6.89%
5/8/2019	9.50%	3.10%	6.40%
5/14/2019	8.75%	3.10%	5.65%
5/16/2019	9.50%	3.09%	6.41%
5/23/2019	9.90%	3.09%	6.81%
		Average	4.68%
		No of Cases	1,593

Expected Earnings Analysis

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]
		Expected ROE	Shares Outstanding			Adjustment	Adjusted
		2022-2024	2019	2022-2024	% Increase	Factor	ROE
ALLETE, Inc	ALE	9.0%	51.75	51.75	0.00%	1.000	9.00%
Alliant Energy Corporation	LNT	10.0%	240.00	250.00	0.82%	1.004	10.04%
Ameren Corporation	AEE	10.5%	246.50	255.00	0.68%	1.003	10.54%
Avangrid, Inc.	AGR	6.0%	309.00	309.00	0.00%	1.000	6.00%
CMS Energy Corporation	CMS	14.0%	285.00	297.00	0.83%	1.004	14.06%
Consolidated Edison	ED	8.5%	334.00	338.00	0.24%	1.001	8.51%
DTE Energy Company	DTE	10.5%	192.00	200.00	0.82%	1.004	10.54%
Duke Energy Corporation	DUK	8.5%	733.00	755.00	0.59%	1.003	8.53%
Evergy, Inc	EVERG	8.5%	225.00	212.00	-1.18%	0.994	8.45%
Eversource Energy	ES	9.0%	318.50	350.00	1.90%	1.009	9.08%
Hawaiian Electric Industries, Inc	HE	10.0%	109.00	113.00	0.72%	1.004	10.04%
NextEra Energy, Inc.	NEE	13.5%	535.00	535.00	0.00%	1.000	13.50%
NorthWestern Corporation	NWE	9.0%	50.50	51.10	0.24%	1.001	9.01%
OGE Energy Corp	OGE	11.5%	200.00	200.00	0.00%	1.000	11.50%
Otter Tail Corporation	OTTR	10.5%	39.75	41.75	0.99%	1.005	10.55%
Pinnacle West Capital Corporation	PNW	10.5%	112.50	114.50	0.35%	1.002	10.52%
PNM Resources, Inc.	PNM	9.5%	79.65	84.00	1.07%	1.005	9.55%
Portland General Electric Company	POR	9.0%	89.40	90.00	0.13%	1.001	9.01%
Southern Company	SO	12.5%	1045.00	1085.00	0.75%	1.004	12.55%
WEC Energy Group, Inc	WEC	12.0%	315.50	315.50	0.00%	1.000	12.00%
Xcel Energy Inc.	XEL	11.0%	515.50	521.50	0.23%	1.001	11.01%
						Median	10.04%
						Mean	10.19%

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  $[1] \times [5]$

Proxy Group Capital Structure

Company	Ticker	% Common Equity								
		2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	Average
ALLETE, Inc	ALE	59.53%	59.12%	58.50%	58.84%	63.09%	62.51%	61.03%	60.62%	60.40%
Alliant Energy Corporation	LNT	53.18%	53.11%	51.13%	51.00%	49.74%	49.77%	52.08%	51.23%	51.41%
Ameren Corporation	AEE	52.81%	52.89%	53.22%	52.01%	53.04%	52.65%	53.56%	53.11%	52.89%
Avangrd, Inc	AGR	56.51%	55.72%	56.13%	54.93%	56.55%	55.69%	53.88%	53.54%	55.37%
CMS Energy Corporation	CMS	52.52%	50.27%	53.01%	52.86%	53.13%	52.25%	53.25%	52.97%	52.53%
Consolidated Edison, Inc	ED	48.75%	47.97%	48.38%	48.73%	49.75%	49.23%	49.87%	49.19%	48.98%
DTE Energy Company	DTE	48.69%	50.96%	49.97%	49.23%	51.12%	51.02%	50.50%	50.63%	50.26%
Duke Energy Corporation	DUK	53.14%	54.35%	55.03%	54.94%	54.46%	54.30%	53.78%	54.62%	54.33%
Eversource Energy	EVRG	58.16%	59.56%	59.86%	58.51%	58.73%	58.62%	59.41%	58.74%	58.95%
Hawaiian Electric Industries, Inc	HE	54.22%	53.28%	51.03%	50.14%	54.05%	54.60%	55.16%	54.82%	53.41%
NextEra Energy, Inc	NEE	58.06%	57.98%	56.00%	55.78%	57.44%	57.42%	58.11%	57.76%	57.33%
NorthWestern Corporation	NWE	61.05%	64.37%	64.78%	60.84%	61.23%	59.93%	63.00%	62.78%	62.25%
OGE Energy Corp	OGE	48.74%	47.88%	48.36%	48.41%	47.48%	49.89%	48.86%	48.61%	48.53%
OTter Tail Corporation	OTTR	55.38%	53.20%	53.05%	54.25%	53.59%	53.36%	53.05%	52.75%	53.58%
Pinnacle West Capital Corporation	PNW	53.90%	53.58%	53.49%	53.11%	52.67%	57.34%	57.24%	55.31%	54.58%
PNM Resources, Inc	PNM	54.48%	54.36%	53.68%	53.71%	53.18%	53.14%	53.05%	53.32%	53.61%
Portland General Electric Company	POR	43.45%	45.63%	48.01%	46.68%	46.20%	46.06%	47.58%	46.89%	46.31%
Southern Company	SO	50.60%	50.19%	50.51%	50.29%	50.14%	49.80%	50.17%	50.32%	50.25%
Wisconsin Energy Corporation	WEC	52.80%	54.21%	51.50%	50.31%	49.98%	47.67%	50.14%	49.99%	50.83%
Xcel Energy Inc	XEL	55.73%	53.46%	58.30%	57.72%	61.62%	54.62%	55.82%	55.48%	56.00%
Mean		NA	54.22%	53.37%	53.63%	54.15%	53.95%	53.93%	54.37%	53.94%
Mean		53.59%	53.62%	53.69%	53.14%	53.87%	53.52%	53.98%	53.67%	53.64%

Operating Company Capital Structure

Operating Company	Parent	% Common Equity								
		2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	Average
ALLETE (Minnesota Power)	ALE	60.87%	61.39%	60.43%	60.33%	60.38%	60.04%	59.73%	59.16%	60.29%
Superior Water, Light and Power Company	ALE	58.19%	56.86%	56.58%	57.34%	65.80%	64.99%	62.33%	62.08%	60.52%
Interstate Power and Light Company	LNT	53.33%	53.52%	49.64%	50.47%	49.92%	50.31%	51.79%	50.89%	51.23%
Wisconsin Power and Light Company	LNT	53.03%	52.69%	52.62%	51.52%	49.57%	49.23%	52.39%	51.56%	51.58%
Ameren Illinois Company	AEE	53.65%	52.86%	53.18%	52.74%	54.24%	53.38%	54.98%	54.55%	53.70%
Union Electric Company	AEE	51.96%	52.52%	53.26%	51.28%	51.84%	51.92%	52.14%	51.68%	52.08%
Central Maine Power Company	AGR	63.51%	63.21%	64.17%	63.53%	64.18%	63.82%	63.97%	63.27%	63.71%
New York State Electric & Gas Corporation	AGR	55.93%	54.30%	53.95%	50.96%	54.51%	53.30%	48.27%	50.24%	52.69%
Rochester Gas and Electric Corporation	AGR	49.96%	48.89%	48.16%	47.77%	50.80%	49.63%	48.94%	48.46%	49.08%
United Illuminating Company	AGR	56.65%	56.46%	58.23%	57.43%	56.70%	56.00%	54.35%	52.17%	56.00%
Consumers Energy Company	CMS	52.52%	50.27%	53.01%	52.86%	53.13%	52.25%	53.25%	52.97%	52.53%
Consolidated Edison Company of New York, Inc	ED	48.30%	47.52%	48.33%	46.72%	48.86%	48.22%	49.47%	48.58%	48.22%
Orange and Rockland Utilities, Inc	ED	49.21%	48.41%	48.44%	50.74%	50.83%	50.25%	50.27%	49.81%	49.75%
Rockland Electric Company	ED	NA	NA	NA	NA	NA	NA	NA	NA	NA
DTE Electric Company	DTE	48.69%	50.96%	49.97%	49.23%	51.12%	51.02%	50.50%	50.63%	50.26%
Duke Energy Carolinas, LLC	DUK	52.32%	51.78%	52.64%	52.10%	51.70%	52.98%	53.98%	53.49%	52.62%
Duke Energy Florida, LLC	DUK	50.56%	50.04%	49.65%	48.79%	49.92%	49.25%	49.46%	47.74%	49.42%
Duke Energy Indiana, LLC	DUK	54.29%	53.26%	52.79%	52.64%	52.54%	51.94%	51.71%	51.89%	52.63%
Duke Energy Kentucky, Inc	DUK	52.81%	51.95%	56.58%	55.79%	53.72%	53.11%	50.69%	55.74%	53.80%
Duke Energy Ohio, Inc	DUK	59.29%	68.09%	67.73%	67.10%	66.06%	66.24%	65.79%	65.38%	65.71%
Duke Energy Progress, LLC	DUK	49.60%	51.00%	50.76%	53.22%	52.82%	52.27%	51.06%	53.51%	51.78%
Kansas City Power & Light Company	EVRG	46.04%	49.49%	49.50%	48.88%	49.25%	49.15%	49.42%	48.47%	48.78%
Kansas Gas and Electric Company	EVRG	75.13%	74.97%	74.91%	74.45%	74.29%	74.18%	74.21%	73.69%	74.48%
KCP&L Greater Missouri Operations Company	EVRG	52.68%	54.71%	55.70%	52.03%	52.63%	52.40%	55.14%	54.57%	53.73%
Westar Energy (KPL)	EVRG	58.80%	58.08%	59.34%	58.68%	58.75%	58.74%	58.87%	58.22%	58.81%
Connecticut Light and Power Company	ES	58.18%	56.18%	54.49%	53.85%	50.40%	53.82%	53.49%	54.79%	54.40%
NSTAR Electric Company	ES	56.08%	55.74%	55.50%	54.51%	53.83%	53.85%	52.87%	52.73%	54.39%
Public Service Company of New Hampshire	ES	48.38%	47.92%	43.11%	42.06%	57.93%	57.30%	59.26%	57.05%	51.63%
Western Massachusetts Electric Company	ES	NA	NA	NA	NA	NA	53.43%	55.02%	54.71%	54.39%
Hawaiian Electric Light Company, Inc	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hawaiian Electric Company, Inc	HE	58.06%	57.98%	56.09%	55.78%	57.44%	57.42%	58.11%	57.76%	57.33%
Mau Electric Company, Limited	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida Power & Light Company	NEE	64.03%	64.37%	64.78%	60.84%	61.23%	59.93%	63.00%	62.78%	62.62%
Gulf Power Company	NEE	58.06%	NA	NA	NA	NA	NA	NA	NA	58.06%
NorthWestern Corporation	NWE	48.74%	47.88%	48.36%	48.41%	47.48%	49.89%	48.86%	48.61%	48.53%
Oklahoma Gas and Electric Company	OGE	55.38%	53.20%	53.05%	54.25%	53.59%	53.36%	53.05%	52.75%	53.58%
OTter Tail Power Company	OTTR	53.90%	53.58%	53.49%	53.11%	52.67%	57.34%	57.24%	55.31%	54.58%
Arizona Public Service Company	PNW	54.48%	54.36%	53.68%	53.71%	53.18%	53.14%	53.05%	53.32%	53.61%
Public Service Company of New Mexico	PNM	43.45%	45.63%	48.01%	46.68%	46.20%	46.06%	47.58%	46.89%	46.31%
Portland General Electric Company	POR	50.60%	50.19%	50.51%	50.29%	50.14%	49.80%	50.17%	50.32%	50.25%
Alabama Power Company	SO	52.23%	47.77%	48.13%	47.51%	48.86%	47.07%	47.93%	47.25%	48.34%
Georgia Power Company	SO	56.43%	59.02%	57.27%	54.97%	53.81%	50.06%	50.35%	51.55%	54.18%
Gulf Power Company	SO	NA	59.73%	55.34%	54.90%	54.27%	54.19%	54.97%	54.41%	55.40%
Mississippi Power Company	SO	49.73%	50.35%	45.28%	43.87%	43.00%	39.34%	47.32%	46.76%	45.70%
Upper Michigan Energy Resources Corporation	WEC	52.54%	47.01%	55.08%	54.53%	70.04%	49.85%	NA	NA	54.84%
Wisconsin Electric Power Company	WEC	55.78%	56.03%	59.25%	59.09%	56.47%	55.94%	55.97%	55.76%	56.79%
Wisconsin Public Service Corporation	WEC	58.88%	57.33%	60.59%	59.53%	58.35%	58.06%	55.68%	55.21%	57.96%
Northern States Power Company - MN	XEL	NA	52.81%	52.64%	52.61%	52.59%	52.22%	52.78%	52.57%	52.57%
Northern States Power Company - WI	XEL	NA	53.60%	48.45%	53.85%	53.79%	53.36%	55.57%	55.22%	53.41%
Public Service Company of Colorado	XEL	NA	56.31%	56.08%	54.17%	56.67%	56.50%	54.88%	55.75%	55.75%
Southwestern Public Service Company	XEL	NA	54.17%	56.29%	53.88%	53.54%	53.55%	52.29%	54.61%	54.05%
Mean		54.34%	54.25%	54.24%	53.67%	54.54%	53.84%	54.18%	54.00%	54.21%

Source: S&P Global Market Intelligence

Proxy Group Capital Structure

Company	Ticker	% Long-Term Debt								Average
		2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	
ALLETE, Inc	ALE	40.47%	40.88%	41.50%	41.16%	36.91%	37.49%	38.97%	39.38%	39.60%
Alliant Energy Corporation	LNT	46.82%	46.89%	48.87%	49.00%	50.26%	50.23%	47.91%	48.77%	48.59%
Ameren Corporation	AEE	47.19%	47.31%	46.78%	47.99%	46.96%	47.35%	46.44%	46.89%	47.11%
Avangrid, Inc	AGR	43.49%	44.28%	43.87%	45.07%	43.45%	44.31%	46.12%	46.46%	44.63%
CMS Energy Corporation	CMS	47.48%	49.73%	46.99%	47.14%	46.87%	47.75%	46.75%	47.03%	47.47%
Consolidated Edison, Inc	ED	51.25%	52.03%	51.62%	51.27%	50.25%	50.77%	50.13%	50.81%	51.02%
DTE Energy Company	DTE	51.31%	49.04%	50.03%	50.77%	48.88%	48.98%	49.50%	49.37%	49.74%
Duke Energy Corporation	DUK	46.86%	45.65%	44.97%	45.06%	45.54%	45.70%	46.22%	45.38%	45.67%
Energy, Inc	EVRG	41.84%	40.44%	40.14%	41.49%	41.27%	41.38%	40.59%	41.26%	41.05%
Eversource Energy	ES	45.78%	46.72%	48.97%	49.86%	45.95%	45.40%	44.84%	45.18%	46.59%
Hawaiian Electric Industries, Inc	HE	41.94%	42.02%	43.91%	44.22%	42.56%	42.58%	41.89%	42.24%	42.67%
NextEra Energy, Inc	NEE	38.95%	35.63%	35.22%	39.16%	38.77%	40.07%	37.00%	37.22%	37.75%
NorthWestern Corporation	NWE	51.26%	52.12%	51.64%	51.59%	52.52%	50.11%	51.14%	51.39%	51.47%
OGE Energy Corp	OGE	44.62%	46.80%	46.95%	45.75%	46.41%	46.64%	46.95%	47.25%	46.42%
Otter Tail Corporation	OTTR	46.10%	46.42%	46.51%	46.89%	47.33%	42.66%	42.76%	44.69%	45.42%
Pinnacle West Capital Corporation	PNW	45.52%	45.64%	46.32%	46.29%	46.82%	46.86%	46.95%	46.68%	46.39%
PNM Resources, Inc	PNM	56.55%	54.37%	51.99%	53.32%	53.80%	53.94%	52.42%	53.11%	53.69%
Portland General Electric Company	POR	49.40%	49.81%	49.49%	49.71%	49.86%	50.20%	49.83%	49.68%	49.75%
Southern Company	SO	47.20%	45.79%	48.50%	49.69%	50.02%	52.33%	49.86%	50.01%	49.17%
Wisconsin Energy Corporation	WEC	44.27%	46.54%	41.70%	42.28%	38.38%	45.38%	44.18%	44.52%	43.40%
Xcel Energy Inc	XEL	NA	45.78%	46.63%	46.37%	45.85%	46.05%	46.07%	45.63%	46.06%
Mean		46.41%	46.38%	46.31%	46.86%	46.13%	46.48%	46.02%	46.33%	46.36%

Operating Company Capital Structure

Operating Company	Parent	% Long-Term Debt								Average
		2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	2017Q4	2017Q3	2017Q2	
ALLETE (Minnesota Power)	ALE	39.13%	38.61%	39.57%	39.67%	39.62%	39.96%	40.27%	40.84%	39.71%
Superior Water, Light and Power Company	ALE	41.81%	43.14%	43.42%	42.66%	34.20%	35.01%	37.67%	37.92%	39.48%
Interstate Power and Light Company	LNT	46.67%	46.48%	50.36%	49.53%	50.08%	49.69%	48.21%	49.11%	48.77%
Wisconsin Power and Light Company	LNT	46.97%	47.31%	47.38%	48.48%	50.43%	50.77%	47.61%	48.44%	48.42%
Ameren Illinois Company	AEE	46.35%	47.14%	46.82%	47.26%	45.76%	46.62%	45.02%	45.45%	46.30%
Union Electric Company	AEE	48.04%	47.48%	46.74%	48.72%	48.16%	48.06%	47.86%	48.32%	47.92%
Central Maine Power Company	AGR	36.49%	36.79%	35.63%	36.47%	35.82%	36.18%	36.03%	36.73%	36.29%
New York State Electric & Gas Corporation	AGR	44.07%	45.70%	46.05%	49.01%	45.49%	46.70%	51.73%	49.76%	47.31%
Rochester Gas and Electric Corporation	AGR	50.04%	51.11%	51.84%	52.23%	49.20%	50.37%	51.06%	51.54%	50.92%
United Illuminating Company	AGR	43.35%	43.54%	41.77%	42.57%	43.30%	44.00%	45.65%	47.83%	44.00%
Consumers Energy Company	CMS	47.48%	49.73%	46.99%	47.14%	46.87%	47.75%	46.75%	47.03%	47.47%
Consolidated Edison Company of New York, Inc	ED	51.70%	52.48%	51.67%	53.26%	51.34%	51.78%	50.53%	51.42%	51.78%
Orange and Rockland Utilities, Inc	ED	50.79%	51.59%	51.56%	49.26%	49.17%	49.75%	49.73%	50.19%	50.25%
Rockland Electric Company	ED	NA	NA	NA	NA	NA	NA	NA	NA	NA
DTE Electric Company	DTE	51.31%	49.04%	50.03%	50.77%	48.88%	48.98%	49.50%	49.37%	49.74%
Duke Energy Carolinas, LLC	DUK	47.68%	48.22%	47.36%	47.90%	48.30%	47.02%	46.02%	46.51%	47.38%
Duke Energy Florida, LLC	DUK	49.44%	49.96%	50.35%	51.21%	50.08%	50.75%	50.54%	52.26%	50.58%
Duke Energy Indiana, LLC	DUK	45.71%	46.74%	47.21%	47.36%	47.46%	48.06%	48.29%	48.11%	47.37%
Duke Energy Kentucky, Inc	DUK	47.19%	48.05%	43.42%	44.21%	46.28%	46.89%	49.31%	44.26%	46.20%
Duke Energy Ohio, Inc	DUK	40.71%	31.91%	32.27%	32.90%	33.94%	33.76%	34.21%	34.62%	34.29%
Duke Energy Progress, LLC	DUK	50.40%	46.00%	49.24%	46.78%	47.18%	47.73%	48.94%	46.49%	48.22%
Kansas City Power & Light Company	EVRG	53.96%	50.51%	50.50%	51.12%	50.75%	50.85%	50.58%	51.53%	51.22%
Kansas Gas and Electric Company	EVRG	24.87%	25.03%	25.06%	25.55%	25.71%	25.82%	25.79%	26.31%	25.52%
KCP&L Greater Missouri Operations Company	EVRG	47.32%	45.29%	44.30%	47.97%	47.37%	47.60%	44.86%	45.43%	46.27%
Westar Energy (KPL)	EVRG	41.20%	40.92%	40.66%	41.32%	41.25%	41.26%	41.13%	41.78%	41.19%
Connecticut Light and Power Company	ES	41.82%	43.82%	45.51%	46.15%	49.60%	46.18%	46.51%	45.21%	45.60%
NSTAR Electric Company	ES	43.92%	44.26%	44.50%	45.49%	46.17%	46.15%	47.13%	47.27%	45.61%
Public Service Company of New Hampshire	ES	51.62%	52.08%	56.89%	57.94%	42.07%	42.70%	40.74%	42.95%	48.37%
Western Massachusetts Electric Company	ES	NA	NA	NA	NA	NA	46.57%	44.98%	45.29%	45.61%
Hawaii Electric Light Company, Inc	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hawaiian Electric Company, Inc	HE	41.94%	42.02%	43.91%	44.22%	42.56%	42.58%	41.89%	42.24%	42.67%
Mau Electric Company, Limited	HE	NA	NA	NA	NA	NA	NA	NA	NA	NA
Florida Power & Light Company	NEE	35.97%	35.63%	35.22%	39.16%	38.77%	40.07%	37.00%	37.22%	37.38%
Gulf Power Company	NEE	41.94%	NA	NA	NA	NA	NA	NA	NA	41.94%
NorthWestern Corporation	NWE	51.26%	52.12%	51.64%	51.59%	52.52%	50.11%	51.14%	51.39%	51.47%
Oklahoma Gas and Electric Company	OGE	44.62%	46.80%	46.95%	45.75%	46.41%	46.64%	46.95%	47.25%	46.42%
Otter Tail Power Company	OTTR	46.10%	46.42%	46.51%	46.89%	47.33%	42.66%	42.76%	44.69%	45.42%
Arizona Public Service Company	PNW	45.52%	45.64%	46.32%	46.29%	46.82%	46.86%	46.95%	46.68%	46.39%
Public Service Company of New Mexico	PNM	56.55%	54.37%	51.99%	53.32%	53.80%	53.94%	52.42%	53.11%	53.69%
Portland General Electric Company	POR	49.40%	49.81%	49.49%	49.71%	49.86%	50.20%	49.83%	49.68%	49.75%
Alabama Power Company	SO	47.77%	52.23%	51.87%	52.49%	51.14%	52.93%	52.07%	52.75%	51.66%
Georgia Power Company	SO	43.57%	40.98%	42.73%	45.03%	46.19%	49.94%	49.65%	48.45%	45.82%
Gulf Power Company	SO	NA	40.27%	44.66%	45.10%	45.73%	45.81%	45.03%	45.59%	44.60%
Mississippi Power Company	SO	50.27%	49.65%	54.72%	56.13%	57.00%	60.66%	52.68%	53.24%	54.30%
Upper Michigan Energy Resources Corporation	WEC	47.46%	52.99%	44.92%	45.47%	29.96%	50.15%	NA	NA	45.16%
Wisconsin Electric Power Company	WEC	44.22%	43.87%	40.75%	40.91%	43.53%	44.06%	44.03%	44.24%	43.21%
Wisconsin Public Service Corporation	WEC	41.12%	42.67%	39.41%	40.47%	41.65%	41.94%	44.32%	44.79%	42.04%
Northern States Power Company - MN	XEL	NA	47.19%	47.36%	47.39%	47.41%	47.62%	47.78%	47.22%	47.43%
Northern States Power Company - WI	XEL	NA	46.40%	51.55%	46.15%	46.21%	46.64%	44.43%	44.78%	46.59%
Public Service Company of Colorado	XEL	NA	43.69%	43.92%	45.83%	43.33%	43.50%	44.36%	45.12%	44.25%
Southwestern Public Service Company	XEL	NA	45.83%	43.71%	46.12%	46.46%	46.45%	47.71%	45.39%	45.95%
Mean		45.86%	45.75%	45.76%	46.33%	45.46%	46.16%	45.82%	46.00%	45.79%

2014-2019 Reported Authorized Returns on Equity, Electric Utility Rate Cases

State	Utility	Parent Company Ticker	Case Identification	Date Authorized	Authorized ROE
New York	Consolidated Edison Co of NY	ED	C-13-E-0030	2/20/2014	9.20
North Dakota	Northern States Power Co - MN	XEL	C-PU-12-813	2/26/2014	9.75
New Hampshire	Liberty Utilities Granite St	AQN	D-DE-13-063	3/17/2014	9.55
District of Columbia	Potomac Electric Power Co	EXC	FC-1103-2013-E	3/26/2014	9.40
New Mexico	Southwestern Public Service Co	XEL	C-12-00350-UT	3/26/2014	9.96
Delaware	Delmarva Power & Light Co	EXC	D-13-115	4/2/2014	9.70
Texas	Entergy Texas Inc	ETR	D-41791	5/16/2014	9.80
Massachusetts	Fitchburg Gas & Electric Light	UTL	DPU 13-90	5/30/2014	9.70
Wisconsin	Wisconsin Power and Light Co	LNT	D-6680-UR-119 (Elec)	6/6/2014	10.40
Maine	Emera Maine	EMA	D-2013-00443	6/30/2014	9.55
Maryland	Potomac Electric Power Co	EXC	C-9336	7/2/2014	9.62
Louisiana	Entergy Louisiana LLC	ETR	D-UD-13-01	7/10/2014	9.95
New Jersey	Rockland Electric Company	ED	D-ER-13111135	7/23/2014	9.75
Maine	Central Maine Power Co	IBE	D-2013-00168	7/29/2014	9.45
Wyoming	Cheyenne Light Fuel Power Co	BKH	D-20003-132-ER-13	7/31/2014	9.90
New Jersey	Atlantic City Electric Co	EXC	D-ER-14030245	8/20/2014	9.75
Vermont	Green Mountain Power Corp		D-8190, 8191	8/25/2014	9.60
Utah	PacifiCorp	BRK A	D-13-035-184	8/29/2014	9.80
Texas	Lone Star Transmission LLC	NEE	D-42469	9/11/2014	9.60
Florida	Florida Public Utilities Co	CPK	D-140025-EI	9/15/2014	10.25
Nevada	Nevada Power Co	BRK A	D-14-05004	10/9/2014	9.80
Illinois	MidAmerican Energy Co	BRK A	D-14-0066	11/6/2014	9.56
Wisconsin	Wisconsin Public Service Corp	WEC	D-6690-UR-123 (Elec)	11/6/2014	10.20
Wisconsin	Wisconsin Electric Power Co	WEC	D-05-UR-107 (WEP-Elec)	11/14/2014	10.20
Virginia	Appalachian Power Co	AEP	C-PUE-2014-00026	11/26/2014	9.70
Wisconsin	Madison Gas and Electric Co	MGEE	D-3270-UR-120 (Elec)	11/26/2014	10.20
Oregon	Portland General Electric Co	POR	D-UE-283	12/4/2014	9.68
Mississippi	Entergy Mississippi LLC	ETR	D-2014-UN-0132	12/11/2014	10.07
Wisconsin	Northern States Power Co - WI	XEL	D-4220-UR-120 (Elec)	12/12/2014	10.20
Connecticut	Connecticut Light & Power Co	ES	D-14-05-06	12/17/2014	9.17
Colorado	Black Hills Colorado Electric	BKH	D-14AL-0393E	12/18/2014	9.83
Wyoming	PacifiCorp	BRK A	D-20000-446-ER-14	1/23/2015	9.50
Colorado	Public Service Co of CO	XEL	D-14AL-0660E	2/24/2015	9.83
New Jersey	Jersey Cntrl Power & Light Co	FE	D-ER-12111052	3/18/2015	9.75
Washington	PacifiCorp	BRK A	D-UE-140762	3/25/2015	9.50
Minnesota	Northern States Power Co - MN	XEL	D-E-002GR-13-868	3/26/2015	9.72
Michigan	Wisconsin Public Service Corp	WEC	C-U-17669	4/23/2015	10.20
Missouri	Union Electric Co	AEE	C-ER-2014-0258	4/29/2015	9.53
Texas	Cross Texas Transmission		D-43950	5/1/2015	9.60
West Virginia	Appalachian Power Co	AEP	C-14-1152-E-42T	5/26/2015	9.75
New York	Central Hudson Gas & Electric	FTS	C-14-E-0318	6/17/2015	9.00
New York	Consolidated Edison Co of NY	ED	C-15-E-0050C-13-E-0030 (	6/17/2015	9.00
Missouri	Kansas City Power & Light	EVRG	C-ER-2014-0370	9/2/2015	9.50
Kansas	Kansas City Power & Light	EVRG	D-15-KCPE-116-RTS	9/10/2015	9.30
New York	Orange & Rockland Utls Inc	ED	C-14-E-0493	10/15/2015	9.00
Wisconsin	Wisconsin Public Service Corp	WEC	D-6690-UR-124 (Elec)	11/19/2015	10.00
Michigan	Consumers Energy Co	CMS	C-U-17735	11/19/2015	10.30
Wisconsin	Northern States Power Co - WI	XEL	D-4220-UR-121 (Elec)	12/3/2015	10.00
Michigan	DTE Electric Co	DTE	C-U-17767	12/11/2015	10.30
Oregon	Portland General Electric Co	POR	D-UE-294	12/16/2015	9.60
Texas	Southwestern Public Service Co	XEL	D-43695	12/17/2015	9.70
Idaho	Avista Corp	AVA	C-AVU-E-15-05	12/18/2015	9.50
Wyoming	PacifiCorp	BRK A	D-20000-469-ER-15	12/30/2015	9.50
Washington	Avista Corp	AVA	D-UE-150204	1/6/2016	9.50
Arkansas	Entergy Arkansas LLC	ETR	D-15-015-U	2/23/2016	9.75
Indiana	Indianapolis Power & Light Co	AES	Ca-44576	3/16/2016	9.85
Massachusetts	Fitchburg Gas & Electric Light	UTL	DPU 15-80	4/29/2016	9.80
Maryland	Baltimore Gas and Electric Co	EXC	C-9406 (elec)	6/3/2016	9.75
New Mexico	El Paso Electric Co	EE	C-15-00127-UT	6/6/2016	9.48
New York	NY State Electric & Gas Corp	IBE	C-15-E-0283	6/15/2016	9.00
New York	Rochester Gas & Electric Corp	IBE	C-15-E-0285	6/15/2016	9.00
Indiana	Northern IN Public Svc Co	NI	Ca-44688	7/18/2016	9.98
Tennessee	Kingsport Power Company	AEP	D-16-00001	8/9/2016	9.85
Arizona	UNS Electric Inc	FTS	D-E-04204A-15-0142	8/18/2016	9.50
New Jersey	Atlantic City Electric Co	EXC	D-ER-16030252	8/24/2016	9.75
Washington	PacifiCorp	BRK A	D-UE-152253	9/1/2016	9.50
Michigan	Upper Peninsula Power Co		C-U-17895	9/8/2016	10.00
New Mexico	Public Service Co of NM	PNM	C-15-00261-UT	9/28/2016	9.58
Massachusetts	Massachusetts Electric Co	NG	DPU-15-155	9/30/2016	9.90
Wisconsin	Madison Gas and Electric Co	MGEE	D-3270-UR-121 (Elec)	11/9/2016	9.80
Oklahoma	Public Service Co of OK	AEP	Ca-PUD201500208	11/10/2016	9.50
Maryland	Potomac Electric Power Co	EXC	C-9418	11/15/2016	9.55
Wisconsin	Wisconsin Power and Light Co	LNT	D-6680-UR-120 (Elec)	11/18/2016	10.00
Florida	Florida Power & Light Co	NEE	D-160021-EI	11/29/2016	10.55
California	Liberty Utilities (CalPeco Elect	AQN	A-15-05-008	12/1/2016	10.00
South Carolina	Duke Energy Progress LLC	DUK	D-2016-227-E	12/7/2016	10.10
New Jersey	Jersey Cntrl Power & Light Co	FE	D-ER-16040383	12/12/2016	9.60
Connecticut	United Illuminating Co	IBE	D-16-06-04	12/14/2016	9.10
Maine	Emera Maine	EMA	D-2015-00360	12/19/2016	9.00
Colorado	Black Hills Colorado Electric	BKH	D-16AL-0326E	12/19/2016	9.37
Nevada	Sierra Pacific Power Co	BRK A	D-16-06006	12/22/2016	9.60
North Carolina	Virginia Electric & Power Co	D	D-E-22, Sub 532	12/22/2016	9.90
Idaho	Avista Corp	AVA	C-AVU-E-16-03	12/28/2016	9.50
Wyoming	MDU Resources Group Inc	MDU	D-20004-117-ER-16	1/18/2017	9.45
New York	Consolidated Edison Co of NY	ED	C-16-E-0060	1/24/2017	9.00
Michigan	DTE Electric Co	DTE	C-U-18014	1/31/2017	10.10
Maryland	Delmarva Power & Light Co	EXC	C-9424	2/15/2017	9.60
New Jersey	Rockland Electric Company	ED	D-ER-16050428	2/22/2017	9.60
Arizona	Tucson Electric Power Co	FTS	D-E-01933A-15-0322	2/24/2017	9.75
Michigan	Consumers Energy Co	CMS	C-U-17990	2/28/2017	10.10



State	Utility	Parent Company Ticker	Case Identification	Date Authorized	Authorized ROE
Minnesota	Otter Tail Power Co	OTTR	D-E-017GR-15-1033	3/2/2017	9.41
Oklahoma	Oklahoma Gas and Electric Co	OGE	Ca-PUD201500273	3/20/2017	9.50
Florida	Gulf Power Co	NEE	D-160186-E1	4/4/2017	10.25
New Hampshire	Liberty Utilities Granite St	AQN	D-DE-16-383	4/12/2017	9.40
New Hampshire	Unitl Energy Systems Inc	UTL	D-DE-16-384	4/20/2017	9.50
Missouri	Kansas City Power & Light	EVRG	C-ER-2016-0285	5/3/2017	9.50
Minnesota	Northern States Power Co - MN	XEL	D-E-002GR-15-826	5/11/2017	9.20
Arkansas	Oklahoma Gas and Electric Co	OGE	D-16-052-U	5/18/2017	9.50
Delaware	Delmarva Power & Light Co	EXC	D-16-0649	5/23/2017	9.70
North Dakota	MDU Resources Group Inc	MDU	C-PU-16-666	6/16/2017	9.65
Kentucky	Kentucky Utilities Co	PPL	C-2016-00370	6/22/2017	9.70
Kentucky	Louisville Gas & Electric Co	PPL	C-2016-00371 (elec )	6/22/2017	9.70
District of Columbia	Potomac Electric Power Co	EXC	FC-1139	7/24/2017	9.50
Arizona	Arizona Public Service Co	PNW	D-E-01345A-16-0036	8/15/2017	10.00
New Jersey	Atlantic City Electric Co	EXC	D-ER-17030308	9/22/2017	9.60
Texas	Oncor Electric Delivery Co	SRE	D-46957	9/28/2017	9.80
Maryland	Potomac Electric Power Co	EXC	C-9443	10/20/2017	9.50
California	San Diego Gas & Electric Co	SRE	Advice No 3120-E	10/26/2017	10.20
California	Pacific Gas and Electric Co	PCG	Advice No 3887-G/5148-E	10/26/2017	10.25
California	Southern California Edison Co	EIX	Advice No 3665-E	10/26/2017	10.30
Florida	Tampa Electric Co	EMA	D-20170210-E1	11/6/2017	10.25
Alaska	Alaska Electric Light Power	AVA	D-U-16-086	11/15/2017	11.95
Massachusetts	NSTAR Electric Co	ES	DPU 17-05 (NSTAR)	11/30/2017	10.00
Massachusetts	Western Massachusetts Electric	ES	DPU 17-05 (WMECCO)	11/30/2017	10.00
Washington	Puget Sound Energy Inc	PUJ	D-UE-170033	12/5/2017	9.50
Wisconsin	Northern States Power Co - WI	XEL	D-4220-UR-123 (Elec)	12/7/2017	9.80
Texas	Southwestern Electric Power Co	AEP	D-46449	12/14/2017	9.60
Texas	El Paso Electric Co	EE	D-46831	12/14/2017	9.65
Oregon	Portland General Electric Co	POR	D-UE-319	12/18/2017	9.50
New Mexico	Public Service Co of NM	PNM	C-16-00276-UT	12/20/2017	9.58
Vermont	Green Mountain Power Corp	GMTA	C-17-3112-INV	12/21/2017	9.10
Idaho	Avista Corp	AVA	C-AVU-E-17-01	12/28/2017	9.50
Nevada	Nevada Power Co	BRKA	D-17-06003	12/29/2017	9.51
Kentucky	Kentucky Power Co	AEP	C-2017-00179	1/18/2018	9.70
Oklahoma	Public Service Co of OK	AEP	Ca-PUD201700151	1/31/2018	9.30
Iowa	Interstate Power & Light Co	LNT	D-RPU-2017-0001	2/2/2018	9.98
North Carolina	Duke Energy Progress LLC	DUK	D-E-2, Sub 1142	2/23/2018	9.90
Minnesota	ALLETE (Minnesota Power)	ALE	D-E-015/GR-16-664	3/12/2018	9.25
New York	Niagara Mohawk Power Corp	NG	C-17-E-0238	3/15/2018	9.00
Michigan	Consumers Energy Co	CMS	C-U-18322	3/29/2018	10.00
Michigan	Indiana Michigan Power Co	AEP	C-U-18370	4/12/2018	9.90
Kentucky	Duke Energy Kentucky Inc	DUK	C-2017-00321	4/13/2018	9.73
Connecticut	Connecticut Light & Power Co	ES	D-17-10-46	4/18/2018	9.25
Michigan	DTE Electric Co	DTE	C-U-18255	4/18/2018	10.00
Washington	Avista Corp	AVA	D-UE-170485	4/26/2018	9.50
Indiana	Indiana Michigan Power Co	AEP	Ca-44967	5/30/2018	9.95
Maryland	Potomac Electric Power Co	EXC	C-9472	5/31/2018	9.50
New York	Central Hudson Gas & Electric	FTS	C-17-E-0459	6/14/2018	8.80
Hawaii	Hawaiian Electric Co	HE	D-2016-0328	6/22/2018	9.50
North Carolina	Duke Energy Carolinas LLC	DUK	D-E-7, Sub 1146	6/22/2018	9.90
Maine	Emera Maine	EMA	D-2017-00198	6/28/2018	9.35
Hawaii	Hawaii Electric Light Co	HE	D-2015-0170	6/29/2018	9.50
District of Columbia	Potomac Electric Power Co	EXC	FC-1150	8/6/2018	9.53
Delaware	Delmarva Power & Light Co	EXC	D-17-0977	8/21/2018	9.70
Rhode Island	Narragansett Electric Co	NG	D-4770 (electric)	8/24/2018	9.28
New Mexico	Southwestern Public Service Co	XEL	C-17-00255-UT	9/5/2018	9.56
Wisconsin	Wisconsin Power and Light Co	LNT	D-6680-UR-121 (Elec)	9/14/2018	10.00
Wisconsin	Madison Gas and Electric Co	MGEE	D-3270-UR-122 (Elec)	9/20/2018	9.80
North Dakota	Otter Tail Power Co	OTTR	C-PU-17-398	9/26/2018	9.77
Ohio	Dayton Power and Light Co	AES	C-15-1830-EL-AIR	9/26/2018	10.00
Kansas	Westar Energy Inc	EVRG	D-18-WSEE-328-RTS	9/27/2018	9.30
Pennsylvania	UGI Utilities Inc	UGI	D-R-2017-2640058	10/4/2018	9.85
New Jersey	Public Service Electric Gas	PEG	D-ER18010029	10/29/2018	9.60
Indiana	Indianapolis Power & Light Co	AES	Ca-45029	10/31/2018	9.99
Kansas	Kansas City Power & Light	EVRG	D-18-KCPE-480-RTS	12/13/2018	9.30
Oregon	Portland General Electric Co	POR	D-UE-335	12/14/2018	9.50
Ohio	Duke Energy Ohio Inc	DUK	C-17-0032-EL-AIR	12/19/2018	9.84
Texas	Texas-New Mexico Power Co	PNM	D-48401	12/20/2018	9.65
Vermont	Green Mountain Power Corp	GMTA	C-18-0974-TF	12/21/2018	9.30
Michigan	Consumers Energy Co	CMS	C-U-20134	1/9/2019	10.00
West Virginia	Appalachian Power Co	AEP	C-18-0646-E-42T	2/27/2019	9.75
New Jersey	Atlantic City Electric Co	EXC	D-ER18080925	3/13/2019	9.60
New York	Orange & Rockland Utills Inc	ED	C-18-E-0067	3/14/2019	9.00
Oklahoma	Public Service Co of OK	AEP	Ca-PUD201800097	3/14/2019	9.40
Maryland	Potomac Edison Co	FE	C-9490	3/22/2019	9.65
Kentucky	Kentucky Utilities Co	PPL	C-2018-00294	4/30/2019	9.73
Kentucky	Louisville Gas & Electric Co	PPL	C-2018-00295 (elec )	4/30/2019	9.73
South Carolina	Duke Energy Carolinas LLC	DUK	D-2018-319-E	5/1/2019	9.50
Michigan	DTE Electric Co	DTE	C-U-20162	5/2/2019	10.00
South Carolina	Duke Energy Progress LLC	DUK	D-2018-318-E	5/6/2019	9.50
South Dakota	Otter Tail Power Co	OTTR	D-EL18-021	5/14/2019	8.75
Hawaii	Maui Electric Company Ltd	HE	D-2017-0150	5/16/2019	9.50
Michigan	Upper Peninsula Power Co	UP	C-U-20276	5/23/2019	9.90
				Average	9.68
				Median	9.65
				Minimum	8.75
				Maximum	11.95





	LNT	AEE	BKH	ED	DTE	DUK	ES	EXC	FTS	IDA	NEE	NWE	OGE	OTTR	PNW	POR	PEG	WEC	XEL	
8/30/2157	2157	\$1,485.86	\$2,034.71	\$2,031.11	\$2,433.48	\$3,890.28	\$3,779.44	\$2,144.01	\$1,598.46	\$1,821.09	\$2,253.49	\$6,231.95	\$1,953.78	\$1,502.77	\$1,484.93	\$2,886.17	\$1,423.37	\$1,920.05	\$2,461.29	\$1,823.03
8/30/2158	2158	\$1,582.28	\$2,139.36	\$2,135.57	\$2,558.81	\$4,080.34	\$3,973.81	\$2,254.27	\$1,880.87	\$1,914.75	\$2,369.38	\$6,552.15	\$2,054.26	\$1,580.06	\$1,540.27	\$3,036.71	\$1,496.58	\$2,018.78	\$2,587.87	\$1,706.51
8/30/2159	2159	\$1,842.82	\$2,248.38	\$2,245.40	\$2,690.20	\$4,300.70	\$4,178.18	\$2,370.21	\$1,787.11	\$2,013.23	\$2,481.25	\$6,898.13	\$2,158.91	\$1,681.32	\$1,619.48	\$3,192.89	\$1,673.55	\$2,122.82	\$2,720.98	\$1,794.27
8/30/2160	2160	\$1,727.10	\$2,365.07	\$2,360.88	\$2,828.56	\$4,521.89	\$4,393.07	\$2,482.11	\$1,867.99	\$2,116.77	\$2,619.38	\$7,243.44	\$2,271.00	\$1,748.78	\$1,702.78	\$3,357.09	\$1,854.47	\$2,231.78	\$2,860.80	\$1,886.55
8/30/2161	2161	\$1,816.83	\$2,488.71	\$2,482.30	\$3,074.03	\$4,764.45	\$4,619.01	\$2,620.28	\$1,963.65	\$2,226.83	\$2,764.08	\$7,616.97	\$2,387.80	\$1,838.80	\$1,780.35	\$3,528.75	\$1,739.58	\$2,348.67	\$3,008.04	\$1,963.68
8/30/2162	2162	\$1,908.32	\$2,614.80	\$2,608.97	\$3,126.99	\$4,988.97	\$4,858.56	\$2,755.04	\$2,054.02	\$2,340.10	\$2,885.73	\$8,007.65	\$2,510.80	\$1,931.05	\$1,882.43	\$3,711.29	\$1,828.03	\$2,487.25	\$3,182.74	\$2,085.59
8/30/2163	2163	\$2,007.52	\$2,748.07	\$2,744.20	\$3,287.81	\$5,258.07	\$5,108.34	\$2,898.74	\$2,159.66	\$2,460.45	\$3,044.66	\$8,418.49	\$2,639.72	\$2,030.37	\$1,978.24	\$3,902.18	\$1,823.10	\$2,584.14	\$3,325.40	\$2,182.86
8/30/2164	2164	\$2,110.77	\$2,900.45	\$2,895.33	\$3,456.80	\$5,526.39	\$5,368.96	\$3,045.71	\$2,270.73	\$2,598.99	\$3,201.25	\$8,852.51	\$2,775.48	\$2,134.79	\$2,081.04	\$4,102.85	\$2,022.00	\$2,727.56	\$3,496.43	\$2,305.83
8/30/2165	2165	\$2,218.32	\$3,038.11	\$3,033.73	\$3,634.86	\$5,810.61	\$5,645.08	\$3,202.36	\$2,387.51	\$2,720.04	\$3,365.88	\$9,307.78	\$2,918.23	\$2,244.58	\$2,188.06	\$4,313.86	\$2,125.89	\$2,867.84	\$3,676.25	\$2,424.21
8/30/2166	2166	\$2,333.48	\$3,185.41	\$3,180.75	\$3,821.82	\$6,108.45	\$5,935.41	\$3,367.05	\$2,510.30	\$2,858.93	\$3,539.00	\$9,788.48	\$3,068.31	\$2,380.02	\$2,300.60	\$4,535.72	\$2,235.33	\$3,015.33	\$3,885.32	\$2,548.99
8/30/2167	2167	\$2,453.47	\$3,369.75	\$3,363.80	\$4,019.17	\$6,423.86	\$6,240.67	\$3,540.22	\$2,639.41	\$3,007.02	\$3,721.01	\$10,289.81	\$3,228.11	\$2,481.40	\$2,418.92	\$4,768.99	\$2,360.30	\$3,170.41	\$4,064.11	\$2,679.08
8/30/2168	2168	\$2,578.88	\$3,532.54	\$3,526.29	\$4,224.83	\$6,754.03	\$6,561.83	\$3,722.30	\$2,775.15	\$3,161.67	\$3,812.38	\$10,819.02	\$3,382.03	\$2,608.02	\$2,543.32	\$5,014.28	\$2,471.17	\$3,333.47	\$4,273.13	\$2,817.81
8/30/2169	2169	\$2,712.33	\$3,714.22	\$3,707.84	\$4,442.11	\$7,101.39	\$6,889.10	\$3,913.73	\$2,817.88	\$3,324.28	\$4,113.60	\$11,375.45	\$3,568.49	\$2,743.20	\$2,674.13	\$5,272.15	\$2,588.27	\$3,504.81	\$4,482.80	\$2,982.73

Retention Ratio Regression Analysis

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.452730482
R Square	0.204964889
Adjusted R Square	0.202223389
Standard Error	0.279859793
Observations	292

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	5.855610484	5.855610484	74.76376458	3.67241E-16
Residual	290	22.71323615	0.078321504		
Total	291	28.56884663			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	0.168	0.018	9.523	0.000	0.133593901	0.20319881
Retention Ratio	-0.237	0.027	-8.647	0.000	-0.290825295	-0.182976465

Date	Ticker	Payout Ratio	Retention Ratio	5-year Fwd EPS	
				Growth	
2004	ALE	22.22%	77.78%	13.03%	
2005	ALE	50.40%	49.60%	-0.53%	
2006	ALE	52.35%	47.65%	1.33%	
2007	ALE	53.25%	46.75%	-1.44%	
2008	ALE	60.99%	39.01%	0.64%	
2009	ALE	93.12%	6.88%	9.29%	
2010	ALE	80.37%	19.63%	9.42%	
2011	ALE	67.17%	32.83%	3.80%	
2012	ALE	71.32%	28.68%	4.27%	
2013	ALE	72.24%	27.76%	5.48%	
1996	LNT	86.78%	13.22%	6.92%	
1997	LNT	105.26%	-5.26%	-0.07%	
1998	LNT	158.73%	-58.73%	13.28%	
1999	LNT	91.32%	8.68%	2.08%	
2000	LNT	80.97%	19.03%	3.42%	
2001	LNT	82.64%	17.36%	2.46%	
2002	LNT	169.49%	-69.49%	18.83%	
2003	LNT	63.69%	36.31%	11.10%	
2004	LNT	55.14%	44.86%	2.50%	
2005	LNT	47.51%	52.49%	7.55%	
2006	LNT	55.83%	44.17%	8.91%	
2007	LNT	47.21%	52.79%	4.97%	
2008	LNT	55.12%	44.88%	7.73%	
2009	LNT	78.95%	21.05%	13.86%	
2010	LNT	57.45%	42.55%	4.34%	
2011	LNT	61.82%	38.18%	3.86%	
2012	LNT	59.02%	40.98%	5.80%	
2013	LNT	56.97%	43.03%	6.17%	
1996	AEE	87.76%	12.24%	4.29%	
1997	AEE	104.10%	-4.10%	2.83%	
1998	AEE	90.07%	9.93%	3.32%	
1999	AEE	90.39%	9.61%	1.35%	
2000	AEE	76.28%	23.72%	-0.15%	
2001	AEE	74.49%	25.51%	-3.63%	
2002	AEE	95.49%	4.51%	3.17%	
2003	AEE	80.89%	19.11%	-1.11%	
2004	AEE	90.07%	9.93%	0.24%	

Date	Ticker	Payout Ratio	Retention Ratio	5-year Fwd EPS
				Growth
2005	AEE	81.15%	18.85%	-2.03%
2006	AEE	95.49%	4.51%	-1.20%
2007	AEE	85.23%	14.77%	-4.09%
2008	AEE	88.19%	11.81%	-5.99%
2009	AEE	55.40%	44.60%	-2.44%
2010	AEE	55.60%	44.40%	-2.53%
2011	AEE	63.16%	36.84%	2.15%
2012	AEE	66.39%	33.61%	3.31%
2013	AEE	76.19%	23.81%	9.85%
1996	BKH	65.71%	34.29%	20.76%
1997	BKH	63.76%	36.24%	13.10%
1998	BKH	62.50%	37.50%	7.41%
1999	BKH	61.18%	38.82%	5.08%
2000	BKH	45.57%	54.43%	1.45%
2001	BKH	32.75%	67.25%	-6.47%
2002	BKH	49.79%	50.21%	4.16%
2003	BKH	65.22%	34.78%	-10.29%
2004	BKH	71.26%	28.74%	228.58%
2005	BKH	60.66%	39.34%	218.63%
2006	BKH	59.73%	40.27%	209.85%
2007	BKH	51.12%	48.88%	224.61%
2008	BKH	777.78%	-677.78%	249.76%
2009	BKH	61.21%	38.79%	14.13%
2010	BKH	86.75%	13.25%	19.41%
2011	BKH	144.55%	-44.55%	25.82%
2012	BKH	75.13%	24.87%	12.52%
2013	BKH	58.24%	41.76%	6.55%
1996	CMS	41.63%	58.37%	-8.29%
2007	CMS	31.25%	68.75%	25.07%
2008	CMS	29.27%	70.73%	8.33%
2009	CMS	53.76%	46.24%	14.17%
2010	CMS	49.62%	50.38%	7.30%
2011	CMS	57.93%	42.07%	6.44%
2012	CMS	62.75%	37.25%	7.26%
2013	CMS	61.45%	38.55%	6.94%
1996	ED	70.99%	29.01%	2.28%
1997	ED	71.19%	28.81%	1.64%
1998	ED	69.74%	30.26%	-0.88%
1999	ED	68.37%	31.63%	-5.08%
2000	ED	79.56%	20.44%	3.19%
2001	ED	68.54%	31.46%	-0.51%
2002	ED	70.93%	29.07%	3.58%
2003	ED	79.15%	20.85%	4.81%
2004	ED	97.41%	2.59%	7.10%
2005	ED	76.25%	23.75%	3.43%
2006	ED	77.97%	22.03%	4.27%
2007	ED	66.67%	33.33%	2.30%
2008	ED	69.64%	30.36%	3.36%
2009	ED	75.16%	24.84%	3.09%
2010	ED	68.59%	31.41%	3.36%
2011	ED	67.23%	32.77%	2.24%
2012	ED	62.69%	37.31%	1.43%
2013	ED	62.60%	37.40%	3.26%
1996	DTE	73.57%	26.43%	-3.62%
1997	DTE	71.53%	28.47%	11.43%
1998	DTE	67.54%	32.46%	5.14%
1999	DTE	61.86%	38.14%	1.19%
2000	DTE	63.00%	37.00%	7.20%
2001	DTE	95.81%	4.19%	9.04%
2002	DTE	53.79%	46.21%	-4.88%
2003	DTE	72.28%	27.72%	0.77%

Date	Ticker	Payout Ratio	Retention Ratio	5-year Fwd EPS
				Growth
2004	DTE	80.78%	19.22%	6.61%
2005	DTE	63.00%	37.00%	4.05%
2006	DTE	84.90%	15.10%	8.69%
2007	DTE	79.70%	20.30%	8.12%
2008	DTE	77.66%	22.34%	6.97%
2009	DTE	65.43%	34.57%	10.37%
2010	DTE	58.29%	41.71%	4.69%
2011	DTE	63.22%	36.78%	6.82%
2012	DTE	62.37%	37.63%	9.40%
2013	DTE	68.88%	31.12%	11.56%
2007	DUK	71.67%	28.33%	1.45%
2008	DUK	89.11%	10.89%	6.07%
2009	DUK	83.19%	16.81%	4.45%
2010	DUK	72.39%	27.61%	0.58%
2011	DUK	71.74%	28.26%	-1.92%
2012	DUK	81.67%	18.33%	2.91%
2013	DUK	77.64%	22.36%	1.03%
2011	EE	26.61%	73.39%	-0.24%
2012	EE	42.92%	57.08%	1.79%
2013	EE	47.73%	52.27%	-0.57%
2001	ES	32.85%	67.15%	-7.65%
2002	ES	53.00%	47.00%	16.53%
2003	ES	46.77%	53.23%	15.13%
2004	ES	69.23%	30.77%	20.99%
2005	ES	69.39%	30.61%	21.44%
2006	ES	89.02%	10.98%	25.85%
2007	ES	49.06%	50.94%	4.09%
2008	ES	44.62%	55.38%	7.05%
2009	ES	49.74%	50.26%	7.23%
2010	ES	49.05%	50.95%	6.64%
2011	ES	49.55%	50.45%	6.94%
2012	ES	69.84%	30.16%	10.93%
2013	ES	59.04%	40.96%	5.48%
1996	HE	93.08%	6.92%	4.99%
1997	HE	88.41%	11.59%	4.01%
1998	HE	83.78%	16.22%	2.06%
1999	HE	85.52%	14.48%	-0.31%
2000	HE	97.64%	2.36%	3.64%
2001	HE	77.50%	22.50%	-3.34%
2002	HE	76.54%	23.46%	-6.90%
2003	HE	78.48%	21.52%	-7.12%
2004	HE	91.18%	8.82%	-7.33%
2005	HE	84.93%	15.07%	-2.21%
2006	HE	93.23%	6.77%	3.38%
2007	HE	111.71%	-11.71%	9.88%
2008	HE	115.89%	-15.89%	10.00%
2009	HE	136.26%	-36.26%	13.24%
2010	HE	102.48%	-2.48%	4.94%
2011	HE	86.11%	13.89%	11.67%
2012	HE	74.25%	25.75%	2.80%
2013	HE	76.54%	23.46%	5.96%
2005	NWE	58.48%	41.52%	5.90%
2006	NWE	94.66%	5.34%	14.23%
2007	NWE	88.89%	11.11%	10.11%
2008	NWE	74.58%	25.42%	7.29%
2009	NWE	66.34%	33.66%	8.78%
2010	NWE	63.55%	36.45%	6.99%
2011	NWE	56.92%	43.08%	6.72%
2012	NWE	65.49%	34.51%	8.56%
2013	NWE	61.79%	38.21%	7.15%
1996	OGE	82.72%	17.28%	-2.52%

Date	Ticker	Payout Ratio	Retention Ratio	5-year Fwd EPS	
				Growth	
1997	OGE	82.72%	17.28%		-0.37%
1998	OGE	65.69%	34.31%		-1.39%
1999	OGE	69.07%	30.93%		0.05%
2000	OGE	70.53%	29.47%		1.14%
2001	OGE	103.08%	-3.08%		14.19%
2002	OGE	93.06%	6.94%		13.50%
2003	OGE	77.01%	22.99%		8.28%
2004	OGE	75.28%	24.72%		9.10%
2005	OGE	72.83%	27.17%		10.98%
2006	OGE	54.47%	45.53%		7.31%
2007	OGE	51.52%	48.48%		6.54%
2008	OGE	56.00%	44.00%		9.27%
2009	OGE	53.38%	46.62%		8.41%
2010	OGE	48.67%	51.33%		2.92%
2011	OGE	43.93%	56.07%		-0.15%
2012	OGE	44.69%	55.31%		1.88%
2013	OGE	43.81%	56.19%		2.29%
1996	OTTR	72.58%	27.42%		6.36%
1997	OTTR	72.09%	27.91%		6.86%
1998	OTTR	74.42%	25.58%		3.73%
1999	OTTR	68.28%	31.72%		1.12%
2000	OTTR	63.75%	36.25%		2.78%
2001	OTTR	61.90%	38.10%		0.77%
2002	OTTR	59.22%	40.78%		0.53%
2003	OTTR	71.52%	28.48%		-4.10%
2004	OTTR	73.33%	26.67%		-10.94%
2005	OTTR	62.92%	37.08%		-23.97%
2006	OTTR	68.05%	31.95%		-19.27%
2007	OTTR	65.73%	34.27%		6.33%
2008	OTTR	109.17%	-9.17%		20.18%
2009	OTTR	167.61%	-67.61%		29.78%
2010	OTTR	313.16%	-213.16%		39.20%
2011	OTTR	264.44%	-164.44%		36.03%
2012	OTTR	113.33%	-13.33%		12.61%
2013	OTTR	86.86%	13.14%		8.67%
1996	PNW	41.70%	58.30%		8.36%
1997	PNW	40.94%	59.06%		-0.24%
1998	PNW	43.16%	56.84%		-0.97%
1999	PNW	41.82%	58.18%		-2.81%
2000	PNW	42.69%	57.31%		-6.52%
2001	PNW	41.58%	58.42%		-0.18%
2002	PNW	64.43%	35.57%		4.74%
2003	PNW	68.65%	31.35%		-0.86%
2004	PNW	70.93%	29.07%		-0.01%
2005	PNW	86.16%	13.84%		9.88%
2006	PNW	64.04%	35.96%		0.99%
2007	PNW	70.95%	29.05%		5.73%
2008	PNW	99.06%	0.94%		12.32%
2009	PNW	92.92%	7.08%		10.56%
2010	PNW	68.18%	31.82%		5.20%
2011	PNW	70.23%	29.77%		5.94%
2012	PNW	76.29%	23.71%		4.96%
2013	PNW	60.93%	39.07%		4.54%
1996	PNM	20.87%	79.13%		20.65%
1997	PNM	33.60%	66.40%		7.11%
1998	PNM	34.00%	66.00%		4.60%
1999	PNM	41.09%	58.91%		12.27%
2000	PNM	34.19%	65.81%		10.06%
2001	PNM	20.31%	79.69%		-1.57%
2002	PNM	53.27%	46.73%		-0.93%
2003	PNM	53.04%	46.96%		-19.53%



Date	Ticker	5-year Fwd EPS		
		Payout Ratio	Retention Ratio	Growth
2004	PNM	44.06%	55.94%	61.06%
2005	PNM	50.64%	49.36%	69.24%
2006	PNM	50.00%	50.00%	72.01%
2007	PNM	119.74%	-19.74%	87.44%
2008	PNM	554.55%	-454.55%	106.07%
2009	PNM	86.21%	13.79%	21.18%
2010	PNM	57.47%	42.53%	11.59%
2011	PNM	46.30%	53.70%	6.50%
2012	PNM	44.27%	55.73%	8.54%
2013	PNM	48.23%	51.77%	4.30%
2006	POR	59.65%	40.35%	20.49%
2007	POR	39.91%	60.09%	-1.20%
2008	POR	69.78%	30.22%	5.80%
2009	POR	77.10%	22.90%	11.58%
2010	POR	62.65%	37.35%	4.95%
2011	POR	54.36%	45.64%	2.63%
2012	POR	57.75%	42.25%	4.66%
2013	POR	62.15%	37.85%	6.43%
1996	SO	75.00%	25.00%	-0.15%
1997	SO	82.28%	17.72%	4.02%
1998	SO	77.46%	22.54%	3.42%
1999	SO	73.22%	26.78%	3.18%
2000	SO	66.67%	33.33%	1.89%
2001	SO	83.23%	16.77%	5.59%
2002	SO	73.51%	26.49%	4.32%
2003	SO	70.56%	29.44%	2.76%
2004	SO	68.93%	31.07%	2.47%
2005	SO	69.48%	30.52%	2.14%
2006	SO	73.33%	26.67%	4.03%
2007	SO	70.18%	29.82%	3.26%
2008	SO	73.78%	26.22%	3.74%
2009	SO	74.57%	25.43%	3.64%
2010	SO	76.27%	23.73%	3.80%
2011	SO	73.33%	26.67%	2.12%
2012	SO	72.66%	27.34%	3.86%
2013	SO	74.44%	25.56%	2.33%
1996	WEC	76.65%	23.35%	34.94%
1997	WEC	285.19%	-185.19%	54.68%
1998	WEC	94.55%	5.45%	13.05%
1999	WEC	82.98%	17.02%	6.72%
2000	WEC	126.85%	-26.85%	22.76%
2001	WEC	43.48%	56.52%	9.31%
2002	WEC	34.48%	65.52%	5.61%
2003	WEC	35.40%	64.60%	7.54%
2004	WEC	45.16%	54.84%	12.13%
2005	WEC	34.38%	65.63%	8.60%
2006	WEC	34.85%	65.15%	10.68%
2007	WEC	35.21%	64.79%	10.73%
2008	WEC	35.53%	64.47%	10.68%
2009	WEC	42.50%	57.50%	10.27%
2010	WEC	41.67%	58.33%	4.34%
2011	WEC	47.71%	52.29%	6.93%
2012	WEC	51.06%	48.94%	6.58%
2013	WEC	57.77%	42.23%	6.50%
1996	XEL	71.73%	28.27%	6.01%
1997	XEL	86.96%	13.04%	-7.15%
1998	XEL	77.72%	22.28%	28.57%
1999	XEL	101.40%	-1.40%	33.67%
2000	XEL	92.50%	7.50%	30.19%
2001	XEL	66.08%	33.92%	24.32%
2002	XEL	269.05%	-169.05%	40.62%

Date	Ticker	Payout Ratio	Retention Ratio	5-year Fwd EPS
				Growth
2003	XEL	60.98%	39.02%	3.68%
2004	XEL	63.78%	36.22%	3.44%
2005	XEL	70.83%	29.17%	5.48%
2006	XEL	65.19%	34.81%	5.03%
2007	XEL	67.41%	32.59%	6.54%
2008	XEL	64.38%	35.62%	5.56%
2009	XEL	65.10%	34.90%	6.41%
2010	XEL	64.10%	35.90%	6.16%
2011	XEL	59.88%	40.12%	5.15%
2012	XEL	57.84%	42.16%	4.46%
2013	XEL	58.12%	41.88%	5.29%

Retention Ratio Regression Analysis

Company	Ticker	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Alum Energy Corporation	EPS	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.35	2.48	7.77	3.08	1.82	1.83	2.10	7.58	7.83	7.80	7.38	7.80	7.38	7.14	7.13	7.38
	Dividends Per Share	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Retention Ratio	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Annual Earnings Growth	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27.27%	50.00%	53.33%	60.89%	40.89%	60.37%	61.71%	71.37%	71.37%	67.24%	67.59%	66.24%	66.24%	66.24%	66.24%
	Dividends Per Share	0.38	0.50	0.65	0.85	1.10	1.44	1.77	2.10	2.48	2.87	3.30	3.77	4.24	4.71	5.18	5.65	6.12	6.59	7.06	7.53	8.00	8.47	8.94	9.41	9.88
Amgen Corporation	EPS	0.38	0.50	0.65	0.85	1.10	1.44	1.77	2.10	2.48	2.87	3.30	3.77	4.24	4.71	5.18	5.65	6.12	6.59	7.06	7.53	8.00	8.47	8.94	9.41	
	Dividends Per Share	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
	Retention Ratio	0.26	0.20	0.15	0.12	0.09	0.07	0.05	0.04	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
	Annual Earnings Growth	8.37%	8.00%	7.81%	7.63%	7.45%	7.27%	7.09%	6.91%	6.73%	6.55%	6.37%	6.19%	6.01%	5.83%	5.65%	5.47%	5.29%	5.11%	4.93%	4.75%	4.57%	4.39%	4.21%	4.03%	
	Dividends Per Share	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
Averigil, Inc.	EPS	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
	Dividends Per Share	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Retention Ratio	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Annual Earnings Growth	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%		
	Dividends Per Share	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10		

Some values may be negative or zero as the dividend was paid earnings were negative or zero.  
N/A indicates no dividend was paid earnings were negative or zero.  
Average 5-year forward earnings per share growth is only reported when data is available for all 5 years.

Retention Growth Estimate Vs Value Line EPS 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 2020	Projected Dividend per share 2020	Retention Ratio (B)	Projected Book Value per Share 2020	Return on Book Value (B)	B x R	Projected Common Shares Outstanding 2020	Projected Common Shares Outstanding 2022-2024	Common Shares Growth Rate	2019 High Price	2019 Low Price	2019 price midpoint	Projected Book Value per Share 2019	Market/Book Ratio	"S"	"V"	S x V	BR + SV	2019-20 Value Line Projected EPS Growth	Sustainable Growth Mtrns EPS Growth	Projected 2019 EPS
ALLETE, Inc	ALE	3.70	2.46	33.51%	44.35	8.34%	2.80%	51.75	51.75	0.00%	\$ 84.30	\$ 72.50	\$ 78.40	43.05	1.82	0.00%	45.05%	0.00%	2.80%	5.71%	-2.92%	3.50
Alliant Energy Corporation	LNT	2.40	1.50	37.50%	23.06	10.41%	3.90%	242.00	250.00	1.08%	\$ 49.10	\$ 40.80	\$ 44.95	21.80	2.06	2.22%	51.50%	1.15%	5.05%	6.67%	-1.62%	2.25
Ameren Corporation	AME	3.50	2.08	41.14%	35.10	9.97%	4.10%	250.50	258.00	0.59%	\$ 78.10	\$ 83.10	\$ 80.60	32.95	2.11	1.24%	52.68%	0.88%	4.78%	6.06%	-1.30%	3.30
Averigrid, Inc	AGR	2.50	1.82	27.20%	50.06	4.00%	1.35%	309.00	309.00	0.00%	\$ 52.90	\$ 47.40	\$ 60.15	49.35	1.02	0.00%	1.60%	0.00%	1.35%	11.11%	-9.76%	2.25
Black Hills Corporation	BKH	3.60	2.17	38.72%	39.90	9.02%	3.58%	81.00	81.00	0.00%	\$ 74.80	\$ 60.80	\$ 67.80	38.10	1.78	0.00%	43.81%	0.00%	3.58%	4.35%	-0.76%	3.45
CMS Energy Corporation	CMS	2.70	1.64	39.26%	19.35	13.95%	5.48%	288.00	297.00	1.02%	\$ 57.70	\$ 48.00	\$ 52.85	17.90	2.95	3.01%	66.13%	1.99%	7.47%	8.00%	-0.63%	2.50
Consolidated Edison, Inc	ED	4.45	3.06	31.24%	64.80	8.17%	2.55%	338.00	338.00	0.29%	\$ 86.60	\$ 73.30	\$ 79.90	53.00	1.61	0.44%	33.67%	0.16%	2.70%	7.23%	-4.83%	4.15
DTE Energy Company	DTE	6.70	4.07	39.25%	64.40	10.40%	4.08%	196.00	200.00	0.87%	\$ 130.00	\$ 107.30	\$ 118.85	60.50	1.96	1.31%	49.01%	0.84%	4.73%	7.20%	-2.47%	6.25
Duke Energy Corporation	DUK	5.20	3.83	26.35%	63.20	8.23%	2.17%	736.00	784.00	0.64%	\$ 91.70	\$ 82.50	\$ 87.10	61.65	1.41	1.19%	29.22%	0.38%	2.52%	5.05%	-2.53%	4.95
Eversource Energy	EVER	3.20	2.08	35.00%	38.15	9.39%	2.94%	212.00	212.00	0.00%	\$ 89.90	\$ 84.60	\$ 87.25	38.05	1.50	0.00%	33.54%	0.00%	2.94%	14.29%	-11.35%	2.80
Hawaiian Electric Industries, Inc	HE	2.10	1.32	37.14%	21.48	9.78%	3.64%	110.00	113.00	0.89%	\$ 41.70	\$ 35.10	\$ 38.40	20.68	1.87	1.67%	46.48%	0.77%	4.41%	5.00%	-0.59%	2.00
NorthWestern Corporation	NWE	3.60	2.40	33.33%	40.80	8.82%	2.94%	60.65	51.10	0.29%	\$ 71.80	\$ 57.30	\$ 64.55	39.70	1.63	0.48%	38.50%	0.18%	3.12%	2.86%	0.27%	3.50
OGE Energy Corp	OGE	2.25	1.65	26.67%	21.15	10.64%	2.84%	200.00	200.00	0.00%	\$ 43.80	\$ 38.00	\$ 40.90	20.55	1.99	0.00%	49.76%	0.00%	2.84%	4.65%	-1.81%	2.15
Otter Tail Corporation	OTTR	2.25	1.46	36.11%	20.20	11.14%	3.91%	40.25	41.76	1.21%	\$ 63.20	\$ 45.90	\$ 49.55	19.10	2.89	3.15%	61.48%	1.94%	6.86%	4.68%	1.20%	2.15
Pinnacle West Capital Corporation	PW	5.10	3.22	36.89%	50.00	10.20%	3.76%	113.00	114.50	0.44%	\$ 97.30	\$ 81.60	\$ 89.45	48.30	1.85	0.91%	46.00%	0.37%	4.13%	5.10%	-1.02%	4.85
PNM Resources, Inc	PNM	2.25	1.24	44.89%	23.30	9.65%	4.33%	81.00	84.00	1.21%	\$ 47.90	\$ 39.70	\$ 43.80	22.05	1.89	2.40%	49.65%	1.19%	5.53%	4.65%	0.97%	2.15
Portland General Electric Company	POR	2.55	1.62	36.47%	29.80	8.53%	3.11%	89.66	90.00	0.17%	\$ 62.60	\$ 44.00	\$ 48.30	28.00	1.67	0.28%	39.96%	0.11%	3.22%	4.08%	-0.86%	2.45
Southern Company	SO	3.20	2.54	20.63%	26.90	11.90%	2.45%	1055.00	1085.00	0.83%	\$ 53.40	\$ 43.30	\$ 48.35	26.00	1.86	1.73%	48.23%	0.80%	3.25%	4.92%	-1.67%	3.52
WEC Energy Group, Inc	WEC	3.70	2.50	32.43%	33.10	11.18%	3.63%	318.50	315.50	0.00%	\$ 83.00	\$ 67.20	\$ 75.10	32.05	2.34	0.00%	57.32%	0.00%	3.63%	5.11%	-1.49%	3.52
Xcel Energy Inc	XEL	2.75	1.72	37.45%	25.95	10.60%	3.97%	617.00	521.50	0.29%	\$ 87.50	\$ 47.70	\$ 52.60	24.85	2.12	0.61%	52.76%	0.32%	4.28%	5.77%	-1.48%	2.60
				Average	34.73%												Mean	3.88%	6.11%	-2.12%		
																	Median	3.63%	5.15%	-1.48%		

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]

Number of underestimates 17  
Number of overestimates 3

Retention Growth Estimate Vs. Value Line EPS Growth Estimate

Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	2022-24 Value Line Projected Annual EPS Growth	Average 2022- 2024 Sustainable Growth Minus EPS Growth
		Projected Earnings per share 2022-2024	Projected Dividend per share 2022- 2024	Retention Rate (B)	Projected Book Value per Share 2022-2024	Return on Book Value (C)	B x R	Projected Common Shares Outstanding 2020	Projected Common Shares Outstanding 2022-2024	Common Shares Growth Rate	2019 High Price	2019 Low Price	2019 price midpoint	Projected Book Value per Share 2019	Market/ Book Ratio	"S"	"V"	S x V	2022 BR + SV	2020 BR + SV	Average 2022/2022 BR + SV		
ALLETE, Inc	ALE	4.25	2.85	32.94%	48.50	8.76%	2.89%	51.75	51.75	0.00%	\$ 84.30	\$ 72.50	\$ 78.40	43.05	1.82	0.00%	45.09%	0.00%	2.89%	2.80%	2.84%	4.73%	-1.89%
Alliant Energy Corporation	LNT	2.80	1.74	37.86%	27.55	10.16%	3.86%	242.00	250.00	1.08%	\$ 49.10	\$ 40.80	\$ 44.95	21.80	2.06	2.22%	51.50%	1.15%	4.99%	5.05%	5.02%	5.27%	-0.25%
Ameren Corporation	AEE	4.25	2.55	40.00%	40.75	10.43%	4.17%	280.50	255.00	0.59%	\$ 76.10	\$ 63.10	\$ 69.80	32.95	2.11	1.24%	52.65%	0.66%	4.83%	4.76%	4.79%	4.79%	-1.89%
Avergrid, Inc	AGR	3.25	2.10	38.38%	63.00	6.13%	2.17%	309.00	309.00	0.00%	\$ 62.80	\$ 47.40	\$ 60.15	49.35	1.02	0.00%	1.00%	0.00%	2.17%	1.98%	1.98%	9.14%	-7.38%
Black Hills Corporation	BKH	4.90	2.60	42.22%	48.00	10.00%	4.22%	61.00	61.00	0.00%	\$ 74.80	\$ 60.80	\$ 67.80	38.10	1.78	0.00%	43.81%	0.00%	4.22%	3.99%	3.90%	7.72%	-3.82%
CMS Energy Corporation	CMS	3.25	2.00	38.46%	24.50	13.27%	5.10%	288.00	297.00	1.02%	\$ 57.70	\$ 48.00	\$ 52.85	17.90	2.95	3.01%	66.13%	1.99%	7.09%	7.47%	7.28%	6.38%	0.91%
Consolidated Edison, Inc	ED	5.00	3.40	32.00%	59.75	8.37%	2.88%	335.00	338.00	0.29%	\$ 86.50	\$ 73.30	\$ 79.90	53.00	1.51	0.44%	33.67%	0.10%	2.83%	2.70%	2.76%	3.96%	-1.20%
DTE Energy Company	DTE	7.75	4.80	38.08%	74.00	10.47%	3.99%	198.00	200.00	0.67%	\$ 130.00	\$ 107.30	\$ 118.65	60.50	1.98	1.31%	49.01%	0.64%	4.63%	4.73%	4.68%	4.97%	-0.29%
Duke Energy Corporation	DUK	6.78	4.16	27.83%	68.80	8.39%	2.34%	736.00	768.00	0.84%	\$ 91.70	\$ 82.50	\$ 87.10	61.66	1.41	1.19%	29.22%	0.38%	2.68%	2.62%	2.60%	3.41%	-0.81%
Envyrg, Inc	EVRG	3.80	2.90	28.87%	41.80	8.43%	2.41%	212.00	212.00	0.00%	\$ 59.90	\$ 54.60	\$ 57.25	38.05	1.50	0.00%	33.54%	0.00%	2.41%	2.94%	2.67%	2.87%	-0.36%
Eversource Energy	ES	4.25	2.85	37.65%	46.75	9.09%	3.42%	323.00	360.00	2.68%	\$ 73.30	\$ 63.10	\$ 68.20	37.70	1.81	4.86%	44.72%	2.17%	5.59%	5.69%	5.64%	5.20%	0.44%
Hawaiian Electric Industries, Inc	HE	2.50	1.50	40.00%	24.50	10.20%	4.09%	110.00	113.00	0.89%	\$ 41.70	\$ 35.10	\$ 38.40	20.55	1.87	1.67%	46.48%	0.77%	4.86%	4.41%	4.63%	5.98%	-1.35%
NorthWestern Corporation	NWE	4.00	2.70	32.50%	44.00	9.09%	2.95%	50.65	51.10	0.29%	\$ 71.80	\$ 57.30	\$ 64.55	39.70	1.63	0.48%	38.50%	0.18%	3.14%	3.12%	3.13%	3.57%	-0.44%
OGE Energy Corp	OGE	2.75	1.95	29.09%	23.28	11.83%	3.44%	200.00	200.00	0.00%	\$ 43.80	\$ 38.00	\$ 40.90	20.66	1.99	0.00%	49.76%	0.00%	3.44%	2.84%	3.14%	6.92%	-7.78%
Otter Tail Corporation	OTTR	2.50	1.85	34.00%	23.25	10.75%	3.88%	40.25	41.75	1.21%	\$ 53.20	\$ 45.90	\$ 49.55	19.10	2.59	3.15%	61.43%	1.84%	5.59%	5.85%	5.72%	3.57%	2.15%
Pinnacle West Capital Corporation	PNW	5.75	3.80	33.91%	66.80	10.36%	3.51%	113.00	114.50	0.44%	\$ 97.30	\$ 81.60	\$ 89.45	48.30	1.86	0.81%	46.00%	0.37%	3.89%	4.13%	4.01%	4.08%	-0.07%
PNM Resources, Inc	PNM	2.75	1.50	45.45%	27.50	10.00%	3.55%	81.00	84.00	0.17%	\$ 47.90	\$ 39.70	\$ 43.80	22.05	1.99	2.40%	49.66%	1.19%	5.74%	5.53%	5.63%	6.52%	-1.29%
Portland General Electric Company	POR	3.00	1.95	35.00%	32.75	9.16%	3.21%	89.55	90.00	0.17%	\$ 52.60	\$ 44.00	\$ 48.30	29.00	1.67	0.28%	39.96%	0.11%	3.32%	3.22%	3.27%	5.57%	-1.30%
Southern Company	SO	3.75	2.78	25.87%	30.00	12.50%	3.23%	1055.00	1085.00	0.93%	\$ 53.40	\$ 43.30	\$ 48.35	26.00	1.86	1.73%	46.23%	0.80%	4.03%	3.25%	3.64%	5.43%	-1.79%
WEC Energy Group Inc	WEC	4.90	3.00	33.33%	36.75	12.24%	4.08%	315.50	315.50	0.00%	\$ 83.00	\$ 87.20	\$ 75.10	32.05	2.34	0.80%	57.32%	0.00%	4.08%	3.63%	3.85%	6.74%	-2.89%
Xcel Energy Inc	XEL	3.25	2.05	38.92%	29.50	11.02%	4.07%	817.00	821.50	0.29%	\$ 67.50	\$ 47.70	\$ 62.60	24.86	2.12	0.61%	52.76%	0.32%	4.20%	4.05%	4.12%	5.51%	-1.38%
				Average	35.21%		10.10%	0.0385									Mean	4.20%	4.05%	4.12%	5.51%	-1.38%	
																	Median	4.15%	3.88%	3.96%	5.50%	-1.24%	

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 - ([15] / [14])
- [17] Equals [15] x [16]
- [18] Equals [6] x [17]
- [19] Source RBH-X SGR for 2018
- [20] Equals Average ([18], [19])

Number of underestimates 17  
Number of overestimates 3

Growth Rate Regression Analysis

Company	Ticker	Median P/E Ratio	Proj. Earnings Growth Rate	Proj. Dividend Growth Rate	Proj. Book Value Growth Rate	Proj. B x R Sustainable Growth Rate
ALLETE, Inc.	ALE	17.00	5.00%	5.00%	3.00%	3.15%
Alliant Energy Corporation	LNT	16.00	6.50%	5.50%	7.50%	3.80%
Ameren Corporation	AEE	16.00	6.50%	6.00%	5.00%	4.31%
American Electric Power Company, Inc.	AEP	15.00	4.00%	6.00%	4.50%	3.15%
Avangrid, Inc.	AGR	NMF	10.00%	3.00%	1.50%	2.10%
Avista Corporation	AVA	17.00	3.50%	4.00%	3.50%	2.48%
Black Hills Corporation	BKH	18.00	6.00%	6.50%	5.50%	4.20%
CenterPoint Energy, Inc.	CNP	17.00	12.50%	2.50%	13.50%	3.90%
CMS Energy Corporation	CMS	17.00	7.00%	7.00%	7.50%	5.74%
Consolidated Edison, Inc.	ED	15.00	3.00%	3.50%	3.00%	2.89%
Dominion Energy Inc.	D	20.00	6.50%	5.00%	7.00%	2.25%
DTE Energy Company	DTE	16.00	5.50%	6.00%	5.50%	3.89%
Duke Energy Corporation	DUK	18.00	6.00%	3.00%	2.50%	2.38%
Edison International	EIX	13.00	NMF	3.50%	3.00%	6.48%
El Paso Electric Company	EE	16.00	4.50%	6.50%	4.00%	2.98%
Entergy Corporation	ETR	12.00	0.50%	2.50%	5.00%	3.50%
Exelon Corporation	EXC	14.00	10.50%	5.50%	5.50%	5.70%
FirstEnergy Corp.	FE	17.00	8.00%	3.50%	9.00%	6.56%
Evergy, Inc.	EVRG	NMF	NMF	NMF	NMF	2.64%
Hawaiian Electric Industries, Inc.	HE	18.00	4.50%	3.00%	4.00%	3.90%
IDACORP, Inc.	IDA	14.00	3.50%	6.00%	4.00%	3.80%
MGE Energy, Inc.	MGEE	18.00	9.00%	4.50%	6.00%	6.44%
NextEra Energy, Inc.	NEE	16.00	10.00%	10.00%	5.50%	5.27%
Eversource Energy	ES	18.00	5.50%	5.50%	5.00%	3.33%
NorthWestern Corporation	NWE	16.00	3.00%	4.50%	3.00%	2.88%
OGE Energy Corp.	OGE	17.00	6.50%	7.50%	3.50%	3.22%
Otter Tail Corporation	OTTR	22.00	5.00%	4.00%	4.50%	3.57%
Pinnacle West Capital Corporation	PNW	15.00	5.00%	6.00%	3.50%	3.68%
PNM Resources, Inc.	PNM	18.00	8.50%	7.00%	4.50%	4.18%
Portland General Electric Company	POR	16.00	4.50%	6.50%	3.00%	3.15%
PPL Corporation	PPL	13.00	1.50%	2.00%	6.00%	4.55%
Public Service Enterprise Group Incorporated	PEG	13.00	6.00%	5.00%	5.00%	4.62%
Sempra Energy	SRE	19.00	11.00%	8.00%	6.50%	5.04%
Southern Company	SO	16.00	3.50%	3.00%	3.50%	3.38%
WEC Energy Group, Inc.	WEC	17.00	6.00%	6.00%	3.50%	3.96%
Xcel Energy Inc	XEL	15.00	5.50%	6.00%	4.50%	4.18%

Notes:

Source: Value Line Reports as of June 28, 2019.

SUMMARY OUTPUT

Regression Statistics						
Multiple R						0.371585799
R Square						0.138076006
Adjusted R Square						0.110272006
Standard Error						1.916197554
Observations						33

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	18.23440106	18.23440106	4.966048309	0.033238208	
Residual	31	113.826205	3.671813065			
Total	32	132.0606061				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	14.75444124	0.820199221	17.9888506	5.84185E-18	13.0816339	16.42724858
Proj.EarningsGrowth Rate	28.40383455	12.74592927	2.228463217	0.033238208	2.40834041	54.39932869

SUMMARY OUTPUT

Regression Statistics						
Multiple R						0.159797482
R Square						0.025535235
Adjusted R Square						-0.004916789
Standard Error						2.089993812
Observations						34

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	3.662804181	3.662804181	0.838539839	0.366664237	
Residual	32	139.7783723	4.368074134			
Total	33	143.4411765				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	15.3541256	1.117659793	13.73774532	5.73584E-15	13.0775271	17.6307241
Proj.Dividend Growth Rate	18.72711912	20.45074449	0.915718209	0.366664237	-22.92968422	60.38392246

SUMMARY OUTPUT

Regression Statistics						
Multiple R						0.145846236
R Square						0.021271124
Adjusted R Square						-0.009314153
Standard Error						2.094561569
Observations						34

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	3.051155116	3.051155116	0.695469398	0.410492483	
Residual	32	140.3900214	4.387188167			
Total	33	143.4411765				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	15.61395845	0.923576412	16.90597361	1.64163E-17	13.73269487	17.49522204
Proj.	14.19141914	17.01714951	0.833948079	0.410492483	-20.4713801	48.85421839

SUMMARY OUTPUT

<i>Regression Statistics</i>						
Multiple R		0.183779152				
R Square		0.033774777				
Adjusted R Square		0.003580239				
Standard Error		2.081139132				
Observations		34				

<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	4.844693713	4.844693713	1.118572389	0.298145086	
Residual	32	138.5964828	4.331140086			
Total	33	143.4411765				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	17.65641348	1.309825572	13.4799731	9.64241E-15	14.98838609	20.32444086
Proj. B x R Sustainable Growth Rate	-33.20490782	31.39570441	-1.057625827	0.298145086	-97.15586497	30.74604933

SUMMARY OUTPUT

<i>Regression Statistics</i>						
Multiple R		0.518210488				
R Square		0.26854211				
Adjusted R Square		0.164048126				
Standard Error		1.857386531				
Observations		33				

<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	4	35.46383379	8.865958447	2.569928898	0.059733795	
Residual	28	96.59677227	3.449884724			
Total	32	132.0606061				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	17.40932085	1.607738293	10.82845444	1.61417E-11	14.11601825	20.70262346
Proj.EarningsGrowth Rate	54.64976206	19.7669836	2.764699115	0.00996563	14.15893169	95.14059242
Proj.Dividend Growth Rate	-12.31838542	23.07477974	-0.533846284	0.597660996	-59.58492903	34.94815819
Proj. Book Value Growth Rate	-15.35666103	22.47537875	-0.683265951	0.500054063	-61.39538737	30.68206531
Proj. B x R Sustainable Growth Rate	-70.48714444	36.92652916	-1.908848355	0.066580182	-146.1277105	5.153421605



Ms Winker's Constant Growth DCF Results

	5 Year Historical Growth in Earnings	5 Year Historical Growth In Dividends	5 Year Historical Growth In Book Value	10 Year Historical Growth In Earnings	10 Year Historical Growth In Dividends	10 Year Historical Growth In Book Value	5 Year Projected Growth In Earnings	5 Year Projected Growth In Dividends	5 Year Projected Growth In Book Value	2020 BxR Growth Rate	5 Year Projected BxR Growth Rate
AW Proxy Group Average	5.42%	5.58%	4.29%	5.00%	6.06%	4.38%	5.65%	5.23%	4.18%	3.38%	3.52%
Dividend Yield 1 [1]	3.51%										
Dividend Yield 2 [2]	3.34%										
ROE 1	8.93%	9.10%	7.80%	8.51%	9.57%	7.89%	9.16%	8.74%	7.69%	6.90%	7.04%
ROE 2	8.76%	8.93%	7.63%	8.34%	9.40%	7.72%	8.99%	8.57%	7.52%	6.73%	6.87%

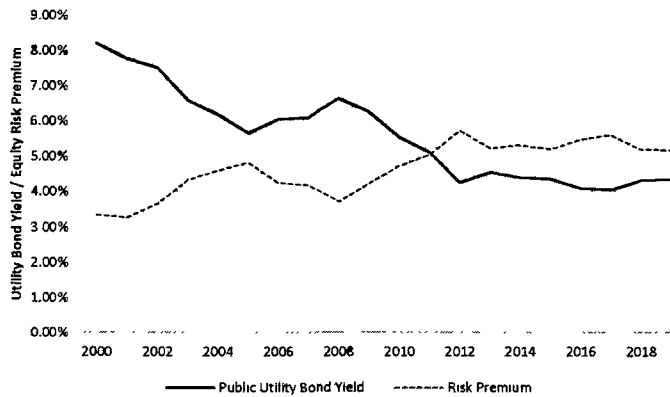
See Schedule AW-1

[1] 2020 Dividend Yield with 2019 High/Low Stock Price

[2] 2020 Dividend Yield with 2019 High/Low & 6/14/19 Yahoo Closing Stock Price

Analysis Using Ms. Winker's Risk Premium Data

Rate Case Year	Average Allowed ROE	Public Utility Bond Yield	Risk Premium	LN (Moody's Public Utility Bond)
2000	11.58%	8.22%	3.36%	-2.50
2001	11.07%	7.79%	3.28%	-2.55
2002	11.21%	7.53%	3.68%	-2.59
2003	10.96%	6.61%	4.35%	-2.72
2004	10.81%	6.20%	4.61%	-2.78
2005	10.51%	5.67%	4.84%	-2.87
2006	10.34%	6.07%	4.27%	-2.80
2007	10.31%	6.12%	4.20%	-2.79
2008	10.37%	6.65%	3.72%	-2.71
2009	10.52%	6.28%	4.24%	-2.77
2010	10.29%	5.55%	4.74%	-2.89
2011	10.19%	5.13%	5.06%	-2.97
2012	10.01%	4.27%	5.74%	-3.15
2013	9.81%	4.57%	5.24%	-3.09
2014	9.75%	4.42%	5.33%	-3.12
2015	9.60%	4.38%	5.22%	-3.13
2016	9.60%	4.11%	5.49%	-3.19
2017	9.68%	4.07%	5.61%	-3.20
2018	9.55%	4.34%	5.21%	-3.14
2019	9.55%	4.37%	5.18%	-3.13
Average:	10.29%	5.62%	4.67%	-2.90



-0.97002856 Correlation

Source: Schedule AW-3

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.96612652
R Square	0.93340044
Adjusted R Square	0.92970047
Standard Error	0.0019923
Observations	20

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.001001329	0.001001329	252.27207	4.93112E-12
Residual	18	7.14464E-05	3.96924E-06		
Total	19	0.001072775			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	-0.0455247	0.005822502	-7.81874798	3.39128E-07	-0.057757298	-0.03329205
LN (Moody's Public Utility Bond)	-0.0317473	0.001998816	-15.883075	4.93112E-12	-0.035946699	-0.02754799

	<u>Yield</u>	<u>RP</u>	<u>ROE</u>
LN Approach	4.37%	5.39%	9.75%
	4.27%	5.46%	9.73%

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.97002856
R Square	0.94095541
Adjusted R Square	0.93767516
Standard Error	0.00187589
Observations	20

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0.001009434	0.001009434	286.8543644	1.66249E-12
Residual	18	6.33416E-05	3.51898E-06		
Total	19	0.001072775			

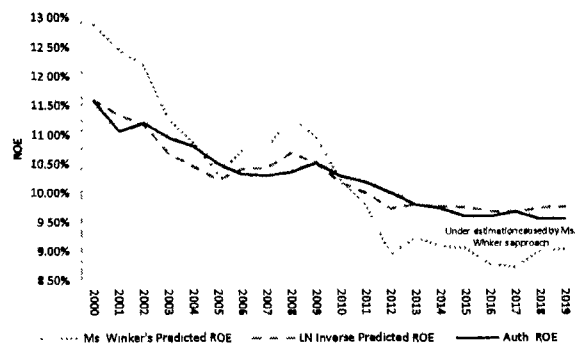
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	0.07801491	0.001896866	41.12832118	2.96404E-19	0.074029745	0.08200008
Public Utility Bond Yield	-0.5577815	0.032933159	-16.9367755	1.66249E-12	-0.626971516	-0.48859152

	<u>Yield</u>	<u>RP</u>	<u>ROE</u>
Linear Approach.	4.37%	5.37%	9.73%
	4.27%	5.42%	9.69%

Relative Accuracy of Risk Premium Methods

Rate Case Year	Auth ROE	Public Utility Bond Yield	Risk Premium	Ms. Winker's Predicted RP	Ms Winker's Predicted ROE	Error	Absolute Error	LN Inverse Predicted RP	LN Inverse Predicted ROE	Error	Absolute Error
2000	11.58%	8.22%	3.36%	4.67%	12.89%	1.31%	1.31%	3.38%	11.60%	0.02%	0.02%
2001	11.07%	7.79%	3.28%	4.67%	12.46%	1.39%	1.39%	3.55%	11.34%	0.27%	0.27%
2002	11.21%	7.53%	3.68%	4.67%	12.20%	0.99%	0.99%	3.66%	11.19%	-0.02%	0.02%
2003	10.96%	6.61%	4.35%	4.67%	11.27%	0.31%	0.31%	4.07%	10.68%	-0.28%	0.28%
2004	10.81%	6.20%	4.61%	4.67%	10.87%	0.06%	0.06%	4.28%	10.47%	-0.34%	0.34%
2005	10.51%	5.67%	4.84%	4.67%	10.34%	-0.17%	0.17%	4.56%	10.23%	-0.28%	0.28%
2006	10.34%	6.07%	4.27%	4.67%	10.74%	0.40%	0.40%	4.34%	10.41%	0.07%	0.07%
2007	10.31%	6.12%	4.20%	4.67%	10.78%	0.47%	0.47%	4.32%	10.43%	0.12%	0.12%
2008	10.37%	6.65%	3.72%	4.67%	11.32%	0.95%	0.95%	4.05%	10.70%	0.33%	0.33%
2009	10.52%	6.28%	4.24%	4.67%	10.95%	0.43%	0.43%	4.23%	10.52%	0.00%	0.00%
2010	10.29%	5.55%	4.74%	4.67%	10.22%	-0.07%	0.07%	4.62%	10.18%	-0.11%	0.11%
2011	10.19%	5.13%	5.06%	4.67%	9.80%	-0.39%	0.39%	4.88%	10.01%	-0.18%	0.18%
2012	10.01%	4.27%	5.74%	4.67%	8.94%	-1.07%	1.07%	5.46%	9.73%	-0.28%	0.28%
2013	9.81%	4.57%	5.24%	4.67%	9.24%	-0.57%	0.57%	5.25%	9.81%	0.00%	0.00%
2014	9.75%	4.42%	5.33%	4.67%	9.09%	-0.66%	0.66%	5.35%	9.77%	0.02%	0.02%
2015	9.60%	4.38%	5.22%	4.67%	9.05%	-0.55%	0.55%	5.38%	9.76%	0.16%	0.16%
2016	9.60%	4.11%	5.49%	4.67%	8.78%	-0.82%	0.82%	5.58%	9.69%	0.09%	0.09%
2017	9.68%	4.07%	5.61%	4.67%	8.73%	-0.95%	0.95%	5.61%	9.68%	0.00%	0.00%
2018	9.55%	4.34%	5.21%	4.67%	9.01%	-0.54%	0.54%	5.41%	9.75%	0.20%	0.20%
2019	9.55%	4.37%	5.18%	4.67%	9.03%	-0.52%	0.52%	5.39%	9.75%	0.20%	0.20%
Average:	10.29%	5.62%	4.67%	4.67%	10.29%	0.00%	0.63%	4.67%	10.29%	0.00%	0.15%



Source: Schedule AW-3

Equity Duration Calculation

Company	Ticker	2020 Projected Dividend	2019 High/Low & 06/14/19 Yahoo Closing Stock Price	Dividend Yield	Expected Dividend Yield	5-year Projected EPS growth	Mean ROE	Equity Duration
1 ALLETE, Inc	ALE	\$2.46	\$81.67	3.01%	3.16%	5.00%	8.16%	33.67
2 Alliant Energy Corporation	LNT	\$1.50	\$47.48	3.16%	3.36%	6.50%	9.86%	32.25
3 Ameren Corporation	AEE	\$2.06	\$73.16	2.82%	3.00%	6.50%	9.50%	35.73
4 Avangrid, Inc	AGR	\$1.82	\$50.80	3.58%	3.94%	10.00%	13.94%	28.74
5 Black Hills Corporation	BKH	\$2.17	\$72.96	2.97%	3.15%	6.00%	9.15%	34.05
6 CMS Energy Corporation	CMS	\$1.64	\$55.80	2.94%	3.14%	7.00%	10.14%	34.41
7 Consolidated Edison, Inc	ED	\$3.06	\$84.22	3.63%	3.74%	3.00%	6.74%	28.36
8 DTE Energy Company	DTE	\$4.07	\$124.10	3.28%	3.46%	5.50%	8.96%	31.17
9 Duke Energy Corporation	DUK	\$3.83	\$87.49	4.38%	4.64%	6.00%	10.64%	23.80
10 Evergy, Inc	EVRG	\$2.08	\$58.96	3.53%	N/A	N/A	N/A	N/A
11 Eversource Energy	ES	\$2.26	\$72.81	3.10%	3.27%	5.50%	8.77%	32.77
12 Hawaiian Electric Industries, Inc	HE	\$1.32	\$40.93	3.23%	3.37%	4.50%	7.87%	31.65
13 NorthWestern Corporation	NWE	\$2.40	\$68.75	3.49%	3.60%	3.00%	6.60%	29.43
14 OGE Energy Corp	OGE	\$1.65	\$42.15	3.91%	4.17%	6.50%	10.67%	26.45
15 Otter Tail Corporation	OTTR	\$1.46	\$50.64	2.88%	3.03%	5.00%	8.03%	35.00
16 Pinnacle West Capital Corporation	PNW	\$3.22	\$93.47	3.45%	3.62%	5.00%	8.62%	29.80
17 PNM Resources, Inc	PNM	\$1.24	\$47.26	2.62%	2.85%	8.50%	11.35%	37.98
18 Portland General Electric Company	POR	\$1.62	\$51.92	3.12%	3.26%	4.50%	7.76%	32.62
19 Southern Company	SO	\$2.54	\$52.00	4.88%	5.06%	3.50%	8.56%	21.46
20 WEC Energy Group, Inc	WEC	\$2.50	\$79.71	3.14%	3.32%	6.00%	9.32%	32.47
21 Xcel Energy Inc	XEL	\$1.72	\$56.32	3.05%	3.22%	5.50%	8.72%	33.25

Source: Schedule AW-1

Average Equity Duration 31.25

Equity Duration Calculation	Price	D(0)	Growth Rate	Period	1	2	3	4	200
1 ALLETE, Inc Stated Price	\$ 81 67	2.46	5 00%	Dividend	\$ 2.52	\$ 2.65	\$ 2.78	\$ 2.92	\$ 41,526.90
1 ALLETE, Inc Implied Price	\$ 79 51			PV Factor	0.9245312	0.8547580	0.7902505	0.7306113	0.0000002
1 ALLETE, Inc. Equity Duration	33 67			PV Wtgd Cash Flow	0.0293197	0.0284623	0.0276300	0.0268221	0.0000798
2 Alliant Energy Corporation Stated Price	\$ 47 48	1.50	6 50%	Dividend	\$ 1.55	\$ 1.65	\$ 1.76	\$ 1.87	\$ 429,094.81
2 Alliant Energy Corporation Implied Price	\$ 45 93			PV Factor	0.9102086	0.8284796	0.7540893	0.6863785	0.0000000
2 Alliant Energy Corporation Equity Duration	32 25			PV Wtgd Cash Flow	0.0306888	0.0297489	0.0288378	0.0279545	0.0000629
3 Ameren Corporation Stated Price	\$ 73 16	2.06	6 50%	Dividend	\$ 2.13	\$ 2.27	\$ 2.41	\$ 2.57	\$ 589,290.21
3 Ameren Corporation Implied Price	\$ 70 65			PV Factor	0.9132506	0.8340266	0.7616752	0.6956003	0.0000000
3 Ameren Corporation Equity Duration	35 73			PV Wtgd Cash Flow	0.0274946	0.0267416	0.0260092	0.0252968	0.0001095
4 Avangrid, Inc Stated Price	\$ 50 80	1.82	10 00%	Dividend	\$ 1.91	\$ 2.10	\$ 2.31	\$ 2.54	\$ 329,917,257.56
4 Avangrid, Inc Implied Price	\$ 48 45			PV Factor	0.8776476	0.7702654	0.6760216	0.5933087	0.0000000
4 Avangrid, Inc Equity Duration	28 74			PV Wtgd Cash Flow	0.0346179	0.0334206	0.0322646	0.0311487	0.0000314
5 Black Hills Corporation Stated Price	\$ 72 96	2.17	6 00%	Dividend	\$ 2.24	\$ 2.37	\$ 2.51	\$ 2.66	\$ 242,752.74
5 Black Hills Corporation Implied Price	\$ 70 69			PV Factor	0.9161479	0.8393269	0.7689475	0.7044696	0.0000000
5 Black Hills Corporation Equity Duration	34 05			PV Wtgd Cash Flow	0.0289657	0.0281291	0.0273166	0.0265276	0.0000849
6 CMS Energy Corporation Stated Price	\$ 55 80	1.64	7 00%	Dividend	\$ 1.70	\$ 1.82	\$ 1.94	\$ 2.08	\$ 1,194,416.95
6 CMS Energy Corporation Implied Price	\$ 53 81			PV Factor	0.9078958	0.8242747	0.7483555	0.6794288	0.0000000
6 CMS Energy Corporation Equity Duration	34 41			PV Wtgd Cash Flow	0.0286388	0.0278211	0.0270268	0.0262551	0.0000898
7 Consolidated Edison, Inc Stated Price	\$ 84 22	3.06	3 00%	Dividend	\$ 3.11	\$ 3.20	\$ 3.30	\$ 3.39	\$ 1,113.77
7 Consolidated Edison, Inc Implied Price	\$ 82 93			PV Factor	0.9368354	0.8776605	0.8222234	0.7702879	0.0000022
7 Consolidated Edison, Inc Equity Duration	28 36			PV Wtgd Cash Flow	0.0350875	0.0338573	0.0326703	0.0315249	0.0000289
8 DTE Energy Company Stated Price	\$ 124 10	4.07	5 50%	Dividend	\$ 4.18	\$ 4.41	\$ 4.65	\$ 4.91	\$ 177,262.03
8 DTE Energy Company Implied Price	\$ 120 67			PV Factor	0.9177669	0.8422960	0.7730314	0.7094626	0.0000000
8 DTE Energy Company Equity Duration	31 17			PV Wtgd Cash Flow	0.0318060	0.0307960	0.0298180	0.0288711	0.0000517
9 Duke Energy Corporation Stated Price	\$ 87 49	3.83	6 00%	Dividend	\$ 3.94	\$ 4.18	\$ 4.43	\$ 4.70	\$ 428,453.00
9 Duke Energy Corporation Implied Price	\$ 84 99			PV Factor	0.9038276	0.8169044	0.7383407	0.6673327	0.0000000
9 Duke Energy Corporation Equity Duration	23 80			PV Wtgd Cash Flow	0.0419507	0.0401912	0.0385054	0.0368904	0.0000083
10 Evergy, Inc Stated Price	\$ 58 96	2.08	N/A	Dividend	N/A	N/A	N/A	N/A	N/A
10 Evergy, Inc Implied Price	N/A			PV Factor	N/A	N/A	N/A	N/A	N/A
10 Evergy, Inc Equity Duration	N/A			PV Wtgd Cash Flow	N/A	N/A	N/A	N/A	N/A
11 Eversource Energy Stated Price	\$ 72 81	2.26	5 50%	Dividend	\$ 2.32	\$ 2.45	\$ 2.58	\$ 2.73	\$ 98,430.51
11 Eversource Energy Implied Price	\$ 70 75			PV Factor	0.9193296	0.8451670	0.7769870	0.7143072	0.0000000
11 Eversource Energy Equity Duration	32 77			PV Wtgd Cash Flow	0.0301740	0.0292655	0.0283844	0.0275298	0.0000688
12 Hawaiian Electric Industries, Inc Stated Price	\$ 40 93	1.32	4 50%	Dividend	\$ 1.35	\$ 1.41	\$ 1.47	\$ 1.54	\$ 8,597.64
12 Hawaiian Electric Industries, Inc Implied Price	\$ 39 97			PV Factor	0.9270370	0.8593977	0.7966935	0.7385643	0.0000003
12 Hawaiian Electric Industries, Inc Equity Duration	31 65			PV Wtgd Cash Flow	0.0313010	0.0303230	0.0293755	0.0284576	0.0000565
13 NorthWestern Corporation Stated Price	\$ 68 75	2.40	3 00%	Dividend	\$ 2.44	\$ 2.51	\$ 2.58	\$ 2.66	\$ 873.54
13 NorthWestern Corporation Implied Price	\$ 67 67			PV Factor	0.9381224	0.8800736	0.8256168	0.7745296	0.0000028
13 NorthWestern Corporation Equity Duration	29 43			PV Wtgd Cash Flow	0.0337692	0.0326301	0.0315293	0.0304657	0.0000365
14 OGE Energy Corp Stated Price	\$ 42 15	1.65	6 50%	Dividend	\$ 1.70	\$ 1.81	\$ 1.93	\$ 2.06	\$ 472,004.30
14 OGE Energy Corp Implied Price	\$ 40 84			PV Factor	0.9035951	0.8164841	0.7377710	0.6666463	0.0000000
14 OGE Energy Corp Equity Duration	26 45			PV Wtgd Cash Flow	0.0376886	0.0362689	0.0349026	0.0335878	0.0000181
15 Otter Tail Corporation Stated Price	\$ 50 64	1.46	5 00%	Dividend	\$ 1.50	\$ 1.57	\$ 1.65	\$ 1.73	\$ 24,646.04
15 Otter Tail Corporation Implied Price	\$ 49 26			PV Factor	0.9256898	0.8569016	0.7932250	0.7342803	0.0000002
15 Otter Tail Corporation Equity Duration	35 00			PV Wtgd Cash Flow	0.0281212	0.0273331	0.0265671	0.0258225	0.0000983
16 Pinnacle West Capital Corporation Stated Price	\$ 93 47	3.22	5 00%	Dividend	\$ 3.30	\$ 3.47	\$ 3.64	\$ 3.82	\$ 54,356.35
16 Pinnacle West Capital Corporation Implied Price	\$ 91 14			PV Factor	0.9206628	0.8476200	0.7803723	0.7184597	0.0000001
16 Pinnacle West Capital Corporation Equity Duration	29 80			PV Wtgd Cash Flow	0.0333421	0.0322317	0.0311583	0.0301206	0.0000394
17 PNM Resources, Inc Stated Price	\$ 47 26	1.24	8 50%	Dividend	\$ 1.29	\$ 1.40	\$ 1.52	\$ 1.65	\$ 14,521,639.38
17 PNM Resources, Inc Implied Price	\$ 45 15			PV Factor	0.8980949	0.8065745	0.7243805	0.6505624	0.0000000
17 PNM Resources, Inc Equity Duration	37 98			PV Wtgd Cash Flow	0.0257117	0.0250544	0.0244138	0.0237896	0.0001485
18 Portland General Electric Company Stated Price	\$ 51 92	1.62	4 50%	Dividend	\$ 1.66	\$ 1.73	\$ 1.81	\$ 1.89	\$ 10,551.64
18 Portland General Electric Company Implied Price	\$ 50 69			PV Factor	0.9279803	0.8611475	0.7991279	0.7415749	0.0000003
18 Portland General Electric Company Equity Duration	32 62			PV Wtgd Cash Flow	0.0303256	0.0294079	0.0285180	0.0276550	0.0000670
19 Southern Company Stated Price	\$ 52 00	2.54	3 50%	Dividend	\$ 2.58	\$ 2.67	\$ 2.77	\$ 2.87	\$ 2,429
19 Southern Company Implied Price	\$ 51 12			PV Factor	0.9211871	0.8485857	0.7817062	0.7200977	0.0000001
19 Southern Company Equity Duration	21 46			PV Wtgd Cash Flow	0.0465747	0.0444056	0.0423376	0.0403659	0.0000035
20 WEC Energy Group, Inc Stated Price	\$ 79 71	2.50	6 00%	Dividend	\$ 2.58	\$ 2.73	\$ 2.89	\$ 3.07	\$ 279,669.06
20 WEC Energy Group, Inc Implied Price	\$ 77 29			PV Factor	0.9147059	0.8366868	0.7653224	0.7000449	0.0000000
20 WEC Energy Group, Inc Equity Duration	32 47			PV Wtgd Cash Flow	0.0304751	0.0295483	0.0286497	0.0277784	0.0000653
21 Xcel Energy Inc Stated Price	\$ 56 32	1.72	5 50%	Dividend	\$ 1.77	\$ 1.86	\$ 1.97	\$ 2.08	\$ 74,911.72
21 Xcel Energy Inc Implied Price	\$ 54 71			PV Factor	0.9197751	0.8459862	0.7781170	0.7156927	0.0000001
21 Xcel Energy Inc Equity Duration	33 25			PV Wtgd Cash Flow	0.0297097	0.0288292	0.0279748	0.0271457	0.0000746

Step-By-Step Adjustment of Mr. Gorman's Multi-Stage DCF Model  
Re-Creation of Exhibit MPG-12

Line No.	Company	Ticker	[1]	[2]	[3]	[4] [5] [6] [7] [8] [9]					[10]	
			Stock Price	Annualized Dividend	First-Stage Growth	Second-Stage Growth					Third-Stage Growth	Multi-Stage Growth DCF
						Year 6	Year 7	Year 8	Year 9	Year 10		
1	ALLETE, Inc	ALE	\$82.26	\$2.35	7.15%	6.64%	6.13%	5.63%	5.12%	4.61%	4.10%	7.71%
2	Alliant Energy Corporation	LNT	\$47.67	\$1.42	5.38%	5.17%	4.95%	4.74%	4.53%	4.31%	4.10%	7.46%
3	Ameren Corporation	AEE	\$73.76	\$1.90	5.82%	5.54%	5.25%	4.96%	4.67%	4.39%	4.10%	7.09%
4	Black Hills Corporation	BKH	\$50.77	\$2.02	4.31%	4.28%	4.24%	4.21%	4.17%	4.14%	4.10%	8.30%
5	CMS Energy Corporation	CMS	\$75.40	\$1.53	6.79%	6.34%	5.89%	5.45%	5.00%	4.55%	4.10%	6.60%
6	Consolidated Edison, Inc	ED	\$56.13	\$2.96	2.87%	3.08%	3.28%	3.49%	3.69%	3.90%	4.10%	9.19%
7	DTE Energy Company	DTE	\$86.20	\$3.78	5.21%	5.03%	4.84%	4.66%	4.47%	4.29%	4.10%	8.99%
8	Duke Energy Corporation	DUK	\$126.13	\$3.71	5.48%	5.25%	5.02%	4.79%	4.56%	4.33%	4.10%	7.44%
9	Evergy, Inc.	EVRG	\$88.43	\$1.90	6.37%	5.99%	5.61%	5.23%	4.86%	4.48%	4.10%	6.68%
10	Eversource Energy	ES	\$61.36	\$2.14	5.76%	5.48%	5.20%	4.93%	4.65%	4.38%	4.10%	8.13%
11	Hawaiian Electric Industries, Inc.	HE	\$58.53	\$1.28	5.75%	5.48%	5.20%	4.93%	4.65%	4.38%	4.10%	6.62%
12	NextEra Energy, Inc	NEE	\$73.14	\$5.00	7.77%	7.16%	6.54%	5.93%	5.32%	4.71%	4.10%	12.83%
13	NorthWestern Corporation	NWE	\$41.90	\$2.30	3.40%	3.52%	3.63%	3.75%	3.87%	3.98%	4.10%	9.58%
14	OGE Energy Corp.	OGE	\$196.97	\$1.46	4.59%	4.51%	4.43%	4.35%	4.26%	4.18%	4.10%	4.58%
15	Otter Tail Corporation	OTTR	\$71.02	\$1.40	7.00%	6.52%	6.03%	5.55%	5.07%	4.58%	4.10%	6.56%
16	Pinnacle West Capital Corporation	PNW	\$42.31	\$2.95	5.14%	4.97%	4.80%	4.62%	4.45%	4.27%	4.10%	11.80%
17	PNM Resources, Inc.	PNM	\$50.96	\$1.16	5.69%	5.43%	5.16%	4.90%	4.63%	4.37%	4.10%	6.71%
18	Portland General Electric Company	POR	\$95.38	\$1.45	4.92%	4.79%	4.65%	4.51%	4.37%	4.24%	4.10%	5.69%
19	Southern Company	SO	\$47.64	\$2.48	3.74%	3.80%	3.86%	3.92%	3.98%	4.04%	4.10%	9.40%
20	WEC Energy Group, Inc.	WEC	\$52.91	\$2.36	5.78%	5.50%	5.22%	4.94%	4.66%	4.38%	4.10%	9.25%
21	Xcel Energy Inc.	XEL	\$53.50	\$1.62	5.95%	5.64%	5.33%	5.03%	4.72%	4.41%	4.10%	7.64%
22				Mean	5.47%	5.24%	5.01%	4.79%	4.56%	4.33%	4.10%	8.01%
23				Median	5.69%	5.43%	5.16%	4.90%	4.63%	4.37%	4.10%	7.64%
24	Notes:											
25	Source: Exhibit MPG-12											

Step-By-Step Adjustment of Mr. Gorman's Multi-Stage DCF Model  
Correct for Mid-Year Convention

Line No.	Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
			Stock Price	Annualized Dividend	First-Stage Growth	Year 6	Year 7	Year 8	Year 9	Year 10	Third-Stage Growth	Multi-Stage Growth DCF
26	ALLETE, Inc	ALE	\$82.26	\$2.35	7.15%	6.64%	6.13%	5.63%	5.12%	4.61%	4.10%	7.84%
27	Alliant Energy Corporation	LNT	\$47.67	\$1.42	5.38%	5.17%	4.95%	4.74%	4.53%	4.31%	4.10%	7.58%
28	Ameren Corporation	AEE	\$73.76	\$1.90	5.82%	5.54%	5.25%	4.96%	4.67%	4.39%	4.10%	7.19%
29	Black Hills Corporation	BKH	\$50.77	\$2.02	4.31%	4.28%	4.24%	4.21%	4.17%	4.14%	4.10%	8.46%
30	CMS Energy Corporation	CMS	\$75.40	\$1.53	6.79%	6.34%	5.89%	5.45%	5.00%	4.55%	4.10%	6.68%
31	Consolidated Edison, Inc	ED	\$56.13	\$2.96	2.87%	3.08%	3.28%	3.49%	3.69%	3.90%	4.10%	9.42%
32	DTE Energy Company	DTE	\$86.20	\$3.78	5.21%	5.03%	4.84%	4.66%	4.47%	4.29%	4.10%	9.20%
33	Duke Energy Corporation	DUK	\$126.13	\$3.71	5.48%	5.25%	5.02%	4.79%	4.56%	4.33%	4.10%	7.56%
34	Evergy, Inc	EVRG	\$88.43	\$1.90	6.37%	5.99%	5.61%	5.23%	4.86%	4.48%	4.10%	6.76%
35	Eversource Energy	ES	\$61.36	\$2.14	5.76%	5.48%	5.20%	4.93%	4.65%	4.38%	4.10%	8.28%
36	Hawaiian Electric Industries, Inc.	HE	\$58.53	\$1.28	5.75%	5.48%	5.20%	4.93%	4.65%	4.38%	4.10%	6.70%
37	NextEra Energy, Inc	NEE	\$73.14	\$5.00	7.77%	7.16%	6.54%	5.93%	5.32%	4.71%	4.10%	13.35%
38	NorthWestern Corporation	NWE	\$41.90	\$2.30	3.40%	3.52%	3.63%	3.75%	3.87%	3.98%	4.10%	9.83%
39	OGE Energy Corp.	OGE	\$196.97	\$1.46	4.59%	4.51%	4.43%	4.35%	4.26%	4.18%	4.10%	4.61%
40	Otter Tail Corporation	OTTR	\$71.02	\$1.40	7.00%	6.52%	6.03%	5.55%	5.07%	4.58%	4.10%	6.64%
41	Pinnacle West Capital Corporation	PNW	\$42.31	\$2.95	5.14%	4.97%	4.80%	4.62%	4.45%	4.27%	4.10%	12.24%
42	PNM Resources, Inc.	PNM	\$50.96	\$1.16	5.69%	5.43%	5.16%	4.90%	4.63%	4.37%	4.10%	6.80%
43	Portland General Electric Company	POR	\$95.38	\$1.45	4.92%	4.79%	4.65%	4.51%	4.37%	4.24%	4.10%	5.74%
44	Southern Company	SO	\$47.64	\$2.48	3.74%	3.80%	3.86%	3.92%	3.98%	4.04%	4.10%	9.64%
45	WEC Energy Group, Inc.	WEC	\$52.91	\$2.36	5.78%	5.50%	5.22%	4.94%	4.66%	4.38%	4.10%	9.47%
46	Xcel Energy Inc.	XEL	\$53.50	\$1.62	5.95%	5.64%	5.33%	5.03%	4.72%	4.41%	4.10%	7.77%
47				Mean	5.47%	5.24%	5.01%	4.79%	4.56%	4.33%	4.10%	8.18%
48				Median	5.69%	5.43%	5.16%	4.90%	4.63%	4.37%	4.10%	7.77%
49	Notes:											
50	Source: Exhibit MPG-12											
											Difference:	0.1674%



Step-By-Step Adjustment of Mr. Gorman's Multi-Stage DCF Model  
 Long-Term Growth Estimate of 5.83%

Line No.	Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
			Stock Price	Annualized Dividend	First-Stage Growth	Second-Stage Growth				Third-Stage Growth	Multi-Stage Growth DCF	
						Year 6	Year 7	Year 8	Year 9	Year 10		
51	ALLETE, Inc	ALE	\$82.26	\$2.35	7.15%	6.93%	6.71%	6.49%	6.27%	6.05%	5.83%	9.25%
52	Alliant Energy Corporation	LNT	\$47.67	\$1.42	5.38%	5.46%	5.53%	5.61%	5.68%	5.76%	5.83%	9.01%
53	Ameren Corporation	AEE	\$73.76	\$1.90	5.82%	5.82%	5.83%	5.83%	5.83%	5.83%	5.83%	8.65%
54	Black Hills Corporation	BKH	\$50.77	\$2.02	4.31%	4.56%	4.82%	5.07%	5.32%	5.58%	5.83%	9.83%
55	CMS Energy Corporation	CMS	\$75.40	\$1.53	6.79%	6.63%	6.47%	6.31%	6.15%	5.99%	5.83%	8.17%
56	Consolidated Edison, Inc	ED	\$56.13	\$2.96	2.87%	3.36%	3.86%	4.35%	4.84%	5.34%	5.83%	10.72%
57	DTE Energy Company	DTE	\$86.20	\$3.78	5.21%	5.32%	5.42%	5.52%	5.62%	5.73%	5.83%	10.52%
58	Duke Energy Corporation	DUK	\$126.13	\$3.71	5.48%	5.54%	5.59%	5.65%	5.71%	5.77%	5.83%	8.99%
59	Evergy, Inc.	EVRG	\$88.43	\$1.90	6.37%	6.28%	6.19%	6.10%	6.01%	5.92%	5.83%	8.25%
60	Eversource Energy	ES	\$61.36	\$2.14	5.76%	5.77%	5.78%	5.79%	5.81%	5.82%	5.83%	9.67%
61	Hawaiian Electric Industries, Inc.	HE	\$58.53	\$1.28	5.75%	5.77%	5.78%	5.79%	5.80%	5.82%	5.83%	8.19%
62	NextEra Energy, Inc.	NEE	\$73.14	\$5.00	7.77%	7.44%	7.12%	6.80%	6.48%	6.15%	5.83%	14.43%
63	NorthWestern Corporation	NWE	\$41.90	\$2.30	3.40%	3.81%	4.21%	4.62%	5.02%	5.43%	5.83%	11.10%
64	OGE Energy Corp.	OGE	\$196.97	\$1.46	4.59%	4.80%	5.01%	5.21%	5.42%	5.62%	5.83%	6.20%
65	Otter Tail Corporation	OTTR	\$71.02	\$1.40	7.00%	6.81%	6.61%	6.42%	6.22%	6.03%	5.83%	8.13%
66	Pinnacle West Capital Corporation	PNW	\$42.31	\$2.95	5.14%	5.26%	5.37%	5.49%	5.60%	5.72%	5.83%	13.37%
67	PNM Resources, Inc.	PNM	\$50.96	\$1.16	5.69%	5.72%	5.74%	5.76%	5.78%	5.81%	5.83%	8.28%
68	Portland General Electric Company	POR	\$95.38	\$1.45	4.92%	5.07%	5.23%	5.38%	5.53%	5.68%	5.83%	7.29%
69	Southern Company	SO	\$47.64	\$2.48	3.74%	4.09%	4.44%	4.79%	5.13%	5.48%	5.83%	10.93%
70	WEC Energy Group, Inc.	WEC	\$52.91	\$2.36	5.78%	5.79%	5.80%	5.81%	5.81%	5.82%	5.83%	10.77%
71	Xcel Energy Inc	XEL	\$53.50	\$1.62	5.95%	5.93%	5.91%	5.89%	5.87%	5.85%	5.83%	9.19%
72				Mean	5.47%	5.53%	5.59%	5.65%	5.71%	5.77%	5.83%	9.57%
73				Median	5.69%	5.72%	5.74%	5.76%	5.78%	5.81%	5.83%	9.19%
74	Notes:											
75	Source: Exhibit MPG-12											

Step-By-Step Adjustment of Mr. Gorman's Multi-Stage DCF Model  
Long-Term Growth Estimate of 6.47%

Line No.	Company	Ticker	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
			Stock Price	Annualized Dividend	First-Stage Growth	Second-Stage Growth			Third-Stage Growth	Multi-Stage Growth DCF		
						Year 6	Year 7	Year 8	Year 9	Year 10		
76	ALLETE, Inc	ALE	\$82.26	\$2.35	7.15%	7.04%	6.92%	6.81%	6.70%	6.58%	6.47%	9.78%
77	Alliant Energy Corporation	LNT	\$47.67	\$1.42	5.38%	5.56%	5.74%	5.93%	6.11%	6.29%	6.47%	9.55%
78	Ameren Corporation	AEE	\$73.76	\$1.90	5.82%	5.93%	6.04%	6.15%	6.25%	6.36%	6.47%	9.19%
79	Black Hills Corporation	BKH	\$50.77	\$2.02	4.31%	4.67%	5.03%	5.39%	5.75%	6.11%	6.47%	10.34%
80	CMS Energy Corporation	CMS	\$75.40	\$1.53	6.79%	6.74%	6.68%	6.63%	6.58%	6.52%	6.47%	8.73%
81	Consolidated Edison, Inc	ED	\$56.13	\$2.96	2.87%	3.47%	4.07%	4.67%	5.27%	5.87%	6.47%	11.21%
82	DTE Energy Company	DTE	\$86.20	\$3.78	5.21%	5.42%	5.63%	5.84%	6.05%	6.26%	6.47%	11.01%
83	Duke Energy Corporation	DUK	\$126.13	\$3.71	5.48%	5.64%	5.81%	5.97%	6.14%	6.30%	6.47%	9.53%
84	Eergy, Inc.	EVRG	\$88.43	\$1.90	6.37%	6.38%	6.40%	6.42%	6.44%	6.45%	6.47%	8.80%
85	Eversource Energy	ES	\$61.36	\$2.14	5.76%	5.88%	5.99%	6.11%	6.23%	6.35%	6.47%	10.18%
86	Hawaiian Electric Industries, Inc.	HE	\$58.53	\$1.28	5.75%	5.87%	5.99%	6.11%	6.23%	6.35%	6.47%	8.75%
87	NextEra Energy, Inc	NEE	\$73.14	\$5.00	7.77%	7.55%	7.33%	7.12%	6.90%	6.69%	6.47%	14.83%
88	NorthWestern Corporation	NWE	\$41.90	\$2.30	3.40%	3.91%	4.42%	4.94%	5.45%	5.96%	6.47%	11.59%
89	OGE Energy Corp.	OGE	\$196.97	\$1.46	4.59%	4.91%	5.22%	5.53%	5.84%	6.16%	6.47%	6.80%
90	Otter Tail Corporation	OTTR	\$71.02	\$1.40	7.00%	6.91%	6.82%	6.74%	6.65%	6.56%	6.47%	8.69%
91	Pinnacle West Capital Corporation	PNW	\$42.31	\$2.95	5.14%	5.36%	5.59%	5.81%	6.03%	6.25%	6.47%	13.80%
92	PNM Resources, Inc.	PNM	\$50.96	\$1.16	5.69%	5.82%	5.95%	6.08%	6.21%	6.34%	6.47%	8.84%
93	Portland General Electric Company	POR	\$95.38	\$1.45	4.92%	5.18%	5.44%	5.70%	5.95%	6.21%	6.47%	7.87%
94	Southern Company	SO	\$47.64	\$2.48	3.74%	4.20%	4.65%	5.11%	5.56%	6.02%	6.47%	11.41%
95	WEC Energy Group, Inc.	WEC	\$52.91	\$2.36	5.78%	5.90%	6.01%	6.13%	6.24%	6.36%	6.47%	11.26%
96	Xcel Energy Inc	XEL	\$53.50	\$1.62	5.95%	6.04%	6.12%	6.21%	6.30%	6.38%	6.47%	9.72%
97				Mean	5.47%	5.64%	5.80%	5.97%	6.14%	6.30%	6.47%	10.09%
98				Median	5.69%	5.82%	5.95%	6.08%	6.21%	6.34%	6.47%	9.72%
99	Notes:											
100	Source: Exhibit MPG-12											

Analysis Using Mr. Gorman's Rolling Average Equity Risk Premium Data

Year	Authorized Electric Returns	30-Year Treasury Bond Yield	Indicated Risk Premium	Rolling 5-Year Average Treasury	Rolling 5-Year Average Risk Premium	Slope	Rolling 10-Year Average Treasury	Rolling 10-Year Average Risk Premium	Slope
1986	13.93%	7.80%	6.13%						
1987	12.99%	8.58%	4.41%						
1988	12.79%	8.96%	3.83%						
1989	12.97%	8.45%	4.52%						
1990	12.70%	8.61%	4.09%	8.48%	4.60%	-46.36%			-48.31%
1991	12.55%	8.14%	4.41%	8.55%	4.25%				
1992	12.09%	7.67%	4.42%	8.36%	4.26%				
1993	11.41%	6.60%	4.81%	7.89%	4.45%				
1994	11.34%	7.37%	3.97%	7.68%	4.34%				
1995	11.55%	6.88%	4.67%	7.33%	4.46%		7.91%	4.53%	
1996	11.39%	6.70%	4.69%	7.04%	4.51%		7.80%	4.38%	
1997	11.40%	6.61%	4.79%	6.83%	4.59%		7.60%	4.42%	
1998	11.66%	5.58%	6.08%	6.63%	4.84%		7.26%	4.65%	
1999	10.77%	5.87%	4.90%	6.33%	5.03%		7.00%	4.68%	
2000	11.43%	5.94%	5.49%	6.14%	5.19%		6.73%	4.82%	
2001	11.09%	5.49%	5.60%	5.90%	5.37%		6.47%	4.94%	
2002	11.16%	5.43%	5.73%	5.66%	5.56%		6.25%	5.07%	
2003	10.97%	4.96%	6.01%	5.54%	5.55%		6.08%	5.19%	
2004	10.75%	5.05%	5.70%	5.37%	5.71%		5.85%	5.37%	
2005	10.54%	4.65%	5.89%	5.11%	5.79%		5.63%	5.49%	
2006	10.34%	4.90%	5.44%	5.00%	5.76%		5.45%	5.56%	
2007	10.31%	4.83%	5.48%	4.88%	5.71%		5.27%	5.63%	
2008	10.37%	4.28%	6.09%	4.74%	5.72%		5.14%	5.63%	
2009	10.52%	4.07%	6.45%	4.55%	5.87%		4.96%	5.79%	
2010	10.29%	4.25%	6.04%	4.47%	5.90%		4.79%	5.84%	
2011	10.19%	3.91%	6.28%	4.27%	6.07%		4.63%	5.91%	
2012	10.01%	2.92%	7.09%	3.89%	6.39%		4.38%	6.05%	
2013	9.81%	3.45%	6.36%	3.72%	6.44%		4.23%	6.08%	
2014	9.75%	3.34%	6.41%	3.57%	6.44%		4.06%	6.15%	
2015	9.60%	2.84%	6.76%	3.29%	6.58%		3.88%	6.24%	
2016	9.60%	2.60%	7.00%	3.03%	6.72%		3.65%	6.40%	
2017	9.68%	2.90%	6.79%	3.02%	6.66%		3.46%	6.53%	
2018	9.55%	3.11%	6.44%	2.96%	6.68%		3.34%	6.56%	
2019	9.57%	3.01%	6.56%	2.89%	6.71%		3.23%	6.57%	
Average	11.03%	5.46%	5.57%	5.44%	5.54%		5.40%	5.54%	
Minimum				2.89%	4.25%		3.23%	4.38%	
Maximum			6.71%	8.55%	6.72%		7.91%	6.57%	

Source: Exhibit MPG-16.

Analysis Using Mr. Gorman's Rolling Average Equity Risk Premium Data

Year	Authorized Electric Returns	Utility Bond Yield	Indicated Risk Premium	Rolling 5-Year Average Utility Bond	Rolling 5-Year Average Risk Premium	Slope	Rolling 10-Year Average Utility Bond	Rolling 10-Year Average Risk Premium	Slope
1986	13.93%	9.58%	4.35%						
1987	12.99%	10.10%	2.89%						
1988	12.79%	10.49%	2.30%						
1989	12.97%	9.77%	3.20%						
1990	12.70%	9.86%	2.84%	9.96%	3.12%	-46.70%			-47.57%
1991	12.55%	9.36%	3.19%	9.92%	2.88%				
1992	12.09%	8.69%	3.40%	9.63%	2.99%				
1993	11.41%	7.59%	3.82%	9.05%	3.29%				
1994	11.34%	8.31%	3.03%	8.76%	3.26%				
1995	11.55%	7.89%	3.66%	8.37%	3.42%		9.16%	3.27%	
1996	11.39%	7.75%	3.64%	8.05%	3.51%		8.98%	3.20%	
1997	11.40%	7.60%	3.80%	7.83%	3.59%		8.73%	3.29%	
1998	11.66%	7.04%	4.62%	7.72%	3.75%		8.39%	3.52%	
1999	10.77%	7.62%	3.15%	7.58%	3.77%		8.17%	3.52%	
2000	11.43%	8.24%	3.19%	7.65%	3.68%		8.01%	3.55%	
2001	11.09%	7.76%	3.33%	7.65%	3.62%		7.85%	3.56%	
2002	11.16%	7.37%	3.79%	7.61%	3.61%		7.72%	3.60%	
2003	10.97%	6.58%	4.39%	7.52%	3.57%		7.62%	3.66%	
2004	10.75%	6.16%	4.59%	7.22%	3.86%		7.40%	3.82%	
2005	10.54%	5.65%	4.89%	6.71%	4.20%		7.18%	3.94%	
2006	10.34%	6.07%	4.27%	6.37%	4.39%		7.01%	4.00%	
2007	10.31%	6.07%	4.24%	6.11%	4.48%		6.86%	4.04%	
2008	10.37%	6.53%	3.84%	6.10%	4.37%		6.81%	3.97%	
2009	10.52%	6.04%	4.48%	6.07%	4.34%		6.65%	4.10%	
2010	10.29%	5.47%	4.82%	6.04%	4.33%		6.37%	4.26%	
2011	10.19%	5.04%	5.15%	5.83%	4.51%		6.10%	4.45%	
2012	10.01%	4.13%	5.88%	5.44%	4.83%		5.77%	4.66%	
2013	9.81%	4.48%	5.33%	5.03%	5.13%		5.56%	4.75%	
2014	9.75%	4.28%	5.47%	4.68%	5.33%		5.38%	4.84%	
2015	9.60%	4.12%	5.48%	4.41%	5.46%		5.22%	4.90%	
2016	9.60%	3.93%	5.67%	4.19%	5.57%		5.01%	5.04%	
2017	9.68%	4.00%	5.68%	4.16%	5.53%		4.80%	5.18%	
2018	9.55%	4.25%	5.30%	4.11%	5.52%		4.57%	5.33%	
2019	9.57%	4.25%	5.32%	4.11%	5.49%		4.39%	5.41%	
Average	11.03%	6.83%	4.21%	6.80%	4.18%		6.79%	4.15%	
Minimum				4.11%	2.88%		4.39%	3.20%	
Maximum				9.96%	5.57%		9.16%	5.41%	

Source: Exhibit MPG-17.

Analysis Using Mr. Gorman's Rolling Average Equity Risk Premium Data

SUMMARY OUTPUT

Regression Statistics						
Multiple R	0.983762085					
R Square	0.96778784	MRP.	6.76%	Rf.	2.80%	
Adjusted R Square	0.966637406		ROE	9.56%		
Standard Error	0.001528776					
Observations	30					

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	0.001966103	0.001966103	841.2369673	1.96513E-22	
Residual	28	6.54404E-05	2.33716E-06			
Total	29	0.002031544				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.080582252	0.000912731	88.28692674	8.48246E-36	0.078712606	0.082451898
Five Year Avg. Treasury	-0.463574083	0.015983062	-29.00408535	1.96513E-22	-0.496313901	-0.430834266

SUMMARY OUTPUT

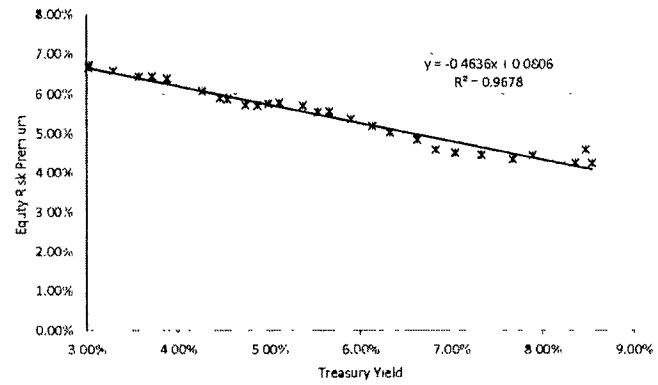
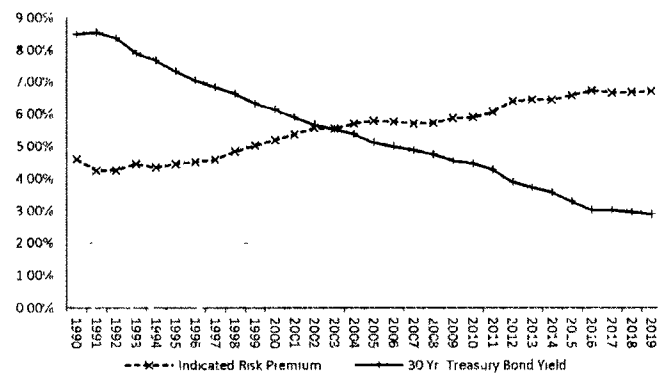
Regression Statistics						
Multiple R	0.984051717					
R Square	0.968357781	MRP.	5.28%	Rf.	4.43%	
Adjusted R Square	0.967227702		ROE	9.71%		
Standard Error	0.001535777					
Observations	30					

ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	0.002021078	0.002021078	856.8937004	1.53014E-22	
Residual	28	6.60411E-05	2.35861E-06			
Total	29	0.002087119				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.073531832	0.001119815	65.66427657	3.24666E-32	0.071237995	0.075825668
Five Year Avg. Utility	-0.467033052	0.015954535	-29.27274672	1.53014E-22	-0.499714435	-0.434351669



Analysis Using Mr. Gorman's Annual Equity Risk Premium Data

Year	ROE	Utility "A" Bond Yield	Treasury Bond Yield	Credit Spread	Treasury Equity Risk Premium	Utility Bond Equity Risk Premium	Treasury Yield	Credit Spread
1986	13.93%	9.58%	7.80%	1.78%	6.13%	4.35%	7.80%	1.78%
1987	12.99%	10.10%	8.58%	1.52%	4.41%	2.89%	8.58%	1.52%
1988	12.79%	10.49%	8.96%	1.53%	3.83%	2.30%	8.96%	1.53%
1989	12.97%	9.77%	8.45%	1.32%	4.52%	3.20%	8.45%	1.32%
1990	12.70%	9.86%	8.61%	1.25%	4.09%	2.84%	8.61%	1.25%
1991	12.55%	9.36%	8.14%	1.22%	4.41%	3.19%	8.14%	1.22%
1992	12.09%	8.69%	7.67%	1.02%	4.42%	3.40%	7.67%	1.02%
1993	11.41%	7.59%	6.60%	0.99%	4.81%	3.82%	6.60%	0.99%
1994	11.34%	8.31%	7.37%	0.94%	3.97%	3.03%	7.37%	0.94%
1995	11.55%	7.89%	6.88%	1.01%	4.67%	3.66%	6.88%	1.01%
1996	11.39%	7.75%	6.70%	1.05%	4.69%	3.64%	6.70%	1.05%
1997	11.40%	7.60%	6.61%	0.99%	4.79%	3.80%	6.61%	0.99%
1998	11.66%	7.04%	5.58%	1.46%	6.08%	4.62%	5.58%	1.46%
1999	10.77%	7.62%	5.87%	1.75%	4.90%	3.15%	5.87%	1.75%
2000	11.43%	8.24%	5.94%	2.30%	5.49%	3.19%	5.94%	2.30%
2001	11.09%	7.76%	5.49%	2.27%	5.60%	3.33%	5.49%	2.27%
2002	11.16%	7.37%	5.43%	1.94%	5.73%	3.79%	5.43%	1.94%
2003	10.97%	6.58%	4.96%	1.62%	6.01%	4.39%	4.96%	1.62%
2004	10.75%	6.16%	5.05%	1.11%	5.70%	4.59%	5.05%	1.11%
2005	10.54%	5.65%	4.65%	1.00%	5.89%	4.89%	4.65%	1.00%
2006	10.34%	6.07%	4.90%	1.17%	5.44%	4.27%	4.90%	1.17%
2007	10.31%	6.07%	4.83%	1.24%	5.48%	4.24%	4.83%	1.24%
2008	10.37%	6.53%	4.28%	2.25%	6.09%	3.84%	4.28%	2.25%
2009	10.52%	6.04%	4.07%	1.97%	6.45%	4.48%	4.07%	1.97%
2010	10.29%	5.47%	4.25%	1.22%	6.04%	4.82%	4.25%	1.22%
2011	10.19%	5.04%	3.91%	1.13%	6.28%	5.15%	3.91%	1.13%
2012	10.01%	4.13%	2.92%	1.21%	7.09%	5.88%	2.92%	1.21%
2013	9.81%	4.48%	3.45%	1.03%	6.36%	5.33%	3.45%	1.03%
2014	9.75%	4.28%	3.34%	0.94%	6.41%	5.47%	3.34%	0.94%
2015	9.60%	4.12%	2.84%	1.27%	6.76%	5.48%	2.84%	1.27%
2016	9.60%	3.93%	2.60%	1.33%	7.00%	5.67%	2.60%	1.33%
2017	9.68%	4.00%	2.90%	1.10%	6.79%	5.68%	2.90%	1.10%
2018	9.55%	4.25%	3.11%	1.14%	6.44%	5.30%	3.11%	1.14%
2019	9.57%	4.11%	2.90%	1.21%	6.68%	5.46%	2.90%	1.21%

Source Exhibit MPG-14 and MPG-15

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.91313
R Square	0.83381
Adjusted R Square	0.82861
Standard Error	0.00390
Observations	34

ANOVA

	df	SS	MS	F	Significance F
Regression	1	0.00245	0.00245	160.54744	0.00000
Residual	32	0.00049	0.00002		
Total	33	0.00294			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.07976	0.00201	39.64489	0.00000	0.07566	0.08386
Treasury Yield	-0.44035	0.03475	-12.67073	0.00000	-0.51114	-0.36956

RESIDUAL OUTPUT

Observation	Predicted Y	Residuals	( $e_t - e_{(t-1)}$ )	( $e_t$ )
1	0.045423048	0.015893619		
2	0.04198101	0.00211899	0.00019	0.00000
3	0.040311365	-0.002003031	0.00002	0.00000
4	0.042557129	0.002651204	0.00002	0.00001
5	0.041856245	-0.000939579	0.00001	0.00000
6	0.04393688	0.000204786	0.00000	0.00000
7	0.046002837	-0.001769504	0.00000	0.00000
8	0.0507072	-0.002590534	0.00000	0.00001
9	0.047309197	-0.007609197	0.00003	0.00006
10	0.049448545	-0.002790211	0.00002	0.00001
11	0.050255846	-0.003364179	0.00000	0.00001
12	0.050674175	-0.002732508	0.00000	0.00001
13	0.05519873	0.005617937	0.00007	0.00003
14	0.053932735	-0.004891068	0.00011	0.00002
15	0.053595137	0.001279863	0.00004	0.00000
16	0.055573024	0.000393643	0.00000	0.00000
17	0.05585191	0.00144809	0.00000	0.00000
18	0.057932545	0.002192455	0.00000	0.00000
19	0.057539903	-0.00050657	0.00001	0.00000
20	0.059304957	-0.00036329	0.00000	0.00000
21	0.05819375	-0.003775568	0.00001	0.00001
22	0.058475638	-0.003717305	0.00000	0.00001
23	0.060919559	-1.12255E-05	0.00001	0.00000
24	0.061844285	0.002664048	0.00001	0.00001
25	0.061044324	-0.000652657	0.00001	0.00000
26	0.0625415	0.000250167	0.00000	0.00000
27	0.066900926	0.003990741	0.00001	0.00002
28	0.0645781	-0.000961434	0.00002	0.00000
29	0.065055142	-0.000955142	0.00000	0.00000
30	0.067253203	0.000338464	0.00000	0.00000
31	0.068324711	0.001700289	0.00000	0.00000
32	0.067014682	0.000835318	0.00000	0.00000
33	0.066056929	-0.001681929	0.00001	0.00000
34	0.067014682	-0.000264682	0.00000	0.00000
			0.00062	0.00024

Durbin-Watson 2.63343  
 (1% significance) dL 1.184 4-dL 4.000  
 dU 1.298 2.82 2.702  
 DW > 2 TRUE  
 DW < 4 - dU? TRUE No Autocorrelation



SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.93002
R Square	0.86493
Adjusted R Square	0.86071
Standard Error	0.00368
Observations	34

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.00277	0.00277	204.91671	0.00000
Residual	32	0.00043	0.00001		
Total	33	0.00321			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.07308	0.00225	32.42136	0.00000	0.06834	0.07756
Utility "A" Bond Yield	-0.45411	0.03172	-14.31491	0.00000	-0.51737	-0.38772

RESIDUAL OUTPUT

Observation	Predicted Y	Residuals	$(e_t - e_{(t-1)})$	$(e_t)$
1	0.029574642	0.013925358		
2	0.027213281	0.001686719	0.00015	0.00000
3	0.025442261	-0.002442261	0.00002	0.00001
4	0.028711837	0.003288163	0.00003	0.00001
5	0.02830314	9.68602E-05	0.00001	0.00000
6	0.030573679	0.001326321	0.00000	0.00000
7	0.033616201	0.000383799	0.00000	0.00000
8	0.038611387	-0.000411387	0.00000	0.00000
9	0.035341811	-0.005041811	0.00002	0.00003
10	0.037249063	-0.000649063	0.00002	0.00000
11	0.037884814	-0.001484814	0.00000	0.00000
12	0.038565976	-0.000565976	0.00000	0.00000
13	0.041108979	0.005091021	0.00003	0.00003
14	0.038475154	-0.006975154	0.00015	0.00005
15	0.035640765	-0.003782432	0.00001	0.00001
16	0.037828051	-0.004553051	0.00000	0.00002
17	0.039599071	-0.001724071	0.00001	0.00000
18	0.043194091	0.000697576	0.00001	0.00000
19	0.045105128	0.000794872	0.00000	0.00000
20	0.047424862	0.001483471	0.00000	0.00000
21	0.045521393	-0.002804727	0.00002	0.00001
22	0.045498688	-0.003132021	0.00000	0.00001
23	0.043432498	-0.005015831	0.00000	0.00003
24	0.045653842	-0.000845508	0.00002	0.00000
25	0.048243503	-3.24232E-05	0.00000	0.00000
26	0.050195643	0.001314283	0.00000	0.00000
27	0.054319627	0.004471809	0.00001	0.00002
28	0.052752436	0.000587856	0.00002	0.00000
29	0.053654119	0.001071787	0.00000	0.00000
30	0.054389831	0.000456202	0.00000	0.00000
31	0.055230827	0.001467181	0.00000	0.00000
32	0.054919513	0.001892944	0.00000	0.00000
33	0.053777545	-0.000779839	0.00001	0.00000
34	0.054429713	0.000204146	0.00000	0.00000

Durbin-Watson 2.23449  
dL 1.184 4-dL 2.816  
dU 1.298 4-dU 2.702  
DW > 2 TRUE  
DW < 4-dU? TRUE No Autocorrelation

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.92640
R Square	0.85822
Adjusted R Square	0.84907
Standard Error	0.00366
Observations	34

ANOVA

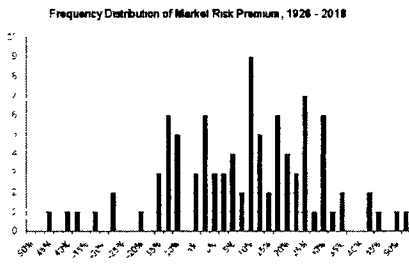
	df	SS	MS	F	Significance F
Regression	2	0.00252	0.00126	93.82508	0.00000
Residual	31	0.00042	0.00001		
Total	33	0.00294			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.07497	0.00281	26.72495	0.00000	0.06910	0.08059
Treasury Yield	-0.44476	0.03267	-13.61435	0.00000	-0.51007	-0.37648
Credit Spread	0.36961	0.15998	2.31043	0.02769	0.04454	0.69765

RESIDUAL OUTPUT

Observation	Predicted Y	Residuals	$(e_t - e_{(t-1)})^2$	$(e_t)^2$
1	0.046870384	0.014446282		
2	0.04242667	0.00167333	0.00016	0.00000
3	0.040780321	-0.002471988	0.00002	0.00001
4	0.042272419	0.002935914	0.00003	0.00001
5	0.041308856	-0.000392189	0.00001	0.00000
6	0.043308714	0.000832953	0.00000	0.00000
7	0.044653082	-0.000419748	0.00000	0.00000
8	0.04928758	-0.001170914	0.00000	0.00000
9	0.045664531	-0.005964531	0.00002	0.00004
10	0.048068663	-0.00141033	0.00002	0.00000
11	0.049044227	-0.00215256	0.00000	0.00000
12	0.049263463	-0.001321797	0.00000	0.00000
13	0.055561341	0.005255326	0.00004	0.00003
14	0.05536377	-0.006322104	0.00013	0.00004
15	0.057046423	-0.002171423	0.00002	0.00000
16	0.058924022	-0.002957355	0.00000	0.00001
17	0.057998299	-0.000698299	0.00001	0.00000
18	0.058920115	0.001204885	0.00000	0.00000
19	0.056638504	0.000394829	0.00000	0.00000
20	0.058014684	0.000926983	0.00000	0.00000
21	0.057508917	-0.003090735	0.00002	0.00001
22	0.058048722	-0.003290388	0.00000	0.00001
23	0.064250253	-0.00334192	0.00000	0.00001
24	0.064152415	0.000355918	0.00001	0.00000
25	0.06056515	-0.000173483	0.00000	0.00000
26	0.061745115	0.001046552	0.00000	0.00000
27	0.066450787	0.00444088	0.00001	0.00002
28	0.063430543	0.000186124	0.00002	0.00000
29	0.063578873	0.000521127	0.00000	0.00000
30	0.067045146	0.00054652	0.00000	0.00000
31	0.068342279	0.001682721	0.00000	0.00000
32	0.066172899	0.001677101	0.00000	0.00000
33	0.065331118	-0.000956118	0.00001	0.00000
34	0.066571564	0.000178436	0.00000	0.00000

		0.00054	0.00021
	Durbin-Watson	2.62504	
dL		1.128	4-dL
dU		1.364	2.872
DW>2	TRUE		
DW<4-dU	TRUE	No Autocorrelation	



Year	Large Company Stocks	Long-Term Government	MRP	MRP		
	Total Returns Jan-Dec*	Bond Income Returns Jan-Dec*		Bin	Frequency	Cumulative %
1926	0.1162	0.0373	0.0789	-50.00%	0	0.0%
1927	0.3749	0.0341	0.3408	-47.50%	0	0.0%
1928	0.4361	0.0322	0.4039	-45.00%	1	1.1%
1929	-0.0842	0.0347	-0.1189	-42.50%	0	1.1%
1930	-0.2480	0.0332	-0.2812	-40.00%	1	2.2%
1931	-0.4334	0.0333	-0.4667	-37.50%	1	3.2%
1932	-0.0818	0.0389	-0.1188	-35.00%	0	3.2%
1933	0.5389	0.0312	0.5087	-32.50%	1	4.3%
1934	-0.0144	0.0318	-0.0462	-30.00%	0	4.3%
1935	0.4767	0.0281	0.4486	-27.50%	2	6.5%
1936	0.3392	0.0277	0.3115	-25.00%	0	6.5%
1937	-0.3503	0.0268	-0.3769	-22.50%	0	6.5%
1938	0.3112	0.0264	0.2848	-20.00%	1	7.5%
1939	-0.0041	0.0240	-0.0291	-17.50%	0	7.5%
1940	-0.0978	0.0223	-0.1291	-15.00%	3	10.8%
1941	-0.1159	0.0184	-0.1353	-12.50%	6	17.2%
1942	0.2034	0.0248	0.1788	-10.00%	5	22.6%
1943	0.2690	0.0244	0.2346	-7.50%	0	22.6%
1944	0.1875	0.0248	0.1728	-5.00%	3	25.8%
1945	0.3644	0.0234	0.3410	-2.50%	8	32.3%
1946	-0.0807	0.0204	-0.1011	0.00%	3	35.5%
1947	0.0571	0.0215	0.0348	0.00%	3	38.7%
1948	0.0550	0.0240	0.0310	5.00%	4	43.0%
1949	0.1878	0.0225	0.1654	7.50%	2	45.2%
1950	0.3171	0.0212	0.2959	10.00%	9	54.9%
1951	0.2402	0.0238	0.2164	12.50%	5	60.2%
1952	0.1837	0.0206	0.1571	15.00%	2	62.4%
1953	-0.0099	0.0294	-0.0383	17.50%	6	68.0%
1954	0.5282	0.0279	0.4983	20.00%	4	73.1%
1955	0.3158	0.0275	0.2881	22.50%	3	76.3%
1956	0.0656	0.0299	0.0357	25.00%	7	83.8%
1957	-0.1078	0.0344	-0.1422	27.50%	1	84.8%
1958	0.4338	0.0327	0.4009	30.00%	6	91.4%
1959	0.1186	0.0401	0.0785	32.50%	1	92.5%
1960	0.0047	0.0426	-0.0379	35.00%	2	94.6%
1961	0.2888	0.0383	0.2306	37.50%	0	94.6%
1962	-0.0873	0.0400	-0.1273	40.00%	0	94.6%
1963	0.2290	0.0388	0.1901	42.50%	2	96.8%
1964	0.1648	0.0415	0.1233	45.00%	1	97.8%
1965	0.1245	0.0418	0.0826	47.50%	0	97.8%
1966	-0.1000	0.0448	-0.1455	50.00%	1	98.8%
1967	0.2398	0.0458	0.1938	51.00%	1	100.0%
1968	0.1106	0.0550	0.0556			
1969	-0.0850	0.0595	-0.1446			
1970	0.0388	0.0674	-0.0288			
1971	0.1430	0.0632	0.0789			
1972	0.1888	0.0587	0.1312			
1973	-0.1468	0.0651	-0.2120			
1974	-0.2647	0.0727	-0.3374			
1975	0.3723	0.0798	0.2924			
1976	0.2393	0.0789	0.1604			
1977	-0.0716	0.0714	-0.1430			
1978	0.0657	0.0790	-0.0133			
1979	0.1881	0.0696	0.0975			
1980	0.3250	0.0697	0.2253			
1981	-0.0492	0.1156	-0.1647			
1982	0.2155	0.1350	0.0805			
1983	0.2250	0.1038	0.1218			
1984	0.0627	0.1174	-0.0547			
1985	0.3173	0.1125	0.2048			
1986	0.1867	0.0888	0.0989			
1987	0.0625	0.0792	-0.0267			
1988	0.1661	0.0897	0.0764			
1989	0.3168	0.0881	0.2289			
1990	-0.0310	0.0819	-0.1129			
1991	0.3047	0.0822	0.2225			
1992	0.0762	0.0726	0.0036			
1993	0.1608	0.0717	0.0291			
1994	0.0132	0.0658	-0.0527			
1995	0.3758	0.0780	0.2998			
1996	0.2290	0.0618	0.1678			
1997	0.3336	0.0664	0.2672			
1998	0.2858	0.0583	0.2275			
1999	0.2194	0.0667	0.1527			
2000	-0.0810	0.0650	-0.1588			
2001	-0.1188	0.0553	-0.1742			
2002	-0.2210	0.0558	-0.2768			
2003	0.2888	0.0480	0.2388			
2004	0.1088	0.0502	0.0586			
2005	0.0491	0.0488	0.0022			
2006	0.1578	0.0468	0.1111			
2007	0.0649	0.0496	0.0063			
2008	-0.3700	0.0445	-0.4145			
2009	0.2646	0.0347	0.2298			
2010	0.1506	0.0425	0.1081			
2011	0.0211	0.0382	-0.0171			
2012	0.1600	0.0246	0.1354			
2013	0.3238	0.0288	0.2951			
2014	0.1368	0.0341	0.1028			
2015	0.0138	0.0247	-0.0109			
2016	0.1188	0.0230	0.0958			
2017	0.2183	0.0267	0.1916			
2018	-0.0438	0.0282	-0.0720			
Average	0.1180	0.0497	0.0681			
Std Dev	0.1870	0.0283	0.1985			

MRP		
Bin	Frequency	Cumulative %
-50.00%	0	0.0%
-47.50%	0	0.0%
-45.00%	1	1.1%
-42.50%	0	1.1%
-40.00%	1	2.2%
-37.50%	1	3.2%
-35.00%	0	3.2%
-32.50%	1	4.3%
-30.00%	0	4.3%
-27.50%	2	6.5%
-25.00%	0	6.5%
-22.50%	0	6.5%
-20.00%	1	7.5%
-17.50%	0	7.5%
-15.00%	3	10.8%
-12.50%	6	17.2%
-10.00%	5	22.6%
-7.50%	0	22.6%
-5.00%	3	25.8%
-2.50%	8	32.3%
0.00%	3	35.5%
2.50%	3	38.7%
5.00%	4	43.0%
7.50%	2	45.2%
10.00%	9	54.9%
12.50%	5	60.2%
15.00%	2	62.4%
17.50%	6	68.0%
20.00%	4	73.1%
22.50%	3	76.3%
25.00%	7	83.8%
27.50%	1	84.8%
30.00%	6	91.4%
32.50%	1	92.5%
35.00%	2	94.6%
37.50%	0	94.6%
40.00%	0	94.6%
42.50%	2	96.8%
45.00%	1	97.8%
47.50%	0	97.8%
50.00%	1	98.8%
51.00%	1	100.0%

Count		93
Highest MRP from Direct	Rank	
13.72%	61.80%	
Historical Market Return		
Event	% Rank	Occurrence
13.84%	49.80%	47
16.75%	56.80%	40
		93

Source: Duff & Phelps, 2019 SBB1, Appendix A-1, A-7

Alternative Bond Yield Plus Risk Premium Analyses

	[1]	[2]	[3]	[4]
		LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX
	Constant	-0.025	0.055	0.000
Long Term Average [5]			1.81%	18.78

	30-Yr Treasury Yield [6]	Risk Premium [7]	Return on Equity [8]
Current 30-Year Treasury	2.63%	7.14%	9.77%
Near-Term Projected 30-Year Treasury	2.70%	7.08%	9.78%
Long-Term Projected 30-Year Treasury	3.70%	6.29%	9.99%
Mr. Gorman's Projected 30-Year Treasury	2.80%	6.99%	9.79%

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.822384
R Square	0.676315
Adjusted R Square	0.674957
Standard Error	0.00533
Observations	719

ANOVA					
	df	SS	MS	F	Significance F
Regression	3	0.042440248	0.0141467	497.9794456	1.2992E-174
Residual	715	0.020311935	2.841E-05		
Total	718	0.062752183			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-0.02545	0.00234	-10.86348	0.00000	-0.03005	-0.02085
LN(30-Year Treasury)	-0.02507	0.00074	-33.92001	0.00000	-0.02653	-0.02362
Moody's Utility Baa Credit Spread	0.05538	0.00754	0.71427	0.47529	-0.09684	0.20761
VIX	0.00025	0.00006	3.88217	0.00011	0.00012	0.00037

- [1] Constant of regression equation (1993 - 2019)
- [2] Equals Regression Coefficient of 30-year Treasury Yield variable
- [3] Equals Regression Coefficient of Credit Spread variable
- [4] Equals Regression Coefficient of VIX variable
- [5] Long-Term Historical Average of each variable
- [6] Source Current = Bloomberg Professional  
Near-Term = Blue Chip Financial Forecasts, Vol 38, No 7, July 1, 2019, at 2  
Long-Term Projected = Blue Chip Financial Forecasts, Vol 38, No 6, June 1, 2019, at 14  
Exhibit MPG-21
- [7] Equals [1] + ([6] x [2]) + ([3] x [5]) + ([4] x [5])
- [8] Equals [6] + [7]
- [9] Source S&P Global Market Intelligence
- [10] Source S&P Global Market Intelligence
- [11] Source Bloomberg Professional, equals 200-trading day average (i.e. lag period)
- [12] Source Bloomberg Professional, equals 200-trading day average (i.e. lag period)
- [13] Equals LN[11]
- [14] Equals [12] - [11]
- [15] Source Bloomberg Professional, equals 200-trading day average (i.e. lag period)
- [16] Equals [10] - [11]

[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
Date of Rate Case	Return on Equity	30-Year Treasury Yield	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
1/10/1990	12.80%	8.24%	8.24%	-2.50		19.951	4.56%
1/11/1990	12.90%	8.24%	8.24%	-2.50		19.964	4.68%
1/17/1990	12.80%	8.22%	8.22%	-2.50		21.586	4.58%
1/26/1990	12.00%	8.20%	8.20%	-2.50		22.873	3.80%
2/9/1990	12.10%	8.17%	8.17%	-2.50		23.580	3.93%
2/24/1990	12.86%	8.15%	8.15%	-2.51		23.352	4.71%
3/30/1990	12.90%	8.16%	8.16%	-2.51		22.175	4.74%
4/4/1990	15.76%	8.17%	8.17%	-2.51		22.156	7.59%
4/12/1990	12.52%	8.18%	8.18%	-2.50		22.039	4.34%
4/19/1990	12.75%	8.20%	8.20%	-2.50		22.014	4.55%
5/21/1990	12.10%	8.28%	8.28%	-2.49		21.425	3.82%
5/29/1990	12.40%	8.30%	8.30%	-2.49		21.247	4.10%
5/31/1990	12.00%	8.30%	8.30%	-2.49		21.174	3.70%
6/4/1990	12.90%	8.30%	8.30%	-2.49		21.109	4.60%
6/6/1990	12.25%	8.31%	8.31%	-2.49		21.056	3.94%
6/15/1990	13.20%	8.32%	8.32%	-2.49		20.803	4.88%
6/20/1990	12.92%	8.32%	8.32%	-2.49		20.684	4.60%
6/27/1990	12.90%	8.33%	8.33%	-2.49		20.523	4.57%
6/29/1990	12.50%	8.33%	8.33%	-2.48		20.448	4.17%
7/6/1990	12.35%	8.34%	8.34%	-2.48		20.327	4.01%
7/6/1990	12.10%	8.34%	8.34%	-2.48		20.327	3.76%
8/10/1990	12.55%	8.41%	8.41%	-2.48		20.520	4.14%
8/16/1990	13.21%	8.43%	8.43%	-2.47		20.635	4.78%
8/22/1990	13.10%	8.45%	8.45%	-2.47		20.825	4.65%
8/24/1990	13.00%	8.46%	8.46%	-2.47		20.999	4.54%
9/26/1990	11.45%	8.59%	8.59%	-2.45		21.957	2.86%
10/2/1990	13.00%	8.61%	8.61%	-2.45		22.090	4.39%
10/5/1990	12.84%	8.62%	8.62%	-2.45		22.177	4.22%
10/19/1990	13.00%	8.67%	8.67%	-2.45		22.677	4.33%
10/25/1990	12.30%	8.68%	8.68%	-2.44		22.813	3.62%
11/21/1990	12.70%	8.69%	8.69%	-2.44		22.979	4.01%
12/13/1990	12.30%	8.67%	8.67%	-2.44		22.962	3.63%
12/17/1990	12.87%	8.67%	8.67%	-2.45		22.989	4.20%
12/18/1990	13.10%	8.67%	8.67%	-2.45		23.001	4.43%
12/19/1990	12.00%	8.66%	8.66%	-2.45		23.021	3.34%
12/20/1990	12.75%	8.66%	8.66%	-2.45		23.038	4.09%
12/21/1990	12.50%	8.66%	8.66%	-2.45		23.050	3.84%
12/27/1990	12.79%	8.66%	8.66%	-2.45		23.111	4.13%
1/2/1991	13.10%	8.65%	8.65%	-2.45		23.228	4.45%
1/4/1991	12.50%	8.65%	8.65%	-2.45		23.308	3.85%
1/15/1991	12.75%	8.64%	8.64%	-2.45		23.744	4.11%
1/25/1991	11.70%	8.63%	8.63%	-2.45		23.915	3.07%
2/4/1991	12.50%	8.60%	8.60%	-2.45		23.925	3.90%
2/7/1991	12.50%	8.59%	8.59%	-2.45		23.930	3.91%
2/12/1991	13.00%	8.58%	8.58%	-2.46		23.961	4.43%
2/14/1991	12.72%	8.57%	8.57%	-2.46		23.984	4.15%
2/22/1991	12.80%	8.55%	8.55%	-2.46		24.052	4.25%
3/6/1991	13.10%	8.53%	8.53%	-2.46		24.139	4.57%
3/8/1991	13.00%	8.52%	8.52%	-2.46		24.176	4.48%
3/8/1991	12.30%	8.52%	8.52%	-2.46		24.176	3.78%
4/22/1991	13.00%	8.49%	8.49%	-2.47		24.187	4.51%
5/7/1991	13.50%	8.47%	8.47%	-2.47		24.213	5.03%
5/13/1991	13.25%	8.47%	8.47%	-2.47		24.135	4.78%
5/30/1991	12.75%	8.44%	8.44%	-2.47		23.592	4.31%
6/12/1991	12.00%	8.41%	8.41%	-2.48		23.059	3.59%
6/25/1991	11.70%	8.39%	8.39%	-2.48		22.501	3.31%
6/28/1991	12.50%	8.38%	8.38%	-2.48		22.349	4.12%
7/1/1991	12.00%	8.38%	8.38%	-2.48		22.296	3.62%
7/3/1991	12.50%	8.37%	8.37%	-2.48		22.180	4.13%
7/19/1991	12.10%	8.34%	8.34%	-2.48		21.587	3.78%
8/1/1991	12.90%	8.32%	8.32%	-2.49		20.947	4.58%
8/16/1991	13.20%	8.29%	8.29%	-2.49		20.171	4.91%
9/27/1991	12.50%	8.23%	8.23%	-2.50		19.033	4.27%
9/30/1991	12.25%	8.23%	8.23%	-2.50		19.006	4.02%
10/17/1991	13.00%	8.20%	8.20%	-2.50		18.520	4.80%
10/23/1991	12.50%	8.20%	8.20%	-2.50		18.275	4.30%
10/23/1991	12.55%	8.20%	8.20%	-2.50		18.275	4.35%
10/31/1991	11.80%	8.19%	8.19%	-2.50		17.727	3.61%
11/1/1991	12.00%	8.19%	8.19%	-2.50		17.668	3.81%
11/5/1991	12.25%	8.19%	8.19%	-2.50		17.583	4.06%
11/12/1991	12.50%	8.18%	8.18%	-2.50		17.383	4.32%
11/12/1991	13.25%	8.18%	8.18%	-2.50		17.383	5.07%
11/25/1991	12.40%	8.18%	8.18%	-2.50		17.237	4.22%
11/26/1991	12.50%	8.18%	8.18%	-2.50		17.223	4.32%
11/26/1991	11.60%	8.18%	8.18%	-2.50		17.223	3.42%
11/27/1991	12.10%	8.18%	8.18%	-2.50		17.211	3.92%
12/18/1991	12.25%	8.15%	8.15%	-2.51		17.092	4.10%
12/19/1991	12.60%	8.15%	8.15%	-2.51		17.077	4.45%
12/19/1991	12.80%	8.15%	8.15%	-2.51		17.077	4.65%
12/20/1991	12.65%	8.14%	8.14%	-2.51		17.061	4.51%
1/9/1992	12.80%	8.09%	8.09%	-2.51		17.131	4.71%
1/16/1992	12.75%	8.07%	8.07%	-2.52		17.144	4.68%
1/21/1992	12.00%	8.06%	8.06%	-2.52		17.132	3.94%
1/22/1992	13.00%	8.06%	8.06%	-2.52		17.115	4.94%
1/27/1992	12.65%	8.05%	8.05%	-2.52		17.085	4.60%
1/31/1992	12.00%	8.04%	8.04%	-2.52		17.116	3.96%

Date of Rate Case	Return on Equity	30-Year Treasury Yield	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
2/11/1992	12.40%	8.03%		-2.52		17.161	4.37%
2/25/1992	12.50%	8.01%		-2.52		17.139	4.49%
3/16/1992	11.43%	7.98%		-2.53		17.252	3.45%
3/18/1992	12.28%	7.98%		-2.53		17.255	4.30%
4/2/1992	12.10%	7.95%		-2.53		17.233	4.15%
4/9/1992	11.45%	7.94%		-2.53		17.248	3.51%
4/10/1992	11.50%	7.93%		-2.53		17.243	3.57%
4/14/1992	11.50%	7.93%		-2.53		17.216	3.57%
5/5/1992	11.50%	7.89%		-2.54		17.082	3.61%
5/12/1992	12.48%	7.88%		-2.54		17.082	4.58%
5/12/1992	11.87%	7.88%		-2.54		17.082	3.99%
6/1/1992	12.30%	7.87%		-2.54		17.011	4.43%
6/12/1992	10.90%	7.86%		-2.54		16.961	3.04%
6/26/1992	12.35%	7.85%		-2.54		16.911	4.50%
6/29/1992	11.00%	7.85%		-2.54		16.887	3.15%
6/30/1992	13.00%	7.85%		-2.55		16.865	5.15%
7/13/1992	13.50%	7.84%		-2.55		16.777	5.66%
7/13/1992	11.90%	7.84%		-2.55		16.777	4.06%
7/22/1992	11.20%	7.83%		-2.55		16.656	3.37%
8/3/1992	12.00%	7.81%		-2.55		16.514	4.19%
8/6/1992	12.50%	7.80%		-2.55		16.477	4.70%
9/22/1992	12.00%	7.71%		-2.56		15.901	4.29%
9/28/1992	11.40%	7.71%		-2.56		15.791	3.69%
9/30/1992	11.75%	7.70%		-2.56		15.760	4.05%
10/2/1992	13.00%	7.70%		-2.56		15.751	5.30%
10/12/1992	12.20%	7.70%		-2.56		15.857	4.50%
10/16/1992	13.16%	7.70%		-2.56		15.836	5.46%
10/30/1992	11.75%	7.71%		-2.56		15.749	4.04%
11/3/1992	12.00%	7.71%		-2.56		15.747	4.29%
12/3/1992	11.85%	7.68%		-2.57		15.365	4.17%
12/15/1992	11.00%	7.66%		-2.57		15.185	3.34%
12/16/1992	11.90%	7.66%		-2.57		15.159	4.24%
12/16/1992	12.40%	7.66%		-2.57		15.159	4.74%
12/17/1992	12.00%	7.66%		-2.57		15.127	4.34%
12/22/1992	12.40%	7.65%		-2.57		15.012	4.75%
12/22/1992	12.30%	7.65%		-2.57		15.012	4.65%
12/29/1992	12.25%	7.63%		-2.57		14.868	4.62%
12/30/1992	12.00%	7.63%		-2.57		14.847	4.37%
12/31/1992	11.90%	7.63%		-2.57		14.827	4.27%
1/12/1993	12.00%	7.61%		-2.58		14.723	4.39%
1/21/1993	11.25%	7.59%		-2.58		14.550	3.66%
2/2/1993	11.40%	7.56%		-2.58		14.357	3.84%
2/15/1993	12.30%	7.52%		-2.59		14.229	4.78%
2/24/1993	11.90%	7.49%		-2.59		14.190	4.41%
2/26/1993	11.80%	7.48%		-2.59		14.171	4.32%
2/26/1993	12.20%	7.48%		-2.59		14.171	4.72%
4/23/1993	11.75%	7.29%		-2.62		13.852	4.46%
5/11/1993	11.75%	7.25%		-2.62		13.853	4.50%
5/14/1993	11.50%	7.24%		-2.63		13.866	4.26%
5/25/1993	11.50%	7.23%		-2.63		13.877	4.27%
5/28/1993	11.00%	7.22%		-2.63		13.848	3.78%
6/3/1993	12.00%	7.21%		-2.63		13.836	4.79%
6/16/1993	11.50%	7.19%		-2.63		13.772	4.31%
6/18/1993	12.10%	7.18%		-2.63		13.761	4.92%
6/25/1993	11.67%	7.17%		-2.64		13.730	4.50%
7/21/1993	11.38%	7.10%		-2.65		13.456	4.28%
7/23/1993	10.46%	7.09%		-2.65		13.366	3.37%
8/24/1993	11.50%	6.96%		-2.67		12.798	4.54%
9/21/1993	10.50%	6.81%		-2.69		12.719	3.69%
9/29/1993	11.47%	6.77%		-2.69		12.733	4.70%
9/30/1993	11.60%	6.76%		-2.69		12.736	4.84%
11/2/1993	10.80%	6.80%	7.90%	-2.72	1.29%	12.669	4.20%
11/12/1993	12.00%	6.57%	7.87%	-2.72	1.30%	12.757	5.43%
11/26/1993	11.00%	6.52%	7.84%	-2.73	1.32%	12.845	4.48%
12/14/1993	10.55%	6.48%	7.80%	-2.74	1.32%	12.748	4.07%
12/16/1993	10.60%	6.48%	7.80%	-2.74	1.32%	12.725	4.12%
12/21/1993	11.30%	6.47%	7.80%	-2.74	1.33%	12.662	4.83%
1/4/1994	10.07%	6.44%	7.78%	-2.74	1.34%	12.497	3.63%
1/13/1994	11.00%	6.42%	7.77%	-2.75	1.35%	12.456	4.58%
1/21/1994	11.00%	6.40%	7.75%	-2.75	1.35%	12.388	4.60%
1/28/1994	11.35%	6.39%	7.74%	-2.75	1.35%	12.371	4.96%
2/3/1994	11.40%	6.38%	7.73%	-2.75	1.35%	12.341	5.02%
2/17/1994	10.60%	6.36%	7.71%	-2.76	1.35%	12.380	4.24%
2/25/1994	11.25%	6.35%	7.71%	-2.78	1.35%	12.403	4.90%
2/25/1994	12.00%	6.35%	7.71%	-2.76	1.35%	12.403	5.65%
3/1/1994	11.00%	6.35%	7.70%	-2.76	1.36%	12.414	4.65%
3/4/1994	11.00%	6.35%	7.70%	-2.76	1.36%	12.444	4.65%
4/25/1994	11.00%	6.41%	7.74%	-2.75	1.33%	13.021	4.59%
5/10/1994	11.75%	6.45%	7.77%	-2.74	1.32%	13.186	5.30%
5/13/1994	10.50%	6.46%	7.78%	-2.74	1.32%	13.244	4.04%
6/3/1994	11.00%	6.54%	7.84%	-2.73	1.30%	13.312	4.46%
6/27/1994	11.40%	6.65%	7.94%	-2.71	1.29%	13.417	4.75%
8/5/1994	12.75%	6.88%	8.14%	-2.68	1.26%	13.408	5.87%
10/31/1994	10.00%	7.33%	8.53%	-2.61	1.21%	13.764	2.67%
11/9/1994	10.85%	7.39%	8.60%	-2.61	1.21%	13.925	3.46%
11/9/1994	10.85%	7.39%	8.60%	-2.61	1.21%	13.925	3.46%
11/18/1994	11.20%	7.45%	8.65%	-2.60	1.20%	14.121	3.75%

Date of Rate Case	Return on Equity	30-Year Treasury Yield	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
11/22/1994	11.60%	7.47%	8.67%	-2.59	1.20%	14.142	4.13%
11/28/1994	11.06%	7.49%	8.69%	-2.59	1.20%	14.199	3.57%
12/8/1994	11.70%	7.54%	8.75%	-2.58	1.21%	14.303	4.16%
12/8/1994	11.50%	7.54%	8.75%	-2.58	1.21%	14.303	3.96%
12/14/1994	10.95%	7.56%	8.77%	-2.58	1.21%	14.291	3.39%
12/15/1994	11.50%	7.57%	8.78%	-2.58	1.21%	14.275	3.93%
12/19/1994	11.50%	7.58%	8.79%	-2.58	1.21%	14.242	3.92%
12/28/1994	12.15%	7.61%	8.82%	-2.58	1.21%	14.148	4.54%
1/9/1995	12.28%	7.64%	8.86%	-2.57	1.22%	14.140	4.64%
1/31/1995	11.00%	7.69%	8.93%	-2.57	1.24%	13.725	3.31%
2/10/1995	12.60%	7.70%	8.95%	-2.56	1.25%	13.559	4.90%
2/17/1995	11.90%	7.70%	8.96%	-2.56	1.26%	13.495	4.20%
3/9/1995	11.50%	7.71%	8.98%	-2.56	1.26%	13.363	3.79%
3/20/1995	12.00%	7.72%	8.98%	-2.56	1.26%	13.344	4.28%
3/23/1995	12.81%	7.72%	8.98%	-2.56	1.26%	13.318	5.09%
3/29/1995	11.60%	7.72%	8.99%	-2.56	1.27%	13.305	3.88%
4/6/1995	11.10%	7.71%	8.99%	-2.56	1.28%	13.306	3.39%
4/7/1995	11.00%	7.71%	8.99%	-2.56	1.28%	13.300	3.29%
4/19/1995	11.00%	7.70%	8.99%	-2.56	1.29%	13.207	3.30%
5/12/1995	11.63%	7.68%	8.96%	-2.57	1.29%	13.198	3.95%
5/25/1995	11.20%	7.65%	8.94%	-2.57	1.30%	13.212	3.55%
6/9/1995	11.25%	7.60%	8.91%	-2.58	1.31%	13.255	3.65%
6/21/1995	12.25%	7.56%	8.88%	-2.58	1.32%	13.235	4.69%
6/30/1995	11.10%	7.52%	8.85%	-2.59	1.33%	13.194	3.58%
9/11/1995	11.30%	7.20%	8.58%	-2.63	1.38%	12.507	4.10%
9/27/1995	11.50%	7.12%	8.51%	-2.64	1.38%	12.252	4.38%
9/27/1995	11.75%	7.12%	8.51%	-2.64	1.38%	12.252	4.63%
9/27/1995	11.30%	7.12%	8.51%	-2.64	1.38%	12.252	4.18%
9/29/1995	11.00%	7.11%	8.49%	-2.64	1.38%	12.241	3.89%
11/9/1995	12.36%	6.90%	8.30%	-2.67	1.40%	12.461	5.46%
11/9/1995	11.38%	6.90%	8.30%	-2.67	1.40%	12.461	4.48%
11/17/1995	11.00%	6.86%	8.26%	-2.68	1.41%	12.502	4.14%
12/4/1995	11.35%	6.78%	8.21%	-2.69	1.43%	12.514	4.57%
12/11/1995	11.40%	6.74%	8.18%	-2.70	1.43%	12.521	4.66%
12/20/1995	11.60%	6.70%	8.14%	-2.70	1.44%	12.503	4.90%
12/27/1995	12.00%	6.66%	8.11%	-2.71	1.45%	12.481	5.34%
2/5/1996	12.25%	6.48%	7.98%	-2.74	1.50%	12.630	5.77%
3/29/1996	10.67%	6.42%	7.92%	-2.75	1.50%	13.472	4.25%
4/8/1996	11.00%	6.42%	7.92%	-2.75	1.50%	13.621	4.58%
4/11/1996	12.59%	6.43%	7.93%	-2.74	1.51%	13.730	6.16%
4/11/1996	12.59%	6.43%	7.93%	-2.74	1.51%	13.730	6.16%
4/24/1996	11.25%	6.43%	7.95%	-2.74	1.51%	13.922	4.82%
4/30/1996	11.00%	6.43%	7.95%	-2.74	1.52%	13.980	4.57%
5/13/1996	11.00%	6.44%	7.97%	-2.74	1.53%	14.143	4.59%
5/23/1996	11.25%	6.43%	7.98%	-2.74	1.54%	14.234	4.82%
6/25/1996	11.25%	6.48%	8.01%	-2.74	1.53%	14.715	4.77%
6/27/1996	11.20%	6.48%	8.01%	-2.74	1.53%	14.748	4.72%
8/12/1996	10.40%	6.57%	8.09%	-2.72	1.51%	15.346	3.83%
9/27/1996	11.00%	6.71%	8.18%	-2.70	1.48%	15.956	4.29%
10/16/1996	12.25%	6.76%	8.22%	-2.69	1.46%	16.204	5.49%
11/5/1996	11.00%	6.81%	8.25%	-2.69	1.44%	16.418	4.19%
11/26/1996	11.30%	6.83%	8.26%	-2.68	1.43%	16.576	4.47%
12/18/1996	11.75%	6.83%	8.27%	-2.68	1.44%	16.796	4.92%
12/31/1996	11.50%	6.83%	8.27%	-2.68	1.44%	16.843	4.67%
1/3/1997	10.70%	6.83%	8.27%	-2.68	1.43%	16.859	3.87%
2/13/1997	11.80%	6.82%	8.24%	-2.68	1.42%	17.228	4.98%
2/20/1997	11.80%	6.82%	8.24%	-2.69	1.42%	17.291	4.98%
3/31/1997	10.02%	6.80%	8.21%	-2.69	1.40%	17.827	3.22%
4/2/1997	11.65%	6.80%	8.21%	-2.69	1.40%	17.859	4.85%
4/28/1997	11.50%	6.81%	8.20%	-2.69	1.39%	18.196	4.69%
4/29/1997	11.70%	6.81%	8.20%	-2.69	1.39%	18.210	4.89%
7/17/1997	12.00%	6.77%	8.14%	-2.69	1.37%	19.028	5.23%
12/12/1997	11.00%	6.60%	7.96%	-2.72	1.36%	22.568	4.40%
12/23/1997	11.12%	6.57%	7.94%	-2.72	1.37%	22.838	4.55%
2/2/1998	12.75%	6.39%	7.81%	-2.75	1.42%	23.426	6.36%
3/2/1998	11.25%	6.29%	7.71%	-2.77	1.42%	23.401	4.96%
3/6/1998	10.75%	6.27%	7.70%	-2.77	1.43%	23.374	4.48%
3/20/1998	10.50%	6.22%	7.65%	-2.78	1.42%	23.346	4.28%
4/30/1998	12.20%	6.12%	7.55%	-2.79	1.42%	23.657	6.08%
7/10/1998	11.40%	5.94%	7.40%	-2.82	1.46%	23.131	5.46%
9/15/1998	11.90%	5.78%	7.30%	-2.85	1.52%	23.823	6.12%
11/30/1998	12.60%	5.58%	7.26%	-2.89	1.68%	26.038	7.02%
12/10/1998	12.20%	5.54%	7.25%	-2.89	1.71%	26.300	6.66%
12/17/1998	12.10%	5.52%	7.25%	-2.90	1.73%	26.545	6.58%
2/5/1999	10.30%	5.38%	7.24%	-2.92	1.86%	27.504	4.92%
3/4/1999	10.50%	5.34%	7.25%	-2.93	1.91%	28.150	5.16%
4/6/1999	10.94%	5.32%	7.28%	-2.93	1.96%	28.434	5.62%
7/29/1999	10.75%	5.52%	7.54%	-2.90	2.02%	25.838	5.23%
9/23/1999	10.75%	5.70%	7.72%	-2.86	2.02%	24.955	5.05%
11/17/1999	11.10%	5.90%	7.90%	-2.83	2.00%	24.340	5.20%
1/7/2000	11.50%	6.05%	8.03%	-2.81	1.98%	23.491	5.45%
1/7/2000	11.50%	6.05%	8.03%	-2.81	1.98%	23.491	5.45%
2/17/2000	10.60%	6.17%	8.15%	-2.78	1.98%	23.371	4.43%
3/28/2000	11.25%	6.20%	8.23%	-2.78	2.03%	22.977	5.05%
5/24/2000	11.00%	6.18%	8.34%	-2.78	2.16%	23.851	4.82%
7/18/2000	12.20%	6.16%	8.40%	-2.79	2.24%	23.370	6.04%
9/29/2000	11.16%	6.03%	8.42%	-2.81	2.38%	22.441	5.13%

Date of Rate Case	Return on Equity	30-Year Treasury Yield	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
11/28/2000	12.90%	5.89%	8.40%	-2.83	2.51%	22.973	7.01%
11/30/2000	12.10%	5.88%	8.40%	-2.83	2.51%	23.027	6.22%
1/23/2001	11.25%	5.79%	8.33%	-2.85	2.54%	23.495	5.46%
2/8/2001	11.50%	5.77%	8.31%	-2.85	2.54%	23.172	5.73%
5/8/2001	10.75%	5.62%	8.12%	-2.88	2.50%	24.371	5.13%
6/26/2001	11.00%	5.62%	8.09%	-2.88	2.46%	24.895	5.38%
7/25/2001	11.02%	5.60%	8.06%	-2.88	2.46%	25.061	5.42%
7/25/2001	11.02%	5.60%	8.06%	-2.88	2.46%	25.061	5.42%
7/31/2001	11.00%	5.59%	8.05%	-2.88	2.46%	24.978	5.41%
8/31/2001	10.50%	5.56%	8.01%	-2.89	2.46%	24.499	4.94%
9/7/2001	10.75%	5.55%	8.01%	-2.89	2.45%	24.541	5.20%
9/10/2001	11.00%	5.55%	8.01%	-2.89	2.45%	24.567	5.45%
9/20/2001	10.00%	5.55%	8.00%	-2.89	2.45%	24.850	4.45%
10/24/2001	10.30%	5.54%	8.01%	-2.89	2.47%	25.696	4.76%
11/28/2001	10.60%	5.49%	8.01%	-2.90	2.51%	26.149	5.11%
12/3/2001	12.88%	5.49%	8.01%	-2.90	2.52%	26.196	7.39%
12/20/2001	12.50%	5.50%	8.03%	-2.90	2.53%	26.141	7.00%
1/22/2002	10.00%	5.50%	8.06%	-2.90	2.56%	25.522	4.50%
3/27/2002	10.10%	5.45%	8.09%	-2.91	2.65%	24.626	4.65%
4/22/2002	11.80%	5.45%	8.12%	-2.91	2.67%	24.461	6.35%
5/28/2002	10.17%	5.46%	8.15%	-2.91	2.68%	24.275	4.71%
6/10/2002	12.00%	5.47%	8.16%	-2.91	2.69%	24.331	6.53%
6/18/2002	11.16%	5.48%	8.17%	-2.90	2.70%	24.396	5.68%
6/20/2002	11.00%	5.48%	8.18%	-2.90	2.70%	24.451	5.52%
6/20/2002	12.30%	5.48%	8.18%	-2.90	2.70%	24.451	6.82%
7/15/2002	11.00%	5.48%	8.19%	-2.90	2.72%	24.130	5.52%
9/12/2002	12.30%	5.45%	8.14%	-2.91	2.69%	25.140	6.85%
9/26/2002	10.45%	5.41%	8.12%	-2.92	2.71%	25.816	5.04%
12/4/2002	11.55%	5.29%	8.04%	-2.94	2.75%	28.007	6.26%
12/13/2002	11.75%	5.27%	8.02%	-2.94	2.75%	28.249	6.48%
12/20/2002	11.40%	5.25%	8.01%	-2.95	2.76%	28.439	6.15%
1/8/2003	11.10%	5.19%	7.96%	-2.96	2.77%	28.875	5.91%
1/31/2003	12.45%	5.13%	7.89%	-2.97	2.76%	29.608	7.32%
2/28/2003	12.30%	5.05%	7.79%	-2.99	2.75%	30.685	7.25%
3/6/2003	10.75%	5.03%	7.77%	-2.99	2.74%	30.932	5.72%
3/7/2003	9.96%	5.02%	7.76%	-2.99	2.74%	30.987	4.94%
3/20/2003	12.00%	4.98%	7.70%	-3.00	2.71%	31.498	7.02%
4/3/2003	12.00%	4.96%	7.64%	-3.00	2.68%	31.713	7.04%
4/15/2003	11.15%	4.94%	7.59%	-3.01	2.65%	31.673	6.21%
6/25/2003	10.75%	4.79%	7.24%	-3.04	2.45%	28.301	5.96%
6/26/2003	10.75%	4.79%	7.23%	-3.04	2.44%	28.223	5.96%
7/9/2003	9.75%	4.79%	7.19%	-3.04	2.40%	27.498	4.96%
7/16/2003	9.75%	4.79%	7.16%	-3.04	2.37%	27.035	4.96%
7/25/2003	9.50%	4.80%	7.13%	-3.04	2.33%	26.346	4.70%
8/26/2003	10.50%	4.83%	7.02%	-3.03	2.19%	24.802	5.67%
12/17/2003	9.85%	4.94%	6.75%	-3.01	1.82%	20.529	4.91%
12/17/2003	10.70%	4.94%	6.75%	-3.01	1.82%	20.529	5.76%
12/18/2003	11.50%	4.94%	6.75%	-3.01	1.82%	20.453	6.56%
12/19/2003	12.00%	4.94%	6.75%	-3.01	1.81%	20.380	7.06%
12/19/2003	12.00%	4.94%	6.75%	-3.01	1.81%	20.380	7.06%
12/23/2003	10.50%	4.94%	6.75%	-3.01	1.81%	20.212	5.56%
1/13/2004	12.00%	4.95%	6.71%	-3.01	1.77%	19.363	7.05%
3/2/2004	10.75%	4.99%	6.62%	-3.00	1.64%	18.175	5.76%
3/26/2004	10.25%	5.02%	6.60%	-2.99	1.58%	17.977	5.23%
4/5/2004	11.25%	5.03%	6.60%	-2.99	1.57%	17.856	6.22%
5/18/2004	10.50%	5.07%	6.61%	-2.98	1.54%	17.446	5.43%
5/25/2004	10.25%	5.08%	6.60%	-2.98	1.53%	17.370	5.17%
5/27/2004	10.25%	5.08%	6.60%	-2.98	1.52%	17.338	5.17%
6/2/2004	11.22%	5.08%	6.60%	-2.98	1.52%	17.300	6.14%
6/30/2004	10.50%	5.10%	6.57%	-2.98	1.47%	16.971	5.40%
6/30/2004	10.50%	5.10%	6.57%	-2.98	1.47%	16.971	5.40%
7/16/2004	11.80%	5.11%	6.56%	-2.97	1.45%	16.718	6.49%
8/25/2004	10.25%	5.10%	6.53%	-2.98	1.43%	16.527	5.15%
9/9/2004	10.40%	5.10%	6.51%	-2.98	1.42%	16.364	5.30%
11/9/2004	10.50%	5.07%	6.43%	-2.98	1.37%	15.937	5.43%
11/23/2004	11.00%	5.06%	6.42%	-2.98	1.36%	15.752	5.94%
12/14/2004	10.97%	5.07%	6.41%	-2.98	1.35%	15.582	5.90%
12/21/2004	11.25%	5.07%	6.41%	-2.98	1.34%	15.511	6.18%
12/21/2004	11.50%	5.07%	6.41%	-2.98	1.34%	15.511	6.43%
12/22/2004	10.70%	5.07%	6.41%	-2.98	1.34%	15.486	5.63%
12/22/2004	11.50%	5.07%	6.41%	-2.98	1.34%	15.486	6.43%
12/29/2004	9.85%	5.07%	6.41%	-2.98	1.34%	15.327	4.78%
1/6/2005	10.70%	5.08%	6.41%	-2.98	1.33%	15.143	5.62%
2/18/2005	10.30%	4.98%	6.33%	-3.00	1.35%	14.601	5.32%
2/25/2005	10.50%	4.96%	6.31%	-3.00	1.35%	14.476	5.54%
3/10/2005	11.00%	4.93%	6.27%	-3.01	1.34%	14.188	6.07%
3/24/2005	10.30%	4.90%	6.23%	-3.02	1.34%	14.060	5.40%
4/4/2005	10.00%	4.88%	6.21%	-3.02	1.33%	14.023	5.12%
4/7/2005	10.25%	4.87%	6.20%	-3.02	1.33%	13.996	5.38%
5/18/2005	10.25%	4.78%	6.08%	-3.04	1.30%	13.898	5.47%
5/25/2005	10.75%	4.76%	6.07%	-3.04	1.30%	13.770	5.99%
5/26/2005	9.75%	4.76%	6.06%	-3.04	1.30%	13.741	4.99%
6/1/2005	9.75%	4.75%	6.05%	-3.05	1.30%	13.657	5.00%
7/19/2005	11.50%	4.64%	5.95%	-3.07	1.31%	13.169	6.86%
8/5/2005	11.75%	4.62%	5.93%	-3.07	1.31%	12.946	7.13%
8/15/2005	10.13%	4.61%	5.92%	-3.08	1.31%	12.853	5.52%
9/28/2005	10.00%	4.54%	5.87%	-3.09	1.32%	12.775	5.46%



Date of Rate Case	Return on Equity	30-Year Treasury Yield	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
10/4/2005	10.75%	4.54%	5.87%	-3.09	1.33%	12.777	6.21%
12/12/2005	11.00%	4.55%	5.93%	-3.09	1.38%	12.963	6.45%
12/13/2005	10.75%	4.55%	5.93%	-3.09	1.38%	12.958	6.20%
12/21/2005	10.28%	4.54%	5.93%	-3.09	1.39%	12.911	5.75%
12/21/2005	10.40%	4.54%	5.93%	-3.09	1.39%	12.911	5.86%
12/22/2005	11.15%	4.54%	5.94%	-3.09	1.39%	12.900	6.61%
12/22/2005	11.00%	4.54%	5.94%	-3.09	1.39%	12.900	6.46%
12/28/2005	10.00%	4.54%	5.94%	-3.09	1.40%	12.874	5.46%
12/28/2005	10.00%	4.54%	5.94%	-3.09	1.40%	12.874	5.46%
1/5/2006	11.00%	4.53%	5.94%	-3.09	1.41%	12.823	6.47%
1/27/2006	9.75%	4.52%	5.94%	-3.10	1.42%	12.731	5.23%
3/3/2006	10.36%	4.53%	5.96%	-3.09	1.43%	12.396	5.86%
4/17/2006	10.20%	4.61%	6.05%	-3.08	1.44%	12.342	5.59%
4/26/2006	10.60%	4.64%	6.08%	-3.07	1.44%	12.335	5.96%
5/17/2006	11.60%	4.69%	6.14%	-3.06	1.45%	12.468	6.91%
6/6/2006	10.00%	4.74%	6.19%	-3.05	1.44%	12.723	5.26%
6/27/2006	10.75%	4.80%	6.25%	-3.04	1.45%	13.067	5.95%
7/6/2006	10.20%	4.83%	6.28%	-3.03	1.45%	13.117	5.37%
7/24/2006	9.60%	4.86%	6.32%	-3.02	1.46%	13.299	4.74%
7/26/2006	10.50%	4.86%	6.33%	-3.02	1.47%	13.299	5.64%
7/28/2006	10.05%	4.86%	6.33%	-3.02	1.47%	13.289	5.19%
8/23/2006	9.55%	4.89%	6.36%	-3.02	1.47%	13.195	4.66%
9/1/2006	10.54%	4.90%	6.36%	-3.02	1.47%	13.188	5.64%
9/14/2006	10.00%	4.91%	6.37%	-3.01	1.47%	13.245	5.09%
10/6/2006	9.67%	4.92%	6.37%	-3.01	1.45%	13.287	4.75%
11/21/2006	10.08%	4.95%	6.39%	-3.01	1.44%	13.114	5.13%
11/21/2006	10.08%	4.95%	6.39%	-3.01	1.44%	13.114	5.13%
11/21/2006	10.12%	4.95%	6.39%	-3.01	1.44%	13.114	5.17%
12/1/2006	10.50%	4.95%	6.38%	-3.00	1.43%	13.064	5.55%
12/1/2006	10.25%	4.95%	6.38%	-3.00	1.43%	13.064	5.30%
12/7/2006	10.75%	4.95%	6.38%	-3.00	1.43%	13.055	5.80%
12/21/2006	10.90%	4.95%	6.38%	-3.01	1.42%	12.977	5.95%
12/21/2006	11.25%	4.95%	6.38%	-3.01	1.42%	12.977	6.30%
12/22/2006	10.25%	4.95%	6.37%	-3.01	1.42%	12.974	5.30%
1/5/2007	10.00%	4.95%	6.37%	-3.01	1.42%	12.970	5.05%
1/11/2007	10.10%	4.95%	6.37%	-3.01	1.42%	12.976	5.15%
1/11/2007	10.10%	4.95%	6.37%	-3.01	1.42%	12.976	5.15%
1/11/2007	10.90%	4.95%	6.37%	-3.01	1.42%	12.976	5.95%
1/12/2007	10.10%	4.95%	6.37%	-3.01	1.42%	12.969	5.15%
1/13/2007	10.40%	4.95%	6.37%	-3.01	1.42%	12.969	5.45%
1/19/2007	10.80%	4.94%	6.36%	-3.01	1.42%	12.955	5.86%
3/21/2007	11.35%	4.87%	6.26%	-3.02	1.40%	12.825	6.48%
3/22/2007	9.75%	4.86%	6.26%	-3.02	1.40%	12.806	4.89%
5/15/2007	10.00%	4.81%	6.19%	-3.03	1.38%	12.233	5.19%
5/17/2007	10.25%	4.81%	6.18%	-3.04	1.38%	12.222	5.44%
5/17/2007	10.25%	4.81%	6.18%	-3.04	1.38%	12.222	5.44%
5/22/2007	10.20%	4.80%	6.18%	-3.04	1.37%	12.198	5.40%
5/22/2007	10.50%	4.80%	6.18%	-3.04	1.37%	12.198	5.70%
5/23/2007	10.70%	4.80%	6.18%	-3.04	1.37%	12.193	5.90%
5/25/2007	9.67%	4.80%	6.18%	-3.04	1.37%	12.178	4.87%
6/15/2007	9.90%	4.82%	6.18%	-3.03	1.36%	12.267	5.08%
6/21/2007	10.20%	4.83%	6.19%	-3.03	1.36%	12.299	5.37%
6/22/2007	10.50%	4.83%	6.19%	-3.03	1.36%	12.315	5.67%
6/28/2007	10.75%	4.84%	6.19%	-3.03	1.36%	12.379	5.91%
7/12/2007	9.67%	4.86%	6.21%	-3.02	1.35%	12.555	4.81%
7/19/2007	10.00%	4.87%	6.21%	-3.02	1.35%	12.649	5.13%
7/19/2007	10.00%	4.87%	6.21%	-3.02	1.35%	12.649	5.13%
8/15/2007	10.40%	4.88%	6.23%	-3.02	1.36%	13.747	5.52%
10/9/2007	10.00%	4.91%	6.31%	-3.01	1.41%	15.910	5.09%
10/17/2007	9.10%	4.91%	6.32%	-3.01	1.41%	16.134	4.19%
10/31/2007	9.96%	4.90%	6.33%	-3.02	1.43%	16.589	5.06%
11/29/2007	10.90%	4.87%	6.34%	-3.02	1.47%	18.096	6.03%
12/6/2007	10.75%	4.86%	6.35%	-3.02	1.49%	18.410	5.89%
12/13/2007	9.96%	4.86%	6.36%	-3.02	1.50%	18.605	5.10%
12/14/2007	10.70%	4.86%	6.36%	-3.02	1.51%	18.628	5.84%
12/14/2007	10.80%	4.86%	6.36%	-3.02	1.51%	18.628	5.94%
12/19/2007	10.20%	4.86%	6.37%	-3.03	1.52%	18.718	5.34%
12/20/2007	10.20%	4.85%	6.37%	-3.03	1.52%	18.750	5.35%
12/20/2007	11.00%	4.85%	6.37%	-3.03	1.52%	18.750	6.15%
12/28/2007	10.25%	4.85%	6.39%	-3.03	1.54%	18.834	5.40%
12/31/2007	11.25%	4.85%	6.39%	-3.03	1.54%	18.862	6.40%
1/8/2008	10.75%	4.83%	6.39%	-3.03	1.56%	19.127	5.92%
1/17/2008	10.75%	4.81%	6.40%	-3.03	1.58%	19.482	5.94%
1/28/2008	9.40%	4.80%	6.40%	-3.04	1.60%	19.948	4.60%
1/30/2008	10.00%	4.79%	6.40%	-3.04	1.61%	20.102	5.21%
1/31/2008	10.71%	4.79%	6.40%	-3.04	1.61%	20.172	5.92%
2/29/2008	10.25%	4.75%	6.44%	-3.05	1.69%	21.407	5.50%
3/12/2008	10.25%	4.73%	6.46%	-3.05	1.73%	21.945	5.52%
3/25/2008	9.10%	4.68%	6.47%	-3.06	1.79%	22.512	4.42%
4/22/2008	10.25%	4.60%	6.49%	-3.08	1.89%	23.283	5.65%
4/24/2008	10.10%	4.60%	6.50%	-3.08	1.90%	23.321	5.50%
5/1/2008	10.70%	4.59%	6.50%	-3.08	1.92%	23.424	6.11%
5/19/2008	11.00%	4.56%	6.52%	-3.09	1.96%	23.330	6.44%
5/27/2008	10.00%	4.55%	6.53%	-3.09	1.98%	23.209	5.45%
6/10/2008	10.70%	4.54%	6.55%	-3.09	2.01%	22.876	6.16%
6/27/2008	11.04%	4.54%	6.58%	-3.09	2.04%	22.745	6.50%
6/27/2008	10.50%	4.54%	6.58%	-3.09	2.04%	22.745	5.96%

Date of Rate Case	Return on Equity	30-Year Treasury Yield	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
7/10/2008	10.43%	4.52%	6.60%	-3.10	2.07%	22.858	5.91%
7/16/2008	9.40%	4.52%	6.60%	-3.10	2.09%	23.050	4.88%
7/30/2008	10.80%	4.51%	6.64%	-3.10	2.13%	23.306	6.29%
7/31/2008	10.70%	4.51%	6.64%	-3.10	2.13%	23.324	6.19%
8/11/2008	10.25%	4.51%	6.66%	-3.10	2.16%	23.356	5.74%
8/26/2008	10.18%	4.50%	6.70%	-3.10	2.20%	23.260	5.68%
9/10/2008	10.30%	4.50%	6.73%	-3.10	2.23%	23.042	5.80%
9/24/2008	10.65%	4.48%	6.77%	-3.11	2.29%	23.444	6.17%
9/24/2008	10.65%	4.48%	6.77%	-3.11	2.29%	23.444	6.17%
9/24/2008	10.65%	4.48%	6.77%	-3.11	2.29%	23.444	6.17%
9/30/2008	10.20%	4.48%	6.79%	-3.11	2.32%	23.765	5.72%
10/8/2008	10.15%	4.46%	6.83%	-3.11	2.37%	24.577	5.69%
11/13/2008	10.55%	4.45%	7.14%	-3.11	2.69%	29.547	6.10%
11/17/2008	10.20%	4.44%	7.16%	-3.11	2.72%	29.975	5.76%
12/1/2008	10.25%	4.40%	7.27%	-3.12	2.87%	31.762	5.85%
12/23/2008	11.00%	4.27%	7.39%	-3.15	3.12%	34.098	6.73%
12/29/2008	10.00%	4.24%	7.41%	-3.16	3.17%	34.327	5.76%
12/29/2008	10.20%	4.24%	7.41%	-3.16	3.17%	34.327	5.96%
12/31/2008	10.75%	4.22%	7.42%	-3.17	3.20%	34.445	6.53%
1/14/2009	10.50%	4.15%	7.47%	-3.18	3.32%	35.195	6.35%
1/21/2009	10.50%	4.12%	7.49%	-3.19	3.38%	35.739	6.38%
1/21/2009	10.50%	4.12%	7.49%	-3.19	3.38%	35.739	6.38%
1/21/2009	10.50%	4.12%	7.49%	-3.19	3.38%	35.739	6.38%
1/27/2009	10.76%	4.09%	7.52%	-3.20	3.43%	36.198	6.67%
1/30/2009	10.50%	4.08%	7.53%	-3.20	3.46%	36.498	6.42%
2/4/2009	8.75%	4.06%	7.55%	-3.20	3.49%	36.855	4.69%
3/4/2009	10.50%	3.96%	7.64%	-3.23	3.68%	39.476	6.54%
3/12/2009	11.50%	3.93%	7.67%	-3.24	3.74%	40.316	7.57%
4/2/2009	11.10%	3.85%	7.76%	-3.26	3.91%	41.942	7.25%
4/21/2009	10.61%	3.80%	7.83%	-3.27	4.03%	42.820	6.81%
4/24/2009	10.00%	3.79%	7.85%	-3.27	4.06%	43.008	6.21%
4/30/2009	11.25%	3.78%	7.87%	-3.28	4.09%	43.203	7.47%
5/4/2009	10.74%	3.77%	7.88%	-3.28	4.11%	43.301	6.97%
5/20/2009	10.25%	3.74%	7.92%	-3.29	4.17%	43.850	6.51%
5/28/2009	10.50%	3.74%	7.94%	-3.29	4.20%	44.127	6.76%
6/22/2009	10.00%	3.76%	7.98%	-3.28	4.21%	44.895	6.24%
6/24/2009	10.80%	3.77%	7.98%	-3.28	4.21%	44.965	7.03%
7/8/2009	10.63%	3.77%	7.98%	-3.28	4.21%	44.894	6.86%
7/17/2009	10.50%	3.78%	7.96%	-3.28	4.19%	44.531	6.72%
8/31/2009	10.25%	3.82%	7.63%	-3.27	3.82%	39.060	6.43%
10/14/2009	10.70%	4.01%	7.28%	-3.22	3.27%	33.940	6.69%
10/23/2009	10.88%	4.06%	7.22%	-3.20	3.16%	33.272	6.82%
11/2/2009	10.70%	4.09%	7.17%	-3.20	3.08%	32.692	6.61%
11/3/2009	10.70%	4.10%	7.17%	-3.20	3.07%	32.553	6.60%
11/24/2009	10.25%	4.15%	7.05%	-3.18	2.89%	30.961	6.10%
11/25/2009	10.75%	4.16%	7.04%	-3.18	2.88%	30.840	6.59%
11/30/2009	10.35%	4.17%	7.02%	-3.18	2.85%	30.666	6.18%
12/3/2009	10.50%	4.18%	7.00%	-3.18	2.82%	30.272	6.32%
12/7/2009	10.70%	4.18%	6.98%	-3.17	2.80%	29.979	6.52%
12/16/2009	11.00%	4.21%	6.93%	-3.17	2.72%	29.085	6.79%
12/16/2009	10.90%	4.21%	6.93%	-3.17	2.72%	29.085	6.69%
12/18/2009	10.40%	4.22%	6.92%	-3.16	2.69%	28.808	6.18%
12/18/2009	10.40%	4.22%	6.92%	-3.16	2.69%	28.808	6.18%
12/22/2009	10.20%	4.23%	6.90%	-3.16	2.67%	28.538	5.97%
12/22/2009	10.40%	4.23%	6.90%	-3.16	2.67%	28.538	6.17%
12/22/2009	10.40%	4.23%	6.90%	-3.16	2.67%	28.538	6.17%
12/30/2009	10.00%	4.26%	6.86%	-3.16	2.60%	27.975	5.74%
1/4/2010	10.80%	4.28%	6.84%	-3.15	2.57%	27.765	6.52%
1/11/2010	11.00%	4.30%	6.80%	-3.15	2.50%	27.158	6.70%
1/26/2010	10.13%	4.35%	6.70%	-3.13	2.35%	26.138	5.78%
1/27/2010	10.40%	4.35%	6.69%	-3.13	2.33%	26.065	6.05%
1/27/2010	10.40%	4.35%	6.69%	-3.13	2.33%	26.065	6.05%
1/27/2010	10.70%	4.35%	6.69%	-3.13	2.33%	26.065	6.35%
2/9/2010	9.80%	4.38%	6.60%	-3.13	2.22%	25.499	5.42%
2/18/2010	10.60%	4.40%	6.55%	-3.12	2.16%	25.089	6.20%
2/24/2010	10.18%	4.41%	6.52%	-3.12	2.12%	24.840	5.77%
3/2/2010	9.63%	4.41%	6.49%	-3.12	2.08%	24.581	5.22%
3/4/2010	10.50%	4.41%	6.48%	-3.12	2.07%	24.452	6.09%
3/5/2010	10.50%	4.41%	6.47%	-3.12	2.06%	24.395	6.09%
3/11/2010	11.90%	4.42%	6.44%	-3.12	2.03%	24.139	7.48%
3/17/2010	10.00%	4.41%	6.41%	-3.12	1.99%	23.875	5.59%
3/25/2010	10.15%	4.42%	6.37%	-3.12	1.95%	23.496	5.73%
4/2/2010	10.10%	4.43%	6.33%	-3.12	1.90%	23.193	5.67%
4/27/2010	10.00%	4.46%	6.26%	-3.11	1.81%	22.185	5.54%
4/29/2010	9.90%	4.46%	6.25%	-3.11	1.80%	22.126	5.44%
4/29/2010	10.06%	4.46%	6.25%	-3.11	1.80%	22.126	5.60%
4/29/2010	10.26%	4.46%	6.25%	-3.11	1.80%	22.126	5.80%
5/12/2010	10.30%	4.45%	6.21%	-3.11	1.76%	22.272	5.85%
5/12/2010	10.30%	4.45%	6.21%	-3.11	1.76%	22.272	5.85%
5/28/2010	10.20%	4.44%	6.17%	-3.11	1.73%	22.817	5.76%
5/28/2010	10.10%	4.44%	6.17%	-3.11	1.73%	22.817	5.66%
6/7/2010	10.30%	4.44%	6.17%	-3.11	1.73%	23.007	5.86%
6/16/2010	10.00%	4.44%	6.17%	-3.11	1.73%	23.170	5.56%
6/28/2010	10.50%	4.43%	6.17%	-3.12	1.73%	23.196	6.07%
6/28/2010	9.67%	4.43%	6.17%	-3.12	1.73%	23.196	5.24%
6/30/2010	9.40%	4.43%	6.17%	-3.12	1.74%	23.299	4.97%
7/1/2010	10.25%	4.43%	6.17%	-3.12	1.74%	23.346	5.82%

Date of Rate Case	Return on Equity	30-Year Treasury Yield	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
7/15/2010	10.70%	4.43%	6.16%	-3.12	1.74%	23.441	6.27%
7/15/2010	10.53%	4.43%	6.16%	-3.12	1.74%	23.441	6.10%
7/30/2010	10.70%	4.41%	6.16%	-3.12	1.74%	23.388	6.29%
8/4/2010	10.50%	4.41%	6.15%	-3.12	1.74%	23.393	6.09%
8/6/2010	9.83%	4.41%	6.15%	-3.12	1.74%	23.400	5.42%
8/25/2010	9.90%	4.37%	6.10%	-3.13	1.73%	23.375	5.53%
9/3/2010	10.60%	4.35%	6.07%	-3.14	1.73%	23.433	6.25%
9/14/2010	10.70%	4.33%	6.06%	-3.14	1.73%	23.463	6.37%
9/16/2010	10.00%	4.33%	6.05%	-3.14	1.73%	23.436	5.67%
9/16/2010	10.00%	4.33%	6.05%	-3.14	1.73%	23.436	5.67%
9/30/2010	9.75%	4.29%	6.02%	-3.15	1.73%	23.465	5.46%
10/14/2010	10.35%	4.24%	5.98%	-3.16	1.74%	23.480	6.11%
10/28/2010	10.70%	4.21%	5.95%	-3.17	1.74%	23.516	6.49%
11/2/2010	10.38%	4.20%	5.95%	-3.17	1.75%	23.573	6.18%
11/4/2010	10.70%	4.20%	5.94%	-3.17	1.75%	23.559	6.50%
11/19/2010	10.20%	4.18%	5.93%	-3.18	1.76%	23.299	6.02%
11/22/2010	10.00%	4.18%	5.93%	-3.18	1.76%	23.259	5.82%
12/1/2010	10.13%	4.16%	5.92%	-3.18	1.76%	23.193	5.97%
12/6/2010	9.86%	4.15%	5.91%	-3.18	1.76%	23.167	5.71%
12/9/2010	10.25%	4.15%	5.91%	-3.18	1.76%	23.123	6.10%
12/13/2010	10.70%	4.15%	5.91%	-3.18	1.76%	23.105	6.55%
12/14/2010	10.13%	4.15%	5.91%	-3.18	1.76%	23.098	5.98%
12/15/2010	10.44%	4.15%	5.91%	-3.18	1.76%	23.093	6.29%
12/17/2010	10.00%	4.15%	5.91%	-3.18	1.76%	23.080	5.85%
12/20/2010	10.60%	4.15%	5.91%	-3.18	1.76%	23.073	6.45%
12/21/2010	10.30%	4.14%	5.90%	-3.18	1.76%	23.066	6.16%
12/27/2010	9.90%	4.14%	5.90%	-3.18	1.76%	23.043	5.76%
12/29/2010	11.15%	4.14%	5.90%	-3.18	1.76%	23.038	7.01%
1/5/2011	10.15%	4.13%	5.90%	-3.19	1.76%	23.056	6.02%
1/12/2011	10.30%	4.12%	5.89%	-3.19	1.77%	23.040	6.18%
1/13/2011	10.30%	4.12%	5.89%	-3.19	1.77%	23.034	6.18%
1/18/2011	10.00%	4.12%	5.89%	-3.19	1.77%	23.018	5.88%
1/20/2011	9.30%	4.12%	5.88%	-3.19	1.76%	23.030	5.18%
1/20/2011	10.13%	4.12%	5.88%	-3.19	1.76%	23.030	6.01%
1/31/2011	9.60%	4.12%	5.88%	-3.19	1.76%	23.090	5.48%
2/3/2011	10.00%	4.12%	5.88%	-3.19	1.76%	23.101	5.88%
2/25/2011	10.00%	4.14%	5.89%	-3.18	1.74%	22.605	5.86%
3/25/2011	9.80%	4.18%	5.88%	-3.18	1.70%	21.323	5.62%
3/30/2011	10.00%	4.18%	5.87%	-3.17	1.69%	21.183	5.82%
4/12/2011	10.00%	4.21%	5.86%	-3.17	1.65%	20.755	5.79%
4/25/2011	10.74%	4.23%	5.86%	-3.16	1.63%	20.195	6.51%
4/26/2011	9.67%	4.23%	5.86%	-3.16	1.63%	20.151	5.44%
4/27/2011	10.40%	4.24%	5.86%	-3.16	1.62%	20.105	6.16%
5/4/2011	10.00%	4.24%	5.85%	-3.16	1.61%	19.870	5.76%
5/4/2011	10.00%	4.24%	5.85%	-3.16	1.61%	19.870	5.76%
5/24/2011	10.50%	4.27%	5.85%	-3.15	1.58%	19.452	6.23%
6/8/2011	10.75%	4.30%	5.85%	-3.15	1.55%	19.062	6.45%
6/16/2011	9.20%	4.32%	5.86%	-3.14	1.55%	18.858	4.88%
6/17/2011	9.95%	4.32%	5.86%	-3.14	1.55%	18.848	5.63%
7/13/2011	10.20%	4.36%	5.88%	-3.13	1.51%	18.499	5.84%
8/1/2011	9.20%	4.39%	5.89%	-3.13	1.50%	18.459	4.81%
8/8/2011	10.00%	4.38%	5.88%	-3.13	1.49%	18.769	5.62%
8/11/2011	10.00%	4.38%	5.87%	-3.13	1.49%	19.060	5.62%
8/12/2011	10.35%	4.37%	5.87%	-3.13	1.49%	19.138	5.98%
8/19/2011	10.25%	4.36%	5.85%	-3.13	1.49%	19.523	5.89%
9/2/2011	12.88%	4.32%	5.82%	-3.14	1.50%	20.303	8.56%
9/22/2011	10.00%	4.24%	5.77%	-3.16	1.52%	21.319	5.76%
10/12/2011	10.30%	4.14%	5.71%	-3.18	1.57%	22.796	6.16%
10/20/2011	10.50%	4.10%	5.68%	-3.19	1.59%	23.238	6.40%
11/30/2011	10.90%	3.87%	5.54%	-3.25	1.66%	25.236	7.03%
11/30/2011	10.90%	3.87%	5.54%	-3.25	1.66%	25.236	7.03%
12/14/2011	10.00%	3.80%	5.49%	-3.27	1.69%	25.638	6.20%
12/14/2011	10.30%	3.80%	5.49%	-3.27	1.69%	25.638	6.50%
12/20/2011	10.20%	3.76%	5.47%	-3.28	1.71%	25.735	6.44%
12/21/2011	10.20%	3.76%	5.47%	-3.28	1.71%	25.741	6.44%
12/22/2011	9.90%	3.75%	5.46%	-3.28	1.71%	25.737	6.15%
12/22/2011	10.40%	3.75%	5.46%	-3.28	1.71%	25.737	6.65%
12/23/2011	10.19%	3.74%	5.46%	-3.28	1.71%	25.740	6.45%
1/25/2012	10.50%	3.57%	5.37%	-3.33	1.80%	25.848	6.93%
1/27/2012	10.50%	3.56%	5.36%	-3.34	1.80%	25.865	6.94%
2/15/2012	10.20%	3.47%	5.30%	-3.36	1.82%	26.075	6.73%
2/23/2012	9.90%	3.44%	5.28%	-3.37	1.84%	26.088	6.46%
2/27/2012	10.25%	3.43%	5.27%	-3.37	1.84%	26.101	6.82%
2/29/2012	10.40%	3.41%	5.26%	-3.38	1.85%	26.118	6.99%
3/29/2012	10.37%	3.32%	5.20%	-3.41	1.89%	25.969	7.05%
4/4/2012	10.00%	3.30%	5.19%	-3.41	1.90%	25.856	6.70%
4/26/2012	10.00%	3.21%	5.14%	-3.44	1.94%	25.884	6.79%
5/2/2012	10.00%	3.18%	5.13%	-3.45	1.95%	25.813	6.82%
5/7/2012	9.80%	3.17%	5.12%	-3.45	1.95%	25.812	6.63%
5/15/2012	10.00%	3.14%	5.10%	-3.46	1.95%	25.775	6.86%
5/29/2012	10.05%	3.11%	5.08%	-3.47	1.98%	25.287	6.94%
6/7/2012	10.30%	3.08%	5.07%	-3.48	2.00%	24.831	7.22%
6/14/2012	9.40%	3.06%	5.07%	-3.49	2.01%	24.496	6.34%
6/15/2012	10.40%	3.06%	5.06%	-3.49	2.01%	24.437	7.34%
6/18/2012	9.60%	3.06%	5.06%	-3.49	2.01%	24.370	6.54%
6/19/2012	9.25%	3.05%	5.06%	-3.49	2.01%	24.303	6.20%
6/26/2012	10.10%	3.04%	5.06%	-3.49	2.02%	23.895	7.06%

Date of Rate Case	Return on Equity	30-Year Treasury Yield	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
6/29/2012	10.00%	3.04%	5.05%	-3.49	2.02%	23.626	6.96%
7/9/2012	10.20%	3.03%	5.05%	-3.50	2.02%	23.227	7.17%
7/16/2012	9.80%	3.02%	5.04%	-3.50	2.02%	22.669	6.78%
7/20/2012	9.81%	3.01%	5.04%	-3.50	2.03%	22.150	6.80%
7/20/2012	9.31%	3.01%	5.04%	-3.50	2.03%	22.150	6.30%
9/13/2012	9.80%	2.94%	4.99%	-3.53	2.05%	19.167	6.86%
9/19/2012	10.05%	2.94%	4.99%	-3.53	2.05%	18.886	7.11%
9/19/2012	9.80%	2.94%	4.99%	-3.53	2.05%	18.886	6.86%
9/26/2012	9.50%	2.94%	4.98%	-3.53	2.04%	18.550	6.56%
10/12/2012	9.60%	2.93%	4.96%	-3.53	2.02%	18.065	6.67%
10/23/2012	9.75%	2.93%	4.94%	-3.53	2.00%	17.858	6.82%
10/24/2012	10.30%	2.93%	4.93%	-3.53	2.00%	17.846	7.37%
11/9/2012	10.30%	2.92%	4.90%	-3.53	1.98%	17.753	7.38%
11/28/2012	10.40%	2.90%	4.86%	-3.54	1.97%	17.607	7.50%
11/29/2012	9.88%	2.89%	4.86%	-3.54	1.97%	17.587	6.99%
11/29/2012	9.75%	2.89%	4.86%	-3.54	1.97%	17.587	6.86%
12/5/2012	9.71%	2.89%	4.85%	-3.54	1.96%	17.530	6.82%
12/5/2012	10.40%	2.89%	4.85%	-3.54	1.96%	17.530	7.51%
12/12/2012	9.80%	2.88%	4.84%	-3.55	1.96%	17.486	6.92%
12/13/2012	10.50%	2.88%	4.84%	-3.55	1.96%	17.479	7.62%
12/13/2012	9.50%	2.88%	4.84%	-3.55	1.96%	17.479	6.62%
12/14/2012	10.40%	2.88%	4.83%	-3.55	1.96%	17.472	7.52%
12/19/2012	9.71%	2.87%	4.83%	-3.55	1.95%	17.456	6.84%
12/19/2012	10.25%	2.87%	4.83%	-3.55	1.95%	17.456	7.38%
12/20/2012	10.40%	2.87%	4.83%	-3.55	1.95%	17.440	7.53%
12/20/2012	10.30%	2.87%	4.83%	-3.55	1.95%	17.440	7.43%
12/20/2012	10.45%	2.87%	4.83%	-3.55	1.95%	17.440	7.58%
12/20/2012	10.25%	2.87%	4.83%	-3.55	1.95%	17.440	7.38%
12/20/2012	10.25%	2.87%	4.83%	-3.55	1.95%	17.440	7.38%
12/20/2012	9.80%	2.87%	4.83%	-3.55	1.95%	17.440	6.93%
12/20/2012	9.50%	2.87%	4.83%	-3.55	1.95%	17.440	6.63%
12/21/2012	10.20%	2.87%	4.82%	-3.55	1.95%	17.433	7.33%
12/26/2012	9.80%	2.86%	4.82%	-3.55	1.96%	17.445	6.94%
1/9/2013	9.70%	2.85%	4.79%	-3.56	1.95%	17.482	6.85%
1/9/2013	9.70%	2.85%	4.79%	-3.56	1.95%	17.482	6.85%
1/9/2013	9.70%	2.85%	4.79%	-3.56	1.95%	17.482	6.85%
1/16/2013	9.60%	2.84%	4.78%	-3.56	1.94%	17.441	6.76%
1/16/2013	9.60%	2.84%	4.78%	-3.56	1.94%	17.441	6.76%
2/13/2013	10.20%	2.84%	4.74%	-3.56	1.90%	17.007	7.36%
2/22/2013	9.75%	2.85%	4.73%	-3.56	1.88%	16.897	6.90%
2/27/2013	10.00%	2.86%	4.73%	-3.56	1.87%	16.859	7.14%
3/14/2013	9.30%	2.88%	4.72%	-3.55	1.84%	16.368	6.42%
3/27/2013	9.80%	2.90%	4.71%	-3.54	1.81%	15.901	6.90%
5/1/2013	9.84%	2.94%	4.66%	-3.53	1.72%	15.256	6.90%
5/15/2013	10.30%	2.96%	4.64%	-3.52	1.68%	15.027	7.34%
5/30/2013	10.20%	2.98%	4.64%	-3.51	1.66%	14.874	7.22%
5/31/2013	9.00%	2.98%	4.64%	-3.51	1.66%	14.881	6.02%
6/11/2013	10.00%	3.00%	4.64%	-3.51	1.64%	14.953	7.00%
6/21/2013	9.75%	3.02%	4.65%	-3.50	1.62%	15.004	6.73%
6/25/2013	9.80%	3.03%	4.65%	-3.50	1.62%	15.018	6.77%
7/12/2013	9.36%	3.07%	4.68%	-3.48	1.60%	15.060	6.29%
8/8/2013	9.83%	3.14%	4.73%	-3.46	1.59%	14.830	6.69%
8/14/2013	9.15%	3.16%	4.75%	-3.45	1.59%	14.734	5.99%
9/11/2013	10.25%	3.26%	4.83%	-3.42	1.57%	14.567	6.99%
9/11/2013	10.20%	3.26%	4.83%	-3.42	1.57%	14.567	6.94%
9/24/2013	10.20%	3.31%	4.87%	-3.41	1.57%	14.472	6.89%
10/3/2013	9.65%	3.33%	4.89%	-3.40	1.56%	14.454	6.32%
11/6/2013	10.20%	3.41%	4.96%	-3.38	1.55%	14.395	6.79%
11/21/2013	10.00%	3.44%	4.98%	-3.37	1.54%	14.358	6.56%
11/26/2013	10.00%	3.45%	4.99%	-3.37	1.54%	14.354	6.55%
12/3/2013	10.25%	3.47%	5.00%	-3.36	1.53%	14.380	6.78%
12/4/2013	9.50%	3.47%	5.00%	-3.36	1.53%	14.380	6.03%
12/5/2013	10.20%	3.48%	5.01%	-3.36	1.53%	14.379	6.72%
12/9/2013	8.72%	3.48%	5.01%	-3.36	1.53%	14.350	5.24%
12/9/2013	9.75%	3.48%	5.01%	-3.36	1.53%	14.350	6.27%
12/13/2013	9.75%	3.50%	5.02%	-3.35	1.52%	14.340	6.25%
12/16/2013	9.95%	3.50%	5.03%	-3.35	1.52%	14.350	6.45%
12/16/2013	9.95%	3.50%	5.03%	-3.35	1.52%	14.350	6.45%
12/16/2013	10.12%	3.50%	5.03%	-3.35	1.52%	14.350	6.62%
12/17/2013	9.50%	3.51%	5.03%	-3.35	1.52%	14.364	5.99%
12/17/2013	10.95%	3.51%	5.03%	-3.35	1.52%	14.364	7.44%
12/18/2013	8.72%	3.51%	5.03%	-3.35	1.52%	14.365	5.21%
12/18/2013	9.80%	3.51%	5.03%	-3.35	1.52%	14.365	6.29%
12/19/2013	10.15%	3.51%	5.04%	-3.35	1.52%	14.371	6.64%
12/30/2013	9.50%	3.54%	5.05%	-3.34	1.51%	14.405	5.96%
2/20/2014	9.20%	3.68%	5.14%	-3.30	1.46%	14.608	5.52%
2/26/2014	9.75%	3.69%	5.15%	-3.30	1.46%	14.636	6.06%
3/17/2014	9.55%	3.72%	5.17%	-3.29	1.45%	14.725	5.83%
3/26/2014	9.40%	3.73%	5.17%	-3.29	1.45%	14.673	5.67%
3/26/2014	9.96%	3.73%	5.17%	-3.29	1.45%	14.673	6.23%
4/2/2014	9.70%	3.73%	5.17%	-3.29	1.45%	14.589	5.97%
5/16/2014	9.80%	3.70%	5.11%	-3.30	1.40%	14.376	6.10%
5/30/2014	9.70%	3.68%	5.08%	-3.30	1.40%	14.342	6.02%
6/6/2014	10.40%	3.67%	5.07%	-3.30	1.40%	14.271	6.73%
6/30/2014	9.55%	3.64%	5.02%	-3.31	1.38%	13.947	5.91%
7/2/2014	9.62%	3.64%	5.02%	-3.31	1.38%	13.914	5.98%
7/10/2014	9.95%	3.63%	5.00%	-3.32	1.37%	13.860	6.32%

Date of Rate Case	Return on Equity	30-Year Treasury Yield	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
7/23/2014	9.75%	3.61%	4.97%	-3.32	1.36%	13.706	6.14%
7/29/2014	9.45%	3.60%	4.96%	-3.32	1.36%	13.579	5.85%
7/31/2014	9.90%	3.60%	4.95%	-3.32	1.35%	13.572	6.30%
8/20/2014	9.75%	3.57%	4.92%	-3.33	1.36%	13.609	6.18%
8/25/2014	9.60%	3.56%	4.91%	-3.34	1.36%	13.589	6.04%
8/29/2014	9.80%	3.54%	4.90%	-3.34	1.36%	13.566	6.26%
9/11/2014	9.60%	3.51%	4.88%	-3.35	1.37%	13.562	6.09%
9/15/2014	10.25%	3.51%	4.88%	-3.35	1.37%	13.571	6.74%
10/9/2014	9.80%	3.45%	4.83%	-3.37	1.39%	13.611	6.35%
11/6/2014	9.56%	3.37%	4.79%	-3.39	1.41%	14.109	6.19%
11/6/2014	10.20%	3.37%	4.79%	-3.39	1.41%	14.109	6.83%
11/14/2014	10.20%	3.35%	4.78%	-3.40	1.42%	13.982	6.85%
11/26/2014	9.70%	3.33%	4.77%	-3.40	1.44%	13.822	6.37%
11/26/2014	10.20%	3.33%	4.77%	-3.40	1.44%	13.822	6.87%
12/4/2014	9.68%	3.31%	4.76%	-3.41	1.45%	13.789	6.37%
12/10/2014	9.25%	3.29%	4.75%	-3.41	1.46%	13.802	5.96%
12/10/2014	9.25%	3.29%	4.75%	-3.41	1.46%	13.802	5.96%
12/11/2014	10.07%	3.29%	4.75%	-3.42	1.46%	13.832	6.78%
12/12/2014	10.20%	3.28%	4.75%	-3.42	1.47%	13.868	6.92%
12/17/2014	9.17%	3.27%	4.75%	-3.42	1.48%	13.965	5.90%
12/18/2014	9.83%	3.26%	4.75%	-3.42	1.48%	13.978	6.57%
1/23/2015	9.50%	3.14%	4.69%	-3.46	1.55%	14.366	6.36%
2/24/2015	9.83%	3.04%	4.65%	-3.49	1.61%	14.665	6.79%
3/18/2015	9.75%	2.98%	4.64%	-3.51	1.66%	14.881	6.77%
3/25/2015	9.50%	2.96%	4.63%	-3.52	1.67%	14.942	6.54%
3/26/2015	9.72%	2.95%	4.63%	-3.52	1.68%	14.966	6.77%
4/23/2015	10.20%	2.87%	4.61%	-3.55	1.74%	15.189	7.33%
4/29/2015	9.53%	2.86%	4.60%	-3.56	1.75%	15.204	6.67%
5/1/2015	9.60%	2.85%	4.60%	-3.56	1.75%	15.226	6.75%
5/26/2015	9.75%	2.83%	4.63%	-3.56	1.80%	15.165	6.92%
6/17/2015	9.00%	2.82%	4.66%	-3.57	1.84%	15.286	6.18%
6/17/2015	9.00%	2.82%	4.66%	-3.57	1.84%	15.286	6.18%
9/2/2015	9.50%	2.79%	4.79%	-3.58	2.00%	15.672	6.71%
9/10/2015	9.30%	2.79%	4.81%	-3.58	2.02%	15.975	6.51%
10/15/2015	9.00%	2.81%	4.90%	-3.57	2.09%	16.671	6.19%
11/19/2015	10.30%	2.88%	5.03%	-3.55	2.15%	16.288	7.42%
11/19/2015	10.00%	2.88%	5.03%	-3.55	2.15%	16.288	7.12%
12/3/2015	10.00%	2.90%	5.08%	-3.54	2.19%	16.265	7.10%
12/9/2015	9.14%	2.90%	5.10%	-3.54	2.20%	16.323	6.24%
12/9/2015	9.14%	2.90%	5.10%	-3.54	2.20%	16.323	6.24%
12/11/2015	10.30%	2.90%	5.11%	-3.54	2.21%	16.405	7.40%
12/15/2015	9.60%	2.91%	5.12%	-3.54	2.22%	16.489	6.69%
12/17/2015	9.70%	2.91%	5.13%	-3.54	2.23%	16.532	6.79%
12/18/2015	9.50%	2.91%	5.14%	-3.54	2.23%	16.559	6.59%
12/30/2015	9.50%	2.93%	5.17%	-3.53	2.25%	16.587	6.57%
1/6/2016	9.50%	2.94%	5.20%	-3.53	2.26%	16.709	6.56%
2/23/2016	9.75%	2.94%	5.33%	-3.53	2.40%	18.293	6.81%
3/16/2016	9.85%	2.91%	5.36%	-3.54	2.45%	18.671	6.94%
4/29/2016	9.80%	2.83%	5.31%	-3.56	2.47%	18.564	6.97%
6/3/2016	9.75%	2.80%	5.24%	-3.57	2.43%	18.777	6.95%
6/8/2016	9.48%	2.80%	5.23%	-3.58	2.43%	18.673	6.68%
6/15/2016	9.00%	2.78%	5.20%	-3.58	2.42%	18.344	6.22%
6/15/2016	9.00%	2.78%	5.20%	-3.58	2.42%	18.344	6.22%
7/18/2016	9.98%	2.71%	5.08%	-3.61	2.37%	17.472	7.27%
8/9/2016	9.85%	2.66%	4.98%	-3.63	2.32%	17.058	7.19%
8/18/2016	9.50%	2.63%	4.94%	-3.64	2.30%	16.958	6.87%
8/24/2016	9.75%	2.62%	4.91%	-3.64	2.29%	16.909	7.13%
9/1/2016	9.50%	2.59%	4.87%	-3.65	2.27%	16.787	6.91%
9/8/2016	10.00%	2.58%	4.84%	-3.66	2.26%	16.689	7.42%
9/28/2016	9.58%	2.54%	4.75%	-3.67	2.22%	16.544	7.04%
9/30/2016	9.90%	2.53%	4.74%	-3.68	2.21%	16.462	7.37%
11/9/2016	9.80%	2.48%	4.58%	-3.70	2.10%	15.662	7.32%
11/10/2016	9.50%	2.48%	4.58%	-3.70	2.09%	15.624	7.02%
11/15/2016	9.55%	2.49%	4.57%	-3.69	2.08%	15.523	7.06%
11/18/2016	10.00%	2.50%	4.56%	-3.69	2.07%	15.388	7.50%
11/29/2016	10.55%	2.51%	4.55%	-3.69	2.04%	14.984	8.04%
12/1/2016	10.00%	2.51%	4.55%	-3.68	2.03%	14.902	7.49%
12/8/2016	8.64%	2.52%	4.54%	-3.68	2.02%	14.787	6.12%
12/9/2016	8.64%	2.52%	4.54%	-3.68	2.02%	14.787	6.12%
12/7/2016	10.10%	2.52%	4.53%	-3.68	2.01%	14.745	7.58%
12/12/2016	9.60%	2.53%	4.53%	-3.68	2.00%	14.633	7.07%
12/14/2016	9.10%	2.53%	4.52%	-3.68	1.99%	14.588	6.57%
12/19/2016	9.37%	2.54%	4.52%	-3.67	1.98%	14.517	6.83%
12/19/2016	9.00%	2.54%	4.52%	-3.67	1.98%	14.517	6.46%
12/22/2016	9.90%	2.55%	4.51%	-3.67	1.96%	14.413	7.35%
12/22/2016	9.60%	2.55%	4.51%	-3.67	1.96%	14.413	7.05%
12/28/2016	9.50%	2.55%	4.50%	-3.67	1.95%	14.343	6.95%
1/18/2017	9.45%	2.58%	4.48%	-3.66	1.89%	14.202	6.87%
1/24/2017	9.00%	2.59%	4.47%	-3.65	1.88%	14.132	6.41%
1/31/2017	10.10%	2.60%	4.47%	-3.65	1.87%	14.050	7.50%
2/15/2017	9.60%	2.62%	4.46%	-3.64	1.84%	13.900	6.98%
2/22/2017	9.60%	2.64%	4.46%	-3.64	1.82%	13.821	6.96%
2/24/2017	9.75%	2.64%	4.46%	-3.63	1.82%	13.796	7.11%
2/28/2017	10.10%	2.64%	4.46%	-3.63	1.82%	13.775	7.46%
3/2/2017	9.41%	2.65%	4.46%	-3.63	1.81%	13.749	6.76%
3/20/2017	9.50%	2.68%	4.46%	-3.62	1.78%	13.563	6.82%
4/4/2017	10.25%	2.71%	4.46%	-3.61	1.75%	13.301	7.54%

Date of Rate Case	Return on Equity	30-Year Treasury Yield	Moody's Utility Baa Yield	LN(30-Year Treasury)	Moody's Utility Baa Credit Spread	VIX	Risk Premium
4/12/2017	9.40%	2.74%	4.47%	-3.60	1.73%	13.091	6.66%
4/20/2017	9.50%	2.76%	4.47%	-3.59	1.71%	13.055	6.74%
5/3/2017	9.50%	2.79%	4.48%	-3.58	1.70%	12.948	6.71%
5/11/2017	9.20%	2.81%	4.50%	-3.57	1.68%	12.884	6.39%
5/18/2017	9.50%	2.83%	4.50%	-3.57	1.68%	12.877	6.67%
5/23/2017	9.70%	2.84%	4.51%	-3.56	1.67%	12.862	6.86%
6/16/2017	9.65%	2.89%	4.52%	-3.54	1.63%	12.694	6.76%
6/22/2017	9.70%	2.90%	4.52%	-3.54	1.63%	12.652	6.80%
6/22/2017	9.70%	2.90%	4.52%	-3.54	1.63%	12.652	6.80%
7/24/2017	9.50%	2.95%	4.53%	-3.52	1.59%	12.242	6.55%
8/15/2017	10.00%	2.97%	4.53%	-3.52	1.56%	11.970	7.03%
9/22/2017	9.60%	2.93%	4.48%	-3.53	1.55%	11.474	6.67%
9/28/2017	9.80%	2.92%	4.47%	-3.53	1.54%	11.426	6.88%
10/20/2017	9.50%	2.91%	4.42%	-3.54	1.51%	11.227	6.59%
10/26/2017	10.25%	2.91%	4.42%	-3.54	1.51%	11.223	7.34%
10/26/2017	10.20%	2.91%	4.42%	-3.54	1.51%	11.223	7.29%
10/26/2017	10.30%	2.91%	4.42%	-3.54	1.51%	11.223	7.39%
11/6/2017	10.25%	2.90%	4.40%	-3.54	1.50%	11.152	7.35%
11/15/2017	11.95%	2.89%	4.39%	-3.54	1.50%	11.147	9.06%
11/30/2017	10.00%	2.88%	4.37%	-3.55	1.49%	11.109	7.12%
11/30/2017	10.00%	2.88%	4.37%	-3.55	1.49%	11.109	7.12%
12/5/2017	9.50%	2.88%	4.36%	-3.55	1.48%	11.107	6.62%
12/6/2017	8.40%	2.87%	4.36%	-3.55	1.48%	11.104	5.53%
12/6/2017	8.40%	2.87%	4.36%	-3.55	1.48%	11.104	5.53%
12/7/2017	9.80%	2.87%	4.36%	-3.55	1.48%	11.066	6.93%
12/14/2017	9.65%	2.86%	4.35%	-3.55	1.48%	11.039	6.79%
12/14/2017	9.60%	2.86%	4.35%	-3.55	1.48%	11.039	6.74%
12/18/2017	9.50%	2.86%	4.34%	-3.55	1.48%	11.023	6.64%
12/20/2017	9.58%	2.86%	4.34%	-3.56	1.48%	11.005	6.72%
12/21/2017	9.10%	2.85%	4.33%	-3.56	1.48%	10.992	6.25%
12/28/2017	9.50%	2.85%	4.32%	-3.56	1.48%	10.961	6.65%
12/29/2017	9.51%	2.85%	4.32%	-3.56	1.47%	10.960	6.66%
1/18/2018	9.70%	2.84%	4.29%	-3.56	1.46%	10.845	6.86%
1/31/2018	9.30%	2.84%	4.28%	-3.56	1.44%	10.766	6.49%
2/2/2018	9.98%	2.84%	4.28%	-3.56	1.44%	10.773	7.14%
2/23/2018	9.90%	2.85%	4.27%	-3.56	1.42%	11.710	7.05%
3/12/2018	9.25%	2.86%	4.27%	-3.55	1.41%	12.069	6.39%
3/15/2018	9.00%	2.87%	4.27%	-3.55	1.40%	12.166	6.13%
3/29/2018	10.00%	2.88%	4.28%	-3.55	1.40%	12.678	7.12%
4/12/2018	9.90%	2.89%	4.29%	-3.54	1.40%	13.137	7.01%
4/13/2018	9.73%	2.89%	4.29%	-3.54	1.40%	13.166	6.84%
4/18/2018	9.25%	2.89%	4.29%	-3.54	1.40%	13.243	6.36%
4/18/2018	10.00%	2.89%	4.29%	-3.54	1.40%	13.243	7.11%
4/26/2018	9.50%	2.90%	4.30%	-3.54	1.40%	13.409	6.60%
5/30/2018	9.95%	2.94%	4.35%	-3.53	1.41%	13.834	7.01%
5/31/2018	9.50%	2.94%	4.35%	-3.53	1.41%	13.849	6.56%
6/14/2018	8.80%	2.96%	4.37%	-3.52	1.42%	13.845	5.84%
6/22/2018	9.50%	2.97%	4.39%	-3.52	1.42%	13.902	6.53%
6/22/2018	9.90%	2.97%	4.39%	-3.52	1.42%	13.902	6.93%
6/28/2018	9.35%	2.97%	4.40%	-3.52	1.43%	14.017	6.38%
6/29/2018	9.50%	2.97%	4.40%	-3.52	1.43%	14.045	6.53%
8/8/2018	9.53%	2.99%	4.46%	-3.51	1.46%	14.441	6.54%
8/21/2018	9.70%	3.00%	4.48%	-3.51	1.47%	14.557	6.70%
8/24/2018	9.28%	3.01%	4.48%	-3.50	1.48%	14.599	6.27%
9/5/2018	9.56%	3.02%	4.50%	-3.50	1.48%	14.653	6.54%
9/14/2018	10.00%	3.03%	4.52%	-3.50	1.49%	14.769	6.97%
9/20/2018	9.80%	3.04%	4.53%	-3.49	1.49%	14.793	6.76%
9/26/2018	9.77%	3.05%	4.54%	-3.49	1.50%	14.829	6.72%
9/26/2018	10.00%	3.05%	4.54%	-3.49	1.50%	14.829	6.95%
9/27/2018	9.30%	3.05%	4.55%	-3.49	1.50%	14.844	6.25%
10/4/2018	9.85%	3.06%	4.56%	-3.49	1.51%	14.907	6.79%
10/29/2018	9.80%	3.10%	4.63%	-3.47	1.53%	15.820	6.50%
10/31/2018	9.99%	3.11%	4.64%	-3.47	1.53%	15.925	6.88%
11/1/2018	8.69%	3.11%	4.64%	-3.47	1.53%	15.960	5.58%
12/4/2018	8.69%	3.14%	4.72%	-3.46	1.58%	15.950	5.55%
12/13/2018	9.30%	3.14%	4.73%	-3.46	1.59%	16.057	6.16%
12/14/2018	9.50%	3.14%	4.73%	-3.46	1.59%	16.053	6.36%
12/19/2018	9.84%	3.14%	4.74%	-3.46	1.60%	16.148	6.70%
12/20/2018	9.65%	3.14%	4.74%	-3.46	1.60%	16.201	6.51%
12/21/2018	9.30%	3.14%	4.74%	-3.46	1.60%	16.289	6.16%
1/9/2019	10.00%	3.14%	4.76%	-3.46	1.62%	16.681	6.86%
2/27/2019	9.75%	3.12%	4.80%	-3.47	1.68%	16.509	6.63%
3/13/2019	9.60%	3.12%	4.80%	-3.47	1.68%	16.588	6.48%
3/14/2019	9.00%	3.12%	4.80%	-3.47	1.68%	16.589	5.88%
3/14/2019	9.40%	3.12%	4.80%	-3.47	1.68%	16.589	6.28%
3/22/2019	9.65%	3.12%	4.80%	-3.47	1.68%	16.577	6.53%
4/30/2019	9.73%	3.11%	4.78%	-3.47	1.67%	16.507	6.62%
4/30/2019	9.73%	3.11%	4.78%	-3.47	1.67%	16.507	6.62%
5/1/2019	9.50%	3.11%	4.78%	-3.47	1.67%	16.520	6.39%
5/2/2019	10.00%	3.11%	4.78%	-3.47	1.67%	16.528	6.89%
5/8/2019	9.50%	3.10%	4.77%	-3.47	1.67%	16.613	6.40%
5/14/2019	8.75%	3.10%	4.77%	-3.48	1.67%	16.735	5.65%
5/16/2019	9.50%	3.09%	4.77%	-3.48	1.67%	16.757	6.41%
5/23/2019	9.90%	3.09%	4.76%	-3.48	1.67%	16.846	6.81%
Average					1.81%	18.78	5.71%
Count							866

Hypothetical Example. Flotation Cost Recovery

Return on Equity 10.50%  
 Flotation Costs 2.69%  
 Market Value \$ 25.00  
 Dividend Yield 4.25%  
 Growth Rate 6.25%  
 Adjusted ROE 10.62%  
**Flotation Cost Recovery: No**  
**DCF Estimate 10.38%**

	Common Stock	Retained Earnings	Book Value	Market Price	Market/ Book Value	Earnings Per Share	Dividends Per Share	Payout Ratio
1	\$ 24.33		\$ 24.33	\$ 25.00	1.0277	\$ 2.55	\$ 1.06	41.60%
2	\$ 24.33	\$ 1.49	\$ 25.82	\$ 26.53	1.0277	\$ 2.71	\$ 1.13	41.60%
3	\$ 24.33	\$ 3.08	\$ 27.40	\$ 28.16	1.0277	\$ 2.88	\$ 1.20	41.60%
4	\$ 24.33	\$ 4.76	\$ 29.08	\$ 29.89	1.0277	\$ 3.05	\$ 1.27	41.60%
5	\$ 24.33	\$ 6.54	\$ 30.87	\$ 31.72	1.0277	\$ 3.24	\$ 1.35	41.60%
6	\$ 24.33	\$ 8.43	\$ 32.76	\$ 33.67	1.0277	\$ 3.44	\$ 1.43	41.60%
7	\$ 24.33	\$ 10.44	\$ 34.77	\$ 35.73	1.0277	\$ 3.65	\$ 1.52	41.60%
8	\$ 24.33	\$ 12.57	\$ 36.90	\$ 37.92	1.0277	\$ 3.87	\$ 1.61	41.60%
9	\$ 24.33	\$ 14.84	\$ 39.16	\$ 40.25	1.0277	\$ 4.11	\$ 1.71	41.60%
10	\$ 24.33	\$ 17.24	\$ 41.56	\$ 42.71	1.0277	\$ 4.36	\$ 1.82	41.60%
<b>Growth Rate</b>			<b>6.13%</b>	<b>6.13%</b>		<b>6.13%</b>	<b>6.13%</b>	

Return on Equity 10.50%  
 Flotation Costs 2.69%  
 Market Value \$ 25.00  
 Dividend Yield 4.25%  
 Growth Rate 6.25%  
 Adjusted ROE 10.62%  
**Flotation Cost Recovery: Yes**  
**DCF Estimate 10.50%**

	Common Stock	Retained Earnings	Book Value	Market Price	Market/ Book Value	Earnings Per Share	Dividends Per Share	Payout Ratio
1	\$ 24.33		\$ 24.33	\$ 25.00	1.0277	\$ 2.58	\$ 1.06	41.14%
2	\$ 24.33	\$ 1.52	\$ 25.85	\$ 26.56	1.0277	\$ 2.74	\$ 1.13	41.14%
3	\$ 24.33	\$ 3.14	\$ 27.46	\$ 28.22	1.0277	\$ 2.92	\$ 1.20	41.14%
4	\$ 24.33	\$ 4.85	\$ 29.18	\$ 29.99	1.0277	\$ 3.10	\$ 1.27	41.14%
5	\$ 24.33	\$ 6.68	\$ 31.00	\$ 31.86	1.0277	\$ 3.29	\$ 1.35	41.14%
6	\$ 24.33	\$ 8.61	\$ 32.94	\$ 33.85	1.0277	\$ 3.50	\$ 1.44	41.14%
7	\$ 24.33	\$ 10.67	\$ 35.00	\$ 35.97	1.0277	\$ 3.72	\$ 1.53	41.14%
8	\$ 24.33	\$ 12.86	\$ 37.19	\$ 38.22	1.0277	\$ 3.95	\$ 1.62	41.14%
9	\$ 24.33	\$ 15.18	\$ 39.51	\$ 40.60	1.0277	\$ 4.20	\$ 1.73	41.14%
10	\$ 24.33	\$ 17.65	\$ 41.98	\$ 43.14	1.0277	\$ 4.46	\$ 1.83	41.14%
<b>Growth Rate</b>			<b>6.25%</b>	<b>6.25%</b>		<b>6.25%</b>	<b>6.25%</b>	

Proof Concept Earnings, Dividends, Book Value and  
Stock Price Growth Rate Equivalence in Constant Growth DCF

Line Description	IMPLIED GROWTH RATE AT ALLOWED ROE	
Input	Dividend Yield	4 10% [1]
Assumes g = Allowed ROE - Div Yield	Assumed Growth Rate	6 40%
Input	Total Return	10 50% [1]
Input	Payout Ratio	65 57% [1]
Input	Book Value/Share	20 [1]

		0	1	2	3	4	5	6	7	8	9	10	250
BV/S Escalates at Constant Growth g	Book Value/Share	\$ 20 00	\$ 21 28	\$ 22 64	\$ 24 09	\$ 25 63	\$ 27 27	\$ 29 02	\$ 30 88	\$ 32 85	\$ 34 95	\$ 37 19	\$ 108,751,933 10
Demonstrating Constant BV/S growth			6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%
Earnings based on ROE applied to BV/S	Earnings/share	\$ 2 10	\$ 2 23	\$ 2 38	\$ 2 53	\$ 2 69	\$ 2 86	\$ 3 05	\$ 3 24	\$ 3 45	\$ 3 67	\$ 3 91	\$ 11,418,952 98
Demonstrating Constant EPS growth			6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%
Demonstrating Constant Return Earned based on BV/S and EPS	Allowed ROE	10 50%	10 50%	10 50%	10 50%	10 50%	10 50%	10 50%	10 50%	10 50%	10 50%	10 50%	10 50%
Div/S based on EPS and Constant Payout ratio	Dividends/Share	\$ 1 38	\$ 1 47	\$ 1 56	\$ 1 66	\$ 1 76	\$ 1 88	\$ 2 00	\$ 2 13	\$ 2 26	\$ 2 41	\$ 2 56	\$ 7,487,434 37
Demonstrating Constant Div/S growth			6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%
Retained Earnings based on difference between EPS and Div/S	Earnings retained to book value	\$ 0 72	\$ 0 77	\$ 0 82	\$ 0 87	\$ 0 93	\$ 0 99	\$ 1 05	\$ 1 12	\$ 1 19	\$ 1 26	\$ 1 34	\$ 3,931,518 60
Demonstrating Constant growth in Retained Earnings			6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%	6 40%
Demonstrating Constant Market/Book ratio	Market/Book Ratio	1 787	1 787	1 787	1 787	1 787	1 787	1 787	1 787	1 787	1 787	1 787	1 787
DCF calculation of market price = [Div/S]/[1+g]/[ROE-g]	Market Price	\$ 35 73	\$ 38 02	\$ 40 45	\$ 43 04	\$ 45 80	\$ 48 73	\$ 51 85	\$ 55 17	\$ 58 70	\$ 62 45	\$ 66 45	\$ 194,308,053 03
Demonstrating Price Appreciation equals Long Term Growth Rate	Price Appreciation	6 40%	OK	<== Price appreciation should equal long term growth rate									
Demonstrating Constant Price/Earnings Ratio	Price/Earnings	17 02	17 02	17 02	17 02	17 02	17 02	17 02	17 02	17 02	17 02	17 02	17 02
Present Value Factor calculated based upon the current period and the Constant ROE	Present Value Factor		0 9050	0 8190	0 7412	0 6707	0 6070	0 5493	0 4971	0 4499	0 4071	0 3684	0 00

CASE 1	DIVIDENDS IN PERPETUITY												
Present value of Div/S obtained by multiplying nominal Div/S by the Present Value Factor for the period	Present Value Dividend	1 3259	1 2767	1 2293	1 1837	1 1398	1 0975	1 0568	1 0176	0 9798	0 9435		0 00
Total Value of investment sum of all Present Value Dividends in perpetuity (250 instances for demonstration purposes)	Value of Investment	\$ 35 73											



<b>CASE 2</b>		<b>10-YEAR HOLDING PERIOD</b>										
Present value of Div/S obtained by multiplying nominal Div/S by the Present Value Factor for the period	Present Value of Dividend	\$ 1.33	\$ 1.28	\$ 1.23	\$ 1.18	\$ 1.14	\$ 1.10	\$ 1.06	\$ 1.02	\$ 0.98	\$ 0.94	
Present value of Stock Price obtained by multiplying nominal Stock Price by the Present Value Factor for the 10th Period (Terminal Value)	Present Value of Stock Price	--	--	--	--	--	--	--	--	--	--	24.48
Value of dividends = sum of all Present Value Dividends for periods 1-10	Value of Dividends	\$ 11.25										
Present value of Stock Price obtained by multiplying nominal Stock Price by the Present Value Factor for the 10th Period (Terminal Value)	Value of Stock Price	\$ 24.48										
Total Value of investment sum of all Present Value Dividends for periods 1-10 and Present Value of Stock in period 10 (Terminal Value)	Value of Investment	\$ 35.73										

<b>CASE 3</b>		<b>5-YEAR HOLDING PERIOD</b>				
Present value of Div/S obtained by multiplying nominal Div/S by the Present Value Factor for the period	Present Value of Dividend	\$ 1.33	\$ 1.28	\$ 1.23	\$ 1.18	\$ 1.14
Present value of Stock Price obtained by multiplying nominal Stock Price by the Present Value Factor for the 5th Period (Terminal Value)	Present Value of Stock Price	--	--	--	--	29.58
Value of dividends = sum of all Present Value Dividends for periods 1-5	Value of Dividends	\$ 6.16				
Present value of Stock Price obtained by multiplying nominal Stock Price by the Present Value Factor for the 5th Period (Terminal Value)	Value of Stock Price	\$ 29.58				
Total Value of investment sum of all Present Value Dividends for periods 1-5 and Present Value of Stock in period 5 (Terminal Value)	Value of Investment	\$ 35.73				

[1] Note, for purposes of this exhibit, these data are illustrative only

Equity Duration Calculation Using Mr. Bewitte's DCF Model Data

Company		Using Data As-Filed		Constant Growth		Solved		Price	DIV	DIV	DIV	DIV	DIV	DIV	DIV	DIV	DIV	DIV	DIV	DIV
Ticker	Price	Annual Dividend	Projected Growth Rate	DCF ROE	ROE	1	2	3	4	5	6	7	8	9	10	15	199	200		
ALLETE Inc	80.30	2.352	5.80%	9.81%	9.80%	(\$30.00)	\$ 2.42	\$ 2.56	\$ 2.71	\$ 2.87	\$ 3.03	\$ 3.21	\$ 3.39	\$ 3.59	\$ 3.80	\$ 4.02	\$ 170,614.08	\$ 180,589.71		
Alliant Energy Corporation	46.08	1.420	5.55%	9.72%	9.71%	(\$46.00)	\$ 1.46	\$ 1.54	\$ 1.63	\$ 1.72	\$ 1.81	\$ 1.91	\$ 2.02	\$ 2.13	\$ 2.25	\$ 2.37	\$ 64,403.12	\$ 67,877.49		
Ameren Corporation	71.71	1.900	5.90%	9.63%	9.61%	(\$71.71)	\$ 1.96	\$ 2.07	\$ 2.19	\$ 2.32	\$ 2.46	\$ 2.61	\$ 2.76	\$ 2.92	\$ 3.09	\$ 3.28	\$ 166,267.04	\$ 176,066.21		
Aurvigil, Inc	50.94	1.760	6.93%	10.66%	10.56%	(\$50.04)	\$ 1.82	\$ 1.95	\$ 2.08	\$ 2.23	\$ 2.38	\$ 2.55	\$ 2.72	\$ 2.91	\$ 3.11	\$ 3.33	\$ 1,042,290.90	\$ 1,114,499.44		
Black Hills Corporation	71.99	2.020	5.23%	9.11%	9.10%	(\$71.99)	\$ 2.07	\$ 2.19	\$ 2.30	\$ 2.42	\$ 2.54	\$ 2.67	\$ 2.81	\$ 2.96	\$ 3.12	\$ 3.29	\$ 60,379.51	\$ 63,014.87		
CMS Energy Corporation	54.29	1.532	6.67%	9.79%	9.78%	(\$54.29)	\$ 1.58	\$ 1.69	\$ 1.81	\$ 1.93	\$ 2.07	\$ 2.21	\$ 2.36	\$ 2.52	\$ 2.70	\$ 2.88	\$ 119,174.22	\$ 125,452.03		
Consolidated Edison, Inc	82.98	2.960	2.98%	6.60%	6.59%	(\$82.98)	\$ 3.00	\$ 3.09	\$ 3.19	\$ 3.28	\$ 3.38	\$ 3.48	\$ 3.59	\$ 3.69	\$ 3.80	\$ 3.91	\$ 1,001.60	\$ 1,051.42		
DTE Energy Company	122.19	3.780	5.39%	9.56%	9.56%	(\$122.19)	\$ 3.88	\$ 4.09	\$ 4.31	\$ 4.54	\$ 4.79	\$ 5.05	\$ 5.32	\$ 5.60	\$ 5.91	\$ 6.22	\$ 126,263.57	\$ 133,066.02		
Duke Energy Corporation	88.19	3.712	6.22%	9.85%	9.86%	(\$88.19)	\$ 3.81	\$ 4.01	\$ 4.22	\$ 4.44	\$ 4.67	\$ 4.92	\$ 5.17	\$ 5.44	\$ 5.73	\$ 6.03	\$ 92,576.75	\$ 97,420.93		
Energy Inc	57.80	1.900	6.38%	9.78%	9.77%	(\$57.80)	\$ 1.96	\$ 2.09	\$ 2.22	\$ 2.36	\$ 2.51	\$ 2.67	\$ 2.84	\$ 3.02	\$ 3.21	\$ 3.42	\$ 404,219.48	\$ 428,987.41		
Eversource Energy	70.78	2.140	6.66%	9.67%	9.66%	(\$70.78)	\$ 2.20	\$ 2.32	\$ 2.46	\$ 2.59	\$ 2.73	\$ 2.88	\$ 3.04	\$ 3.21	\$ 3.39	\$ 3.58	\$ 99,438.94	\$ 103,909.57		
Hawaiian Electric Industries	38.78	1.280	4.90%	9.09%	9.09%	(\$38.78)	\$ 1.21	\$ 1.27	\$ 1.34	\$ 1.41	\$ 1.49	\$ 1.58	\$ 1.66	\$ 1.74	\$ 1.82	\$ 1.91	\$ 14,094.31	\$ 14,770.84		
NextEra Energy, Inc	189.71	6.000	9.83%	11.79%	11.77%	(\$189.71)	\$ 6.23	\$ 6.70	\$ 7.21	\$ 7.77	\$ 8.35	\$ 8.95	\$ 9.57	\$ 10.24	\$ 10.98	\$ 11.78	\$ 442,838,219.44	\$ 466,522,016.52		
NorthWestern Corporation	68.08	2.300	3.50%	6.94%	6.94%	(\$68.08)	\$ 2.34	\$ 2.42	\$ 2.51	\$ 2.59	\$ 2.69	\$ 2.79	\$ 2.89	\$ 2.99	\$ 3.09	\$ 3.19	\$ 2,135.47	\$ 2,210.47		
OGE Energy Corp	41.81	1.460	5.60%	9.19%	9.19%	(\$41.81)	\$ 1.50	\$ 1.58	\$ 1.67	\$ 1.77	\$ 1.87	\$ 1.97	\$ 2.08	\$ 2.20	\$ 2.32	\$ 2.46	\$ 76,744.77	\$ 80,618.48		
Otter Tail Corporation	48.83	1.490	6.26%	9.19%	9.13%	(\$48.83)	\$ 1.44	\$ 1.53	\$ 1.63	\$ 1.73	\$ 1.84	\$ 1.95	\$ 2.08	\$ 2.21	\$ 2.34	\$ 2.49	\$ 235,842.39	\$ 250,582.54		
Pinnacle West Capital Corporation	92.69	2.950	6.29%	9.52%	9.51%	(\$92.69)	\$ 3.03	\$ 3.19	\$ 3.35	\$ 3.53	\$ 3.72	\$ 3.91	\$ 4.12	\$ 4.33	\$ 4.56	\$ 4.80	\$ 76,401.11	\$ 80,414.08		
PNM Resources, Inc	45.41	1.180	6.71%	9.35%	9.33%	(\$45.41)	\$ 1.20	\$ 1.28	\$ 1.37	\$ 1.46	\$ 1.55	\$ 1.66	\$ 1.77	\$ 1.89	\$ 2.02	\$ 2.15	\$ 482,931.63	\$ 503,895.20		
Portland General Electric Company	50.74	1.540	5.28%	9.39%	9.39%	(\$50.74)	\$ 1.58	\$ 1.66	\$ 1.75	\$ 1.84	\$ 1.94	\$ 2.04	\$ 2.15	\$ 2.27	\$ 2.39	\$ 2.51	\$ 41,612.74	\$ 43,907.81		
Southern Company	51.99	2.480	3.29%	6.23%	6.23%	(\$51.99)	\$ 2.52	\$ 2.60	\$ 2.69	\$ 2.79	\$ 2.87	\$ 2.96	\$ 3.06	\$ 3.16	\$ 3.27	\$ 3.37	\$ 1,538.73	\$ 1,589.40		
WEC Energy Group	77.01	2.360	5.93%	9.09%	9.08%	(\$77.01)	\$ 2.43	\$ 2.57	\$ 2.73	\$ 2.89	\$ 3.06	\$ 3.24	\$ 3.43	\$ 3.64	\$ 3.85	\$ 4.08	\$ 218,453.06	\$ 231,407.33		
Xcel Energy Inc	55.28	1.620	5.94%	9.95%	9.94%	(\$55.28)	\$ 1.67	\$ 1.76	\$ 1.87	\$ 1.98	\$ 2.09	\$ 2.21	\$ 2.34	\$ 2.48	\$ 2.62	\$ 2.78	\$ 126,499.80	\$ 132,812.13		

Duration calculation

Company	Ticker	Equity Duration	DIV 1	DIV 2	DIV 3	DIV 4	DIV 5	DIV 6	DIV 7	DIV 8	DIV 9	DIV 10	DIV 15	DIV 199	DIV 200
ALLETE Inc	ALE	35.24	0.03	0.05	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22	0.02	0.02	0.02
Alliant Energy Corporation	LNT	33.69	0.03	0.06	0.09	0.11	0.13	0.15	0.17	0.19	0.21	0.22	0.02	0.02	0.02
Ameren Corporation	AME	38.34	0.03	0.05	0.07	0.09	0.11	0.13	0.15	0.17	0.18	0.20	0.03	0.03	0.03
Aurvigil, Inc	AGR	30.10	0.03	0.06	0.09	0.12	0.14	0.17	0.19	0.21	0.23	0.24	0.01	0.01	0.01
Black Hills Corporation	BKH	36.47	0.03	0.05	0.08	0.10	0.12	0.14	0.16	0.18	0.19	0.21	0.03	0.02	0.02
CMS Energy Corporation	CMS	36.93	0.03	0.05	0.08	0.10	0.12	0.14	0.16	0.18	0.19	0.21	0.03	0.02	0.02
Consolidated Edison, Inc	ED	28.22	0.03	0.07	0.10	0.12	0.16	0.17	0.19	0.21	0.23	0.25	0.01	0.01	0.01
DTE Energy Company	DTE	35.56	0.03	0.06	0.08	0.11	0.13	0.15	0.17	0.19	0.21	0.22	0.02	0.02	0.02
Duke Energy Corporation	DUK	25.23	0.04	0.08	0.11	0.14	0.17	0.19	0.22	0.24	0.26	0.27	0.00	0.00	0.00
Energy Inc	EVRG	31.82	0.03	0.06	0.09	0.11	0.14	0.16	0.18	0.20	0.22	0.23	0.01	0.01	0.01
Eversource Energy	ES	34.26	0.03	0.06	0.08	0.10	0.13	0.15	0.17	0.19	0.20	0.22	0.02	0.02	0.02
Hawaiian Electric Industries	HE	32.34	0.03	0.06	0.09	0.11	0.13	0.16	0.18	0.20	0.21	0.23	0.01	0.01	0.01
NextEra Energy, Inc	NEE	38.95	0.02	0.05	0.07	0.09	0.11	0.13	0.16	0.17	0.18	0.20	0.04	0.03	0.03
NorthWestern Corporation	NWE	30.77	0.03	0.06	0.09	0.12	0.14	0.18	0.19	0.20	0.22	0.24	0.01	0.01	0.01
OGE Energy Corp	OGE	30.13	0.03	0.06	0.09	0.12	0.14	0.17	0.19	0.21	0.23	0.24	0.01	0.01	0.01
Otter Tail Corporation	OTTR	36.58	0.03	0.05	0.08	0.10	0.12	0.14	0.16	0.18	0.19	0.21	0.03	0.03	0.03
Pinnacle West Capital Corporation	PNW	32.71	0.03	0.06	0.08	0.11	0.13	0.16	0.18	0.19	0.21	0.23	0.01	0.01	0.01
PNM Resources, Inc	PNM	39.60	0.02	0.05	0.07	0.09	0.11	0.13	0.15	0.16	0.18	0.19	0.04	0.04	0.04
Portland General Electric Company	POR	34.11	0.03	0.06	0.08	0.11	0.13	0.15	0.17	0.19	0.20	0.22	0.02	0.02	0.02
Southern Company	SO	21.92	0.05	0.09	0.12	0.16	0.19	0.22	0.24	0.26	0.28	0.30	0.06	0.06	0.06
WEC Energy Group	WEC	33.91	0.03	0.06	0.08	0.11	0.13	0.15	0.17	0.19	0.21	0.22	0.02	0.02	0.02
Xcel Energy Inc	XEL	35.23	0.03	0.05	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22	0.02	0.02	0.02
		Average	33.22												
		Median	33.80												

Notes:

Source: Schedule RB-1 and RB-2

$$D = \frac{\sum_{t=1}^N \frac{CF_t}{(1+r)^t}}{P}$$

Where:  
 t = time period (1 through 200)  
 CF = Cash Flow (i.e. dividend) at time t  
 r = ROE  
 P = Current Stock Price

CAPM vs. ECAPM Security Market Line  
Using Mr. Baudino's Inputs

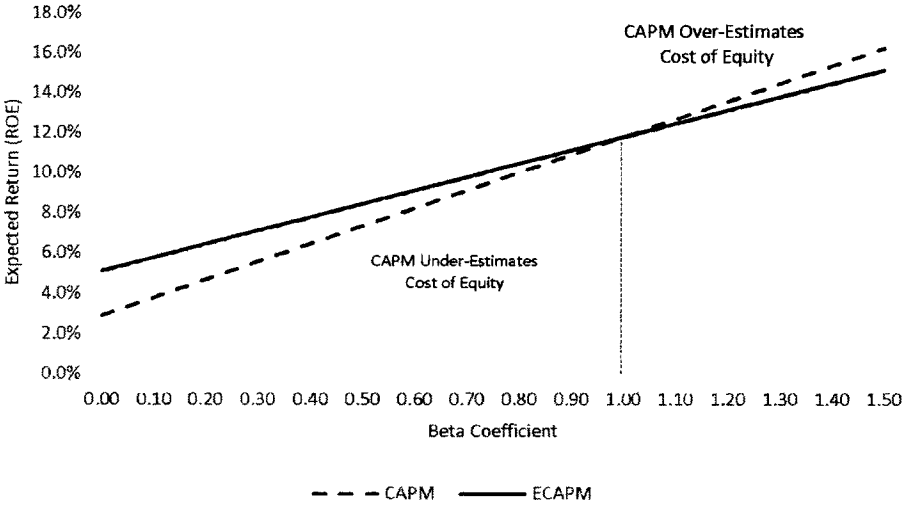
	Risk-Free Rate	2.90%		
	MRP	8.90%	ECAPM alpha	
Beta	CAPM	ECAPM	1.00%	2.00%
0.00	2.90%	5.13%	3.90%	4.90%
0.01	2.99%	5.19%	3.98%	4.97%
0.02	3.08%	5.26%	4.06%	5.04%
0.03	3.17%	5.33%	4.14%	5.11%
0.04	3.26%	5.39%	4.22%	5.18%
0.05	3.35%	5.46%	4.30%	5.25%
0.06	3.43%	5.53%	4.37%	5.31%
0.07	3.52%	5.59%	4.45%	5.38%
0.08	3.61%	5.66%	4.53%	5.45%
0.09	3.70%	5.73%	4.61%	5.52%
0.10	3.79%	5.79%	4.69%	5.59%
0.11	3.88%	5.86%	4.77%	5.66%
0.12	3.97%	5.93%	4.85%	5.73%
0.13	4.06%	5.99%	4.93%	5.80%
0.14	4.15%	6.06%	5.01%	5.87%
0.15	4.24%	6.13%	5.09%	5.94%
0.16	4.32%	6.19%	5.16%	6.00%
0.17	4.41%	6.26%	5.24%	6.07%
0.18	4.50%	6.33%	5.32%	6.14%
0.19	4.59%	6.39%	5.40%	6.21%
0.20	4.68%	6.46%	5.48%	6.28%
0.21	4.77%	6.53%	5.56%	6.35%
0.22	4.86%	6.59%	5.64%	6.42%
0.23	4.95%	6.66%	5.72%	6.49%
0.24	5.04%	6.73%	5.80%	6.56%
0.25	5.13%	6.79%	5.88%	6.63%
0.26	5.21%	6.86%	5.95%	6.69%
0.27	5.30%	6.93%	6.03%	6.76%
0.28	5.39%	6.99%	6.11%	6.83%
0.29	5.48%	7.06%	6.19%	6.90%
0.30	5.57%	7.13%	6.27%	6.97%
0.31	5.66%	7.19%	6.35%	7.04%
0.32	5.75%	7.26%	6.43%	7.11%
0.33	5.84%	7.33%	6.51%	7.18%
0.34	5.93%	7.39%	6.59%	7.25%
0.35	6.02%	7.46%	6.67%	7.32%
0.36	6.10%	7.53%	6.74%	7.38%
0.37	6.19%	7.59%	6.82%	7.45%
0.38	6.28%	7.66%	6.90%	7.52%
0.39	6.37%	7.73%	6.98%	7.59%
0.40	6.46%	7.80%	7.06%	7.66%
0.41	6.55%	7.86%	7.14%	7.73%

Beta	CAPM	ECAPM	1.00%	2.00%
0.42	6.64%	7.93%	7.22%	7.80%
0.43	6.73%	8.00%	7.30%	7.87%
0.44	6.82%	8.06%	7.38%	7.94%
0.45	6.91%	8.13%	7.46%	8.01%
0.46	6.99%	8.20%	7.53%	8.07%
0.47	7.08%	8.26%	7.61%	8.14%
0.48	7.17%	8.33%	7.69%	8.21%
0.49	7.26%	8.40%	7.77%	8.28%
0.50	7.35%	8.46%	7.85%	8.35%
0.51	7.44%	8.53%	7.93%	8.42%
0.52	7.53%	8.60%	8.01%	8.49%
0.53	7.62%	8.66%	8.09%	8.56%
0.54	7.71%	8.73%	8.17%	8.63%
0.55	7.80%	8.80%	8.25%	8.70%
0.56	7.88%	8.86%	8.32%	8.76%
0.57	7.97%	8.93%	8.40%	8.83%
0.58	8.06%	9.00%	8.48%	8.90%
0.59	8.15%	9.06%	8.56%	8.97%
0.60	8.24%	9.13%	8.64%	9.04%
0.61	8.33%	9.20%	8.72%	9.11%
0.62	8.42%	9.26%	8.80%	9.18%
0.63	8.51%	9.33%	8.88%	9.25%
0.64	8.60%	9.40%	8.96%	9.32%
0.65	8.69%	9.46%	9.04%	9.39%
0.66	8.77%	9.53%	9.11%	9.45%
0.67	8.86%	9.60%	9.19%	9.52%
0.68	8.95%	9.66%	9.27%	9.59%
0.69	9.04%	9.73%	9.35%	9.66%
0.70	9.13%	9.80%	9.43%	9.73%
0.71	9.22%	9.86%	9.51%	9.80%
0.72	9.31%	9.93%	9.59%	9.87%
0.73	9.40%	10.00%	9.67%	9.94%
0.74	9.49%	10.06%	9.75%	10.01%
0.75	9.58%	10.13%	9.83%	10.08%
0.76	9.66%	10.20%	9.90%	10.14%
0.77	9.75%	10.26%	9.98%	10.21%
0.78	9.84%	10.33%	10.06%	10.28%
0.79	9.93%	10.40%	10.14%	10.35%
0.80	10.02%	10.47%	10.22%	10.42%
0.81	10.11%	10.53%	10.30%	10.49%
0.82	10.20%	10.60%	10.38%	10.56%
0.83	10.29%	10.67%	10.46%	10.63%
0.84	10.38%	10.73%	10.54%	10.70%
0.85	10.47%	10.80%	10.62%	10.77%
0.86	10.55%	10.87%	10.69%	10.83%
0.87	10.64%	10.93%	10.77%	10.90%
0.88	10.73%	11.00%	10.85%	10.97%
0.89	10.82%	11.07%	10.93%	11.04%

Beta	CAPM	ECAPM	1.00%	2.00%
0.90	10.91%	11.13%	11.01%	11.11%
0.91	11.00%	11.20%	11.09%	11.18%
0.92	11.09%	11.27%	11.17%	11.25%
0.93	11.18%	11.33%	11.25%	11.32%
0.94	11.27%	11.40%	11.33%	11.39%
0.95	11.36%	11.47%	11.41%	11.46%
0.96	11.44%	11.53%	11.48%	11.52%
0.97	11.53%	11.60%	11.56%	11.59%
0.98	11.62%	11.67%	11.64%	11.66%
0.99	11.71%	11.73%	11.72%	11.73%
1.00	11.80%	11.80%	11.80%	11.80%
1.01	11.89%	11.87%	11.88%	11.87%
1.02	11.98%	11.93%	11.96%	11.94%
1.03	12.07%	12.00%	12.04%	12.01%
1.04	12.16%	12.07%	12.12%	12.08%
1.05	12.25%	12.13%	12.20%	12.15%
1.06	12.33%	12.20%	12.27%	12.21%
1.07	12.42%	12.27%	12.35%	12.28%
1.08	12.51%	12.33%	12.43%	12.35%
1.09	12.60%	12.40%	12.51%	12.42%
1.10	12.69%	12.47%	12.59%	12.49%
1.11	12.78%	12.53%	12.67%	12.56%
1.12	12.87%	12.60%	12.75%	12.63%
1.13	12.96%	12.67%	12.83%	12.70%
1.14	13.05%	12.73%	12.91%	12.77%
1.15	13.14%	12.80%	12.99%	12.84%
1.16	13.22%	12.87%	13.06%	12.90%
1.17	13.31%	12.93%	13.14%	12.97%
1.18	13.40%	13.00%	13.22%	13.04%
1.19	13.49%	13.07%	13.30%	13.11%
1.20	13.58%	13.14%	13.38%	13.18%
1.21	13.67%	13.20%	13.46%	13.25%
1.22	13.76%	13.27%	13.54%	13.32%
1.23	13.85%	13.34%	13.62%	13.39%
1.24	13.94%	13.40%	13.70%	13.46%
1.25	14.03%	13.47%	13.78%	13.53%
1.26	14.11%	13.54%	13.85%	13.59%
1.27	14.20%	13.60%	13.93%	13.66%
1.28	14.29%	13.67%	14.01%	13.73%
1.29	14.38%	13.74%	14.09%	13.80%
1.30	14.47%	13.80%	14.17%	13.87%
1.31	14.56%	13.87%	14.25%	13.94%
1.32	14.65%	13.94%	14.33%	14.01%
1.33	14.74%	14.00%	14.41%	14.08%
1.34	14.83%	14.07%	14.49%	14.15%
1.35	14.92%	14.14%	14.57%	14.22%
1.36	15.00%	14.20%	14.64%	14.28%
1.37	15.09%	14.27%	14.72%	14.35%

Beta	CAPM	ECAPM	1.00%	2.00%
1.38	15.18%	14.34%	14.80%	14.42%
1.39	15.27%	14.40%	14.88%	14.49%
1.40	15.36%	14.47%	14.96%	14.56%
1.41	15.45%	14.54%	15.04%	14.63%
1.42	15.54%	14.60%	15.12%	14.70%
1.43	15.63%	14.67%	15.20%	14.77%
1.44	15.72%	14.74%	15.28%	14.84%
1.45	15.81%	14.80%	15.36%	14.91%
1.46	15.89%	14.87%	15.43%	14.97%
1.47	15.98%	14.94%	15.51%	15.04%
1.48	16.07%	15.00%	15.59%	15.11%
1.49	16.16%	15.07%	15.67%	15.18%
1.50	16.25%	15.14%	15.75%	15.25%

Source:  
Exhibit RB-3



Recently Authorized ROEs by RRA Ranking

State	Company	Case Identification	Service	Case Type	Date	Return on Equity (%)	RRA Rank	Electric Utilities		
								Above Average	Average	Below Average
Washington	Avista Corp	D-UE-150204	Electric	Vertically Integrated	1/6/2016	9.50	Average / 3		9.50	
Arkansas	Entergy Arkansas LLC	D-15-015-U	Electric	Vertically Integrated	2/23/2016	9.75	Average / 1		9.75	
Indiana	Indianapolis Power & Light Co	Ca-44576	Electric	Vertically Integrated	3/16/2016	9.95	Average / 1		9.95	
Massachusetts	Fitchburg Gas & Electric Light	DPU-15-80	Electric	Distribution	4/29/2016	9.80	Average / 2		9.80	
Maryland	Baltimore Gas and Electric Co	C-9406 (elec)	Electric	Distribution	6/3/2016	9.75	Below Average / 3			9.75
New Mexico	El Paso Electric Co	C-15-00127-UT	Electric	Vertically Integrated	6/6/2016	9.48	Below Average / 2			9.48
New York	NY State Electric & Gas Corp	C-15-E-0283	Electric	Distribution	6/15/2016	9.00	Average / 1		9.00	
New York	Rochester Gas & Electric Corp	C-15-E-0285	Electric	Distribution	6/15/2016	9.00	Average / 1		9.00	
Indiana	Northern IN Public Svc Co	Ca-44888	Electric	Vertically Integrated	7/18/2016	9.98	Average / 1		9.98	
Tennessee	Kingsport Power Company	D-16-00001	Electric	Vertically Integrated	6/9/2016	9.85	Above Average / 3	9.85		
Arizona	UNS Electric Inc	D-E-04204A-15-0142	Electric	Vertically Integrated	8/18/2016	9.50	Average / 3		9.50	
New Jersey	Atlantic City Electric Co	D-ER-16030252	Electric	Distribution	9/24/2016	9.75	Below Average / 1			9.75
Washington	Pacificorp	D-UE-152253	Electric	Vertically Integrated	9/1/2016	9.50	Average / 3		9.50	
Nichigan	Upper Peninsula Power Co	CAU-17895	Electric	Vertically Integrated	8/8/2016	10.00	Above Average / 3	10.00		
New Mexico	Public Service Co. of NM	C-15-00261-UT	Electric	Vertically Integrated	9/28/2016	9.58	Below Average / 2			9.58
Massachusetts	Massachusetts Electric Co	DPU-15-155	Electric	Distribution	9/30/2016	9.90	Average / 2		9.90	
Wisconsin	Madsen Gas and Electric Co	D-3270-UR-121 (Elec)	Electric	Vertically Integrated	11/9/2016	9.80	Above Average / 2	9.80		
Oklahoma	Public Service Co. of OK	Ca-PUD201500208	Electric	Vertically Integrated	11/10/2016	9.50	Average / 3		9.50	
Maryland	Potomac Electric Power Co	C-9418	Electric	Distribution	11/15/2016	9.55	Below Average / 3			9.55
Wisconsin	Wisconsin Power and Light Co	D-6680-UR-120 (Elec)	Electric	Vertically Integrated	11/18/2016	10.00	Above Average / 2	10.00		
Florida	Florida Power & Light Co	D-160021-EI	Electric	Vertically Integrated	11/29/2016	10.55	Above Average / 2	10.55		
California	Liberty Utilities (CalPaco Elect)	A-15-05-008	Electric	Vertically Integrated	12/1/2016	10.00	Average / 1		10.00	
South Carolina	Duke Energy Progress LLC	D-2016-227-E	Electric	Vertically Integrated	12/7/2016	10.10	Average / 3		10.10	
New Jersey	Jersey Crtrl Power & Light Co	D-ER-16040383	Electric	Distribution	12/12/2016	9.80	Below Average / 1			9.80
Connecticut	United Illuminating Co	D-16-06-04	Electric	Distribution	12/14/2016	9.10	Below Average / 1			9.10
Maine	Emers Maine	D-2015-00380	Electric	Distribution	12/19/2016	9.00	Average / 2		9.00	
Colorado	Black Hills Colorado Electric	D-16AL-0328E	Electric	Vertically Integrated	12/19/2016	9.37	Average / 2		9.37	
Nevada	Sierra Pacific Power Co	D-16-06006	Electric	Vertically Integrated	12/22/2016	9.60	Average / 2		9.60	
North Carolina	Virginia Electric & Power Co	D-E-22, Sub 532	Electric	Vertically Integrated	12/22/2016	9.80	Average / 1		9.80	
Idaho	Avista Corp	C-AVUE-16-03	Electric	Vertically Integrated	12/28/2016	9.50	Average / 2		9.50	
Wyoming	MDU Resources Group Inc	D-20004-117-ER-16	Electric	Vertically Integrated	1/18/2017	9.45	Average / 3		9.45	
New York	Consolidated Edison Co. of NY	C-16-0060	Electric	Distribution	1/24/2017	9.00	Average / 1		9.00	
Michigan	DTE Electric Co	C-U-18014	Electric	Vertically Integrated	1/31/2017	10.10	Above Average / 3	10.10		
Maryland	Delmarva Power & Light Co	C-9424	Electric	Distribution	2/15/2017	9.80	Below Average / 3			9.80
New Jersey	Rockland Electric Company	D-ER-16050428	Electric	Distribution	2/22/2017	9.80	Below Average / 1			9.80
Arizona	Tucson Electric Power Co	D-E-01933A-15-0322	Electric	Vertically Integrated	2/24/2017	9.75	Average / 3		9.75	
Nichigan	Consumers Energy Co	C-U-17990	Electric	Vertically Integrated	2/28/2017	10.10	Above Average / 3	10.10		
Minnesota	Otter Tail Power Co	D-E-017GR-15-1033	Electric	Vertically Integrated	3/2/2017	9.41	Average / 2		9.41	
Oklahoma	Oklahoma Gas and Electric Co	Ca-PUD201500273	Electric	Vertically Integrated	3/20/2017	9.50	Average / 3		9.50	
Florida	Gulf Power Co	D-160166-EI	Electric	Vertically Integrated	4/4/2017	10.25	Above Average / 2	10.25		
New Hampshire	Liberty Utilities Granite St	D-DE-16-383	Electric	Distribution	4/12/2017	9.40	Average / 3		9.40	
New Hampshire	Unitil Energy Systems Inc	D-DE-16-384	Electric	Distribution	4/20/2017	9.50	Average / 3		9.50	
Missouri	Kansas City Power & Light	C-ER-2016-0285	Electric	Vertically Integrated	5/3/2017	9.50	Average / 3		9.50	
Minnesota	Northern States Power Co - MN	D-E-002GR-15-828	Electric	Vertically Integrated	5/11/2017	9.20	Average / 2		9.20	
Arkansas	Oklahoma Gas and Electric Co	D-18-052-U	Electric	Vertically Integrated	5/18/2017	9.50	Average / 1		9.50	
Delaware	Delmarva Power & Light Co	D-16-0649	Electric	Distribution	5/23/2017	9.70	Average / 3		9.70	
North Dakota	MDU Resources Group Inc	C-PJ-16-866	Electric	Vertically Integrated	6/16/2017	9.65	Average / 1		9.65	
Kentucky	Kentucky Utilities Co	C-2016-00370	Electric	Vertically Integrated	6/22/2017	9.70	Average / 1		9.70	



State	Company	Case Identification	Service	Case Type	Date	Return on Equity (%)	RRA Rank	Above Average	Average	Below Average
Kentucky	Loueville Gas & Electric Co	C-2016-00371 (elec)	Electric	Vertically Integrated	6/22/2017	9.70	Average / 1		\$ 70	
District of Columbia	Potomac Electric Power Co	FC-1139	Electric	Distribution	7/24/2017	9.50	Below Average / 3			9.50
Arizona	Arizona Public Service Co	D-E-01345A-16-0036	Electric	Vertically Integrated	8/16/2017	10.00	Average / 3	10.00		
New Jersey	Atlantic City Electric Co	D-ER-17030308	Electric	Distribution	9/22/2017	9.60	Below Average / 1			9.60
Texas	Oncor Electric Delivery Co	D-46957	Electric	Distribution	9/28/2017	9.80	Average / 3	9.80		
Maryland	Potomac Electric Power Co	C-9443	Electric	Distribution	10/20/2017	9.50	Below Average / 3			9.50
California	San Diego Gas & Electric Co	Advice No. 3120-E	Electric	Vertically Integrated	10/28/2017	10.20	Average / 1		10.20	
California	Pacific Gas and Electric Co	Advice No. 3887-G5149-E	Electric	Vertically Integrated	10/28/2017	10.25	Average / 1		10.25	
California	Southern California Edison Co	Advice No. 3665-E	Electric	Vertically Integrated	10/28/2017	10.30	Average / 1		10.30	
Florida	Tampa Electric Co	D-20170210-EI	Electric	Vertically Integrated	11/6/2017	10.25	Above Average / 2	10.25		
Alaska	Alaska Electric Light Power	D-U-16-086	Electric	Vertically Integrated	11/16/2017	11.95	Below Average / 1			11.95
Massachusetts	NSTAR Electric Co	DPU 17-05 (NSTAR)	Electric	Distribution	11/30/2017	10.00	Average / 2	10.00		
Massachusetts	Western Massachusetts Electric	DPU 17-05 (WMECO)	Electric	Distribution	11/30/2017	10.00	Average / 2	10.00		
Washington	Puget Sound Energy Inc	D-UE-170033	Electric	Vertically Integrated	12/6/2017	9.50	Average / 3		9.50	
Wisconsin	Northern States Power Co - WI	D-4220-UR-123 (Elec)	Electric	Vertically Integrated	12/7/2017	9.80	Above Average / 2	9.80		
Texas	Southwestern Electric Power Co	D-6449	Electric	Vertically Integrated	12/14/2017	9.80	Average / 3		9.80	
Texas	El Paso Electric Co	D-46831	Electric	Vertically Integrated	12/14/2017	9.85	Average / 3		9.85	
Oregon	Portland General Electric Co	D-UE-319	Electric	Vertically Integrated	12/18/2017	9.50	Average / 2		9.50	
New Mexico	Public Service Co of NM	C-16-00276-UT	Electric	Vertically Integrated	12/20/2017	9.58	Below Average / 2			9.58
Vermont	Green Mountain Power Corp	C-17-3112-RNV	Electric	Vertically Integrated	12/21/2017	9.10	Average / 3		9.10	
Idaho	Avista Corp	CA-AVUE-17-01	Electric	Vertically Integrated	12/28/2017	9.50	Average / 2		9.50	
Nevada	Nevada Power Co	D-17-06003	Electric	Vertically Integrated	12/28/2017	9.51	Average / 2		9.51	
Kentucky	Kentucky Power Co	C-2017-00179	Electric	Vertically Integrated	1/18/2018	9.70	Average / 1		9.70	
Oklahoma	Public Service Co of OK	CA-PU0201700151	Electric	Vertically Integrated	1/31/2018	9.30	Average / 3		9.30	
Iowa	Interstate Power & Light Co	D-RPU-2017-0001	Electric	Vertically Integrated	2/2/2018	9.98	Average / 1		9.98	
North Carolina	Duke Energy Progress LLC	D-E-2, Sub 1142	Electric	Vertically Integrated	2/23/2018	9.90	Average / 1		9.90	
Minnesota	ALLTEC (Minnesota Power)	D-E-0156R-16-964	Electric	Vertically Integrated	3/12/2018	9.25	Average / 2		9.25	
New York	Norfolk Electric Power Corp	C-17-E-0238	Electric	Distribution	3/15/2018	9.00	Average / 1		9.00	
Michigan	Consumers Energy Co	C-U-18322	Electric	Vertically Integrated	3/28/2018	10.00	Above Average / 3	10.00		
Michigan	Indiana Michigan Power Co	C-U-18370	Electric	Vertically Integrated	4/12/2018	9.90	Above Average / 3	9.90		
Kentucky	Duke Energy Kentucky Inc	C-2017-00321	Electric	Vertically Integrated	4/13/2018	9.73	Average / 1		9.73	
Connecticut	Connecticut Light & Power Co	D-17-10-46	Electric	Distribution	4/18/2018	9.25	Below Average / 1			9.25
Michigan	DTE Electric Co	C-U-18255	Electric	Vertically Integrated	4/18/2018	10.00	Above Average / 3	10.00		
Washington	Avista Corp	D-UE-170495	Electric	Vertically Integrated	4/28/2018	9.50	Average / 3		9.50	
Indiana	Indiana Michigan Power Co	CA-44967	Electric	Vertically Integrated	5/30/2018	9.95	Average / 1		9.95	
Maryland	Delmarva Electric Power Corp	C-14273	Electric	Distribution	5/5/2018	9.50	Below Average / 3			9.50
New York	Central Hudson Gas & Electric	C-17-E-0458	Electric	Distribution	8/14/2018	9.80	Average / 1		9.80	
Hawaii	Hawaiian Electric Co	D-2016-0328	Electric	Vertically Integrated	8/22/2018	9.50	Average / 2		9.50	
North Carolina	Duke Energy Carolinas LLC	D-E-7, Sub 1146	Electric	Vertically Integrated	8/22/2018	9.90	Average / 1		9.90	
Maine	Emera Maine	D-2017-00188	Electric	Distribution	6/28/2018	9.35	Average / 2		9.35	
Hawaii	Hawai Electric Light Co	D-2015-0170	Electric	Vertically Integrated	8/29/2018	9.50	Average / 2		9.50	
District of Columbia	Potomac Electric Power Co	FC-1160	Electric	Distribution	8/8/2018	9.53	Below Average / 3			9.53
Delaware	Delmarva Power & Light Co	D-17-0977	Electric	Distribution	8/21/2018	9.70	Average / 3		9.70	
Rhode Island	Narragansett Electric Co	D-1770 (electric)	Electric	Distribution	8/24/2018	9.28	Average / 2		9.28	
New Mexico	Southwestern Public Service Co	C-17-00255-UT	Electric	Vertically Integrated	9/6/2018	9.56	Below Average / 2			9.56
Wisconsin	Wisconsin Power and Light Co	D-6680-UR-121 (Elec)	Electric	Vertically Integrated	9/14/2018	10.00	Above Average / 2	10.00		
Wisconsin	Madison Gas and Electric Co	D-3270-UR-122 (Elec)	Electric	Vertically Integrated	9/20/2018	9.80	Above Average / 2	9.80		
North Dakota	Otter Tail Power Co	C-PU-17-398	Electric	Vertically Integrated	9/26/2018	9.77	Average / 1		9.77	
Ohio	Dayton Power and Light Co	C-15-1835-EL-AR	Electric	Distribution	9/26/2018	10.00	Average / 2		10.00	
Kansas	Westar Energy Inc	D-18-WSEE-328-RTS	Electric	Vertically Integrated	9/27/2018	9.30	Below Average / 1			9.30
Pennsylvania	UGI Utilities Inc	D-R-2017-2640058	Electric	Distribution	10/4/2018	9.85	Above Average / 2	9.85		
New Jersey	Public Service Electric Gas	D-ER18010029	Electric	Distribution	10/29/2018	9.60	Below Average / 1			9.60
Indiana	Indianapolis Power & Light Co	CA-45028	Electric	Vertically Integrated	10/31/2018	9.99	Average / 1		9.99	
Kansas	Kansas City Power & Light	D-18-KCPE-480-RTS	Electric	Vertically Integrated	12/13/2018	9.30	Below Average / 1			9.30
Oregon	Portland General Electric Co	D-UE-335	Electric	Vertically Integrated	12/14/2018	9.50	Average / 2		9.50	
Ohio	Duke Energy Ohio Inc	C-17-0032-EL-AR	Electric	Distribution	12/19/2018	9.84	Average / 2		9.84	
Texas	Texas-New Mexico Power Co	D-48401	Electric	Distribution	12/20/2018	9.65	Average / 3		9.65	
Vermont	Green Mountain Power Corp	C-18-0974-TF	Electric	Distribution	12/21/2018	9.30	Average / 3		9.30	
Michigan	Consumers Energy Co	C-U-20194	Electric	Vertically Integrated	1/8/2019	10.00	Above Average / 3	10.00		
West Virginia	Appalachian Power Co	C-18-0846-E-42T	Electric	Vertically Integrated	2/27/2019	9.75	Below Average / 2			9.75
New Jersey	Atlantic City Electric Co	D-ER18080825	Electric	Distribution	3/13/2019	9.40	Below Average / 1			9.40
New York	Orange & Rockland Utility Inc	C-18-E-0067	Electric	Distribution	3/14/2019	9.00	Average / 1		9.00	
Oklahoma	Public Service Co of OK	CA-PU0201800097	Electric	Vertically Integrated	3/14/2019	9.40	Average / 3		9.40	
Maryland	Potomac Edison Co	C-8490	Electric	Distribution	3/22/2019	9.85	Below Average / 3			9.85
Kentucky	Kentucky Utilities Co	C-2018-00294	Electric	Vertically Integrated	4/30/2019	9.73	Average / 1		9.73	
Kentucky	Louisville Gas & Electric Co	C-2018-00295 (elec)	Electric	Vertically Integrated	4/30/2019	9.73	Average / 1		9.73	
South Carolina	Duke Energy Carolinas LLC	D-2018-319-E	Electric	Vertically Integrated	5/1/2019	9.50	Average / 3		9.50	
Michigan	DTE Electric Co	C-U-20162	Electric	Vertically Integrated	5/2/2019	10.00	Above Average / 3	10.00		
South Carolina	Duke Energy Progress LLC	D-2018-319-E	Electric	Vertically Integrated	5/8/2019	9.50	Average / 3		9.50	
South Dakota	Otter Tail Power Co	D-EL1-021	Electric	Vertically Integrated	5/14/2019	9.76	Average / 2		9.76	
Hawaii	Mau Electric Company Ltd	D-2017-0150	Electric	Vertically Integrated	5/18/2019	9.50	Average / 2		9.50	
Michigan	Upper Peninsula Power Co	C-U-20276	Electric	Vertically Integrated	5/23/2019	9.90	Above Average / 3	9.90		
				Total Cases	120			19	77	24
				Mean	9.66			10.01	9.58	9.63
				Median	9.60			10.00	9.50	9.58
				Maximum	11.95			10.55	10.30	11.95
				Minimum	8.75			9.80	8.75	9.10
				Total Distribution Cases	39			Court "Below Average"		
				Mean	9.50					18
				Median	9.60					
				Maximum	10.00					
				Minimum	8.80					