Exhibit No.:	
Issue:	Rate of Return
Witness:	Christopher C. Walters, CFA
Type of Exhibit:	Direct Testimony
Sponsoring Party:	Missouri Industrial Energy Consumers
Case No.:	ER-2019-0335
Date Testimony Prepared:	December 4, 2019

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Decrease Its Revenues for Electric Service.	)	**Case No. ER-2019-0335**

Direct Testimony and Schedules of

Christopher C. Walters, CFA

On behalf of

Missouri Industrial Energy Consumers

December 4, 2019

BRUBAKER & ASSOCIATES, INC.

Project 10842

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Union Electric Company d/b/a Ameren Missouri's Tariffs to Decrease Its Revenues for Electric Service.	)	**Case No. ER-2019-0335**

STATE OF MISSOURI)
) **SS**
COUNTY OF ST. LOUIS)

Affidavit of Christopher C. Walters

Christopher C. Walters, being first duly sworn, on his oath states:

1. My name is Christopher C. Walters. I am a consultant with Brubaker & Associates, Inc., having its principal place of business at 16690 Swingley Ridge Road, Suite 140, Chesterfield, Missouri 63017. We have been retained by the Missouri Industrial Energy Consumers in this proceeding on their behalf.

2. Attached hereto and made a part hereof for all purposes are my direct testimony and schedules which were prepared in written form for introduction into evidence in Missouri Public Service Commission Case No. ER-2019-0335.

3. I hereby swear and affirm that the testimony and schedules are true and correct and that they show the matters and things that they purport to show.

Christopher C. Walters

Subscribed and sworn to before me this 4th day of December, 2019.

TAMMY S. KLOSSNER
Notary Public - Notary Seal
STATE OF MISSOURI
St. Charles County
My Commission Expires: Mar. 18, 2023
Commission # 15024862

Notary Public

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Direct Testimony of Christopher C. Walters

I. INTRODUCTION

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Christopher C. Walters. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q WHAT IS YOUR OCCUPATION?

A I am a Senior Consultant in the field of public utility regulation with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A This information is included in Appendix A to this testimony.

Q HAVE YOU EVER TESTIFIED BEFORE A REGULATORY BODY?

A Yes. I have sponsored pre-filed written testimony in over 30 dockets in front of 17 different regulatory bodies including 16 states, the Federal Energy Regulatory Commission ("FERC"), and the City Council of New Orleans. A list detailing each of these is attached hereto as my Schedule CCW-1.

Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A This testimony is presented on behalf of the Missouri Industrial Energy Consumers ("MIEC"), a non-profit corporation that represents the interests of large customers in Missouri utility matters. These companies purchase substantial quantities of electricity from Ameren Missouri and the outcome of this proceeding will have an impact on their cost of electricity.

Q WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A My testimony will address the current market cost of equity, and resulting overall rate of return for Ameren Missouri (or "Company"). In my analyses, I consider the results of several market models, the current and expected economic environment, as well as the outlook for the regulated utility industry. In addition, I also take into consideration economic and legislative events that have taken place since Ameren Missouri's last litigated rate case in which a return on equity ("ROE") was awarded by this Commission.

My silence with respect to any position taken by Ameren Missouri in its application or direct testimony in this proceeding should not be interpreted as an endorsement of that position.

II. SUMMARY

Q PLEASE SUMMARIZE YOUR RECOMMENDATIONS AND CONCLUSIONS.

A In Section III of my testimony, I review and analyze the regulated utility industry's access to capital, credit rating trends and outlooks, as well as the overall trend in the authorized ROE for utilities throughout the country. I conclude that the trend in authorized ROEs for utilities has declined over the last several years and has remained

well below 10.0% more recently. I also review the impact that the Federal Reserve's monetary policy actions have had on the cost of capital.

In Section IV of my testimony, I outline how a fair ROE should be established, provide an overview of the market's perception of Ameren Missouri's investment risk, comment on the Company's proposed capital structure, and present the analyses I relied on to estimate an appropriate ROE for Ameren Missouri. Based on the results of several cost of equity estimation methods performed on publicly traded electric utility companies with comparable risk to the Company, I recommend the Commission award Ameren Missouri a return on common equity of 9.2%, which is the approximate midpoint of my recommended range of 8.8% to 9.5%. This ROE will fairly compensate Ameren Missouri for its current market cost of common equity by fairly balancing the interests of investors and ratepayers.

In Section V of my testimony, I review changes in the economic environment, as well as certain legislative changes since Ameren Missouri's last litigated rate case (ER-2014-0258) where its most recent stated authorized ROE of 9.53% was determined by this Commission. I use these observations to further assess the reasonableness of my recommendations.

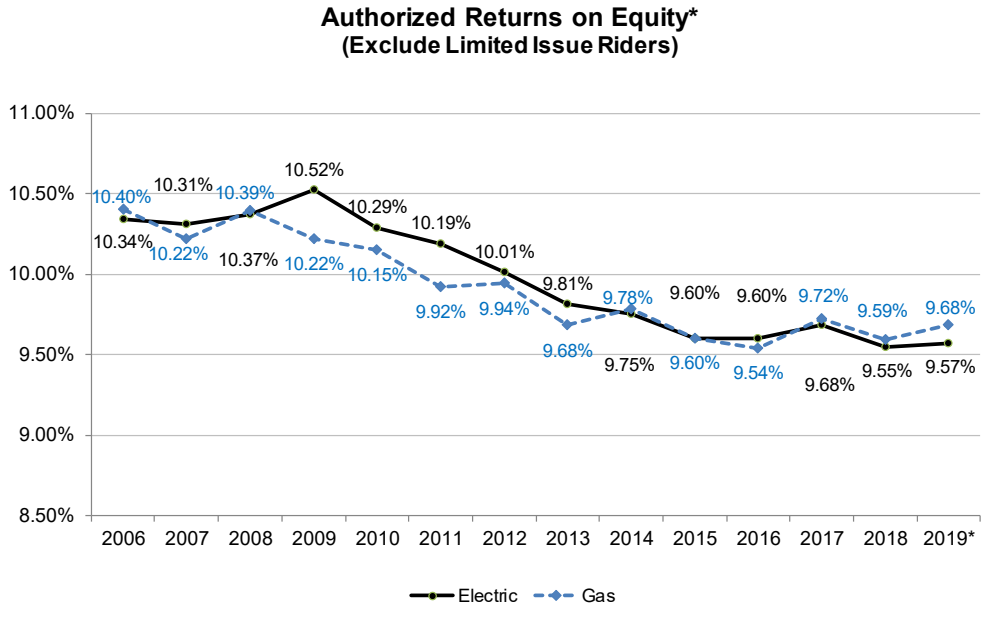
III. ACCESS TO CAPITAL AND ECONOMIC ENVIRONMENT

III.A. Electric Industry Authorized ROEs, Access to Capital, and Credit Strength

Q PLEASE DESCRIBE THE OBSERVABLE EVIDENCE ON TRENDS IN AUTHORIZED ROEs FOR ELECTRIC AND GAS UTILITIES, UTILITIES' CREDIT STANDING, AND UTILITIES' ACCESS TO CAPITAL TO FUND INFRASTRUCTURE INVESTMENT.

A Authorized ROEs for both electric and gas utilities have declined over the last ten years, as illustrated in Figure 1, and have been reasonably stable well below 10.0% for about the last six years.

FIGURE 1



Source and Notes:
[1] *S&P Global Market Intelligence*, RRA Regulatory Focus, Major Rate Case Decisions -- January - September 2019, October, 2019 at page 1.
* Data includes January - September, 2019.
* Electric Returns exclude Limited Issue Riders.
* RRA excludes the 2017 Alaska ENSTAR decision from its calculations.

Q PLEASE DESCRIBE THE DISTRIBUTION OF AUTHORIZED ROEs FOR THE LAST FEW YEARS.

A The distribution of authorized returns, annually, since 2016 is summarized in Table 1.

TABLE 1

Distribution of Authorized ROEs
(All Electric Utilities)

Line	Year	Average (1)	Median (2)	Share of Decisions ≤ 9.5% (3)	Share of Decisions ≤ 9.7% (4)
1	2016	9.60%	9.60%	41%	53%
2	2017[1]	9.67%	9.60%	42%	67%
3	2018[2]	9.54%	9.57%	47%	63%
4	2019 Q3	9.60%	9.60%	35%	59%

Source and Notes:
S&P Global Market Intelligence, downloaded 10/2/2019.
[1] Includes authorized base ROE of 9.4% for Nevada Power Company, which excludes incentives associated with the Lenzie facility.
[2] Includes authorized base ROE of 9.6% for Interstate Power & Light Co., which exludes allowed ROE for generating facilities subject to special ratemaking principles.
*Excludes Limited Issue Rider Cases.

The distribution shows that over the last few years, the majority of authorized ROEs since 2016 have been below 9.7%, with a significant portion of those being below 9.5%.

Q HOW HAS THE AUTHORIZED COMMON EQUITY RATIO FLUCTUATED OVER THE SAME TIME PERIOD FOR ELECTRIC UTILITIES?

A In general, the electric utility industry's common equity ratio has not really deviated too much from 50.0%. As shown in Table 2, I have provided the authorized common equity ratios for electric utilities around the country, excluding the reported common equity ratios for Arkansas, Florida, Michigan, and Indiana. I have excluded the reported common equity ratios for these states because these jurisdictions include sources of capital outside of investor-supplied capital such as accumulated deferred income taxes. As such, the reported common equity ratios in these states would bias down the reported permanent common equity ratios authorized for ratemaking purposes.

TABLE 2

Trends in State Authorized Common Equity Ratios
(Industry)

		Electric[1,2]	
Line	Year	Average	Median
	(1)	(2)	(3)
1	2016	49.70%	49.99%
2	2017	50.02%	49.85%
3	2018	50.60%	50.23%
4	2019	51.75%	51.37%
5	Average	50.52%	50.36%
6	Min	49.70%	49.85%
7	Max	51.75%	51.37%

Sources and Note:
[1]S&P Global Market Intelligence, downloaded 10/2/2019.
[2]Data through 3Q 2019. Excludes Arkansas, Florida, Indiana and Michigan because they include non-investor capital.

Q HOW HAS THE CREDIT RATING OF THE ELECTRIC UTILITY INDUSTRY CHANGED OVER THE LAST SEVERAL YEARS?

A The credit rating changes for the electric utility industry over the last several years are the result of marked improvement in overall financial health and credit quality as shown in Table 3. As shown in this table, in 2008, 69% of the electric utility industry was rated from BBB- to BBB+, 18% had a bond rating better than BBB+, and approximately 13% of the industry was below investment grade.

The overall industry rating improved steadily over the subsequent eight years. By 2016, none of the industry was below investment grade, and approximately 70% were BBB+ or stronger. Overall, the improvement in the electric utility industry's overall credit quality has been quite significant.

TABLE 3

S&P Ratings by Category
(Year End)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Regulated											
A or higher	8%	7%	9%	8%	6%	3%	3%	3%	6%	6%	3%
A-	10%	15%	14%	14%	17%	20%	21%	22%	28%	34%	32%
BBB+	23%	22%	17%	19%	14%	17%	32%	33%	36%	29%	32%
BBB	23%	27%	31%	35%	36%	49%	37%	33%	22%	20%	21%
BBB-	23%	20%	17%	14%	17%	6%	3%	3%	8%	11%	12%
Below BBB-	13%	10%	11%	11%	11%	6%	5%	6%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source:
EEI 2018 Q4 Credit Ratings. Tab V. S&P Rating by Comp. Category

Q HAVE UTILITIES BEEN ABLE TO ACCESS EXTERNAL CAPITAL TO SUPPORT INFRASTRUCTURE CAPITAL PROGRAMS?

A Yes. In its October 22, 2019 Utility Capital Expenditures Update report, *RRA Financial Focus*, a division of S&P Global Market Intelligence, made several relevant comments about utility investments generally:

- Projected 2019 capital expenditures for the 48 gas and electric utilities in the Regulatory Research Associates', a group with S&P Global Market Intelligence, universe currently stands at roughly $134.2 billion, a step ahead of the prior forecast of $131.1 billion from spring 2019.

- Energy utility capex projections for future years increased modestly from our previous analysis as well, rising to $121.6 billion for 2020. We anticipate both the 2020 and 2021 forecasts will continue to increase as companies' plans for future projects solidify and new opportunities arise.

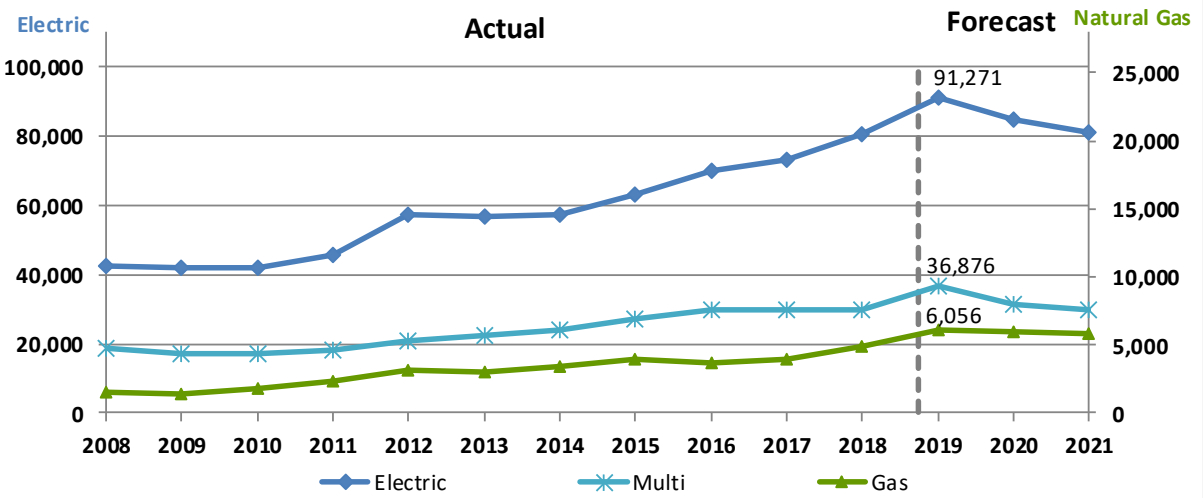
- For the first half of 2019, energy utility capex totaled $55.3 billion, in line with total investment in the first half of the previous year. Energy utility capex in 2018 totaled $115.4 billion, a record high for the 48-utility group and 8% above 2017 energy utility investment spending.

- Across the small investor-owned water utility sector, total capex grew 8% year over year to $2.8 million in 2018. American Water, which represents over 55% of the sector's capex, experienced a year-over-year growth in capex spending of 10.6%. Total-sector capex growth is expected to increase 3.8% in 2019, excluding the additional investment Aqua America is going to put in People's Natural Gas once the transaction is completed.[1]

Regulated utility companies have accessed significant amounts of capital to support substantial capital investments over at least the last ten years. As shown in Figure 2, capital expenditures for electric and natural gas utilities have increased considerably over the period 2007 into 2019, and the forecasted capital expenditures remain elevated, but slightly below current levels.

[1]S&P Global Market Intelligence, RRA Financial Focus: "Utility Capital Expenditures Update," October 22, 2019.

FIGURE 2



Source: *S&P Global Market Intelligence, RRA Financial Focus*, Utility Capital Expenditures, October 22, 2019, Table 1.

Q IS THERE EVIDENCE OF ROBUST VALUATIONS OF REGULATED UTILITY EQUITY SECURITIES?

A Yes. Robust valuations are an indication that utilities can sell securities at high prices, which is a strong indication that they can access equity capital under reasonable terms and conditions, and at relatively low cost. As shown on Schedule CCW-2, the historical valuation of electric utilities followed by *Value Line*, based on a price-to-earnings ("P/E") ratio, price-to-cash flow ("P/CF") ratio, and market price-to-book value ("M/B") ratio, indicates utility security valuations today are very strong and robust relative to the last several years. These strong valuations of utility stocks indicate that utilities have access to equity capital under reasonable terms and at lower costs.

Q HOW SHOULD THE COMMISSION USE THIS MARKET INFORMATION IN ASSESSING A FAIR RETURN FOR AMEREN MISSOURI?

A Observable market evidence is quite clear that capital market costs are near historically low levels. While authorized ROEs have fallen to the mid 9.0% range, utilities continue to have access to large amounts of external capital even as they are funding large capital programs. Furthermore, utilities' investment-grade credit ratings are mostly stable and have improved due, in part, to supportive regulatory treatment. The Commission should carefully weigh all this important observable market evidence in assessing a fair ROE for Ameren Missouri.

III.B. Regulated Utility Industry Outlook

Q PLEASE DESCRIBE THE CREDIT RATING OUTLOOK FOR REGULATED UTILITIES.

A As discussed above and expanded upon here, regulated utilities' credit ratings have improved over the last few years. Credit analysts have observed that utilities have strong access to capital at attractive pricing (i.e., low capital costs), which has supported very large capital programs.

Standard & Poor's ("S&P") recently published a report titled "Industry Top Trends 2019: North America Regulated Utilities." In that report, S&P noted the following:

> **– Ratings Outlook**: Rating trends across regulated electric, gas, and water utilities in North America remain mostly stable, reflecting generally supportive regulatory oversight. However, the industry's financial measures weakened in 2018 as a result of U.S. tax reform, robust capital spending, and flat to slightly negative load growth. In general, those utilities most affected by these developments were those who strategically operate with a minimal financial cushion at their current rating.

* * *

> **– Industry Trends:** The North America utility industry is mostly stable with some downside ratings exposure. Weaker credit measures from tax reform will likely persist in 2019, reflecting tax-related rate reductions carryovers. However, we expect that some utilities will offset this reduced revenue with further equity infusions or asset sales. Other developing trends include rising interest rates, inflation, technology, climate change, and regulatory lag, which could further stress the industry's credit quality.[2]

In a recent report Fitch states:

> The Tax Cuts and Jobs Act signed into law on Dec. 22, 2017 has negative credit implications for U.S. regulated utilities and utility holding companies over the short-to-medium term, according to Fitch Ratings. A reduction in customer bills to reflect lower federal income taxes and return of excess accumulated deferred income taxes is expected to lower revenues and funds from operations (FFO) across the sector. Absent mitigating strategies on the regulatory front, this is expected to lead to weaker credit metrics and negative rating actions for those issuers that have limited headroom to absorb the leverage creep.
>
> * * *
>
> Over a longer-term perspective, Fitch views tax reform as modestly positive for utilities. The sector retained the deductibility of interest expense, which would have otherwise significantly impacted cost of capital for this capital intensive sector. The exemption from 100% capex expensing is also welcome news for the sector, which has seen years of bonus depreciation reduce rate base leading to lower earnings. Finally, the reduction in federal income taxes lowers cost of service to customers, providing utilities headroom to increase rates for capital investments.[3]

Moody's previously did place the industry on "Negative" outlook to reflect the uncertainty and short-term cash flow impacts primarily as a result of the change in federal tax law, but also the large capital program for the industry. However, Moody's has since revised its outlook for the regulated utility industry to "stable" from "negative" in its November 7, 2019 report. Specifically, Moody's stated the following:

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[2] *S&P Global Ratings*: "Industry Top Trends 2019: North America Regulated Utilities," November 8, 2018, at 1 (emphasis added).

[3] *Fitch Ratings*: "Tax Reform Creates Near-term Credit Pressure for U.S. Utilities," January 24, 2018 (emphasis added).

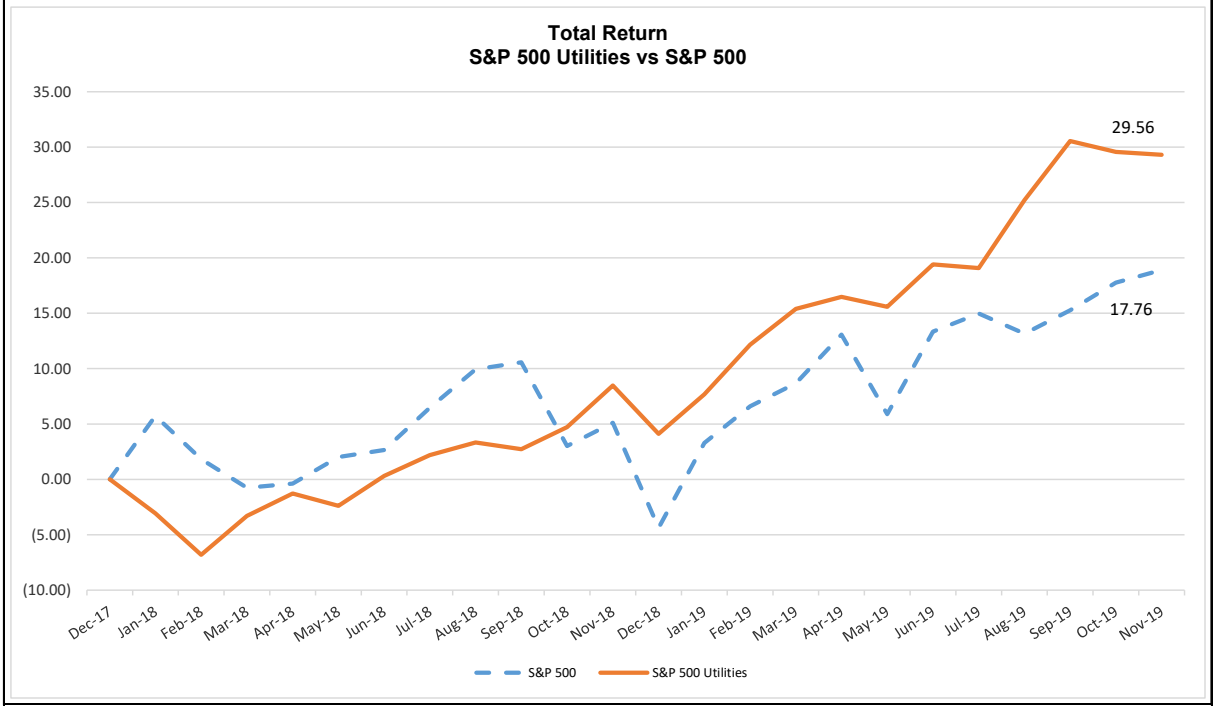
We are changing our outlook for the US regulated utility sector to stable from negative as the industry's funds from operations (FFO)-to-debt ratio stabilizes. The implementation of more proactive regulatory and financial actions, along with savings mainly related to tax credits, tax deductions and net operating losses (NOLs), are helping to buoy the sector's cash flows following US tax reform.[4]

Q IS THERE REASON TO BELIEVE THAT THE CHANGE IN FEDERAL TAX LAW WILL INCREASE UTILITIES' COST OF EQUITY GOING FORWARD?

A It is unlikely. For some utilities, the Tax Cuts and Jobs Act ("TCJA") will have an impact on cash flows, depending on whether or not they have addressed the return of the excess accumulated deferred income taxes to customers in their regulated jurisdictions. There may be some utilities whose credit metrics are marginal to support their existing credit ratings and were, or are, subject to a slight downgrade as a result of the TCJA. The impact on cash flows, however, is not likely to be significant enough to threaten the credit standing of, or increase the cost of equity capital for, the industry in general on a going forward basis. As shown in Figure 3, the S&P 500 Utilities index has outperformed the broader market as measured by the S&P 500 by a significant margin since December 2017 when the TCJA was signed into law.

[4] *Moody's Investors Service*: "Outlook: Regulated electric and gas utilities - US, 2020 outlook moves to stable on supportive regulation, weaker but steady credit metrics," November 7, 2019 at 3. (emphasis added).

FIGURE 3



Given the period of time that has passed since the passage of the TCJA and the outperformance of the utilities sector, it is reasonable to conclude that investors have fully contemplated the effect of the TCJA on utilities and do not expect an increase in the cost of capital as a result of the TCJA going forward.

III.C. Federal Reserve Monetary Policy

Q HAVE YOU CONSIDERED THE CONSENSUS OUTLOOKS OF INDEPENDENT ECONOMISTS FOR CHANGES IN INTEREST RATES IN FORMING YOUR RECOMMENDED ROE IN THIS CASE?

A Yes. The consensus of independent economists indicates that they are expecting the Federal Reserve's monetary policy actions, as directed by the Federal Open Market

Committee ("FOMC"),[5] will keep the Federal Funds Rate flat to slightly declining over the near term. This is evident from a comparison of current and forecasted changes in the Federal Funds Rate as shown in Table 4. Similarly, the consensus for long-term interest rates, reflected in the rate for 30-year Treasury Bonds, is also largely expected to remain flat to slightly declining to a level near 2.5% through the first quarter of 2021.

TABLE 4

Blue Chip Financial Forecasts
Projected Federal Funds Rate, 30-Year Treasury Bond Yields, and GDP Price Index

Publication Date	1Q 2019	2Q 2019	3Q 2019	4Q 2019	1Q 2020	2Q 2020	3Q 2020	4Q 2020	1Q 2021
Federal Funds Rate									
Jun-19	**2.4**	2.4	2.4	2.4	2.4	2.4	2.3		
Jul-19		2.4	2.2	2.0	1.9	1.9	1.8	1.8	
Aug-19		**2.4**	2.2	2.0	1.9	1.8	1.8	1.8	
Sep-19		**2.4**	2.1	1.8	1.7	1.6	1.6	1.6	
Oct-19			2.3	1.8	1.6	1.5	1.5	1.5	1.4
Nov-19			**2.2**	1.7	1.5	1.5	1.4	1.4	1.4
T-Bond, 30 yr.									
Jun-19	**3.0**	2.9	3.0	3.0	3.1	3.1	3.1		
Jul-19		2.8	2.6	2.6	2.7	2.7	2.8	2.8	
Aug-19		**2.8**	2.6	2.6	2.6	2.7	2.7	2.7	
Sep-19		**2.8**	2.3	2.2	2.3	2.4	2.5	2.6	
Oct-19			2.3	2.1	2.2	2.2	2.3	2.4	2.5
Nov-19			**2.3**	2.1	2.2	2.2	2.3	2.4	2.5
GDP Price Index									
Jun-19	**0.9**	2.4	2.1	2.1	2.1	2.1	2.1		
Jul-19		2.3	2.0	2.0	2.1	2.1	2.0	2.0	
Aug-19		**2.4**	2.0	2.0	2.0	2.1	2.1	2.0	
Sep-19		**2.4**	2.1	2.1	2.1	2.0	2.1	2.1	
Oct-19			2.1	2.0	2.0	2.0	2.1	2.0	2.0
Nov-19			**1.7**	2.0	2.0	2.0	2.1	2.0	2.0

Source and Note:
Blue Chip Financial Forecasts, June through November 2019.
Actual Yields in Bold

[5]The FOMC is the monetary policymaking body of the Federal Reserve.

Q WILL YOU PLEASE BRIEFLY DESCRIBE RECENT MONETARY POLICY ACTIONS TAKEN BY THE FEDERAL RESERVE?

A Yes. Prior to cutting rates in August 2019, the Federal Reserve had been implementing a "normalization" monetary policy by taking what is known as tightening actions since December 2015 when it started raising the target Federal Funds Rate. Such normalization or tightening actions included raising the Federal Funds Rate and reducing its securities holdings on its balance sheet. In August 2019, the FOMC voted to reduce the target Federal Funds Rate by 25 basis points and end the planned reduction of its securities holdings on its balance sheet. The Federal Funds Rate has been cut an additional two times.

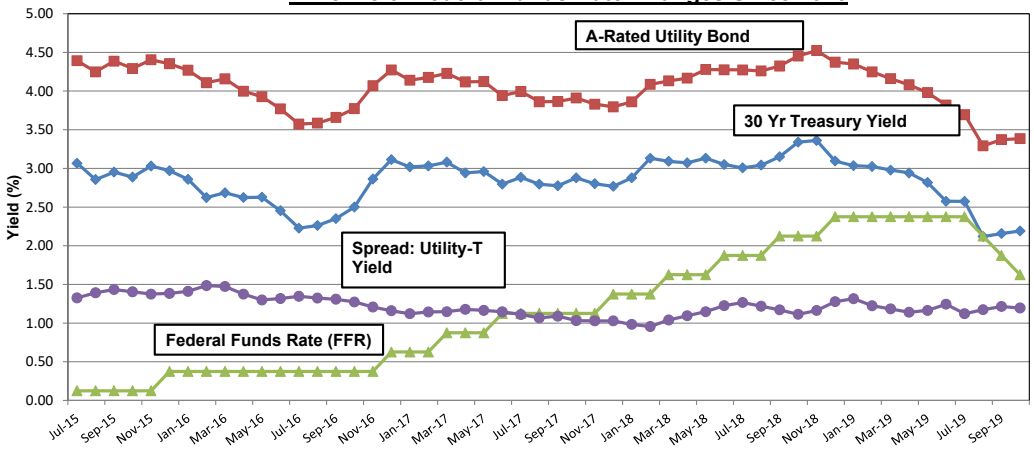
Q PRIOR TO ITS RECENT ACTIONS, IS THERE EVIDENCE THAT THE FEDERAL RESERVE'S NORMALIZATION POLICY HAD MINIMAL IMPACT ON LONG-TERM RATES?

A Yes. Prior to lowering the short-term rate in August, the Federal Reserve had raised the Federal Funds Rate nine times since December 2015, raising the short-end of the yield curve. However, comparable increases for longer maturity bonds have not been

realized. This has had the effect of flattening the yield curve. This is illustrated in Figure 4.

FIGURE 4

Timeline of Federal Funds Rate Changes Since 2015



Fed FFR Actions:		Midpoint of FFR	Change
1	December 2015	0.375	
2	December 2016	0.625	0.25
3	March 2017	0.875	0.25
4	June 2017	1.125	0.25
5	December 2017	1.375	0.25
6	March 2018	1.625	0.25
7	June 2018	1.875	0.25
8	September 2018	2.125	0.25
9	December 2018	2.375	0.25
10	August 2019	2.125	(0.25)
11	September 2019	1.875	(0.25)
12	October 2019	1.625	(0.25)

Sources:
Federal Reserve Bank of New York, https://apps.newyorkfed.org/markets/autorates/fed-funds-search-page
Board of Governors of the Federal Reserve System, https://www.federalreserve.gov/datadownload/
Moody's Credit Trends, https://credittrends.moodys.com/

As shown in Figure 4, the actions taken by the Federal Reserve to increase the Federal Funds Rate have simply flattened the yield curve and did not result in a corresponding increase in long-term interest rates. This is significant because the cost of common equity is impacted by long-term interest rates, not short-term interest rates.

Q DO YOU BELIEVE THAT MARKET PARTICIPANTS AND THE CONSENSUS OF INDEPENDENT ECONOMISTS REFLECT ALL RELEVANT FACTORS IN FORMING THEIR INTEREST RATE PROJECTIONS?

A Yes. Because the Federal Reserve's actions are well followed by market participants and captured in independent economists' outlooks for changes in capital market costs, the Federal Reserve's actions, along with all other relevant factors, are considered by economists in forming their outlooks for changes in interest rates and capital market conditions.

As such, this well-informed outlook for changes in interest rates is certainly relevant in assessing whether or not the current low-cost capital market costs are expected to prevail or change over time.

IV. RETURN ON EQUITY

Q PLEASE DESCRIBE WHAT IS MEANT BY A "UTILITY'S COST OF COMMON EQUITY."

A A utility's cost of common equity is the expected return that investors require on an investment in the utility. Investors expect to earn their required return by receiving dividends and through stock price appreciation.

Q PLEASE DESCRIBE THE FRAMEWORK FOR DETERMINING A REGULATED UTILITY'S COST OF COMMON EQUITY.

A In general, determining a fair cost of common equity for a regulated utility has been framed by two hallmark decisions of the U.S. Supreme Court: *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n of W. Va.*, 262 U.S. 679 (1923) and *Fed. Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591 (1944).

These decisions identify the general financial and economic standards to be considered in establishing the cost of common equity for a public utility. Those general standards provide that the authorized return should: (1) be sufficient to maintain financial integrity; (2) attract capital under reasonable terms; and (3) be commensurate with returns investors could earn by investing in other enterprises of comparable risk.

Q PLEASE DESCRIBE THE METHODS YOU HAVE USED TO ESTIMATE AMEREN MISSOURI'S COST OF COMMON EQUITY.

A I have used several models based on financial theory to estimate Ameren Missouri's cost of common equity. These models are: (1) a constant growth Discounted Cash Flow ("DCF") model using the consensus of analysts' growth rate projections; (2) a constant growth DCF using sustainable growth rate estimates; (3) a multi-stage DCF model; (4) a Risk Premium model; and (5) a Capital Asset Pricing Model ("CAPM"). I have applied these models to a group of publicly traded utilities with investment risk similar to Ameren Missouri.

IV.A. Ameren Missouri's Investment Risk

Q PLEASE DESCRIBE THE MARKET'S ASSESSMENT OF THE INVESTMENT RISK OF AMEREN MISSOURI.

A The market's assessment of Ameren Missouri's investment risk is described by credit rating analysts' reports. Ameren Missouri's current corporate bond ratings from S&P and Moody's are BBB+ and Baa1, respectively.[6] It should be noted that Ameren Missouri's rating from S&P reflects a one-notch downgrade from its stand-alone credit

[6]S&P Global Market Intelligence, October 17, 2019.

profile ("SACP") rating of A-. The one notch downgrade is the result of S&P group rating methodology and Ameren Missouri's association with its parent company, Ameren Corporation. In other words, Ameren Missouri's rating from S&P would be A- if not for Ameren Corporation's BBB+ rating. The Company's outlook from both S&P and Moody's is "Stable." Prior to upgrading Ameren Missouri, in its most recent report on Ameren Missouri, S&P specifically stated:

> **Outlook**
>
> S&P Global Ratings' stable rating outlook on AM reflects that on parent Ameren Corp. and incorporates our base-case scenario that Ameren's adjusted funds from operations (FFO) to debt will average about 15% for 2019 through 2022. Fundamental to our forecast is our expectation that the company will continue to manage its regulatory risk, enabling some of the regulated companies to earn their allowed return on equity. We also expect that the company will continue to fund its capital spending initiatives in a credit-supportive manner.
>
> * * *
>
> **Business Risk: Excellent**
>
> Our assessment of AM's business risk profile reflects the utility's very low-risk, rate-regulated electric and natural gas distribution operations providing essential services that are strategically important to economies, have material barriers to entry, and essentially operate insulated from market challenges. There is substantial stability in usage and consumption. The utility operates under generally supportive regulatory terms that contribute to credit quality. It has a diverse customer base throughout Missouri of about 1.2 million electric customers and 120,000 natural gas distribution customers in portions of central and eastern Missouri, including the St. Louis metropolitan area. The utility has an electricity generation fleet that includes low-cost coal-fired assets that are subject to increasing air emissions rules and the Callaway nuclear power plant, which introduces higher operating risk. The utility is making ongoing investments in wind generation, notably the company's stated plan to acquire 700 megawatts of wind capacity through 2020.
>
> * * *
>
> **Financial Risk: Significant**
>
> Our stand-alone base-case scenario includes adjusted FFO to debt in the 15%-17% range, at the weaker end of the significant benchmark

range. The weakness in financial measures results from higher capital spending. Firstly, AM is expected to spend about $1 billion on grid modernization through 2023. Additionally, through 2020, AM plans to invest about $1 billion on wind generation capacity. The decline of FFO to debt is largely because of partly debt-funded capital spending on these projects as well as reduced deferred taxes. We expect debt leverage, as measured by total debt to EBITDA, in the 4.5x-5x range, indicating material debt leverage for the financial risk profile assessment. We expect discretionary cash flow to remain negative after taking into account the utility's capital spending and dividend payments leading to external funding needs including debt. AM benefits from various rate mechanisms that allow for the timely recovery of costs and support more stable operating cash flows. We expect AM will continue to fund its investments in a manner that preserves credit quality. We base our financial risk assessment on our medial volatility financial benchmarks table. It has more relaxed financial ratio benchmarks as compared to those used for a typical corporate issuer. This reflects the company's steady cash flows from its low-risk, rate-regulated electric and gas utility operations and regulatory risk management.[7]

IV.B. Ameren Missouri's Proposed Capital Structure

Q WHAT CAPITAL STRUCTURE IS AMEREN MISSOURI REQUESTING IN THIS CASE?

A Ameren Missouri's proposed capital structure is shown in Table 5:

TABLE 5

Ameren Missouri's Proposed Capital Structure

Description	As Filed Weight
Long-Term Debt	47.10%
Preferred Stock	00.99%
Common Equity	51.91%
Total Permanent Capital Structure	100.00%

Source: Schedule DTS-D1.

[7] *Standard & Poor's RatingsDirect*: "Union Electric Co. d/b/a Ameren Missouri," February 14, 2019, pages 3-6.

Q HOW DOES AMEREN MISSOURI'S REQUESTED CAPITAL STRUCTURE COMPARE TO WHAT HAS BEEN AUTHORIZED FOR OTHER ELECTRIC UTILITIES RECENTLY?

A Ameren Missouri's requested common equity ratio of 51.91% is largely in line with, but slightly higher than, the average common equity ratio being awarded to regulated electric utilities in 2019 as identified in Table 2.

IV.C. Risk Proxy Group

Q PLEASE DESCRIBE HOW YOU IDENTIFIED A PROXY UTILITY GROUP THAT COULD BE USED TO ESTIMATE AMEREN MISSOURI'S CURRENT MARKET COST OF EQUITY.

A I relied on the same electric proxy group developed by Ameren Missouri witness Mr. Hevert with one exception: El Paso Electric Company. I excluded El Paso Electric because it is the target of a major acquisition by JP Morgan Investment Management. This acquisition was announced on June 3, 2019 shortly after the end of Mr. Hevert's study period.[8]

Q WHY IS IT APPROPRIATE TO EXCLUDE COMPANIES THAT ARE INVOLVED IN MERGER AND ACQUISITION ("M&A") ACTIVITY FROM THE PROXY GROUP?

A M&A activity can distort the market factors used in DCF and risk premium studies. M&A activity can have impacts on stock prices, growth outlooks, and relative volatility in historical stock prices if the market was anticipating or expecting the M&A activity prior

[8]Mr. Hevert's DCF analysis relied on average prices and dividends for the period ending May 31, 2019.

to it actually being announced. This distortion in the market data thus impacts the reliability of the DCF and risk premium estimates for a company involved in M&A.

Moreover, companies generally enter into M&A in order to produce greater shareholder value by combining companies. The enhanced shareholder value normally could not be realized had the two companies not combined.

When companies announce a merger or acquisition, the public assesses the proposed transaction and develops outlooks on the value of the two companies after the combination based on expected synergies or other value-adds created by the M&A.

As a result, the stock value before the merger is completed may not reflect the forward-looking earnings and dividend payments for the company absent the merger or on a stand-alone basis. Therefore, an accurate DCF return estimate on companies involved in M&A activities cannot be produced because their stock prices do not reflect the stand-alone investment characteristics of the companies. Rather, the stock price more likely reflects the shareholder enhancement produced by the proposed transaction. For these reasons, it is appropriate to remove companies involved in M&A activities from a proxy group used to estimate a fair ROE for a utility.

Q PLEASE DESCRIBE HOW YOUR PROXY GROUP'S INVESTMENT RISK COMPARES TO AMEREN MISSOURI.

A The proxy group shown in Schedule CCW-3, has an average corporate credit rating from S&P of BBB+, which is one notch below Ameren Missouri's SACP rating of A-.[9] The proxy group has an average corporate credit rating from Moody's of Baa1, which is identical to Ameren Missouri's credit rating from Moody's.

[9]Ameren Missouri's SACP, or stand-alone credit profile, rating of A- is previously described in Section IV.A. on pages 18-19 of this testimony.

As also shown on my Schedule CCW-3, the proxy group has an average and median common equity ratio (including short-term debt) as reported by S&P Global Market Intelligence ("MI") of 46.9% and 45.2%, respectively. Similarly, as reported by *The Value Line Investment Survey* ("*Value Line*"), the proxy group has an average and median common equity ratio (excluding short-term debt) of 50.2% and 49.4%, respectively. In this regard, the Company's proposed common equity ratio of 51.9% excluding short-term debt is higher than the average and median common equity ratios of the proxy group.

Based on these parameters, I conclude that Ameren Missouri is reasonably risk-comparable to the proxy group. In fact, given that Ameren Missouri has a higher credit rating and common equity ratio, the use of this proxy group could be viewed as conservative in that Ameren Missouri's ROE should be slightly lower than the proxy group.

IV.D. Discounted Cash Flow Model

Q PLEASE DESCRIBE THE DCF MODEL.

A The DCF model posits that a stock price equals the sum of the present value of expected future cash flows discounted at the investor's required rate of return or cost of capital. This model is expressed mathematically as follows:

$$P_0 = \frac{D_1}{(1+K)^1} + \frac{D_2}{(1+K)^2} \ldots . \frac{D_\infty}{(1+K)^\infty} \qquad \text{(Equation 1)}$$

P_0 = Current stock price
D = Dividends in periods 1 - ∞
K = Investor's required return

This model can be rearranged in order to estimate the discount rate or investor-required return, known as "K." If it is reasonable to assume that earnings and dividends will grow at a constant rate, then Equation 1 can be rearranged as follows:

$$K = D_1/P_0 + G \qquad \text{(Equation 2)}$$

K = Investor's required return
D_1 = Dividend in first year
P_0 = Current stock price
G = Expected constant dividend growth rate

Equation 2 is referred to as the annual "constant growth" DCF model.

Q PLEASE DESCRIBE THE INPUTS TO YOUR CONSTANT GROWTH DCF MODEL.

A As shown in Equation 2 above, the DCF model requires a current stock price, expected dividend, and expected growth rate in dividends.

Q WHAT STOCK PRICE HAVE YOU RELIED ON IN YOUR CONSTANT GROWTH DCF MODEL?

A I relied on the average of the weekly high and low stock prices of the utilities in the proxy group over a 13-week period ending on November 1, 2019. An average stock price is less susceptible to market price variations than a price at a single point in time. Therefore, an average stock price is less susceptible to aberrant market price movements, which may not reflect the stock's long-term value.

A 13-week average stock price reflects a period that is still short enough to contain data that reasonably reflects current market expectations, but the period is not so short as to be susceptible to market price variations that may not reflect the stock's long-term value. In my judgment, a 13-week average stock price is a reasonable balance between the need to reflect current market expectations and the need to capture sufficient data to smooth out aberrant market movements.

Q WHAT DIVIDEND DID YOU USE IN YOUR CONSTANT GROWTH DCF MODEL?

A I used the most recently paid quarterly dividend as reported in *Value Line*.[10] This dividend was annualized (multiplied by 4) and adjusted for next year's growth to produce the D_1 factor for use in Equation 2 above. In other words, I calculate D_1 by multiplying the annualized dividend (D_0) by (1+G).

Q WHAT DIVIDEND GROWTH RATES HAVE YOU USED IN YOUR CONSTANT GROWTH DCF MODEL?

A There are several methods that can be used to estimate the expected growth in dividends. However, regardless of the method, for purposes of determining the market-required return on common equity, one must attempt to estimate investors' expectations about what the dividend, or earnings growth rate will be and not what an individual investor or analyst may use to make individual investment decisions.

As predictors of future returns, securities analysts' growth estimates have been shown to be more accurate than growth rates derived from historical data.[11] That is, assuming the market generally makes rational investment decisions, analysts' growth projections are more likely to influence investors' decisions, which are captured in observable stock prices, than growth rates derived only from historical data.

For my constant growth DCF analysis, I have relied on a consensus, or mean, of professional securities analysts' earnings growth estimates as a proxy for investors' dividend growth rate expectations. I used the average of analysts' growth rate estimates from three sources: Zacks, MI, and Yahoo! Finance. All such projections were available on November 1, 2019, and all were reported online.

[10] *The Value Line Investment Survey*, August 16, September 13, and October 25, 2019.

[11] *See, e.g.,* David Gordon, Myron Gordon, and Lawrence Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management*, Spring 1989.

Each growth rate projection is based on a survey of independent securities analysts. There is no clear evidence whether a particular analyst is most influential on general market investors. Therefore, a single analyst's projection does not as reliably predict investor outlooks as does a consensus of market analysts' projections. The consensus of estimates is a simple arithmetic average, or mean, of surveyed analysts' earnings growth forecasts. A simple average of the growth forecasts gives equal weight to all surveyed analysts' projections. Therefore, a simple average, or arithmetic mean, of analyst forecasts is a good proxy for investor expectations.

The growth rates I used in my DCF analysis are shown in Schedule CCW-4. The average growth rate for my proxy group is 5.64%.

Q WHAT ARE THE RESULTS OF YOUR CONSTANT GROWTH DCF MODEL?

A As shown in Schedule CCW-5, the average and median constant growth DCF returns for my proxy group for the 13-week analysis are 8.74% and 8.62%, respectively.

Q DO YOU HAVE ANY COMMENTS ON THE RESULTS OF YOUR CONSTANT GROWTH DCF ANALYSIS?

A Yes. The constant growth DCF analysis for my proxy group is based on a group average long-term sustainable growth rate of 5.64%. The three- to five-year growth rates are higher than the long-term projected GDP growth rate of 4.10%, described below.

Q HOW DID YOU IDENTIFY THE LONG-TERM PROJECTED GDP GROWTH RATE?

A *Blue Chip Economic Indicators,* which is a well-respected and often-cited publication, projects that over the next 5 and 10 years, the U.S. nominal GDP will grow at an annual

rate of approximately 4.10%. These GDP growth projections reflect two components: (1) a real growth outlook of around 1.9% to 2.0%; and (2) an inflation outlook of around 2.1% going forward. As such, the average growth rate over the next 10 years is around 4.10%, which I believe is a reasonable proxy of long-term sustainable growth.[12]

In my multi-stage DCF analysis, I discuss academic and investment practitioner support for using the projected long-term GDP growth outlook as a maximum sustainable growth rate projection. A long-term sustainable growth rate for a utility stock cannot exceed the growth rate of the economy in which it sells its goods and services. Therefore, using the long-term GDP growth rate as a conservative projection for the maximum sustainable growth rate is logical, and is generally consistent with economic theory and practice.

IV.E. Sustainable Growth DCF

Q PLEASE DESCRIBE WHAT THE SUSTAINABLE GROWTH DCF METHOD IS AND HOW YOU ESTIMATED A SUSTAINABLE GROWTH RATE FOR YOUR SUSTAINABLE GROWTH DCF MODEL.

A A sustainable growth rate, also known as the internal growth rate, is based on the percentage of the utility's earnings that is retained and reinvested in utility plant and equipment. These reinvested earnings increase the earnings base (rate base). Earnings grow when plant funded by reinvested earnings is put into service, and the utility is allowed to earn its authorized return on such additional rate base investment.

The internal growth methodology is tied to the percentage of earnings retained in the company and not paid out as dividends. The earnings retention ratio is 1 minus

[12] *Blue Chip Economic Indicators,* October 10, 2019, at 14.

the dividend payout ratio. As the payout ratio declines, the earnings retention ratio increases. An increased earnings retention ratio will fuel stronger growth because the business funds more investments with retained earnings.

The payout ratios of the proxy group are shown in my Schedule CCW-6. These dividend payout ratios and earnings retention ratios then can be used to develop a sustainable long-term earnings retention growth rate. A sustainable long-term earnings retention ratio will help gauge whether analysts' current three- to five-year growth rate projections can be sustained over an indefinite period of time.

The data used to estimate the long-term sustainable growth rate is based on the Company's current market-to-book ratio and on *Value Line*'s three- to five-year projections of earnings, dividends, earned returns on book equity, and stock issuances.

As shown in Schedule CCW-7, the average sustainable growth rate for the proxy group using this internal growth rate model is 4.76%.

Q WHAT IS THE DCF ESTIMATE USING THESE SUSTAINABLE GROWTH RATES?

A A DCF estimate based on these sustainable growth rates is developed in Schedule CCW-8. As shown there, and using the same formula in Equation 2 above, a sustainable growth DCF analysis produces proxy group average and median DCF results for the 13-week period of 7.83% and 7.19%, respectively.

IV.F. Multi-Stage DCF Model

Q HAVE YOU CONDUCTED ANY OTHER DCF STUDIES?

A Yes. As previously indicated, the DCF is designed to reflect a present value of an infinite string of future cash flow. That said, however, my first constant growth DCF is based on the analyst growth rate projections, so it is a reasonable reflection of rational investment expectations over the next three- to five- years. The limitation on this constant growth DCF model is that it cannot reflect a rational expectation that a period of high or low short-term growth can be followed by a change in growth to a rate that is more reflective of long-term sustainable growth. Hence, I performed a multi-stage DCF analysis to reflect this outlook of changing growth expectations.

Q WHY DO YOU BELIEVE GROWTH RATES CAN CHANGE OVER TIME?

A Analyst-projected growth rates over the next three to five years will change as utility earnings growth outlooks change. Utility companies go through cycles in making investments in their systems. When utility companies are making large investments, their rate base grows rapidly, which in turn accelerates earnings growth. Once a major construction cycle is completed or levels off, growth in the utility rate base slows and its earnings growth slows from an abnormally high three- to five-year rate to a lower sustainable growth rate.

As major construction cycles extend over longer periods of time, even with an accelerated construction program, the growth rate of the utility will slow simply because rate base growth will slow and the utility has limited human and capital resources available to expand its construction program. Therefore, the three- to five-year growth rate projection should be used as a long-term sustainable growth rate, but not without making a reasonable informed judgment to determine whether it considers the current

market environment, the industry, and whether the three- to five-year growth outlook is sustainable.

Q PLEASE DESCRIBE YOUR MULTI-STAGE DCF MODEL.

A The multi-stage DCF model reflects the possibility of non-constant growth for a company over time. The multi-stage DCF model reflects three growth periods: (1) a short-term growth period consisting of the first five years; (2) a transition period, consisting of the next five years (6 through 10); and (3) a long-term growth period starting in year 11 and extending into perpetuity.

For the short-term growth period, I relied on the consensus of analysts' growth projections described above in relationship to my constant growth DCF model. For the transition period, the growth rates were reduced or increased by an equal factor reflecting the difference between the analysts' growth rates and the long-term sustainable growth rate. For the long-term growth period, I assumed each company's growth would converge to the maximum sustainable long-term growth rate.

Q WHY IS THE GDP GROWTH PROJECTION A REASONABLE PROXY FOR THE MAXIMUM SUSTAINABLE LONG-TERM GROWTH RATE?

A Utilities cannot indefinitely sustain a growth rate that exceeds the growth rate of the economy in which they sell services. Utilities' earnings/dividend growth is created by increased utility investment or rate base. Such investment, in turn, is driven by service area economic growth and demand for utility service. In other words, utilities invest in

plant to meet sales demand growth. Sales growth, in turn, is tied to economic growth in their service areas.

The U.S. Department of Energy, Energy Information Administration ("EIA") has observed that utility sales growth tracks U.S. GDP growth, albeit at a lower level, as shown in Schedule CCW-9. Utility sales growth has lagged behind GDP growth for more than a decade. As a result, nominal GDP growth is a very conservative proxy for utility sales growth, rate base growth, and earnings growth. Therefore, the U.S. GDP nominal growth rate is a conservative proxy for the highest sustainable long-term growth rate of a utility.

Q IS THERE RESEARCH THAT SUPPORTS YOUR POSITION THAT, OVER THE LONG TERM, A COMPANY'S EARNINGS AND DIVIDENDS CANNOT GROW AT A RATE GREATER THAN THE GROWTH OF THE U.S. GDP?

A Yes. This concept is supported in published analyst literature and academic work. Specifically, in a textbook titled "Fundamentals of Financial Management," published by Eugene Brigham and Joel F. Houston, the authors state as follows:

> The constant growth model is most appropriate for mature companies with a stable history of growth and stable future expectations. Expected growth rates vary somewhat among companies, but dividends for mature firms are often expected to grow in the future at about the same rate as nominal gross domestic product (real GDP plus inflation).[13]

The use of the economic growth rate is also supported by investment practitioners as outlined as follows:

> **Estimating Growth Rates**
>
> One of the advantages of a three-stage discounted cash flow model is that it fits with life cycle theories in regards to company growth. In these theories, companies are assumed to have a life cycle with varying

[13] *"Fundamentals of Financial Management*," Eugene F. Brigham and Joel F. Houston, Eleventh Edition 2007, Thomson South-Western, a Division of Thomson Corporation at 298 (emphasis added).

growth characteristics. Typically, the potential for extraordinary growth in the near term eases over time and eventually growth slows to a more stable level.

* * *

Another approach to estimating long-term growth rates is to focus on estimating the overall economic growth rate. Again, this is the approach used in the *Ibbotson Cost of Capital Yearbook*. To obtain the economic growth rate, a forecast is made of the growth rate's component parts. Expected growth can be broken into two main parts: expected inflation and expected real growth. By analyzing these components separately, it is easier to see the factors that drive growth.[14]

Q ARE THERE ANY ACTUAL INVESTMENT RESULTS THAT SUPPORT THE NOTION THAT THE GROWTH IN STOCK INVESTMENTS WILL NOT EXCEED THE NOMINAL GROWTH OF THE U.S. GDP?

A Yes. This is evident by a comparison of the compound annual growth of the U.S. GDP compared to the geometric growth of the U.S. stock market. Duff & Phelps measures the historical geometric growth of the U.S. stock market over the period 1926-2018 to be approximately 5.8%.[15] During this same time period, the U.S. nominal compound annual growth of the U.S. GDP was approximately 6.1%.[16]

As such, over the past 90 years, the geometric average growth of the U.S. nominal GDP has been higher but comparable to the average geometric growth of the U.S. stock market capital appreciation. This historical relationship indicates that the U.S. GDP growth outlook is a conservative estimate of the long-term sustainable growth of U.S. stock investments.

[14] *Morningstar, Inc., Ibbotson SBBI 2013 Valuation Yearbook* at 51 and 52.
[15] *Duff & Phelps, 2019 SBBI Yearbook* at 6-17.
[16] U.S. Bureau of Economic Analysis, May 1, 2019.

Q WHAT IS THE GEOMETRIC AVERAGE AND WHY IS IT APPROPRIATE TO USE THIS MEASURE TO COMPARE GDP GROWTH TO CAPITAL APPRECIATION IN THE STOCK MARKET?

A The geometric average growth rate and compound annual growth rate are used interchangeably. The geometric annual growth rate is the calculated growth rate, or return, that measures the magnitude of growth from start to finish. The geometric average is best, and most often, used as a measurement of performance or growth over a long period of time.[17] Because I am comparing achieved growth in the stock market to achieved growth in U.S. GDP over a long period of time, the geometric average growth rate is most appropriate.

Q HOW DID YOU DETERMINE A LONG-TERM GROWTH RATE THAT REFLECTS THE CURRENT CONSENSUS OF INDEPENDENT MARKET PARTICIPANTS?

A I relied on the consensus of long-term GDP growth projections as projected by independent economists. *Blue Chip Economic Indicators* publishes the consensus for GDP growth projections twice a year. These projections reflect current outlooks for GDP and are likely to be influential on investors' expectations of future growth outlooks. The consensus of projected GDP growth is 4.10% over the next 10 years.[18]

Q DO YOU CONSIDER OTHER SOURCES OF PROJECTED LONG-TERM GDP GROWTH?

A Yes, and the consistency of the projections from these sources corroborate my use of the consensus projections, as shown in Table 6.

[17] *New Regulatory Finance*, Roger Morin, PhD, at 133-134.
[18] *Blue Chip Economic Indicators*, October 10, 2019, at 14.

TABLE 6

GDP Forecasts

Source	Term	Real GDP	Inflation	Nominal GDP
Blue Chip Economic Indicators	5-10 Yrs	2.0%	2.1%	4.1%
EIA - Annual Energy Outlook	30 Yrs	1.8%	2.3%	4.2%
Congressional Budget Office	9 Yrs	1.9%	2.1%	3.9%
Moody's Analytics	28 Yrs	2.0%	1.9%	3.9%
Social Security Administration	75 Yrs			4.3%
The Economist Intelligence Unit	30 Yrs	1.9%	1.8%	3.8%

The EIA in its *Annual Energy Outlook* projects real GDP out until 2050. In its 2019 Annual Report, the EIA projects real GDP through 2050 to be 1.8% and a long-term GDP price inflation projection of 2.3%. The EIA data supports a long-term nominal GDP growth outlook of 4.2%.[19]

Also, the Congressional Budget Office ("CBO") makes long-term economic projections. The CBO is projecting real GDP growth to be 1.9% with a GDP price inflation outlook of 2.1%. The CBO's outlook for nominal GDP based on this projection is 3.9% through 2029.[20]

Moody's Analytics also makes long-term economic projections. In its recent forecast through 2048, Moody's Analytics is projecting real GDP growth of 2.0% with GDP inflation of 1.9%.[21] Based on these projections, Moody's is projecting nominal GDP growth of 3.9% through 2048.

[19]DOE/EIA Annual Energy Outlook 2019 With Projections to 2050, February 2019, Table 20.
[20]*CBO: The Budget and Economic Outlook: 2019 to 2029*, January 2019.
[21]www.economy.com, *Moody's Analytics Forecast*, April 8, 2019.

The Social Security Administration ("SSA") makes long-term economic projections out to 2095. The SSA's nominal GDP projection, under its "intermediate cost" scenario of approximately 75 years, is 4.3%.[22]

The Economist Intelligence Unit, a division of *The Economist* and a third-party data provider to MI, makes a long-term economic projection out through 2050. The Economist Intelligence Unit is projecting real GDP growth of 1.9% with an inflation rate of 1.8% through 2050. The real GDP growth projection is in line with the consensus. The long-term nominal GDP projection based on these outlooks is approximately 3.8%.[23]

The real GDP and nominal GDP growth projections made by these independent sources support the use of the consensus for 5-year and 10-year projected GDP growth outlooks as a reasonable estimate of market participants' long-term GDP growth.

Q WHAT STOCK PRICE, DIVIDEND, AND GROWTH RATES DID YOU USE IN YOUR MULTI-STAGE DCF ANALYSIS?

A I relied on the same 13-week average stock prices and the most recent quarterly dividend payment data discussed above. For the first stage, I used the consensus of analysts' growth rate projections discussed above in my constant growth DCF model. The first stage covers the first five years, consistent with the time horizon of the securities analysts' growth rate projections. The second stage, or transition stage, begins in year 6 and extends through year 10. The second stage growth transitions the growth rate from the first stage to the third stage using a straight linear trend. For the third stage, or long-term sustainable growth stage, starting in year 11, I used a

[22] www.ssa.gov, "2019 OASDI Trustees Report," Table VI.G4.
[23] *S&P Global Market Intelligence, Economist Intelligence Unit*, downloaded on February 14, 2019.

4.10% long-term sustainable growth rate based on the consensus of economists' long-term projected nominal GDP growth rate.

Q WHAT ARE THE RESULTS OF YOUR MULTI-STAGE DCF MODEL?

A As shown in Schedule CCW-10, the average and median DCF ROEs for my proxy group using the 13-week average stock price are 7.45% and 7.38%, respectively.

Q PLEASE SUMMARIZE THE RESULTS FROM YOUR DCF ANALYSES.

A It is my opinion that a reasonable range based on the DCF results summarized in Table 7 is 7.2% to 8.7%.

TABLE 7

Summary of DCF Results

Description	Proxy Group Average	Proxy Group Median
Constant Growth DCF Model (Analysts' Growth)	8.74%	8.62%
Constant Growth DCF Model (Sustainable Growth)	7.83%	7.19%
Multi-Stage DCF Model	7.45%	7.38%

IV.G. Risk Premium Model

Q PLEASE DESCRIBE YOUR BOND YIELD PLUS RISK PREMIUM MODEL.

A This model is based on the principle that investors require a higher return to assume greater risk. Common equity investments have greater risk than bonds because bonds have more security of payment in bankruptcy proceedings than common equity and the coupon payments on bonds represent contractual obligations. In contrast, companies

are not required to pay dividends or guarantee returns on common equity investments. Therefore, common equity securities are considered to be riskier than bond securities.

This risk premium model is based on two estimates of an equity risk premium. First, I quantify the difference between regulatory commission-authorized returns on common equity and contemporary U.S. Treasury bonds. The difference between the authorized return on common equity and the Treasury bond yield is the risk premium. I estimated the risk premium on an annual basis for each year since January 1986. The authorized ROEs were based on regulatory commission-authorized returns for electric utility companies. Authorized returns are typically based on expert witnesses' estimates of the investor-required return at the time of the proceeding.

The second equity risk premium estimate is based on the difference between regulatory commission-authorized returns on common equity and contemporary "A" rated utility bond yields by Moody's. I selected the period 1986 through 2019 because public utility stocks consistently traded at a premium to book value during that period. This is illustrated in Schedule CCW-11, which shows the market-to-book ratio since 1986 for the electric utility industry was consistently above a multiple of 1.0x. Over this period, an analyst can infer that authorized ROEs were sufficient to support market prices that at least exceeded book value. This is an indication that commission authorized returns on common equity supported a utility's ability to issue additional common stock without diluting existing shares. It further demonstrates that utilities were able to access equity markets without a detrimental impact on current shareholders.

Based on this analysis, as shown in Schedule CCW-12 the average indicated equity risk premium over U.S. Treasury bond yields has been 5.58%. Since the risk premium can vary depending upon market conditions and changing investor risk

perceptions, I believe using an estimated range of risk premiums provides the best method to measure the current return on common equity for a risk premium methodology.

I incorporated five-year and 10-year rolling average risk premiums over the study period to gauge the variability over time of risk premiums. These rolling average risk premiums mitigate the impact of anomalous market conditions and skewed risk premiums over an entire business cycle. As shown on my Schedule CCW-12, the five-year rolling average risk premium over Treasury bonds ranged from 4.25% to 6.77%, while the 10-year rolling average risk premium ranged from 4.38% to 6.60%.

As shown on my Schedule CCW-13, the average indicated equity risk premium over contemporary "A" rated Moody's utility bond yields was 4.22%. The five-year and 10-year rolling average risk premiums ranged from 2.88% to 5.57% and 3.20% to 5.45%, respectively.

Q DO YOU BELIEVE THAT THE TIME PERIOD USED TO DERIVE THESE EQUITY RISK PREMIUM ESTIMATES IS APPROPRIATE TO FORM ACCURATE CONCLUSIONS ABOUT CONTEMPORARY MARKET CONDITIONS?

A Yes. Contemporary market conditions can change dramatically during the period that rates determined in this proceeding will be in effect. A relatively long period of time where stock valuations reflect premiums to book value indicates that the authorized ROEs and the corresponding equity risk premiums were supportive of investors' return expectations and provided utilities access to the equity markets under reasonable terms and conditions. Further, this time period is long enough to smooth abnormal market movement that might distort equity risk premiums. While market conditions and

risk premiums do vary over time, this historical time period is a reasonable period to estimate contemporary risk premiums.

Alternatively, some studies, such as Duff & Phelps referred to later in this testimony, have recommended that use of "actual achieved investment return data" in a risk premium study should be based on long historical time periods. The studies find that achieved returns over short time periods may not reflect investors' expected returns due to unexpected and abnormal stock price performance. Short-term, abnormal actual returns would be smoothed over time and the achieved actual investment returns over long time periods would approximate investors' expected returns. Therefore, it is reasonable to assume that averages of annual achieved returns over long time periods will generally converge on the investors' expected returns.

My risk premium study is based on data that inherently relied on investor expectations, not actual investment returns, and, thus, need not encompass a very long historical time period.

Q PLEASE EXPLAIN OTHER MARKET EVIDENCE YOU RELIED ON IN DETERMINING AN APPROPRIATE EQUITY RISK PREMIUM.

A The equity risk premium should reflect the market's perception of risk in the utility industry today. I have gauged investor perceptions in utility risk today in Schedule CCW-14, where I show the yield spread between utility bonds and Treasury bonds over the last 40 years. As shown in this schedule, the average utility bond yield spreads over Treasury bonds for "A" and "Baa" rated utility bonds for this historical period are 1.49% and 1.93%, respectively. Yield spreads of "A" and "Baa" rated utility bonds over Treasury bonds during 2017 were 1.10% and 1.48%, respectively, which are lower than the 40-year averages. Similarly, yield spreads of "A" and "Baa" rated utility bonds over

Treasury bonds during 2018 were 1.14% and 1.56%, respectively, which are also lower than the 40-year averages.

A current 13-week average "A" rated utility bond yield of 3.35% when compared to the current Treasury bond yield of 2.15%, as shown in Schedule CCW-15, page 1, implies a yield spread of 1.20%. This current utility bond yield spread is lower than the 40-year average spread for "A" rated utility bonds of 1.49%. The current spread for the "Baa" rated utility bond yield of 1.53% is 0.40% lower than the 40-year average of 1.93%.

These utility bond yield spreads are evidence that the market's recent perception of utility risk is below average relative to the historical time period and demonstrate that utilities continue to have strong access to capital in the current market.

Q WHAT IS YOUR RECOMMENDED RETURN FOR AMEREN MISSOURI BASED ON YOUR RISK PREMIUM STUDY?

A Because of today's low interest rates and uncertainty revolving around forecasted interest rates, I am recommending more weight be given to the high-end risk premium estimates than the low-end, in order to be conservative. As such, I am recommending that the most recent five-year average risk premium be used in determining a fair ROE for Ameren Missouri. As shown on my Schedule CCW-12, the most recent five-year average risk premium over Treasury yields is 6.77%. A risk premium of 6.77% exceeds the 34-year average of 5.58% by 1.19%. Adding the 6.77% risk premium to the projected Treasury yield of 2.5% produces a ROE of 9.3%.

Similarly, as shown on my Schedule CCW-13, the most recent five-year allowed risk premium over utility bond yields is 5.57%. This risk premium is well above the

34-year historical average risk premium of 4.22%. The A-rated utility bond yield has averaged 3.35% and 3.57% over the 13-week and 26-week periods ending November 1, 2019, respectively. Adding the 5.57% risk premium to the A-rated utility bond yields of 3.35% and 3.57% produce an estimated cost of equity of 8.9% to 9.1%. Similarly, the Baa-rated utility bond yield has averaged 3.68% and 3.97% over the same 13-week and 26-week periods. Adding the 5.57% risk premium to the average Baa-rated utility bond yields of 3.68% and 3.97% produces an estimated cost of equity of approximately 9.3% to 9.5%. The estimated cost of equity using the risk premium over utility bond yields is in the range of 8.9% to 9.5%. The results of my risk premium analyses are summarized in Table 8.

TABLE 8

Summary of Risk Premium Results

Description	ROE Estimate
Projected Treasury Yield	9.3%
13-Week Average Yields	
A-Rated Utility Bond	8.9%
Baa-Rated Utility Bond	9.3%
26-Week Average Yields	
A-Rated Utility Bond	9.1%
Baa-Rated Utility Bond	9.5%

IV.H. Capital Asset Pricing Model ("CAPM")

Q PLEASE DESCRIBE THE CAPM.

A The CAPM method of analysis is based upon the theory that the market-required rate of return for a security is equal to the risk-free rate, plus a risk premium associated with the specific security. This relationship between risk and return can be expressed mathematically as follows:

$R_i = R_f + B_i \times (R_m - R_f)$ where:

R_i = Required return for stock i
R_f = Risk-free rate
R_m = Expected return for the market portfolio
B_i = Beta - Measure of the risk for stock

The stock-specific risk term in the above equation is beta. Beta represents the investment risk that cannot be diversified away when the security is held in a diversified portfolio. When stocks are held in a diversified portfolio, stock-specific risks can be eliminated by balancing the portfolio with securities that react in the opposite direction to firm-specific risk factors (e.g., business cycle, competition, product mix, and production limitations).

The risks that cannot be eliminated when held in a diversified portfolio are non-diversifiable risks. Non-diversifiable risks are related to the market in general and referred to as systematic risks. Risks that can be eliminated by diversification are non-systematic risks. In a broad sense, systematic risks are market risks and non-systematic risks are business risks. The CAPM theory suggests the market will not compensate investors for assuming risks that can be diversified away. Therefore, the only risk investors will be compensated for are systematic, or non-diversifiable, risks. The beta is a measure of the systematic, or non-diversifiable risks.

Q PLEASE DESCRIBE THE INPUTS TO YOUR CAPM.

A The CAPM requires an estimate of the market risk-free rate, the Company's beta, and the market risk premium.

Q WHAT DID YOU USE AS AN ESTIMATE OF THE MARKET RISK-FREE RATE?

A As previously noted, *Blue Chip Financial Forecasts*' projected 30-year Treasury bond yield is 2.5%.[24] The current 30-year Treasury bond yield is 2.15%, as shown in Schedule CCW-15. Again, in an effort to provide a conservative ROE estimate, I used *Blue Chip Financial Forecasts*' projected 30-year Treasury bond yield of 2.5% for my CAPM analysis.

Q WHY DID YOU USE LONG-TERM TREASURY BOND YIELDS AS AN ESTIMATE OF THE RISK-FREE RATE?

A Treasury securities are backed by the full faith and credit of the United States government, so long-term Treasury bonds are considered to have negligible credit risk. Also, long-term Treasury bonds have an investment horizon similar to that of common stock. As a result, investor-anticipated long-run inflation expectations are reflected in both common stock required returns and long-term bond yields. Therefore, the nominal risk-free rate (or expected inflation rate and real risk-free rate) included in a long-term bond yield is a reasonable estimate of the nominal risk-free rate included in common stock returns.

Treasury bond yields, however, do include risk premiums related to unanticipated future inflation and interest rates. In this regard, a Treasury bond yield is not entirely risk-free. Risk premiums related to unanticipated inflation and interest

[24] *Blue Chip Financial Forecasts*, November 1, 2019 at 2.

rates reflect systematic market risks. Consequently, for companies with betas less than 1.0, using the Treasury bond yield as a proxy for the risk-free rate in the CAPM analysis can produce an overstated estimate of the CAPM return.

Q WHAT BETA DID YOU USE IN YOUR ANALYSIS?

A As shown in Schedule CCW-16, the proxy group average and median *Value Line* beta estimates are 0.57 and 0.55, respectively. In my experience, a beta of this level is relatively low compared to what it has been in previous years. Given the sudden drop in beta estimates over the last year or so, I have also calculated the average beta measured since 2014. The historical average *Value Line* beta since then is 0.68 and has ranged from 0.58 to 0.75.

Q HOW DID YOU DERIVE YOUR MARKET RISK PREMIUM ESTIMATE?

A I derived three market risk premium estimates: a forward-looking estimate using a risk premium methodology and two forward-looking estimates based on the DCF methodology.

Q PLEASE DESCRIBE YOUR MARKET RISK PREMIUM ESTIMATE DERIVED USING THE RISK PREMIUM METHODOLOGY.

A The forward-looking risk premium-based estimate was derived by estimating the expected return on the market (as represented by the S&P 500) and subtracting the risk-free rate from this estimate. I estimated the expected return on the S&P 500 by adding an expected inflation rate to the long-term historical arithmetic average real

return on the market. The real return on the market represents the achieved return above the rate of inflation.

Duff & Phelps' *2019 SBBI Yearbook* estimates the historical arithmetic average real market return over the period 1926 to 2018 to be 8.8%.[25] A current consensus for projected inflation, as measured by the Consumer Price Index ("CPI"), is 2.0%.[26] Using these estimates, the expected market return is 11.0%.[27] The market risk premium then is the difference between the 11.0% expected market return and the projected risk-free rate of 2.5%, or 8.5%.

Q PLEASE DESCRIBE YOUR MARKET RISK PREMIUM ESTIMATES DERIVED USING THE DCF METHODOLOGY.

A I employed two versions of the constant growth DCF model to develop estimates of the market risk premium. I first employed the constant growth DCF model in the traditional sense by adding a projected 3-5 year growth rate to a projected dividend yield.

I obtained the expected growth rate of the S&P 500 Index from State Street Global Advisors ("State Street"). State Street is the creator of several exchange traded funds ("ETF") that cover a multitude of investment strategies. In general, ETFs can be expected to move up or down in value with the value of the applicable index. For example, the SPDR S&P 500 ETF (Ticker: SPY) is designed to correspond generally to the price and yield performance of the S&P 500 Index.

On its website, State Street publishes a multitude of comparative data for its SPY ETF and the S&P 500 Index, including the current dividend yield and 3-5 year earnings growth rates. As inputs to my first constant growth DCF analysis, I have relied

[25] *Duff & Phelps, 2019 SBBI Yearbook at 6-18.*
[26] *Blue Chip Financial Forecasts*, November 1, 2019 at 2.
[27] { [(1 + 0.088) ∗ (1 + 0.020)] – 1 } ∗ 100.

on the published dividend yield and growth rate estimates for the S&P 500 Index as published by State Street on November 12, 2019. The published dividend yield and estimated growth for the S&P 500 as of November 12, 2019 were 1.91% and 10.70%, respectively. Using these inputs, a constant growth DCF produces an expected return on the market of 12.81%.[28] Subtracting the projected Treasury yield of 2.5% from the expected return on the market of 12.81% produces a market risk premium estimate of 10.3%.

My second DCF-based market risk premium estimate was derived by estimating the expected market return using a version of the FERC's two-step DCF methodology. FERC's two-step DCF analysis is a constant growth DCF using a growth rate that is calculated by weighting the 3-5 year growth rate estimate by two-thirds (2/3) and the projected long-term GDP growth rate by one-third (1/3). Applying 2/3 weight to the S&P 500 growth estimate of 10.70%, and 1/3 weight to the GDP growth rate estimate of 4.10% discussed above, produces a blended growth rate of 8.50%.[29]

I then used the blended growth rate of 8.50% and the current dividend yield of 1.91% to estimate the expected market return by employing the constant growth DCF. This yields an expected market return of 10.57%.[30] Subtracting the projected risk-free rate of 2.5% from this expected market return produces a market risk premium of approximately 8.1%.

Q PLEASE EXPLAIN WHY YOU EMPLOYED THE TWO-STEP DCF METHOD.

A As I discussed in detail above, the constant growth model assumes the input growth rate to be the growth rate in perpetuity. No company, regulated or not, can grow at a

[28]DCF = 1.91%*(1+10.70%) + 10.70% = 12.81%.
[29](10.70%*2/3) + (4.10%*1/3) = 8.50%.
[30]Two-Step DCF = 1.91%*(1+8.50%) + 8.50% = 10.57%.

higher rate than the economy in which it sells goods and services in perpetuity, which is the time period assumed in the DCF model. Because the actual earnings estimates for the underlying holdings are used to calculate a mean 3-5 year earnings growth rate estimate for the index, the individual growth rates for the underlying holdings must be taken into consideration in evaluating the reasonableness, or sustainability, of the growth rate for the index as a whole. For example, S&P 500 member company Everest Re Group (NYSE: RE) has a consensus projected growth rate of 75.01% as reported by Yahoo! Finance and a projected growth rate of 34.45% from *Value Line*. These growth rates are approximately 18.3x and 8.4x, respectively, greater than the consensus expected growth rate of the economy discussed earlier.

For these reasons, employing the two-step DCF based on a blended growth rate that gives some weight to projected GDP growth is reasonable.

Q HOW DO YOUR FORWARD-LOOKING ESTIMATES OF THE MARKET RISK PREMIUM COMPARE TO THE HISTORICAL REALIZED MARKET RISK PREMIUM?

A Between 1926 and 2018, the arithmetic average of the achieved total return on the S&P 500 was 11.9%[31] and the return on long-term Treasury bonds was 5.9%.[32] The indicated market risk premium is 6.0% (11.9% - 5.9% = 6.0%). Therefore, my forward-looking estimates of the market risk premium of 8.5%, 8.1%, and 10.3% exceed the historical market risk premium by 2.10% to 4.30%.

[31] *Duff & Phelps, 2019 Yearbook at 6-17*.
[32] *Id.*

Q HOW DO YOUR EXPECTED MARKET RETURNS COMPARE TO CURRENT EXPECTATIONS OF FINANCIAL INSTITUTIONS?

A As shown in Table 9, my expected market returns of 10.98%, 10.57%, and 12.81% exceed long-term market expectations of several financial institutions.

TABLE 9

Long-Term Expected Return on the Market

Source	Term	Expected Return: Large Cap Equities	Expected Return: Nominal US GDP
BlackRock Capital Management[1]	25 Years	7.1%	N/A
JP Morgan Chase[2]	10 – 15 Years	5.25%	3.75%
Vanguard[3]	10 Years	3% - 5%	N/A
Research Affiliates[4]	10 Years	2.60%	3.51%
Morningstar[5]	10 Years	2.70%	N/A

Sources:
[1]BlackRock Investment Institute, April 2019 report, downloaded 7/23/2019.
[2]JP Morgan Chase, Long-Term Capital Market Assumptions, 2019 Report.
[3]Vanguard Economic and Market Outlook for 2019: Down but not out, December 2018.
[4]Research Affiliates, Asset Allocation Interactive, downloaded 7/24/2019.
[5]Morningstar Markets Observer Q2 2019 at 12.

When compared to the expected market returns of financial institutions above, my expected market returns of 10.98%, 10.57%, and 12.81% are more than two times higher than all but one projection. For these reasons, my expected market returns, and the associated market risk premiums, should be considered high-end estimates.

Q HOW DO YOUR ESTIMATED MARKET RISK PREMIUMS COMPARE TO THAT ESTIMATED BY DUFF & PHELPS?

A The Duff & Phelps analysis indicates a market risk premium falls somewhere in the range of 5.50% to 6.91%. My forward-looking market risk premium estimates are in the range of 8.1% to 10.3%. All of my market risk premium estimates are substantially above the historical and normalized market risk premiums recommended by Duff & Phelps.

Q HOW DOES DUFF & PHELPS MEASURE A MARKET RISK PREMIUM?

A Duff & Phelps makes several estimates of a forward-looking market risk premium based on actual achieved data from the historical period of 1926 through 2018 as well as normalized data. Using this data, Duff & Phelps estimates a market risk premium derived from the total return on large company stocks (S&P 500), less the income return on Treasury bonds.

Duff & Phelps' range is based on several methodologies. First, Duff & Phelps estimates a market risk premium of 6.91% based on the difference between the total market return on common stocks (S&P 500) less the income return on 20-year Treasury bond investments over the 1926-2018 period.[33]

Second, Duff & Phelps used the Ibbotson & Chen supply-side model which produced a market risk premium estimate of 6.14%.[34] Duff & Phelps explains that the historical market risk premium based on the S&P 500 was influenced by an abnormal expansion of P/E ratios relative to earnings and dividend growth during the period, primarily over the last 30 years. In order to control for the volatility of extraordinary

[33] *Duff & Phelps 2019 Valuation Handbook* at 3-44.
[34] *Id.* at 3-45 to 3-46.

events and their impacts on P/E ratios, Duff & Phelps takes into consideration the three-year average P/E ratio as the current P/E ratio.[35] Therefore, Duff & Phelps adjusted this market risk premium estimate to normalize the growth in the P/E ratio to be more in line with the growth in dividends and earnings.

Finally, Duff & Phelps develops its own recommended equity, or market risk premium by employing an analysis that takes into consideration a wide range of economic information, multiple risk premium estimation methodologies, and the current state of the economy by observing measures such as the level of stock indices and corporate spreads as indicators of perceived risk. Based on this methodology, and utilizing a "normalized" risk-free rate of 3.5%, Duff & Phelps concludes that the current expected, or forward-looking, market risk premium is 5.5%, implying an expected return on the market of 9.0%.[36]

It should be noted that Duff & Phelps' market risk premiums are measured over a 20-year Treasury bond. Because I am relying on a projected 30-year Treasury bond yield, the results of my CAPM analysis should be considered conservative estimates for the cost of equity.

Q WHAT ARE THE RESULTS OF YOUR CAPM ANALYSIS?

A As shown in Schedule CCW-17, I have provided the results of six different applications of the CAPM. The first three results presented are based on the proxy group's current average beta of 0.57, a projected risk-free rate of 2.5%, and my three market risk premium estimates of 8.5%, 8.1%, and 10.3%. The results of the CAPM based on these inputs range from 7.09% to 8.34%.

[35] *Duff & Phelps 2019 Valuation Handbook* at 3-46.
[36] *Id. at* 3-36.

The last three results presented are based on the proxy group's historical beta of 0.68, a projected risk-free rate of 2.5%, and my three market risk premium estimates of 8.5%, 8.1%, and 10.3%. The results of the CAPM based on these inputs range from 7.98% to 9.47%. My CAPM results are summarized in Table 10.

TABLE 10

CAPM Results Summary

Description	Current Beta	Historical Beta
Risk Premium Method	7.32%	8.25%
FERC 2-Step DCF Method	7.09%	7.98%
DCF Method	8.34%	9.47%

IV.I. Return on Equity Summary

Q BASED ON THE RESULTS OF YOUR RETURN ON COMMON EQUITY ANALYSES DESCRIBED ABOVE, WHAT RETURN ON COMMON EQUITY DO YOU RECOMMEND FOR AMEREN MISSOURI?

A The results of my analyses are summarized in Table 11.

TABLE 11

Return on Common Equity Summary

Description	Results
DCF	7.2% - 8.7%
Risk Premium	8.9% - 9.5%
CAPM	7.1% - 9.5%

Based on my analyses described above, I estimate Ameren Missouri's current market cost of equity to be in the range of 8.8% to 9.5% with a midpoint estimate of approximately 9.2%. The low-end of my recommended range is based largely on the high-end of my DCF and the low-end of my Risk Premium estimates. The high-end of my recommended range is based on the high-end of my Risk Premium and CAPM estimates.

V. OTHER CONSIDERATIONS

Q PLEASE SUMMARIZE THIS PORTION OF YOUR TESTIMONY.

A In this section, I discuss certain economic and legislative events that have occurred since Ameren Missouri's last litigated rate case where its most recent authorized ROE of 9.53% was established. I use this information in assessing the reasonableness of my recommended ROE of 9.20% for Ameren Missouri. Specifically over this time period, I look at the changes in interest rates and the enactment of Missouri Senate Bill ("SB") 564.

Q WHEN WAS AMEREN MISSOURI'S LAST FULLY LITIGATED BASE RATE CASE?

A Ameren Missouri filed its application for its most recently litigated rate case, Case No. ER-2014-0258, on July 3, 2014. The Commission issued its Order establishing, among other things in that proceeding, an authorized ROE of 9.53% on April 29, 2015.

Q WHAT HAS HAPPENED TO INTEREST RATES SINCE AMEREN MISSOURI'S LAST FULLY LITIGATED RATE CASE?

A Interest rates have decreased quite considerably since July 3, 2014 (when Ameren Missouri filed its application in ER-2014-0258) and April 29, 2015 (when the Commission issued its Order in ER-2014-0258). As shown in Table 12, as of November 12, 2019, Treasury yields have fallen between 61 and 127 basis points, A-rated utility bond yields have fallen between 56 and 95 basis points, and Baa-rated utility bond yields have fallen between 98 and 105 basis points since Ameren Missouri's authorized ROE of 9.53% was authorized by this Commission.

TABLE 12

Changes in Interest Rate Since ER-2014-0258

Date	Treasury Yield	A-Rated Utility Yield	Baa-Rated Utility Yield
13-Week Avg as of:			
7/3/2014	3.42%	4.30%	4.73%
4/29/2015	2.76%	3.91%	4.66%
11/12/2019	2.15%	3.35%	3.68%
Difference from:			
7/3/2014	**-1.27%**	**-0.95%**	**-1.05%**
4/29/2015	**-0.61%**	**-0.56%**	**-0.98%**

Q HAVE THERE BEEN ANY MATERIAL LEGISLATIVE EVENTS THAT HAVE OCCURRED SINCE ER-2014-0258?

A Yes. Most notably, on June 1, 2018, former Missouri Governor Eric Greitens signed SB 564 into law. This legislation is summarized by S&P Global Market Intelligence as follows:

> Senate Bill 564
>
> On June 1, 2018, Senate Bill 564 was signed by former Gov. Eric Greitens. S.B. 564 provides for the electric utilities, upon filing a notice with the PSC, to defer for future recovery 85% of all depreciation expense and return associated with "qualifying electric plant" investments made after filing the notice. The resulting regulatory asset balances, which are to accrue carrying charges at the utility's weighted average cost of capital and which would be amortized over a 20-year period once included in rates, are to be adjusted to reflect any prudence disallowances ordered by the PSC, and these provisions "shall not be construed to affect existing law respecting the burdens of production and persuasion in general rate proceedings for rate base additions." Utilities subject to these provisions will be required to tender five-year capital investment plans with the commission.
>
> For each of the first five years that a utility is allowed to make the deferrals, the purchase and installation of smart meters will be limited to 6% of the utility's aggregate capital expenditures during any given year under the investment plan. At least 25% of each year's capital investment will be required to be allocated to grid-modernization projects.
>
> Participating utilities will be subject to a three-year base rate freeze that would commence on the date new rates were established in the company's most recent rate case unless a force majeure event were to occur.
>
> * * *
>
> For Union Electric, if the difference between the utility's average overall rate at any point in time while this provision applies and the average of the utility's average overall rate as of the date new base rates are set in the company's rate case that concluded prior to the date the utility became subject to the aforementioned deferral provisions and the utility's average overall rate set after consideration of the above-noted tax adjustments reflects a compound annual growth rate of more than 2.85%, the utility is to be prohibited from recovering any amount in excess of the 2.85% as a performance penalty.

> The decoupling mechanism and the deferral/rate cap provisions may not be used in conjunction with each other, and the utility may choose which of these ratemaking techniques to pursue.[37]

Q DID AMEREN MISSOURI FILE TO ADOPT THE PROVISIONS OF SB 564?

A Yes. On September 1, 2018, Ameren Missouri filed with the Commission its intention to defer 85% of its capital investment costs.

Q HAS THERE BEEN A RECOGNITION OF CHANGES IN AMEREN MISSOURI'S RISK SINCE THE PASSAGE OF SB 564?

A Yes. There have been multiple comments made by entities on both the equity and credit sides. For example, S&P Global Market Intelligence states in its regulatory ranking and profile report outlining its views on the Missouri Public Service Commission as follows:

> On June 1, 2018, former Gov. Eric Greitens signed legislation that improves aspects of the state's regulatory framework for electric utilities and reduces the impact of "regulatory lag." The bill allows the electric utilities to elect to pursue either a decoupling mechanism or a unique deferral arrangement for certain investments that would otherwise not be immediately captured in rates. In light of the enactment of this bill, RRA raised its ranking of Missouri regulation to Average/3, from Below Average/1.[38]

In addition, in its March 28, 2019 announcement, Moody's made the following comments on SB 564 and its impact to Ameren Missouri's risk profile:

> Union Electric
>
> RATING OUTLOOK
>
> The stable outlook on UE reflects an improved legislative construct in Missouri with the passage of SB 564, which largely offsets the expected

[37] *S&P Global Market Intelligence*: "Missouri Public Service Commission," downloaded November 26, 2019, at 3.

[38] *Id*. at 2.

decline in cash flow as a result of federal tax reform and frozen rates through April 2020.[39]

Q HOW SHOULD THE COMMISSION USE THESE OBSERVATIONS WITH REGARD TO ESTABLISHING AMEREN MISSOURI'S COST OF EQUITY IN THIS PROCEEDING?

A Given the observations of material declines in capital costs described above since Ameren Missouri's cost of equity was last decided, and the impacts to Ameren Missouri's risk profile as a result of legislative actions since ER-2014-0258, the Commission should recognize that there has not been, for any reason, an increase in the Company's cost of equity. In fact, if anything, there has been a decrease in the Company's cost of equity given the changes in interest rates and changes in Ameren Missouri's risk profile as a result of legislative actions since the Company's previously awarded ROE of 9.53% was determined.

Q DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

A Yes, it does.

\\consultbai.local\documents\ProlawDocs\SDW\10842\Testimony-BAI\381964.docx

[39] *Moody's Investors Service Rating Action*: "Moody's affirms the ratings of Ameren, Union Electric and Ameren Illinois, outlooks stable," March 28, 2019 at 3.

Qualifications of Christopher C. Walters

Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A Christopher C. Walters. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

Q PLEASE STATE YOUR OCCUPATION.

A I am a Senior Consultant in the field of public utility regulation with the firm of Brubaker & Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EMPLOYMENT EXPERIENCE.

A I graduated from Southern Illinois University Edwardsville in 2008 where I received a Bachelor of Science Degree in Business Economics and Finance. I graduated with a Master of Business Administration Degree from Lindenwood University in 2011.

In January 2009, I accepted the position Financial Representative with American General Finance and was promoted to Senior Assistant Manager. In this position I was responsible for assisting in the management of daily operations of the branch, analyzing and reporting on the performance of the branch to upper management, performing credit analyses for consumers and small businesses, as well as assisting home buyers obtain mortgage financing.

In January 2011, I accepted the position of Analyst with BAI. As an Analyst, I performed detailed analysis, research, and general project support on regulatory and competitive procurement projects. In July 2013, I was promoted to the position of Associate Consultant. In January 2016, I was promoted to Consultant. In January 2018, I was promoted to Senior Consultant. As a Senior Consultant, I perform detailed

technical analyses and research to support regulatory projects including expert testimony, and briefing assistance covering various regulatory issues. At BAI, I have been involved with several regulated projects for electric, natural gas and water and wastewater utilities, as well as competitive procurement of electric power and gas supply. My regulatory filing tasks have included measuring the cost of capital, capital structure evaluations, assessing financial integrity, merger and acquisition related issues, risk management related issues, depreciation rate studies, other revenue requirement issues and wholesale market and retail regulated power price forecasts. Since 2011, I have been working with BAI witnesses on utility rate of return filings. Specifically, I have assisted in analyzing rate of return studies, drafting discovery requests and analyzing responses, drafting testimony and exhibits and assisting with the review of the briefs in more than 30 states, two Canadian provinces, and the Federal Energy Regulatory Commission ("FERC").

BAI was formed in April 1995. BAI and its predecessor firm have participated in more than 700 regulatory proceedings in 40 states and Canada.

BAI provides consulting services in the economic, technical, accounting, and financial aspects of public utility rates and in the acquisition of utility and energy services through RFPs and negotiations, in both regulated and unregulated markets. Our clients include large industrial and institutional customers, some utilities and, on occasion, state regulatory agencies. We also prepare special studies and reports, forecasts, surveys and siting studies, and present seminars on utility-related issues.

In general, we are engaged in energy and regulatory consulting, economic analysis and contract negotiation. In addition to our main office in St. Louis, the firm also has branch offices in Phoenix, Arizona and Corpus Christi, Texas.

Q HAVE YOU EVER TESTIFIED BEFORE A REGULATORY BODY?

A Yes. I have sponsored testimony before state regulatory commissions including: Arkansas, Delaware, Florida, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Nevada, Ohio, Oklahoma, Utah, and Wyoming. In addition, I have also sponsored testimony before the City Council of New Orleans and an affidavit before the FERC.

Q PLEASE DESCRIBE ANY PROFESSIONAL REGISTRATIONS OR ORGANIZATIONS TO WHICH YOU BELONG.

A I earned the Chartered Financial Analyst ("CFA") designation from the CFA Institute. The CFA charter was awarded after successfully completing three examinations which covered the subject areas of financial accounting and reporting analysis, corporate finance, economics, fixed income and equity valuation, derivatives, alternative investments, risk management, and professional and ethical conduct. I am a member of the CFA Institute and the CFA Society of St. Louis.

Proceedings in Which
Christopher C. Walters Filed Testimony

Date Filed	State	Docket No.	Utility	Subjects	On Behalf Of
11/6/2019	MI	U-20561	DTE ELECTRIC COMPANY	Rate of Return / Capital Structure / Regulatory Plan / Securitization for Tree Trimming	Association of Businesses Advocating Tariff Equity
10/17/2019	MI	U-20359	INDIANA MICHIGAN POWER COMPANY	Rate of Return / Capital Structure	Association of Businesses Advocating Tariff Equity
10/4/2019	WY	30026-2-GR-19 (Record No. 15267)	BLACK HILLS WYOMING GAS, LLC	Rate of Return / Capital Structure	Federal Executive Agencies
9/10/2019	MD	9610	BALTIMORE GAS AND ELECTRIC COMPANY	Rate of Return / Capital Structure	United States Department of Defense and all other Federal Executive Agencies
9/4/2019	NV	19-06002	SIERRA PACIFIC POWER COMPANY D/B/A NV ENERGY	Rate of Return / Capital Structure	Switch, Ltd.
8/1/2019	IA	RPU-2019-0001	INTERSTATE POWER AND LIGHT COMPANY	Rate of Return / Capital Structure	Iowa Business Energy Coalition
7/16/2019	AR	19-008-U	SOUTHWESTERN ELECTRIC POWER COMPANY	Rate of Return / Capital Structure	The Office of the Arkansas Attorney General Leslie Rutledge
4/22/2019	OK	PUD 201800140	OKLAHOMA GAS AND ELECTRIC COMPANY	Rate of Return / Capital Structure	Federal Executive Agencies
3/1/2019	MI	U-20298	DTE GAS COMPANY	TCJA	Association of Businesses Advocating Tariff Equity
2/21/2019	MI	U-20276	UPPER PENINSULA POWER COMPANY	Rate of Return / Capital Structure; Revenue Credits	Association of Businesses Advocating Tariff Equity and Calumet Electronics Corporation
2/1/2019	LA	UD-18-07	ENTERGY NEW ORLEANS, INC.	Rate of Return / Capital Structure	Air Products and Chemicals, Inc.
1/16/2019	KY	2018-00294 / 2018-00295	KENTUCKY UTILITIES COMPANY / LOUISVILLE GAS AND ELECTRIC COMPANY	Rate of Return / Capital Structure	United States Department of Defense and all other Federal Executive Agencies
11/7/2018	MI	U-20162	DTE ELECTRIC COMPANY	Rate of Return / Capital Structure	Association of Businesses Advocating Tariff Equity
9/4/2018	LA	U-34794	CLECO CORPORATE HOLDINGS LLC AND CLECO POWER LLC	Ring Fence Conditions	Packaging Corporation of America
8/28/2018	UT	17-035-69	ROCKY MOUNTAIN POWER	Income Taxes - TCJA; Credit Metrics	Utah Industrial Energy Consumers
8/3/2018	IA	RPU-2018-0003	MIDAMERICAN ENERGY COMPANY	Rate of Return / Capital Structure	The Iowa Business Energy Coalition
6/5/2018	IL	18-0463	AMEREN ILLINOIS COMPANY	Rate of Return / Capital Structure	Illinois Industrial Energy Consumers, Citizens Utility Board and Federal Executive Agencies
5/2/2018	OK	PUD 201700496	OKLAHOMA GAS AND ELECTRIC COMPANY	Rate of Return / Capital Structure	Federal Executive Agencies
2/1/2018	FL	20170179-GU	FLORIDA CITY GAS	Rate of Return / Capital Structure	Federal Executive Agencies

Proceedings in Which
Christopher C. Walters Filed Testimony

Date Filed	State	Docket No.	Utility	Subjects	On Behalf Of
10/12/2017	MI	U-18370	INDIANA MICHIGAN POWER COMPANY	Rate of Return / Capital Structure	Association of Businesses Advocating Tariff Equity
8/29/2017	MI	U-18255	DTE ELECTRIC COMPANY	Rate of Return / Capital Structure	Association of Businesses Advocating Tariff Equity
5/31/2017	MN	E015/GR-16-664	MINNESOTA POWER	Rate of Return / Capital Structure	Large Power Intervenors
3/3/2017	KY	2016-00371	LOUISVILLE GAS AND ELECTRIC COMPANY	Rate of Return / Capital Structure	United States Department of Defense and all other Federal Executive Agencies
12/22/2016	MI	U-18124	CONSUMERS ENERGY COMPANY	Rate of Return / Capital Structure	Association of Businesses Advocating Tariff Equity
11/21/2016	OH	16-0395-EL-SSO; 16-0396-EL-ATA; 16-0397-EL-AAM	DAYTON POWER AND LIGHT COMPANY	Plant In Service Riders / Surcharges / Trackers	Sierra Club
11/18/2016	DE	16-0163	SUEZ WATER DELAWARE INC.	Rate of Return / Capital Structure	State of Delaware Division of the Public Advocate
7/22/2016	MI	U-17990	CONSUMERS ENERGY COMPANY	Rate of Return / Capital Structure	Association of Businesses Advocating Tariff Equity
7/14/2016	US	ER-16-____-000	VARIOUS UTILITIES	Rate of Return / Capital Structure	Alcoa Power Generating Inc.
3/21/2016	OK	PUD 201500273	OKLAHOMA GAS AND ELECTRIC COMPANY	Rate of Return / Capital Structure	Federal Executive Agencies
12/4/2015	MI	U-17882	CONSUMERS ENERGY COMPANY	Rate of Return / Capital Structure	Association of Business Advocating Tariff Equity
9/29/2015	AR	15-015-U	ENTERGY ARKANSAS, INC.	Rate of Return / Capital Structure	Federal Executive Agencies
7/9/2015	KS	15-WSEE-115-RTS	WESTAR ENERGY, INC. AND KANSAS GAS AND ELECTRIC COMPANY	Rate of Return / Capital Structure	Kansas Industrial Consumers Group, Inc.; Occidental Chemical Corporation; CCPS Transportation, LLC; Spirit AeroSystems, Inc.; Coffeyville Resources Refining & Marketing, LLC; The Goodyear Tire & Rubber Company; Unified School District #259 and Kansas Association of School Boards
5/22/2015	MI	U-17767	DTE ELECTRIC COMPANY	Rate of Return / Capital Structure	Association of Businesses Advocating Tariff Equity
4/24/2015	MI	U-17735	CONSUMERS ENERGY COMPANY	Rate of Return / Capital Structure	Association of Businesses Advocating Tariff Equity

Ameren Missouri

Electric Utilities
(Valuation Metrics)

Line	Company	Price to Earnings (P/E) Ratio [1] 18-Year Average (1)	2019 [2] (2)	2018 (3)	2017 (4)	2016 (5)	2015 (6)	2014 (7)	2013 (8)	2012 (9)	2011 (10)	2010 (11)	2009 (12)	2008 (13)	2007 (14)	2006 (15)	2005 (16)	2004 (17)	2003 (18)	2002 (19)
1	ALLETE	17.74	25.30	15.06	23.05	18.63	15.06	17.23	18.59	15.88	14.66	15.98	16.08	13.95	14.78	16.55	17.91	25.21	N/A	N/A
2	Alliant Energy	16.34	23.40	18.07	20.60	22.30	18.07	16.60	15.28	14.50	14.45	12.47	13.86	13.43	15.08	16.82	12.59	14.00	12.69	19.93
3	Ameren Corp.	16.04	24.00	17.55	20.60	18.29	17.55	16.71	16.52	13.35	11.93	9.66	9.26	14.21	17.45	19.39	16.72	16.28	13.51	15.78
4	American Electric Power	14.46	23.00	15.77	19.33	15.16	15.77	15.88	14.49	13.77	11.92	13.42	10.03	13.06	16.27	12.91	13.70	12.42	10.66	12.68
5	Avangrid, Inc.	30.35	22.10	40.94	27.27	20.49	40.94	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
6	Avista Corp.	18.20	22.60	17.60	23.37	18.80	17.60	17.28	14.64	19.30	14.08	12.74	11.42	14.97	30.88	15.39	19.45	24.43	13.84	19.27
7	Black Hills	17.87	22.60	16.14	19.48	22.29	16.14	19.03	18.24	17.13	31.13	18.10	9.93	N/A	15.02	15.77	17.27	17.13	15.95	12.52
8	CenterPoint Energy	14.93	16.90	18.10	17.91	21.91	18.10	16.96	18.75	14.85	14.58	13.78	11.81	11.27	15.00	10.27	19.06	17.84	6.05	5.59
9	CMS Energy Corp.	17.30	24.80	18.29	21.32	20.94	18.29	17.30	16.32	15.07	13.62	12.46	13.56	10.87	26.84	22.18	12.60	12.39	N/A	N/A
10	Consol. Edison	15.56	20.90	15.59	19.77	18.80	15.59	15.90	14.72	15.39	15.08	13.30	12.55	12.29	13.78	15.49	15.13	18.21	14.30	13.28
11	Dominion Resources	18.44	21.00	22.14	22.17	21.33	22.14	22.97	19.25	18.91	17.27	14.35	12.74	13.78	20.63	15.98	24.89	15.07	15.24	12.05
12	DTE Energy	15.78	21.10	18.11	18.59	18.97	18.11	14.91	17.92	14.89	13.51	12.27	10.41	14.81	18.27	17.43	13.80	16.04	13.69	11.28
13	Duke Energy	17.02	17.60	18.22	19.93	21.25	18.22	17.91	17.45	17.46	13.76	12.69	13.32	17.28	16.13	N/A	N/A	N/A	N/A	N/A
14	Edison Int'l	13.97	14.10	14.77	17.23	17.92	14.77	13.05	12.70	9.71	11.81	10.32	9.72	12.36	16.03	12.99	11.74	37.59	6.97	7.78
15	El Paso Electric	17.96	31.30	18.33	21.78	18.66	18.33	16.38	15.88	14.47	12.60	10.72	10.79	11.89	15.26	16.92	26.72	22.03	18.26	22.99
16	Entergy Corp.	13.86	21.80	12.53	15.01	10.92	12.53	12.89	13.21	11.22	9.06	11.57	11.98	16.56	19.30	14.28	16.28	15.09	13.77	11.53
17	Eversource Energy	17.85	22.10	18.11	19.47	18.69	18.11	17.92	16.94	19.86	15.35	13.42	11.96	13.66	18.75	27.07	19.76	20.77	13.35	16.07
18	Evergy, Inc.	22.90	22.90	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
19	Exelon Corp.	14.32	15.00	12.58	13.41	18.68	12.58	16.02	13.43	19.08	11.30	10.97	11.49	17.97	18.22	16.53	15.37	12.99	11.77	10.46
20	FirstEnergy Corp.	17.24	16.80	17.02	11.41	15.91	17.02	39.79	13.06	21.10	22.39	11.75	13.02	15.64	15.59	14.23	16.07	14.13	22.47	12.95
21	Fortis Inc.	19.28	21.40	18.00	16.81	21.60	18.00	24.29	19.97	20.12	18.79	18.22	16.36	17.48	21.14	17.68	N/A	N/A	N/A	N/A
22	Great Plains Energy	15.76	N/A	19.37	NMF	17.98	19.37	16.47	14.19	15.53	16.11	12.10	16.03	20.55	16.35	18.30	13.96	12.59	12.23	11.09
23	Hawaiian Elec.	18.38	22.70	20.40	20.69	13.56	20.40	15.88	16.21	15.81	17.09	18.59	19.79	23.16	21.57	20.33	18.27	19.18	13.76	13.47
24	IDACORP, Inc.	16.41	24.40	16.22	20.60	19.06	16.22	14.67	13.45	12.41	11.54	11.83	10.20	13.93	18.19	15.07	16.70	15.49	26.51	18.88
25	MGE Energy	18.92	29.30	20.28	29.36	24.90	20.28	17.19	17.01	17.23	15.82	14.98	15.14	14.22	15.01	15.88	22.40	17.98	17.55	15.96
26	NextEra Energy, Inc.	16.36	24.30	16.89	21.65	20.71	16.89	17.25	16.57	14.43	11.54	10.83	13.42	14.48	18.90	13.65	17.88	13.65	17.88	13.60
27	NorthWestern Corp	17.16	21.20	18.36	17.85	17.19	18.36	16.24	16.86	15.72	12.62	12.90	11.54	13.87	21.74	25.95	17.09	N/A	N/A	N/A
28	OGE Energy	15.36	20.60	17.69	18.32	17.68	17.69	18.27	17.69	15.16	14.37	13.31	10.83	12.41	13.75	13.68	14.95	14.13	11.84	14.12
29	Otter Tail Corp.	23.92	23.60	18.20	22.06	20.19	18.20	18.84	21.12	21.75	47.48	55.10	31.16	30.06	19.02	17.35	15.40	17.34	17.77	16.01
30	PG&E Corp.	17.39	N/A	26.40	18.28	21.13	26.40	15.00	23.67	20.70	15.46	15.80	13.01	12.08	16.85	14.84	15.37	13.81	9.50	N/A
31	Pinnacle West Capital	15.82	20.20	16.04	19.28	18.74	16.04	15.89	15.27	14.35	14.60	12.57	13.74	16.07	14.93	13.69	19.24	15.80	13.96	14.43
32	PNM Resources	18.14	24.60	16.85	20.43	19.83	16.85	18.68	16.13	14.97	14.53	14.05	18.09	N/A	35.65	15.57	17.38	15.02	14.73	15.08
33	Portland General	16.71	22.90	17.71	20.03	19.06	17.71	15.32	16.88	13.98	12.37	12.00	14.40	16.30	11.94	23.35	N/A	N/A	N/A	N/A
34	PPL Corp.	14.14	12.00	13.92	17.65	12.83	13.92	14.08	12.84	10.88	10.52	11.93	25.69	17.64	17.26	14.10	15.12	12.51	10.59	11.06
35	Public Serv. Enterprise	13.44	16.10	12.41	16.31	15.35	12.41	12.61	13.50	12.79	10.40	10.37	10.04	13.65	16.54	17.81	16.74	14.26	10.58	10.00
36	SCANA Corp.	14.00	N/A	14.67	14.46	16.80	14.67	13.68	14.43	14.80	13.67	12.93	11.63	12.67	14.96	15.42	14.44	13.57	13.05	12.17
37	Sempra Energy	15.46	24.30	19.73	24.33	24.37	19.73	21.87	19.68	14.89	11.77	12.60	10.09	11.80	14.01	11.50	11.79	8.65	8.96	8.19
38	Southern Co.	15.82	18.00	15.85	15.48	17.76	15.85	16.04	16.19	16.97	15.85	14.90	13.52	16.13	15.95	16.19	15.92	14.68	14.83	14.63
39	Vectren Corp.	17.10	N/A	17.92	23.54	19.18	17.92	19.98	20.66	15.02	15.83	15.10	12.89	16.79	15.33	18.92	15.11	17.57	14.80	14.16
40	WEC Energy Group	16.90	27.90	21.33	20.01	19.95	21.33	17.71	16.50	15.76	14.25	14.01	13.35	14.77	16.47	15.97	14.46	17.51	12.43	10.46
41	Westar Energy	15.75	N/A	18.45	23.40	21.59	18.45	15.36	14.04	13.43	14.78	12.96	14.95	16.96	14.10	12.18	14.79	17.44	10.78	14.02
42	Xcel Energy Inc.	17.15	24.10	16.54	20.20	18.48	16.54	15.44	15.04	14.82	14.24	14.13	12.66	13.69	16.65	14.80	15.36	13.65	11.62	40.80
43	Average	16.65	21.81	18.00	19.81	18.97	18.00	17.39	16.38	15.69	15.30	14.28	13.56	15.18	17.74	16.47	16.52	16.57	13.70	14.31
44	Median	16.08	22.60	17.71	19.97	18.80	17.71	16.54	16.27	15.04	14.31	12.91	12.82	14.21	16.41	15.88	15.92	15.29	13.60	13.47

Sources:
[1] The Value Line Investment Survey Investment Analyzer Software, downloaded on June 25, 2019.
[2] The Value Line Investment Survey, August 16, September 13, and October 25, 2019.

Ameren Missouri

Electric Utilities
(Valuation Metrics)

Line	Company	18-Year Average	2019 [2/a]	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
		Market Price to Cash Flow (MP/CF) Ratio [1]																		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
1	ALLETE	9.49	10.74	10.16	10.95	8.26	7.49	8.80	9.15	8.18	7.91	8.04	8.51	9.29	10.30	11.06	11.54	11.46	N/A	N/A
2	Alliant Energy	7.81	10.75	9.71	13.21	10.67	8.86	8.40	7.52	7.50	7.21	6.59	6.23	7.49	7.92	8.00	5.09	5.52	4.76	5.20
3	Ameren Corp.	7.02	9.14	7.95	8.38	7.44	6.87	6.95	6.61	5.48	5.02	4.23	4.25	6.35	7.69	8.57	8.57	8.24	6.74	7.96
4	American Electric Power	6.39	8.83	8.03	8.81	7.57	7.09	7.00	6.57	5.93	5.46	5.54	4.71	5.71	6.84	5.54	6.07	5.50	4.69	5.19
5	Avangrid, Inc.	9.94	9.46	10.24	10.14	8.56	11.30	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
6	Avista Corp.	6.74	7.43	10.14	9.35	7.63	6.76	7.30	6.21	6.88	6.40	5.80	4.06	5.12	7.58	5.30	6.58	7.58	5.36	5.90
7	Black Hills	7.77	10.42	8.83	9.20	9.33	8.06	8.81	8.03	6.04	7.85	6.16	4.25	11.26	7.62	6.92	7.57	6.69	6.89	5.92
8	CenterPoint Energy	5.11	6.23	8.45	6.97	5.96	5.75	6.25	6.56	5.15	5.39	4.70	4.05	4.29	5.17	3.94	4.70	4.26	2.08	2.16
9	CMS Energy Corp.	5.85	9.37	8.40	8.75	8.50	7.53	7.13	6.68	6.03	5.41	4.48	3.64	3.45	5.57	4.40	4.04	3.20	2.88	NMF
10	Consol. Edison	8.26	9.41	8.73	9.64	9.39	7.96	7.89	7.77	8.31	8.15	7.39	6.72	6.89	8.31	8.65	8.59	9.31	7.90	7.64
11	Dominion Resources	9.59	12.66	10.94	11.35	11.59	11.84	12.27	10.88	9.92	9.45	8.12	6.98	8.27	8.65	7.81	10.09	7.68	7.51	6.53
12	DTE Energy	6.38	9.46	8.54	9.05	8.64	8.52	6.42	6.65	5.91	5.18	4.69	3.59	4.90	5.73	5.21	5.54	6.00	5.62	5.20
13	Duke Energy	7.58	7.41	7.65	8.40	8.57	7.95	8.12	8.11	9.53	6.56	6.01	5.96	7.13	7.16	N/A	N/A	N/A	N/A	N/A
14	Edison Int'l	5.81	6.59	13.46	7.05	6.77	5.92	5.68	5.46	4.59	4.22	4.11	3.95	5.63	7.01	5.87	5.61	6.84	2.82	2.96
15	El Paso Electric	6.11	9.13	9.43	8.54	7.46	6.47	6.33	6.19	5.78	5.16	4.31	3.98	4.95	6.44	6.25	6.67	4.65	3.90	4.39
16	Entergy Corp.	5.73	6.13	4.92	4.66	4.01	4.11	4.21	4.03	4.23	3.90	4.66	5.68	7.96	9.21	7.16	8.76	7.12	6.84	5.57
17	Eversource Energy	6.83	9.90	9.16	10.36	10.14	10.12	10.14	8.08	9.30	6.99	4.97	4.61	4.12	6.18	6.02	3.55	3.78	2.85	2.75
18	Evergy, Inc.	8.20	8.20	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
19	Exelon Corp.	6.08	5.17	5.05	4.45	4.80	4.70	5.09	4.61	5.54	5.86	5.10	5.98	9.65	9.89	8.62	7.97	6.29	5.71	4.97
20	FirstEnergy Corp.	6.44	7.87	8.84	4.76	5.12	5.38	7.43	6.15	7.42	7.33	4.49	4.91	7.58	7.89	7.53	6.04	5.15	6.90	5.10
21	Fortis Inc.	8.23	8.81	7.97	8.23	10.46	7.29	9.25	7.93	8.09	8.38	7.40	6.76	7.58	9.18	7.89	N/A	N/A	N/A	N/A
22	Great Plains Energy	6.89	N/A	N/A	14.62	8.63	6.66	6.45	5.73	6.09	5.74	4.49	5.06	7.71	7.13	7.68	6.70	6.52	5.92	5.14
23	Hawaiian Elec.	8.02	9.22	8.34	9.21	7.44	9.25	7.64	8.15	8.05	7.73	7.81	6.95	9.10	7.95	8.47	8.29	8.44	6.12	6.20
24	IDACORP, Inc.	8.38	12.87	11.72	11.56	10.95	9.37	8.59	7.78	7.05	6.64	6.52	5.31	7.10	8.23	7.73	7.55	7.15	7.27	7.53
25	MGE Energy	11.28	14.21	15.04	17.33	15.66	12.53	11.42	11.20	10.77	9.48	9.05	8.40	8.42	9.23	9.30	11.73	11.04	10.20	8.09
26	NextEra Energy, Inc.	7.81	12.44	10.76	11.62	9.23	7.93	7.98	7.60	7.58	5.98	5.33	6.09	7.34	9.02	6.51	6.71	6.71	5.97	5.77
27	NorthWestern Corp	7.69	9.31	8.19	8.82	8.65	8.99	9.01	7.61	6.85	5.89	5.79	5.05	5.57	8.45	9.39	7.31	8.13	N/A	N/A
28	OGE Energy	7.93	10.84	9.36	10.52	9.03	9.25	10.65	9.93	7.35	7.48	6.61	5.37	6.43	7.58	7.50	7.04	6.73	5.62	5.39
29	Otter Tail Corp.	9.42	12.37	11.58	11.09	9.38	9.04	9.45	9.58	8.43	9.04	8.07	8.01	11.65	9.53	8.66	8.18	9.01	8.13	8.33
30	PG&E Corp.	5.55	N/A	- 5.65	7.09	7.26	7.24	5.65	6.84	5.86	5.32	5.42	4.71	4.61	5.84	5.28	5.07	5.13	4.05	14.69
31	Pinnacle West Capital	6.15	7.85	7.09	8.73	7.89	6.91	7.03	6.85	6.34	5.80	5.65	3.84	4.19	4.76	4.48	7.48	5.88	4.80	5.21
32	PNM Resources	6.81	8.20	7.57	7.40	7.64	6.95	7.48	6.47	5.80	4.94	4.58	4.53	7.10	10.67	7.50	7.62	6.84	5.55	5.72
33	Portland General	5.81	7.31	6.56	7.45	7.12	6.73	5.49	6.06	5.08	4.86	4.13	4.63	4.81	5.34	5.74	N/A	N/A	N/A	N/A
34	PPL Corp.	7.47	7.68	7.02	10.11	8.37	8.73	7.32	6.59	5.87	5.98	7.46	8.82	9.17	8.90	7.58	7.57	6.49	5.41	5.30
35	Public Serv. Enterprise	7.48	8.27	9.48	8.67	8.56	6.66	6.48	6.40	6.40	6.03	6.04	6.20	8.46	9.83	8.41	8.59	7.17	6.79	6.24
36	SCANA Corp.	7.09	N/A	N/A	8.26	9.59	8.33	7.50	7.49	7.40	6.75	6.52	5.88	6.38	7.15	7.03	5.40	6.86	6.59	6.36
37	Sempra Energy	7.95	11.50	10.10	10.65	10.88	9.99	10.77	9.37	7.26	6.13	6.53	6.07	7.07	8.61	7.22	6.96	5.16	4.85	4.00
38	Southern Co.	8.13	8.15	7.05	7.49	8.83	8.23	8.42	8.30	8.75	8.22	7.79	7.08	8.18	8.62	8.47	8.41	8.28	8.28	7.83
39	Vectren Corp.	7.08	N/A	N/A	10.32	8.60	7.82	7.57	6.82	5.79	5.81	5.58	5.24	6.90	6.53	7.37	7.06	7.63	7.27	6.92
40	WEC Energy Group	8.64	12.79	10.82	11.04	10.95	12.90	10.27	9.58	9.24	8.43	8.15	6.87	7.57	7.84	7.27	6.40	6.27	4.91	4.27
41	Westar Energy	6.91	N/A	N/A	10.87	10.86	9.05	7.93	7.23	6.71	6.67	5.51	5.32	7.09	6.88	5.81	7.00	6.54	4.24	2.94
42	Xcel Energy Inc.	6.61	9.18	7.90	8.50	8.10	7.62	7.31	7.00	6.85	6.47	6.28	5.43	5.71	6.51	5.54	5.62	5.31	4.27	5.46
43	Average	7.31	9.33	8.64	9.36	8.65	8.05	7.85	7.39	6.98	6.53	6.00	5.59	6.95	7.72	7.12	7.13	6.77	5.70	5.85
44	Median	7.19	9.18	8.73	9.05	8.57	7.93	7.54	7.12	6.85	6.27	5.80	5.35	7.09	7.76	7.37	7.04	6.71	5.62	5.52

Sources:

[1] The Value Line Investment Survey Investment Analyzer Software, downloaded on June 25, 2019.

[2] The Value Line Investment Survey, August 16, September 13, and October 25, 2019.

Note:

[a] Based on the average of the high and low price for 2019 and the projected 2019 Cash Flow per share, published in The Value Line Investment Survey, August 16, September 13, and October 25, 2019.

Ameren Missouri

Electric Utilities
(Valuation Metrics)

Line	Company	15-Year Average (1)	2019 [2/b] (2)	2018 (3)	2017 (4)	2016 (5)	2015 (6)	2014 (7)	2013 (8)	2012 (9)	2011 (10)	2010 (11)	2009 (12)	2008 (13)	2007 (14)	2006 (15)	2005 (16)
		Market Price to Book Value (MP/BV) Ratio [1]															
1	ALLETE	1.61	1.87	1.79	1.78	1.53	1.37	1.42	1.51	1.34	1.35	1.28	1.15	1.55	1.89	2.09	2.22
2	Alliant Energy	1.70	2.17	2.16	2.38	2.17	1.86	1.86	1.70	1.57	1.46	1.31	1.04	1.33	1.67	1.52	1.33
3	Ameren Corp.	1.45	2.16	1.95	1.93	1.67	1.46	1.45	1.29	1.18	0.90	0.83	0.78	1.25	1.60	1.62	1.68
4	American Electric Power	1.56	2.06	1.82	1.88	1.81	1.55	1.54	1.40	1.31	1.23	1.23	1.08	1.48	1.85	1.56	1.57
5	Avangrid, Inc.	0.90	1.02	1.02	0.93	0.83	0.72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	1.33	1.54	1.88	1.73	1.57	1.36	1.33	1.25	1.21	1.19	1.07	0.94	1.11	1.29	1.30	1.13
7	Black Hills	1.51	1.85	1.61	2.06	1.94	1.59	1.79	1.62	1.21	1.14	1.07	0.83	1.22	1.57	1.47	1.63
8	CenterPoint Energy	2.34	1.58	2.18	2.59	2.73	2.43	2.27	2.30	1.99	1.87	1.96	1.77	2.49	3.13	2.75	3.06
9	CMS Energy Corp.	2.02	3.14	2.81	2.93	2.72	2.43	2.26	2.09	1.91	1.66	1.48	1.10	1.23	1.82	1.42	1.32
10	Consol. Edison	1.41	1.55	1.49	1.63	1.58	1.42	1.34	1.38	1.47	1.38	1.22	1.08	1.17	1.47	1.47	1.52
11	Dominion Resources	2.62	2.17	2.40	2.94	3.15	3.34	3.55	2.97	2.84	2.37	2.01	1.80	2.42	2.69	2.07	2.50
12	DTE Energy	1.48	1.98	1.91	2.01	1.82	1.65	1.62	1.51	1.35	1.20	1.16	0.89	1.10	1.35	1.29	1.39
13	Duke Energy	1.20	1.41	1.33	1.41	1.35	1.29	1.28	1.19	1.12	1.11	1.00	0.91	1.06	1.15	N/A	N/A
14	Edison Int'l	1.67	1.71	1.97	2.17	1.92	1.76	1.68	1.57	1.53	1.24	1.07	1.04	1.56	2.05	1.80	1.93
15	El Paso Electric	1.59	1.97	1.94	1.87	1.68	1.48	1.52	1.49	1.59	1.64	1.17	0.98	1.33	1.69	1.71	1.76
16	Entergy Corp.	1.74	2.01	1.74	1.76	1.67	1.40	1.33	1.21	1.31	1.35	1.62	1.66	2.44	2.65	1.89	2.01
17	Eversource Energy	1.45	1.88	1.68	1.73	1.64	1.53	1.47	1.38	1.28	1.50	1.31	1.12	1.31	1.60	1.22	1.05
18	Evergy, Inc.	1.58	1.58	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
19	Exelon Corp.	2.23	1.42	1.31	1.20	1.20	1.14	1.28	1.17	1.46	1.95	2.07	2.57	4.39	4.79	3.89	3.60
20	FirstEnergy Corp.	1.93	2.74	2.67	3.53	2.37	1.16	1.15	1.28	1.44	1.33	1.36	1.54	2.52	2.23	1.92	1.64
21	Fortis Inc.	1.47	1.35	1.24	1.41	1.26	1.33	1.35	1.45	1.59	1.59	1.56	1.33	1.48	1.63	1.96	N/A
22	Great Plains Energy	1.21	N/A	N/A	1.33	1.17	1.12	1.11	1.02	0.96	0.93	0.87	0.80	1.11	1.66	1.77	1.86
23	Hawaiian Elec.	1.64	1.98	1.76	1.76	1.63	1.71	1.49	1.54	1.62	1.54	1.44	1.16	1.61	1.57	2.01	1.78
24	IDACORP, Inc.	1.43	2.08	1.96	1.94	1.76	1.54	1.45	1.33	1.19	1.17	1.13	0.92	1.09	1.26	1.37	1.22
25	MGE Energy	2.08	2.69	2.59	2.88	2.60	2.10	2.10	2.06	1.92	1.75	1.65	1.54	1.62	1.75	1.83	2.09
26	NextEra Energy, Inc.	2.03	2.76	2.32	2.35	2.30	2.09	2.15	1.93	1.74	1.55	1.49	1.70	2.06	2.34	1.80	1.93
27	NorthWestern Corp	1.46	1.66	1.48	1.64	1.68	1.60	1.54	1.56	1.42	1.35	1.22	1.07	1.15	1.48	1.65	1.42
28	OGE Energy	1.85	2.01	1.75	1.82	1.73	1.79	2.22	2.24	1.94	1.90	1.70	1.37	1.52	1.98	1.91	1.80
29	Otter Tail Corp.	1.83	2.59	2.49	2.33	1.90	1.78	1.90	1.96	1.58	1.35	1.19	1.18	1.71	1.93	1.76	1.74
30	PG&E Corp.	1.60	N/A	1.70	1.71	1.69	1.57	1.39	1.38	1.41	1.46	1.56	1.41	1.50	1.94	1.83	1.84
31	Pinnacle West Capital	1.41	1.88	1.74	1.91	1.72	1.52	1.44	1.47	1.39	1.25	1.14	0.95	1.00	1.26	1.26	1.25
32	PNM Resources	1.24	2.23	1.83	1.84	1.56	1.33	1.21	1.09	0.98	0.80	0.69	0.56	0.66	1.23	1.21	1.45
33	Portland General	1.32	1.77	1.56	1.69	1.56	1.42	1.37	1.28	1.14	1.09	0.94	0.92	1.05	1.32	1.36	N/A
34	PPL Corp.	2.12	1.75	1.81	2.40	2.46	2.24	1.64	1.55	1.58	1.47	1.61	2.10	3.19	3.05	2.43	2.50
35	Public Serv. Enterprise	1.91	1.87	1.81	1.68	1.67	1.58	1.57	1.44	1.46	1.59	1.67	1.78	2.58	2.99	2.46	2.45
36	SCANA Corp.	1.51	N/A	N/A	1.65	1.74	1.47	1.48	1.48	1.48	1.36	1.33	1.20	1.45	1.62	1.64	1.72
37	Sempra Energy	1.80	2.11	2.06	2.24	2.00	2.17	2.20	1.84	1.53	1.28	1.35	1.32	1.60	1.87	1.70	1.73
38	Southern Co.	2.04	1.93	1.89	2.07	2.01	1.99	2.02	2.04	2.15	1.99	1.83	1.73	2.12	2.24	2.23	2.35
39	Vectren Corp.	1.83	N/A	N/A	2.75	2.29	2.11	2.08	1.82	1.57	1.53	1.41	1.34	1.64	1.74	1.77	1.82
40	WEC Energy Group	1.92	2.57	2.11	2.10	2.09	1.82	2.34	2.21	2.05	1.81	1.65	1.40	1.57	1.77	1.71	1.62
41	Westar Energy	1.37	N/A	N/A	1.94	1.95	1.49	1.44	1.33	1.26	1.20	1.10	0.93	1.10	1.36	1.30	1.41
42	Xcel Energy Inc.	1.59	2.25	1.97	2.06	1.88	1.66	1.55	1.50	1.51	1.41	1.32	1.19	1.30	1.53	1.40	1.38
43	Average	1.69	1.98	1.88	2.00	1.85	1.67	1.68	1.60	1.51	1.43	1.35	1.25	1.63	1.90	1.78	1.80
44	Median	1.60	1.97	1.83	1.91	1.74	1.57	1.53	1.49	1.47	1.37	1.31	1.15	1.48	1.71	1.71	1.73

Sources:

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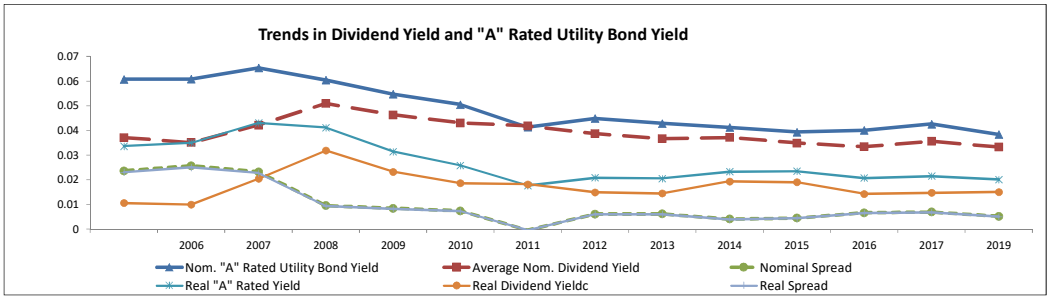
Notes:

[b] Based on the average of the high and low price for 2018 and the projected 2018 Book Value per share, published in The Value Line Investment Survey, August 16, September 13, and October 25, 2019.

Ameren Missouri

Electric Utilities
(Valuation Metrics)

Line	Company	Dividend Yield[1] 14-Year Average (1)	2019 [2/a] (2)	2018 (3)	2017 (4)	2016 (5)	2015 (6)	2014 (7)	2013 (8)	2012 (9)	2011 (10)	2010 (11)	2009 (12)	2008 (13)	2007 (14)	2006 (15)
1	ALLETE	3.95%	2.92%	2.99%	2.97%	3.56%	3.97%	3.92%	3.89%	4.49%	4.58%	5.03%	5.79%	4.37%	3.60%	3.16%
2	Alliant Energy	3.76%	3.00%	3.20%	3.07%	3.21%	3.60%	3.53%	3.74%	4.07%	4.28%	4.61%	5.73%	4.10%	3.13%	3.32%
3	Ameren Corp.	4.50%	2.73%	3.04%	3.12%	3.50%	3.96%	4.02%	4.61%	4.97%	5.28%	5.76%	5.98%	6.21%	4.88%	4.93%
4	American Electric Power	4.09%	3.29%	3.60%	3.42%	3.54%	3.80%	3.83%	4.23%	4.58%	4.96%	4.90%	5.50%	4.20%	3.40%	4.06%
5	Avangrid, Inc.	3.76%	3.51%	3.49%	3.79%	4.26%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	3.74%	3.48%	2.93%	3.14%	3.39%	3.97%	3.99%	4.51%	4.55%	4.54%	4.76%	4.49%	3.39%	2.68%	2.52%
7	Black Hills	3.77%	2.87%	3.31%	2.75%	2.87%	3.55%	2.84%	3.19%	4.39%	4.64%	4.79%	6.17%	4.21%	3.40%	3.79%
8	CenterPoint Energy	4.52%	3.96%	4.09%	4.79%	4.70%	5.06%	3.94%	3.57%	4.04%	4.27%	5.29%	6.37%	4.98%	3.87%	4.39%
9	CMS Energy Corp.	3.27%	2.72%	3.03%	2.88%	2.99%	3.36%	3.59%	3.76%	4.16%	4.25%	3.98%	3.97%	2.69%	1.16%	N/A
10	Consol. Edison	4.45%	3.61%	3.68%	3.40%	3.62%	4.12%	4.38%	4.25%	4.07%	4.46%	5.16%	5.99%	5.67%	4.84%	5.04%
11	Dominion Resources	4.06%	5.00%	4.72%	3.88%	3.82%	3.66%	3.43%	3.78%	4.06%	4.13%	4.41%	5.20%	3.77%	3.32%	3.60%
12	DTE Energy	4.17%	3.22%	3.34%	3.15%	3.34%	3.53%	3.54%	3.84%	4.19%	4.68%	4.75%	6.29%	5.24%	4.36%	4.86%
13	Duke Energy	4.75%	4.31%	4.54%	4.15%	4.26%	4.34%	4.26%	4.45%	4.68%	5.21%	5.71%	6.25%	5.16%	4.44%	N/A
14	Edison Int'l	3.08%	3.79%	3.84%	2.87%	2.81%	2.83%	2.62%	2.85%	2.97%	3.37%	3.66%	3.95%	2.69%	2.21%	2.58%
15	El Paso Electric	2.73%	2.62%	2.55%	2.49%	2.75%	3.13%	2.97%	2.99%	2.97%	2.11%	N/A	N/A	N/A	N/A	N/A
16	Entergy Corp.	4.10%	3.69%	4.41%	4.49%	4.55%	4.59%	4.47%	5.07%	4.91%	4.85%	4.20%	3.97%	2.92%	2.39%	2.82%
17	Eversource Energy	3.33%	3.02%	3.32%	3.14%	3.22%	3.34%	3.40%	3.48%	3.52%	3.23%	3.64%	4.16%	3.25%	2.60%	3.27%
18	Evergy, Inc.	3.22%	3.22%	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
19	Exelon Corp.	3.85%	3.06%	3.32%	3.51%	3.75%	3.88%	3.69%	4.69%	5.73%	4.96%	4.95%	4.26%	2.78%	2.48%	2.83%
20	FirstEnergy Corp.	4.38%	3.75%	5.17%	4.62%	4.31%	4.23%	4.26%	4.26%	4.90%	5.23%	5.76%	5.09%	3.21%	3.12%	3.40%
21	Fortis Inc.	3.68%	3.69%	4.07%	3.69%	3.80%	3.76%	3.88%	3.84%	3.64%	3.58%	3.80%	4.21%	3.76%	3.01%	2.79%
22	Great Plains Energy	4.52%	N/A	N/A	3.58%	3.64%	3.76%	3.62%	3.84%	4.08%	4.15%	4.49%	5.03%	6.96%	5.49%	5.60%
23	Hawaiian Elec.	4.63%	3.16%	3.54%	3.65%	3.99%	4.05%	4.76%	4.72%	4.70%	5.04%	5.51%	6.89%	5.00%	5.18%	4.59%
24	IDACORP, Inc.	3.22%	2.52%	2.61%	2.58%	2.77%	3.06%	3.12%	3.21%	3.28%	3.10%	3.44%	4.46%	3.95%	3.55%	3.39%
25	MGE Energy	3.19%	2.07%	2.16%	1.95%	2.23%	2.78%	2.78%	2.91%	3.25%	3.63%	3.98%	4.36%	4.24%	4.14%	4.25%
26	NextEra Energy, Inc.	3.17%	2.62%	2.68%	2.79%	2.91%	3.01%	3.00%	3.30%	3.65%	3.96%	3.90%	3.55%	3.02%	2.65%	3.40%
27	NorthWestern Corp	4.09%	3.43%	3.86%	3.52%	3.43%	3.61%	3.30%	3.66%	4.17%	4.51%	4.93%	5.75%	5.38%	4.09%	3.65%
28	OGE Energy	3.62%	3.69%	3.98%	3.61%	3.87%	3.51%	2.63%	2.48%	2.94%	3.06%	3.68%	4.96%	4.52%	3.77%	3.99%
29	Otter Tail Corp.	4.15%	2.79%	2.92%	3.12%	3.87%	4.33%	4.14%	4.11%	5.21%	5.57%	5.68%	5.38%	3.63%	3.46%	3.92%
30	PG&E Corp.	3.70%	N/A	N/A	2.42%	3.22%	3.45%	3.96%	4.20%	4.25%	4.24%	4.08%	4.26%	4.01%	3.07%	3.22%
31	Pinnacle West Capital	4.53%	3.35%	3.55%	3.16%	3.46%	3.88%	4.09%	3.98%	5.32%	4.81%	5.43%	6.76%	6.17%	4.75%	4.67%
32	PNM Resources	3.26%	2.55%	2.79%	2.53%	2.69%	2.90%	2.79%	2.99%	2.96%	3.19%	4.09%	4.76%	4.85%	3.36%	3.21%
33	Portland General	3.69%	2.97%	3.27%	2.92%	3.06%	3.27%	3.34%	3.67%	4.11%	4.37%	5.20%	5.36%	4.28%	3.34%	2.54%
34	PPL Corp.	4.45%	5.44%	5.61%	4.24%	4.25%	4.55%	4.45%	4.81%	5.07%	5.10%	5.12%	4.51%	3.10%	2.69%	3.41%
35	Public Serv. Enterprise	3.81%	3.37%	3.49%	3.74%	3.78%	3.81%	3.92%	4.35%	4.55%	4.24%	4.30%	4.30%	3.26%	2.73%	3.47%
36	SCANA Corp.	4.37%	N/A	N/A	4.03%	3.29%	3.90%	4.05%	4.15%	4.25%	4.78%	4.93%	5.67%	4.92%	4.29%	4.21%
37	Sempra Energy	2.95%	3.04%	3.20%	2.92%	2.92%	2.71%	2.61%	3.03%	3.71%	3.65%	3.08%	3.23%	2.62%	2.08%	2.47%
38	Southern Co.	4.74%	4.87%	5.27%	4.63%	4.42%	4.78%	4.69%	4.61%	4.29%	4.63%	5.13%	5.52%	4.58%	4.39%	4.52%
39	Vectren Corp.	4.38%	N/A	N/A	2.79%	3.31%	3.60%	3.62%	4.15%	4.82%	5.06%	5.53%	5.85%	4.79%	4.53%	4.52%
40	WEC Energy Group	3.05%	2.86%	3.38%	3.31%	3.35%	3.49%	3.40%	3.49%	3.24%	3.35%	2.97%	3.16%	2.41%	2.14%	2.18%
41	Westar Energy	4.37%	N/A	N/A	3.00%	2.90%	3.73%	3.88%	4.27%	4.57%	4.84%	5.32%	6.27%	5.22%	4.16%	4.28%
42	Xcel Energy Inc.	3.92%	2.85%	3.25%	3.10%	3.33%	3.69%	3.83%	3.86%	3.90%	4.20%	4.54%	5.14%	4.70%	4.05%	4.40%
43	**Average**	**3.90%**	**3.32%**	**3.56%**	**3.34%**	**3.49%**	**3.71%**	**3.66%**	**3.87%**	**4.18%**	**4.30%**	**4.63%**	**5.09%**	**4.21%**	**3.51%**	**3.71%**
44	Median	3.87%	3.22%	3.36%	3.15%	3.43%	3.71%	3.76%	3.85%	4.18%	4.42%	4.76%	5.14%	4.21%	3.40%	3.60%
45	20-Yr Treasury Yields[3]	3.40%	2.46%	3.02%	2.65%	2.23%	2.55%	3.07%	3.12%	2.54%	3.62%	4.03%	4.11%	4.36%	4.91%	4.99%
46	20-Yr TIPS[3]	1.26%	0.65%	0.94%	0.75%	0.66%	0.78%	0.87%	0.75%	0.21%	1.19%	1.73%	2.21%	2.19%	2.36%	2.31%
47	Implied Inflation[b]	2.12%	1.80%	2.06%	1.89%	1.56%	1.75%	2.19%	2.35%	2.33%	2.40%	2.26%	1.85%	2.13%	2.49%	2.62%
48	**Real Dividend Yield[c]**	**1.74%**	**1.50%**	**1.47%**	**1.42%**	**1.90%**	**1.93%**	**1.44%**	**1.49%**	**1.81%**	**1.86%**	**2.32%**	**3.18%**	**2.04%**	**0.99%**	**1.06%**
	Utility															
49	**Nominal "A" Rated Yield[4]**	**4.87%**	**3.84%**	**4.25%**	**4.00%**	**3.93%**	**4.12%**	**4.28%**	**4.48%**	**4.13%**	**5.04%**	**5.46%**	**6.04%**	**6.53%**	**6.07%**	**6.07%**
50	**Real "A" Rated Yield**	**2.70%**	**2.01%**	**2.14%**	**2.07%**	**2.34%**	**2.33%**	**2.04%**	**2.08%**	**1.76%**	**2.58%**	**3.13%**	**4.11%**	**4.31%**	**3.49%**	**3.36%**
	Spreads (Utility Bond - Stock)															
51	**Nominal Spread[d]**	**0.97%**	**0.51%**	**0.69%**	**0.66%**	**0.44%**	**0.40%**	**0.61%**	**0.61%**	**-0.05%**	**0.74%**	**0.84%**	**0.95%**	**2.32%**	**2.57%**	**2.36%**
52	**Real Spread[e]**	**0.95%**	**0.50%**	**0.68%**	**0.65%**	**0.44%**	**0.40%**	**0.60%**	**0.59%**	**-0.05%**	**0.72%**	**0.82%**	**0.93%**	**2.27%**	**2.50%**	**2.30%**
	Spreads (Treasury Bond - Stock)															
53	**Nominal[f]**	**-0.50%**	**-0.87%**	**-0.54%**	**-0.69%**	**-1.26%**	**-1.17%**	**-0.59%**	**-0.75%**	**-1.64%**	**-0.68%**	**-0.60%**	**-0.98%**	**0.15%**	**1.40%**	**1.28%**
54	**Real[g]**	**-0.49%**	**-0.85%**	**-0.53%**	**-0.68%**	**-1.24%**	**-1.15%**	**-0.58%**	**-0.73%**	**-1.60%**	**-0.67%**	**-0.58%**	**-0.97%**	**0.15%**	**1.37%**	**1.25%**



Sources:
[1] The Value Line Investment Survey Investment Analyzer Software, downloaded on June 25, 2019.
[2] The Value Line Investment Survey, August 16, September 13, and October 25, 2019.
[3] St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org.
[4] www.moodys.com, Bond Yields and Key Indicators, through October 31, 2019.

Notes:
[a] Based on the average of the high and low price for 2017 and the projected 2017 Dividends Declared per share, published in the Value Line Investment Survey, August 16, September 13, and October 25, 2019.
[b] Line 47 = (1 + Line 45) / (1 + Line 46) - 1.
[c] Line 48 = (1 + Line 43) / (1 +Line 47) - 1.
[d] The spread being measured here is the nominal A-rated utility bond yield over the average nominal utility dividend yield; (Line 49 - Line 43).
[e] The spread being measured here is the real A-rated utility bond yield over the average real utility dividend yield; Line 50 - Line 48)
[f] The spread being measured here is the nominal 20-Year Treasury yield over the average nominal utility dividend yield; (Line 45 - Line 43).
[g] The spread being measured here is the real 20-Year TIPS yield over the average real utility dividend yield; Line 48 - Line 46)

Ameren Missouri

Electric Utilities
(Valuation Metrics)

Line	Company	Dividend per Share[1] 14-Year Average	2019 [2]	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	ALLETE	1.90	2.35	2.24	2.14	2.08	2.02	1.96	1.90	1.84	1.78	1.76	1.76	1.72	1.64	1.45
2	Alliant Energy	0.96	1.42	1.34	1.26	1.18	1.10	1.02	0.94	0.90	0.85	0.79	0.75	0.70	0.64	0.58
3	Ameren Corp.	1.86	1.93	1.85	1.78	1.72	1.66	1.61	1.60	1.60	1.56	1.54	1.54	2.54	2.54	2.54
4	American Electric Power	1.99	2.72	2.53	2.39	2.27	2.15	2.03	1.95	1.88	1.85	1.71	1.64	1.64	1.58	1.50
5	Avangrid, Inc.	1.74	1.76	1.74	1.73	1.73	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	1.11	1.55	1.49	1.43	1.37	1.32	1.27	1.22	1.16	1.10	1.00	0.81	0.69	0.60	0.57
7	Black Hills	1.58	2.05	1.93	1.81	1.68	1.62	1.56	1.52	1.48	1.46	1.44	1.42	1.40	1.37	1.32
8	CenterPoint Energy	0.90	1.16	1.12	1.35	1.03	0.99	0.95	0.83	0.81	0.79	0.78	0.76	0.73	0.68	0.60
9	CMS Energy Corp.	0.95	1.53	1.43	1.33	1.24	1.16	1.08	1.02	0.96	0.84	0.66	0.50	0.36	0.20	N/A
10	Consol. Edison	2.53	2.96	2.86	2.76	2.68	2.60	2.52	2.46	2.42	2.40	2.38	2.36	2.34	2.32	2.30
11	Dominion Resources	2.30	3.67	3.34	3.04	2.80	2.59	2.40	2.25	2.11	1.97	1.83	1.75	1.58	1.46	1.38
12	DTE Energy	2.67	3.85	3.59	3.36	3.06	2.84	2.69	2.59	2.42	2.32	2.18	2.12	2.12	2.12	2.08
13	Duke Energy	3.13	3.75	3.64	3.49	3.36	3.24	3.15	3.09	3.03	2.97	2.91	2.82	2.70	2.58	N/A
14	Edison Int'l	1.59	2.46	2.43	2.23	1.98	1.73	1.48	1.37	1.31	1.29	1.27	1.25	1.23	1.18	1.10
15	El Paso Electric	1.16	1.52	1.42	1.32	1.23	1.17	1.11	1.05	0.97	0.66	N/A	N/A	N/A	N/A	N/A
16	Entergy Corp.	3.20	3.66	3.58	3.50	3.42	3.34	3.32	3.32	3.32	3.32	3.24	3.00	3.00	2.58	2.16
17	Eversource Energy	1.38	2.14	2.02	1.90	1.78	1.67	1.57	1.47	1.32	1.10	1.03	0.95	0.83	0.78	0.73
18	Evergy, Inc.	1.94	1.94	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
19	Exelon Corp.	1.66	1.45	1.38	1.31	1.26	1.24	1.24	1.46	2.10	2.10	2.10	2.10	2.05	1.82	1.64
20	FirstEnergy Corp.	1.83	1.52	1.82	1.44	1.44	1.44	1.44	1.65	2.20	2.20	2.20	2.20	2.20	2.05	1.85
21	Fortis Inc.	1.27	1.85	1.75	1.65	1.55	1.43	1.30	1.25	1.21	1.17	1.12	1.04	1.00	0.82	0.67
22	Great Plains Energy	1.11	N/A	N/A	1.10	1.06	1.00	0.94	0.88	0.86	0.84	0.83	0.83	1.66	1.66	1.66
23	Hawaiian Elec.	1.24	1.28	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24
24	IDACORP, Inc.	1.65	2.56	2.40	2.24	2.08	1.92	1.76	1.57	1.37	1.20	1.20	1.20	1.20	1.20	1.20
25	MGE Energy	1.10	1.38	1.32	1.26	1.21	1.16	1.11	1.07	1.04	1.01	0.99	0.97	0.96	0.94	0.93
26	NextEra Energy, Inc.	2.78	5.00	4.44	3.93	3.48	3.08	2.90	2.64	2.40	2.20	2.00	1.89	1.78	1.64	1.50
27	NorthWestern Corp	1.65	2.30	2.20	2.10	2.00	1.92	1.60	1.52	1.48	1.44	1.36	1.34	1.32	1.28	1.24
28	OGE Energy	0.95	1.52	1.40	1.27	1.16	1.05	0.95	0.85	0.80	0.76	0.73	0.71	0.70	0.68	0.67
29	Otter Tail Corp.	1.23	1.40	1.34	1.28	1.25	1.23	1.21	1.19	1.19	1.19	1.19	1.19	1.19	1.17	1.15
30	PG&E Corp.	1.70	N/A	N/A	1.55	1.93	1.82	1.82	1.82	1.82	1.82	1.82	1.68	1.56	1.44	1.32
31	Pinnacle West Capital	2.38	3.04	2.87	2.70	2.56	2.44	2.33	2.23	2.67	2.10	2.10	2.10	2.10	2.10	2.03
32	PNM Resources	0.77	1.18	1.09	0.99	0.88	0.80	0.76	0.68	0.58	0.50	0.50	0.50	0.61	0.91	0.86
33	Portland General	1.12	1.52	1.43	1.34	1.26	1.18	1.12	1.10	1.08	1.06	1.04	1.01	0.97	0.93	0.68
34	PPL Corp.	1.44	1.65	1.64	1.58	1.52	1.50	1.49	1.47	1.44	1.40	1.40	1.38	1.34	1.22	1.10
35	Public Serv. Enterprise	1.47	1.88	1.80	1.72	1.64	1.56	1.48	1.44	1.42	1.37	1.37	1.33	1.29	1.17	1.14
36	SCANA Corp.	2.00	N/A	N/A	2.45	2.30	2.18	2.10	2.03	1.98	1.94	1.90	1.88	1.84	1.76	1.68
37	Sempra Energy	2.36	3.87	3.58	3.29	3.02	2.80	2.64	2.52	2.40	1.92	1.56	1.56	1.37	1.24	1.20
38	Southern Co.	1.98	2.46	2.38	2.30	2.22	2.15	2.08	2.01	1.94	1.87	1.80	1.73	1.66	1.60	1.54
39	Vectren Corp.	1.42	N/A	N/A	1.71	1.62	1.54	1.46	1.43	1.41	1.39	1.37	1.35	1.31	1.27	1.23
40	WEC Energy Group	1.33	2.36	2.21	2.08	1.98	1.74	1.56	1.45	1.20	1.04	0.80	0.68	0.54	0.50	0.46
41	Westar Energy	1.30	N/A	N/A	1.60	1.52	1.44	1.40	1.36	1.32	1.28	1.24	1.20	1.16	1.08	0.98
42	Xcel Energy Inc.	1.17	1.62	1.52	1.44	1.36	1.28	1.20	1.11	1.07	1.03	1.00	0.97	0.94	0.91	0.88
43	**Average**	**1.66**	**2.22**	**2.12**	**1.97**	**1.86**	**1.76**	**1.67**	**1.61**	**1.59**	**1.51**	**1.47**	**1.42**	**1.42**	**1.36**	**1.27**
44	**Industry Average Growth**	**4.40%**	**4.84%**	**7.61%**	**6.14%**	**5.60%**	**5.24%**	**3.58%**	**1.23%**	**5.69%**	**2.49%**	**3.36%**	**-0.08%**	**5.06%**	**6.45%**	

Sources:
[1] The Value Line Investment Survey Investment Analyzer Software, downloaded on June 25, 2019.
[2] The Value Line Investment Survey, August 16, September 13, and October 25, 2019.
Notes:
PG&E is excluded from 2017, 2018 and 2019 average calculations due to their Dividend Suspension.

Ameren Missouri

Electric Utilities
(Valuation Metrics)

Line	Company	14-Year Average	2019 [2]	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
		Earnings per Share[1]														
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1	ALLETE	2.85	3.40	3.38	3.13	3.14	3.38	2.90	2.63	2.58	2.65	2.19	1.89	2.82	3.08	2.77
2	Alliant Energy	1.57	2.25	2.19	1.99	1.65	1.69	1.74	1.65	1.53	1.38	1.38	0.95	1.27	1.35	1.03
3	Ameren Corp.	2.71	3.30	3.32	2.77	2.68	2.38	2.40	2.10	2.41	2.47	2.77	2.78	2.88	2.98	2.66
4	American Electric Power	3.31	4.10	3.90	3.62	4.23	3.59	3.34	3.18	2.98	3.13	2.60	2.97	2.99	2.86	2.86
5	Avangrid, Inc.	1.73	2.20	1.92	1.67	1.98	0.86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	Avista Corp.	1.75	2.95	2.07	1.95	2.15	1.89	1.84	1.85	1.32	1.72	1.65	1.58	1.36	0.72	1.47
7	Black Hills	2.38	3.45	3.47	3.38	2.63	2.83	2.89	2.61	1.97	1.01	1.66	2.32	0.18	2.68	2.21
8	CenterPoint Energy	1.22	1.50	0.74	1.57	1.00	1.08	1.42	1.24	1.35	1.27	1.07	1.01	1.30	1.17	1.33
9	CMS Energy Corp.	1.57	2.50	2.32	2.17	1.98	1.89	1.74	1.66	1.53	1.45	1.33	0.93	1.23	0.64	0.64
10	Consol. Edison	3.72	4.05	4.55	4.10	3.94	4.05	3.62	3.93	3.86	3.57	3.47	3.14	3.36	3.48	2.95
11	Dominion Resources	2.87	2.00	3.25	3.53	3.44	3.20	3.05	3.09	2.75	2.76	2.89	2.64	3.04	2.13	2.40
12	DTE Energy	4.19	6.25	6.17	5.73	4.83	4.44	5.10	3.76	3.88	3.67	3.74	3.24	2.73	2.66	2.45
13	Duke Energy	3.85	5.00	4.13	4.22	3.71	4.10	4.13	3.98	3.71	4.14	4.02	3.39	3.03	3.60	2.73
14	Edison Int'l	3.48	4.60	-1.26	4.51	3.94	4.15	4.33	3.78	4.55	3.23	3.35	3.24	3.68	3.32	3.28
15	El Paso Electric	2.06	2.45	2.07	2.42	2.39	2.03	2.27	2.20	2.26	2.48	2.07	1.50	1.73	1.63	1.27
16	Entergy Corp.	5.98	5.60	5.88	5.19	6.88	5.81	5.77	4.96	6.02	7.55	6.66	6.30	6.20	5.60	5.36
17	Eversource Energy	2.36	3.45	3.25	3.11	2.96	2.76	2.58	2.49	1.89	2.22	2.10	1.91	1.86	1.59	0.82
18	Evergy, Inc.	2.80	2.80	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
19	Exelon Corp.	3.00	3.00	2.07	2.78	1.80	2.54	2.10	2.31	1.92	3.75	3.87	4.29	4.10	4.03	3.50
20	FirstEnergy Corp.	2.68	2.55	1.33	2.73	2.10	2.00	0.85	2.97	2.13	1.88	3.25	3.32	4.38	4.22	3.82
21	Fortis Inc.	1.82	2.60	2.52	2.66	1.89	2.11	1.38	1.63	1.65	1.74	1.62	1.51	1.52	1.29	1.36
22	Great Plains Energy	1.33	N/A	N/A	-0.06	1.61	1.37	1.57	1.62	1.35	1.25	1.53	1.03	1.16	1.85	1.62
23	Hawaiian Elec.	1.52	1.95	1.85	1.64	2.29	1.50	1.64	1.62	1.67	1.44	1.21	0.91	1.07	1.11	1.33
24	IDACORP, Inc.	3.37	4.45	4.49	4.21	3.94	3.87	3.85	3.64	3.37	3.36	2.95	2.64	2.18	1.86	2.35
25	MGE Energy	1.94	2.60	2.43	2.20	2.18	2.06	2.32	2.16	1.86	1.76	1.67	1.47	1.59	1.51	1.37
26	NextEra Energy, Inc.	5.13	7.75	6.67	6.50	5.78	6.06	5.60	4.83	4.56	4.82	4.74	3.97	4.07	3.27	3.23
27	NorthWestern Corp	2.54	3.65	3.40	3.34	3.39	2.90	2.99	2.46	2.26	2.53	2.14	2.02	1.77	1.44	1.31
28	OGE Energy	1.68	2.10	2.12	1.92	1.69	1.69	1.98	1.94	1.79	1.73	1.50	1.33	1.25	1.32	1.23
29	Otter Tail Corp.	1.38	2.15	2.06	1.86	1.60	1.56	1.55	1.37	1.05	0.45	0.38	0.71	1.09	1.78	1.69
30	PG&E Corp.	1.49	N/A	-13.25	3.50	2.83	2.00	3.06	1.83	2.07	2.78	2.82	3.03	3.22	2.78	2.76
31	Pinnacle West Capital	3.49	4.75	4.54	4.43	3.95	3.92	3.58	3.66	3.50	2.99	3.08	2.26	2.12	2.96	3.17
32	PNM Resources	1.31	2.15	1.66	1.92	1.65	1.64	1.45	1.41	1.31	1.08	0.87	0.58	0.11	0.76	1.72
33	Portland General	1.92	2.40	2.37	2.29	2.16	2.04	2.18	1.77	1.87	1.95	1.66	1.31	1.39	2.33	1.14
34	PPL Corp.	2.36	2.40	2.58	2.11	2.79	2.37	2.38	2.38	2.61	2.61	2.29	1.19	2.45	2.63	2.29
35	Public Serv. Enterprise	2.86	3.80	2.76	2.82	2.83	3.30	2.99	2.45	2.44	3.11	3.07	3.08	2.90	2.59	1.85
36	SCANA Corp.	3.30	N/A	N/A	4.20	4.16	3.81	3.79	3.39	3.15	2.97	2.98	2.85	2.95	2.74	2.59
37	Sempra Energy	4.62	5.75	5.48	4.63	4.24	5.23	4.63	4.22	4.35	4.47	4.02	4.78	4.43	4.26	4.23
38	Southern Co.	2.64	3.05	3.00	3.21	2.83	2.84	2.77	2.70	2.67	2.55	2.36	2.32	2.25	2.28	2.10
39	Vectren Corp.	1.94	N/A	N/A	2.60	2.55	2.39	2.02	1.66	1.94	1.73	1.64	1.79	1.63	1.83	1.44
40	WEC Energy Group	2.34	3.53	3.34	3.14	2.96	2.34	2.59	2.51	2.35	2.18	1.92	1.60	1.52	1.42	1.32
41	Westar Energy	1.96	N/A	N/A	2.27	2.43	2.09	2.35	2.27	2.15	1.79	1.80	1.28	1.31	1.84	1.88
42	Xcel Energy Inc.	1.89	2.60	2.47	2.30	2.21	2.10	2.03	1.91	1.85	1.72	1.56	1.49	1.46	1.35	1.35
43	**Average**	**2.64**	**3.38**	**3.01**	**3.02**	**2.91**	**2.78**	**2.77**	**2.60**	**2.51**	**2.53**	**2.45**	**2.26**	**2.29**	**2.32**	**2.17**
44	**Industry Average Growth**	**3.54%**	**12.18%**	**-0.18%**	**3.68%**	**4.86%**	**0.28%**	**6.70%**	**3.34%**	**-0.86%**	**3.54%**	**8.08%**	**-1.11%**	**-1.47%**	**6.98%**	

Sources:

[1] The Value Line Investment Survey Investment Analyzer Software, downloaded on June 25, 2019.

[2] The Value Line Investment Survey, August 16, September 13, and October 25, 2019.

Notes:

PG&E is excluded from 2017, 2018, and 2019 average calculations due to their Dividend Suspension.

Ameren Missouri

Electric Utilities
(Valuation Metrics)

Line	Company	Cash Flow / Capital Spending 2017 (1)	2018 (2)	2019 (3)	2020 (4)	3 - 5 yr Projection (5)
1	ALLETE	1.61x	1.22x	0.71x	1.10x	1.71x
2	Alliant Energy	0.49x	N/A	0.65x	0.71x	0.85x
3	Ameren Corp.	0.75x	0.80x	0.79x	0.62x	0.98x
4	American Electric Power	0.67x	0.68x	0.69x	0.78x	0.88x
5	Avangrid, Inc.	0.57x	0.85x	0.68x	0.56x	0.69x
6	Avista Corp.	0.77x	0.78x	0.90x	0.86x	1.00x
7	Black Hills	1.17x	0.87x	0.54x	0.77x	1.22x
8	CenterPoint Energy	1.22x	0.98x	0.97x	1.05x	1.15x
9	CMS Energy Corp.	0.89x	0.77x	0.78x	0.76x	1.00x
10	Consol. Edison	0.76x	0.82x	0.80x	0.77x	0.90x
11	Dominion Resources	0.81x	1.04x	0.78x	1.00x	1.23x
12	DTE Energy	0.94x	0.84x	0.65x	1.05x	1.23x
13	Duke Energy	0.87x	0.81x	0.78x	0.86x	1.08x
14	Edison Int'l	0.94x	0.34x	0.75x	0.76x	0.87x
15	El Paso Electric	1.04x	0.86x	0.91x	1.00x	0.94x
16	Entergy Corp.	0.76x	0.73x	0.70x	0.85x	0.89x
17	Eversource Energy	0.79x	0.83x	0.78x	0.95x	1.26x
18	Evergy, Inc.	N/A	1.17x	1.29x	1.31x	1.65x
19	Exelon Corp.	1.06x	1.05x	1.20x	1.32x	1.52x
20	FirstEnergy Corp.	1.03x	0.76x	0.94x	1.02x	1.19x
21	Fortis Inc.	0.76x	0.72x	0.58x	0.77x	0.87x
22	Hawaiian Elec.	0.81x	0.85x	1.13x	1.11x	1.11x
23	IDACORP, Inc.	1.33x	1.42x	1.24x	1.24x	1.31x
24	MGE Energy	1.19x	0.66x	0.80x	1.13x	1.21x
25	NextEra Energy, Inc.	0.53x	0.56x	0.82x	0.94x	1.13x
26	NorthWestern Corp	1.21x	1.23x	1.08x	1.11x	1.38x
27	OGE Energy	0.81x	1.30x	1.21x	1.40x	1.58x
28	Otter Tail Corp.	1.10x	1.49x	0.73x	0.46x	1.36x
29	PG&E Corp.	0.82x	-0.58x	N/A	N/A	N/A
30	Pinnacle West Capital	0.76x	1.06x	1.03x	1.10x	1.21x
31	PNM Resources	0.84x	0.82x	0.71x	0.69x	0.87x
32	Portland General	1.07x	1.00x	0.99x	0.90x	1.52x
33	PPL Corp.	0.82x	0.93x	0.92x	1.06x	1.54x
34	Public Serv. Enterprise	0.64x	0.70x	1.13x	1.10x	1.29x
35	Sempra Energy	0.67x	0.80x	0.65x	0.91x	1.46x
36	Southern Co.	0.90x	0.83x	0.87x	1.01x	1.38x
37	WEC Energy Group	0.92x	0.90x	0.68x	0.68x	1.10x
38	Xcel Energy Inc.	0.84x	0.77x	0.69x	0.96x	1.10x
39	Average	0.90x	0.86x	0.85x	0.94x	1.18x
40	Median	0.84x	0.83x	0.79x	0.95x	1.19x

Sources:

The Value Line Investment Survey Investment Analyzer Software, downloaded on June 25, 2019.

The Value Line Investment Survey, August 16, September 13, and October 25, 2019.

Notes:

Based on the projected Cash Flow per share and Capital Spending per share.

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Proxy Group

Line	Company	Credit Ratings[1] S&P (1)	Moody's (2)	Common Equity Ratios MI[1] (3)	Value Line[2] (4)
1	ALLETE, Inc.	BBB+	Baa1	59.2%	60.1%
2	Alliant Energy Corporation	A-	Baa1	42.7%	46.7%
3	American Electric Power Company, Inc.	A-	Baa1	42.6%	46.8%
4	Avangrid, Inc.	BBB+	Baa1	69.4%	73.8%
5	CMS Energy Corporation	BBB+	Baa1	28.7%	30.7%
6	DTE Energy Company	BBB+	Baa2	41.0%	45.8%
7	Duke Energy Corporation	A-	Baa1	43.1%	46.2%
8	Evergy, Inc.	A-	Baa2	54.0%	60.0%
9	Hawaiian Electric Industries, Inc.	BBB-	N/A	51.5%	51.7%
10	NextEra Energy, Inc.	A-	Baa1	45.0%	56.0%
11	NorthWestern Corporation	BBB	Baa2	47.8%	47.8%
12	OGE Energy Corp.	BBB+	Baa1	56.0%	58.0%
13	Otter Tail Corporation	BBB	Baa2	54.5%	55.3%
14	Pinnacle West Capital Corporation	A-	A3	49.4%	53.0%
15	PNM Resources, Inc.	BBB+	Baa3	36.2%	38.6%
16	Portland General Electric Company	BBB+	A3	50.3%	53.5%
17	Southern Company	A-	Baa2	32.5%	37.6%
18	WEC Energy Group, Inc.	A-	Baa1	45.2%	49.4%
19	Xcel Energy Inc.	A-	Baa1	41.5%	43.6%
20	**Average**	**BBB+**	**Baa1**	**46.9%**	**50.2%**
21	**Median**			**45.2%**	**49.4%**
22	**Ameren Missouri**	**BBB+[3]**	**Baa1[3]**		**51.9%[4]**

Sources:

[1] S&P Global Market Intelligence, Downloaded on November 12, 2019.

[2] *The Value Line Investment Survey* , August 16, September 13, and October 25, 2019.

[3] Hevert direct at 11.

[4] Sagel direct at 10.

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Consensus Analysts' Growth Rates

Line	Company	Zacks		MI		Yahoo! Finance		Average of Growth Rates
		Estimated Growth %[1]	Number of Estimates	Estimated Growth %[2]	Number of Estimates	Estimated Growth %[3]	Number of Estimates	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	ALLETE, Inc.	7.20%	N/A	7.07%	3	7.00%	6	7.09%
2	Alliant Energy Corporation	5.60%	N/A	5.69%	4	5.15%	10	5.48%
3	American Electric Power Company, Inc.	5.70%	N/A	5.64%	6	5.90%	11	5.75%
4	Avangrid, Inc.	7.40%	N/A	7.05%	3	6.00%	11	6.82%
5	CMS Energy Corporation	6.40%	N/A	6.94%	7	7.37%	19	6.90%
6	DTE Energy Company	6.00%	N/A	6.20%	6	3.66%	14	5.29%
7	Duke Energy Corporation	4.90%	N/A	4.24%	6	4.06%	18	4.40%
8	Evergy, Inc.	6.60%	N/A	8.98%	4	6.70%	10	7.43%
9	Hawaiian Electric Industries, Inc.	4.20%	N/A	5.58%	3	3.40%	6	4.39%
10	NextEra Energy, Inc.	8.00%	N/A	7.81%	5	7.99%	18	7.93%
11	NorthWestern Corporation	2.60%	N/A	3.50%	3	3.19%	6	3.10%
12	OGE Energy Corp.	4.50%	N/A	5.15%	3	3.40%	11	4.35%
13	Otter Tail Corporation	7.00%	N/A	7.40%	1	9.00%	0	7.80%
14	Pinnacle West Capital Corporation	6.10%	N/A	5.33%	6	5.11%	15	5.51%
15	PNM Resources, Inc.	5.50%	N/A	6.17%	6	6.22%	10	5.96%
16	Portland General Electric Company	4.60%	N/A	4.52%	5	4.40%	12	4.51%
17	Southern Company	4.50%	N/A	N/A	N/A	1.56%	20	3.03%
18	WEC Energy Group, Inc.	6.20%	N/A	6.09%	5	6.12%	15	6.14%
19	Xcel Energy Inc.	5.40%	N/A	N/A	N/A	5.20%	14	5.30%
20	**Average**	**5.71%**	**N/A**	**6.08%**	**4**	**5.34%**	**12**	**5.64%**
21	**Median**							**5.51%**

Sources:

[1] Zacks, http://www.zacks.com/, downloaded on November 1, 2019.

[2] S&P Global Market Intelligence, https://platform.mi.spglobal.com, downloaded on November 1, 2019.

[3] Yahoo! Finance, http://www.finance.yahoo.com/, downloaded on November 1, 2019.

Note:

Yahoo! Finance next year number of estimates.

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Constant Growth DCF Model
(Consensus Analysts' Growth Rates)

Line	Company	13-Week AVG Stock Price[1] (1)	Analysts' Growth[2] (2)	Annualized Dividend[3] (3)	Adjusted Yield (4)	Constant Growth DCF (5)
1	ALLETE, Inc.	$86.14	7.09%	$2.35	2.92%	10.01%
2	Alliant Energy Corporation	$52.47	5.48%	$1.42	2.85%	8.33%
3	American Electric Power Company, Inc.	$92.03	5.75%	$2.68	3.08%	8.83%
4	Avangrid, Inc.	$50.37	6.82%	$1.76	3.73%	10.55%
5	CMS Energy Corporation	$62.65	6.90%	$1.53	2.61%	9.51%
6	DTE Energy Company	$129.40	5.29%	$3.78	3.08%	8.36%
7	Duke Energy Corporation	$93.48	4.40%	$3.78	4.22%	8.62%
8	Evergy, Inc.	$64.39	7.43%	$1.90	3.17%	10.60%
9	Hawaiian Electric Industries, Inc.	$44.66	4.39%	$1.28	2.99%	7.39%
10	NextEra Energy, Inc.	$225.09	7.93%	$5.00	2.40%	10.33%
11	NorthWestern Corporation	$72.85	3.10%	$2.30	3.26%	6.35%
12	OGE Energy Corp.	$43.46	4.35%	$1.46	3.51%	7.86%
13	Otter Tail Corporation	$52.96	7.80%	$1.40	2.85%	10.65%
14	Pinnacle West Capital Corporation	$94.60	5.51%	$2.95	3.29%	8.80%
15	PNM Resources, Inc.	$50.98	5.96%	$1.16	2.41%	8.37%
16	Portland General Electric Company	$56.32	4.51%	$1.54	2.86%	7.36%
17	Southern Company	$59.98	3.03%	$2.48	4.26%	7.29%
18	WEC Energy Group, Inc.	$92.85	6.14%	$2.36	2.70%	8.83%
19	Xcel Energy Inc.	$63.39	5.30%	$1.62	2.69%	7.99%
20	**Average**	**$78.32**	**5.64%**	**$2.25**	**3.10%**	**8.74%**
21	**Median**					**8.62%**

Sources:
[1] S&P Global Market Intelligence, Downloaded on November 12, 2019.
[2] Schedule CCW-4.
[3] *The Value Line Investment Survey* , August 16, September 13, and October 25, 2019.

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Payout Ratios

Line	Company	Dividends Per Share 2018 (1)	Dividends Per Share Projected (2)	Earnings Per Share 2018 (3)	Earnings Per Share Projected (4)	Payout Ratio 2018 (5)	Payout Ratio Projected (6)
1	ALLETE, Inc.	$2.24	$2.85	$3.38	$4.50	66.27%	63.33%
2	Alliant Energy Corporation	$1.34	$1.74	$2.19	$2.80	61.19%	62.14%
3	American Electric Power Company, Inc.	$2.53	$3.40	$3.90	$5.00	64.87%	68.00%
4	Avangrid, Inc.	$1.74	$2.10	$1.92	$3.25	90.63%	64.62%
5	CMS Energy Corporation	$1.43	$2.00	$2.32	$3.25	61.64%	61.54%
6	DTE Energy Company	$3.59	$4.80	$6.17	$7.75	58.18%	61.94%
7	Duke Energy Corporation	$3.64	$4.05	$4.13	$5.75	88.14%	70.43%
8	Evergy, Inc.	$1.74	$2.50	$2.50	$3.50	69.60%	71.43%
9	Hawaiian Electric Industries, Inc.	$1.24	$1.50	$1.85	$2.25	67.03%	66.67%
10	NextEra Energy, Inc.	$4.44	$7.00	$6.67	$11.50	66.57%	60.87%
11	NorthWestern Corporation	$2.20	$2.70	$3.40	$4.00	64.71%	67.50%
12	OGE Energy Corp.	$1.40	$1.90	$2.12	$2.75	66.04%	69.09%
13	Otter Tail Corporation	$1.34	$1.65	$2.06	$2.50	65.05%	66.00%
14	Pinnacle West Capital Corporation	$2.87	$3.80	$4.54	$5.75	63.22%	66.09%
15	PNM Resources, Inc.	$1.09	$1.50	$1.66	$2.50	65.66%	60.00%
16	Portland General Electric Company	$1.43	$1.95	$2.37	$3.00	60.34%	65.00%
17	Southern Company	$2.38	$2.78	$3.00	$3.75	79.33%	74.13%
18	WEC Energy Group, Inc.	$2.21	$3.00	$3.34	$4.50	66.17%	66.67%
19	Xcel Energy Inc.	$1.52	$2.05	$2.47	$3.25	61.54%	63.08%
20	**Average**	**$2.12**	**$2.80**	**$3.16**	**$4.29**	**67.69%**	**65.71%**

Source:
The Value Line Investment Survey, August 16, September 13, and October 25, 2019.

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Sustainable Growth Rate

Line	Company	3 to 5 Year Projections										Sustainable
		Dividends Per Share (1)	Earnings Per Share (2)	Book Value Per Share (3)	Book Value Growth (4)	ROE (5)	Adjustment Factor (6)	Adjusted ROE (7)	Payout Ratio (8)	Retention Rate (9)	Internal Growth Rate (10)	Growth Rate (11)
1	ALLETE, Inc.	$2.85	$4.50	$48.75	3.09%	9.23%	1.02	9.37%	63.33%	36.67%	3.44%	3.54%
2	Alliant Energy Corporation	$1.74	$2.80	$27.55	7.23%	10.16%	1.03	10.52%	62.14%	37.86%	3.98%	5.94%
3	American Electric Power Company, Inc.	$3.40	$5.00	$47.50	4.25%	10.53%	1.02	10.75%	68.00%	32.00%	3.44%	4.80%
4	Avangrid, Inc.	$2.10	$3.25	$52.75	1.54%	6.16%	1.01	6.21%	64.62%	35.38%	2.20%	2.20%
5	CMS Energy Corporation	$2.00	$3.25	$24.50	7.86%	13.27%	1.04	13.77%	61.54%	38.46%	5.30%	7.88%
6	DTE Energy Company	$4.80	$7.75	$73.50	5.49%	10.54%	1.03	10.83%	61.94%	38.06%	4.12%	6.61%
7	Duke Energy Corporation	$4.05	$5.75	$68.75	2.67%	8.36%	1.01	8.47%	70.43%	29.57%	2.51%	2.92%
8	Evergy, Inc.	$2.50	$3.50	$41.50	1.11%	8.43%	1.01	8.48%	71.43%	28.57%	2.42%	2.42%
9	Hawaiian Electric Industries, Inc.	$1.50	$2.25	$24.25	4.08%	9.28%	1.02	9.46%	66.67%	33.33%	3.15%	4.09%
10	NextEra Energy, Inc.	$7.00	$11.50	$85.50	3.66%	13.45%	1.02	13.69%	60.87%	39.13%	5.36%	10.26%
11	NorthWestern Corporation	$2.70	$4.00	$45.00	3.12%	8.89%	1.02	9.03%	67.50%	32.50%	2.93%	3.21%
12	OGE Energy Corp.	$1.90	$2.75	$23.50	3.22%	11.70%	1.02	11.89%	69.09%	30.91%	3.67%	3.71%
13	Otter Tail Corporation	$1.65	$2.50	$23.25	4.81%	10.75%	1.02	11.01%	66.00%	34.00%	3.74%	5.73%
14	Pinnacle West Capital Corporation	$3.80	$5.75	$55.75	3.66%	10.31%	1.02	10.50%	66.09%	33.91%	3.56%	3.91%
15	PNM Resources, Inc.	$1.50	$2.50	$26.50	4.56%	9.43%	1.02	9.64%	60.00%	40.00%	3.86%	5.70%
16	Portland General Electric Company	$1.95	$3.00	$32.50	2.97%	9.23%	1.01	9.37%	65.00%	35.00%	3.28%	3.44%
17	Southern Company	$2.78	$3.75	$30.25	4.81%	12.40%	1.02	12.69%	74.13%	25.87%	3.28%	4.89%
18	WEC Energy Group, Inc.	$3.00	$4.50	$36.75	3.45%	12.24%	1.02	12.45%	66.67%	33.33%	4.15%	4.15%
19	Xcel Energy Inc.	$2.05	$3.25	$30.25	4.93%	10.74%	1.02	11.00%	63.08%	36.92%	4.06%	5.08%
20	**Average**	**$2.80**	**$4.29**	**$42.02**	**4.03%**	**10.27%**	**1.02**	**10.48%**	**65.71%**	**34.29%**	**3.60%**	**4.76%**
21	**Median**											**4.15%**

Sources and Notes:
Cols. (1), (2) and (3): *The Value Line Investment Survey* , August 16, September 13, and October 25, 2019.
Col. (4): [Col. (3) / Page 2 Col. (2)] ^ (1/number of years projected) - 1.
Col. (5): Col. (2) / Col. (3).
Col. (6): [2 * (1 + Col. (4))] / (2 + Col. (4)).
Col. (7): Col. (6) * Col. (5).
Col. (8): Col. (1) / Col. (2).
Col. (9): 1 - Col. (8).
Col. (10): Col. (9) * Col. (7).
Col. (11): Col. (10) + Page 2 Col. (9).

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Sustainable Growth Rate

Line	Company	13-Week Average Stock Price[1] (1)	2018 Book Value Per Share[2] (2)	Market to Book Ratio (3)	Common Shares Outstanding (in Millions)[2] 2018 (4)	Common Shares Outstanding (in Millions)[2] 3-5 Years (5)	Growth (6)	S Factor[3] (7)	V Factor[4] (8)	S * V (9)
1	ALLETE, Inc.	$86.14	$41.86	2.06	51.50	51.75	0.10%	0.20%	51.40%	0.10%
2	Alliant Energy Corporation	$52.47	$19.43	2.70	236.06	250.00	1.15%	3.12%	62.97%	1.96%
3	American Electric Power Company, Inc.	$92.03	$38.58	2.39	493.25	518.00	0.98%	2.35%	58.08%	1.36%
4	Avangrid, Inc.	$50.37	$48.88	1.03	309.01	309.00	- 0.00%	- 0.00%	2.97%	- 0.00%
5	CMS Energy Corporation	$62.65	$16.78	3.73	283.37	297.00	0.94%	3.52%	73.21%	2.58%
6	DTE Energy Company	$129.40	$56.27	2.30	181.93	200.00	1.91%	4.40%	56.52%	2.48%
7	Duke Energy Corporation	$93.48	$60.27	1.55	727.00	755.00	0.76%	1.18%	35.53%	0.42%
8	Evergy, Inc.	$64.39	$39.28	1.64	255.33	212.00	- 3.65%	- 5.99%	39.00%	- 2.33%
9	Hawaiian Electric Industries, Inc.	$44.66	$19.86	2.25	108.88	113.00	0.75%	1.68%	55.54%	0.93%
10	NextEra Energy, Inc.	$225.09	$71.43	3.15	478.00	535.00	2.28%	7.18%	68.27%	4.90%
11	NorthWestern Corporation	$72.85	$38.60	1.89	50.32	51.10	0.31%	0.58%	47.01%	0.27%
12	OGE Energy Corp.	$43.46	$20.06	2.17	199.70	200.00	0.03%	0.07%	53.85%	0.04%
13	Otter Tail Corporation	$52.96	$18.38	2.88	39.66	41.80	1.06%	3.04%	65.30%	1.99%
14	Pinnacle West Capital Corporation	$94.60	$46.59	2.03	112.10	114.00	0.34%	0.68%	50.75%	0.35%
15	PNM Resources, Inc.	$50.98	$21.20	2.40	79.65	85.00	1.31%	3.15%	58.42%	1.84%
16	Portland General Electric Company	$56.32	$28.07	2.01	89.27	90.00	0.16%	0.33%	50.16%	0.16%
17	Southern Company	$59.98	$23.92	2.51	1,033.80	1,090.00	1.06%	2.67%	60.12%	1.60%
18	WEC Energy Group, Inc.	$92.85	$31.02	2.99	315.52	315.50	- 0.00%	- 0.00%	66.59%	- 0.00%
19	Xcel Energy Inc.	$63.39	$23.78	2.67	514.04	530.00	0.61%	1.64%	62.49%	1.02%
20	**Average**	**$78.32**	**$34.96**	**2.33**	**292.55**	**303.06**	**0.86%**	**2.24%**	**53.59%**	**1.38%**

Sources and Notes:

[1] S&P Global Market Intelligence, Downloaded on November 12, 2019.

[2] *The Value Line Investment Survey* , August 16, September 13, and October 25, 2019.

[3] Expected Growth in the Number of Shares, Column (3) * Column (6).

[4] Expected Profit of Stock Investment, [1 - 1 / Column (3)].

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Constant Growth DCF Model
(Sustainable Growth Rate)

Line	Company	13-Week AVG Stock Price[1] (1)	Sustainable Growth[2] (2)	Annualized Dividend[3] (3)	Adjusted Yield (4)	Constant Growth DCF (5)
1	ALLETE, Inc.	$86.14	3.54%	$2.35	2.82%	6.36%
2	Alliant Energy Corporation	$52.47	5.94%	$1.42	2.87%	8.81%
3	American Electric Power Company, Inc.	$92.03	4.80%	$2.68	3.05%	7.85%
4	Avangrid, Inc.	$50.37	2.20%	$1.76	3.57%	5.77%
5	CMS Energy Corporation	$62.65	7.88%	$1.53	2.63%	10.51%
6	DTE Energy Company	$129.40	6.61%	$3.78	3.11%	9.72%
7	Duke Energy Corporation	$93.48	2.92%	$3.78	4.16%	7.09%
8	Evergy, Inc.	$64.39	2.42%	$1.90	3.02%	5.45%
9	Hawaiian Electric Industries, Inc.	$44.66	4.09%	$1.28	2.98%	7.07%
10	NextEra Energy, Inc.	$225.09	10.26%	$5.00	2.45%	12.71%
11	NorthWestern Corporation	$72.85	3.21%	$2.30	3.26%	6.47%
12	OGE Energy Corp.	$43.46	3.71%	$1.46	3.48%	7.19%
13	Otter Tail Corporation	$52.96	5.73%	$1.40	2.79%	8.52%
14	Pinnacle West Capital Corporation	$94.60	3.91%	$2.95	3.24%	7.15%
15	PNM Resources, Inc.	$50.98	5.70%	$1.16	2.40%	8.10%
16	Portland General Electric Company	$56.32	3.44%	$1.54	2.83%	6.27%
17	Southern Company	$59.98	4.89%	$2.48	4.34%	9.22%
18	WEC Energy Group, Inc.	$92.85	4.15%	$2.36	2.65%	6.80%
19	Xcel Energy Inc.	$63.39	5.08%	$1.62	2.69%	7.77%
20	**Average**	**$78.32**	**4.76%**	**$2.25**	**3.07%**	**7.83%**
21	**Median**					**7.19%**

Sources:
[1] S&P Global Market Intelligence, Downloaded on November 12, 2019.
[2] Schedule CCW-7, page 1.
[3] *The Value Line Investment Survey*, August 16, September 13, and October 25, 2019.

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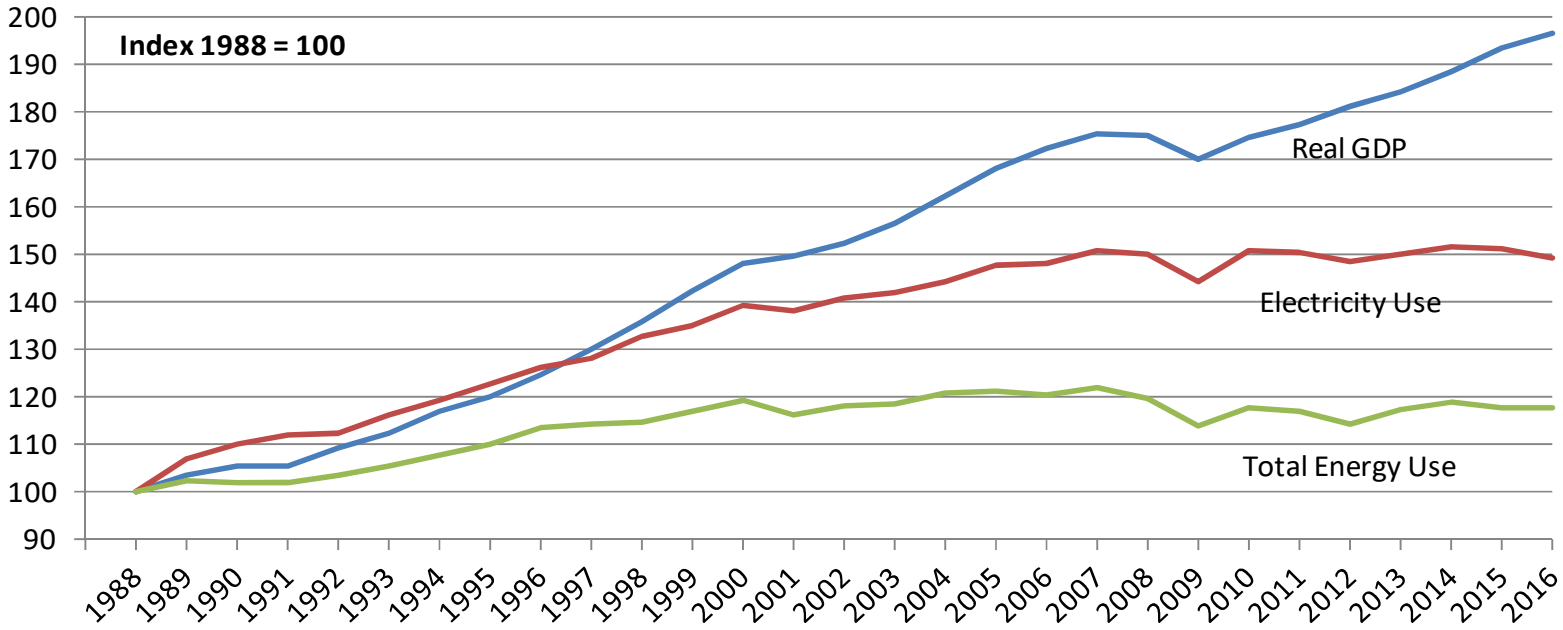
Electricity Sales Are Linked to U.S. Economic Growth



Note:
1988 represents the base year. Graph depicts increases or decreases from the base year.

Sources:
U.S. Energy Information Administration
Federal Reserve Bank of St. Louis

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Multi-Stage Growth DCF Model

Line	Company	13-Week AVG Stock Price[1] (1)	Annualized Dividend[2] (2)	First Stage Growth[3] (3)	Second Stage Growth Year 6 (4)	Year 7 (5)	Year 8 (6)	Year 9 (7)	Year 10 (8)	Third Stage Growth[4] (9)	Multi-Stage Growth DCF (10)
1	ALLETE, Inc.	$86.14	$2.35	7.09%	6.59%	6.09%	5.60%	5.10%	4.60%	4.10%	7.54%
2	Alliant Energy Corporation	$52.47	$1.42	5.48%	5.25%	5.02%	4.79%	4.56%	4.33%	4.10%	7.17%
3	American Electric Power Company, Inc.	$92.03	$2.68	5.75%	5.47%	5.20%	4.92%	4.65%	4.37%	4.10%	7.47%
4	Avangrid, Inc.	$50.37	$1.76	6.82%	6.36%	5.91%	5.46%	5.01%	4.55%	4.10%	8.41%
5	CMS Energy Corporation	$62.65	$1.53	6.90%	6.44%	5.97%	5.50%	5.03%	4.57%	4.10%	7.14%
6	DTE Energy Company	$129.40	$3.78	5.29%	5.09%	4.89%	4.69%	4.50%	4.30%	4.10%	7.38%
7	Duke Energy Corporation	$93.48	$3.78	4.40%	4.35%	4.30%	4.25%	4.20%	4.15%	4.10%	8.39%
8	Evergy, Inc.	$64.39	$1.90	7.43%	6.87%	6.32%	5.76%	5.21%	4.65%	4.10%	7.89%
9	Hawaiian Electric Industries, Inc.	$44.66	$1.28	4.39%	4.34%	4.30%	4.25%	4.20%	4.15%	4.10%	7.13%
10	NextEra Energy, Inc.	$225.09	$5.00	7.93%	7.29%	6.66%	6.02%	5.38%	4.74%	4.10%	7.06%
11	NorthWestern Corporation	$72.85	$2.30	3.10%	3.26%	3.43%	3.60%	3.77%	3.93%	4.10%	7.17%
12	OGE Energy Corp.	$43.46	$1.46	4.35%	4.31%	4.27%	4.23%	4.18%	4.14%	4.10%	7.65%
13	Otter Tail Corporation	$52.96	$1.40	7.80%	7.18%	6.57%	5.95%	5.33%	4.72%	4.10%	7.58%
14	Pinnacle West Capital Corporation	$94.60	$2.95	5.51%	5.28%	5.04%	4.81%	4.57%	4.34%	4.10%	7.65%
15	PNM Resources, Inc.	$50.98	$1.16	5.96%	5.65%	5.34%	5.03%	4.72%	4.41%	4.10%	6.76%
16	Portland General Electric Company	$56.32	$1.54	4.51%	4.44%	4.37%	4.30%	4.24%	4.17%	4.10%	7.01%
17	Southern Company	$59.98	$2.48	3.03%	3.21%	3.39%	3.57%	3.74%	3.92%	4.10%	8.12%
18	WEC Energy Group, Inc.	$92.85	$2.36	6.14%	5.80%	5.46%	5.12%	4.78%	4.44%	4.10%	7.11%
19	Xcel Energy Inc.	$63.39	$1.62	5.30%	5.10%	4.90%	4.70%	4.50%	4.30%	4.10%	6.97%
20	**Average**	**$78.32**	**$2.25**	**5.64%**	**5.38%**	**5.13%**	**4.87%**	**4.61%**	**4.36%**	**4.10%**	**7.45%**
21	**Median**										**7.38%**

Sources:
[1] S&P Global Market Intelligence, Downloaded on November 12, 2019.
[2] *The Value Line Investment Survey*, August 16, September 13, and October 25, 2019.
[3] Schedule CCW-4.
[4] *Blue Chip Economic Indicators*, October 10, 2019 at 14.

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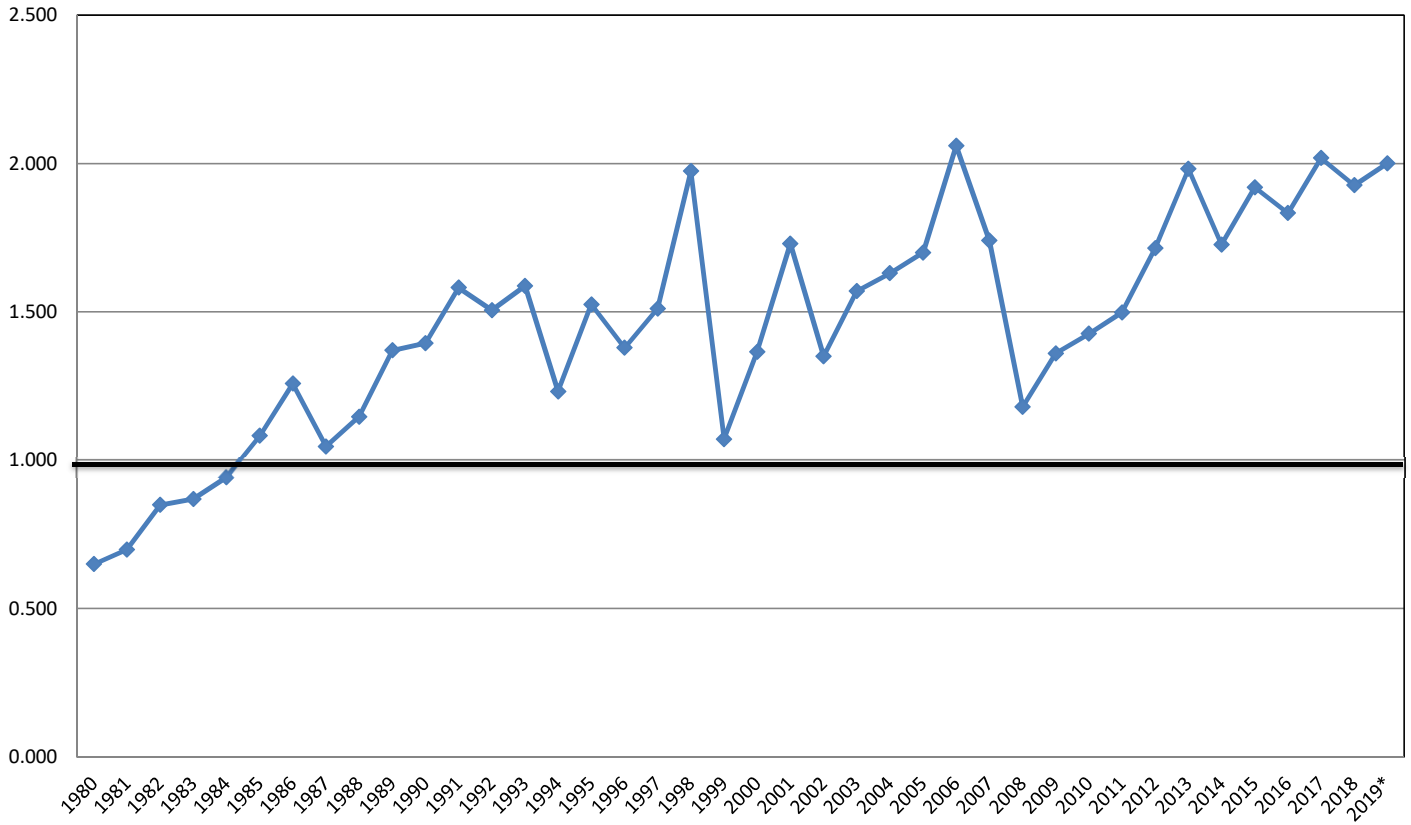
Common Stock Market/Book Ratio



Source:

1980 - 2000: Mergent Public Utility Manual.

2001 - 2015: AUS Utility Reports, multiple dates.

2016 - 2018: Value Line Investment Survey, multiple dates.

* Value Line Investment Survey Reports, August 16, August 30, September 13, and October 25, 2019.

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Equity Risk Premium - Treasury Bond

Line	Year	Authorized Electric Returns[1] (1)	30 yr. Treasury Bond Yield[2] (2)	Indicated Risk Premium (3)	Rolling 5 - Year Average (4)	Rolling 10 - Year Average (5)
1	1986	13.93%	7.80%	6.13%		
2	1987	12.99%	8.58%	4.41%		
3	1988	12.79%	8.96%	3.83%		
4	1989	12.97%	8.45%	4.52%		
5	1990	12.70%	8.61%	4.09%	4.60%	
6	1991	12.55%	8.14%	4.41%	4.25%	
7	1992	12.09%	7.67%	4.42%	4.26%	
8	1993	11.41%	6.60%	4.81%	4.45%	
9	1994	11.34%	7.37%	3.97%	4.34%	
10	1995	11.55%	6.88%	4.67%	4.46%	4.53%
11	1996	11.39%	6.70%	4.69%	4.51%	4.38%
12	1997	11.40%	6.61%	4.79%	4.59%	4.42%
13	1998	11.66%	5.58%	6.08%	4.84%	4.65%
14	1999	10.77%	5.87%	4.90%	5.03%	4.68%
15	2000	11.43%	5.94%	5.49%	5.19%	4.82%
16	2001	11.09%	5.49%	5.60%	5.37%	4.94%
17	2002	11.16%	5.43%	5.73%	5.56%	5.07%
18	2003	10.97%	4.96%	6.01%	5.55%	5.19%
19	2004	10.75%	5.05%	5.70%	5.71%	5.37%
20	2005	10.54%	4.65%	5.89%	5.79%	5.49%
21	2006	10.34%	4.90%	5.44%	5.76%	5.56%
22	2007	10.31%	4.83%	5.48%	5.71%	5.63%
23	2008	10.37%	4.28%	6.09%	5.72%	5.63%
24	2009	10.52%	4.07%	6.45%	5.87%	5.79%
25	2010	10.29%	4.25%	6.04%	5.90%	5.84%
26	2011	10.19%	3.91%	6.28%	6.07%	5.91%
27	2012	10.01%	2.92%	7.09%	6.39%	6.05%
28	2013	9.81%	3.45%	6.36%	6.44%	6.08%
29	2014	9.75%	3.34%	6.41%	6.44%	6.15%
30	2015	9.60%	2.84%	6.76%	6.58%	6.24%
31	2016	9.60%	2.60%	7.00%	6.72%	6.40%
32	2017	9.68%	2.90%	6.79%	6.66%	6.53%
33	2018	9.55%	3.11%	6.44%	6.68%	6.56%
34	2019 [3]	9.57%	2.69%	6.88%	6.77%	6.60%
35	**Average**	**11.03%**	**5.45%**	**5.58%**	**5.54%**	**5.54%**
36	**Minimum**				**4.25%**	**4.38%**
37	**Maximum**				**6.77%**	**6.60%**

Sources:

[1] *Regulatory Research Associates, Inc*., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 pg. 5, and Jan. 2011 pg. 3.
S&P Global Market Intelligence, RRA Regulatory Focus, Major Rate Case Decisions, January- September 2019, October 17, 20
2006 - 2019 Authorized Returns exclude limited issue rider cases.

[2] St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/.
The yields from 2002 to 2005 represent the 20-Year Treasury yields obtained from the Federal Reserve Bank.

[3] Data includes January - September, 2019.

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Equity Risk Premium - Utility Bond

Line	Year	Authorized Electric Returns[1] (1)	Average "A" Rated Utility Bond Yield[2] (2)	Indicated Risk Premium (3)	Rolling 5 - Year Average (4)	Rolling 10 - Year Average (5)
1	1986	13.93%	9.58%	4.35%		
2	1987	12.99%	10.10%	2.89%		
3	1988	12.79%	10.49%	2.30%		
4	1989	12.97%	9.77%	3.20%		
5	1990	12.70%	9.86%	2.84%	3.12%	
6	1991	12.55%	9.36%	3.19%	2.88%	
7	1992	12.09%	8.69%	3.40%	2.99%	
8	1993	11.41%	7.59%	3.82%	3.29%	
9	1994	11.34%	8.31%	3.03%	3.26%	
10	1995	11.55%	7.89%	3.66%	3.42%	3.27%
11	1996	11.39%	7.75%	3.64%	3.51%	3.20%
12	1997	11.40%	7.60%	3.80%	3.59%	3.29%
13	1998	11.66%	7.04%	4.62%	3.75%	3.52%
14	1999	10.77%	7.62%	3.15%	3.77%	3.52%
15	2000	11.43%	8.24%	3.19%	3.68%	3.55%
16	2001	11.09%	7.76%	3.33%	3.62%	3.56%
17	2002	11.16%	7.37%	3.79%	3.61%	3.60%
18	2003	10.97%	6.58%	4.39%	3.57%	3.66%
19	2004	10.75%	6.16%	4.59%	3.86%	3.82%
20	2005	10.54%	5.65%	4.89%	4.20%	3.94%
21	2006	10.34%	6.07%	4.27%	4.39%	4.00%
22	2007	10.31%	6.07%	4.24%	4.48%	4.04%
23	2008	10.37%	6.53%	3.84%	4.37%	3.97%
24	2009	10.52%	6.04%	4.48%	4.34%	4.10%
25	2010	10.29%	5.47%	4.82%	4.33%	4.26%
26	2011	10.19%	5.04%	5.15%	4.51%	4.45%
27	2012	10.01%	4.13%	5.88%	4.83%	4.66%
28	2013	9.81%	4.48%	5.33%	5.13%	4.75%
29	2014	9.75%	4.28%	5.47%	5.33%	4.84%
30	2015	9.60%	4.12%	5.48%	5.46%	4.90%
31	2016	9.60%	3.93%	5.67%	5.57%	5.04%
32	2017	9.68%	4.00%	5.68%	5.53%	5.18%
33	2018	9.55%	4.25%	5.30%	5.52%	5.33%
34	2019 [3]	9.57%	3.89%	5.68%	5.56%	5.45%
35	**Average**	**11.03%**	**6.81%**	**4.22%**	**4.18%**	**4.15%**
36	**Minimum**				**2.88%**	**3.20%**
37	**Maximum**				**5.57%**	**5.45%**

Sources:

[1] *Regulatory Research Associates, Inc*., Regulatory Focus, Major Rate Case Decisions, Jan. 1997 pg. 5, and Jan. 2011 pg. 3. *S&P Global Market Intelligence*, RRA Regulatory Focus, Major Rate Case Decisions, January- September 2019, October 17, 2006 - 2019 Authorized Returns exclude limited issue rider cases.

[2] Mergent Public Utility Manual, Mergent Weekly News Reports, 2003.
The utility yields for the period 2001-2009 were obtained from the Mergent Bond Record.
The utility yields from 2010-2019 were obtained from http://credittrends.moodys.com/.

[3] Data includes January - September, 2019.

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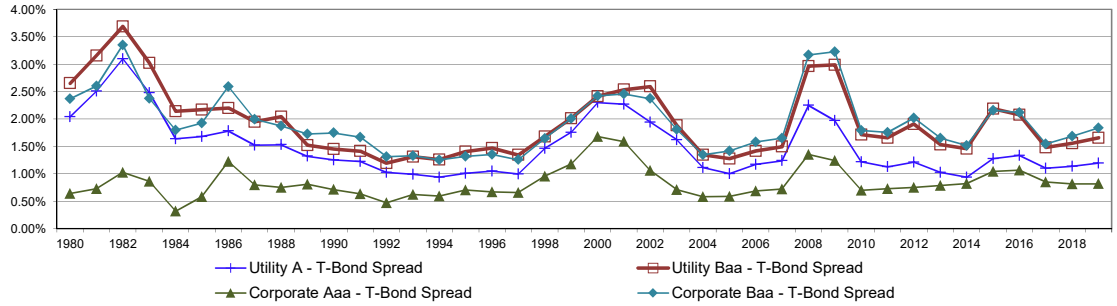
Bond Yield Spreads

Line	Year	T-Bond Yield[1] (1)	Public Utility Bond A[2] (2)	Public Utility Bond Baa[2] (3)	Public Utility Bond A-T-Bond Spread (4)	Public Utility Bond Baa-T-Bond Spread (5)	Corporate Bond Aaa[3] (6)	Corporate Bond Baa[3] (7)	Corporate Bond Aaa-T-Bond Spread (8)	Corporate Bond Baa-T-Bond Spread (9)	Utility to Corporate Baa Spread (10)	Utility to Corporate A-Aaa Spread (11)
1	1980	11.30%	13.34%	13.95%	2.04%	2.65%	11.94%	13.67%	0.64%	2.37%	0.28%	1.40%
2	1981	13.44%	15.95%	16.60%	2.51%	3.16%	14.17%	16.04%	0.73%	2.60%	0.56%	1.78%
3	1982	12.76%	15.86%	16.45%	3.10%	3.69%	13.79%	16.11%	1.03%	3.35%	0.34%	2.07%
4	1983	11.18%	13.66%	14.20%	2.48%	3.02%	12.04%	13.55%	0.86%	2.38%	0.65%	1.62%
5	1984	12.39%	14.03%	14.53%	1.64%	2.14%	12.71%	14.19%	0.32%	1.80%	0.34%	1.32%
6	1985	10.79%	12.47%	12.96%	1.68%	2.17%	11.37%	12.72%	0.58%	1.93%	0.24%	1.10%
7	1986	7.80%	9.58%	10.00%	1.78%	2.20%	9.02%	10.39%	1.22%	2.59%	-0.39%	0.56%
8	1987	8.58%	10.10%	10.53%	1.52%	1.95%	9.38%	10.58%	0.80%	2.00%	-0.05%	0.72%
9	1988	8.96%	10.49%	11.00%	1.53%	2.04%	9.71%	10.83%	0.75%	1.87%	0.17%	0.78%
10	1989	8.45%	9.77%	9.97%	1.32%	1.52%	9.26%	10.18%	0.81%	1.73%	-0.21%	0.51%
11	1990	8.61%	9.86%	10.06%	1.25%	1.45%	9.32%	10.36%	0.71%	1.75%	-0.30%	0.54%
12	1991	8.14%	9.36%	9.55%	1.22%	1.41%	8.77%	9.80%	0.63%	1.67%	-0.25%	0.59%
13	1992	7.67%	8.69%	8.86%	1.02%	1.19%	8.14%	8.98%	0.47%	1.31%	-0.12%	0.55%
14	1993	6.60%	7.59%	7.91%	0.99%	1.31%	7.22%	7.93%	0.62%	1.33%	-0.02%	0.37%
15	1994	7.37%	8.31%	8.63%	0.94%	1.26%	7.96%	8.62%	0.59%	1.25%	0.01%	0.35%
16	1995	6.88%	7.89%	8.29%	1.01%	1.41%	7.59%	8.20%	0.71%	1.32%	0.09%	0.30%
17	1996	6.70%	7.75%	8.17%	1.05%	1.47%	7.37%	8.05%	0.67%	1.35%	0.12%	0.38%
18	1997	6.61%	7.60%	7.95%	0.99%	1.34%	7.26%	7.86%	0.66%	1.26%	0.09%	0.34%
19	1998	5.58%	7.04%	7.26%	1.46%	1.68%	6.53%	7.22%	0.95%	1.64%	0.04%	0.51%
20	1999	5.87%	7.62%	7.88%	1.75%	2.01%	7.04%	7.87%	1.18%	2.01%	0.01%	0.58%
21	2000	5.94%	8.24%	8.36%	2.30%	2.42%	7.62%	8.36%	1.68%	2.42%	-0.01%	0.62%
22	2001	5.49%	7.76%	8.03%	2.27%	2.54%	7.08%	7.95%	1.59%	2.45%	0.08%	0.68%
23	2002	5.43%	7.37%	8.02%	1.94%	2.59%	6.49%	7.80%	1.06%	2.37%	0.22%	0.88%
24	2003	4.96%	6.58%	6.84%	1.62%	1.89%	5.67%	6.77%	0.71%	1.81%	0.08%	0.91%
25	2004	5.05%	6.16%	6.40%	1.11%	1.35%	5.63%	6.39%	0.58%	1.35%	0.00%	0.53%
26	2005	4.65%	5.65%	5.93%	1.00%	1.28%	5.24%	6.06%	0.59%	1.42%	-0.14%	0.41%
27	2006	4.90%	6.07%	6.32%	1.17%	1.42%	5.59%	6.48%	0.69%	1.58%	-0.16%	0.48%
28	2007	4.83%	6.07%	6.33%	1.24%	1.50%	5.56%	6.48%	0.72%	1.65%	-0.15%	0.52%
29	2008	4.28%	6.53%	7.25%	2.25%	2.97%	5.63%	7.45%	1.35%	3.17%	-0.20%	0.90%
30	2009	4.07%	6.04%	7.06%	1.97%	2.99%	5.31%	7.30%	1.24%	3.23%	-0.24%	0.73%
31	2010	4.25%	5.47%	5.96%	1.22%	1.71%	4.95%	6.04%	0.70%	1.79%	-0.08%	0.52%
32	2011	3.91%	5.04%	5.57%	1.13%	1.66%	4.64%	5.67%	0.73%	1.76%	-0.10%	0.40%
33	2012	2.92%	4.13%	4.83%	1.21%	1.90%	3.67%	4.94%	0.75%	2.02%	-0.11%	0.46%
34	2013	3.45%	4.48%	4.98%	1.03%	1.53%	4.24%	5.10%	0.79%	1.65%	-0.12%	0.24%
35	2014	3.34%	4.28%	4.80%	0.94%	1.46%	4.16%	4.86%	0.82%	1.52%	-0.06%	0.12%
36	2015	2.84%	4.12%	5.03%	1.27%	2.19%	3.89%	5.00%	1.05%	2.16%	0.03%	0.23%
37	2016	2.60%	3.93%	4.67%	1.33%	2.08%	3.66%	4.71%	1.07%	2.12%	-0.04%	0.27%
38	2017	2.90%	4.00%	4.38%	1.10%	1.48%	3.74%	4.44%	0.85%	1.55%	-0.06%	0.26%
39	2018	3.11%	4.25%	4.67%	1.14%	1.56%	3.93%	4.80%	0.82%	1.69%	-0.13%	0.32%
40	2019[4]	2.69%	3.89%	4.35%	1.20%	1.66%	3.51%	4.53%	0.82%	1.84%	-0.18%	0.38%
41	**Average**	**6.43%**	**7.93%**	**8.36%**	**1.49%**	**1.93%**	**7.27%**	**8.36%**	**0.84%**	**1.93%**	**0.01%**	**0.66%**

Yield Spreads

Treasury Vs. Corporate & Treasury Vs. Utility



Sources:

[1] St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/.

[2] The utility yields for the period 1980-2000 were obtained from Mergent Public Utility Manual, Mergent Weekly News Reports, 2003.
The utility yields for the period 2001-2009 were obtained from the Mergent Bond Record.
The utility yields for the period 2010-2019 were obtained from http://credittrends.moodys.com/.

[3] The corporate yields for the period 1980-2009 were obtained from the St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/.
The corporate yields from 2010-2019 were obtained from http://credittrends.moodys.com/.

[4] Data includes January - September, 2019.

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Treasury and Utility Bond Yields

Line	Date	Treasury Bond Yield[1] (1)	"A" Rated Utility Bond Yield[2] (2)	"Baa" Rated Utility Bond Yield[2] (3)
1	11/01/19	2.21%	3.36%	3.70%
2	10/25/19	2.29%	3.44%	3.77%
3	10/18/19	2.25%	3.43%	3.77%
4	10/11/19	2.22%	3.43%	3.77%
5	10/04/19	2.01%	3.26%	3.60%
6	09/27/19	2.13%	3.35%	3.68%
7	09/20/19	2.17%	3.41%	3.75%
8	09/13/19	2.37%	3.57%	3.92%
9	09/06/19	2.02%	3.24%	3.58%
10	08/30/19	1.96%	3.19%	3.53%
11	08/23/19	2.02%	3.23%	3.56%
12	08/16/19	2.01%	3.23%	3.55%
13	08/09/19	2.26%	3.38%	3.71%
14	**Average**	**2.15%**	**3.35%**	**3.68%**
15	**Spread To Treasury**		**1.20%**	**1.53%**

Sources:

[1] St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org.

[2] http://credittrends.moodys.com/.

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Treasury and Utility Bond Yields

Line	Date	Treasury Bond Yield[1] (1)	"A" Rated Utility Bond Yield[2] (2)	"Baa" Rated Utility Bond Yield[2] (3)
1	11/01/19	2.21%	3.36%	3.70%
2	10/25/19	2.29%	3.44%	3.77%
3	10/18/19	2.25%	3.43%	3.77%
4	10/11/19	2.22%	3.43%	3.77%
5	10/04/19	2.01%	3.26%	3.60%
6	09/27/19	2.13%	3.35%	3.68%
7	09/20/19	2.17%	3.41%	3.75%
8	09/13/19	2.37%	3.57%	3.92%
9	09/06/19	2.02%	3.24%	3.58%
10	08/30/19	1.96%	3.19%	3.53%
11	08/23/19	2.02%	3.23%	3.56%
12	08/16/19	2.01%	3.23%	3.55%
13	08/09/19	2.26%	3.38%	3.71%
14	08/02/19	2.39%	3.47%	3.81%
15	07/26/19	2.59%	3.68%	4.01%
16	07/19/19	2.57%	3.69%	4.18%
17	07/12/19	2.64%	3.76%	4.24%
18	07/05/19	2.54%	3.72%	4.19%
19	06/28/19	2.52%	3.72%	4.19%
20	06/21/19	2.59%	3.80%	4.30%
21	06/14/19	2.59%	3.86%	4.36%
22	06/07/19	2.57%	3.84%	4.35%
23	05/31/19	2.58%	3.83%	4.33%
24	05/24/19	2.75%	3.95%	4.47%
25	05/17/19	2.82%	3.99%	4.48%
26	05/10/19	2.89%	4.01%	4.51%
27	**Average**	**2.38%**	**3.57%**	**3.97%**
28	**Spread To Treasury**		**1.19%**	**1.59%**

Sources:

[1] St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org.

[2] http://credittrends.moodys.com/.

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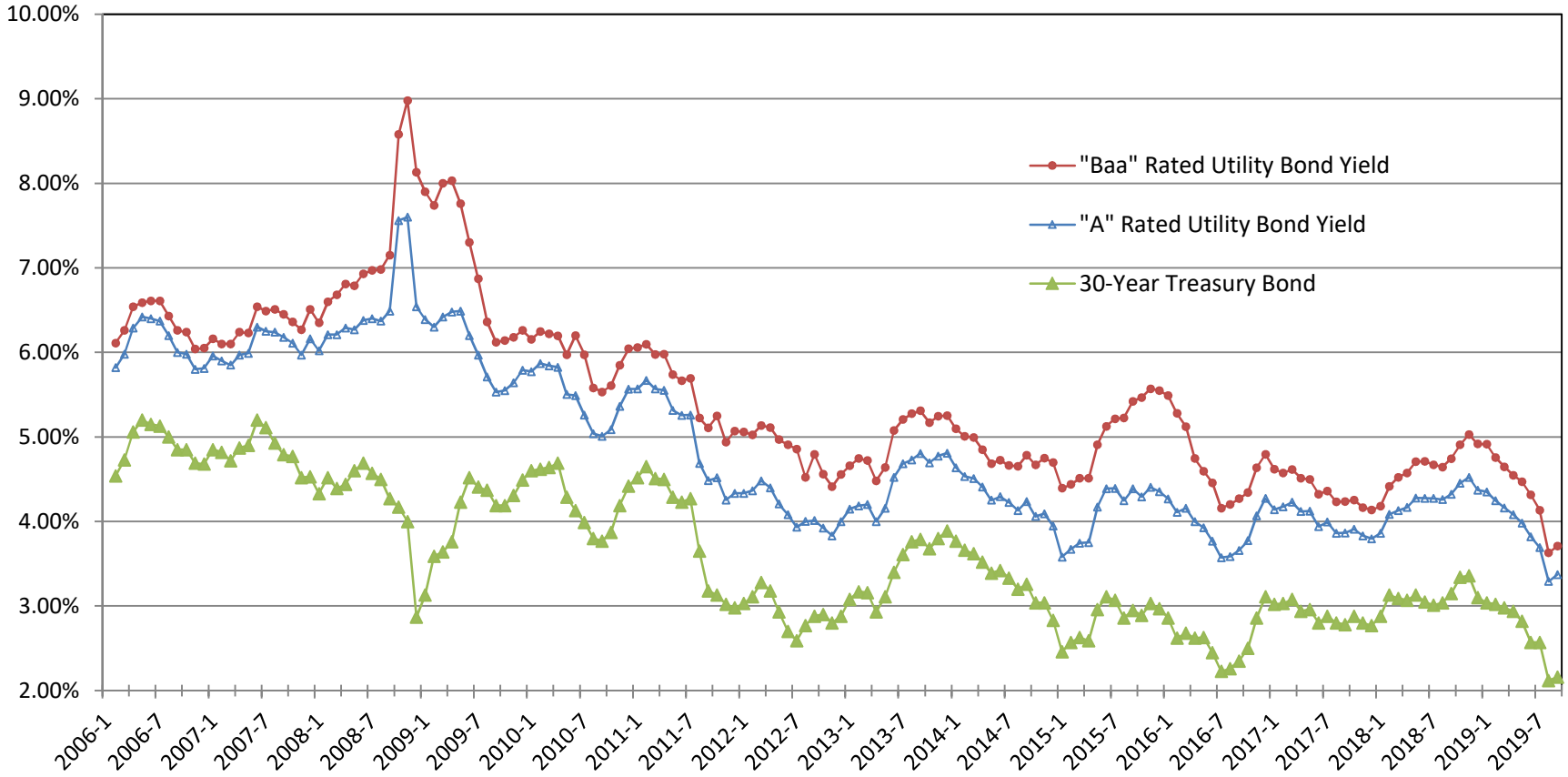
Trends in Bond Yields



Sources:
Mergent Bond Record.
www.moodys.com, Bond Yields and Key Indicators.
St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/

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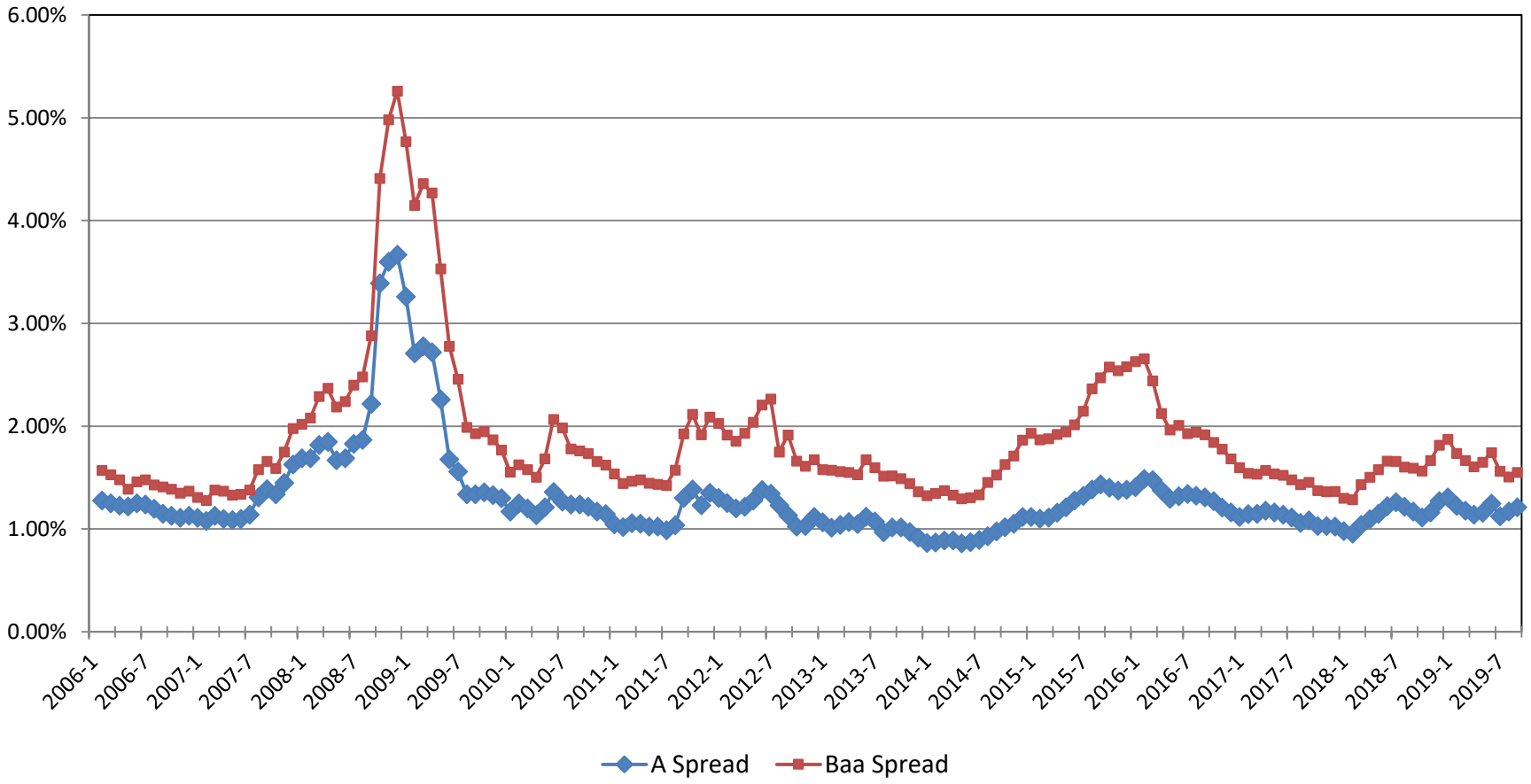
Yield Spread Between Utility Bonds and 30-Year Treasury Bonds



Sources:
Mergent Bond Record.
www.moodys.com, Bond Yields and Key Indicators.
St. Louis Federal Reserve: Economic Research, http://research.stlouisfed.org/

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Value Line Beta

Line	Company	Beta
1	ALLETE, Inc.	0.65
2	Alliant Energy Corporation	0.60
3	American Electric Power Company, Inc.	0.55
4	Avangrid, Inc.	0.40
5	CMS Energy Corporation	0.55
6	DTE Energy Company	0.55
7	Duke Energy Corporation	0.50
8	Evergy, Inc.	NMF
9	Hawaiian Electric Industries, Inc.	0.55
10	NextEra Energy, Inc.	0.55
11	NorthWestern Corporation	0.60
12	OGE Energy Corp.	0.80
13	Otter Tail Corporation	0.65
14	Pinnacle West Capital Corporation	0.55
15	PNM Resources, Inc.	0.60
16	Portland General Electric Company	0.60
17	Southern Company	0.50
18	WEC Energy Group, Inc.	0.50
19	Xcel Energy Inc.	0.50
20	**Average**	**0.57**
21	**Median**	**0.55**
22	**Historical Beta[2]**	**0.68**

Source:

[1] *The Value Line Investment Survey,* August 16, September 13, and October 25, 2019.

[2] Schedule CCW-16 page 2.

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Historical Betas
(Electric Utilities)

Line	Company	Average	2Q19	1Q19	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17	2Q17	1Q17	4Q16	3Q16	2Q16	1Q16	4Q15	3Q15	2Q15	1Q15	4Q14	3Q14
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1	ALLETE, Inc.	0.76	0.65	0.65	0.65	0.70	0.75	0.75	0.80	0.75	0.80	0.80	0.75	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80
2	Alliant Energy Corporation	0.73	0.60	0.65	0.60	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80
3	American Electric Power Company, Inc.	0.65	0.55	0.55	0.55	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
4	Avangrid, Inc.	0.36	0.40	0.40	0.30	0.30	0.40	0.35	NMF	NMF	NMF	NMF	NMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	CMS Energy Corporation	0.66	0.55	0.55	0.55	0.55	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.75	0.75	0.70	0.75	0.75	0.70	0.75
6	DTE Energy Company	0.67	0.55	0.55	0.55	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.75	0.75	0.75	0.75	0.75	0.75	0.75
7	Duke Energy Corporation	0.58	0.50	0.50	0.55	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.50	0.60	0.60	0.60	0.60	0.60
8	Evergy, Inc.	N/A	NMF	NMF	NMF	NMF	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
9	Hawaiian Electric Industries, Inc.	0.72	0.60	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.75
10	NextEra Energy, Inc.	0.67	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.70	0.75	0.70	0.75	0.70	0.70	0.70
11	NorthWestern Corporation	0.68	0.60	0.55	0.60	0.65	0.65	0.70	0.70	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.70	0.70	0.70	0.70
12	OGE Energy Corp.	0.91	0.80	0.85	0.85	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.90	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.90	0.85
13	Otter Tail Corporation	0.85	0.70	0.70	0.75	0.80	0.85	0.85	0.90	0.90	0.90	0.85	0.85	0.85	0.80	0.85	0.85	0.85	0.90	0.90	0.90	0.95
14	Pinnacle West Capital Corporation	0.68	0.55	0.55	0.60	0.65	0.65	0.70	0.70	0.65	0.70	0.70	0.70	0.70	0.75	0.75	0.75	0.70	0.70	0.70	0.70	0.70
15	PNM Resources, Inc.	0.77	0.65	0.65	0.60	0.75	0.70	0.75	0.75	0.75	0.70	0.75	0.75	0.80	0.80	0.80	0.85	0.85	0.85	0.85	0.85	0.85
16	Portland General Electric Company	0.72	0.60	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.75
17	Southern Company	0.56	0.50	0.50	0.50	0.50	0.55	0.65	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.60	0.60	0.55	0.60	0.55	0.55	0.60
18	WEC Energy Group, Inc.	0.62	0.50	0.55	0.50	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.70	0.70	0.70	0.70	0.65	0.65	0.65
19	Xcel Energy Inc.	0.61	0.50	0.50	0.55	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.70	0.65
20	**Average**	0.68	0.58	0.58	0.58	0.63	0.66	0.68	0.70	0.69	0.69	0.69	0.69	0.71	0.72	0.75	0.75	0.74	0.75	0.74	0.74	0.74

Source: Value Line Software Analyzer

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CAPM Return

Line	Description	Risk Premium[2] Derived MRP (1)	FERC 2-Step DCF[3] Derived MRP (2)	DCF[3] Derived MRP (3)
	Current Beta			
1	Risk-Free Rate[1]	2.50%	2.50%	2.50%
2	Market Risk Premium	8.50%	8.10%	10.30%
3	Beta[4]	0.57	0.57	0.57
4	**CAPM**	**7.32%**	**7.09%**	**8.34%**
	Historical Beta			
5	Risk-Free Rate[1]	2.50%	2.50%	2.50%
6	Market Risk Premium	8.50%	8.10%	10.30%
7	Historical Beta[4]	0.68	0.68	0.68
8	**CAPM**	**8.25%**	**7.98%**	**9.47%**

Sources:

[1] *Blue Chip Financial Forecasts*, November 1, 2019, at 2.

[2] *Duff & Phelps, 2019 SBBI Yearbook* at 6-18.

[3] *State Street Global Advisors, downloaded 11/12/2019.*

[4] Schedule CCW-16, page 1.

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Development of the Market Risk Premium

Line	Description	MRP	
Risk Premium Based Method:			
1	Lg. Co. Stock Real Market Return	8.80%	[1]
2	Projected Consumer Price Index	2.00%	[2]
3	Expected Market Return	10.98%	
4	Risk-Free Rate	2.50%	[2]
5	Market Risk Premium	**8.50%**	
FERC 2-Step DCF Based Method:			
6	Short-Term S&P 500 Growth	10.70%	[3]
7	Long-Term GDP Growth	4.10%	[4]
8	Blended Growth Rate	8.50%	[5]
9	Index Dividend Yield	1.91%	[3]
10	Adjusted Yield	2.07%	
11	Expected Market Return	10.57%	
12	Risk-Free Rate	2.50%	[2]
13	Market Risk Premium	**8.10%**	
DCF Based Method:			
14	S&P 500 Growth	10.70%	[3]
15	Index Dividend Yield	1.91%	[3]
16	Adjusted Yield	2.11%	
17	Expected Market Return	12.81%	
18	Risk-Free Rate	2.50%	[2]
19	Market Risk Premium	**10.30%**	

Sources & Note:

[1] Duff & Phelps 2019 SBBI Yearbook at 6-18.

[2] Blue Chip Financial Forecasts, November 1, 2019.

[3] State Street Global Advisors, downloaded 11/12/2019.

[4] *Blue Chip Economic Indicators*, October 10, 2019 at 14.

[5] (2/3*10.70%) + (1/3*4.10%) = 8.50%.