

STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

In the matter of

Public Service of New Hampshire (Eversource Energy)

Docket No. DE 19-057

Petition for Permanent Rate Increase

SUPPLEMENTAL TESTIMONY

OF

Dr. Pradip K. Chattopadhyay
Assistant Consumer Advocate

July 16, 2020

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1 **I. INTRODUCTION**

2 **Q. Please state your name, business address and occupation.**

3 A. My name is Pradip K. Chattopadhyay. My business address is 21 South Fruit Street,
4 Suite 18, Concord, New Hampshire. I am employed as the Assistant Consumer Advocate/Rate
5 and Market Policy Director with the New Hampshire Office of the Consumer Advocate (OCA).

6 **Q. What is your educational and professional background?**

7 A. Please see my Direct Testimony in this docket (Bates pages 003-004) for that description.

8 **Q. Have you previously provided testimony before this or any other Commission?**

9 A. Yes. Please see my Direct Testimony in this docket at Bates pages 005-006 for the list of
10 my testimonies before this Commission and references to other testimonies before other
11 Commissions.

12 **Q. What is the purpose of your testimony?**

13 A. The Commission in Order No. 26,363 directed the Company to file updated Return on
14 Equity (ROE) testimony, and ordered that “any party that previously filed Rate of Return or
15 capital structure testimony may update its testimony provided that the testimony is filed no later
16 than 30 days from the date of this order.” In this brief testimony, I am updating my
17 recommendation to reflect current financial market realities. As I rely solely on the Discounted
18 Cash Flow (DCF) approach to inform my point estimate of allowed ROE, the main focus of my
19 analysis is on updating the DCF estimation. I have, however, also updated the CAPM

1 estimations, and provided some thoughts on why I continue to stress that the Commission should
2 rely only on the DCF approach to set the allowed ROE for PSNH.

3 **Q. What is your updated allowed ROE for the company?**

4 A. I am recommending a return of 8.64 percent as a point estimate. Based on my analysis, I
5 am also recommending a range of returns on equity that I consider reasonable for the company,
6 i.e., 8.55 percent to 8.75 percent.

7 **Q. Please discuss how your testimony is organized.**

8 A. As for what follows, Section II discusses the updated DCF estimation of ROE. Section
9 III focuses on my updated CAPM estimation. Section IV concludes with the OCA's updated
10 recommendation on PSNH's allowed ROE. Section V includes the updated schedules that
11 inform the OCA's analysis. Finally, Section VI contains two Attachments.

12
13 **II. UPDATED DCF ESTIMATIONS**

14 **Q. Please confirm that you are still using the Single-Stage DCF model to derive estimates**
15 **for the proxy that you had identified in your direct testimony.**

16 A. I am confirming that. For the description of my proxy selection and screening methods,
17 please see my direct testimony, Bates page 21, Line 15 to Bates page 25, Line 5. I believe that the
18 proxy group selected previously is still soundly reasonable (see Schedules Updated PKC-1 and
19 Updated PKC-2). The equity/debt ratio and the credit rating (which reflects both financial and
20 business risks) of Eversource (PSNH's parent company) indicate that Eversource continues to be
21 less risky than the proxy group.

1 **Q. Do you have any additional observations on the choice of your proxy group?**

2 A. Yes. I would like to respond to an assertion by PSNH witness Ann Bulkley in her rebuttal
3 testimony that OCA has not analyzed financial and business risks; *see* Rebuttal Testimony of Ann
4 E. Bulkley, Bates page 000812, Lines 10-12. Ms.Bulkley's appears to have overlooked that I have
5 analyzed S&P and Moody's credit ratings of the proxy group's constituent companies. Credit
6 ratings by Moody's and S&P encompass considerations of financial risk and business risk.¹ The
7 whole reason behind our discussing credit ratings (*see* my direct testimony, Schedule PKC-1) was
8 indeed to weigh the credit agencies' consideration of financial and business risks and help the
9 OCA to determine the appropriateness of the proxy group. I expect that the credit rating agencies
10 do not take operational and business considerations lightly when assigning credit ratings to utility
11 companies, and the fact that both Moody's and S&P have rated Eversource at the highest of the
12 ratings for any of the proxy group's companies gives me the comfort that the proxy group
13 represents a higher risk level compared to Eversource. Yet, as Ms. Bulkley appears to have
14 overlooked the fact that I have already analyzed credit ratings to judge both financial and business
15 risks, I have, in this testimony, additionally analyzed Earnings Before Interest and Taxes (EBIT)
16 and Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA), which are often
17 used to examine business realities for a company, annually for the period 2015-2019; *see*
18 Attachment A. The data shows that Eversource has EBIT and EBITDA coefficient of variations
19 (CV) that are comfortably lower than that of the proxy group.² Also, the mean plus/minus
20 2*STDEV ranges for EBIT/Interest Expense for the proxy group's companies and Eversource

¹ See S&P's key credit factors for regulated utilities at
https://www.standardandpoors.com/en_US/web/guest/article/-/view/type/HTML/id/2351400

² Coefficient of variation (CV) is defined as the ratio of the standard deviation (STDEV) to the mean. It shows the extent of variability in relation to the mean.

1 show that Eversource is business-wise more attractive for investors than the proxy group.³ That
2 finding conforms to the credit rating agencies' view of Eversource relative to the proxy group.

3 **Q. Please confirm that you are still using the same DCF approach as was laid out in your**
4 **direct testimony.**

5 A. I am confirming that. To facilitate the discussion of the updated estimation, however, I
6 will briefly summarize my method here too. For a theoretical description of the Single-Stage DCF
7 method, I would respectfully direct the Commission to my direct testimony at Bates page 21, Lines
8 6-14, but it is important to stress again that the two essential practical elements of this method are
9 the dividend yield and the growth component. It is important to point out again that the growth
10 component of the DCF equation tends to be the most critical element in the use of the DCF
11 methodology. A couple of things render the estimation of the growth component somewhat
12 challenging. First, while the growth component of the single-stage DCF model is in principle
13 meant to be based on long-term projections, in practice, it is based at most on three-to-five-years'
14 projections, since long-term projections are seldom available. Second, "it is reasonable to believe
15 that investors, as a group, do not utilize a single growth estimate when they price a utility's stock."⁴
16 While growth projections by equity analysts are available on variables like earnings, dividends,
17 book value per share, among other things, what weight one should give to different projections is
18 often a matter of contention. Unlike Ms. Bulkley's approach, which relies only on earnings growth
19 to estimate the growth component, I have relied on three estimates for the growth component: (1)
20 the average of the growth rates in earnings per share (EPS), book value per share (BVPS), and

³ STDEV represents Standard Deviation. In statistics, the standard deviation is a measure of the amount of variation of a set of values. The lower the standard deviation that the closer are the values to the mean. Standard Deviation is often used to characterize risk.

⁴ *The Cost of Capital - A Practitioner's Guide*, by David C. Parcell, prepared for the Society of Utility and Regulatory Financial Analysts (2010 edition), Page 146.

1 dividends per share (DPS); (2) earnings growth only; and (3) the sum of the internal growth rate,
2 br , and the external growth component, sv .⁵ For reasons why I disagree with Ms. Bulkley, please
3 see my direct testimony, Bates page 026, Line 15 to Bates page 029, Line 2. The other important
4 variables for the DCF estimation are the stock prices and dividend yield.

5 **Q. You have previously used pricing data from November 7, 2019 to December 6, 2019**
6 **to measure the dividend yields for the proxy's constituent companies. Which period did you**
7 **update the pricing data to for your supplemental DCF estimation?**

8 A. As of preparing this testimony, I used daily pricing data from the most recent month to
9 calculate the average price (Schedule Updated PKC-3), which in conjunction with the annualized
10 dividend helps measure the dividend yield (Schedule Updated PKC-4) component of the DCF
11 based cost of equity. That period to accommodate the production and the filing of this testimony
12 is June 8, 2020 to July 6, 2020.

13 **Q. Please remind us what measures of the DCF growth component were considered.**

14 A. As I had indicated above, I have considered three approaches to measuring DCF's growth
15 component. For the first approach, I have used the average of the Value Line five-year projections
16 for growth in DPS and BVPS *and* the average of the Value Line, Zacks and SNL median long-
17 term projections for EPS growth rates, appropriately updated to reflect the latest information from
18 the noted sources to calculate the growth component. For the second approach, which is based on
19 estimates for the internal and external components for growth, I used the latest Value Line and
20 Yahoo Finance data on retention ratio, expected return on common equity, market-to-book ratio,
21 and expected growth in the number of outstanding shares (called retention growth). For the third

⁵ The alternative is based on the formula, $br + sv$, where b is the retention ratio, r is the expected return on equity, s is the expected funds raised from the sale of stock as a fraction of existing equity, and v is $(1-(B/P))$, where B is the book value of the share and P is the price of the share.

approach, even though I have reservations about Ms. Bulkley's sole reliance on earnings growth as a measure of the growth component, I considered and applied that approach to my proxy to derive another DCF estimate for the cost of equity, updated to reflect recent information (see Schedule Updated PKC-5 for the calculation of the growth components; see also Schedules Updated PKC-6 and Updated PKC-7 for the inputs for external and internal growth components).

Q. Briefly explain the estimation of the growth component based on the retention ratio, expected return on common equity, market-to-book ratio, and growth in the number of outstanding stocks.

A. I have used the latest Value Line's expectations regarding retention ratios and returns on equity for five years into the future to derive estimates for b and r and have used them to calculate the expected internal growth component, b times r . To account for growth expectations from external financing and derive estimates of the external growth component, I have also used the latest market-to-book ratios from Yahoo Finance and the average of Value Line's five-year projections for the number of outstanding shares. That is helpful in calculating the external growth component, $s_e * v$, where s_e = expected funds raised from sale of stock as a fraction of existing equity, and $v = \left(1 - \frac{B}{P}\right)$.⁶ The revised formulation for the growth component can be alternatively expressed as $b_e r_e + g_e \left(\frac{P}{B} - 1\right)$, where g_e is the expected growth rate in the number of outstanding shares. In short, the growth component can be viewed as the sum of the "internal" growth rate, i.e. $b_e r_e$, and the "external" growth rate, i.e. $g_e \left(\frac{P}{B} - 1\right)$.

⁶ See "The Cost of Capital to a Public Utility," Myron Gordon, MSU Public Utilities Studies (1974), Page 30.

1 **Q. Did you employ the same outlier-determination approach here as used in your direct**
2 **testimony?**

3 A. Yes.

4 **Q. As part of the outlier determination, you rely on an additional screening that**
5 **eliminates ROE estimates that are less than or equal to the sum of the recent yield on Utility**
6 **A preferred stocks and 50 basis points. What is the latest cut-off?**

7 A. The latest yield on Utility A preferred stocks is 6.19 percent (see Value Line's Selection &
8 Opinion, July 10, 2020). Therefore the updated cut-off is 6.69 percent.

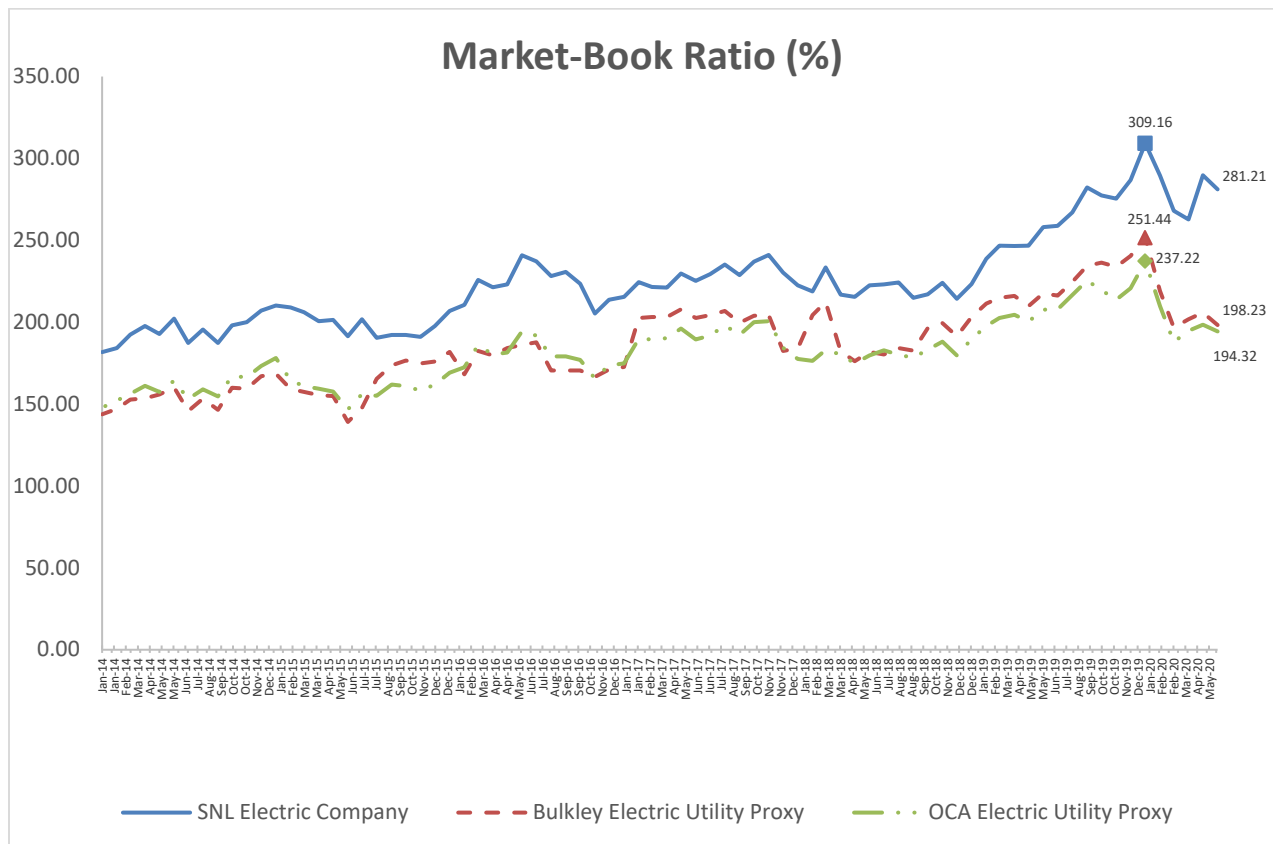
9 **Q. What are the DCF estimates for your proxy?**

10 A. The single-stage DCF estimate, based on the latest average expected growth rates in
11 earnings, dividends and book value, is 8.50 percent. Schedule Updated PKC-8 provides the
12 calculations. When only the EPS growth rate is used for the growth component, the single-stage
13 DCF method produces an estimate of 8.89 percent. When the "internal-plus-external" growth
14 approach is used, the DCF method produces an estimate of 8.53 percent. I have applied my
15 recommended outlier-determination criteria in deriving these estimates.

16 **Q. Are the upticks in the estimated ROEs over the last six months understandable?**

17 A. Yes. The COVID-19 pandemic has resulted in significant uncertainties about the economic
18 reality globally. I expect that when the dust settles, it will be fully confirmed that the U.S. economy
19 over the last six months has experienced a contraction. Also, while utility stocks tend to be
20 defensive stocks, when there is an unprecedented economic shock, even those stocks become
21 riskier relatively speaking. Another way to look at the current reality is to see Figure 1, shown
22 below, which plots the market-to-book ratio of SNL Electric Company, Ms. Bulkley's proxy
23 group, and the OCA's proxy group. As is observable, the market-to-book ratio of both Ms.

Bulkley's proxy group and the OCA's proxy group have fallen significantly over the last six months or so. While Ms. Bulkley's proxy group's market-to-book ratio has fallen from 2.51 to 1.98 from January 2020 to June 2020 (data current as of June 15), the OCA's proxy group's market-to-book ratio has fallen from 2.37 to 1.94 over the same period. Indeed, the significant drop in market prices, *ceteris paribus*, indicates that utility stocks now require a higher return on equity (through the dividend yield component) to attract investors' dollars.



Q. Do you continue to disagree with Ms. Bulkley's recommendation of an implicit adjustment for flotation costs to derive allowed ROE?

A. Yes.

III CAPITAL ASSET PRICING MODEL (CAPM)

1 **Q. Did you follow the same approach that you relied on in your direct testimony to**
2 **calculate three CAPM estimates of ROE?**

3 A. Essentially, I did. Presentation-wise, I have however made three calculations separately in
4 three EXCEL worksheets. Therefore, Schedule 11 is reported as Schedules 11.a, 11.b, and 11.c,
5 rather than just 11.a and 11.b. Also, based on the analysis and Dr. Woolridge's direct testimony,
6 I have provided three additional estimates, as discussed later.

7 **Q. Can you briefly describe the CAPM method?**

8 A. Yes. The CAPM method recognizes that common equity capital is more risky than debt
9 from an investor's standpoint, and that investors require higher returns on stocks than on bonds to
10 be compensated for the additional risk. The cost of common equity under CAPM is represented
11 by the following equation: $K = R_f + \beta_s * (R_M - R_f)$ where K is the cost of equity, R_f is the yield
12 on risk free securities, R_M is the expected return on the overall market and $(R_M - R_f)$ is the equity
13 risk premium demanded by shareholders to accept equity relative to debt. β_s is the average beta
14 of a group of comparable-risk companies that is used to adjust the risk premium to measure risks
15 specific to the regulated utility in question.

16 **Q. As you have already discussed your approach in your direct testimony, please briefly**
17 **highlight the key elements to be considered in updating the CAPM estimates of ROE.**

18 A. The key inputs for the estimations are the betas associated with the proxy group's
19 companies, an estimate of the risk-free rate, and three estimates of the market risk premium. I had
20 already discussed in detail in my direct testimony why I disagree with Ms. Bulkley's estimate of
21 risk-free rate as well as her approach to estimating market risk premiums. I will therefore simply
22 discuss the key inputs used for my updated estimations.

23 **Q. What beta measures do you use for your sample?**

1 A. I use Value Line beta estimates for the companies in my DCF proxy group (see Schedule
2 Updated PKC-9) to derive the average beta for those companies. The proxy beta currently is 0.88.
3 It is worth noting that the proxy beta has increased significantly compared to what it was at the
4 time of writing the direct testimony.⁷

5 **Q. What risk-free rate did you use for your estimations?**

6 A. Consistent with the direct testimony's approach, I have used the latest yield on 10-Year
7 Treasury bond. As a proxy for latest yield I have used the data for the last month, i.e. June 9, 2020
8 to July 6, 2020. As explained previously in the direct testimony, it is appropriate to use the most
9 current data on such a yield but, to iron out any anomalous daily movements, it is helpful to rely
10 on the data from the latest month. I have therefore used the average yield over June 9, 2020 to July
11 7, 2020; 0.70 percent.

12 As for the expected market returns, I applied the DCF construct to the S&P 500 companies
13 essentially using the same approach that Ms. Bulkley followed, but for the DCF growth
14 components I use not only earnings growth projections, but also the latest Value Line dividends
15 and book value growth projections to derive three capitalization-weighted estimates of the
16 expected market return. Those three estimates are associated with three samples of S&P 500
17 stocks. Estimate CAPM1 uses only dividend paying S&P 500 stocks and uses only EPS growth
18 projections for the DCF growth component. Estimate CAPM2 uses only dividend paying S&P
19 500 stocks and uses the average of the EPS, DPS, and BVPS growth projections for the DCF

⁷ A point that Dr. Woolridge makes in his direct testimony needs to be stressed. The Value Line betas as reported are adjusted to model the tendency of historical betas to regress towards 1; see Direct Testimony of Dr. Woolridge, Bates page 000078, Line 22 to Bates page 000079, Line 12. As pointed out by Dr. Woolridge, that tendency is questionable for utilities. If anything, the cited research by him suggests that for utilities the tendency may be to regress to a number well below 1.

growth component. Estimate CAPM3 uses all S&P 500 stocks (including non-dividend yielding stocks) and uses EPS growth projections for the DCF growth component.

Q. Please discuss the three updated market return estimates.

A. The calculations are reported in Table 1 below.

Table 1. CAPM Cost of Equity Estimates			
	CAPM1	CAPM2	CAPM3
	Dividend-Paying S&P 500 Stocks		All S&P 500 Stocks
	EPS growth projection	Average EPS, DPS & BVPS growth projections	EPS growth projection
DCF Market Return (a)	11.95	11.41	13.58
Risk Free Return (b)	0.70	0.70	0.70
Market Beta (c)	0.988	0.990	0.979
Risk Premium (a)-(b)	11.25	10.71	12.88
Beta adjusted RP (d) = ((a)-(b))/(c)	11.39	10.82	13.16
Proxy group beta (e)	0.88	0.88	0.88
CAPM ROE estimate (b)+(e)* (d)	10.71	10.21	12.26

The approaches for the three estimates are exactly the same as those relied upon in the direct testimony. I would direct the Commission to that testimony at Bates pages 37-39 for a revisit. It would however be also helpful to view the quantitative steps noted in the first column of Table 1 above.

Q. What are the current estimates of the cost of equity for the PSNH proxy group based on the three estimated market risk premiums?

1 A. The last row of Table 1 reports the three estimates. CAPM1, CAPM2 and CAPM3 ROE
2 estimates are 10.71 percent, 10.21 percent and 12.26 percent, respectively.⁸

3 **Q. Have you relied on these CAPM estimates to provide your recommended allowed**
4 **ROE?**

5 A. No. As stated in my direct testimony, the CAPM estimation, building upon the Company's
6 approach, is performed simply as a check. I have actually relied solely on the DCF approach to
7 inform my recommendation on ROE in my direct testimony. The OCA's CAPM estimations are
8 provided in order to point out areas where we find the Company's approach to be absolutely
9 unreasonable, and simply to opine on what would result when one corrects for those unreasonable
10 inputs, while still using the Company's approach.

11 Fundamentally, the OCA is opposed to relying on the CAPM approach with any
12 meaningful weightage, when the market-to-book ratios for the utility companies are significantly
13 higher than 1. That we have conducted those estimations should not be viewed as an overt or a
14 tacit acceptance of that method. I believe that the Commission's long-standing overwhelming
15 reliance on the DCF method is just and reasonable.

16 **Q. Do you have any additional observations with respect to the application of the CAPM**
17 **method?**

18 A. Yes, I do. It is evident from Table 1, that all of the CAPM estimates are significantly higher
19 than those derived using the DCF approach. The CAPM3 estimate in particular is definitely
20 "ridiculous" for reasons well discussed by Dr. Woolridge, Staff's ROE witness, in his direct
21 testimony; see Dr. Woolridge's direct testimony, Bates page 000091, Line 23 to Bates page

⁸ Compared to the estimates derived end of 2019, the current estimates are significantly higher largely on account of a marked increase in the Value Line Betas following the COVID-19 scare.

000092, Line 4.⁹ The OCA agrees with Dr. Woolridge's view that many of the EPS growth estimates that inform the market returns for stocks in S&P 500 when relying on the Company's approach cannot realistically represent long-term growth estimates. I agree with Staff that to assume long-term EPS growth rates are higher than 8 percent is very unreasonable. Indeed, if we restrict the CAPM analyses quite generously to stocks that have Value Line 3-5 years' growth projections of less or equal to 12 percent, and recalculate the CAPM estimates, *ceteris paribus*, we obtain ROEs of 9.33 percent, 9.04 percent and 8.98percent for CAPM1, CAPM2, and CAPM3, respectively.

I also believe that the DCF construct, for estimating returns on equity, is not suitable for S&P 500 companies that are in their early years of growth or do not provide dividends. Fundamentally, the DCF construct is more suited for mature companies that also pay predictable dividends. Its application to derive the cost of equity on S&P 500 stocks, especially for those that do not pay dividends or have very high early growth rates, is very questionable.

IV. CONCLUSION

Q. Please summarize your updated cost of equity estimates.

A. Table 2 below reports the cost of equity estimates based on the different methodologies used in this testimony.

Table 2: Summary of Cost of Equity Estimates (in %)	
DCF (traditional: EPS, BVPS & DPS average)	8.50
DCF (traditional: EPS)	8.89
DCF ($g=br+sv$ Method)	8.53

⁹ For rate cases in the US during 2018-2020 with Commission orders with expressly stated ROEs, there have been no instances where Commissions have allowed ROEs of greater or equal to 12 percent; see Attachment B. In fact, over 2018-2020 there has only been one ROE that was greater than 11 percent; i.e. 11.2 percent.

CAPM1	10.71
CAPM2	10.21
CAPM3	12.27
CAPM1 (sans VL growth projections > 12 percent)	9.33
CAPM2 (sans VL growth projections > 12 percent)	9.04
CAPM3 (sans VL growth projections > 12 percent)	8.98

1
2 **Q. What is your recommendation on the allowed rate of return on equity?**

3 A. Table 2 summarizes estimates of cost of equity that the OCA's analyses produced in this
4 updated testimony. The OCA recommends using the DCF approach exclusively in estimating the
5 cost of equity, for reasons that were discussed in Sections II and IIIA of my direct testimony as
6 well as at the end of the previous section in this testimony. The average of all of the DCF
7 estimates is 8.64 percent. As for a specific point estimate, the OCA therefore recommends an
8 allowed return of 8.64 percent. With respect to what constitutes a reasonable range of allowed
9 return on equity, the OCA recommends 8.55 to 8.75 percent.

10 **Q. Does this conclude your testimony?**

11 A. Yes, it does.

V. SCHEDULES

Schedule Updated PKC-1

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Credit Ratings

Company	Ticker Symbol	Moody's	Credit Watch Outlook	S&P	Credit Watch Outlook
Alliant	LNT	Baa2	Stable	A-	Stable
Ameren Corporation	AEE	Baa1	Stable	BBB+	Stable
AEP Company	AEP	Baa1	Negative	A-	Stable
Avista	AVA	Baa2	Stable	BBB	Stable
Consolidated Edison	ED	Baa2	Stable	A-	Stable
Duke Energy Corporation	DUK	Baa1	Stable	A-	Stable
Edison International	EIX	Baa3	Stable	BBB	Stable
Evergy Inc.	EVRG	Baa2	Stable	A-	Stable
Entergy Corporation	ETR	Baa2	Stable	BBB+	Stable
First Energy Corporation	FE	Baa3	Stable	BBB	Stable
IDACORP, Inc.	IDA	Baa1	Stable	BBB	Stable
NorthWestern Corporation	NWE	Baa2	Stable	BBB	Stable
OGE Energy Corporation	OGE	(P)Baa1	Stable	BBB+	Stable
Pinnacle West Capital Corporation	PNW	A3	Negative	A-	Stable
PNM Resources, Inc.	PNM	Baa3	Stable	BBB	Negative
Portland General Electric Company	POR	A3	Stable	BBB+	Positive
PPL Corporation	PPL	Baa2	Stable	A-	Stable
Southern Company	SO	Baa2	Stable	A-	Negative
Xcel Energy Inc.	XEL	Baa1	Stable	A-	Stable

Ratings downloaded from SNL data on July 7, 2020.

Schedule Updated PKC-2

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Common Equity Ratios

Company	2017	2018	2019	Average (2017-19)	2020	2021	2023-25	Average (2016-21)
Alliant	48.6	46.6	48.5	47.9	48	48	48	48
Ameren Corporation	49.8	48.8	47.1	48.6	45.5	48.5	50	48.8
AEP Company	48.5	46.8	43.9	46.4	43.5	44.5	47	45.8
Avista	52.8	49.5	50.6	51.0	49.5	51	49.5	49.8
Consolidated Edison	51.1	48.9	49.3	49.8	49.5	49.5	49.5	49.5
Duke Energy Corporation	46	46.2	44.1	45.4	45.5	45.5	45	45.2
Edison International	45.8	38.3	39.9	41.3	40.5	40	39	39.5
Evergy Inc.		60	49.4	54.7	48.5	47.5	46.5	47.1
Entergy Corporation	35.5	35.9	37.1	36.2	37.5	37.5	41	39.6
First Energy Corporation	15.7	27.4	26.2	23.1	25	27	34	30.8
IDACORP, Inc.	56.3	56.4	58.7	57.1	54	54	53.5	53.7
NorthWestern Corporation	49.8	47.8	47.5	48.4	51.5	49	50.5	50.4
OGE Energy Corporation	58.3	58	56.4	57.6	51.5	52	51.5	51.6
Pinnacle West Capital Corporation	51.1	53	52.9	52.3	47	47	48.5	47.9
PNM Resources, Inc.	43.6	38.6	39.9	40.7	51	46	49	48.8
Portland General Electric Company	49.9	53.5	48.7	50.7	47.5	46.5	47.5	47.3
PPL Corporation	35.2	36.7	38.5	36.8	40	40.5	42.5	41.6
Southern Company	35	37.6	39.5	37.4	39	38	39.5	39.1
Xcel Energy Inc.	44.1	43.6	43.2	43.6	43	43	43	43

Schedule Updated PKC-3

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STOCK PRICES																				
Date	LNT	AEE	AEP	AVA	ED	DUK	EIX	EVRG	ETR	FE	IDA	NWE	OGE	PNW	PNM	POR	PPL	SO	XEL	
7/6/2020	49.0000	73.3400	82.1200	36.1300	73.1000	79.8100	56.0500	61.4600	96.4000	40.1800	88.4800	54.7600	30.5200	76.8000	39.2800	41.9400	25.8800	52.61	63.58	
7/3/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
7/2/2020	49.4200	73.2300	82.5200	36.6500	73.8100	81.8400	55.5400	61.4600	96.8600	39.9200	89.5800	55.3100	30.6300	76.0300	39.2800	42.7100	26.1800	52.79	64.1	
7/1/2020	48.7600	72.4900	82.0000	36.8000	73.1000	81.9300	55.3300	61.0100	96.7200	39.8800	89.5900	55.4100	30.5200	75.3900	39.3300	42.5300	26.2000	52.87	64.185	
6/30/2020	47.8400	70.3600	79.6400	36.3900	71.9300	79.8900	54.3100	59.2900	93.8100	38.7800	87.3700	54.5200	30.3600	73.2900	38.4400	41.8100	25.8400	51.85	62.5	
6/29/2020	47.4000	69.7300	79.5700	35.4800	72.7000	80.2500	55.3400	59.1800	93.7700	37.9900	86.2000	54.1000	30.4000	72.9600	38.4300	41.7400	25.7600	51.56	62.46	
6/26/2020	47.0500	68.9000	78.0000	33.7700	71.2800	78.9300	54.8200	58.1100	91.6600	36.8500	84.7700	52.1400	29.3700	71.0500	37.1000	40.2800	25.0700	50.92	62.31	
6/25/2020	46.7700	68.8100	79.3000	35.0700	70.6200	79.4500	54.8900	58.9800	92.3600	37.5300	85.7500	52.2400	30.0600	71.3600	37.9700	41.2400	25.5900	51.25	62.9	
6/24/2020	47.1200	69.4600	80.7100	35.3500	71.5300	80.4700	54.3700	59.0400	93.5100	37.7800	86.8700	52.8600	30.3400	71.6200	37.9500	41.7900	25.5200	52.38	63.68	
6/23/2020	47.8900	70.0000	80.9500	34.8900	70.9400	81.8500	55.7700	59.6400	95.0000	38.7800	86.5200	54.1400	30.5800	72.2400	38.3400	43.2200	25.7600	53.27	64.19	
6/22/2020	48.4850	70.6200	80.6200	35.5200	71.4200	82.5300	55.7900	59.9200	96.9700	39.7000	86.8100	54.6000	30.8400	73.2800	38.1900	43.0300	26.3500	54.67	65.15	
6/19/2020	47.9900	69.8000	79.7100	35.3300	71.4400	82.1100	55.6600	59.3500	94.5200	38.9800	85.2500	54.5600	30.5400	73.5000	37.5000	43.0000	26.0000	53.61	64.01	
6/18/2020	49.0300	72.4600	81.7700	36.9400	74.8700	85.7700	58.8400	60.5600	97.5000	40.5100	87.5600	55.7100	30.9800	76.6500	38.5200	44.2500	26.8800	56.11	64.51	
6/17/2020	48.9100	72.4600	82.2500	37.1400	75.2900	86.2100	59.8900	59.8800	97.0700	40.2500	87.5400	55.9000	30.9600	76.2500	38.6100	44.5200	26.8400	56.04	63.89	
6/16/2020	49.0000	72.5500	81.6000	37.4800	76.3700	86.9500	60.5200	59.9700	97.9200	40.5100	86.9100	56.8200	31.2900	77.2300	39.3000	45.0700	27.1800	56.22	63.74	
6/15/2020	48.9200	72.3400	81.7600	37.5500	75.6000	86.9600	59.4500	59.3500	97.1900	40.4700	87.6300	56.4800	31.2200	77.0900	38.9900	45.1300	26.7900	56.42	63.51	
6/12/2020	48.5500	71.7500	81.8000	36.4800	75.3800	86.7400	57.5700	60.0800	96.4200	40.4300	86.9600	55.5800	30.8600	75.6000	38.7300	44.6300	26.5500	56.17	63.65	
6/11/2020	48.6900	71.8400	81.7600	36.1900	74.6700	87.0800	56.8100	60.9500	96.7700	40.5000	87.2000	56.5100	30.4100	74.7000	38.6400	44.6600	26.3600	56.09	65.08	
6/10/2020	50.7200	74.8600	85.3700	38.5900	76.9500	90.1900	60.3400	63.4300	102.1900	42.2500	92.3800	60.7000	32.7300	78.1300	40.7400	46.7000	27.8600	59.2	66.93	
6/9/2020	50.7700	75.2700	85.9100	39.0900	76.7000	90.3200	61.6300	63.5700	103.3400	42.8900	92.9100	62.2200	33.5300	80.1100	41.9000	47.5800	28.3700	59.36	66.37	
6/8/2020	52.3200	77.2200	87.9100	39.5600	77.7100	91.9100	64.7600	65.1000	105.8900	43.9800	95.7500	63.2400	34.8000	82.0400	43.1500	48.2800	30.6500	60.27	66.95	
Average	48.73	71.87	81.76	36.52	73.77	84.06	57.38	60.52	96.79	39.91	88.10	55.89	31.05	75.27	39.02	43.71	26.58	54.68	64.18	

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Dividend Yield Estimate for the Next Period			
Company	Average Stock Price	2021 Dividend	Div. Yield(1)
Alliant Energy Corporation	47.39	1.64	3.46%
Ameren Corporation	71.18	2.11	2.96%
AEP Company	80.52	3	3.73%
Avista	38.45	1.68	4.37%
Consolidated Edison	72.57	3.16	4.35%
Duke Energy Corporation	83.53	3.89	4.66%
Edison International	60.75	2.68	4.41%
Evergy, Inc.	58.93	2.17	3.68%
Entergy Corporation	98.01	3.86	3.94%
First Energy Corporation	40.91	1.61	3.94%
IDACORP, Inc.	89.66	2.93	3.27%
NorthWestern Corporation	57.77	2.5	4.33%
OGE Energy Corporation	30.71	1.68	5.47%
Pinnacle West Capital Corporation	74.21	3.41	4.60%
PNM Resources, Inc.	38.86	1.3	3.35%
Portland General Electric Company	44.11	1.72	3.90%
PPL Corporation	26.17	1.67	6.38%
Southern Company	55.25	2.62	4.74%
Xcel Energy Inc.	61.28	1.82	2.97%
Average			4.13%

DY data from Value Line (latest one-pagers as of June 19, 2020)

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Growth Components											
Company		Value Line 5-yearly projections			Zacks EPS	SNL Median	Average EPS	Average of Average EPS, DPS and BPS	Internal growth	External Growth	Internal plus External growth
		EPS growth rate	DPS growth rate	BPS growth rate							
Alliant Energy Corporation	LNT	6.5	5.50	7.50	5.50	6.00	6.00	6.33%	3.52%	1.60%	5.12%
Ameren Corporation	AEE	6	5.00	5.50	6.80	6.75	6.52	5.67%	4.42%	2.34%	6.76%
AEP Company	AEP	5	5.50	4.50	5.80	6.00	5.60	5.20%	3.44%	2.28%	5.72%
Avista	AVA	1	4.00	3.00	5.20	5.00	3.73	3.58%	1.85%	0.22%	2.08%
Consolidated Edison	ED	3	3.50	3.00	2.00	2.00	2.33	2.94%	2.41%	0.46%	2.87%
Duke Energy Corporation	DUK	5	2.00	2.50	4.60	4.28	4.63	3.04%	2.55%	0.22%	2.77%
Edison International	EIX		4.00	5.50	3.30	5.45	4.38	4.63%	3.73%	0.66%	4.40%
Evergy, Inc.	EVRG	3	5.50	2.00	5.00	5.00	4.33	3.94%	1.79%	0.00%	1.79%
Entergy Corporation	ETR	3	4.00	5.00	5.70	6.00	4.90	4.63%	3.76%	1.16%	4.93%
First Energy Corporation	FE	8.5	3.00	9.50		6.00	7.25	6.58%	6.80%	3.78%	10.57%
IDACORP, Inc.	IDA	3	6.50	3.50	2.60	3.00	2.87	4.29%	3.05%	0.00%	3.05%
NorthWestern Corporation	NWE	2.5	4.00	3.00	3.40	4.00	3.30	3.43%	2.54%	0.35%	2.89%
OGE Energy Corporation	OGE	3	6.00	1.00	3.70	4.69	3.80	3.60%	2.83%	0.00%	2.83%
Pinnacle West Capital Corpor	PNW	4.5	5.50	3.50	5.20	5.09	4.93	4.64%	3.61%	0.81%	4.42%
PNM Resources, Inc.	PNM	6	5.50	5.50	6.20	6.00	6.07	5.69%	4.19%	2.15%	6.34%
Portland General Electric Com	POR	4	6.00	3.00	5.30	4.15	4.48	4.49%	2.92%	0.06%	2.98%
PPL Corporation	PPL	2.5	2.00	4.50		2.95	2.73	3.08%	4.32%	0.11%	4.43%
Southern Company	SO	3	3.00	3.50	4.00	4.70	3.90	3.47%	2.80%	0.94%	3.75%
Xcel Energy Inc.	XEL	6	6.00	5.50	5.90	6.10	6.00	5.83%	3.97%	0.56%	4.53%
Average		4.19	4.55	4.26	4.72	4.90	4.61	4.48%	3.39%	0.93%	4.33%

SNL, Zacks data downloaded July 7, 2020. Value Line One-pagers' data latest per June 19, 2020.

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"External Component" of COE						
		current market to book ratio	# of shares 2021	# of shares 2023/202 4	growth rate in # of shares	sv
Alliant Energy Corporation	LNT	2.24	255	265	1.29%	1.60%
Ameren Corporation	AEE	2.24	260	275	1.89%	2.34%
AEP Company	AEP	2.02	496	530	2.23%	2.28%
Avista	AVA	1.47	70	71	0.47%	0.22%
Consolidated Edison	ED	1.35	351	365	1.31%	0.46%
Duke Energy Corporation	DUK	1.34	770	785	0.65%	0.22%
Edison International	EIX	1.51	380	395	1.30%	0.66%
Evergy, Inc.	EVERG	1.63	227	227	0.00%	0.00%
Entergy Corporation	ETR	1.9	204	212	1.29%	1.16%
First Energy Corporation	FE	3.17	546	575	1.74%	3.78%
IDACORP, Inc.	IDA	1.83	50.4	50.4	0.00%	0.00%
NorthWestern Corporation	NWE	1.36	51.5	53	0.96%	0.35%
OGE Energy Corporation	OGE	1.72	200	200	0.00%	0.00%
Pinnacle West Capital Corporation	PNW	1.56	113	118	1.45%	0.81%
PNM Resources, Inc.	PNM	1.92	85.83	92	2.34%	2.15%
Portland General Electric Company	POR	1.45	89.65	90	0.13%	0.06%
PPL Corporation	PPL	1.52	775	780	0.21%	0.11%
Southern Company	SO	2.01	1060	1090	0.93%	0.94%
Xcel Energy Inc.	XEL	2.53	542	548	0.37%	0.56%

Source: Value Line (data as of June 19, 2020)

Market to book ratio (mrq) based on yahoo finance data upto July 2, 2020. Downloaded on July 7, 2020.

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Expected Return on Equity				
EXPECTED ROE		2021	2023-2025	202-25
Alliant Energy Corporation	LNT	10.00%	10.50%	10.38%
Ameren Corporation	AEE	9.50%	10.00%	9.88%
AEP Company	AEP	10.50%	10.50%	10.50%
Avista	AVA	7.00%	8.00%	7.75%
Consolidated Edison	ED	8.00%	8.00%	8.00%
Duke Energy Corporation	DUK	8.00%	8.50%	8.38%
Edison International	EIX	10.50%	10.00%	10.13%
Evergy, Inc.	EVRG	7.50%	8.00%	7.88%
Entergy Corporation	ETR	10.50%	11.00%	10.88%
First Energy Corporation	FE	19.00%	15.50%	16.38%
IDACORP, Inc.	IDA	9.00%	9.00%	9.00%
NorthWestern Corporation	NWE	8.50%	8.50%	8.50%
OGE Energy Corporation	OGE	12.00%	12.50%	12.38%
Pinnacle West Capital Corp	PNW	10.00%	10.50%	10.38%
PNM Resources, Inc.	PNM	9.00%	9.50%	9.38%
Portland General Electric Co	POR	8.50%	9.00%	8.88%
PPL Corporation	PPL	13.50%	12.50%	12.75%
Southern Company	SO	12.00%	12.50%	12.38%
Xcel Energy Inc.	XEL	10.00%	10.50%	10.38%
Average				10.22%

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Retention Ratio (b)								
		2021			2023-25			Average
		earnings	dividends	b	earnings	dividends	b	Retention
		pershare	pershare		pershare	pershare		ratio (b)
Alliant Energy Corporation	LNT	2.55	1.64	0.36	3.00	2.00	0.33	0.34
Ameren Corporation	AEE	3.65	2.11	0.42	4.50	2.45	0.46	0.45
AEP Company	AEP	4.55	3.00	0.34	5.25	3.55	0.32	0.33
Avista	AVA	2.20	1.68	0.24	2.50	1.90	0.24	0.24
Consolidated Edison	ED	4.55	3.16	0.31	5.00	3.50	0.30	0.30
Duke Energy Corporation	DUK	5.30	3.89	0.27	6.00	4.10	0.32	0.30
Edison International	EIX	4.25	2.68	0.37	4.75	3.00	0.37	0.37
Eversource Energy	EVER	2.95	2.17	0.26	3.25	2.55	0.22	0.23
Entergy Corporation	ETR	5.80	3.86	0.33	7.00	4.55	0.35	0.35
First Energy Corporation	FE	2.75	1.61	0.41	3.25	1.90	0.42	0.42
IDACORP, Inc.	IDA	4.75	2.93	0.38	5.25	3.55	0.32	0.34
NorthWestern Corporation	NWE	3.55	2.50	0.30	4.00	2.80	0.30	0.30
OGE Energy Corporation	OGE	2.25	1.68	0.25	2.50	1.95	0.22	0.23
Pinnacle West Capital Corp	PNW	5.15	3.14	0.39	6.00	4.00	0.33	0.35
PNM Resources, Inc.	PNM	2.25	1.30	0.42	2.75	1.50	0.45	0.45
Portland General Electric Co	POR	2.55	1.62	0.36	3.00	2.05	0.32	0.33
PPL Corporation	PPL	2.45	1.67	0.32	2.75	1.80	0.35	0.34
Southern Company	SO	3.25	2.62	0.19	3.75	2.86	0.24	0.23
Xcel Energy Inc.	XEL	2.90	1.82	0.37	3.50	2.15	0.39	0.38

Source: Value Line one-pagers (latest data as of June 19, 2020)

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DCF ROE Estimates				
Company		Average of EPS, DPS, and BVPS growth rates	br and sv	EPS growth rates
Alliant Energy Corporation	LNT	9.79%	8.58%	9.46%
Ameren Corporation	AEE	8.64%	9.72%	9.48%
AEP Company	AEP	8.93%	9.45%	9.33%
Avista	AVA	7.95%	6.45%	8.10%
Consolidated Edison	ED	7.30%	7.22%	6.69%
Duke Energy Corporation	DUK	7.70%	7.42%	9.28%
Edison International	EIX	9.04%	8.81%	8.79%
Evergy, Inc.	EVRG	7.63%	5.48%	8.02%
Entergy Corporation	ETR	8.57%	8.86%	8.84%
First Energy Corporation	FE	10.52%	14.51%	11.19%
IDACORP, Inc.	IDA	7.56%	6.32%	6.13%
NorthWestern Corporation	NWE	7.76%	7.21%	7.63%
OGE Energy Corporation	OGE	9.07%	8.30%	9.27%
Pinnacle West Capital Corporation	PNW	9.24%	9.02%	9.53%
PNM Resources, Inc.	PNM	9.03%	9.68%	9.41%
Portland General Electric Company	POR	8.39%	6.88%	8.38%
PPL Corporation	PPL	9.46%	10.81%	9.11%
Southern Company	SO	8.21%	8.49%	8.64%
Xcel Energy Inc.	XEL	8.80%	7.50%	8.97%
Average		8.61%	8.46%	8.75%
Average plus 2*SD		10.30%	12.46%	10.99%
Average minus 2*SD		6.92%	4.46%	6.51%
Cost of Equity estimate		8.50%	8.53%	8.89%

The shaded cells are the outliers based on the screening discussed in the testimony.

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PROXY BETA

Company		VL Betas
Alliant Energy Corporation	LNT	0.80
Ameren Corporation	AEE	0.80
AEP Company	AEP	0.75
Avista	AVA	0.95
Consolidated Edison	ED	0.75
Duke Energy Corporation	DUK	0.85
Edison International	EIX	0.90
Evergy, Inc.	EVRG	1.05
Entergy Corporation	ETR	0.95
First Energy Corporation	FE	0.85
IDACORP, Inc.	IDA	0.80
NorthWestern Corporation	NWE	0.90
OGE Energy Corporation	OGE	1.05
Pinnacle West Capital Corpor	PNW	0.85
PNM Resources, Inc.	PNM	0.90
Portland General Electric Cor	POR	0.85
PPL Corporation	PPL	1.05
Southern Company	SO	0.90
Xcel Energy Inc.	XEL	0.75
Proxy Average		0.88

Source: Value Line betas latest as of June 19, 2019

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Pricing Date	10y US T-Note
7/7/2020	0.65
7/6/2020	0.69
7/3/2020	0.68
7/2/2020	0.68
7/1/2020	0.69
6/30/2020	0.66
6/29/2020	0.64
6/26/2020	0.64
6/25/2020	0.68
6/24/2020	0.69
6/23/2020	0.72
6/22/2020	0.71
6/19/2020	0.70
6/18/2020	0.71
6/17/2020	0.74
6/16/2020	0.75
6/15/2020	0.71
6/12/2020	0.71
6/11/2020	0.66
6/10/2020	0.75
6/9/2020	0.84
Average	0.70

Data source for yields is SNL

CAPM Cost of Equity Estimates			
	CAPM1	CAPM2	CAPM3
	Dividend-Paying S&P 500 Stocks		All S&P 500 Stocks
	EPS growth projection	Average EPS, DPS & BVPS growth projections	EPS growth projection
DCF Market Return (a)	11.95	11.41	13.58
Risk Free Return (b)	0.70	0.70	0.70
Market Beta (c)	0.988	0.990	0.979
Risk Premium (a)-(b)	11.25	10.71	12.88
Beta adjusted RP (d) = ((a)-(b))/(c)	11.39	10.82	13.16
Proxy group beta (e)	0.88	0.88	0.88
CAPM ROE estimate (b)+(e)* (d)	10.71	10.21	12.26

Growth projections downloaded from Value Line on June 19, 2019.

Schedule Updated PKC-11a. Analysis with EPS GR and DY>0
Components of the S&P 500

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#	Company	Symbol	DY	MCAP	MCAP- weight	Beta	EPSGR	DPSGR	BVPSGR	DCF	weighted DCF	weighted Beta
1	3M Compa	MMM	0.03693	9.16E+10	0.46%	0.95	4.5	6.5	1	8.28%	0.0380%	0.00436
2	A. O. Smitt	AOS	0.02003	7.72E+09	0.04%	0.95	5.5	12	5	7.56%	0.0029%	0.000368
3	Abbott Lab	ABT	0.01595	1.6E+11	0.80%	1.05	9.5	9	5.5	11.17%	0.0894%	0.008402
4	AbbVie Inc	ABBV	0.04905	1.7E+11	0.85%	1.05	8	8	#N/A	13.10%	0.1113%	0.008923
6	Accenture	ACN	0.01577	1.34E+11	0.67%	0.95	7.5	8	17	9.14%	0.0615%	0.006393
7	Activision	ATVI	0.00539	5.86E+10	0.29%	0.75	8	10	8.5	8.56%	0.0251%	0.002201
9	Advance A	AAP	0.00677	1.02E+10	0.05%	1.2	11	34	4.5	11.71%	0.0060%	0.000614
12	Aflac Inco	AFL	0.03018	2.66E+10	0.13%	1.25	7	6.5	10.5	10.12%	0.0135%	0.001668
13	Agilent Tec	A	0.00816	2.72E+10	0.14%	0.95	10.5	9	6.5	11.36%	0.0155%	0.001297
14	Air Product	APD	0.02251	5.26E+10	0.26%	0.95	12	7.5	8.5	14.39%	0.0379%	0.002503
16	Alaska Air	ALK	0.04005	4.59E+09	0.02%	1.3	2	#N/A	1	6.05%	0.0014%	0.000299
17	Albemarle	ALB	0.01954	8.38E+09	0.04%	1.2	5.5	5.5	4.5	7.51%	0.0032%	0.000504
18	Alexandria	ARE	0.02491	2.15E+10	0.11%	1	16.5	6	8.5	19.20%	0.0207%	0.001077
21	Allegion	PLALLE	0.01243	9.5E+09	0.05%	1.15	9.5	12.5	25	10.80%	0.0051%	0.000547
22	Alliant Ene	LNT	0.031	1.22E+10	0.06%	0.8	6.5	5.5	7.5	9.70%	0.0059%	0.00049
23	Allstate Co	ALL	0.02187	3.1E+10	0.16%	1	6	8	6.5	8.25%	0.0128%	0.001554
26	Altria Grou	MO	0.08102	7.71E+10	0.39%	0.85	8.5	9	5.5	16.95%	0.0654%	0.003283
29	Ameren Cc	AEE	0.02733	1.79E+10	0.09%	0.8	6	5	5.5	8.81%	0.0079%	0.000717
30	American /AAL		0.02426	6.97E+09	0.03%	1.4	2	#N/A	#N/A	4.45%	0.0016%	0.000489
31	American E	AEP	0.03424	4.05E+10	0.20%	0.75	5	5.5	4.5	8.51%	0.0173%	0.001523
32	American E	AXP	0.01684	8.22E+10	0.41%	1.2	7.5	5.5	7	9.25%	0.0381%	0.004945
34	American T	AMT	0.01708	1.14E+11	0.57%	0.95	7.5	10.5	9.5	9.27%	0.0531%	0.005436
35	American V	AWK	0.01703	2.34E+10	0.12%	0.85	8.5	8.5	5	10.28%	0.0120%	0.000996
36	Ameriprise	AMP	0.02764	1.84E+10	0.09%	1.4	11	2.5	20.5	13.92%	0.0128%	0.001292
37	Amerisourc	ABC	0.01676	2.04E+10	0.10%	0.9	7	4	6.5	8.73%	0.0089%	0.00092
38	AMETEK In	AME	0.00807	2.05E+10	0.10%	1.15	15.5	13	11	16.37%	0.0168%	0.001179
39	Amgen Inc	AMGN	0.02779	1.35E+11	0.68%	0.85	6.5	8	7	9.37%	0.0636%	0.005771
40	Amphenol	APH	0.01021	2.9E+10	0.15%	0.95	9	8.5	6.5	10.07%	0.0146%	0.00138
41	Analog Dev	ADI	0.02019	4.52E+10	0.23%	0.95	7	6	6.5	9.09%	0.0206%	0.002154
43	Anthem Inc	ANTM	0.01431	6.69E+10	0.34%	1.15	14	12.5	11.5	15.53%	0.0521%	0.003858
44	Aon Plc Cl	AON	0.00922	4.41E+10	0.22%	0.95	11	5	16	11.97%	0.0265%	0.002101
45	Apache Co	APA	0.00703	5.37E+09	0.03%	1.9	13.5	-14	-10	14.25%	0.0038%	0.000511
46	Apartment	AIV	0.04208	5.8E+09	0.03%	1.2	-1.5	3	16.5	2.68%	0.0008%	0.000349
47	Apple Inc.	AAPL	0.00933	1.52E+12	7.64%	0.95	14	12	13	15.00%	1.1458%	0.072575
48	Applied Ma	AMAT	0.01457	5.53E+10	0.28%	1.2	6.5	8.5	12.5	8.00%	0.0222%	0.003328
49	Aptiv PLC	APTIV	0.01149	2.07E+10	0.10%	1.2	11	1.5	19.5	12.21%	0.0127%	0.001244
50	Archer-Dar	ADM	0.03549	2.25E+10	0.11%	1	9.5	5.5	4.5	13.22%	0.0149%	0.00113
52	Arthur J. G	AJG	0.01815	1.88E+10	0.09%	1	13.5	2.5	11.5	15.44%	0.0145%	0.000942
53	Assurant In	AIZ	0.02354	6.38E+09	0.03%	0.9	6.5	4	10.5	8.93%	0.0029%	0.000288
54	AT&T Inc.	T	0.06853	2.16E+11	1.08%	0.8	5.5	4.5	4.5	12.54%	0.1359%	0.008669
55	Atmos Ene	ATO	0.02267	1.24E+10	0.06%	0.8	7	7.5	7.5	9.35%	0.0058%	0.000497
57	Automatic	ADP	0.02399	6.52E+10	0.33%	1.1	12	11.5	14	14.54%	0.0475%	0.003594
59	AvalonBay	AVB	0.03967	2.26E+10	0.11%	1.05	2.5	5.5	3	6.52%	0.0074%	0.001187
60	Avery Denn	AVY	0.01992	9.71E+09	0.05%	1.2	11	8.5	7	13.10%	0.0064%	0.000584
62	Ball Corp	BLL	0.00851	2.3E+10	0.12%	1.05	21	8	11.5	21.94%	0.0253%	0.001209
63	Bank of Am	BAC	0.02875	2.17E+11	1.09%	1.2	5	11	6	7.95%	0.0865%	0.013063
64	Bank of Ne	BK	0.0321	3.42E+10	0.17%	1.1	7	15.5	5.5	10.32%	0.0177%	0.001885
65	Baxter Inte	BAX	0.01169	4.27E+10	0.21%	0.8	9	9.5	7	10.22%	0.0219%	0.00171
66	Becton Dic	BDX	0.01338	6.85E+10	0.34%	0.8	9	5	3.5	10.40%	0.0357%	0.002744
68	Best Buy	BBY	0.02673	2.13E+10	0.11%	1.15	8.5	12.5	4	11.29%	0.0120%	0.001225
71	BlackRock	BLK	0.02608	8.59E+10	0.43%	1.3	10.5	10	4	13.24%	0.0570%	0.005595
74	BorgWarne	BWA	0.02045	6.89E+09	0.03%	1.2	3.5	4.5	5.5	5.58%	0.0019%	0.000414
75	Boston Pro	BXP	0.04134	1.47E+10	0.07%	1.1	3.5	6.5	2	7.71%	0.0057%	0.000812
77	Bristol-Mye	BMJ	0.03216	1.27E+11	0.63%	0.85	9	1.5	4	12.36%	0.0784%	0.005394
78	Broadcom	AVGO	0.04079	1.28E+11	0.64%	1.1	17	12	5	21.43%	0.1376%	0.007066
79	Broadridge	BR	0.01715	1.45E+10	0.07%	0.85	9	10.5	7	10.79%	0.0078%	0.000616
80	Brown-Fort	BFB	0.01044	2.06E+10	0.10%	0.9	14.5	4.5	10	15.62%	0.0162%	0.000931
81	C.H. Robin	CHRW	0.0262	1.05E+10	0.05%	0.65	8	7.5	10.5	10.72%	0.0056%	0.000341
82	Cabot Oil &	COG	0.02131	7.48E+09	0.04%	0.95	40.5	23	10.5	43.06%	0.0161%	0.000356
84	Campbell &	CPB	0.02854	1.48E+10	0.07%	0.65	2	0.5	15.5	4.88%	0.0036%	0.000483
85	Capital One	COF	0.02286	3.19E+10	0.16%	1.4	5.5	1.5	7.5	7.85%	0.0125%	0.002235
86	Cardinal H	CAH	0.0366	1.55E+10	0.08%	1	13	2.5	-4.5	16.90%	0.0131%	0.000777
88	Carnival Cr	CCL	0.10627	1.13E+10	0.06%	1.4	-2.5	#N/A	2	7.99%	0.0045%	0.000791
89	Caterpillar	CAT	0.03229	6.91E+10	0.35%	1.1	4	5.5	4.5	7.29%	0.0252%	0.003807
90	Cboe Glob	CBOE	0.01436	1.1E+10	0.06%	0.9	14.5	9.5	19.5	16.04%	0.0088%	0.000496
92	CDW Corp	CDW	0.01296	1.67E+10	0.08%	0.95	11	15	11.5	12.37%	0.0103%	0.000794

93	Celanese (CE	0.02814	1.04E+10	0.05%	1.2	7	9.5	5	9.91%	0.0052%	0.000627
95	CenterPoir CNP	0.0327	9.22E+09	0.05%	1.15	4.5	-5.5	4	7.84%	0.0036%	0.000532
96	CenturyLin CTL	0.09852	1.11E+10	0.06%	1	1	-12.5	-2.5	10.90%	0.0061%	0.000558
97	Cerner Cor CERN	0.01033	2.12E+10	0.11%	0.9	9	42.5	7.5	10.08%	0.0107%	0.000957
98	CF Industri CF	0.04001	6.41E+09	0.03%	1.25	29.5		5	34.09%	0.0110%	0.000402
99	Charles Sc SCHW	0.01952	4.75E+10	0.24%	1.1	12	18	10	14.07%	0.0335%	0.002617
101	Chevron C CVX	0.05612	1.72E+11	0.86%	1.3	13.5	4.5	1	19.49%	0.1677%	0.011182
103	Chubb Lim CB	0.02406	5.85E+10	0.29%	1.05	9.5	4	6.5	12.02%	0.0352%	0.003079
104	Church & FCHD	0.01234	1.91E+10	0.10%	0.65	9	6	9.5	10.29%	0.0099%	0.000623
105	Cigna Cor C	0.00021	7.01E+10	0.35%	1.2	11.5	4	15.5	11.52%	0.0405%	0.004215
106	Cincinnati CINF	0.03802	1.02E+10	0.05%	1	10.5	3.5	4.5	14.50%	0.0074%	0.000509
107	Cintas Cor CTAS	0.00925	2.87E+10	0.14%	1.1	14	15.5	5.5	14.99%	0.0216%	0.001582
108	Cisco Syst CSCO	0.03142	1.94E+11	0.97%	0.95	7	8.5	4.5	10.25%	0.0994%	0.009212
109	Citigroup Ir C	0.03846	1.1E+11	0.55%	1.4	10	25.5	5	14.04%	0.0777%	0.007746
110	Citizens Fin CFG	0.05966	1.12E+10	0.06%	1.35	12	18.5	5	18.32%	0.0102%	0.000755
111	Citrix Syste CTXS	0.00954	1.81E+10	0.09%	0.8	9	#N/A	3	10.00%	0.0091%	0.000726
112	Clorox Con CLX	0.02069	2.7E+10	0.14%	0.55	4.5	5.5	22.5	6.62%	0.0090%	0.000745
113	CME Grou CME	0.01928	6.32E+10	0.32%	0.9	2.5	4	6	4.45%	0.0141%	0.002851
114	CMS Ener CMS	0.02761	1.69E+10	0.08%	0.8	7.5	7	7.5	10.36%	0.0088%	0.000677
115	Coca-Cola KO	0.0349	2.02E+11	1.01%	0.9	6.5	4.5	5	10.10%	0.1022%	0.009102
116	Cognizant CTSH	0.01603	2.97E+10	0.15%	1.05	5	16.5	10	6.64%	0.0099%	0.001561
117	Colgate-Pa CL	0.02391	6.3E+10	0.32%	0.75	5	3.5	#N/A	7.45%	0.0235%	0.00237
118	Comcast C CMCSA	0.02333	1.8E+11	0.90%	0.75	13.5	11	8	15.99%	0.1442%	0.006765
119	Comerica C MA	0.0679	5.57E+09	0.03%	1.25	0.5	7	4	7.31%	0.0020%	0.000349
120	Conagra B CAG	0.02482	1.67E+10	0.08%	0.75	5	4	11	7.54%	0.0063%	0.000627
121	Concho Re CXO	0.01404	1.12E+10	0.06%	1.35	6	35	2.5	7.45%	0.0042%	0.000758
123	Consolidat ED	0.04087	2.5E+10	0.13%	0.75	3	3.5	3	7.15%	0.0090%	0.00094
124	Constellat STZ	0.01628	3.52E+10	0.18%	1.15	7.5	9	7.5	9.19%	0.0162%	0.002031
125	Cooper Co COO	0.0002	1.61E+10	0.08%	0.95	14.5	0	11	14.52%	0.0117%	0.000767
127	Corning Inc GLW	0.03218	2.08E+10	0.10%	1.1	15	11.5	5.5	18.46%	0.0193%	0.001147
129	Costco Wh COST	0.00935	1.32E+11	0.66%	0.65	9	9.5	9	9.98%	0.0661%	0.004308
130	Coty Inc. C COTY	0.10638	3.59E+09	0.02%	1.15	5	4.5	0.5	15.90%	0.0029%	0.000207
131	Crown Cas CCI	0.02905	6.89E+10	0.35%	0.9	12.5	7	7.5	15.59%	0.0538%	0.003106
132	CSX Corp CSX	0.01497	5.32E+10	0.27%	1.15	9.5	8	0.5	11.07%	0.0295%	0.003064
133	Cummins I CMI	0.03063	2.53E+10	0.13%	1.15	4	4.5	4	7.12%	0.0090%	0.001456
134	CVS Health CVS	0.03101	8.43E+10	0.42%	0.9	6	7	9.5	9.19%	0.0388%	0.003802
135	D.R. Horton DHI	0.01221	2.08E+10	0.10%	1.25	6.5	9	12	7.76%	0.0081%	0.001305
136	Danaher C DHR	0.00409	1.25E+11	0.62%	0.85	15	12	8.5	15.44%	0.0964%	0.005307
139	Deere & Co DE	0.01963	4.85E+10	0.24%	1.15	5	6.5	8	7.01%	0.0170%	0.002792
140	Delta Air Li DAL	0.05229	1.96E+10	0.10%	1.4	6	6	3	11.39%	0.0112%	0.001378
141	DENTSPLY XRAY	0.00906	9.68E+09	0.05%	1.05	8.5	9	4	9.44%	0.0046%	0.000509
144	Diamondb FANG	0.0322	7.35E+09	0.04%	1.45	16.5	#N/A	3.5	19.99%	0.0074%	0.000534
145	Digital Rea DLR	0.03129	3.84E+10	0.19%	0.85	6	6	7	9.22%	0.0178%	0.001636
146	Discover F DFS	0.0327	1.65E+10	0.08%	1.55	7.5	13.5	15	10.89%	0.0090%	0.001281
150	Dollar Gen DG	0.00753	4.82E+10	0.24%	0.7	12	9	8.5	12.80%	0.0309%	0.001689
152	Dominion ED	0.04448	7.1E+10	0.36%	0.8	7	4.5	6	11.60%	0.0413%	0.002845
153	Domino's F DPZ	0.00831	1.47E+10	0.07%	0.65	13	14	#N/A	13.89%	0.0102%	0.000479
154	Dover Cor DOV	0.02013	1.4E+10	0.07%	1.3	9.5	3	9	11.61%	0.0082%	0.000913
156	DTE Energ DTE	0.03759	2.08E+10	0.10%	0.9	5	6.5	5.5	8.85%	0.0092%	0.000936
157	Duke Ener DUK	0.04407	6.3E+10	0.32%	0.85	5	2	2.5	9.52%	0.0301%	0.002685
158	Duke Realt DRE	0.0257	1.35E+10	0.07%	0.9	-1	5.5	4.5	1.56%	0.0011%	0.000608
160	DXC Tech DXC	0.05364	3.97E+09	0.02%	1.5	10	13.5	10	15.63%	0.0031%	0.000299
161	E*TRADE IETFC	0.01142	1.08E+10	0.05%	1.25	17.5	#N/A	7.5	18.74%	0.0102%	0.000679
162	Eastman C EMN	0.03748	9.57E+09	0.05%	1.25	8	5.5	4.5	11.90%	0.0057%	0.0006
163	Eaton Cor ETN	0.03336	3.5E+10	0.18%	1.3	4	4.5	1.5	7.40%	0.0130%	0.002281
164	eBay Inc. EBAY	0.01321	3.4E+10	0.17%	1	7	28.5	7.5	8.37%	0.0143%	0.001706
165	Ecolab Inc. ECL	0.00916	5.94E+10	0.30%	1.1	8.5	8	9.5	9.45%	0.0281%	0.003272
166	Edison Inte EIX	0.04334	2.22E+10	0.11%	0.9	12	4	5.5	16.59%	0.0185%	0.001003
169	Eli Lilly and LLY	0.01838	1.54E+11	0.77%	0.75	10	8.5	10	11.93%	0.0921%	0.00579
170	Emerson E EMR	0.03258	3.67E+10	0.18%	1.2	9	2	7.5	12.40%	0.0228%	0.002206
171	Entergy Co ETR	0.03815	1.95E+10	0.10%	0.95	3	4	5	6.87%	0.0067%	0.000929
172	EOG Reso EOG	0.02834	3.08E+10	0.15%	1.15	26.5	10	12	29.71%	0.0459%	0.001775
173	Equifax Inc EFX	0.00913	2.07E+10	0.10%	1	7	3	10.5	7.94%	0.0083%	0.001039
174	Equinix Inc EQIX	0.01528	6.17E+10	0.31%	0.95	16	7	4	17.65%	0.0545%	0.002935
175	Equity Res EQR	0.03891	2.3E+10	0.12%	0.95	-11.5	4.5	2.5	-7.83%	-0.0090%	0.001097
176	Essex Proj ESS	0.03421	1.59E+10	0.08%	1	1	4.5	1	4.44%	0.0035%	0.000796
178	Everest Re RE	0.02877	8.62E+09	0.04%	0.9	18.5	6.5	6.5	21.64%	0.0093%	0.000389
179	Evergy Inc EVRG	0.03336	1.37E+10	0.07%	1.05	3	5.5	2	6.39%	0.0044%	0.000722
180	Eversource ES	0.02679	2.9E+10	0.15%	0.9	6.5	6	5	9.27%	0.0135%	0.001309
181	Exelon Cor EXC	0.04005	3.72E+10	0.19%	0.9	5	5.5	4	9.11%	0.0170%	0.001679
183	Expeditors EXPD	0.01413	1.23E+10	0.06%	0.95	5.5	6.5	3.5	6.95%	0.0043%	0.000583
184	Extra Spac EXR	0.03769	1.23E+10	0.06%	0.95	3	4.5	3.5	6.83%	0.0042%	0.000587

185	Exxon Mot	XOM	0.07417	1.98E+11	0.99%	1.1	9	3.5	1.5	16.75%	0.1665%	0.010935
188	Fastenal C	FAST	0.02382	2.41E+10	0.12%	0.9	7.5	9.5	6.5	9.97%	0.0120%	0.001085
189	Federal Re	FRT	0.04765	6.67E+09	0.03%	1	1.5	2	2	6.30%	0.0021%	0.000334
190	FedEx Cor	FDX	0.01879	3.62E+10	0.18%	1.05	3	6.5	9.5	4.91%	0.0089%	0.001902
191	Fidelity Na	FIS	0.01	8.65E+10	0.43%	0.95	7	5.5	13	8.04%	0.0348%	0.004116
192	Fifth Third	FTB	0.05002	1.54E+10	0.08%	1.35	3	9.5	6.5	8.08%	0.0062%	0.00104
193	First Reput	FRC	0.00722	1.9E+10	0.10%	1	10.5	5	10	11.26%	0.0107%	0.000952
194	FirstEnergy	FE	0.03851	2.19E+10	0.11%	0.85	8.5	3	9.5	12.51%	0.0138%	0.000935
197	FLIR Syste	FLIR	0.0169	5.26E+09	0.03%	0.95	9	4.5	5	10.77%	0.0028%	0.000251
198	Flowserve	FLS	0.0287	3.63E+09	0.02%	1.4	12.5	3	7	15.55%	0.0028%	0.000254
199	FMC Corpr	FMC	0.01778	1.28E+10	0.06%	1.25	11	16	12	12.88%	0.0083%	0.000803
202	Fortive Cor	FTV	0.00411	2.3E+10	0.12%	1.2	8	6.5	8	8.43%	0.0097%	0.001381
203	Fortune Br	FBHS	0.01535	8.63E+09	0.04%	1.35	5	5.5	9	6.57%	0.0028%	0.000584
206	Franklin Re	BEN	0.04787	1.12E+10	0.06%	1.1	6.5	9	3.5	11.44%	0.0064%	0.000616
208	Gap Inc.	GPS	0.08891	4.07E+09	0.02%	1.35	2.5	0.5	4.5	11.50%	0.0023%	0.000276
209	Garmin Ltd	GRMN	0.02564	1.82E+10	0.09%	1	7	4.5	5	9.65%	0.0088%	0.000911
211	General Dy	GD	0.02766	4.56E+10	0.23%	1.1	6	5.5	14.5	8.85%	0.0202%	0.002515
212	General El	GE	0.00549	6.37E+10	0.32%	1.25	2	-9	-3.5	2.55%	0.0082%	0.003989
213	General Mi	GIS	0.03174	3.74E+10	0.19%	0.7	4	3	12.5	7.24%	0.0136%	0.001313
215	Genuine P	GPC	0.03581	1.27E+10	0.06%	1.2	6.5	5.5	7	10.20%	0.0065%	0.000765
216	Gilead Scie	GILD	0.03674	9.29E+10	0.47%	0.65	-1.5	6	3.5	2.15%	0.0100%	0.003025
217	Global Pay	GPN	0.00432	5.4E+10	0.27%	1.2	11.5	47	13.5	11.96%	0.0323%	0.003245
218	Globe Life	GL	0.00979	8.16E+09	0.04%	1.15	10	7	8	11.03%	0.0045%	0.00047
219	Goldman S	GS	0.02453	7.01E+10	0.35%	1.15	6.5	15.5	10	9.03%	0.0317%	0.00404
220	H&R Block	HRB	0.06353	3.15E+09	0.02%	1	6	5.5	19	12.54%	0.0020%	0.000158
221	Halliburton	HAL	0.01365	1.16E+10	0.06%	1.6	19.5	-22	5	21.00%	0.0122%	0.000928
222	Hanesbran	HBI	0.0508	4.11E+09	0.02%	0.85	2.5	3.5	7	7.64%	0.0016%	0.000175
223	Hartford Fi	HIG	0.03155	1.48E+10	0.07%	1.1	12	8.5	9.5	15.34%	0.0113%	0.000813
224	Hasbro Inc	HAS	0.03619	1.03E+10	0.05%	1.15	10.5	4.5	7	14.31%	0.0074%	0.000593
226	Healthpeak	PEAK	0.05286	1.51E+10	0.08%	1.05	-15.5	1	1.5	-10.62%	-0.0080%	0.000793
228	Hershey Co	HSY	0.02333	2.76E+10	0.14%	0.85	4.5	6	21.5	6.89%	0.0095%	0.001174
230	Hewlett Pa	HPE	0.04734	1.3E+10	0.07%	1.35	7.5	10	6	12.41%	0.0081%	0.000881
232	HollyFronti	HFC	0.043	5.27E+09	0.03%	1.3	16.5	4.5	11.5	21.15%	0.0056%	0.000343
234	Home Dep	HD	0.02408	2.68E+11	1.34%	1.05	8	12.5	#N/A	10.50%	0.1411%	0.014103
235	Honeywell	HON	0.02429	1.04E+11	0.52%	1.15	8	8.5	5.5	10.53%	0.0549%	0.005995
236	Hormel Foo	HRL	0.01931	2.6E+10	0.13%	0.55	8.5	8	6.5	10.51%	0.0137%	0.000715
237	Host Hotel	HST	0.06557	8.6E+09	0.04%	1	-2.5	2.5	-1	3.98%	0.0017%	0.000431
238	Howmet Al	HWM	0.00549	6.36E+09	0.03%	1.65	12	-3.5	10	12.58%	0.0040%	0.000526
239	HP Inc.	HPQ	0.04165	2.42E+10	0.12%	1.3	10.5	7	#N/A	14.88%	0.0180%	0.001576
240	Humana In	HUM	0.0066	5.01E+10	0.25%	1.2	10.5	10.5	14	11.19%	0.0281%	0.003014
241	Huntington	HBAN	0.05903	1.03E+10	0.05%	1.2	4	6.5	4.5	10.02%	0.0052%	0.00062
242	Huntington	HII	0.0227	7.35E+09	0.04%	1.1	7	12	11.5	9.35%	0.0034%	0.000405
243	IDEX Corp	IEX	0.01306	1.15E+10	0.06%	1.05	9.5	11	12.5	10.87%	0.0063%	0.000607
245	IHS Markit	INFO	0.00949	2.86E+10	0.14%	1.15	11.5	0	4.5	12.50%	0.0179%	0.001648
246	Illinois To	ITW	0.0251	5.39E+10	0.27%	1.1	7	9	-3.5	9.60%	0.0259%	0.002969
249	Intel Corp	INTC	0.02197	2.54E+11	1.27%	0.9	9	4.5	6	11.30%	0.1440%	0.011472
250	Intercontin	ICE	0.01271	5.17E+10	0.26%	0.95	9	6.5	8	10.33%	0.0267%	0.002459
251	Internation	IBM	0.05251	1.1E+11	0.55%	1.05	1.5	2.5	21	6.79%	0.0375%	0.00058
252	Internation	IFF	0.02334	1.37E+10	0.07%	0.9	8	9	7	10.43%	0.0072%	0.000619
253	Internation	IP	0.05844	1.38E+10	0.07%	1.15	6	4	2	12.02%	0.0083%	0.000795
254	Interpublic	IPG	0.05812	6.84E+09	0.03%	1.15	11	9.5	8.5	17.13%	0.0059%	0.000394
255	Intuit Inc.	INTU	0.00738	7.49E+10	0.38%	1.1	14.5	14	33	15.29%	0.0574%	0.004129
257	Invesco Ltr	IVZ	0.05472	5.2E+09	0.03%	1.4	3.5	4.5	12.5	9.07%	0.0024%	0.000365
260	Iron Mount	IRM	0.0917	7.77E+09	0.04%	0.9	8.5	3	-5.5	18.06%	0.0070%	0.00035
261	J.B. Hunt T	JBHT	0.00905	1.26E+10	0.06%	0.95	6.5	7	12.5	7.43%	0.0047%	0.000599
262	J.M. Smuc	SJM	0.03242	1.24E+10	0.06%	0.65	3	3.5	4.5	6.29%	0.0039%	0.000403
263	Jack Henry	JKHY	0.00957	1.38E+10	0.07%	0.9	10	9	7.5	11.00%	0.0076%	0.000621
264	Jacobs En	J	0.00893	1.11E+10	0.06%	1.2	14.5	15	10.5	15.46%	0.0086%	0.000666
265	Johnson &	KNJ	0.02817	3.78E+11	1.89%	0.85	10	7.5	11	12.96%	0.2453%	0.016093
266	Johnson C	JCI	0.02996	2.58E+10	0.13%	1.15	8	4	5	11.12%	0.0144%	0.001488
267	JPMorgan	JPM	0.03639	3.01E+11	1.51%	1.1	3.5	6.5	6.5	7.20%	0.1088%	0.016618
268	Juniper Ne	JNPR	0.03363	7.88E+09	0.04%	1	6	9	-5.5	9.46%	0.0037%	0.000395
269	Kansas Cit	KSU	0.01103	1.38E+10	0.07%	1.1	11.5	7	7	12.67%	0.0087%	0.00076
270	Kellogg Co	K	0.03365	2.32E+10	0.12%	0.65	3	3.5	13.5	6.42%	0.0075%	0.000756
271	KeyCorp	KEY	0.05449	1.32E+10	0.07%	1.35	3	8.5	5.5	8.53%	0.0057%	0.000896
273	Kimberly-C	KMB	0.03005	4.85E+10	0.24%	0.8	7	3.5	#N/A	10.11%	0.0246%	0.001944
275	Kinder Mor	KMI	0.06658	3.57E+10	0.18%	1.3	22	13	3.5	29.39%	0.0525%	0.002323
276	KLA Corpo	KLAC	0.01755	3E+10	0.15%	1.1	11.5	11.5	21	13.36%	0.0201%	0.001656
278	Kraft Heinz	KHC	0.04822	4.05E+10	0.20%	0.9	-0.5	-4	0	4.31%	0.0088%	0.001828
279	Kroger Co.	KR	0.02012	2.5E+10	0.13%	0.55	5.5	12	11	7.57%	0.0095%	0.000689
280	L Brands Ir	LB	0.07682	4.34E+09	0.02%	1.45	-2.5	-9.5	#N/A	5.09%	0.0011%	0.000315
283	Lam Reser	LRCX	0.01461	4.57E+10	0.23%	1.3	10	13	12	11.53%	0.0264%	0.002977

284	Lamb Wes LW	0.01357	9.9E+09	0.05%	1.1	9.5	13.5	#N/A	10.92%	0.0054%	0.000546
286	Leggett & FLEG	0.04623	4.58E+09	0.02%	1.25	8	6	6	12.81%	0.0029%	0.000287
287	Leidos Holdings	0.01369	1.41E+10	0.07%	1.2	10	3	13.5	11.44%	0.0081%	0.000848
288	Lennar Corporation	0.00808	1.7E+10	0.09%	1.4	7	25.5	10.5	7.84%	0.0067%	0.001193
289	Lincoln National	0.03938	7.85E+09	0.04%	1.85	9.5	9.5	9	13.63%	0.0054%	0.000728
293	Lockheed Martin	0.02537	1.06E+11	0.53%	0.95	8.5	8	#N/A	11.14%	0.0593%	0.005052
294	Loews Corporation	0.00738	9.53E+09	0.05%	1.05	12	0	5.5	12.78%	0.0061%	0.000502
295	Lowe's Companies	0.01635	1.02E+11	0.51%	1.2	10.5	9.5	#N/A	12.22%	0.0622%	0.006109
296	LyondellBasell	0.06274	2.23E+10	0.11%	1.35	3.5	4	7	9.88%	0.0111%	0.001511
297	M&T Bank	0.03984	1.42E+10	0.07%	1.05	9.5	10.5	7	13.67%	0.0097%	0.000745
298	Marathon Petroleum	0.03082	5.13E+09	0.03%	1.55	9	0	-1	12.22%	0.0031%	0.000398
299	Marathon Petroleum	0.06031	2.5E+10	0.13%	1.75	3	5.5	7	9.12%	0.0114%	0.002194
300	MarketAxess	0.00479	1.9E+10	0.10%	0.85	14	15.5	15	14.51%	0.0138%	0.000809
302	Marsh & McLennan	0.01679	5.49E+10	0.27%	0.95	10	6.5	9.5	11.76%	0.0323%	0.002612
303	Martin Marietta	0.01038	1.32E+10	0.07%	1.15	9.5	5.5	8	10.59%	0.0070%	0.00076
304	Masco Corporation	0.01119	1.27E+10	0.06%	1.2	6	7.5	#N/A	7.15%	0.0046%	0.000765
305	Mastercard	0.00525	3.06E+11	1.53%	1.1	13.5	8.5	45.5	14.06%	0.2156%	0.016867
306	Maxim International	0.0317	1.61E+10	0.08%	0.95	4.5	6.5	-0.5	7.74%	0.0063%	0.000769
307	McCormick & Co	0.01426	2.15E+10	0.11%	0.85	6.5	5.5	10.5	7.97%	0.0086%	0.000916
308	McDonald's	0.02639	1.41E+11	0.71%	0.95	7.5	8	#N/A	10.24%	0.0723%	0.006707
309	McKesson	0.01069	2.48E+10	0.12%	1	9	6.5	9	10.12%	0.0126%	0.001244
310	Medtronic	0.02457	1.27E+11	0.63%	0.95	7.5	6	3	10.05%	0.0637%	0.006025
311	Merck & Co	0.03201	1.92E+11	0.96%	0.85	9	7.5	5.5	12.35%	0.1190%	0.008195
312	MetLife Inc	0.04828	3.46E+10	0.17%	1.35	7.5	5.5	2	12.51%	0.0217%	0.00234
314	MGM Resorts	0.00054	9.16E+09	0.05%	1.7	25	0	12.5	25.06%	0.0115%	0.000781
315	Microchip Technology	0.0141	2.56E+10	0.13%	1.05	7.5	4.5	15.5	8.96%	0.0115%	0.001346
317	Microsoft	0.01039	1.49E+12	7.46%	0.95	14	11.5	12.5	15.11%	1.1274%	0.070874
318	Mid-America	0.03416	1.34E+10	0.07%	1	0.5	2.5	5	3.92%	0.0026%	0.000671
321	Mondelez International	0.02147	7.58E+10	0.38%	0.95	8	8	5.5	10.23%	0.0389%	0.003608
323	Moody's	0.00815	5.15E+10	0.26%	1.2	8	9.5	#N/A	8.85%	0.0229%	0.003099
324	Morgan Stanley	0.02942	7.5E+10	0.38%	1.3	5	6	9	8.02%	0.0301%	0.004884
325	Mosaic Company	0.01528	4.96E+09	0.02%	1.3	22	15.5	3	23.70%	0.0059%	0.000323
326	Motorola Solutions	0.01811	2.4E+10	0.12%	0.85	9.5	10	#N/A	11.40%	0.0137%	0.001024
327	MSCI Inc.	0.00824	2.76E+10	0.14%	1	17	13	62	17.89%	0.0247%	0.001383
329	Nasdaq Inc	0.01643	1.96E+10	0.10%	1.05	8	4.5	10	9.71%	0.0095%	0.001031
330	National Oilwell	0.0163	4.76E+09	0.02%	1.1	31	-10.5	-9.5	32.88%	0.0078%	0.000263
331	NetApp Inc	0.04487	9.49E+09	0.05%	1.1	10	15	#N/A	14.71%	0.0070%	0.000523
333	Newell Brands	0.05955	6.55E+09	0.03%	1.15	4.5	0	-0.5	10.59%	0.0035%	0.000378
334	Newmont Corporation	0.01801	4.46E+10	0.22%	0.7	11.5	14.5	8.5	13.40%	0.0299%	0.001563
337	NextEra Energy	0.0225	1.22E+11	0.61%	0.85	10	10.5	6	12.36%	0.0755%	0.00519
339	NIKE Inc.	0.00995	1.53E+11	0.77%	1.15	18	12	5.5	19.08%	0.1464%	0.008822
340	NiSource	0.0354	9.08E+09	0.05%	0.85	13.5	7.5	5	17.28%	0.0079%	0.000387
341	Noble Energy	0.00782	4.91E+09	0.02%	1.75	0	5.5	-0.5	0.78%	0.0002%	0.00043
342	Norfolk Southern	0.02156	4.47E+10	0.22%	1.15	11.5	8	2	13.78%	0.0308%	0.002574
343	Northern Trust	0.03389	1.72E+10	0.09%	1.1	4.5	6.5	6	7.97%	0.0069%	0.000948
344	Northrop Grumman	0.01825	5.3E+10	0.27%	0.85	10.5	8	22.5	12.42%	0.0330%	0.002257
345	NortonLifeLock	0.02493	1.18E+10	0.06%	1.05	5	15	14	7.56%	0.0045%	0.000622
348	Nucor Corporation	0.03699	1.31E+10	0.07%	1.2	3	2.5	5	6.75%	0.0044%	0.000788
349	NVIDIA Corporation	0.00174	2.27E+11	1.14%	1.2	9.5	5	24	9.68%	0.1100%	0.013636
351	Occidental Petroleum	0.00203	1.77E+10	0.09%	1.4	14.5	#N/A	10	14.72%	0.0131%	0.001242
352	Old Dominion	0.00364	1.94E+10	0.10%	0.95	6.5	14	11	6.88%	0.0067%	0.000925
353	Omnicom	0.04691	1.19E+10	0.06%	0.95	5.5	7.5	11	10.32%	0.0061%	0.000565
354	ONEOK Inc	0.10289	1.6E+10	0.08%	1.55	16	10	8.5	27.11%	0.0217%	0.001243
355	Oracle Corporation	0.01788	1.69E+11	0.85%	0.85	10	11	-4	11.88%	0.1008%	0.007212
358	PACCAR Inc	0.01719	2.57E+10	0.13%	1.1	3.5	2.5	6	5.25%	0.0068%	0.001419
359	Packaging Corp	0.03237	9.26E+09	0.05%	1	4	6	8	7.30%	0.0034%	0.000464
360	Parker-Hanifin	0.01899	2.38E+10	0.12%	1.4	9	9	13.5	10.98%	0.0131%	0.001667
361	Paychex Inc	0.03283	2.71E+10	0.14%	1.15	10.5	10	7.5	13.96%	0.0189%	0.001561
364	Pentair Inc	0.02004	6.28E+09	0.03%	1.25	6	-1	2.5	8.06%	0.0025%	0.000394
365	People's United	0.06015	5.08E+09	0.03%	0.95	4	1.5	4	10.14%	0.0026%	0.000242
366	PepsiCo Inc	0.0308	1.84E+11	0.92%	0.85	6	4	7.5	9.17%	0.0847%	0.007847
367	PerkinElmer	0.00286	1.09E+10	0.05%	0.95	9	2.5	6	9.30%	0.0051%	0.00052
368	Perrigo Corporation	0.01649	7.44E+09	0.04%	1	2	10	6	3.67%	0.0014%	0.000373
369	Pfizer Inc.	0.04573	1.85E+11	0.93%	0.85	8.5	5	4	13.27%	0.1228%	0.007865
370	Philip Morris	0.06273	1.16E+11	0.58%	0.95	6	4.5	#N/A	12.46%	0.0725%	0.00553
371	Phillips 66	0.04722	3.33E+10	0.17%	1.3	4	8.5	4.5	8.82%	0.0147%	0.002169
372	Pinnacle West	0.04083	8.62E+09	0.04%	0.85	4.5	5.5	3.5	8.67%	0.0037%	0.000367
374	PNC Financial	0.04154	4.7E+10	0.24%	1.15	8	11.5	6.5	12.32%	0.0290%	0.002707
375	PPG Industries	0.01954	2.46E+10	0.12%	1.1	6	6	3.5	8.01%	0.0099%	0.001358
376	PPL Corporation	0.06176	2.07E+10	0.10%	1.05	2.5	2	4.5	8.75%	0.0091%	0.001087
377	Principal Financial	0.05302	1.16E+10	0.06%	1.45	5.5	5.5	8	10.95%	0.0063%	0.000841
378	Procter & Gamble	0.02652	2.95E+11	1.48%	0.75	8.5	4	6	11.26%	0.1667%	0.011098

379	Progressiv	PGR	0.00495	4.73E+10	0.24%	0.8	9.5	-14.5	10	10.02%	0.0238%	0.001898
380	Prologis In	PLD	0.0244	7.03E+10	0.35%	1.05	6	7.5	8.5	8.51%	0.0300%	0.003698
381	Prudential	PRU	0.06871	2.53E+10	0.13%	1.5	7	9	3.5	14.11%	0.0179%	0.001901
382	Public Ser	PEG	0.03891	2.55E+10	0.13%	0.9	5	4	5	8.99%	0.0115%	0.001149
383	Public Stor	PSA	0.04076	3.43E+10	0.17%	0.85	3.5	2	2	7.65%	0.0131%	0.001461
384	PulteGroup	PHM	0.01348	9.55E+09	0.05%	1.45	5.5	8.5	12.5	6.89%	0.0033%	0.000694
385	PVH Corp.	PVH	0.00302	3.53E+09	0.02%	1.6	6.5	0	6	6.81%	0.0012%	0.000283
387	QUALCOM	QCOM	0.02891	1.01E+11	0.51%	1	9.5	7.5	4	12.53%	0.0635%	0.005069
388	Quanta Se	PWR	0.00521	5.28E+09	0.03%	1.25	15.5	0	8	16.06%	0.0042%	0.000331
389	Quest Diag	DGX	0.02016	1.49E+10	0.07%	0.95	9	7.5	9	11.11%	0.0083%	0.000707
390	Ralph Laur	RL	0.03719	5.37E+09	0.03%	1.2	8	5.5	0	11.87%	0.0032%	0.000323
391	Raymond	RJF	0.02049	9.9E+09	0.05%	1.15	8	12.5	11	10.13%	0.0050%	0.00057
392	Raytheon	RTX	0.02841	1.01E+11	0.51%	1.05	3	-4	3.5	5.88%	0.0299%	0.005336
393	Realty Incc	O	0.0442	2.18E+10	0.11%	1	6.5	5	5.5	11.06%	0.0121%	0.001091
394	Regency C	REG	0.05124	7.88E+09	0.04%	1	13.5	5	3.5	18.97%	0.0075%	0.000395
396	Regions Fi	RF	0.05016	1.19E+10	0.06%	1.35	5	8.5	5.5	10.14%	0.0060%	0.000802
397	Republic S	RSG	0.01963	2.63E+10	0.13%	0.9	9	9	5	11.05%	0.0145%	0.001185
398	ResMed In	RMD	0.00898	2.51E+10	0.13%	0.95	8.5	7	4	9.44%	0.0119%	0.001197
399	Robert Hal	RHI	0.02632	5.92E+09	0.03%	1.15	9	7	16.5	11.75%	0.0035%	0.000341
400	Rockwell A	ROK	0.01946	2.43E+10	0.12%	1.2	7	6	4.5	9.01%	0.0110%	0.00146
401	Rollins Inc.	ROL	0.00755	1.39E+10	0.07%	0.85	12	10	7.5	12.80%	0.0089%	0.000591
402	Roper Tech	ROP	0.0051	4.2E+10	0.21%	1.05	11.5	10	12.5	12.04%	0.0253%	0.002209
404	Royal Caril	RCL	0.05257	1.24E+10	0.06%	1.4	-0.5	#N/A	1	4.74%	0.0030%	0.000872
405	S&P Globa	SPGI	0.0082	7.87E+10	0.39%	1.1	11	11	26	11.87%	0.0468%	0.00434
407	SBA Comm	SBAC	0.00643	3.23E+10	0.16%	0.95	31	#N/A	#N/A	31.74%	0.0514%	0.001537
408	Schlumber	SLB	0.02478	2.8E+10	0.14%	1.25	15.5	0	-6	18.17%	0.0255%	0.001754
409	Seagate Te	STX	0.05238	1.27E+10	0.06%	1.1	4	1	24	9.34%	0.0060%	0.000702
410	Sealed Air	SEE	0.02022	4.93E+09	0.02%	1	26	4	#N/A	28.28%	0.0070%	0.000247
411	Sempra En	SRE	0.03356	3.64E+10	0.18%	0.95	10	7.5	8	13.52%	0.0247%	0.001735
413	Sherwin-W	SHW	0.00921	5.28E+10	0.26%	1.05	8.5	11	12.5	9.46%	0.0250%	0.002779
414	Simon Proj	SPG	0.11838	2.17E+10	0.11%	1.25	4.5	-2.5	-1	16.60%	0.0181%	0.001359
415	Skyworks	SWKS	0.01363	2.15E+10	0.11%	1.1	10	13	16.5	11.43%	0.0123%	0.001187
416	SL Green	SLG	0.06613	4.1E+09	0.02%	1.2	0.5	4	0.5	7.13%	0.0015%	0.000246
417	Snap-on In	SNA	0.03186	7.37E+09	0.04%	1.1	6	6.5	3.5	9.28%	0.0034%	0.000406
418	Southern C	SO	0.04562	5.92E+10	0.30%	0.9	3	3	3.5	7.63%	0.0227%	0.002672
420	Stanley Bl	SWK	0.02018	2.11E+10	0.11%	1.45	9	6	4	11.11%	0.0117%	0.001532
421	Starbucks	SBUX	0.02149	8.92E+10	0.45%	1	13.5	12	#N/A	15.79%	0.0706%	0.004468
422	State Stre	STT	0.03281	2.23E+10	0.11%	1.2	3.5	5	6.5	6.84%	0.0076%	0.001342
423	STERIS Pl	STE	0.00965	1.3E+10	0.07%	1.1	9.5	8	9	10.51%	0.0069%	0.000718
424	Stryker Co	SYK	0.0121	7.13E+10	0.36%	1.1	11	9	10	12.28%	0.0439%	0.003932
426	Synchrony	SYF	0.03629	1.42E+10	0.07%	1.45	8	14	9	11.77%	0.0084%	0.001029
428	Sysco Cor	SY	0.03218	2.84E+10	0.14%	1.1	9.5	8.5	-4	12.87%	0.0183%	0.001565
429	T. Rowe Pr	TROW	0.02867	2.86E+10	0.14%	1.05	8	9.5	8.5	10.98%	0.0157%	0.001504
431	Tapestry Ir	TPR	0.09657	3.86E+09	0.02%	1.4	5	0	10.5	14.90%	0.0029%	0.000271
432	Target Cor	TGT	0.02319	5.87E+10	0.29%	0.7	9.5	5.5	6.5	11.93%	0.0351%	0.002057
433	TE Connec	TEL	0.02361	2.68E+10	0.13%	1.15	5.5	6	3.5	7.93%	0.0107%	0.001546
436	Teleflex In	TFX	0.00372	1.7E+10	0.09%	1.1	14	2.5	11	14.40%	0.0122%	0.000936
437	Texas Instr	TXN	0.02858	1.16E+11	0.58%	0.85	4	6.5	13.5	6.92%	0.0401%	0.004925
438	Textron Inc	TXT	0.00229	7.96E+09	0.04%	1.35	11	10.5	3.5	11.24%	0.0045%	0.000539
439	Thermo Fi	TMO	0.00253	1.37E+11	0.69%	0.9	10	11.5	5	10.27%	0.0706%	0.006189
440	Tiffany & C	TIF	0.01919	1.47E+10	0.07%	0.85	9.5	6	5.5	11.51%	0.0085%	0.000625
441	TJX Comp	TJX	0.01721	6.4E+10	0.32%	1.15	14	10.5	20	15.84%	0.0508%	0.00369
443	Tractor Sup	TSCO	0.01114	1.45E+10	0.07%	0.85	9.5	9	3.5	10.67%	0.0078%	0.000619
445	Travelers	TRV	0.0293	2.93E+10	0.15%	0.95	9.5	3	7	12.57%	0.0185%	0.001397
446	Truist Finan	TFC	0.04444	5.46E+10	0.27%	1.2	5	6.5	6.5	9.56%	0.0261%	0.003282
449	Tyson Foo	TSN	0.02624	2.33E+10	0.12%	0.7	7	10	9.5	9.72%	0.0114%	0.000818
450	U.S. Banc	USB	0.04356	5.81E+10	0.29%	1.1	3.5	6.5	6.5	7.93%	0.0231%	0.003202
451	UDR Inc.	UDR	0.03796	1.12E+10	0.06%	1	5	4	11	8.89%	0.0050%	0.00056
455	Union Paci	UNP	0.02271	1.16E+11	0.58%	1.1	10.5	7.5	2	12.89%	0.0749%	0.00639
457	United Par	UPS	0.03755	9.28E+10	0.46%	0.75	6	6.5	28	9.87%	0.0459%	0.003486
459	United Heal	UNH	0.01715	2.76E+11	1.39%	1.1	12	12	9	13.82%	0.1914%	0.015238
461	Unum Gro	UNM	0.06651	3.49E+09	0.02%	1.6	9	11.5	5	15.95%	0.0028%	0.00028
462	V.F. Corpo	VFC	0.03024	2.47E+10	0.12%	1.2	7	4	4.5	10.13%	0.0126%	0.001488
463	Valero Ene	VLO	0.06065	2.63E+10	0.13%	1.55	8	5	0.5	14.31%	0.0189%	0.002047
465	Ventas Inc	VTR	0.08056	1.47E+10	0.07%	1.2	1.5	2	1.5	9.62%	0.0071%	0.000883
467	Verisk Ana	VRSK	0.00647	2.71E+10	0.14%	0.9	10.5	0	11	11.18%	0.0152%	0.001221
468	Verizon Co	VZ	0.04324	2.35E+11	1.18%	0.65	4	2	1	8.41%	0.0992%	0.007668
470	ViacomCB	VIAC	0.03918	1.38E+10	0.07%	1.4	12	9.5	26	16.15%	0.0112%	0.000968
471	Visa Inc.	V	0.00619	4.13E+11	2.07%	1	15	15	10.5	15.67%	0.3241%	0.020688
472	Vornado R	VNO	0.06593	7.65E+09	0.04%	1.2	-5	1.5	5.5	1.43%	0.0005%	0.00046
473	Vulcan Ma	VMC	0.01124	1.6E+10	0.08%	1.15	12.5	8	3	13.69%	0.0110%	0.000924
474	W. R. Berk	WRB	0.00822	1.04E+10	0.05%	1.05	10	7.5	8	10.86%	0.0057%	0.000549

475 W.W. Grainger	0.01892	1.63E+10	0.08%	1	8	11	14.5	9.97%	0.0081%	0.000816
476 Walgreens	0.04359	3.68E+10	0.18%	0.75	6	6.5	9	10.49%	0.0194%	0.001384
477 Walmart Inc	0.01831	3.34E+11	1.67%	0.6	7.5	4	3.5	9.40%	0.1574%	0.010046
479 Waste Management	0.02083	4.42E+10	0.22%	0.75	5.5	6.5	3.5	7.64%	0.0169%	0.00166
481 WEC Energy	0.02815	2.83E+10	0.14%	0.8	6	6.5	3.5	8.90%	0.0126%	0.001136
482 Wells Fargo	0.07405	1.13E+11	0.57%	1.1	5	6	5	12.59%	0.0713%	0.006226
483 Welltower	0.04372	2.33E+10	0.12%	0.95	9.5	3.5	0.5	14.08%	0.0164%	0.001109
484 West Pharmaceutical	0.00301	1.57E+10	0.08%	0.85	14	12	11	14.32%	0.0112%	0.000667
486 Western Union	0.04151	8.91E+09	0.04%	0.8	5	13.5	18	9.25%	0.0041%	0.000357
487 Westinghouse	0.00785	1.16E+10	0.06%	1.2	10.5	7.5	10	11.33%	0.0066%	0.0007
488 WestRock	0.02822	7.35E+09	0.04%	1.2	5	1	3.5	7.89%	0.0029%	0.000442
490 Whirlpool	0.03791	7.87E+09	0.04%	1.4	5	2.5	14.5	8.89%	0.0035%	0.000552
491 Williams-Sonoma	0.08226	2.36E+10	0.12%	1.6	13	6.5	5.5	21.76%	0.0257%	0.001892
494 Xcel Energy	0.02666	3.39E+10	0.17%	0.75	6	6	5.5	8.75%	0.0148%	0.001273
495 Xerox Holdings	0.06039	3.53E+09	0.02%	1.35	9.5	4.5	12	15.83%	0.0028%	0.000239
496 Xilinx Inc.	0.01626	2.27E+10	0.11%	0.9	6	4	2	7.67%	0.0087%	0.001025
497 Xylem Inc.	0.01566	1.19E+10	0.06%	1.05	8.5	5	11	10.13%	0.0061%	0.000629
498 Yum! Brands	0.02086	2.71E+10	0.14%	1.1	9.5	11	#N/A	11.69%	0.0159%	0.001495
500 Zimmer Biomet	0.00753	2.64E+10	0.13%	1.1	5.5	4	4.5	6.27%	0.0083%	0.001453
501 Zions Banc	0.03764	5.92E+09	0.03%	1.15	4.5	9.5	4	8.35%	0.0025%	0.000341
502 Zoetis Inc.	0.00582	6.53E+10	0.33%	1.05	12	13.5	19	12.62%	0.0413%	0.003434
			100.00%		8.308				11.9487%	0.987682

Schedule Updated PKC 11b. Analysis with AvGR and DY>0
Components of the S&P 500

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#	Company Symbol	DY	MCAP	MCAP-weight	Beta	EPSGR	DPSGR	BVPSGR	AVGGR with DY=0	DCF	weighted DCF	weighted beta
1	3M Comp MM	0.03693	9.16E+10	0.46%	0.95	4.5	6.5	1	4	0.077669	0.000355	0.004341
2	A. O. Smi AOS	0.02003	7.72E+09	0.04%	0.95	5.5	12	5	7.5	0.095781	3.69E-05	0.000366
3	Abbott Lab ABT	0.01595	1.6E+11	0.80%	1.05	9.5	9	5.5	8	0.096588	0.00077	0.008366
4	AbbVie Inc ABBV	0.04905	1.7E+11	0.85%	1.05	8	8		8	0.131012	0.001109	0.008885
6	Accenture ACN	0.01577	1.34E+11	0.67%	0.95	7.5	8		10.833333	0.124958	0.000837	0.006366
7	Activision I ATVI	0.00539	5.86E+10	0.29%	0.75	8	10	8.5	8.833333	0.093961	0.000275	0.002192
9	Advance A AAP	0.00677	1.02E+10	0.05%	1.2	11	34	4.5	16.5	0.172329	8.78E-05	0.000611
11	AES Corp AES	0.04265	8.94E+09	0.04%	1.05		4	0	2	0.063077	2.81E-05	0.000468
12	Aflac Inco AFL	0.03018	2.66E+10	0.13%	1.25	7	6.5	10.5	8	0.111387	0.000148	0.001661
13	Agilent Tec A	0.00816	2.72E+10	0.14%	0.95	10.5	9	6.5	8.666667	0.09518	0.000129	0.001291
14	Air Produc APD	0.02251	5.26E+10	0.26%	0.95	12	7.5	8.5	9.333333	0.116894	0.000307	0.002493
16	Alaska Air ALK	0.04005	4.59E+09	0.02%	1.3	2		1	1.5	0.05535	1.27E-05	0.000298
17	Albemarle ALB	0.01954	8.38E+09	0.04%	1.2	5.5	5.5	4.5	5.166667	0.071711	3E-05	0.000502
18	Alexandria ARE	0.02491	2.15E+10	0.11%	1	16.5	6	8.5	10.333333	0.12953	0.000139	0.001072
21	Alliegion PI ALLE	0.01243	9.5E+09	0.05%	1.15	9.5	12.5	25	15.66667	0.17007	8.06E-05	0.000545
22	Alliant Ene LNT	0.031	1.22E+10	0.06%	0.8	6.5	5.5	7.5	6.5	0.097008	5.92E-05	0.000488
23	Allstate Co ALL	0.02187	3.1E+10	0.15%	1	6	8	6.5	6.833333	0.090951	0.000141	0.001548
26	Altria Grou MO	0.08102	7.71E+10	0.38%	0.85	8.5	9	5.5	7.666667	0.160792	0.000618	0.003268
29	Ameren Cr AEE	0.02733	1.79E+10	0.09%	0.8	6	5	5.5	5.5	0.083082	7.42E-05	0.000714
31	American I AEP	0.03424	4.05E+10	0.20%	0.75	5	5.5	4.5	5	0.085096	0.000172	0.001516
32	American I AXP	0.01684	8.22E+10	0.41%	1.2	7.5	5.5	7	6.666667	0.084068	0.000345	0.004924
33	American I AIG	0.03942	2.8E+10	0.14%	1.4		6	3	4.5	0.085307	0.000119	0.001953
34	American I AMT	0.01708	1.14E+11	0.57%	0.95	7.5	10.5	9.5	9.166667	0.10953	0.000624	0.005413
35	American I AWK	0.01703	2.34E+10	0.12%	0.85	8.5	8.5	5	7.333333	0.090988	0.000106	0.000992
36	Ameriprise AMP	0.02764	1.84E+10	0.09%	1.4	11	2.5	20.5	11.333333	0.14254	0.000131	0.001286
37	Amerisour ABC	0.01676	2.04E+10	0.10%	0.9	7	4	6.5	5.833333	0.075582	7.69E-05	0.000916
38	AMETEK I AME	0.00807	2.05E+10	0.10%	1.15	15.5	13	11	13.16667	0.140268	0.000143	0.001174
39	Amgen Inc AMGN	0.02779	1.35E+11	0.68%	0.85	6.5	8	7	7.166667	0.100452	0.000679	0.005746
40	Amphenol APH	0.01021	2.9E+10	0.14%	0.95	9	8.5	6.5	8	0.090618	0.000131	0.001374
41	Analog De ADI	0.02019	4.52E+10	0.23%	0.95	7	6	6.5	6.5	0.085846	0.000194	0.002145
43	Anthem Inc ANTM	0.01431	6.69E+10	0.33%	1.15	14	12.5	11.5	12.66667	0.141883	0.000474	0.003841
44	Aon Plc Cl AON	0.00922	4.41E+10	0.22%	0.95	11	5	16	10.66667	0.116378	0.000256	0.002092
45	Apache Cr APA	0.00703	5.37E+09	0.03%	1.9	13.5	-14	-10	-3.5	-0.02809	-7.5E-06	0.000509
46	Apartment AIV	0.04208	5.8E+09	0.03%	1.2	-1.5	3	16.5	6	0.103342	2.99E-05	0.000347
47	Apple Inc. AAPL	0.00933	1.52E+12	7.61%	0.95	14	12	13	13	0.139936	0.010644	0.072261
48	Applied Mz AMAT	0.01457	5.53E+10	0.28%	1.2	6.5	8.5	12.5	9.166667	0.106904	0.000295	0.003313
49	Aptiv PLC APTV	0.01149	2.07E+10	0.10%	1.2	11	1.5	19.5	10.66667	0.118769	0.000123	0.001238
50	Archer-Dai ADM	0.03549	2.25E+10	0.11%	1	9.5	5.5	4.5	6.5	0.101643	0.000114	0.001125
52	Arthur J. G AJG	0.01815	1.88E+10	0.09%	1	13.5	2.5	11.5	9.166667	0.110649	0.000104	0.000938
53	Assurant Ir AIZ	0.02354	6.38E+09	0.03%	0.9	6.5	4	10.5	7	0.094364	3.01E-05	0.000287
54	AT&T Inc. T	0.06853	2.16E+11	1.08%	0.8	5.5	4.5	4.5	4.833333	0.118519	0.001279	0.008631
55	Atmos Ene ATO	0.02267	1.24E+10	0.06%	0.8	7	7.5	7.5	7.333333	0.096835	6E-05	0.000495
57	Automatic ADP	0.02399	6.52E+10	0.33%	1.1	12	11.5	14	12.5	0.150489	0.00049	0.003579
59	AvalonBay AVB	0.03967	2.26E+10	0.11%	1.05	2.5	5.5	3	3.666667	0.077064	8.67E-05	0.001182
60	Avery Deni AVY	0.01992	9.71E+09	0.05%	1.2	11	8.5	7	8.833333	0.109133	5.29E-05	0.000581
62	Ball Corpo BLL	0.00851	2.3E+10	0.11%	1.05	21	8	11.5	13.5	0.144084	0.000165	0.001204
63	Bank of Am BAC	0.02875	2.17E+11	1.08%	1.2	5	11	6	7.333333	0.103138	0.001118	0.013007
64	Bank of Ne BK	0.0321	3.42E+10	0.17%	1.1	7	15.5	5.5	9.333333	0.126931	0.000217	0.001877
65	Baxter Inte BAX	0.01169	4.27E+10	0.21%	0.8	9	9.5	7	8.5	0.097187	0.000207	0.001703
66	Becton Dic BDx	0.01338	6.85E+10	0.34%	0.8	9	5	3.5	5.833333	0.072104	0.000246	0.002732
68	Best Buy C BBY	0.02673	2.13E+10	0.11%	1.15	8.5	12.5	4	8.333333	0.111177	0.000118	0.001122
71	BlackRock BLK	0.02608	8.59E+10	0.43%	1.3	10.5	10	4	8.166667	0.108812	0.000466	0.005571
74	BorgWarrn BWA	0.02045	6.89E+09	0.03%	1.2	3.5	4.5	5.5	4.5	0.06591	2.27E-05	0.000413
75	Boston Prc BXP	0.04134	1.47E+10	0.07%	1.1	3.5	6.5	2	4	0.082167	6.04E-05	0.000809
77	Bristol-Mye BMY	0.03216	1.27E+11	0.63%	0.85	9	1.5	4	4.833333	0.081271	0.000514	0.005371
78	Broadcom AVGO	0.04079	1.28E+11	0.64%	1.1	17	12	5	11.333333	0.156435	0.001	0.007035
79	Broadridge BR	0.01715	1.45E+10	0.07%	0.85	9	10.5	7	8.833333	0.106241	7.66E-05	0.000613
80	Brown-For BFB	0.01044	2.06E+10	0.10%	0.9	14.5	4.5	10	9.666667	0.107611	0.000111	0.000927
81	C.H. Robin CHRW	0.0262	1.05E+10	0.05%	0.65	8	7.5	10.5	8.666667	0.114002	5.96E-05	0.00034
82	Cabot Oil & COG	0.02131	7.48E+09	0.04%	0.95	40.5	23	10.5	24.66667	0.270605	0.000101	0.000355
84	Campbell : CPB	0.02854	1.48E+10	0.07%	0.65	2	0.5	15.5	6	0.089396	6.61E-05	0.000481
85	Capital On COF	0.02286	3.19E+10	0.16%	1.4	5.5	1.5	7.5	4.833333	0.071746	0.000114	0.002226
86	Cardinal H CAH	0.0366	1.55E+10	0.08%	1	13	2.5	-4.5	3.666667	0.073938	5.72E-05	0.000774
88	Carnival C CCL	0.10627	1.13E+10	0.06%	1.4	-2.5		2	-0.25	0.103637	5.83E-05	0.000787
89	Caterpillar CAT	0.03229	6.91E+10	0.34%	1.1	4	5.5	4.5	4.666667	0.07971	0.000275	0.00379
90	Cboe Glob CBOE	0.01436	1.1E+10	0.05%	0.9	14.5	9.5	19.5	14.5	0.160401	8.8E-05	0.000494
92	CDW Corp CDW	0.01296	1.67E+10	0.08%	0.95	11	15	11.5	12.5	0.13877	0.000116	0.000791
93	Celanese (CE	0.02814	1.04E+10	0.05%	1.2	7	9.5	5	7.166667	0.100815	5.24E-05	0.000624
95	CenterPoir CNP	0.0327	9.22E+09	0.05%	1.15	4.5	-5.5	4	1	0.042864	1.97E-05	0.000529
96	CenturyLin CTL	0.09852	1.11E+10	0.06%	1	1	-12.5	-2.5	-4.66667	0.049555	2.75E-05	0.000556
97	Cerner Coi CERN	0.01033	2.12E+10	0.11%	0.9	9	42.5	7.5	19.66667	0.208012	0.00022	0.000953
98	CF Industri CF	0.04001	6.41E+09	0.03%	1.25	29.5	5	6.5	13.66667	0.179411	5.74E-05	0.0004

99	Charles Sc SCHW	0.01952	4.75E+10	0.24%	1.1	12	18	10	13.33333	0.154155	0.000365	0.002606
101	Chevron C CVX	0.05612	1.72E+11	0.86%	1.3	13.5	4.5	1	6.333333	0.12123	0.001038	0.011134
103	Chubb Lim CB	0.02406	5.85E+10	0.29%	1.05	9.5	4	6.5	6.666667	0.091529	0.000267	0.003066
104	Church & I CHD	0.01234	1.91E+10	0.10%	0.65	9	6	9.5	8.166667	0.094511	9.02E-05	0.000621
105	Cigna Corq CI	0.00021	7.01E+10	0.35%	1.2	11.5	4	15.5	10.33333	0.103554	0.000362	0.004197
106	Cincinnati CIN	0.03802	1.02E+10	0.05%	1	10.5	3.5	4.5	6.166667	0.100859	5.11E-05	0.000506
107	Cintas Cor CTAS	0.00925	2.87E+10	0.14%	1.1	14	15.5	5.5	11.66667	0.126456	0.000181	0.001575
108	Cisco Syst CSCO	0.03142	1.94E+11	0.97%	0.95	7	8.5	4.5	6.666667	0.099134	0.000957	0.009172
109	Citigroup Ir C	0.03846	1.1E+11	0.55%	1.4	10	25.5	5	13.5	0.176056	0.000097	0.007713
110	Citizens Fi CFG	0.05966	1.12E+10	0.06%	1.35	12	18.5	5	11.83333	0.181523	0.000101	0.000751
111	Citrix Syst CTXS	0.00954	1.81E+10	0.09%	0.8	9		3	6	0.069826	6.31E-05	0.000723
112	Clorox Cor CLX	0.02069	2.7E+10	0.13%	0.55	4.5	5.5	22.5	10.83333	0.130144	0.000175	0.000742
113	CME Grou CME	0.01928	6.32E+10	0.32%	0.9	2.5	4	6	4.166667	0.061348	0.000194	0.002839
114	CMS Eneri CMS	0.02761	1.69E+10	0.08%	0.8	7.5	7	7.5	7.333333	0.101956	8.59E-05	0.000674
115	Coca-Cola KO	0.0349	2.02E+11	1.01%	0.9	6.5	4.5	5	5.333333	0.089164	0.000898	0.009062
116	Cognizant CTS	0.01603	2.97E+10	0.15%	1.05	5	16.5	10	10.5	0.121872	0.00018	0.001554
117	Colgate-Pe CL	0.02391	6.3E+10	0.31%	0.75	5	3.5		4.25	0.066918	0.000211	0.002359
118	Comcast C CMCSA	0.02333	1.8E+11	0.90%	0.75	13.5	11	8	10.83333	0.132927	0.001194	0.006736
119	Comerica I CMA	0.0679	5.57E+09	0.03%	1.25	0.5	7	4	3.833333	0.107535	2.99E-05	0.000347
120	Conagra B CAG	0.02482	1.67E+10	0.08%	0.75	5	4	11	6.666667	0.092314	7.68E-05	0.000624
121	Concho Re CXO	0.01404	1.12E+10	0.06%	1.35	6	35	2.5	14.5	0.160058	8.95E-05	0.000755
122	ConocoPh COP	0.0378	4.77E+10	0.24%	1.35		6.5	3.5	5	0.088745	0.000211	0.003211
123	Consolidat ED	0.04087	2.5E+10	0.12%	0.75	3	3.5	3	3.166667	0.073184	9.13E-05	0.000936
124	Constellati STZ	0.01628	3.52E+10	0.18%	1.15	7.5	9	7.5	8	0.096931	0.00017	0.002022
125	Cooper Co COO	0.0002	1.61E+10	0.08%	0.95	14.5	0	11	8.5	0.085209	6.85E-05	0.000763
127	Corning Inr GLW	0.03218	2.08E+10	0.10%	1.1	15	11.5	5.5	10.66667	0.140563	0.000146	0.001142
129	Costco Wt COST	0.00935	1.32E+11	0.66%	0.65	9	9.5	9	9.166667	0.101445	0.000669	0.00429
130	Coty Inc. C COTY	0.10638	3.59E+09	0.02%	1.15	5	4.5	0.5	3.333333	0.141486	2.53E-05	0.000206
131	Crown Cas CCI	0.02905	6.89E+10	0.34%	0.9	12.5	7	7.5	9	0.120357	0.000414	0.003092
132	CSX Corp CSX	0.01497	5.32E+10	0.27%	1.15	9.5	8	0.5	6	0.075419	0.0002	0.003051
133	Cummins I CMI	0.03063	2.53E+10	0.13%	1.15	4	4.5	4	4.166667	0.072935	9.19E-05	0.001449
134	CVS Healt CVS	0.03101	8.43E+10	0.42%	0.9	6	7	9.5	7.5	0.107173	0.000451	0.003785
135	D.R. Horto DHI	0.01221	2.08E+10	0.10%	1.25	6.5	9	12	9.166667	0.104436	0.000109	0.001299
136	Danaher C DHR	0.00409	1.25E+11	0.62%	0.85	15	12	8.5	11.83333	0.122665	0.000763	0.005284
139	Deere & C DE	0.01963	4.85E+10	0.24%	1.15	5	6.5	8	6.5	0.085268	0.000206	0.00278
140	Delta Air L DAL	0.05229	1.96E+10	0.10%	1.4	6	6	3	5	0.103597	0.000102	0.001372
141	DENTSPLY XRAY	0.00906	9.68E+09	0.05%	1.05	8.5	9	4	7.166667	0.081051	3.91E-05	0.000507
144	Diamondb: FANG	0.0322	7.35E+09	0.04%	1.45	16.5		3.5	10	0.13381	4.91E-05	0.000532
145	Digital Rea DLR	0.03129	3.84E+10	0.19%	0.85	6	6	7	6.333333	0.095614	0.000183	0.001629
146	Discover F DFS	0.0327	1.65E+10	0.08%	1.55	7.5	13.5	15	12	0.154662	0.000127	0.001275
150	Dollar Gen DG	0.00753	4.82E+10	0.24%	0.7	12	9	8.5	9.833333	0.106234	0.000255	0.001682
152	Dominion I D	0.04448	7.1E+10	0.35%	0.8	7	4.5	6	5.833333	0.104111	0.000369	0.002833
153	Domino's F DPZ	0.00831	1.47E+10	0.07%	0.65	13	14		13.5	0.143871	0.000105	0.000476
154	Dover Corq DOV	0.02013	1.4E+10	0.07%	1.3	9.5	3	9	7.166667	0.092518	6.47E-05	0.000909
156	DTE Enerq DTE	0.03759	2.08E+10	0.10%	0.9	5	6.5	5.5	5.666667	0.095322	9.87E-05	0.000932
157	Duke Ener DUK	0.04407	6.3E+10	0.31%	0.85	5	2	2.5	3.166667	0.076434	0.00024	0.002673
158	Duke Real DRE	0.0257	1.35E+10	0.07%	0.9	-1	5.5	4.5	3	0.056086	3.77E-05	0.000605
160	DXC Tech DXC	0.05364	3.97E+09	0.02%	1.5	10	13.5	10	11.16667	0.168302	3.34E-05	0.000297
161	E*TRADE ETF	0.01142	1.08E+10	0.05%	1.25	17.5		7.5	12.5	0.137134	7.42E-05	0.000676
162	Eastman CEMN	0.03748	9.57E+09	0.05%	1.25	8	5.5	4.5	6	0.098604	4.71E-05	0.000597
163	Eaton Corq ETN	0.03336	3.5E+10	0.17%	1.3	4	4.5	1.5	3.333333	0.067249	0.000117	0.002271
164	eBay Inc. EBAY	0.01321	3.4E+10	0.17%	1	7	28.5	7.5	14.33333	0.15749	0.000267	0.001698
165	Ecolab Inc ECL	0.00916	5.94E+10	0.30%	1.1	8.5	8	9.5	8.666667	0.096224	0.000285	0.003258
166	Edison Inte EIX	0.04334	2.22E+10	0.11%	0.9	12	4	5.5	7.166667	0.11656	0.000129	0.000999
169	Eli Lilly anc LLY	0.01838	1.54E+11	0.77%	0.75	10	8.5	10	9.5	0.114253	0.000878	0.005765
170	Emerson E EMR	0.03258	3.67E+10	0.18%	1.2	9	2	7.5	6.166667	0.095251	0.000174	0.002196
171	Entergy Cc ETR	0.03815	1.95E+10	0.10%	0.95	3	4	5	4	0.078913	7.68E-05	0.000925
172	EOG Reso EOG	0.02834	3.08E+10	0.15%	1.15	26.5	10	12	16.16667	0.192297	0.000296	0.001768
173	Equifax Inc EFX	0.00913	2.07E+10	0.10%	1	7	3	10.5	6.833333	0.077775	8.05E-05	0.001035
174	Equinix Inc EQIX	0.01528	6.17E+10	0.31%	0.95	16	7	4	9	0.105968	0.000326	0.002922
175	Equity Res EQR	0.03891	2.3E+10	0.12%	0.95	-11.5	4.5	2.5	-1.5	0.023618	2.72E-05	0.001093
176	Essex Proj ESS	0.03421	1.59E+10	0.08%	1	1	4.5	1	2.166667	0.056247	4.46E-05	0.000793
178	Everest Re RE	0.02877	8.62E+09	0.04%	0.9	18.5	6.5	6.5	10.5	0.13528	5.82E-05	0.000387
179	Evergy Inc EVRG	0.03336	1.37E+10	0.07%	1.05	3	5.5	2	3.5	0.068944	4.72E-05	0.000719
180	Eversource ES	0.02679	2.9E+10	0.14%	0.9	6.5	6	5	5.833333	0.085905	0.000124	0.001303
181	Exelon Cor EXC	0.04005	3.72E+10	0.19%	0.9	5	5.5	4	4.833333	0.089351	0.000166	0.001671
183	Expeditors EXPD	0.01413	1.23E+10	0.06%	0.95	5.5	6.5	3.5	5.166667	0.066162	0.000155	0.000581
184	Extra Spac EXR	0.03769	1.23E+10	0.06%	0.95	3	4.5	3.5	3.666667	0.075048	4.62E-05	0.000584
185	Exxon Mot XOM	0.07417	1.98E+11	0.99%	1.1	9	3.5	1.5	4.666667	0.122567	0.001213	0.010888
188	Fastenal C FAST	0.02382	2.41E+10	0.12%	0.9	7.5	9.5	6.5	7.833333	0.103086	0.000124	0.00108
189	Federal Re FRT	0.04765	6.67E+09	0.03%	1	1.5	2	2	1.833333	0.06642	2.21E-05	0.000333
190	FedEx Cor FDX	0.01879	3.62E+10	0.18%	1.05	3	6.5	9.5	6.333333	0.082718	0.000149	0.001894
191	Fidelity Na FIS	0.01	8.65E+10	0.43%	0.95	7	5.5	13	8.5	0.095425	0.000412	0.004098
192	Fifth Third FITB	0.05002	1.54E+10	0.08%	1.35	3	9.5	6.5	6.333333	0.114937	8.81E-05	0.001035
193	First Repul FRC	0.00722	1.9E+10	0.09%	1	10.5	5	10	8.5	0.092527	8.77E-05	0.000948
194	FirstEnergy FE	0.03851	2.19E+10	0.11%	0.85	8.5	3	9.5	7	0.109858	0.00012	0.000931
197	FLIR Syst FLIR	0.0169	5.26E+09	0.03%	0.95	9	4.5	5	6.166667	0.079088	2.08E-05	0.000249
198	Flowserve FLS	0.0287	3.63E+09	0.02%	1.4	12.5	3	7	7.5	0.104776	1.9E-05	0.000253
199	FMC Corpr FMC	0.01778	1.28E+10	0.06%	1.25	11	16	12	13	0.148936	9.52E-05	0.000799

202	Fortive Coi FTV	0.00411	2.3E+10	0.11%	1.2	8	6.5	8	7.5	0.079264	9.08E-05	0.001375
203	Fortune Br FBHS	0.01535	8.63E+09	0.04%	1.35	5	5.5	9	6.5	0.080849	3.48E-05	0.000581
206	Franklin R BEN	0.04787	1.12E+10	0.06%	1.1	6.5	9	3.5	6.333333	0.112719	6.28E-05	0.000613
208	Gap Inc. GPS	0.08891	4.07E+09	0.02%	1.35	2.5	0.5	4.5	2.5	0.115021	2.34E-05	0.000274
209	Garmin Ltc GRMN	0.02564	1.82E+10	0.09%	1	7	4.5	5	5.5	0.081345	7.38E-05	0.000907
211	General D GD	0.02766	4.56E+10	0.23%	1.1	6	5.5	14.5	8.666667	0.115525	0.000263	0.002504
212	General El GE	0.00549	6.37E+10	0.32%	1.25	2	-9	-3.5	-3.5	-0.02961	-9.4E-05	0.003971
213	General Mi GIS	0.03174	3.74E+10	0.19%	0.7	4	3	12.5	6.5	0.097772	0.000183	0.001307
215	Genuine P GPC	0.03581	1.27E+10	0.06%	1.2	6.5	5.5	7	6.333333	0.100277	6.37E-05	0.000762
216	Gilead Scir GILD	0.03674	9.29E+10	0.46%	0.65	-1.5	6	3.5	2.666667	0.063897	0.000296	0.003012
217	Global Pay GPN	0.00432	5.4E+10	0.27%	1.2	11.5	47	13.5	24	0.244838	0.000659	0.003231
218	Globe Life GL	0.00979	8.16E+09	0.04%	1.15	10	7	8	8.333333	0.093531	3.81E-05	0.000468
219	Goldman S GS	0.02453	7.01E+10	0.35%	1.15	6.5	15.5	10	10.66667	0.132505	0.000463	0.004022
220	H&R Block HRB	0.06353	3.15E+09	0.02%	1	6	5.5	19	10.16667	0.168426	2.65E-05	0.000157
221	Halliburton HAL	0.01365	1.16E+10	0.06%	1.6	19.5	-22	5	8.333333	0.02204	1.27E-05	0.000924
222	Hanesbran HBI	0.0508	4.11E+09	0.02%	0.85	2.5	3.5	7	4.333333	0.095234	1.95E-05	0.000174
223	Hartford Fi HIG	0.03155	1.48E+10	0.07%	1.1	12	8.5	9.5	10	0.133128	9.8E-05	0.00081
224	Hasbro Inc HAS	0.03619	1.03E+10	0.05%	1.15	10.5	4.5	7	7.333333	0.11085	5.7E-05	0.000591
226	Healthpeal PEAK	0.05286	1.51E+10	0.08%	1.05	-15.5	1	1.5	-4.33333	0.008381	6.3E-06	0.00079
228	Hershey C HSY	0.02333	2.76E+10	0.14%	0.85	4.5	6	21.5	10.66667	0.131241	0.000181	0.001169
229	Hess Corp HES	0.01936	1.59E+10	0.08%	1.45		0	2.5	1.25	0.031981	2.53E-05	0.001148
230	Hewlett Pa HPE	0.04734	1.3E+10	0.06%	1.35	7.5	10	6	7.833333	0.127527	8.29E-05	0.000877
232	HollyFronti HFC	0.043	5.27E+09	0.03%	1.3	16.5	4.5	11.5	10.83333	0.153663	4.04E-05	0.000342
234	Home Dep HD	0.02408	2.68E+11	1.34%	1.05	8	12.5		10.25	0.127814	0.001709	0.014042
235	Honeywell HON	0.02429	1.04E+11	0.52%	1.15	8	8.5	5.5	7.333333	0.098514	0.000511	0.005969
236	Hormel Fo HRL	0.01931	2.6E+10	0.13%	0.55	8.5	8	6.5	7.666667	0.096717	0.000125	0.000712
237	Host Hotel HST	0.06557	8.6E+09	0.04%	1	-2.5	2.5	-1	-0.33333	0.062127	2.67E-05	0.000429
238	Howmet Al HWM	0.00549	6.36E+09	0.03%	1.65	12	-3.5	10	6.166667	0.067326	2.14E-05	0.000523
239	HP Inc. HPQ	0.04165	2.42E+10	0.12%	1.3	10.5	7		8.75	0.130972	0.000158	0.001569
240	Humana In HUM	0.0066	5.01E+10	0.25%	1.2	10.5	10.5	14	11.66667	0.123652	0.000309	0.003001
241	Huntington HBAN	0.05903	1.03E+10	0.05%	1.2	4	6.5	4.5	5	0.110506	5.68E-05	0.000617
242	Huntington HII	0.0227	7.35E+09	0.04%	1.1	7	12	11.5	10.16667	0.125521	4.6E-05	0.000403
243	IDEX Corp IEX	0.01306	1.15E+10	0.06%	1.05	9.5	11	12.5	11	0.123778	7.13E-05	0.000605
245	IHS Markit INFO	0.00949	2.86E+10	0.14%	1.15	11.5	0	4.5	5.333333	0.063076	9E-05	0.00164
246	Illinois Too ITW	0.0251	5.39E+10	0.27%	1.1	7	9	-3.5	4.166667	0.06729	0.000181	0.002956
249	Intel Corp INTC	0.02197	2.54E+11	1.27%	0.9	9	4.5	6	6.5	0.087684	0.001113	0.011423
250	Intercontin ICE	0.01271	5.17E+10	0.26%	0.95	9	6.5	8	7.833333	0.091541	0.000236	0.002448
251	Internation IBM	0.05251	1.1E+11	0.55%	1.05	1.5	2.5	21	8.333333	0.138031	0.000759	0.005775
252	Internation IFF	0.02334	1.37E+10	0.07%	0.9	8	9	7	8	0.104274	7.15E-05	0.000617
253	Internation IP	0.05844	1.38E+10	0.07%	1.15	6	4	2	4	0.099609	6.85E-05	0.000791
254	Interpublic IPG	0.05812	6.84E+09	0.03%	1.15	11	9.5	8.5	9.666667	0.157596	5.38E-05	0.000392
255	Intuit Inc. INTU	0.00738	7.49E+10	0.37%	1.1	14.5	14	33	20.5	0.213136	0.000797	0.004111
257	Invesco Ltr IVZ	0.05472	5.2E+09	0.03%	1.4	3.5	4.5	12.5	6.833333	0.124923	3.24E-05	0.000363
260	Iron Mount IRM	0.0917	7.77E+09	0.04%	0.9	8.5	3	-5.5	2	0.112617	4.36E-05	0.000349
261	J.B. Hunt TJBHT	0.00905	1.26E+10	0.06%	0.95	6.5	7	12.5	8.666667	0.096109	6.03E-05	0.000596
262	J.M. Smuc SJM	0.03242	1.24E+10	0.06%	0.65	3	3.5	4.5	3.666667	0.069681	4.31E-05	0.000402
263	Jack Henry JKHY	0.00957	1.38E+10	0.07%	0.9	10	9	7.5	8.833333	0.098326	6.76E-05	0.000619
264	Jacobs En J	0.00893	1.11E+10	0.06%	1.2	14.5	15	10.5	13.33333	0.142859	7.9E-05	0.000663
265	Johnson & JNJ	0.02817	3.78E+11	1.89%	0.85	10	7.5	11	9.5	0.124508	0.002347	0.016024
266	Johnson C JCI	0.02996	2.58E+10	0.13%	1.15	8	4	5	5.666667	0.087476	0.000113	0.001481
267	JPMorgan JPM	0.03639	3.01E+11	1.50%	1.1	3.5	6.5	6.5	5.5	0.092391	0.00139	0.016546
268	Juniper Ne JNPR	0.03363	7.88E+09	0.04%	1	6	9	-5.5	3.166667	0.065829	2.59E-05	0.000393
269	Kansas Cit KSU	0.01103	1.38E+10	0.07%	1.1	11.5	7	7	8.5	0.096499	6.63E-05	0.000756
270	Kellogg Cc K	0.03365	2.32E+10	0.12%	0.65	3	3.5	13.5	6.666667	0.101438	0.000117	0.000753
271	KeyCorp KEY	0.05449	1.32E+10	0.07%	1.35	3	8.5	5.5	5.666667	0.112701	7.45E-05	0.000892
273	Kimberly-C KMB	0.03005	4.85E+10	0.24%	0.8	7	3.5		5.25	0.083339	0.000202	0.001936
275	Kinder Mor KMI	0.06658	3.57E+10	0.18%	1.3	22	13	3.5	12.83333	0.199186	0.000354	0.002313
276	KLA Corp KLAC	0.01755	3E+10	0.15%	1.1	11.5	11.5	21	14.66667	0.165504	0.000248	0.001649
278	Kraft Heinz KHC	0.04822	4.05E+10	0.20%	0.9	-0.5	-4	0	-1.5	0.032858	6.65E-05	0.00182
279	Kroger Co. KR	0.02012	2.5E+10	0.12%	0.55	5.5	12	11	9.5	0.116076	0.000145	0.000686
280	L Brands Lr LB	0.07682	4.34E+09	0.02%	1.45	-2.5	-9.5		-6	0.014515	3.14E-06	0.000314
283	Lam Rese LRCX	0.01461	4.57E+10	0.23%	1.3	10	13	12	11.66667	0.132129	0.000301	0.002964
284	Lamb Wes LW	0.01357	9.9E+09	0.05%	1.1	9.5	13.5		11.5	0.12935	6.39E-05	0.000543
286	Leggett & L LEG	0.04623	4.58E+09	0.02%	1.25	8	6	6	6.666667	0.114438	2.61E-05	0.000286
287	Leidos Hol LDOS	0.01369	1.41E+10	0.07%	1.2	10	3	13.5	8.833333	0.102628	7.22E-05	0.000845
288	Lennar Co LEN	0.00808	1.7E+10	0.08%	1.4	7	25.5	10.5	14.33333	0.151992	0.000129	0.001187
289	Lincoln Na LNC	0.03938	7.85E+09	0.04%	1.85	9.5	9.5	9	9.333333	0.134551	5.27E-05	0.000725
293	Lockheed L LMT	0.02537	1.06E+11	0.53%	0.95	8.5	8		8.25	0.108917	0.000577	0.00503
294	Loews Cor L	0.00738	9.53E+09	0.05%	1.05	12	0	5.5	5.833333	0.065929	3.14E-05	0.0005
295	Lowe's Coi LOW	0.01635	1.02E+11	0.51%	1.2	10.5	9.5		10	0.117168	0.000594	0.006082
296	LyondellBa LYB	0.06274	2.23E+10	0.11%	1.35	3.5	4	7	4.833333	0.11259	0.000125	0.001505
297	M&T Bank MTB	0.03984	1.42E+10	0.07%	1.05	9.5	10.5	7	9	0.131633	9.3E-05	0.000742
298	Marathon M MRO	0.03082	5.13E+09	0.03%	1.55	9	0	-1	2.666667	0.057898	1.48E-05	0.000397
299	Marathon F MPC	0.06031	2.5E+10	0.12%	1.75	3	5.5	7	5.166667	0.113535	0.000142	0.002184
300	MarketAxe MKTX	0.00479	1.9E+10	0.09%	0.85	14	15.5	15	14.83333	0.153479	0.000145	0.000805
302	Marsh & M MMC	0.01679	5.49E+10	0.27%	0.95	10	6.5	9.5	8.666667	0.104184	0.000285	0.002601
303	Martin Mar MLM	0.01038	1.32E+10	0.07%	1.15	9.5	5.5	8	7.666667	0.087445	5.76E-05	0.000757
304	Masco Cor MAS	0.01119	1.27E+10	0.06%	1.2	6	7.5		6.75	0.079068	5.02E-05	0.000762
305	Mastercarc MA	0.00525	3.06E+11	1.53%	1.1	13.5	8.5	45.5	22.5	0.230841	0.003524	0.016794

306	Maxim Inte MXIM	0.0317	1.61E+10	0.08%	0.95	4.5	6.5	-0.5	3.5	0.067255	5.42E-05	0.000765
307	McCormick MKC	0.01426	2.15E+10	0.11%	0.85	6.5	5.5	10.5	7.5	0.089795	9.63E-05	0.000912
308	McDonald's MCD	0.02639	1.41E+11	0.70%	0.95	7.5	8		7.75	0.104913	0.000738	0.006678
309	McKesson MCK	0.01069	2.48E+10	0.12%	1	9	6.5	9	8.166667	0.092793	0.000115	0.001239
310	Medtronic MDT	0.02457	1.27E+11	0.63%	0.95	7.5	6	3	5.5	0.080246	0.000507	0.005998
311	Merck & C MRK	0.03201	1.92E+11	0.96%	0.85	9	7.5	5.5	7.333333	0.106517	0.001022	0.008159
312	MetLife Inc MET	0.04828	3.46E+10	0.17%	1.35	7.5	5.5	2	5	0.099487	0.000172	0.00233
314	MGM Resc MGM	0.00054	9.16E+09	0.05%	1.7	25	0	12.5	12.5	0.125574	5.74E-05	0.000777
315	Microchip MCHP	0.0141	2.56E+10	0.13%	1.05	7.5	4.5	15.5	9.166667	0.106413	0.000136	0.00134
317	Microsoft MSFT	0.01039	1.49E+12	7.43%	0.95	14	11.5	12.5	12.66667	0.137715	0.01023	0.070567
318	Mid-America MAA	0.03416	1.34E+10	0.07%	1	0.5	2.5	5	2.666667	0.061282	4.09E-05	0.000668
321	Mondelez Intl MDLZ	0.02147	7.58E+10	0.38%	0.95	8	8	5.5	7.166667	0.093906	0.000355	0.003592
323	Moody's C MCO	0.00815	5.15E+10	0.26%	1.2	8	9.5		8.75	0.096007	0.000247	0.003086
324	Morgan St MS	0.02942	7.5E+10	0.37%	1.3	5	6	9	6.666667	0.097067	0.000363	0.004863
325	Mosaic Co MOS	0.01528	4.96E+09	0.02%	1.3	22	15.5	3	13.5	0.151311	3.75E-05	0.000322
326	Motorola S MSI	0.01811	2.4E+10	0.12%	0.85	9.5	10		9.75	0.116493	0.00014	0.00102
327	MSCI Inc MSCI	0.00824	2.76E+10	0.14%	1	17	13	62	30.66667	0.31617	0.000435	0.001377
329	Nasdaq Inc NDAQ	0.01643	1.96E+10	0.10%	1.05	8	4.5	10	7.5	0.092046	9E-05	0.001027
330	National O NOV	0.0163	4.76E+09	0.02%	1.1	31	-10.5	-9.5	3.666667	0.053266	1.27E-05	0.000261
331	NetApp Inc NTAP	0.04487	9.49E+09	0.05%	1.1	10	15		12.5	0.172674	8.18E-05	0.000521
333	Newell Bra NWL	0.05955	6.55E+09	0.03%	1.15	4.5	0	-0.5	1.333333	0.07328	2.4E-05	0.000376
334	Newmont NEM	0.01801	4.46E+10	0.22%	0.7	11.5	14.5	8.5	11.5	0.134046	0.000298	0.001557
335	News Corp NWSA	0.01676	4.64E+09	0.02%	1.05		20	6	13	0.147849	3.42E-05	0.000243
337	NextEra E NEE	0.0225	1.22E+11	0.61%	0.85	10	10.5	6	8.833333	0.111827	0.00068	0.005167
338	Nielsen Hc NLSN	0.0159	5.38E+09	0.03%	0.95		-14	3	-5.5	-0.03954	-1.1E-05	0.000255
339	NIKE Inc NKE	0.00995	1.53E+11	0.76%	1.15	18	12	5.5	11.83333	0.128872	0.000984	0.008784
340	NiSource NI	0.0354	9.08E+09	0.05%	0.85	13.5	7.5	5	8.666667	0.123601	5.6E-05	0.000385
341	Noble Ene NBL	0.00782	4.91E+09	0.02%	1.75	0	5.5	-0.5	1.666667	0.024552	6.01E-06	0.000428
342	Norfolk So NSC	0.02156	4.47E+10	0.22%	1.15	11.5	8	2	7.166667	0.093999	0.00021	0.002563
343	Northern T NTRS	0.03389	1.72E+10	0.09%	1.1	4.5	6.5	6	5.666667	0.091517	7.85E-05	0.000943
344	Northrop G NOC	0.01825	5.3E+10	0.26%	0.85	10.5	8	22.5	13.66667	0.156164	0.000413	0.002247
345	NortonLife NLOK	0.02493	1.18E+10	0.06%	1.05	5	15	14	11.33333	0.139676	8.23E-05	0.000619
348	Nucor Corp NUE	0.03699	1.31E+10	0.07%	1.2	3	2.5	5	3.5	0.072637	4.75E-05	0.000785
349	NVIDIA Cc NVDA	0.00174	2.27E+11	1.13%	1.2	9.5	5	24	12.83333	0.130185	0.001473	0.013577
351	Occidental OXY	0.00203	1.77E+10	0.09%	1.4	14.5		10	12.25	0.124654	0.00011	0.001237
352	Old Dominion ODFL	0.00364	1.94E+10	0.10%	0.95	6.5	14	11	10.5	0.108831	0.000105	0.000921
353	Omnicom OMC	0.04691	1.19E+10	0.06%	0.95	5.5	7.5	11	8	0.128786	7.63E-05	0.000563
354	ONEOK In OKE	0.10289	1.6E+10	0.08%	1.55	16	10	8.5	11.5	0.223806	0.000179	0.001237
355	Oracle Cor ORCL	0.01788	1.69E+11	0.84%	0.85	10	11	-4	5.666667	0.075053	0.000634	0.007181
358	PACCAR I PCAR	0.01719	2.57E+10	0.13%	1.1	3.5	2.5	6	4	0.057534	7.39E-05	0.001413
359	Packaging PKG	0.03237	9.26E+09	0.05%	1	4	6	8	6	0.093341	4.31E-05	0.000462
360	Parker-Haif PH	0.01899	2.38E+10	0.12%	1.4	9	9	13.5	10.5	0.124987	0.000148	0.00166
361	Paychex Inc PAYX	0.03283	2.71E+10	0.14%	1.15	10.5	10	7.5	9.333333	0.127695	0.000173	0.001555
364	Pentair plc PNR	0.02004	6.28E+09	0.03%	1.25	6	-1	2.5	2.5	0.045291	1.42E-05	0.000392
365	People's U PBCT	0.06015	5.08E+09	0.03%	0.95	4	1.5	4	3.166667	0.092769	2.35E-05	0.000241
366	PepsiCo Inc PEP	0.0308	1.84E+11	0.92%	0.85	6	4	7.5	5.833333	0.090032	0.000828	0.007813
367	PerkinElmer PKI	0.00286	1.09E+10	0.05%	0.95	9	2.5	6	5.833333	0.061277	3.34E-05	0.000517
368	Perrigo Co PRGO	0.01649	7.44E+09	0.04%	1	2	10	6	6	0.076985	2.86E-05	0.000371
369	Pfizer Inc PFE	0.04573	1.85E+11	0.92%	0.85	8.5	5	4	5.833333	0.105397	0.000971	0.007831
370	Philip Morris PM	0.06273	1.16E+11	0.58%	0.95	6	4.5		5.25	0.116877	0.000677	0.005506
371	Phillips 66 PSX	0.04722	3.33E+10	0.17%	1.3	4	8.5	4.5	5.666667	0.105225	0.000175	0.002159
372	Pinnacle W PNW	0.04083	8.62E+09	0.04%	0.85	4.5	5.5	3.5	4.5	0.086749	3.73E-05	0.000366
373	Pioneer Nc PXD	0.02327	1.56E+10	0.08%	1.25		37	4	20.5	0.230655	0.000179	0.000972
374	PNC Financ PNC	0.04154	4.7E+10	0.23%	1.15	8	11.5	6.5	8.666667	0.130007	0.000305	0.002696
375	PPG Indus PPG	0.01954	2.46E+10	0.12%	1.1	6	6	3.5	5.166667	0.071711	8.81E-05	0.001352
376	PPL Corp PPL	0.06176	2.07E+10	0.10%	1.05	2.5	2	4.5	3	0.092686	9.56E-05	0.001083
377	Principal F PFG	0.05302	1.16E+10	0.06%	1.45	5.5	5.5	8	6.333333	0.118032	6.81E-05	0.000837
378	Procter & G PG	0.02652	2.95E+11	1.47%	0.75	8.5	4	6	6.166667	0.089004	0.001311	0.011105
379	Progressive PGR	0.00495	4.73E+10	0.24%	0.8	9.5	-14.5	10	1.666667	0.021658	5.11E-05	0.001889
380	Prologis Inc PLD	0.0244	7.03E+10	0.35%	1.05	6	7.5	8.5	7.333333	0.098628	0.000346	0.003682
381	Prudential PRU	0.06871	2.53E+10	0.13%	1.5	7	9	3.5	6.5	0.135943	0.000172	0.001893
382	Public Serv PEG	0.03891	2.55E+10	0.13%	0.9	5	4	5	4.666667	0.086485	0.00011	0.001144
383	Public Stor PSA	0.04076	3.43E+10	0.17%	0.85	3.5	2	2	2.5	0.06627	0.000113	0.001455
384	PulteGroup PHM	0.01348	9.55E+09	0.05%	1.45	5.5	8.5	12.5	8.833333	0.102409	4.88E-05	0.000691
385	PVH Corp PVH	0.00302	3.53E+09	0.02%	1.6	6.5	0	6	4.166667	0.04475	7.89E-06	0.000282
387	QUALCOM QCOM	0.02891	1.01E+11	0.50%	1	9.5	7.5	4	7	0.099922	0.000504	0.005047
388	Quanta Se PWR	0.00521	5.28E+09	0.03%	1.25	15.5	0	8	7.833333	0.083747	2.21E-05	0.000329
389	Quest Diag DGX	0.02016	1.49E+10	0.07%	0.95	9	7.5	9	8.5	0.106017	7.86E-05	0.000704
390	Ralph Laur RL	0.03719	5.37E+09	0.03%	1.2	8	5.5	0	4.5	0.083027	2.23E-05	0.000322
391	Raymond R JF	0.02049	9.9E+09	0.05%	1.15	8	12.5	11	10.5	0.126566	6.25E-05	0.000568
392	Raytheon RTX	0.02841	1.01E+11	0.51%	1.05	3	-4	3.5	0.833333	0.036862	0.000187	0.005313
393	Realty Incc O	0.0442	2.18E+10	0.11%	1	6.5	5	5.5	5.666667	0.102119	0.000111	0.001086

394	Regency C REG	0.05124	7.88E+09	0.04%	1	13.5	5	3.5	7.333333	0.126452	4.97E-05	0.000393
396	Regions Fi RF	0.05016	1.19E+10	0.06%	1.35	5	8.5	5.5	6.333333	0.115082	6.81E-05	0.000799
397	Republic S RSG	0.01963	2.63E+10	0.13%	0.9	9	9	5	7.666667	0.097049	0.000127	0.00118
398	ResMed In RMD	0.00898	2.51E+10	0.13%	0.95	8.5	7	4	6.5	0.074272	9.31E-05	0.001191
399	Robert Hal RHI	0.02632	5.92E+09	0.03%	1.15	9	7	16.5	10.833333	0.136079	4.02E-05	0.00034
400	Rockwell A ROK	0.01946	2.43E+10	0.12%	1.2	7	6	4.5	5.833333	0.078361	9.49E-05	0.001454
401	Rollins Inc. ROL	0.00755	1.39E+10	0.07%	0.85	12	10	7.5	9.833333	0.106255	7.36E-05	0.000589
402	Roper Tec ROP	0.0051	4.2E+10	0.21%	1.05	11.5	10	12.5	11.333333	0.118722	0.000249	0.002199
404	Royal Caril RCL	0.05257	1.24E+10	0.06%	1.4	-0.5		1	0.25	0.055136	3.42E-05	0.000868
405	S&P Globe SPGI	0.0082	7.87E+10	0.39%	1.1	11	11	26	16	0.168856	0.000663	0.004321
408	Schlumber SLB	0.02478	2.8E+10	0.14%	1.25	15.5	0	-6	3.166667	0.056839	7.94E-05	0.001747
409	Seagate Ti STX	0.05238	1.27E+10	0.06%	1.1	4	1	24	9.666667	0.151578	9.63E-05	0.000699
410	Sealed Air SEE	0.02022	4.93E+09	0.02%	1	26	4		15	0.171737	4.22E-05	0.000246
411	Sempra Er SRE	0.03356	3.64E+10	0.18%	0.95	10	7.5	8	8.5	0.119986	0.000218	0.001727
413	Sherwin-W SHW	0.00921	5.28E+10	0.26%	1.05	8.5	11	12.5	10.66667	0.116368	0.000307	0.002767
414	Simon Pro SPG	0.11838	2.17E+10	0.11%	1.25	4.5	-2.5	-1	0.333333	0.121911	0.000132	0.001353
415	Skyworks : SWKS	0.01363	2.15E+10	0.11%	1.1	10	13	16.5	13.16667	0.146194	0.000157	0.001182
416	SL Green I SLG	0.06613	4.1E+09	0.02%	1.2	0.5	4	0.5	1.666667	0.083348	1.7E-05	0.000245
417	Snap-on In SNA	0.03186	7.37E+09	0.04%	1.1	6	6.5	3.5	5.333333	0.086043	3.16E-05	0.000405
418	Southern C SO	0.04562	5.92E+10	0.30%	0.9	3	3	3.5	3.166667	0.078009	0.000231	0.002661
420	Stanley Bl SWK	0.02018	2.11E+10	0.11%	1.45	9	6	4	6.333333	0.084152	8.85E-05	0.001525
421	Starbucks SBUX	0.02149	8.92E+10	0.44%	1	13.5	12		12.75	0.15036	0.000669	0.004448
422	State Stret STT	0.03281	2.23E+10	0.11%	1.2	3.5	5	6.5	5	0.08363	9.31E-05	0.001336
423	STERIS PI STE	0.00965	1.3E+10	0.07%	1.1	9.5	8	9	8.833333	0.09841	6.4E-05	0.000715
424	Stryker Co SYK	0.0121	7.13E+10	0.36%	1.1	11	9	10	10	0.112705	0.000401	0.003915
426	Synchrony SYF	0.03629	1.42E+10	0.07%	1.45	8	14	9	10.33333	0.141498	9.99E-05	0.001024
428	Sysco Cor SY Y	0.03218	2.84E+10	0.14%	1.1	9.5	8.5	-4	4.666667	0.079598	0.000113	0.001558
429	T. Rowe P TROW	0.02867	2.86E+10	0.14%	1.05	8	9.5	8.5	8.666667	0.116579	0.000166	0.001497
431	Tapestry Ir TPR	0.09657	3.86E+09	0.02%	1.4	5	0	10.5	5.166667	0.150731	2.9E-05	0.00027
432	Target Cor TGT	0.02319	5.87E+10	0.29%	0.7	9.5	5.5	6.5	7.166667	0.095688	0.00028	0.002048
433	TE Conner TEL	0.02361	2.68E+10	0.13%	1.15	5.5	6	3.5	5	0.0742	9.93E-05	0.001539
436	Teleflex In TFX	0.00372	1.7E+10	0.08%	1.1	14	2.5	11	9.166667	0.095557	8.09E-05	0.000931
437	Texas Insti TXN	0.02858	1.16E+11	0.58%	0.85	4	6.5	13.5	8	0.109723	0.000633	0.004903
438	Textron Inc TXT	0.00229	7.96E+09	0.04%	1.35	11	10.5	3.5	8.333333	0.085719	3.41E-05	0.000536
439	Thermo Fi TMO	0.00253	1.37E+11	0.68%	0.9	10	11.5	5	8.833333	0.090975	0.000623	0.006162
440	Tiffany & C TIF	0.01919	1.47E+10	0.07%	0.85	9.5	6	5.5	7	0.089862	6.58E-05	0.000622
441	TJX Comp TJX	0.01721	6.4E+10	0.32%	1.15	14	10.5	20	14.83333	0.16682	0.000533	0.003674
443	Tractor Su TSCO	0.01114	1.45E+10	0.07%	0.85	9.5	9	3.5	7.333333	0.084882	6.15E-05	0.000616
445	Travelers (TRV	0.0293	2.93E+10	0.15%	0.95	9.5	3	7	6.5	0.095252	0.000139	0.001391
446	Truist Fina TFC	0.04444	5.46E+10	0.27%	1.2	5	6.5	6.5	6	0.105773	0.000288	0.003268
449	Tyson Foo TSN	0.02624	2.33E+10	0.12%	0.7	7	10	9.5	8.833333	0.115732	0.000135	0.000815
450	U.S. Bancr USB	0.04356	5.81E+10	0.29%	1.1	3.5	6.5	6.5	5.5	0.099758	0.000289	0.003189
451	UDR Inc. UDR	0.03796	1.12E+10	0.06%	1	5	4	11	6.666667	0.105892	5.91E-05	0.000558
455	Union Paci UNP	0.02271	1.16E+11	0.58%	1.1	10.5	7.5	2	6.666667	0.090134	0.000521	0.006363
457	United Par UPS	0.03755	9.28E+10	0.46%	0.75	6	6.5	28	13.5	0.175085	0.00081	0.003471
459	UnitedHea UNH	0.01715	2.76E+11	1.38%	1.1	12	12	9	11	0.128093	0.001767	0.015172
461	Unum Groi UNM	0.06651	3.49E+09	0.02%	1.6	9	11.5	5	8.5	0.154337	2.68E-05	0.000278
462	V.F. Corpo VFC	0.03024	2.47E+10	0.12%	1.2	7	4	4.5	5.166667	0.082688	0.000102	0.001481
463	Valero Enc VLO	0.06065	2.63E+10	0.13%	1.55	8	5	0.5	4.5	0.107015	0.000141	0.002038
465	Ventas Inc VTR	0.08056	1.47E+10	0.07%	1.2	1.5	2	1.5	1.666667	0.097898	7.17E-05	0.000879
467	Verisk Ana VRSK	0.00647	2.71E+10	0.14%	0.9	10.5	0	11	7.166667	0.078369	0.000106	0.001216
468	Verizon Cc VZ	0.04324	2.35E+11	1.17%	0.65	4	2	1	2.333333	0.067078	0.000788	0.007635
470	ViacomCB VIAC	0.03918	1.38E+10	0.07%	1.4	12	9.5	26	15.83333	0.200615	0.000138	0.000964
471	Visa Inc. C V	0.00619	4.13E+11	2.06%	1	15	15	10.5	13.5	0.141608	0.002917	0.020598
472	Vornado R VNO	0.06593	7.65E+09	0.04%	1.2	-5	1.5	5.5	0.666667	0.072816	2.78E-05	0.000458
473	Vulcan Ma VMC	0.01124	1.6E+10	0.08%	1.15	12.5	8	3	7.833333	0.090014	7.2E-05	0.00092
474	W. R. Berk WRB	0.00822	1.04E+10	0.05%	1.05	10	7.5	8	8.5	0.093569	4.87E-05	0.000547
475	W.W. Grai GWW	0.01892	1.63E+10	0.08%	1	8	11	14.5	11.16667	0.131643	0.000107	0.000812
476	Walgreens WBA	0.04359	3.68E+10	0.18%	0.75	6	6.5	9	7.166667	0.116819	0.000215	0.001378
477	Walmart In WMT	0.01831	3.34E+11	1.67%	0.6	7.5	4	3.5	5	0.068768	0.001146	0.010003
479	Waste Mar WM	0.02083	4.42E+10	0.22%	0.75	5.5	6.5	3.5	5.166667	0.073035	0.000161	0.001653
481	WEC Ener WEC	0.02815	2.83E+10	0.14%	0.8	6	6.5	3.5	5.333333	0.082234	0.000116	0.001131
482	Wells Farg WFC	0.07405	1.13E+11	0.56%	1.1	5	6	5	5.333333	0.129358	0.000729	0.006199
483	Welltower WELL	0.04372	2.33E+10	0.12%	0.95	9.5	3.5	0.5	4.5	0.089704	0.000104	0.001104
484	West Phar WST	0.00301	1.57E+10	0.08%	0.85	14	12	11	12.33333	0.126529	9.88E-05	0.000664
486	Western U WU	0.04151	8.91E+09	0.04%	0.8	5	13.5	18	12.16667	0.165702	7.37E-05	0.000356
487	Westingho WAB	0.00785	1.16E+10	0.06%	1.2	10.5	7.5	10	9.333333	0.10155	5.9E-05	0.000697
488	WestRock WRK	0.02822	7.35E+09	0.04%	1.2	5	1	3.5	3.166667	0.060333	2.21E-05	0.00044
490	Whirlpool (WHR	0.03791	7.87E+09	0.04%	1.4	5	2.5	14.5	7.333333	0.112633	4.42E-05	0.00055
491	Williams C WMB	0.08226	2.36E+10	0.12%	1.6	13	6.5	5.5	8.333333	0.169021	0.000199	0.001884
494	Xcel Energ XEL	0.02666	3.39E+10	0.17%	0.75	6	6	5.5	5.833333	0.085771	0.000145	0.001268
495	Xerox Holc XRX	0.06039	3.53E+09	0.02%	1.35	9.5	4.5	12	8.666667	0.149674	2.63E-05	0.000238
496	Xilinx Inc. XLNX	0.01626	2.27E+10	0.11%	0.9	6	4	2	4	0.056585	6.42E-05	0.001021
497	Xylem Inc. XYL	0.01566	1.19E+10	0.06%	1.05	8.5	5	11	8.166667	0.097966	5.84E-05	0.000626
498	Yum! Bran YUM	0.02086	2.71E+10	0.14%	1.1	9.5	11		10.25	0.124429	0.000168	0.001489
500	Zimmer Bi ZBH	0.00753	2.64E+10	0.13%	1.1	5.5	4	4.5	4.666667	0.054372	7.15E-05	0.001446
501	Zions Banc ZION	0.03764	5.92E+09	0.03%	1.15	4.5	9.5	4	6	0.098769	2.92E-05	0.00034
502	Zoetis Inc. ZTS	0.00582	6.53E+10	0.33%	1.05	12	13.5	19	14.83333	0.154585	0.000503	0.003419
										7.641667	0.106096	0.114097
												0.989638

100.00%

Schedule Updated PKC-11c. Analysis with EPSGR, all stocks
Components of the S&P 500

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#	Company	Symbol	DY	MCAP	MCAP- weight	Beta	EPSGR	DPSGR	BVPSGR	DCF	weighted DCF	weighted Beta
1	3M Comp	MMM	0.03693	9.16E+10	0.35%	0.95	4.5	6.5	1	8.28%	0.0291%	0.003337
2	A. O. Smith	AOS	0.02003	7.72E+09	0.03%	0.95	5.5	12	5	7.56%	0.0022%	0.000281
3	Abbott Lab	ABT	0.01595	1.6E+11	0.61%	1.05	9.5	9	5.5	11.17%	0.0684%	0.006431
4	AbbVie Inc	ABBV	0.04905	1.7E+11	0.65%	1.05	8	8	#N/A	13.10%	0.0852%	0.006829
5	ABIOMED	ABMD	0	1.14E+10	0.04%	1	10.5	0	16	10.50%	0.0046%	0.000437
6	Accenture	ACN	0.01577	1.34E+11	0.52%	0.95	7.5	8	17	9.14%	0.0471%	0.004893
7	Activision	ATVI	0.00539	5.86E+10	0.22%	0.75	8	10	8.5	8.56%	0.0192%	0.001685
8	Adobe Inc.	ADBE	0	2.03E+11	0.78%	0.85	19.5	0	22	19.50%	0.1515%	0.006604
9	Advance A	AAP	0.00677	1.02E+10	0.04%	1.2	11	34	4.5	11.71%	0.0046%	0.00047
10	Advanced	AMD	0	6.33E+10	0.24%	1.3	18.5	0	32.5	18.50%	0.0449%	0.003156
12	Aflac Inco	AFL	0.03018	2.66E+10	0.10%	1.25	7	6.5	10.5	10.12%	0.0103%	0.001277
13	Agilent Tec	A	0.00816	2.72E+10	0.10%	0.95	10.5	9	6.5	11.36%	0.0119%	0.000992
14	Air Product	APD	0.02251	5.26E+10	0.20%	0.95	12	7.5	8.5	14.39%	0.0290%	0.001916
15	Akamai Te	AKAM	0	1.63E+10	0.06%	0.8	14	0	9.5	14.00%	0.0088%	0.000501
16	Alaska Air	ALK	0.04005	4.59E+09	0.02%	1.3	2	#N/A	1	6.05%	0.0011%	0.000229
17	Albemarle	ALB	0.01954	8.38E+09	0.03%	1.2	5.5	5.5	4.5	7.51%	0.0024%	0.000386
18	Alexandria	ARE	0.02491	2.15E+10	0.08%	1	16.5	6	8.5	19.20%	0.0158%	0.000824
19	Alexion Ph	ALXN	0	2.57E+10	0.10%	0.9	42	0	4	42.00%	0.0414%	0.000887
20	Align Tech	ALGN	0	2.08E+10	0.08%	1.3	17	0	15	17.00%	0.0136%	0.001039
21	Allegion Pl	ALLE	0.01243	9.5E+09	0.04%	1.15	9.5	12.5	25	10.80%	0.0039%	0.000419
22	Alliant Ene	LNT	0.031	1.22E+10	0.05%	0.8	6.5	5.5	7.5	9.70%	0.0046%	0.000375
23	Allstate Co	ALL	0.02187	3.1E+10	0.12%	1	6	8	6.5	8.25%	0.0098%	0.00119
25	Alphabet Ir	GOOG	0	4.83E+11	1.85%	0.9	14.5	0	18	14.50%	0.2684%	0.016662
26	Altria Grou	MO	0.08102	7.71E+10	0.30%	0.85	8.5	9	5.5	16.95%	0.0501%	0.002512
27	Amazon.cc	AMZN	0	1.32E+12	5.08%	0.8	33.5	0	33.5	33.50%	1.7008%	0.040615
29	Ameren Cc	AEE	0.02733	1.79E+10	0.07%	0.8	6	5	5.5	8.81%	0.0060%	0.000549
30	American A	AAL	0.02426	6.97E+09	0.03%	1.4	2	#N/A	#N/A	4.45%	0.0012%	0.000374
31	American E	AEP	0.03424	4.05E+10	0.16%	0.75	5	5.5	4.5	8.51%	0.0132%	0.001166
32	American E	AXP	0.01684	8.22E+10	0.32%	1.2	7.5	5.5	7	9.25%	0.0292%	0.003785
34	American T	AMT	0.01708	1.14E+11	0.44%	0.95	7.5	10.5	9.5	9.27%	0.0406%	0.004161
35	American V	AWK	0.01703	2.34E+10	0.09%	0.85	8.5	8.5	5	10.28%	0.0092%	0.000762
36	Ameriprise	AMP	0.02764	1.84E+10	0.07%	1.4	11	2.5	20.5	13.92%	0.0098%	0.000989
37	Amerisour	ABC	0.01676	2.04E+10	0.08%	0.9	7	4	6.5	8.73%	0.0068%	0.000704
38	AMETEK Ir	AME	0.00807	2.05E+10	0.08%	1.15	15.5	13	11	16.37%	0.0128%	0.000903
39	Amgen Inc	AMGN	0.02779	1.35E+11	0.52%	0.85	6.5	8	7	9.37%	0.0487%	0.004417
40	Amphenol	APH	0.01021	2.9E+10	0.11%	0.95	9	8.5	6.5	10.07%	0.0112%	0.001056
41	Analog Dev	ADI	0.02019	4.52E+10	0.17%	0.95	7	6	6.5	9.09%	0.0158%	0.001649
42	ANSYS Inc	ANSS	0	2.48E+10	0.09%	0.9	13	#N/A	13	13.00%	0.0123%	0.000855
43	Anthem Inc	ANTM	0.01431	6.69E+10	0.26%	1.15	14	12.5	11.5	15.53%	0.0399%	0.002953
44	Aon Plc Cl	AON	0.00922	4.41E+10	0.17%	0.95	11	5	16	11.97%	0.0203%	0.001608
45	Apache Cc	APA	0.00703	5.37E+09	0.02%	1.9	13.5	-14	-10	14.25%	0.0029%	0.000391
46	Apartment A	IV	0.04208	5.8E+09	0.02%	1.2	-1.5	3	16.5	2.68%	0.0006%	0.000267
47	Apple Inc.	AAPL	0.00933	1.52E+12	5.85%	0.95	14	12	13	15.00%	0.8769%	0.055546
48	Applied Mat	AMAT	0.01457	5.53E+10	0.21%	1.2	6.5	8.5	12.5	8.00%	0.0170%	0.002547
49	Aptiv PLC	APTIV	0.01149	2.07E+10	0.08%	1.2	11	1.5	19.5	12.21%	0.0097%	0.000952
50	Archer-Dar	ADM	0.03549	2.25E+10	0.09%	1	9.5	5.5	4.5	13.22%	0.0114%	0.000865
51	Arista Netw	ANET	0	1.66E+10	0.06%	1.1	5.5	0	8.5	5.50%	0.0035%	0.000701
52	Arthur J. G	AJG	0.01815	1.88E+10	0.07%	1	13.5	2.5	11.5	15.44%	0.0111%	0.000721
53	Assurant Ir	AIZ	0.02354	6.38E+09	0.02%	0.9	6.5	4	10.5	8.93%	0.0022%	0.00022
54	AT&T Inc.	T	0.06853	2.16E+11	0.83%	0.8	5.5	4.5	4.5	12.54%	0.1040%	0.006635
55	Atmos Ene	ATO	0.02267	1.24E+10	0.05%	0.8	7	7.5	7.5	9.35%	0.0044%	0.000381
57	Automatic	ADP	0.02399	6.52E+10	0.25%	1.1	12	11.5	14	14.54%	0.0364%	0.002751
58	AutoZone I	AZO	0	2.66E+10	0.10%	1	13	0	#N/A	13.00%	0.0133%	0.001021
59	AvalonBay	AVB	0.03967	2.26E+10	0.09%	1.05	2.5	5.5	3	6.52%	0.0056%	0.000909
60	Avery Deni	AVY	0.01992	9.71E+09	0.04%	1.2	11	8.5	7	13.10%	0.0049%	0.000447
62	Ball Corp	BLL	0.00851	2.3E+10	0.09%	1.05	21	8	11.5	21.94%	0.0193%	0.000925
63	Bank of An	BAC	0.02875	2.17E+11	0.83%	1.2	5	11	6	7.95%	0.0662%	0.009998
64	Bank of Ne	BK	0.0321	3.42E+10	0.13%	1.1	7	15.5	5.5	10.32%	0.0135%	0.001443
65	Baxter Inte	BAX	0.01169	4.27E+10	0.16%	0.8	9	9.5	7	10.22%	0.0167%	0.001309
66	Becton Dic	BDX	0.01338	6.85E+10	0.26%	0.8	9	5	3.5	10.40%	0.0273%	0.0021
67	Berkshire	BRKB	0	2.51E+11	0.96%	0.9	6	0	6	6.00%	0.0578%	0.008676
68	Best Buy C	BBY	0.02673	2.13E+10	0.08%	1.15	8.5	12.5	4	11.29%	0.0092%	0.000938
69	Biogen Inc	BIIB	0	4.25E+10	0.16%	0.95	8	0	8.5	8.00%	0.0130%	0.001548
70	Bio-Rad L	BIO	0	1.12E+10	0.04%	0.8	11.5	0	2	11.50%	0.0049%	0.000342
71	BlackRock	BLK	0.02608	8.59E+10	0.33%	1.3	10.5	10	4	13.24%	0.0436%	0.004282
72	Boeing Co	BA	0	1.09E+11	0.42%	1.6	-1.5	#N/A	#N/A	-1.50%	-0.0062%	0.006659
73	Booking H	BKNG	0	6.66E+10	0.26%	1.1	12	0	15.5	12.00%	0.0307%	0.002812
74	BorgWarrn	BWA	0.02045	6.89E+09	0.03%	1.2	3.5	4.5	5.5	5.58%	0.0015%	0.000317
75	Boston Prc	BXP	0.04134	1.47E+10	0.06%	1.1	3.5	6.5	2	7.71%	0.0044%	0.000622
76	Boston Sci	BSX	0	5.24E+10	0.20%	1.05	13.5	0	6.5	13.50%	0.0271%	0.00211
77	Bristol-My	MY	0.03216	1.27E+11	0.49%	0.85	9	1.5	4	12.36%	0.0600%	0.004129
78	Broadcom	AVGO	0.04079	1.28E+11	0.49%	1.1	17	12	5	21.43%	0.1053%	0.005408

79	Broadridge BR	0.01715	1.45E+10	0.06%	0.85	9	10.5	7	10.79%	0.0060%	0.000471
80	Brown-Ford BFB	0.01044	2.06E+10	0.08%	0.9	14.5	4.5	10	15.62%	0.0124%	0.000712
81	C.H. Robin CHRW	0.0262	1.05E+10	0.04%	0.65	8	7.5	10.5	10.72%	0.0043%	0.000261
82	Cabot Oil & COG	0.02131	7.48E+09	0.03%	0.95	40.5	23	10.5	43.06%	0.0124%	0.000273
83	Cadence C CDNS	0	2.62E+10	0.10%	0.95	10	0	17.5	10.00%	0.0100%	0.000953
84	Campbell C CPB	0.02854	1.48E+10	0.06%	0.65	2	0.5	15.5	4.88%	0.0028%	0.000369
85	Capital On COF	0.02286	3.19E+10	0.12%	1.4	5.5	1.5	7.5	7.85%	0.0096%	0.001711
86	Cardinal H CAH	0.0366	1.55E+10	0.06%	1	13	2.5	-4.5	16.90%	0.0100%	0.000595
87	CarMax Inc KMX	0	1.59E+10	0.06%	1.25	7.5	0	12.5	7.50%	0.0046%	0.000763
88	Carnival C CCL	0.10627	1.13E+10	0.04%	1.4	-2.5	#N/A	2	7.99%	0.0035%	0.000605
89	Caterpillar CAT	0.03229	6.91E+10	0.26%	1.1	4	5.5	4.5	7.29%	0.0193%	0.002913
90	Choe Glob CBOE	0.01436	1.1E+10	0.04%	0.9	14.5	9.5	19.5	16.04%	0.0068%	0.00038
91	CBRE Gro CBRE	0	1.59E+10	0.06%	1.5	7.5	0	17	7.50%	0.0046%	0.000915
92	CDW Corp CDW	0.01296	1.67E+10	0.06%	0.95	11	15	11.5	12.37%	0.0079%	0.000608
93	Celanese C CE	0.02814	1.04E+10	0.04%	1.2	7	9.5	5	9.91%	0.0040%	0.00048
94	Centene C CNC	0	3.7E+10	0.14%	1.1	13	0	17	13.00%	0.0185%	0.001562
95	CenterPoi CNP	0.0327	9.22E+09	0.04%	1.15	4.5	-5.5	4	7.84%	0.0028%	0.000407
96	CenturyLin CTL	0.09852	1.11E+10	0.04%	1	1	-12.5	-2.5	10.90%	0.0047%	0.000427
97	Cerner Cor CERN	0.01033	2.12E+10	0.08%	0.9	9	42.5	7.5	10.08%	0.0082%	0.000732
98	CF Industri CF	0.04001	6.41E+09	0.02%	1.25	29.5	5	6.5	34.09%	0.0084%	0.000307
99	Charles Sc SCHW	0.01952	4.75E+10	0.18%	1.1	12	18	10	14.07%	0.0256%	0.002003
100	Charter Co CHTR	0	1.1E+11	0.42%	0.95	33.5	0	4.5	33.50%	0.1419%	0.004025
101	Chevron C CVX	0.05612	1.72E+11	0.66%	1.3	13.5	4.5	1	19.49%	0.1283%	0.008558
102	Chipotle M CMG	0	2.87E+10	0.11%	0.9	14.5	0	13	14.50%	0.0160%	0.000992
103	Chubb Lim CB	0.02406	5.85E+10	0.22%	1.05	9.5	4	6.5	12.02%	0.0270%	0.002357
104	Church & F CHD	0.01234	1.91E+10	0.07%	0.65	9	6	9.5	10.29%	0.0076%	0.000477
105	Cigna Cor C	0.00021	7.01E+10	0.27%	1.2	11.5	4	15.5	11.52%	0.0310%	0.003226
106	Cincinnati CINF	0.03802	1.02E+10	0.04%	1	10.5	3.5	4.5	14.50%	0.0056%	0.000389
107	Cintas Cor CTAS	0.00925	2.87E+10	0.11%	1.1	14	15.5	5.5	14.99%	0.0165%	0.001211
108	Cisco Syst CSCO	0.03142	1.94E+11	0.74%	0.95	7	8.5	4.5	10.25%	0.0761%	0.00705
109	Citigroup Inc C	0.03846	1.1E+11	0.42%	1.4	10	25.5	5	14.04%	0.0595%	0.005929
110	Citizens Fin CFG	0.05966	1.12E+10	0.04%	1.35	12	18.5	5	18.32%	0.0078%	0.000578
111	Citrix Syst CCTXS	0.00954	1.81E+10	0.07%	0.8	9	#N/A	3	10.00%	0.0069%	0.000556
112	Clorox Cor CLX	0.02069	2.7E+10	0.10%	0.55	4.5	5.5	22.5	6.62%	0.0069%	0.00057
113	CME Grou CME	0.01928	6.32E+10	0.24%	0.9	2.5	4	6	4.45%	0.0108%	0.002182
114	CMS Ener CMS	0.02761	1.69E+10	0.06%	0.8	7.5	7	7.5	10.36%	0.0067%	0.000518
115	Coca-Cola KO	0.0349	2.02E+11	0.77%	0.9	6.5	4.5	5	10.10%	0.0782%	0.006966
116	Cognizant CTSH	0.01603	2.97E+10	0.11%	1.05	5	16.5	10	6.64%	0.0076%	0.001195
117	Colgate-Pa CL	0.02391	6.3E+10	0.24%	0.75	5	3.5	#N/A	7.45%	0.0180%	0.001814
118	Comcast C CMCSA	0.02333	1.8E+11	0.69%	0.75	13.5	11	8	15.99%	0.1104%	0.005178
119	Comerica C CMA	0.0679	5.57E+09	0.02%	1.25	0.5	7	4	7.31%	0.0016%	0.000267
120	Conagra B CAG	0.02482	1.67E+10	0.06%	0.75	5	4	11	7.54%	0.0048%	0.00048
121	Concho Res CXO	0.01404	1.12E+10	0.04%	1.35	6	35	2.5	7.45%	0.0032%	0.00058
122	Consolidat ED	0.04087	2.5E+10	0.10%	0.75	3	3.5	3	7.15%	0.0069%	0.00072
123	Constellat STZ	0.01628	3.52E+10	0.14%	1.15	7.5	9	7.5	9.19%	0.0124%	0.001554
124	Cooper Co COO	0.0002	1.61E+10	0.06%	0.95	14.5	0	11	14.52%	0.0090%	0.000587
125	Copart Inc. CPRT	0	2.03E+10	0.08%	1.05	17.5	0	14	17.50%	0.0136%	0.000817
126	Corning Inc GLW	0.03218	2.08E+10	0.08%	1.1	15	11.5	5.5	18.46%	0.0147%	0.000878
127	Costco Wh COST	0.00935	1.32E+11	0.51%	0.65	9	9.5	9	9.98%	0.0506%	0.003297
128	Coty Inc. C COTY	0.10638	3.59E+09	0.01%	1.15	5	4.5	0.5	15.90%	0.0022%	0.000158
129	Crown Cas CCI	0.02905	6.89E+10	0.26%	0.9	12.5	7	7.5	15.59%	0.0412%	0.002377
130	CSX Corp CSX	0.01497	5.32E+10	0.20%	1.15	9.5	8	0.5	11.07%	0.0226%	0.002345
131	Cummins C CMI	0.03063	2.53E+10	0.10%	1.15	4	4.5	4	7.12%	0.0069%	0.001114
132	CVS Health CVS	0.03101	8.43E+10	0.32%	0.9	6	7	9.5	9.19%	0.0297%	0.00291
133	D.R. Horte DHI	0.01221	2.08E+10	0.08%	1.25	6.5	9	12	7.76%	0.0062%	0.000999
134	Danaher C DHR	0.00409	1.25E+11	0.48%	0.85	15	12	8.5	15.44%	0.0738%	0.004062
135	Darden Re DRI	0	9.63E+09	0.04%	1.35	4	-1	6	4.00%	0.0015%	0.000498
136	DaVita Inc. DVA	0	9.52E+09	0.04%	0.95	12	0	9.5	12.00%	0.0044%	0.000347
137	Deere & C DE	0.01963	4.85E+10	0.19%	1.15	5	6.5	8	7.01%	0.0130%	0.002137
138	Delta Air Li DAL	0.05229	1.96E+10	0.08%	1.4	6	6	3	11.39%	0.0086%	0.001054
139	DENTSPLY XRAY	0.00906	9.68E+09	0.04%	1.05	8.5	9	4	9.44%	0.0035%	0.00039
140	Diamondbr FANG	0.0322	7.35E+09	0.03%	1.45	16.5	#N/A	3.5	19.99%	0.0056%	0.000409
141	Digital Rea DLR	0.03129	3.84E+10	0.15%	0.85	6	6	7	9.22%	0.0136%	0.001252
142	Discover F DFS	0.0327	1.65E+10	0.06%	1.55	7.5	13.5	15	10.89%	0.0069%	0.00098
143	Discovery DISCA	0	3.6E+09	0.01%	1.05	18	0	17	18.00%	0.0025%	0.000145
144	DISH Netw DISH	0	1.93E+10	0.07%	1.3	1	0	16.5	1.00%	0.0007%	0.000964
145	Dollar Gen DG	0.00753	4.82E+10	0.18%	0.7	12	9	8.5	12.80%	0.0236%	0.001293
146	Dollar Tree DLTR	0	2.15E+10	0.08%	0.75	8	0	8.5	8.00%	0.0066%	0.000619
147	Dominion F D	0.04448	7.1E+10	0.27%	0.8	7	4.5	6	11.60%	0.0316%	0.002177
148	Domino's F DPZ	0.00831	1.47E+10	0.06%	0.65	13	14	#N/A	13.89%	0.0078%	0.000366
149	Dover Cor D	0.02013	1.4E+10	0.05%	1.3	9.5	3	9	11.61%	0.0062%	0.000699
150	DTE Energ DTE	0.03759	2.08E+10	0.08%	0.9	5	6.5	5.5	8.85%	0.0070%	0.000716
151	Duke Ener DUK	0.04407	6.3E+10	0.24%	0.85	5	2	2.5	9.52%	0.0230%	0.002055
152	Duke Real DRE	0.0257	1.35E+10	0.05%	0.9	-1	5.5	4.5	1.56%	0.0008%	0.000465
153	DXC Tech DXC	0.05364	3.97E+09	0.02%	1.5	10	13.5	10	15.63%	0.0024%	0.000229
154	E*TRADE ETFC	0.01142	1.08E+10	0.04%	1.25	17.5	#N/A	7.5	18.74%	0.0078%	0.00052
155	Eastman C EMN	0.03748	9.57E+09	0.04%	1.25	8	5.5	4.5	11.90%	0.0044%	0.000459

163	Eaton Corp	ETN	0.03336	3.5E+10	0.13%	1.3	4	4.5	1.5	7.40%	0.0099%	0.001746
164	eBay Inc.	EBAY	0.01321	3.4E+10	0.13%	1	7	28.5	7.5	8.37%	0.0109%	0.001305
165	Ecolab Inc.	ECL	0.00916	5.94E+10	0.23%	1.1	8.5	8	9.5	9.45%	0.0215%	0.002504
166	Edison Inte	EIX	0.04334	2.22E+10	0.09%	0.9	12	4	5.5	16.59%	0.0142%	0.000768
167	Edwards L	EW	0	4.34E+10	0.17%	1	13.5	0	8	13.50%	0.0225%	0.001663
168	Electronic	EA	0	3.73E+10	0.14%	0.7	10.5	0	16.5	10.50%	0.0150%	0.001003
169	Eli Lilly and	LLY	0.01838	1.54E+11	0.59%	0.75	10	8.5	10	11.93%	0.0705%	0.004431
170	Emerson E	EMR	0.03258	3.67E+10	0.14%	1.2	9	2	7.5	12.40%	0.0174%	0.001688
171	Entergy Co	ETR	0.03815	1.95E+10	0.07%	0.95	3	4	5	6.87%	0.0051%	0.000711
172	EOG Reso	EOG	0.02834	3.08E+10	0.12%	1.15	26.5	10	12	29.71%	0.0351%	0.001359
173	Equifax Inc	EFX	0.00913	2.07E+10	0.08%	1	7	3	10.5	7.94%	0.0063%	0.000795
174	Equinix Inc	EQIX	0.01528	6.17E+10	0.24%	0.95	16	7	4	17.65%	0.0417%	0.002246
175	Equity Res	EQR	0.03891	2.3E+10	0.09%	0.95	-11.5	4.5	2.5	-7.83%	-0.0069%	0.00084
176	Essex Pro	ESS	0.03421	1.59E+10	0.06%	1	1	4.5	1	4.44%	0.0027%	0.000609
177	Estee Lauder	EL	0	7.06E+10	0.27%	0.9	14	9.5	4	14.00%	0.0379%	0.002437
178	Everest Re	RE	0.02877	8.62E+09	0.03%	0.9	18.5	6.5	6.5	21.64%	0.0072%	0.000297
179	Evergy Inc	EVRG	0.03336	1.37E+10	0.05%	1.05	3	5.5	2	6.39%	0.0034%	0.000553
180	Eversource	ES	0.02679	2.9E+10	0.11%	0.9	6.5	6	5	9.27%	0.0103%	0.001002
181	Exelon Corp	EXC	0.04005	3.72E+10	0.14%	0.9	5	5.5	4	9.11%	0.0130%	0.001285
182	Expedia Gr	EXPE	0	1.19E+10	0.05%	1.2	24	11.5	9.5	24.00%	0.0110%	0.000548
183	Expeditors	EXPD	0.01413	1.23E+10	0.05%	0.95	5.5	6.5	3.5	6.95%	0.0033%	0.000446
184	Extra Space	EXR	0.03769	1.23E+10	0.05%	0.95	3	4.5	3.5	6.83%	0.0032%	0.000449
185	Exxon Mobil	XOM	0.07417	1.98E+11	0.76%	1.1	9	3.5	1.5	16.75%	0.1275%	0.00837
186	F5 Networks	FFIV	0	8.44E+09	0.03%	0.9	6.5	0	15	6.50%	0.0021%	0.000291
187	Facebook	FB	0	6.72E+11	2.58%	0.95	14	0	18	14.00%	0.3609%	0.024492
188	Fastenal Co	FAST	0.02382	2.41E+10	0.09%	0.9	7.5	9.5	6.5	9.97%	0.0092%	0.00083
189	Federal Reserve	FRT	0.04765	6.67E+09	0.03%	1	1.5	2	2	6.30%	0.0016%	0.000256
190	FedEx Corp	FDX	0.01879	3.62E+10	0.14%	1.05	3	6.5	9.5	4.91%	0.0068%	0.001456
191	Fidelity Nat	FIS	0.01	8.65E+10	0.33%	0.95	7	5.5	13	8.04%	0.0266%	0.00315
192	Fifth Third	FITB	0.05002	1.54E+10	0.06%	1.35	3	9.5	6.5	8.08%	0.0048%	0.000796
193	First Republic	FRC	0.00722	1.9E+10	0.07%	1	10.5	5	10	11.26%	0.0082%	0.000729
194	FirstEnergy	FE	0.03851	2.19E+10	0.08%	0.85	8.5	3	9.5	12.51%	0.0105%	0.000715
195	Fiserv Inc.	FISV	0	6.96E+10	0.27%	1	15	0	38.5	15.00%	0.0401%	0.002671
196	FLEETCO	FLT	0	2.19E+10	0.08%	1.1	12.5	0	7	12.50%	0.0105%	0.000924
197	FLIR Systems	FLIR	0.0169	5.26E+09	0.02%	0.95	9	4.5	5	10.77%	0.0022%	0.000192
198	Flowserve	FLS	0.0287	3.63E+09	0.01%	1.4	12.5	3	7	15.55%	0.0022%	0.000195
199	FMC Corp	FMC	0.01778	1.28E+10	0.05%	1.25	11	16	12	12.88%	0.0063%	0.000614
200	Ford Motor	F	0	2.52E+10	0.10%	1.25	11	-8	-2.5	11.00%	0.0106%	0.001207
201	Fortinet Inc	FTNT	0	2.19E+10	0.08%	0.95	28	0	24	28.00%	0.0235%	0.000799
202	Fortive Corp	FTV	0.00411	2.3E+10	0.09%	1.2	8	6.5	8	8.43%	0.0074%	0.001057
203	Fortune Br	FBHS	0.01535	8.63E+09	0.03%	1.35	5	5.5	9	6.57%	0.0022%	0.000447
206	Franklin Resources	BEN	0.04787	1.12E+10	0.04%	1.1	6.5	9	3.5	11.44%	0.0049%	0.000471
207	Freeport-Mc	FCX	0	1.53E+10	0.06%	1.75	19.5	#N/A	7	19.50%	0.0115%	0.001029
208	Gap Inc.	GPS	0.08891	4.07E+09	0.02%	1.35	2.5	0.5	4.5	11.50%	0.0018%	0.000211
209	Garmin Ltd	GRMN	0.02564	1.82E+10	0.07%	1	7	4.5	5	9.65%	0.0067%	0.000697
210	Gartner Inc	IT	0	1.09E+10	0.04%	1	12	0	17	12.00%	0.0050%	0.000458
211	General Dynamics	GD	0.02766	4.56E+10	0.17%	1.1	6	5.5	14.5	8.85%	0.0155%	0.001925
212	General Electric	GE	0.00549	6.37E+10	0.24%	1.25	2	-9	-3.5	2.55%	0.0062%	0.003053
213	General Mills	GIS	0.03174	3.74E+10	0.14%	0.7	4	3	12.5	7.24%	0.0104%	0.001005
214	General Motors	GM	0	3.88E+10	0.15%	1.3	3.5	-1	8	3.50%	0.0052%	0.001933
215	Genuine Parts	GPC	0.03581	1.27E+10	0.05%	1.2	6.5	5.5	7	10.20%	0.0050%	0.000586
216	Gilead Sciences	GILD	0.03674	9.29E+10	0.36%	0.65	-1.5	6	3.5	2.15%	0.0076%	0.002315
217	Global Pay	GNPN	0.00432	5.4E+10	0.21%	1.2	11.5	47	13.5	11.96%	0.0247%	0.002484
218	Globe Life	GL	0.00979	8.16E+09	0.03%	1.15	10	7	8	11.03%	0.0035%	0.00036
219	Goldman Sachs	GS	0.02453	7.01E+10	0.27%	1.15	6.5	15.5	10	9.03%	0.0243%	0.003092
220	H&R Block	HRB	0.06353	3.15E+09	0.01%	1	6	5.5	19	12.54%	0.0015%	0.000121
221	Halliburton	HAL	0.01365	1.16E+10	0.04%	1.6	19.5	-22	5	21.00%	0.0093%	0.00071
222	Hanesbrands	HBI	0.0508	4.11E+09	0.02%	0.85	2.5	3.5	7	7.64%	0.0012%	0.000134
223	Hartford Financial	HIG	0.03155	1.48E+10	0.06%	1.1	12	8.5	9.5	15.34%	0.0087%	0.000623
224	Hasbro Inc	HAS	0.03619	1.03E+10	0.04%	1.15	10.5	4.5	7	14.31%	0.0057%	0.000454
225	HCA Healthcare	HCA	0	3.38E+10	0.13%	1.1	10.5	16.5	#N/A	10.50%	0.0136%	0.001426
226	Healthpeak	PEAK	0.05286	1.51E+10	0.06%	1.05	-15.5	1	1.5	-10.62%	-0.0061%	0.000607
227	Henry Schein	HSIC	0	8.48E+09	0.03%	0.95	5	0	10.5	5.00%	0.0016%	0.000309
228	Hershey Co	HSY	0.02333	2.76E+10	0.11%	0.85	4.5	6	21.5	6.89%	0.0073%	0.000899
230	Hewlett-Packard	HPE	0.04734	1.3E+10	0.05%	1.35	7.5	10	6	12.41%	0.0062%	0.000675
232	HollyFrontier	HFC	0.043	5.27E+09	0.02%	1.3	16.5	4.5	11.5	21.15%	0.0043%	0.000263
233	Hologic Inc	HOLX	0	1.37E+10	0.05%	1.15	25	0	16	25.00%	0.0131%	0.000604
234	Home Depot	HD	0.02408	2.68E+11	1.03%	1.05	8	12.5	#N/A	10.50%	0.1080%	0.010794
235	Honeywell	HON	0.02429	1.04E+11	0.40%	1.15	8	8.5	5.5	10.53%	0.0420%	0.004589
236	Hormel Foods	HRL	0.01931	2.6E+10	0.10%	0.55	8.5	8	6.5	10.51%	0.0105%	0.000547
237	Host Hotels	HST	0.06557	8.6E+09	0.03%	1	-2.5	2.5	-1	3.98%	0.0013%	0.00033
238	Howmet Aerospace	HWM	0.00549	6.36E+09	0.02%	1.65	12	-3.5	10	12.58%	0.0031%	0.000402
239	HP Inc.	HPQ	0.04165	2.42E+10	0.09%	1.3	10.5	7	#N/A	14.88%	0.0138%	0.001206
240	Humana Inc	HUM	0.0066	5.01E+10	0.19%	1.2	10.5	10.5	14	11.19%	0.0215%	0.002306
241	Huntington Bank	HBAN	0.05903	1.03E+10	0.04%	1.2	4	6.5	4.5	10.02%	0.0040%	0.000474
242	Huntington Hills	HIL	0.0227	7.35E+09	0.03%	1.1	7	12	11.5	9.35%	0.0026%	0.00031
243	IDEX Corp	IEX	0.01306	1.15E+10	0.04%	1.05	9.5	11	12.5	10.87%	0.0048%	0.000465

244	IDEXX Lab IDXX	0	2.66E+10	0.10%	1.05	10.5	0	#N/A	10.50%	0.0107%	0.001071
245	IHS Markit INFO	0.00949	2.86E+10	0.11%	1.15	11.5	0	4.5	12.50%	0.0137%	0.001261
246	Illinois Too ITW	0.0251	5.39E+10	0.21%	1.1	7	9	-3.5	9.60%	0.0198%	0.002272
247	Illumina Inc ILMN	0	5.33E+10	0.20%	0.9	14	0	18.5	14.00%	0.0286%	0.001841
249	Intel Corpo INTC	0.02197	2.54E+11	0.98%	0.9	9	4.5	6	11.30%	0.1102%	0.00878
250	Intercontin ICE	0.01271	5.17E+10	0.20%	0.95	9	6.5	8	10.33%	0.0205%	0.001882
251	International IBM	0.05251	1.1E+11	0.42%	1.05	1.5	2.5	21	6.79%	0.0287%	0.004439
252	International IFF	0.02334	1.37E+10	0.05%	0.9	8	9	7	10.43%	0.0055%	0.000474
253	International IP	0.05844	1.38E+10	0.05%	1.15	6	4	2	12.02%	0.0064%	0.000608
254	Interpublic IPG	0.05812	6.84E+09	0.03%	1.15	11	9.5	8.5	17.13%	0.0045%	0.000302
255	Intuit Inc. INTU	0.00738	7.49E+10	0.29%	1.1	14.5	14	33	15.29%	0.0439%	0.00316
256	Intuitive Su ISRG	0	6.83E+10	0.26%	1.15	11.5	0	15.5	11.50%	0.0301%	0.003012
257	Invesco Ltr IVZ	0.05472	5.2E+09	0.02%	1.4	3.5	4.5	12.5	9.07%	0.0018%	0.000279
258	IPG Photogr IPGP	0	8.62E+09	0.03%	0.9	9.5	0	11.5	9.50%	0.0031%	0.000297
259	IQVIA Hold IQV	0	2.64E+10	0.10%	1.2	9.5	#N/A	10.5	9.50%	0.0096%	0.001214
260	Iron Mount IRM	0.0917	7.77E+09	0.03%	0.9	8.5	3	-5.5	18.06%	0.0054%	0.000268
261	J.B. Hunt T JBHT	0.00905	1.26E+10	0.05%	0.95	6.5	7	12.5	7.43%	0.0036%	0.000458
262	J.M. Smuci SJM	0.03242	1.24E+10	0.05%	0.65	3	3.5	4.5	6.29%	0.0030%	0.000309
263	Jack Henry JKHY	0.00957	1.38E+10	0.05%	0.9	10	9	7.5	11.00%	0.0058%	0.000476
264	Jacobs Enr J	0.00893	1.11E+10	0.04%	1.2	14.5	15	10.5	15.46%	0.0066%	0.00051
265	Johnson & JNJ	0.02817	3.78E+11	1.45%	0.85	10	7.5	11	12.96%	0.1878%	0.012317
266	Johnson C JCI	0.02996	2.58E+10	0.10%	1.15	8	4	5	11.12%	0.0110%	0.001139
267	JPMorgan JPM	0.03639	3.01E+11	1.16%	1.1	3.5	6.5	6.5	7.20%	0.0833%	0.012718
268	Juniper Ne JNPR	0.03363	7.88E+09	0.03%	1	6	9	-5.5	9.46%	0.0029%	0.000302
269	Kansas Cit KSU	0.01103	1.38E+10	0.05%	1.1	11.5	7	7	12.67%	0.0067%	0.000581
270	Kellogg Co K	0.03365	2.32E+10	0.09%	0.65	3	3.5	13.5	6.42%	0.0057%	0.000579
271	KeyCorp KEY	0.05449	1.32E+10	0.05%	1.35	3	8.5	5.5	8.53%	0.0043%	0.000686
272	Keysight T KEYS	0	1.92E+10	0.07%	0.85	17	0	21.5	17.00%	0.0125%	0.000626
273	Kimberly-C KMB	0.03005	4.85E+10	0.19%	0.8	7	3.5	#N/A	10.11%	0.0188%	0.001488
274	Kimco Rea KIM	0	5.77E+09	0.02%	1.05	5	4.5	5	5.00%	0.0011%	0.000232
275	Kinder Mor KMI	0.06658	3.57E+10	0.14%	1.3	22	13	3.5	29.39%	0.0402%	0.001778
276	KLA Corpo KLAC	0.01755	3E+10	0.12%	1.1	11.5	11.5	21	13.36%	0.0154%	0.001267
277	Kohl's Corp KSS	0	3.68E+09	0.01%	1.55	6.5	9.5	6	6.50%	0.0009%	0.000219
278	Kraft Heinz KHC	0.04822	4.05E+10	0.16%	0.9	-0.5	-4	0	4.31%	0.0067%	0.001399
279	Kroger Co. KR	0.02012	2.5E+10	0.10%	0.55	5.5	12	11	7.57%	0.0073%	0.000528
280	L Brands Ir LB	0.07682	4.34E+09	0.02%	1.45	-2.5	-9.5	#N/A	5.09%	0.0008%	0.000241
282	Laboratory LH	0	1.64E+10	0.06%	1.15	8	0	7.5	8.00%	0.0050%	0.000722
283	Lam Reser LRCX	0.01461	4.57E+10	0.18%	1.3	10	13	12	11.53%	0.0202%	0.002278
284	Lamb Wes LW	0.01357	9.9E+09	0.04%	1.1	9.5	13.5	#N/A	10.92%	0.0041%	0.000418
285	Las Vegas LVS	0	3.68E+10	0.14%	1.05	7.5	3	6.5	7.50%	0.0106%	0.001482
286	Leggett & F LEG	0.04623	4.58E+09	0.02%	1.25	8	6	6	12.81%	0.0022%	0.000219
287	Leidos Hol LDOS	0.01369	1.41E+10	0.05%	1.2	10	3	13.5	11.44%	0.0062%	0.000649
288	Lennar Co LEN	0.00808	1.7E+10	0.07%	1.4	7	25.5	10.5	7.84%	0.0051%	0.000913
289	Lincoln Na LNC	0.03938	7.85E+09	0.03%	1.85	9.5	9.5	9	13.63%	0.0041%	0.000557
292	LKQ Corp LKQ	0	7.9E+09	0.03%	1.5	8	0	5	8.00%	0.0024%	0.000454
293	Lockheed L LMT	0.02537	1.06E+11	0.41%	0.95	8.5	8	#N/A	11.14%	0.0454%	0.003866
294	Loews Cor L	0.00738	9.53E+09	0.04%	1.05	12	0	5.5	12.78%	0.0047%	0.000384
295	Lowe's Co LOW	0.01635	1.02E+11	0.39%	1.2	10.5	9.5	#N/A	12.22%	0.0476%	0.004675
296	LyondellBa LYB	0.06274	2.23E+10	0.09%	1.35	3.5	4	7	9.88%	0.0085%	0.001157
297	M&T Bank MTB	0.03984	1.42E+10	0.05%	1.05	9.5	10.5	7	13.67%	0.0074%	0.000571
298	Marathon C MRO	0.03082	5.13E+09	0.02%	1.55	9	0	-1	12.22%	0.0024%	0.000305
299	Marathon F MPC	0.06031	2.5E+10	0.10%	1.75	3	5.5	7	9.12%	0.0088%	0.001679
300	MarketAxe MKTX	0.00479	1.9E+10	0.07%	0.85	14	15.5	15	14.51%	0.0106%	0.000619
301	Marriott Int MAR	0	3.01E+10	0.12%	1.15	17.5	10	29.5	17.50%	0.0202%	0.001326
302	Marsh & M MMC	0.01679	5.49E+10	0.21%	0.95	10	6.5	9.5	11.76%	0.0248%	0.001999
303	Martin Mar MLM	0.01038	1.32E+10	0.05%	1.15	9.5	5.5	8	10.59%	0.0054%	0.000582
304	Masco Cor MAS	0.01119	1.27E+10	0.05%	1.2	6	7.5	#N/A	7.15%	0.0035%	0.000586
305	Mastercar MA	0.00525	3.06E+11	1.17%	1.1	13.5	8.5	45.5	14.06%	0.1650%	0.012909
306	Maxim Inte MXIM	0.0317	1.61E+10	0.06%	0.95	4.5	6.5	-0.5	7.74%	0.0048%	0.000588
307	McCormick MKC	0.01426	2.15E+10	0.08%	0.85	6.5	5.5	10.5	7.97%	0.0066%	0.000701
308	McDonald's MCD	0.02639	1.41E+11	0.54%	0.95	7.5	8	#N/A	10.24%	0.0553%	0.005134
309	McKesson MCK	0.01069	2.48E+10	0.10%	1	9	6.5	9	10.12%	0.0096%	0.000952
310	Medtronic MDT	0.02457	1.27E+11	0.49%	0.95	7.5	6	3	10.05%	0.0488%	0.004611
311	Merck & C MRK	0.03201	1.92E+11	0.74%	0.85	9	7.5	5.5	12.35%	0.0911%	0.006272
312	MetLife Inc MET	0.04828	3.46E+10	0.13%	1.35	7.5	5.5	2	12.51%	0.0166%	0.001791
313	Mettler-Tol MTD	0	1.87E+10	0.07%	0.95	9.5	0	#N/A	9.50%	0.0068%	0.000682
314	MGM Resc MGM	0.00054	9.16E+09	0.04%	1.7	25	0	12.5	25.06%	0.0088%	0.000597
315	Microchip MCHP	0.0141	2.56E+10	0.10%	1.05	7.5	4.5	15.5	8.96%	0.0088%	0.00103
316	Micron Tec MU	0	5.61E+10	0.22%	1.3	13.5	0	22	13.50%	0.0291%	0.002799
317	Microsoft C MSFT	0.01039	1.49E+12	5.71%	0.95	14	11.5	12.5	15.11%	0.8629%	0.054244
318	Mid-Americ MAA	0.03416	1.34E+10	0.05%	1	0.5	2.5	5	3.92%	0.0020%	0.000514
319	Mohawk In MHK	0	6.8E+09	0.03%	1.35	0	0	8	0.00%	0.0000%	0.000352
320	Molson Co TAP	0	7.68E+09	0.03%	0.95	5	8	2.5	5.00%	0.0015%	0.00028
321	Mondelez I MDLZ	0.02147	7.58E+10	0.29%	0.95	8	8	5.5	10.23%	0.0297%	0.002761
322	Monster Bt MNST	0	3.67E+10	0.14%	0.85	14.5	0	16.5	14.50%	0.0204%	0.001197
323	Moody's C MCO	0.00815	5.15E+10	0.20%	1.2	8	9.5	#N/A	8.85%	0.0175%	0.002372
324	Morgan St MS	0.02942	7.5E+10	0.29%	1.3	5	6	9	8.02%	0.0230%	0.003738

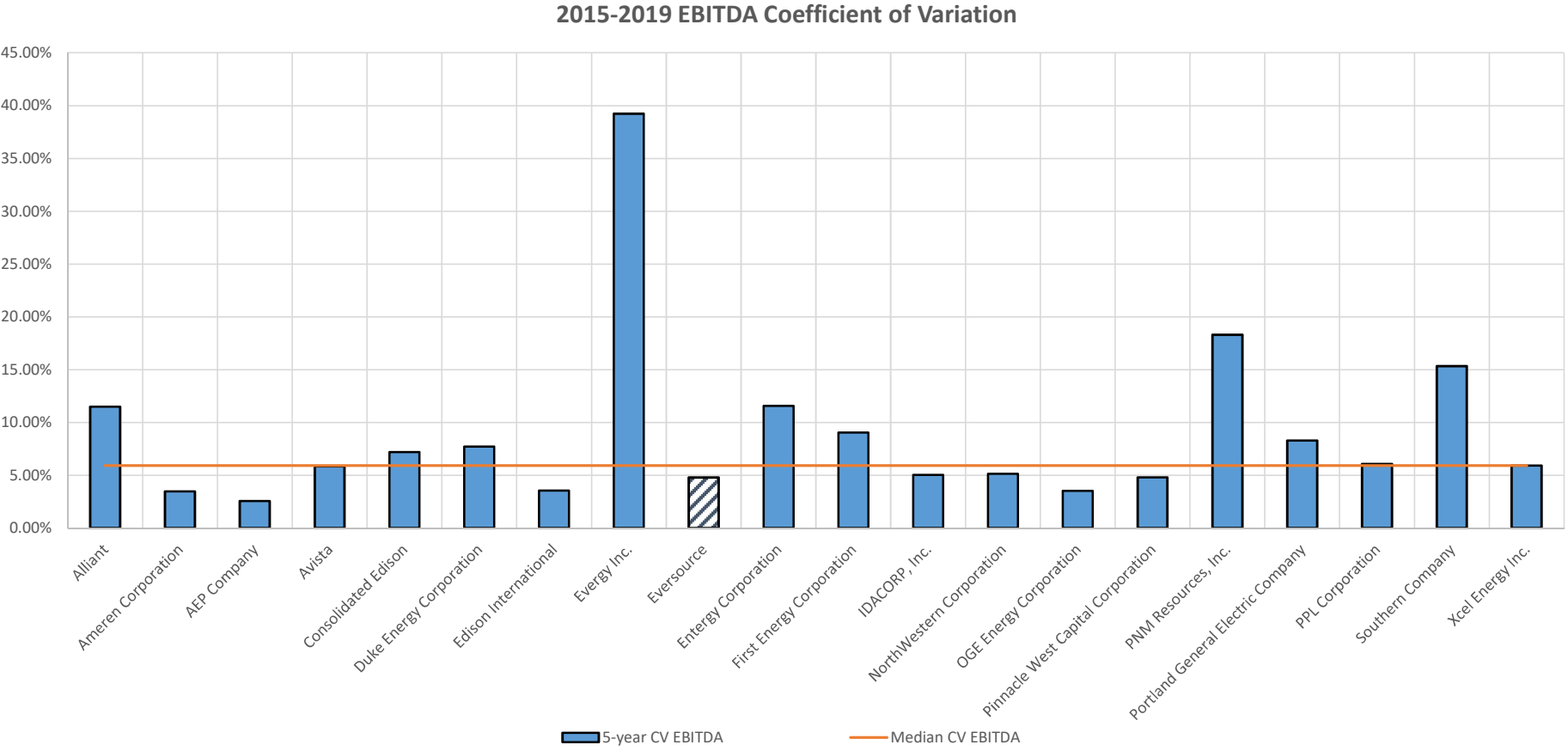
325	Mosaic Co MOS	0.01528	4.96E+09	0.02%	1.3	22	15.5	3	23.70%	0.0045%	0.000247
326	Motorola S MSI	0.01811	2.4E+10	0.09%	0.85	9.5	10	#N/A	11.40%	0.0105%	0.000784
327	MSCI Inc. (MSCI	0.00824	2.76E+10	0.11%	1	17	13	62	17.89%	0.0189%	0.001058
328	Mylan N.V. MYL	0	8.44E+09	0.03%	0.85	3.5	0	3	3.50%	0.0011%	0.000275
329	Nasdaq Inc NDAQ	0.01643	1.96E+10	0.08%	1.05	8	4.5	10	9.71%	0.0073%	0.000789
330	National O NOV	0.0163	4.76E+09	0.02%	1.1	31	-10.5	-9.5	32.88%	0.0060%	0.000201
331	NetApp Inc NTAP	0.04487	9.49E+09	0.04%	1.1	10	15	#N/A	14.71%	0.0054%	0.0004
332	Netflix Inc. NFLX	0	1.98E+11	0.76%	0.85	24	0	29	24.00%	0.1821%	0.00645
333	Newell Bra NWL	0.05955	6.55E+09	0.03%	1.15	4.5	0	-0.5	10.59%	0.0027%	0.000289
334	Newmont (NEM	0.01801	4.46E+10	0.17%	0.7	11.5	14.5	8.5	13.40%	0.0229%	0.001196
337	NextEra Er NEE	0.0225	1.22E+11	0.47%	0.85	10	10.5	6	12.36%	0.0578%	0.003972
339	NIKE Inc. (NKE	0.00995	1.53E+11	0.59%	1.15	18	12	5.5	19.08%	0.1121%	0.006752
340	NiSource li NI	0.0354	9.08E+09	0.03%	0.85	13.5	7.5	5	17.28%	0.0060%	0.000296
341	Noble Ener NBL	0.00782	4.91E+09	0.02%	1.75	0	5.5	-0.5	0.78%	0.0001%	0.000329
342	Norfolk So NSC	0.02156	4.47E+10	0.17%	1.15	11.5	8	2	13.78%	0.0236%	0.00197
343	Northern T NTRS	0.03389	1.72E+10	0.07%	1.1	4.5	6.5	6	7.97%	0.0053%	0.000725
344	Northrop G NOC	0.01825	5.3E+10	0.20%	0.85	10.5	8	22.5	12.42%	0.0252%	0.001727
345	NortonLife NLOK	0.02493	1.18E+10	0.05%	1.05	5	15	14	7.56%	0.0034%	0.000476
346	Norwegian NCLH	0	4.95E+09	0.02%	1.55	-1.5	0	2.5	-1.50%	-0.0003%	0.000294
348	Nucor Corj NUE	0.03699	1.31E+10	0.05%	1.2	3	2.5	5	6.75%	0.0034%	0.000603
349	NVIDIA Co NVDA	0.00174	2.27E+11	0.87%	1.2	9.5	5	24	9.68%	0.0842%	0.010436
350	NVR Inc. NVR	0	1.24E+10	0.05%	1.1	9.5	0	8.5	9.50%	0.0045%	0.000522
351	Occidental OXY	0.00203	1.77E+10	0.07%	1.4	14.5	#N/A	10	14.72%	0.0100%	0.000951
352	Old Domin ODFL	0.00364	1.94E+10	0.07%	0.95	6.5	14	11	6.88%	0.0051%	0.000708
353	Omnicom (OMC	0.04691	1.19E+10	0.05%	0.95	5.5	7.5	11	10.32%	0.0047%	0.000433
354	ONEOK In OKE	0.10289	1.6E+10	0.06%	1.55	16	10	8.5	27.11%	0.0166%	0.000951
355	Oracle Cor ORCL	0.01788	1.69E+11	0.65%	0.85	10	11	-4	11.88%	0.0771%	0.00552
356	O'Reilly Au ORLY	0	3.16E+10	0.12%	1	12	0	29.5	12.00%	0.0146%	0.001213
358	PACCAR li PCAR	0.01719	2.57E+10	0.10%	1.1	3.5	2.5	6	5.25%	0.0052%	0.001086
359	Packaging PKG	0.03237	9.26E+09	0.04%	1	4	6	8	7.30%	0.0026%	0.000355
360	Parker-Har PH	0.01899	2.38E+10	0.09%	1.4	9	9	13.5	10.98%	0.0100%	0.001276
361	Paychex In PAYX	0.03283	2.71E+10	0.10%	1.15	10.5	10	7.5	13.96%	0.0145%	0.001195
362	Paycom Sc PAYC	0	1.85E+10	0.07%	1.15	26	#N/A	41.5	26.00%	0.0185%	0.000817
363	PayPal Ho PYPL	0	1.97E+11	0.76%	1	15.5	0	9.5	15.50%	0.1173%	0.007566
364	Pentair plc PNR	0.02004	6.28E+09	0.02%	1.25	6	-1	2.5	8.06%	0.0019%	0.000301
365	People's U PBCT	0.06015	5.08E+09	0.02%	0.95	4	1.5	4	10.14%	0.0020%	0.000185
366	PepsiCo In PEP	0.0308	1.84E+11	0.71%	0.85	6	4	7.5	9.17%	0.0648%	0.006006
367	PerkinElm PKI	0.00286	1.09E+10	0.04%	0.95	9	2.5	6	9.30%	0.0039%	0.000398
368	Perrigo Co PRGO	0.01649	7.44E+09	0.03%	1	2	10	6	3.67%	0.0010%	0.000285
369	Pfizer Inc. PFE	0.04573	1.85E+11	0.71%	0.85	8.5	5	4	13.27%	0.0940%	0.006019
370	Philip Morr PM	0.06273	1.16E+11	0.45%	0.95	6	4.5	#N/A	12.46%	0.0555%	0.004232
371	Phillips 66 PSX	0.04722	3.33E+10	0.13%	1.3	4	8.5	4.5	8.82%	0.0113%	0.00166
372	Pinnacle W PNW	0.04083	8.62E+09	0.03%	0.85	4.5	5.5	3.5	8.67%	0.0029%	0.000281
374	PNC Finan PNC	0.04154	4.7E+10	0.18%	1.15	8	11.5	6.5	12.32%	0.0222%	0.002072
375	PPG Indus PPG	0.01954	2.46E+10	0.09%	1.1	6	6	3.5	8.01%	0.0076%	0.001039
376	PPL Corp PPL	0.06176	2.07E+10	0.08%	1.05	2.5	2	4.5	8.75%	0.0069%	0.000832
377	Principal F PFG	0.05302	1.16E+10	0.04%	1.45	5.5	5.5	8	10.95%	0.0049%	0.000643
378	Procter & C PG	0.02652	2.95E+11	1.13%	0.75	8.5	4	6	11.26%	0.1276%	0.008494
379	Progressiv PGR	0.00495	4.73E+10	0.18%	0.8	9.5	-14.5	10	10.02%	0.0182%	0.001452
380	Prologis In PLD	0.0244	7.03E+10	0.27%	1.05	6	7.5	8.5	8.51%	0.0229%	0.00283
381	Prudential PRU	0.06871	2.53E+10	0.10%	1.5	7	9	3.5	14.11%	0.0137%	0.001455
382	Public Ser PEG	0.03891	2.55E+10	0.10%	0.9	5	4	5	8.99%	0.0088%	0.000879
383	Public Stor PSA	0.04076	3.43E+10	0.13%	0.85	3.5	2	2	7.65%	0.0101%	0.001118
384	PulteGroup PHM	0.01348	9.55E+09	0.04%	1.45	5.5	8.5	12.5	6.89%	0.0025%	0.000531
385	PVH Corp. PVH	0.00302	3.53E+09	0.01%	1.6	6.5	0	6	6.81%	0.0009%	0.000217
386	Qorvo Inc. QRVO	0	1.28E+10	0.05%	1.1	23.5	0	4	23.50%	0.0115%	0.000538
387	QUALCOM QCOM	0.02891	1.01E+11	0.39%	1	9.5	7.5	4	12.53%	0.0486%	0.003879
388	Quanta Se PWR	0.00521	5.28E+09	0.02%	1.25	15.5	0	8	16.06%	0.0033%	0.000253
389	Quest Diag DGX	0.02016	1.49E+10	0.06%	0.95	9	7.5	9	11.11%	0.0063%	0.000541
390	Ralph Laur RL	0.03719	5.37E+09	0.02%	1.2	8	5.5	0	11.87%	0.0024%	0.000247
391	Raymond J. RJF	0.02049	9.9E+09	0.04%	1.15	8	12.5	11	10.13%	0.0038%	0.000437
392	Raytheon T RTX	0.02841	1.01E+11	0.39%	1.05	3	-4	3.5	5.88%	0.0229%	0.004084
393	Realty Incc O	0.0442	2.18E+10	0.08%	1	6.5	5	5.5	11.06%	0.0092%	0.000835
394	Regency C REG	0.05124	7.88E+09	0.03%	1	13.5	5	3.5	18.97%	0.0057%	0.000302
395	Regeneron REGN	0	6.72E+10	0.26%	0.75	6.5	#N/A	7	6.50%	0.0168%	0.001933
396	Regions Fi RF	0.05016	1.19E+10	0.05%	1.35	5	8.5	5.5	10.14%	0.0046%	0.000614
397	Republic S RSG	0.01963	2.63E+10	0.10%	0.9	9	9	5	11.05%	0.0111%	0.000907
398	ResMed In RMD	0.00898	2.51E+10	0.10%	0.95	8.5	7	4	9.44%	0.0091%	0.000916
399	Robert Hal RHI	0.02632	5.92E+09	0.02%	1.15	9	7	16.5	11.75%	0.0027%	0.000261
400	Rockwell A ROK	0.01946	2.43E+10	0.09%	1.2	7	6	4.5	9.01%	0.0084%	0.001118
401	Rollins Inc. ROL	0.00755	1.39E+10	0.05%	0.85	12	10	7.5	12.80%	0.0068%	0.000453
402	Roper Tec ROP	0.0051	4.2E+10	0.16%	1.05	11.5	10	12.5	12.04%	0.0194%	0.001691
403	Ross Store ROST	0	3.29E+10	0.13%	1.25	9	11	9.5	9.00%	0.0113%	0.001576
404	Royal Caril RCL	0.05257	1.24E+10	0.05%	1.4	-0.5	#N/A	1	4.74%	0.0023%	0.000667
405	S&P Globa SPGI	0.0082	7.87E+10	0.30%	1.1	11	11	26	11.87%	0.0358%	0.003321
406	salesforce. CRM	0	1.69E+11	0.65%	0.9	30	#N/A	20.5	30.00%	0.1945%	0.005836
407	SBA Comn SBAC	0.00643	3.23E+10	0.12%	0.95	31	#N/A	#N/A	31.74%	0.0393%	0.001177

408 Schlumber SLB	0.02478	2.8E+10	0.11%	1.25	15.5	0	-6	18.17%	0.0195%	0.001343
409 Seagate Tr STX	0.05238	1.27E+10	0.05%	1.1	4	1	24	9.34%	0.0046%	0.000537
410 Sealed Air SEE	0.02022	4.93E+09	0.02%	1	26	4	#N/A	28.28%	0.0053%	0.000189
411 Sempra En SRE	0.03356	3.64E+10	0.14%	0.95	10	7.5	8	13.52%	0.0189%	0.001328
412 ServiceNow NOW	0	7.65E+10	0.29%	1	46	0	25	46.00%	0.1349%	0.002933
413 Sherwin-W SHW	0.00921	5.28E+10	0.20%	1.05	8.5	11	12.5	9.46%	0.0192%	0.002127
414 Simon Proj SPG	0.11838	2.17E+10	0.08%	1.25	4.5	-2.5	-1	16.60%	0.0138%	0.00104
415 Skyworks S SWKS	0.01363	2.15E+10	0.08%	1.1	10	13	16.5	11.43%	0.0094%	0.000909
416 SL Green F SLG	0.06613	4.1E+09	0.02%	1.2	0.5	4	0.5	7.13%	0.0011%	0.000189
417 Snap-on In SNA	0.03186	7.37E+09	0.03%	1.1	6	6.5	3.5	9.28%	0.0026%	0.000311
418 Southern C SO	0.04562	5.92E+10	0.23%	0.9	3	3	3.5	7.63%	0.0173%	0.002045
419 Southwest LUV	0	2.11E+10	0.08%	1	1.5	#N/A	-5	1.50%	0.0012%	0.00081
420 Stanley Bl SWK	0.02018	2.11E+10	0.08%	1.45	9	6	4	11.11%	0.0090%	0.001172
421 Starbucks SBUX	0.02149	8.92E+10	0.34%	1	13.5	12	#N/A	15.79%	0.0540%	0.003419
422 State Stree STT	0.03281	2.23E+10	0.09%	1.2	3.5	5	6.5	6.84%	0.0059%	0.001027
423 STERIS Pl STE	0.00965	1.3E+10	0.05%	1.1	9.5	8	9	10.51%	0.0053%	0.00055
424 Stryker Co SYK	0.0121	7.13E+10	0.27%	1.1	11	9	10	12.28%	0.0336%	0.003009
425 SVB Finan SIVB	0	1.14E+10	0.04%	1.2	19.5	0	10	19.50%	0.0085%	0.000523
426 Synchrony SYF	0.03629	1.42E+10	0.05%	1.45	8	14	9	11.77%	0.0064%	0.000787
427 Synopsys I SNPS	0	2.86E+10	0.11%	1	8	0	5	8.00%	0.0088%	0.001098
428 Sysco Cor SY	0.03218	2.84E+10	0.11%	1.1	9.5	8.5	-4	12.87%	0.0140%	0.001198
429 T. Rowe Pl TROW	0.02867	2.86E+10	0.11%	1.05	8	9.5	8.5	10.98%	0.0120%	0.001151
430 Take-Two TTWO	0	1.61E+10	0.06%	0.7	20.5	0	17.5	20.50%	0.0127%	0.000432
431 Tapestry Ir TPR	0.09657	3.86E+09	0.01%	1.4	5	0	10.5	14.90%	0.0022%	0.000207
432 Target Cor TGT	0.02319	5.87E+10	0.22%	0.7	9.5	5.5	6.5	11.93%	0.0268%	0.001575
433 TE Connec TEL	0.02361	2.68E+10	0.10%	1.15	5.5	6	3.5	7.93%	0.0082%	0.001183
435 Teledyne T TDY	0	1.2E+10	0.05%	1.1	8	0	11.5	8.00%	0.0037%	0.000507
436 Teleflex Inc TFX	0.00372	1.7E+10	0.07%	1.1	14	2.5	11	14.40%	0.0094%	0.000716
437 Texas Instr TXN	0.02858	1.16E+11	0.44%	0.85	4	6.5	13.5	6.92%	0.0307%	0.003769
438 Textron Inc TXT	0.00229	7.96E+09	0.03%	1.35	11	10.5	3.5	11.24%	0.0034%	0.000412
439 Thermo Fi TMO	0.00253	1.37E+11	0.53%	0.9	10	11.5	5	10.27%	0.0540%	0.004737
440 Tiffany & C TIF	0.01919	1.47E+10	0.06%	0.85	9.5	6	5.5	11.51%	0.0065%	0.000478
441 TJX Comp TJX	0.01721	6.4E+10	0.25%	1.15	14	10.5	20	15.84%	0.0389%	0.002824
442 T-Mobile U TMUS	0	1.31E+11	0.50%	0.8	14	0	9.5	14.00%	0.0706%	0.004034
443 Tractor Su TSCO	0.01114	1.45E+10	0.06%	0.85	9.5	9	3.5	10.67%	0.0059%	0.000474
444 TransDigm TDG	0	2.52E+10	0.10%	1.15	15.5	0	#N/A	15.50%	0.0150%	0.001111
445 Travelers C TRV	0.0293	2.93E+10	0.11%	0.95	9.5	3	7	12.57%	0.0141%	0.001069
446 Truist Fina TFC	0.04444	5.46E+10	0.21%	1.2	5	6.5	6.5	9.56%	0.0200%	0.002512
448 Tyler Tech TYL	0	1.36E+10	0.05%	0.8	10.5	0	10.5	10.50%	0.0055%	0.000418
449 Tyson Foo TSN	0.02624	2.33E+10	0.09%	0.7	7	10	9.5	9.72%	0.0087%	0.000626
450 U.S. Banc USB	0.04356	5.81E+10	0.22%	1.1	3.5	6.5	6.5	7.93%	0.0177%	0.002451
451 UDR Inc. UDR	0.03796	1.12E+10	0.04%	1	5	4	11	8.89%	0.0038%	0.000429
452 Ulta Beaut ULTA	0	1.23E+10	0.05%	1.25	9	0	11.5	9.00%	0.0043%	0.000591
453 Under Arm UAA	0	2.18E+09	0.01%	1.25	21.5	#N/A	7.5	21.50%	0.0018%	0.000105
455 Union Paci UNP	0.02271	1.16E+11	0.44%	1.1	10.5	7.5	2	12.89%	0.0573%	0.004891
456 United Airl UAL	0	1.14E+10	0.04%	1.45	3.5	0	3	3.50%	0.0015%	0.000635
457 United Par UPS	0.03755	9.28E+10	0.36%	0.75	6	6.5	28	9.87%	0.0351%	0.002668
458 United Rer URI	0	1.11E+10	0.04%	1.55	9.5	0	18	9.50%	0.0040%	0.000659
459 UnitedHea UNH	0.01715	2.76E+11	1.06%	1.1	12	12	9	13.82%	0.1465%	0.011662
460 Universal I UHS	0	8.3E+09	0.03%	1.25	11	23	9	11.00%	0.0035%	0.000398
461 Unum Groi UNM	0.06651	3.49E+09	0.01%	1.6	9	11.5	5	15.95%	0.0021%	0.000214
462 V.F. Corpo VFC	0.03024	2.47E+10	0.09%	1.2	7	4	4.5	10.13%	0.0096%	0.001138
463 Valero Ene VLO	0.06065	2.63E+10	0.10%	1.55	8	5	0.5	14.31%	0.0145%	0.001566
464 Varian Mer VAR	0	1.08E+10	0.04%	1	13.5	0	16	13.50%	0.0056%	0.000416
465 Ventas Inc VTR	0.08056	1.47E+10	0.06%	1.2	1.5	2	1.5	9.62%	0.0054%	0.000676
466 VeriSign In VRSN	0	2.39E+10	0.09%	0.95	9.5	0	#N/A	9.50%	0.0087%	0.000872
467 Verisk Ana VRSK	0.00647	2.71E+10	0.10%	0.9	10.5	0	11	11.18%	0.0116%	0.000934
468 Verizon Cc VZ	0.04324	2.35E+11	0.90%	0.65	4	2	1	8.41%	0.0759%	0.005869
469 Vertex Pha VRTX	0	7.24E+10	0.28%	0.95	32	0	29.5	32.00%	0.0888%	0.002637
470 ViacomCB VIAC	0.03918	1.38E+10	0.05%	1.4	12	9.5	26	16.15%	0.0085%	0.000741
471 Visa Inc. C V	0.00619	4.13E+11	1.58%	1	15	15	10.5	15.67%	0.2480%	0.015833
472 Vornado R VNO	0.06593	7.65E+09	0.03%	1.2	-5	1.5	5.5	1.43%	0.0004%	0.000352
473 Vulcan Ma VMC	0.01124	1.6E+10	0.06%	1.15	12.5	8	3	13.69%	0.0084%	0.000707
474 W. R. Berk WRB	0.00822	1.04E+10	0.04%	1.05	10	7.5	8	10.86%	0.0043%	0.00042
475 W.W. Grai GWW	0.01892	1.63E+10	0.06%	1	8	11	14.5	9.97%	0.0062%	0.000624
476 Walgreens WBA	0.04359	3.68E+10	0.14%	0.75	6	6.5	9	10.49%	0.0148%	0.001059
477 Walmart In WMT	0.01831	3.34E+11	1.28%	0.6	7.5	4	3.5	9.40%	0.1205%	0.007689
478 Walt Disne DIS	0	2.14E+11	0.82%	0.95	7.5	3.5	21.5	7.50%	0.0615%	0.00779
479 Waste Mar WM	0.02083	4.42E+10	0.17%	0.75	5.5	6.5	3.5	7.64%	0.0129%	0.00127
480 Waters Co WAT	0	1.2E+10	0.05%	0.9	6	0	7.5	6.00%	0.0028%	0.000414
481 WEC Ener WEC	0.02815	2.83E+10	0.11%	0.8	6	6.5	3.5	8.90%	0.0097%	0.00087
482 Wells Farg WFC	0.07405	1.13E+11	0.43%	1.1	5	6	5	12.59%	0.0545%	0.004765
483 Welltower WELL	0.04372	2.33E+10	0.09%	0.95	9.5	3.5	0.5	14.08%	0.0126%	0.000849
484 West Phar WST	0.00301	1.57E+10	0.06%	0.85	14	12	11	14.32%	0.0086%	0.00051
485 Western D WDC	0	1.28E+10	0.05%	1.4	1	3	4.5	1.00%	0.0005%	0.000689
486 Western U WU	0.04151	8.91E+09	0.03%	0.8	5	13.5	18	9.25%	0.0032%	0.000273
487 Westingho WAB	0.00785	1.16E+10	0.04%	1.2	10.5	7.5	10	11.33%	0.0051%	0.000536

488 WestRock WRK	0.02822	7.35E+09	0.03%	1.2	5	1	3.5	7.89%	0.0022%	0.000338
489 Weyerhae WY	0	1.67E+10	0.06%	1.4	15	6	-3	15.00%	0.0096%	0.000898
490 Whirlpool C WHR	0.03791	7.87E+09	0.03%	1.4	5	2.5	14.5	8.89%	0.0027%	0.000423
491 Williams C WMB	0.08226	2.36E+10	0.09%	1.6	13	6.5	5.5	21.76%	0.0197%	0.001448
493 Wynn Res WYNN	0	9.53E+09	0.04%	1.45	27	9.5	46	27.00%	0.0099%	0.00053
494 Xcel Energ XEL	0.02666	3.39E+10	0.13%	0.75	6	6	5.5	8.75%	0.0114%	0.000975
495 Xerox Hold XRX	0.06039	3.53E+09	0.01%	1.35	9.5	4.5	12	15.83%	0.0021%	0.000183
496 Xilinx Inc. XLNX	0.01626	2.27E+10	0.09%	0.9	6	4	2	7.67%	0.0067%	0.000785
497 Xylem Inc. XYL	0.01566	1.19E+10	0.05%	1.05	8.5	5	11	10.13%	0.0046%	0.000481
498 Yum! Bran YUM	0.02086	2.71E+10	0.10%	1.1	9.5	11	#N/A	11.69%	0.0122%	0.001144
499 Zebra Tecl ZBRA	0	1.39E+10	0.05%	1.05	11	0	25.5	11.00%	0.0059%	0.000561
500 Zimmer Bi ZBH	0.00753	2.64E+10	0.10%	1.1	5.5	4	4.5	6.27%	0.0063%	0.001112
501 Zions Banc ZION	0.03764	5.92E+09	0.02%	1.15	4.5	9.5	4	8.35%	0.0019%	0.000261
502 Zoetis Inc. ZTS	0.00582	6.53E+10	0.25%	1.05	12	13.5	19	12.62%	0.0316%	0.002628
			100.00%		9.304671				13.5784%	0.978839

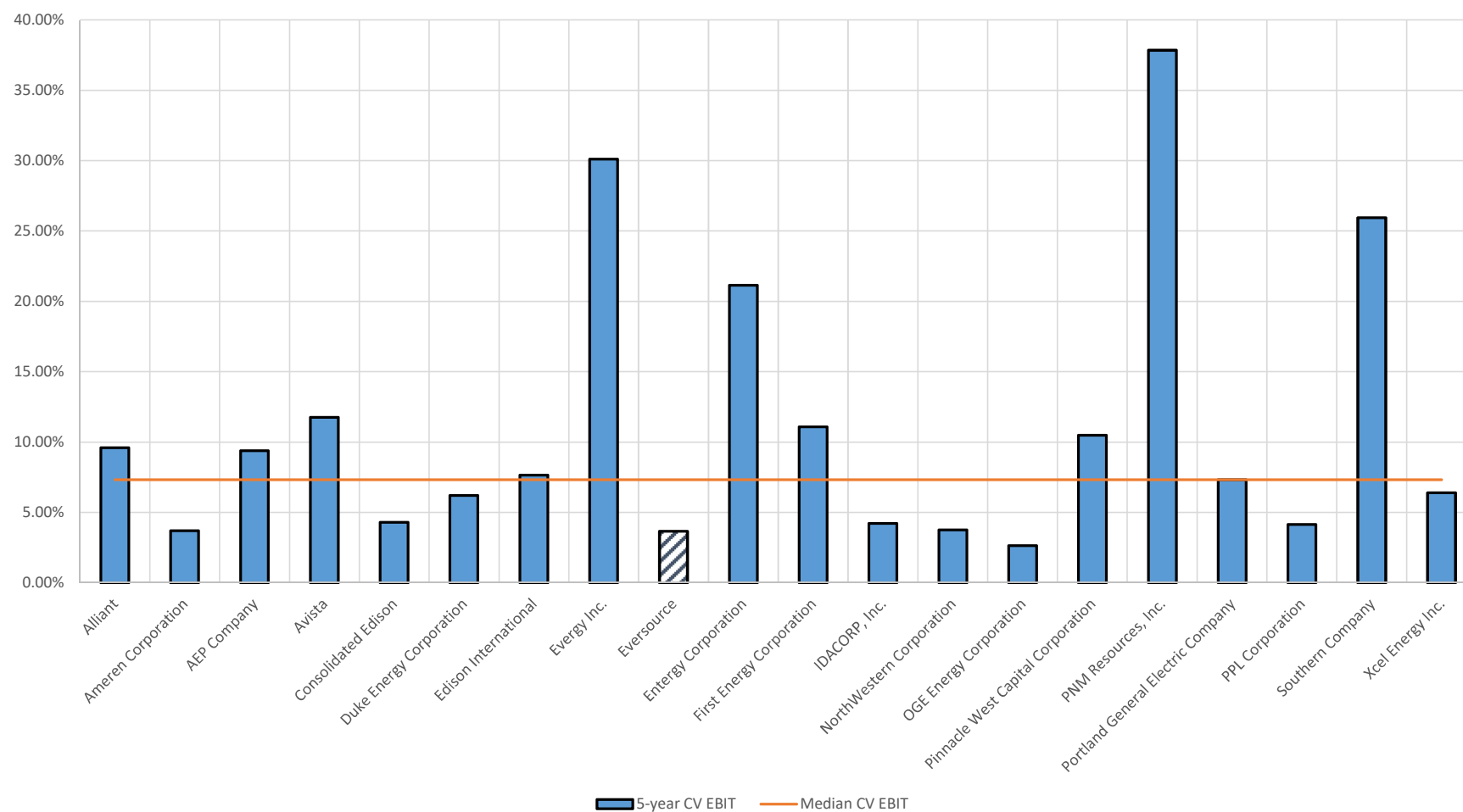
VI. ATTACHMENTS

Coefficient of Variations of EBIT & EBITDA and EBIT/Interest Ranges



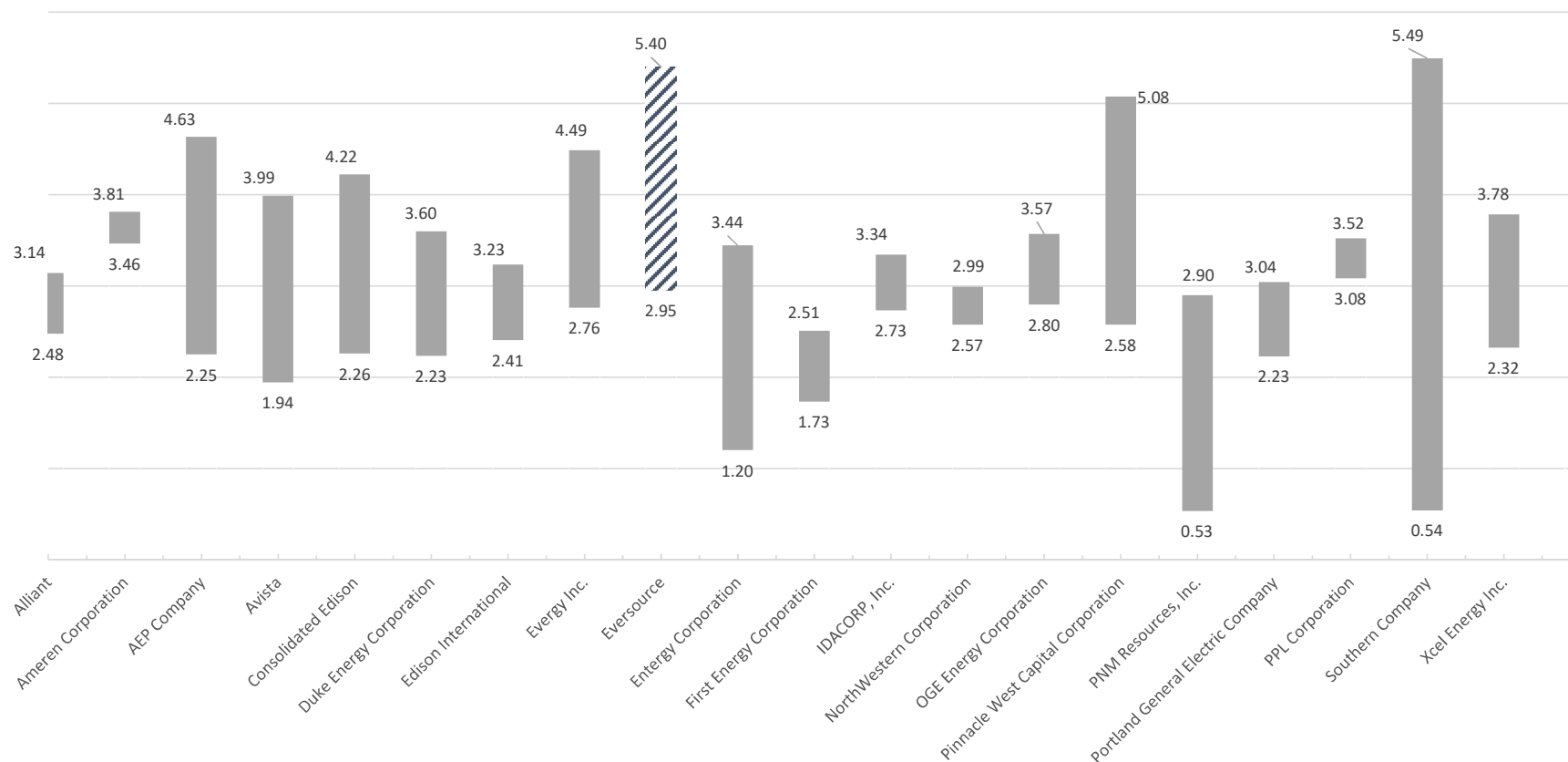
Data Source: SNL

2015-2019 EBIT Coefficient of Variation



Data Source: SNL

2015-2019: EBIT/Interest Expense Mean +/- 2*STDEV range



Data Source: SNL

ROEs Granted by Commissions during 2018-2020

S&P Global
Market Intelligence

Rate Case History (Past Rate Cases)

List None

Company List All

States All

Years 2020, 2019, 2018

Service Type All

		Ticker					Rate (%)		Total Capital (%)					Rate (%)		Total Capital (%)	End Date		Method	(months)			
Indiana	Northern IN	NI	Ca-44403-TDSIC-11	Natural Gas	Limited-Issue Ride	2/25/2020	4.5	NA	NA	NA	65.73	6/24/2020	Fully Litigated	4.5	No	No	NA	NA	NA	12/2019	65.73	Year-end	4
Kansas	Black Hills	BKH	D-20-BHCG-389-TAR (GSRS)	Natural Gas	Limited-Issue Ride	3/11/2020	1.6	NA	NA	NA	49.22	6/23/2020	Fully Litigated	1.6	No	No	NA	NA	NA	01/2020	49.16	Year-end	3
Texas	CenterPoint	CNP	D-GUD-10920	Natural Gas	Distribution	11/14/2019	6.8	8.22	10.40	58.00	NA	6/16/2020	Settled	4.0	No	No	7.38	9.65	56.95	06/2019	280.51	Year-end	7
Virginia	Appalachian	AEP	C-PUR-2019-00122 (RAC-EE)	Electric	Limited-Issue Ride	9/30/2019	4.0	NA	9.42	NA	9.67	5/21/2020	Fully Litigated	4.0	No	No	NA	9.42	NA	06/2021	9.44	Year-end	7
Indiana	Southern	CNP	Ca-44910-TDSIC-6	Electric	Limited-Issue Ride	2/3/2020	7.4	NA	NA	NA	152.32	5/20/2020	Fully Litigated	7.4	No	No	NA	NA	NA	10/2019	152.32	Year-end	3
New Mexico	Southwestern	XEL	C-19-00170-UT	Electric	Vertically Integrates	7/1/2019	46.6	7.54	10.10	54.77	1,269.65	5/20/2020	Settled	31.0	No	No	7.19	9.45	54.77	03/2019	1,270.95	Year-end	10
Colorado	Black Hills	BKH	D-19AL-0075G	Natural Gas	Distribution	2/1/2019	3.5	7.32	10.30	50.15	265.29	5/19/2020	Fully Litigated	(3.3)	No	No	6.76	9.20	50.15	06/2018	231.29	Average	15
Missouri	Missouri Gas	SR	GO-2020-0230 (ISRS)	Natural Gas	Limited-Issue Ride	2/3/2020	5.6	NA	NA	NA	56.59	5/13/2020	Settled	5.6	No	No	NA	NA	NA	02/2020	NA	NA	3
Missouri	Spire Missouri	SR	GO-2020-0229 (ISRS)	Natural Gas	Limited-Issue Ride	2/3/2020	10.7	NA	NA	NA	53.55	5/13/2020	Settled	5.5	No	No	NA	NA	NA	02/2020	NA	NA	3
Michigan	DTE Electric	DTE	C-U-20561	Electric	Vertically Integrates	7/8/2019	343.2	5.73	10.50	38.32	18,167.55	5/8/2020	Fully Litigated	188.3	No	No	5.46	9.90	38.32	04/2021	17,885.89	Average	10
Kentucky	Delta Natural Gas Co.		C-2020-00059 (PRP)	Natural Gas	Limited-Issue Ride	2/28/2020	3.4	NA	NA	NA	18.05	4/28/2020	Fully Litigated	3.4	No	No	NA	NA	NA	12/2019	18.05	Year-end	2
Kentucky	Duke Energy	DUK	C-2019-00271	Electric	Vertically Integrates	9/3/2019	45.6	6.71	9.80	48.23	946.43	4/27/2020	Fully Litigated	24.1	No	No	6.41	9.25	48.23	03/2021	881.00	Average	7
Texas	Atmos Energy	ATO	D-GUD-10900	Natural Gas	Distribution	9/27/2019	0.3	7.71	9.80	60.12	37.40	4/21/2020	Settled	(0.3)	No	No	7.71	9.80	60.12	NA	NA	NA	6
Massachusetts	Fitchburg Gas	UTL	DPU 19-130	Electric	Distribution	12/17/2019	2.7	8.41	10.50	52.45	77.45	4/17/2020	Settled	1.1	No	No	7.99	9.70	52.45	12/2018	72.21	Year-end	4
Virginia	Virginia	D	C-PUR-2019-00105 (Rider US)	Electric	Limited-Issue Ride	7/23/2019	7.4	6.84	9.20	51.17	66.35	4/13/2020	Fully Litigated	7.4	No	No	6.84	9.20	51.17	05/2020	66.35	Average	8
Minnesota	Northern	XEL	D-E-002/GR-19-564	Electric	Vertically Integrates	11/1/2019	466.1	7.47	10.20	52.50	9,805.74	4/7/2020	NA	NA	Yes	Yes	NA	NA	NA	NA	NA	NA	5
Kentucky	Kentucky	PPL	C-PUR-2019-00060	Electric	Vertically Integrates	7/12/2019	12.7	7.57	10.50	54.04	253.87	4/6/2020	Settled	9.0	No	No	NA	NA	NA	12/2018	NA	NA	8
Maine	Northern	UTL	D-2019-00092	Natural Gas	Distribution	6/28/2019	7.1	8.00	10.50	52.91	231.31	3/26/2020	Fully Litigated	3.6	No	No	7.34	9.48	50.00	12/2018	227.28	Year-end	9
Washington	Avista Corp.	AVA	D-UE-190334	Electric	Vertically Integrates	4/30/2019	45.8	7.52	9.90	50.00	1,708.30	3/25/2020	Settled	28.5	No	No	7.21	9.40	48.50	12/2018	NA	NA	11
Washington	Avista Corp.	AVA	D-UG-190335	Natural Gas	Distribution	4/30/2019	12.9	7.52	9.90	50.00	398.99	3/25/2020	Settled	8.0	No	No	7.21	9.40	48.50	12/2018	NA	NA	11
Virginia	Virginia	D	C-PUR-2019-00104 (Rider US)	Electric	Limited-Issue Ride	7/1/2019	18.0	6.84	9.20	51.17	297.66	3/20/2020	Fully Litigated	18.0	No	No	6.84	9.20	51.17	05/2021	297.66	Average	8
Missouri	Union Electric	AEE	C-ER-2019-0335	Electric	Vertically Integrates	7/3/2019	(0.8)	7.36	9.95	51.91	7,977.97	3/18/2020	Settled	(32.0)	No	No	NA	NA	NA	12/2018	NA	NA	8
Mississippi	Mississippi	SO	D-2019-UN-0219	Electric	Vertically Integrates	11/26/2019	(5.8)	7.73	10.30	53.10	2,362.14	3/17/2020	Settled	(16.7)	No	No	7.57	NA	53.00	12/2020	2,363.90	Year-end	3
Indiana	Indiana	AEP	Ca-45235	Electric	Vertically Integrates	5/14/2019	172.0	5.91	10.50	37.55	4,946.96	3/11/2020	Fully Litigated	77.1	Yes	No	5.61	9.70	37.55	12/2020	4,694.02	Year-end	10
Arkansas	Oklahoma	OGE	D-18-046-FR (2019 update)	Electric	Vertically Integrates	10/1/2019	5.4	5.33	NA	37.92	64.19	2/28/2020	Settled	5.2	No	No	5.33	NA	37.92	03/2020	621.22	Year-end	5
Massachusetts	Fitchburg Gas	UTL	DPU 19-131	Natural Gas	Distribution	12/17/2019	7.3	8.41	10.50	52.45	95.04	2/28/2020	Settled	4.6	Yes	No	7.99	9.70	52.45	12/2018	88.13	Year-end	2
New Hampshire	Liberty	AQN	D-DG-19-161	Natural Gas	Distribution	11/27/2019	10.8	7.21	10.00	50.00	334.58	2/28/2020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3
Texas	AEP Texas	AEP	D-49494	Electric	Distribution	5/1/2019	59.1	7.08	10.50	45.00	2,433.98	2/27/2020	Settled	0.7	No	No	6.45	9.40	42.50	12/2018	2,403.99	Year-end	10
Utah	Questar Gas	D	D-19-057-02	Natural Gas	Distribution	7/1/2019	17.5	7.73	10.50	55.00	1,804.27	2/25/2020	Fully Litigated	2.7	Yes	No	7.18	9.50	55.00	12/2020	1,793.54	Average	7
Virginia	Appalachian	AEP	C-PUR-2019-00038 (G-RAC)	Electric	Limited-Issue Ride	5/31/2019	(6.6)	7.79	10.42	50.78	174.43	2/25/2020	Fully Litigated	(6.3)	No	No	7.74	10.42	50.78	04/2021	174.43	Average	9
Kansas	Atmos Energy	ATO	D-19-ATMG-525-RTS	Natural Gas	Distribution	6/28/2019	8.5	7.68	9.90	60.12	243.72	2/24/2020	Fully Litigated	3.1	No	No	7.03	9.10	56.32	03/2019	242.31	Year-end	8
North Carolina	Virginia	D	E-22, Sub 562	Electric	Vertically Integrates	3/29/2019	24.2	7.83	10.75	53.65	1,152.25	2/24/2020	Settled	NA	No	Yes	7.20	9.75	52.00	12/2018	NA	Year-end	11
Maine	Central Maine	IBE	D-2018-00194	Electric	Distribution	10/15/2018	44.8	7.45	10.00	55.00	952.47	2/19/2020	Fully Litigated	17.4	No	No	6.30	8.25	50.00	06/2018	939.45	Average	16
Virginia	Virginia	D	C-PUR-2019-00087 (Rider R)	Electric	Limited-Issue Ride	5/31/2019	(8.2)	8.13	11.75	51.17	317.82	2/18/2020	Fully Litigated	(13.0)	No	No	7.35	10.20	51.17	03/2021	315.69	Average	8
Texas	CenterPoint	CNP	D-49421	Electric	Distribution	4/5/2019	188.9	7.39	10.40	50.00	6,415.24	2/14/2020	Settled	55.9	No	No	6.51	9.40	42.50	12/2018	6,266.07	Year-end	10
Colorado	Public Service Co. of CO	XEL	D-19AL-0268E	Electric	Vertically Integrates	5/20/2019	353.3	7.53	10.20	55.61	8,326.36	2/11/2020	Fully Litigated	280.5	No	No	6.97	9.30	55.61	08/2019	8,025.71	Average	8
California	PacificCorp	BRKA	A-18-04-002	Electric	Vertically Integrates	4/12/2018	0.8	NA	10.60	51.96	NA	2/6/2020	Fully Litigated	(5.8)	No	No	NA	10.00	51.96	12/2019	NA	Average	22
Virginia	Virginia	D	C-PUR-2019-00085 (Rider B)	Electric	Limited-Issue Ride	5/31/2019	(6.3)	7.62	10.75	51.17	140.83	2/3/2020	Fully Litigated	(6.3)	No	No	6.84	9.20	51.17	03/2021	141.77	Average	8
Virginia	Virginia	D	C-PUR-2019-00086 (Rider GV)	Electric	Limited-Issue Ride	5/31/2019	16.4	7.62	10.75	51.17	854.65	2/3/2020	Fully Litigated	11.4	No	No	6.84	9.20	51.17	03/2021	891.19	Average	8
Virginia	Virginia	D	C-PUR-2019-00088 (Rider S)	Electric	Limited-Issue Ride	5/31/2019	(9.3)	8.13	11.75	51.17	1,108.94	2/3/2020	Fully Litigated	(20.3)	No	No	7.35	10.20	51.17	03/2021	1,104.57	Average	8
Virginia	Virginia	D	C-PUR-2019-00089 (Rider W)	Electric	Limited-Issue Ride	5/31/2019	8.1	8.13	11.75	51.17	614.22	2/3/2020	Fully Litigated	0.7	No	No	7.35	10.20	51.17	03/2021	612.24	Average	8
Washington	Cascade	MDU	D-UG-190210	Natural Gas	Distribution	3/29/2019	12.7	7.73	10.30	50.00	405.16	2/3/2020	Settled	6.5	No	No	7.24	9.40	49.10	12/2018	NA	NA	10
Indiana	Indiana Gas	CNP	Ca-44430-TDSIC-11	Natural Gas	Limited-Issue Ride	10/1/2019	1.8	NA	NA	NA	562.58	1/29/2020	Fully Litigated	1.8	No	No	NA	NA	NA	06/2019	562.58	Year-end	4
Indiana	Southern	CNP	Ca-44429-TDSIC-11	Natural Gas	Limited-Issue Ride	10/1/2019	2.2	NA	NA	NA	187.32	1/29/2020	Fully Litigated	2.2	No	No	NA	NA	NA	06/2019	187.32	Year-end	4
Virginia	Roanoke Gas Co.	RGCO	C-PUR-2018-00013	Natural Gas	Distribution	10/10/2018	9.2	7.99	10.70	59.92	126.09	1/24/2020	Fully Litigated	7.3	No	Yes	7.28	9.44	59.64	12/2017	125.41	Average	15
Michigan	Indiana Michigan Power Co.	AEP	C-U-20359	Electric	Vertically Integrates	6/24/2019	50.4	6.34	10.50	40.16	1,131.20	1/23/2020	Settled	36.4	No	No	6.08	9.86	46.56	12/2020	1,131.20	Average	7
New Jersey	Rockland Electric Company	ED	D-ER19050552	Electric	Distribution	5/3/2019	20.3	7.37	9.60	50.16	253.28	1/22/2020	Settled	12.0	No	No	7.11	9.50	48.32	09/2019	229.88	Year-end	8
New York	Consolidated Edison Co. of NY	ED	C-19-E-0065	Electric	Distribution	1/31/2019	469.6	7.19	9.75	50.00	21,835.67	1/16/2020	Settled	113.3	Yes	No	6.61	8.80	48.00	12/2020	21,659.54	Average	11
New York	Consolidated	ED	C-19-G-0066	Natural Gas	Distribution	1/31/2019	206.2	7.19	9.75	50.00	7,192.55	1/16/2020	Settled	83.9	Yes	No	6.61	8.80	48.00	12			

Virginia	Washington Gas Light Co.	ALA	C-PUR-2018-00080	Natural Gas	Distribution	7/31/2018	33.3	7.81	10.30	53.48	1,228.23	12/20/2019	Fully Litigated	13.2	No	Yes	7.22	9.20	53.48	12/20/2019	1,231.22	Average	16
California	Pacific Gas and Electric Co.	PCG	A-19-04-015	Electric	Vertically Integrate	4/22/2019	396.0	NA	12.00	52.00	NA	12/19/2019	Fully Litigated	46.0	No	No	7.81	10.25	52.00	12/20/2020	NA	NA	8
California	San Diego Gas & Electric Co.	SRE	A-19-04-017 (Elec)	Electric	Vertically Integrate	4/22/2019	NA	8.95	12.38	56.00	NA	12/19/2019	Fully Litigated	NA	No	No	7.55	10.20	52.00	12/20/2020	NA	NA	8
California	San Diego Gas & Electric Co.	SRE	A-19-04-017 (Gas)	Natural Gas	Distribution	4/22/2019	NA	8.95	12.38	56.00	NA	12/19/2019	Fully Litigated	NA	No	No	7.55	10.20	52.00	12/20/2020	NA	NA	8
California	Southern California Edison	EIX	A-19-04-014	Electric	Vertically Integrate	4/22/2019	204.0	8.28	11.45	52.00	NA	12/19/2019	Fully Litigated	25.0	No	No	7.68	10.30	52.00	12/20/2020	NA	NA	8
California	Southern California Edison	SRE	A-19-04-018	Natural Gas	Distribution	4/22/2019	40.1	7.85	10.70	56.00	NA	12/19/2019	Fully Litigated	(3.0)	No	No	7.30	10.05	52.00	12/20/2020	NA	NA	8
Georgia	Atlanta Gas	SO	D-42315	Natural Gas	Distribution	6/3/2019	90.3	7.94	10.75	55.00	3,187.73	12/19/2019	Fully Litigated	65.3	No	No	NA	10.25	56.00	07/20/20	NA	Average	6
Massachusetts	NSTAR	ES	DPU 19-115	Electric	Distribution	9/16/2019	33.6	NA	NA	NA	NA	12/19/2019	Fully Litigated	33.6	No	No	NA	NA	NA	NA	NA	NA	3
Indiana	Northern Indiana	NI	Ca-44733-TDSIC-6	Electric	Limited-Issue Ride	8/21/2019	44.8	NA	NA	NA	500.86	12/18/2019	Fully Litigated	44.8	No	No	NA	NA	NA	06/2019	500.86	Year-end	3
Iowa	Interstate	LNT	D-RPU-2019-0002	Natural Gas	Distribution	3/1/2019	21.0	7.39	10.00	53.00	570.79	12/18/2019	Settled	11.8	No	No	7.02	9.60	51.00	12/20/20	557.40	Average	9
Maryland	Columbia Gas	NI	C-9609	Natural Gas	Distribution	5/22/2019	3.8	7.98	10.95	52.90	137.53	12/18/2019	Fully Litigated	1.0	No	No	7.26	9.60	52.90	06/2019	137.53	Average	7
Georgia	Georgia	SO	D-42516	Electric	Vertically Integrate	6/28/2019	937.0	7.93	10.90	56.00	20,079.35	12/17/2019	Fully Litigated	909.0	Yes	No	NA	10.50	56.00	NA	NA	NA	5
Maryland	Baltimore Gas	EXC	C-9610 (EL)	Electric	Distribution	5/24/2019	80.7	7.26	10.30	52.00	3,457.32	12/17/2019	Settled	25.0	No	No	6.94	9.70	NA	07/2019	NA	NA	6
Maryland	Baltimore Gas	EXC	C-9610 (GAS)	Natural Gas	Distribution	5/24/2019	67.3	7.26	10.30	52.00	1,893.61	12/17/2019	Settled	54.0	No	No	6.97	9.75	NA	07/2019	NA	NA	6
Illinois	Ameren Illinois	AEE	D-19-0436	Electric	Distribution	4/18/2019	(3.0)	6.71	8.91	50.00	3,180.74	12/16/2019	Fully Litigated	(3.0)	No	No	6.71	8.91	50.00	12/2018	3,180.74	Year-end	8
Arkansas	Entergy	ETR	D-16-036-FR (2019 review)	Electric	Vertically Integrate	7/5/2019	15.3	5.23	NA	36.53	7,960.90	12/13/2019	Settled	10.1	No	No	5.23	NA	36.49	12/20/20	7,960.90	Average	5
Wyoming	Black Hills	BKH	D-30026-2-GR-19	Natural Gas	Distribution	6/3/2019	16.1	7.54	10.40	50.23	354.37	12/11/2019	Settled	13.2	No	No	6.98	9.40	50.23	12/2018	354.36	Year-end	6
Michigan	SEMCO	ALA	C-U-20479	Natural Gas	Distribution	5/31/2019	38.6	7.07	10.50	51.90	723.69	12/6/2019	Settled	19.9	No	No	NA	9.87	54.00	12/20/20	NA	NA	6
Michigan	Columbia Gas	NI	C-PUR-2019-00132 (SAVE)	Natural Gas	Limited-Issue Ride	8/15/2019	6.1	6.68	9.70	NA	59.42	12/6/2019	Fully Litigated	6.1	No	No	6.68	9.70	NA	12/20/20	59.42	Average	3
Illinois	Commonwealth	EXC	D-19-0387	Electric	Distribution	4/8/2019	(2.7)	6.51	8.91	47.97	11,355.13	12/4/2019	Fully Litigated	(3.1)	No	No	6.51	8.91	47.97	12/2018	11,355.14	Year-end	8
Indiana	Northern IN	NI	Ca-45159	Electric	Vertically Integrate	10/31/2018	109.5	7.02	10.80	47.86	4,115.50	12/4/2019	Settled	42.7	Yes	No	6.52	9.75	47.86	12/2019	4,115.50	Year-end	13
Idaho	Avista Corp.	AVA	C-AVU-E-1904	Electric	Vertically Integrate	6/10/2019	5.3	7.55	9.90	50.00	836.82	11/29/2019	Settled	(7.2)	No	No	7.35	9.50	50.00	12/2018	827.75	Year-end	5
Indiana	Southern	CNP	Ca-44910-TDSIC-5	Electric	Limited-Issue Ride	8/2/2019	7.2	NA	NA	NA	118.54	11/27/2019	Fully Litigated	7.2	No	No	NA	NA	NA	04/2019	118.54	Year-end	3
Virginia	Washington	ALA	C-PUR-2019-00142 (SAVE)	Natural Gas	Limited-Issue Ride	9/30/2019	12.6	NA	NA	NA	115.66	11/26/2019	Fully Litigated	12.4	No	No	NA	NA	NA	12/20/20	115.66	Average	2
Kansas	Kansas Gas	OGS	D-20-KGSG-090-TAR (GSRs)	Natural Gas	Limited-Issue Ride	8/26/2019	4.2	NA	NA	NA	34.56	11/21/2019	Fully Litigated	4.2	No	No	NA	NA	NA	06/2019	34.60	Year-end	2
New Jersey	Elizabethtown	SJI	D-GR19040486	Natural Gas	Distribution	4/18/2019	65.5	7.60	10.40	52.50	1,113.39	11/13/2019	Settled	34.0	No	No	7.13	9.60	51.50	08/2019	988.31	Year-end	6
New Jersey	New Jersey	NJR	D-GR19030420	Natural Gas	Distribution	3/28/2019	134.3	7.75	10.88	56.46	1,815.90	11/13/2019	Settled	62.2	No	No	6.95	9.60	54.00	08/2019	1,765.00	Year-end	7
Louisiana	Entergy New	ETR	D-UD-18-07 (elec.)	Electric	Vertically Integrate	9/21/2018	135.1	7.79	10.50	52.20	769.32	11/7/2019	Fully Litigated	(41.8)	No	No	7.09	9.35	50.00	NA	NA	NA	13
Louisiana	Entergy New	ETR	D-UD-18-07 (gas)	Natural Gas	Distribution	9/21/2018	(0.9)	7.92	10.75	52.20	120.13	11/7/2019	Fully Litigated	(2.5)	No	No	7.09	9.35	50.00	NA	NA	NA	13
Virginia	Virginia	D	C-PUR-2019-00046 (Rider U)	Electric	Limited-Issue Ride	8/15/2019	(14.0)	7.62	10.75	51.17	375.01	11/1/2019	Fully Litigated	(18.0)	No	No	6.83	9.20	51.17	01/2021	372.77	Average	7
North Carolina	Piedmont	DUK	G-9, Sub 743	Natural Gas	Distribution	4/1/2019	143.6	7.61	10.60	52.00	3,364.07	10/31/2019	Settled	82.8	No	No	7.14	9.70	52.00	12/2018	3,450.61	Year-end	7
Wisconsin	Wisconsin	WEC	D-05-UR-109 (WEP-Elec)	Electric	Vertically Integrate	3/28/2019	223.3	9.40	10.35	53.99	4,846.53	10/31/2019	Settled	81.3	No	No	7.49	10.00	54.46	12/20/20	4,738.61	NA	7
Wisconsin	Wisconsin	WEC	D-05-UR-109 (WEP-Gas)	Natural Gas	Distribution	3/28/2019	20.4	9.60	10.35	53.99	723.99	10/31/2019	Settled	15.7	No	No	7.49	10.00	54.46	12/20/20	722.39	NA	7
Wisconsin	Wisconsin	WEC	D-05-UR-109	Natural Gas	Distribution	3/28/2019	14.8	8.66	10.30	51.52	1,403.77	10/31/2019	Settled	1.6	No	No	7.32	10.20	52.02	12/20/20	1,404.71	NA	7
Wisconsin	Wisconsin Public Service Corp.	WEC	D-6690-UR-126 (Elec)	Electric	Vertically Integrate	3/28/2019	101.9	8.17	10.35	51.46	2,614.73	10/31/2019	Settled	38.6	No	No	7.22	10.00	51.96	12/20/20	2,569.52	NA	7
Wisconsin	Wisconsin	WEC	D-6690-UR-126 (Gas)	Natural Gas	Distribution	3/28/2019	16.2	7.97	10.35	51.46	583.98	10/31/2019	Settled	9.6	No	No	7.22	10.00	51.96	12/20/20	581.53	NA	7
Missouri	Missouri Gas	SR	C-GO-2019-0357 (SRS)	Natural Gas	Limited-Issue Ride	7/15/2019	6.3	NA	NA	NA	41.50	10/30/2019	Settled	4.0	No	No	NA	NA	NA	05/2019	38.67	Year-end	3
Missouri	Spiral Missouri	SR	C-GO-2019-0356 (SRS)	Natural Gas	Limited-Issue Ride	7/15/2019	8.1	NA	NA	NA	53.47	10/30/2019	Settled	4.8	No	No	NA	NA	NA	05/2019	45.51	Year-end	3
Washington	Northwest	NWN	D-UG-181053	Natural Gas	Distribution	12/31/2018	8.3	7.63	10.30	49.50	186.48	10/21/2019	Settled	5.1	No	No	7.16	9.40	49.00	09/2018	173.75	Average	9
Indiana	Northern IN	NI	Ca-44403-TDSIC-10	Natural Gas	Limited-Issue Ride	6/25/2019	7.3	NA	NA	NA	27.36	10/16/2019	Fully Litigated	7.3	No	No	NA	NA	NA	04/2019	27.36	Year-end	3
Maryland	Washington	ALA	C-9605	Natural Gas	Distribution	4/22/2019	38.6	7.85	10.40	54.57	1,082.46	10/15/2019	Settled	27.0	No	No	7.42	9.70	53.50	03/2019	NA	NA	5
Indiana	Duke Energy	DUK	Ca-44720-TDSIC-6	Electric	Limited-Issue Ride	4/30/2019	23.5	NA	NA	NA	393.50	10/8/2019	Fully Litigated	23.5	No	No	NA	NA	NA	12/2018	393.50	Year-end	5
Oregon	Avista Corp.	AVA	D-UG 366	Natural Gas	Distribution	3/15/2019	6.7	7.55	9.90	50.00	287.34	10/8/2019	Settled	3.6	No	No	7.24	9.40	50.00	12/20/20	283.14	Year-end	6
Pennsylvania	Peoples	WTRG	D-R-2018-3006818	Natural Gas	Distribution	1/28/2019	94.8	8.00	11.25	53.66	2,052.31	10/3/2019	Settled	59.5	No	No	NA	NA	NA	10/20/20	NA	NA	8
Illinois	Northern	SO	D-18-1775	Natural Gas	Distribution	11/9/2018	180.2	7.27	9.86	54.20	3,447.73	10/2/2019	Fully Litigated	167.7	No	No	7.20	9.73	54.20	09/2020	3,446.88	Average	10
Massachusetts	Massachusetts	NG	DPU-18-150	Electric	Distribution	11/15/2018	116.0	8.04	10.50	53.49	2,218.49	9/30/2019	Fully Litigated	90.1	Yes	No	7.56	9.60	53.49	12/2017	2,151.48	Year-end	10
California	San Diego	SRE	A-17-10-007 (Elec)	Electric	Vertically Integrate	10/6/2017	111.5	NA	NA	NA	5,303.72	9/26/2019	Fully Litigated	35.7	Yes	No	NA	NA	NA	12/2019	5,077.14	Average	24
California	San Diego	SRE	A-17-10-007 (Gas)	Natural Gas	Distribution	10/6/2017	104.8	NA	NA	NA	1,011.89	9/26/2019	Fully Litigated	71.7	Yes	No	NA	NA	NA	12/2019	1,015.63	Average	24
California	Southern	SRE	A-17-10-008	Natural Gas	Distribution	10/6/2017	475.0	NA	NA	NA	6,996.61	9/26/2019	Fully Litigated	314.5	Yes	No	NA	NA	NA	12/2019	6,916.81	Average	24
Michigan	Consumers	CMS	C-U-20322	Natural Gas	Distribution	11/30/2018	204.1	6.23	10.75	42.23	6,501.07	9/26/2019	Fully Litigated	143.5	No	No	5.84	9.90	41.78	09/2020	6,428.66	Average	10
Kentucky	Atmos Energy	ATO	C-2019-00253 (PRP)	Natural Gas	Limited-Issue Ride	7/31/2019	2.9	NA	NA	NA	27.31	9/24/2019	Fully Litigated	2.9	No	No	NA	NA	NA	09/2020	27.31	Year-end	1
Oklahoma	Oklahoma	OGE	Ca-PUD201800140	Electric	Vertically Integrate	12/31/2018	77.6	7.52	9.90	53.34	5,254.15	9/19/2019	Settled	0.0	No	No	NA	NA	NA	09/2018	NA	NA	8
Pennsylvania	UGI Utilities	UGI	D-R-2018-3006814	Natural Gas	Distribution	1/28/2019	71.1	8.31	11.25	54.80	2,376.71	9/19/2019	Settled	30.0	No	No	NA	NA	NA	09/2020	NA	NA	7
California	Pacific Gas	PCG	A-17-11-009 (GT&S)	Natural Gas	Transmission	11/17/2017	184.0	NA	NA	NA	NA	9/12/2019	Fully Litigated	31.3	Yes	No	NA	NA	NA	12/2019	NA	Average	22
Wisconsin	Northern	XEL	D-4220-UR-124 (Elec)	Electric	Vertically Integrate	5/23/2019	0.0	7.74	10.00	52.52	1,482.79	9/4/2019	Settled	0.7	Yes	No	7.74	10.00	52.52	12/20/20	1,482.79	Average	3
Wisconsin	Northern	XEL	D-4220-UR-124 (Gas)	Natural Gas	Distribution	5/23/2019	(3.2)	7.74	10.00	52.52	160.91	9/4/2019	Settled	1.1	Yes	No	7.74	10.00	52.52	12/20/20	160.91	Average	3
Oklahoma	CenterPoint Energy Resources	CNP	Ca-PUD201900019	Natural Gas	Distribution	3/15/2019	2.0	NA	NA	NA	62.92	8/29/2019	Fully Litigated	1.9	No	No	NA	NA	NA				

Maryland	Potomac Electric Power Co.	EXC	C-9602	Electric	Distribution	1/15/2019	26.7	7.81	10.30	50.46	1,973.61	8/12/2019	Fully Litigated	10.3	No	No	7.45	9.60	50.46	01/2019	1,958.40	Average	6
Virginia	Black Hills	D	C-PUR-2018-00195 (Rider E)	Electric	Limited-Issue Ride	12/14/2018	113.7	6.87	9.20	51.37	219.30	8/5/2019	Fully Litigated	104.3	No	No	6.81	9.20	51.17	10/2020	NA	NA	7
Kansas	Empire	AQN	D-19-EPDE-223-RTS	Electric	Vertically Integrate	12/10/2018	1.7	7.54	10.20	51.65	63.77	7/30/2019	Settled	0.0	No	No	NA	NA	NA	NA	NA	NA	7
Indiana	Indiana Gas	CNP	Ca-44430-TDSC-10	Natural Gas	Limited-Issue Ride	4/1/2019	10.4	NA	NA	NA	533.65	7/29/2019	Fully Litigated	10.4	No	No	NA	NA	NA	12/2018	NA	NA	3
Indiana	Southern New Mexico	CNP	Ca-44429-TDSC-10	Natural Gas	Limited-Issue Ride	4/1/2019	4.1	NA	NA	NA	169.40	7/29/2019	Fully Litigated	4.1	No	No	NA	NA	NA	12/2018	NA	NA	3
New Mexico	EMA		C-18-00038-UT	Natural Gas	Distribution	2/26/2018	8.0	7.65	10.20	54.00	578.35	7/17/2019	Settled	2.5	Yes	No	NA	NA	NA	09/2017	NA	NA	16
Virginia	Black Hills	D	C-PUR-2018-00166 (Rider BW)	Electric	Limited-Issue Ride	10/3/2018	3.1	7.39	10.20	51.37	656.56	7/3/2019	Fully Litigated	3.1	No	No	7.39	10.20	51.37	08/2020	656.56	Average	9
Virginia	Black Hills	D	C-PUR-2018-00167 (Rider US)	Electric	Limited-Issue Ride	10/3/2018	1.8	6.87	9.20	51.37	68.66	7/3/2019	Fully Litigated	1.8	No	No	6.87	9.20	51.37	08/2020	68.66	Average	9
Kansas	Black Hills	BKH	D-19-BHCG-400-TAR (GSRS)	Natural Gas	Limited-Issue Ride	4/1/2019	1.4	NA	NA	NA	32.39	6/25/2019	Fully Litigated	1.4	No	No	NA	NA	NA	02/2019	33.09	Year-end	2
Montana	MDU	MDU	D2018.9.60	Electric	Vertically Integrate	9/28/2018	11.9	7.54	10.30	50.45	211.27	6/18/2019	Settled	9.3	Yes	Yes	NA	NA	NA	12/2017	NA	NA	8
Indiana	Northern IN	NI	Ca-44733-TDSC-5	Electric	Limited-Issue Ride	1/29/2019	16.7	NA	NA	NA	375.16	6/12/2019	Fully Litigated	16.7	No	No	NA	NA	NA	11/2018	375.16	Year-end	4
Virginia	Columbia Gas	NI	C-PUR-2018-00131	Natural Gas	Distribution	8/28/2018	22.2	7.04	10.95	35.22	685.53	6/12/2019	Settled	9.5	No	Yes	NA	NA	NA	12/2017	NA	NA	9
Indiana	Southern	CNP	Ca-44910-TDSC-4	Electric	Limited-Issue Ride	2/4/2019	4.1	NA	NA	NA	83.57	5/29/2019	Fully Litigated	4.1	No	No	NA	NA	NA	10/2018	83.57	Year-end	3
Michigan	Upper		C-U-20276	Electric	Vertically Integrate	9/21/2018	7.1	7.68	10.50	49.94	267.72	5/23/2019	Settled	1.8	No	No	6.91	9.90	NA	12/2019	NA	Average	8
Texas	Atmos Energy	ATO	D-GUD-10779 (Mid-Tex Divisic	Natural Gas	Distribution	10/11/2018	4.3	8.39	10.50	60.18	2,574.00	5/21/2019	Settled	2.2	No	No	7.97	9.80	60.18	12/2017	2,572.77	Year-end	7
Tennessee	Atmos Energy	ATO	D-19-00018	Natural Gas	Distribution	2/11/2019	0.9	7.79	NA	58.38	389.06	5/20/2019	Settled	0.0	No	No	7.79	NA	58.38	05/2020	389.06	Average	3
California	Southern	EIX	A-16-09-001	Electric	Vertically Integrate	9/1/2016	(106.0)	7.61	NA	NA	22,939.28	5/16/2019	Fully Litigated	(523.0)	Yes	No	7.43	NA	NA	12/2018	22,336.48	Average	32
Hawaii	Maui Electric	HE	D-2017-0150	Electric	Vertically Integrate	10/12/2017	21.2	8.05	10.60	56.94	482.42	5/16/2019	Settled	12.2	No	Yes	7.43	9.50	57.02	12/2018	454.33	Average	19
South Dakota	OTter Tail Power Co.	OTTR	D-EL18-021	Electric	Vertically Integrate	4/20/2018	5.7	7.91	10.30	52.92	NA	5/14/2019	Fully Litigated	4.8	No	Yes	7.09	8.75	52.92	12/2017	83.50	Average	12
South Carolina	Duke Energy Progress LLC	DUK	D-2018-318-E	Electric	Vertically Integrate	11/20/2018	68.5	7.52	10.50	53.00	1,512.51	5/8/2019	Fully Litigated	41.5	No	No	6.99	9.50	53.00	12/2017	1,477.36	Year-end	6
Kentucky	Atmos Energy	ATO	C-2018-00281	Natural Gas	Distribution	9/28/2018	14.4	7.93	10.40	58.06	496.01	5/7/2019	Fully Litigated	(0.3)	No	No	7.49	9.65	58.06	03/2020	424.93	Average	7
Missouri	Spire Missouri	SR	C-GO-2019-0116 (ISRS)	Natural Gas	Limited-Issue Ride	1/14/2019	9.8	NA	NA	NA	51.48	5/3/2019	Fully Litigated	6.5	No	No	NA	NA	NA	11/2018	NA	NA	3
Missouri	Spire Missouri	SR	C-GO-2019-0115 (ISRS)	Natural Gas	Limited-Issue Ride	1/14/2019	9.2	NA	NA	NA	54.20	5/3/2019	Fully Litigated	5.9	No	No	NA	NA	NA	11/2018	NA	NA	3
Michigan	DTE Electric	DTE	C-U-20162	Electric	Vertically Integrate	7/6/2018	396.8	5.72	10.50	38.72	17,152.35	5/2/2019	Fully Litigated	273.3	No	No	5.48	10.00	37.94	04/2020	17,058.83	Average	10
Virginia	Appalachian Power Co.	AEP	C-PUR-2018-00118 (RAC-EE)	Electric	Limited-Issue Ride	9/28/2018	(0.0)	NA	9.42	NA	NA	5/2/2019	Fully Litigated	(0.0)	No	No	NA	9.42	NA	06/2020	NA	NA	7
Virginia	Electric & Power Co.	D	C-PUR-2017-00168 (Rider DS)	Electric	Limited-Issue Ride	10/3/2018	18.4	6.87	9.20	51.37	NA	5/2/2019	Fully Litigated	17.9	No	No	6.87	9.20	51.37	06/2020	NA	NA	7
South Carolina	Duke Energy Carolinas LLC	DUK	D-2018-319-E	Electric	Vertically Integrate	11/8/2018	225.2	7.69	10.50	53.00	5,624.95	5/1/2019	Fully Litigated	106.9	No	No	7.16	9.50	53.00	12/2017	5,445.67	Year-end	5
Kentucky	Delta Natural Gas Co.		C-2019-00074 (PRP)	Natural Gas	Limited-Issue Ride	2/28/2019	2.7	NA	NA	NA	13.78	4/30/2019	Fully Litigated	2.7	No	No	NA	NA	NA	12/2018	13.78	Year-end	2
Kentucky	Kentucky	PPL	C-2018-00294	Electric	Vertically Integrate	9/28/2018	112.5	7.56	10.42	52.84	4,099.14	4/30/2019	Settled	55.9	No	No	NA	9.73	NA	04/2020	NA	NA	7
Kentucky	Louisville Gas	PPL	C-2018-00295 (elec.)	Electric	Vertically Integrate	9/28/2018	34.9	7.62	10.42	52.84	2,593.43	4/30/2019	Settled	2.1	No	No	NA	9.73	NA	04/2020	NA	NA	7
Kentucky	Louisville Gas	PPL	C-2018-00295 (gas)	Natural Gas	Distribution	9/28/2018	24.9	7.62	10.42	52.84	788.38	4/30/2019	Settled	18.6	No	No	NA	9.73	NA	04/2020	NA	NA	7
Kansas	Atmos Energy	ATO	D-19-ATMG-307-TAR (GSRS)	Natural Gas	Limited-Issue Ride	2/1/2019	1.6	NA	NA	NA	26.32	4/23/2019	Fully Litigated	1.6	No	No	NA	NA	NA	12/2018	NA	NA	2
Maine	Versant Power		D-2019-00019	Electric	Distribution	3/22/2019	15.7	7.66	10.30	50.00	341.28	4/23/2019	NA	NA	No	No	NA	NA	NA	NA	NA	1	
Virginia	Black Hills	D	C-PUR-2018-00101 (Rider US)	Electric	Limited-Issue Ride	7/24/2018	10.6	6.87	9.20	51.37	102.06	4/15/2019	Fully Litigated	10.4	No	No	6.87	9.20	51.37	02/2020	102.06	Average	8
Florida	Duke Energy	DUK	D-20180149	Electric	Limited-Issue Ride	7/31/2018	29.2	NA	10.50	NA	NA	4/2/2019	Settled	29.2	No	No	NA	10.50	NA	NA	NA	NA	8
Kentucky	Duke Energy	DUK	C-2018-00261	Natural Gas	Distribution	8/31/2018	10.5	7.18	9.90	50.76	313.68	3/27/2019	Settled	7.4	No	No	7.07	9.70	50.76	03/2020	313.42	Average	6
Maryland	Potomac Electric & Power Co.	FE	C-9490	Electric	Distribution	8/24/2018	17.6	7.75	10.80	52.82	471.12	3/22/2019	Fully Litigated	6.2	No	No	7.15	9.65	52.82	06/2018	461.68	Average	7
New York	Orange & Rockland	ED	C-18-E-0067	Electric	Distribution	1/26/2018	30.4	7.35	9.75	48.00	877.64	3/14/2019	Settled	13.4	Yes	No	6.97	9.00	48.00	12/2019	877.79	Average	13
New York	Orange & Rockland	ED	C-18-G-0068	Natural Gas	Distribution	1/26/2018	(0.5)	7.35	9.75	48.00	453.64	3/14/2019	Settled	(7.5)	Yes	No	6.97	9.00	48.00	12/2019	454.01	Average	13
Oklahoma	Public Service	AEP	Ca-PUD201800097	Electric	Vertically Integrate	9/26/2018	88.5	7.41	10.30	48.14	2,513.28	3/14/2019	Settled	46.0	No	No	6.97	9.40	NA	03/2018	NA	NA	5
New Jersey	Atlantic City	EXC	D-ER18080925	Electric	Distribution	8/21/2018	130.2	7.33	10.10	49.94	1,592.61	3/13/2019	Settled	70.0	No	No	7.08	9.60	49.94	12/2018	1,494.60	Year-end	6
Arkansas	Oklahoma Electric & Power Co.	OGE	D-18-046-FR	Electric	Vertically Integrate	10/1/2018	5.8	5.27	NA	37.31	617.46	3/6/2019	Settled	3.3	No	No	5.27	NA	37.31	03/2020	617.46	Year-end	5
Virginia	Black Hills	D	C-PUR-2018-00083 (Rider B)	Electric	Limited-Issue Ride	6/1/2018	0.8	6.87	9.20	51.37	148.79	2/27/2019	Fully Litigated	(4.0)	No	No	6.87	9.20	51.37	03/2020	148.78	NA	9
Virginia	Black Hills	D	C-PUR-2018-00084 (Rider GV)	Electric	Limited-Issue Ride	6/1/2018	39.7	6.87	9.20	51.37	963.48	2/27/2019	Fully Litigated	38.4	No	No	6.87	9.20	51.37	03/2020	962.35	Average	9
Virginia	Black Hills	D	C-PUR-2018-00085 (Rider R)	Electric	Limited-Issue Ride	6/1/2018	(7.4)	7.38	10.20	51.37	327.92	2/27/2019	Fully Litigated	(8.6)	No	No	7.38	10.20	51.37	03/2020	327.36	Average	9
Virginia	Electric & Power Co.	D	C-PUR-2018-00086 (Rider S)	Electric	Limited-Issue Ride	6/1/2018	1.7	7.39	10.20	51.37	1,137.08	2/27/2019	Fully Litigated	(3.5)	No	No	7.38	10.20	51.37	03/2020	1,134.87	Average	9
Virginia	Electric & Power Co.	D	C-PUR-2018-00087 (Rider W)	Electric	Limited-Issue Ride	6/1/2018	(2.0)	7.39	10.20	51.37	634.64	2/27/2019	Fully Litigated	(4.3)	No	No	7.38	10.20	51.37	03/2020	633.60	Average	9
West Virginia	Appalachian Power Co.	AEP	C-18-0646-E-42T	Electric	Vertically Integrate	5/9/2018	95.3	7.52	10.22	50.16	4,124.37	2/27/2019	Settled	44.2	No	No	7.28	9.75	50.16	12/2017	4,004.98	Average	9
Washington	Puget Sound Energy Inc.		D-UE-180899	Electric	Vertically Integrate	11/7/2018	18.9	NA	NA	NA	5,101.82	2/21/2019	Settled	0.0	No	No	NA	NA	NA	06/2018	NA	Year-end	3
Washington	Puget Sound Energy Inc.		D-UG-180900	Natural Gas	Distribution	11/7/2018	21.7	NA	NA	NA	1,863.54	2/21/2019	Settled	21.5	No	No	NA	NA	NA	06/2018	NA	Year-end	3
Kansas	Kansas Gas Service Co.	OGS	D-18-KGSG-560-RTS	Natural Gas	Distribution	6/29/2018	49.7	7.88	10.00	61.07	1,041.99	2/5/2019	Settled	21.5	No	No	NA	NA	NA	12/2017	NA	NA	7
Indiana	Indiana Gas	CNP	Ca-44430-TDSC-9	Natural Gas	Limited-Issue Ride	10/1/2018	(13.1)	NA	NA	NA	476.00	1/29/2019	Fully Litigated	(13.1)	No	No	NA	NA	NA	06/2018	476.00	Year-end	4
Indiana	Southern	CNP	Ca-44429-TDSC-9	Natural Gas	Limited-Issue Ride	10/1/2018	(0.8)	NA	NA	NA	147.16	1/29/2019	Fully Litigated	(0.8)	No	No	NA	NA	NA	06/2018	147.16	Year-end	4
Massachusetts	Berkshire Gas	IBE	DPJ 18-40	Natural Gas	Distribution	5/17/2018	4.1	8.94	10.35	61.48	95.83	1/18/2019	Settled	2.4	No	No	8.33	9.70	54.00	12/2017	NA	NA	8
Michigan	Consumers	CMS	C-U-20134	Electric	Vertically Integrate	5/14/2018	43.9	6.28	10.75	41.90	10,638.74	1/9/2019	Settled	(24.0)	No	No	NA	10.00	NA	12/2019	NA	Average	8
Oklahoma	Oklahoma	OGS	Ca-PUD201800028	Natural Gas	Distribution	3/15/2018	(5.6)	NA	NA	NA	1,407.29	1/8/2019	Settled	(5.9)	No	No	NA	NA	NA	12/2017	NA	NA	9
Maryland	Baltimore Gas	EXC	C-9484	Natural Gas	Distribution	6/8/2018	82.8	7.46	10.50	52.85	1,703.42	1/4/2019	Fully Litigated	6.0	No	No	7.09	9.80	52.85	07/2018	1,646.01	Average	7
Virginia	Appalachian	AEP	C-PUR-2018-00018 (G-RAC)	Electric	Limited-Issue Ride	3/29/2018	7.2	7.76	10.40	50.46	181.90	1/2/2019	Settled	7.2	No	No	7.76	10.40	NA	02/2020	181.89	Average	9
West Virginia																							

Colorado	Southwest	SWX	D-18-05031 (Northern)	Natural Gas	Distribution	5/29/2018	1.4	7.51	10.30	49.66	136.14	12/24/2018	Fully Litigated	(2.1)	No	No	6.98	9.25	49.66	01/2018	134.23	Year-end	6
Colorado	Public Service	XEL	D-17AL-0363G	Natural Gas	Distribution	6/2/2017	23.5	7.18	9.35	56.00	1,526.37	12/21/2018	Fully Litigated	22.0	No	Yes	7.12	9.35	54.60	12/2016	1,527.01	Average	18
Vermont	Green		C-18-0974-TF	Electric	Vertically Integrates	4/13/2018	23.5	5.26	9.30	49.85	1,558.69	12/21/2018	Fully Litigated	23.5	No	No	5.26	9.30	49.85	09/2017	1,557.78	Average	8
Pennsylvania	Duquesne		D-R-2018-3000124	Electric	Distribution	3/28/2018	133.8	8.06	10.95	54.51	1,926.26	12/20/2018	Settled	92.7	No	No	NA	NA	NA	12/2019	NA	NA	8
Pennsylvania	PECO Energy	EXC	D-R-2018-3000164	Electric	Distribution	3/29/2018	81.9	7.79	10.95	53.39	4,846.19	12/20/2018	Settled	24.9	No	No	NA	NA	NA	12/2019	NA	NA	8
Texas	Entergy Texas	ETR	D-48371	Electric	Vertically Integrates	5/15/2018	117.5	8.23	10.65	50.90	2,571.70	12/20/2018	Settled	53.2	No	Yes	NA	NA	NA	12/2017	NA	NA	7
Texas	Texas-New	PNM	D-48401	Electric	Distribution	5/30/2018	31.3	8.85	10.50	50.00	522.41	12/20/2018	Settled	22.8	No	No	7.89	9.65	45.00	12/2017	520.30	Year-end	6
Connecticut	CT Natural	IBE	D-18-05-16	Natural Gas	Distribution	6/29/2018	27.8	7.82	10.20	55.00	537.83	12/19/2018	Settled	19.7	Yes	No	7.32	9.30	55.00	12/2017	534.22	Average	5
Ohio	Duke Energy	DUK	C-17-0032-EL-AIR	Electric	Distribution	3/2/2017	15.4	7.82	10.40	50.75	1,338.49	12/19/2018	Settled	(19.2)	No	No	7.54	9.84	50.75	03/2017	1,302.47	Date Certain	21
Virginia	Virginia	D	C-PUR-2018-00042 (Rider U)	Electric	Limited-Issue Ride	3/19/2018	50.7	6.87	9.20	51.37	309.30	12/19/2018	Fully Litigated	47.3	No	No	6.86	9.20	51.37	01/2020	288.74	Average	9
Oregon	Portland	POR	D-UE-335	Electric	Vertically Integrates	2/15/2018	75.5	7.31	9.50	50.00	4,857.60	12/14/2018	Settled	8.6	No	No	7.30	9.50	50.00	12/2019	4,744.71	Year-end	10
Iowa	Interstate	LNT	D-RPU-2018-0002	Natural Gas	Distribution	5/2/2018	19.8	7.49	9.80	53.00	509.02	12/13/2018	Settled	13.9	No	Yes	7.29	9.60	51.00	12/2017	491.45	Average	7
Kansas	Evergy Metro	EVRG	D-18-KCPE-480-RTS	Electric	Vertically Integrates	5/1/2018	32.9	7.38	9.85	49.75	2,329.02	12/13/2018	Settled	(3.9)	No	No	7.07	9.30	49.09	09/2017	NA	NA	7
Arkansas	Entergy	ETR	16-036-FR (2018 Review)	Electric	Vertically Integrates	7/6/2018	189.7	5.26	NA	36.73	7,546.59	12/12/2018	Settled	189.7	No	No	5.26	NA	36.55	12/2019	7,546.59	Average	5
Connecticut	Yankee Gas	ES	D-18-05-10	Natural Gas	Distribution	6/15/2018	86.1	7.57	10.25	53.76	1,573.24	12/12/2018	Settled	30.2	Yes	No	7.06	9.30	53.76	12/2017	1,446.41	Average	6
Maryland	Washington	ALA	C-9486 (STRIDE 2)	Natural Gas	Limited-Issue Ride	6/15/2018	31.7	NA	NA	NA	248.55	12/11/2018	Fully Litigated	31.7	Yes	No	NA	NA	NA	12/2023	248.55	Average	5
Maryland	Washington	ALA	C-9481	Natural Gas	Distribution	5/15/2018	56.8	7.60	10.30	51.69	1,097.13	12/11/2018	Fully Litigated	29.1	No	No	7.30	9.70	51.69	03/2018	1,011.59	Average	7
Texas	Southwestern	XEL	D-47527	Electric	Vertically Integrates	8/21/2017	32.0	7.79	10.25	58.00	1,882.88	12/7/2018	Settled	0.0	No	Yes	NA	NA	NA	06/2017	NA	NA	15
Pennsylvania	Columbia Gas	NI	D-R-2018-2647577	Natural Gas	Distribution	3/16/2018	46.9	8.10	10.95	52.34	1,916.00	12/6/2018	Settled	26.0	No	No	NA	NA	NA	12/2019	NA	NA	8
Indiana	Southern	CNP	Ca-44910-TDSIC-3	Electric	Limited-Issue Ride	8/1/2018	3.9	NA	NA	NA	59.20	12/5/2018	Fully Litigated	3.9	No	No	NA	NA	NA	04/2018	59.20	Year-end	4
Kentucky	Columbia Gas	NI	C-2018-00341 (AMRP)	Natural Gas	Limited-Issue Ride	10/15/2018	3.6	7.62	NA	52.42	64.92	12/5/2018	Fully Litigated	3.6	No	No	7.62	NA	52.42	12/2019	64.92	Year-end	1
Illinois	Commonwealth	EXC	D-18-0808	Electric	Distribution	4/16/2018	(26.1)	6.52	8.69	47.11	10,675.24	12/4/2018	Fully Litigated	(26.1)	No	No	6.52	8.69	47.11	12/2017	10,675.26	Year-end	7
Tennessee	Almos Energy	ATO	D-18-00067	Natural Gas	Distribution	6/15/2018	(5.0)	7.26	NA	51.40	351.85	12/4/2018	Fully Litigated	(5.0)	No	No	7.26	NA	51.40	05/2019	351.85	Average	5
Virginia	Washington	ALA	C-PUR-2018-00145 (SAVE)	Natural Gas	Limited-Issue Ride	9/4/2018	(1.7)	NA	NA	NA	36.56	12/3/2018	Fully Litigated	(1.7)	No	No	NA	NA	NA	12/2019	34.65	Average	3
Indiana	Northern	NI	Ca-44733-TDSIC-4	Electric	Limited-Issue Ride	7/31/2018	15.5	NA	NA	NA	324.74	11/28/2018	Settled	14.8	No	No	NA	NA	NA	05/2018	319.93	Year-end	4
Maryland	Columbia Gas	NI	C-9480	Natural Gas	Distribution	4/13/2018	6.1	8.11	10.95	53.60	114.68	11/21/2018	Settled	3.8	No	No	NA	NA	NA	04/2018	NA	NA	7
Delaware	Delmarva	EXC	D-17-0978	Natural Gas	Distribution	8/17/2017	3.8	6.98	10.10	50.20	355.93	11/8/2018	Settled	(3.5)	No	Yes	6.78	9.70	50.52	12/2017	NA	NA	14
Kansas	Kansas Gas	OGS	D-19-KGSG-088-TAR (GSR5)	Natural Gas	Limited-Issue Ride	8/24/2018	2.4	NA	NA	NA	45.62	11/8/2018	Fully Litigated	2.4	No	No	NA	NA	NA	06/2018	45.56	Year-end	2
Minnesota	Minnesota	WEC	D-G-011/GR-17-563	Natural Gas	Distribution	10/13/2017	4.7	7.00	10.30	50.90	284.29	11/8/2018	Fully Litigated	3.1	No	Yes	6.70	9.70	50.90	12/2018	284.30	Average	13
Illinois	Ameren Illinois	AEE	D-18-0807	Electric	Distribution	4/16/2018	73.7	6.99	8.69	50.00	2,951.88	11/1/2018	Fully Litigated	73.7	No	No	6.99	8.69	50.00	12/2017	2,951.88	Year-end	6
Illinois	Ameren Illinois	AEE	D-18-0463	Natural Gas	Distribution	1/31/2018	38.2	7.14	9.87	50.00	1,595.54	11/1/2018	Settled	31.7	No	No	7.14	9.87	50.00	12/2019	1,588.06	Average	9
Indiana	Indianapolis	AES	Ca-45029	Electric	Vertically Integrates	12/21/2017	88.3	6.82	10.32	40.21	3,368.50	10/31/2018	Settled	43.9	No	No	6.59	9.99	39.67	06/2017	3,339.57	Year-end	10
Missouri	Evergy Metro	EVRG	C-ER-2018-0145	Electric	Vertically Integrates	1/30/2018	16.4	7.45	9.85	50.03	2,626.77	10/31/2018	Settled	(21.1)	No	No	NA	NA	NA	06/2017	NA	NA	9
Missouri	Evergy	EVRG	C-ER-2018-0146	Electric	Vertically Integrates	1/30/2018	19.3	7.66	9.85	54.40	1,907.88	10/31/2018	Settled	(24.0)	No	No	NA	NA	NA	06/2017	NA	NA	9
New Jersey	Public Service	PEG	D-ER18010029	Electric	Distribution	1/12/2018	172.7	7.36	10.30	54.00	5,664.07	10/29/2018	Settled	88.9	No	Yes	6.99	9.60	54.00	06/2018	5,476.00	Year-end	9
New Jersey	Public Service	PEG	D-GR18010030	Natural Gas	Distribution	1/12/2018	246.8	7.36	10.30	54.00	4,242.98	10/29/2018	Settled	123.1	No	No	6.99	9.60	54.00	06/2018	4,035.00	Year-end	9
Oregon	Northwest	NWN	D-UG-344	Natural Gas	Distribution	12/29/2017	37.8	7.62	10.00	50.00	1,214.90	10/26/2018	Settled	24.9	No	No	7.32	9.40	50.00	10/2019	1,201.79	Average	10
Virginia	Columbia Gas	NI	C-PUR-2018-00132 (SAVE)	Natural Gas	Limited-Issue Ride	8/15/2018	2.1	7.47	NA	NA	15.79	10/26/2018	Fully Litigated	2.1	No	No	7.47	NA	NA	12/2019	21.05	Average	2
Tennessee	Chattanooga	SO	D-18-00017	Natural Gas	Distribution	2/15/2018	6.2	7.83	11.25	49.23	157.80	10/15/2018	Settled	1.4	NA	NA	7.12	9.80	49.23	06/2019	149.74	Average	8
Indiana	Duke Energy	DUK	Ca-44720-TDSIC-4	Electric	Limited-Issue Ride	4/25/2018	14.3	NA	NA	NA	213.31	10/9/2018	Fully Litigated	14.3	No	No	NA	NA	NA	12/2017	213.31	NA	5
Arkansas	Black Hills	BKH	D-17-071-U	Natural Gas	Distribution	12/15/2017	18.5	6.06	10.20	42.46	547.72	10/5/2018	Settled	22.6	No	No	5.62	9.61	40.43	12/2017	546.16	Year-end	9
Oklahoma	CenterPoint	CNP	Ca-PUD201800029	Natural Gas	Distribution	3/15/2018	5.1	NA	NA	NA	57.00	10/4/2018	Fully Litigated	5.4	No	No	NA	NA	NA	12/2017	NA	NA	6

Pennsylvania	UGI Utilities Inc.	UGI	D-R-2017-2640058	Electric	Distribution	1/26/2018	7.7	8.24	11.25	54.02	119.24	10/4/2018	Fully Litigated	3.2	No	No	7.48	9.85	54.02	09/2019	94.85	Year-end	8
Maryland	Columbia Gas of Maryland	NI	C-9479 (RIS)	Natural Gas	Limited-Issue Ride	4/6/2018	4.3	NA	NA	NA	34.21	9/28/2018	Settled	2.0	No	No	NA	NA	NA	12/2019	20.30	Average	5
Massachusetts	Boston Gas	NG	DPU-17-170 (Boston Gas)	Natural Gas	Distribution	11/15/2017	136.5	7.54	10.50	53.04	1,733.50	9/28/2018	Fully Litigated	100.8	No	No	7.01	9.50	53.04	12/2016	1,727.44	Year-end	10
Massachusetts	Colonial Gas	NG	DPU-17-170 (Colonial Gas)	Natural Gas	Distribution	11/15/2017	25.6	7.71	10.50	53.04	411.48	9/28/2018	Fully Litigated	17.8	No	No	7.18	9.50	53.04	12/2016	410.44	Year-end	10
Kansas	Evergy	EVRG	D-18-WSEE-328-RTS	Electric	Vertically Integrate	2/1/2018	68.3	7.33	9.85	51.36	5,753.01	9/27/2018	Settled	(50.3)	No	No	7.06	9.30	51.24	06/2017	NA	Year-end	7
North Dakota	MDU	MDU	C-PU-17-295	Natural Gas	Distribution	7/21/2017	3.6	7.54	10.00	51.00	136.86	9/26/2018	Settled	2.5	No	Yes	7.24	9.40	51.00	12/2018	NA	Average	14
North Dakota	Oter Tail	OTTR	C-PU-17-398	Electric	Vertically Integrate	11/21/2017	10.1	7.92	10.30	52.50	364.77	9/26/2018	Settled	7.4	No	Yes	7.64	9.77	52.50	12/2018	364.76	Average	10
Ohio	Dayton Power	AES	C-15-1830-EL-AIR	Electric	Distribution	11/30/2015	65.8	7.86	10.50	50.00	683.78	9/26/2018	Settled	29.8	No	No	7.27	10.00	47.52	05/2016	643.52	Date Certain	34
South Carolina	Dominion	D	D-2018-6-G	Natural Gas	Distribution	6/15/2018	(18.7)	8.19	NA	53.13	604.58	9/26/2018	Fully Litigated	(19.7)	No	No	8.05	NA	49.83	03/2018	604.60	Year-end	3
South Carolina	Piedmont	DUK	D-2018-7-G	Natural Gas	Distribution	6/15/2018	(4.0)	8.87	NA	53.00	341.63	9/26/2018	Settled	(13.9)	No	No	7.60	10.20	53.00	03/2018	341.42	Year-end	3
Missouri	Missouri Gas	SR	C-GO-2018-0310 (ISRS)	Natural Gas	Limited-Issue Ride	6/7/2018	7.1	NA	NA	NA	80.09	9/20/2018	Fully Litigated	5.4	No	No	NA	NA	NA	04/2018	NA	NA	3
Missouri	Spire Missouri	SR	C-GO-2018-0309 (ISRS)	Natural Gas	Limited-Issue Ride	6/7/2018	4.8	NA	NA	NA	67.18	9/20/2018	Fully Litigated	2.6	No	No	NA	NA	NA	04/2018	NA	NA	3
Wisconsin	Madison Gas and Electric Co.	MGEE	D-3270-UR-122 (Elec)	Electric	Vertically Integrate	7/17/2018	(8.0)	7.10	9.80	56.06	860.54	9/20/2018	Settled	(9.2)	No	No	7.10	9.80	56.06	12/2020	860.54	Average	2
Wisconsin	Madison Gas	MGEE	D-3270-UR-122 (Gas)	Natural Gas	Distribution	7/17/2018	4.1	7.10	9.80	56.06	250.74	9/20/2018	Settled	4.1	Yes	No	7.10	9.80	56.06	12/2020	250.74	Average	2
Indiana	Northern IN	NI	Ca-44988	Natural Gas	Distribution	9/27/2017	138.1	6.90	10.70	46.88	1,520.21	9/19/2018	Settled	107.3	Yes	No	6.50	9.85	46.88	12/2018	1,520.21	Year-end	11
Massachusetts	Bay State Gas	NI	DPU-18-45	Natural Gas	Distribution	4/13/2018	43.8	8.17	10.95	53.25	769.78	9/19/2018	NA	NA	No	No	NA	NA	NA	NA	NA	NA	5
Wisconsin	Wisconsin LNT	LNT	D-6680-UR-121 (Elec)	Electric	Vertically Integrate	5/24/2018	0.0	7.08	10.00	52.00	3,955.30	9/14/2018	Settled	0.0	No	No	7.08	10.00	52.00	12/2020	3,955.30	Average	3
Wisconsin	Wisconsin Power and Light Co.	LNT	D-6680-UR-121 (Gas)	Natural Gas	Distribution	5/24/2018	0.0	6.97	10.00	NA	386.92	9/14/2018	Settled	0.0	No	No	6.97	10.00	52.00	12/2020	386.92	Average	3
Michigan	DTE Gas Co.	DTE	C-U-18999	Natural Gas	Distribution	11/22/2017	38.1	5.75	10.50	38.30	4,256.67	9/13/2018	Fully Litigated	9.0	No	No	5.56	10.00	38.30	09/2019	4,236.43	Average	9
Arkansas	CenterPoint	CNP	D-17-010-FR (2018 filing)	Natural Gas	Distribution	4/4/2018	5.3	4.66	NA	31.35	770.66	9/11/2018	Settled	5.1	No	No	4.69	NA	31.52	09/2019	769.09	Year-end	5
Indiana	Indiana Gas	CNP	Ca-44430-TDSIC-8	Natural Gas	Limited-Issue Ride	4/2/2018	9.8	NA	NA	NA	421.72	9/5/2018	Fully Litigated	9.8	No	No	NA	NA	NA	12/2017	421.72	Year-end	5
Indiana	Southern	CNP	Ca-44429-TDSIC-8	Natural Gas	Limited-Issue Ride	4/2/2018	2.2	NA	NA	NA	130.98	9/5/2018	Fully Litigated	2.2	No	No	NA	NA	NA	12/2017	130.98	Year-end	5
New Mexico	Southwestern	XEL	C-17-00255-UT	Electric	Vertically Integrate	10/27/2017	27.3	7.84	10.25	58.00	877.46	9/5/2018	Fully Litigated	12.5	No	No	7.24	9.56	53.97	06/2017	870.33	Year-end	10
West Virginia	Appalachian	AEP	18-0503-E-ENEC	Electric	Limited-Issue Ride	4/17/2018	94.6	NA	NA	NA	NA	8/31/2018	Settled	91.6	No	No	NA	NA	NA	12/2017	NA	NA	4
Michigan	Consumers	CMS	C-U-18424	Natural Gas	Distribution	10/31/2017	82.6	6.17	10.75	40.91	5,437.58	8/28/2018	Settled	10.6	No	No	5.86	10.00	40.91	06/2019	NA	Average	10
Rhode Island	Narragansett	NG	D-4770 (electric)	Electric	Distribution	11/27/2017	18.9	7.43	10.10	50.97	730.08	8/24/2018	Settled	28.9	Yes	No	6.97	9.28	50.95	06/2017	734.84	Average	9
Rhode Island	Narragansett	NG	D-4770 (gas)	Natural Gas	Distribution	11/27/2017	15.5	7.67	10.10	50.97	765.22	8/24/2018	Settled	17.4	Yes	No	7.15	9.28	50.95	06/2017	788.69	Average	9
Indiana	Northern IN	NI	Ca-44403-TDSIC-8	Natural Gas	Limited-Issue Ride	2/27/2018	15.4	NA	NA	NA	405.15	8/22/2018	Fully Litigated	14.2	No	No	NA	NA	NA	12/2017	381.66	Year-end	5
Delaware	Delmarva	EXC	D-17-0977	Electric	Distribution	8/21/2018	10.9	6.98	10.10	50.52	810.64	8/21/2018	Settled	(6.9)	No	Yes	6.78	9.70	50.52	12/2017	NA	NA	12
Kentucky	Delta Natural Gas	SO	C-2018-00086 (PRP)	Natural Gas	Limited-Issue Ride	2/27/2018	2.0	NA	NA	NA	11.04	8/21/2018	Fully Litigated	2.2	No	No	NA	NA	NA	12/2017	11.04	Year-end	5
Virginia	SO	SO	C-PUR-2018-00079 (SAVE)	Natural Gas	Limited-Issue Ride	5/31/2018	3.2	6.86	9.50	48.74	51.81	8/15/2018	Fully Litigated	3.2	No	No	6.86	9.50	48.74	08/2019	51.81	Average	2
District of Columbia	Potomac	EXC	FC-1150	Electric	Distribution	12/19/2017	26.3	7.74	10.10	50.28	1,872.43	8/8/2018	Settled	(24.1)	No	No	7.45	9.53	50.44	12/2017	NA	NA	7
Delaware	Chesapeake Utilities Corp.	CPK	D-18-0934	Natural Gas	Distribution	NA	NA	NA	NA	NA	NA	8/2/2018	Fully Litigated	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
New Jersey	Atlantic City	EXC	D-ER18060638	Electric	Distribution	6/15/2018	99.7	7.46	10.10	50.26	1,536.40	7/25/2018	NA	NA	No	No	NA	NA	NA	12/2018	NA	NA	1
Washington	Cascade	MDU	D-UG-170929	Natural Gas	Distribution	8/31/2017	(1.7)	7.60	9.90	50.00	311.36	7/20/2018	Settled	(2.9)	No	No	7.31	9.40	49.00	12/2016	280.73	Average	10
Wyoming	Black Hills	BKH	D-30011-97-GR-17	Natural Gas	Distribution	11/17/2017	1.2	8.00	10.20	54.00	13.03	7/16/2018	Settled	1.0	No	No	7.75	9.60	54.00	06/2017	12.91	Year-end	8
Florida	Duke Energy	DUK	D-20180084-EI	Electric	Limited-Issue Ride	4/2/2018	200.5	6.62	NA	45.52	1,373.82	7/10/2018	Settled	200.5	Yes	No	NA	NA	NA	NA	NA	NA	3
Virginia	D	D	C-PUR-2017-00128 (Rider BW)	Electric	Limited-Issue Ride	10/5/2017	5.3	7.87	11.50	50.23	699.93	7/9/2018	Fully Litigated	(11.13)	No	No	7.21	10.20	50.23	08/2019	699.95	Average	9
Virginia	D	D	C-PUR-2017-00127 (Rider US)	Electric	Limited-Issue Ride	10/9/2017	5.1	7.36	10.50	50.23	70.57	7/9/2018	Fully Litigated	3.3	No	No	6.71	9.20	50.23	08/2019	70.43	Average	9
Hawaii	HE	HE	D-2015-0170	Electric	Vertically Integrate	9/19/2016	19.3	8.44	10.60	57.12	478.77	6/29/2018	Settled	(0.1)	No	Yes	7.80	9.50	56.69	12/2016	481.31	Average	21
Maine	Versant Power	HE	D-2017-00198	Electric	Distribution	10/2/2017	10.0	7.25	9.50	49.00	307.31	6/28/2018	Fully Litigated	4.5	No	No	7.18	9.35	49.00	12/2016	292.87	Average	8
Hawaii	Hawaiian	HE	D-2016-0328	Electric	Vertically Integrate	12/16/2016	125.0	8.28	10.60	57.36	2,131.35	6/22/2018	Settled	(0.6)	No	Yes	7.57	9.50	57.10	12/2017	1,993.36	Average	18
North Carolina	Duke Energy	DUK	D-E-7, Sub 1146	Electric	Vertically Integrate	8/25/2017	472.2	7.35	9.90	52.00	NA	6/22/2018	Settled	(13.0)	No	No	7.35	9.90	52.00	12/2016	13,500.00	Year-end	10

Kansas	Black Hills	BKH	D-18-BHCG-423-TAR (GSRS)	Natural Gas	Limited-Issue Ride	4/2/2018	0.7	NA	NA	NA	18.32	6/19/2018	Fully Litigated	0.6	No	No	NA	NA	NA	02/2018	18.04	Year-end	2
Oklahoma	Oklahoma	OGE	Ca-PUD201700496	Electric	Vertically Integrate	1/16/2018	1.9	7.76	9.90	53.34	4,583.07	6/19/2018	Settled	(64.0)	No	No	NA	NA	NA	09/2017	NA	NA	5
New York	Central	FTS	C-17-E-0459	Electric	Distribution	7/28/2017	63.4	6.99	9.50	50.00	983.39	6/14/2018	Settled	19.7	Yes	No	6.44	8.80	48.00	06/2019	999.48	Average	10
New York	Central	FTS	C-17-G-0460	Natural Gas	Distribution	7/28/2017	22.2	6.99	9.50	50.00	380.37	6/14/2018	Settled	6.7	Yes	No	6.44	8.80	48.00	06/2019	368.52	Average	10
Missouri	Liberty	AQN	C-GR-2018-0013	Natural Gas	Distribution	9/29/2017	7.1	7.64	10.25	53.00	104.97	6/6/2018	Settled	4.6	No	No	NA	9.80	NA	06/2017	97.82	Year-end	8
Maryland	Potomac	EXC	C-9472	Electric	Distribution	1/2/2018	3.3	7.74	10.10	50.44	1,812.76	5/31/2018	Settled	(15.0)	No	No	7.03	9.50	50.44	12/2017	NA	NA	4
Indiana	Indiana	AEP	Ca-44967	Electric	Vertically Integrate	7/26/2017	192.6	5.97	10.60	37.04	4,185.06	5/30/2018	Settled	153.4	Yes	No	5.51	9.95	35.73	12/2018	4,206.64	Year-end	10
Indiana	Northern IN	NI	Ca-44733-TDSC-3	Electric	Limited-Issue Ride	1/30/2018	12.6	NA	NA	NA	250.43	5/30/2018	Fully Litigated	12.6	No	No	NA	NA	NA	11/2017	250.43	Year-end	4
Maryland	Baltimore Gas	EXC	C-9468 (STRIDE 2)	Natural Gas	Limited-Issue Ride	12/1/2017	87.2	6.69	NA	NA	674.10	5/30/2018	Fully Litigated	68.0	Yes	No	6.69	NA	NA	12/2023	NA	NA	6
Montana	MDU	MDU	D2017.9.79	Natural Gas	Distribution	9/25/2017	1.6	7.47	9.90	51.62	53.74	5/29/2018	Settled	1.0	No	No	7.21	9.40	51.62	NA	NA	NA	8
Indiana	Southern	CNP	Ca-44910-TDSC-2	Electric	Limited-Issue Ride	2/1/2018	1.9	NA	NA	NA	31.61	5/23/2018	Fully Litigated	1.9	No	No	NA	NA	NA	10/2017	31.61	Year-end	3
Virginia	Appalachian	AEP	C-PUR-2017-00126 (RAC-EE)	Electric	Limited-Issue Ride	9/29/2017	2.2	NA	NA	NA	27.31	5/16/2018	Fully Litigated	1.0	No	No	NA	NA	NA	06/2019	NA	NA	7
Georgia	Atlanta Gas	SO	D-40828 (2018 Review)	Natural Gas	Distribution	12/1/2017	(16.0)	NA	NA	54.00	2,677.95	5/15/2018	Settled	(16.0)	No	No	NA	NA	55.00	12/2018	2,677.95	NA	5
Minnesota	CenterPoint	CNP	D-G-008/GR-17-285	Natural Gas	Distribution	8/2/2017	56.5	7.56	10.00	52.18	1,028.10	5/10/2018	Settled	3.9	No	Yes	7.12	NA	NA	09/2018	1,005.40	Average	9
Virginia	Virginia	D	C-PUR-2017-00129 (Rider DSI)	Electric	Limited-Issue Ride	10/3/2017	3.1	7.36	10.50	50.23	NA	5/10/2018	Fully Litigated	2.8	No	No	6.71	9.20	50.23	06/2019	NA	NA	7
Kentucky	Kentucky	PPL	C-PUR-2017-00106	Electric	Vertically Integrate	9/29/2017	6.7	7.47	10.42	53.85	214.08	5/8/2018	Settled	1.8	No	No	NA	NA	NA	12/2016	NA	NA	7
Kentucky	Atmos Energy	ATO	C-2017-00349	Natural Gas	Distribution	9/28/2017	1.8	7.72	10.30	52.57	427.15	5/3/2018	Fully Litigated	(1.9)	No	No	7.41	9.70	52.57	03/2019	427.65	Average	7
New Hampshire	Northern	UTL	D-DG-17-070	Natural Gas	Distribution	6/5/2017	4.7	8.30	10.30	51.70	131.49	5/2/2018	Settled	0.9	Yes	Yes	7.59	9.50	51.70	12/2016	131.66	Year-end	11
New Hampshire	Liberty	AQN	D-DG-17-048	Natural Gas	Distribution	4/28/2017	14.5	7.36	9.40	50.00	252.00	4/27/2018	Fully Litigated	8.1	Yes	Yes	6.80	9.30	49.21	12/2016	244.39	Year-end	12
Colorado	Public Service	XEL	D-17AL-0649E	Electric	Vertically Integrate	10/3/2017	377.9	7.55	10.00	55.25	7,396.06	4/26/2018	Fully Litigated	NA	No	No	NA	NA	NA	NA	NA	NA	6
Washington	Avista Corp.	AVA	D-UE-170485	Electric	Vertically Integrate	5/26/2017	50.3	7.76	9.90	50.00	1,592.17	4/26/2018	Fully Litigated	10.8	No	No	7.50	9.50	48.50	12/2016	1,523.13	Average	11
Washington	Avista Corp.	AVA	D-UG-170486	Natural Gas	Distribution	5/26/2017	7.6	7.76	9.90	50.00	319.54	4/26/2018	Fully Litigated	(2.1)	No	No	7.50	9.50	48.50	12/2016	310.10	Average	11
Connecticut	Connecticut	DE	D-17-10-46	Electric	Distribution	11/22/2017	337.0	7.70	10.50	53.45	3,899.73	4/18/2018	Settled	124.7	Yes	No	7.09	9.25	53.00	12/2016	3,861.11	Average	4
Michigan	DTE Electric	ES	C-U-18255	Electric	Vertically Integrate	4/19/2017	212.3	5.57	10.50	37.59	15,376.51	4/18/2018	Fully Litigated	74.4	No	Yes	5.34	10.00	36.84	10/2018	15,259.41	Average	12
Kentucky	Duke Energy Kentucky Inc.	DUK	C-2017-00321	Electric	Vertically Integrate	9/1/2017	48.6	7.08	10.30	48.89	705.05	4/13/2018	Fully Litigated	8.4	No	No	6.83	9.73	49.25	03/2019	647.81	Average	7
Michigan	Indiana Michigan Power Co.	AEP	C-U-18370	Electric	Vertically Integrate	5/15/2017	51.7	6.02	10.60	36.38	1,014.57	4/12/2018	Fully Litigated	49.1	No	No	5.76	9.90	36.38	12/2018	984.63	Average	11
Virginia	Appalachian Power Co.	AEP	C-PUR-2017-00031 (Rider G)	Electric	Limited-Issue Ride	7/5/2017	NA	7.02	9.40	46.68	NA	4/2/2018	Fully Litigated	NA	No	No	NA	NA	NA	NA	NA	NA	9
Michigan	Consumers	CMS	C-U-18322	Electric	Vertically Integrate	3/31/2017	147.7	6.09	10.50	40.89	10,258.46	3/29/2018	Fully Litigated	72.3	No	Yes	5.89	10.00	40.89	09/2018	10,202.17	Average	12
Florida	Pivotal Utility	NEE	20170179-GU	Natural Gas	Distribution	10/23/2017	12.3	6.57	11.25	41.23	303.22	3/26/2018	Settled	15.3	Yes	Yes	NA	10.19	48.00	12/2018	NA	NA	5
Georgia	Georgia	SO	D-32539 (2018 Update)	Electric	Limited-Issue Ride	11/1/2017	(50.0)	NA	NA	NA	NA	3/20/2018	Fully Litigated	(50.0)	No	No	NA	NA	NA	12/2018	NA	NA	4
New York	Niagara	NG.	C-17-E-0238	Electric	Distribution	4/28/2017	261.0	6.93	9.79	48.00	5,207.22	3/15/2018	Settled	160.0	Yes	No	6.53	9.00	48.00	03/2019	5,260.73	Average	10
New York	Niagara	NG.	C-17-G-0239	Natural Gas	Distribution	4/28/2017	69.7	6.93	9.79	48.00	1,222.04	3/15/2018	Settled	45.5	Yes	No	6.53	9.00	48.00	03/2019	1,231.78	Average	10
Minnesota	ALLETE	ALE	D-E-015/GR-16-664	Electric	Vertically Integrate	11/2/2016	48.0	7.55	10.15	53.81	2,083.09	3/12/2018	Fully Litigated	12.0	No	Yes	7.06	9.25	53.81	12/2017	2,048.92	Average	16
Maine	Northern	UTL	D-2017-00065	Natural Gas	Distribution	5/31/2017	3.5	8.01	10.30	51.70	180.10	2/28/2018	Fully Litigated	(0.1)	No	No	7.53	9.50	50.00	12/2016	170.90	Average	9
Kansas	Atmos Energy	ATO	18-ATMG-218-TAR (GSRS)	Natural Gas	Limited-Issue Ride	11/21/2017	0.9	NA	NA	NA	NA	2/27/2018	Fully Litigated	0.8	No	No	NA	NA	NA	09/2017	NA	NA	3
Virginia	Virginia	D	C-PUR-2017-00070 (Rider B)	Electric	Limited-Issue Ride	6/1/2017	14.9	8.37	12.50	50.23	145.74	2/27/2018	Fully Litigated	14.9	No	No	7.20	11.20	50.23	03/2019	145.74	Average	9
North Carolina	Duke Energy	DUK	D-E-2, Sub 1142	Electric	Vertically Integrate	6/1/2017	348.5	7.09	9.90	52.00	8,171.04	2/23/2018	Settled	194.0	No	No	7.09	9.90	52.00	12/2016	8,153.33	Year-end	8
Missouri	Missouri Gas	SR	C-GR-2017-0216	Natural Gas	Distribution	4/11/2017	52.2	7.50	10.35	54.20	843.68	2/21/2018	Fully Litigated	15.2	No	No	7.20	9.80	54.16	12/2016	807.35	Year-end	10
Missouri	Spire Missouri	SR	C-GR-2017-0215	Natural Gas	Distribution	4/11/2017	60.5	7.50	10.35	54.20	1,315.95	2/21/2018	Fully Litigated	18.0	No	No	7.20	9.80	54.16	12/2016	1,220.58	Year-end	10
Virginia	Virginia	D	C-PUR-2017-00071 (Rider GV)	Electric	Limited-Issue Ride	6/1/2017	12.3	6.71	9.20	50.23	926.51	2/21/2018	Fully Litigated	0.2	No	No	6.71	9.20	50.23	03/2019	926.51	Average	8
Virginia	Virginia	D	C-PUR-2017-00073 (Rider S)	Electric	Limited-Issue Ride	6/1/2017	2.1	7.87	11.50	50.23	1,168.91	2/20/2018	Fully Litigated	(24.6)	No	No	7.21	10.20	50.23	03/2019	1,168.91	Average	8
Virginia	Virginia	D	C-PUR-2017-00074 (Rider W)	Electric	Limited-Issue Ride	6/1/2017	(11.5)	7.21	10.20	50.23	612.63	2/14/2018	Fully Litigated	(11.5)	No	No	7.21	10.20	50.23	03/2019	612.63	Average	8
Maryland	Delmarva	EXC	C-9455	Electric	Distribution	7/14/2017	19.3	7.05	10.10	50.68	740.92	2/9/2018	Settled	13.4	No	No	NA	NA	NA	09/2017	NA	NA	7
Virginia	Virginia	D	C-PUR-2017-00072 (Rider R)	Electric	Limited-Issue Ride	6/1/2017	1.7	7.87	11.50	50.23	348.62	2/9/2018	Fully Litigated	(6.0)	No	No	7.21	10.20	50.23	03/2019	348.72	Average	8
Mississippi	Mississippi	SO	D-2017-AD-0112	Electric	Limited-Issue Ride	7/6/2017	NA	NA	NA	NA	NA	2/6/2018	Settled	NA	No	No	6.62	8.58	50.45	12/2018	613.00	Average	7
Iowa	Interstate	LNT	D-RPU-2017-0001	Electric	Vertically Integrate	4/3/2017	168.0	7.74	10.57	49.05	4,274.62	2/2/2018	Settled	130.0	No	Yes	7.49	9.98	49.02	12/2016	4,231.16	Average	10
Illinois	Northern	SO	D-17-0124	Natural Gas	Distribution	3/10/2017	184.5	7.87	10.70	54.50	2,516.69	1/31/2018	Fully Litigated	93.5	No	No	7.26	9.80	52.00	12/2018	2,422.25	Average	10
Oklahoma	Public Service	AEP	Ca-PUD201700151	Electric	Vertically Integrate	6/30/2017	169.7	7.22	10.00	48.50	2,527.47	1/31/2018	Fully Litigated	75.5	No	No	6.88	9.30	48.51	12/2016	2,465.22	Year-end	7
Indiana	Indiana Gas	CNP	Ca-44430-TDSC-7	Natural Gas	Limited-Issue Ride	10/2/2017	8.4	NA	NA	NA	365.27	1/24/2018	Fully Litigated	8.4	No	No	NA	NA	NA	06/2017	365.27	Year-end	3
Indiana	Southern	CNP	Ca-44429-TDSC-7	Natural Gas	Limited-Issue Ride	10/2/2017	1.3	NA	NA	NA	112.42	1/24/2018	Fully Litigated	1.3	No	No	NA	NA	NA	06/2017	112.42	Year-end	3
Kentucky	Kentucky	AEP	C-2017-00179	Electric	Vertically Integrate	6/28/2017	60.4	6.75	10.31	41.68	1,191.79	1/18/2018	Settled	12.3	No	No	6.44	9.70	41.68	02/2017	1,191.79	Year-end	6