



John Cochrane

Senior Managing Director

200 State Street
9th Floor
Boston, MA 02109
Tel: (508) 335-9348

Education

M.B.A., Northeastern
University

B.A. Biology, Harvard
University

Mr. Cochrane is a Senior Managing Director in FTI's Power & Utilities practice within the Economic and Financial Consulting segment, specializing in advising electric and gas utility clients in all economic, regulatory and financial areas of their business. He has more than 30 years of US and international utility sector experience, including over 20 years of experience testifying on financial issues for electric utility rate cases including capital structure and ROE in New Hampshire, Massachusetts, Rhode Island, New York and before FERC. In addition, he has extensive experience in mergers and acquisitions, joint ventures, partnerships, restructurings, regulation and business development, both domestic and international. He has held C-suite and other senior leadership positions at major US utilities and served as a member of the Board of Directors on a variety of energy sector companies including start-ups.

PROFESSIONAL EXPERIENCE

FTI Consulting, Senior Managing Director, Boston, MA, 2013 to present, with responsibility for leading the Economic and Financial Consulting Power & Utilities team based in Boston:

- Provided cost of capital testimony supporting Liberty Utilities' (Granite State Electric) ongoing rate case before the New Hampshire Public Utilities Commission, including analysis of return on equity and capital structure.
- Advised Trans Bay Cable, an underwater direct current transmission cable connecting San Francisco to Pittsburg (CA), on the reasonableness and methodology of its ROE calculation for the 3-year rate case reset before FERC; provided analysis and expert advice for testimony development.
- Provided expert testimony pertaining to a purchase price dispute stemming from CCI's acquisition of a portfolio of power plants located in PJM.
- Advised PPL Electric Utilities on financial modeling and rate case strategy on the development of transmission projects in PJM.
- Advised global infrastructure fund on financial modeling and rate case strategy applying to a wholly-owned portfolio company, a water utility covering three separate jurisdictions in the U.S. southwest.

National Grid PLC, Executive Vice President – Global Business Development & Mergers and Acquisitions (most recently, among other senior roles),

US/UK/Europe 2006-2013

- Assisted in the development of the Cap & Floor regime for regulatory return on capital for transmission interconnectors in Great Britain.
- Led all business development, mergers, acquisitions, divestitures and joint ventures globally, including the sale of a wide range of businesses totaling \$10B, the negotiation of a 15 year, \$4.5B power supply agreement with Long Island Power Authority, and commercial and regulatory negotiations for a \$3B joint venture with six New York transmission owners.
- Led joint venture negotiations, feasibility studies, project budgets and timelines, and vendor selections for four £1B sub-sea interconnectors between the United Kingdom, Norway, Belgium, France and the Netherlands.

National Grid USA, 1999 – 2006 Executive Vice President, Chief Financial Officer and Treasurer

- Testified on behalf of National Grid with respect to capital structure in rate cases, in all National Grid state jurisdictions, including New Hampshire, Massachusetts, Rhode Island, New York and before FERC.
- Testified as a witness with respect to ROE for a rate case in New Hampshire on behalf of Granite State.
- Testified on behalf of National Grid with respect to debt and equity financings including first mortgage bonds, bank agreements, private placements, common equity issuances in all National Grid state jurisdictions, including New Hampshire, Massachusetts, Rhode Island, New York and before FERC.
- Managed ROE expert testimony preparation on behalf of National Grid in all National Grid state jurisdictions, including New Hampshire, Massachusetts, Rhode Island, New York and before FERC.
- Managed the preparation of FERC ROE filing for two DC transmission lines from Canada in New Hampshire and Massachusetts.
- Supported regulatory approval filings for several M&A deals completed by National Grid including: the sale of New England Electric to National Grid, the purchase of Eastern Utilities by National Grid, the purchase of Niagara Mohawk by National Grid, the purchase of KeySpan Corp by National Grid, The purchase of Rhode Island gas assets of Southern Union Co by National Grid, helping to create the second largest US utility with a total enterprise value of \$27B.
- Ran the sale process on behalf of National Grid for Granite State and EnergyNorth, purchased by Liberty Utilities.
- In addition to mergers & acquisitions, he was responsible for accounting, tax, pensions, insurance/claims, risk management, energy supply, property, investments, cash management, forecasting/budgeting, planning, financial analysis and all third-party financing. In this capacity, he managed a 500-person organization with 13 reporting functions.

- Served as a U.S. board member on US/European companies involved in cross-border tax structures including Luxemburg, Ireland, Jersey, Iceland and Malta.

New England Electric Systems, Treasurer (most recently, among other senior roles), Westborough, MA, 1981-1999

BOARD OF DIRECTORS MEMBERSHIP

EMERA US Subsidiaries, Member, Board of Directors, 2015 – present

PowerOptions, Board of Directors (Audit and Strategic Planning Committees), 2013 – present

GreenerU, Inc., Member, Board of Directors, 2011 – 2013

National Grid USA, Member, Board of Directors, 2000 – 2013

SELECT TESTIMONY

Sponsor	Date	Applicant(s)	Docket/Case	Subject
New Hampshire Public Utilities Commission				
National Grid USA	08/2006	National Grid USA; EnergyNorth Natural Gas	DG 06-107	Merger
Granite State Electric Company	11/1992	Granite State Electric Company	DF 92-219	Financing
Granite State Electric Company	4/2019	Granite State Electric Company	DG 19-064	Cost of Capital
Massachusetts Department of Public Utilities				
New England Electric System	05/1995	New England Electric System; Nantucket Electric Company	DPU 95-67	Merger
New England Power Company	10/1997	USGen New England, Inc; New England Power Company; Massachusetts Electric Company; Nantucket Electric Company	DPU 97-94	Financing
New York Department of Public Service				
National Grid plc	10/2006	National Grid plc; KeySpan Corporation	PSC Case 06-M-0878	Merger
Federal Energy Regulatory Commission				
New England Power Company; Massachusetts Electric Company; The Narragansett	09/1997	New England Power Company; Massachusetts Electric Company; The Narragansett	OA96-74-000	Capital Structure and Cost of Capital

Electric Company; Granite State Electric Company		Electric Company; Granite State Electric Company		
New England Power Company	01/1997	New England Power Company	ER-97-1115	Financing
NEES Transmission Services, Inc.; New England Power Company; Massachusetts Electric Company; The Narragansett Electric Company; Granite State Electric Company	03/1996	NEES Transmission Services, Inc.; New England Power Company; Massachusetts Electric Company; The Narragansett Electric Company; Granite State Electric Company	ER96-1309-000	Capital Structure and Cost of Capital
New England Power Company	09/1995	Tennessee Gas Pipeline Co	RP95-112-000	Return on Equity
New England Power Company	12/1994	New England Power Company	Docket ER95-267	Capital Structure and Cost of Capital

Summary of Results

Constant Growth DCF - Earnings Growth			
Mean	Low ROE	Mean ROE	High ROE
30-Day Average	7.55%	9.20%	11.35%
90-Day Average	7.54%	9.19%	11.33%
180-Day Average	7.63%	9.28%	11.42%
Average	7.57%	9.22%	11.36%

Multi-Stage Growth DCF			
Mean	Low ROE	Mean ROE	High ROE
30-Day Average	8.06%	8.38%	8.85%
90-Day Average	8.04%	8.36%	8.83%
180-Day Average	8.14%	8.47%	8.95%
Average	8.08%	8.40%	8.88%

CAPM	
Current 30-Day Treasury	CAPM
30-Day Average	10.26%
90-Day Average	10.37%
180-Day Average	10.47%
Average	10.37%

Flotation Cost Adjustment	0.08%
---------------------------	-------

Zone of Reasonableness			
Method	Low ROE	Mean ROE	High ROE
Constant Growth DCF	7.57%	9.22%	11.36%
Multi-Stage DCF	8.08%	8.40%	8.88%
CAPM	10.37%	10.37%	10.37%
Mean	8.67%	9.33%	10.20%
With Flotation Costs	8.76%	9.41%	10.29%

Proxy Group Selection Criteria

		[1]	[2]	[3]	[4]	[5]	[6]
		Consistently Paid	Positive Earnings Growth Estimates From At Least Two	Party to Merger or Other Significant	S&P Long-Term	Moody's Long-Term	Percent of Operating Income or Net Income From
Company Name	Stock Ticker	Dividends?	Analysts?	Transaction?	Issuer Rating	Issuer Rating	Regulated Gas Operations
Atmos Energy	ATO	Yes	Yes	No	A	A2	98.6%
Chesapeake Utilities	CPK	Yes	Yes	No			84.6%
NISource Inc.	NI	Yes	Yes	No	BBB+	Baa2	62.3%
New Jersey Resources	NJR	Yes	Yes	No	BBB+		71.3%
ONE Gas, Inc.	OGS	Yes	Yes	No	A	A2	100.0%
South Jersey Industries	SJI	Yes	Yes	No		A3	131.2%
Spire, Inc.	SR	Yes	Yes	No		Baa2	93.1%
Southwest Gas	SWX	Yes	Yes	No		Baa1	82.1%

[1] Source: Value Line

[2] Source: Value Line, Zack's, Yahoo Finance

[3] Source: Company 10Ks

[4] Source: S&P Global Market Intelligence

[5] Source: S&P Global Market Intelligence

[6] Source: Company 10Ks

Constant Growth Discounted Cash Flow Model
Earnings Growth
30 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
Atmos Energy	ATO	\$2.24	\$109.62	2.04%	2.11%	6.70%	6.50%	7.50%	6.90%	8.61%	9.01%	9.62%
Chesapeake Utilities	CPK	\$1.65	\$93.58	1.76%	1.83%	7.00%	6.00%	9.00%	7.33%	7.82%	9.16%	10.84%
NiSource Inc.	NI	\$0.80	\$29.10	2.75%	2.85%	5.40%	4.66%	12.50%	7.52%	7.47%	10.37%	15.42%
New Jersey Resources	NJR	\$1.25	\$45.01	2.78%	2.85%	7.00%	6.00%	3.50%	5.50%	6.33%	8.35%	9.87%
ONE Gas, Inc.	OGS	\$2.12	\$90.58	2.34%	2.41%	5.90%	5.00%	8.00%	6.30%	7.40%	8.71%	10.43%
South Jersey Industries	SJI	\$1.23	\$32.02	3.84%	3.98%	6.60%	4.60%	10.50%	7.23%	8.53%	11.21%	14.54%
Spire, Inc.	SR	\$2.37	\$83.68	2.83%	2.89%	4.40%	2.71%	5.50%	4.20%	5.58%	7.09%	8.41%
Southwest Gas	SWX	\$2.25	\$89.91	2.50%	2.59%	6.20%	6.10%	9.00%	7.10%	8.68%	9.69%	11.61%
Mean				2.61%	2.69%	6.15%	5.20%	8.19%	6.51%	7.55%	9.20%	11.35%
Median				2.63%	2.72%	6.40%	5.50%	8.50%	7.00%	7.64%	9.09%	10.64%

[1] Source: Value Line

[2] Source: Yahoo Finance, as of September 19, 2019

[3] Equals [1] / [2]

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

[5] Source: Zacks

[6] Source: Yahoo Finance

[7] Source: Value Line

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

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

[10] Equals [4] + [8]

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

Constant Growth Discounted Cash Flow Model
Earnings Growth
90 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
		Indicated Annual Dividend	Weighted- Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth		Mean	
Company	Ticker									Low ROE	ROE	High ROE
Atmos Energy	ATO	\$2.24	\$106.59	2.10%	2.17%	6.70%	6.50%	7.50%	6.90%	8.67%	9.07%	9.68%
Chesapeake Utilities	CPK	\$1.65	\$93.52	1.76%	1.83%	7.00%	6.00%	9.00%	7.33%	7.82%	9.16%	10.84%
NiSource Inc.	NI	\$0.80	\$28.89	2.77%	2.87%	5.40%	4.66%	12.50%	7.52%	7.49%	10.39%	15.44%
New Jersey Resources	NJR	\$1.25	\$47.78	2.62%	2.69%	7.00%	6.00%	3.50%	5.50%	6.16%	8.19%	9.71%
ONE Gas, Inc.	OGS	\$2.12	\$90.26	2.35%	2.42%	5.90%	5.00%	8.00%	6.30%	7.41%	8.72%	10.44%
South Jersey Industries	SJI	\$1.23	\$32.69	3.76%	3.90%	6.60%	4.60%	10.50%	7.23%	8.45%	11.13%	14.46%
Spire, Inc.	SR	\$2.37	\$84.09	2.82%	2.88%	4.40%	2.71%	5.50%	4.20%	5.57%	7.08%	8.40%
Southwest Gas	SWX	\$2.25	\$88.38	2.55%	2.64%	6.20%	6.10%	9.00%	7.10%	8.72%	9.74%	11.66%
Mean				2.59%	2.67%	6.15%	5.20%	8.19%	6.51%	7.54%	9.19%	11.33%
Median				2.58%	2.66%	6.40%	5.50%	8.50%	7.00%	7.66%	9.12%	10.64%

[1] Source: Value Line

[2] Source: Yahoo Finance, as of September 19, 2019

[3] Equals [1] / [2]

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

[5] Source: Zacks

[6] Source: Yahoo Finance

[7] Source: Value Line

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

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

[10] Equals [4] + [8]

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

Constant Growth Discounted Cash Flow Model
Earnings Growth
180 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Dividend Yield	Expected Dividend Yield	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Low ROE	Mean ROE	High ROE
Atmos Energy	ATO	\$2.24	\$101.16	2.21%	2.29%	6.70%	6.50%	7.50%	6.90%	8.79%	9.19%	9.80%
Chesapeake Utilities	CPK	\$1.65	\$91.86	1.80%	1.86%	7.00%	6.00%	9.00%	7.33%	7.85%	9.20%	10.88%
NiSource Inc.	NI	\$0.80	\$28.03	2.85%	2.96%	5.40%	4.66%	12.50%	7.52%	7.58%	10.48%	15.53%
New Jersey Resources	NJR	\$1.25	\$47.83	2.61%	2.69%	7.00%	6.00%	3.50%	5.50%	6.16%	8.19%	9.71%
ONE Gas, Inc.	OGS	\$2.12	\$87.25	2.43%	2.51%	5.90%	5.00%	8.00%	6.30%	7.49%	8.81%	10.53%
South Jersey Industries	SJI	\$1.23	\$31.52	3.90%	4.04%	6.60%	4.60%	10.50%	7.23%	8.59%	11.28%	14.61%
Spire, Inc.	SR	\$2.37	\$80.21	2.95%	3.02%	4.40%	2.71%	5.50%	4.20%	5.70%	7.22%	8.54%
Southwest Gas	SWX	\$2.25	\$84.61	2.66%	2.75%	6.20%	6.10%	9.00%	7.10%	8.84%	9.85%	11.78%
Mean				2.68%	2.77%	6.15%	5.20%	8.19%	6.51%	7.63%	9.28%	11.42%
Median				2.64%	2.72%	6.40%	5.50%	8.50%	7.00%	7.72%	9.19%	10.70%

[1] Source: Value Line

[2] Source: Yahoo Finance, as of September 19, 2019

[3] Equals [1] / [2]

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

[5] Source: Zacks

[6] Source: Yahoo Finance

[7] Source: Value Line

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

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

[10] Equals [4] + [8]

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

Multi-Stage Discounted Cash Flow Model
30 Day Average Stock Price
Low Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Second Stage Growth												ROE
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	First Stage Growth	Year 6	Year 7	Year 8	Year 9	Year 10	Third Stage Growth	
Atmos Energy	ATO	\$2.24	\$109.62	6.70%	6.50%	7.50%	6.50%	6.31%	6.11%	5.92%	5.72%	5.53%	5.34%	7.71%
Chesapeake Utilities	CPK	\$1.65	\$93.58	7.00%	6.00%	9.00%	6.00%	5.89%	5.78%	5.67%	5.56%	5.45%	5.34%	7.31%
NiSource Inc.	NI	\$0.80	\$29.10	5.40%	4.66%	12.50%	4.66%	4.77%	4.89%	5.00%	5.11%	5.22%	5.34%	8.19%
New Jersey Resources	NJR	\$1.25	\$45.01	7.00%	6.00%	3.50%	3.50%	3.81%	4.11%	4.42%	4.72%	5.03%	5.34%	8.00%
ONE Gas, Inc.	OGS	\$2.12	\$90.58	5.90%	5.00%	8.00%	5.00%	5.06%	5.11%	5.17%	5.22%	5.28%	5.34%	7.81%
South Jersey Industries	SJI	\$1.23	\$32.02	6.60%	4.60%	10.50%	4.60%	4.72%	4.85%	4.97%	5.09%	5.21%	5.34%	9.35%
Spire, Inc.	SR	\$2.37	\$83.68	4.40%	2.71%	5.50%	2.71%	3.15%	3.59%	4.02%	4.46%	4.90%	5.34%	7.92%
Southwest Gas	SWX	\$2.25	\$89.91	6.20%	6.10%	9.00%	6.10%	5.97%	5.85%	5.72%	5.59%	5.46%	5.34%	8.18%
													Mean	8.06%
													Median	7.96%
													Max	9.35%
													Min	7.31%

[1] Source: Value Line
[2] Source: Yahoo Finance, as of September 19, 2019
[3] Source: Zacks
[4] Source: Yahoo Finance
[5] Source: Value Line
[6] Equals minimum ([3], [4], [5])
[7] Equals [6] + (([12] - [6]) / 6)
[8] Equals [7] + (([12] - [6]) / 6)
[9] Equals [8] + (([12] - [6]) / 6)
[10] Equals [9] + (([12] - [6]) / 6)
[11] Equals [10] + (([12] - [6]) / 6)
[12] Source: Federal Reserve Bank of St. Louis; Energy Information Administration
[13] Equals internal rate of return of cash flows resulting from Excel's goal seek function

Multi-Stage Discounted Cash Flow Model
30 Day Average Stock Price
Average Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Second Stage Growth												ROE
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	First Stage Growth	Year 6	Year 7	Year 8	Year 9	Year 10	Third Stage Growth	
Atmos Energy	ATO	\$2.24	\$109.62	6.70%	6.50%	7.50%	6.90%	6.64%	6.38%	6.12%	5.86%	5.60%	5.34%	7.77%
Chesapeake Utilities	CPK	\$1.65	\$93.58	7.00%	6.00%	9.00%	7.33%	7.00%	6.67%	6.33%	6.00%	5.67%	5.34%	7.49%
NiSource Inc.	NI	\$0.80	\$29.10	5.40%	4.66%	12.50%	7.52%	7.16%	6.79%	6.43%	6.06%	5.70%	5.34%	8.76%
New Jersey Resources	NJR	\$1.25	\$45.01	7.00%	6.00%	3.50%	5.50%	5.47%	5.45%	5.42%	5.39%	5.36%	5.34%	8.38%
ONE Gas, Inc.	OGS	\$2.12	\$90.58	5.90%	5.00%	8.00%	6.30%	6.14%	5.98%	5.82%	5.66%	5.50%	5.34%	8.02%
South Jersey Industries	SJI	\$1.23	\$32.02	6.60%	4.60%	10.50%	7.23%	6.92%	6.60%	6.28%	5.97%	5.65%	5.34%	10.06%
Spire, Inc.	SR	\$2.37	\$83.68	4.40%	2.71%	5.50%	4.20%	4.39%	4.58%	4.77%	4.96%	5.15%	5.34%	8.19%
Southwest Gas	SWX	\$2.25	\$89.91	6.20%	6.10%	9.00%	7.10%	6.81%	6.51%	6.22%	5.92%	5.63%	5.34%	8.37%
													Mean	8.38%
													Median	8.28%
													Max	10.06%
													Min	7.49%

- [1] Source: Value Line
[2] Source: Yahoo Finance, as of September 19, 2019
[3] Source: Zacks
[4] Source: Yahoo Finance
[5] Source: Value Line
[6] Equals average ([3], [4], [5])
[7] Equals [6] + (([12] - [6]) / 6)
[8] Equals [7] + (([12] - [6]) / 6)
[9] Equals [8] + (([12] - [6]) / 6)
[10] Equals [9] + (([12] - [6]) / 6)
[11] Equals [10] + (([12] - [6]) / 6)
[12] Source: Federal Reserve Bank of St. Louis; Energy Information Administration
[13] Equals internal rate of return of cash flows resulting from Excel's goal seek function

Multi-Stage Discounted Cash Flow Model
30 Day Average Stock Price
High Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Second Stage Growth												ROE
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	First Stage Growth	Year 6	Year 7	Year 8	Year 9	Year 10	Third Stage Growth	
Atmos Energy	ATO	\$2.24	\$109.62	6.70%	6.50%	7.50%	7.50%	7.14%	6.78%	6.42%	6.06%	5.70%	5.34%	7.87%
Chesapeake Utilities	CPK	\$1.65	\$93.58	7.00%	6.00%	9.00%	9.00%	8.39%	7.78%	7.17%	6.56%	5.95%	5.34%	7.74%
NiSource Inc.	NI	\$0.80	\$29.10	5.40%	4.66%	12.50%	12.50%	11.31%	10.11%	8.92%	7.72%	6.53%	5.34%	9.95%
New Jersey Resources	NJR	\$1.25	\$45.01	7.00%	6.00%	3.50%	7.00%	6.72%	6.45%	6.17%	5.89%	5.61%	5.34%	8.68%
ONE Gas, Inc.	OGS	\$2.12	\$90.58	5.90%	5.00%	8.00%	8.00%	7.56%	7.11%	6.67%	6.22%	5.78%	5.34%	8.33%
South Jersey Industries	SJI	\$1.23	\$32.02	6.60%	4.60%	10.50%	10.50%	9.64%	8.78%	7.92%	7.06%	6.20%	5.34%	11.06%
Spire, Inc.	SR	\$2.37	\$83.68	4.40%	2.71%	5.50%	5.50%	5.47%	5.45%	5.42%	5.39%	5.36%	5.34%	8.44%
Southwest Gas	SWX	\$2.25	\$89.91	6.20%	6.10%	9.00%	9.00%	8.39%	7.78%	7.17%	6.56%	5.95%	5.34%	8.75%
													Mean	8.85%
													Median	8.56%
													Max	11.06%
													Min	7.74%

[1] Source: Value Line
[2] Source: Yahoo Finance, as of September 19, 2019
[3] Source: Zacks
[4] Source: Yahoo Finance
[5] Source: Value Line
[6] Equals maximum ([3], [4], [5])
[7] Equals [6] + (([12] - [6]) / 6)
[8] Equals [7] + (([12] - [6]) / 6)
[9] Equals [8] + (([12] - [6]) / 6)
[10] Equals [9] + (([12] - [6]) / 6)
[11] Equals [10] + (([12] - [6]) / 6)
[12] Source: Federal Reserve Bank of St. Louis; Energy Information Administration
[13] Equals internal rate of return of cash flows resulting from Excel's goal seek function

Multi-Stage Discounted Cash Flow Model
90 Day Average Stock Price
Low Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Second Stage Growth												ROE
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	First Stage Growth	Year 6	Year 7	Year 8	Year 9	Year 10	Third Stage Growth	
Atmos Energy	ATO	\$2.24	\$106.59	6.70%	6.50%	7.50%	6.50%	6.31%	6.11%	5.92%	5.72%	5.53%	5.34%	7.78%
Chesapeake Utilities	CPK	\$1.65	\$93.52	7.00%	6.00%	9.00%	6.00%	5.89%	5.78%	5.67%	5.56%	5.45%	5.34%	7.31%
NiSource Inc.	NI	\$0.80	\$28.89	5.40%	4.66%	12.50%	4.66%	4.77%	4.89%	5.00%	5.11%	5.22%	5.34%	8.21%
New Jersey Resources	NJR	\$1.25	\$47.78	7.00%	6.00%	3.50%	3.50%	3.81%	4.11%	4.42%	4.72%	5.03%	5.34%	7.84%
ONE Gas, Inc.	OGS	\$2.12	\$90.26	5.90%	5.00%	8.00%	5.00%	5.06%	5.11%	5.17%	5.22%	5.28%	5.34%	7.81%
South Jersey Industries	SJI	\$1.23	\$32.69	6.60%	4.60%	10.50%	4.60%	4.72%	4.85%	4.97%	5.09%	5.21%	5.34%	9.27%
Spire, Inc.	SR	\$2.37	\$84.09	4.40%	2.71%	5.50%	2.71%	3.15%	3.59%	4.02%	4.46%	4.90%	5.34%	7.90%
Southwest Gas	SWX	\$2.25	\$88.38	6.20%	6.10%	9.00%	6.10%	5.97%	5.85%	5.72%	5.59%	5.46%	5.34%	8.23%
													Mean	8.04%
													Median	7.87%
													Max	9.27%
													Min	7.31%

[1] Source: Value Line
[2] Source: Yahoo Finance, as of September 19, 2019
[3] Source: Zacks
[4] Source: Yahoo Finance
[5] Source: Value Line
[6] Equals minimum ([3], [4], [5])
[7] Equals [6] + (([12] - [6]) / 6)
[8] Equals [7] + (([12] - [6]) / 6)
[9] Equals [8] + (([12] - [6]) / 6)
[10] Equals [9] + (([12] - [6]) / 6)
[11] Equals [10] + (([12] - [6]) / 6)
[12] Source: Federal Reserve Bank of St. Louis; Energy Information Administration
[13] Equals internal rate of return of cash flows resulting from Excel's goal seek function

Multi-Stage Discounted Cash Flow Model
90 Day Average Stock Price
Average Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	First Stage Growth	Second Stage Growth					Third Stage Growth	ROE
								Year 6	Year 7	Year 8	Year 9	Year 10		
Atmos Energy	ATO	\$2.24	\$106.59	6.70%	6.50%	7.50%	6.90%	6.64%	6.38%	6.12%	5.86%	5.60%	5.34%	7.84%
Chesapeake Utilities	CPK	\$1.65	\$93.52	7.00%	6.00%	9.00%	7.33%	7.00%	6.67%	6.33%	6.00%	5.67%	5.34%	7.50%
NiSource Inc.	NI	\$0.80	\$28.89	5.40%	4.66%	12.50%	7.52%	7.16%	6.79%	6.43%	6.06%	5.70%	5.34%	8.78%
New Jersey Resources	NJR	\$1.25	\$47.78	7.00%	6.00%	3.50%	5.50%	5.47%	5.45%	5.42%	5.39%	5.36%	5.34%	8.20%
ONE Gas, Inc.	OGS	\$2.12	\$90.26	5.90%	5.00%	8.00%	6.30%	6.14%	5.98%	5.82%	5.66%	5.50%	5.34%	8.03%
South Jersey Industries	SJI	\$1.23	\$32.69	6.60%	4.60%	10.50%	7.23%	6.92%	6.60%	6.28%	5.97%	5.65%	5.34%	9.96%
Spire, Inc.	SR	\$2.37	\$84.09	4.40%	2.71%	5.50%	4.20%	4.39%	4.58%	4.77%	4.96%	5.15%	5.34%	8.17%
Southwest Gas	SWX	\$2.25	\$88.38	6.20%	6.10%	9.00%	7.10%	6.81%	6.51%	6.22%	5.92%	5.63%	5.34%	8.42%
													Mean	8.36%
													Median	8.19%
													Max	9.96%
													Min	7.50%

[1] Source: Value Line

[2] Source: Yahoo Finance, as of September 19, 2019

[3] Source: Zacks

[4] Source: Yahoo Finance

[5] Source: Value Line

[6] Equals average ([3], [4], [5])

[7] Equals [6] + (([12] - [6]) / 6)

[8] Equals [7] + (([12] - [6]) / 6)

[9] Equals [8] + (([12] - [6]) / 6)

[10] Equals [9] + (([12] - [6]) / 6)

[11] Equals [10] + (([12] - [6]) / 6)

[12] Source: Federal Reserve Bank of St. Louis; Energy Information Administration

[13] Equals internal rate of return of cash flows resulting from Excel's goal seek function

Multi-Stage Discounted Cash Flow Model
90 Day Average Stock Price
High Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Second Stage Growth												ROE
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	First Stage Growth	Year 6	Year 7	Year 8	Year 9	Year 10	Third Stage Growth	
Atmos Energy	ATO	\$2.24	\$106.59	6.70%	6.50%	7.50%	7.50%	7.14%	6.78%	6.42%	6.06%	5.70%	5.34%	7.94%
Chesapeake Utilities	CPK	\$1.65	\$93.52	7.00%	6.00%	9.00%	9.00%	8.39%	7.78%	7.17%	6.56%	5.95%	5.34%	7.74%
NiSource Inc.	NI	\$0.80	\$28.89	5.40%	4.66%	12.50%	12.50%	11.31%	10.11%	8.92%	7.72%	6.53%	5.34%	9.98%
New Jersey Resources	NJR	\$1.25	\$47.78	7.00%	6.00%	3.50%	7.00%	6.72%	6.45%	6.17%	5.89%	5.61%	5.34%	8.49%
ONE Gas, Inc.	OGS	\$2.12	\$90.26	5.90%	5.00%	8.00%	8.00%	7.56%	7.11%	6.67%	6.22%	5.78%	5.34%	8.34%
South Jersey Industries	SJI	\$1.23	\$32.69	6.60%	4.60%	10.50%	10.50%	9.64%	8.78%	7.92%	7.06%	6.20%	5.34%	10.94%
Spire, Inc.	SR	\$2.37	\$84.09	4.40%	2.71%	5.50%	5.50%	5.47%	5.45%	5.42%	5.39%	5.36%	5.34%	8.42%
Southwest Gas	SWX	\$2.25	\$88.38	6.20%	6.10%	9.00%	9.00%	8.39%	7.78%	7.17%	6.56%	5.95%	5.34%	8.81%
													Mean	8.83%
													Median	8.45%
													Max	10.94%
													Min	7.74%

[1] Source: Value Line
[2] Source: Yahoo Finance, as of September 19, 2019
[3] Source: Zacks
[4] Source: Yahoo Finance
[5] Source: Value Line
[6] Equals maximum ([3], [4], [5])
[7] Equals [6] + (([12] - [6]) / 6)
[8] Equals [7] + (([12] - [6]) / 6)
[9] Equals [8] + (([12] - [6]) / 6)
[10] Equals [9] + (([12] - [6]) / 6)
[11] Equals [10] + (([12] - [6]) / 6)
[12] Source: Federal Reserve Bank of St. Louis; Energy Information Administration
[13] Equals internal rate of return of cash flows resulting from Excel's goal seek function

Multi-Stage Discounted Cash Flow Model
180 Day Average Stock Price
Low Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Second Stage Growth												ROE
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	First Stage Growth	Year 6	Year 7	Year 8	Year 9	Year 10	Third Stage Growth	
Atmos Energy	ATO	\$2.24	\$101.16	6.70%	6.50%	7.50%	6.50%	6.31%	6.11%	5.92%	5.72%	5.53%	5.34%	7.91%
Chesapeake Utilities	CPK	\$1.65	\$91.86	7.00%	6.00%	9.00%	6.00%	5.89%	5.78%	5.67%	5.56%	5.45%	5.34%	7.35%
NiSource Inc.	NI	\$0.80	\$28.03	5.40%	4.66%	12.50%	4.66%	4.77%	4.89%	5.00%	5.11%	5.22%	5.34%	8.30%
New Jersey Resources	NJR	\$1.25	\$47.83	7.00%	6.00%	3.50%	3.50%	3.81%	4.11%	4.42%	4.72%	5.03%	5.34%	7.84%
ONE Gas, Inc.	OGS	\$2.12	\$87.25	5.90%	5.00%	8.00%	5.00%	5.06%	5.11%	5.17%	5.22%	5.28%	5.34%	7.90%
South Jersey Industries	SJI	\$1.23	\$31.52	6.60%	4.60%	10.50%	4.60%	4.72%	4.85%	4.97%	5.09%	5.21%	5.34%	9.42%
Spire, Inc.	SR	\$2.37	\$80.21	4.40%	2.71%	5.50%	2.71%	3.15%	3.59%	4.02%	4.46%	4.90%	5.34%	8.03%
Southwest Gas	SWX	\$2.25	\$84.61	6.20%	6.10%	9.00%	6.10%	5.97%	5.85%	5.72%	5.59%	5.46%	5.34%	8.36%
													Mean	8.14%
													Median	7.97%
													Max	9.42%
													Min	7.35%

[1] Source: Value Line

[2] Source: Yahoo Finance, as of September 19, 2019

[3] Source: Zacks

[4] Source: Yahoo Finance

[5] Source: Value Line

[6] Equals minimum ([3], [4], [5])

[7] Equals [6] + (([12] - [6]) / 6)

[8] Equals [7] + (([12] - [6]) / 6)

[9] Equals [8] + (([12] - [6]) / 6)

[10] Equals [9] + (([12] - [6]) / 6)

[11] Equals [10] + (([12] - [6]) / 6)

[12] Source: Federal Reserve Bank of St. Louis; Energy Information Administration

[13] Equals internal rate of return of cash flows resulting from Excel's goal seek function

Multi-Stage Discounted Cash Flow Model
180 Day Average Stock Price
Average Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Second Stage Growth												ROE
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	First Stage Growth	Year 6	Year 7	Year 8	Year 9	Year 10	Third Stage Growth	
Atmos Energy	ATO	\$2.24	\$101.16	6.70%	6.50%	7.50%	6.90%	6.64%	6.38%	6.12%	5.86%	5.60%	5.34%	7.98%
Chesapeake Utilities	CPK	\$1.65	\$91.86	7.00%	6.00%	9.00%	7.33%	7.00%	6.67%	6.33%	6.00%	5.67%	5.34%	7.53%
NiSource Inc.	NI	\$0.80	\$28.03	5.40%	4.66%	12.50%	7.52%	7.16%	6.79%	6.43%	6.06%	5.70%	5.34%	8.89%
New Jersey Resources	NJR	\$1.25	\$47.83	7.00%	6.00%	3.50%	5.50%	5.47%	5.45%	5.42%	5.39%	5.36%	5.34%	8.19%
ONE Gas, Inc.	OGS	\$2.12	\$87.25	5.90%	5.00%	8.00%	6.30%	6.14%	5.98%	5.82%	5.66%	5.50%	5.34%	8.13%
South Jersey Industries	SJI	\$1.23	\$31.52	6.60%	4.60%	10.50%	7.23%	6.92%	6.60%	6.28%	5.97%	5.65%	5.34%	10.14%
Spire, Inc.	SR	\$2.37	\$80.21	4.40%	2.71%	5.50%	4.20%	4.39%	4.58%	4.77%	4.96%	5.15%	5.34%	8.32%
Southwest Gas	SWX	\$2.25	\$84.61	6.20%	6.10%	9.00%	7.10%	6.81%	6.51%	6.22%	5.92%	5.63%	5.34%	8.56%
													Mean	8.47%
													Median	8.25%
													Max	10.14%
													Min	7.53%

[1] Source: Value Line
[2] Source: Yahoo Finance, as of September 19, 2019
[3] Source: Zacks
[4] Source: Yahoo Finance
[5] Source: Value Line
[6] Equals average ([3], [4], [5])
[7] Equals [6] + (([12] - [6]) / 6)
[8] Equals [7] + (([12] - [6]) / 6)
[9] Equals [8] + (([12] - [6]) / 6)
[10] Equals [9] + (([12] - [6]) / 6)
[11] Equals [10] + (([12] - [6]) / 6)
[12] Source: Federal Reserve Bank of St. Louis; Energy Information Administration
[13] Equals internal rate of return of cash flows resulting from Excel's goal seek function

Multi-Stage Discounted Cash Flow Model
180 Day Average Stock Price
High Growth Rate

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
		Second Stage Growth												ROE
Company	Ticker	Indicated Annual Dividend	Weighted-Average Stock Price	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	First Stage Growth	Year 6	Year 7	Year 8	Year 9	Year 10	Third Stage Growth	
Atmos Energy	ATO	\$2.24	\$101.16	6.70%	6.50%	7.50%	7.50%	7.14%	6.78%	6.42%	6.06%	5.70%	5.34%	8.08%
Chesapeake Utilities	CPK	\$1.65	\$91.86	7.00%	6.00%	9.00%	9.00%	8.39%	7.78%	7.17%	6.56%	5.95%	5.34%	7.78%
NiSource Inc.	NI	\$0.80	\$28.03	5.40%	4.66%	12.50%	12.50%	11.31%	10.11%	8.92%	7.72%	6.53%	5.34%	10.12%
New Jersey Resources	NJR	\$1.25	\$47.83	7.00%	6.00%	3.50%	7.00%	6.72%	6.45%	6.17%	5.89%	5.61%	5.34%	8.48%
ONE Gas, Inc.	OGS	\$2.12	\$87.25	5.90%	5.00%	8.00%	8.00%	7.56%	7.11%	6.67%	6.22%	5.78%	5.34%	8.45%
South Jersey Industries	SJI	\$1.23	\$31.52	6.60%	4.60%	10.50%	10.50%	9.64%	8.78%	7.92%	7.06%	6.20%	5.34%	11.15%
Spire, Inc.	SR	\$2.37	\$80.21	4.40%	2.71%	5.50%	5.50%	5.47%	5.45%	5.42%	5.39%	5.36%	5.34%	8.58%
Southwest Gas	SWX	\$2.25	\$84.61	6.20%	6.10%	9.00%	9.00%	8.39%	7.78%	7.17%	6.56%	5.95%	5.34%	8.96%
													Mean	8.95%
													Median	8.53%
													Max	11.15%
													Min	7.78%

[1] Source: Value Line

[2] Source: Yahoo Finance, as of September 19, 2019

[3] Source: Zacks

[4] Source: Yahoo Finance

[5] Source: Value Line

[6] Equals maximum ([3], [4], [5])

[7] Equals [6] + (([12] - [6]) / 6)

[8] Equals [7] + (([12] - [6]) / 6)

[9] Equals [8] + (([12] - [6]) / 6)

[10] Equals [9] + (([12] - [6]) / 6)

[11] Equals [10] + (([12] - [6]) / 6)

[12] Source: Federal Reserve Bank of St. Louis; Energy Information Administration

[13] Equals internal rate of return of cash flows resulting from Excel's goal seek function

Proxy Group Betas

[1]

Company Name	Stock Ticker	Beta
Atmos Energy	ATO	0.60
Chesapeake Utilities	CPK	0.65
NiSource Inc.	NI	0.55
New Jersey Resources	NJR	0.70
ONE Gas, Inc.	OGS	0.65
South Jersey Industries	SJI	0.80
Spire, Inc.	SR	0.65
Southwest Gas	SWX	0.70
Mean		0.66

[1] Source: Value Line

Market Risk Premium Derived from Value Line Long-Term Growth Estimates

[1]	S&P 500 Estimated Required	14.42%
	Market Return	

S&P 500 Index

Company	Ticker	[2] Market Capitalization	[3] Weight in Index	[4] Dividend Yield	[5] Long-Term EPS Growth	[6] DCF Result	[7] Weighted DCF Result
Agilent Technologies	A	24,170.20	0.09%	0.85%	9.50%	10.39%	0.0094%
Amer. Airlines	AAL	12,600.90	0.05%	1.41%	7.50%	8.97%	0.0042%
Advance Auto Parts	AAP	10,907.90	0.04%	0.16%	14.00%	14.17%	0.0058%
Apple Inc.	AAPL	1,001,257.00	3.74%	1.44%	12.50%	14.03%	0.5248%
AbbVie Inc.	ABBV	105,954.80	0.40%	5.97%	10.50%	16.79%	0.0664%
AmerisourceBergen	ABC	17,635.20	0.07%	1.96%	8.00%	10.04%	0.0066%
ABIOMED Inc.	ABMD	8,726.30	0.03%	0.00%	15.00%	15.00%	0.0049%
Abbott Labs.	ABT	147,100.50	0.55%	1.54%	10.00%	11.61%	0.0638%
Accenture Plc	ACN	124,167.00	0.46%	1.64%	9.00%	10.72%	0.0497%
Adobe Inc.	ADBE	136,769.20	0.51%	0.00%	20.50%	20.50%	0.1047%
Analog Devices	ADI	42,806.80	0.16%	1.86%	10.00%	11.96%	0.0191%
Archer Daniels Midl'd	ADM	22,822.20	0.09%	3.42%	9.50%	13.09%	0.0112%
Automatic Data Proc.	ADP	69,396.90	0.26%	2.17%	14.50%	16.83%	0.0436%
Alliance Data Sys.	ADS	6,653.60	0.02%	1.93%	9.50%	11.52%	0.0029%
Autodesk Inc.	ADSK	33,666.90	0.13%	0.00%	0.00%	0.00%	0.0000%
Ameren Corp.	AEE	19,334.60	0.07%	2.57%	6.50%	9.15%	0.0066%
Amer. Elec. Power	AEP	46,008.40	0.17%	3.05%	4.00%	7.11%	0.0122%
AES Corp.	AES	10,587.60	0.04%	3.45%	0.00%	3.45%	0.0014%
Aflac Inc.	AFL	38,918.80	0.15%	2.09%	7.50%	9.67%	0.0141%
Allergan plc	AGN	54,342.90	0.20%	1.79%	3.50%	5.32%	0.0108%
Amer. Int'l Group	AIG	50,358.60	0.19%	2.21%	0.00%	2.21%	0.0042%
Apartment Investment	AIV	7,858.80	0.03%	3.03%	-3.00%	-0.02%	0.0000%
Assurant Inc.	AIZ	7,726.30	0.03%	1.90%	6.50%	8.46%	0.0024%
Gallagher (Arthur J.)	AJG	16,647.70	0.06%	1.92%	14.50%	16.56%	0.0103%
Akamai Technologies	AKAM	14,581.40	0.05%	0.00%	18.00%	18.00%	0.0098%
Albemarle Corp.	ALB	7,236.80	0.03%	2.15%	5.50%	7.71%	0.0021%
Align Techn.	ALGN	14,404.50	0.05%	0.00%	25.00%	25.00%	0.0135%
Alaska Air Group	ALK	7,965.20	0.03%	2.17%	5.50%	7.73%	0.0023%
Allstate Corp.	ALL	32,508.00	0.12%	1.85%	10.50%	12.44%	0.0151%
Allegion plc	ALLE	9,544.20	0.04%	1.06%	8.50%	9.60%	0.0034%
Alexion Pharmac.	ALXN	23,691.20	0.09%	0.00%	26.00%	26.00%	0.0230%
Applied Materials	AMAT	47,752.30	0.18%	1.65%	8.50%	10.21%	0.0182%
Amcor plc	AMCR	11,329.30	0.04%	0.00%	0.00%	0.00%	0.0000%
Advanced Micro Dev.	AMD	33,046.40	0.12%	0.00%	27.50%	27.50%	0.0340%
AMETEK Inc.	AME	20,599.10	0.08%	0.62%	15.50%	16.17%	0.0124%
Affiliated Managers	AMG	4,357.70	0.02%	1.56%	10.00%	11.64%	0.0019%
Amgen	AMGN	117,800.90	0.44%	3.04%	7.00%	10.15%	0.0447%
Ameriprise Fin'l	AMP	19,338.10	0.07%	2.63%	12.50%	15.30%	0.0111%
Amer. Tower 'A'	AMT	100,452.60	0.38%	1.87%	7.50%	9.44%	0.0354%
Amazon.com	AMZN	899,821.00	3.36%	0.00%	39.00%	39.00%	1.3111%
Arista Networks	ANET	18,689.40	0.07%	0.00%	11.50%	11.50%	0.0080%
ANSYS Inc.	ANSS	18,408.70	0.07%	0.00%	11.50%	11.50%	0.0079%
Anthem Inc.	ANTM	65,363.50	0.24%	1.25%	19.50%	20.88%	0.0510%
Aon plc	AON	45,777.70	0.17%	0.91%	10.00%	10.95%	0.0187%
Smith (A.O.)	AOS	7,971.90	0.03%	1.82%	9.50%	11.40%	0.0034%
Apache Corp.	APA	9,684.60	0.04%	3.88%	50.00%	54.85%	0.0198%
Air Products & Chem.	APD	48,980.50	0.18%	2.09%	9.50%	11.69%	0.0214%
Amphenol Corp.	APH	28,031.50	0.10%	1.06%	9.50%	10.61%	0.0111%
Aptiv PLC	APTIV	22,921.60	0.09%	0.98%	11.00%	12.04%	0.0103%
Alexandria Real Estate	ARE	17,100.30	0.06%	2.60%	0.00%	2.60%	0.0017%
Arconic Inc.	ARNC	11,946.70	0.04%	0.30%	0.00%	0.30%	0.0001%
Atmos Energy	ATO	13,271.00	0.05%	2.00%	7.50%	9.57%	0.0047%
Activision Blizzard	ATVI	42,183.90	0.16%	0.73%	9.50%	10.26%	0.0162%
AvalonBay Communities	AVB	29,191.90	0.11%	2.97%	2.50%	5.51%	0.0060%
Broadcom Inc.	AVGO	115,674.70	0.43%	3.65%	33.50%	37.76%	0.1632%
Avery Dennison	AVY	9,607.80	0.04%	2.14%	11.00%	13.26%	0.0048%
Amer. Water Works	AWK	22,108.20	0.08%	1.68%	9.50%	11.25%	0.0093%
Amer. Express	AXP	98,001.30	0.37%	1.46%	10.00%	11.53%	0.0422%
AutoZone Inc.	AZO	28,494.40	0.11%	0.00%	13.50%	13.50%	0.0144%
Boeing	BA	216,325.50	0.81%	2.33%	15.50%	18.01%	0.1456%
Bank of America	BAC	278,596.40	1.04%	2.41%	10.50%	13.04%	0.1357%
Baxter Int'l Inc.	BAX	44,623.80	0.17%	1.01%	10.50%	11.56%	0.0193%
BB&T Corp.	BBT	40,437.70	0.15%	3.41%	8.00%	11.55%	0.0174%
Best Buy Co.	BBY	17,911.30	0.07%	3.11%	8.50%	11.74%	0.0079%

Becton Dickinson	BDX	69,210.80	0.26%	1.23%	10.00%	11.29%	0.0292%
Franklin Resources	BEN	14,901.80	0.06%	3.82%	7.50%	11.47%	0.0064%
Brown-Forman 'B'	BF/B	30,705.80	0.11%	1.04%	14.50%	15.62%	0.0179%
Baker Hughes a GE co.	BHGE	11,976.40	0.04%	3.10%	0.00%	3.10%	0.0014%
Biogen	BIIB	49,150.30	0.18%	0.00%	4.50%	4.50%	0.0083%
Bank of New York Mello	BK	44,286.30	0.17%	2.64%	7.00%	9.73%	0.0161%
Booking Holdings	BKNG	88,034.70	0.33%	0.00%	12.00%	12.00%	0.0395%
BlackRock Inc.	BLK	68,614.40	0.26%	2.97%	9.00%	12.11%	0.0310%
Ball Corp.	BLL	24,649.10	0.09%	0.81%	25.00%	25.91%	0.0239%
Bristol-Myers Squibb	BMJ	81,902.90	0.31%	3.28%	8.00%	11.41%	0.0349%
Broadridge Fin'l	BR	14,691.50	0.05%	1.70%	11.00%	12.80%	0.0070%
Berkshire Hathaway 'B'	BRK/	0.00	0.00%	0.00%	0.00%	0.00%	0.0000%
Boston Scientific	BSX	59,919.40	0.22%	0.00%	16.00%	16.00%	0.0358%
BorgWarner	BWA	7,647.30	0.03%	1.84%	4.50%	6.38%	0.0018%
Boston Properties	BXP	20,084.20	0.08%	3.00%	5.00%	8.07%	0.0061%
Citigroup Inc.	C	157,524.00	0.59%	2.93%	10.00%	13.07%	0.0769%
Conagra Brands	CAG	14,412.20	0.05%	2.87%	4.50%	7.43%	0.0040%
Cardinal Health	CAH	14,310.00	0.05%	4.00%	10.50%	14.71%	0.0079%
Caterpillar Inc.	CAT	73,204.10	0.27%	3.17%	13.00%	16.37%	0.0448%
Chubb Ltd.	CB	72,288.40	0.27%	1.89%	10.00%	11.99%	0.0324%
Cboe Global Markets	CBOE	13,002.50	0.05%	1.24%	14.50%	15.83%	0.0077%
CBRE Group	CBRE	18,111.40	0.07%	0.00%	11.00%	11.00%	0.0074%
CBS Corp. 'B'	CBS	15,896.30	0.06%	1.84%	9.50%	11.43%	0.0068%
Crown Castle Int'l	CCI	58,755.80	0.22%	3.47%	12.50%	16.19%	0.0355%
Carnival Corp.	CCL	25,496.30	0.10%	4.13%	10.00%	14.34%	0.0137%
Cadence Design Sys.	CDNS	18,747.80	0.07%	0.00%	12.50%	12.50%	0.0088%
Celanese Corp.	CE	15,319.00	0.06%	2.00%	8.50%	10.59%	0.0061%
Celgene Corp.	CELG	70,106.10	0.26%	0.00%	9.00%	9.00%	0.0236%
Cerner Corp.	CERN	21,528.10	0.08%	1.06%	9.00%	10.11%	0.0081%
CF Industries	CF	10,948.10	0.04%	2.50%	0.00%	2.50%	0.0010%
Citizens Fin'l Group	CFG	16,562.40	0.06%	3.98%	9.50%	13.67%	0.0085%
Church & Dwight	CHD	17,971.30	0.07%	1.25%	9.00%	10.31%	0.0069%
C.H. Robinson	CHRW	11,618.60	0.04%	2.34%	9.00%	11.44%	0.0050%
Charter Communic.	CHTR	94,664.10	0.35%	0.00%	17.50%	17.50%	0.0619%
Cigna Corp.	CI	62,196.00	0.23%	0.02%	14.50%	14.53%	0.0338%
Cincinnati Financial	CINF	18,665.20	0.07%	1.96%	8.50%	10.54%	0.0074%
Colgate-Palmolive	CL	60,875.50	0.23%	2.42%	6.00%	8.50%	0.0193%
Clorox Co.	CLX	19,382.00	0.07%	2.75%	5.00%	7.82%	0.0057%
Comerica Inc.	CMA	9,886.60	0.04%	4.06%	11.00%	15.28%	0.0056%
Comcast Corp.	CMCS	212,159.90	0.79%	1.80%	13.50%	15.42%	0.1222%
CME Group	CME	75,697.10	0.28%	1.42%	3.00%	4.44%	0.0125%
Chipotle Mex. Grill	CMG	23,068.90	0.09%	0.00%	26.00%	26.00%	0.0224%
Cummins Inc.	CMI	25,566.80	0.10%	3.23%	8.00%	11.36%	0.0109%
CMS Energy Corp.	CMS	17,836.80	0.07%	2.56%	7.00%	9.65%	0.0064%
Centene Corp.	CNC	19,208.30	0.07%	0.00%	15.50%	15.50%	0.0111%
CenterPoint Energy	CNP	15,086.50	0.06%	3.93%	12.50%	16.67%	0.0094%
Capital One Fin'l	COF	43,868.00	0.16%	1.72%	6.00%	7.77%	0.0127%
Cabot Oil & Gas 'A'	COG	7,602.10	0.03%	1.98%	46.50%	48.94%	0.0139%
Cooper Cos.	COO	14,881.80	0.06%	0.02%	14.50%	14.52%	0.0081%
ConocoPhillips	COP	66,575.20	0.25%	2.03%	37.00%	39.41%	0.0980%
Costco Wholesale	COST	126,590.80	0.47%	0.90%	8.50%	9.44%	0.0447%
Coty Inc.	COTY	7,716.90	0.03%	4.87%	5.00%	9.99%	0.0029%
Campbell Soup	CPB	14,029.60	0.05%	3.00%	0.50%	3.51%	0.0018%
Capri Holdings Ltd.	CPRI	4,936.50	0.02%	0.00%	10.50%	10.50%	0.0019%
Copart Inc.	CPRT	18,815.40	0.07%	0.00%	17.50%	17.50%	0.0123%
salesforce.com	CRM	119,808.00	0.45%	0.00%	29.00%	29.00%	0.1298%
Cisco Systems	CSO	212,156.50	0.79%	2.85%	8.00%	10.96%	0.0869%
CSX Corp.	CSX	56,502.90	0.21%	1.36%	14.50%	15.95%	0.0337%
Cintas Corp.	CTAS	25,967.70	0.10%	0.90%	15.00%	15.96%	0.0155%
CenturyLink Inc.	CTL	13,964.70	0.05%	7.81%	1.00%	8.85%	0.0046%
Cognizant Technology	CTSH	35,035.40	0.13%	1.26%	6.00%	7.30%	0.0096%
Corteva Inc.	CTVA	21,820.50	0.08%	0.00%	12.50%	12.50%	0.0102%
Citrix Sys.	CTXS	12,585.10	0.05%	1.45%	6.50%	8.00%	0.0038%
CVS Health	CVS	82,655.40	0.31%	3.14%	6.50%	9.75%	0.0301%
Chevron Corp.	CVX	234,758.40	0.88%	3.87%	16.50%	20.69%	0.1815%
Concho Resources	CXO	14,579.50	0.05%	0.69%	19.50%	20.26%	0.0110%
Dominion Energy	D	64,978.80	0.24%	4.60%	6.50%	11.25%	0.0273%
Delta Air Lines	DAL	38,160.30	0.14%	2.74%	10.00%	12.88%	0.0184%
Dupont de Nemours	DD	51,136.60	0.19%	0.00%	10.00%	10.00%	0.0191%
Deere & Co.	DE	51,777.70	0.19%	1.85%	14.00%	15.98%	0.0309%
Discover Fin'l Svcs.	DFS	26,752.80	0.10%	2.10%	7.50%	9.68%	0.0097%
Dollar General	DG	40,310.80	0.15%	0.82%	12.00%	12.86%	0.0194%
Quest Diagnostics	DGX	14,272.20	0.05%	2.01%	8.50%	10.59%	0.0056%
Horton D.R.	DHI	18,809.10	0.07%	1.22%	7.50%	8.76%	0.0062%
Danaher Corp.	DHR	104,546.50	0.39%	0.47%	13.50%	14.00%	0.0547%
Disney (Walt)	DIS	237,407.30	0.89%	1.32%	6.50%	7.86%	0.0697%
Discovery Inc.	DISC	13,975.10	0.05%	0.00%	18.00%	18.00%	0.0094%
Discovery Communic. 'C	DISC	13,017.00	0.05%	0.00%	0.00%	0.00%	0.0000%
Dish Network 'A'	DISH	16,655.40	0.06%	0.00%	-2.00%	-2.00%	-0.0012%

Digital Realty Trust	DLR	25,561.70	0.10%	3.62%	7.00%	10.74%	0.0103%
Dollar Tree Inc.	DLTR	26,460.00	0.10%	0.00%	11.50%	11.50%	0.0114%
Dover Corp.	DOV	14,394.00	0.05%	1.98%	10.50%	12.58%	0.0068%
Dow Inc.	DOW	35,406.60	0.13%	5.98%	0.00%	5.98%	0.0079%
Duke Realty Corp.	DRE	11,971.30	0.04%	2.73%	4.50%	7.29%	0.0033%
Darden Restaurants	DRI	14,855.70	0.06%	2.95%	11.00%	14.11%	0.0078%
DTE Energy	DTE	24,172.00	0.09%	3.06%	5.50%	8.65%	0.0078%
Duke Energy	DUK	68,788.70	0.26%	4.02%	6.00%	10.14%	0.0261%
DaVita Inc.	DVA	9,827.30	0.04%	0.00%	11.50%	11.50%	0.0042%
Devon Energy	DVN	10,625.40	0.04%	1.39%	25.00%	26.56%	0.0105%
DXC Technology	DXC	8,432.40	0.03%	2.61%	10.00%	12.74%	0.0040%
Electronic Arts	EA	29,508.20	0.11%	0.00%	11.00%	11.00%	0.0121%
eBay Inc.	EBAY	34,016.80	0.13%	1.44%	10.00%	11.51%	0.0146%
Ecolab Inc.	ECL	56,543.30	0.21%	0.94%	10.00%	10.98%	0.0232%
Consol. Edison	ED	30,504.20	0.11%	3.31%	3.00%	6.36%	0.0072%
Equifax Inc.	EFX	17,088.00	0.06%	1.10%	7.50%	8.65%	0.0055%
Edison Int'l	EIX	23,663.70	0.09%	3.37%	14.00%	17.61%	0.0156%
Lauder (Estee)	EL	69,793.30	0.26%	1.00%	14.00%	15.06%	0.0393%
Eastman Chemical	EMN	9,910.60	0.04%	3.43%	8.00%	11.56%	0.0043%
Emerson Electric	EMR	40,086.10	0.15%	3.05%	11.50%	14.73%	0.0221%
EOG Resources	EOG	47,384.90	0.18%	1.41%	33.00%	34.64%	0.0613%
Equinix Inc.	EQIX	48,264.60	0.18%	1.80%	22.00%	23.99%	0.0433%
Equity Residential	EQR	31,587.80	0.12%	2.70%	-13.50%	-10.98%	-0.0130%
Eversource Energy	ES	26,931.10	0.10%	2.64%	5.50%	8.22%	0.0083%
Essex Property Trust	ESS	21,541.40	0.08%	2.44%	-0.50%	1.93%	0.0016%
E*Trade Fin'l	ETFC	10,817.50	0.04%	1.24%	17.50%	18.85%	0.0076%
Eaton Corp. plc	ETN	35,494.20	0.13%	3.36%	9.00%	12.51%	0.0166%
Entergy Corp.	ETR	22,864.80	0.09%	3.23%	0.50%	3.74%	0.0032%
Evergy Inc.	EVRG	15,434.80	0.06%	3.11%	0.00%	3.11%	0.0018%
Edwards Lifesciences	EW	44,721.40	0.17%	0.00%	15.50%	15.50%	0.0259%
Exelon Corp.	EXC	46,366.00	0.17%	3.16%	9.00%	12.30%	0.0213%
Expeditors Int'l	EXPD	12,683.30	0.05%	1.34%	9.00%	10.40%	0.0049%
Expedia Group	EXPE	20,107.20	0.08%	1.01%	24.00%	25.13%	0.0189%
Extra Space Storage	EXR	14,852.10	0.06%	3.12%	4.00%	7.18%	0.0040%
Ford Motor	F	36,307.60	0.14%	6.59%	3.50%	10.21%	0.0138%
Diamondback Energy	FANG	15,957.20	0.06%	0.77%	17.00%	17.84%	0.0106%
Fastenal Co.	FAST	18,578.10	0.07%	2.72%	8.50%	11.33%	0.0079%
Facebook Inc.	FB	542,659.60	2.03%	0.00%	17.50%	17.50%	0.3548%
Fortune Brands Home	FBHS	7,429.40	0.03%	1.66%	10.50%	12.25%	0.0034%
Freep't-McMoRan Inc.	FCX	15,163.00	0.06%	1.91%	22.50%	24.63%	0.0140%
FedEx Corp.	FDX	39,775.70	0.15%	1.80%	7.50%	9.37%	0.0139%
FirstEnergy Corp.	FE	25,599.00	0.10%	3.28%	8.00%	11.42%	0.0109%
F5 Networks	FFIV	8,309.80	0.03%	0.00%	12.00%	12.00%	0.0037%
Fidelity Nat'l Info.	FIS	43,383.60	0.16%	1.05%	18.00%	19.14%	0.0310%
Fiserv Inc.	FISV	41,219.10	0.15%	0.00%	10.50%	10.50%	0.0162%
Fifth Third Bancorp	FITB	20,444.70	0.08%	3.44%	7.00%	10.56%	0.0081%
FLIR Systems	FLIR	7,197.50	0.03%	1.34%	12.00%	13.42%	0.0036%
Flowserv Corp.	FLS	6,236.30	0.02%	1.60%	13.50%	15.20%	0.0035%
FleetCor Technologies	FLT	25,259.60	0.09%	0.00%	16.50%	16.50%	0.0156%
FMC Corp.	FMC	11,789.80	0.04%	1.88%	15.00%	17.02%	0.0075%
Fox Corp. 'B'	FOX	0.00	0.00%	0.00%	0.00%	0.00%	0.0000%
Fox Corp. 'A'	FOXA	11,355.70	0.04%	0.00%	0.00%	0.00%	0.0000%
First Republic Bank	FRC	16,035.60	0.06%	0.80%	10.50%	11.34%	0.0068%
Federal Rlty. Inv. Tru	FRT	10,043.80	0.04%	3.11%	3.00%	6.15%	0.0023%
TechnipFMC	FTI	10,716.00	0.04%	2.17%	15.69%	18.03%	0.0072%
Fortinet Inc.	FTNT	13,409.80	0.05%	0.00%	26.00%	26.00%	0.0130%
Fortive Corp.	FTV	23,072.20	0.09%	0.41%	10.00%	10.43%	0.0090%
Gen'l Dynamics	GD	54,340.20	0.20%	2.17%	6.00%	8.23%	0.0167%
Gen'l Electric	GE	82,209.00	0.31%	0.43%	2.50%	2.93%	0.0090%
Gilead Sciences	GILD	83,571.30	0.31%	3.82%	-1.50%	2.29%	0.0072%
Gen'l Mills	GIS	32,857.00	0.12%	3.64%	4.00%	7.71%	0.0095%
Globe Life Inc.	GL	10,301.90	0.04%	0.73%	9.50%	10.27%	0.0040%
Corning Inc.	GLW	21,500.40	0.08%	2.90%	15.00%	18.12%	0.0146%
Gen'l Motors	GM	53,939.60	0.20%	4.13%	2.50%	6.68%	0.0135%
Alphabet Inc.	GOOG	859,726.60	3.21%	0.00%	16.50%	16.50%	0.5300%
Alphabet Inc. 'A'	GOOG	860,661.20	3.22%	0.00%	17.50%	17.50%	0.5627%
Genuine Parts	GPC	14,172.50	0.05%	3.14%	8.00%	11.27%	0.0060%
Global Payments	GPV	25,487.90	0.10%	0.03%	17.50%	17.53%	0.0167%
Gap (The) Inc.	GPS	6,595.00	0.02%	5.53%	5.00%	10.67%	0.0026%
Garmin Ltd.	GRMN	16,251.80	0.06%	2.67%	10.50%	13.31%	0.0081%
Goldman Sachs	GS	77,598.80	0.29%	2.32%	8.50%	10.92%	0.0317%
Grainger (W.W.)	GWW	15,943.50	0.06%	1.97%	8.50%	10.56%	0.0063%
Halliburton Co.	HAL	18,284.10	0.07%	3.44%	24.50%	28.36%	0.0194%
Hasbro Inc.	HAS	15,261.00	0.06%	2.25%	8.00%	10.34%	0.0059%
Huntington Bancshs.	HBAN	15,017.60	0.06%	4.22%	11.50%	15.96%	0.0090%
Hanesbrands Inc.	HBI	5,238.60	0.02%	4.14%	4.00%	8.22%	0.0016%
HCA Healthcare	HCA	43,311.20	0.16%	1.26%	12.00%	13.34%	0.0216%
HCP Inc.	HCP	16,755.30	0.06%	4.22%	-3.50%	0.64%	0.0004%
Home Depot	HD	250,019.50	0.93%	2.70%	9.00%	11.82%	0.1104%

Hess Corp.	HES	19,967.90	0.07%	1.53%	0.00%	1.53%	0.0011%
HollyFrontier Corp.	HFC	8,756.10	0.03%	2.56%	18.00%	20.79%	0.0068%
Hartford Fin'l Svcs.	HIG	21,927.70	0.08%	2.01%	12.50%	14.64%	0.0120%
Huntington Ingalls	HII	9,044.20	0.03%	1.58%	7.00%	8.63%	0.0029%
Hilton Worldwide Hldgs	HLT	27,555.20	0.10%	0.63%	17.00%	17.68%	0.0182%
Harley-Davidson	HOG	5,452.70	0.02%	4.31%	8.50%	13.00%	0.0026%
Hologic Inc.	HOLX	13,352.60	0.05%	0.00%	12.00%	12.00%	0.0060%
Honeywell Int'l	HON	119,992.30	0.45%	1.97%	8.50%	10.55%	0.0473%
Helmerich & Payne	HP	4,706.70	0.02%	6.60%	0.00%	6.60%	0.0012%
Hewlett Packard Ent.	HPE	19,453.50	0.07%	3.03%	6.50%	9.63%	0.0070%
HP Inc.	HPQ	27,785.90	0.10%	3.63%	8.50%	12.28%	0.0127%
Block (H&R)	HRB	4,772.80	0.02%	4.42%	7.00%	11.58%	0.0021%
Hormel Foods	HRL	22,926.90	0.09%	2.05%	9.00%	11.14%	0.0095%
Schein (Henry)	HSIC	9,335.10	0.03%	0.00%	7.00%	7.00%	0.0024%
Host Hotels & Resorts	HST	12,786.70	0.05%	4.69%	0.50%	5.20%	0.0025%
Hershey Co.	HSY	32,172.20	0.12%	2.01%	6.50%	8.58%	0.0103%
Humana Inc.	HUM	37,610.10	0.14%	0.81%	11.50%	12.35%	0.0174%
Int'l Business Mach.	IBM	126,653.50	0.47%	4.57%	1.50%	6.11%	0.0289%
Intercontinental Exch.	ICE	52,470.30	0.20%	1.18%	10.50%	11.74%	0.0230%
IDEXX Labs.	IDXX	23,574.10	0.09%	0.00%	13.00%	13.00%	0.0114%
IDEX Corp.	IEX	12,640.90	0.05%	1.20%	9.50%	10.76%	0.0051%
Int'l Flavors & Frag.	IFF	13,118.30	0.05%	2.47%	8.50%	11.08%	0.0054%
illumina Inc.	ILMN	45,169.60	0.17%	0.00%	14.00%	14.00%	0.0236%
Incyte Corp.	INCY	16,785.30	0.06%	0.00%	0.00%	0.00%	0.0000%
IHS Markit	INFO	26,903.50	0.10%	0.00%	17.00%	17.00%	0.0171%
Intel Corp.	INTC	228,455.10	0.85%	2.44%	10.50%	13.07%	0.1116%
Intuit Inc.	INTU	70,025.40	0.26%	0.79%	13.50%	14.34%	0.0375%
Int'l Paper	IP	16,055.40	0.06%	4.91%	10.50%	15.66%	0.0094%
Interpublic Group	IPG	8,238.00	0.03%	4.69%	11.00%	15.95%	0.0049%
IPG Photonics	IPGP	7,288.70	0.03%	0.00%	9.50%	9.50%	0.0026%
IQVIA Holdings	IQV	30,137.50	0.11%	0.00%	12.50%	12.50%	0.0141%
Ingersoll-Rand	IR	29,948.30	0.11%	1.71%	12.00%	13.81%	0.0155%
Iron Mountain	IRM	9,229.00	0.03%	7.59%	8.50%	16.41%	0.0057%
Intuitive Surgical	ISRG	60,992.60	0.23%	0.00%	14.00%	14.00%	0.0319%
Gartner Inc.	IT	12,630.90	0.05%	0.00%	13.50%	13.50%	0.0064%
Illinois Tool Works	ITW	50,423.90	0.19%	2.75%	9.00%	11.87%	0.0224%
Invesco Ltd.	IVZ	8,010.00	0.03%	7.27%	6.00%	13.49%	0.0040%
Hunt (J.B.)	JBHT	12,075.50	0.05%	0.96%	10.00%	11.00%	0.0050%
Johnson Ctrls. Int'l p	JCI	35,035.00	0.13%	2.36%	2.00%	4.39%	0.0057%
Jacobs Engineering	JEC	12,530.70	0.05%	0.74%	14.50%	15.29%	0.0072%
Jefferies Fin'l Group	JEF	5,714.90	0.02%	2.54%	18.50%	21.28%	0.0045%
Henry (Jack) & Assoc.	JKHY	11,388.30	0.04%	1.08%	10.50%	11.64%	0.0050%
Johnson & Johnson	JNJ	343,759.00	1.28%	2.92%	12.00%	15.10%	0.1939%
Juniper Networks	JNPR	8,223.20	0.03%	3.27%	6.00%	9.37%	0.0029%
JPMorgan Chase	JPM	381,715.80	1.43%	3.02%	8.50%	11.64%	0.1661%
Nordstrom Inc.	JWN	4,980.00	0.02%	4.60%	6.00%	10.74%	0.0020%
Kellogg	K	21,735.30	0.08%	3.61%	4.00%	7.68%	0.0062%
KeyCorp	KEY	18,106.20	0.07%	4.10%	10.50%	14.82%	0.0100%
Keysight Technologies	KEYS	18,781.90	0.07%	0.00%	19.00%	19.00%	0.0133%
Kraft Heinz Co.	KHC	34,343.00	0.13%	5.83%	2.00%	7.88%	0.0101%
Kimco Realty	KIM	8,520.50	0.03%	5.64%	5.00%	10.78%	0.0034%
KLA Corp.	KLAC	25,409.90	0.09%	2.16%	11.50%	13.79%	0.0131%
Kimberly-Clark	KMB	46,166.20	0.17%	3.07%	7.00%	10.18%	0.0176%
Kinder Morgan Inc.	KMI	46,811.10	0.17%	4.83%	35.50%	41.19%	0.0720%
CarMax Inc.	KMX	14,275.20	0.05%	0.00%	10.50%	10.50%	0.0056%
Coca-Cola	KO	233,073.00	0.87%	2.94%	6.50%	9.53%	0.0830%
Kroger Co.	KR	20,630.20	0.08%	2.48%	4.50%	7.03%	0.0054%
Kohl's Corp.	KSS	7,765.40	0.03%	5.78%	6.50%	12.47%	0.0036%
Kansas City South'n	KSU	13,213.70	0.05%	1.09%	12.00%	13.15%	0.0065%
Loews Corp.	L	15,447.60	0.06%	0.49%	14.00%	14.52%	0.0084%
L Brands	LB	5,207.80	0.02%	6.37%	-2.00%	4.30%	0.0008%
Leidos Hldgs.	LDOS	12,581.30	0.05%	1.56%	9.00%	10.63%	0.0050%
Leggett & Platt	LEG	5,427.10	0.02%	3.88%	9.00%	13.05%	0.0026%
Lennar Corp.	LEN	17,328.20	0.06%	0.30%	8.00%	8.31%	0.0054%
Laboratory Corp.	LH	16,734.60	0.06%	0.00%	8.00%	8.00%	0.0050%
L3Harris Technologies	LHX	25,377.50	0.09%	1.40%	16.50%	18.02%	0.0171%
Linde plc	LIN	105,152.60	0.39%	2.00%	0.00%	2.00%	0.0078%
LKQ Corp.	LKQ	9,876.20	0.04%	0.00%	10.00%	10.00%	0.0037%
Lilly (Eli)	LLY	110,397.30	0.41%	2.26%	11.50%	13.89%	0.0573%
Lockheed Martin	LMT	111,103.80	0.42%	2.34%	11.50%	13.97%	0.0580%
Lincoln Nat'l Corp.	LNC	12,225.30	0.05%	2.56%	9.00%	11.68%	0.0053%
Alliant Energy	LNT	12,614.70	0.05%	2.67%	6.50%	9.26%	0.0044%
Lowe's Cos.	LOW	86,811.10	0.32%	1.97%	11.50%	13.58%	0.0440%
Lam Research	LRCX	34,210.40	0.13%	1.94%	8.50%	10.52%	0.0135%
Southwest Airlines	LUV	29,606.40	0.11%	1.31%	10.50%	11.88%	0.0131%
Lamb Weston Holdings	LW	10,778.20	0.04%	1.09%	0.00%	1.09%	0.0004%
LyondellBasell Inds.	LYB	32,812.60	0.12%	4.74%	5.50%	10.37%	0.0127%
Macy's Inc.	M	4,856.10	0.02%	9.61%	3.50%	13.27%	0.0024%
MasterCard Inc.	MA	280,324.50	1.05%	0.48%	16.00%	16.52%	0.1730%

Mid-America Apartment	MAA	14,779.20	0.06%	2.96%	1.00%	3.97%	0.0022%
Macerich Comp. (The)	MAC	4,565.70	0.02%	9.47%	3.00%	12.61%	0.0022%
Marriott Int'l	MAR	42,668.50	0.16%	1.48%	11.50%	13.07%	0.0208%
Masco Corp.	MAS	11,797.80	0.04%	1.32%	9.50%	10.88%	0.0048%
McDonald's Corp.	MCD	159,868.90	0.60%	2.28%	8.50%	10.88%	0.0650%
Microchip Technology	MCHP	22,015.90	0.08%	1.62%	10.50%	12.21%	0.0100%
McKesson Corp.	MCK	26,954.50	0.10%	1.13%	8.50%	9.67%	0.0097%
Moody's Corp.	MCO	40,966.80	0.15%	0.92%	11.00%	11.97%	0.0183%
Mondelez Int'l	MDLZ	79,863.00	0.30%	2.07%	8.50%	10.66%	0.0318%
Medtronic plc	MDT	148,841.90	0.56%	1.95%	8.50%	10.53%	0.0585%
MetLife Inc.	MET	44,793.20	0.17%	3.72%	7.50%	11.36%	0.0190%
MGM Resorts Int'l	MGM	15,295.20	0.06%	1.79%	14.00%	15.91%	0.0091%
Mohawk Inds.	MHK	8,989.80	0.03%	0.00%	3.50%	3.50%	0.0012%
McCormick & Co.	MKC	21,208.10	0.08%	1.46%	8.00%	9.52%	0.0075%
MarketAxess Holdings	MKTX	12,939.80	0.05%	0.60%	14.00%	14.64%	0.0071%
Martin Marietta	MLM	16,777.00	0.06%	0.83%	8.00%	8.86%	0.0056%
Marsh & McLennan	MMC	51,791.50	0.19%	1.80%	9.00%	10.88%	0.0211%
3M Company	MMM	96,111.90	0.36%	3.45%	7.00%	10.57%	0.0379%
Monster Beverage	MNST	32,030.30	0.12%	0.00%	14.50%	14.50%	0.0174%
Altria Group	MO	74,947.70	0.28%	8.38%	8.50%	17.23%	0.0482%
Mosaic Company	MOS	8,099.30	0.03%	1.05%	22.00%	23.16%	0.0070%
Marathon Petroleum	MPC	35,587.20	0.13%	3.93%	10.50%	14.64%	0.0195%
Merck & Co.	MRK	215,533.80	0.81%	2.62%	8.50%	11.23%	0.0904%
Marathon Oil Corp.	MRO	10,484.20	0.04%	1.53%	0.00%	1.53%	0.0006%
Morgan Stanley	MS	73,020.60	0.27%	3.18%	10.00%	13.34%	0.0364%
MSCI Inc.	MSCI	19,936.40	0.07%	1.18%	18.50%	19.79%	0.0147%
Microsoft Corp.	MSFT	1,081,442.60	4.04%	1.30%	14.50%	15.90%	0.6423%
Motorola Solutions	MSI	27,641.00	0.10%	1.47%	10.50%	12.05%	0.0124%
M&T Bank Corp.	MTB	21,060.70	0.08%	2.55%	9.50%	12.17%	0.0096%
Mettler-Toledo Int'l	MTD	17,474.80	0.07%	0.00%	10.00%	10.00%	0.0065%
Micron Technology	MU	55,001.30	0.21%	0.00%	12.00%	12.00%	0.0247%
Maxim Integrated	MXIM	15,931.40	0.06%	3.28%	6.00%	9.38%	0.0056%
Mylan N.V.	MYL	10,833.10	0.04%	0.00%	0.50%	0.50%	0.0002%
Noble Energy	NBL	11,253.90	0.04%	2.06%	0.00%	2.06%	0.0009%
Norwegian Cruise Line	NCLH	11,587.60	0.04%	0.00%	16.00%	16.00%	0.0069%
Nasdaq Inc.	NDAQ	16,816.80	0.06%	1.85%	8.00%	9.92%	0.0062%
NextEra Energy	NEE	107,727.10	0.40%	2.37%	10.50%	12.99%	0.0523%
Newmont Goldcorp	NEM	32,295.60	0.12%	1.42%	2.50%	3.94%	0.0048%
Netflix Inc.	NFLX	125,483.50	0.47%	0.00%	32.00%	32.00%	0.1500%
NiSource Inc.	NI	10,988.50	0.04%	2.72%	12.50%	15.39%	0.0063%
NIKE Inc. 'B'	NKE	137,952.10	0.52%	1.00%	14.00%	15.07%	0.0777%
Nektar Therapeutics	NKTR	3,537.80	0.01%	0.00%	15.50%	15.50%	0.0020%
Nielsen Hldgs. plc	NLSN	8,048.90	0.03%	6.19%	45.50%	53.09%	0.0160%
Northrop Grumman	NOC	63,587.90	0.24%	1.41%	9.50%	10.97%	0.0261%
National Oilwell Varco	NOV	8,833.30	0.03%	0.87%	0.00%	0.87%	0.0003%
NRG Energy	NRG	10,032.60	0.04%	0.31%	0.00%	0.31%	0.0001%
Norfolk Southern	NSC	48,098.10	0.18%	2.06%	15.00%	17.21%	0.0309%
NetApp Inc.	NTAP	13,008.80	0.05%	3.53%	10.00%	13.70%	0.0067%
Northern Trust Corp.	NTRS	20,582.30	0.08%	2.92%	8.50%	11.55%	0.0089%
Nucor Corp.	NUE	15,982.40	0.06%	3.04%	13.00%	16.23%	0.0097%
NVIDIA Corp.	NVDA	107,756.50	0.40%	0.36%	11.50%	11.88%	0.0478%
Newell Brands	NWL	7,566.20	0.03%	5.15%	4.00%	9.25%	0.0026%
News Corp. 'B'	NWS	8,366.30	0.03%	1.39%	0.00%	1.39%	0.0004%
News Corp. 'A'	NWSA	8,161.80	0.03%	1.43%	0.00%	1.43%	0.0004%
Realty Income Corp.	O	22,969.00	0.09%	3.74%	4.50%	8.33%	0.0071%
ONEOK Inc.	OKE	31,009.50	0.12%	4.99%	17.00%	22.42%	0.0260%
Omnicom Group	OMC	17,075.60	0.06%	3.44%	6.50%	10.05%	0.0064%
Oracle Corp.	ORCL	175,907.50	0.66%	1.80%	10.00%	11.89%	0.0781%
O'Reilly Automotive	ORLY	29,903.70	0.11%	0.00%	12.00%	12.00%	0.0134%
Occidental Petroleum	OXY	34,264.90	0.13%	6.92%	33.00%	41.07%	0.0526%
Paychex Inc.	PAYX	29,650.50	0.11%	3.15%	10.50%	13.82%	0.0153%
People's United Fin'l	PBCT	6,355.80	0.02%	4.45%	9.00%	13.65%	0.0032%
PACCAR Inc.	PCAR	24,369.20	0.09%	4.69%	7.50%	12.37%	0.0113%
Public Serv. Enterpris	PEG	31,106.90	0.12%	3.11%	6.00%	9.20%	0.0107%
PepsiCo Inc.	PEP	189,536.50	0.71%	2.82%	6.50%	9.41%	0.0666%
Pfizer Inc.	PFE	203,068.60	0.76%	3.94%	11.00%	15.16%	0.1150%
Principal Fin'l Group	PFG	15,852.30	0.06%	3.87%	5.50%	9.47%	0.0056%
Procter & Gamble	PG	305,329.10	1.14%	2.45%	9.00%	11.56%	0.1318%
Progressive Corp.	PGR	44,263.10	0.17%	0.53%	15.50%	16.07%	0.0266%
Parker-Hannifin	PH	22,818.10	0.09%	1.98%	11.50%	13.59%	0.0116%
PulteGroup Inc.	PHM	9,750.60	0.04%	1.30%	8.00%	9.35%	0.0034%
Packaging Corp.	PKG	9,785.40	0.04%	3.06%	6.00%	9.15%	0.0033%
PerkinElmer Inc.	PKI	9,563.20	0.04%	0.33%	11.00%	11.34%	0.0041%
Prologis	PLD	53,530.00	0.20%	2.59%	6.50%	9.17%	0.0183%
Philip Morris Int'l	PM	111,568.40	0.42%	6.53%	6.00%	12.72%	0.0530%
PNC Financial Serv.	PNC	63,027.00	0.24%	3.26%	8.00%	11.39%	0.0268%
Pentair plc	PNR	6,322.00	0.02%	1.91%	6.00%	7.97%	0.0019%
Pinnacle West Capital	PNW	10,810.30	0.04%	3.16%	5.50%	8.74%	0.0035%
PPG Inds.	PPG	28,518.20	0.11%	1.69%	7.50%	9.25%	0.0099%

PPL Corp.	PPL	22,766.80	0.09%	5.26%	1.50%	6.80%	0.0058%
Perrigo Co. plc	PRGO	7,387.80	0.03%	1.55%	2.00%	3.56%	0.0010%
Prudential Fin'l	PRU	35,869.30	0.13%	4.49%	7.00%	11.65%	0.0156%
Public Storage	PSA	43,600.70	0.16%	3.28%	4.50%	7.85%	0.0128%
Phillips 66	PSX	46,235.70	0.17%	3.69%	10.00%	13.87%	0.0240%
PVH Corp.	PVH	6,458.00	0.02%	0.17%	9.50%	9.68%	0.0023%
Quanta Services	PWR	5,385.30	0.02%	0.42%	15.50%	15.95%	0.0032%
Pioneer Natural Res.	PXD	22,716.80	0.08%	1.10%	37.50%	38.81%	0.0329%
PayPal Holdings	PYPL	124,903.20	0.47%	0.00%	20.00%	20.00%	0.0933%
Qualcomm Inc.	QCOM	95,284.10	0.36%	3.17%	10.50%	13.84%	0.0493%
Qorvo Inc.	QRVO	8,868.10	0.03%	0.00%	0.00%	0.00%	0.0000%
Royal Caribbean	RCL	23,562.50	0.09%	2.77%	12.50%	15.45%	0.0136%
Everest Re Group Ltd.	RE	10,686.00	0.04%	2.25%	18.50%	20.96%	0.0084%
Regency Centers Corp.	REG	11,417.50	0.04%	3.44%	16.00%	19.72%	0.0084%
Regeneron Pharmac.	REGN	31,414.40	0.12%	0.00%	10.00%	10.00%	0.0117%
Regions Financial	RF	16,181.60	0.06%	3.85%	10.50%	14.55%	0.0088%
Robert Half Int'l	RHI	6,422.40	0.02%	2.34%	9.00%	11.45%	0.0027%
Raymond James Fin'l	RJF	11,894.00	0.04%	1.64%	10.00%	11.73%	0.0052%
Ralph Lauren	RL	7,399.60	0.03%	2.87%	8.00%	10.98%	0.0030%
ResMed Inc.	RMD	19,138.10	0.07%	1.17%	15.50%	16.76%	0.0120%
Rockwell Automation	ROK	19,072.20	0.07%	2.40%	9.50%	12.01%	0.0086%
Rollins Inc.	ROL	11,383.40	0.04%	1.21%	13.00%	14.29%	0.0061%
Roper Tech.	ROP	37,079.80	0.14%	0.52%	11.50%	12.05%	0.0167%
Ross Stores	ROST	39,334.80	0.15%	0.99%	9.50%	10.53%	0.0155%
Republic Services	RSG	30,372.10	0.11%	1.88%	11.50%	13.49%	0.0153%
Raytheon Co.	RTN	55,413.70	0.21%	1.89%	10.00%	11.99%	0.0248%
SBA Communications	SBAC	28,409.30	0.11%	0.59%	27.00%	27.67%	0.0294%
Starbucks Corp.	SBUX	110,467.10	0.41%	1.84%	13.50%	15.46%	0.0638%
Schwab (Charles)	SCHW	56,161.00	0.21%	1.58%	12.00%	13.68%	0.0287%
Sealed Air	SEE	6,384.30	0.02%	1.55%	22.50%	24.22%	0.0058%
Sherwin-Williams	SHW	50,720.50	0.19%	0.92%	10.50%	11.46%	0.0217%
SVB Fin'l Group	SIVB	11,140.50	0.04%	0.00%	15.00%	15.00%	0.0062%
Smucker (J.M.)	SJM	12,276.30	0.05%	3.27%	5.00%	8.35%	0.0038%
Schlumberger Ltd.	SLB	52,222.30	0.20%	5.30%	19.50%	25.31%	0.0494%
SL Green Realty	SLG	6,925.70	0.03%	4.31%	5.50%	9.93%	0.0026%
Snap-on Inc.	SNA	8,565.10	0.03%	2.74%	6.00%	8.82%	0.0028%
Synopsys Inc.	SNPS	20,620.70	0.08%	0.00%	10.50%	10.50%	0.0081%
Southern Co.	SO	63,821.90	0.24%	4.13%	3.50%	7.70%	0.0184%
Simon Property Group	SPG	47,779.00	0.18%	5.59%	4.50%	10.22%	0.0182%
S&P Global	SPGI	63,232.60	0.24%	0.95%	11.00%	12.00%	0.0284%
Sempra Energy	SRE	38,581.90	0.14%	2.87%	11.00%	14.03%	0.0202%
SunTrust Banks	STI	30,231.20	0.11%	3.29%	10.00%	13.45%	0.0152%
State Street Corp.	STT	22,764.20	0.09%	3.40%	5.00%	8.49%	0.0072%
Seagate Technology	STX	14,246.00	0.05%	4.76%	4.00%	8.86%	0.0047%
Constellation Brands	STZ	39,720.50	0.15%	1.50%	8.00%	9.55%	0.0142%
Stanley Black & Decker	SWK	21,705.30	0.08%	1.93%	9.00%	11.02%	0.0089%
Skyworks Solutions	SWKS	13,602.70	0.05%	2.22%	6.00%	8.29%	0.0042%
Synchrony Financial	SYF	22,769.60	0.09%	2.59%	9.00%	11.70%	0.0100%
Stryker Corp.	SYK	82,694.80	0.31%	0.94%	13.00%	14.00%	0.0433%
Symantec Corp.	SYMC	14,795.70	0.06%	1.25%	7.00%	8.29%	0.0046%
Sysco Corp.	SY	40,204.40	0.15%	1.99%	12.00%	14.11%	0.0212%
AT&T Inc.	T	271,381.80	1.01%	5.57%	5.50%	11.23%	0.1138%
Molson Coors Brewing	TAP	11,762.00	0.04%	4.14%	5.50%	9.76%	0.0043%
TransDigm Group	TDG	28,311.40	0.11%	0.00%	11.00%	11.00%	0.0116%
TE Connectivity	TEL	31,750.40	0.12%	1.95%	7.50%	9.52%	0.0113%
Teleflex Inc.	TFX	15,797.80	0.06%	0.40%	15.00%	15.43%	0.0091%
Target Corp.	TGT	55,157.70	0.21%	2.45%	8.00%	10.54%	0.0217%
Tiffany & Co.	TIF	11,033.90	0.04%	2.57%	10.50%	13.21%	0.0054%
TJX Companies	TJX	68,256.40	0.26%	1.63%	13.50%	15.24%	0.0389%
Thermo Fisher Sci.	TMO	118,240.50	0.44%	0.26%	10.00%	10.27%	0.0454%
T-Mobile US	TMUS	69,210.70	0.26%	0.00%	18.00%	18.00%	0.0465%
Tapestry Inc.	TPR	7,330.80	0.03%	5.34%	12.00%	17.66%	0.0048%
TripAdvisor Inc.	TRIP	5,611.10	0.02%	0.00%	19.50%	19.50%	0.0041%
Price (T. Rowe) Group	TROW	27,320.10	0.10%	2.69%	10.00%	12.82%	0.0131%
Travelers Cos.	TRV	38,248.50	0.14%	2.23%	9.00%	11.33%	0.0162%
Tractor Supply	TSCO	11,024.10	0.04%	1.61%	11.50%	13.20%	0.0054%
Tyson Foods 'A'	TSN	32,182.00	0.12%	1.76%	7.00%	8.82%	0.0106%
Total System Svcs.	TSS	23,585.70	0.09%	0.00%	10.00%	10.00%	0.0088%
Take-Two Interactive	TWTO	14,770.50	0.06%	0.00%	22.50%	22.50%	0.0124%
Twitter Inc.	TWTR	33,158.80	0.12%	0.00%	0.00%	0.00%	0.0000%
Texas Instruments	TXN	120,400.00	0.45%	2.39%	6.50%	8.97%	0.0403%
Textron Inc.	TXT	11,831.90	0.04%	0.16%	13.00%	13.17%	0.0058%
Under Armour 'C'	UA	8,312.00	0.03%	0.00%	0.00%	0.00%	0.0000%
Under Armour 'A'	UAA	9,119.70	0.03%	0.00%	18.50%	18.50%	0.0063%
United Airlines Hldgs.	UAL	23,046.10	0.09%	0.00%	12.00%	12.00%	0.0103%
UDR Inc.	UDR	13,289.60	0.05%	2.84%	5.50%	8.42%	0.0042%
Universal Health 'B'	UHS	13,274.20	0.05%	0.53%	11.00%	11.56%	0.0057%
Ulta Beauty	ULTA	13,300.30	0.05%	0.00%	17.00%	17.00%	0.0084%
UnitedHealth Group	UNH	220,741.80	0.82%	1.86%	13.50%	15.48%	0.1277%

Unum Group	UNM	6,195.00	0.02%	3.86%	8.50%	12.52%	0.0029%
Union Pacific	UNP	117,802.80	0.44%	2.32%	14.50%	16.99%	0.0748%
United Parcel Serv.	UPS	102,276.40	0.38%	3.38%	8.00%	11.51%	0.0440%
United Rentals	URI	9,686.70	0.04%	0.00%	14.50%	14.50%	0.0052%
U.S. Bancorp	USB	88,414.70	0.33%	3.05%	6.00%	9.14%	0.0302%
United Technologies	UTX	118,665.10	0.44%	2.14%	9.00%	11.23%	0.0498%
Visa Inc.	V	349,456.50	1.31%	0.64%	18.00%	18.69%	0.2441%
Varian Medical Sys.	VAR	10,552.40	0.04%	0.00%	10.00%	10.00%	0.0039%
V.F. Corp.	VFC	34,643.10	0.13%	1.98%	7.00%	9.05%	0.0117%
Viacom Inc. 'B'	VIAB	10,177.30	0.04%	3.17%	6.00%	9.27%	0.0035%
Valero Energy	VLO	34,640.50	0.13%	4.43%	11.50%	16.18%	0.0209%
Vulcan Materials	VMC	19,874.30	0.07%	0.83%	14.50%	15.38%	0.0114%
Vornado R'lty Trust	VNO	11,979.20	0.04%	4.21%	-1.50%	2.67%	0.0012%
Verisk Analytics	VRSK	26,007.00	0.10%	0.63%	10.00%	10.66%	0.0104%
VeriSign Inc.	VRSN	22,653.30	0.08%	0.00%	11.00%	11.00%	0.0093%
Vertex Pharmac.	VRTX	45,210.00	0.17%	0.00%	50.00%	50.00%	0.0845%
Ventas Inc.	VTR	25,769.50	0.10%	4.47%	4.00%	8.56%	0.0082%
Verizon Communic.	VZ	248,063.20	0.93%	4.10%	4.00%	8.18%	0.0758%
Wabtec Corp.	WAB	13,880.40	0.05%	0.65%	13.50%	14.19%	0.0074%
Waters Corp.	WAT	15,464.70	0.06%	0.00%	10.00%	10.00%	0.0058%
Walgreens Boots	WBA	49,284.50	0.18%	3.35%	9.50%	13.01%	0.0240%
WellCare Health Plans	WCG	13,586.30	0.05%	0.00%	20.00%	20.00%	0.0102%
Western Digital	WDC	18,481.80	0.07%	3.19%	1.00%	4.21%	0.0029%
WEC Energy Group	WEC	29,487.00	0.11%	2.64%	6.00%	8.72%	0.0096%
Welltower Inc.	WELL	32,380.40	0.12%	3.96%	10.50%	14.67%	0.0177%
Wells Fargo	WFC	216,162.20	0.81%	4.17%	5.50%	9.79%	0.0790%
Whirlpool Corp.	WHR	9,359.90	0.03%	3.23%	6.50%	9.84%	0.0034%
Willis Towers Wat. plc	WLTW	25,564.40	0.10%	1.31%	17.50%	18.93%	0.0181%
Waste Management	WM	48,622.70	0.18%	1.79%	9.00%	10.87%	0.0197%
Williams Cos.	WMB	30,044.90	0.11%	6.13%	20.00%	26.74%	0.0300%
Walmart Inc.	WMT	333,412.20	1.25%	1.82%	7.50%	9.39%	0.1169%
WestRock Co.	WRK	9,234.50	0.03%	5.07%	10.00%	15.32%	0.0053%
Western Union	WU	9,672.20	0.04%	3.52%	4.50%	8.10%	0.0029%
Weyerhaeuser Co.	WY	20,700.90	0.08%	4.89%	17.50%	22.82%	0.0177%
Wynn Resorts	WYNN	11,996.40	0.04%	3.59%	14.50%	18.35%	0.0082%
Cimarex Energy	XEC	5,156.90	0.02%	1.57%	16.00%	17.70%	0.0034%
Xcel Energy Inc.	XEL	33,085.20	0.12%	2.60%	5.50%	8.17%	0.0101%
Xilinx Inc.	XLNX	26,010.70	0.10%	1.43%	9.50%	11.00%	0.0107%
Exxon Mobil Corp.	XOM	306,028.30	1.14%	4.81%	14.00%	19.15%	0.2189%
Dentsply Sirona	XRAY	11,182.60	0.04%	0.70%	4.50%	5.22%	0.0022%
Xerox Holdings	XRX	6,667.80	0.02%	3.31%	9.50%	12.97%	0.0032%
Xylem Inc.	XYL	14,038.80	0.05%	1.23%	14.00%	15.32%	0.0080%
Yum! Brands	YUM	34,686.40	0.13%	1.53%	12.00%	13.62%	0.0176%
Zimmer Biomet Hldgs.	ZBH	28,616.30	0.11%	0.70%	4.50%	5.22%	0.0056%
Zions Bancorp.	ZION	7,887.80	0.03%	3.05%	9.50%	12.70%	0.0037%
Zoetis Inc.	ZTS	59,378.80	0.22%	0.53%	13.00%	13.57%	0.0301%

[1] Sum of [7]

[2] Source: Value Line

[3] Weight based on market capitalization

[4] Source: Value Line

[5] Source: Value Line

[6] Equals [4] x (1 + (0.5 x [5])) + [5]

[7] Equals [3] x [6]

Capital Asset Pricing Model

	[1]	[2]	[3]	[4]	[5]
	Risk Free Rate	Proxy Group Average Beta	S&P 500 Estimated Required Market Return	Market Risk Premium	CAPM ROE
Current 30-Year Treasury (30-day Average)	2.11%	0.66	14.42%	12.31%	10.26%
Current 30-Year Treasury (90-day Average)	2.44%	0.66	14.42%	11.98%	10.37%
Current 30-Year Treasury (180-day Average)	2.71%	0.66	14.42%	11.71%	10.47%
[6] Mean					10.37%

[1] Source: US Treasury Department

[2] Source: Attachment JC-6

[3] Source: Attachment JC-7

[4] Equals [3] - [1]

[5] Equals [1] + ([2] x [4])

[6] Equals Average of [5]

Flotation Cost Adjustment

			[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Company	Ticker	Completion Date	Shares	Offering Price	Underwriting	Offering	Net Proceeds	Flotation	Gross Equity	Net Proceeds	Flotation Cost
			Issued	per Share	Discount per Share	Expense	per Share	Costs	Issue Before	(\$000)	Percentage
			(000)			(\$000)		(\$000)	Costs	(\$000)	
Algonquin Power & Utilities Corp.	AQN	11/10/2017	43,470	\$10.44	\$0.42	\$393.89	\$10.01	\$18,543.49	453,740	435,196	4.09%
Algonquin Power & Utilities Corp.	AQN	12/2/2015	16,508	\$7.83	\$0.31	\$374.64	\$7.49	\$5,545.07	129,261	123,716	4.29%
Atmos Energy Corporation	ATO	8/8/2019	8,059	\$92.75	\$0.98	\$1,000.00	\$91.65	\$8,873.13	747,500	738,627	1.19%
Atmos Energy Corporation	ATO	11/28/2017	4,558	\$86.79	NA	NA	\$86.65	\$8,692.26	403,692	395,000	2.15%
Chesapeake Utilities Corporation	CPK	9/22/2016	960	\$62.26	\$2.33	\$157.00	\$59.77	\$2,394.94	59,800	57,405	4.00%
Chesapeake Utilities Corporation	CPK	11/16/2006	690	\$30.10	\$1.13	\$225.00	\$28.65	\$1,001.64	20,779	19,778	4.82%
NiSource Inc.	NI	9/8/2010	24,265	\$16.50	\$0.54	\$400.00	\$15.95	\$13,410.89	400,373	386,962	3.35%
NiSource Inc.	NI	11/6/2002	41,400	\$18.30	\$0.55	\$300.00	\$17.74	\$23,028.60	757,620	734,591	3.04%
South Jersey Industries	SJI	4/18/2018	12,669	\$29.50	\$1.03	\$700.00	\$28.41	\$13,781.25	373,750	359,969	3.69%
South Jersey Industries	SJI	5/12/2016	8,050	\$26.26	\$0.92	\$330.00	\$25.30	\$7,726.34	211,393	203,667	3.65%
Spire, Inc.	SR	5/7/2018	2,300	\$68.75	\$2.11	\$325.00	\$66.50	\$5,176.57	158,125	152,948	3.27%
Spire, Inc.	SR	5/12/2016	2,185	\$63.05	\$2.05	\$300.00	\$60.86	\$4,777.28	137,764	132,987	3.47%
Southwest Gas Corporation	SWX	11/27/2018	3,565	\$75.50	\$2.55	\$600.00	\$72.78	\$9,683.98	269,158	259,474	3.60%
Mean								\$9,433.49	\$317,150.35		

[1] Source: S&P Global

[2] Source: S&P Global; Company Prospectus Supplements

[3] Source: S&P Global; Company Prospectus Supplements

[4] Source: Company Prospectus Supplements

[5] Equals: $((1) \times ((2) - (3)) - (4)) / (1)$

[6] Equals $((1) \times (3)) + (4)$

[7] Equals $(1) \times (2)$

[8] Equals $(1) \times (5)$

[9] Equals $(6) / (7)$

Weighted Average Flotation Costs	2.974%
----------------------------------	--------

Constant Growth Discounted Cash Flow Model
Earnings Growth
30 Day Average Stock Price

		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
Company	Ticker	Indicated Annual Dividend	Weighted- Average Stock Price	Dividend Yield	Expected Dividend Yield	Adjusted for Flotation Costs	Zacks Earnings Growth	Yahoo Finance Earnings Growth	Value Line Earnings Growth	Average Earnings Growth	Mean ROE	Flotation- Adjusted ROE
Atmos Energy	ATO	\$2.24	\$109.62	2.04%	2.11%	2.18%	6.70%	6.50%	7.50%	6.90%	9.01%	9.08%
Chesapeake Utilities	CPK	\$1.65	\$93.58	1.76%	1.83%	1.88%	7.00%	6.00%	9.00%	7.33%	9.16%	9.22%
NiSource Inc.	NI	\$0.80	\$29.10	2.75%	2.85%	2.94%	5.40%	4.66%	12.50%	7.52%	10.37%	10.46%
New Jersey Resources	NJR	\$1.25	\$45.01	2.78%	2.85%	2.94%	7.00%	6.00%	3.50%	5.50%	8.35%	8.44%
ONE Gas, Inc.	OGS	\$2.12	\$90.58	2.34%	2.41%	2.49%	5.90%	5.00%	8.00%	6.30%	8.71%	8.79%
South Jersey Industries	SJI	\$1.23	\$32.02	3.84%	3.98%	4.10%	6.60%	4.60%	10.50%	7.23%	11.21%	11.34%
Spire, Inc.	SR	\$2.37	\$83.68	2.83%	2.89%	2.98%	4.40%	2.71%	5.50%	4.20%	7.09%	7.18%
Southwest Gas	SWX	\$2.25	\$89.91	2.50%	2.59%	2.67%	6.20%	6.10%	9.00%	7.10%	9.69%	9.77%
Mean				2.61%	2.69%	2.77%	6.15%	5.20%	8.19%	6.51%	9.20%	9.28%
Median				2.63%	2.72%	2.81%	6.40%	5.50%	8.50%	7.00%	9.09%	9.15%

[1] Source: Value Line
[2] Source: Yahoo Finance, as of September 19, 2019
[3] Equals [1] / [2]
[4] Equals [3] x (1 + 0.5 x [9])
[6] Source: Zacks
[7] Source: Yahoo Finance
[8] Source: Value Line
[9] Equals average ([6], [7], [8])
[10] Equals [4] + [9]
[11] Equals [5] + [9]
[12] Equals average of [11] - average of [10]

[12]

Weighted Average Flotation Costs	2.97%
Flotation-Adjusted ROE	9.28%
Unadjusted ROE	9.20%
Flotation Cost Adjustment	0.08%

Proxy Group Revenue Decoupling Mechanisms

[1]

Parent Company Ticker	Operating Company	State	Decoupling?
ATO	Atmos Energy	Colorado	
ATO	Atmos Energy	Kansas	✓
ATO	Atmos Energy	Kentucky	✓
ATO	Atmos Energy	Louisiana	✓
ATO	Atmos Energy	Mississippi	✓
ATO	Atmos Energy	Tennessee	✓
ATO	Atmos Energy	Texas	✓
ATO	Atmos Energy	Virginia	✓
CPK	Chesapeake Utilities	Delaware	
CPK	Chesapeake Utilities	Maryland	✓
CPK	Florida Public Utilities Company	Florida	
NI	Northern Indiana Public Service	Indiana	
NI	Columbia Gas of Kentucky	Kentucky	✓
NI	Columbia Gas of Maryland	Maryland	✓
NI	Bay State Gas	Massachusetts	✓
NI	Columbia Gas of Ohio	Ohio	
NI	Columbia Gas of Pennsylvania	Pennsylvania	✓
NI	Columbia Gas of Virginia	Virginia	✓
NJR	New Jersey Natural Gas	New Jersey	✓
OGS	Kansas Gas Service	Kansas	✓
OGS	Oklahoma Natural Gas	Oklahoma	✓
OGS	Texas Gas Service	Texas	✓
SJI	South Jersey Gas	New Jersey	✓
SR	Spire Alabama	Alabama	✓
SR	Spire Gulf	Alabama	✓
SR	Spire Missouri East	Missouri	✓
SR	Spire Missouri West	Missouri	✓
SWX	Southwest Gas	Arizona	✓
SWX	Southwest Gas	California	✓
SWX	Southwest Gas	Nevada	✓

[1] Source: Regulatory Research Associates, "Adjustment Clauses: A State-by-State Overview," September 28, 2018; Operating company tariffs.

Small Size Premium

	Granite State Electric	
[1]	Customers (000s)	94
[2]	Implied Equity (\$ Millions)	\$167.3
[3]	Implied Market Capitalization (\$ Millions)	\$417.4

Proxy Group				
		[4]	[5]	[6]
Company Name	Ticker	Customers (000s)	Market Cap (\$ Millions)	Market-to-Book Ratio
Atmos Energy	ATO	3,256	\$13,271.0	2.62
Chesapeake Utilities	CPK	158	\$1,548.4	2.99
NiSource Inc.	NI	3,482	\$10,988.5	2.73
New Jersey Resources	NJR	539	\$3,998.7	2.69
ONE Gas, Inc.	OGS	2,179	\$4,944.7	2.45
South Jersey Industries	SJI	391	\$3,050.7	2.20
Spire, Inc.	SR	1,693	\$4,406.9	1.92
Southwest Gas	SWX	2,047	\$4,948.6	2.14
Mean		1,718	\$5,894.7	2.47
Median		1,870	\$4,675.8	2.54

Duff & Phelps Size Premia [7]

Market Capitalization (\$ Millions)			
	Lowest in		
Decile	Decile	Highest in Decile	Size Premium
1	\$29,428.9	\$1,073,390.6	-0.30%
2	\$13,513.0	\$29,022.9	0.52%
3	\$7,276.0	\$13,455.8	0.81%
4	\$4,504.1	\$7,254.2	0.85%
5	\$2,996.0	\$4,503.5	1.28%
6	\$1,961.8	\$2,992.3	1.50%
7	\$1,292.8	\$1,960.2	1.58%
8	\$730.0	\$1,292.2	1.80%
9	\$325.4	\$727.8	2.46%
10	\$2.5	\$321.6	5.22%

Market Capitalization (\$ Millions)			
	Lowest in		
Category	Category	Highest in Category	Size Premium
Mid Cap	\$2,996.0	\$13,455.8	0.89%
Low Cap	\$730.0	\$2,992.3	1.58%
Micro Cap	\$2.5	\$727.8	3.39%

[1] Source: MCOS Model.

[2] Source: RR-1 and RR-4. Proposed test year rate base multiplied by proposed common equity ratio.

[3] Equals [2] x Median of [6]

[4] Source: Company 10ks

[5] Source: Value Line, as of September 19, 2019

[6] Source: Value Line

[7] Source: Duff & Phelps Cost of Capital Navigator

Proxy Group Capital Structure

Common Equity Ratio

Company Name	Ticker	2014	2015	2016	2017	2018	Average
Atmos Energy	ATO	55.70%	56.50%	61.30%	56.00%	65.70%	59.04%
Chesapeake Utilities	CPK	65.50%	70.60%	76.50%	71.10%	62.10%	69.16%
NiSource Inc.	NI	43.10%	39.30%	40.20%	36.50%	37.90%	39.40%
New Jersey Resources	NJR	61.80%	56.80%	52.30%	55.40%	54.60%	56.18%
ONE Gas, Inc.	OGS	59.90%	60.50%	61.30%	62.20%	61.40%	61.06%
South Jersey Industries	SJI	52.00%	50.80%	61.50%	51.50%	37.60%	50.68%
Spire, Inc.	SR	44.90%	47.00%	49.10%	50.00%	54.30%	49.06%
Southwest Gas	SWX	47.60%	50.70%	51.80%	50.20%	51.70%	50.40%
Average		53.81%	54.03%	56.75%	54.11%	53.16%	54.37%

Source: Value Line

Long-Term Debt Ratio

Company Name	Ticker	2014	2015	2016	2017	2018	Average
Atmos Energy	ATO	44.30%	43.50%	38.70%	44.00%	34.30%	40.96%
Chesapeake Utilities	CPK	34.50%	29.40%	23.50%	28.90%	37.90%	30.84%
NiSource Inc.	NI	56.90%	60.70%	59.80%	63.50%	55.30%	59.24%
New Jersey Resources	NJR	38.20%	43.20%	47.70%	44.60%	45.40%	43.82%
ONE Gas, Inc.	OGS	40.10%	39.50%	38.70%	37.80%	38.60%	38.94%
South Jersey Industries	SJI	48.00%	49.20%	38.50%	48.50%	62.40%	49.32%
Spire, Inc.	SR	55.10%	53.00%	50.90%	50.00%	45.70%	50.94%
Southwest Gas	SWX	52.40%	49.30%	48.20%	49.80%	48.30%	49.60%
Average		46.19%	45.98%	43.25%	45.89%	45.99%	45.46%

THIS PAGE INTENTIONALLY LEFT BLANK