

COST OF CAPITAL STUDY

YIELD CAPITALIZATION

2023 Assessment Year

APPENDIX C

NATURAL GAS DISTRIBUTION

EQUITY RATE					9.00%	
CAPITAL ASSET PRICING MODEL						PAGE
	CAPM Ex Ante		9.06%			4
DIVIDEND GROWTH MODELS						
	Value Line, based on Dividends Growth		9.00%			5
	Value Line, based on Earnings Growth		10.50%			6
	Value Line, based on Return on Equity		8.25%			7
	FCFE GROWTH MODEL Multi Stage		8.25%			8
				RANGE	8.25% - 10.5%	
DEBT RATE					5.50%	9
MARKET CAPITAL STRUCTURE						
	Equity	60%	x 9.00%	=	5.40%	3
	Debt	40%	x 5.50%	=	2.20%	3
	Marginal Tax Rate	24%	= (1-.24)	x 2.20%	<u>1.67%</u>	
WEIGHTED AVERAGE COST OF CAPITAL					7.07%	

SUPPORT FOR GUIDELINE COMPANIES

Washington State Department of Revenue

2023 Assessment Year

Natural Gas Distribution

Capital Structure at Book Value

Company	Ticker	Beta	Fin'l Strength	P/E Ratio	Div'd Yield	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
Atmos Energy Corp	ato	0.85	A+	20.50	2.4%	9,419,165,000	59.0%		0.0%	6,551,800,000	41.0%	15,970,965,000
Chesapeake Util	cpk	0.80	A	25.60	1.7%	1,270,350,000	62.2%		0.0%	772,600,000	37.8%	2,042,950,000
New Jersey Resources	njr	0.95	A+	17.50	2.9%	1,817,160,000	40.3%		0.0%	2,690,900,000	59.7%	4,508,060,000
NiSource Inc	ni	0.90	B+	20.00	3.5%	5,968,200,000	36.5%	880,000,000	5.4%	9,521,200,000	58.2%	16,369,400,000
Northwest Natural Gas	nwn	0.80	A	18.80	4.1%	1,120,000,000	46.5%		0.0%	1,287,000,000	53.5%	2,407,000,000
Southwest Gas	swx	0.90	A	24.00	4.0%	3,634,600,000	38.3%		0.0%	5,866,000,000	61.7%	9,500,600,000
Spire Inc	sr	0.85	B++	15.80	4.0%	2,576,700,000	91.4%	242,000,000	8.6%	1,000,000	0.0%	2,819,700,000
ONE Gas Inc	ogs	0.80	B++	20.60	3.3%	2,550,600,000	51.2%		0.0%	2,429,100,000	48.8%	4,979,700,000
UGI Corp	ugi	1.05	B++	12.80	3.8%	5,912,524,800	47.7%		0.0%	6,485,000,000	52.3%	12,397,524,800
	Mean	0.88		19.51	3.31%	3,807,699,978	52.6%		1.6%	3,956,066,667	45.9%	7,888,433,311
	Harmonic Mean	0.87		18.76	3.07%		48.8%				0.3%	
	Median	0.85		20.00	3.46%		47.7%		0.0%		52.3%	
	Weighted Mean					34,269,299,800	48.3%		0.0%	35,604,600,000	50.2%	70,995,899,800
	Say	0.87										

**SUPPORT FOR CAPITAL STRUCTURE
MARKET VALUE**

Washington State Department of Revenue
2023 Assessment Year
Natural Gas Distribution

Capital Structure at Market Value

Company	Ticker	Stock Price	Common Shares	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
Atmos Energy Corp	ato	111.360	140,900,000	15,690,624,000	69.4%	-	0.0%	6,918,843,000	30.6%	22,609,467,000
Chesapeake Util	cpk	118.180	27,000,000	3,190,860,000	86.3%	-	0.0%	505,000,000	13.7%	3,695,860,000
New Jersey Resources	njr	49.620	95,640,000	4,745,656,800	70.9%	-	0.0%	1,946,356,000	29.1%	6,692,012,800
NiSource Inc	ni	27.170	406,000,000	11,031,020,000	54.1%	880,000,000	4.3%	8,479,400,000	41.6%	20,390,420,000
Northwest Natural Gas	nwn	47.130	35,000,000	1,649,550,000	63.6%	-	0.0%	944,383,000	36.4%	2,593,933,000
Southwest Gas	swx	61.310	68,000,000	4,169,080,000	60.3%	-	0.0%	2,748,591,000	39.7%	6,917,671,000
Spire Inc	sr	68.860	52,500,000	3,615,150,000	52.1%	242,000,000	3.5%	3,083,700,000	44.4%	6,940,850,000
ONE Gas Inc	ogs	75.100	54,500,000	4,092,950,000	62.1%	-	0.0%	2,500,000,000	37.9%	6,592,950,000
UGI Corp	ugi	37.070	210,560,000	7,805,459,200	55.8%	-	0.0%	6,189,000,000	44.2%	13,994,459,200
Mean					63.8%				35.3%	
Harmonic Mean					62.4%				31.2%	
Median					62.1%				37.9%	
Weighted Mean				55,990,350,000	61.9%	1,122,000,000	1.2%	33,315,273,000	36.8%	90,427,623,000
Std Dev					10.6%				9.7%	
Coefficient of Variation					16.6%				27.6%	
Say					60%				40%	100%

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT CAPITAL ASSET PRICING MODEL

Washington State Department of Revenue

2023 Assessment Year - Natural Gas Distribution

$$\text{Ex Ante} \\ \text{Ke} = \text{Rf} + \text{B} (\text{Rp})$$

Ke = Cost of Equity				9.06%
				to page 1
	Rm =	rate of return	9.82%	
	Rf =	risk free rate	3.97%	
	Rp =	risk premium	5.85%	
	B =	Beta	0.87	page 2
Rp = Risk Premium				5.85%
				to above
	Shannon Pratt and Roger Grabowski		3.50%-6.00%	
	Cost of Capital, App and Exam, 5th Ed, 2014			
	Dr. Aswath Damodaran		5.94%	chart page 15
	http://pages.stern.nyu.edu/~adamodar/		5.85%	adjusted for Rf
	2022 Implied Premium			
Rf = Risk Free Rate				3.97%
				to above
	Value Line Investment Survey, Selected Yields January 6, 2023, page 1465			
	as of 12-27-22			
	US Treasury Securities year end data			
	5 year		3.94%	
	10 year		3.84%	
	30 year		3.93%	
	30 year Zero		3.81%	
	Federal Reserve Statistical Release (http://www.federalreserve.gov/Releases/H15/Current/)			
	As of 12-30-22			
	Treasury Constant Maturities			
	5 year		3.99%	
	10 year		3.88%	
	20 year		4.14%	
	30 year		3.97%	
	20 year TIPS		1.62%	
	30 year TIPS		1.67%	
Inflation				2.30%
				to appraisal template
	Federal Reserve Statistical Release (http://www.federalreserve.gov/Releases/H15/Current/)			
	As of 12-30-22			
	Inflation Indication from Treasury Inflation-Protected Securities			
	20 year		2.52%	
	30 year		2.30%	
	Federal Reserve Bank of Philadelphia			
	The Livingston Survey December 16, 2022, pages 4, 8			
	Inflation median (measured by the CPI) over next 10 years		2.50%	
Gross Domestic Product (GDP) Nominal				4.10%
				real GDP + inflation est
	Federal Reserve Projected Long Run Real GDP Growth			
	Median Projection Value From Dec 14, 2022 Report		1.80%	
	https://www.federalreserve.gov/monetarypolicy/files/fomcproptabl20221214.pdf			
	Congressional Budget Office Real GDP Economic Projections			Table 2.3, pg 49
	The Budget and Economic Outlook 2023-2033	2023-2027	1.80%	
	Average Percentage Change Year To Year	2028-2033	1.80%	
	https://www.cbo.gov/system/files/2023-02/58848-Outlook.pdf			
	Federal Reserve Bank of Philadelphia			
	The Livingston Survey, December 16, 2022, page 8		1.97%	
	Average Real GDP Growth Rate for Next 10 Years			
	https://www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey			

**SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT
DIVIDEND GROWTH MODEL**

Washington State Department of Revenue
2023 Assessment Year
Natural Gas Distribution

Based on Dividend Growth

$$K_e = (D1 / P_o) + G$$

Ke = Cost of Equity
D1 = Expected Dividends
Po = Current Price
G = Sustainable Growth

Company	Ticker	Stock Price (Po)	Expected Dividend (D1)	Dividend Yield (D1/Po)	Dividend Short Term Growth (G)	Ke Short Term Growth
Atmos Energy Corp	ato	111.36	2.96	2.66%	7.50%	10.16%
Cheapeake Util	cpk	118.18	2.22	1.88%	8.00%	9.88%
New Jersey Resources	njr	49.62	1.56	3.14%	5.00%	8.14%
NiSource Inc	ni	27.17	1.00	3.68%	4.50%	8.18%
Northwest Natural Gas	nwn	47.13	1.94	4.12%	0.50%	4.62%
Southwest Gas	swx	61.31	2.58	4.21%	15.50%	19.71%
Spire Inc	sr	68.86	2.88	4.18%	5.00%	9.18%
ONE Gas Inc	ogs	75.10	2.60	3.46%	5.50%	8.96%
UGI Corp	ugi	37.07	1.42	3.82%	3.50%	7.32%
Mean						9.57%
Harmonic Mean						8.42%
Median						8.96%
Max						19.71%
Min						4.62%
Std Dev						4.14%
Coefficient of Variation						43.28%
Say						9.00%

**SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT
DIVIDEND GROWTH MODEL**

Washington State Department of Revenue
2023 Assessment Year
Natural Gas Distribution

Based on Earnings Growth

Ke = (D1 / Po) + G

- Ke = Cost of Equity
- D1 = Expected Dividends
- Po = Current Price
- G = Sustainable Growth

Company	Ticker	Stock Price (Po)	Expected Dividends (D1)	Yield (D1/Po)	Earnings Short Term Growth (G)	Ke Short Term Growth
Atmos Energy Corp	ato	111.36	2.96	2.66%	7.0%	9.66%
Chesapeake Util	cpk	118.18	2.22	1.88%	6.5%	8.38%
New Jersey Resources	njr	49.62	1.56	3.14%	5.0%	8.14%
NiSource Inc	ni	27.17	1.00	3.68%	9.5%	13.18%
Northwest Natural Gas	nwn	47.13	1.94	4.12%	6.5%	10.62%
Southwest Gas	swx	61.31	2.58	4.21%	10.0%	14.21%
Spire Inc	sr	68.86	2.88	4.18%	8.0%	12.18%
ONE Gas Inc	ogs	75.10	2.60	3.46%	6.0%	9.46%
UGI Corp	ugi	37.07	1.42	3.82%	6.5%	10.32%
Mean						10.68%
Harmonic Mean						10.34%
Median						10.32%
Max						14.21%
Min						8.14%
Std Dev						2.10%
Coefficient of Variation						19.67%
Say						10.50%

**SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT
DIVIDEND GROWTH MODEL**

Washington State Department of Revenue
2023 Assessment Year
Natural Gas Distribution

Based on Return on Equity

$$K_e = (D1 / P_o) + G$$

- Ke** = Cost of Equity
- D1** = Expected Dividends
- E1** = Expected Earnings
- Po** = Current Price
- G** = Sustainable Growth
- b** = Retained Earnings % = (1 - Payout Ratio)
- ROE** = Return on Equity = (E1 / Po)

Company	Ticker	Stock Price (Po)	Expected Dividend (D1)	Expected Earnings (E1)	Dividend Yield (D1/Po)	Retained Earnings (b)	ROE (E1/Po)	Growth (b*ROE)	Ke Dividends	Ke Earnings	
Atmos Energy Corp	ato	111.360	2.96	6.00	2.7%	51.0%	5.39%	2.75%	5.41%	8.14%	
Chesapeake Util	cpk	118.180	2.22	5.00	1.9%	57.0%	4.23%	2.41%	4.29%	6.64%	
New Jersey Resources	njr	49.620	1.56	2.75	3.1%	47.0%	5.54%	2.60%	5.75%	8.15%	
NiSource Inc	ni	27.170	1.00	1.55	3.7%	35.0%	5.70%	2.00%	5.68%	7.70%	
Northwest Natural Gas	nwn	47.130	1.94	2.75	4.1%	26.0%	5.83%	1.52%	5.63%	7.35%	
Southwest Gas	swx	61.310	2.58	4.00	4.2%	29.0%	6.52%	1.89%	6.10%	8.42%	
Spire Inc	sr	68.860	2.88	4.65	4.2%	29.0%	6.75%	1.96%	6.14%	8.71%	
ONE Gas Inc	ogs	75.100	2.60	4.25	3.5%	39.0%	5.66%	2.21%	5.67%	7.87%	
UGI Corp	ugi	37.070	1.42	3.15	3.8%	53.0%	8.50%	4.50%	8.33%	13.00%	
									Mean	5.89%	8.44%
									Harmonic Mean	5.74%	8.18%
									Median	5.68%	8.14%
									Max	8.33%	13.00%
									Min	4.29%	6.64%
									Std Dev	1.06%	1.81%
									Coefficient of Variation	18.03%	21.50%
									say	8.25%	

**SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT
FREE CASH FLOW TO EQUITY MODEL MULTI STAGE**

Washington State Department of Revenue

2023 Assessment Year

Natural Gas Distribution

Company	Ticker	Stock Price	Expected Earnings	P/E	Payout Ratio	ROE	Ke
Atmos Energy Corp	ato	111.36	6.00	18.56	50.00%	8.50%	7.06%
Chesapeake Util	cpk	118.18	5.00	23.64	45.00%	10.00%	NMF
New Jersey Resources	njr	49.62	2.75	18.04	56.00%	13.50%	7.14%
NiSource Inc	ni	27.17	1.55	17.53	65.00%	10.00%	7.91%
Northwest Natural Gas	nwn	47.13	2.75	17.14	71.00%	8.00%	7.42%
Southwest Gas	swx	61.31	4.00	15.33	65.00%	7.00%	9.52%
Spire Inc	sr	68.86	4.65	14.81	68.00%	9.00%	9.24%
UGI Corp	ugi	37.07	3.15	11.77	47.00%	10.50%	12.07%
ONE Gas Inc	ogs	75.10	4.25	17.67	62.00%	8.50%	7.67%
Mean				17.16	58.78%	9.44%	8.50%
Harmonic Mean				16.63	57.31%	9.15%	8.25%
Median				17.53	62.00%	9.00%	7.79%
Industry Summary				17.50	60.00%	9.00%	
						Say	8.25%

SUPPORT FOR DEBT RATING AND DEBT YIELD RATE

Washington State Department of Revenue

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Natural Gas Distribution

Company	Ticker	Mergent's Ratings	S&P Ratings
Atmos Energy Corp	ato	A1	A-
Chesapeake Util	cpk		
New Jersey Resources	njr		
NiSource Inc	ni	Baa2	BBB+
Northwest Natural Gas	nwn	Baa1	A+
Southwest Gas	swx	Baa1	BBB
Spire Inc	sr	Baa2	A-
UGI Corp	ugi	A3	
ONE Gas Inc	ogs	A3	A-
Overall Average Debt Rating		A3 / Baa1	A-

Mergent's Bond Record January 2023, page 81

Corporate	Aaa	Aa	A	Baa
October	5.10%	5.40%	5.74%	6.26%
November	4.90%	5.23%	5.58%	6.07%
December	4.43%	4.77%	5.12%	5.59%
4th Qtr Average	4.81%	5.13%	5.48%	5.97%
Public Utilities	Aaa	Aa	A	Baa
October		5.68%	5.88%	6.18%
November		5.54%	5.75%	6.05%
December		5.06%	5.28%	5.57%
4th Qtr Average		5.43%	5.64%	5.93%
Industrials	Aaa	Aa	A	Baa
October	5.10%	5.11%	5.59%	6.33%
November	4.90%	4.92%	5.40%	6.08%
December	4.43%	4.48%	4.94%	5.61%
4th Qtr Average	4.81%	4.84%	5.31%	6.01%

		20Y	25Y	30Y
Bloomberg S&P Bond Yields				
December 2022	BBB+	5.72%	5.55%	5.43%
	A-	5.80%	5.76%	5.79%

Debt Yield Rate	5.50%
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SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

Washington State Department of Revenue
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 Natural Gas Distribution

Company	Ticker	Stock Price	2022		2023		2022		2023	
			Actual Earnings Ratio (EPS/P)	Projected Earnings Ratio (PEPS/P)	Cash Flow Ratio (CF/P)	Projected Cash Flow Ratio				
Atmos Energy Corp	ato	111.36	5.60	5.0%	6.00	5.4%	9.30	8.4%	10.00	9.0%
Chesapeake Util	cpk	118.18	4.75	4.0%	5.00	4.2%	8.60	7.3%	9.05	7.7%
New Jersey Resources	njr	49.62	2.50	5.0%	2.75	5.5%	3.86	7.8%	4.30	8.7%
NiSource Inc	ni	27.17	1.45	5.3%	1.55	5.7%	3.45	12.7%	3.55	13.1%
Northwest Natural Gas	nwn	47.13	2.60	5.5%	2.75	5.8%	5.75	12.2%	6.25	13.3%
Southwest Gas	swx	61.31	3.50	5.7%	4.65	7.6%	10.50	17.1%	9.35	15.3%
Spire Inc	sr	68.86	3.95	5.7%	3.15	4.6%	8.44	12.3%	5.65	8.2%
UGI Corp	ugj	37.07	2.50	6.7%	3.15	8.5%	5.43	14.6%	5.65	15.2%
ONE Gas Inc	ogs	75.10	4.05	5.4%	4.25	5.7%	8.10	10.8%	8.55	11.4%
Mean			5.4%		5.9%		11.5%		11.3%	
Harmonic Mean			5.3%		5.6%		10.6%		10.6%	
Median			5.4%		5.7%		12.2%		11.4%	
Max			6.7%		8.5%		17.1%		15.3%	
Min			4.0%		4.2%		7.3%		7.7%	
Std Dev			0.7%		1.4%		3.3%		3.0%	
Coefficient of Variation			13.5%		22.9%		28.6%		26.8%	
Say			5.4%		5.7%		12.2%		11.4%	

Source:

Actual earnings: Value Line / Q4 average stock price
 Estimated Earnings: Value Line / Q4 average stock price
 Actual Cash Flow: Value Line / Q4 average stock price
 Estimated Cash Flow: Value Line / Q4 average stock price

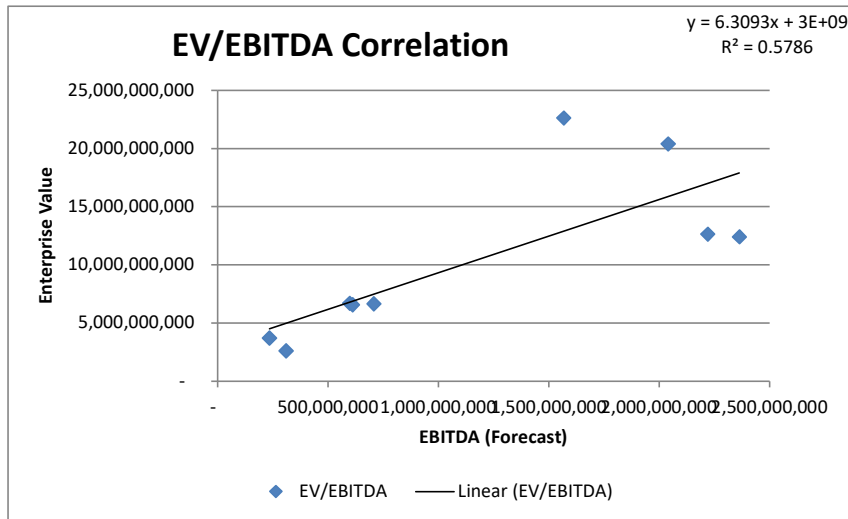
SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

Washington State Department of Revenue

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Natural Gas Distribution

Company	Ticker	Stock Price	Enterprise Value	EBITDA Historical	Annual Change VL	EBITDA Forecast	EV / EBITDA Forecast	Revenue Forecast	EV / Sales Forecast	Cash Flow Forecast	Debt Service	EV / CF Forecast
Atmos Energy Corp	ato	111.36	22,609,467,000	1,456,637,000	7.53%	1,566,276,344	14.44	4,980,815,000	4.54	1,409,000,000	380,536,365	12.63
Chesapeake Util	cpk	118.18	3,695,860,000	222,950,000	5.23%	234,615,988	15.75	1,094,850,000	3.38	244,350,000	27,775,000	13.58
New Jersey Resources	njr	49.62	6,692,012,800	535,724,000	11.40%	596,790,984	11.21	2,960,058,000	2.26	411,252,000	107,049,580	12.91
NiSource Inc	ni	27.17	20,390,420,000	1,982,400,000	2.90%	2,039,860,870	10.00	5,521,600,000	3.69	1,441,300,000	466,367,000	10.69
Northwest Natural Gas	nwn	47.13	2,593,933,000	284,184,000	8.70%	308,895,652	8.40	966,000,000	2.69	218,750,000	51,941,065	9.58
Southwest Gas	swx	61.31	6,656,151,000	645,500,000	9.52%	706,976,190	9.41	4,712,400,000	1.41	782,000,000	151,172,505	7.13
Spire Inc	sr	68.86	12,404,813,800	2,132,000,000	10.78%	2,361,872,038	5.25	2,514,750,000	4.93	490,875,000	169,603,500	18.78
UGI Corp	ugi	37.07	12,636,459,200	2,132,000,000	4.05%	2,218,379,374	5.70	10,275,328,000	1.23	1,189,664,000	340,395,000	8.26
ONE Gas Inc	ogs	75.10	6,564,761,000	578,436,000	5.56%	610,571,333	10.75	2,520,625,000	2.60	465,975,000	137,500,000	10.88
Mean							10.10		2.97			11.61
Harmonic Mean							8.94		2.43			10.78
Median							10.00		2.69			10.88
Std Dev							3.51		1.28			3.44
Coefficient of Variation							0.35		0.43			0.30
Say							10.00		2.70			12.00



Forecast EV/EBITDA By Rank

Guideline Companies	EV/EBITDA forecast	
Spire Inc	5.25	7.23 Harmonic Mean
UGI Corp	5.70	7.75 Low Average
Northwest Natural Gas	8.40	8.40 Low Median
Southwest Gas	9.41	8.50 Say
NiSource Inc	10.00	
ONE Gas Inc	10.75	12.05 High Harmonic Mean
New Jersey Resources	11.21	12.43 High Average
Atmos Energy Corp	14.44	11.21 High Median
Chesapeake Util	15.75	12.50 Say

SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

2023 Assessment Year

Natural Gas Distribution

Company	Ticker	Stock Price	Revenues Multiple	Cash Flow Multiple	Earnings Multiple	Book Value Multiple				
Atmos Energy Corp	ato	111.36	29.82	3.73	9.30	11.97	5.60	19.89	66.85	1.67
Chesapeake Util	cpk	118.18	36.95	3.20	8.60	13.74	4.75	24.88	47.05	2.51
New Jersey Resources	njr	49.62	30.38	1.63	3.86	12.85	2.50	19.85	19.00	2.61
NiSource Inc	ni	27.17	13.30	2.04	3.45	7.88	1.45	18.74	14.70	1.85
Northwest Natural Gas	nwn	47.13	27.45	1.72	5.75	8.20	2.60	18.13	32.00	1.47
Southwest Gas	swx	61.31	69.10	0.89	10.50	5.84	3.50	17.52	53.45	1.15
Spire Inc	sr	68.86	41.88	1.64	8.44	8.16	3.95	17.43	49.08	1.40
UGI Corp	ugi	37.07	48.00	0.77	5.43	6.83	2.50	14.83	28.08	1.32
ONE Gas Inc	ogs	75.10	43.75	1.72	8.10	9.27	4.05	18.54	46.80	1.60
Mean			1.93	9.42	18.87	1.73				
Harmonic Mean			1.53	8.73	18.55	1.62				
Median			1.72	8.20	18.54	1.60				
Max			3.73	13.74	24.88	2.61				
Min			0.77	5.84	14.83	1.15				
Say			1.75	9.00	18.55	1.65				

DATA INPUT

Washington State Department of Revenue

2023 Assessment Year

Natural Gas Distribution

Guideline Companies		Stock Price 12/30/22	Historic Figures (2022)													
			Beta Levered	Fin'l Strength	Revenues Per Share	Cash Flow Per Share	Earnings Per Share	Dividends Per Share	Bk Value Per Share	Common Shares	Mkt/Bk	LTD (BV)	Trailing P/E Ratio	Div Yield	Calculated Debt	
Name	Ticker	Yahoo	VL	VL	VL	VL	VL	VL	VL	VL	VL	Formula	V L	V L	V L	Formula
Atmos Energy Corp	ato	111.36	0.85	A+	29.82	9.30	5.60	2.72	66.85	140,900,000	1.67	6,551,800,000	20.50	2.6%	86.92%	
Chesapeake Util	cpk	118.18	0.80	A	36.95	8.60	4.75	2.03	47.05	27,000,000	2.51	772,600,000	25.60	1.8%	84.05%	
New Jersey Resources	njr	49.62	0.95	A+	30.38	3.86	2.50	1.45	19.00	95,640,000	2.61	2,690,900,000	17.50	3.0%	82.37%	
NiSource Inc	ni	27.17	0.90	B+	13.30	3.45	1.45	0.94	14.70	406,000,000	1.85	9,521,200,000	20.00	3.6%	88.76%	
Northwest Natural Gas	nwn	47.13	0.80	A	27.45	5.75	2.60	1.93	32.00	35,000,000	1.47	1,287,000,000	18.80	4.0%	83.88%	
Southwest Gas	swx	61.31	0.90	A	69.10	10.50	3.50	2.48	53.45	68,000,000	1.15	5,866,000,000	24.00	3.8%	84.54%	
Spire Inc	sr	68.86	0.85	B++	41.88	8.44	3.95	2.74	49.08	52,500,000	1.40	1,000,000	15.80	4.0%	90.35%	
ONE Gas Inc	ogs	75.10	0.80	B++	43.75	8.10	4.05	2.48	46.80	54,500,000	1.60	2,429,100,000	20.60	3.2%	92.59%	
UGI Corp	ugi	37.07	1.05	B++	48.00	5.43	2.50	1.41	28.08	210,560,000	1.32	6,485,000,000	12.80	3.7%	92.86%	

Average 19.51
 Harmonic Mean 18.76
 Median 20.00

Value Line 2/24/2023

SJI ACQUIRED NO LONGER ON VALUELINE

			Projected (Next Year) 2023										Longer Term Forecasts		Income Statement	
Payout Ratio	All Div'ds to Net Profits	Rtn on Shrhldrs Equity	Revenues Per Share	Cash Flow Per Share	Earnings Per Share	Dividends Per Share	Bk Value Per Share	All Div'ds to Net Profits	Rtn on Shrhldrs Equity	CF Projection 26-28	Earnings Projection 26-28	Earnings Growth 26-28	Dividends Growth 26-28	Operating Income	Current Assets	
Formula	V L	V L	V L	V L	V L	V L	V L	VL	V L	V L	V L	VL	VL	Yahoo	Yahoo	
49%	49%	8.2%	35.35	10.00	6.00	2.96	70.20	50.0%	8.5%	12.60	7.85	7.0%	7.5%	920,982,000	3,047,693,000	
43%	43%	10.0%	40.55	9.05	5.00	2.22	50.15	45.0%	10.0%	11.50	6.50	6.5%	8.0%	142,933,000	193,976,000	
58%	53%	13.2%	30.95	4.30	2.75	1.56	20.40	56.0%	13.5%	4.25	3.45	5.0%	5.0%	406,475,000	756,087,000	
65%	65%	9.5%	13.60	3.55	1.55	1.00	15.32	65.0%	10.0%	4.25	2.10	9.5%	4.5%	1,161,600,000	2,584,300,000	
74%	74%	8.0%	27.60	6.25	2.75	1.94	34.50	71.0%	8.0%	7.20	3.25	6.5%	0.5%	167,477,000	744,213,000	
71%	71%	6.5%	69.30	11.50	4.00	2.58	57.15	65.0%	7.0%	13.50	5.50	10.0%	15.5%	1,145,853,000	3,707,662,000	
71%	71%	7.8%	47.90	9.35	4.65	2.88	52.30	68.0%	9.0%	11.10	5.50	8.0%	5.0%	408,200,000	1,592,000,000	
61%	61%	8.5%	46.25	8.55	4.25	2.60	49.80	62.0%	8.5%	10.90	5.60	6.0%	5.5%	349,957,000	1,217,608,000	
56%	47%	10.6%	48.80	5.65	3.15	1.42	29.75	47.0%	10.5%	6.45	3.55	6.5%	3.5%	1,614,000,000	3,802,000,000	
	59.3%	9.1%						58.8%	9.4%	9.08						
	57.2%	8.8%						57.3%	9.2%	7.58						
	61.0%	8.5%						62.0%	9.0%	10.90						

Balance Sheet				Cash Flow Statement	Other Financials	
PP & E Gross	Intangibles (excl. GW)	Current Liabilities	Long Term Debt Less Current Maturities	Depreciation & Amortization	Carrying Value Debt	Fair Value Debt
Yahoo	Yahoo	Yahoo	Yahoo	Yahoo	10-K	10-K
20,452,802,000	-	3,602,600,000	5,710,254,000	535,655,000	7,960,000,000	6,918,843,000
2,287,820,000	17,859,000	369,023,000	578,388,000	80,017,000	600,800,000	505,000,000
5,684,236,000	8,468,000	1,104,153,000	2,485,402,000	129,249,000	2,362,845,000	1,946,356,000
27,551,300,000	-	4,660,500,000	9,523,600,000	820,800,000	9,553,600,000	8,479,400,000
4,469,297,000	-	898,734,000	1,246,167,000	116,707,000	1,125,877,000	944,383,000
11,576,350,000	105,668,000	3,422,963,000	4,403,299,000	470,460,000	3,251,296,000	2,748,591,000
8,207,000,000	-	2,354,600	2,958,500,000	237,300,000	3,412,900,000	3,083,700,000
7,834,557,000	323,838,000	1,189,419,000	2,352,400,000	228,479,000	2,700,000,000	2,500,000,000
12,206,000,000	500,000,000	2,444,000,000	6,483,000,000	518,000,000	6,665,000,000	6,189,000,000

STOCK PRICE

Washington State Department of Revenue
 2023 Assessment Year
 Natural Gas Distribution

								66.20
								22 Year End
Atmos Energy Corp ato								
	Date	Open	High	Low	Close	Adj Close*	Volume	111.360
12/30/2022		114.6	114.57	111.3	112.1	111.36	588,900	
Chesapeake Util cpk								
	Date	Open	High	Low	Close	Adj Close*	Volume	118.180
12/30/2022		120.76	121.27	117.22	118.18	118.18	80,100	
New Jersey Resources njr								
	Date	Open	High	Low	Close	Adj Close*	Volume	49.620
12/30/2022		49.9	50.04	49.29	49.62	49.62	376,400	
Nisource Inc ni								
	Date	Open	High	Low	Close	Adj Close*	Volume	27.170
12/30/2022		27.82	27.87	27.23	27.42	27.17	1,948,100	
NW Natural Gas nwn								
	Date	Open	High	Low	Close	Adj Close*	Volume	47.130
12/30/2022		48.25	48.44	47.18	47.59	47.13	173,400	
Southwest Gas Corp swx								
	Date	Open	High	Low	Close	Adj Close*	Volume	61.310
12/30/2022		62.41	62.59	61.65	61.88	61.31	351,600	
Spire Inc sr								
	Date	Open	High	Low	Close	Adj Close*	Volume	68.860
12/30/2022		69.84	70.11	68.25	68.86	68.86	205,900	
UGI Corp ugi								
	Date	Open	High	Low	Close	Adj Close*	Volume	37.070
12/30/2022		37.36	37.62	36.86	37.07	37.07	828,500	
One Gas Inc ogs								
	Date	Open	High	Low	Close	Adj Close*	Volume	75.100
12/30/2022		76.74	76.94	75.16	75.72	75.10	297,800	

Source:
 finance.yahoo.com
 Historical Stock Quotes

IMPLIED PREMIUMS FOR US MARKET																
Updated January 2023																
These implied premiums are calculated using the S&P 500.																
Year	Earnings Yield	Dividend Yield	S&P 500	Earnings*	Dividends*	Ends + Buy	Inge in Earnings	Inge in Dividends	T.Bill Rate	T.Bond Rate	Bond-Bill	Boothed Growth	Premium	Implied Premium (FCFE)	Implied Premium (FCFE + Div)	ERP/Riskfree Rate
1960	5.34%	3.41%	58.11	3.10	1.98				2.66%	2.76%	0.10%	2.45%				
1961	4.71%	2.85%	71.55	3.37	2.04		8.60%	2.91%	2.13%	2.35%	0.22%	2.41%	2.92%			1.24
1962	5.81%	3.40%	63.1	3.67	2.15		8.79%	5.21%	2.73%	3.85%	1.12%	4.05%	3.56%			0.92
1963	5.51%	3.13%	75.02	4.13	2.35		12.75%	9.45%	3.12%	4.14%	1.02%	4.96%	3.38%			0.82
1964	5.62%	3.05%	84.75	4.76	2.58		15.23%	10.08%	3.54%	4.21%	0.67%	5.13%	3.31%			0.79
1965	5.73%	3.06%	92.43	5.30	2.83		11.20%	9.42%	3.93%	4.65%	0.72%	5.46%	3.32%			0.71
1966	6.74%	3.59%	80.33	5.41	2.88		2.23%	1.96%	4.76%	4.64%	-0.12%	4.19%	3.68%			0.79
1967	5.66%	3.09%	96.47	5.46	2.98		0.85%	3.37%	4.21%	5.70%	1.49%	5.25%	3.20%			0.56
1968	5.51%	2.93%	103.86	5.72	3.04		4.81%	2.09%	5.21%	6.16%	0.95%	5.32%	3.00%			0.49
1969	6.63%	3.52%	92.06	6.10	3.24		6.66%	6.49%	6.58%	7.88%	1.30%	7.55%	3.74%			0.47
1970	5.98%	3.46%	92.15	5.51	3.19		-9.72%	-1.61%	6.53%	6.50%	-0.03%	4.78%	3.41%			0.52
1971	5.46%	3.10%	102.09	5.57	3.16		1.15%	-0.74%	4.39%	5.89%	1.50%	4.57%	3.09%			0.52
1972	5.23%	2.70%	118.05	6.17	3.19		10.76%	0.71%	3.84%	6.41%	2.57%	5.21%	2.72%			0.42
1973	8.16%	3.70%	97.55	7.96	3.61		28.93%	13.24%	6.93%	6.90%	-0.03%	8.30%	4.30%			0.62
1974	13.64%	5.43%	68.56	9.35	3.72		17.48%	3.14%	8.00%	7.40%	-0.60%	6.42%	5.59%			0.76
1975	8.55%	4.14%	90.19	7.71	3.73		-17.54%	0.30%	5.80%	7.76%	1.96%	5.99%	4.13%			0.53
1976	9.07%	3.93%	107.46	9.75	4.22		26.39%	13.10%	5.08%	6.81%	1.73%	8.19%	4.55%			0.67
1977	11.43%	5.11%	95.1	10.87	4.86		11.53%	15.07%	5.12%	7.78%	2.66%	9.52%	5.92%			0.76
1978	12.11%	5.39%	96.11	11.64	5.18		7.07%	6.60%	7.18%	9.15%	1.97%	8.48%	5.72%			0.63
1979	13.48%	5.53%	107.94	14.55	5.97		25.01%	15.23%	10.38%	10.33%	-0.05%	11.70%	6.45%			0.62
1980	11.04%	4.74%	135.76	14.99	6.44		3.01%	7.81%	11.24%	12.43%	1.19%	11.01%	5.03%			0.40
1981	12.39%	5.57%	122.55	15.18	6.83		1.31%	6.08%	14.71%	13.98%	-0.73%	11.42%	5.73%			0.41
1982	9.83%	4.93%	140.64	13.82	6.93		-8.95%	1.58%	10.54%	10.47%	-0.07%	7.96%	4.90%			0.47
1983	8.06%	4.32%	164.93	13.29	7.12		-3.84%	2.76%	8.80%	11.80%	0.99%	4.31%				0.37
1984	10.07%	4.68%	167.24	16.84	7.83		26.69%	9.85%	9.85%	11.51%	1.66%	11.02%	5.11%			0.44
1985	7.42%	3.88%	211.28	15.68	8.20		-6.91%	4.74%	7.72%	8.99%	1.27%	7.89%	4.03%	6.75%		0.43
1986	5.96%	3.38%	242.17	14.43	8.19		-7.93%	-0.15%	6.16%	7.22%	1.06%	5.54%	3.36%	6.96%		0.50
1987	6.49%	3.71%	247.08	16.04	9.17		11.10%	11.99%	5.47%	8.86%	3.39%	9.66%	4.18%	8.58%		0.45
1988	8.20%	3.68%	277.72	24.12	10.22		50.42%	11.49%	6.35%	9.14%	2.79%	9.76%	4.12%	7.67%		0.41
1989	6.80%	3.32%	353.4	24.32	11.73		0.83%	14.80%	8.37%	7.93%	-0.44%	9.58%	3.85%	7.46%		0.44
1990	6.58%	3.74%	330.22	22.65	12.35		-6.87%	5.26%	7.81%	8.07%	0.26%	7.39%	3.92%	7.19%		0.48
1991	4.58%	3.11%	417.09	19.30	12.97		-14.79%	5.03%	7.00%	6.70%	-0.30%	6.34%	3.27%	7.81%		0.52
1992	4.16%	2.90%	435.71	20.87	12.64		8.13%	-2.59%	5.30%	6.68%	1.38%	4.67%	2.83%	9.83%		0.53
1993	4.25%	2.72%	466.45	26.90	12.69		28.89%	0.41%	3.50%	5.79%	2.29%	4.73%	2.74%	8.00%		0.55
1994	5.89%	2.91%	459.27	31.75	13.36		18.03%	5.34%	5.00%	7.82%	2.82%	7.23%	3.06%	7.17%		0.45
1995	5.74%	2.30%	615.93	37.70	14.17		18.74%	6.00%	3.50%	5.57%	2.07%	5.65%	2.44%	6.50%		0.59
1996	4.83%	2.01%	740.74	40.63	14.89		7.77%	5.10%	5.00%	6.41%	1.41%	6.13%	2.11%	7.92%		0.50
1997	4.08%	1.60%	970.43	44.09	15.52		8.52%	4.25%	5.35%	5.74%	0.39%	5.45%	1.67%	8.00%		0.48
1998	3.11%	1.32%	1229.23	44.27	16.20		0.41%	4.37%	4.33%	4.65%	0.32%	4.60%	1.38%	7.20%		0.49
1999	3.07%	1.14%	1469.25	51.68	16.71		16.74%	3.16%	5.37%	6.44%	1.07%	5.75%	1.20%	12.50%		0.32
2000	3.94%	1.23%	1320.28	56.13	16.27		8.61%	-2.65%	5.73%	5.11%	-0.62%	3.71%	1.65%	12.00%		0.56
2001	3.85%	1.37%	1148.09	38.85	15.74	30.08	-30.79%	-3.24%	1.80%	5.05%	3.25%	3.56%	1.73%	10.30%	2.91%	0.72
2002	5.23%	1.83%	879.82	46.04	16.08	29.83	18.51%	2.15%	1.20%	3.81%	2.61%	3.57%	2.29%	8.00%	4.10%	1.08
2003	4.87%	1.61%	1111.91	54.69	17.88	31.58	18.79%	11.19%	1.00%	4.25%	3.25%	5.35%	2.12%	11.00%	3.69%	0.87
2004	5.58%	1.60%	1211.92	67.68	19.407	40.60	23.75%	8.54%	2.18%	4.22%	2.04%	4.90%	2.02%	8.50%	3.65%	0.86
2005	5.47%	1.79%	1248.29	76.45	22.38	61.17	12.96%	15.32%	4.31%	4.39%	0.08%	6.16%	2.20%	8.00%	4.08%	0.93
2006	6.18%	1.77%	1418.3	87.72	25.05	73.16	14.74%	11.93%	4.88%	4.70%	-0.18%	5.93%	1.97%	12.50%	4.16%	0.89
2007	5.62%	1.89%	1468.36	82.54	27.73	95.36	-5.91%	10.70%	3.31%	4.02%	0.71%	5.03%	2.06%	5.00%	4.37%	1.09
2008	7.24%	3.11%	903.25	65.39	28.05	67.52	-20.78%	1.15%	1.59%	2.21%	0.62%	2.11%	4.05%	4.00%	6.43%	2.91
2009	5.35%	2.00%	1115.10	59.65	22.31	37.43	-8.78%	-20.46%	0.14%	3.84%	3.70%	0.28%	2.60%	7.20%	4.36%	1.14
2010	6.65%	1.84%	1257.64	83.66	23.12	55.53	40.25%	3.63%	0.13%	3.29%	3.16%	3.33%	2.24%	6.95%	5.20%	1.58
2011	7.72%	2.07%	1257.60	97.05	26.02	71.28	16.01%	12.54%	0.03%	1.88%	1.85%	2.75%	2.71%	7.18%	6.01%	3.20
2012	7.18%	2.13%	1426.19	102.47	30.44	75.90	5.58%	16.99%	0.05%	1.76%	1.71%	2.93%	2.47%	5.27%	5.78%	3.28
2013	5.81%	1.96%	1848.36	107.45	36.28	88.13	4.86%	19.19%	0.07%	3.04%	2.97%	5.01%	2.03%	4.28%	4.96%	1.63
2014	5.49%	1.92%	2058.90	113.01	39.44	101.98	5.17%	8.71%	0.05%	2.17%	2.12%	2.77%	2.24%	5.58%	5.78%	2.66
2015	5.20%	2.11%	2043.94	106.32	43.16	106.10	-5.92%	9.43%	0.21%	2.27%	2.06%	2.96%	2.46%	5.51%	6.12%	2.70
2016	4.86%	2.01%	2238.83	108.86	45.03	108.67	2.39%	4.33%	0.51%	2.45%	1.94%	2.64%	2.41%	5.54%	5.69%	2.32
2017	4.67%	1.86%	2673.61	124.94	49.73	108.28	14.77%	10.44%	1.39%	2.41%	1.02%	3.22%	2.36%	7.05%	5.08%	2.11
2018	5.92%	2.14%	2506.85	148.34	53.61	136.65	18.73%	7.80%	2.37%	2.68%	0.31%	3.24%	2.50%	4.12%	5.96%	2.22
2019	5.03%	1.82%	3230.78	162.35	58.80	150.50	9.44%	9.68%	1.55%	1.92%	0.37%	2.57%		3.96%	5.20%	2.71
2020	3.68%	1.51%	3756.07	138.12	56.70	127.78	-14.92%	-3.57%	0.09%	0.93%	0.84%	0.74%	1.65%	4.72%	4.94%	5.08
2021	4.33%	1.24%	4766.18	206.38	59.20	147.24	47.67%	4.41%	0.06%	1.51%	1.45%	1.71%	1.72%	6.47%	4.24%	2.81
2022	5.72%	1.78%	3839.50	219.49	68.34	181.99	6.35%	15.44%	4.42%	3.88%	-0.54%	5.59%	2.16%	6.41%	5.94%	1.53

<http://pages.stern.nyu.edu/~adamodar/>

Three Stage Free Cash Flow to Equity Discount Model

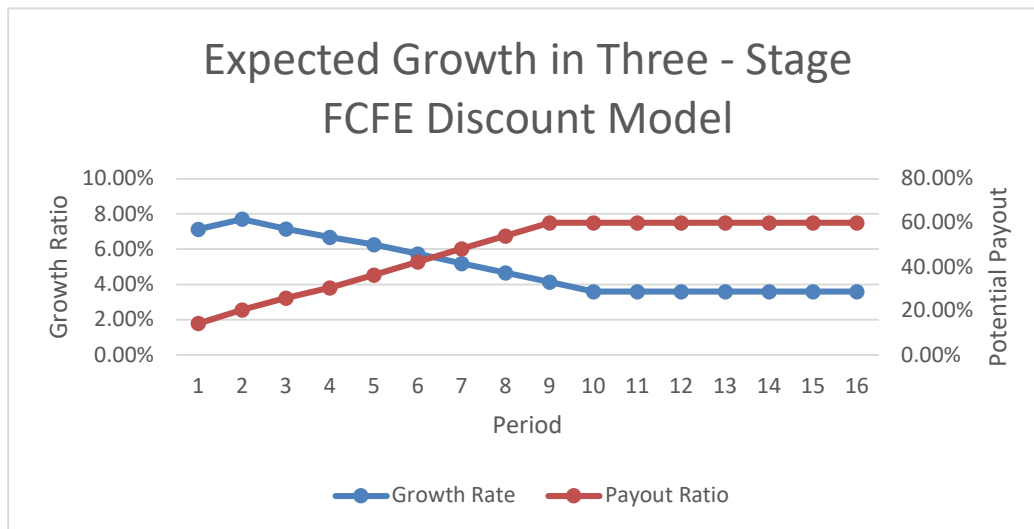
Company [Atmos Energy Corp](#)

Ticker [ato](#)

4.10% GDP
 17.5 Industry P/E
 60.0% Target Dividend Payout Ratio
 9.0% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		79.37%	20.63%	5.60			(111.36)
	1	7.14%	85.65%	14.35%	6.00	0.86		0.86
	2	7.71%	79.52%	20.48%	6.46	1.32		1.32
Stage 1	3	7.16%	74.21%	25.79%	6.93	1.79		1.79
	4	6.68%	69.56%	30.44%	7.39	2.25		2.25
	5	6.26%	63.65%	36.35%	7.85	2.85		2.85
	6	5.73%	57.74%	42.26%	8.30	3.51		3.51
	7	5.20%	51.82%	48.18%	8.73	4.21		4.21
Stage 2	8	4.66%	45.91%	54.09%	9.14	4.94		4.94
	9	4.13%	40.00%	60.00%	9.52	5.71		5.71
	10	3.60%	40.00%	60.00%	9.86	5.92	178.73	184.65
Stage 3	11+	3.60%	40.00%	60.00%	10.21	6.13		

Ke = 7.06%



Three Stage Free Cash Flow to Equity Discount Model

Company [Chesapeake Utilities](#)

Ticker [cpk](#)

4.10% GDP

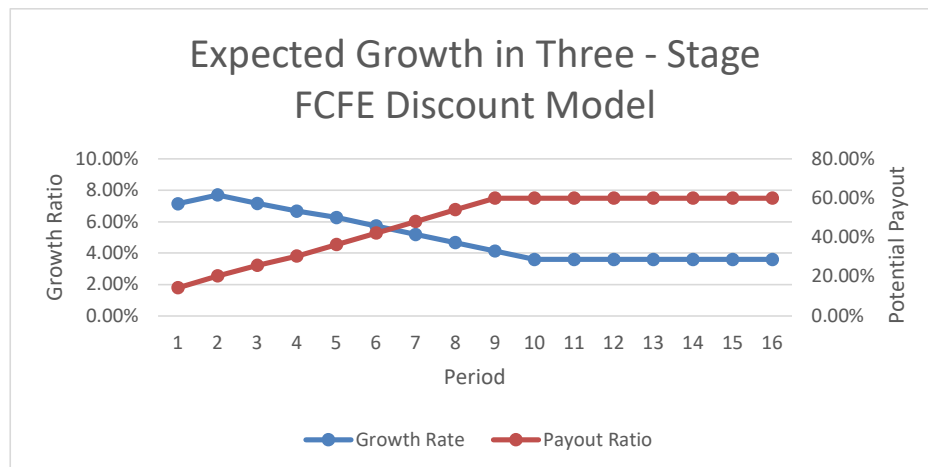
17.5 Industry P/E

60.0% Target Dividend Payout Ratio

9.0% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		58.48%	41.52%	4.75			(118.18)
	1	5.26%	83.33%	16.67%	5.00	0.83		0.83
	2	7.50%	77.52%	22.48%	5.38	1.21		1.21
Stage 1	3	6.98%	72.46%	27.54%	5.75	1.58		1.58
	4	6.52%	68.03%	31.97%	6.13	1.96		1.96
	5	6.12%	62.42%	37.58%	6.50	2.44		2.44
	6	5.62%	56.82%	43.18%	6.87	2.96		2.96
	7	5.11%	51.21%	48.79%	7.22	3.52		3.52
Stage 2	8	4.61%	45.61%	54.39%	7.55	4.11		4.11
	9	4.10%	40.00%	60.00%	7.86	4.72		4.72
	10	3.60%	40.00%	60.00%	8.14	4.88	147.61	152.49
Stage 3	11+	3.60%	40.00%	60.00%	8.43	5.06		

$K_e = 4.29\%$



Three Stage Free Cash Flow to Equity Discount Model

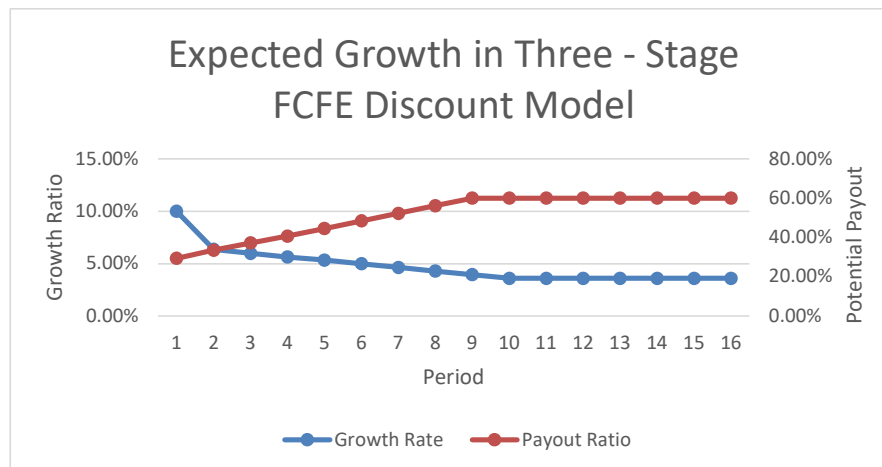
Company [New Jersey Resources](#)

Ticker [njr](#)

4.10% GDP
 17.5 Industry P/E
 60.0% Target Dividend Payout Ratio
 9.0% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		111.11%	-11.11%	2.50			(49.62)
	1	10.00%	70.71%	29.29%	2.75	0.81		0.81
	2	6.36%	66.48%	33.52%	2.93	0.98		0.98
Stage 1	3	5.98%	62.72%	37.28%	3.10	1.16		1.16
	4	5.65%	59.37%	40.63%	3.28	1.33		1.33
	5	5.34%	55.50%	44.50%	3.45	1.54		1.54
	6	4.99%	51.62%	48.38%	3.62	1.75		1.75
	7	4.65%	47.75%	52.25%	3.79	1.98		1.98
Stage 2	8	4.30%	43.87%	56.13%	3.95	2.22		2.22
	9	3.95%	40.00%	60.00%	4.11	2.47		2.47
	10	3.60%	40.00%	60.00%	4.26	2.55	77.19	79.74
Stage 3	11+	3.60%	40.00%	60.00%	4.41	2.65		

Ke = 7.14%



Three Stage Free Cash Flow to Equity Discount Model

Company **Nisource Inc**

Ticker **ni**

4.10% GDP

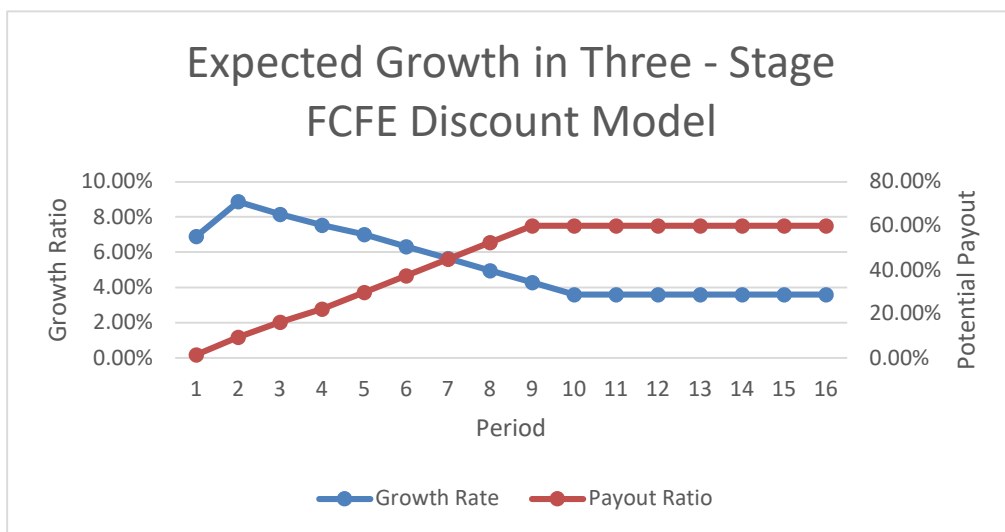
17.5 Industry P/E

60.0% Target Dividend Payout Ratio

9.0% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		76.63%	23.37%	1.45			(27.17)
Stage 1	1	6.90%	98.57%	1.43%	1.55	0.02		0.02
	2	8.87%	90.53%	9.47%	1.69	0.16		0.16
	3	8.15%	83.71%	16.29%	1.83	0.30		0.30
	4	7.53%	77.85%	22.15%	1.96	0.43		0.43
	5	7.01%	70.28%	29.72%	2.10	0.62		0.62
Stage 2	6	6.33%	62.71%	37.29%	2.23	0.83		0.83
	7	5.64%	55.14%	44.86%	2.36	1.06		1.06
	8	4.96%	47.57%	52.43%	2.48	1.30		1.30
	9	4.28%	40.00%	60.00%	2.58	1.55		1.55
	10	3.60%	40.00%	60.00%	2.67	1.60	48.50	50.10
Stage 3	11+	3.60%	40.00%	60.00%	2.77	1.66		

Ke = 7.91%



Three Stage Free Cash Flow to Equity Discount Model

Company **NW Nat'l Gas**

Ticker **nwn**

4.10% GDP

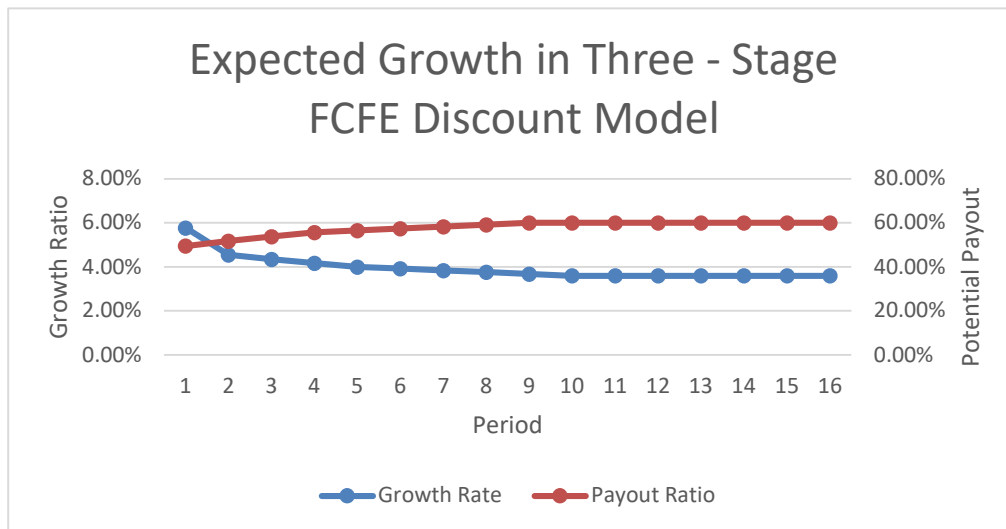
17.5 Industry P/E

60.0% Target Dividend Payout Ratio

9.0% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		64.10%	35.90%	2.60			(47.13)
Stage 1	1	5.77%	50.51%	49.49%	2.75	1.36		1.36
	2	4.55%	48.31%	51.69%	2.88	1.49		1.49
	3	4.35%	46.30%	53.70%	3.00	1.61		1.61
	4	4.17%	44.44%	55.56%	3.13	1.74		1.74
	5	4.00%	43.56%	56.44%	3.25	1.83		1.83
Stage 2	6	3.92%	42.67%	57.33%	3.38	1.94		1.94
	7	3.84%	41.78%	58.22%	3.51	2.04		2.04
	8	3.76%	40.89%	59.11%	3.64	2.15		2.15
	9	3.68%	40.00%	60.00%	3.77	2.26		2.26
	10	3.60%	40.00%	60.00%	3.91	2.35	70.86	73.21
Stage 3	11+	3.60%	40.00%	60.00%	4.05	2.43		

Ke = 7.42%



Three Stage Free Cash Flow to Equity Discount Model

Company **Southwest Gas**

Ticker **SWX**

4.10% GDP

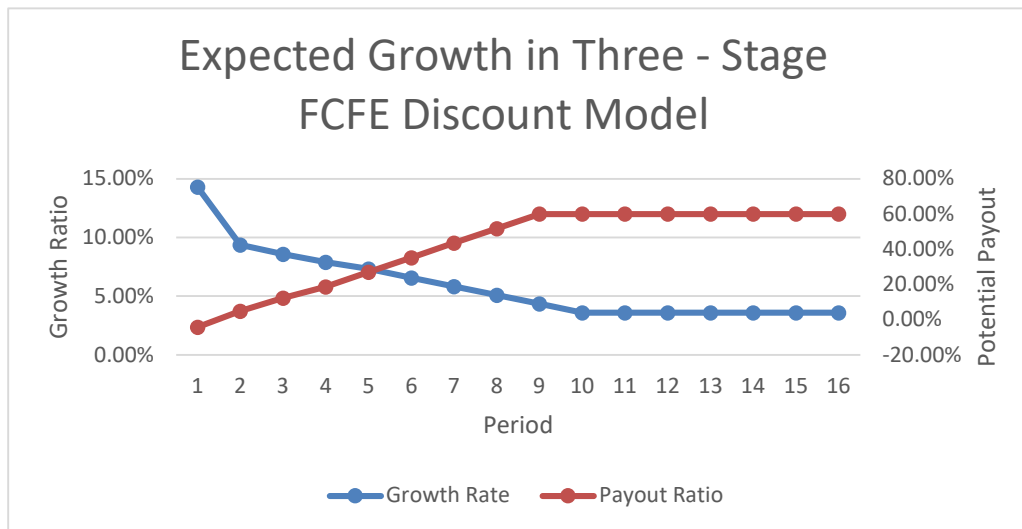
17.5 Industry P/E

60.0% Target Dividend Payout Ratio

9.0% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		158.73%	-58.73%	3.50			(61.31)
Stage 1	1	14.29%	104.17%	-4.17%	4.00	(0.17)		-0.17
	2	9.38%	95.24%	4.76%	4.38	0.21		0.21
	3	8.57%	87.72%	12.28%	4.75	0.58		0.58
	4	7.89%	81.30%	18.70%	5.13	0.96		0.96
	5	7.32%	73.04%	26.96%	5.50	1.48		1.48
Stage 2	6	6.57%	64.78%	35.22%	5.86	2.06		2.06
	7	5.83%	56.52%	43.48%	6.20	2.70		2.70
	8	5.09%	48.26%	51.74%	6.52	3.37		3.37
	9	4.34%	40.00%	60.00%	6.80	4.08		4.08
	10	3.60%	40.00%	60.00%	7.05	4.23	127.76	131.99
Stage 3	11+	3.60%	40.00%	60.00%	7.30	4.38		

$K_e = 9.52%$



Three Stage Free Cash Flow to Equity Discount Model

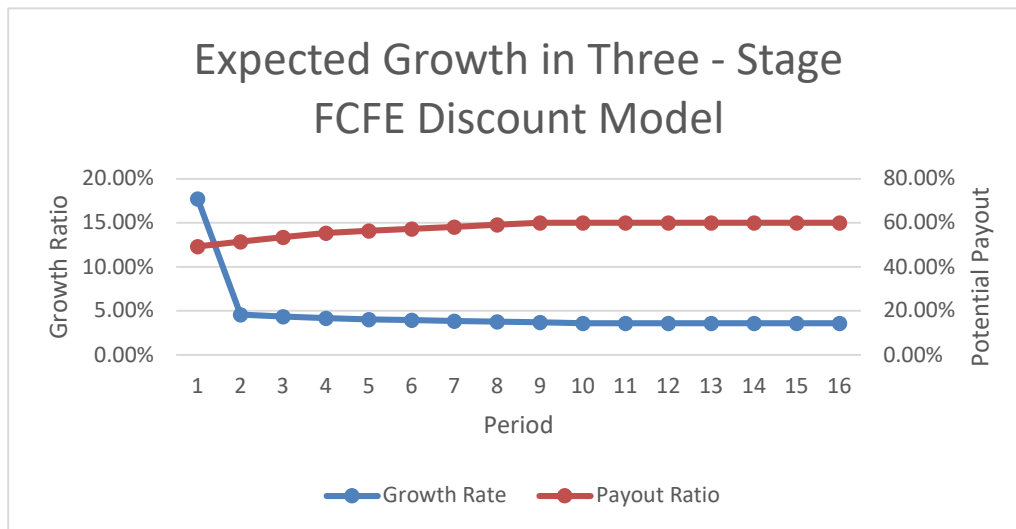
Company [Spire Inc](#)

Ticker [sr](#)

4.10% GDP
 17.5 Industry P/E
 60.0% Target Dividend Payout Ratio
 9.0% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		196.91%	-96.91%	3.95			(68.86)
Stage 1	1	17.72%	50.78%	49.22%	4.65	2.29		2.29
	2	4.57%	48.56%	51.44%	4.86	2.50		2.50
	3	4.37%	46.52%	53.48%	5.08	2.71		2.71
	4	4.19%	44.65%	55.35%	5.29	2.93		2.93
	5	4.02%	43.72%	56.28%	5.50	3.10		3.10
Stage 2	6	3.94%	42.79%	57.21%	5.72	3.27		3.27
	7	3.85%	41.86%	58.14%	5.94	3.45		3.45
	8	3.77%	40.93%	59.07%	6.16	3.64		3.64
	9	3.68%	40.00%	60.00%	6.39	3.83		3.83
	10	3.60%	40.00%	60.00%	6.62	3.97	119.97	123.94
Stage 3	11+	3.60%	40.00%	60.00%	6.86	4.11		

$K_e = 9.24\%$



Three Stage Free Cash Flow to Equity Discount Model

Company **ONE Gas Inc**

Ticker **ogs**

4.10% GDP
 17.5 Industry P/E
 60.0% Target Dividend Payout Ratio
 9.0% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		54.87%	45.13%	4.05			(75.10)
Stage 1	1	4.94%	88.24%	11.76%	4.25	0.50		0.50
	2	7.94%	81.74%	18.26%	4.59	0.84		0.84
	3	7.36%	76.14%	23.86%	4.93	1.17		1.17
	4	6.85%	71.26%	28.74%	5.26	1.51		1.51
	5	6.41%	65.01%	34.99%	5.60	1.96		1.96
Stage 2	6	5.85%	58.76%	41.24%	5.93	2.44		2.44
	7	5.29%	52.50%	47.50%	6.24	2.96		2.96
	8	4.73%	46.25%	53.75%	6.54	3.51		3.51
	9	4.16%	40.00%	60.00%	6.81	4.08		4.08
	10	3.60%	40.00%	60.00%	7.05	4.23	127.87	132.11
Stage 3	11+	3.60%	40.00%	60.00%	7.31	4.38		

K_e = 7.67%

