

COST OF CAPITAL STUDY

YIELD CAPITALIZATION

2021 Assessment Year

APPENDIX C

NATURAL GAS DISTRIBUTION

EQUITY RATE						9.00%	
CAPITAL ASSET PRICING MODEL							PAGE
	CAPM Ex Ante		5.05%				4
DIVIDEND GROWTH MODELS							
	Value Line, based on Dividends Growth		9.00%				5
	Value Line, based on Earnings Growth		10.00%				6
	Value Line, based on Return on Equity		8.00%				7
	FCFE GROWTH MODEL Multi Stage		7.50%				8
				RANGE	5.05% - 10%		
DEBT RATE						3.00%	9
MARKET CAPITAL STRUCTURE							
	Equity	55%	x	9.00%	=	4.95%	3
	Debt	45%	x	3.00%	=	1.35%	3
	Marginal Tax Rate	24%	=	(1-.24)	x	1.35%	
						<u>1.03%</u>	
WEIGHTED AVERAGE COST OF CAPITAL						5.98%	

SUPPORT FOR GUIDELINE COMPANIES

Washington State Department of Revenue

2021 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	0.80	A+	18.20	2.4%	6,791,226,000	60.0%		0.0%	4,531,780,000	40.0%	11,323,006,000
Chesapeake Util	cpk	0.80	A	24.40	1.6%	643,125,000	55.3%		0.0%	520,000,000	44.7%	1,163,125,000
New Jersey Resources	njr	0.95	A+	22.20	3.6%	1,845,108,000	44.9%		0.0%	2,264,900,000	55.1%	4,110,008,000
NiSource Inc	ni	0.80	A	16.20	3.7%	5,266,250,000	34.3%	880,000,000	5.7%	9,208,900,000	60.0%	15,355,150,000
NW Natural Gas	nwn	0.80	A	18.90	4.2%	950,150,000	52.5%		0.0%	860,200,000	47.5%	1,810,350,000
South Jersey Industries	sji	1.05	B++	14.30	5.5%	1,651,350,000	39.5%		0.0%	2,531,600,000	60.5%	4,182,950,000
Southwest Gas	swx	0.95	A	14.20	3.7%	2,698,950,000	50.1%		0.0%	2,685,700,000	49.9%	5,384,650,000
Spire Inc	sr	0.85	B++	16.60	3.9%	2,283,056,597	45.3%	242,000,000	4.8%	2,517,600,000	49.9%	5,042,656,597
ONE Gas Inc	ogs	0.80	A	19.10	2.8%	2,263,100,000	58.9%		0.0%	1,582,200,000	41.1%	3,845,300,000
UGI Corp	ugi	1.00	B++	13.40	3.8%	4,127,347,000	40.7%		0.0%	6,012,000,000	59.3%	10,139,347,000
	Mean	0.88		17.75	3.51%	2,851,966,260	48.1%		1.1%	3,271,488,000	50.8%	6,235,654,260
	Harmonic Mean	0.87		17.15	3.15%		46.7%				49.8%	
	Median	0.83		17.40	3.69%		47.7%		0.0%		49.9%	
	Weighted Mean					28,519,662,597	45.7%		0.0%	32,714,880,000	52.5%	62,356,542,597
	Say	0.85										

SUPPORT FOR CAPITAL STRUCTURE MARKET VALUE

Washington State Department of Revenue

2021 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	95.430	125,880,000	12,012,728,400	68.2%	-	0.0%	5,597,183,000	31.8%	17,609,911,400
Chesapeake Util	cpk	108.210	17,500,000	1,893,675,000	77.5%	-	0.0%	548,500,000	22.5%	2,442,175,000
New Jersey Resources	njr	35.550	95,800,000	3,405,690,000	58.5%	-	0.0%	2,417,748,000	41.5%	5,823,438,000
NiSource Inc	ni	22.940	383,000,000	8,786,020,000	42.4%	880,000,000	4.3%	11,034,200,000	53.3%	20,700,220,000
NW Natural Gas	nwn	45.520	31,000,000	1,411,120,000	56.3%	-	0.0%	1,097,348,000	43.7%	2,508,468,000
South Jersey Industries	sjj	21.550	101,000,000	2,176,550,000	40.8%	-	0.0%	3,152,224,000	59.2%	5,328,774,000
Southwest Gas	swx	60.750	57,000,000	3,462,750,000	52.4%	-	0.0%	3,148,818,000	47.6%	6,611,568,000
Spire Inc	sr	64.040	51,664,553	3,308,597,974	51.7%	242,000,000	3.8%	2,848,200,000	44.5%	6,398,797,974
ONE Gas Inc	ogs	76.770	53,000,000	4,068,810,000	67.0%	-	0.0%	2,000,000,000	33.0%	6,068,810,000
UGI Corp	ugi	34.960	209,510,000	7,324,469,600	53.2%	-	0.0%	6,451,000,000	46.8%	13,775,469,600
Mean					56.8%				42.4%	
Harmonic Mean					54.8%				39.4%	
Median					54.7%				44.1%	
			Weighted Mean	47,850,410,974	54.8%	1,122,000,000	1.3%	38,295,221,000	43.9%	87,267,631,974
Std Dev					11.5%				10.8%	
Coefficient of Variation					20.2%				25.5%	
Say					55%				45%	100%

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT CAPITAL ASSET PRICING MODEL

Washington State Department of Revenue
2021 Assessment Year - Natural Gas Distribution

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

Ke = Cost of Equity			5.05%
			to page 1
	Rm =	rate of return	5.65%
	Rf =	risk free rate	1.65%
	Rp =	risk premium	4.00%
	B =	Beta	0.85
			page 2
Rp = Risk Premium			4.00%
			to above
	Shannon Pratt and Roger Grabowski	3.50%-6.00%	
	Cost of Capital, App and Exam, 5th Ed, 2014		
	Dr. Aswath Damodaran	4.72%	chart page 15
	http://pages.stern.nyu.edu/~adamodar/	4.00%	adjusted for Rf
	2020 Implied Premium		
	John Graham and Campbell Harvey	6.20%	10 year expected real return
	Duke CFO magazine Global Business Outlook survey -	5.48%	adjusted for Rf
	4th Quarter 2020	0.93%	Rf rate used in survey
Rf = Risk Free Rate			1.65%
			to above
	Value Line Investment Survey, Selected Yields January 8, 2021, page 689		
	as of 12-31-20	US Treasury Securities year end data	
		5 year	0.37%
		10 year	0.93%
		30 year	1.67%
		30 year Zero	NA
	Federal Reserve Statistical Release (http://www.federalreserve.gov/Releases/H15/Current/)		
	as of 12-31-20	Treasury Constant Maturities	
		5 year	0.36%
		10 year	0.93%
		20 year	1.45%
		30 year	1.65%
		20 year TIPS	-0.61%
		30 year TIPS	-0.37%
			2.06%
			2.02%
			TIPS inflation indication
Inflation			2.00%
			to appraisal template
	Value Line Investment Survey, Economic Series January 31 2021 page 1500		
	Consumer Price Index Annual Rate of Change 2023-2025		2.30%
	The Livingston Survey December 18, 2020, page 4, 10		
	Inflation median (measured by the CPI) over next 10 years		2.23%
Gross Domestic Product (GDP) Nominal			3.80%
			real GDP + inflation est
	Federal Reserve Projected Long Run Real GDP Growth		
	Median Projection Value From December 16, 2020 Report		1.80%
	https://www.federalreserve.gov/monetarypolicy/files/fomcproptabl20201216.pdf		
	Congressional Budget Office Real GDP Economic Projections		
	The Budget and Economic Outlook 2021-2031		Table 2.3, pg 15
	Average Percentage Change Year To Year	2021-2025	1.90%
	https://www.cbo.gov/system/files/2021-02/56970-Outlook	2026-2031	1.70%
	Federal Reserve Bank of Philadelphia		
	The Livingston Survey, December 18, 2020, page 4, 10		
	Average Annual Real GDP Growth Rate for Next Ten Years		2.20%
	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
2021 Assessment Year
Natural Gas Distribution

Based on Dividend Growth

$$K_e = (D1 / P_0) + G$$

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	95.43	2.50	2.62%	7.50%	10.12%
Cheapeake Util	cpk	108.21	1.83	1.69%	8.00%	9.69%
New Jersey Resources	njr	35.55	1.34	3.77%	5.50%	9.27%
NiSource Inc	ni	22.94	0.88	3.84%	4.50%	8.34%
NW Natural Gas	nwn	45.52	1.92	4.22%	0.50%	4.72%
South Jersey Industries	sjj	21.55	1.25	5.80%	4.00%	9.80%
Southwest Gas	swx	60.75	2.37	3.90%	4.50%	8.40%
Spire Inc	sr	64.04	2.60	4.06%	4.50%	8.56%
ONE Gas Inc	ogs	76.77	2.32	3.02%	7.00%	10.02%
UGI Corp	ugi	34.96	1.34	3.83%	4.50%	8.33%
Mean						8.73%
Harmonic Mean						8.34%
Median						8.91%
Max						10.12%
Min						4.72%
Std Dev						1.58%
Coefficient of Variation						18.12%
Say						9.00%

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2021 Assessment Year

Natural Gas Distribution

Based on Earnings Growth

$$K_e = (D_1 / P_0) + G$$

K_e = Cost of Equity
 D_1 = Expected Dividends
 P_0 = Current Price
 G = Sustainable Growth

Company	Ticker	Stock Price (Po)	Expected Dividends (D1)	Yield (D1/Po)	Earnings Short Term Growth (G)	K_e Short Term Growth
Atmos Energy Corp	ato	95.43	2.50	2.62%	7.0%	9.62%
Chesapeake Util	cpk	108.21	1.83	1.69%	8.5%	10.19%
New Jersey Resources	njr	35.55	1.34	3.77%	1.5%	5.27%
NiSource Inc	ni	22.94	0.88	3.84%	10.0%	13.84%
NW Natural Gas	nwn	45.52	1.92	4.22%	5.5%	9.72%
South Jersey Industries	sjj	21.55	1.25	5.80%	10.5%	16.30%
Southwest Gas	swx	60.75	2.37	3.90%	8.0%	11.90%
Spire Inc	sr	64.04	2.60	4.06%	9.0%	13.06%
ONE Gas Inc	ogs	76.77	2.32	3.02%	6.5%	9.52%
UGI Corp	ugi	34.96	1.34	3.83%	5.5%	9.33%
Mean						10.88%
Harmonic Mean						9.99%
Median						9.95%
Max						16.30%
Min						5.27%
Std Dev						3.04%
Coefficient of Variation						27.93%
Say						10.00%

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

Washington State Department of Revenue

2021 Assessment Year

Natural Gas Distribution

Based on Return on Equity

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

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

Company	Ticker	Stock Price (P _o)	Expected Dividend (D1)	Expected Earnings (E1)	Dividend Yield (D1/P _o)	Retained Earnings (b)	ROE (E1/P _o)	Growth (b*ROE)	K _e Dividends	K _e Earnings
Atmos Energy Corp	ato	95.430	2.50	5.00	2.6%	51.0%	5.24%	2.67%	5.29%	7.91%
Chesapeake Util	cpk	108.210	1.83	4.25	1.7%	56.0%	3.93%	2.20%	3.89%	6.13%
New Jersey Resources	njr	35.550	1.34	1.65	3.8%	40.0%	4.64%	1.86%	5.63%	6.50%
NiSource Inc	ni	22.940	0.88	1.40	3.8%	28.0%	6.10%	1.71%	5.54%	7.81%
NW Natural Gas	nwn	45.520	1.92	2.50	4.2%	15.0%	5.49%	0.82%	5.04%	6.32%
South Jersey Industries	sjj	21.550	1.25	1.70	5.8%	25.0%	7.89%	1.97%	7.77%	9.86%
Southwest Gas	swx	60.750	2.37	4.45	3.9%	43.0%	7.33%	3.15%	7.05%	10.47%
Spire Inc	sr	64.040	2.60	3.85	4.1%	nmf	6.01%	nmf	nmf	nmf
ONE Gas Inc	ogs	76.770	2.32	3.80	3.0%	41.0%	4.95%	2.03%	5.05%	6.98%
UGI Corp	ugi	34.960	1.34	2.90	3.8%	51.0%	8.30%	4.23%	8.06%	12.53%
Mean									5.93%	8.28%
Harmonic Mean									5.64%	7.83%
Median									5.54%	7.81%
Max									8.06%	12.53%
Min									3.89%	6.13%
Std Dev									1.40%	2.21%
Coefficient of Variation									23.54%	26.69%
say									8.00%	

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

Washington State Department of Revenue

2021 Assessment Year

Natural Gas Distribution

Company	Ticker	Stock Price	Expected Earnings	P/E	Payout Ratio	ROE	Ke
Atmos Energy Corp	ato	95.43	5.00	19.09	50.00%	8.00%	6.30%
Chesapeake Util	cpk	108.21	4.25	25.46	46.00%	9.50%	3.36%
New Jersey Resources	njr	35.55	1.65	21.55	81.00%	8.50%	5.75%
NiSource Inc	ni	22.94	1.40	16.39	69.00%	8.50%	9.10%
NW Natural Gas	nwn	45.52	2.50	18.21	77.00%	7.50%	6.58%
South Jersey Industries	sjj	21.55	1.70	12.68	74.00%	10.00%	11.42%
Southwest Gas	swx	60.75	4.45	13.65	54.00%	9.00%	10.58%
Spire Inc	sr	64.04	3.85	16.63	76.00%	7.50%	8.01%
UGI Corp	ugi	34.96	2.90	12.06	46.00%	13.50%	11.57%
ONE Gas Inc	ogs	76.77	3.80	20.20	61.00%	8.50%	5.72%
Mean				17.59	63.40%	9.05%	7.84%
Harmonic Mean				16.70	60.65%	8.81%	6.85%
Median				17.42	65.00%	8.50%	7.29%
Industry Summary				17.00	63.00%	8.75%	
						Say	7.50%

SUPPORT FOR DEBT RATING AND DEBT YIELD RATE

Washington State Department of Revenue

2021 Assessment Year

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+
NW Natural Gas	nwn	A2	A+
South Jersey Industries	sjj	A3	BBB
Southwest Gas	swx	A3	A-
Spire Inc	sr	Baa2	BBB+
UGI Corp	ugi		
ONE Gas Inc	ogs	A2	BBB+
Overall Average Debt Rating		A3	A-

Mergent's Bond Record January 2021, page 251				
Corporate	Aaa	Aa	A	Baa
October	2.35%	2.55%	2.88%	3.44%
November	2.30%	2.47%	2.79%	3.30%
December	2.26%	2.44%	2.72%	3.16%
4th Qtr Average	2.30%	2.49%	2.80%	3.30%
Public Utilities	Aaa	Aa	A	Baa
October		2.72%	2.95%	3.27%
November		2.63%	2.85%	3.17%
December		2.57%	2.77%	3.05%
4th Qtr Average		2.64%	2.86%	3.16%
Industrials	Aaa	Aa	A	Baa
October	2.35%	2.37%	2.81%	3.60%
November	2.30%	2.30%	2.72%	3.41%
December	2.26%	2.31%	2.66%	3.27%
4th Qtr Average	2.30%	2.33%	2.73%	3.43%

		Avg YTM	Med YTM
S&P's Long Term Bond Yield	A-	2.84%	2.80%
Moody's Long Term Bond Yield	A3	2.78%	2.71%

Bloomberg Dec 2020	20y	25Y	30Y
A-	2.99	3.05	3.18

Debt Yield Rate	3.00%
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SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

Washington State Department of Revenue

2021 Assessment Year

Natural Gas Distribution

Company	Ticker	Stock Price	2020		2021		2020		2021	
			Actual Earnings Ratio (EPS/P)		Projected Earnings Ratio (PEPS/P)		Cash Flow Ratio (CF/P)		Projected Cash Flow Ratio	
Atmos Energy Corp	ato	95.43	4.72	4.9%	5.00	5.2%	8.03	8.4%	8.40	8.8%
Chesapeake Util	cpk	108.21	4.05	3.7%	4.25	3.9%	7.60	7.0%	8.35	7.7%
New Jersey Resources	njr	35.55	2.07	5.8%	1.65	4.6%	3.30	9.3%	2.95	8.3%
NiSource Inc	ni	22.94	1.32	5.8%	1.40	6.1%	3.10	13.5%	3.25	14.2%
NW Natural Gas	nwn	45.52	2.25	4.9%	2.50	5.5%	5.30	11.6%	5.15	11.3%
South Jersey Industries	sjj	21.55	1.60	7.4%	1.70	7.9%	2.65	12.3%	2.85	13.2%
Southwest Gas	swx	60.75	4.00	6.6%	3.85	6.3%	9.65	15.9%	7.85	12.9%
Spire Inc	sr	64.04	1.44	2.2%	2.90	4.5%	5.25	8.2%	5.30	8.3%
UGI Corp	ugi	34.96	2.67	7.6%	2.90	8.3%	4.98	14.2%	5.30	15.2%
ONE Gas Inc	ogs	76.77	3.68	4.8%	3.80	4.9%	7.30	9.5%	7.70	10.0%
			Mean	5.4%		5.7%		11.0%		11.0%
			Harmonic Mean	4.8%		5.5%		10.3%		10.4%
			Median	5.4%		5.4%		10.6%		10.7%
			Max	7.6%		8.3%		15.9%		15.2%
			Min	2.2%		3.9%		7.0%		7.7%
			Std Dev	1.6%		1.4%		3.0%		2.7%
			Coefficient of Variation	30.5%		25.0%		26.8%		24.9%
			Say	5.0%		5.5%		11.0%		11.0%

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

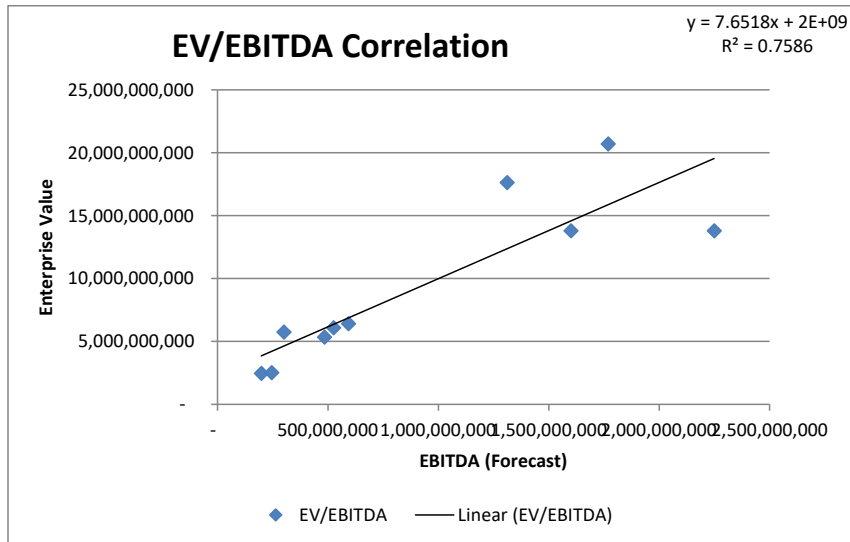
SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

Washington State Department of Revenue

2021 Assessment Year

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	95.43	17,609,911,400	1,253,927,000	4.61%	1,311,704,458	13.43	2,838,594,000	6.20	1,057,392,000	167,915,490	14.37
Chesapeake Util	cpk	108.21	2,442,175,000	180,309,000	9.87%	198,102,651	12.33	583,625,000	4.18	146,125,000	16,455,000	15.02
New Jersey Resources	njr	35.55	5,734,828,000	336,277,000	-10.61%	300,611,258	19.08	2,270,460,000	2.53	282,610,000	72,532,440	16.15
NiSource Inc	ni	22.94	20,700,220,000	1,687,300,000	4.84%	1,768,943,548	11.70	5,381,150,000	3.85	1,244,750,000	331,026,000	13.14
NW Natural Gas	nwn	45.52	2,508,468,000	252,034,000	-2.83%	244,900,962	10.24	819,950,000	3.06	159,650,000	32,920,440	13.03
South Jersey Industries	sjj	21.55	5,328,774,000	450,291,000	7.55%	484,275,226	11.00	1,641,250,000	3.25	287,850,000	94,566,720	13.93
Southwest Gas	swx	60.75	6,398,797,974	552,300,000	7.25%	592,363,212	10.80	3,380,100,000	1.89	589,950,000	94,464,540	9.35
Spire Inc	sr	64.04	13,775,469,600	1,504,000,000	49.52%	2,248,838,095	6.13	1,805,676,127	7.63	405,566,741	85,446,000	28.06
UGI Corp	ugi	34.96	13,775,469,600	1,504,000,000	6.43%	1,600,642,570	8.61	6,987,158,500	1.97	1,110,403,000	193,530,000	10.56
ONE Gas Inc	ogs	76.77	6,068,810,000	498,397,000	5.48%	525,706,425	11.54	1,600,600,000	3.79	408,100,000	60,000,000	12.96
Mean							11.49		3.84			14.66
Harmonic Mean							10.63		3.20			13.57
Median							11.27		3.52			13.54
Std Dev							3.36		1.83			5.11
Coefficient of Variation							0.29		0.48			0.35
Say							11.50		3.50			14.00



Forecast EV/EBITDA By Rank

Guideline Companies	EV/EBITDA forecast	
Spire Inc	6.13	
UGI Corp	8.61	8.92 Harmonic Mean
NW Natural Gas	10.24	9.36 Low Average
Southwest Gas	10.80	10.24 Low Median
South Jersey Industries	11.00	9.00 Say
ONE Gas Inc	11.54	13.15 High Harmonic Mean
NiSource Inc	11.70	13.62 High Average
Chesapeake Util	12.33	12.33 High Median
Atmos Energy Corp	13.43	13.00 Say
New Jersey Resources	19.08	

SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

2021 Assessment Year

Natural Gas Distribution

Company	Ticker	Stock Price	Revenues Multiple	Cash Flow Multiple	Earnings Multiple	Book Value Multiple				
Atmos Energy Corp	ato	95.43	22.41	4.26	8.03	11.88	4.72	20.22	53.95	1.77
Chesapeake Util	cpk	108.21	28.55	3.79	7.60	14.24	4.05	26.72	36.75	2.94
New Jersey Resources	njr	35.55	20.39	1.74	3.30	10.77	2.07	17.17	19.26	1.85
NiSource Inc	ni	22.94	12.22	1.88	3.10	7.40	1.32	17.38	13.75	1.67
NW Natural Gas	nwn	45.52	24.65	1.85	5.30	8.59	2.25	20.23	30.65	1.49
South Jersey Industries	sjj	21.55	15.60	1.38	2.65	8.13	1.60	13.47	16.35	1.32
Southwest Gas	swx	60.75	57.65	1.05	9.65	6.30	4.00	15.19	47.35	1.28
Spire Inc	sr	64.04	35.96	1.78	5.25	12.20	1.44	44.47	44.19	1.45
UGI Corp	ugi	34.96	31.31	1.12	4.98	7.02	2.67	13.09	19.70	1.77
ONE Gas Inc	ogs	76.77	28.30	2.71	7.30	10.52	3.68	20.86	42.70	1.80
		Mean		2.16		9.70		20.88		1.73
		Harmonic Mean		1.77		9.09		18.55		1.65
		Median		1.81		9.55		18.80		1.72
		Max		4.26		14.24		44.47		2.94
		Min		1.05		6.30		13.09		1.28
		Say		2.00		9.25		20.00		1.50

DATA INPUT

Washington State Department of Revenue

2021 Assessment Year

Natural Gas Distribution

Guideline Companies		Stock Price 12/31/20	Historic Figures (2020)													
			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	95.43	0.80	A+	22.41	8.03	4.72	2.30	53.95	125,880,000	1.77	4,531,780,000	18.20	2.9%	122.75%	
Chesapeake Util	cpk	108.21	0.80	A	28.55	7.60	4.05	1.69	36.75	17,500,000	2.94	520,000,000	24.40	1.8%	104.88%	
New Jersey Resources	njr	35.55	0.95	A+	20.39	3.30	2.07	1.27	19.26	95,800,000	1.85	2,264,900,000	22.20	3.6%	114.98%	
NiSource Inc	ni	22.94	0.80	A	12.22	3.10	1.32	0.84	13.75	383,000,000	1.67	9,208,900,000	16.20	3.9%	119.38%	
NW Natural Gas	nwn	45.52	0.80	A	24.65	5.30	2.25	1.91	30.65	31,000,000	1.49	860,200,000	18.90	4.1%	119.64%	
South Jersey Industries	sji	21.55	1.05	B++	15.60	2.65	1.60	1.19	16.35	101,000,000	1.32	2,531,600,000	14.30	5.3%	107.98%	
Southwest Gas	swx	60.75	0.95	A	57.65	9.65	4.00	2.26	47.35	57,000,000	1.28	2,685,700,000	14.20	3.8%	115.25%	
Spire Inc	sr	64.04	0.85	B++	35.96	5.25	1.44	2.49	44.19	51,664,553	1.45	2,517,600,000	16.60	4.1%	117.51%	
ONE Gas Inc	ogs	76.77	0.80	A	28.30	7.30	3.68	2.16	42.70	53,000,000	1.80	1,582,200,000	19.10	3.2%	125.00%	
UGI Corp	ugi	34.96	1.00	B++	31.31	4.98	2.67	1.32	19.70	209,510,000	1.77	6,012,000,000	13.40	3.4%	107.02%	

Average

Harmonic Mean

Median

17.75

17.15

17.40

Value Line 2/26/2021

Projected (Next Year) 2021												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 24-26	Earnings Projection 24-26	Operating Income	Current Assets	PP & E Gross
Formula	V L	V L	V L	V L	V L	V L	V L	VL	V L	V L	V L	Morningstar	Morningstar	Morningstar
49%	49%	8.6%	22.55	8.40	5.00	2.50	61.35	50.0%	8.0%	10.25	6.50	824,099,000	471,258,000	16,184,367,000
42%	44%	10.5%	33.35	8.35	4.25	1.83	41.40	46.0%	9.5%	11.90	5.75	112,593,000	136,431,000	1,908,992,000
61%	60%	10.6%	23.70	2.95	1.65	1.34	19.80	81.0%	8.5%	3.90	2.45	216,383,000	622,332,000	4,918,946,000
64%	72%	8.0%	14.05	3.25	1.40	0.88	14.20	69.0%	8.5%	4.40	2.30	961,400,000	1,659,400,000	24,179,900,000
85%	85%	7.5%	26.45	5.15	2.50	1.92	33.85	77.0%	7.5%	6.85	3.10	148,351,000	323,245,000	3,955,244,000
74%	75%	9.5%	16.25	2.85	1.70	1.25	17.00	74.0%	10.0%	3.95	2.50	279,644,000	506,828,000	5,413,425,000
57%	57%	8.5%	59.30	10.35	4.45	2.37	50.00	54.0%	9.0%	13.75	6.50	423,004,000	871,013,000	9,711,541,000
173%	NMF	3.5%	34.95	7.85	3.85	2.60	52.45	76.0%	7.5%	10.35	5.15	355,000,000	590,600,000	7,217,600,000
59%	59%	8.5%	30.20	7.70	3.80	2.32	45.80	61.0%	8.5%	9.65	5.00	303,516,000	539,869,000	6,838,603,000
49%	49%	13.6%	33.35	5.30	2.90	1.34	21.35	46.0%	13.5%	6.20	3.55	1,020,000,000	1,543,000,000	10,658,000,000

61.1% 8.9%
58.6% 7.9%
59.0% 8.6%

63.4% 9.1% 8.12
60.6% 8.8% 6.67
65.0% 8.5% 8.25

Balance Sheet			Cash Flow Statement	Other Financials	
Intangibles (excl. GW)	Current Liabilities	Long Term Debt Less Current Maturities	Depreciation & Amortization	Carrying Value Debt	Fair Value Debt
Morningstar	Morningstar	Morningstar	Morningstar	10-K	10-K
	782,401,000	4,523,313,000	429,828,000	4,560,000,000	5,597,183,000
8,292,000	329,032,000	508,499,000	67,716,000	523,000,000	548,500,000
14,767,000	533,722,000	2,354,496,000	119,894,000	2,102,845,000	2,417,748,000
	2,279,400,000	9,219,800,000	725,900,000	9,243,100,000	11,034,200,000
	627,083,000	860,081,000	103,683,000	917,220,000	1,097,348,000
	1,163,632,000	2,776,400,000	170,647,000	2,919,201,000	3,152,224,000
	911,676,000	2,732,200,000	332,027,000	2,732,200,000	3,148,818,000
	1,449,200,000	2,423,700,000	197,300,000	2,423,700,000	2,848,200,000
	797,079,000	1,582,428,000	194,881,000	1,600,000,000	2,000,000,000
1,220,000,000	1,755,000,000	5,981,000,000	484,000,000	6,028,000,000	6,451,000,000

STOCK PRICE

Washington State Department of Revenue
 2021 Assessment Year
 Natural Gas Distribution

								56.57
								Year End
Atmos Energy Corp ato								
	Date	Open	High	Low	Close	Adj Close*	Volume	95.430
12/31/2020	93.27	95.49	93.02	95.43	95.43	631,500		
Chesapeake Util cpk								
	Date	Open	High	Low	Close	Adj Close*	Volume	108.210
12/31/2020	106.40	108.64	106.40	108.21	108.21	73,700		
New Jersey Resources njr								
	Date	Open	High	Low	Close	Adj Close*	Volume	35.550
12/31/2020	34.92	35.72	34.74	35.55	35.55	388,300		
Nisource Inc ni								
	Date	Open	High	Low	Close	Adj Close*	Volume	22.940
12/31/2020	22.59	22.96	22.48	22.94	22.94	1,808,400		
NW Natural Gas nwn								
	Date	Open	High	Low	Close	Adj Close*	Volume	45.515
12/31/2020	45.78	46.14	45.05	45.99	45.52	304,900		
South Jersey Industries sji								
	Date	Open	High	Low	Close	Adj Close*	Volume	21.550
12/31/2020	21.59	21.62	21.27	21.55	21.55	829,200		
Southwest Gas Corp swx								
	Date	Open	High	Low	Close	Adj Close*	Volume	60.750
12/31/2020	59.85	60.96	59.33	60.75	60.75	289,900		
Spire Inc sr								
	Date	Open	High	Low	Close	Adj Close*	Volume	64.040
12/31/2020	63.65	64.31	63.19	64.04	64.04	179,100		
UGI Corp ugi								
	Date	Open	High	Low	Close	Adj Close*	Volume	34.960
12/31/2020	34.64	35.20	34.48	34.96	34.96	1,065,900		
One Gas Inc ogs								
	Date	Open	High	Low	Close	Adj Close*	Volume	76.770
12/31/2020	76.02	77.11	75.48	76.77	76.77	142,500		

Source:
 finance.yahoo.com
 Historical Stock Quotes

IMPLIED PREMIUMS FOR US MARKET																	
Updated January 2021																	
These implied premiums are calculated using the S&P 500.																	
Year	Earnings Yield	Dividend Yield	S&P 500	Earnings*	Dividends*	Yields + Buybacks	Change in Earnings	Earnings in Dividends	T.Bill Rate	T.Bond Rate	Bond-Bill	Uncovered Growth	Premium	Net Growth Es	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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		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%		4.90%	0.47	
1983	8.06%	4.32%	164.93	13.29	7.12		-3.84%	2.76%	8.80%	11.80%	3.00%	9.09%	4.31%		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%		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%	3.84%	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%	3.58%	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%	3.99%	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%	3.77%	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%	3.51%	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%	3.89%	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%	3.48%	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%	3.55%	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%	3.17%	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%	3.55%	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%	3.29%	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%	3.20%	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%	2.73%	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%	2.26%	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%	2.05%	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%	2.87%	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%	3.62%	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%	4.73%	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%	4.74%	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%	4.86%	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%	5.22%	0.93
2006	6.18%	1.77%	1418.3	87.72	25.05	73.16	14.74%	11.93%	4.88%	4.79%	-0.18%	5.93%	1.97%	12.50%	4.16%	6.12%	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%	4.59%	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%	6.92%	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%	4.64%	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%	6.09%	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%	8.34%	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%	7.30%	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%	4.99%	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%	5.48%	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%	5.16%	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%	4.50%	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%	4.75%	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%	5.55%	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%	5.06%	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%	5.42%	4.72%	4.94%	5.08

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

Three Stage Free Cash Flow to Equity Discount Model

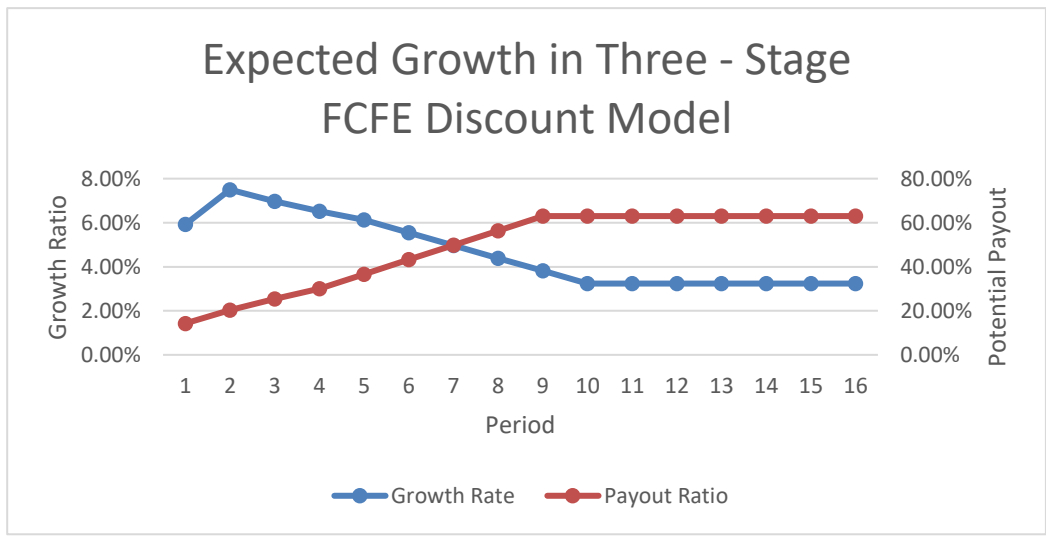
Company **Atmos Energy Corp**

Ticker **ato**

3.80% GDP
 17 Industry P/E
 63.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		67.80%	32.20%	4.72			(95.43)
	1	5.93%	85.71%	14.29%	5.00	0.71		0.71
	2	7.50%	79.73%	20.27%	5.38	1.09		1.09
Stage 1	3	6.98%	74.53%	25.47%	5.75	1.46		1.46
	4	6.52%	69.97%	30.03%	6.13	1.84		1.84
	5	6.12%	63.38%	36.62%	6.50	2.38		2.38
	6	5.55%	56.78%	43.22%	6.86	2.96		2.96
	7	4.97%	50.19%	49.81%	7.20	3.59		3.59
Stage 2	8	4.39%	43.59%	56.41%	7.52	4.24		4.24
	9	3.81%	37.00%	63.00%	7.80	4.92		4.92
	10	3.24%	37.00%	63.00%	8.06	5.08	141.40	146.48
Stage 3	11+	3.24%	37.00%	63.00%	8.32	5.24		

$K_e = 6.30\%$



Three Stage Free Cash Flow to Equity Discount Model

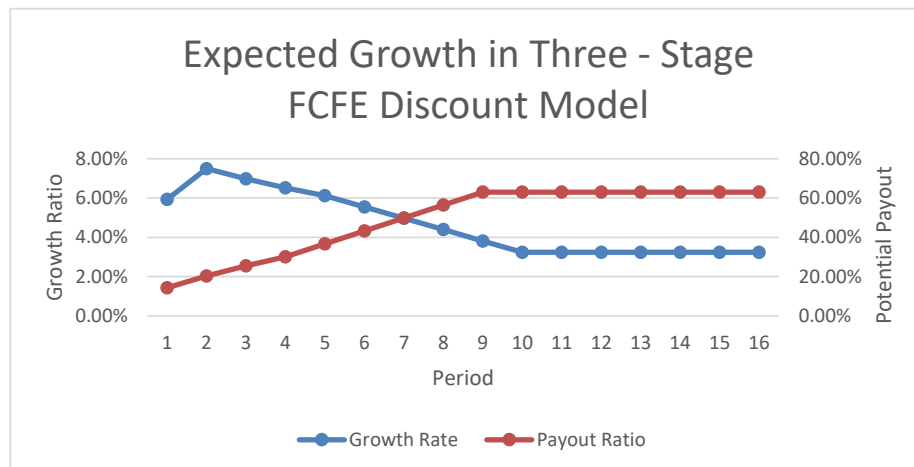
Company **Chesapeake Utilities**

Ticker **cpk**

3.80% GDP
 17 Industry P/E
 63.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		56.44%	43.56%	4.05			#####
	1	4.94%	100.84%	-0.84%	4.25	(0.04)		-0.04
	2	8.82%	92.66%	7.34%	4.63	0.34		0.34
Stage 1	3	8.11%	85.71%	14.29%	5.00	0.71		0.71
	4	7.50%	79.73%	20.27%	5.38	1.09		1.09
	5	6.98%	71.19%	28.81%	5.75	1.66		1.66
	6	6.23%	62.64%	37.36%	6.11	2.28		2.28
	7	5.48%	54.09%	45.91%	6.44	2.96		2.96
Stage 2	8	4.73%	45.55%	54.45%	6.75	3.67		3.67
	9	3.99%	37.00%	63.00%	7.02	4.42		4.42
	10	3.24%	37.00%	63.00%	7.24	4.56	127.14	131.70
Stage 3	11+	3.24%	37.00%	63.00%	7.48	4.71		

$K_e = 3.36\%$



Three Stage Free Cash Flow to Equity Discount Model

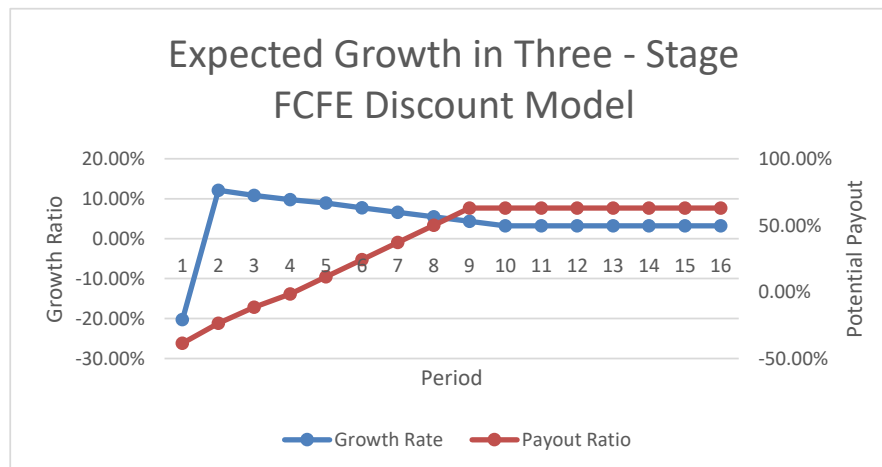
Company **New Jersey Resources**

Ticker **njr**

3.80% GDP
 17.0 Industry P/E
 63.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		-231.88%	331.88%	2.07			(35.55)
	1	-20.29%	138.53%	-38.53%	1.65	(0.64)		-0.64
	2	12.12%	123.55%	-23.55%	1.85	(0.44)		-0.44
Stage 1	3	10.81%	111.50%	-11.50%	2.05	(0.24)		-0.24
	4	9.76%	101.59%	-1.59%	2.25	(0.04)		-0.04
	5	8.89%	88.67%	11.33%	2.45	0.28		0.28
	6	7.76%	75.75%	24.25%	2.64	0.64		0.64
	7	6.63%	62.83%	37.17%	2.82	1.05		1.05
Stage 2	8	5.50%	49.92%	50.08%	2.97	1.49		1.49
	9	4.37%	37.00%	63.00%	3.10	1.95		1.95
	10	3.24%	37.00%	63.00%	3.20	2.02	56.16	58.18
Stage 3	11+	3.24%	37.00%	63.00%	3.30	2.08		

$K_e = 5.75\%$



Three Stage Free Cash Flow to Equity Discount Model

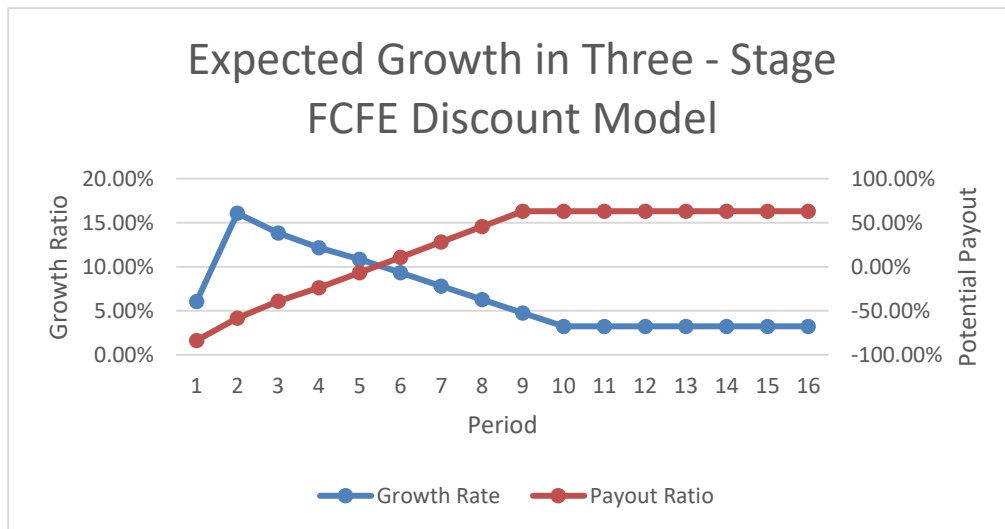
Company **Nisource Inc**

Ticker **ni**

3.80% GDP
 17.0 Industry P/E
 63.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		69.26%	30.74%	1.32			(22.94)
	1	6.06%	183.67%	-83.67%	1.40	(1.17)		-1.17
	2	16.07%	158.24%	-58.24%	1.63	(0.95)		-0.95
Stage 1	3	13.85%	139.00%	-39.00%	1.85	(0.72)		-0.72
	4	12.16%	123.92%	-23.92%	2.08	(0.50)		-0.50
	5	10.84%	106.54%	-6.54%	2.30	(0.15)		-0.15
	6	9.32%	89.15%	10.85%	2.51	0.27		0.27
	7	7.80%	71.77%	28.23%	2.71	0.77		0.77
Stage 2	8	6.28%	54.38%	45.62%	2.88	1.31		1.31
	9	4.76%	37.00%	63.00%	3.02	1.90		1.90
	10	3.24%	37.00%	63.00%	3.12	1.96	54.68	56.64
Stage 3	11+	3.24%	37.00%	63.00%	3.22	2.03		

Ke = 9.10%



Three Stage Free Cash Flow to Equity Discount Model

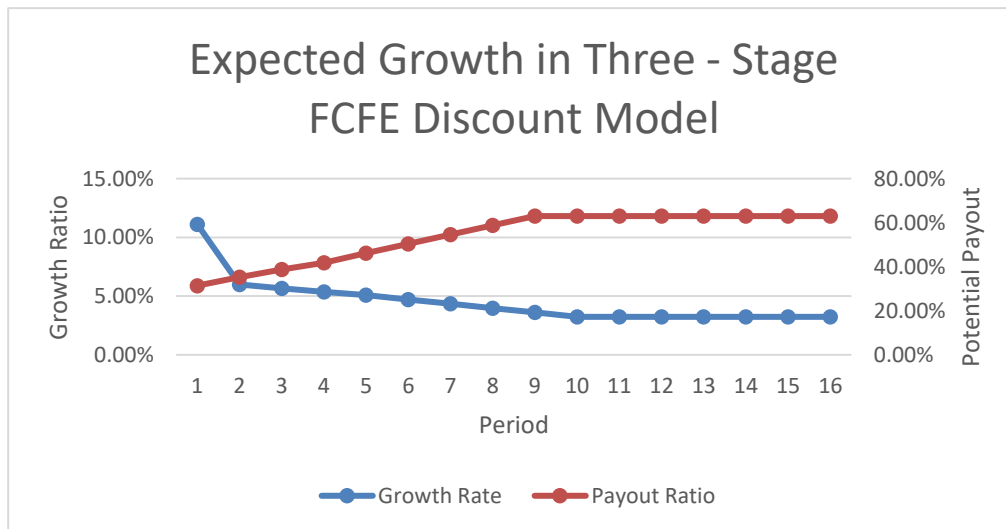
Company **NW Nat'l Gas**

Ticker **nwn**

3.80% GDP
 17.0 Industry P/E
 63.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		126.98%	-26.98%	2.25			(45.52)
Stage 1	1	11.11%	68.57%	31.43%	2.50	0.79		0.79
	2	6.00%	64.69%	35.31%	2.65	0.94		0.94
	3	5.66%	61.22%	38.78%	2.80	1.09		1.09
	4	5.36%	58.11%	41.89%	2.95	1.24		1.24
	5	5.08%	53.89%	46.11%	3.10	1.43		1.43
Stage 2	6	4.72%	49.67%	50.33%	3.25	1.63		1.63
	7	4.35%	45.44%	54.56%	3.39	1.85		1.85
	8	3.98%	41.22%	58.78%	3.52	2.07		2.07
	9	3.61%	37.00%	63.00%	3.65	2.30		2.30
	10	3.24%	37.00%	63.00%	3.77	2.37	66.11	68.49
Stage 3	11+	3.24%	37.00%	63.00%	3.89	2.45		

$K_e = 6.58\%$



Three Stage Free Cash Flow to Equity Discount Model

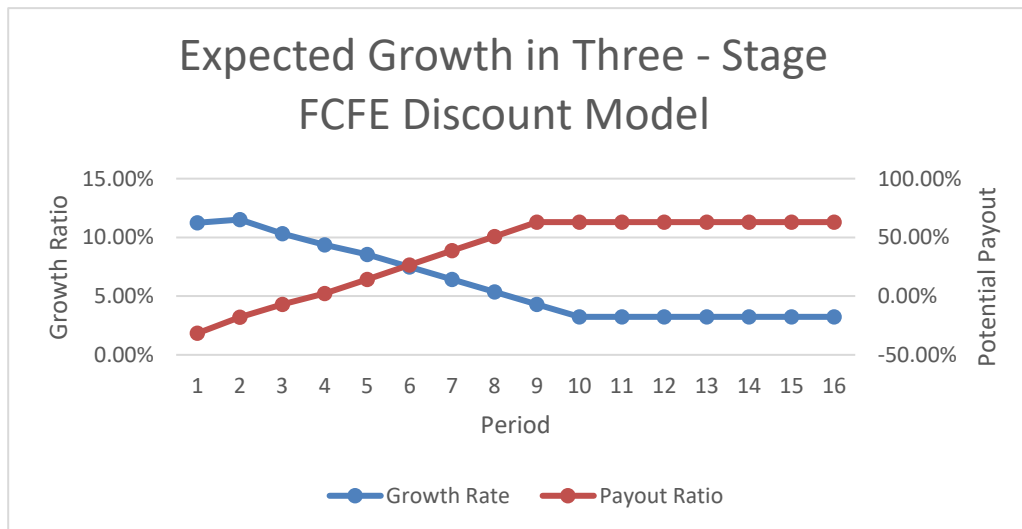
Company **Southwest Gas**

Ticker **SWX**

3.80% GDP
 17.0 Industry P/E
 63.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		128.57%	-28.57%	4.00			(60.75)
	1	11.25%	131.62%	-31.62%	4.45	(1.41)		-1.41
	2	11.52%	118.03%	-18.03%	4.96	(0.89)		-0.89
Stage 1	3	10.33%	106.98%	-6.98%	5.48	(0.38)		-0.38
	4	9.36%	97.82%	2.18%	5.99	0.13		0.13
	5	8.56%	85.66%	14.34%	6.50	0.93		0.93
	6	7.50%	73.49%	26.51%	6.99	1.85		1.85
	7	6.43%	61.33%	38.67%	7.44	2.88		2.88
Stage 2	8	5.37%	49.16%	50.84%	7.84	3.98		3.98
	9	4.30%	37.00%	63.00%	8.17	5.15		5.15
	10	3.24%	37.00%	63.00%	8.44	5.32	148.08	153.39
Stage 3	11+	3.24%	37.00%	63.00%	8.71	5.49		

$K_e = 10.58\%$



Three Stage Free Cash Flow to Equity Discount Model

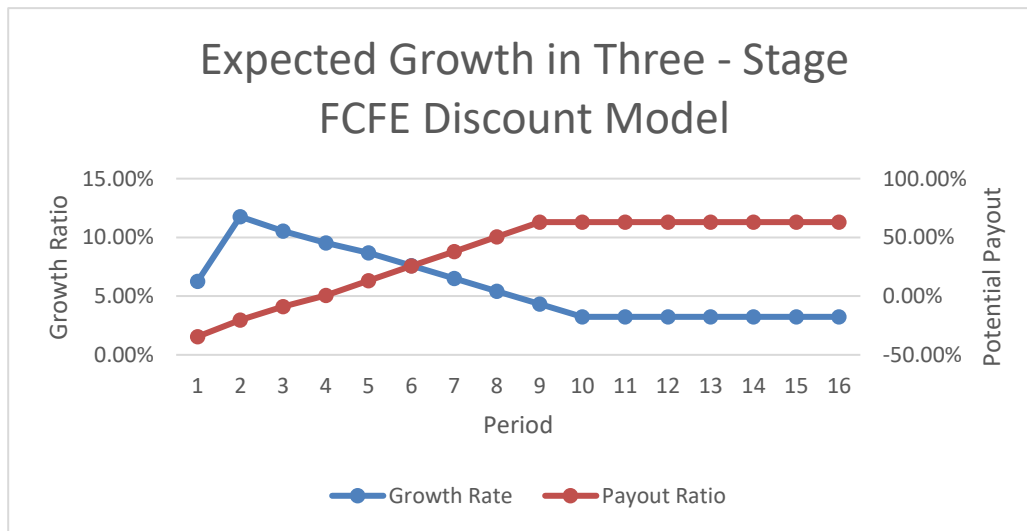
Company **South Jersey Industries**

Ticker **sjj**

3.80% GDP
 17.0 Industry P/E
 63.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		71.43%	28.57%	1.60			(21.55)
	1	6.25%	134.45%	-34.45%	1.70	(0.59)		-0.59
	2	11.76%	120.30%	-20.30%	1.90	(0.39)		-0.39
Stage 1	3	10.53%	108.84%	-8.84%	2.10	(0.19)		-0.19
	4	9.52%	99.38%	0.62%	2.30	0.01		0.01
	5	8.70%	86.90%	13.10%	2.50	0.33		0.33
	6	7.60%	74.43%	25.57%	2.69	0.69		0.69
	7	6.51%	61.95%	38.05%	2.87	1.09		1.09
Stage 2	8	5.42%	49.48%	50.52%	3.02	1.53		1.53
	9	4.33%	37.00%	63.00%	3.15	1.99		1.99
	10	3.24%	37.00%	63.00%	3.25	2.05	57.10	59.15
Stage 3	11+	3.24%	37.00%	63.00%	3.36	2.12		

$K_e = 11.42\%$



Three Stage Free Cash Flow to Equity Discount Model

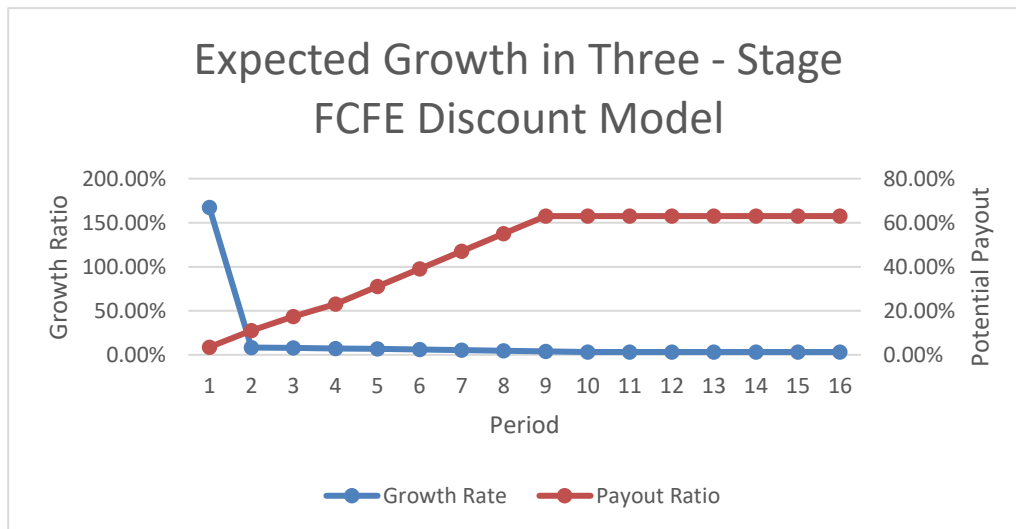
Company **Spire Inc**

Ticker **sr**

3.80% GDP
 17.0 Industry P/E
 63.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		1912.70%	-1812.70%	1.44			(64.04)
	1	#####	96.47%	3.53%	3.85	0.14		0.14
	2	8.44%	88.96%	11.04%	4.18	0.46		0.46
Stage 1	3	7.78%	82.54%	17.46%	4.50	0.79		0.79
	4	7.22%	76.98%	23.02%	4.83	1.11		1.11
	5	6.74%	68.98%	31.02%	5.15	1.60		1.60
	6	6.04%	60.99%	39.01%	5.46	2.13		2.13
	7	5.34%	52.99%	47.01%	5.75	2.70		2.70
Stage 2	8	4.64%	45.00%	55.00%	6.02	3.31		3.31
	9	3.94%	37.00%	63.00%	6.26	3.94		3.94
	10	3.24%	37.00%	63.00%	6.46	4.07	113.35	117.42
Stage 3	11+	3.24%	37.00%	63.00%	6.67	4.20		

$K_e = 8.01%$



Three Stage Free Cash Flow to Equity Discount Model

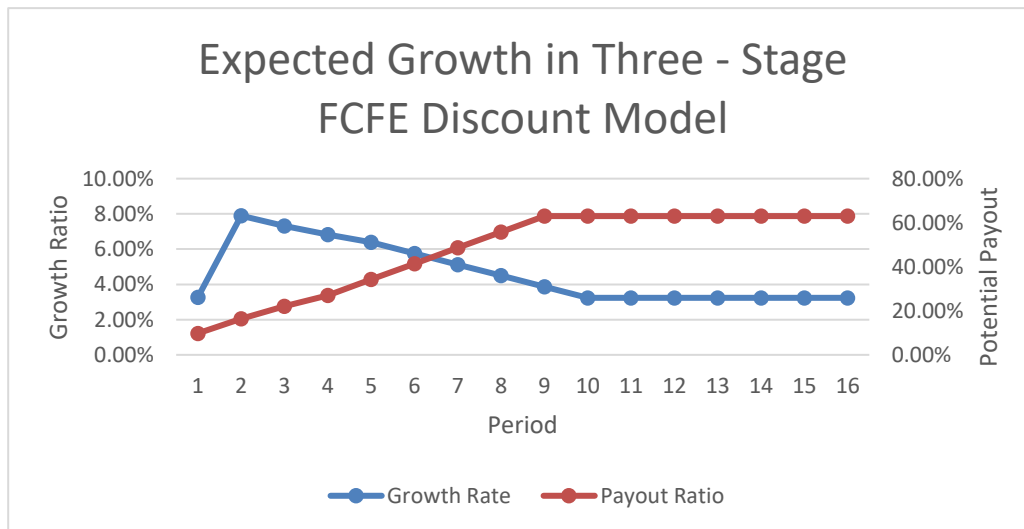
Company **ONE Gas Inc**

Ticker **ogs**

3.80% GDP
 17.0 Industry P/E
 63.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		37.27%	62.73%	3.68			(76.77)
	1	3.26%	90.23%	9.77%	3.80	0.37		0.37
	2	7.89%	83.62%	16.38%	4.10	0.67		0.67
Stage 1	3	7.32%	77.92%	22.08%	4.40	0.97		0.97
	4	6.82%	72.95%	27.05%	4.70	1.27		1.27
	5	6.38%	65.76%	34.24%	5.00	1.71		1.71
	6	5.75%	58.57%	41.43%	5.29	2.19		2.19
	7	5.12%	51.38%	48.62%	5.56	2.70		2.70
Stage 2	8	4.50%	44.19%	55.81%	5.81	3.24		3.24
	9	3.87%	37.00%	63.00%	6.03	3.80		3.80
	10	3.24%	37.00%	63.00%	6.23	3.92	109.31	113.24
Stage 3	11+	3.24%	37.00%	63.00%	6.43	4.05		

$K_e = 5.72\%$



Three Stage Free Cash Flow to Equity Discount Model

Company **UGI Corp**

Ticker **ugi**

3.80% GDP
 17.0 Industry P/E
 63.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		98.45%	1.55%	2.67			(34.96)
	1	8.61%	64.04%	35.96%	2.90	1.04		1.04
	2	5.60%	60.64%	39.36%	3.06	1.21		1.21
Stage 1	3	5.31%	57.59%	42.41%	3.23	1.37		1.37
	4	5.04%	54.82%	45.18%	3.39	1.53		1.53
	5	4.80%	51.26%	48.74%	3.55	1.73		1.73
	6	4.49%	47.69%	52.31%	3.71	1.94		1.94
	7	4.17%	44.13%	55.87%	3.86	2.16		2.16
Stage 2	8	3.86%	40.56%	59.44%	4.01	2.39		2.39
	9	3.55%	37.00%	63.00%	4.16	2.62		2.62
	10	3.24%	37.00%	63.00%	4.29	2.70	75.29	78.00
Stage 3	11+	3.24%	37.00%	63.00%	4.43	2.79		

$K_e = 11.57%$

