

COST OF CAPITAL STUDY

YIELD CAPITALIZATION

2024 Assessment Year

APPENDIX C

NATURAL GAS DISTRIBUTION

EQUITY RATE		9.00%				
CAPITAL ASSET PRICING MODEL				PAGE		
CAPM Ex Ante	7.99%			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	8.75%			7		
FCFE GROWTH MODEL Multi Stage	7.75%			8		
		RANGE	7.75% - 10%			
DEBT RATE		6.00%		9		
SECURED DEBT (LEASE) RATE		5.00%		9		
MARKET CAPITAL STRUCTURE						
Equity	60%	x	9.00%	=	5.40%	3
Debt	40%	x	6.00%	=	2.40%	3
Marginal Tax Rate	24%	=	(1-.24)	x	2.40%	<u>1.82%</u>
WEIGHTED AVERAGE COST OF CAPITAL		7.22%				

SUPPORT FOR GUIDELINE COMPANIES

Washington State Department of Revenue

2024 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+	18.60	2.6%	10,869,468,000	59.1%		0.0%	7,529,300,000	40.9%	18,398,768,000
Chesapeake Util	cpk	0.80	A	21.30	2.1%	912,050,000	58.6%		0.0%	643,800,000	41.4%	1,555,850,000
New Jersey Resources	njr	0.95	A	18.30	3.5%	1,990,428,000	42.1%		0.0%	2,739,000,000	57.9%	4,729,428,000
NiSource Inc	ni	0.90	B++	16.30	3.4%	8,071,750,000	37.5%	880,000,000	4.1%	12,558,300,000	58.4%	21,510,050,000
Northwest Natural Gas	nwn	0.85	A	13.30	5.0%	1,172,900,000	45.2%		0.0%	1,424,600,000	54.8%	2,597,500,000
Southwest Gas	swx	0.90	A	NMF	3.9%	3,600,000,000	40.7%		0.0%	5,235,500,000	59.3%	8,835,500,000
Spire Inc	sr	0.85	B++	16.00	4.6%	2,675,428,000	41.8%	242,000,000	3.8%	3,489,800,000	54.5%	6,407,228,000
ONE Gas Inc	ogs	0.85	B++	15.20	4.1%	2,611,275,000	58.4%		0.0%	1,862,600,000	41.6%	4,473,875,000
UGI Corp	ugi	1.10	B++	8.30	6.0%	4,218,200,000	38.5%		0.0%	6,746,000,000	61.5%	10,964,200,000
	Mean	0.89		15.91	3.90%	4,013,499,889	46.9%		0.9%	4,692,100,000	52.3%	8,830,266,556
	Harmonic Mean	0.89		14.80	3.56%		45.4%				50.9%	
	Median	0.85		16.15	3.91%		42.1%		0.0%		54.8%	
	Weighted Mean					36,121,499,000	45.5%		0.0%	42,228,900,000	53.1%	79,472,399,000
	Say	0.89										

**SUPPORT FOR CAPITAL STRUCTURE
MARKET VALUE**

Washington State Department of Revenue
2024 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	115.900	148,490,000	17,209,991,000	76.1%	-	0.0%	5,402,591,000	23.9%	22,612,582,000
Chesapeake Util	cpk	105.630	18,500,000	1,954,155,000	62.0%	-	0.0%	1,200,000,000	38.0%	3,154,155,000
New Jersey Resources	njr	44.580	97,570,000	4,349,670,600	67.4%	-	0.0%	2,106,536,000	32.6%	6,456,206,600
NiSource Inc	ni	29.550	415,000,000	12,263,250,000	52.2%	880,000,000	3.7%	10,370,900,000	44.1%	23,514,150,000
Northwest Natural Gas	nwn	38.940	37,000,000	1,440,780,000	53.8%	-	0.0%	1,236,559,000	46.2%	2,677,339,000
Southwest Gas	swx	63.350	72,000,000	4,561,200,000	59.1%	-	0.0%	3,162,068,000	40.9%	7,723,268,000
Spire Inc	sr	62.340	53,200,000	3,316,488,000	48.6%	242,000,000	3.5%	3,270,200,000	47.9%	6,828,688,000
ONE Gas Inc	ogs	63.720	55,500,000	3,536,460,000	55.8%	-	0.0%	2,800,000,000	44.2%	6,336,460,000
UGI Corp	ugi	24.600	210,910,000	5,188,386,000	45.4%	-	0.0%	6,238,000,000	54.6%	11,426,386,000
Mean					57.8%				41.4%	
Harmonic Mean					56.5%				39.2%	
Median					55.8%				44.1%	
Weighted Mean				53,820,380,600	59.3%	1,122,000,000	1.2%	35,786,854,000	39.4%	90,729,234,600
Std Dev					9.6%				9.0%	
Coefficient of Variation					16.6%				21.8%	
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

Ex Ante
Ke = Rf + B (Rp)

Ke = Cost of Equity		7.99%
		to page 1
	Rm = rate of return	8.48%
	Rf = risk free rate	4.03%
	Rp = risk premium	4.45%
	B = Beta	0.89
		page 2
Rp = Risk Premium		4.45%
		to above
	Shannon Pratt and Roger Grabowski	3.50%-6.00%
	Cost of Capital, App and Exam, 5th Ed, 2014	
	Dr. Aswath Damodaran	4.60%
	http://pages.stern.nyu.edu/~adamodar/	4.45%
	2023 Implied Premium	adjusted for Rf
Rf = Risk Free Rate		4.03%
		to above
	Value Line Investment Survey, Selected Yields January 12, 2024, page 829	
	as of 12-29-23	
	US Treasury Securities year end data	
	5 year	3.84%
	10 year	3.88%
	30 year	4.03%
	30 year Zero	4.00%
	Federal Reserve Statistical Release (http://www.federalreserve.gov/Releases/H15/Current/)	
	As of 12-29-23	
	Treasury Constant Maturities	
	5 year	3.84%
	10 year	3.88%
	20 year	4.20%
	30 year	4.03%
	20 year TIPS	<u>1.82%</u>
	30 year TIPS	<u>1.90%</u>
		2.38%
		2.13%
		TIPS inflation indication
Inflation		2.13%
		to appraisal template
	The Livingston Survey December 15, 2023, page 2, 8	
	Inflation median (measured by the Consumer Price Index) over next 10 years	2.26%
Gross Domestic Product (GDP) Nominal		3.93%
		real GDP + inflation est
	Federal Reserve Projected Long Run Real GDP Growth	
	Median Projection Value From Dec 13, 2023 Report	1.80%
	https://www.federalreserve.gov/monetarypolicy/files/fomcprojt20231213.pdf	
	Congressional Budget Office Real GDP Economic Projections	
	The Budget and Economic Outlook 2024-2034	Table 2.3, pg 55
	Average Percentage Change Year To Year	2024-2028
	https://www.cbo.gov/system/files/2024-02/59710-Outli	2029-2034
		2.20%
		1.90%
	Federal Reserve Bank of Philadelphia	
	The Livingston Survey, December 15, 2023, page 8	
	Average Real GDP Growth Rate for Next 10 Years	2.00%
	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
2024 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	115.90	3.22	2.78%	7.50%	10.28%
Cheapeake Util	cpk	105.63	2.44	2.31%	8.50%	10.81%
New Jersey Resources	njr	44.58	1.68	3.77%	5.00%	8.77%
NiSource Inc	ni	29.55	1.06	3.59%	4.50%	8.09%
Northwest Natural Gas	nwn	38.94	1.95	5.01%	0.50%	5.51%
Southwest Gas	swx	63.35	2.48	3.91%	5.50%	9.41%
Spire Inc	sr	62.34	3.02	4.84%	4.50%	9.34%
ONE Gas Inc	ogs	63.72	2.64	4.14%	3.00%	7.14%
UGI Corp	ugi	24.60	1.52	6.18%	3.50%	9.68%
Mean						8.78%
Harmonic Mean						8.45%
Median						9.34%
Max						10.81%
Min						5.51%
Std Dev						1.65%
Coefficient of Variation						18.78%
Say						9.00%

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

Washington State Department of Revenue

2024 Assessment Year

Natural Gas Distribution

Based on Earnings 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 Dividends (D1)	Yield (D1/Po)	Earnings Short Term Growth (G)	Ke Short Term Growth
Atmos Energy Corp	ato	115.90	3.22	2.78%	7.0%	9.78%
Chesapeake Util	cpk	105.63	2.44	2.31%	5.0%	7.31%
New Jersey Resources	njr	44.58	1.68	3.77%	5.0%	8.77%
NiSource Inc	ni	29.55	1.06	3.59%	9.5%	13.09%
Northwest Natural Gas	nwn	38.94	1.95	5.01%	6.5%	11.51%
Southwest Gas	swx	63.35	2.48	3.91%	10.0%	13.91%
Spire Inc	sr	62.34	3.02	4.84%	4.5%	9.34%
ONE Gas Inc	ogs	63.72	2.64	4.14%	4.0%	8.14%
UGI Corp	ugi	24.60	1.52	6.18%	6.5%	12.68%
					Mean	10.50%
					Harmonic Mean	10.03%
					Median	9.78%
					Max	13.91%
					Min	7.31%
					Std Dev	2.36%
					Coefficient of Variation	22.51%
					Say	10.00%

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

Washington State Department of Revenue
2024 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	115.900	3.22	6.55	2.8%	51.0%	5.65%	2.88%	5.66%	8.53%
Chesapeake Util	cpk	105.630	2.44	5.10	2.3%	54.0%	4.83%	2.61%	4.92%	7.44%
New Jersey Resources	njr	44.580	1.68	2.80	3.8%	42.2%	6.28%	2.65%	6.42%	8.93%
NiSource Inc	ni	29.550	1.06	1.70	3.6%	37.0%	5.75%	2.13%	5.72%	7.88%
Northwest Natural Gas	nwn	38.940	1.95	2.75	5.0%	27.0%	7.06%	1.91%	6.91%	8.97%
Southwest Gas	swx	63.350	2.48	3.30	3.9%	13.0%	5.21%	0.68%	4.59%	5.89%
Spire Inc	sr	62.340	3.02	4.10	4.8%	24.0%	6.58%	1.58%	6.42%	8.16%
ONE Gas Inc	ogs	63.720	2.64	4.05	4.1%	37.0%	6.36%	2.35%	6.49%	8.71%
UGI Corp	ugi	24.600	1.52	2.90	6.2%	48.0%	11.79%	5.66%	11.84%	17.45%
Mean									6.55%	9.11%
Harmonic Mean									6.13%	8.44%
Median									6.42%	8.53%
Max									11.84%	17.45%
Min									4.59%	5.89%
Std Dev									2.12%	3.27%
Coefficient of Variation									32.42%	35.94%

say **8.75%**

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

Washington State Department of Revenue

2024 Assessment Year

Natural Gas Distribution

Company	Ticker	Stock Price	Expected Earnings	P/E	Payout Ratio	ROE	Ke
Atmos Energy Corp	ato	115.90	6.55	17.69	50.00%	9.00%	6.24%
Chesapeake Util	cpk	105.63	5.10	20.71	48.00%	9.50%	NMF
New Jersey Resources	njr	44.58	2.80	15.92	60.00%	12.50%	7.39%
NiSource Inc	ni	29.55	1.70	17.38	62.00%	8.50%	6.29%
Northwest Natural Gas	nwn	38.94	2.75	14.16	70.00%	7.00%	8.61%
Southwest Gas	swx	63.35	3.30	19.20	75.00%	6.50%	5.36%
Spire Inc	sr	62.34	4.10	15.20	79.00%	7.50%	8.21%
UGI Corp	ugi	24.60	2.90	8.48	52.00%	13.50%	15.67%
ONE Gas Inc	ogs	63.72	4.05	15.73	65.00%	8.00%	7.48%
Mean				16.05	62.33%	9.11%	8.16%
Harmonic Mean				15.12	60.60%	8.63%	7.43%
Median				15.92	62.00%	8.50%	7.43%
Industry Summary				15.50	61.00%	8.75%	
						Say	7.75%

SUPPORT FOR DEBT RATING AND DEBT YIELD RATE

Washington State Department of Revenue

2024 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	A1	
NiSource Inc	ni	Baa2	BBB+
Northwest Natural Gas	nwn	A2	AA-
Southwest Gas	swx	Baa1	BBB
Spire Inc	sr	Baa2	BBB+
UGI Corp	ugi	A3	
ONE Gas Inc	ogs	A3	A-
Overall Average Debt Rating		A3	A-

Mergent's Bond Record January 2024, page 101

Corporate	Aaa	Aa	A	Baa
October	5.61%	5.97%	6.18%	6.63%
November	5.61%	5.57%	5.78%	6.19%
December	4.74%	5.05%	5.25%	5.64%
4th Qtr Average	5.32%	5.53%	5.74%	6.15%
Public Utilities	Aaa	Aa	A	Baa
October		6.19%	6.34%	6.61%
November		5.82%	5.96%	6.20%
December		5.27%	5.42%	5.68%
4th Qtr Average		5.76%	5.91%	6.16%
Industrials	Aaa	Aa	A	Baa
October	5.61%	5.76%	6.02%	6.64%
November	5.20%	5.32%	5.59%	6.18%
December	4.74%	4.82%	5.07%	5.60%
4th Qtr Average	5.18%	5.30%	5.56%	6.14%

		20Y	25Y	30Y
Bloomberg S&P Bond Yields				
December 2023	A-	5.95%	6.02%	6.18%

Debt Yield Rate	6.00%
Cost of Secured Debt (Operating Lease) Rate	5.00%

SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

Washington State Department of Revenue

2024 Assessment Year

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	115.90	6.10	5.3%	6.55	5.7%	10.04	8.7%	10.75	9.3%
Chesapeake Util	cpk	105.63	4.85	4.6%	5.10	4.8%	8.80	8.3%	9.35	8.9%
New Jersey Resources	njr	44.58	2.70	6.1%	2.80	6.3%	4.22	9.5%	4.40	9.9%
NiSource Inc	ni	29.55	1.60	5.4%	1.70	5.8%	3.60	12.2%	3.80	12.9%
Northwest Natural Gas	nwn	38.94	2.65	6.8%	2.75	7.1%	5.85	15.0%	6.15	15.8%
Southwest Gas	swx	63.35	2.85	4.5%	4.10	6.5%	9.15	14.4%	9.05	14.3%
Spire Inc	sr	62.34	3.85	6.2%	2.90	4.7%	8.60	13.8%	5.60	9.0%
UGI Corp	ugi	24.60	2.84	11.5%	2.90	11.8%	5.43	22.1%	5.60	22.8%
ONE Gas Inc	ogs	63.72	4.15	6.5%	4.05	6.4%	9.10	14.3%	9.85	15.5%
Mean			6.3%		6.5%		13.1%		13.1%	
Harmonic Mean			5.9%		6.1%		12.1%		12.0%	
Median			6.1%		6.3%		13.8%		12.9%	
Max			11.5%		11.8%		22.1%		22.8%	
Min			4.5%		4.7%		8.3%		8.9%	
Std Dev			2.1%		2.1%		4.2%		4.6%	
Coefficient of Variation			33.5%		32.4%		32.3%		34.9%	
Say			6.0%		6.2%		12.5%		12.0%	

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

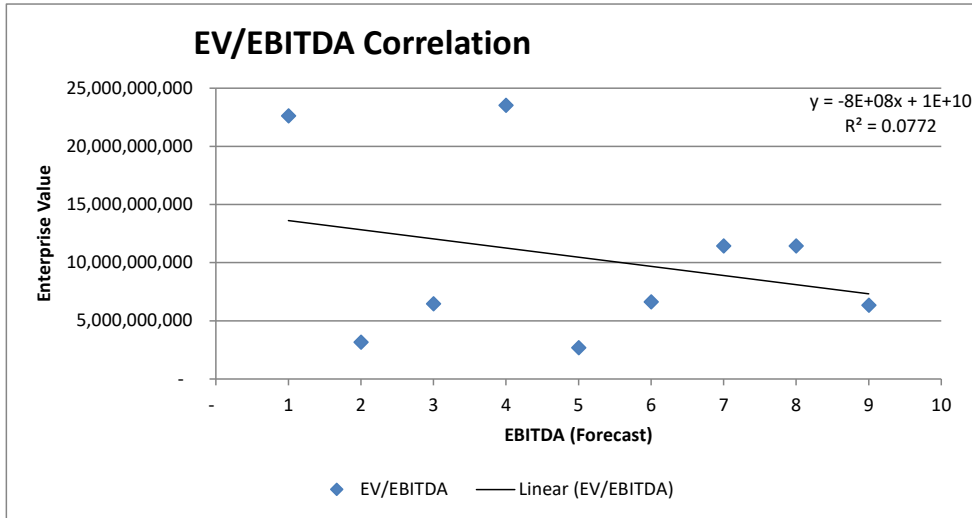
SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

Washington State Department of Revenue

2024 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	115.90	22,612,582,000	1,671,474,000	7.07%	1,789,675,847	12.64	3,972,107,500	5.69	1,596,267,500	324,155,460	11.77
Chesapeake Util	cpk	105.63	3,154,155,000	238,593,000	6.25%	253,505,063	12.44	720,575,000	4.38	172,975,000	72,000,000	12.88
New Jersey Resources	njr	44.58	6,456,206,600	563,545,000	4.27%	587,582,464	10.99	2,097,755,000	3.08	429,308,000	126,392,160	11.62
NiSource Inc	ni	29.55	23,514,150,000	2,206,600,000	5.56%	2,329,188,889	10.10	6,059,000,000	3.88	1,577,000,000	622,254,000	10.69
Northwest Natural Gas	nwn	38.94	2,677,339,000	310,522,000	5.13%	326,446,205	8.20	1,119,250,000	2.39	227,550,000	74,193,540	8.87
Southwest Gas	swx	63.35	6,632,421,000	930,619,000	2.73%	956,045,749	6.94	5,155,200,000	1.29	676,800,000	189,724,080	7.65
Spire Inc	sr	62.34	11,426,386,000	673,400,000	5.23%	708,636,047	16.12	2,601,480,000	4.39	481,460,000	196,212,000	16.86
UGI Corp	ugi	24.60	11,426,386,000	NMF	3.13%	NMF	NMF	8,594,582,500	1.33	1,181,096,000	374,280,000	7.35
ONE Gas Inc	ogs	63.72	6,336,460,000	657,420,000	8.24%	711,602,967	8.90	2,639,025,000	2.40	546,675,000	168,000,000	8.87
Mean							10.79		3.20			10.73
Harmonic Mean							10.13		2.52			10.07
Median							10.54		3.08			10.69
Std Dev							2.93		1.50			3.00
Coefficient of Variation							0.27		0.47			0.28
Say							10.00		3.00			10.50



Forecast EV/EBITDA By Rank

Guideline Companies	EV/EBITDA forecast	
Southwest Gas	6.94	8.80 Harmonic Mean
Northwest Natural Gas	8.20	9.03 Low Average
ONE Gas Inc	8.90	8.90 Low Median
NiSource Inc	10.10	8.90 Say
New Jersey Resources	10.99	
Chesapeake Util	12.44	12.80 High Harmonic Mean
Atmos Energy Corp	12.64	13.05 High Average
Spire Inc	16.12	12.54 High Median
#N/A	#N/A	12.80 Say

SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

2024 Assessment Year

Natural Gas Distribution

Company	Ticker	Stock Price	Revenues	Multiple	Cash Flow	Multiple	Earnings	Multiple	Book Value	Multiple
Atmos Energy Corp	ato	115.90	28.79	4.03	10.04	11.54	6.10	19.00	73.20	1.58
Chesapeake Util	cpk	105.63	36.20	2.92	8.80	12.00	4.85	21.78	49.30	2.14
New Jersey Resources	njr	44.58	20.12	2.22	4.22	10.56	2.70	16.51	20.40	2.19
NiSource Inc	ni	29.55	14.45	2.04	3.60	8.21	1.60	18.47	19.45	1.52
Northwest Natural Gas	nwn	38.94	31.10	1.25	5.85	6.66	2.65	14.69	31.70	1.23
Southwest Gas	swx	63.35	73.60	0.86	9.15	6.92	2.85	22.23	50.00	1.27
Spire Inc	sr	62.34	50.12	1.24	8.60	7.25	3.85	16.19	50.29	1.24
UGI Corp	ugi	24.60	42.33	0.58	5.43	4.53	2.84	8.66	20.00	1.23
ONE Gas Inc	ogs	63.72	46.50	1.37	9.10	7.00	4.15	15.35	47.05	1.35
		Mean		1.83		8.30		16.99		1.53
		Harmonic Mean		1.33		7.61		15.83		1.46
		Median		1.37		7.25		16.51		1.35
		Max		4.03		12.00		22.23		2.19
		Min		0.58		4.53		8.66		1.23
		Say		1.50		7.75		16.00		1.50

DATA INPUT

Washington State Department of Revenue

2024 Assessment Year

Natural Gas Distribution

Guideline Companies		Stock Price 12/29/23	Historic Figures (2023)													
			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	115.90	0.85	A+	28.79	10.04	6.10	2.96	73.20	148,490,000	1.58	7,529,300,000	18.60	2.9%	82.36%	
Chesapeake Util	cpk	105.63	0.80	A	36.20	8.80	4.85	2.25	49.30	18,500,000	2.14	643,800,000	21.30	2.4%	100.00%	
New Jersey Resources	njr	44.58	0.95	A	20.12	4.22	2.70	1.56	20.40	97,570,000	2.19	2,739,000,000	18.30	4.0%	81.40%	
NiSource Inc	ni	29.55	0.90	B++	14.45	3.60	1.60	1.00	19.45	415,000,000	1.52	12,558,300,000	16.30	4.0%	93.61%	
Northwest Natural Gas	nwn	38.94	0.85	A	31.10	5.85	2.65	1.94	31.70	37,000,000	1.23	1,424,600,000	13.30	5.3%	90.61%	
Southwest Gas	swx	63.35	0.90	A	73.60	9.15	2.85	2.48	50.00	72,000,000	1.27	5,235,500,000	NMF	4.1%	90.30%	
Spire Inc	sr	62.34	0.85	B++	50.12	8.60	3.85	2.88	50.29	53,200,000	1.24	3,489,800,000	16.00	5.2%	88.13%	
ONE Gas Inc	ogs	63.72	0.85	B++	46.50	9.10	4.15	2.60	47.05	55,500,000	1.35	1,862,600,000	15.20	4.2%	94.57%	
UGI Corp	ugi	24.60	1.10	B++	42.33	5.43	2.84	1.47	20.00	210,910,000	1.23	6,746,000,000	8.30	6.3%	93.85%	

Average 15.91
Harmonic Mean 14.80
Median 16.15

Value Line 240223

			Projected (Next Year) 2024										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 27-29	Earnings Projection 27-29	Earnings Growth 27-29	Dividends Growth 27-29	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%	8.5%	26.75	10.75	6.55	3.22	74.90	50.0%	9.0%	13.65	8.35	7.0%	7.5%	1,067,147,000	855,768,000
	46%	46%	10.0%	38.95	9.35	5.10	2.44	53.40	48.0%	9.5%	11.70	6.50	5.0%	8.5%	161,158,000	185,699,000
	58%	58%	13.2%	21.50	4.40	2.80	1.68	22.30	60.0%	12.5%	5.25	3.50	5.0%	5.0%	407,000,000	532,077,000
	63%	63%	8.0%	14.60	3.80	1.70	1.06	20.00	62.0%	8.5%	4.25	2.10	9.5%	4.5%	1,298,400,000	4,499,400,000
	73%	73%	7.5%	30.25	6.15	2.75	1.95	39.70	70.0%	7.0%	7.55	3.25	6.5%	0.5%	184,941,000	601,440,000
	87%	87%	5.5%	71.60	9.40	3.30	2.48	52.50	75.0%	6.5%	11.50	4.25	10.0%	5.5%	489,711,000	1,881,114,000
	71%	76%	7.5%	48.90	9.05	4.10	3.02	55.45	79.0%	7.5%	11.10	5.50	4.5%	4.5%	418,600,000	1,076,900,000
	63%	63%	9.0%	47.55	9.85	4.05	2.64	49.55	65.0%	8.0%	13.95	5.00	4.0%	3.0%	377,590,000	765,204,000
	52%	52%	14.0%	40.75	5.60	2.90	1.52	21.25	52.0%	13.5%	6.00	3.15	6.5%	3.5%	NMF	2,045,000,000
	63.0%	9.2%							62.3%	9.1%	9.44					
	60.5%	8.6%							60.6%	8.6%	7.95					
	63.0%	8.5%							62.0%	8.5%	11.10					

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
23,121,740,000	-	1,352,592,000	6,554,133,000	604,327,000	6,560,000,000	5,402,591,000
2,985,230,000	16,865,000	386,384,000	1,187,075,000	77,435,000	1,200,000,000	1,200,000,000
6,166,279,000	8,452,000	806,603,000	2,768,017,000	156,545,000	2,587,845,000	2,106,536,000
30,482,100,000	-	5,265,100,000	11,055,500,000	908,200,000	11,079,300,000	10,370,900,000
4,757,799,000	-	696,878,000	1,425,435,000	125,581,000	1,364,732,000	1,236,559,000
12,282,883,000		1,684,847,000	4,609,838,000	440,908,000	3,501,543,000	3,162,068,000
8,909,700,000	-	1,755,400,000	3,554,000,000	254,800,000	3,710,600,000	3,270,200,000
8,468,967,000	293,619,000	1,477,221,000	2,160,401,000	279,830,000	2,960,815,000	2,800,000,000
13,128,000,000	443,000,000	2,274,000,000	6,543,000,000	532,000,000	6,647,000,000	6,238,000,000

STOCK PRICE

Washington State Department of Revenue
 2024 Assessment Year
 Natural Gas Distribution

60.96
23 Year End

Atmos Energy Corp ato								
Date	Open	High	Low	Close	Adj Close*	Volume		
12/29/2023	115.6	116.23	115.2	115.9	115.90	429,800		115.900
Chesapeake Util cpk								
Date	Open	High	Low	Close	Adj Close*	Volume		
12/29/2023	106.07	106.54	104.27	105.63	105.63	158,000		105.630
New Jersey Resources njr								
Date	Open	High	Low	Close	Adj Close*	Volume		
12/29/2023	44.69	44.95	44.36	44.58	44.58	361,500		44.580
Nisource Inc ni								
Date	Open	High	Low	Close	Adj Close*	Volume		
12/29/2023	26.41	26.57	26.37	26.55	29.55	2,197,900		29.550
NW Natural Gas nwn								
Date	Open	High	Low	Close	Adj Close*	Volume		
12/29/2023	38.85	39.01	38.57	38.94	38.94	229,600		38.940
Southwest Gas Corp swx								
Date	Open	High	Low	Close	Adj Close*	Volume		
12/29/2023	63.48	63.79	63.17	63.35	63.35	257,400		63.350
Spire Inc sr								
Date	Open	High	Low	Close	Adj Close*	Volume		
12/29/2023	62.09	62.58	61.87	62.34	62.34	380,400		62.340
UGI Corp ugi								
Date	Open	High	Low	Close	Adj Close*	Volume		
12/29/2023	24.64	24.74	24.39	24.6	24.60	1,291,000		24.600
One Gas Inc ogs								
Date	Open	High	Low	Close	Adj Close*	Volume		
12/29/2023	64	64.22	63.48	63.75	63.72	349,600		63.720

Source:
 finance.yahoo.com
 Historical Stock Quotes

IMPLIED PREMIUMS FOR US MARKET																	
Year	Earnings Yield	Dividend Yield	S&P 500	Earnings*	Dividends*	Ends + Buys	Change in Earnings	Change in Dividends	T.Bill Rate	T.Bond Rate	Bond-Bill	Boothed Growth	Premium	Net Growth Est	Implied Premium (FCFE)	Implied Premium (FCFE - 1%)	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%		3.36%		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%	4.70%	-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%	7.00%	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
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%	4.90%	2.81
2022	5.72%	1.78%	3839.5	219.49	68.34	181.99	6.35%	15.44%	4.42%	3.88%	-0.54%	5.59%	2.16%	6.41%	5.94%	5.11%	1.53
2023	4.61%	1.47%	4769.83	219.7	70.3	164.25	0.10%	2.87%	5.20%	3.88%	-1.32%	3.73%	1.97%	8.74%	4.60%	4.57%	1.19

<http://pages.stern.nyu.edu/~adamodar/>
Updated January 2024

Three Stage Free Cash Flow to Equity Discount Model

Company [Atmos Energy Corp](#)

Ticker [ato](#)

3.93% GDP

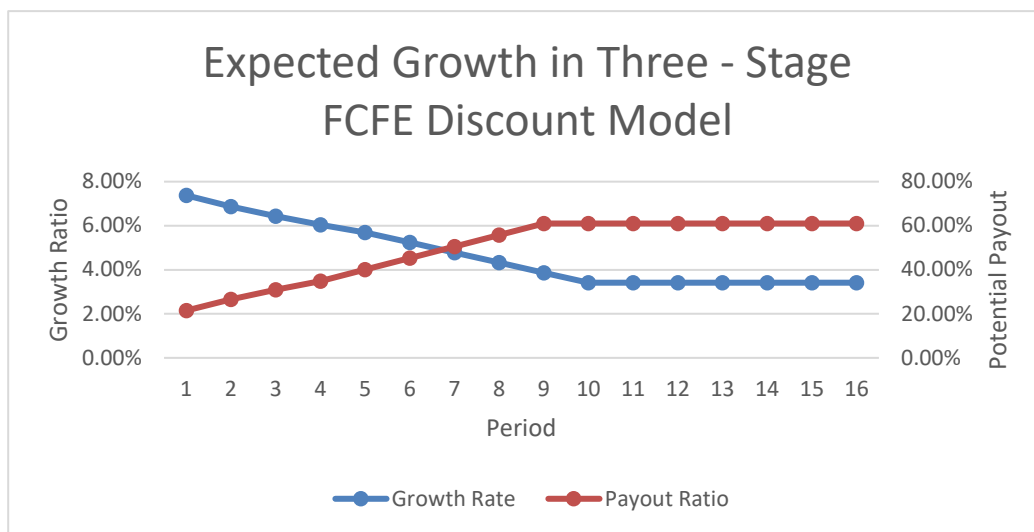
15.5 Industry P/E

61.0% Target Dividend Payout Ratio

8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		84.31%	15.69%	6.10			(115.90)
Stage 1	1	7.38%	78.52%	21.48%	6.55	1.41		1.41
	2	6.87%	73.47%	26.53%	7.00	1.86		1.86
	3	6.43%	69.03%	30.97%	7.45	2.31		2.31
	4	6.04%	65.10%	34.90%	7.90	2.76		2.76
	5	5.70%	59.88%	40.12%	8.35	3.35		3.35
Stage 2	6	5.24%	54.66%	45.34%	8.79	3.98		3.98
	7	4.78%	49.44%	50.56%	9.21	4.66		4.66
	8	4.33%	44.22%	55.78%	9.61	5.36		5.36
	9	3.87%	39.00%	61.00%	9.98	6.09		6.09
	10	3.41%	39.00%	61.00%	10.32	6.29	165.39	171.69
Stage 3	11+	3.41%	39.00%	61.00%	10.67	6.51		

Ke = 6.24%



Three Stage Free Cash Flow to Equity Discount Model

Company [Chesapeake Utilities](#)

Ticker [cpk](#)

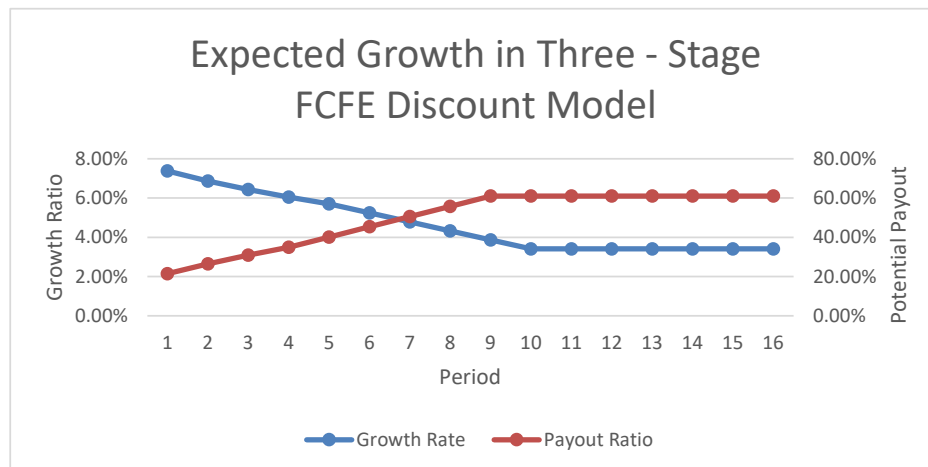
3.93% GDP

15.5 Industry P/E

61.0% Target Dividend Payout Ratio

8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		58.91%	41.09%	4.85			(105.63)
	1	5.15%	78.43%	21.57%	5.10	1.10		1.10
	2	6.86%	73.39%	26.61%	5.45	1.45		1.45
Stage 1	3	6.42%	68.97%	31.03%	5.80	1.80		1.80
	4	6.03%	65.04%	34.96%	6.15	2.15		2.15
	5	5.69%	59.83%	40.17%	6.50	2.61		2.61
	6	5.24%	54.62%	45.38%	6.84	3.10		3.10
	7	4.78%	49.42%	50.58%	7.17	3.63		3.63
Stage 2	8	4.32%	44.21%	55.79%	7.48	4.17		4.17
	9	3.87%	39.00%	61.00%	7.77	4.74		4.74
	10	3.41%	39.00%	61.00%	8.03	4.90	128.73	133.63
Stage 3	11+	3.41%	39.00%	61.00%	8.31	5.07		
							$K_e =$	4.44%



Three Stage Free Cash Flow to Equity Discount Model

Company [New Jersey Resources](#)

Ticker [njr](#)

3.93% GDP

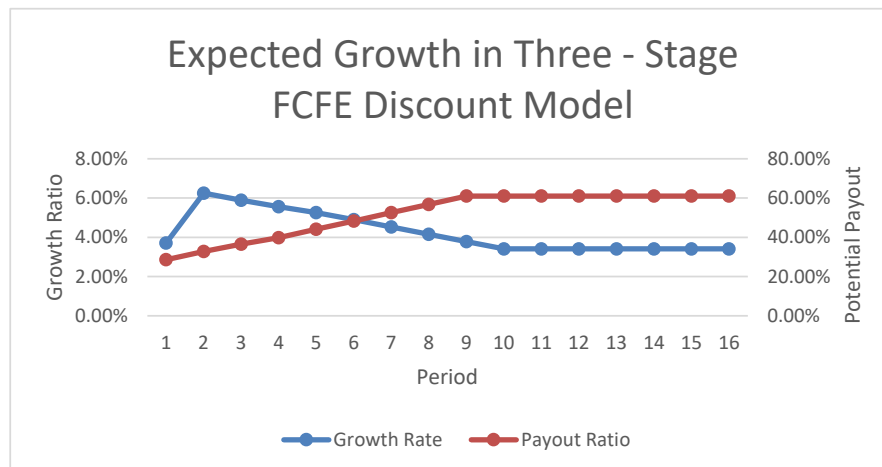
15.5 Industry P/E

61.0% Target Dividend Payout Ratio

8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		42.33%	57.67%	2.70			(44.58)
	1	3.70%	71.43%	28.57%	2.80	0.80		0.80
	2	6.25%	67.23%	32.77%	2.98	0.97		0.97
Stage 1	3	5.88%	63.49%	36.51%	3.15	1.15		1.15
	4	5.56%	60.15%	39.85%	3.33	1.32		1.32
	5	5.26%	55.92%	44.08%	3.50	1.54		1.54
	6	4.89%	51.69%	48.31%	3.67	1.77		1.77
	7	4.52%	47.46%	52.54%	3.84	2.02		2.02
Stage 2	8	4.15%	43.23%	56.77%	4.00	2.27		2.27
	9	3.78%	39.00%	61.00%	4.15	2.53		2.53
	10	3.41%	39.00%	61.00%	4.29	2.62	68.75	71.37
Stage 3	11+	3.41%	39.00%	61.00%	4.44	2.71		

Ke = 7.39%



Three Stage Free Cash Flow to Equity Discount Model

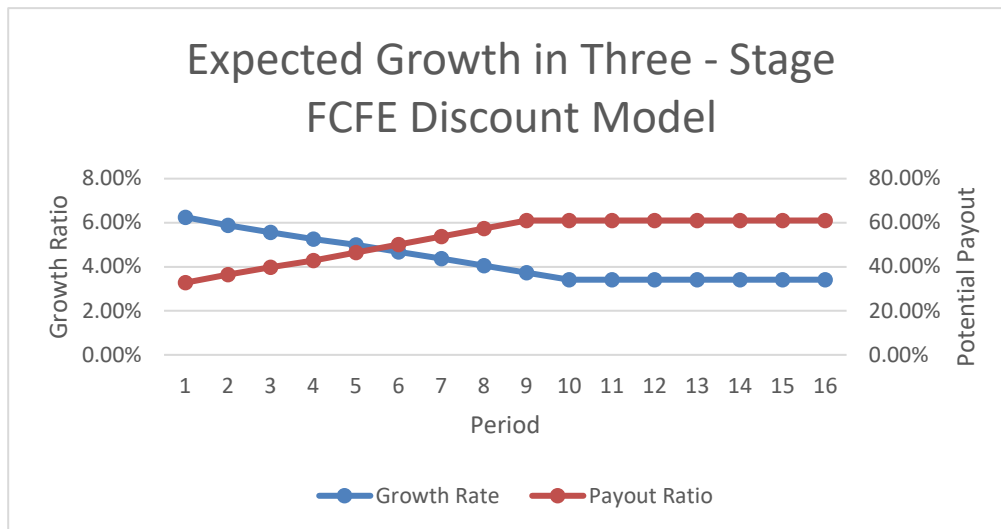
Company [Nisource Inc](#)

Ticker [ni](#)

3.93% GDP
 15.5 Industry P/E
 61.0% 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			(29.55)
	1	6.25%	67.23%	32.77%	1.70	0.56		0.56
	2	5.88%	63.49%	36.51%	1.80	0.66		0.66
Stage 1	3	5.56%	60.15%	39.85%	1.90	0.76		0.76
	4	5.26%	57.14%	42.86%	2.00	0.86		0.86
	5	5.00%	53.51%	46.49%	2.10	0.98		0.98
	6	4.68%	49.89%	50.11%	2.20	1.10		1.10
	7	4.37%	46.26%	53.74%	2.29	1.23		1.23
Stage 2	8	4.05%	42.63%	57.37%	2.39	1.37		1.37
	9	3.73%	39.00%	61.00%	2.48	1.51		1.51
	10	3.41%	39.00%	61.00%	2.56	1.56	41.05	42.61
Stage 3	11+	3.41%	39.00%	61.00%	2.65	1.62		

Ke = 6.29%



Three Stage Free Cash Flow to Equity Discount Model

Company **NW Nat'l Gas**

Ticker **nwn**

3.93% GDP

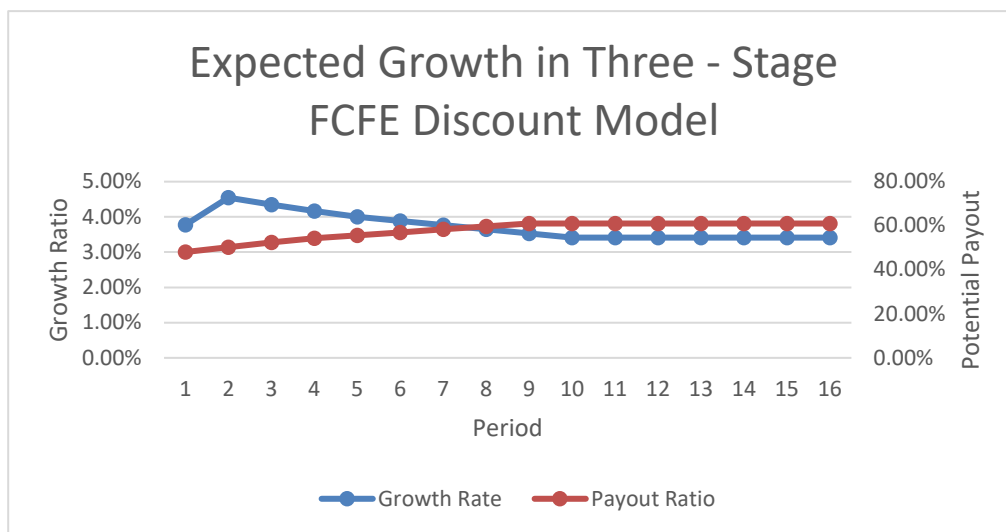
15.5 Industry P/E

61.0% Target Dividend Payout Ratio

8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		43.13%	56.87%	2.65			(38.94)
	1	3.77%	51.95%	48.05%	2.75	1.32		1.32
	2	4.55%	49.69%	50.31%	2.88	1.45		1.45
Stage 1	3	4.35%	47.62%	52.38%	3.00	1.57		1.57
	4	4.17%	45.71%	54.29%	3.13	1.70		1.70
	5	4.00%	44.37%	55.63%	3.25	1.81		1.81
	6	3.88%	43.03%	56.97%	3.38	1.92		1.92
	7	3.77%	41.69%	58.31%	3.50	2.04		2.04
Stage 2	8	3.65%	40.34%	59.66%	3.63	2.17		2.17
	9	3.53%	39.00%	61.00%	3.76	2.29		2.29
	10	3.41%	39.00%	61.00%	3.89	2.37	62.31	64.68
Stage 3	11+	3.41%	39.00%	61.00%	4.02	2.45		

Ke = 8.61%



Three Stage Free Cash Flow to Equity Discount Model

Company [Southwest Gas](#)

Ticker [SWX](#)

3.93% GDP

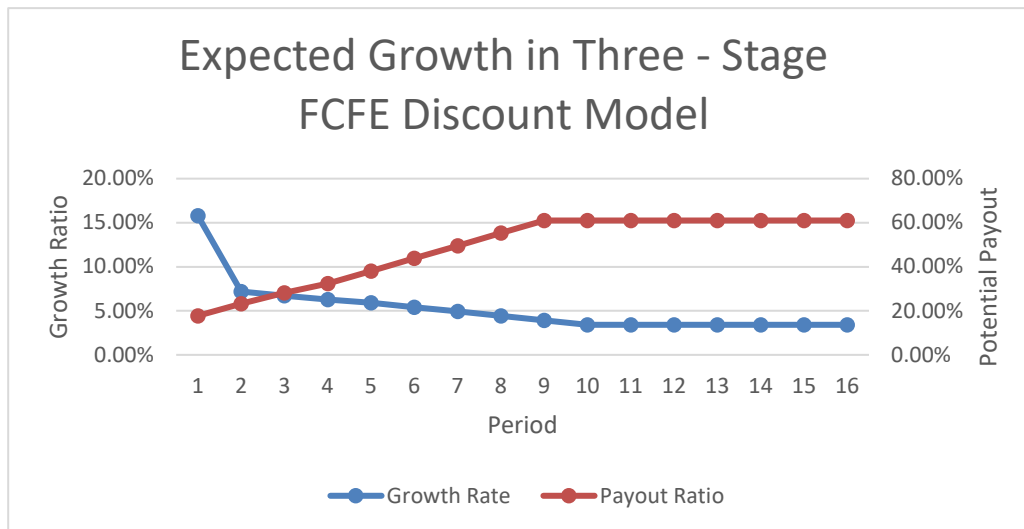
15.5 Industry P/E

61.0% Target Dividend Payout Ratio

8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		180.45%	-80.45%	2.85			(63.35)
Stage 1	1	15.79%	82.25%	17.75%	3.30	0.59		0.59
	2	7.20%	76.73%	23.27%	3.54	0.82		0.82
	3	6.71%	71.90%	28.10%	3.78	1.06		1.06
	4	6.29%	67.65%	32.35%	4.01	1.30		1.30
	5	5.92%	61.92%	38.08%	4.25	1.62		1.62
Stage 2	6	5.42%	56.19%	43.81%	4.48	1.96		1.96
	7	4.92%	50.46%	49.54%	4.70	2.33		2.33
	8	4.42%	44.73%	55.27%	4.91	2.71		2.71
	9	3.91%	39.00%	61.00%	5.10	3.11		3.11
	10	3.41%	39.00%	61.00%	5.27	3.22	84.54	87.76
Stage 3	11+	3.41%	39.00%	61.00%	5.45	3.33		

K_e = 5.36%



Three Stage Free Cash Flow to Equity Discount Model

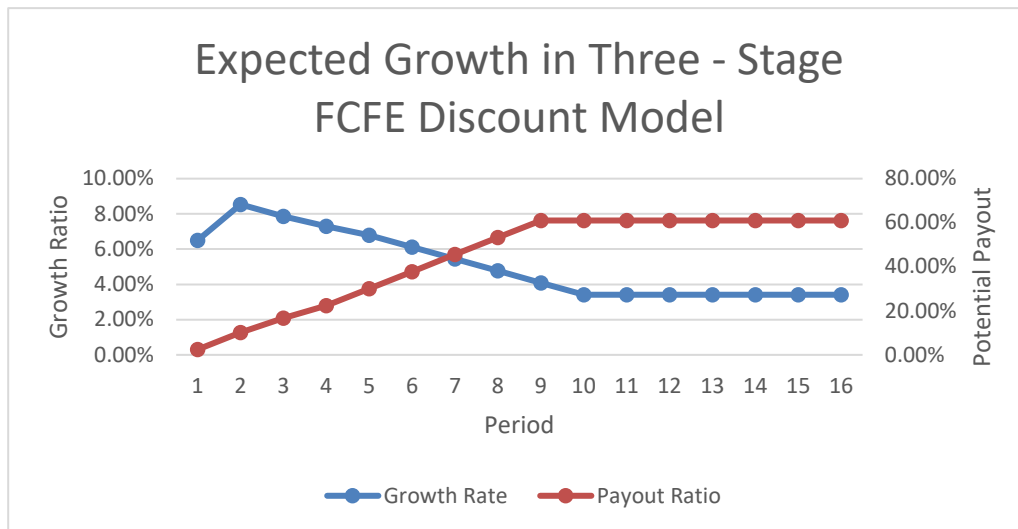
Company [Spire Inc](#)

Ticker [sr](#)

3.93% GDP
 15.5 Industry P/E
 61.0% Target Dividend Payout Ratio
 8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		74.21%	25.79%	3.85			(62.34)
Stage 1	1	6.49%	97.56%	2.44%	4.10	0.10		0.10
	2	8.54%	89.89%	10.11%	4.45	0.45		0.45
	3	7.87%	83.33%	16.67%	4.80	0.80		0.80
	4	7.29%	77.67%	22.33%	5.15	1.15		1.15
	5	6.80%	69.94%	30.06%	5.50	1.65		1.65
Stage 2	6	6.12%	62.20%	37.80%	5.84	2.21		2.21
	7	5.44%	54.47%	45.53%	6.15	2.80		2.80
	8	4.77%	46.73%	53.27%	6.45	3.43		3.43
	9	4.09%	39.00%	61.00%	6.71	4.09		4.09
	10	3.41%	39.00%	61.00%	6.94	4.23	111.24	115.48
Stage 3	11+	3.41%	39.00%	61.00%	7.18	4.38		

Ke = 8.21%



Three Stage Free Cash Flow to Equity Discount Model

Company **ONE Gas Inc**

Ticker **ogs**

3.93% GDP

15.5 Industry P/E

61.0% Target Dividend Payout Ratio

8.8% Target ROE

	Year	Growth Rate	Reinvestment Rate	Payout Ratio	Earnings	FCFE	Terminal Value	Cash Flow
Historic	0		-27.54%	127.54%	4.15			(63.72)
Stage 1	1	-2.41%	67.02%	32.98%	4.05	1.34		1.34
	2	5.86%	63.31%	36.69%	4.29	1.57		1.57
	3	5.54%	59.98%	40.02%	4.53	1.81		1.81
	4	5.25%	56.99%	43.01%	4.76	2.05		2.05
	5	4.99%	53.39%	46.61%	5.00	2.33		2.33
Stage 2	6	4.67%	49.80%	50.20%	5.23	2.63		2.63
	7	4.36%	46.20%	53.80%	5.46	2.94		2.94
	8	4.04%	42.60%	57.40%	5.68	3.26		3.26
	9	3.73%	39.00%	61.00%	5.89	3.60		3.60
	10	3.41%	39.00%	61.00%	6.10	3.72	97.70	101.42
Stage 3	11+	3.41%	39.00%	61.00%	6.30	3.85		

$K_e = 7.48\%$

