

COST OF CAPITAL STUDY

YIELD CAPITALIZATION
2012 ASSESSMENT YEAR

APPENDIX C

NATURAL GAS DISTRIBUTION

EQUITY RATE						8.50%	
CAPITAL ASSET PRICING MODEL							PAGE
	CAPM Ex Post		6.19%				5
	CAPM Ex Ante		7.10%				6
DIVIDEND GROWTH MODELS							
	Value Line, based on Dividends Growth		7.50%				8
	Value Line, based on Earnings Growth		8.50%				9
	Value Line, based on Return on Equity		7.50%				10
				RANGE	6.19 - 8.50%		
DEBT RATE						4.50%	11
MARKET CAPITAL STRUCTURE							
	Equity	60%	x	8.50%	=	5.10%	3
	Debt	40%	x	4.50%	=	1.80%	3
	Marginal Tax Rate	38%	=	(1-.38)	x	1.80%	
						<u>1.12%</u>	
WEIGHTED AVERAGE COST OF CAPITAL						6.22%	

SUPPORT FOR GUIDELINE COMPANIES

WASHINGTON STATE DEPARTMENT OF REVENUE

2012 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Capital Structure at Book Value

Company	Ticker	Beta	P/E Ratio	Div'd Yield	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
AGL Resources	gas	0.75	14.5	4.6%	3,342,024,353	48.4%	-	0.0%	3,561,000,000	51.6%	6,903,024,353
Atmos Energy Corp	ato	0.70	13.4	4.5%	2,257,294,244	50.6%	-	0.0%	2,206,200,000	49.4%	4,463,494,244
Laclede Group	lg	0.60	15.3	4.0%	574,753,381	62.9%	-	0.0%	339,400,000	37.1%	914,153,381
New Jersey Resources	njr	0.65	16.5	3.2%	776,860,595	64.3%	-	0.0%	431,600,000	35.7%	1,208,460,595
Nisource Inc	ni	0.85	22.1	3.9%	4,997,410,811	44.4%	-	0.0%	6,267,100,000	55.6%	11,264,510,811
NW Natural Gas	nwn	0.60	18.5	3.8%	714,466,060	52.7%	-	0.0%	641,700,000	47.3%	1,356,166,060
Piedmont Natural Gas	pnv	0.70	19.7	3.6%	997,545,198	59.6%	-	0.0%	675,000,000	40.4%	1,672,545,198
South Jersey Industries	sjj	0.65	17.0	3.1%	624,961,240	59.6%	-	0.0%	424,200,000	40.4%	1,049,161,240
Southwest Gas	swx	0.75	15.4	2.8%	1,229,773,833	56.9%	-	0.0%	930,900,000	43.1%	2,160,673,833
UGI Corp	ugi	0.70	14.6	3.8%	1,982,394,328	48.4%	-	0.0%	2,115,700,000	51.6%	4,098,094,328
WGL Holdings	wgl	0.65	16.3	3.8%	1,209,678,201	66.4%	28,200,000	1.5%	584,000,000	32.1%	1,821,878,201
Mean		0.69	16.7	3.7%	1,700,651,113	55.8%		0.1%	1,652,436,364	44.0%	
Weighted Mean					18,707,162,244	50.7%	28,200,000	0.1%	18,176,800,000	49.2%	36,912,162,244
Median						56.9%		0.0%		43.1%	

**SUPPORT FOR CAPITAL STRUCTURE
MARKET VALUE**

WASHINGTON STATE DEPARTMENT OF REVENUE
2012 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Capital Structure at Market Value

Company	Ticker	Stock Average	Common Shares	Common Stock	%	Preferred Stock	%	Long Term Debt	%	Total Debt & Equity
AGL Resources	gas	40.637	117,099,662	4,758,539,931	53.7%	-	0.0%	4,110,788,725	46.3%	8,869,328,656
Atmos Energy Corp	ato	33.263	90,364,061	3,005,809,882	52.7%	-	0.0%	2,698,734,150	47.3%	5,704,544,032
Laclede Group	lg	39.882	22,486,439	896,796,665	68.5%	-	0.0%	412,024,150	31.5%	1,308,820,814
New Jersey Resources	njr	46.075	41,476,807	1,911,043,883	79.0%	-	0.0%	508,739,728	21.0%	2,419,783,611
Nisource Inc	ni	22.175	282,180,170	6,257,345,270	46.4%	-	0.0%	7,226,251,168	53.6%	13,483,596,438
NW Natural Gas	nwn	46.208	26,719,000	1,234,640,458	59.9%	-	0.0%	827,815,816	40.1%	2,062,456,274
Piedmont Natural Gas	pny	31.705	72,338,303	2,293,485,897	74.8%	-	0.0%	771,938,804	25.2%	3,065,424,701
South Jersey Industries	sjj	54.263	30,249,818	1,641,455,957	78.8%	-	0.0%	442,483,020	21.2%	2,083,938,977
Southwest Gas	swx	38.948	46,093,472	1,795,263,912	58.3%	-	0.0%	1,285,759,080	41.7%	3,081,022,992
UGI Corp	ugi	28.120	112,126,376	3,152,993,693	56.2%	-	0.0%	2,457,972,405	43.8%	5,610,966,098
WGL Holdings	wgl	41.805	51,497,582	2,152,856,416	75.1%	28,200,000	1.0%	686,140,424	23.9%	2,867,196,840
			Mean		63.9%		0.1%		36.0%	
			Weighted Mean	29,100,231,964	57.6%	28,200,000	0.1%	21,428,647,470	42.4%	50,557,079,434
			Median		59.9%		0.0%		40.1%	
			Max		79.0%		1.0%		53.6%	
			Min		46.4%		0.0%		21.0%	

Source:

Stock Price: Yahoo

Market Value Debt: Bond Analysis

Target

60%

0%

40%

100%

SUPPORT FOR MARKET MULTIPLES

WASHINGTON STATE DEPARTMENT OF REVENUE

2012 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Company	Ticker	Stock Avg	Revenues	Multiple	Cash Flow	Multiple	Earnings	Multiple	Divds Decld	Multiple	Book Value	Multiple
AGL Resources	gas	40.637	20.000	2.0	3.05	13.3	2.12	19.2	1.90	21.4	28.54	1.4
Atmos Energy Corp	ato	33.263	48.150	0.7	4.72	7.0	2.26	14.7	1.36	24.5	24.98	1.3
Laclede Group	lg	39.882	71.480	0.6	4.62	8.6	2.86	13.9	1.61	24.8	25.56	1.6
New Jersey Resources	njr	46.075	72.600	0.6	3.40	13.6	2.58	17.9	1.44	32.0	18.73	2.5
Nisource Inc	ni	22.175	21.970	1.0	2.99	7.4	1.03	21.5	0.92	24.1	17.71	1.3
NW Natural Gas	nwn	46.208	31.770	1.5	5.01	9.2	2.39	19.3	1.75	26.4	26.74	1.7
Piedmont Natural Gas	pny	31.705	19.830	1.6	2.99	10.6	1.57	20.2	1.15	27.6	13.79	2.3
South Jersey Industries	sjj	54.263	27.430	2.0	4.54	12.0	2.89	18.8	1.50	36.2	20.66	2.6
Southwest Gas	swx	38.948	41.070	0.9	6.81	5.7	2.43	16.0	1.06	36.7	26.68	1.5
UGI Corp	ugi	28.120	54.470	0.5	4.12	6.8	2.06	13.7	1.02	27.6	17.68	1.6
WGL Holdings	wgl	41.805	53.750	0.8	4.01	10.4	2.25	18.6	1.55	27.0	23.49	1.8
		Mean		1.1		9.5		17.6		28.0		1.8
		Median		0.9		9.2		18.6		27.0		1.6
		Max		2.0		13.6		21.5		36.7		2.6
		Min		0.52		5.7		13.7		21.4		1.3
		Std Dev		0.6		2.7		2.6		5.0		0.5
		Coefficient of Variation		0.5		0.3		0.1		0.2		0.3
		Say		1.0		9.2		18.0		27.0		1.7

**SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT
CAPITAL ASSET PRICING MODEL**

WASHINGTON STATE DEPARTMENT OF REVENUE
2012 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Ex Post
Ke = Rf + B (Rm-Rf)

Ke = Cost of Equity **6.19%**

to page 1

Rf =	risk free rate	2.90%	
Rp =	risk premium	4.70%	
B =	Beta	0.70	

page 7

Rp = Risk Premium (Rm-Rf) **4.70%**

to above

2012 Ibbotson Risk Premia Over Time Report, Page 6

	less	9.80% Large Company Geometric Rm 5.10% Average Historical Rf Income Return
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Rf = Risk Free Rate **2.90%**

to above

2012 Ibbotson Risk Premia Over Time Report, Page 7

Long Term (20 years) US Treasury Bond Yield	2.48%
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Value Line Investment Survey, Selected Yields January 6, 2012, page 1821

US Treasury Securities year end data	
30 year	2.92%
30 year Zero	3.02%

Federal Reserve Statistical Release (<http://www.federalreserve.gov/Releases/H15/Current/>)

Treasury Constant Maturities	
20 year	2.57%
30 year	2.89%
20 year TIPS	<u>0.53%</u>
	2.04%
	Inflation Indication

2.20%

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT
CAPITAL ASSET PRICING MODEL
WASHINGTON STATE DEPARTMENT OF REVENUE
2012 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Ex Ante
 $Ke = Rf + B (Rp)$

Ke =	Cost of Equity	7.10%	
			to page 1
	Rm =	rate of return	8.90%
	Rf =	risk free rate	2.90%
	Rp =	risk premium	6.00%
	B =	Beta	0.70
			page 7
Rp =	Risk Premium		6.00%
			to above
	Shannon Pratt and Roger Grabowski		3.50- 6.00%
	Cost of Capital, Applications and Examples, Third Edition, 2008, Page 113		
	Dr. Aswath Damodaran		6.04%
	http://pages.stern.nyu.edu/~adamodar/ 2012 Implied Premium		
	Ibbotson		6.14%
	2012 Risk Premia Over Time Report, Page 4 Long-horizon expected ERP (supply side)		
	John Graham & Campbell Harvey		3.85%
	Duke CFO Outlook Survey		December 2011
			10 year average
			2.39 - 4.74%
			10 year average range
Rf =	Risk Free Rate		2.90%
			to above
	2012 Ibbotson Risk Premia Over Time Report, Page 7		
	Long Term (20 years) US Treasury Bond Yield		2.48%
	Value Line Investment Survey, Selected Yields January 6, 2012, page 1821		
	US Treasury Securities year end data		
	30 year		2.92%
	30 year Zero		3.02%
	Federal Reserve Statistical Release (http://www.federalreserve.gov/Releases/H15/Current/)		
	Treasury Constant Maturities		
	20 year		2.57%
	30 year		2.89%
	20 year TIPS		<u>0.53%</u>
			2.04%
			Inflation Indication
			2.20%

BETA CALCULATION FOR CAPM

WASHINGTON STATE DEPARTMENT OF REVENUE

2012 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Company	Ticker	Value Line
AGL Resources	gas	0.75
Atmos Energy Corp	ato	0.70
Laclede Group	lg	0.60
New Jersey Resources	njr	0.65
Nisource Inc	ni	0.85
NW Natural Gas	nwn	0.60
Piedmont Natural Gas	pnv	0.70
South Jersey Industries	sjj	0.65
Southwest Gas	swx	0.75
UGI Corp	ugi	0.70
WGL Holdings	wgl	0.65
	Mean	0.69
	Median	0.70
	Max	0.85
	Min	0.60

Source: Value Line-five year, weekly

Say

0.70

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

WASHINGTON STATE DEPARTMENT OF REVENUE

2012 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Based on Dividend Growth

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

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 Growth (G)	Ke
AGL Resources	gas	40.637	1.84	4.53%	2.00%	6.53%
Atmos Energy Corp	ato	33.263	1.38	4.15%	1.50%	5.65%
Laclede Group	lg	39.882	1.65	4.14%	2.50%	6.64%
New Jersey Resources	njr	46.075	1.52	3.30%	4.00%	7.30%
Nisource Inc	ni	22.175	0.92	4.15%	nil	nmf
NW Natural Gas	nwn	46.208	1.78	3.85%	3.00%	6.85%
Piedmont Natural Gas	pnv	31.705	1.19	3.75%	3.50%	7.25%
South Jersey Industries	sjj	54.263	1.64	3.02%	9.00%	12.02%
Southwest Gas	swx	38.948	1.18	3.03%	8.00%	11.03%
UGI Corp	ugi	28.120	1.06	3.77%	6.00%	9.77%
WGL Holdings	wgl	41.805	1.59	3.80%	2.50%	6.30%
					Mean	7.93%
					Median	7.05%
					Trimmed Mean	7.48%
					Max	12.02%
					Min	5.65%

Source: Value Line Projections to 13-15

Say 7.50%

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

WASHINGTON STATE DEPARTMENT OF REVENUE

2012 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Based on Earnings Growth

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

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)	Earnings Growth (G)	Ke
AGL Resources	gas	40.637	1.84	4.53%	5.50%	10.03%
Atmos Energy Corp	ato	33.263	1.38	4.15%	4.00%	8.15%
Laclede Group	lg	39.882	1.65	4.14%	2.00%	6.14%
New Jersey Resources	njr	46.075	1.52	3.30%	5.50%	8.80%
Nisource Inc	ni	22.175	0.92	4.15%	8.00%	12.15%
NW Natural Gas	nwn	46.208	1.78	3.85%	4.00%	7.85%
Piedmont Natural Gas	pnv	31.705	1.19	3.75%	2.50%	6.25%
South Jersey Industries	sjj	54.263	1.64	3.02%	9.00%	12.02%
Southwest Gas	swx	38.948	1.18	3.03%	9.50%	12.53%
UGI Corp	ugi	28.120	1.06	3.77%	4.50%	8.27%
WGL Holdings	wgl	41.805	1.59	3.80%	3.00%	6.80%
Mean						9.00%
Median						8.27%
Trimmed Mean						7.79%
Max						12.53%
Min						6.14%

Source: Value Line Projections to 13-15

Say 8.50%

SUPPORT FOR YIELD CAPITALIZATION EQUITY COMPONENT DIVIDEND GROWTH MODEL

WASHINGTON STATE DEPARTMENT OF REVENUE

2012 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Based on Return on Equity

Ke = (D1 / Po) + G

Ke = Cost of Equity
D1 = Expected Dividends
Po = Current Price
G = Sustainable Growth
b = Retained Earnings (plowback)
ROE = Return on Equity

Company	Ticker	Stock Price (Po)	Expected Dividend (D1)	Dividend Yield (D1/Po)	b payout ratio (1-)	ROE	Growth (b*ROE)	Ke
AGL Resources	gas	40.637	1.84	4.53%	14.0%	5.20%	0.73%	5.26%
Atmos Energy Corp	ato	33.263	1.38	4.15%	38.0%	8.80%	3.34%	7.49%
Laclede Group	lg	39.882	1.65	4.14%	44.0%	11.10%	4.88%	9.02%
New Jersey Resources	njr	46.075	1.52	3.30%	45.0%	13.70%	6.17%	9.46%
Nisource Inc	ni	22.175	0.92	4.15%	13.0%	6.00%	0.78%	4.93%
NW Natural Gas	nwn	46.208	1.78	3.85%	27.0%	8.90%	2.40%	6.26%
Piedmont Natural Gas	pry	31.705	1.19	3.75%	27.0%	11.40%	3.08%	6.83%
South Jersey Industries	sjj	54.263	1.64	3.02%	49.0%	14.30%	7.01%	10.03%
Southwest Gas	swx	38.948	1.18	3.03%	57.0%	9.20%	5.24%	8.27%
UGI Corp	ugi	28.120	1.06	3.77%	51.0%	11.80%	6.02%	9.79%
WGL Holdings	wgl	41.805	1.59	3.80%	36.0%	9.40%	3.38%	7.19%
							Mean	7.68%
							Median	7.49%
							Max	10.03%
							Min	4.93%
							Say	7.50%

Value Line

SUPPORT FOR DEBT RATING AND DEBT YIELD RATE

WASHINGTON STATE DEPARTMENT OF REVENUE
2012 ASSESSMENT YEAR
NATURAL GAS DISTRIBUTION

Company	Ticker	Mergent's Ratings	S&P Ratings	WAYTM
AGL Resources	gas		BBB+	3.59%
Atmos Energy Corp	ato	Baa1	BBB+	3.33%
Laclede Group	lg		A	3.89%
New Jersey Resources	njr		A	
Nisource Inc	ni	Baa3	BBB-	3.25%
NW Natural Gas	nwn	A1	A+	3.54%
Piedmont Natural Gas	pnv		A	5.22%
South Jersey Industries	sjj		BBB+	5.20%
Southwest Gas	swx	Baa2	BBB+	4.23%
UGI Corp	ugi			1.92%
WGL Holdings	wgl		A+	3.81%
Overall Average Debt Rating		Baa1	A-	3.80%

bond analysis, A-BBB bonds

All issues 20+ year maturities

Guideline Companies, All Ratings	3.44%	4.51%
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bond analysis page 12

Mergent's Bond Record January 2012, page 140

Corporate	Aaa	Aa	A	Baa
October	3.98%	4.16%	4.54%	5.37%
November	3.87%	3.97%	4.34%	5.14%
December	3.93%	4.03%	4.40%	5.25%
4th Qtr Average	3.93%	4.05%	4.43%	5.25%
Public Utilities	Aaa	Aa	A	Baa
October		4.21%	4.52%	5.24%
November		3.92%	4.25%	4.93%
December		4.00%	4.33%	5.07%
4th Qtr Average		4.04%	4.37%	5.08%
Industrials	Aaa	Aa	A	Baa
October	3.98%	4.11%	4.56%	5.50%
November	3.87%	4.01%	4.43%	5.34%
December	3.93%	4.06%	4.46%	5.43%
4th Qtr Average	3.93%	4.06%	4.48%	5.42%

Debt Yield Rate	4.50%
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Natural Gas Distribution Bond Analysis

2012.5

Company	type	coupon	maturity	Price 12/11	Issued / Book	current yield	yield to maturity	WAYTM	Rating	Mkt Val	Mkt : Book	Embedded	Debt Service
AGL Capital	Nt	4.950	2015	107.69 \$	200,000,000	4.60%	1.78%	0.04%	BBB+	\$ 215,380,000	107.69%		9,900,000
AGL Capital	Sr Nt	5.875	2041	118.30 \$	700,000,000	4.97%	4.70%	0.37%	BBB+	\$ 828,100,000	118.30%		41,125,000
AGL Capital	Sr Nt	6.375	2016	113.93 \$	300,000,000	5.60%	2.20%	0.07%	BBB+	\$ 341,790,000	113.93%		19,125,000
	3	300	Sum	339.92 \$	1,200,000,000	Percent of book	113.31%	0.49%	\$	1,385,270,000	115.44%	5.85% \$	70,150,000
Atlanta Gas & Light	MTN	7.300	2027	128.24 \$	54,000,000	5.69%	4.59%	0.03%	BBB+	\$ 69,249,600	128.24%		3,942,000
Atlanta Gas & Light	MTN	7.000	2015	100.00 \$	11,250,000	7.00%	7.00%	0.01%	A-	\$ 11,250,000	100.00%		787,500
	2	200	Sum	228.24 \$	65,250,000	Percent of book	114.12%	0.04%	\$	80,499,600	123.37%	7.25%	4,729,500
Atmos Energy	Sr Nt	6.350	2017	118.49 \$	250,000,000	5.36%	2.01%	0.06%	BBB+	\$ 296,225,000	118.49%		15,875,000
Atmos Energy	Sr Nt	6.750	2028	129.27 \$	150,000,000	5.22%	4.15%	0.07%	BBB+	\$ 193,905,000	129.27%		10,125,000
Atmos Energy	Sr Nt	5.950	2034	121.91 \$	200,000,000	4.88%	4.36%	0.10%	BBB+	\$ 243,820,000	121.91%		11,900,000
	3	300	Sum	369.67 \$	600,000,000	Percent of book	123.22%	0.23%	\$	733,950,000	122.33%	6.32%	37,900,000
Laclede Gas	1st Mtg	7.900	2030	140.85 \$	30,000,000	5.61%	4.48%	0.02%	A	\$ 42,255,000	140.85%		2,370,000
Laclede Gas	1st Mtg	7.000	2029	118.35 \$	25,000,000	5.91%	5.30%	0.02%	A	\$ 29,587,500	118.35%		1,750,000
Laclede Gas	1st Mtg	5.500	2019	115.45 \$	150,000,000	4.76%	2.86%	0.05%	A	\$ 173,175,000	115.45%		8,250,000
Laclede Gas	1st Mtg	6.150	2036	125.77 \$	55,000,000	4.89%	4.37%	0.03%	NR	\$ 69,173,500	125.77%		3,382,500
Laclede Gas	1st Mtg	6.000	2034	122.36 \$	150,000,000	4.90%	4.37%	0.07%	A	\$ 183,540,000	122.36%		9,000,000
	5	500	Sum	622.78 \$	410,000,000	Percent of book	124.56%	0.18%	\$	497,731,000	121.40%	6.04% \$	24,752,500
Nisource Finance	Gtd Nt	6.800	2019	117.12 \$	500,000,000	5.81%	3.78%	0.21%	BBB-	\$ 585,600,000	117.12%		34,000,000
Nisource Finance	Gtd Nt	6.125	2022	115.12 \$	500,000,000	5.32%	4.17%	0.24%	BBB-	\$ 575,600,000	115.12%		30,625,000
Nisource Finance	Gtd Nt	6.400	2018	114.98 \$	800,000,000	5.57%	3.37%	0.31%	BBB-	\$ 919,840,000	114.98%		51,200,000
Nisource Finance	Gtd Nt	5.250	2017	110.38 \$	1,000,000,000	4.76%	2.77%	0.31%	BBB-	\$ 1,103,800,000	110.38%		52,500,000
Nisource Finance	Gtd Nt	10.750	2016	130.16 \$	600,000,000	8.26%	1.78%	0.12%	BBB-	\$ 780,960,000	130.16%		64,500,000
Nisource Finance	Gtd Nt	5.450	2020	110.76 \$	1,000,000,000	4.92%	3.78%	0.43%	BBB-	\$ 1,107,600,000	110.76%		54,500,000
	6	600	Sum	698.52 \$	4,400,000,000	Percent of book	116.42%	1.62%	\$	5,073,400,000	115.30%	6.53%	287,325,000
Northwest Nat Gas	MTN	5.660	2033	114.76 \$	150,000,000	4.93%	4.54%	0.08%	A+	\$ 172,140,000	114.76%		8,490,000
Northwest Nat Gas	MTN	5.820	2032	116.71 \$	108,000,000	4.99%	4.51%	0.06%	A+	\$ 126,046,800	116.71%		6,285,600
Northwest Nat Gas	MTN	7.850	2030	140.97 \$	123,000,000	5.57%	4.43%	0.06%	A+	\$ 173,393,100	140.97%		9,655,500
Northwest Nat Gas	MTN	7.740	2030	140.38 \$	123,000,000	5.51%	4.39%	0.06%	A+	\$ 172,667,400	140.38%		9,520,200
Northwest Nat Gas	MTN	4.700	2015	109.06 \$	40,000,000	4.31%	1.01%	0.00%	A+	\$ 43,624,000	109.06%		1,880,000
Northwest Nat Gas	MTN	9.050	2021	148.87 \$	10,000,000	6.08%	2.58%	0.00%	A+	\$ 14,887,000	148.87%		905,000
Northwest Nat Gas	MTN	5.620	2023	122.39 \$	150,000,000	4.59%	3.09%	0.05%	A+	\$ 183,585,000	122.39%		8,430,000
Northwest Nat Gas	MTN	7.630	2019	133.10 \$	123,000,000	5.73%	2.12%	0.03%	A+	\$ 163,713,000	133.10%		9,384,900
Northwest Nat Gas	MTN	7.720	2025	143.83 \$	123,000,000	5.37%	3.37%	0.05%	A+	\$ 176,910,900	143.83%		9,495,600
Northwest Nat Gas	MTN	7.000	2017	125.42 \$	40,000,000	5.58%	1.17%	0.01%	A+	\$ 50,168,000	125.42%		2,800,000
	10	1000	Sum	1295.49 \$	990,000,000	Percent of book	129.55%	0.40%	\$	1,277,135,200	129.00%	6.75%	66,846,800
Piedmont Nat Gas	Nt	6.000	2033	120.56 \$	200,000,000	4.98%	4.45%	0.10%	A	\$ 241,120,000	120.56%		12,000,000
Piedmont Nat Gas	Nt	6.250	2036	100.00 \$	200,000,000	6.25%	6.25%	0.14%	NR	\$ 200,000,000	100.00%		12,500,000
Piedmont Nat Gas	MTN	7.950	2029	141.57 \$	60,000,000	5.62%	4.36%	0.03%	A	\$ 84,942,000	141.57%		4,770,000
	3	300	Sum	362.13 \$	460,000,000	Percent of book	120.71%	0.27%	\$	526,062,000	114.36%	6.36%	29,270,000
South Jersey Gas	MTN	5.550	2033	104.31 \$	30,000,000	5.32%	5.20%	0.02%	A	\$ 31,293,000	104.31%		1,665,000
	1	100	Sum	104.31 \$	30,000,000	Percent of book	104.31%	0.02%	\$	31,293,000	104.31%	5.55%	1,665,000
Southwest Gas	Deb	8.000	2026	138.12 \$	75,000,000	5.79%	4.23%	0.04%	BBB+	\$ 103,590,000	138.12%		6,000,000
	1	100	Sum	138.12 \$	75,000,000	Percent of book	138.12%	0.04%	\$	103,590,000	138.12%	8.00%	6,000,000
UGI Utilities	Sr Nt	5.753	2016	115.71 \$	175,000,000	4.97%	1.15%	0.02%	NR	\$ 202,492,500	115.71%		10,067,750
UGI Utilities	Sr Nt	6.206	2036	120.81 \$	100,000,000	5.14%	4.72%	0.05%	NR	\$ 120,810,000	120.81%		6,206,000
UGI Utilities	MTN	5.640	2015	112.00 \$	125,000,000	5.04%	0.77%	0.01%	NR	\$ 140,000,000	112.00%		7,050,000
UGI Utilities	MTN	7.250	2017	123.22 \$	20,000,000	5.88%	1.83%	0.00%	BBB	\$ 24,644,000	123.22%		1,450,000
	4	400	Sum	471.74 \$	420,000,000	Percent of book	117.94%	0.09%	\$	487,946,500	116.18%	5.90%	24,773,750
Washington Gas & Light	MTN	5.700	2036	114.79 \$	25,000,000	4.97%	4.65%	0.01%	A+	\$ 28,697,500	114.79%		1,425,000
Washington Gas & Light	MTN	5.170	2016	111.38 \$	25,000,000	4.64%	1.79%	0.01%	A+	\$ 27,845,000	111.38%		1,292,500
Washington Gas & Light	MTN	5.781	2036	116.01 \$	25,000,000	4.98%	4.65%	0.01%	A+	\$ 29,002,500	116.01%		1,445,250
Washington Gas & Light	MTN	6.490	2027	120.18 \$	8,000,000	5.40%	4.56%	0.00%	A+	\$ 9,614,400	120.18%		519,200
Washington Gas & Light	MTN	6.820	2026	125.77 \$	25,000,000	5.42%	4.27%	0.01%	A+	\$ 31,442,500	125.77%		1,705,000
Washington Gas & Light	MTN	5.440	2025	118.19 \$	41,000,000	4.60%	3.61%	0.02%	A+	\$ 48,457,900	118.19%		2,230,400
	6	600	Sum	706.32 \$	149,000,000	Percent of book	117.72%	0.06%	\$	175,059,800	117.49%	5.78%	8,617,350
Total				\$	8,799,250,000			3.44%	Total	\$ 10,371,937,100	117.87%	6.39% \$	562,029,900

This includes short term. For 20+ year maturities see below

Company	type	coupon	maturity	Price 12/11	Issued / Book	current yield	yield to maturity	Weighted A	Rating	Mkt Val	Mkt : Book	Embedded	Debt Service
Laclede Gas	1st Mtg	6.000	2034	122.36 \$	150,000,000	4.90%	4.37%	0.95%	A	\$ 183,540,000	122.36%		9,000,000
Northwest Nat Gas	MTN	5.660	2033	114.76 \$	150,000,000	4.93%	4.54%	0.99%	A+	\$ 172,140,000	114.76%		8,490,000
Northwest Nat Gas	MTN	5.820	2032	116.71 \$	108,000,000	4.99%	4.51%	0.71%	A+	\$ 126,046,800	116.71%		6,285,600
Piedmont Nat Gas	Nt	6.000	2033	120.56 \$	200,000,000	4.98%	4.45%	1.29%	A	\$ 241,120,000	120.56%		12,000,000

South Jersey Gas	MTN	5.550	2033	104.31	\$	30,000,000	5.32%	5.20%	0.23%	A	\$	31,293,000	104.31%	1,665,000				
Washington Gas & Light	MTN	5.700	2036	114.79	\$	25,000,000	4.97%	4.65%	0.17%	A+	\$	28,697,500	114.79%	1,425,000				
Washington Gas & Light	MTN	5.781	2036	116.01	\$	25,000,000	4.98%	4.65%	0.17%	A+	\$	29,002,500	116.01%	1,445,250				
				Total	\$	688,000,000					4.51%	Total	\$	811,839,800	118.00%	5.86%	\$	40,310,850
														Embedded debt rate	5.86%			
														Weighted average yield to maturity	4.51%			
														Debt service / Market value	4.97%			

Source: Standard & Poor's Bond Guide, January 2012, 2011 Yr End Prices

DATA INPUT

WASHINGTON STATE DEPARTMENT OF REVENUE
 2012 ASSESSMENT YEAR
 NATURAL GAS DISTRIBUTION

Instructions: Data entered on this page will flow to the applicable worksheets.

div to earnings

Guideline Companies		Stock Price	Revenues	Cash Flow	Earnings	Dividends	Bk Value	Common	Calculated Debt	Wtd Avg YTM	Payout Ratio	Payout Ratio	ROE
Name	Ticker	(4th Qtr Avg)	Per Share	Per Share	Per Share	Per Share	Stock	Shares	mk to bk		calculated	V L	V L
AGL Resources	gas	40.637	20.00	3.05	2.12	1.90	28.54	117,099,662	115.44%	3.59%	90%	86%	5.2%
Atmos Energy Corp	ato	33.263	48.15	4.72	2.26	1.36	24.98	90,364,061	122.33%	3.33%	60%	62%	8.8%
Laclede Group	lg	39.882	71.48	4.62	2.86	1.61	25.56	22,486,439	121.40%	3.89%	56%	56%	11.1%
New Jersey Resources	njr	46.075	72.60	3.40	2.58	1.44	18.73	41,476,807	117.87%		56%	55%	13.7%
Nisource Inc	ni	22.175	21.97	2.99	1.03	0.92	17.71	282,180,170	115.30%	3.25%	89%	87%	6.0%
NW Natural Gas	nwn	46.208	31.77	5.01	2.39	1.75	26.74	26,719,000	129.00%	3.54%	nmf	73%	8.9%
Piedmont Natural Gas	pnv	31.705	19.83	2.99	1.57	1.15	13.79	72,338,303	114.36%	5.22%	73%	73%	11.4%
South Jersey Industries	sjj	54.263	27.43	4.54	2.89	1.50	20.66	30,249,818	104.31%	5.20%	52%	51%	14.3%
Southwest Gas	swx	38.948	41.07	6.81	2.43	1.06	26.68	46,093,472	138.12%	4.23%	44%	43%	9.2%
UGI Corp	ugi	28.120	54.47	4.12	2.06	1.02	17.68	112,126,376	116.18%	1.92%	nmf	49%	11.8%
WGL Holdings	wgl	41.805	53.75	4.01	2.25	1.55	23.49	51,497,582	117.49%	3.81%	69%	64%	9.4%

Value Line March 9, 2012

Yahoo

Value Line

Value Line

Value Line

Value Line

Value Line

Value Line

Bond analysis
 119.25%
 117.87%

Bond analysis

calculated

Value Line

Value Line

SUPPORT FOR DIRECT CAPITALIZATION EQUITY COMPONENT

WASHINGTON STATE DEPARTMENT OF REVENUE

2012 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

Company	Ticker	Stock Average	2011		2012		2011		2012	
			Actual Earnings Ratio (EPS/P)		Projected Earnings Ratio (PEPS/P)		Cash Flow Ratio (CF/P)		Projected Cash Flow Ratio	
AGL Resources	gas	40.64	2.12	5.2%	3.25	8.0%	3.05	7.5%	4.85	11.9%
Atmos Energy Corp	ato	33.26	2.26	6.8%	2.30	6.9%	4.72	14.2%	4.95	14.9%
Laclede Group	lg	39.88	2.86	7.2%	2.70	6.8%	4.62	11.6%	4.60	11.5%
New Jersey Resources	njr	46.08	2.58	5.6%	2.85	6.2%	3.40	7.4%	3.85	8.4%
Nisource Inc	ni	22.18	1.03	4.6%	1.45	6.5%	2.99	13.5%	3.45	15.6%
NW Natural Gas	nwn	46.21	2.39	5.2%	2.65	5.7%	5.01	10.8%	5.65	12.2%
Piedmont Natural Gas	pny	31.71	1.57	5.0%	1.65	5.2%	2.99	9.4%	3.10	9.8%
South Jersey Industries	sjj	54.26	2.89	5.3%	3.20	5.9%	4.54	8.4%	4.85	8.9%
Southwest Gas	swx	38.95	2.43	6.2%	2.65	6.8%	6.81	17.5%	7.15	18.4%
UGI Corp	ugi	28.12	2.06	7.3%	1.95	6.9%	4.12	14.7%	4.10	14.6%
WGL Holdings	wgl	41.81	2.25	5.4%	2.50	6.0%	4.01	9.6%	4.40	10.5%
		Mean		5.8%		6.5%		11.3%		12.4%
		Median		5.4%		6.5%		10.8%		11.9%
		Max		7.3%		8.0%		17.5%		18.4%
		Min		4.6%		5.2%		7.4%		8.4%

Source: **Say** **5.5%** **6.5%** **11.0%** **12.0%**

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

AVERAGE FOURTH QUARTER STOCK PRICE

WASHINGTON STATE DEPARTMENT OF REVENUE

2012 ASSESSMENT YEAR

NATURAL GAS DISTRIBUTION

								38.46
AGL Resources gas								Q4 Average
Date	Open	High	Low	Close	Volume	Adj Close		40.637
12/1/2011	41.23	43.00	38.40	42.26	2105200		42.26	
11/1/2011	40.79	42.07	38.71	41.23	508000		41.23	
10/3/2011	40.50	43.69	37.95	41.94	505000		41.94	
Atmos Energy Corp ato								
Date	Open	High	Low	Close	Volume	Adj Close		33.263
12/1/2011	34.13	34.63	31.76	33.35	908300		33.35	
11/1/2011	33.44	35.55	32.38	34.21	467900		34.21	
10/3/2011	32.30	35.26	30.00	34.32	414500		33.97	
Laclede Group Inc lg								
Date	Open	High	Low	Close	Volume	Adj Close		39.882
12/1/2011	40.04	41.24	38.78	40.47	117200		40.47	
11/1/2011	39.30	40.72	38.51	40.13	131300		39.71	
10/3/2011	38.64	42.81	37.23	40.12	129900		39.70	
New Jersey Resources njr								
Date	Open	High	Low	Close	Volume	Adj Close		46.075
12/1/2011	47.14	50.48	45.88	49.20	221500		49.20	
11/1/2011	45.41	48.00	43.52	47.31	205100		46.93	
10/3/2011	42.64	48.47	40.10	47.02	246400		46.64	
Nisource Inc ni								
Date	Open	High	Low	Close	Volume	Adj Close		22.175
12/1/2011	22.77	23.97	21.67	23.81	2519000		23.81	
11/1/2011	21.56	22.93	21.17	22.91	3024900		22.91	
10/3/2011	21.37	23	20.31	22.09	4798800		22.09	
NW Natural Gas nwn								
Date	Open	High	Low	Close	Volume	Adj Close		46.208
12/1/2011	46.89	48.98	45.81	47.93	125900		47.93	
11/1/2011	45.59	47.49	44.78	47.06	107900		47.06	
10/3/2011	44.08	47.67	42.52	46.72	130100		46.72	
Piedmont Natural Gas pny								
Date	Open	High	Low	Close	Volume	Adj Close		31.705
12/1/2011	32.85	34.74	31.94	33.98	375100		33.98	
11/1/2011	31.56	33.01	29.90	32.97	341800		32.69	
10/3/2011	28.72	33.60	27.04	32.69	408900		32.41	
South Jersey Industries sjj								
Date	Open	High	Low	Close	Volume	Adj Close		54.263
12/1/2011	56.30	57.83	53.22	56.81	113500		56.81	
11/1/2011	54.51	57.25	52.35	56.18	125500		55.77	
10/3/2011	49.59	57.60	47.33	56.31	127700		55.90	
Southwest Gas Corp swx								
Date	Open	High	Low	Close	Volume	Adj Close		38.948
12/1/2011	40.40	43.20	38.20	42.49	255300		42.49	

11/1/2011	38.21	40.46	37.05	40.43	236800	40.43
10/3/2011	35.97	40.23	34.55	39.48	285000	39.21

UGI Corp ugi

Date	Open	High	Low	Close	Volume	Adj Close	
12/1/2011	29.93	30.22	27.35	29.4	1481100	29.4	28.120
11/1/2011	28.01	30.13	27.68	29.96	778700	29.68	
10/3/2011	26.23	29.27	24.07	28.67	1048200	28.4	

WGL Holdings wgl

Date	Open	High	Low	Close	Volume	Adj Close	
12/1/2011	42.9	44.99	41.43	44.22	328600	43.83	41.805
11/1/2011	41.4	43.58	40.11	42.87	370700	42.49	
10/3/2011	38.95	43.88	36.84	42.81	335700	42.43	

Source:
 finance.yahoo.com
 Historical Stock Quotes

IMPLIED PREMIUMS FOR US MARKET

Last updated January 2012

These implied premiums are calculated using the S&P 500.

Year	Earnings Yield	Dividend Yield	S&P 500	Earnings	Dividends	Change in Earnings	Change in Dividends	T.Bill Rate	T.Bond Rate	Bond-Bill	Smoothed Growth	Implied Premium (DDM)	Analyst Growth Estimate	Implied Premium (FCFE)	ERP/Riskfree Rate
1960	5.34%	3.41%	58.11	3.1	1.98			0.0266	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	5.3	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	6.1	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%	0.4
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	8.2	-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%	0.5
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	19.3	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	26.9	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	37.7	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%	0.5
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	16.2	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	-30.79%	-3.24%	1.80%	5.05%	3.25%	3.56%	1.73%	10.30%	3.62%	0.72
2002	5.23%	1.83%	879.82	46.04	16.08	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	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	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	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	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	-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	-20.78%	1.15%	1.59%	2.21%	0.62%	2.11%	2.06%	4.00%	6.43%	2.91
2009	5.35%	2.00%	1115.1	59.65	22.31	-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	40.25%	3.63%	0.13%	3.29%	3.16%	3.33%	2.24%	6.95%	5.20%	1.58