

2018

**CAPITALIZATION RATE STUDY
FOR CENTRALLY ASSESSED PROPERTIES**

FOR: JANUARY 1, 2018



UTAH STATE TAX COMMISSION

PROPERTY TAX DIVISION
UTILITIES & TRANSPORTATION SECTION
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REV. 4/2/2018



UTAH STATE TAX COMMISSION
PROPERTY TAX DIVISION
SUMMARY OF EQUITY RATES AND CAPITAL STRUCTURE

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Industry	Page	Equity Yield Rate	Debt/Equity	Income Tax Rate
PASSENGER AIR CARRIERS	3	10.85%	35% / 65%	25.0%
REGIONAL AIR CARRIERS	7	12.91%	55% / 45%	25.0%
FREIGHT AIR CARRIERS	11	8.98%	25% / 75%	25.0%
ELECTRIC UTILITIES	15	7.40%	40% / 60%	25.0%
NATURAL GAS UTILITIES	19	7.54%	35% / 65%	25.0%
NATURAL GAS PIPELINES	23	11.93%	45% / 55%	25.0%
LIQUID PIPELINES	27	11.74%	40% / 60%	25.0%
RAILROAD	31	10.43%	15% / 85%	25.0%
RAILROAD - SHORTLINE	35	10.99%	20% / 80%	25.0%
WIRELESS TELECOMS	39	8.24%	40% / 60%	25.0%
WIRELINTELECOMS	43	9.58%	60% / 40%	25.0%
COMBINED TELECOMS	47	8.38%	45% / 55%	25.0%



**UTAH STATE TAX COMMISSION
PROPERTY TAX DIVISION
KEY RATES AND FIGURES**

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CORPORATE BONDS

Aaa	3.51%
Aa	3.61%
A	3.79%
Baa	4.22%
Ba1	6.92%
Ba2	6.92%
Ba3	6.92%
B1	7.88%
B2	7.88%
B3	7.88%
Caa1	9.47%
Caa2	9.74%
Caa3	9.47%
Ca	12.38%
C	12.54%

PUBLIC UTILITY BONDS

Aaa	N/A
Aa	3.62%
A	3.79%
Baa	4.14%

PREFERRED STOCKS

Aaa	N/A
Aa	N/A
A	N/A
Baa	N/A

MISCELLANEOUS RATES

Airline 'TEFRA' Relief Factor	5.47%
4-R Act Relief for Railroads	7.48%
4-R Act Relief (BNSF only)	5.47%
Rural Telephone Equity Rate Adj.	4.00%
Default Income Tax Rate	25.00%
GDP Price Deflator Forecast	2.30%
Long Term Growth Rate	3.54%

INFLATION FACTORS

Year	4th Qtr. GDP Implicit Price Deflator	Annual Percent Change	Conversion Factor
2007	97.95	2.46%	1.167
2008	99.81	1.90%	1.145
2009	100.18	0.38%	1.141
2010	101.96	1.78%	1.121
2011	103.91	1.91%	1.100
2012	105.94	1.95%	1.079
2013	107.67	1.64%	1.061
2014	109.36	1.56%	1.045
2015	110.51	1.05%	1.034
2016	112.19	1.52%	1.019
2017	114.29	1.87%	1.000

2018 - 2008 Average Change: 1.64%

Source:

U.S. Department of Commerce: Bureau of Economic Analysis
Gross Domestic Product: Implicit Price Deflator

MARKET RISK PREMIUMS

Full Term Historical Risk Premium	7.07%
Supply Side Risk Premium	6.04%
Damodaran Implied ERP	5.05%
Risk Free Rate	2.58%

MISCELLANEOUS INFORMATION

Stock prices are from the last trading day of 2017. Retrieved from <http://finance.yahoo.com/>

Bond yield information derived from the January 2018 Mergent bond record.

Company and industry data was taken from the last ValueLine tear sheet of 2017

Damodaran Implied Risk Premium Model Calculated Based on Model Found at: <http://pages.stern.nyu.edu/~adamodar/>

Full term historical and supply side RP are taken from: Duff and Phelps



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PASSENGER AIR CARRIERS -- COMPANY INFORMATION

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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Alaska Airlines	9,046.19	4,939.62	65%	35%
American Airlines	24,740.68	35,443.01	41%	59%
Allegiant Travel Company	2,486.28	1,145.38	68%	32%
Delta Airlines	39,603.09	22,128.02	64%	36%
Hawaiian Holdings	2,039.26	1,409.70	59%	41%
JetBlue Airways	7,171.14	2,190.28	77%	23%
Southwest Airlines	38,520.65	4,656.43	89%	11%
Spirit Airways	5,950.19	2,873.98	67%	33%
United Continental	19,341.99	28,303.23	41%	59%
Selected Equity and Debt Structure			65%	35%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate
Alaska Airlines	1.20	(1.11) B	N/A	38.00%
American Airlines	1.30	(1.00) B+	Ba3	38.00%
Allegiant Travel Company	0.90	(0.89) B++	Ba3	36.50%
Delta Airlines	1.30	(1.00) B+	Baa3	35.00%
Hawaiian Holdings	1.25	(1.11) B	B1	38.00%
JetBlue Airways	1.20	(1.00) B+	Ba1	38.00%
Southwest Airlines	1.20	(0.78) A	A3	37.00%
Spirit Airways	1.45	(0.89) B++	Ba1	37.00%
United Continental	1.35	(1.11) B	Ba2	36.00%
Selected for Industry	1.24	0.99	Ba1	25.00%

* Amounts in Millions



UTAH STATE TAX COMMISSION
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PASSENGER AIR CARRIERS -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT	
Market Risk Premium	7.07%
X Industry Beta	1.24
Industry Risk Premium	8.77%
Add: Risk Free Rate	2.58%
Indicated Rate	11.35%

CAPM: IMPLIED ERP	
Market Risk Premium	5.05%
X Industry Beta	1.24
Industry Risk Premium	6.26%
Add: Risk Free Rate	2.58%
Indicated Rate	8.84%

CAPM: SUPPLY SIDE	
Market Risk Premium	6.04%
X Industry Beta	1.24
Industry Risk Premium	7.49%
Add: Risk Free Rate	2.58%
Indicated Rate	10.07%

DIVISION'S RISK PREMIUM	
Market Risk Premium	7.07%
X Industry Financial Strength	0.99
Industry Risk Premium	7.00%
Add: Risk Free Rate	2.58%
Indicated Rate	9.58%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
Alaska Airlines	7.92%	9.54%	12.95%
American Airlines	6.54%	15.64%	N/A
Allegiant Travel Company	4.47%	10.53%	N/A
Delta Airlines	14.99%	17.82%	11.01%
Hawaiian Holdings	12.74%	N/A	12.99%
JetBlue Airways	11.46%	N/A	10.61%
Southwest Airlines	11.19%	14.42%	8.10%
Spirit Airways	N/A	N/A	N/A
United Continental	11.78%	N/A	11.81%
Selected Rate	10.14%	13.59%	11.39%



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PASSENGER AIR CARRIERS -- DGM INPUTS

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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
Alaska Airlines	73.51	1.30	10.0%	14.0%	22.5%	3.54%
American Airlines	52.03	1.99	1.5%	24.0%	N/A	3.54%
Allegiant Travel Company	154.75	2.40	2.0%	17.0%	N/A	3.54%
Delta Airlines	56.00	4.84	10.5%	17.5%	0.7%	3.54%
Hawaiian Holdings	39.85	2.38	11.5%	Nil	12.1%	3.54%
JetBlue Airways	22.34	1.46	7.0%	Nil	4.9%	3.54%
Southwest Airlines	65.45	2.77	12.0%	20.0%	4.4%	3.54%
Spirit Airways	87.25		7.5%	Nil	N/A	3.54%
United Continental	67.40	5.29	4.5%	Nil	4.6%	3.54%



**UTAH STATE TAX COMMISSION
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REGIONAL AIR CARRIERS -- COMPANY INFORMATION**

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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Skywest Inc.	2,748.17	3,333.43	45%	55%
Selected Equity and Debt Structure			45%	55%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate	
Skywest Inc.	1.55	(1.00) B+	Baa1	39.00%	
Selected for Industry		1.55	1.00	Baa1	25.00%

* Amounts in Millions



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REGIONAL AIR CARRIERS -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT	
Market Risk Premium	7.07%
X Industry Beta	1.55
Industry Risk Premium	10.96%
Add: Risk Free Rate	2.58%
Indicated Rate	13.54%

CAPM: IMPLIED ERP	
Market Risk Premium	5.05%
X Industry Beta	1.55
Industry Risk Premium	7.83%
Add: Risk Free Rate	2.58%
Indicated Rate	10.41%

CAPM: SUPPLY SIDE	
Market Risk Premium	6.04%
X Industry Beta	1.55
Industry Risk Premium	9.36%
Add: Risk Free Rate	2.58%
Indicated Rate	11.94%

DIVISION'S RISK PREMIUM	
Market Risk Premium	7.07%
X Industry Financial Strength	1.00
Industry Risk Premium	7.07%
Add: Risk Free Rate	2.58%
Indicated Rate	9.65%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
Skywest Inc.	9.86%	9.66%	7.16%
Selected Rate	9.86%	9.66%	7.16%



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REGIONAL AIR CARRIERS -- DGM INPUTS

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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
Skywest Inc.	53.10	0.36	17.5%	17.0%	10.8%	3.54%



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FREIGHT AIR CARRIERS -- COMPANY INFORMATION

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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Atlas Air Worldwide	1,483.40	3,336.95	31%	69%
Federal Express	66,940.96	30,205.54	69%	31%
United Parcel Service	102,349.85	26,685.27	79%	21%
Selected Equity and Debt Structure			75%	25%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate
Atlas Air Worldwide	1.30	(1.00) B+	N/A	37.00%
Federal Express	1.10	(0.56) A++	Baa2	33.50%
United Parcel Service	0.85	(0.78) A	A1	35.00%
Selected for Industry	0.96	0.69	A3	25.00%

*Amount in Millions



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FREIGHT AIR CARRIERS -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT		CAPM: IMPLIED ERP	
Market Risk Premium	7.07%	Market Risk Premium	5.05%
X Industry Beta	0.96	X Industry Beta	0.96
Industry Risk Premium	6.79%	Industry Risk Premium	4.85%
Add: Risk Free Rate	2.58%	Add: Risk Free Rate	2.58%
Indicated Rate	9.37%	Indicated Rate	7.43%

CAPM: SUPPLY SIDE		DIVISION'S RISK PREMIUM	
Market Risk Premium	6.04%	Market Risk Premium	7.07%
X Industry Beta	0.96	X Industry Financial Strength	0.69
Industry Risk Premium	5.80%	Industry Risk Premium	4.88%
Add: Risk Free Rate	2.58%	Add: Risk Free Rate	2.58%
Indicated Rate	8.38%	Indicated Rate	7.46%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
Atlas Air Worldwide	N/A	N/A	N/A
Federal Express	7.96%	11.40%	10.24%
United Parcel Service	9.01%	7.99%	N/A
Selected Rate	8.48%	9.70%	10.24%



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FREIGHT AIR CARRIERS -- DGM INPUTS

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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
Atlas Air Worldwide	58.65	Nil	23.0%	Nil	N/A	3.54%
Federal Express	249.54	2.00	12.5%	21.0%	18.1%	3.54%
United Parcel Service	119.15	3.40	10.0%	7.5%	N/A	3.54%



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ELECTRIC UTILITIES -- COMPANY INFORMATION

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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Alliant Energy	9,857.77	5,542.50	64%	36%
CMS Energy Corp.	13,319.68	10,997.00	55%	45%
Great Plains Energy	6,957.45	4,000.00	63%	37%
IdaCorp Inc.	4,603.81	1,915.46	71%	29%
NorthWestern	3,162.98	2,245.82	58%	42%
OGE Energy	6,572.13	3,556.40	65%	35%
Portland General	4,061.83	2,829.00	59%	41%
Vectren Corp.	5,396.66	1,981.20	73%	27%
Wisconsin Energy	20,963.62	11,813.60	64%	36%
Westar Energy	7,502.58	4,357.63	63%	37%
XCEL Energy	24,428.47	17,346.00	58%	42%
Selected Equity and Debt Structure			60%	40%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate
Alliant Energy	0.70	(0.78) A	Baa1	15.00%
CMS Energy Corp.	0.65	(0.89) B++	Baa1	33.00%
Great Plains Energy	0.75	(1.00) B+	Baa2	37.00%
IdaCorp Inc.	0.70	(0.78) A	Baa1	20.00%
NorthWestern	0.70	(1.00) B+	Baa1	20.00%
OGE Energy	0.95	(0.78) A	A3	32.00%
Portland General	0.70	(0.89) B++	A3	21.00%
Vectren Corp.	0.75	(0.78) A	A2	35.00%
Wisconsin Energy	0.60	(0.67) A+	A3	37.50%
Westar Energy	0.70	(0.78) A	Baa1	34.00%
XCEL Energy	0.60	(0.67) A+	A3	33.00%
Selected for Industry	0.67	0.77	Baa1	25.00%

*Amount in Millions



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ELECTRIC UTILITIES -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT		CAPM: IMPLIED ERP	
Market Risk Premium	7.07%	Market Risk Premium	5.05%
X Industry Beta	0.67	X Industry Beta	0.67
Industry Risk Premium	4.74%	Industry Risk Premium	3.38%
Add: Risk Free Rate	2.58%	Add: Risk Free Rate	2.58%
Indicated Rate	7.32%	Indicated Rate	5.96%

CAPM: SUPPLY SIDE		DIVISION'S RISK PREMIUM	
Market Risk Premium	6.04%	Market Risk Premium	7.07%
X Industry Beta	0.67	X Industry Financial Strength	0.77
Industry Risk Premium	4.05%	Industry Risk Premium	5.44%
Add: Risk Free Rate	2.58%	Add: Risk Free Rate	2.58%
Indicated Rate	6.63%	Indicated Rate	8.02%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
Alliant Energy	7.68%	7.07%	6.91%
CMS Energy Corp.	7.74%	7.74%	7.19%
Great Plains Energy	7.59%	7.79%	7.02%
IdaCorp Inc.	6.15%	7.57%	6.15%
NorthWestern	7.61%	7.82%	7.31%
OGE Energy	8.79%	10.00%	7.82%
Portland General	7.65%	7.65%	6.89%
Vectren Corp.	7.55%	7.15%	6.73%
Wisconsin Energy	7.86%	8.06%	6.99%
Westar Energy	7.72%	7.31%	7.11%
XCEL Energy	7.09%	7.69%	6.73%
Selected Rate	7.60%	7.83%	6.99%



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ELECTRIC UTILITIES -- DGM INPUTS

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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
Alliant Energy	42.61	1.34	6.00%	4.50%	4.10%	3.54%
CMS Energy Corp.	47.30	1.42	6.50%	6.50%	5.15%	3.54%
Great Plains Energy	32.24	1.18	4.50%	5.00%	3.09%	3.54%
IdaCorp Inc.	91.36	2.40	3.50%	7.00%	3.51%	3.54%
NorthWestern	59.70	2.20	4.50%	5.00%	3.75%	3.54%
OGE Energy	32.91	1.40	6.00%	9.00%	3.60%	3.54%
Portland General	45.58	1.42	6.00%	6.00%	4.12%	3.54%
Vectren Corp.	65.02	1.83	6.50%	5.50%	4.48%	3.54%
Wisconsin Energy	66.43	2.21	6.00%	6.50%	3.83%	3.54%
Westar Energy	52.80	1.68	6.00%	5.00%	4.50%	3.54%
XCEL Energy	48.11	1.52	4.50%	6.00%	3.63%	3.54%



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NATURAL GAS UTILITIES -- COMPANY INFORMATION

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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Atmos Energy Corp	9,530.54	3,642.47	72%	28%
Chesapeake Utility	1,283.25	467.99	73%	27%
NiSource	8,651.20	9,809.10	47%	53%
Northwest NG	1,714.10	907.54	65%	35%
Southwest Gas	3,870.28	2,110.52	65%	35%
Spire Inc	3,629.75	2,863.70	56%	44%
Selected Equity and Debt Structure			65%	35%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate
Atmos Energy Corp	0.70	(0.67) A+	A2	40.00%
Chesapeake Utility	0.70	(0.89) B++	-	41.50%
NiSource	0.60	(1.00) B+	Baa2	35.50%
Northwest NG	0.70	(0.78) A	A3	35.00%
Southwest Gas	0.80	(0.89) B++	A3	35.00%
Spire Inc	0.70	(0.89) B++	Baa2	24.00%
Selected for Industry	0.70	0.85	Baa1	25.00%

*Amount in Millions



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NATURAL GAS UTILITIES -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT	
Market Risk Premium	7.07%
X Industry Beta	0.70
Industry Risk Premium	4.95%
Add: Risk Free Rate	2.58%
Indicated Rate	7.53%

CAPM: IMPLIED ERP	
Market Risk Premium	5.05%
X Industry Beta	0.70
Industry Risk Premium	3.54%
Add: Risk Free Rate	2.58%
Indicated Rate	6.12%

CAPM: SUPPLY SIDE	
Market Risk Premium	6.04%
X Industry Beta	0.70
Industry Risk Premium	4.23%
Add: Risk Free Rate	2.58%
Indicated Rate	6.81%

DIVISION'S RISK PREMIUM	
Market Risk Premium	7.07%
X Industry Financial Strength	0.85
Industry Risk Premium	6.01%
Add: Risk Free Rate	2.58%
Indicated Rate	8.59%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
Atmos Energy Corp	6.79%	7.00%	6.64%
Chesapeake Utility	7.04%	6.03%	7.12%
NiSource	7.22%	7.62%	5.92%
Northwest NG	8.11%	5.68%	6.75%
Southwest Gas	7.93%	7.73%	6.63%
Spire Inc	8.34%	7.12%	6.88%
Selected Rate	7.57%	6.86%	6.66%



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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
Atmos Energy Corp	85.89	1.94	6.0%	6.5%	5.6%	3.54%
Chesapeake Utility	78.55	1.33	8.0%	5.5%	8.2%	3.54%
NiSource	25.67	0.74	5.5%	6.5%	2.3%	3.54%
Northwest NG	59.65	1.89	7.0%	1.0%	3.7%	3.54%
Southwest Gas	80.48	2.08	8.0%	7.5%	4.8%	3.54%
Spire Inc	75.15	2.25	8.0%	5.0%	4.4%	3.54%



UTAH STATE TAX COMMISSION

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NATURAL GAS PIPELINES -- COMPANY INFORMATION

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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Andeavor Logistics	10,027.71	4,300.00	70%	30%
Boardwalk Pipeline	3,231.37	3,889.40	45%	55%
DCP Midstream	5,206.45	4,885.00	52%	48%
Enbridge Inc	66,291.45	86,605.75	43%	57%
Energy Transfer Partners	25,942.77	34,284.00	43%	57%
Enterprise Products	57,290.48	26,558.70	68%	32%
Kinder Morgan	40,063.18	40,050.00	50%	50%
ONEOK Inc	20,776.20	9,938.95	68%	32%
Spectra Energy LP	12,352.30	8,824.00	58%	42%
TransCanada	42,851.84	52,764.29	45%	55%
Western Gas Partners	10,528.49	3,622.18	74%	26%
Selected Equity and Debt Structure			55%	45%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate
Andeavor Logistics	1.35	(1.00) B+	Ba1	38.00%
Boardwalk Pipeline	1.00	(1.22) C++	Baa3	0.50%
DCP Midstream	1.60	(1.00) B+	Ba2	1.00%
Enbridge Inc	1.00	(0.89) B++	Baa3	25.00%
Energy Transfer Partners	1.55	(1.00) B+	Baa3	5.00%
Enterprise Products	1.30	(1.00) B+	-	1.00%
Kinder Morgan	1.45	(1.11) B	Baa3	16.00%
ONEOK Inc	1.55	(1.00) B+	Baa3	25.00%
Spectra Energy LP	0.90	(0.89) B++	Baa2	1.00%
TransCanada	1.10	(0.89) B++	A3	30.00%
Western Gas Partners	1.40	(1.00) B+	Ba1	1.00%
Selected for Industry	1.30	1.00	Baa3	25.00%

*Amounts in Millions



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NATURAL GAS PIPELINES -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT	
Market Risk Premium	7.07%
X Industry Beta	1.30
Industry Risk Premium	9.19%
Add: Risk Free Rate	2.58%
Indicated Rate	11.77%

CAPM: IMPLIED ERP	
Market Risk Premium	5.05%
X Industry Beta	1.30
Industry Risk Premium	6.57%
Add: Risk Free Rate	2.58%
Indicated Rate	9.15%

CAPM: SUPPLY SIDE	
Market Risk Premium	6.04%
X Industry Beta	1.30
Industry Risk Premium	7.85%
Add: Risk Free Rate	2.58%
Indicated Rate	10.43%

DIVISION'S RISK PREMIUM	
Market Risk Premium	7.07%
X Industry Financial Strength	1.00
Industry Risk Premium	7.07%
Add: Risk Free Rate	2.58%
Indicated Rate	9.65%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
Andeavor Logistics	16.83%	15.42%	6.37%
Boardwalk Pipeline	10.26%	11.88%	7.03%
DCP Midstream	13.03%	11.41%	10.01%
Enbridge Inc	9.79%	10.80%	8.44%
Energy Transfer Partners	17.82%	16.61%	10.38%
Enterprise Products	13.69%	12.68%	8.63%
Kinder Morgan	16.24%	7.14%	6.54%
ONEOK Inc	15.39%	11.14%	8.79%
Spectra Energy LP	12.05%	12.45%	10.48%
TransCanada	6.22%	10.67%	7.97%
Western Gas Partners	15.41%	12.78%	9.06%
Selected Rate	13.34%	12.09%	8.52%



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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
Andeavor Logistics	46.19	4.00	11.5%	15.0%	-10.9%	3.54%
Boardwalk Pipeline	12.91	0.40	16.5%	12.5%	4.5%	3.54%
DCP Midstream	36.33	3.16	1.5%	5.5%	-2.0%	3.54%
Enbridge Inc	39.11	2.45	6.0%	3.5%	0.2%	3.54%
Energy Transfer Partners	17.92	2.20	5.5%	8.5%	-9.9%	3.54%
Enterprise Products	26.51	1.73	10.0%	12.5%	0.0%	3.54%
Kinder Morgan	18.07	0.80	1.5%	24.0%	0.0%	3.54%
ONEOK Inc	53.45	3.10	8.0%	18.5%	2.2%	3.54%
Spectra Energy LP	39.54	3.05	6.5%	5.5%	1.6%	3.54%
TransCanada	48.64	2.00	11.0%		4.3%	3.54%
Western Gas Partners	48.09	3.77	7.0%	13.5%	-2.2%	3.54%



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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Andeavor Logistics	10,027.71	4,300.00	70%	30%
Buckeye Partners	7,267.87	5,053.24	59%	41%
Enbridge Inc	66,291.45	86,605.75	43%	57%
Energy Transfer Partners	25,942.77	34,284.00	43%	57%
Enterprise Products	57,290.48	26,588.70	68%	32%
Kinder Morgan	40,063.18	40,050.00	50%	50%
Magellan Midstream	16,176.09	4,826.48	77%	23%
Phillips 66 Partners	6,364.29	2,943.00	68%	32%
Spectra Energy LP	12,352.30	8,824.00	58%	42%
Selected Equity and Debt Structure			60%	40%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate
Andeavor Logistics	1.35	(1.00) B+	Ba1	38.00%
Buckeye Partners	1.20	(1.00) B+	Baa3	0.00%
Enbridge Inc	1.00	(0.89) B++	Baa3	25.00%
Energy Transfer Partners	1.55	(1.00) B+	Baa3	5.00%
Enterprise Products	1.30	(1.00) B+	-	1.00%
Kinder Morgan	1.45	(1.11) B	Baa3	16.00%
Magellan Midstream	1.20	(0.89) B++	Baa1	0.50%
Phillips 66 Partners	1.15	(0.89) B++	Baa3	0.00%
Spectra Energy LP	0.90	(0.89) B++	Baa2	1.00%
Selected for Industry	1.23	0.96	Baa3	25.00%

*Amount in Millions



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CAPM: RULE 62 COMPLIANT	
Market Risk Premium	7.07%
X Industry Beta	1.23
Industry Risk Premium	8.70%
Add: Risk Free Rate	2.58%
Indicated Rate	11.28%

CAPM: IMPLIED ERP	
Market Risk Premium	5.05%
X Industry Beta	1.23
Industry Risk Premium	6.21%
Add: Risk Free Rate	2.58%
Indicated Rate	8.79%

CAPM: SUPPLY SIDE	
Market Risk Premium	6.04%
X Industry Beta	1.23
Industry Risk Premium	7.43%
Add: Risk Free Rate	2.58%
Indicated Rate	10.01%

DIVISION'S RISK PREMIUM	
Market Risk Premium	7.07%
X Industry Financial Strength	0.96
Industry Risk Premium	6.79%
Add: Risk Free Rate	2.58%
Indicated Rate	9.37%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
Andeavor Logistics	16.83%	15.42%	6.37%
Buckeye Partners	15.55%	14.14%	11.37%
Enbridge Inc	9.79%	10.80%	8.44%
Energy Transfer Partners	17.82%	16.61%	10.38%
Enterprise Products	13.69%	12.68%	8.63%
Kinder Morgan	16.24%	7.14%	6.54%
Magellan Midstream	10.09%	11.71%	7.47%
Phillips 66 Partners	17.13%	17.53%	9.55%
Spectra Energy LP	12.05%	12.45%	10.48%
Selected Rate	14.35%	13.16%	8.80%



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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Dividend	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
Andeavor Logistics	46.19	4.00	11.5%	15.0%	-10.9%	3.54%
Buckeye Partners	49.55	5.16	4.0%	7.5%	-2.9%	3.54%
Enbridge Inc	39.11	2.45	6.0%	3.5%	0.2%	3.54%
Energy Transfer Partners	17.92	2.20	5.5%	8.5%	-9.9%	3.54%
Enterprise Products	26.51	1.73	10.0%	12.5%	0.0%	3.54%
Kinder Morgan	18.07	0.80	1.5%	24.0%	0.0%	3.54%
Magellan Midstream	70.94	3.80	10.5%	6.5%	0.0%	3.54%
Phillips 66 Partners	52.35	3.10	23.5%	22.5%	3.8%	3.54%
Spectra Energy LP	39.54	3.05	6.5%	5.5%	1.6%	3.54%



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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Canadian National Railway	61,264.50	9,669.32	86%	14%
Canadian Pacific Railway	26,481.92	7,697.14	77%	23%
CSX Corp	48,958.90	13,220.00	79%	21%
Norfolk Southern	41,174.38	11,871.00	78%	22%
Union Pacific	104,721.07	18,244.00	85%	15%
Selected Equity and Debt Structure			85%	15%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate	
Canadian National Railway	1.05	(0.78) A	A2	26.50%	
Canadian Pacific Railway	1.20	(0.89) B++	Baa1	26.50%	
CSX Corp	1.20	(0.89) B++	Baa1	37.00%	
Norfolk Southern	1.15	(0.78) A	A3	37.00%	
Union Pacific	1.05	(0.56) A++	Baa1	38.00%	
Selected for Industry		1.11	0.73	A3	25.00%

*Amounts in Millions



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CAPM: RULE 62 COMPLIANT		CAPM: IMPLIED ERP	
Market Risk Premium	7.07%	Market Risk Premium	5.05%
X Industry Beta	1.11	X Industry Beta	1.11
Industry Risk Premium	7.85%	Industry Risk Premium	5.61%
Add: Risk Free Rate	2.58%	Add: Risk Free Rate	2.58%
Indicated Rate	10.43%	Indicated Rate	8.19%

CAPM: SUPPLY SIDE		DIVISION'S RISK PREMIUM	
Market Risk Premium	6.04%	Market Risk Premium	7.07%
X Industry Beta	1.11	X Industry Financial Strength	0.73
Industry Risk Premium	6.70%	Industry Risk Premium	5.16%
Add: Risk Free Rate	2.58%	Add: Risk Free Rate	2.58%
Indicated Rate	9.28%	Indicated Rate	7.74%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
Canadian National Railway	9.09%	10.10%	7.88%
Canadian Pacific Railway	9.58%	10.38%	8.09%
CSX Corp	10.58%	8.15%	8.02%
Norfolk Southern	10.02%	6.58%	7.08%
Union Pacific	10.32%	8.50%	8.50%
Selected Rate	9.99%	8.66%	8.03%



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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
Canadian National Railway	82.50	2.92	8.50%	11.00%	5.52%	3.54%
Canadian Pacific Railway	182.76	6.26	10.00%	12.00%	6.32%	3.54%
CSX Corp	55.01	1.43	14.50%	8.50%	8.18%	3.54%
Norfolk Southern	144.90	4.73	11.50%	3.00%	4.23%	3.54%
Union Pacific	134.10	4.78	11.50%	7.00%	7.01%	3.54%



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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Canadian National Railway	61,264.50	9,669.32	86%	14%
Canadian Pacific Railway	26,481.92	7,697.14	77%	23%
CSX Corp	48,958.90	13,220.00	79%	21%
Genesee & Wyoming	4,877.01	2,354.88	67%	33%
Kansas City Southern	10,841.53	2,722.90	80%	20%
Norfolk Southern	41,174.38	11,871.00	78%	22%
Union Pacific	104,721.07	18,244.00	85%	15%
Selected Equity and Debt Structure			80%	20%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate
Canadian National Railway	1.05	(0.78) A	A2	26.50%
Canadian Pacific Railway	1.20	(0.89) B++	Baa1	26.50%
CSX Corp	1.20	(0.89) B++	Baa1	37.00%
Genesee & Wyoming	1.50	(1.00) B+	Ba2	38.00%
Kansas City Southern	1.15	(0.78) A	Baa3	35.00%
Norfolk Southern	1.15	(0.78) A	A3	37.00%
Union Pacific	1.05	(0.56) A++	A3	38.00%
Selected for Industry	1.19	0.81	Baa1	25.00%

*Amounts in Millions



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CAPM: RULE 62 COMPLIANT	
Market Risk Premium	7.07%
X Industry Beta	1.19
Industry Risk Premium	8.41%
Add: Risk Free Rate	2.58%
Indicated Rate	10.99%

CAPM: IMPLIED ERP	
Market Risk Premium	5.05%
X Industry Beta	1.19
Industry Risk Premium	6.01%
Add: Risk Free Rate	2.58%
Indicated Rate	8.59%

CAPM: SUPPLY SIDE	
Market Risk Premium	6.04%
X Industry Beta	1.19
Industry Risk Premium	7.19%
Add: Risk Free Rate	2.58%
Indicated Rate	9.77%

DIVISION'S RISK PREMIUM	
Market Risk Premium	7.07%
X Industry Financial Strength	0.81
Industry Risk Premium	5.73%
Add: Risk Free Rate	2.58%
Indicated Rate	8.31%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
Canadian National Railway	9.09%	10.10%	7.88%
Canadian Pacific Railway	9.58%	10.38%	8.09%
CSX Corp	10.58%	8.15%	8.02%
Genesee & Wyoming	N/A	N/A	N/A
Kansas City Southern	9.83%	7.41%	7.28%
Norfolk Southern	10.02%	6.58%	7.08%
Union Pacific	10.32%	8.50%	8.50%
Selected Rate	9.90%	8.52%	7.81%



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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
Canadian National Railway	82.50	2.92	8.5%	11.0%	5.5%	3.54%
Canadian Pacific Railway	182.76	6.26	10.0%	12.0%	6.3%	3.54%
CSX Corp	55.01	1.43	14.5%	8.5%	8.2%	3.54%
Genesee & Wyoming	78.73	N/A	9.0%	Nil	23.1%	3.54%
Kansas City Southern	105.22	3.02	12.0%	6.0%	5.7%	3.54%
Norfolk Southern	144.90	4.73	11.5%	3.0%	4.2%	3.54%
Union Pacific	134.10	4.78	11.5%	7.0%	7.0%	3.54%



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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
AT&T Inc.	238,700.83	174,387.00	58%	42%
Sprint Corp.	23,571.78	38,376.00	38%	62%
T-Mobile US Inc.	54,580.92	33,066.00	62%	38%
Verizon Communications	215,926.68	129,678.00	62%	38%
Selected Equity and Debt Structure			60%	40%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate	
AT&T Inc.	0.75	(0.56) A++	Baa1	35.00%	
Sprint Corp.	1.2	(1.22) C++	B1	NMF	
T-Mobile US Inc.	0.95	(1.00) B+	Ba2	30.00%	
Verizon Communications	0.75	(0.56) A++	Baa1	35.00%	
Selected for Industry		0.80	0.65	Baa	25.00%

*Amount in Millions



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CAPM: RULE 62 COMPLIANT	
Market Risk Premium	7.07%
X Industry Beta	0.80
Industry Risk Premium	5.66%
Add: Risk Free Rate	2.58%
Indicated Rate	8.24%

CAPM: IMPLIED ERP	
Market Risk Premium	5.05%
X Industry Beta	0.80
Industry Risk Premium	4.04%
Add: Risk Free Rate	2.58%
Indicated Rate	6.62%

CAPM: SUPPLY SIDE	
Market Risk Premium	6.04%
X Industry Beta	0.80
Industry Risk Premium	4.83%
Add: Risk Free Rate	2.58%
Indicated Rate	7.41%

DIVISION'S RISK PREMIUM	
Market Risk Premium	7.07%
X Industry Financial Strength	0.65
Industry Risk Premium	4.60%
Add: Risk Free Rate	2.58%
Indicated Rate	7.18%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
AT&T Inc.	9.48%	8.87%	15.13%
Sprint Corp.	N/A	N/A	5.32%
T-Mobile US Inc.	N/A	N/A	11.73%
Verizon Communications	9.84%	9.43%	9.48%
Selected Rate	9.66%	9.15%	7.97%



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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
AT&T Inc.	38.88	2.00	5.50%	4.00%	19.49%	3.54%
Sprint Corp.	5.89	0.03	NMF	Nil	6.60%	3.54%
T-Mobile US Inc.	63.51	N/A	NMF	Nil	23.79%	3.54%
Verizon Communications	52.93	3.45	3.00%	2.00%	2.12%	3.54%



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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
AT&T Inc.	238700.83	174387.00	58%	42%
CenturyLink Inc.	17833.74	37293.00	32%	68%
Cincinnati Bell	879.83	1748.10	33%	67%
Consolidated Communications	862.78	2263.36	28%	72%
Frontier Communications	530.26	14650.00	3%	97%
Verizon Communications	215926.68	129678.00	62%	38%
Zayo Group	9130.29	5765.60	61%	39%
Selected Equity and Debt Structure			40%	60%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate
AT&T Inc.	0.75	(0.56) A++	Baa1	35.00%
CenturyLink Inc.	1.00	(1.11) B	Ba3	37.00%
Cincinnati Bell	1.30	(1.33) C+	B2	39.00%
Consolidated Communications	1.00	(1.22) C++	NA	40.00%
Frontier Communications	1.15	(1.44) C	B3	35.00%
Verizon Communications	0.75	(0.56) A++	Baa1	35.00%
Zayo Group	1.00	(1.11) B	B2	20.00%
Selected for Industry	0.99	1.05	Ba3	25.00%

*Amount in Millions



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CAPM: RULE 62 COMPLIANT	
Market Risk Premium	7.07%
X Industry Beta	0.99
Industry Risk Premium	7.00%
Add: Risk Free Rate	2.58%
Indicated Rate	9.58%

CAPM: IMPLIED ERP	
Market Risk Premium	5.05%
X Industry Beta	0.99
Industry Risk Premium	5.00%
Add: Risk Free Rate	2.58%
Indicated Rate	7.58%

CAPM: SUPPLY SIDE	
Market Risk Premium	6.04%
X Industry Beta	0.99
Industry Risk Premium	5.98%
Add: Risk Free Rate	2.58%
Indicated Rate	8.56%

DIVISION'S RISK PREMIUM	
Market Risk Premium	7.07%
X Industry Financial Strength	1.05
Industry Risk Premium	7.42%
Add: Risk Free Rate	2.58%
Indicated Rate	10.00%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
AT&T Inc.	9.48%	8.87%	15.13%
CenturyLink Inc.	11.02%	11.62%	16.52%
Cincinnati Bell	N/A	N/A	N/A
Consolidated Communicatio	N/A	N/A	-117.33%
Frontier Communications	N/A	31.75%	31.05%
Verizon Communications	9.84%	9.43%	9.48%
Zayo Group	N/A	N/A	7.76%
Selected Rate	9.66%	9.15%	9.66%



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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
AT&T Inc.	38.88	2.00	5.50%	4.00%	19.49%	3.54%
CenturyLink Inc.	16.68	2.16	-10.00%	-8.50%	3.62%	3.54%
Cincinnati Bell	20.85	N/A	NMF	Nil	N/A	3.54%
Consolidated Communications	12.19	1.55	NMF	Nil	-326.88%	3.54%
Frontier Communications	6.76	2.40	NMF	-14.50%	-16.23%	3.54%
Verizon Communications	52.93	3.45	3.00%	2.00%	2.12%	3.54%
Zayo Group	36.80	0.00	NMF	Nil	13.97%	3.54%



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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
AT&T Inc.	238,700.83	174,387.00	58%	42%
CenturyLink Inc.	17,833.74	37,293.00	32%	68%
Cincinnati Bell	879.83	1,748.10	33%	67%
Consolidated Communications	862.78	2,263.36	28%	72%
Frontier Communications	530.26	14,650.00	3%	97%
Sprint Corp.	23,571.78	38,376.00	38%	62%
T-Mobile US Inc.	54,580.92	33,066.00	62%	38%
Telephone and Data Systems Inc.	3,085.80	2,499.00	55%	45%
Verizon Communications	215,926.68	129,678.00	62%	38%
Zayo Group	9,130.29	5,765.60	61%	39%
Selected Equity and Debt Structure			55%	45%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Beta	Financial Strength	Credit Rating	Tax Rate	
AT&T Inc.	0.75	(0.56) A++	Baa1	35.00%	
CenturyLink Inc.	1.00	(1.11) B	Ba3	37.00%	
Cincinnati Bell	1.30	(1.33) C+	B2	39.00%	
Consolidated Communications	1.00	(1.22) C++	NA	40.00%	
Frontier Communications	1.15	(1.44) C	B3	35.00%	
Sprint Corp.	1.20	(1.22) C++	B1	NMF	
T-Mobile US Inc.	0.95	(1.00) B+	Ba2	30.00%	
Telephone and Data Systems Inc.	1.20	(1.11) B	Ba1	37.00%	
Verizon Communications	0.75	(0.56) A++	Baa1	35.00%	
Zayo Group	1.00	(1.11) B	B2	20.00%	
Selected for Industry		0.82	0.70	Baa	25.00%

*Amount in Millions



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CAPM: RULE 62 COMPLIANT	
Market Risk Premium	7.07%
X Industry Beta	0.82
Industry Risk Premium	5.80%
Add: Risk Free Rate	2.58%
Indicated Rate	8.38%

CAPM: IMPLIED ERP	
Market Risk Premium	5.05%
X Industry Beta	0.82
Industry Risk Premium	4.14%
Add: Risk Free Rate	2.58%
Indicated Rate	6.72%

CAPM: SUPPLY SIDE	
Market Risk Premium	6.04%
X Industry Beta	0.82
Industry Risk Premium	4.95%
Add: Risk Free Rate	2.58%
Indicated Rate	7.53%

DIVISION'S RISK PREMIUM	
Market Risk Premium	7.07%
X Industry Financial Strength	0.70
Industry Risk Premium	4.95%
Add: Risk Free Rate	2.58%
Indicated Rate	7.53%

MULTISTAGE DIVIDEND GROWTH MODEL			
Company Name	Indicated Rates		
	EPS	Dividend	Plowback
AT&T Inc.	9.48%	8.87%	15.13%
CenturyLink Inc.	11.02%	11.62%	16.52%
Cincinnati Bell	N/A	N/A	N/A
Consolidated Communications	N/A	N/A	-117.33%
Frontier Communications	N/A	31.75%	31.05%
Sprint Corp.	N/A	N/A	5.32%
T-Mobile US Inc.	N/A	N/A	11.73%
Telephone and Data Systems Inc.	7.28%	5.86%	-7.48%
Verizon Communications	9.84%	9.43%	9.48%
Zayo Group	N/A	N/A	7.76%
Selected Rate	7.52%	9.98%	7.52%



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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Multi-Stage Growth Rates			Long Term Growth Rate
			EPS	Dividend	Plowback	
AT&T Inc.	38.88	2.00	5.50%	4.00%	19.49%	3.54%
CenturyLink Inc.	16.68	2.16	-10.00%	-8.50%	3.62%	3.54%
Cincinnati Bell	20.85	N/A	NMF	Nil	N/A	3.54%
Consolidated Communications	12.19	1.55	NMF	Nil	-326.88%	3.54%
Frontier Communications	6.76	2.40	NMF	-14.50%	-16.23%	3.54%
Sprint Corp.	5.89	0.03	NMF	Nil	6.60%	3.54%
T-Mobile US Inc.	63.51	N/A	NMF	Nil	23.79%	3.54%
Telephone and Data Systems Inc	27.80	0.65	7.00%	3.50%	-29.49%	3.54%
Verizon Communications	52.93	3.45	3.00%	2.00%	2.12%	3.54%
Zayo Group	36.80	0.00	NMF	Nil	13.97%	3.54%