

**CAPITALIZATION RATE STUDY
FOR CENTRALLY ASSESSED PROPERTIES**

FOR: JANUARY 1, 2025



UTAH STATE TAX COMMISSION

**CENTRALLY ASSESSED DIVISION
UTILITIES & TRANSPORTATION SECTION
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UTAH STATE TAX COMMISSION
CENTRALLY ASSESSED DIVISION
SUMMARY OF EQUITY RATES AND CAPITAL STRUCTURE

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**UTAH STATE TAX COMMISSION
CENTRALLY ASSESSED DIVISION
DESCRIPTION OF EQUITY MODELS**

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The Centrally Assessed Division of the Utah State Tax Commission "Division" estimates the market cost of equity for the industries it is required to assess for property tax purposes according to Utah Law. The Division estimates the market cost of equity using recognized equity models based on financial literature, research, and guidance from Utah Tax Commission Administrative Rule R884-24P-62 ("Rule 62"). The Division develops several market-based equity models including various Capital Asset Pricing Models ("CAPM") and Dividend Growth Models ("DGM"). The following is a summary of each of these models.

CAPM

The Division uses three CAPM cost of equity models: CAPM: Rule 62, CAPM: Supply Side, and CAPM: Implied Equity Risk Premium. Each of these CAPMs are based on the formula:

$$K(e) = R(f) + (\text{Beta} \times \text{Equity Risk Premium})$$

Where:

$K(e)$ = the estimated market cost of equity

$R(f)$ = the current risk free rate

Beta = a measure of the volatility of an individual stock compared to the volatility of the market as a whole.

Equity Risk Premium = the premium investors require above the return on a risk free investment. In other words, the additional return investors require for investing in risky securities vs. risk free securities. The Equity Risk Premium is also commonly referred to as the Market Risk Premium.

The difference between the three CAPMs that the Division calculates is how the Equity Risk Premium is estimated.

CAPM: RULE 62

Utah Tax Commission Administrative Code R884-24P-62 ("Rule 62") states that the CAPM is the "preferred method for estimating the cost of equity" (Utah Tax Code R884-24P-62 (5)(b)(i)(B)(II)(Aa)). Rule 62 also states that "more than one method may be used to correlate a cost of equity, but only if the CAPM method is weighted at least 50% in the correlation" (Utah Tax Code R884-24P-64 (5)(b)(i)(B)(II)(Aa)).

Rule 62 requires the Division to use or estimate the inputs for this CAPM as follows:

- The risk free rate shall be the current market rate on 20-year Treasury bonds.
- The beta should reflect an average or value-weighted average of comparable companies and should be drawn from Value Line or an equivalent source.
- The Risk Premium shall be the arithmetic average of the spread between the return on stocks and the income return on long-term bonds for the entire historical period contained in the Ibbotson Yearbook published immediately following the lien date.¹

¹ This information is now provided by Kroll



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CAPM: Supply Side

The CAPM: Supply Side uses the same inputs as the CAPM: Rule 62 except that the Supply Side uses an Equity Risk Premium that is based on the historical returns of companies in the form of earnings, dividends, and capital gains. Ibbotson states that "investors should not expect a much higher or lower return than that produced by the companies in the real economy."² This earnings model separates the Equity Risk Premium into four sections: inflation, income growth, growth in real earnings, and growth of the Price Earnings Ratio ("P/E Ratio"). In other words, CAPM: Supply Side ignores the historical returns that have resulted in the change in the P/E ratio. The Division uses the Supply Side Equity Risk Premium published by Kroll.

CAPM: Implied Equity Risk Premium

Professor Damodaran from the Stern School of Business at New York University estimates the Equity Risk Premium by using current market data to extract the premium currently required by investors. Dr. Damodaran relies on the price of the S&P 500 index and the expected future cash flows of the index (including dividends and share repurchases) to estimate the current implied expected return on the market.³ This expected return is then compared to the current return on the risk free rate to derive an implied equity risk premium. The Division adjusts Dr. Damodaran's model, which is compared to a 10-year Treasury bond, to compare it to the 20-year Treasury bond that the Division uses in its other CAPM models.

²Ibbotson SBBI 2015 Classic Yearbook pg. 155

³<http://pages.stern.nyu.edu/~adamodar/>



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DGM

The Division uses four multi-stage DGM cost of equity models: two models based on the methodology of Dr. Aswath Damodaran and two based on the methodology of Dr. Bradford Cornell. All of these models start with a short-term growth rate that is then adjusted, over a period of years, to a more sustainable long-term growth rate. The basic formula for a DGM is:

$$K(e) = (D1/P0) + g$$

Where:

K(e) = the estimated cost of equity

D1 = next years expected dividend (including stock buybacks)

P0 = current stock price

g = the expected growth in dividends (including stock buybacks)

Damodaran DGM

This DGM model is based on the same mathematic structure that Dr. Damodaran uses to calculate the Implied Equity Risk Premium, but does so for each company with a positive payout ratio. The first stage of the model grows the earnings per share linearly for five years from Valueline's next year EPS estimate to the 3-5 year EPS estimate. The company's specific payout ratio is used to determine the total expected payout to shareholders. In year 5, a terminal value is calculated using a perpetual growth rate equal to the latest Congressional Budget Office's estimation of long-term economic growth. An internal rate of return calculation is then applied to the estimate of cash flows available to equity holders (including the terminal value) to determine the implied cost of equity.

Damodaran DGM (AP) Adjusted Payout

This DGM model is the same as the DGM Damodaran model but it adjusts the payout ratio to a sustainable level developed by Dr. Damodaran. This sustainable payout ratio is calculated as $1 - (g/ROE)$ where g is the Congressional Budget Office's estimation of long term economic growth and the ROE is the industry average, weighted average, or median long term ROE from Valueline. The payout ratio is adjusted linearly over five years from the company specific payout ratio to the industry specific sustainable payout ratio.

Cornell 3-Stage DGM and Cornell (AP) Adjusted Payout

This 3-stage DGM follows the model put forth in "The Equity Risk Premium" by Bradford Cornell. This model uses the 5 year growth estimate provided by Value Line, then that growth rate converges linearly to the long-term growth rate over a 15 year period. In year 20, a terminal value is calculated iteratively using the $V = (CF_{n+1}) / (k - g)$ formula. An internal rate of return calculation is then applied to the estimate of cash flows available to equity holders (including the terminal value) to determine the implied cost of equity that will equal the current stock price. In the adjusted payout model the payout ratio is adjusted linearly over fifteen years from the company specific payout ratio to the industry specific sustainable payout ratio.



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CENTRALLY ASSESSED DIVISION
KEY RATES AND FIGURES

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CORPORATE BONDS

Aaa	5.20%
Aa	5.37%
A	5.53%
Baa	5.80%
Ba1	6.44%
Ba2	7.04%
Ba3	7.68%
B1	8.36%
B2	9.09%
B3	9.87%
Caa1	10.72%
Caa2	11.62%
Caa3	12.61%
Ca	13.67%
C	14.82%

PUBLIC UTILITY BONDS

Aaa	N/A
Aa	5.45%
A	5.58%
Baa	5.77%

PREFERRED STOCKS

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

MISCELLANEOUS RATES

Airline 'TEFRA' Relief Factor	8.97%
4-R Act Relief for Railroads	12.96%
4-R Act Relief (BNSF only)	8.96%
TIPS Inflationary Estimate	2.45%
Marginal Income Tax Rate	25.00%
GDP Price Deflator Forecast	N/A
Long Term Growth Rate	3.80%

INFLATION FACTORS

	4th Qtr.	Annual	
	GDP Implicit	Percent	Conversion
Year	Price Deflator	Change	Factor
2014	96.80	1.39%	1.304
2015	97.53	0.75%	1.294
2016	98.88	1.39%	1.277
2017	100.78	1.92%	1.253
2018	103.01	2.21%	1.225
2019	104.54	1.49%	1.207
2020	106.29	1.67%	1.188
2021	112.84	6.16%	1.119
2022	120.17	6.50%	1.050
2023	123.25	2.56%	1.024
2024	126.23	2.42%	1.000

2025 - 2015 Average Change: 2.71%

Source:

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

MARKET RISK PREMIUMS

Full Term Historical Risk Premium	7.31%
Supply Side Risk Premium	6.26%
Damodaran Implied ERP	3.89%
Risk Free Rate	4.86%

MISCELLANEOUS INFORMATION

Stock prices are from the last trading day of 2024. Retrieved from <http://finance.yahoo.com/>

Bond yield information derived from the January 2025 Mergent bond record and Q4 FINRA data.

Company and industry data was taken from the last Value Line tear sheet of 2024.

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: Kroll.



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PASSENGER AIR CARRIERS -- EQUITY RATE SUMMARY

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RECONCILIATION

Equity Models	Weight	Equity Rate
CAPM: RULE 62	70%	16.12%
CAPM: SUPPLY SIDE	0%	14.50%
CAPM: IMPLIED ERP	30%	10.85%
DGM: DAMODARAN	0%	
DGM: DAMODARAN (AP)	0%	10.89%
DGM: CORNELL	0%	7.30%
DGM: CORNELL (AP)	0%	9.60%
Reconciled Equity Rate		14.54%
Reconciled Debt Rate		7.04%
Debt/Equity Structure		55% / 45%
WACC Conclusion		10.42%



**UTAH STATE TAX COMMISSION
CENTRALLY ASSESSED DIVISION**

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 Air Group	7,842.47	6,244.00	56%	44%
Allegiant Travel Co.	1,732.54	2,163.14	44%	56%
American Airlines	11,461.38	37,741.00	23%	77%
Delta Airlines	39,111.59	22,724.00	63%	37%
Jetblue Airways	2,774.58	8,940.00	24%	76%
Southwest Airlines	19,947.21	8,032.00	71%	29%
United Airlines	31,839.07	33,403.00	49%	51%
Selected Equity and Debt Structure			45%	55%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Return On Equity	Beta	Credit Rating	Debt Rate
Alaska Air Group	28.50%	1.55	Ba1	6.44%
Allegiant Travel Co.	23.50%	1.45	Ba3	7.68%
American Airlines	N/A	1.60	B1	8.36%
Delta Airlines	21.50%	1.60	Baa2	5.80%
Jetblue Airways	18.00%	1.75	B3	9.87%
Southwest Airlines	9.00%	1.10	Baa1	5.80%
United Airlines	31.00%	1.70	Ba1	6.44%
Selected for Industry	21.92%	1.54	Ba2	7.04%

* Amounts in Millions



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CENTRALLY ASSESSED DIVISION
PASSENGER AIR CARRIERS -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT

Market Risk Premium	7.31%
X Industry Beta	1.54
Industry Risk Premium	11.26%
Add: Risk Free Rate	4.86%
Indicated Rate	16.12%

CAPM: IMPLIED ERP

Market Risk Premium	3.89%
X Industry Beta	1.54
Industry Risk Premium	5.99%
Add: Risk Free Rate	4.86%
Indicated Rate	10.85%

CAPM: SUPPLY SIDE

Market Risk Premium	6.26%
X Industry Beta	1.54
Industry Risk Premium	9.64%
Add: Risk Free Rate	4.86%
Indicated Rate	14.50%

MULTISTAGE DIVIDEND GROWTH MODEL

Indicated Rates

Company Name	Damodaran's	Damodaran's AP	Cornell's	Cornell's AP
Alaska Air Group	N/A	N/A	N/A	N/A
Allegiant Travel Co.	N/A	N/A	N/A	N/A
American Airlines	N/A	N/A	N/A	N/A
Delta Airlines	N/A	12.81%	5.03%	9.84%
Jetblue Airways	N/A	N/A	N/A	N/A
Southwest Airlines	N/A	8.78%	9.28%	9.17%
United Airlines	N/A	N/A	N/A	N/A
Selected Rate	0.00%	10.89%	7.30%	9.60%



UTAH STATE TAX COMMISSION
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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	Next Year's EPS	3-5 Year EPS	Calculated Growth Rate
Alaska Air Group	64.75		5.50	13.25	34.00%
Allegiant Travel Co.	94.12		6.00	22.00	54.00%
American Airlines	17.43		2.25	3.50	16.00%
Delta Airlines	60.50	0.60	7.55	9.00	6.00%
Jetblue Airways	7.86		-0.20	1.50	nmf
Southwest Airlines	33.62	0.76	1.65	2.50	15.00%
United Airlines	97.10		12.25	14.00	4.50%



UTAH STATE TAX COMMISSION
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REGIONAL AIR CARRIERS -- EQUITY RATE SUMMARY

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RECONCILIATION		
Equity Models	Weight	Equity Rate
CAPM: RULE 62	70%	16.92%
CAPM: SUPPLY SIDE	0%	15.19%
CAPM: IMPLIED ERP	30%	11.28%
DGM: DAMODARAN	0%	N/A
DGM: DAMODARAN (AP)	0%	N/A
DGM: CORNELL	0%	N/A
DGM: CORNELL (AP)	0%	N/A
Reconciled Equity Rate		15.23%
Reconciled Debt Rate		7.04%
Debt/Equity Structure		40% / 60%
WACC Conclusion		11.95%



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	4,038.08	2,612.86	61%	39%
Selected Equity and Debt Structure			60%	40%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Return On Equity	Beta	Credit Rating	Debt Rate
SkyWest Inc	13.50%	1.65	N/A	N/A
Selected for Industry		1.65	Ba2	7.04%

* Amounts in Millions



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REGIONAL AIR CARRIERS -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT

Market Risk Premium	7.31%
X Industry Beta	1.65
Industry Risk Premium	12.06%
Add: Risk Free Rate	4.86%
Indicated Rate	16.92%

CAPM: IMPLIED ERP

Market Risk Premium	3.89%
X Industry Beta	1.65
Industry Risk Premium	6.42%
Add: Risk Free Rate	4.86%
Indicated Rate	11.28%

CAPM: SUPPLY SIDE

Market Risk Premium	6.26%
X Industry Beta	1.65
Industry Risk Premium	10.33%
Add: Risk Free Rate	4.86%
Indicated Rate	15.19%

MULTISTAGE DIVIDEND GROWTH MODEL

Indicated Rates

Company Name	Damodaran's	Damodaran's AP	Cornell's	Cornell's AP
SkyWest Inc	N/A	N/A	N/A	N/A
Selected Rate	N/A	N/A	N/A	N/A



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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	Next Year's EPS	3-5 Year EPS	Calculated Growth Rate
SkyWest Inc	100.13		8.00	9.40	5.50%



UTAH STATE TAX COMMISSION
CENTRALLY ASSESSED DIVISION
FREIGHT AIR CARRIERS -- EQUITY RATE SUMMARY

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RECONCILIATION

Equity Models	Weight	Equity Rate
CAPM: RULE 62	70%	11.28%
CAPM: SUPPLY SIDE	0%	10.36%
CAPM: IMPLIED ERP	10%	8.28%
DGM: DAMODARAN	0%	8.28%
DGM: DAMODARAN (AP)	10%	11.18%
DGM: CORNELL	0%	11.44%
DGM: CORNELL (AP)	10%	12.15%
Reconciled Equity Rate		11.06%
Reconciled Debt Rate		5.53%
Debt/Equity Structure		20% / 80%
WACC Conclusion		9.95%



UTAH STATE TAX COMMISSION
CENTRALLY ASSESSED DIVISION

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
Fedex Corp	67,758.50	18,937.00	78%	22%
United Parcel Service	107,676.79	26,506.00	80%	20%
Selected Equity and Debt Structure			80%	20%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Return On Equity	Beta	Credit Rating	Debt Rate
Fedex Corp	18.50%	1.00	Baa2	5.80%
United Parcel Service	45.00%	0.80	A2	5.53%
Selected for Industry	34.60%	0.88	A3	5.53%

*Amount in Millions



UTAH STATE TAX COMMISSION
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FREIGHT AIR CARRIERS -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT

Market Risk Premium	7.31%
X Industry Beta	0.88
Industry Risk Premium	6.42%
Add: Risk Free Rate	4.86%

Indicated Rate **11.28%**

CAPM: IMPLIED ERP

Market Risk Premium	3.89%
X Industry Beta	0.88
Industry Risk Premium	3.42%
Add: Risk Free Rate	4.86%

Indicated Rate **8.28%**

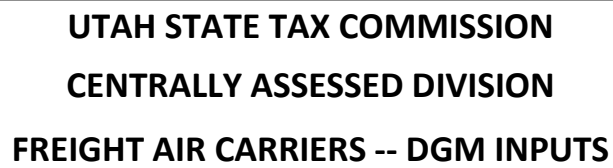
CAPM: SUPPLY SIDE

Market Risk Premium	6.26%
X Industry Beta	0.88
Industry Risk Premium	5.50%
Add: Risk Free Rate	4.86%

Indicated Rate **10.36%**

MULTISTAGE DIVIDEND GROWTH MODEL

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Company Name	Stock Price	Next Year's Payout	Next Year's EPS	3-5 Year EPS	Calculated Growth Rate
Fedex Corp	281.33	6.45	19.50	27.00	11.50%
United Parcel Service	126.10	7.49	8.70	12.00	11.50%



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CENTRALLY ASSESSED DIVISION
ELECTRIC UTILITIES -- EQUITY RATE SUMMARY

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RECONCILIATION

Equity Models	Weight	Equity Rate
CAPM: RULE 62	70%	11.66%
CAPM: SUPPLY SIDE	0%	10.68%
CAPM: IMPLIED ERP	10%	8.48%
DGM: DAMODARAN	0%	9.39%
DGM: DAMODARAN (AP)	10%	8.17%
DGM: CORNELL	0%	8.64%
DGM: CORNELL (AP)	10%	9.31%
Reconciled Equity Rate		10.76%
Reconciled Debt Rate		5.77%
Debt/Equity Structure		45% / 55%
WACC Conclusion		8.51%



**UTAH STATE TAX COMMISSION
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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	15,180.66	9,599.00	61%	39%
American Electric Power	49,150.08	39,560.90	55%	45%
Avista Corp.	2,931.83	2,249.00	57%	43%
FirstEnergy Corp	22,937.64	22,371.00	51%	49%
IdaCorp	5,896.97	3,339.52	64%	36%
NorthWestern	3,464.79	2,651.24	57%	43%
Portland General	4,769.51	4,578.00	51%	49%
PPL Corp	23,956.55	15,664.00	60%	40%
TXNM Energy	4,556.06	4,975.75	48%	52%
XCEL Energy	38,781.17	26,209.00	60%	40%
Selected Equity and Debt Structure			55%	45%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Return On Equity	Beta	Credit Rating	Debt Rate
Alliant Energy	12.00%	0.90	Baa2	5.80%
American Electric Power	11.00%	0.85	Baa2	5.80%
Avista Corp.	8.50%	0.95	Baa2	5.80%
FirstEnergy Corp	14.50%	0.90	Baa3	5.80%
IdaCorp	9.00%	0.85	Baa2	5.80%
NorthWestern	8.00%	1.00	Baa2	5.80%
Portland General	9.50%	0.95	A3	5.53%
PPL Corp	9.50%	1.10	Baa1	5.80%
TXNM Energy	10.00%	0.90	Baa3	5.80%
XCEL Energy	11.00%	0.85	Baa1	5.80%
Selected for Industry	10.30%	0.93	Baa2	5.77%

*Amount in Millions



UTAH STATE TAX COMMISSION
CENTRALLY ASSESSED DIVISION
ELECTRIC UTILITIES -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT

Market Risk Premium	7.31%
X Industry Beta	0.93
Industry Risk Premium	6.80%
Add: Risk Free Rate	4.86%

Indicated Rate 11.66%

CAPM: IMPLIED ERP

Market Risk Premium	3.89%
X Industry Beta	0.93
Industry Risk Premium	3.62%
Add: Risk Free Rate	4.86%

Indicated Rate 8.48%

CAPM: SUPPLY SIDE

Market Risk Premium	6.26%
X Industry Beta	0.93
Industry Risk Premium	5.82%
Add: Risk Free Rate	4.86%

Indicated Rate 10.68%

MULTISTAGE DIVIDEND GROWTH MODEL

Indicated Rates

Company Name	Damodaran's	Damodaran's AP	Cornell's	Cornell's AP
Alliant Energy	7.60%	7.56%	8.11%	8.12%
American Electric Power	8.48%	8.18%	8.91%	8.88%
Avista Corp.	9.87%	8.55%	9.77%	9.36%
FirstEnergy Corp	10.73%	8.98%	9.57%	10.54%
IdaCorp	7.34%	7.51%	8.00%	8.09%
NorthWestern	9.10%	8.36%	9.01%	8.78%
Portland General	9.40%	8.86%	9.44%	9.61%
PPL Corp	16.29%	8.42%	8.03%	13.75%
TXNM Energy	7.66%	7.67%	7.67%	8.01%
XCEL Energy	7.42%	7.63%	7.89%	8.00%

Selected Rate	9.39%	8.17%	8.64%	9.31%
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UTAH STATE TAX COMMISSION
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ELECTRIC UTILITIES -- DGM INPUTS

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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Next Year's EPS	3-5 Year EPS	Calculated Growth Rate
Alliant Energy	59.14	2.04	3.25	3.90	6.50%
American Electric Power	92.23	3.81	5.85	7.05	6.50%
Avista Corp.	36.63	2.00	2.60	3.00	5.00%
FirstEnergy Corp	39.78	1.80	2.85	3.50	7.00%
IdaCorp	109.28	3.52	5.80	7.10	7.00%
NorthWestern	53.46	2.64	3.70	4.25	4.50%
Portland General	43.62	2.08	3.25	3.85	6.00%
PPL Corp	32.46	1.10	1.85	2.25	6.50%
TXNM Energy	49.17	1.65	2.85	3.35	5.50%
XCEL Energy	67.52	2.30	3.80	4.55	6.00%



UTAH STATE TAX COMMISSION
CENTRALLY ASSESSED DIVISION
NATURAL GAS UTILITIES -- EQUITY RATE SUMMARY

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RECONCILIATION

Equity Models	Weight	Equity Rate
CAPM: RULE 62	70%	11.51%
CAPM: SUPPLY SIDE	0%	10.56%
CAPM: IMPLIED ERP	10%	8.40%
DGM: DAMODARAN	0%	8.20%
DGM: DAMODARAN (AP)	10%	7.48%
DGM: CORNELL	0%	8.11%
DGM: CORNELL (AP)	10%	8.25%
Reconciled Equity Rate		10.47%
Reconciled Debt Rate		5.58%
Debt/Equity Structure		40% / 60%
WACC Conclusion		8.51%



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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	22,105.78	7,560.01	75%	25%
Chesapeake Utilities	2,726.61	1,211.10	69%	31%
New Jersey Resources	4,673.92	2,868.45	62%	38%
NiSource Inc	17,270.67	12,532.50	58%	42%
Northwest Natural	1,591.19	1,619.96	50%	50%
One Gas, Inc	4,146.47	2,200.00	65%	35%
Southwest Gas	5,075.76	4,117.88	55%	45%
Spire Inc	3,954.49	3,435.30	54%	46%
Selected Equity and Debt Structure			60%	40%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Return On Equity	Beta	Credit Rating	Debt Rate
Atmos Energy	9.50%	0.90	A1	5.53%
Chesapeake Utilities	10.00%	0.85	N/A	#N/A
New Jersey Resources	12.50%	1.00	A1	5.53%
NiSource Inc	8.50%	0.95	Baa2	5.80%
Northwest Natural	8.00%	0.85	Baa1	5.80%
One Gas, Inc	8.50%	0.85	A3	5.53%
Southwest Gas	8.00%	0.95	Baa1	5.80%
Spire Inc	8.50%	0.90	Baa2	5.80%
Selected for Industry	9.19%	0.91	A3	5.58%

*Amount in Millions



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CAPM: RULE 62 COMPLIANT

Market Risk Premium	7.31%
X Industry Beta	0.91
Industry Risk Premium	6.65%
Add: Risk Free Rate	4.86%

Indicated Rate 11.51%

CAPM: IMPLIED ERP

Market Risk Premium	3.89%
X Industry Beta	0.91
Industry Risk Premium	3.54%
Add: Risk Free Rate	4.86%

Indicated Rate 8.40%

CAPM: SUPPLY SIDE

Market Risk Premium	6.26%
X Industry Beta	0.91
Industry Risk Premium	5.70%
Add: Risk Free Rate	4.86%

Indicated Rate 10.56%

MULTISTAGE DIVIDEND GROWTH MODEL

Indicated Rates

Company Name	Damodaran's	Damodaran's AP	Cornell's	Cornell's AP
Atmos Energy	6.39%	6.93%	6.58%	7.00%
Chesapeake Utilities	6.02%	6.87%	7.35%	7.64%
New Jersey Resources	7.94%	7.79%	8.49%	8.40%
NiSource Inc	7.78%	6.95%	7.47%	7.58%
Northwest Natural	9.14%	8.02%	7.91%	7.93%
One Gas, Inc	7.84%	7.66%	8.98%	8.48%
Southwest Gas	11.12%	7.43%	8.60%	9.74%
Spire Inc	9.34%	8.19%	9.52%	9.23%
Selected Rate	8.20%	7.48%	8.11%	8.25%



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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Next Year's EPS	3-5 Year EPS	Calculated Growth Rate
Atmos Energy	139.27	3.48	7.20	8.35	5.00%
Chesapeake Utilities	121.35	2.64	5.30	7.00	9.50%
New Jersey Resources	46.65	1.76	2.90	3.50	6.50%
NiSource Inc	36.76	1.12	1.80	2.15	6.00%
Northwest Natural	39.56	1.96	3.00	3.15	1.50%
One Gas, Inc	69.25	2.68	4.05	5.00	7.50%
Southwest Gas	70.71	2.52	3.60	4.50	7.50%
Spire Inc	67.83	3.16	4.55	5.50	6.50%



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NATURAL GAS PIPELINES -- EQUITY RATE SUMMARY

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RECONCILIATION

Equity Models	Weight	Equity Rate
CAPM: RULE 62	70%	12.46%
CAPM: SUPPLY SIDE	0%	11.37%
CAPM: IMPLIED ERP	10%	8.91%
DGM: DAMODARAN	0%	12.08%
DGM: DAMODARAN (AP)	10%	9.07%
DGM: CORNELL	0%	10.97%
DGM: CORNELL (AP)	10%	11.85%
Reconciled Equity Rate		11.71%
Reconciled Debt Rate		5.80%
Debt/Equity Structure		35% / 65%
WACC Conclusion		9.64%



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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
Enbridge Inc.	92,412.54	77,844.43	54%	46%
Kinder Morgan, Inc.	60,873.15	30,794.00	66%	34%
Pembina Pipeline	21,467.95	8,815.09	71%	29%
TC Energy Corp.	48,344.67	41,216.06	54%	46%
Williams Companies, Inc.	65,972.28	25,830.00	72%	28%
Selected Equity and Debt Structure			65%	35%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Return On Equity	Beta	Credit Rating	Debt Rate
Enbridge Inc.	11.00%	0.85	Baa2	5.80%
Kinder Morgan, Inc.	10.00%	1.15	Baa2	5.80%
Pembina Pipeline	11.50%	1.05	N/A	#N/A
TC Energy Corp.	14.00%	1.05	Baa3	5.80%
Williams Companies, Inc.	29.50%	1.10	Baa2	5.80%
Selected for Industry	15.20%	1.04	Baa2	5.80%

*Amounts in Millions



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CAPM: RULE 62 COMPLIANT

Market Risk Premium	7.31%
X Industry Beta	1.04
Industry Risk Premium	7.60%
Add: Risk Free Rate	4.86%
Indicated Rate	12.46%

CAPM: IMPLIED ERP

Market Risk Premium	3.89%
X Industry Beta	1.04
Industry Risk Premium	4.05%
Add: Risk Free Rate	4.86%
Indicated Rate	8.91%

CAPM: SUPPLY SIDE

Market Risk Premium	6.26%
X Industry Beta	1.04
Industry Risk Premium	6.51%
Add: Risk Free Rate	4.86%
Indicated Rate	11.37%

MULTISTAGE DIVIDEND GROWTH MODEL

Indicated Rates

Company Name	Damodaran's	Damodaran's AP	Cornell's	Cornell's AP
Enbridge Inc.	12.95%	8.52%	12.35%	11.93%
Kinder Morgan, Inc.	11.84%	8.44%	11.24%	11.76%
Pembina Pipeline	11.20%	9.22%	10.74%	11.08%
TC Energy Corp.	14.54%	11.47%	11.74%	15.14%
Williams Companies, Inc.	9.87%	7.71%	8.81%	9.33%
Selected Rate	12.08%	9.07%	10.97%	11.85%



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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Next Year's EPS	3-5 Year EPS	Calculated Growth Rate
Enbridge Inc.	42.43	2.65	2.13	2.72	8.50%
Kinder Morgan, Inc.	27.40	1.26	1.30	1.75	10.50%
Pembina Pipeline	36.95	1.97	2.30	2.86	7.50%
TC Energy Corp.	46.53	2.40	3.75	5.00	10.00%
Williams Companies, Inc.	54.12	2.02	2.40	3.00	7.50%



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LIQUID PIPELINES -- EQUITY RATE SUMMARY

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RECONCILIATION

Equity Models	Weight	Equity Rate
CAPM: RULE 62	70%	12.97%
CAPM: SUPPLY SIDE	0%	11.81%
CAPM: IMPLIED ERP	10%	9.18%
DGM: DAMODARAN	0%	11.79%
DGM: DAMODARAN (AP)	10%	11.92%
DGM: CORNELL	0%	12.79%
DGM: CORNELL (AP)	10%	13.81%
Reconciled Equity Rate		12.57%
Reconciled Debt Rate		5.80%
Debt/Equity Structure		35% / 65%
WACC Conclusion		10.20%



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LIQUID PIPELINES -- COMPANY INFORMATION

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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Energy Transfer LP	67,215.01	59,010.00	53%	47%
Enterprise Products Partners LP	67,916.35	29,196.00	70%	30%
MPLX LP	48,673.62	19,574.00	71%	29%
Plains All American Pipeline LP	12,020.40	6,713.00	64%	36%
Selected Equity and Debt Structure			65%	35%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Return On Equity	Beta	Credit Rating	Debt Rate
Energy Transfer LP	9.50%	1.10	Baa2	5.80%
Enterprise Products Partners LP	5.50%	1.00	N/A	N/A
MPLX LP	6.50%	0.95	Baa2	5.80%
Plains All American Pipeline LP	18.00%	1.40	Baa2	5.80%
Selected for Industry	17.53%	1.11	Baa2	5.80%

*Amount in Millions



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CAPM: RULE 62 COMPLIANT

Market Risk Premium	7.31%
X Industry Beta	1.11
Industry Risk Premium	8.11%
Add: Risk Free Rate	4.86%
Indicated Rate	12.97%

CAPM: IMPLIED ERP

Market Risk Premium	3.89%
X Industry Beta	1.11
Industry Risk Premium	4.32%
Add: Risk Free Rate	4.86%
Indicated Rate	9.18%

CAPM: SUPPLY SIDE

Market Risk Premium	6.26%
X Industry Beta	1.11
Industry Risk Premium	6.95%
Add: Risk Free Rate	4.86%
Indicated Rate	11.81%

MULTISTAGE DIVIDEND GROWTH MODEL

Indicated Rates

Company Name	Damodaran's	Damodaran's AP	Cornell's	Cornell's AP
Energy Transfer LP	10.29%	10.49%	11.56%	11.98%
Enterprise Products Partner	9.68%	11.11%	9.78%	10.94%
MPLX LP	12.18%	11.66%	11.10%	12.74%
Plains All American Pipeline	15.02%	14.42%	18.75%	19.59%
Selected Rate	11.79%	11.92%	12.79%	13.81%



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LIQUID PIPELINES -- DGM INPUTS

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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Next Year's EPS	3-5 Year EPS	Calculated Growth Rate
Energy Transfer LP	19.59	1.02	1.40	1.85	9.50%
Enterprise Products Partners LP	31.36	1.65	2.85	3.35	5.50%
MPLX LP	47.86	2.89	4.40	5.30	6.50%
Plains All American Pipeline LP	17.08	1.17	1.55	2.55	18.00%



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RAILROAD -- EQUITY RATE SUMMARY

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RECONCILIATION

Equity Models	Weight	Equity Rate
CAPM: RULE 62	70%	12.04%
CAPM: SUPPLY SIDE	0%	11.01%
CAPM: IMPLIED ERP	10%	8.68%
DGM: DAMODARAN	0%	8.51%
DGM: DAMODARAN (AP)	0%	9.64%
DGM: CORNELL	0%	9.74%
DGM: CORNELL (AP)	20%	10.85%
Reconciled Equity Rate		11.47%
Reconciled Debt Rate		5.53%
Debt/Equity Structure		20% / 80%
WACC Conclusion		10.28%



UTAH STATE TAX COMMISSION
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RAILROAD -- COMPANY INFORMATION

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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Canadian National Railway	63,738.13	14,057.87	82%	18%
CPKC	67,557.40	14,662.08	82%	18%
CSX Corp	61,319.13	17,040.00	78%	22%
Norfolk Southern	53,117.51	15,928.00	77%	23%
Union Pacific	137,791.18	26,571.00	84%	16%
Selected Equity and Debt Structure			80%	20%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Return On Equity	Beta	Credit Rating	Debt Rate
Canadian National Railway	33.00%	0.90	A2	5.53%
CPKC	9.50%	0.95	Baa2	5.80%
CSX Corp	33.50%	1.00	A3	5.53%
Norfolk Southern	23.50%	1.05	Baa1	5.80%
Union Pacific	35.50%	1.00	A3	5.53%
Selected for Industry	28.47%	0.98	A3	5.53%

*Amounts in Millions



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RAILROAD -- EQUITY MODELS

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CAPM: RULE 62 COMPLIANT

Market Risk Premium	7.31%
X Industry Beta	0.98
Industry Risk Premium	7.18%
Add: Risk Free Rate	4.86%

Indicated Rate 12.04%

CAPM: IMPLIED ERP

Market Risk Premium	3.89%
X Industry Beta	0.98
Industry Risk Premium	3.82%
Add: Risk Free Rate	4.86%

Indicated Rate 8.68%

CAPM: SUPPLY SIDE

Market Risk Premium	6.26%
X Industry Beta	0.98
Industry Risk Premium	6.15%
Add: Risk Free Rate	4.86%

Indicated Rate 11.01%

MULTISTAGE DIVIDEND GROWTH MODEL

Indicated Rates

Company Name	Damodaran's	Damodaran's AP	Cornell's	Cornell's AP
Canadian National Railway	9.54%	10.71%	12.55%	13.25%
CPKC	4.88%	8.37%	4.95%	7.94%
CSX Corp	10.59%	10.53%	12.51%	12.59%
Norfolk Southern	8.65%	10.21%	10.35%	11.63%
Union Pacific	8.78%	9.11%	9.22%	10.01%
Selected Rate	8.51%	9.64%	9.74%	10.85%



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OIL AND GAS INTEGRATED -- EQUITY RATE SUMMARY

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RECONCILIATION

Equity Models	Weight	Equity Rate
CAPM: RULE 62	70%	13.05%
CAPM: SUPPLY SIDE	0%	11.87%
CAPM: IMPLIED ERP	10%	9.22%
DGM: DAMODARAN	0%	10.60%
DGM: DAMODARAN (AP)	10%	9.57%
DGM: CORNELL	0%	9.36%
DGM: CORNELL (AP)	10%	10.15%
Reconciled Equity Rate		12.03%
Reconciled Debt Rate		5.20%
Debt/Equity Structure		10% / 90%
WACC Conclusion		11.34%

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CALCULATION OF CAPITAL STRUCTURE

Company	Market Value Of Equity*	Market Value Of Debt*	Percent Equity	Percent Debt
Chevron Corporation	256,223.74	19,116.00	93%	7%
Exxon Mobile	468,252.21	32,820.00	93%	7%
Occidental Petro	46,369.21	24,000.00	66%	34%
Selected Equity and Debt Structure			90%	10%

GUIDELINE COMPANY INFORMATION SUMMARY

Company	Return On Equity	Beta	Credit Rating	Debt Rate
Chevron Corporation	16.00%	1.15	Aa2	5.20%
Exxon Mobile	10.50%	1.05	Aa2	5.20%
Occidental Petro	17.00%	1.50	Baa3	5.80%
Selected for Industry	12.83%	1.12	Aa3	5.20%

*Amount in Millions



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CAPM: RULE 62 COMPLIANT

Market Risk Premium	7.31%
X Industry Beta	1.12
Industry Risk Premium	8.19%
Add: Risk Free Rate	4.86%
Indicated Rate	13.05%

CAPM: IMPLIED ERP

Market Risk Premium	3.89%
X Industry Beta	1.12
Industry Risk Premium	4.36%
Add: Risk Free Rate	4.86%
Indicated Rate	9.22%

CAPM: SUPPLY SIDE

Market Risk Premium	6.26%
X Industry Beta	1.12
Industry Risk Premium	7.01%
Add: Risk Free Rate	4.86%
Indicated Rate	11.87%

MULTISTAGE DIVIDEND GROWTH MODEL

Indicated Rates

Company Name	Damodaran's	Damodaran's AP	Cornell's	Cornell's AP
Chevron Corporation	12.63%	11.03%	14.04%	13.48%
Exxon Mobile	8.96%	8.24%	6.71%	7.16%
Occidental Petro	14.31%	13.31%	9.95%	18.34%
Selected Rate	10.60%	9.57%	9.36%	10.15%



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OIL AND GAS INTEGRATED -- DGM INPUTS

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DIVIDEND GROWTH MODEL INPUTS

Company Name	Stock Price	Next Year's Payout	Next Year's EPS	3-5 Year EPS	Calculated Growth Rate
Chevron Corporation	144.84	10.29	12.25	16.00	9.50%
Exxon Mobile	107.57	5.39	8.35	7.65	-3.00%
Occidental Petro	49.41	1.03	4.50	7.30	17.50%