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Capitalization Rate Study

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*State-Assessed Properties Division
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Lien Date 2012

Executive Summary

“The income approach to value includes any method of converting an income stream into a present value estimate (i.e., an indicator of current fair market value). The income approach is also called the capitalization approach because capitalization is the process of converting an expected income into an indicator of value.

The methods or techniques used in the income approach may be relatively simple (e.g., income or rent multipliers and direct capitalization), or more complex (e.g., various yield capitalization techniques). All of these methods are referred to as capitalization techniques because they convert an expected future income stream into a present value estimate.

The income approach requires careful application because small variations in its key variables (capitalization rate, duration of income stream, estimated income and expenses, etc.) will be mathematically leveraged into a wide range of estimated value. This is particularly true for the capitalization rate variable. The reliability of the income approach is no greater than the validity of the assumptions used to estimate the key variables. The mathematical techniques used in the approach, while sometimes complicated, are merely tools for converting these assumptions into an estimate of current market value.”¹

I. Authority for Capitalization Rate Study

Property Tax Rule 8 (g) (2) provides the authority for the method in which the capitalization rates were developed in this study. The rule states “the capitalization rate may be developed...

By deriving a weighted average of the capitalization rates for debt and for equity capital appropriate to the California money markets (the band-of-investment method) and adding increments for expenses that are excluded from outgo because they are based on the value that is being sought or the income that is being capitalized. The appraiser shall weight the rates for debt and equity capital by the respective amounts of such capital he deems most likely to be employed by prospective purchasers.”

II. Band of Investment Approach

In its simplest form, the band of investment method assumes that a purchaser would pay cash (or equity) for a portion of the property and would borrow the balance of the purchase price. For example:

Debt	30%	x	Cost of Debt	7%	=	2.1%
Equity	70%	x	Cost of Equity	12%	=	8.4%
Weighted Average Cost of Capital						<u>10.5%</u>

¹ Assessors’ Handbook 501, Basic Appraisal, Revised January 2002

Executive Summary

This booklet contains a study for each of the major state assessee industry groups² in California. Industry data was compiled by groups with similar Value Line financial ratings. Local exchange, wireless and interexchange industries have been combined into one telecommunications study.

Generally accepted procedures were used to estimate the cost of capital for debt and equity. The long term debt cost is the cost for a particular risk class of debt on the lien date. The equity rate reflects the rate of return or compensation that will satisfy the risk that a prospective purchaser would anticipate if a property purchase decision was made. The rates chosen are the result of analysis of economic conditions and financial data listed in the supporting schedules and are the product of the staff's informed judgment.

The rates derived in this study are basic capitalization (or discount) rates that represent the after-tax return on investment only. Any increments required to be added by Property Tax Rule 8(g)(2), such as income or ad valorem tax components, are in addition to the rates listed.

A. *Capital Structure - Prospective Purchaser vs. Company Specific*

State assesses often ask why the Board does not use the current capital structure of individual companies in the band-of-investment method. As explained in Rule 8 (g)(2), the appraiser shall weight the rates of debt and equity capital by the respective amounts of such capital deemed most likely to be employed by a prospective purchaser.

Therefore, the capital structure contemplated is a representative or typical structure of an industry group of companies with a similar bond rating, not that of the present owner. The objective of doing so is to strike an optimum capital structure from the perspective of a potential investor.

B. *Company Specific Debt Rates*

In many cases the debt component of the capital structure for a prospective purchaser and the individual company being assessed may be similar. In cases where, in the judgement of staff, the debt ratings of the individual companies being assessed and the debt ratings of prospective purchasers are similar, the company-specific bond rating has been used to develop the appropriate debt component of the recommended capitalization rate. In cases where rate-base regulated companies have embedded debt with rates higher than the market rates at the lien date, a revenue adjustment may be indicated in order to match the revenue expected by a prospective purchaser if the purchaser's revenue would be determined by those market rates.

² Gas, Electric & Water; Natural Gas Transmission; Electric Generation; Telecommunications (Local Exchange, Interexchange, Wireless); Pipeline; Railroad

Executive Summary

C. Impact of Holding Companies on Determination of Capital Structure

Many of the larger state assessees are subsidiaries of their holding company. Stock purchases related to a subsidiary must be made through the parent holding company. Since there is no direct market data for state assessees that are subsidiaries of a holding company, staff must rely, in great part, upon market data related to the holding company.

III. Capital Asset Pricing Model

The Capital Asset Pricing Model (CAPM) is a widely accepted theory used to estimate the cost of equity capital. In the application of CAPM, the most sensitive component affecting the outcome is the estimate of the beta³ coefficient. The choice of different time frames and frequencies of measurement in the calculation of the beta can produce significantly different results. Another factor in the use of beta is the choice of whether to use an unadjusted beta or a beta adjusted to reflect the fact that betas tend to revert to the mean over time. In this study, three betas were obtained from separate sources: one adjusted (Value Line) and two unadjusted. Generally the betas from the three sources are averaged to establish the beta used to estimate the cost of equity capital for a specific industry. However, the average beta for highly regulated industries, such as gas or electric transmission and distribution, tend to understate the risk inherent in those securities. Accordingly, for companies in highly regulated environments, the Value Line adjusted beta was chosen as a better estimate of the relative risk in the calculation of the required equity return.

IV. Flotation Costs

When new issues of both debt and equity capital are sold to investors, the issuing company incurs transaction costs such as underwriting fees, legal expenses, and prospectus preparation costs. These costs of issuing securities are known as flotation costs. Much like loan fees or points on a mortgage, flotation costs effectively reduce the net proceeds that a firm will receive from issuing securities. The cost of capital is adjusted upward to reflect the expected flotation costs incurred to issue securities. Since the flotation costs are reflected in the weighted average cost of capital, the flotation costs should not be allowed as expenses in projecting cash flows to be capitalized. Each basic capitalization rate in this study has been adjusted to reflect flotation costs.

V. Utilization of Other Studies and Data

Staff appraisers reviewed data and capitalization rate studies submitted by assessees and interested parties in addition to a review of recent regulatory rate case filings and decisions, and where appropriate, used this information in the development of the staff derived rates.

The capitalization rates published in this study are intended to be applied to the unitary operations of the companies subject to assessment by the California State Board of Equalization.

³ The covariance of the returns of a security regressed against the returns of the overall market - a measurement of relative volatility

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Gas, Electric and Water Companies**

SBE No.	Company Name	Ratings			Capital Structure			Rates of Return			Basic Cap Rate
		Financial	Preferred Stock	Bond	Common Equity	Preferred Stock	Debt	Common Equity	Preferred Stock	Debt	
Gas and Electric Companies											
141	San Diego Gas & Electric Company	A	Baa1	Aa3	53%	4%	43%	11.62%	6.38%	4.31%	8.27%
148	Southern California Edison Company	B++	Baa2	A1	52%	4%	44%	12.04%	6.70%	4.42%	8.47%
135	Pacific Gas and Electric Company	B++	Baa3	A3	52%	4%	44%	11.88%	7.03%	4.78%	8.57%
146	Sierra Pacific Power Company	B	B2	Baa2	52%	1%	47%	12.30%	8.66%	5.30%	8.98%
106	PacifiCorp	Not Rated	Baa3	A2	52%	1%	47%	12.30%	7.03%	4.53%	8.60%
119	Trans Bay Cable LLC	Not Rated		Not Rated	51%		49%	12.30%		5.30%	8.87%
125	Terra-Gen Dixie Valley, LLC	Not Rated		Not Rated	51%		49%	12.30%		5.30%	8.87%
156	Atlantic Path 15, LLC	Not Rated		Not Rated	51%		49%	12.30%		5.30%	8.87%
163	California Pacific Electric Co., LLC	Not Rated		Not Rated	51%		49%	12.30%		5.30%	8.87%
191	Arizona Public Service Company	Not Rated		Baa2	51%		49%	12.30%		5.30%	8.87%
	Electric Cooperatives	Not Rated		Not Rated	51%		49%	12.30%		5.30%	8.87%
Natural Gas Distribution and Storage Companies											
149	Southern California Gas Company	A	Baa1	Baa1	53%	4%	43%	11.33%	6.38%	5.04%	8.43%
152	Southwest Gas Corporation	B	Ba1	Baa2	52%	4%	44%	11.52%	7.36%	5.30%	8.62%
192	Alpine Natural Gas Operating Company	Not Rated		Not Rated	51%		49%	12.83%		5.56%	9.27%
194	West Coast Gas Company, Inc.	Not Rated		Not Rated	51%		49%	12.83%		5.56%	9.27%
104	Central Valley Gas Storage LLC	Not Rated		Not Rated	60%		40%	13.61%		6.07%	10.60%
121	Gill Ranch Storage, LLC	Not Rated		Not Rated	60%		40%	13.61%		6.07%	10.60%
195	Wild Goose Storage, LLC	Not Rated		Not Rated	60%		40%	13.61%		6.07%	10.60%
198	Lodi Gas Storage, LLC	Not Rated		Not Rated	60%		40%	13.61%		6.07%	10.60%
Water Company											
101	Golden State Water Company	B++		Not Rated	55%		45%	12.04%		5.50%	9.10%

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Natural Gas Transmission Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
153	Transwestern Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
180	North Baja Pipeline, LLC	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
187	Mojave Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
188	Kern River Gas Transmission Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
189	Standard Pacific Gas Line Incorporated	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
190	Tuscarora Gas Transmission Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
196	Questar Southern Trails Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
197	El Paso Natural Gas Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Electric Generation Facilities**

Facility Type	Ratings		Capital Structure		Rates of Return		Basic Cap Rate ³
	Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Modern Electric Generation Technology¹	C++	B2	55%	45%	13.87%	7.38%	10.95%
Older Electric Generation Technology²	C++	B2	55%	45%	15.97%	8.39%	12.56%

¹ Modern Electric Generation Technology - Generally high efficiency combined-cycle or simple cycle gas turbine electric generation facilities incorporating contemporary generation technologies.

² Older Electric Generation Technology - Generally older steam turbine electric generation facilities that were sold off by vertically integrated electric utilities and for which no replacements, other than for routine maintenance have been made.

³ Staff may adjust the rates stated above if the specific situation of a facility warrants an adjustment to its basic capitalization rate.

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Telecommunications Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Local Exchange Companies								
279	Pacific Bell Telephone Company	A+	A2	70%	30%	12.30%	4.32%	9.91%
201	Verizon California, Inc.	A+	A3	70%	30%	12.30%	4.58%	9.99%
284	Citizens Telecommunications Company of California, I	B	Not Rated	65%	35%	13.35%	5.35%	10.55%
294	SureWest Telephone	C++	Not Rated	65%	35%	13.35%	5.35%	10.55%
	Other Local Exchange Companies	Not Rated	Not Rated	65%	35%	15.71%	5.61%	12.17%
Wireless Companies								
2606	AT&T Mobility LLC ¹	A+	A2	70%	30%	11.78%	4.58%	9.62%
2532	Los Angeles SMSA Ltd., Partnership	A+	A3	70%	30%	11.78%	4.58%	9.62%
2552	Fresno MSA Limited Partnership	A+	A3	70%	30%	11.78%	4.58%	9.62%
2559	Cellco Partnership	A+	A3	70%	30%	11.78%	4.58%	9.62%
2748	T-Mobile West Corporation	B++	Not Rated	65%	35%	13.09%	5.61%	10.47%
2733	MetroPCS Communications	B	Not Rated	65%	35%	13.09%	5.61%	10.47%
2720	Sprint Telephony PCS, L.P.	C++	Ba3	65%	35%	14.92%	6.13%	11.84%
	Other Wireless Companies ²	Not Rated	Not Rated	55%	45%	17.02%	7.92%	12.92%
	Wireless Reseller Companies	Not Rated	Not Rated	55%	45%	19.11%	8.43%	14.30%
Interexchange Companies								
2310	AT&T Communications ¹	A+	A2	70%	30%	13.09%	4.58%	10.54%
2274	MCI Communications Services, Inc.	A+	A3	70%	30%	13.09%	4.58%	10.54%
2372	MCI Metro Access Transmission Services, LLC	A+	A3	70%	30%	13.09%	4.58%	10.54%
2463	CenturyLink, Inc.	B++	Baa3	65%	35%	14.66%	5.35%	11.40%
7522	tw telecom of california l.p.	B	Not Rated	65%	35%	14.66%	7.92%	12.30%
2014	Sprint Communications Company, L.P.	C++	Ba3	60%	40%	17.02%	6.13%	12.66%
7761	Level 3 Communications, LLC	C++	Not Rated	60%	40%	17.02%	7.92%	13.38%
	Other Interexchange Carriers	Not Rated	Not Rated	55%	45%	21.73%	7.92%	15.51%
	Other Interexchange Resellers	Not Rated	Not Rated	55%	45%	24.87%	8.43%	17.47%

¹ Staff used A3 Debt Rate as it more closely reflects what a buyer would expect in the open market.

² Includes Radio Telephone and Paging Companies

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Pipeline Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Equity	Debt	
402	CALNEV Pipe Line LLC	NR-1	NR-b	70%	30%	12.30%	5.27%	10.19%
461	SFPP, L.P.	NR-1	NR-b	70%	30%	12.30%	5.27%	10.19%
468	Shell California Pipeline Company LLC	NR-2	NR-b	70%	30%	12.83%	5.27%	10.56%
479	Chevron Pipeline Company	NR-2	NR-b	70%	30%	12.83%	5.27%	10.56%
480	ConocoPhillips Pipe Line Company	NR-2	NR-b	70%	30%	12.83%	5.27%	10.56%
486	Pacific Pipeline System, LLC	NR-2	NR-b	70%	30%	12.83%	5.27%	10.56%
	Other Pipeline Companies	NR-3	NR-c	70%	30%	13.87%	6.29%	11.60%

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Railroads**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
804	BNSF Railway Company	A	Baa2	80%	20%	14.14%	5.27%	12.36%
843	Union Pacific Railroad Company	A	Baa2	80%	20%	14.14%	5.27%	12.36%
802	Central Oregon & Pacific Railroad	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
810	California Northern Railroad	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
813	Pacific Harbor Lines	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
850	Modesto & Empire Traction Company	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
865	San Diego & Imperial Valley Railroad Co. Inc.	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
882	Trona Railway Co.	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
897	San Joaquin Valley Railroad Company	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
899	Arizona & California Railroad	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
	Other Railroad Companies	NR-2	NR-2	60%	40%	16.49%	7.81%	13.02%

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Gas, Electric and Water Companies**

SBE No.	Company Name	Ratings			Capital Structure			Rates of Return			Basic Cap Rate
		Financial	Preferred Stock	Bond	Common Equity	Preferred Stock	Debt	Common Equity	Preferred Stock	Debt	
Gas and Electric Companies											
141	San Diego Gas & Electric Company	A	Baa1	Aa3	53%	4%	43%	11.62%	6.38%	4.31%	8.27%
148	Southern California Edison Company	B++	Baa2	A1	52%	4%	44%	12.04%	6.70%	4.42%	8.47%
135	Pacific Gas and Electric Company	B++	Baa3	A3	52%	4%	44%	11.88%	7.03%	4.78%	8.57%
146	Sierra Pacific Power Company	B	B2	Baa2	52%	1%	47%	12.30%	8.66%	5.30%	8.98%
106	PacifiCorp	Not Rated	Baa3	A2	52%	1%	47%	12.30%	7.03%	4.53%	8.60%
119	Trans Bay Cable LLC	Not Rated		Not Rated	51%		49%	12.30%		5.30%	8.87%
125	Terra-Gen Dixie Valley, LLC	Not Rated		Not Rated	51%		49%	12.30%		5.30%	8.87%
156	Atlantic Path 15, LLC	Not Rated		Not Rated	51%		49%	12.30%		5.30%	8.87%
163	California Pacific Electric Co., LLC	Not Rated		Not Rated	51%		49%	12.30%		5.30%	8.87%
191	Arizona Public Service Company	Not Rated		Baa2	51%		49%	12.30%		5.30%	8.87%
	Electric Cooperatives	Not Rated		Not Rated	51%		49%	12.30%		5.30%	8.87%
Natural Gas Distribution and Storage Companies											
149	Southern California Gas Company	A	Baa1	Baa1	53%	4%	43%	11.33%	6.38%	5.04%	8.43%
152	Southwest Gas Corporation	B	Ba1	Baa2	52%	4%	44%	11.52%	7.36%	5.30%	8.62%
192	Alpine Natural Gas Operating Company	Not Rated		Not Rated	51%		49%	12.83%		5.56%	9.27%
194	West Coast Gas Company, Inc.	Not Rated		Not Rated	51%		49%	12.83%		5.56%	9.27%
104	Central Valley Gas Storage LLC	Not Rated		Not Rated	60%		40%	13.61%		6.07%	10.60%
121	Gill Ranch Storage, LLC	Not Rated		Not Rated	60%		40%	13.61%		6.07%	10.60%
195	Wild Goose Storage, LLC	Not Rated		Not Rated	60%		40%	13.61%		6.07%	10.60%
198	Lodi Gas Storage, LLC	Not Rated		Not Rated	60%		40%	13.61%		6.07%	10.60%
Water Company											
101	Golden State Water Company	B++		Not Rated	55%		45%	12.04%		5.50%	9.10%

**2012 Capitalization Rate Study
Gas, Electric and Water Companies
Industry Notes**

- In establishing the capital structures for the rate-regulated utilities, staff considered the decisions of the California Public Utilities Commission (CPUC). For the non-rate-regulated utilities, the capital structures were developed based on the financial data collected and the relative risks of the utilities sampled in the Capitalization Rate Study.
- Staff considered the following in the development of equity rates:
 1. CPUC-authorized rates of return
 2. Discounted Cash Flow Model
 3. Capital Asset Pricing Model – ex post and ex ante risk premiums
- Staff considered the following in the development of debt rates:
 1. Moody's Utility Bond Yield Spreads
 2. The debt rates that a prospective purchaser would expect at the lien date
- The following utilities were added to the 2012 Capitalization Rate Study sample:
 1. NextEra Energy, Inc.
 2. Middlesex Water Company
 3. FirstEnergy Corp.
 4. Integrys Energy Group, Inc.
- The following utilities were removed from the 2012 Capitalization Rate Study sample:
 1. Allegheny Energy Corp.
 2. DPL, Inc.
 3. Nicor, Inc.

**2012 Capitalization Rate Study
Gas and Electric Companies
Flotation Cost Adjustment**

Equity				Preferred Stock				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A	11.10%	4.50%	11.62%	Baa1	6.27%	1.70%	6.38%	Aa3	4.24%	1.70%	4.31%
B++	11.35%	4.50%	11.88%	Baa2	6.59%	1.70%	6.70%	A1	4.34%	1.70%	4.42%
	11.50%	4.50%	12.04%	Baa3	6.91%	1.70%	7.03%	A2	4.45%	1.70%	4.53%
B	11.75%	4.50%	12.30%	Ba1	7.23%	1.70%	7.36%	A3	4.70%	1.70%	4.78%
				Ba2	7.55%	1.70%	7.68%	Baa1	4.96%	1.70%	5.04%
Not Rated	11.75%	4.50%	12.30%	Ba3	7.87%	1.70%	8.01%	Baa2	5.21%	1.70%	5.30%
				B1	8.19%	1.70%	8.33%	Baa3	5.46%	1.70%	5.56%
				B2	8.51%	1.70%	8.66%	Ba1	5.72%	1.70%	5.82%
				B3	8.83%	1.70%	8.98%	Ba2	5.97%	1.70%	6.07%
								Ba3	6.22%	1.70%	6.33%
								B1	6.48%	1.70%	6.59%
				B2	6.73%	1.70%	6.85%				
								B3	6.98%	1.70%	7.10%

Cost of Capital Adjusted for Flotation Costs = $\frac{k_u}{1 - f}$

Where: k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

**2012 Capitalization Rate Study
Gas and Electric Companies
Summary of Rates of Return**

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return ¹	Moody's P/S Yields	Moody's Rating	Rate of Return ²	Moody's Bond Yields	Moody's Rating	Rate of Return ²
A	11.10%	Aa=N/A	Aa1	5.15%	Aaa=N/A	Aaa2	3.39%
			Aa2	5.27%		Aaa3	3.57%
B++	11.35%	A=5.63%	Aa3	5.31%	Aa=3.93	Aa1	3.75%
	11.50%		A1	5.47%		Aa2	3.93%
B	11.75%	A=5.63%	A2	5.63%	A=4.25	Aa3	4.04%
			A3	5.95%		A1	4.14%
Not Rated	11.75%	Baa=6.59%	Baa1	6.27%	Baa=5.01	A2	4.25%
			Baa2	6.59%		A3	4.50%
			Baa3	6.91%		Baa1	4.76%
			Ba1	7.23%		Baa2	5.01%
			Ba2	7.55%		Baa3	5.26%
			Ba3	7.87%		Ba1	5.52%
			B1	8.19%		Ba2	5.77%
			B2	8.51%		Ba3	6.02%
B3	8.83%	B1	6.28%				
						B2	6.53%
						B3	6.78%
						Not Rated	7.04%

¹ The Rate of Return on Common Equity was developed by staff based on the relative risks of the utilities in conjunction with the results of various financial models and pertinent information from different sources. Consideration was also given to the latest decisions of the California Public Utilities Commission. For 2012, the return on equity (ROE) and return on rate base (ROR) for Pacific Gas and Electric Company are 11.35% and 8.79%, respectively (D.09-10-016); for Southern California Edison Company, the ROE and ROR are 11.50% and 8.82%, respectively (D.09-10-016); for San Diego Gas & Electric Company, the ROE and ROR are 11.10% and 8.40%, respectively (D.07-12-049).

² The Rates of Return on Preferred Stocks and Bonds were based on the 2011 Moody's "Utility Preferred Stock Yields" and "Utility Bond Yields" reports. Because Moody's assigns yields only to groups Aaa, Aa, A and Baa for bonds; and Aa, A, and Baa for preferred stock, staff interpolated the difference between these groups to further refine the ratings.

**2012 Capitalization Rate Study
Gas and Electric Companies
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings	
	A+, A	B++, B+, B
Expected Future Return, S&P 500	11.67%	11.67%
Less: Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%	2.93%
Risk Premium	8.74%	8.74%
Beta ²	0.73	0.71
Adjusted Risk Premium	6.39%	6.22%
Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%	2.93%
Projected Return on Common Equity	9.32%	9.15%

¹ WSJ.com, January 3, 2012

² The estimated betas were derived from a sample of gas and electric companies with similar ratings.

**2012 Capitalization Rate Study
Gas and Electric Companies
Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings	
	A+, A	B++, B+, B
Common Stock Return (1926 - 2011) ¹	11.80%	11.80%
Less: Income-Long Term Government Bonds (1926 - 2011) ¹	5.20%	5.20%
Risk Premium	6.60%	6.60%
Beta ²	0.73	0.71
Adjusted Risk Premium	4.82%	4.70%
Risk Free Return 25 - 30 Year Treasury Bonds ³	2.93%	2.93%
Projected Return on Common Equity	7.75%	7.63%

¹ Ibbotson 2012 Valuation Yearbook

² The estimated betas were derived from a sample of gas and electric companies with similar ratings.

³ WSJ.com, January 3, 2012

**2012 Capitalization Rate Study
Gas and Electric Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/30/11	Est. 2012 Earnings	2011 Earnings	2011 Dividends	Est. 2012 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A+	Consolidated Edison, Inc.	62.03	3.65	3.55	2.40	2.42	3.90%	1.00%	3.47%	5.88%	4.90%	7.37%
A	Allele, Inc.	41.98	2.65	2.65	1.78	1.80	4.29%	2.00%	5.83%	6.31%	6.29%	10.12%
A	Alliant Energy Corp.	44.11	2.95	2.75	1.70	1.80	4.08%	6.00%	5.80%	6.69%	10.08%	9.88%
A	CH Energy Group	58.38	3.10	3.00	2.22	2.22	3.80%	1.00%	4.00%	5.31%	4.80%	7.80%
A	Entergy Corp.	73.05	6.00	7.40	3.32	3.32	4.54%	2.00%	0.03%	8.21%	6.54%	4.58%
A	Exelon Corp.	43.37	2.90	3.65	2.10	2.10	4.84%	NIL	-0.63%	6.69%	4.84%	4.21%
A	MGE Energy Inc.	46.77	2.65	2.80	1.52	1.55	3.31%	2.00%	4.00%	5.67%	5.31%	7.31%
A	NextEra Energy, Inc.	60.88	4.50	4.15	2.20	2.30	3.78%	5.50%	5.57%	7.39%	9.28%	9.34%
A	NSTAR	46.96	2.75	2.55	1.73	1.83	3.90%	6.00%	5.60%	5.86%	9.90%	9.50%
A	OGE Energy Corp.	56.71	3.45	3.40	1.52	1.59	2.80%	4.00%	6.87%	6.08%	6.80%	9.67%
A	SCANA Corp.	45.06	3.15	3.05	1.94	1.98	4.39%	2.00%	3.90%	6.99%	6.39%	8.29%
A	Sempra Energy	55.00	4.60	4.35	1.92	2.08	3.78%	9.00%	6.27%	8.36%	12.78%	10.05%
A	Southern Co.	46.29	2.70	2.55	1.87	1.94	4.19%	4.00%	5.67%	5.83%	8.19%	9.86%
A	Vectren Corp.	30.23	1.90	1.80	1.39	1.41	4.66%	3.00%	5.10%	6.29%	7.66%	9.76%
	Mean						4.02%	3.65%	4.39%	6.54%	7.41%	8.41%
	Median						3.99%	3.00%	5.33%	6.30%	6.67%	9.42%
	Weighted Average										7.69%	8.07%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from finance.yahoo.com and represents December 30, 2011 closing stock prices.

2012 Capitalization Rate Study
Gas and Electric Companies
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/30/11	Est. 2012 Earnings	2011 Earnings	2011 Dividends	Est. 2012 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B++	Ameren Corp.	33.13	2.40	2.45	1.56	1.62	4.89%	-1.00%	0.33%	7.24%	3.89%	5.22%
B++	American Electric Power Co.	41.31	3.25	3.15	1.85	1.90	4.60%	4.00%	4.13%	7.87%	8.60%	8.73%
B++	Avista Corp.	25.75	1.80	1.75	1.10	1.18	4.58%	9.00%	4.57%	6.99%	13.58%	9.15%
B++	Cleco Corp.	38.10	2.40	2.45	1.12	1.25	3.28%	9.50%	4.50%	6.30%	12.78%	7.78%
B++	Edison International	41.40	3.10	3.00	1.29	1.31	3.16%	2.50%	2.90%	7.49%	5.66%	6.06%
B++	El Paso Electric Co.	34.64	2.40	2.55	0.66	1.08	3.12%	NMF	5.17%	6.93%	3.12%	8.28%
B++	FirstEnergy Corp.	44.30	3.40	2.50	2.20	2.20	4.97%	0.50%	1.20%	7.67%	5.47%	6.17%
B++	Integrus Energy Group, Inc.	54.18	3.50	3.30	2.72	2.72	5.02%	NIL	7.63%	6.46%	5.02%	12.65%
B++	PG&E Corp.	41.22	2.95	2.80	1.82	1.82	4.42%	3.00%	3.60%	7.16%	7.42%	8.02%
B++	Pinnacle West Capital Corp.	48.18	3.30	2.90	2.10	2.10	4.36%	2.00%	5.63%	6.85%	6.36%	9.99%
B++	Progress Energy, Inc.	56.02	3.15	3.10	2.48	2.52	4.50%	1.00%	3.80%	5.62%	5.50%	8.30%
B++	UIL Holdings	35.37	2.20	1.95	1.73	1.73	4.89%	NIL	3.67%	6.22%	4.89%	8.56%
B++	Westar Energy, Inc.	28.78	1.90	1.75	1.28	1.32	4.59%	3.00%	6.57%	6.60%	7.59%	11.15%
B++	Wisconsin Energy Corp.	34.96	2.25	2.15	1.04	1.20	3.43%	16.00%	7.53%	6.44%	19.43%	10.97%
B++	Xcel Energy, Inc.	27.64	1.85	1.75	1.03	1.06	3.84%	5.00%	5.07%	6.69%	8.84%	8.90%
B+	Black Hills Corp.	33.58	2.00	1.05	1.46	1.48	4.41%	1.50%	6.50%	5.96%	5.91%	10.91%
B+	CMS Energy Corp.	22.08	1.55	1.45	0.84	0.92	4.17%	14.00%	6.13%	7.02%	18.17%	10.30%
B+	DTE Energy Co.	54.45	3.75	3.60	2.32	2.42	4.44%	4.00%	4.17%	6.89%	8.44%	8.61%
B+	Empire District Electric Co.	21.09	1.25	1.30	0.64	1.00	4.74%	-1.00%	7.00%	5.93%	3.74%	11.74%
B+	Great Plains Energy Inc.	21.78	1.45	1.30	0.84	0.86	3.95%	NIL	5.70%	6.66%	3.95%	9.65%
B+	Hawaiian Electric Industries, Inc.	26.48	1.70	1.50	1.24	1.24	4.68%	1.00%	10.83%	6.42%	5.68%	15.52%
B+	Northeast Utilities	36.07	2.50	2.15	1.10	1.18	3.27%	7.00%	7.40%	6.93%	10.27%	10.67%
B+	Otter Tail Corp.	22.02	1.00	0.68	1.19	1.19	5.40%	1.50%	7.67%	4.54%	6.90%	13.07%
B+	Portland General Electric Co.	25.29	2.00	1.95	1.06	1.08	4.27%	3.00%	6.13%	7.91%	7.27%	10.40%
B	CenterPoint Energy, Inc.	20.09	1.20	1.20	0.79	0.80	3.98%	3.00%	4.80%	5.97%	6.98%	8.78%
B	Central Vermont P.S. Corp.	35.10	1.75	0.35	0.92	0.92	2.62%	1.50%	2.00%	4.99%	4.12%	4.62%
B	NV Energy, Inc.	16.35	1.10	0.80	0.49	0.53	3.24%	12.00%	9.63%	6.73%	15.24%	12.87%
B	PNM Resources	18.23	1.25	1.00	0.50	0.60	3.29%	7.00%	14.70%	6.86%	10.29%	17.99%
	Mean						4.15%	4.54%	5.68%	6.62%	8.04%	9.82%
	Median						4.38%	3.00%	5.40%	6.71%	6.94%	9.40%
	Weighted Average										8.05%	8.70%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from finance.yahoo.com and represents December 30, 2011 closing stock prices.

**2012 Capitalization Rate Study
Gas and Electric Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A+	Consolidated Edison, Inc.	3.00%	3.70%	3.70%	3.47%
A	Allete, Inc.	6.00%	5.00%	6.50%	5.83%
A	Alliant Energy Corp.	6.50%	6.00%	4.90%	5.80%
A	CH Energy Group	4.00%	4.00%	N/A	4.00%
A	Entergy Corp.	0.50%	2.00%	-2.40%	0.03%
A	Exelon Corp.	-1.50%	0.00%	-0.40%	-0.63%
A	MGE Energy Inc.	4.00%	4.00%	4.00%	4.00%
A	NextEra Energy, Inc.	4.50%	6.40%	5.80%	5.57%
A	NSTAR	7.00%	5.40%	4.40%	5.60%
A	OGE Energy Corp.	6.50%	5.90%	8.20%	6.87%
A	SCANA Corp.	3.00%	4.20%	4.50%	3.90%
A	Sempra Energy	4.50%	7.00%	7.30%	6.27%
A	Southern Co.	6.00%	5.10%	5.90%	5.67%
A	Vectren Corp.	5.50%	4.30%	5.50%	5.10%
B++	Ameren Corp.	-2.00%	4.00%	-1.00%	0.33%
B++	American Electric Power Co.	4.50%	4.00%	3.90%	4.13%
B++	Avista Corp.	4.50%	4.70%	4.50%	4.57%
B++	Cleco Corp.	6.00%	N/A	3.00%	4.50%
B++	Edison International	0.50%	5.00%	3.20%	2.90%
B++	El Paso Electric Co.	7.50%	4.30%	3.70%	5.17%
B++	FirstEnergy Corp.	0.50%	1.00%	2.10%	1.20%
B++	Integrus Energy Group, Inc.	9.00%	4.50%	9.40%	7.63%
B++	PG&E Corp.	5.00%	4.30%	1.50%	3.60%
B++	Pinnacle West Capital Corp.	6.00%	5.30%	5.60%	5.63%
B++	Progress Energy, Inc.	3.50%	4.50%	3.40%	3.80%
B++	UIL Holdings	3.00%	4.00%	4.00%	3.67%
B++	Westar Energy, Inc.	8.50%	6.10%	5.10%	6.57%
B++	Wisconsin Energy Corp.	8.50%	6.30%	7.80%	7.53%
B++	Xcel Energy, Inc.	5.00%	5.10%	5.10%	5.07%

**2012 Capitalization Rate Study
Gas and Electric Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B+	Black Hills Corp.	8.50%	5.00%	6.00%	6.50%
B+	CMS Energy Corp.	7.00%	5.50%	5.90%	6.13%
B+	DTE Energy Co.	4.50%	4.20%	3.80%	4.17%
B+	Empire District Electric Co.	7.00%	N/A	N/A	7.00%
B+	Great Plains Energy Inc.	6.00%	7.00%	4.10%	5.70%
B+	Hawaiian Electric Industries, Inc.	11.00%	8.00%	13.50%	10.83%
B+	Northeast Utilities	7.50%	7.50%	7.20%	7.40%
B+	Otter Tail Corp.	13.00%	5.00%	5.00%	7.67%
B+	Portland General Electric Co.	7.50%	5.00%	5.90%	6.13%
B	CenterPoint Energy, Inc.	3.00%	5.70%	5.70%	4.80%
B	Central Vermont P.S. Corp.	2.00%	N/A	N/A	2.00%
B	NV Energy, Inc.	10.00%	8.80%	10.10%	9.63%
B	PNM Resources	19.50%	12.60%	12.00%	14.70%
	Mean	5.62%	5.14%	5.09%	5.25%
	Median	5.75%	5.00%	5.00%	5.37%
	Weighted Average				4.24%

Sources: Columns a, b and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

2012 Capitalization Rate Study
Gas and Electric Companies
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/30/11	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
A+	Consolidated Edison, Inc.	292,904,646	62.03	18,168.88	10,369.00	213.00	18,168.88	28,750.88	36.06%	0.74%	63.19%
A	Allete, Inc.	36,809,561	41.98	1,545.27	844.40	0.00	1,545.27	2,389.67	35.34%	0.00%	64.66%
A	Alliant Energy Corp.	110,981,511	44.11	4,895.39	2,703.60	205.10	4,895.39	7,804.09	34.64%	2.63%	62.73%
A	CH Energy Group	14,888,149	58.38	869.17	446.50	21.00	869.17	1,336.67	33.40%	1.57%	65.03%
A	Entergy Corp.	176,116,403	73.05	12,865.30	10,281.00	310.70	12,865.30	23,457.00	43.83%	1.32%	54.85%
A	Exelon Corp.	662,692,262	43.37	28,740.96	12,154.00	87.00	28,740.96	40,981.96	29.66%	0.21%	70.13%
A	MGE Energy Inc.	23,113,638	46.77	1,081.02	361.60	0.00	1,081.02	1,442.62	25.07%	0.00%	74.93%
A	NextEra Energy, Inc.	422,536,194	60.88	25,724.00	20,039.00	0.00	25,724.00	45,763.00	43.79%	0.00%	56.21%
A	NSTAR	103,586,727	46.96	4,864.43	2,200.80	43.00	4,864.43	7,108.23	30.96%	0.60%	68.43%
A	OGE Energy Corp.	98,056,722	56.71	5,560.80	2,586.90	0.00	5,560.80	8,147.70	31.75%	0.00%	68.25%
A	SCANA Corp.	129,651,572	45.06	5,842.10	4,376.00	0.00	5,842.10	10,218.10	42.83%	0.00%	57.17%
A	Sempra Energy	239,818,620	55.00	13,190.02	10,033.00	99.00	13,190.02	23,322.02	43.02%	0.42%	56.56%
A	Southern Co.	861,928,103	46.29	39,898.65	18,733.00	1,082.00	39,898.65	59,713.65	31.37%	1.81%	66.82%
A	Vectren Corp.	81,851,704	30.23	2,474.4	1,581.10	0.00	2,474.4	4,055.5	38.99%	0.00%	61.01%
	Mean								35.76%	0.67%	63.57%
	Median								34.99%	0.32%	63.93%
	Weighted Average								36.56%	0.78%	62.66%

Sources: Columns a, b, c, f and g were extracted from Value Line.
Column d was acquired from finance.yahoo.com and represents December 30, 2011 closing stock prices.

**2012 Capitalization Rate Study
Gas and Electric Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/30/11	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
B++	Ameren Corp.	242,239,840	33.13	8,025.41	6,682.00	142.00	8,025.41	14,849.41	45.00%	0.96%	54.05%
B++	American Electric Power Co.	482,912,247	41.31	19,949.10	15,183.00	61.00	19,949.10	35,193.10	43.14%	0.17%	56.68%
B++	Avista Corp.	58,215,534	25.75	1,499.05	1,172.50	0.00	1,499.05	2,671.55	43.89%	0.00%	56.11%
B++	Cleco Corp.	60,665,607	38.10	2,311.36	1,370.60	0.00	2,311.36	3,681.96	37.22%	0.00%	62.78%
B++	Edison International	325,811,206	41.40	13,488.58	13,010.00	1,029.00	13,488.58	27,527.58	47.26%	3.74%	49.00%
B++	El Paso Electric Co.	40,250,233	34.64	1,394.27	816.50	0.00	1,394.27	2,210.77	36.93%	0.00%	63.07%
B++	FirstEnergy Corp.	418,216,437	44.30	18,526.99	16,491.00	0.00	18,526.99	35,017.99	47.09%	0.00%	52.91%
B++	Integrus Energy Group, Inc.	78,287,906	54.18	4,241.64	2,080.70	51.10	4,241.64	6,373.44	32.65%	0.80%	66.55%
B++	PG&E Corp.	405,169,162	41.22	16,701.07	11,626.00	252.00	16,701.07	28,579.07	40.68%	0.88%	58.44%
B++	Pinnacle West Capital Corp.	109,181,233	48.18	5,260.35	3,046.60	0.00	5,260.35	8,306.95	36.68%	0.00%	63.32%
B++	Progress Energy, Inc.	295,005,362	56.02	16,526.20	11,717.00	92.80	16,526.20	28,336.00	41.35%	0.33%	58.32%
B++	UIL Holdings	50,542,709	35.37	1,787.70	1,551.00	0.00	1,787.70	3,338.70	46.46%	0.00%	53.54%
B++	Westar Energy, Inc.	117,180,729	28.78	3,372.46	2,741.60	21.40	3,372.46	6,135.46	44.68%	0.35%	54.97%
B++	Wisconsin Energy Corp.	231,267,725	34.96	8,085.12	4,618.90	30.40	8,085.12	12,734.42	36.27%	0.24%	63.49%
B++	Xcel Energy, Inc.	484,955,743	27.64	13,404.18	9,450.20	105.00	13,404.18	22,959.38	41.16%	0.46%	58.38%
B+	Black Hills Corp.	39,468,273	33.58	1,325.34	1,282.20	0.00	1,325.34	2,607.54	49.17%	0.00%	50.83%
B+	CMS Energy Corp.	252,000,000	22.08	5,564.16	6,208.00	44.00	5,564.16	11,816.16	52.54%	0.37%	47.09%
B+	DTE Energy Co.	169,250,934	54.45	9,215.71	7,497.00	0.00	9,215.71	16,712.71	44.86%	0.00%	55.14%
B+	Empire District Electric Co.	41,975,818	21.09	885.27	692.50	0.00	885.27	1,577.77	43.89%	0.00%	56.11%
B+	Great Plains Energy Inc.	136,087,321	21.78	2,963.98	2,750.10	39.00	2,963.98	5,753.08	47.80%	0.68%	51.52%
B+	Hawaiian Electric Industries, Inc.	95,975,024	26.48	2,541.42	1,340.00	34.30	2,541.42	3,915.72	34.22%	0.88%	64.90%
B+	Northeast Utilities	176,893,612	36.07	6,380.55	4,503.30	116.20	6,380.55	11,000.05	40.94%	1.06%	58.00%
B+	Otter Tail Corp.	36,062,023	22.02	794.09	433.50	15.50	794.09	1,243.09	34.87%	1.25%	63.88%
B+	Portland General Electric Co.	75,345,583	25.29	1,905.49	1,798.00	0.00	1,905.49	3,703.49	48.55%	0.00%	51.45%
B	CenterPoint Energy, Inc.	425,932,721	20.09	8,556.99	8,497.00	0.00	8,556.99	17,053.99	49.82%	0.00%	50.18%
B	Central Vermont P.S. Corp.	13,431,449	35.10	471.44	232.30	8.10	471.44	711.84	32.63%	1.14%	66.23%
B	NV Energy, Inc.	235,999,750	16.35	3,858.60	5,038.20	0.00	3,858.60	8,896.80	56.63%	0.00%	43.37%
B	PNM Resources	86,673,174	18.23	1,580.05	1,855.30	11.50	1,580.05	3,446.85	53.83%	0.33%	45.84%
	Mean								43.22%	0.49%	56.29%
	Median								43.89%	0.28%	56.11%
	Weighted Average								44.03%	0.63%	55.34%

Sources: Columns a, b, c, f and g were extracted from Value Line.
Column d was acquired from finance.yahoo.com and represents December 30, 2011 closing stock prices.

**2012 Capitalization Rate Study
Gas and Electric Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
A+	Consolidated Edison, Inc.	0.60	0.23	0.26	0.36	0.35	0.71	0.41
A	Allele, Inc.	0.70	0.66	0.67	0.68	0.25	0.51	0.51
A	Alliant Energy Corp.	0.75	0.54	0.53	0.61	0.20	0.57	0.52
A	CH Energy Group	0.65	0.41	0.40	0.49	0.35	0.61	0.47
A	Entergy Corp.	0.70	0.56	0.57	0.61	0.18	0.73	0.44
A	Exelon Corp.	0.85	0.57	0.59	0.67	0.36	0.36	0.69
A	MGE Energy Inc.	0.60	0.30	0.31	0.40	0.37	0.33	0.50
A	NextEra Energy, Inc.	0.75	0.56	0.57	0.63	0.19	0.78	0.46
A	NSTAR	0.65	0.28	0.28	0.40	0.38	0.53	0.49
A	OGE Energy Corp.	0.80	0.77	0.78	0.78	0.31	0.55	0.58
A	SCANA Corp.	0.70	0.55	0.54	0.60	0.30	0.80	0.45
A	Sempra Energy	0.80	0.54	0.53	0.62	0.29	0.56	0.57
A	Southern Co.	0.55	0.30	0.30	0.38	0.32	0.58	0.39
A	Vectren Corp.	0.70	0.40	0.41	0.50	0.36	0.68	0.49
	Mean	0.70	0.48	0.48	0.55		0.59	0.50
	Median	0.70	0.54	0.53	0.60		0.58	0.49
	Weighted Average				0.54		0.61	0.49
	Relevered Beta based on 44% Debt Capital Structure and Mean Unlevered Beta ³							0.73
	Relevered Beta based on 44% Debt Capital Structure and Weighted Average Unlevered Beta ³							0.72

Sources: Columns a, b, c and g were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from Standard and Poor's Stock Reports.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).

**2012 Capitalization Rate Study
Gas and Electric Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line		Value	Zacks	Standard	Average	Company's	Debt	Unlevered
Rating	Company Name	Line	Beta	& Poor's	Beta	Tax	Equity	Beta ²
		Beta		Beta		Rate	Ratio ¹	
B++	Ameren Corp.	0.80	0.62	0.62	0.68	0.37	0.90	0.51
B++	American Electric Power Co.	0.70	0.51	0.52	0.58	0.35	0.92	0.44
B++	Avista Corp.	0.70	0.71	0.72	0.71	0.35	0.83	0.45
B++	Cleco Corp.	0.70	0.51	0.51	0.57	0.37	0.64	0.50
B++	Edison International	0.80	0.67	0.66	0.71	0.33	0.95	0.49
B++	El Paso Electric Co.	0.75	0.60	0.61	0.65	0.33	0.76	0.50
B++	FirstEnergy Corp.	0.80	0.45	0.47	0.57	0.41	0.89	0.52
B++	Integrus Energy Group, Inc.	0.90	0.86	0.89	0.88	0.39	0.50	0.69
B++	PG&E Corp.	0.55	0.29	0.29	0.38	0.32	0.63	0.39
B++	Pinnacle West Capital Corp.	0.70	0.54	0.53	0.59	0.34	0.84	0.45
B++	Progress Energy, Inc.	0.60	0.32	0.31	0.41	0.34	0.88	0.38
B++	UIL Holdings	0.70	0.68	0.67	0.68	0.40	0.65	0.50
B++	Westar Energy, Inc.	0.75	0.59	0.58	0.64	0.30	0.92	0.46
B++	Wisconsin Energy Corp.	0.65	0.33	0.34	0.44	0.35	0.62	0.46
B++	Xcel Energy, Inc.	0.65	0.40	0.39	0.48	0.36	0.79	0.43
B+	Black Hills Corp.	0.85	1.02	1.03	0.97	0.32	0.70	0.58
B+	CMS Energy Corp.	0.75	0.52	0.54	0.60	0.37	1.89	0.34
B+	DTE Energy Co.	0.75	0.64	0.63	0.67	0.35	1.02	0.45
B+	Empire District Electric Co.	0.70	0.58	0.59	0.62	0.36	0.86	0.45
B+	Great Plains Energy Inc.	0.75	0.70	0.73	0.73	0.34	1.00	0.45
B+	Hawaiian Electric Industries, Inc.	0.70	0.50	0.52	0.57	0.35	0.64	0.49
B+	Northeast Utilities	0.70	0.47	0.47	0.55	0.35	0.95	0.43
B+	Otter Tail Corp.	0.90	1.08	1.16	1.05	0.20	0.46	0.66
B+	Portland General Electric Co.	0.75	0.65	0.64	0.68	0.25	0.94	0.44
B	CenterPoint Energy, Inc.	0.80	0.61	0.66	0.69	0.37	1.51	0.41
B	Central Vermont P.S. Corp.	0.75	0.49	0.49	0.58	0.35	0.61	0.54
B	NV Energy, Inc.	0.85	0.67	0.66	0.73	0.33	1.64	0.40
B	PNM Resources	0.95	0.90	0.90	0.92	0.40	1.33	0.53
	Mean	0.75	0.60	0.61	0.65		0.90	0.48
	Median	0.75	0.60	0.60	0.65		0.87	0.46
	Weighted Average				0.59		0.94	0.45
	Relevered Beta based on 47% Debt Capital Structure and Mean Unlevered Beta ³							0.73
	Relevered Beta based on 47% Debt Capital Structure and Weighted Average Unlevered Beta ³							0.69

Sources: Columns a, b, c and g were extracted from Value Line.

Column d was extracted from Zacks.com.

Column e was extracted from Standard and Poor's Stock Reports.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Flotation Cost Adjustment**

Equity				Preferred Stock				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A	10.82%	4.50%	11.33%	Baa1	6.27%	1.70%	6.38%	Aa2	4.13%	1.70%	4.20%
B	11.00%	4.50%	11.52%	Baa2	6.59%	1.70%	6.70%	Aa3	4.24%	1.70%	4.31%
Not Rated	12.25%	4.50%	12.83%	Baa3	6.91%	1.70%	7.03%	A1	4.34%	1.70%	4.42%
	13.00%	4.50%	13.61%	Ba1	7.23%	1.70%	7.36%	A2	4.45%	1.70%	4.53%
				Ba2	7.55%	1.70%	7.68%	A3	4.70%	1.70%	4.78%
				Ba3	7.87%	1.70%	8.01%	Baa1	4.96%	1.70%	5.04%
								Baa2	5.21%	1.70%	5.30%
								Baa3	5.46%	1.70%	5.56%
								Ba1	5.72%	1.70%	5.82%
								Ba2	5.97%	1.70%	6.07%
								Ba3	6.22%	1.70%	6.33%
								B1	6.48%	1.70%	6.59%
							B2	6.73%	1.70%	6.85%	
							B3	6.98%	1.70%	7.10%	

Cost of Capital Adjusted for Flotation Costs = $\frac{k_u}{1 - f}$

Where: k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Summary of Rates of Return**

Common Equity		Preferred Stock			Bonds		
Value Line Rating	Rate of Return ¹	Moody's P/S Yields	Moody's Rating	Rate of Return ²	Moody's Bond Yields	Moody's Rating	Rate of Return ²
A	10.82%		Aa1	5.15%	Aaa=N/A	Aaa2	3.39%
		Aa=N/A	Aa2	5.27%		Aaa3	3.57%
B	11.00%		Aa3	5.31%	Aa=3.93	Aa1	3.75%
			A1	5.47%		Aa2	3.93%
Not Rated	12.25%	A=5.63%	A2	5.63%	A=4.25	Aa3	4.04%
			A3	5.95%		A1	4.14%
		Baa1	6.27%	A2	4.25%		
	Baa=6.59%	Baa2	6.59%	A3	4.50%		
		Baa3	6.91%	Baa1	4.76%		
		Ba1	7.23%	Baa=5.01	Baa2	5.01%	
		Ba2	7.55%		Baa3	5.26%	
		Ba3	7.87%		Ba1	5.52%	
		B1	8.19%		Ba2	5.77%	
		B2	8.51%		Ba3	6.02%	
		B3	8.83%		B1	6.28%	
					B2	6.53%	
					B3	6.78%	
					Not Rated	7.04%	

¹The Rate of Return on Common Equity was developed by staff based on the relative risks of the utilities in conjunction with the results of various financial models and pertinent information from different sources. Consideration was also given to the latest decisions of the California Public Utilities Commission. For 2012, the return on equity and return on rate base for Southern California Gas Company are 10.82% and 8.68%, respectively (D.97-07-054).

²The Rates of Return on Preferred Stocks and Bonds were based on the 2011 Moody's "Utility Preferred Stock Yields" and "Utility Bond Yields" reports. Because Moody's assigns yields only to groups Aaa, Aa, A and Baa for bonds; and Aa, A, and Baa for preferred stock, staff interpolated the difference between these groups to further refine the ratings.

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings	
	A, B++	B+, B
Expected Future Return, S&P 500	11.67%	11.67%
Less: Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%	2.93%
Risk Premium	8.74%	8.74%
Beta ²	0.66	0.74
Adjusted Risk Premium	5.79%	6.51%
Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%	2.93%
Projected Return on Common Equity	8.72%	9.44%

¹ WSJ.com, January 3, 2012

² The estimated betas were derived from a sample of natural gas distribution companies with similar ratings.

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings	
	A, B++	B+, B
Common Stock Return (1926 - 2011) ¹	11.80%	11.80%
Less: Income-Long Term Government Bonds (1926 - 2011) ¹	5.20%	5.20%
Risk Premium	6.60%	6.60%
Beta ²	0.66	0.74
Adjusted Risk Premium	4.37%	4.91%
Risk Free Return 25 - 30 Year Treasury Bonds ³	2.93%	2.93%
Projected Return on Common Equity	7.30%	7.84%

¹ Ibbotson 2012 Valuation Yearbook

² The estimated betas were derived from a sample of natural gas distribution companies with similar ratings.

³ WSJ.com, January 3, 2012

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/30/11	Est. 2012 Earnings	2011 Earnings	2011 Dividends	Est. 2012 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
A	AGL Resources, Inc.	42.26	3.15	2.95	1.80	1.84	4.35%	3.00%	4.33%	7.45%	7.35%	8.69%
A	New Jersey Resources Corp.	49.20	2.85	2.58	1.44	1.52	3.09%	5.00%	4.17%	5.79%	8.09%	7.26%
A	Northwest Natural Gas Co.	47.93	2.70	2.55	1.74	1.78	3.71%	3.50%	4.13%	5.63%	7.21%	7.85%
A	WGL Holdings, Inc.	44.22	2.50	2.25	1.55	1.59	3.60%	2.50%	3.93%	5.65%	6.10%	7.53%
B++	Laclede Group, Inc.	40.47	2.65	2.86	1.61	1.65	4.08%	2.50%	3.60%	6.55%	6.58%	7.68%
B++	Piedmont Natural Gas Co.	33.98	1.65	1.58	1.15	1.19	3.50%	3.50%	4.13%	4.86%	7.00%	7.64%
B++	South Jersey Industries, Inc.	56.81	3.20	2.90	1.50	1.64	2.89%	9.50%	7.90%	5.63%	12.39%	10.79%
B++	UGI Corp.	29.40	2.40	2.06	1.02	1.06	3.61%	7.50%	2.63%	8.16%	11.11%	6.24%
	Mean						3.60%	4.63%	4.35%	6.22%	8.23%	7.96%
	Median						3.60%	3.50%	4.13%	5.72%	7.28%	7.66%
	Weighted Average										8.41%	7.83%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from finance.yahoo.com and represents December 30, 2011 closing stock prices.

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/30/11	Est. 2012 Earnings	2011 Earnings	2011 Dividends	Est. 2012 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B+	Atmos Energy Corp.	33.35	2.40	2.26	1.36	1.38	4.14%	2.00%	3.77%	7.20%	6.14%	7.90%
B	NiSource, Inc.	23.81	1.45	1.35	0.92	0.92	3.86%	NIL	8.70%	6.09%	3.86%	12.56%
B	Southwest Gas Corp.	42.49	2.50	2.15	1.06	1.10	2.59%	4.50%	5.50%	5.88%	7.09%	8.09%
	Mean						3.53%	3.25%	5.99%	6.39%	5.70%	9.52%
	Median						3.86%	3.25%	5.50%	6.09%	6.14%	8.09%
	Weighted Average										4.87%	10.80%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from finance.yahoo.com and represents December 30, 2011 closing stock prices.

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A	AGL Resources, Inc.	5.00%	4.30%	3.70%	4.33%
A	New Jersey Resources Corp.	5.00%	4.50%	3.00%	4.17%
A	Northwest Natural Gas Co.	4.50%	4.30%	3.60%	4.13%
A	WGL Holdings, Inc.	2.00%	5.20%	4.60%	3.93%
B++	Laclede Group, Inc.	2.50%	3.00%	5.30%	3.60%
B++	Piedmont Natural Gas Co.	2.50%	4.70%	5.20%	4.13%
B++	South Jersey Industries, Inc.	9.00%	6.00%	8.70%	7.90%
B++	UGI Corp.	4.50%	3.20%	0.20%	2.63%
B+	Atmos Energy Corp.	5.00%	4.30%	2.00%	3.77%
B	NiSource, Inc.	9.00%	N/A	8.40%	8.70%
B	Southwest Gas Corp.	9.00%	5.30%	2.20%	5.50%
	Mean	5.27%	4.48%	4.26%	4.80%
	Median	5.00%	4.40%	3.70%	4.13%
	Weighted Average				5.47%

Sources: Columns a, b and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/30/11	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
A	AGL Resources, Inc.	78,553,859	42.26	3,319.69	2,687.00	0.00	3,319.69	6,006.69	44.73%	0.00%	55.27%
A	New Jersey Resources Corp.	41,446,786	49.20	2,039.18	426.80	0.00	2,039.18	2,465.98	17.31%	0.00%	82.69%
A	Northwest Natural Gas Co.	26,702,926	47.93	1,279.87	601.70	0.00	1,279.87	1,881.57	31.98%	0.00%	68.02%
A	WGL Holdings, Inc.	51,429,169	44.22	2,274.20	587.20	28.20	2,274.20	2,889.60	20.32%	0.98%	78.70%
B++	Laclede Group, Inc.	22,429,189	40.47	907.71	364.30	0.00	907.71	1,272.01	28.64%	0.00%	71.36%
B++	Piedmont Natural Gas Co.	72,171,413	33.98	2,452.38	675.00	0.00	2,452.38	3,127.38	21.58%	0.00%	78.42%
B++	South Jersey Industries, Inc.	30,140,819	56.81	1,712.30	424.20	0.00	1,712.30	2,136.50	19.85%	0.00%	80.15%
B++	UGI Corp.	111,804,420	29.40	3,287.05	2,039.50	0.00	3,287.05	5,326.55	38.29%	0.00%	61.71%
	Mean								27.84%	0.12%	72.04%
	Median								25.11%	0.00%	74.89%
	Weighted Average								31.09%	0.11%	68.80%

Sources: Columns a, b, c, f and g were extracted from Value Line.
Column d was acquired from finance.yahoo.com and represents December 30, 2011 closing stock prices.

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/30/11	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
B+	Atmos Energy Corp.	90,285,306	33.35	3,011.01	2,206.10	0.00	3,011.01	5,217.11	42.29%	0.00%	57.71%
B	NiSource, Inc.	281,111,006	23.81	6,693.25	6,337.30	0.00	6,693.25	13,030.55	48.63%	0.00%	51.37%
B	Southwest Gas Corp.	45,911,371	42.49	1,950.77	936.90	0.00	1,950.77	2,887.67	32.44%	0.00%	67.56%
	Mean								41.12%	0.00%	58.88%
	Median								42.29%	0.00%	57.71%
	Weighted Average								44.86%	0.00%	55.14%

Sources: Columns a, b, c, f and g were extracted from Value Line.
Column d was acquired from finance.yahoo.com and represents December 30, 2011 closing stock prices.

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
A	AGL Resources, Inc.	0.75	0.44	0.46	0.55	0.40	0.66	0.54
A	New Jersey Resources Corp.	0.65	0.26	0.25	0.39	0.30	0.25	0.55
A	Northwest Natural Gas Co.	0.60	0.32	0.31	0.41	0.30	0.46	0.45
A	WGL Holdings, Inc.	0.65	0.29	0.28	0.41	0.39	0.35	0.54
B++	Laclede Group, Inc.	0.60	0.07	0.06	0.24	0.31	0.43	0.46
B++	Piedmont Natural Gas Co.	0.70	0.32	0.31	0.44	0.30	0.37	0.56
B++	South Jersey Industries, Inc.	0.65	0.36	0.36	0.46	0.28	0.27	0.54
B++	UGI Corp.	0.70	0.43	0.43	0.52	0.30	0.65	0.48
	Mean	0.66	0.31	0.31	0.43		0.43	0.52
	Median	0.65	0.32	0.31	0.43		0.40	0.54
	Weighted Average				0.46		0.49	0.52
	Relevered Beta based on 44% Debt Capital Structure and Mean Unlevered Beta ³							0.76
	Relevered Beta based on 44% Debt Capital Structure and Weighted Average Unlevered Beta ³							0.76

Sources: Columns a, b, c and g were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from Standard and Poor's Stock Reports.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = $Beta/[1+(1-t_c)(D/E)]$; where D/E is the debt to equity ratio, t_c is the company's most recent tax rate.

³ Relevered Beta = $[Unlevered Beta][1+(1-t_p)(D/E)]$; where D/E is the debt to equity ratio, t_p is the prospective purchaser's tax rate (assumed to be 40%).

**2012 Capitalization Rate Study
Natural Gas Distribution Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
B+	Atmos Energy Corp.	0.70	0.50	0.52	0.57	0.36	0.80	0.46
B	NiSource, Inc.	0.85	0.79	0.78	0.81	0.40	1.40	0.46
B	Southwest Gas Corp.	0.75	0.72	0.73	0.73	0.36	0.86	0.48
	Mean	0.77	0.67	0.68	0.70		1.02	0.47
	Median	0.75	0.72	0.73	0.73		0.86	0.46
	Weighted Average				0.74		1.18	0.47
								Relevered Beta based on 50% Debt Capital Structure and Mean Unlevered Beta ³
								0.75
								Relevered Beta based on 50% Debt Capital Structure and Weighted Average Unlevered Beta ³
								0.74

Sources: Columns a, b, c and g were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from Standard and Poor's Stock Reports.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = $Beta/[1+(1-tc)(D/E)]$; where D/E is the debt to equity ratio, tc is the company's most recent tax rate.

³ Relevered Beta = $[Unlevered Beta][1+(1-tp)(D/E)]$; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%).

**2012 Capitalization Rate Study
Water Utility Companies
Flotation Cost Adjustment**

Equity				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
B++	11.50%	4.50%	12.04%	Not Rated	5.50%	1.70%	5.60%

Cost of Capital Adjusted for Flotation Costs = $\frac{k_u}{1 - f}$

Where: k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

**2012 Capitalization Rate Study
Water Utility Companies
Summary of Rates of Return**

Common Equity		Bonds	
Value Line Rating	Rate of Return ¹	Moody's Rating	Rate of Return ²
B++	11.50%	Not Rated	5.50%

¹In developing the Rate of Return on Common Equity, staff considered the latest decision of the California Public Utilities Commission and other pertinent information. For 2012, the return on equity and return on rate base for Golden State Water Company are 10.20% and 8.87%, respectively (D.08-01-043).

²The Rate of Return on Bonds represents what staff estimates a prospective purchaser would expect in the open market.

**2012 Capitalization Rate Study
Water Utility Companies
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Ratings B++, B+, B
Expected Future Return, S&P 500	11.67%
Less: Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%
	<hr/>
Risk Premium	8.74%
Beta ²	0.48
	<hr/>
Adjusted Risk Premium	4.22%
Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%
	<hr/>
Projected Return on Common Equity	<u>7.15%</u>

¹ WSJ.com, January 3, 2012

² The estimated betas were derived from a sample of water companies with similar ratings.

**2012 Capitalization Rate Study
Water Utility Companies
Capital Asset Pricing Model - Ex Post**

Component	Value Line Ratings
	B++, B+, B
Common Stock Return (1926 - 2011) ¹	11.80%
Less: Income-Long Term Government Bonds (1926 - 2011) ¹	<u>5.20%</u>
Risk Premium	6.60%
Beta ²	<u>0.48</u>
Adjusted Risk Premium	3.18%
Risk Free Return 25 - 30 Year Treasury Bonds ³	<u>2.93%</u>
Projected Return on Common Equity	<u><u>6.11%</u></u>

¹ Ibbotson 2012 Valuation Yearbook

² The estimated betas were derived from a sample of water companies with similar ratings.

³ WSJ.com, January 3, 2012

**2012 Capitalization Rate Study
Water Utility Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/30/11	Est. 2012 Earnings	2011 Earnings	2011 Dividends	Est. 2012 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
B++	American States Water Co.	34.90	2.30	2.25	1.10	1.16	3.32%	4.50%	8.70%	6.59%	7.82%	12.02%
B+	Aqua America, Inc.	22.05	1.10	1.05	0.63	0.66	2.99%	6.00%	8.53%	4.99%	8.99%	11.53%
B+	California Water Service Group	18.26	1.10	1.01	0.62	0.64	3.50%	3.50%	9.30%	6.02%	7.00%	12.80%
B+	Middlesex Water Company	18.66	1.00	0.90	0.73	0.74	3.97%	2.00%	4.35%	5.36%	5.97%	8.32%
B	American Water Works Co., Inc.	31.86	1.95	1.78	0.91	0.98	3.08%	10.00%	8.80%	6.12%	13.08%	11.88%
	Mean						3.37%	5.20%	7.94%	5.82%	8.57%	11.31%
	Median						3.32%	4.50%	8.70%	6.02%	7.82%	11.88%
	Weighted Average										11.20%	11.78%

Sources: Columns a, b, d, e, f, g and i were extracted from Value Line.

Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

Column c was acquired from finance.yahoo.com and represents December 30, 2011 closing stock prices.

**2012 Capitalization Rate Study
Water Utility Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B++	American States Water Co.	6.50%	12.00%	7.60%	8.70%
B+	Aqua America, Inc.	10.00%	8.30%	7.30%	8.53%
B+	California Water Service Group	5.50%	10.00%	12.40%	9.30%
B+	Middlesex Water Company	6.00%	N/A	2.70%	4.35%
B	American Water Works Co., Inc.	10.00%	7.80%	8.60%	8.80%
	Mean	7.60%	9.53%	7.72%	7.94%
	Median	6.50%	9.15%	7.60%	8.70%
	Weighted Average				8.66%

Sources: Columns a, b and c were extracted from Value Line.
Column d was extracted from Zacks.com.
Column e was extracted from ThomsonReuters.com.

**2012 Capitalization Rate Study
Water Utility Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/30/11	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %
B++	American States Water Co.	18,735,254	34.90	653.86	340.40	0.00	653.86	994.26	34.24%	0.00%	65.76%
B+	Aqua America, Inc.	138,568,084	22.05	3,055.43	1,402.50	0.00	3,055.43	4,457.93	31.46%	0.00%	68.54%
B+	California Water Service Group	41,817,032	18.26	763.58	477.60	0.00	763.58	1,241.18	38.48%	0.00%	61.52%
B+	Middlesex Water Company	15,634,889	18.66	291.75	132.60	3.40	291.75	427.75	31.00%	0.79%	68.21%
B	American Water Works Co., Inc.	175,516,248	31.86	5,591.95	5,383.50	27.80	5,591.95	11,003.25	48.93%	0.25%	50.82%
	Mean								36.82%	0.21%	62.97%
	Median								34.24%	0.00%	65.76%
	Weighted Average								42.69%	0.17%	57.14%

Sources: Columns a, b, c, f and g were extracted from Value Line.

Column d was acquired from finance.yahoo.com and represents December 30, 2011 closing stock prices.

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Natural Gas Transmission Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
153	Transwestern Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
180	North Baja Pipeline, LLC	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
187	Mojave Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
188	Kern River Gas Transmission Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
189	Standard Pacific Gas Line Incorporated	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
190	Tuscarora Gas Transmission Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
196	Questar Southern Trails Pipeline Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%
197	El Paso Natural Gas Company	Not Rated	Not Rated	80%	20%	12.04%	5.10%	10.65%

**2012 Capitalization Rate Study
Natural Gas Transmission Companies
Industry Notes**

- Interstate gas transmission companies are regulated by the Federal Energy Regulatory Commission (FERC).
- Staff relied upon the results of the following models in the development of equity rates:
 1. Discounted Cash Flow
 2. Capital Asset Pricing Model (Ex Post and Ex Ante)

**2012 Capitalization Rate Study
Natural Gas Transmission Companies
Flotation Cost Adjustment**

Equity				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
Not Rated	11.50%	4.50%	12.04%	Not Rated	5.01%	1.70%	5.10%

Cost of Capital Adjusted for Flotation Costs = $\frac{k_u}{1 - f}$

Where: k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

Staff applied a bond rating of Baa3 for the Natural Gas Transmission Companies, which represents the estimated cost of debt for the companies in the study.

**2012 Capitalization Rate Study
Natural Gas Transmission Companies
Comparison of Return on Common Equity**

Description	2012	2011	Change
E/P Ratio - Mean	5.88%	5.23%	0.65%
E/P Ratio - Median	5.11%	4.18%	0.93%
Dividends Yield + Dividends Growth - Mean	4.16%	5.81%	-1.64%
Dividends Yield + Dividends Growth - Median	5.10%	5.96%	-0.86%
Dividends Yield + Earnings Growth - Mean	19.15%	7.94%	11.21%
Dividends Yield + Earnings Growth - Median	10.26%	6.19%	4.07%
Capital Asset Pricing Model (CAPM) - Ex Ante	12.90%	9.59%	3.31%
Capital Asset Pricing Model (CAPM) - Ex Post	10.46%	12.07%	-1.61%
State-Assessed Properties Division Recommendation:	11.50%	10.00%	1.50%

The Discounted Cash Flow (DCF) model is computed using data from a sample of gas transmission companies with similar risk and operations.

The information considered by staff includes the results of DCF analysis (Dividends Yield + Dividends Growth and Dividends Yield + Earning Growth) and the results of the Capital Asset Pricing Model (CAPM) analysis.

2012 Capitalization Rate Study
Natural Gas Transmission Companies
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/30/11	2012 Est. Earnings	2011 Earnings	2011 Dividends	2012 Est. Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	Div Yld+ Div Grwh (h+i)	Div Yld+ Engs Grwh (h+j)
A	EOG Resources	98.51	4.60	3.50	0.64	0.67	0.68%	8.00%	52.33%	4.67%	8.68%	53.01%
B++	Cabot Oil & Gas	75.90	2.75	1.40	0.12	0.12	0.16%	NIL	26.83%	3.62%	0.16%	26.99%
B++	Devon Energy	62.00	6.80	5.85	0.67	0.68	1.10%	4.00%	9.17%	10.97%	5.10%	10.26%
B++	EQT Resources	54.79	2.80	2.15	0.88	0.88	1.61%	2.00%	20.50%	5.11%	3.61%	22.11%
B++	National Fuel Gas	55.58	3.55	3.09	1.40	1.46	2.63%	5.50%	3.97%	6.39%	8.13%	6.59%
B++	Questar Corp.	19.86	1.20	1.15	0.62	0.66	3.32%	7.50%	5.60%	6.04%	10.82%	8.92%
B	El Paso Corp.	26.57	1.15	1.02	0.04	0.04	0.15%	-7.50%	6.00%	4.33%	-7.35%	6.15%
	Mean						1.38%	3.25%	17.77%	5.88%	4.16%	19.15%
	Median						1.10%	4.75%	9.17%	5.11%	5.10%	10.26%
	Weighted Average										3.48%	29.85%

Sources: Columns a, d, e, f, g and i were extracted from ValueLine.com.

Column c was extracted from Finance.Yahoo.com and represents December 30, 2011 closing stock prices.

Column j is an average of ValueLine.com, Zacks.com and ThomsonReuters.com.

**2012 Capitalization Rate Study
Natural Gas Transmission Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A	EOG Resources	17.00%	64.00%	76.00%	52.33%
B++	Cabot Oil & Gas	14.00%	32.50%	34.00%	26.83%
B++	Devon Energy	8.00%	9.20%	10.30%	9.17%
B++	EQT Resources	19.00%	16.80%	25.70%	20.50%
B++	National Fuel Gas	6.50%	4.20%	1.20%	3.97%
B++	Questar Corp.	NMF	5.50%	5.70%	5.60%
B	El Paso Corp. *	6.00%	N/A	N/A	6.00%
	Mean	11.75%	22.03%	25.48%	17.77%
	Median	11.00%	13.00%	18.00%	9.17%
	Weighted Average				21.09%

* Acquisition of El Paso Corp. by Kinder Morgan Inc. is pending as of December 31, 2011.

**2012 Capitalization Rate Study
Natural Gas Transmission Company
Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	11.67%
Less: Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%
Risk Premium	8.74%
Beta	1.14
Adjusted Risk Premium	9.97%
Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%
Projected Return on Common Equity	<u>12.90%</u>

¹ WSJ.com on January 3, 2012

**2012 Capitalization Rate Study
Natural Gas Transmission Companies
Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Return (1926 - 2011) ¹	11.80%
Less: Income - Long Term Government Bonds ¹	5.20%
Risk Premium	<u>6.60%</u>
Beta	<u>1.14</u>
Adjusted Risk Premium	7.53%
Risk Free Return 25 - 30 Year Treasury Bonds ²	<u>2.93%</u>
Projected Return on Common Equity	<u><u>10.46%</u></u>

¹ Ibbotson 2012 Valuation Yearbook

² WSJ.com on January 3, 2012

**2012 Capitalization Rate Study
Natural Gas Transmission Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line's Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
A	EOG Resources	1.15	1.09	1.09	1.11	0.42	0.13	1.03
B++	Cabot Oil & Gas	1.25	1.16	1.18	1.20	0.37	0.19	1.07
B++	Devon Energy	1.20	1.16	1.16	1.17	0.36	0.17	1.06
B++	EQT Resources	1.20	0.87	0.87	0.98	0.35	0.25	0.84
B++	National Fuel Gas	1.05	1.07	1.06	1.06	0.39	0.26	0.91
B++	Questar Corp.	NMF	0.72	0.46	0.59	0.36	0.24	0.51
B	El Paso Corp.	1.35	1.38	1.38	1.37	0.32	1.31	0.72
	Mean	1.20	1.06	1.03	1.07		0.37	0.88
	Median	1.20	1.09	1.09	1.11		0.24	0.91
	Weighted				1.10		0.18	0.99
	Relevered Beta based on 20% Debt Capital Structure						1.01 ³	
	Relevered Beta based on 20% Debt Capital Structure and a weighted average Beta						1.14 ³	

Sources: Column g was extracted from Value Line.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = Corrected Beta/[1+(1- t_c)(D/E)]; where D/E is the debt to equity ratio, t_c is the company's 2011 tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1- t_p)(D/E)]; where D/E is the debt to equity ratio, t_p is a prospective purchaser's tax rate (assumed to be 40%).

**2012 Capitalization Rate Study
Natural Gas Transmission Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line	Bond	P/S		Common	Common	Market Value	L.T.	Common	Total Cap.	L.T.	Common
Rating	Rating	Rating	Company Name	Stock	Stock Price	Com. Stock	Debt	Stock	(\$mill)	Debt	Stock
				Outstanding	12/30/11	(e * f)	(\$millions)	(\$millions)	(h + i)	%	%
A	NR	NR	EOG Resources	268,850,778	98.51	26,484.49	5,007.70	26,484.49	31,492.19	15.90%	84.10%
B++	NR	NR	Cabot Oil & Gas	104,494,374	75.90	7,931.12	1,205.00	7,931.12	9,136.12	13.20%	86.80%
B++	NR	NR	Devon Energy	403,900,000	62.00	25,041.80	5,970.00	25,041.80	31,011.80	19.30%	80.70%
B++	NR	NR	EQT Resources	149,437,433	54.79	8,187.68	1,978.50	8,187.68	10,166.18	19.50%	80.50%
B++	NR	NR	National Fuel Gas	82,844,910	55.58	4,604.52	899.00	4,604.52	5,503.52	16.30%	83.70%
B++	NR	NR	Questar Corp.	177,586,806	19.86	3,526.87	881.40	3,526.87	4,408.27	20.00%	80.00%
B	NR	NR	El Paso Corp	771,195,525	26.57	20,490.7	12,500.00	20,490.67	32,990.67	37.90%	62.10%
			Mean							20.30%	79.70%
			Median							19.30%	80.70%
			Weighted Average							22.82%	77.18%

Sources: Columns a, e, h and i were extracted from ValueLine.

Column f was extracted from Finance.Yahoo.com and represents December 30, 2011 closing stock prices.

NR - Not Rated

**2012 Capitalization Rate Study
Natural Gas Transmission Companies
Bonds - Rate of Return**

Utility Bond Yield	Bond Rating				
	Aaa	Aa	A	Baa	Avg Utility
As of December 30, 2011	N/A	3.93%	4.25%	5.01%	4.40%

Source: Moody's Public Utility, Credit Market Trends Service.

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Electric Generation Facilities**

Facility Type	Ratings		Capital Structure		Rates of Return		Basic Cap Rate ³
	Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Modern Electric Generation Technology¹	C++	B2	55%	45%	13.87%	7.38%	10.95%
Older Electric Generation Technology²	C++	B2	55%	45%	15.97%	8.39%	12.56%

¹ Modern Electric Generation Technology - Generally high efficiency combined-cycle or simple cycle gas turbine electric generation facilities incorporating contemporary generation technologies.

² Older Electric Generation Technology - Generally older steam turbine electric generation facilities that were sold off by vertically integrated electric utilities and for which no replacements, other than for routine maintenance have been made.

³ Staff may adjust the rates stated above if the specific situation of a facility warrants an adjustment to its basic capitalization rate.

2012 Capitalization Rate Study
Electric Generation Facilities
Industry Notes

- Staff relied primarily on the Capital Asset Pricing Model (CAPM) and Risk Premium Analysis in the development of equity rates. Consideration was given to both the ex post and ex ante risk premiums.
- The Discounted Cash Flow model was not relied upon because the merchant generators in the sample are not currently paying dividends.
- Staff's recommended capital structure of 55% equity and 45% debt provides sufficient coverage of interest and principal payments on debt.
- Staff added a risk premium of 100 basis points to the debt rate for older technology to recognize the market's perception of additional risk present in operating these types of facilities.
- Staff considers the risk associated with older facilities to be greater than that of newer facilities, and has adjusted the beta used in the CAPM calculation upward to reflect this additional risk.
- The following company was removed from the 2012 Capitalization Rate Study sample for electric generation companies:

1. Dynegy, Inc.

Dynegy, Inc. was removed from the current year's study due to its filing for Chapter 11 bankruptcy protection in November 2011.

**2012 Capitalization Rate Study
Electric Generation Facilities
Flotation Cost Adjustment**

Facility Type	Equity			Debt		
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Recommended Rate	Flotation Cost in %	Adjusted Rate
Modern Electric Generation Technology ¹	13.25%	4.50%	13.87%	7.25%	1.70%	7.38%
Older Electric Generation Technology ²	15.25%	4.50%	15.97%	8.25%	1.70%	8.39%

$$\text{Cost of Capital Adjusted for Flotation Costs} = \frac{k_u}{1 - f}$$

Where: k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

¹ The Modern Electric Generation Technology Recommended Debt Rate was developed by staff based on the relative rates of the utilities and other pertinent information from various sources.

² The Older Electric Generation Technology Recommended Debt Rate is equal to the Modern Electric Generation Technology Recommended Debt Rate with an additional risk premium of 100 basis points.

**2012 Capitalization Rate Study
Electric Generation Facilities
Summary of Rates of Return**

Common Equity		Bonds			
Facility Type	Rate of Return ¹	Moody's Bond Yields	Moody's Rating	Rate of Return ²	
Modern Electric Generation Technology	13.25%	Aaa=NA	Aaa2	3.39%	
			Aaa3	3.57%	
			Aa1	3.75%	
Older Electric Generation Technology	15.25%	Aa=3.93%	Aa2	3.93%	
			Aa3	4.04%	
		A=4.25%	A1	4.14%	
			A2	4.25%	
			A3	4.50%	
			Baa1	4.76%	
			Baa=5.01%	Baa2	5.01%
				Baa3	5.26%
		Ba1	5.52%		
		Ba2	5.77%		
Ba3	6.02%				
B1	6.28%				
B2	6.53%				
B3	6.78%				
Caa1	7.04%				

¹ The Rate of Return on Common Equity was developed by staff based on the relative risk of the utilities in conjunction with the results of the various financial models and pertinent information from various sources.

² Rates of Return on Bonds are based on Moody's "Utility Bond Yields" as of December 30, 2011. However, because Moody assigns a yield to the groups Aa, A and Baa for bonds, the staff interpolates the difference between these groups in order to achieve a further refinement of the ratings.

2012 Capitalization Rate Study
Electric Generation Facilities
Comparison of Rates of Return on Common Equity

	All Facilities in Study		
	2012	2011	Change
E/P Ratio-Mean	4.97%	5.93%	-0.96%
E/P Ratio-Median	6.69%	7.40%	-0.71%
Div Yld + Div Growth-Mean	4.43%	3.96%	0.47%
Div Yld + Div Growth-Median	3.34%	3.02%	0.32%
Div Yld + Div Growth-Weighted Avg.	5.63%	6.10%	-0.48%
Div Yld + Earn.Growth-Mean	7.20%	6.16%	1.04%
Div Yld + Earn.Growth-Median	8.90%	6.64%	2.26%
Div Yld + Earn.Growth-Weighted Avg.	7.66%	7.34%	0.31%
Merrill Lynch Industry Factor - Required Return IPPs	13.30%	12.20%	1.10%
ROE% - Yahoo Finance - Utilities	9.62%	9.94%	-0.32%
ROE% - Yahoo Finance - Electric Utilities	7.10%	10.70%	-3.60%
ROE% - Yahoo Finance - Diversified Utilities	11.10%	11.30%	-0.20%

	Modern Technology	Older Technology
2011 Recommended Rate	13.25%	15.25%
CAPM - Ex Ante	12.54%	14.73%
CAPM - Ex Post	10.19%	11.84%
Risk Premium Analysis ¹	13.98%	14.99%
2012 Recommended Rate	13.25%	15.25%

¹ Risk Premium Analysis estimates the market indicated cost of equity by adding the appropriate "risk premium" to the corresponding cost of debt. "Risk Premium" of 6.60% is determined by comparing the Ibbotson total return on large company stocks to the total return on long-term corporate bonds.

**2012 Capitalization Rate Study
Electric Generation Facilities
Capital Asset Pricing Model - Ex Ante**

Component	Types of Facilities	
	Modern Technology	Older Technology
Expected Future Return, S&P 500	11.67%	11.67%
Less: Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%	2.93%
Risk Premium	8.74%	8.74%
Beta ²	1.10	1.35
Adjusted Risk Premium	9.61%	11.80%
Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%	2.93%
Projected Return on Common Equity	12.54%	14.73%

¹ WSJ.com on January 3, 2012

² The betas are based on staff's judgment in conjunction with the results of the Beta Analysis. See explanation contained in the Industry Notes.

**2012 Capitalization Rate Study
Electric Generation Facilities
Capital Asset Pricing Model - Ex Post**

Component	Types of Facilities	
	Modern Technology	Older Technology
Common Stock Return (1926 - 2011) ¹	11.80%	11.80%
Less: Income - Long Term Government Bonds ¹	5.20%	5.20%
Risk Premium	6.60%	6.60%
Beta ²	1.10	1.35
Adjusted Risk Premium	7.26%	8.91%
Risk Free Return 25 - 30 Year Treasury Bonds ³	2.93%	2.93%
Projected Return on Common Equity	10.19%	11.84%

¹ Ibbotson 2012 Valuation Yearbook

² The betas are based on staff's judgment in conjunction with the results of the Beta Analysis. See explanation contained in the Industry Notes.

³ WSJ.com on January 3, 2012

2012 Capitalization Rate Study
Electric Generation Facilities
Equity Rates

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/30/11	Est. 2012 Earnings	2011 Earnings	2011 Dividends	Est. 2012 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DvYld+ DvGrth (h+i)	DvYld+ ErngsGr (h+j)
<u>Merchant Generators</u>												
B+	NRG Energy, Inc.	18.12	0.95	0.70	0.00	0.00	0.00%	0.00%	-1.17%	5.24%	0.00%	-1.17%
B	AES Corp.	11.84	1.30	1.05	0.00	0.17	1.44%	0.00%	10.90%	10.98%	1.44%	12.34%
C+	GenOn Energy, Inc.	2.61	-0.25	-0.20	0.00	0.00	0.00%	0.00%	7.00%	-9.58%	0.00%	7.00%
<u>Diversified Electric Utilities</u>												
A	Exelon Corp.	43.37	2.90	3.65	2.10	2.10	4.84%	-1.50%	-0.63%	6.69%	3.34%	4.21%
A	Duke Energy Corp.	22.00	1.45	1.40	0.99	1.01	4.59%	2.00%	4.80%	6.59%	6.59%	9.39%
A	Sempra Energy	55.00	4.50	4.20	1.92	2.08	3.78%	9.00%	5.93%	8.18%	12.78%	9.72%
B++	Xcel Energy Inc.	27.64	1.85	1.75	1.03	1.06	3.84%	3.00%	5.07%	6.69%	6.84%	8.90%
	Mean						2.64%	1.79%	4.56%	4.97%	4.43%	7.20%
	Median						3.78%	0.00%	5.07%	6.69%	3.34%	8.90%
	Weighted Average										5.63%	7.66%
	Merrill Lynch Required Return - Independent Power Producers											13.30%

Sources: Columns a, b, d, e, f, g and i were extracted from the Value Line Investment Survey Reports.
Column c was extracted from Yahoo.com and represents December 30, 2011 closing stock prices.
Column j represents the average estimated earnings growth extracted from Value Line, Zacks.com and ThomsonReuters.com.

**2012 Capitalization Rate Study
Electric Generation Facilities
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
	<u>Merchant Generators</u>				
B+	NRG Energy, Inc.	-3.50%	0.00%	0.00%	-1.17%
B	AES Corp.	13.00%	8.00%	11.70%	10.90%
C+	GenOn Energy, Inc.	NMF	7.00%	7.00%	7.00%
	<u>Diversified Electric Utilities</u>				
A	Exelon Corp.	-1.50%	0.00%	-0.40%	-0.63%
A	Duke Energy Corp.	6.00%	4.50%	3.90%	4.80%
A	Sempra Energy	3.50%	7.00%	7.30%	5.93%
B++	Xcel Energy Inc.	5.00%	5.10%	5.10%	5.07%
	Mean	3.75%	4.51%	4.94%	4.56%
	Median	4.25%	5.10%	5.10%	5.07%
	Weighted Average				4.31%
	Merrill Lynch 5 Year Growth Estimate - Independent Power Producers				3.40%

2012 Capitalization Rate Study
Electric Generation Facilities
Capital Structure

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/30/11	Mkt Value Equity (\$million)	L.T. Debt (\$million)	Pfd Stock (\$million)	Common Equity (\$million)	Total Capital (\$million)	L.T. Debt %	Pfd Stock %	Common Equity %	Debt Equity Ratio
<u>Merchant Generators</u>												
B+	NRG Energy, Inc.	229,967,461	18.12	4,167.01	9,208.00	248.00	4,167.01	13,623.01	67.59%	1.82%	30.59%	2.09
B	AES Corp.	767,548,237	11.84	9,087.77	18,704.00	0.00	9,087.77	27,791.77	67.30%	0.00%	32.70%	2.06
C+	GenOn Energy, Inc.	771,692,734	2.61	2,014.12	4,066.00	0.00	2,014.12	6,080.12	66.87%	0.00%	33.13%	2.02
Mean									67.26%	0.61%	32.14%	2.05
Median									67.30%	0.00%	32.70%	2.06
Weighted Average									67.33%	0.52%	32.15%	2.06
<u>Diversified Electric Utilities</u>												
A	Exelon Corp.	662,692,262	43.37	28,740.96	12,154.00	87.00	28,740.96	40,981.96	29.66%	0.21%	70.13%	0.42
A	Duke Energy Corp.	1,331,798,790	22.00	29,299.57	17,687.00	0.00	29,299.57	46,986.57	37.64%	0.00%	62.36%	0.60
A	Sempra Energy	239,552,287	55.00	13,175.38	9,648.00	179.00	13,175.38	23,002.38	41.94%	0.78%	57.28%	0.72
B++	Xcel Energy Inc.	484,557,036	27.64	13,393.16	9,263.60	105.00	13,393.16	22,761.76	40.70%	0.46%	58.84%	0.69
Mean									37.49%	0.36%	62.15%	0.61
Median									39.17%	0.34%	60.60%	0.64
Weighted Average									36.46%	0.28%	63.27%	0.58
Value Line Industry Survey Reports - Power Industry									51.9%	0.0%	48.1%	1.08
Value Line Industry Survey Reports - Electric Utility (West) Industry									51.0%	0.5%	48.5%	1.05
Fidelity.com Research Independent Power Producers & Energy Traders												1.41
Fidelity.com Research Electric Utilities												1.08

Sources: Columns a, b, c, f and g were extracted from the Value Line Investment Survey Reports.
Column d was extracted from Yahoo.com and represents December 30, 2011 closing stock prices.

2012 Capitalization Rate Study
Electric Generation Facilities
Beta Analysis

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Company Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
<u>Merchant Generators</u>								
B+	NRG Energy, Inc.	1.10	0.78	0.80	0.89	0.35	1.45	0.50
B	AES Corp.	1.25	1.42	1.43	1.37	0.35	2.06	0.67
C+	GenOn Energy, Inc.	NMF	1.69	1.09	1.39	0.00	1.69	0.72
Mean		1.18	1.30	1.11	1.22	0.23	1.73	0.63
Median		1.18	1.42	1.09	1.37	0.35		0.67
Weighted					1.23	0.31		0.63
<u>Diversified Electric Utility</u>								
A	Exelon Corp.	0.85	0.58	0.59	0.67	0.36	0.35	0.55
A	Duke Energy Corp.	0.65	0.37	0.35	0.46	0.32	0.62	0.32
A	Sempra Energy	0.80	0.54	0.53	0.62	0.30	0.52	0.46
B++	Xcel Energy Inc.	0.65	0.39	0.39	0.48	0.36	0.77	0.32
Mean		0.74	0.47	0.47	0.56	0.33	0.56	0.41
Median		0.73	0.47	0.46	0.55	0.34		0.39
Weighted					0.56	0.33		0.41
Merchant Generators Relevered Beta based on 45% Debt Capital Structure							0.93	³
Diversified Electric Utilities Relevered Beta based on 40% Debt Capital Structure							0.58	³
Merrill Lynch Adjusted Beta Independent Power Producers							1.10	

Sources: Columns a, b, c and g were extracted from the Value Line Investment Survey Reports.
Column d was extracted from Zacks.com.
Column e was extracted from Standard and Poor's Stock Reports.

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = Corrected Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's 2011 tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is a prospective purchaser's tax rate (assumed to be 40%).

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Telecommunications Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
Local Exchange Companies								
279	Pacific Bell Telephone Company	A+	A2	70%	30%	12.30%	4.32%	9.91%
201	Verizon California, Inc.	A+	A3	70%	30%	12.30%	4.58%	9.99%
284	Citizens Telecommunications Company of California, Inc.	B	Not Rated	65%	35%	13.35%	5.35%	10.55%
294	SureWest Telephone	C++	Not Rated	65%	35%	13.35%	5.35%	10.55%
	Other Local Exchange Companies	Not Rated	Not Rated	65%	35%	15.71%	5.61%	12.17%
Wireless Companies								
2606	AT&T Mobility LLC ¹	A+	A2	70%	30%	11.78%	4.58%	9.62%
2532	Los Angeles SMSA Ltd., Partnership	A+	A3	70%	30%	11.78%	4.58%	9.62%
2552	Fresno MSA Limited Partnership	A+	A3	70%	30%	11.78%	4.58%	9.62%
2559	Cellco Partnership	A+	A3	70%	30%	11.78%	4.58%	9.62%
2748	T-Mobile West Corporation	B++	Not Rated	65%	35%	13.09%	5.61%	10.47%
2733	MetroPCS Communications	B	Not Rated	65%	35%	13.09%	5.61%	10.47%
2720	Sprint Telephony PCS, L.P.	C++	Ba3	65%	35%	14.92%	6.13%	11.84%
	Other Wireless Companies ²	Not Rated	Not Rated	55%	45%	17.02%	7.92%	12.92%
	Wireless Reseller Companies	Not Rated	Not Rated	55%	45%	19.11%	8.43%	14.30%
Interexchange Companies								
2310	AT&T Communications ¹	A+	A2	70%	30%	13.09%	4.58%	10.54%
2274	MCI Communications Services, Inc.	A+	A3	70%	30%	13.09%	4.58%	10.54%
2372	MCI Metro Access Transmission Services, LLC	A+	A3	70%	30%	13.09%	4.58%	10.54%
2463	CenturyLink, Inc.	B++	Baa3	65%	35%	14.66%	5.35%	11.40%
7522	tw telecom of california lp.	B	Not Rated	65%	35%	14.66%	7.92%	12.30%
2014	Sprint Communications Company, L.P.	C++	Ba3	60%	40%	17.02%	6.13%	12.66%
7761	Level 3 Communications, LLC	C++	Not Rated	60%	40%	17.02%	7.92%	13.38%
	Other Interexchange Carriers	Not Rated	Not Rated	55%	45%	21.73%	7.92%	15.51%
	Other Interexchange Resellers	Not Rated	Not Rated	55%	45%	24.87%	8.43%	17.47%

¹ Staff used A3 Debt Rate as it more closely reflects what a buyer would expect in the open market.

² Includes Radio Telephone and Paging Companies

**2012 Capitalization Rate Study
Telecommunications Companies
Industry Notes**

- Staff conducted a consolidated capitalization rate study for the local exchange, wireless, and interexchange industries due to the increasing convergence of these three industries. Separate capitalization rates were estimated for the companies in each of the three industries based on the relative risk experienced by each group of companies within their respective industries.
- Staff relied on the Discounted Cash Flow Model (DCF) and Capital Asset Pricing Model (CAPM ex post and ex ante) in the development of equity rates.
- Atlantic Tele-Network, Inc. was added to the 2012 Capitalization Rate Study sample for telecommunications companies.
- Qwest Communications International, Inc., was removed from the 2012 Capitalization Rate Study sample as it was acquired by CenturyLink, Inc. in 2011.

**2012 Capitalization Rate Study
Telecommunications Companies - Local Exchange
Flotation Cost Adjustment**

Value Line Rating	Equity			Debt			
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A+	11.75%	4.50%	12.30%	Aa2	3.93%	1.70%	4.00%
B++, B+, B	12.75%	4.50%	13.35%	Aa3	4.04%	1.70%	4.11%
C++, C+, C	15.00%	4.50%	15.71%	A1	4.14%	1.70%	4.21%
Other Local Exchange Companies	15.00%	4.50%	15.71%	A2	4.25%	1.70%	4.32%
				A3	4.50%	1.70%	4.58%
				Baa1	4.76%	1.70%	4.84%
				Baa2	5.01%	1.70%	5.10%
				Baa3	5.26%	1.70%	5.35%
				Not Rated	5.52%	1.70%	5.61%

Cost of Capital Adjusted for Flotation Costs =

$$\frac{k_u}{1 - f}$$

Where:

k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

**2012 Capitalization Rate Study
Telecommunications Companies - Wireless
Flotation Cost Adjustment**

Value Line Rating	Equity			Debt			
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A+	11.25%	4.50%	11.78%	Aa2	3.93%	1.70%	4.00%
B++, B+, B	12.50%	4.50%	13.09%	Aa3	4.04%	1.70%	4.11%
C++, C+, C	14.25%	4.50%	14.92%	A1	4.14%	1.70%	4.21%
Other Wireless Companies ¹	16.25%	4.50%	17.02%	A2	4.25%	1.70%	4.32%
Wireless Reseller Companies	18.25%	4.50%	19.11%	A3	4.50%	1.70%	4.58%
				Baa1	4.76%	1.70%	4.84%
				Baa2	5.01%	1.70%	5.10%
				Baa3	5.26%	1.70%	5.35%
				Ba1	5.52%	1.70%	5.61%
				Ba2	5.77%	1.70%	5.87%
				Ba3	6.02%	1.70%	6.13%
				B1	6.28%	1.70%	6.39%
				B2	6.53%	1.70%	6.64%
				B3	6.78%	1.70%	6.90%
				Not Rated	7.78%	1.70%	7.92%
				Not Rated	8.28%	1.70%	8.43%

Cost of Capital Adjusted for Flotation Costs =
$$\frac{k_u}{1 - f}$$

Where: k_u = The cost of capital unadjusted for flotation costs
 f = Flotation cost as a percentage of the value of securities issued

¹ Includes Radio Telephone and Paging Companies

**2012 Capitalization Rate Study
Telecommunications Companies - Interexchange
Flotation Cost Adjustment**

Value Line Rating	Equity			Debt			
	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
A+	12.50%	4.50%	13.09%	Aa2	3.93%	1.70%	4.00%
B++, B+, B	14.00%	4.50%	14.66%	Aa3	4.04%	1.70%	4.11%
C++, C+, C	16.25%	4.50%	17.02%	A1	4.14%	1.70%	4.21%
Other Interexchange Carriers	20.75%	4.50%	21.73%	A2	4.25%	1.70%	4.32%
Other Interexchange Resellers	23.75%	4.50%	24.87%	A3	4.50%	1.70%	4.58%
				Baa1	4.76%	1.70%	4.84%
				Baa2	5.01%	1.70%	5.10%
				Baa3	5.26%	1.70%	5.35%
				Ba1	5.52%	1.70%	5.61%
				Ba2	5.77%	1.70%	5.87%
				Ba3	6.02%	1.70%	6.13%
				B1	6.28%	1.70%	6.39%
				B2	6.53%	1.70%	6.64%
				B3	6.78%	1.70%	6.90%
				Not Rated	7.78%	1.70%	7.92%
				Not Rated	8.28%	1.70%	8.43%

Cost of Capital Adjusted for Flotation Costs =

$$\frac{k_u}{1 - f}$$

Where:

k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

**2012 Capitalization Rate Study
Telecommunications Companies
Comparison of Return on Common Equity**

Description	A+			B++, B+, B			C++, C+, C		
	2012	2011	Change	2012	2011	Change	2012	2011	Change
Discounted Cash Flow Analysis									
E/P Ratio - Mean	7.39%	7.38%	0.01%	7.01%	6.24%	0.77%	6.38%	4.29%	2.09%
E/P Ratio - Median	7.39%	7.38%	0.01%	7.24%	6.30%	0.94%	6.38%	4.73%	1.65%
Dividend Yield + Dividend Growth - Mean	8.15%	8.83%	-0.68%	9.59%	8.03%	1.56%	18.35%	6.66%	11.69%
Dividend Yield + Dividend Growth - Median	8.15%	8.83%	-0.68%	9.24%	7.17%	2.07%	18.35%	7.75%	10.60%
Weighted Average (Div. Yield + Div. Growth)	8.39%	9.18%	-0.79%	8.43%	5.75%	2.68%	14.80%	4.55%	10.25%
Dividend Yield + Earnings Growth - Mean	11.97%	10.98%	0.99%	13.01%	9.97%	3.04%	25.27%	14.57%	10.70%
Dividend Yield + Earnings Growth - Median	11.97%	10.98%	0.99%	11.91%	8.02%	3.89%	25.27%	14.70%	10.57%
Weighted Average (Div. Yield + Earn. Growth)	11.78%	11.21%	0.57%	13.26%	6.38%	6.88%	20.99%	9.96%	11.03%
CAPM Analysis									
Ex Ante	8.74%	7.48%	1.26%	10.18%	8.35%	1.83%	12.98%	9.65%	3.33%
Ex Post	7.31%	8.66%	-1.35%	8.41%	9.87%	-1.46%	10.52%	11.66%	-1.14%
Recommended Rates									
Local Exchange	11.75%	11.50%	0.25%	12.75%	11.75%	1.00%	15.00%	12.75%	2.25%
Wireless	11.25%	11.00%	0.25%	12.50%	12.00%	0.50%	14.25%	13.50%	0.75%
Interexchange	12.50%	12.25%	0.25%	14.00%	13.00%	1.00%	16.25%	15.00%	1.25%

Sources: Columns a, d, e, f, g and i were extracted from Value Line.
Column c was extracted from Finance.Yahoo.com and represents December 30, 2011 closing stock prices.
Column j is an average of Value Line, Zacks.com and ThomsonReuters.com.

**2012 Capitalization Rate Study
Telecommunications Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/30/11	Est. 2012 Earnings	2011 Earnings	2011 Dividends	Est. 2012 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DivYld+ DivGrw (h+i)	DivYld+ ErngsGrw (h+j)
A+	AT&T Inc.	30.24	2.55	2.30	1.72	1.76	5.82%	3.50%	5.20%	8.43%	9.32%	11.02%
A+	Verizon Communications	40.12	2.55	2.20	1.96	2.00	4.99%	2.00%	7.93%	6.36%	6.99%	12.92%
	Mean						5.40%	2.75%	6.57%	7.39%	8.15%	11.97%
	Median						5.40%	2.75%	6.57%	7.39%	8.15%	11.97%
	Weighted Average										8.39%	11.78%
B++	Atlantic Tele-Network, Inc.	39.05	2.20	1.50	0.89	0.94	2.41%	8.50%	9.50%	5.63%	10.91%	11.91%
B++	CenturyLink, Inc.	37.20	1.85	1.65	2.90	2.90	7.80%	3.00%	3.63%	4.97%	7.80%	11.43%
B++	Shenandoah Telecom	10.48	0.85	0.56	0.33	0.34	3.24%	6.00%	7.00%	8.11%	9.24%	10.24%
B	Frontier Communications	5.15	0.35	0.23	0.75	0.75	14.56%	-4.00%	7.70%	6.80%	10.56%	22.26%
B	NTELOS Holdings	20.38	1.75	2.10	2.24	1.68	8.24%	6.00%	8.50%	8.59%	14.24%	16.74%
B	Telephone & Data Systems	25.89	2.00	2.25	0.47	0.49	1.89%	4.00%	4.03%	7.72%	5.89%	5.93%
B	Windstream Corp.	11.74	0.85	0.70	1.00	1.00	8.52%	NIL	4.03%	7.24%	8.52%	12.55%
	Mean						6.67%	3.92%	6.34%	7.01%	9.59%	13.01%
	Median						7.80%	5.00%	7.00%	7.24%	9.24%	11.91%
	Weighted Average										8.43%	13.26%

Sources: Columns a, d, e, f, g and i were extracted from Value Line.

Column c was extracted from Finance.Yahoo.com and represents December 30, 2011 closing stock prices.

Column j is an average of Value Line, Zacks.com and ThomsonReuters.com.

**2012 Capitalization Rate Study
Telecommunications Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l	m
Value Line Rating	Company Name	Stock Price 12/30/11	Est. 2012 Earnings	2011 Earnings	2011 Dividends	Est. 2012 Dividends	Dividend Yield (g/c)	Est. Dividend Growth	Est. Earnings Growth	E/P Ratio (d/c)	DivYld+ DivGrw (h+i)	DivYld+ ErngsGrw (h+j)
C++	Consolidated Communications	19.05	0.85	0.83	1.55	1.55	8.14%	NIL	4.83%	4.46%	8.14%	12.97%
C+	Alaska Communications Sys	3.01	0.25	0.01	0.86	0.86	28.57%	NMF	9.00%	8.31%	28.57%	37.57%
	Mean						18.35%	NMF	6.92%	6.38%	18.35%	25.27%
	Median						18.35%	NMF	6.92%	6.38%	18.35%	25.27%
	Weighted Average										14.80%	20.99%

Sources: Columns a, d, e, f, g, and i were extracted from the December 23, 2011 Value Line.

Column c represents closing stock prices as of December 30, 2011 downloaded from Yahoo Finance.

Column j was extracted from the long term earnings growth page of the 2012 capitalization rate study for telecommunications companies.

**2012 Capitalization Rate Study
Telecommunications Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
A+	AT&T Inc.	7.50%	4.80%	3.30%	5.20%
A+	Verizon Communications	5.50%	6.30%	12.00%	7.93%
	Mean	6.50%	5.55%	7.65%	6.57%
	Median	6.50%	5.55%	7.65%	6.57%
	Weighted Average				6.29%
B++	Atlantic Tele-Network, Inc.	9.50%	NMF	NMF	9.50%
B++	CenturyLink, Inc.	-2.00%	2.30%	10.60%	3.63%
B++	Shenandoah Telecom	7.00%	NMF	NMF	7.00%
B	Frontier Communications	4.00%	NMF	11.40%	7.70%
B	NTELOS Holdings	8.50%	NMF	NMF	8.50%
B	Windstream Corp.	9.00%	2.00%	1.10%	4.03%
	Mean	6.00%	2.15%	7.70%	6.73%
	Median	7.75%	2.15%	10.60%	7.35%
	Weighted Average				9.09%

Sources: Columns a, c were extracted from the December 23, 2011 Value Line.
Column d was extracted from Zacks.com on December 30, 2011.
Column e was extracted from ThomsonReuters.com on December 30, 2011.

**2012 Capitalization Rate Study
Telecommunications Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
C++	Consolidated Communications	11.50%	2.00%	1.00%	4.83%
C+	Alaska Communications Systems	NMF	9.00%	NMF	9.00%
	Mean	11.50%	5.50%	1.00%	6.92%
	Median	11.50%	5.50%	1.00%	6.92%
	Weighted Average				6.19%

Sources: Columns a and c were extracted from the December 23, 2011 Value Line.
Column d was extracted from Zacks.com on December 30, 2011.
Column e was extracted from ThomsonReuters.com on December 30, 2011.

**2012 Capitalization Rate Study
Telecommunications Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/30/11	Market Value Equity (\$million)	Long Term Debt (\$million)	Preferred Stock (\$million)	Common Stock (\$million)	Total Capital (\$million)	L.T. Debt %	Preferred Stock %	Common Stock %
A+	AT&T Inc.	5,926,000,000	30.24	179,202.24	62,326.00	0.00	179,202.24	241,528.24	25.80%	0.00%	74.20%
A+	Verizon Communications	2,831,090,656	40.12	113,583.36	46,285.00	0.00	113,583.36	159,868.36	28.95%	0.00%	71.05%
	Mean								27.38%	0.00%	72.62%
	Median								27.38%	0.00%	72.62%
	Weighted Average								27.06%	0.00%	72.94%
B++	Atlantic Tele-Network, Inc.	15,407,318	39.05	601.66	274.10	0.00	601.66	875.76	31.30%	0.00%	68.70%
B++	CenturyLink, Inc.	617,600,600	37.20	22,974.74	21,142.00	0.00	22,974.74	44,116.74	47.92%	0.00%	52.08%
B++	Shenandoah Telecom	23,786,193	10.48	249.28	164.10	0.00	249.28	413.38	39.70%	0.00%	60.30%
B++	Warwick Valley Telephone	5,484,960	13.09	71.80	-	0.50	71.80	72.30	0.00%	0.69%	99.31%
B+	U.S. Cellular	84,551,381	43.63	3,688.98	880.40	0.00	3,688.98	4,569.38	19.27%	0.00%	80.73%
B	Frontier Communications	995,127,000	5.15	5,124.90	8,151.10	0.00	5,124.90	13,276.00	61.40%	0.00%	38.60%
B	MetroPCS Communications	362,219,229	8.68	3,144.06	4,711.00	0.00	3,144.06	7,855.06	59.97%	0.00%	40.03%
B	NTELOS Holdings	21,127,000	20.38	430.57	736.10	0.00	430.57	1,166.67	63.09%	0.00%	36.91%
B	Telephone & Data Systems	103,386,966	25.89	2,676.69	1,528.40	0.90	2,676.69	4,205.99	36.34%	0.02%	63.64%
B	tw telecom inc.	149,359,863	19.38	2,894.59	1,349.50	0.00	2,894.59	4,244.09	31.80%	0.00%	68.20%
B	Windstream Corp.	515,815,356	11.74	6,055.67	7,296.60	0.00	6,055.67	13,352.27	54.65%	0.00%	45.35%
	Mean								40.49%	0.06%	59.44%
	Median								39.70%	0.00%	60.30%
	Weighted Average								49.11%	0.00%	50.89%

Sources: Columns a, c, f, g were extracted from the December 23, 2011 Value Line.
Column d represents closing stock prices as of December 30 2011 downloaded from Yahoo Finance.

**2012 Capitalization Rate Study
Telecommunications Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Common Stock Outstanding	Common Stock Price 12/30/11	Market Value Equity (\$million)	Long Term Debt (\$million)	Preferred Stock (\$million)	Common Stock (\$million)	Total Capital (\$million)	L.T. Debt %	Preferred Stock %	Common Stock %
C++	Consolidated Communications	29,914,005	19.05	569.86	878.00	0.00	569.86	1,447.86	60.64%	0.00%	39.36%
C++	General Communication	44,137,801	9.79	432.11	934.30	0.00	432.11	1,366.41	68.38%	0.00%	31.62%
C++	Level 3 Communications	118,894,880	16.99	2,020.02	7,420.00	0.00	2,020.02	9,440.02	78.60%	0.00%	21.40%
C++	Sprint Nextel	2,995,517,549	2.34	7,009.51	16,272.00	0.00	7,009.51	23,281.51	69.89%	0.00%	30.11%
C++	SureWest Communications	14,091,000	12.03	169.51	191.30	0.00	169.51	360.81	53.02%	0.00%	46.98%
C+	Alaska Comm. Systems	45,210,416	3.01	136.08	564.20	0.00	136.08	700.28	80.57%	0.00%	19.43%
C+	Cincinnati Bell	195,786,914	3.03	593.23	2,508.80	129.40	593.23	3,231.43	77.64%	4.00%	18.36%
C	Leap Wireless	78,712,496	9.29	731.24	3,218.90	0.00	731.24	3,950.14	81.49%	0.00%	18.51%
	Mean								71.28%	0.50%	28.22%
	Median								73.76%	0.00%	25.75%
	Weighted Average								73.07%	0.30%	26.64%

Sources: Columns a, c, f, and g were extracted from the December 23, 2011 Value Line.

Column d represents closing stock prices as of December 30, 2011 downloaded from Yahoo Finance.

**2012 Capitalization Rate Study
Telecommunications Companies
Capital Asset Pricing Model - Ex Ante**

Component	Value Line Rating		
	A+	B++, B+, B	C++, C+, C
Expected Future Return, S&P 500	11.67%	11.67%	11.67%
Less: Risk Free Return, 25-30 Year Treasury Bonds ¹	2.93%	2.93%	2.93%
Ex Ante Risk Premium	8.74%	8.74%	8.74%
Relevered Beta ²	0.66	0.83	1.15
Adjusted Risk Premium	5.81%	7.25%	10.05%
Risk Free Return, 25-30 Year Treasury Bonds ¹	2.93%	2.93%	2.93%
Projected Equity Yield	8.74%	10.18%	12.98%

¹ WSJ.com on January 3, 2012.

² The estimated betas were derived from a representative sample of telecommunications companies with similar ratings.

**2012 Capitalization Rate Study
Telecommunications Companies
Capital Asset Pricing Model - Ex Post**

Component	Value Line Rating		
	A+	B++, B+, B	C++, C+, C
Common Stock Return (1926-2011) ¹	11.80%	11.80%	11.80%
Less: Income - Long Term Government Bonds (1926-2011) ¹	5.20%	5.20%	5.20%
Ex Post Risk Premium	6.60%	6.60%	6.60%
Relevered Beta ²	0.66	0.83	1.15
Adjusted Risk Premium	4.38%	5.48%	7.59%
Risk Free Return, 25-30 Year Treasury Bonds ³	2.93%	2.93%	2.93%
Projected Equity Yield	7.31%	8.41%	10.52%

¹ Ibbotson 2012 Valuation Yearbook

² The estimated betas were derived from a representative sample of telecommunications companies with similar ratings.

³ WSJ.com on January 3, 2012.

**2012 Capitalization Rate Study
Telecommunications Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Thomson Beta	Average Beta	Company Tax Rate	Debt Equity Ratio	Unlevered Beta ¹
A+	AT&T Inc.	0.75	0.62	0.59	0.65	0.34	0.30	0.54
A+	Verizon Communications	0.70	0.60	0.59	0.63	0.35	0.38	0.50
	Mean	0.73	0.61	0.59	0.64		0.34	0.52
	Median	0.73	0.61	0.59	0.64		0.34	0.52
	Weighted Average				0.64		0.34	0.53
B++	Atlantic Tele-Network, Inc.	0.95	1.04	1.32	1.10	0.46	0.33	0.93
B++	CenturyLink, Inc.	0.75	0.75	0.71	0.74	0.39	0.78	0.50
B++	Shenandoah Telecom.	0.80	0.62	2.04	1.15	0.45	0.16	1.06
B++	Warwick Valley Telephone	0.45	0.60	0.19	0.41	0.33	0.06	0.40
B+	U.S. Cellular	1.10	0.88	1.11	1.03	0.34	0.22	0.90
B	Frontier Communications	0.90	0.79	0.86	0.85	0.38	1.46	0.45
B	MetroPCS	1.00	0.61	1.54	1.05	0.36	0.96	0.65
B	NTELOS Holdings	NMF	0.91	0.77	0.84	0.41	0.89	0.55
B	Telephone & Data Systems	0.90	0.82	1.32	1.01	0.33	0.44	0.78
B	tw telecom inc.	1.35	1.38	1.08	1.27	0.25	0.61	0.87
B	Windstream Corp.	0.90	0.86	0.72	0.83	0.39	1.07	0.50
	Mean	0.91	0.84	1.06	0.94		0.64	0.69
	Median	0.90	0.82	1.08	1.01		0.61	0.65
	Weighted Average				0.85		0.88	0.56

¹ Unlevered Beta = Average Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate

**2012 Capitalization Rate Study
Telecommunications Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Thomson Beta	Average Beta	Company Tax Rate	Debt Equity Ratio	Unlevered Beta ¹
C++	Consolidated Communications	0.90	1.03	0.80	0.91	0.36	1.60	0.45
C++	General Communication	1.15	1.07	1.66	1.29	0.52	1.62	0.73
C++	Level 3 Communications	1.25	1.40	1.38	1.34	0.40	1.74	0.66
C++	Sprint Nextel	1.30	1.04	1.32	1.22	0.40	1.85	0.58
C++	SureWest Communications	0.80	0.28	1.74	0.94	0.50	0.78	0.68
C+	Alaska Communications	0.80	0.76	0.86	0.81	0.44	1.67	0.42
C+	Cincinnati Bell	1.05	1.43	1.34	1.27	0.40	3.16	0.44
C	Leap Wireless	1.45	1.51	1.94	1.63	0.40	1.74	0.80
	Mean	1.09	1.07	1.38	1.18		1.77	0.59
	Median	1.10	1.06	1.36	1.25		1.71	0.62
	Weighted Average				1.27		1.89	0.60

	A+	B++, B+, B	C++, C+, C
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A+: Relevered beta based on 30% debt capital structure	0.66 ²	----	----
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Relevered beta based on 30% debt capital structure and a weighted average beta	0.66 ²	----	----
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B++, B+, B: Relevered beta based on 35% debt capital structure	----	0.91 ²	----
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Relevered beta based on 35% debt capital structure and a weighted average beta	----	0.74 ²	----
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C++, C+, C: Relevered beta based on 40% debt capital structure	----	----	0.83 ²
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Relevered beta based on 40% debt capital structure and a weighted average beta	----	----	0.84 ²
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Sources: Columns a, c, g were extracted from December 23, 2011 Value Line.

Column d was extracted from Zacks.com on December 30, 2011.

Column e was extracted from ThomsonReuters.com on January 3, 2012.

Column h is a 5-year average calculated per data extracted from the capitalization rate studies for lien dates 2007-2011, December 23, 2011 Value Line, and Finance.Yahoo.com.

¹ Unlevered Beta = Average Beta/[1+(1-tc)(D/E)]; where D/E is the debt to equity ratio, tc is the company's most recent tax rate

² Relevered Beta = [Unlevered Beta][1+(1-tp)(D/E)]; where D/E is the debt to equity ratio, tp is the prospective purchaser's tax rate (assumed to be 40%)

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Pipeline Companies**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Equity	Debt	
402	CALNEV Pipe Line LLC	NR-1	NR-b	70%	30%	12.30%	5.27%	10.19%
461	SFPP, L.P.	NR-1	NR-b	70%	30%	12.30%	5.27%	10.19%
468	Shell California Pipeline Company LLC	NR-2	NR-b	70%	30%	12.83%	5.27%	10.56%
479	Chevron Pipeline Company	NR-2	NR-b	70%	30%	12.83%	5.27%	10.56%
480	ConocoPhillips Pipe Line Company	NR-2	NR-b	70%	30%	12.83%	5.27%	10.56%
486	Pacific Pipeline System, LLC	NR-2	NR-b	70%	30%	12.83%	5.27%	10.56%
	Other Pipeline Companies	NR-3	NR-c	70%	30%	13.87%	6.29%	11.60%

**2012 Capitalization Rate Study
Pipeline Companies
Industry Notes**

- Staff relied primarily on the Discounted Cash Flow model in the development of equity rates.
- Magellan Midstream Partners, L.P. was added to the study for 2012 lien date.

**2012 Capitalization Rate Study
Pipeline Companies
Flotation Cost Adjustment**

Equity				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
NR-1	11.75%	4.50%	12.30%	NR-b	5.18%	1.70%	5.27%
NR-2	12.25%	4.50%	12.83%	NR-c	6.18%	1.70%	6.29%
NR-3	13.25%	4.50%	13.87%				

Cost of Capital Adjusted for Flotation Costs = $\frac{k_u}{1 - f}$

Where: k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

NR-1: Not-Rated-1 pipelines are not directly traded because they are subsidiaries of larger companies. These are larger common carrier pipelines transmitting refined petroleum products.

NR-2: Not-Rated-2 pipelines are not directly traded because they are subsidiaries of larger companies. These are larger common carrier pipelines transmitting crude oil.

NR-3: Not-Rated-3 pipelines are smaller companies transporting petroleum products or crude oil.

NR-b: Although these companies do not have rated debt securities, the rating class "Baa" was chosen to represent these subsidiaries of larger corporations.

NR-c: Issues of this size are not normally rated. An additional increment of 100 basis points (before flotation costs) has been added to the "Baa" rate.

**2012 Capitalization Rate Study
Pipeline Companies
Comparison of Return on Common Equity**

Description	2012	2011	Change
E/P Ratio - Mean	4.03%	4.13%	-0.10%
E/P Ratio - Median	4.45%	4.70%	-0.25%
Dividend Yield + Dividend Growth - Mean	10.51%	11.47%	-0.96%
Dividend Yield + Dividend Growth - Median	10.56%	11.93%	-1.37%
Dividend Yield + Earnings Growth - Mean	11.35%	11.93%	-0.58%
Dividend Yield + Earnings Growth - Median	12.56%	11.53%	1.03%
Capital Asset Pricing Model (CAPM) - Ex Ante	8.28%	7.26%	1.02%
Capital Asset Pricing Model (CAPM) - Ex Post	6.97%	8.36%	-1.39%

2012 recommended equity rates:

11.75% for Common Carrier product lines
12.25% for Common Carrier crude oil lines
13.25% for all other pipelines

**2012 Capitalization Rate Study
Pipeline Companies
Equity Rates**

a	b	c	d	e	f	g	h	i	j	k	l
Value Line Rating	Company Name	Stock Price 12/30/11	2011 Earnings	2011 Dividends	2012 Est Div	2012 Dividend Yield	2012 Hist. Div Growth	2012 Avg. Erns Growth	E/P Ratio (d/c)	Div Yld+ Div Gwth (g+h)	Div Yld+ Erns Gwth (g+i)
B++	Enbridge Energy Partners, L.P.	33.19	1.37	2.09	1.60	4.82%	1.50%	1.53%	4.13%	6.32%	6.35%
B++	Magellan Midstream Partners L.P	68.88	3.50	3.11	3.35	4.86%	5.50%	6.83%	5.08%	10.36%	11.70%
B+	Buckeye Partners, L.P.	63.98	2.85	4.02	4.20	6.56%	4.00%	6.00%	4.45%	10.56%	12.56%
B+	Enterprise Product Partners, L. P.	46.38	2.10	2.41	2.53	5.45%	8.00%	7.57%	4.53%	13.45%	13.02%
B+	Kinder Morgan Energy Partners, L.P.	84.95	1.65	4.58	4.98	5.86%	6.00%	7.27%	1.94%	11.86%	13.13%
		Mean					5.00%	5.84%	4.03%	10.51%	11.35%
		Median					5.50%	6.83%	4.45%	10.56%	12.56%
		Weighted Average									12.16%

Sources: Columns a, d, e, f and h were extracted from the Value Line Investment Survey Reports.

Column c was extracted from the Finance.Yahoo.com and represents December 30, 2011 closing stock prices.

Column i is an average of Value Line, Zacks.com, and ThomsonReuters.com.

**2012 Capitalization Rate Study
Pipeline Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line Rating	Company Name	Value Line	Zacks	Thomson	Average
B++	Enbridge Energy Partners, L.P.	-2.00%	2.50%	4.10%	1.53%
B++	Magellan Midstream Partners, L. P.	6.00%	6.80% *	7.70%	6.83%
B+	Buckeye Partners, L.P.	6.50%	4.00%	7.50%	6.00%
B+	Enterprise Product Partners, L. P.	9.50%	5.50%	7.70%	7.57%
B+	Kinder Morgan Energy Partners, L.P.	7.50%	4.50%	9.80%	7.27%
	Mean	5.50%	4.66%	7.36%	5.84%
	Median	6.50%	4.50%	7.70%	6.83%
	Weighted Average				6.62%

* Information obtained as of February 6, 2012 from Zacks.com.

2012 Capitalization Rate Study
Pipeline Companies
Capital Asset Pricing Model - Ex Ante

Component	Industry Computation
Expected Future Return, S&P 500	11.67%
Less: Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%
Risk Premium	8.74%
Beta ²	0.61
Adjusted Risk Premium	5.35%
Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%
Projected Return on Common Equity	8.28%

¹ WSJ.com on January 3, 2012

² Weighted average using betas from Value Line, Zacks.com, and Standard & Poor's for a representative sample of pipeline companies.

2012 Capitalization Rate Study
Pipeline Companies
Capital Asset Pricing Model - Ex Post

Component	Industry Computation
Common Stock Return (1926 - 2011) ¹	11.80%
Less: Income - Long Term Government Bonds ¹	5.20%
Risk Premium	6.60%
Beta ²	0.61
Adjusted Risk Premium	4.04%
Risk Free Return 25 - 30 Year Treasury Bonds ³	2.93%
Projected Return on Common Equity	6.97%

¹ Ibbotson 2012 Valuation Yearbook

² Weighted average using betas from Value Line, Zacks.com, and Standard & Poor's for a representative sample of pipeline companies.

³ WSJ.com on January 3, 2012

**2012 Capitalization Rate Study
Pipeline Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zacks Beta	Standard & Poor's Beta	Average Beta	Tax Rate	Debt Equity Ratio	Unlevered Beta ¹
B++	Enbridge Energy Partners, L.P.	0.90	0.64	0.68	0.74	0.40	0.59	0.55
B++	Magellan Midstream Partners L.P.	0.85	0.31 *	0.32	0.49	0.40	0.26	0.43
B+	Buckeye Partners, L.P.	0.80	0.26	0.28	0.45	0.40	0.39	0.36
B+	Enterprise Product Partners, L. P.	0.85	0.59	0.58	0.67	0.40	0.35	0.56
B+	Kinder Morgan Energy Partners, L.P.	0.75	0.38	0.37	0.50	0.40	0.38	0.41
	Mean	0.83	0.44	0.45	0.57	0.40	0.39	0.46
	Median	0.85	0.38	0.37	0.50	0.40	0.38	0.43
	Weighted Average				0.60		0.38	0.49
	Relevered beta based on 30% Debt Capital Structure							0.58 ²
	Relevered beta based on 30% Debt Capital Structure and a weighted average beta							0.61 ²

* Information obtained as of February 6, 2012 from Zacks.com.

¹ Unlevered Beta = Beta/[1+(1-t)(D/E)]; where D/E is the debt to equity ratio, t is the tax rate (assumed to be 40%)

² Relevered Beta = [Unlevered Beta][1+(1-t)(D/E)]; where D/E is the debt to equity ratio, t is the tax rate (assumed to be 40%)

**2012 Capitalization Rate Study
Pipeline Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j
Value Line Rating	Moody Bond Rating	Company Name	Partnership Units Outstanding (000)	Unit Price 12/30/11	Market Value Equity (000)	Long Term Debt (000)	Total Capital (000)	Long Term Debt %	Equity %
B++	NR	Enbridge Energy Partners, L.P.	273,148	33.19	9,065,795	5,345,900	14,411,695	37.09%	62.91%
B++	NR	Magellan Midstream Partners L.P.	112,737	68.88	7,765,297	2,042,200	9,807,497	20.82%	79.18%
B+	NR	Buckeye Partners, L.P.	93,120	63.98	5,957,818	2,315,100	8,272,918	27.98%	72.02%
B+	NR	Enterprise Product Partners, L. P.	870,461	46.38	40,371,990	14,108,700	54,480,690	25.90%	74.10%
B+	NR	Kinder Morgan Energy Partners, L.P.	332,964	84.95	28,285,300	10,662,200	38,947,500	27.38%	72.62%
		Total			91,446,201	34,474,100	125,920,301		
		Mean						27.83%	72.17%
		Median						27.38%	72.62%
		Weighted Average						27.38%	72.62%

Recommended Capital Structure for Common Carrier Pipelines for lien date January 1, 2012:

Debt	-	30%
Equity	-	70%

Sources: . Columns a, d, and g were extracted from the Value Line Investment Survey Reports
Column e was extracted from the Finance.Yahoo.com and represents December 30, 2011 closing stock prices.

**2012 Capitalization Rate Study
Pipeline Companies
Debt Yield Rate**

Average of Industrial and Public Utility Bond Yield:

	Aa Industrial/Utility Average	3.93%		
	A Industrial/Utility Average	4.30%		
		3.93%	Aa	
		4.30%	A	
	Baa Industrial/Utility Average	5.18%		
	Recommended	5.18%	Baa/Ba	

	Bond Rating	Industrial	Public Utility	Average
	Aaa	3.79%	N/A	3.79%
	Aa	3.93%	3.93%	3.93%
	A	4.35%	4.25%	4.30%
	Baa	5.35%	5.01%	5.18%

Source: Moody's Daily Long-Term Corporate Bond Yield Averages as of December 30, 2011.

**California State Board of Equalization
State-Assessed Properties Division
2012 Capitalization Rate Study
Railroads**

SBE No.	Company Name	Ratings		Capital Structure		Rates of Return		Basic Cap Rate
		Financial	Bond	Common Equity	Debt	Common Equity	Debt	
804	BNSF Railway Company	A	Baa2	80%	20%	14.14%	5.27%	12.36%
843	Union Pacific Railroad Company	A	Baa2	80%	20%	14.14%	5.27%	12.36%
802	Central Oregon & Pacific Railroad	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
810	California Northern Railroad	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
813	Pacific Harbor Lines	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
850	Modesto & Empire Traction Company	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
865	San Diego & Imperial Valley Railroad Co. Inc.	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
882	Trona Railway Co.	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
897	San Joaquin Valley Railroad Company	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
899	Arizona & California Railroad	NR-1	NR-1	60%	40%	16.23%	6.80%	12.46%
	Other Railroad Companies	NR-2	NR-2	60%	40%	16.49%	7.81%	13.02%

**2012 Capitalization Rate Study
Railroad Companies
Industry Notes**

- Staff relied upon the results of the following models in the development of equity rates:
 1. Discounted Cash Flow
 2. Capital Asset Pricing Model (Ex Post and Ex Ante)

**2012 Capitalization Rate Study
Railroad Companies
Flotation Cost Adjustment**

Equity				Debt			
Value Line Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate	Moody's Rating	Recommended Rate	Flotation Cost in %	Adjusted Rate
B++, B+	13.50%	4.50%	14.14%	Baa2	5.18%	1.70%	5.27%
NR-1	15.50%	4.50%	16.23%	NR-1 ¹	6.68%	1.70%	6.80%
NR-2	15.75%	4.50%	16.49%	NR-2 ²	7.68%	1.70%	7.81%

Cost of Capital Adjusted for Flotation Costs = $\frac{k_u}{1 - f}$

Where: k_u = The cost of capital unadjusted for flotation costs

f = Flotation cost as a percentage of the value of securities issued

¹ NR-1: Represents short line railroad companies with stable historical income. An additional 150 basis points were added to the Baa2 bond rate to represent the additional risk premium.

² NR-2: Represents short line railroad companies without stable historical income patterns. An additional 250 basis points were added to the Baa2 bond rate to represent the additional risk premium.

**2012 Capitalization Rate Study
Railroad Companies
Comparison of Return on Common Equity**

Description	2012	2011	Change
E/P Ratio - Mean	8.32%	7.16%	1.16%
E/P Ratio - Median	8.23%	7.27%	0.96%
Dividend Yield + Dividend Growth - Mean	18.46%	11.17%	7.29%
Dividend Yield + Dividend Growth - Median	14.27%	13.14%	1.13%
Dividend Yield + Earnings Growth - Mean	18.00%	16.06%	1.94%
Dividend Yield + Earnings Growth - Median	17.27%	16.59%	0.68%
Capital Asset Pricing Model - Ex Post	10.27%	11.97%	-1.70%
Capital Asset Pricing Model - Ex Ante	12.66%	9.87%	2.79%
State-Assessed Properties Division Recommendation:	13.50%	13.00%	0.50%

**2012 Capitalization Rate Study
Railroad Companies
Long Term Earnings Growth**

a	b	c	d	e	f
Value Line		Value			
Rating	Company Name	Line	Zacks	Thomson	Average
Class 1 Railroads:					
A	Union Pacific Corp.	16.00%	13.50%	15.20%	14.90%
B++	CSX Corp.	21.50%	15.80%	13.40%	16.90%
B++	Norfolk Southern Corp.	13.50%	16.10%	14.80%	14.80%
	Mean	17.00%	15.13%	14.47%	15.53%
	Median	16.00%	15.80%	14.80%	14.90%
	Weighted Average				15.37%

**2012 Capitalization Rate Study
Railroad Companies
Capital Asset Pricing Model - Ex Ante**

Component	Industry Computation
Expected Future Return, S&P 500	11.67%
Less: Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%
Risk Premium	8.74%
Beta	1.11
Adjusted Risk Premium	9.73%
Risk Free Return 25 - 30 Year Treasury Bonds ¹	2.93%
Projected Return on Common Equity	12.66%

¹ WSJ.com on January 3, 2012

**2012 Capitalization Rate Study
Railroad Companies
Capital Asset Pricing Model - Ex Post**

Component	Industry Computation
Common Stock Return (1926 - 2011) ¹	11.80%
Less: Income - Long Term Government Bonds ¹	5.20%
Risk Premium	6.60%
Beta	1.11
Adjusted Risk Premium	7.34%
Risk Free Return 25 - 30 Year Treasury Bonds ²	2.93%
Projected Return on Common Equity	10.27%

¹ Ibbotson 2012 Valuation Yearbook

² WSJ.com on January 3, 2012

**2012 Capitalization Rate Study
Railroad Companies
Beta Analysis**

a	b	c	d	e	f	g	h	i
Value Line Rating	Company Name	Value Line Beta	Zack's Beta	Thomson Beta	Average Beta	Company's Tax Rate	Debt Equity Ratio ¹	Unlevered Beta ²
Class 1 Railroads:								
A	Union Pacific Corp.	1.15	1.22	1.07	1.15	0.38	0.25	0.99
B++	CSX Corp.	1.20	1.27	1.22	1.23	0.38	0.40	0.98
B++	Norfolk Southern Corp.	1.10	1.11	1.02	1.08	0.37	0.31	0.90
	Mean	1.15	1.20	1.10	1.15		0.32	0.96
	Median	1.15	1.22	1.07	1.15		0.31	0.98
	Weighted Average				1.15		0.30	0.97
	Relevered Beta based on 20% Debt Capital Structure						1.10 ³	
	Relevered Beta based on 20% Debt Capital Structure and a weighted average Beta						1.11 ³	
Non-Class 1 Railroads:								
B+	Genesee and Wyoming, Inc.	1.25	1.37	1.46	1.36	0.28	0.24	1.16
	Mean	1.25	1.37	1.46	1.36		0.24	1.16
	Median	1.25	1.37	1.46	1.36		0.24	1.16
	Weighted Average				1.36		0.24	1.16
	Relevered Beta based on 40% Debt Capital Structure						1.62 ³	
	Relevered Beta based on 40% Debt Capital Structure and a weighted average Beta						1.62 ³	

¹ Average Debt to Equity Ratio over the last five years.

² Unlevered Beta = Corrected Beta/[1+(1- t_c)(D/E)]; where D/E is the debt to equity ratio, t_c is the company's 2011 tax rate.

³ Relevered Beta = [Unlevered Beta][1+(1- t_p)(D/E)]; where D/E is the debt to equity ratio, t_p is a prospective purchaser's tax rate (assumed to be 40%).

**2012 Capitalization Rate Study
Railroad Companies
Capital Structure**

a	b	c	d	e	f	g	h	i	j
Value Line Rating	Moody Bond Rating	Company Name	Common Stock Outstanding (000)	Common Stock Price 12/30/11	Market Value Equity (000)	Long Term Debt (000)	Total Capital (000)	Long Term Debt %	Common Equity %
Class 1 Railroads:									
A	NR	Union Pacific Corp.	483,077	105.94	51,177,177	8,765,000	59,942,177	14.62%	85.38%
B++	NR	CSX Corp.	1,050,000	21.06	22,113,000	8,160,000	30,273,000	26.95%	73.05%
B++	NR	Norfolk Southern Corp.	336,106	72.86	24,488,683	6,782,000	31,270,683	21.69%	78.31%
		Total					<u>121,485,861</u>		
						Mean		21.09%	78.91%
						Median		21.69%	78.31%
						Weighted Average		19.51%	80.49%
Non-Class 1 Railroads:									
B+	NR	Genesee and Wyoming, Inc.	42,311	60.58	2,563,200	532,600	3,095,800	17.20%	82.80%
		Total					<u>3,095,800</u>		
						Mean		17.20%	82.80%
						Median		17.20%	82.80%
						Weighted Average		17.20%	82.80%

Recommended Capital Structures for lien date January 1, 2012	Equity	Debt
Class 1 Railroads:	80%	20%
Non-Class 1 Railroads:	60%	40%

Sources: Columns a, d, and g were extracted from the Value Line Investment Survey Reports.
Column e was extracted from the Finance.Yahoo.com and represents December 30, 2011 closing stock prices.

**2012 Capitalization Rate Study
Railroad Companies
Interpolation of Railroad Bond Yield**

Yield Increment from Moody's Average Bond Ratings			
a	b	c	d
Moody's Average Rating	Moody's Average Bond Yield	Number of Increments	Incremental Increase (b/c)
Aa = Aa2	3.93%		
A = A2	<u>4.30%</u>		
Difference	<u><u>0.37%</u></u>	3	0.12%
A = A2	4.30%		
Baa = Baa2	<u>5.18%</u>		
Difference	<u><u>0.88%</u></u>	3	0.29%

Interpolated Railroad Bond Yield			
a	b	c	d
Moody's Average Rating	Moody's Average Bond Yield	Incremental Increase	Interpolated Bond Yield
Aa2	3.930%		3.93%
Aa3		0.12%	4.05%
A1		0.12%	4.18%
A2	4.300%		4.30%
A3		0.29%	4.59%
Baa1		0.29%	4.89%
Baa2	5.180%		5.18%
Baa3		0.29%	5.47%

**2012 Capitalization Rate Study
Railroad Companies
Debt Yield Rates**

Bond Rating	Industrial	Public Utility	Average
Aaa	3.79%	N/A	3.79%
Aa	3.93%	3.93%	3.93%
A	4.35%	4.25%	4.30%
Baa	5.35%	5.01%	5.18%

Source: Moody's Daily Long-Term Corporate Bond Yield Averages as of December 30, 2011.