



**OKLAHOMA**  
Tax Commission

# **CAPITALIZATION RATE STUDY**

21-Apr-2025

AD VALOREM

PUBLIC SERVICE SECTION



# OKLAHOMA Tax Commission

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**AD VALOREM**  
April 21, 2025

The Public Service Section acknowledges the contribution of those individuals taking part in the development of our capitalization rates for 2025.

This is an ongoing process. It is our intent to be as transparent as possible while being receptive to any input given.

We look forward to your continued participation in this process.

Sincerely,

Ryan Snyder  
Public Service Manager  
Oklahoma Tax Commission  
Ad Valorem



# EXECUTIVE SUMMARY

## **Executive Summary**

The income approach to value converts projected future income or cash flow into an estimate of present value. The accuracy of this approach is no greater than the validity of the assumptions used to estimate the key variables, particularly the capitalization rate variable. The mathematical techniques used in the approach convert those assumptions into an estimate of current market value.

This booklet contains a study of each of the eight state assessed industry groups in Oklahoma. Industry data was gathered by group as identified by Value Line Investment Survey published from the period of November 2024 through January 2025. Additional Value Line Industry segments including Oil/Gas Distribution and Pipeline MLPs were reviewed.

Generally accepted appraisal 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 assume by investing in the property.

### **Authority for Valuation**

Oklahoma Tax Commission Ad Valorem is charged with the responsibility for the valuation of Railroad, Air Carrier, and Public Service Corporation property in accordance with Title 68, Oklahoma Statutes, Section 2808. The term "public service" includes electric companies, fluid or product pipeline companies, gas distribution and transmission companies, telecommunication companies, and water companies.

### **Nominal Growth Rate**

For the typical income projection of the valuation of Railroad, Air Carrier, and Public Service Corporation property, a nominal growth rate of 4.96% will be applied.

### **Band of Investment, Capital Structure**

A representative capital structure is developed for each industry using the market value of equity and the book value of long term debt. Using Value Line Investment Survey, the market value of equity can be calculated by multiplying the number of shares outstanding by the listed stock price, or by utilizing the given market capitalization number already calculated. The debt components are book amounts unless market amounts are readily available and predetermined to be significantly different. Preferred stock was excluded in the calculations for all industry types.

The rates of debt and equity capital are weighted by the respective amounts of such capital deemed mostly likely to be employed by a prospective buyer. The result is a representative or typical capital structure of an industry group of companies, not that of the present owner.

### **Cost of Debt**

Cost of Debt was calculated as the twelve-month bond yield average from Mergent Bond Record for public utility and industrial bonds utilizing the bond rating perceived as typical for each industry.

## **Executive Summary**

### **Cost of Capital**

Equity rate calculations were derived upon review of Discounted Cash flow, Capital Asset Pricing Model (CAPM), and Earnings Price Ratio.

Discounted Cash Flow (Gordon Growth Model) allows for the calculation of two rates within its model utilizing the dividend yield, dividend growth rate estimates, and earnings growth rate estimates as listed in Value Line Investment Survey. Cost of capital is being calculated for dividends by adding the dividend yield and the dividend estimate. Similarly, the cost of capital for earnings is calculated by adding the dividend yield and the earnings estimate. No calculation is utilized where the resulting yield of growth estimated equity rate is below the chosen cost of debt for each respective industry.

Capital Asset Pricing Model (CAPM) in the application of the CAPM, the most sensitive component affecting the outcome is the estimate of the beta statistic. A choice of 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 of a beta adjusted to reflect the fact that betas revert to the mean over time. for this study the company levered betas as developed and presented in The Value Line Investment Survey for the selected industry groups are used.

Earnings Price Ratios (E/P Ratio) utilizing Value Line Investment Survey for the selected industry groups, the E/P Ratio was calculated with the projects earnings divided by the recent price.

### **Flotation Costs**

Flotation costs are those costs associated with the issuance of new securities and include both the underwriting spread and the costs incurred by the issuing company from the offering. Financial theory suggests and evidence supports that firms do not typically issue new common equity as a matter of common practice. Therefore, in determining a capitalization rate, no adjustment will be made in the capitalization rate of the income stream for hypothetical flotation costs. Flotation costs actually incurred may be accounted for in the income stream.

### **Utilization of Other Studies and Data**

Valuation staff has considered and where appropriate utilized data and capitalization studies submitted by assessed and interested parties in the development of the derived rates.

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

# **Airline - Cargo Industry**

# Industry Capitalization Rate Summary

Industry	Equity Rate	Debt Rate	Market Capitalization	Long-Term Debt	Capitalization Rate
Airline - Cargo	13.10%	5.74%	82.82%	17.18%	11.84%

Mergents 2024 Twelve Month Bond Yield Averages

## **2025 Capitalization Rate Study**

### **Airline - Cargo Industry Notes**

- Recognizing the different operational services as provided by this industry group, it was broken out into two segments, cargo and passenger service.
- From the Airline Passenger Service segment, Ryanair Holdings was excluded due to predominately international flights.
- Staff considered capitalization studies submitted by:
  - No Submissions
- Staff relied upon the results of the following models and appraisal judgment in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model, Ex-Post and Ex Ante
  3. Earnings/Price Ratio



# Industry Capitalization Rate

Industry	Equity Rate	Market Capitalization	Long Term Debt	Capitalization Rate
Airline - Cargo	13.10%	82.82%	17.18%	11.84%

Mergents 2024 Twelve Month Bond Yield Averages

# Industry Equity Rate Summary

## Airline - Cargo

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CapM Ex Post Equity Rate	11.32%
CapM Ex Ante Equity Rate	16.75%
DCF (Dividend) Equity Rate	9.50%
DCF (Earnings) Equity Rate	8.40%
Earnings Price Ratio	10.11%

# CapM Equity Rates

Industry	Ex Post Risk Premium b*	Ex Ante Risk Premium c*	Value Line Beta d	Ex Post CapM Equity Rate (((b-4.86%)*d)+4.86%)	Ex Ante CapM Equity Rate (((c-4.86%)*d)+4.86%)
Airline - Cargo	12.17%	18.32%	0.88	11.32%	16.75%

b\* Risk Free Rate (4.86%) plus Risk Premium Rate (7.31%)

c\* Risk Free Rate (4.86%) plus Risk Premium Rate (13.46%)

Value Line Investment Survey, November 2024 through January 2025, Kroll Cost of Capital Navigator

# Discounted Cash Flow (Gordon Growth)

Industry	Company	Value Line Strength	Market Capitalization d	Dividend Yield e	Growth Estimate		Equity Rate Dividend (e+f)	Equity Rate Earnings (e+g)
					Dividends f	Earnings g		
Airline - Cargo	Air Transport Services Group	B+	1,400,000,000			4.00%		
	FedEx Corp.	B++	66,300,000,000	2.10%	6.00%	3.50%	8.10%	
	United Parcel Service, Inc.	A	114,000,000,000	4.90%	6.00%	3.50%	10.90%	8.40%
Median			66,300,000,000				9.50%	8.40%
Arithmetic Mean			60,566,666,667				9.50%	8.40%

Value Line Investment Survey, November 2024 through January 2025

# E/P Ratio

Industry	Company	Value Line Strength	Market Capitalization c	Recent Price d	Projected Earnings e	E/P Ratio (e/d)
Airline - Cargo						
	Air Transport Services Group	B+	1,400,000,000	22.00	2.50	11.36%
	FedEx Corp.	B++	66,300,000,000	271.18	27.00	9.96%
	United Parcel Service, Inc.	A	114,000,000,000	133.00	12.00	9.02%
Median			66,300,000,000			9.96%
Arithmetic Mean			60,566,666,667			10.11%

Value Line Investment Survey, November 2024 through January 2025

# Capital Structure

Industry	Company	Value Line Strength	Market Capitalization c	Long Term Debt d	Debt/Equity Ratio (d/c)	Percentage Equity (c/(c+d))	Percentage Debt (d/(c+d))
Airline - Cargo							
	Air Transport Services Group	B+	1,400,000,000	1,577,300,000	1.13	47.02%	52.98%
	FedEx Corp.	B++	66,300,000,000	19,664,000,000	0.30	77.13%	22.87%
	United Parcel Service, Inc.	A	114,000,000,000	20,197,000,000	0.18	84.95%	15.05%
Median			66,300,000,000	19,664,000,000	0.30	77.13%	22.87%
Arithmetic Mean			60,566,666,667	13,812,766,667	0.53	69.70%	30.30%
Weighted Average			95,727,297,744	19,859,050,193		82.82%	17.18%

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Airline - Cargo, Selected Comparables		
	Air Transport Services Group	0.85
	FedEx Corp.	1.00
	United Parcel Service, Inc.	0.80
Median		0.85
Arithmetic Mean		0.88

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Airline - Cargo, Value Line		
	Air Transport Services Group	0.85
	FedEx Corp.	1.00
	United Parcel Service, Inc.	0.80
Median		0.85
Arithmetic Mean		0.88

Value Line Investment Survey, November 2024 through January 2025



# **Airline - Passenger Industry**

# Industry Capitalization Rate Summary

Industry	Equity Rate	Debt Rate	Market Capitalization	Long-Term Debt	Capitalization Rate
Airline - Passenger	17.90%	5.74%	62.65%	37.35%	13.36%

Mergents 2024 Twelve Month Bond Yield Averages

## **2025 Capitalization Rate Study**

### **Airline - Passenger Industry Notes**

- Recognizing the different operational services as provided by this industry group, it was broken out into two segments, cargo and passenger service.
- From the Airline Passenger Service segment, Ryanair Holdings was excluded due to predominately international flights.
- Staff considered capitalization studies submitted by:
  - No Submissions
- Staff relied upon the results of the following models and appraisal judgment in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model, Ex-Post and Ex Ante
  3. Earnings/Price Ratio

# Industry Capitalization Rate

Industry	Equity Rate	Market Capitalization	Long Term Debt	Capitalization Rate
Airline - Passenger	17.90%	62.65%	37.35%	13.36%

Mergents 2024 Twelve Month Bond Yield Averages

# Industry Equity Rate Summary

## Airline - Passenger

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CapM Ex Post Equity Rate	16.30%
CapM Ex Ante Equity Rate	25.92%
DCF (Dividend) Equity Rate	31.53%
DCF (Earnings) Equity Rate	28.93%
Earnings Price Ratio	21.40%

# CapM Equity Rates

Industry	Ex Post Risk Premium b*	Ex Ante Risk Premium c*	Value Line Beta d	Ex Post CapM Equity Rate (((b-4.86%)*d)+4.86%)	Ex Ante CapM Equity Rate (((c-4.86%)*d)+4.86%)
Airline - Passenger	12.17%	18.32%	1.57	16.30%	25.92%

b\* Risk Free Rate (4.86%) plus Risk Premium Rate (7.31%)

c\* Risk Free Rate (4.86%) plus Risk Premium Rate (13.46%)

Value Line Investment Survey, November 2024 through January 2025, Kroll Cost of Capital Navigator

## Discounted Cash Flow (Gordon Growth)

Industry	Company	Value Line Strength	Market Capitalization d	Dividend Yield e	Growth Estimate		Equity Rate Dividend (e+f)	Equity Rate Earnings (e+g)
					Dividends f	Earnings g		
Airline - Passenger								
	Alaska Air Group, Inc.	B+	6,000,000,000			34.00%		34.00%
	Allegiant Travel Company	B+	1,200,000,000		20.00%	32.00%	20.00%	32.00%
	American Airlines Group	B	8,500,000,000					
	Copa Holdings, S.A.	B+	4,000,000,000	6.70%	39.50%	12.50%	46.20%	19.20%
	Delta Air Lines, Inc.	B+	36,700,000,000	1.10%				
	JetBlue Airways Corp.	C++	2,000,000,000					
	SkyWest, Inc.	B+	4,000,000,000			30.50%		30.50%
	Southwest Airlines	B+	17,900,000,000	2.40%	26.00%		28.40%	
	Spirit Airlines, Inc.	C	250,000,000					
	United Airlines Holdings, Inc.	B+	25,400,000,000					
Median			5,000,000,000				28.40%	31.25%
Arithmetic Mean			10,595,000,000				31.53%	28.93%

Value Line Investment Survey, November 2024 through January 2025

E/P Ratio

Industry	Company	Value Line Strength	Market Capitalization c	Recent Price d	Projected Earnings e	E/P Ratio (e/d)
Airline - Passenger						
	Alaska Air Group, Inc.	B+	6,000,000,000	47.23	13.25	28.05%
	Allegiant Travel Company	B+	1,200,000,000	65.96	22.00	33.35%
	American Airlines Group	B	8,500,000,000	12.99	3.50	26.94%
	Copa Holdings, S.A.	B+	4,000,000,000	96.36	15.00	15.57%
	Delta Air Lines, Inc.	B+	36,700,000,000	56.89	9.00	15.82%
	JetBlue Airways Corp.	C++	2,000,000,000	5.71	1.50	26.27%
	SkyWest, Inc.	B+	4,000,000,000	99.24	9.40	9.47%
	Southwest Airlines	B+	17,900,000,000	29.91	2.50	8.36%
	Spirit Airlines, Inc.	C	250,000,000	2.34	0.75	32.05%
	United Airlines Holdings, Inc.	B+	25,400,000,000	77.25	14.00	18.12%
Median			5,000,000,000			22.20%
Arithmetic Mean			10,595,000,000			21.40%

Value Line Investment Survey, November 2024 through January 2025



# Capital Structure

Industry	Company	Value Line Strength	Market Capitalization c	Long Term Debt d	Debt/Equity Ratio (d/c)	Percentage Equity (c/(c+d))	Percentage Debt (d/(c+d))
<b>Airline - Passenger</b>							
	Alaska Air Group, Inc.	B+	6,000,000,000	4,159,000,000	0.69	59.06%	40.94%
	Allegiant Travel Company	B+	1,200,000,000	1,767,300,000	1.47	40.44%	59.56%
	American Airlines Group	B	8,500,000,000	26,268,000,000	3.09	24.45%	75.55%
	Copa Holdings, S.A.	B+	4,000,000,000	1,241,700,000	0.31	76.31%	23.69%
	Delta Air Lines, Inc.	B+	36,700,000,000	14,373,000,000	0.39	71.86%	28.14%
	JetBlue Airways Corp.	C++	2,000,000,000	7,868,000,000	3.93	20.27%	79.73%
	SkyWest, Inc.	B+	4,000,000,000	2,196,500,000	0.55	64.55%	35.45%
	Southwest Airlines	B+	17,900,000,000	5,075,000,000	0.28	77.91%	22.09%
	Spirit Airlines, Inc.	C	250,000,000	3,124,000,000	12.50	7.41%	92.59%
	United Airlines Holdings, Inc.	B+	25,400,000,000	22,296,000,000	0.88	53.25%	46.75%
<b>Median</b>			5,000,000,000	4,617,000,000	0.79	56.16%	43.84%
<b>Arithmetic Mean</b>			10,595,000,000	8,836,850,000	2.41	49.55%	50.45%
<b>Weighted Average</b>			23,201,628,126	13,829,849,552		62.65%	37.35%

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Airline - Passenger, Selected Comparables		
	Alaska Air Group, Inc.	1.55
	Allegiant Travel Company	1.45
	American Airlines Group	1.60
	Copa Holdings, S.A.	1.55
	Delta Air Lines, Inc.	1.60
	JetBlue Airways Corp.	1.75
	SkyWest, Inc.	1.65
	Southwest Airlines	1.10
	Spirit Airlines, Inc.	1.70
	United Airlines Holdings, Inc.	1.70
Median		1.60
Arithmetic Mean		1.57

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Airline - Passenger, Value Line		
	Alaska Air Group, Inc.	1.55
	Allegiant Travel Company	1.45
	American Airlines Group	1.60
	Copa Holdings, S.A.	1.55
	Delta Air Lines, Inc.	1.60
	JetBlue Airways Corp.	1.75
	Ryanair Holdings	1.20
	SkyWest, Inc.	1.65
	Southwest Airlines	1.10
	Spirit Airlines, Inc.	1.70
	United Airlines Holdings, Inc.	1.70
Median		1.60
Arithmetic Mean		1.53

Value Line Investment Survey, November 2024 through January 2025

# **Electric Industry**

# Industry Capitalization Rate Summary

Industry	Equity Rate	Debt Rate	Market Capitalization	Long-Term Debt	Capitalization Rate
<i>Electric</i>	11.50%	5.76%	57.38%	42.62%	9.05%

Mergents 2024 Twelve Month Bond Yield Averages

## **2025 Capitalization Rate Study**

### **Electric Industry Notes**

- From the Electric Industry segment, Fortis, Inc. was excluded due to Value Line information listed in Canadian dollars.
- Staff considered capitalization information submitted by:

No Submissions

- Staff relied upon the results of the following models and appraisal judgment in the development of equity rates:
  1. Discounted Cash Flows
  2. Capital Asset Pricing Model, Ex-Post and Ex-Ante
  3. Earnings/Price Ratio

# Industry Capitalization Rate

Industry	Equity Rate	Market Capitalization	Long Term Debt	Capitalization Rate
Electric	11.50%	57.38%	42.62%	9.05%

Mergents 2024 Twelve Month Bond Yield Averages

# Industry Equity Rate Summary

## Electric

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CapM Ex Post Equity Rate	11.75%
CapM Ex Ante Equity Rate	17.55%
DCF (Dividend) Equity Rate	8.60%
DCF (Earnings) Equity Rate	9.39%
Earnings Price Ratio	6.36%



## CapM Equity Rates

Industry	Ex Post Risk Premium b*	Ex Ante Risk Premium c*	Value Line Beta d	Ex Post CapM Equity Rate (((b-4.86%)*d)+4.86%)	Ex Ante CapM Equity Rate (((c-4.86%)*d)+4.86%)
Electric	12.17%	18.32%	0.94	11.75%	17.55%

b\* Risk Free Rate (4.86%) plus Risk Premium Rate (7.31%)

c\* Risk Free Rate (4.86%) plus Risk Premium Rate (13.46%)

Value Line Investment Survey, November 2024 through January 2025, Kroll Cost of Capital Navigator

## Discounted Cash Flow (Gordon Growth)

Industry	Company	Value Line Strength	Market Capitalization d	Dividend Yield e	Growth Estimate		Equity Rate Dividend (e+f)	Equity Rate Earnings (e+g)
					Dividends f	Earnings g		
Electric	Allete, Inc.	A+	3,700,000,000	4.50%	3.50%	6.00%	8.00%	10.50%
	Alliant Energy Corporation	A+	16,300,000,000	3.00%	6.00%	6.00%	9.00%	9.00%
	Ameren Corporation	A+	22,000,000,000	3.20%	6.50%	6.50%	9.70%	9.70%
	American Electric Power Company, Inc.	A	52,700,000,000	3.60%	5.50%	6.50%	9.10%	10.10%
	CenterPoint Energy, Inc.	A	21,200,000,000	2.60%	6.00%	6.50%	8.60%	9.10%
	CMS Energy Corporation	B++	20,800,000,000	3.00%	5.00%	6.00%	8.00%	9.00%
	DTE Energy Company	B++	25,800,000,000	3.30%	3.00%	4.50%	6.30%	7.80%
	Entergy Corporation	A+	32,700,000,000	3.10%	3.50%	0.50%	6.60%	
	Evergy, Inc.	B++	13,600,000,000	4.40%	7.00%	7.50%	11.40%	11.90%
	MGE Energy, Inc.	B++	3,800,000,000	1.70%	6.50%	7.00%	8.20%	8.70%
	OGE Energy Corp.	B++	8,000,000,000	4.30%	3.00%	6.50%	7.30%	10.80%
	Otter Tail Corporation	A	3,800,000,000	2.00%	7.00%	4.50%	9.00%	6.50%
	WEC Energy Group, Inc.	A+	29,400,000,000	3.60%	7.00%	6.00%	10.60%	9.60%
Median			20,800,000,000				8.60%	9.35%
Arithmetic Mean			19,523,076,923				8.60%	9.39%

Value Line Investment Survey, November 2024 through January 2025

## E/P Ratio

Industry	Company	Value Line Strength	Market Capitalization c	Recent Price d	Projected Earnings e	E/P Ratio (e/d)
<b>Electric</b>						
	Allete, Inc.	A+	3,700,000,000	63.25	5.10	8.06%
	Alliant Energy Corporation	A+	16,300,000,000	63.63	3.90	6.13%
	Ameren Corporation	A+	22,000,000,000	82.57	6.00	7.27%
	American Electric Power Company, Inc.	A	52,700,000,000	99.02	7.05	7.12%
	CenterPoint Energy, Inc.	A	21,200,000,000	32.48	1.90	5.85%
	CMS Energy Corporation	B++	20,800,000,000	69.67	4.00	5.74%
	DTE Energy Company	B++	25,800,000,000	124.67	8.90	7.14%
	Entergy Corporation	A+	32,700,000,000	152.50	8.05	5.28%
	Evergy, Inc.	B++	13,600,000,000	64.49	4.75	7.37%
	MGE Energy, Inc.	B++	3,800,000,000	104.75	4.65	4.44%
	OGE Energy Corp.	B++	8,000,000,000	39.64	2.70	6.81%
	Otter Tail Corporation	A	3,800,000,000	92.02	4.25	4.62%
	WEC Energy Group, Inc.	A+	29,400,000,000	93.01	6.40	6.88%
<b>Median</b>			20,800,000,000			6.81%
<b>Arithmetic Mean</b>			19,523,076,923			6.36%

Value Line Investment Survey, November 2024 through January 2025

# Capital Structure

Industry	Company	Value Line Strength	Market Capitalization c	Long Term Debt d	Debt/Equity Ratio (d/c)	Percentage Equity (c/(c+d))	Percentage Debt (d/(c+d))
<b>Electric</b>							
	Allete, Inc.	A+	3,700,000,000	1,743,700,000	0.47	67.97%	32.03%
	Alliant Energy Corporation	A+	16,300,000,000	9,245,000,000	0.57	63.81%	36.19%
	Ameren Corporation	A+	22,000,000,000	16,422,000,000	0.75	57.26%	42.74%
	American Electric Power Company, Inc.	A	52,700,000,000	39,148,000,000	0.74	57.38%	42.62%
	CenterPoint Energy, Inc.	A	21,200,000,000	19,729,000,000	0.93	51.80%	48.20%
	CMS Energy Corporation	B++	20,800,000,000	15,660,000,000	0.75	57.05%	42.95%
	DTE Energy Company	B++	25,800,000,000	20,458,000,000	0.79	55.77%	44.23%
	Entergy Corporation	A+	32,700,000,000	26,563,000,000	0.81	55.18%	44.82%
	Evergy, Inc.	B++	13,600,000,000	11,571,000,000	0.85	54.03%	45.97%
	MGE Energy, Inc.	B++	3,800,000,000	715,300,000	0.19	84.16%	15.84%
	OGE Energy Corp.	B++	8,000,000,000	5,020,800,000	0.63	61.44%	38.56%
	Otter Tail Corporation	A	3,800,000,000	943,700,000	0.25	80.11%	19.89%
	WEC Energy Group, Inc.	A+	29,400,000,000	16,889,200,000	0.57	63.51%	36.49%
<b>Median</b>			20,800,000,000	15,660,000,000	0.74	57.38%	42.62%
<b>Arithmetic Mean</b>			19,523,076,923	14,162,207,692	0.64	62.27%	37.73%
<b>Weighted Average</b>			28,762,332,545	21,364,526,281		57.38%	42.62%

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Electric, Selected Comparables		
	Allete, Inc.	0.95
	Alliant Energy Corporation	0.90
	Ameren Corporation	0.90
	American Electric Power Company, Inc.	0.85
	CenterPoint Energy, Inc.	1.15
	CMS Energy Corporation	0.85
	DTE Energy Company	1.00
	Entergy Corporation	1.00
	Evergy, Inc.	0.96
	MGE Energy, Inc.	0.85
	OGE Energy Corp.	1.05
	Otter Tail Corporation	0.95
	WEC Energy Group, Inc.	0.85
Median		0.95
Arithmetic Mean		0.94

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Electric, Value Line	Allete, Inc.	0.95
	Alliant Energy Corporation	0.90
	Ameren Corporation	0.90
	American Electric Power Company, Inc.	0.85
	CenterPoint Energy, Inc.	1.15
	CMS Energy Corporation	0.85
	DTE Energy Company	1.00
	Entergy Corporation	1.00
	Evergy, Inc.	0.96
	Fortis Inc.	0.75
	MGE Energy, Inc.	0.85
	OGE Energy Corp.	1.05
	Otter Tail Corporation	0.95
	WEC Energy Group, Inc.	0.85
Median		0.93
Arithmetic Mean		0.93

Value Line Investment Survey, November 2024 through January 2025

# **Fluid Pipeline Industry**

# Industry Capitalization Rate Summary

Industry	Equity Rate	Debt Rate	Market Capitalization	Long-Term Debt	Capitalization Rate
Fluid Pipeline	15.20%	5.74%	89.13%	10.87%	14.17%

Mergents 2024 Twelve Month Bond Yield Averages



## **2025 Capitalization Rate Study**

### **Fluid Pipeline Industry Notes**

- From the Fluid Pipeline (Petroleum Integrated) Industry segment, Petroleo Brasileiro S.A. was excluded. While publicly traded, the Brazilian Government is a majority holder of the common stock. Cenovus Energy Inc. and Suncor Energy, Inc. were excluded due to Value Line information listed in Canadian dollars. Clean Energy Fuel Corp. and World Kinect Corp. were excluded due to being new to the Value Line industry and the business model not being consistent with other comparable companies.
- Staff considered capitalization studies/presentations submitted by:
  - The Williams Companies - 2025 Capitalization Rate Presentation
- Staff relied upon the results of the following models and appraisal judgment in the development of equity rates:
  1. Discounted Cash Flows
  2. Capital Asset Pricing Model, Ex-Post and Ex-Ante
  3. Earnings/Price Ratio

# Industry Capitalization Rate

Industry	Equity Rate	Market Capitalization	Long Term Debt	Capitalization Rate
Fluid Pipeline	15.20%	89.13%	10.87%	14.17%

Mergents 2024 Twelve Month Bond Yield Averages

# Industry Equity Rate Summary

## Fluid Pipeline

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CapM Ex Post Equity Rate	14.34%
CapM Ex Ante Equity Rate	22.32%
DCF (Dividend) Equity Rate	14.89%
DCF (Earnings) Equity Rate	16.33%
Earnings Price Ratio	14.12%

# CapM Equity Rates

Industry	Ex Post Risk Premium b*	Ex Ante Risk Premium c*	Value Line Beta d	Ex Post CapM Equity Rate (((b-4.86%)*d)+4.86%)	Ex Ante CapM Equity Rate (((c-4.86%)*d)+4.86%)
Fluid Pipeline	12.17%	18.32%	1.30	14.34%	22.32%

b\* Risk Free Rate (4.86%) plus Risk Premium Rate (7.31%)

c\* Risk Free Rate (4.86%) plus Risk Premium Rate (13.46%)

Value Line Investment Survey, November 2024 through January 2025, Kroll Cost of Capital Navigator

## Discounted Cash Flow (Gordon Growth)

Industry	Company	Value Line Strength	Market Capitalization d	Dividend Yield e	Growth Estimate		Equity Rate Dividend (e+f)	Equity Rate Earnings (e+g)
					Dividends f	Earnings g		
Fluid Pipeline								
	BP p.l.c.	A+	78,000,000,000	6.60%	7.00%	18.50%	13.60%	25.10%
	Chevron Corp.	A+	281,000,000,000	4.40%	7.00%	3.00%	11.40%	7.40%
	CVR Energy, Inc.	B	1,900,000,000		11.00%	-2.00%	11.00%	
	Delek US Holdings, Inc.	B	1,200,000,000	5.50%	15.50%	40.50%	21.00%	46.00%
	Exxon Mobil Corp.	A+	529,000,000,000	3.30%	3.00%	-3.00%	6.30%	
	Hess Corporation	B++	43,200,000,000	1.40%	6.50%	8.00%	7.90%	9.40%
	HF Sinclair Corporation	A	8,000,000,000	5.10%	16.50%		21.60%	
	Imperial Oil Ltd.	A	38,600,000,000	2.40%	13.50%	8.50%	15.90%	10.90%
	Marathon Petroleum	B++	50,200,000,000	2.10%	6.00%	-6.00%	8.10%	
	Occidental Petroleum	B++	47,700,000,000	2.00%	35.00%	6.00%	37.00%	8.00%
	Par Pacific Holdings, Inc.	B	925,000,000			7.50%		7.50%
	PBF Energy, Inc.	C++	3,500,000,000	3.60%	19.00%	-15.50%	22.60%	
	Phillips 66	A+	52,800,000,000	3.70%	6.00%	0.50%	9.70%	
	Shell plc	A+	208,000,000,000	4.10%	7.00%		11.10%	
	TotalEnergies SE	A	146,000,000,000	5.70%	5.50%		11.20%	
	Valero Energy Corp.	B++	43,700,000,000	3.10%	2.00%	-6.00%		
Median			45,700,000,000				11.30%	9.40%
Arithmetic Mean			95,857,812,500				14.89%	16.33%

Value Line Investment Survey, November 2024 through January 2025

## E/P Ratio

Industry	Company	Value Line Strength	Market Capitalization c	Recent Price d	Projected Earnings e	E/P Ratio (e/d)
Fluid Pipeline						
	BP p.l.c.	A+	78,000,000,000	28.92	6.05	20.92%
	Chevron Corp.	A+	281,000,000,000	156.50	16.00	10.22%
	CVR Energy, Inc.	B	1,900,000,000	18.90	3.65	19.31%
	Delek US Holdings, Inc.	B	1,200,000,000	18.55	2.45	13.21%
	Exxon Mobil Corp.	A+	529,000,000,000	120.47	7.65	6.35%
	Hess Corporation	B++	43,200,000,000	141.99	7.50	5.28%
	HF Sinclair Corporation	A	8,000,000,000	42.43	7.50	17.68%
	Imperial Oil Ltd.	A	38,600,000,000	73.75	9.55	12.95%
	Marathon Petroleum	B++	50,200,000,000	156.06	12.50	8.01%
	Occidental Petroleum	B++	47,700,000,000	50.81	7.30	14.37%
	Par Pacific Holdings, Inc.	B	925,000,000	16.65	6.50	39.04%
	PBF Energy, Inc.	C++	3,500,000,000	30.82	5.00	16.22%
	Phillips 66	A+	52,800,000,000	127.94	12.50	9.77%
	Shell plc	A+	208,000,000,000	66.84	7.50	11.22%
	TotalEnergies SE	A	146,000,000,000	61.08	7.40	12.12%
	Valero Energy Corp.	B++	43,700,000,000	138.02	12.80	9.27%
Median			45,700,000,000			12.53%
Arithmetic Mean			95,857,812,500			14.12%

Value Line Investment Survey, November 2024 through January 2025

# Capital Structure

Industry	Company	Value Line Strength	Market Capitalization c	Long Term Debt d	Debt/Equity Ratio (d/c)	Percentage Equity (c/(c+d))	Percentage Debt (d/(c+d))
Fluid Pipeline							
	BP p.l.c.	A+	78,000,000,000	53,000,000,000	0.68	59.54%	40.46%
	Chevron Corp.	A+	281,000,000,000	20,697,000,000	0.07	93.14%	6.86%
	CVR Energy, Inc.	B	1,900,000,000	1,574,000,000	0.83	54.69%	45.31%
	Delek US Holdings, Inc.	B	1,200,000,000	2,780,000,000	2.32	30.15%	69.85%
	Exxon Mobil Corp.	A+	529,000,000,000	36,918,000,000	0.07	93.48%	6.52%
	Hess Corporation	B++	43,200,000,000	8,576,000,000	0.20	83.44%	16.56%
	HF Sinclair Corporation	A	8,000,000,000	2,286,800,000	0.29	77.77%	22.23%
	Imperial Oil Ltd.	A	38,600,000,000	2,958,000,000	0.08	92.88%	7.12%
	Marathon Petroleum	B++	50,200,000,000	24,053,000,000	0.48	67.61%	32.39%
	Occidental Petroleum	B++	47,700,000,000	25,456,000,000	0.53	65.20%	34.80%
	Par Pacific Holdings, Inc.	B	925,000,000	1,039,600,000	1.12	47.08%	52.92%
	PBF Energy, Inc.	C++	3,500,000,000	1,254,000,000	0.36	73.62%	26.38%
	Phillips 66	A+	52,800,000,000	18,476,000,000	0.35	74.08%	25.92%
	Shell plc	A+	208,000,000,000	64,600,000,000	0.31	76.30%	23.70%
	TotalEnergies SE	A	146,000,000,000	45,800,000,000	0.31	76.12%	23.88%
	Valero Energy Corp.	B++	43,700,000,000	9,790,000,000	0.22	81.70%	18.30%
Median			45,700,000,000	14,133,000,000	0.33	75.10%	24.90%
Arithmetic Mean			95,857,812,500	19,953,650,000	0.51	71.68%	28.32%
Weighted Average			288,446,244,030	35,171,090,143		89.13%	10.87%

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Fluid Pipeline, Selected Comparables		
	BP p.l.c.	1.20
	Chevron Corp.	1.15
	CVR Energy, Inc.	1.25
	Delek US Holdings, Inc.	1.20
	Exxon Mobil Corp.	1.05
	Hess Corporation	1.25
	HF Sinclair Corporation	1.25
	Imperial Oil Ltd.	1.35
	Marathon Petroleum	1.50
	Occidental Petroleum	1.50
	Par Pacific Holdings, Inc.	1.40
	PBF Energy, Inc.	1.70
	Phillips 66	1.25
	Shell plc	1.20
	TotalEnergies SE	1.10
	Valero Energy Corp.	1.40
Median		1.25
Arithmetic Mean		1.30

Value Line Investment Survey, November 2024 through January 2025



# Beta

Industry	Company	Value Line Levered Beta
Fluid Pipeline, Value Line	BP p.l.c.	1.20
	Cenovus Energy Inc.	1.40
	Chevron Corp.	1.15
	Clean Energy Fuels Corp.	1.55
	CVR Energy, Inc.	1.25
	Delek US Holdings, Inc.	1.20
	Exxon Mobil Corp.	1.05
	Hess Corporation	1.25
	HF Sinclair Corporation	1.25
	Imperial Oil Ltd.	1.35
	Marathon Petroleum	1.50
	Occidental Petroleum	1.50
	Par Pacific Holdings, Inc.	1.40
	PBF Energy, Inc.	1.70
	Petroleo Brasileiro S.A. (Petrobras)	1.35
	Phillips 66	1.25
	Shell plc	1.20
	Suncor Energy Inc.	1.25
	TotalEnergies SE	1.10
	Valero Energy Corp.	1.40
	World Kinect Corp.	1.10
Median		1.25
Arithmetic Mean		1.30

Value Line Investment Survey, November 2024 through January 2025

# **Gas Distribution Industry**

# Industry Capitalization Rate Summary

Industry	Equity Rate	Debt Rate	Market Capitalization	Long-Term Debt	Capitalization Rate
Gas Distribution	11.60%	5.76%	66.63%	33.37%	9.65%

Mergents 2024 Twelve Month Bond Yield Averages

## **2025 Capitalization Rate Study**

### **Gas Distribution Industry Notes**

- From the Natural Gas Utility Industry segment, UGI Corp. was excluded as they presented to primarily market propane gas.
- Staff considered capitalization studies submitted by:

K.E. Andrews & Co. – Oil Gas Storage and Transportation: Natural Gas Transmission and & Distribution Industry

- Staff relied upon the results of the following models and appraisal judgment in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model, Ex-Post and Ex Ante
  3. Earnings/Price Ratio

# Industry Capitalization Rate

Industry	Equity Rate	Market Capitalization	Long Term Debt	Capitalization Rate
Gas Distribution	11.60%	66.63%	33.37%	9.65%

Mergents 2024 Twelve Month Bond Yield Averages

# Industry Equity Rate Summary

## Gas Distribution

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CapM Ex Post Equity Rate	11.49%
CapM Ex Ante Equity Rate	17.06%
DCF (Dividend) Equity Rate	8.64%
DCF (Earnings) Equity Rate	10.03%
Earnings Price Ratio	6.62%

# CapM Equity Rates

Industry	Ex Post Risk Premium b*	Ex Ante Risk Premium c*	Value Line Beta d	Ex Post CapM Equity Rate (((b-4.86%)*d)+4.86%)	Ex Ante CapM Equity Rate (((c-4.86%)*d)+4.86%)
Gas Distribution	12.17%	18.32%	0.91	11.49%	17.06%

b\* Risk Free Rate (4.86%) plus Risk Premium Rate (7.31%)

c\* Risk Free Rate (4.86%) plus Risk Premium Rate (13.46%)

Value Line Investment Survey, November 2024 through January 2025, Kroll Cost of Capital Navigator

# Discounted Cash Flow (Gordon Growth)

Industry	Company	Value Line Strength	Market Capitalization d	Dividend Yield e	Growth Estimate		Equity Rate Dividend (e+f)	Equity Rate Earnings (e+g)
					Dividends f	Earnings g		
Gas Distribution								
	Atmos Energy Corporation	A	22,700,000,000	2.40%	7.50%	7.00%	9.90%	9.40%
	Chesapeake Utilities Corporation	A	2,900,000,000	2.10%	8.00%	6.50%	10.10%	8.60%
	New Jersey Resources Corp.	A	4,700,000,000	3.80%	5.00%	5.00%	8.80%	8.80%
	NiSource Inc.	A	16,900,000,000	3.10%	4.50%	9.50%	7.60%	12.60%
	Northwest Natural Holding Co.	A	1,600,000,000	4.70%	0.50%	6.50%		11.20%
	ONE Gas, Inc.	B++	4,300,000,000	3.60%	2.50%	3.50%	6.10%	7.10%
	Southwest Gas Holdings, Inc.	A	5,500,000,000	3.20%	5.50%	10.00%	8.70%	13.20%
	Spire Inc.	B++	3,800,000,000	4.80%	4.50%	4.50%	9.30%	9.30%
Median			4,500,000,000				8.80%	9.35%
Arithmetic Mean			7,800,000,000				8.64%	10.03%

Value Line Investment Survey, November 2024 through January 2025



E/P Ratio

Industry	Company	Value Line Strength	Market Capitalization c	Recent Price d	Projected Earnings e	E/P Ratio (e/d)
Gas Distribution						
	Atmos Energy Corporation	A	22,700,000,000	146.11	8.35	5.71%
	Chesapeake Utilities Corporation	A	2,900,000,000	126.44	7.00	5.54%
	New Jersey Resources Corp.	A	4,700,000,000	47.56	3.50	7.36%
	NiSource Inc.	A	16,900,000,000	36.22	2.15	5.94%
	Northwest Natural Holding Co.	A	1,600,000,000	41.44	3.15	7.60%
	ONE Gas, Inc.	B++	4,300,000,000	75.02	5.00	6.66%
	Southwest Gas Holdings, Inc.	A	5,500,000,000	77.10	4.50	5.84%
	Spire Inc.	B++	3,800,000,000	66.08	5.50	8.32%
Median			4,500,000,000			6.30%
Arithmetic Mean			7,800,000,000			6.62%

Value Line Investment Survey, November 2024 through January 2025

# Capital Structure

Industry	Company	Value Line Strength	Market Capitalization c	Long Term Debt d	Debt/Equity Ratio (d/c)	Percentage Equity (c/(c+d))	Percentage Debt (d/(c+d))
<b>Gas Distribution</b>							
	Atmos Energy Corporation	A	22,700,000,000	7,866,500,000	0.35	74.26%	25.74%
	Chesapeake Utilities Corporation	A	2,900,000,000	1,173,000,000	0.40	71.20%	28.80%
	New Jersey Resources Corp.	A	4,700,000,000	2,793,700,000	0.59	62.72%	37.28%
	NiSource Inc.	A	16,900,000,000	12,086,300,000	0.72	58.30%	41.70%
	Northwest Natural Holding Co.	A	1,600,000,000	1,574,800,000	0.98	50.40%	49.60%
	ONE Gas, Inc.	B++	4,300,000,000	2,384,900,000	0.55	64.32%	35.68%
	Southwest Gas Holdings, Inc.	A	5,500,000,000	4,382,100,000	0.80	55.66%	44.34%
	Spire Inc.	B++	3,800,000,000	3,422,300,000	0.90	52.61%	47.39%
<b>Median</b>			4,500,000,000	3,108,000,000	0.65	60.51%	39.49%
<b>Arithmetic Mean</b>			7,800,000,000	4,460,450,000	0.66	61.18%	38.82%
<b>Weighted Average</b>			14,377,243,590	7,199,377,404		66.63%	33.37%

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Gas Distribution, Selected Comparables		
	Atmos Energy Corporation	0.90
	Chesapeake Utilities Corporation	0.85
	New Jersey Resources Corp.	1.00
	NiSource Inc.	0.95
	Northwest Natural Holding Co.	0.85
	ONE Gas, Inc.	0.85
	Southwest Gas Holdings, Inc.	0.95
	Spire Inc.	0.90
Median		0.90
Arithmetic Mean		0.91

Value Line Investment Survey, November 2024 through January 2025

Beta

Industry	Company	Value Line Levered Beta
Gas Distribution, Value Line		
	Atmos Energy Corporation	0.90
	Chesapeake Utilities Corporation	0.85
	New Jersey Resources Corp.	1.00
	NiSource Inc.	0.95
	Northwest Natural Holding Co.	0.85
	ONE Gas, Inc.	0.85
	Southwest Gas Holdings, Inc.	0.95
	Spire Inc.	0.90
	UGI Corp.	1.15
Median		0.90
Arithmetic Mean		0.93

Value Line Investment Survey, November 2024 through January 2025

# **Gas Transmission Industry**

# Industry Capitalization Rate Summary

Industry	Equity Rate	Debt Rate	Market Capitalization	Long-Term Debt	Capitalization Rate
<i>Gas Transmission</i>	15.60%	5.74%	66.90%	33.10%	12.34%

Mergents 2024 Twelve Month Bond Yield Averages

## **2025 Capitalization Rate Study**

### **Gas Transmission Industry Notes**

- From the Natural Gas Diversified Industry segment, National Fuel Gas Company was included as it presented to be primarily engaged in the transportation of natural gas.
- From the Oil/Gas Distribution Industry segment, EnLink Midstream, LLC, Kinder Morgan, Inc., ONEOK, Inc., Targa Resources, TC Energy Corp., and The Williams Companies, Inc. were included as they presented to be primarily engaged in the transportation of natural gas.
- Staff considered capitalization studies submitted by:

K.E. Andrews & Co. – Oil Gas Storage and Transportation: Natural Gas Transmission and & Distribution Industry  
Natural Gas Pipeline Industry Capitalization Rate submitted by B. Nielsen, CPA- Nielsen Management Service, LLC  
Williams- 2025 Cap Rate Presentation
- Staff relied upon the results of the following models and appraisal judgment in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model, Ex-Post and Ex Ante
  3. Earnings/Price Ratio

# Industry Capitalization Rate

Industry	Equity Rate	Market Capitalization	Long Term Debt	Capitalization Rate
Gas Transmission	15.60%	66.90%	33.10%	12.34%

Mergents 2024 Twelve Month Bond Yield Averages



# Industry Equity Rate Summary

## Gas Transmission

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CapM Ex Post Equity Rate	13.95%
CapM Ex Ante Equity Rate	21.59%
DCF (Dividend) Equity Rate	11.73%
DCF (Earnings) Equity Rate	15.12%
Earnings Price Ratio	7.26%

# CapM Equity Rates

Industry	Ex Post Risk Premium b*	Ex Ante Risk Premium c*	Value Line Beta d	Ex Post CapM Equity Rate (((b-4.86%)*d)+4.86%)	Ex Ante CapM Equity Rate (((c-4.86%)*d)+4.86%)
Gas Transmission	12.17%	18.32%	1.24	13.95%	21.59%

b\* Risk Free Rate (4.86%) plus Risk Premium Rate (7.31%)

c\* Risk Free Rate (4.86%) plus Risk Premium Rate (13.46%)

Value Line Investment Survey, November 2024 through January 2025, Kroll Cost of Capital Navigator

# Discounted Cash Flow (Gordon Growth)

Industry	Company	Value Line Strength	Market Capitalization d	Dividend Yield e	Growth Estimate		Equity Rate Dividend (e+f)	Equity Rate Earnings (e+g)
					Dividends f	Earnings g		
Gas Transmission								
	EnLink Midstream, LLC	B+	7,100,000,000	3.40%	4.50%		7.90%	
	Kinder Morgan, Inc.	B++	60,600,000,000	4.20%	6.00%	10.00%	10.20%	14.20%
	National Fuel Gas Company	B++	5,600,000,000	3.40%	3.00%	4.00%	6.40%	7.40%
	ONEOK, Inc.	B++	63,700,000,000	3.70%	4.00%	12.00%	7.70%	15.70%
	Targa Resources	B+	42,500,000,000	1.80%	30.50%	21.00%	32.30%	22.80%
	TC Energy Corporation	A	51,500,000,000	4.80%	5.00%	12.50%	9.80%	17.30%
	Williams Companies, Inc.	B++	69,400,000,000	3.30%	4.50%	10.00%	7.80%	13.30%
Median			51,500,000,000				7.90%	14.95%
Arithmetic Mean			42,914,285,714				11.73%	15.12%

Value Line Investment Survey, November 2024 through January 2025

E/P Ratio

Industry	Company	Value Line Strength	Market Capitalization c	Recent Price d	Projected Earnings e	E/P Ratio (e/d)
Gas Transmission						
	EnLink Midstream, LLC	B+	7,100,000,000	15.47	1.00	6.46%
	Kinder Morgan, Inc.	B++	60,600,000,000	27.27	1.75	6.42%
	National Fuel Gas Company	B++	5,600,000,000	61.47	6.50	10.57%
	ONEOK, Inc.	B++	63,700,000,000	109.04	7.50	6.88%
	Targa Resources	B+	42,500,000,000	194.96	10.00	5.13%
	TC Energy Corporation	A	51,500,000,000	49.59	5.00	10.08%
	Williams Companies, Inc.	B++	69,400,000,000	56.90	3.00	5.27%
Median			51,500,000,000			6.46%
Arithmetic Mean			42,914,285,714			7.26%

Value Line Investment Survey, November 2024 through January 2025

# Capital Structure

Industry	Company	Value Line Strength	Market Capitalization c	Long Term Debt d	Debt/Equity Ratio (d/c)	Percentage Equity (c/(c+d))	Percentage Debt (d/(c+d))
<b>Gas Transmission</b>							
	EnLink Midstream, LLC	B+	7,100,000,000	4,150,000,000	0.58	63.11%	36.89%
	Kinder Morgan, Inc.	B++	60,600,000,000	30,000,000,000	0.50	66.89%	33.11%
	National Fuel Gas Company	B++	5,600,000,000	2,637,100,000	0.47	67.99%	32.01%
	ONEOK, Inc.	B++	63,700,000,000	26,880,000,000	0.42	70.32%	29.68%
	Targa Resources	B+	42,500,000,000	13,601,400,000	0.32	75.76%	24.24%
	TC Energy Corporation	A	51,500,000,000	50,060,500,000	0.97	50.71%	49.29%
	Williams Companies, Inc.	B++	69,400,000,000	24,825,000,000	0.36	73.65%	26.35%
<b>Median</b>			51,500,000,000	24,825,000,000	0.47	67.99%	32.01%
<b>Arithmetic Mean</b>			42,914,285,714	21,736,285,714	0.52	66.92%	33.08%
<b>Weighted Average</b>			56,879,760,320	28,140,875,533		66.90%	33.10%

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Gas Transmission, Selected Comparables		
	EnLink Midstream, LLC	1.50
	Kinder Morgan, Inc.	1.15
	National Fuel Gas Company	0.85
	ONEOK, Inc.	1.50
	Targa Resources	1.55
	TC Energy Corporation	1.05
	Williams Companies, Inc.	1.10
Median		1.15
Arithmetic Mean		1.24

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Gas Transmission, Value Line		
	Antero Midstream Corporation	1.10
	Antero Resources Corporation	1.20
	Cheniere Energy, Inc.	1.00
	CNX Resources Corp.	0.80
	Coterra Energy, Inc.	1.05
	Devon Energy Corp.	1.45
	DT Midstream, Inc.	0.95
	Enbridge, Inc.	0.85
	EnLink Midstream, LLC	1.50
	EOG Resources, Inc.	1.15
	EQT Corporation	1.00
	Kinder Morgan, Inc.	1.15
	Kinetik Holdings, Inc.	1.05
	MDU Resources Group, Inc.,	
	National Fuel Gas Company	0.85
	New Fortress Energy, Inc.	1.30
	ONEOK, Inc.	1.50
	Ovintiv Inc.	1.55
	Pembina Pipeline Corporation	1.05
	Targa Resources	1.55
	TC Energy Corporation	1.05
	Williams Companies, Inc.	1.10
Median		1.10
Arithmetic Mean		1.15

Value Line Investment Survey, November 2024 through January 2025

# **Railroad Industry**



# Industry Capitalization Rate Summary

Industry	Equity Rate	Debt Rate	Market Capitalization	Long-Term Debt	Capitalization Rate
<i>Railroad</i>	13.45%	5.74%	81.68%	18.32%	12.04%

Mergents 2024 Twelve Month Bond Yield Averages

## **2025 Capitalization Rate Study**

### **Railroad Industry Notes**

- For the Railroad Industry segment, Wabtec was excluded as it provides equipment and services to the rail industry. Trinity Industries, Inc. was excluded as they design and manufacture railcars and component parts. GATX Corp. was excluded as they specialize in tank, freight car, and locomotive leasing. The Greenbrier Companies, Inc. was excluded as they design, manufacture, repair, and market railroad freight cars and related equipment.

- Staff considered capitalization studies submitted by:

Union Pacific Railroad Company Cost of Capital Study 2025 Assessment Year

- Staff relied upon the results of the following models and appraisal judgement in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model, Ex-Post and Ex Ante
  3. Earnings/Price Ratio

# Industry Capitalization Rate

Industry	Equity Rate	Market Capitalization	Long Term Debt	Capitalization Rate
Railroad	13.45%	81.68%	18.32%	12.04%

Mergents 2024 Twelve Month Bond Yield Averages

# Industry Equity Rate Summary

## Railroad

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CapM Ex Post Equity Rate	12.02%
CapM Ex Ante Equity Rate	18.05%
DCF (Dividend) Equity Rate	10.08%
DCF (Earnings) Equity Rate	10.58%
Earnings Price Ratio	7.39%

# CapM Equity Rates

Industry	Ex Post Risk Premium b*	Ex Ante Risk Premium c*	Value Line Beta d	Ex Post CapM Equity Rate (((b-4.86%)*d)+4.86%)	Ex Ante CapM Equity Rate (((c-4.86%)*d)+4.86%)
Railroad	12.17%	18.32%	0.98	12.02%	18.05%

b\* Risk Free Rate (4.86%) plus Risk Premium Rate (7.31%)

c\* Risk Free Rate (4.86%) plus Risk Premium Rate (13.46%)

Value Line Investment Survey, November 2024 through January 2025, Kroll Cost of Capital Navigator

# Discounted Cash Flow (Gordon Growth)

Industry	Company	Value Line Strength	Market Capitalization d	Dividend Yield e	Growth Estimate		Equity Rate Dividend (e+f)	Equity Rate Earnings (e+g)
					Dividends f	Earnings g		
Railroad	Canadian National Railway	A+	67,900,000,000	2.40%	8.50%	7.00%	10.90%	9.40%
	Canadian Pacific Kansas City, LTD	A	72,900,000,000	1.00%	9.00%	8.00%	10.00%	9.00%
	CSX Corporation	A	64,300,000,000	1.50%	12.50%	9.00%	14.00%	10.50%
	Norfolk Southern Corp.	A+	56,000,000,000	2.20%	5.00%	11.50%	7.20%	13.70%
	Union Pacific Corporation	A+	139,400,000,000	2.30%	6.00%	8.00%	8.30%	10.30%
Median			67,900,000,000				10.00%	10.30%
Arithmetic Mean			80,100,000,000				10.08%	10.58%

Value Line Investment Survey, November 2024 through January 2025

# E/P Ratio

Industry	Company	Value Line Strength	Market Capitalization c	Recent Price d	Projected Earnings e	E/P Ratio (e/d)
Railroad	Canadian National Railway	A+	67,900,000,000	108.00	9.00	8.33%
	Canadian Pacific Kansas City, LTD	A	72,900,000,000	78.11	4.50	5.76%
	CSX Corporation	A	64,300,000,000	33.36	2.75	8.24%
	Norfolk Southern Corp.	A+	56,000,000,000	247.59	19.50	7.88%
	Union Pacific Corporation	A+	139,400,000,000	229.91	15.50	6.74%
Median			67,900,000,000			7.88%
Arithmetic Mean			80,100,000,000			7.39%

Value Line Investment Survey, November 2024 through January 2025

# Capital Structure

Industry	Company	Value Line Strength	Market Capitalization c	Long Term Debt d	Debt/Equity Ratio (d/c)	Percentage Equity (c/(c+d))	Percentage Debt (d/(c+d))
Railroad							
	Canadian National Railway	A+	67,900,000,000	13,763,000,000	0.20	83.15%	16.85%
	Canadian Pacific Kansas City, LTD	A	72,900,000,000	13,830,000,000	0.19	84.05%	15.95%
	CSX Corporation	A	64,300,000,000	18,535,000,000	0.29	77.62%	22.38%
	Norfolk Southern Corp.	A+	56,000,000,000	16,644,000,000	0.30	77.09%	22.91%
	Union Pacific Corporation	A+	139,400,000,000	29,761,000,000	0.21	82.41%	17.59%
Median			67,900,000,000	16,644,000,000	0.21	82.41%	17.59%
Arithmetic Mean			80,100,000,000	18,506,600,000	0.24	80.86%	19.14%
Weighted Average			91,454,856,429	20,512,515,855		81.68%	18.32%

Value Line Investment Survey, November 2024 through January 2025



# Beta

Industry	Company	Value Line Levered Beta
Railroad, Selected Comparables		
	Canadian National Railway	0.90
	Canadian Pacific Kansas City, LTD	0.95
	CSX Corporation	1.00
	Norfolk Southern Corp.	1.05
	Union Pacific Corporation	1.00
Median		1.00
Arithmetic Mean		0.98

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Railroad, Value Line	Canadian National Railway	0.90
	Canadian Pacific Kansas City, LTD	0.95
	CSX Corporation	1.00
	GATX Corp.	0.95
	Norfolk Southern Corp.	1.05
	The Greenbrier Companies, Inc.	1.25
	Trinity Industries, Inc.	1.05
	Union Pacific Corporation	1.00
	Wabtec	1.25
Median		1.00
Arithmetic Mean		1.04

Value Line Investment Survey, November 2024 through January 2025

# **Telecommunication Industry**

# Industry Capitalization Rate Summary

Industry	Equity Rate	Debt Rate	Market Capitalization	Long-Term Debt	Capitalization Rate
Telecommunication	13.30%	5.74%	67.59%	32.41%	10.85%

Mergents 2024 Twelve Month Bond Yield Averages

## **2025 Capitalization Rate Study**

### **Telecommunication Industry Notes**

- From the Telecommunication Services segment, American Movil, S.A.B. de C.V., Deutsche Telecom AG, Telefonica, S.A., TELUS Corporation, Vodafone Group Plc, Liberty Latin America Ltd., Millicom International Cellular S.A., Rogers Communications, and BCE Inc. were excluded as being heavily involved in non-domestic operations. Zoom Video Communications, Inc. was excluded as they offer value-added, tandem chat, and online webinars. Frontier Communications Parent, Inc., IHS Holding Ltd., and AST Space Mobile Inc. were excluded due to a lack of sufficient financial information and data. Gogo Inc. was excluded as being a global provider of broadband connectivity services for the aviation market. Verint Systems Inc., Twilio Incorporated, Ring Central, Inc., Nice Ltd., and Five9, Inc. were excluded as its offerings principally focused on cloud based technologies and cloud based software platforms to prospective customers.
- Staff considered capitalization studies and/or information submitted by:
  - Hal Heaton, PhD. – The Cost of Capital for AT&T ILEC Telephone Operating Property (2025)
  - Hal Heaton, PhD. – The Cost of Capital for AT&T Mobility Operating Property (2025)
- Staff Relied upon the results of the following models and appraisal judgement in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model, Ex-Post and Ex-Ante
  3. Earnings/Price Ratio

# Industry Capitalization Rate

Industry	Equity Rate	Market Capitalization	Long Term Debt	Capitalization Rate
Telecommunication	13.30%	67.59%	32.41%	10.85%

Mergents 2024 Twelve Month Bond Yield Averages

# Industry Equity Rate Summary

## Telecommunication

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CapM Ex Post Equity Rate	11.53%
CapM Ex Ante Equity Rate	17.14%
DCF (Dividend) Equity Rate	14.28%
DCF (Earnings) Equity Rate	17.82%
Earnings Price Ratio	6.16%

# CapM Equity Rates

Industry	Ex Post Risk Premium b*	Ex Ante Risk Premium c*	Value Line Beta d	Ex Post CapM Equity Rate (((b-4.86%)*d)+4.86%)	Ex Ante CapM Equity Rate (((c-4.86%)*d)+4.86%)
Telecommunication	12.17%	18.32%	0.91	11.53%	17.14%

b\* Risk Free Rate (4.86%) plus Risk Premium Rate (7.31%)

c\* Risk Free Rate (4.86%) plus Risk Premium Rate (13.46%)

Value Line Investment Survey, November 2024 through January 2025, Kroll Cost of Capital Navigator



## Discounted Cash Flow (Gordon Growth)

Industry	Company	Value Line Strength	Market Capitalization d	Dividend Yield e	Growth Estimate		Equity Rate Dividend (e+f)	Equity Rate Earnings (e+g)
					Dividends f	Earnings g		
Telecommunication	AT&T Inc.	B++	166,000,000,000	4.80%	-3.50%	4.00%		8.80%
	Cogent Communications Holdings, Inc.	B+	4,100,000,000	4.90%	4.50%		9.40%	
	EchoStar Corporation	C+	6,600,000,000					
	IDT Corporation	B+	1,300,000,000	0.40%		12.00%		12.40%
	Iridium Communications Inc.	B	3,400,000,000	1.80%	24.50%		26.30%	
	Lumen Technologies, Inc.	C+	7,900,000,000			-8.50%		
	Shenandoah Telecommunications Company	B+	750,000,000	0.70%	12.00%	39.00%	12.70%	39.70%
	Telephone & Data Systems, Inc.	B+	3,800,000,000	0.50%	2.50%	0.50%		
	T-Mobile US, Inc.	A	278,000,000,000	1.50%		20.00%		21.50%
	U.S. Cellular	B+	5,500,000,000			3.50%		
	Verizon Communications	A+	185,000,000,000	6.20%	2.50%	0.50%	8.70%	6.70%
	Viasat, Inc.	B	1,200,000,000					
Median			4,800,000,000				11.05%	12.40%
Arithmetic Mean			55,295,833,333				14.28%	17.82%

Value Line Investment Survey, November 2024 through January 2025

# E/P Ratio

Industry	Company	Value Line Strength	Market Capitalization c	Recent Price d	Projected Earnings e	E/P Ratio (e/d)
Telecommunication						
	AT&T Inc.	B++	166,000,000,000	23.10	3.40	14.72%
	Cogent Communications Holdings, Inc.	B+	4,100,000,000	83.02	1.00	1.20%
	EchoStar Corporation	C+	6,600,000,000	24.41	1.25	5.12%
	IDT Corporation	B+	1,300,000,000	51.16	2.75	5.38%
	Iridium Communications Inc.	B	3,400,000,000	29.99	2.35	7.84%
	Lumen Technologies, Inc.	C+	7,900,000,000	7.78	0.45	5.78%
	Shenandoah Telecommunications Company	B+	750,000,000	13.40	0.55	4.10%
	Telephone & Data Systems, Inc.	B+	3,800,000,000	33.35	1.00	3.00%
	T-Mobile US, Inc.	A	278,000,000,000	239.94	18.25	7.61%
	U.S. Cellular	B+	5,500,000,000	63.83	2.00	3.13%
	Verizon Communications	A+	185,000,000,000	43.98	5.25	11.94%
	Viasat, Inc.	B	1,200,000,000	9.71	0.40	4.12%
Median			4,800,000,000			5.25%
Arithmetic Mean			55,295,833,333			6.16%

Value Line Investment Survey, November 2024 through January 2025

# Capital Structure

Industry	Company	Value Line Strength	Market Capitalization c	Long Term Debt d	Debt/Equity Ratio (d/c)	Percentage Equity (c/(c+d))	Percentage Debt (d/(c+d))
<b>Telecommunication</b>							
	AT&T Inc.	B++	166,000,000,000	126,375,000,000	0.76	56.78%	43.22%
	Cogent Communications Holdings, Inc.	B+	4,100,000,000	1,698,900,000	0.41	70.70%	29.30%
	EchoStar Corporation	C+	6,600,000,000	21,600,000,000	3.27	23.40%	76.60%
	IDT Corporation	B+	1,300,000,000	0		100.00%	0.00%
	Iridium Communications Inc.	B	3,400,000,000	1,776,500,000	0.52	65.68%	34.32%
	Lumen Technologies, Inc.	C+	7,900,000,000	18,142,000,000	2.30	30.34%	69.66%
	Shenandoah Telecommunications Company	B+	750,000,000	335,900,000	0.45	69.07%	30.93%
	Telephone & Data Systems, Inc.	B+	3,800,000,000	4,097,000,000	1.08	48.12%	51.88%
	T-Mobile US, Inc.	A	278,000,000,000	77,714,000,000	0.28	78.15%	21.85%
	U.S. Cellular	B+	5,500,000,000	2,882,000,000	0.52	65.62%	34.38%
	Verizon Communications	A+	185,000,000,000	128,878,000,000	0.70	58.94%	41.06%
	Viasat, Inc.	B	1,200,000,000	6,404,900,000	5.34	15.78%	84.22%
<b>Median</b>			4,800,000,000	5,250,950,000	0.61	62.28%	37.72%
<b>Arithmetic Mean</b>			55,295,833,333	32,492,016,667	1.30	56.88%	43.12%
<b>Weighted Average</b>			209,852,644,865	100,615,502,667		67.59%	32.41%

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Telecommunication, Selected Comparables		
	AT&T Inc.	0.80
	Cogent Communications Holdings, Inc.	0.85
	EchoStar Corporation	0.90
	IDT Corporation	0.95
	Iridium Communications Inc.	1.05
	Lumen Technologies, Inc.	1.15
	Shenandoah Telecommunications Company	0.85
	Telephone & Data Systems, Inc.	0.95
	T-Mobile US, Inc.	0.75
	U.S. Cellular	0.65
	Verizon Communications	0.65
	Viasat, Inc.	1.40
Median		0.88
Arithmetic Mean		0.91

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Telecommunication, Value Line	American Movil, S.A.B. de C.V.	0.85
	AST SpaceMobile Inc.	1.80
	AT&T Inc.	0.80
	BCE Inc	0.90
	Cogent Communications Holdings, Inc.	0.85
	Deutsche Telekom AG	0.85
	EchoStar Corporation	0.90
	Five9, Inc.	1.00
	Frontier Communications Parent, Inc.	1.35
	Gogo Inc.	0.85
	IDT Corporation	0.95
	IHS Holding Ltd.	1.45
	Iridium Communications Inc.	1.05
	Liberty Latin America Ltd.	1.10
	Lumen Technologies, Inc.	1.15
	Millicom International Cellular SA	1.25
	Nice Ltd.	0.90
	RingCentral, Inc.	1.15
	Rogers Communications	0.80
	Shenandoah Telecommunications Company	0.85
	Telefonica, S.A.	0.85
	Telephone & Data Systems, Inc.	0.95
	TELUS Corporation	0.70
	T-Mobile US, Inc.	0.75
	Twilio Incorporated	1.10
	U.S. Cellular	0.65
	Verint Systems Inc.	0.95
	Verizon Communications	0.65
	Viasat, Inc.	1.40
	Vodafone Group Plc	0.95

	Zoom Communications, Inc.	0.55
Median		0.90
Arithmetic Mean		0.98

Value Line Investment Survey, November 2024 through January 2025

# **Water Industry**

# Industry Capitalization Rate Summary

Industry	Equity Rate	Debt Rate	Market Capitalization	Long-Term Debt	Capitalization Rate
Water	11.30%	5.76%	65.00%	35.00%	9.36%

Mergents 2024 Twelve Month Bond Yield Averages



## **2025 Capitalization Rate Study**

### **Water Industry Notes**

- Recognizing the Water industry segment from Value Line.

- Staff considered capitalization studies submitted by:

No Submissions

- Staff relied upon the results of the following models and appraisal judgment in the development of equity rates:
  1. Discounted Cash Flow
  2. Capital Asset Pricing Model, Ex-Post and Ex Ante
  3. Earnings/Price Ratio

# Industry Capitalization Rate

Industry	Equity Rate	Market Capitalization	Long Term Debt	Capitalization Rate
Water	11.30%	65.00%	35.00%	9.36%

Mergents 2024 Twelve Month Bond Yield Averages

# Industry Equity Rate Summary

Water

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CapM Ex Post Equity Rate	11.13%
CapM Ex Ante Equity Rate	16.41%
DCF (Dividend) Equity Rate	9.58%
DCF (Earnings) Equity Rate	10.34%
Earnings Price Ratio	6.35%

# CapM Equity Rates

Industry	Ex Post Risk Premium b*	Ex Ante Risk Premium c*	Value Line Beta d	Ex Post CapM Equity Rate (((b-4.86%)*d)+4.86%)	Ex Ante CapM Equity Rate (((c-4.86%)*d)+4.86%)
Water	12.17%	18.32%	0.86	11.13%	16.41%

b\* Risk Free Rate (4.86%) plus Risk Premium Rate (7.31%)

c\* Risk Free Rate (4.86%) plus Risk Premium Rate (13.46%)

Value Line Investment Survey, November 2024 through January 2025, Kroll Cost of Capital Navigator

# Discounted Cash Flow (Gordon Growth)

Industry	Company	Value Line Strength	Market Capitalization d	Dividend Yield e	Growth Estimate		Equity Rate Dividend (e+f)	Equity Rate Earnings (e+g)
					Dividends f	Earnings g		
Water	American States Water Co.	A	3,000,000,000	2.50%	8.50%	6.50%	11.00%	9.00%
	American Water Works Company, Inc.	A	24,500,000,000	2.60%	8.50%	4.50%	11.10%	7.10%
	California Water Service Group	B++	2,700,000,000	2.50%	6.00%	13.00%	8.50%	15.50%
	Essential Utilities, Inc.	A	10,000,000,000	3.70%	8.00%	7.00%	11.70%	10.70%
	MiddleSex Water Company	A	950,000,000	2.40%	5.00%	7.00%	7.40%	9.40%
	SJW Group	B++	1,600,000,000	3.30%	4.50%	0.70%	7.80%	
Median			2,850,000,000				9.75%	9.40%
Arithmetic Mean			7,125,000,000				9.58%	10.34%

Value Line Investment Survey, November 2024 through January 2025

# E/P Ratio

Industry	Company	Value Line Strength	Market Capitalization c	Recent Price d	Projected Earnings e	E/P Ratio (e/d)
Water	American States Water Co.	A	3,000,000,000	78.34	3.90	4.98%
	American Water Works Company, Inc.	A	24,500,000,000	125.98	7.00	5.56%
	California Water Service Group	B++	2,700,000,000	45.47	3.25	7.15%
	Essential Utilities, Inc.	A	10,000,000,000	36.25	2.65	7.31%
	MiddleSex Water Company	A	950,000,000	53.66	3.15	5.87%
	SJW Group	B++	1,600,000,000	49.07	3.55	7.23%
Median			2,850,000,000			6.51%
Arithmetic Mean			7,125,000,000			6.35%

Value Line Investment Survey, November 2024 through January 2025

# Capital Structure

Industry	Company	Value Line Strength	Market Capitalization c	Long Term Debt d	Debt/Equity Ratio (d/c)	Percentage Equity (c/(c+d))	Percentage Debt (d/(c+d))
<b>Water</b>							
	American States Water Co.	A	3,000,000,000	640,200,000	0.21	82.41%	17.59%
	American Water Works Company, Inc.	A	24,500,000,000	12,533,000,000	0.51	66.16%	33.84%
	California Water Service Group	B++	2,700,000,000	1,051,600,000	0.39	71.97%	28.03%
	Essential Utilities, Inc.	A	10,000,000,000	7,279,000,000	0.73	57.87%	42.13%
	MiddleSex Water Company	A	950,000,000	352,300,000	0.37	72.95%	27.05%
	SJW Group	B++	1,600,000,000	1,673,700,000	1.05	48.87%	51.13%
<b>Median</b>			2,850,000,000	1,362,650,000	0.45	69.06%	30.94%
<b>Arithmetic Mean</b>			7,125,000,000	3,921,633,333	0.54	66.71%	33.29%
<b>Weighted Average</b>			16,842,163,743	9,067,158,480		65.00%	35.00%

Value Line Investment Survey, November 2024 through January 2025

# Beta

Industry	Company	Value Line Levered Beta
Water, Selected Comparables		
	American States Water Co.	0.75
	American Water Works Company, Inc.	1.00
	California Water Service Group	0.75
	Essential Utilities, Inc.	1.00
	MiddleSex Water Company	0.80
	SJW Group	0.85
Median		0.83
Arithmetic Mean		0.86

Value Line Investment Survey, November 2024 through January 2025



# Beta

Industry	Company	Value Line Levered Beta
Water, Value Line		
	American States Water Co.	0.75
	American Water Works Company, Inc.	1.00
	California Water Service Group	0.75
	Essential Utilities, Inc.	1.00
	MiddleSex Water Company	0.80
	SJW Group	0.85
Median		0.83
Arithmetic Mean		0.86

Value Line Investment Survey, November 2024 through January 2025

# Mergents 2024 Corporate Bond Yield Averages

Month	Corporate by Groups		Public Utility Bonds			Industrial Bonds			
	Public Utility	Industrial	Aa	A	Baa	Aaa	Aa	A	Baa
January	5.51%	5.14%	5.34%	5.48%	5.73%	4.87%	4.91%	5.14%	5.62%
February	5.59%	5.28%	5.42%	5.56%	5.79%	5.03%	5.08%	5.29%	5.74%
March	5.59%	5.28%	5.43%	5.55%	5.79%	5.01%	5.09%	5.28%	5.72%
April	5.83%	5.53%	5.67%	5.79%	6.01%	5.28%	5.32%	5.54%	5.99%
May	5.78%	5.49%	5.62%	5.74%	5.97%	5.25%	5.28%	5.50%	5.92%
June	5.65%	5.37%	5.50%	5.61%	5.84%	5.13%	5.18%	5.38%	5.80%
July	5.68%	5.39%	5.54%	5.64%	5.85%	5.12%	5.21%	5.40%	5.82%
August	5.42%	5.15%	5.27%	5.38%	5.61%	4.87%	4.97%	5.18%	5.59%
September	5.23%	4.97%	5.09%	5.20%	5.41%	4.68%	4.79%	5.00%	5.42%
October	5.44%	5.23%	5.29%	5.41%	5.61%	4.95%	5.05%	5.24%	5.65%
November	5.58%	5.40%	5.43%	5.55%	5.75%	5.14%	5.23%	5.43%	5.80%
December	5.60%	5.44%	5.45%	5.58%	5.77%	5.20%	5.28%	5.47%	5.83%
	5.58%	5.31%	5.42%	5.54%	5.76%	5.04%	5.12%	5.32%	5.74%