

2020 State Assessed Property Spring Forum

March 11, 2020



Disclaimer

This presentation is for educational purposes only and does not provide tax advice. It is meant to accompany an oral presentation and not to be used as a standalone document.

This presentation is based on the facts and circumstances being discussed, and on the laws in effect when it is presented. It does not supersede or alter any provisions of Minnesota laws, administrative rules, court cases, or revenue notices.

If you have any questions, contact us at sa.property@state.mn.us or 651-556-6119, or consult a tax professional.

Agenda

- Department's Draft Capitalization Study
- Opportunity for Public Comments

Capitalization Rate Study and Methodologies

Holly Soderbeck and Paul Winghart

Band of Investment Method

	Capital Structure	×	Market Rate	=	Weighted Rate
Debt	50%	×	6%	=	3%
Equity	50%	×	10%	=	5%
Combined Rate				=	8%

Beginning on page 1 of Draft Study

Market Segments

- Electric
- Gas Distribution
- Gas Transmission Pipeline
- Fluid Transportation Pipeline
- Railroad (Class I and Other)

Beginning on page 1 of Draft Study

Market News

- Risk-free rate decreased from 2.97% to 2.33%
- S&P 500 gained more than 28%
- U.S. corporate debt is almost \$10 trillion
- Dividend net increases up 44.2%

Beginning on page 3 of Draft Study

Yield Rate

$$\text{Value} = \frac{\text{Net Operating Income or Net Railway Operating Income}}{\text{Yield Rate}}$$

Beginning on page 6 of Draft Study

Guideline Company Selection

Considerations:

- Value Line industries
- Standard industrial classification codes
- Location
- Business segments
- Recent or current mergers/acquisitions
- Recent initial public offering

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Market Rate of Equity

Capital Asset Pricing Model:

Rate of Equity = (Equity Risk Premium x Beta) + Risk-Free Rate

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Market Rate of Equity

Dividend Growth Model:

Rate of Equity = Dividend Yield + Growth Estimate

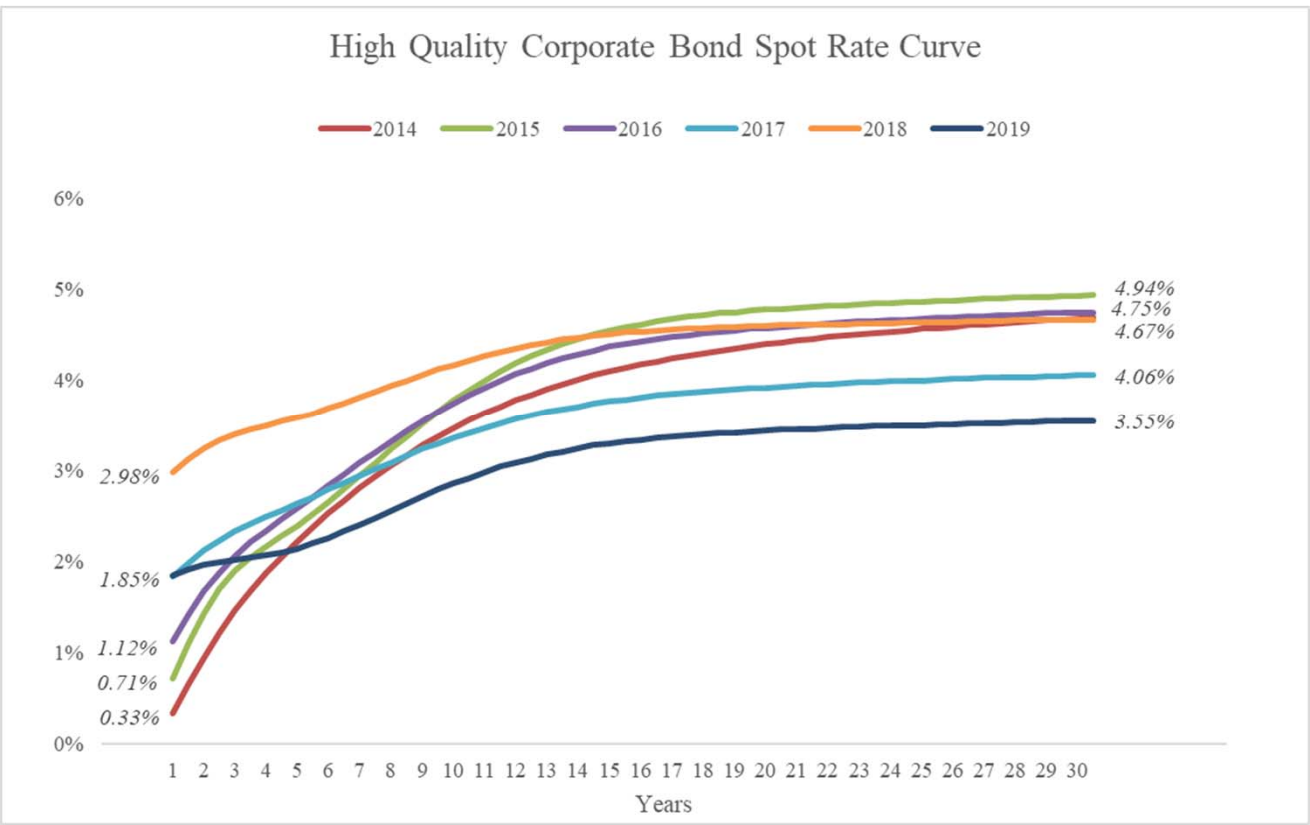
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Market Rate of Debt

Yield to Maturity

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History of the HQM



HQM & OTP In Action

Maturity / Year	High Quality Corporate Bond Spot Curve			Otter Tail Power Inc.'s Cost of Debt
10yr or 2026	2016	Oct	3.21%	3.55%
	2016	Nov	3.58%	
	2016	Dec	3.84%	
30yr or 2048	2017	Dec	4.06%	4.07%
	2018	Jan	4.11%	
	2018	Feb	4.31%	
20yr or 2039	2019	Sep	3.48%	3.52%
	2019	Oct	3.49%	
	2019	Nov	3.51%	
<ul style="list-style-type: none"> • <i>OTP's issuance of \$80.0 million of our 3.55% Guaranteed Senior Note due 12/15/2026</i> • <i>OTP's issuance of \$100 million in privately placed 4.07% Senior Unsecured Notes due 02/07/2048</i> • <i>OTP's issuance of \$26.0 million in privately placed 3.52% Series B Senior Unsecured Notes due 10/10/2039</i> <p>All bullets points taken from OTP's 10-K www.sec.gov</p>				

Market Rate of Preferred Stock

Direct Rate

$$\text{Value} = \frac{\text{Net Operating Income or Net Railway Operating Income}}{\text{Direct Rate}}$$

Beginning on page 25 of Draft Study

Guideline Companies

Beginning on page 26 of Draft Study

Equity Component

$$\text{Indicated Equity Component} = \frac{1}{\text{Price to Earnings Ratio}}$$

Debt Component

Yield to Maturity

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Other

- Flotation Costs
- Company-Specific Risk
- Illiquidity

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Growth

- Short-term growth
- Long-term growth
- Inflation

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Comments Welcome

You can provide your comments by emailing us at sa.property@state.mn.us by March 28.

Provide comments during this forum.

State Assessed Property Spring Forum

Thank you for attending this forum!

Looking Forward to the 2021 Study

- U.S. Department of the Treasury plans to issue 20 year bonds during 2020
- Genesee & Wyoming no longer publicly traded
- Multi-stage Dividend Growth Model
- Sources for Equity Risk Premium

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Questions

Contact us at sa.property@state.mn.us

Appendices

- Appendix A – Electric
- Appendix B – Gas Distribution
- Appendix C – Gas Transmission Pipeline
- Appendix D – Fluid Transportation Pipeline
- Appendix E – Class I Railroads and Other Railroads
- Appendix F – Ex Ante Calculations
- Appendix G – Debt Analysis and Background Data
- Appendix H – Guideline Company Selection

Additional Sections Added in Final Study

- Market-to-Book Ratio Analysis
- Appendix I – Summary of Data Points from Other Studies

Data

Summary of Rates Derived in Study

Market Segments	Yield Rate	Direct Rate	Implied Growth Rate	Short-Term Growth Rate	Long-Term Real Growth Rate	Long-Term Implied Inflation Rate
Electric	6.11%	4.25%	1.86%	5.50%	1.90%	2.00%
Gas Distribution	6.78%	4.34%	2.44%	6.00%	1.90%	2.00%
Gas Transmission	12.10%	4.70%	7.40%	10.25%	1.90%	2.00%
Fluid Transportation	10.56%	6.76%	3.80%	7.86%	1.90%	2.00%
Class I Railroads	10.30%	4.94%	5.36%	10.22%	1.90%	2.00%
Other Railroads	10.47%	4.28%	6.19%	8.04%	1.90%	2.00%

Summary of Rates Derived in Study

Market Segments Yield Rates	2020 AY	2019 AY	2018 AY	2017 AY
Electric	6.11%	7.20%	6.92%	7.13%
Gas Distribution	6.78%	7.37%	7.01%	6.81%
Gas Transmission	12.10%	12.14%	8.77%	8.96%
Fluid Transportation	10.56%	12.45%	9.50%	10.08%
Class I Railroads	10.30%	10.73%	9.30%	9.16%
Other Railroads	10.47%	10.77%	9.73%	9.78%

Guideline Company Selection

Electric

Added

CenterPoint Energy Inc.

Guideline Company Selection

Gas Distribution

New

Black Hills Corp. (80%)
CenterPoint Energy Inc. (63%)
CMS Energy Corp. (50%)
MGE Energy Corp. (50%)
WEC Energy Group (64%)

Removed

Chesapeake Utilities Corp.
Northwest Natural Holding Co.

Guideline Company Selection

Gas Transmission Pipeline

New

Enbridge Inc.

Guideline Company Selection

Fluid Transportation Pipeline

New

NuStar Energy LP

Removed

Buckeye Partners LP

MPLX LP

Guideline Company Selection

Railroad – Class I and Other

Genesee & Wyoming

Capitalization Rate Inputs

2020 vs. 2019 Capital Structure

Capital Structure	2020 AY		2019 AY	
	Debt	Equity	Debt	Equity
Electric	34%	66%	34%	66%
Gas Distribution	34%	66%	27%	73%
Gas Transmission Pipeline	39%	61%	38%	62%
Fluid Transportation Pipeline	38%	62%	34%	66%
Railroad, Class I	17%	83%	17%	83%
Railroad, Others	25%	75%	33%	66%

Capitalization Rate Inputs

2020 vs. 2019 Cost of Debt

Cost of Debt	2020 AY	2019 AY
Electric	3.79%	4.59%
Gas Distribution	3.94%	4.69%
Gas Transmission Pipeline	3.99%	4.29%
Fluid Transportation Pipeline	4.53%	4.64%
Railroad, Class I	3.45%	4.60%
Railroad, Others	4.75%	4.78%

Cost of Equity

Capital Asset Pricing Model (CAPM)

(Equity Risk Premium x Market Segment Beta) + Risk Free Rate

CAPM Inputs

2020 vs. 2019 Risk Free Rate

Risk-free rate	2020 AY	2019 AY
Market yield on U.S. Treasury Securities at 30-year	2.33%	2.97%

CAPM Inputs

2020 vs. 2019 Betas

Betas	2020 AY	2019 AY
Electric	0.60	0.61
Gas Distribution	0.65	0.65
Gas Transmission Pipeline	1.35	1.51
Fluid Transportation Pipeline	1.17	1.25
Railroad, Class I	1.15	1.13
Railroad, Others	1.35	1.50

CAPM Inputs

2020 vs. 2019 Equity Risk Premium

Equity Risk Premium	2020 AY	2019 AY
Ex Post	6.91%	6.91%
Supply Side	6.14%	6.14%
Dr. Damodaran's	5.20%	5.96%
Ex Ante	5.12%	5.83%
Duff & Phelps*	5.00%	5.50%
Duke CFO Global Business Outlook Survey	4.99%	4.42%
Fernandez, Martinez & Acin	5.60%	5.40%

Dividend Growth Model (DGM)

Dividend Yield + Projected Market Segment Growth

2020 vs. 2019 Median Growth Rates

Growth Rates from Value Line Investment Survey	2020 AY (Median)	2019 AY (Median)
	Earnings	Earnings
Electric	5.50%	6.50%
Gas Distribution	7.25%	9.50%
Gas Transmission Pipeline	17.00%	22.50%
Fluid Transportation Pipeline	9.50%	20.50%
Railroad (Class I & Other)	13.25%	11.50%

2020 vs. 2019 Dividend Yields

Dividend Yield	2020 AY	2019 AY
Electric	3.00%	3.20%
Gas Distribution	2.85%	2.60%
Gas Transmission Pipeline	5.90%	5.40%
Fluid Transportation Pipeline	8.60%	7.10%
Railroad (Class I & Other)	1.30%	1.70%

Cost of Equity

2020 vs. 2019 Cost of Equity

Cost of Equity	2020 AY	2019 AY
Electric	7.30%	8.54%
Gas Distribution	8.24%	8.36%
Gas Transmission Pipeline	17.28%	15.50%
Fluid Transportation Pipeline	14.26%	15.80%
Railroad, Class I	11.70%	12.17%
Railroad, Others	12.38%	13.34%

Yield Rates

2020 vs. 2019 Yield Rate

Yield Rate	2020 AY	2019 AY
Electric	6.11%	7.20%
Gas Distribution	6.78%	7.37%
Gas Transmission Pipeline	12.10%	12.14%
Fluid Transportation Pipeline	10.56%	12.45%
Class I Railroads	10.30%	10.73%
Other Railroads	10.47%	10.77%



Questions?

sa.property@state.mn.us

Public Comments

Thank you!

State Assessed Property Section

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