

INTRODUCTION TO CAPITAL STRUCTURE & LIABILITY MANAGEMENT

INTRODUCTION TO PUBLIC UTILITY ACCOUNTING

PRESENTED TO
AGA and EEI

PRESENTED BY
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THE **Brattle** GROUP

Agenda

- Components of Capital Structure
 - Equity, Debt, and Hybrid instruments
 - Rate base and return on capital
- Credit Ratings
 - Credit ratings and credit rating agencies
 - How credit ratings are determined
 - Interaction with regulation
 - Impact of Tax Cuts and JOBS Act of 2017
- Liability Management and Interest Rate Derivatives
 - Derivatives
 - Managing risk
- Question?
- Additional Resources

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Components of Capital Structure

1. Equity: Equity owners are residual claimants and thus has both upside and downside potential

- From an accounting perspective it is the difference between Total Assets and Total Liabilities

2. Preferred Equity: A hybrid security that has characteristics of both debt and equity—usually classified as (part) equity

- 1 & 2 are reported under Proprietary Capital on FERC Form 1 (electric) and FERC Form 2 (gas pipes)

3. Debt: Debtor promises to repay principal and make interest payments; no upside potential, but preferential treatment in bankruptcy

Electric and Gas Utilities Capital Structure

Book Value

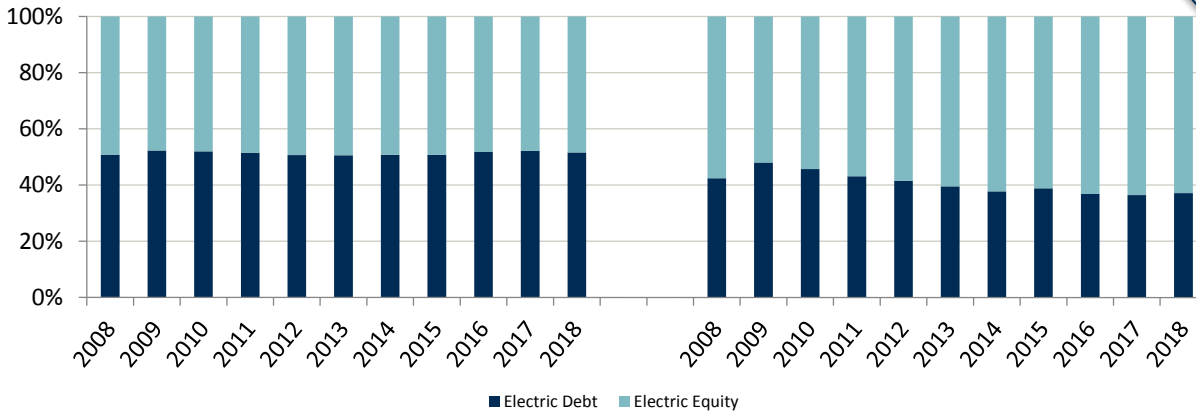
Market Value



Electric Utilities Capital Structure

Book Value: relatively constant
 2017-18: 48% equity
 Market Value: declining debt
 2017-18: 63% equity

42 utilities included (declining #)



Gas Utilities Capital Structure

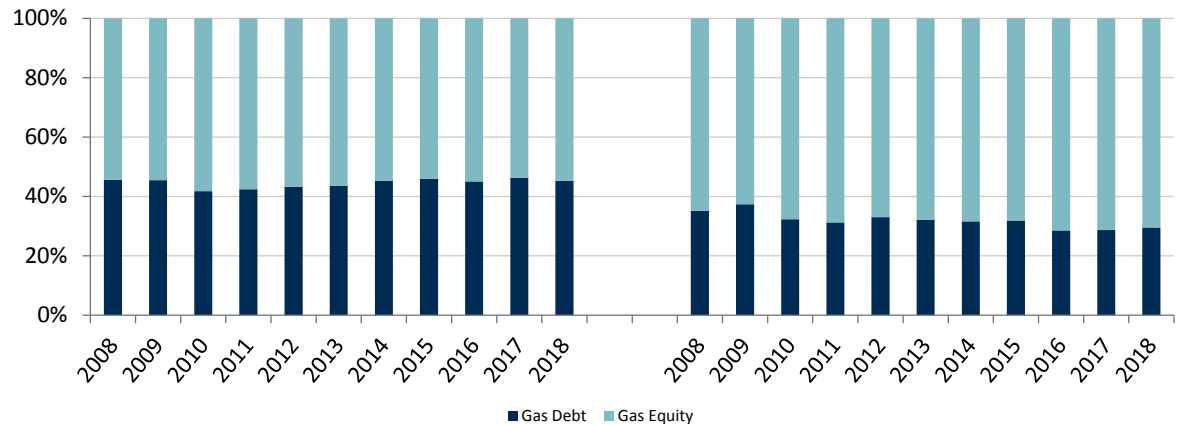


Book Value: relatively constant
 2017-18: 54% equity
 Market Value: declining debt
 2017-18: 70-71% equity
 M&A impacts results in recent years

11 utilities included (declining #)

Book Value

Market Value



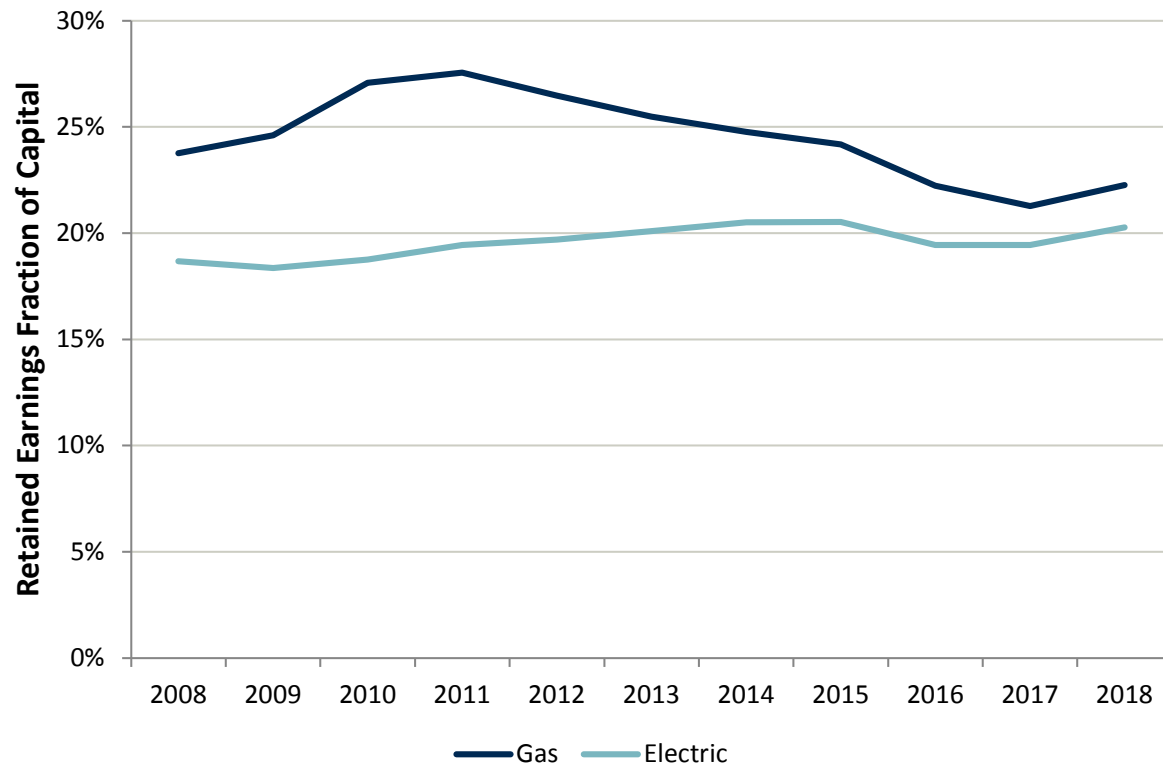
Types of Equity

- Contributed capital: Amounts directly contributed by owners
 - Common Stock: Shares at par value (usually very low, sometimes zero)
 - Paid-in Capital: Additional amounts paid by investors

- Generated internally:
 - Retained Earnings: accumulated net income that has not been distributed as dividends
 - Treasury Stock: The cost of the company's own shares that have been repurchased (reduces equity and shares outstanding)
 - Other comprehensive income: Can be positive or negative and capture items that affect income but that are not flown through the income statements (e.g., changes in pension plans and some derivatives)

Capital Structure: Internally Generated Funding

Retained earnings finance 20% of electric utilities and 22% of natural gas utilities capital. Other capital is raised from investors in capital markets.



Types of Debt

■ Short-term Debt

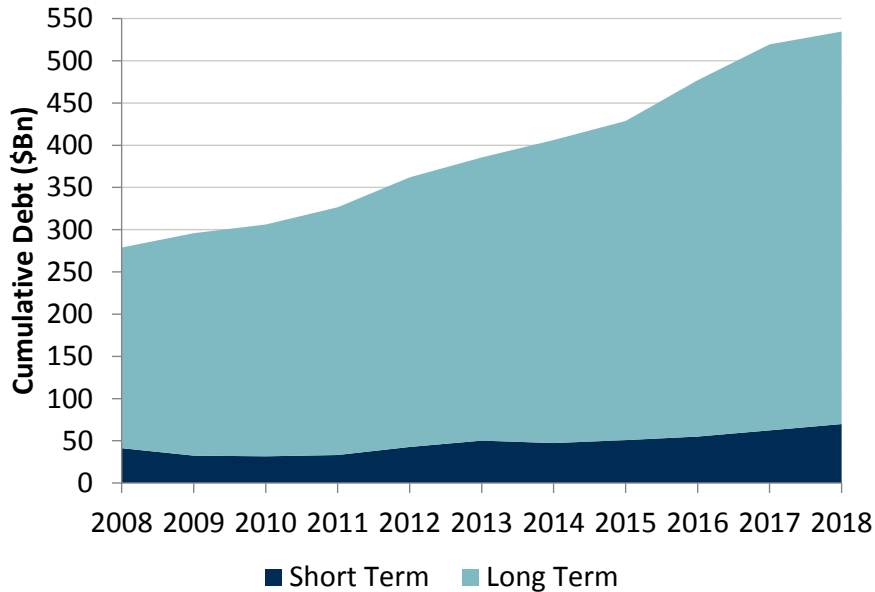
- Commercial paper: unsecured, short-term debt instrument (often used to finance accounts receivable, inventories and meeting short-term liabilities). Maturities are rarely above 270 days.
- Notes payable: Formal promise to pay; *e.g.*, bank loans

■ Long-term Debt

- Secured
 - *E.g.*, mortgage bonds secured by assets—real estate
- Unsecured
 - Bonds, debentures

Short-term Versus Long-term Debt

Electric Industry Debt



The electric industry has a low proportion of short term debt

Range: 1% to 24%

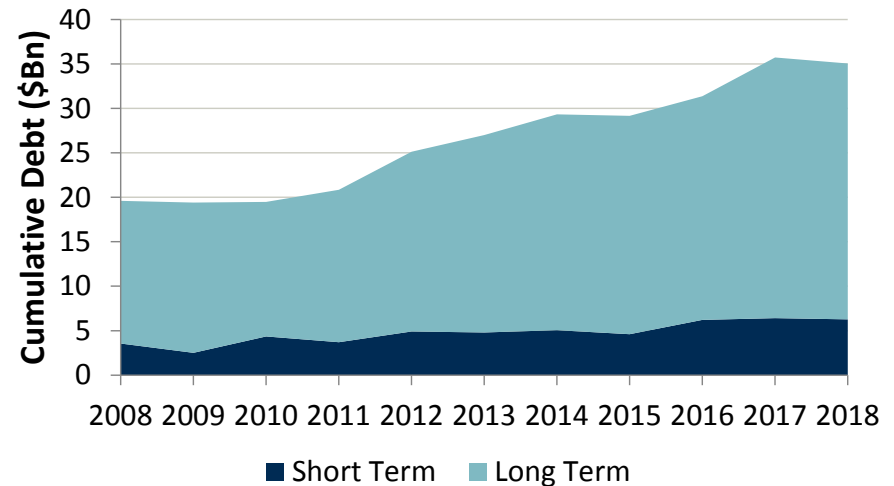
Average: 12% for 2018

The natural gas industry has a higher proportion of short-term debt but actual figures are changing due to mergers (companies are disappearing)

Range: 2% to 52%

Average: 18% for 2018

Gas Industry Debt



Other Long-Term Liabilities

- Leases
- Power purchase agreements (PPAs)
- Pension and post-retirement obligations
- Asset retirement obligations
- Deferred taxes
- Misc. legal or regulatory liabilities

While not part of the capital structure, the magnitude and composition affect investor perception, credit ratings and liability management

- Credit rating agencies may impute debt from leases, PPAs, pension and post-retirement obligations.

Some regulators also consider one or more of these items

- Most regulators deduct deferred taxes to determine rate base, some consider leases, PPAs, pensions, etc.

Issuing Debt

Advantages

- Fixed charges (interest) are tax deductible
- No loss of control as debt has no voting rights
- Interest is commonly lower than the cost of equity
 - Currently very low relative to historical levels
- Most regulators allow the embedded cost of debt included in the revenue requirement

Disadvantages

- Interest is a fixed obligation
- Additional debt increases financial leverage (hence risk)
- Often subject to covenants
- Term of commitment is predetermined (especially for long-term debt)
- Repayment carry cash flow or refinancing risk
 - 2008–09 saw very few long-term utility bond issuances

Balance the portfolio of financing instruments and consider investor perception

Issuing Equity

Advantages

- Carry no fixed charges
- Increase financial flexibility
- Has no fixed maturity

Disadvantages

- Dilutes current equity
- Dividends are not tax-deductible, so the after-tax cost of distributing \$10 as dividend is higher than the after-tax cost of distributing \$10 as interest
- Transaction costs may be high

Balance the portfolio of financing instruments and consider investor perception

Note: Tax Cuts and JOBS Act may impact equity / debt choices:

- less savings from interest deductions
- lower cash collections from tax true-up
- likely having deferred taxes in excess of future tax obligations on the books

Cost of Capital and Return on Invested Capital

Finance

Cost of Capital is the expected rate of return in capital markets for alternative investments of corresponding risk. (i.e., an opportunity cost)

Supreme Court

- **Commensurate with returns** on enterprises with corresponding risks
- Sufficient to maintain the **financial integrity** of the regulated company
- Adequate to allow the company to **attract capital** on reasonable terms

State Commission

- Allowed Return on equity is based on estimates; usually based on samples of comparable utilities
- Cost of Debt is commonly the embedded cost of outstanding debt
- Regulatory capital structure can be actual capital structure or a hypothetical capital structure—commonly measured using book values

Capital Structure and Return: Rate Base

- Rate base is the amount that the regulator recognizes as being financed by the utility:

Rate base = Utility Property, Plant & Equipment

- Accumulated Depreciation
- Deferred Income Taxes*
- Other non-cost capital (*e.g.*, customer deposits)
- + Allowance for Working Capital
- ± Other Adjustments (jurisdiction specific)

- The utility is allowed to earn a return on its rate base
 - The equity portion is allowed a return on equity
 - The debt portion usually is allowed the embedded cost of debt

* Deferred Income Taxes is taxes owed to tax authorities but not yet paid. For regulatory purposes deferred taxes have been collected from customers.

Effects of 2017 Corporate Tax Reform

- December 2017 – US government signed Tax Cuts and JOBS Act into law
- Deferred Income Taxes \$ billions as of year-end 2017:

	Electric	Gas
Deferred Income Tax	\$120,125	\$2,742*
Long-Term Debt	\$457,069	\$29,325

* Impacted by the acquisition of gas LDCs

- A reduction in the federal tax rate from 35% to 25% substantially impact the treatment of the Deferred Income Tax for rate making purposes
 - The amount in excess of what needs to be paid need to be removed from Deferred Income taxes and in most instances will need to be returned to customers over time

Capital Structure & Return: Financing the Rate Base

Financing of the rate base = regulatory capital

$$\text{Capital structure} = \begin{cases} \text{Equity \%} \\ \text{Long-term Debt \%} \\ \text{Short-term Debt \% (if applicable)} \\ \text{Non-cost capital \% (if applicable)} \end{cases}$$

Allowed Return =

$$\begin{aligned} & \text{Allowed Return on Equity} \times \text{Equity \%} \\ & + \text{Embedded Cost of Long-term Debt} \times \text{Long-term Debt \%} \\ & + \text{Embedded Cost of Short-term Debt} \times \text{Short-term Debt \%} \\ & + 0 \times \text{Non-cost Capital \%} \end{aligned}$$

Return on Rate Base = Allowed Return \times Rate Base

[Gross equity return up for taxes to get revenue requirement]

Determining the Regulatory Capital Structure

Example:

- Rate Base: \$2,000
- Book Equity: \$1,100
- Long-term Debt: \$1,000
- Short-term Debt: \$100

Commissions take different approaches to short-term debt (and other specific items)

Assuming PUC ignores ST-Debt

	Amount (\$)	%	Amount that earns a return
Equity	\$1,100	52.4%	\$1,048
Long-Term Debt	\$1,000	47.6%	\$952
Total	\$2,100	100%	\$2,000

Assuming PUC includes ST-Debt

	Amount (\$)	%	Amount that earns a return
Equity	\$1,100	50.0%	\$1,000
Long-Term Debt	\$1,000	45.5%	\$909
Short-Term Debt	\$100	4.5%	\$91
Total	\$2,200	100%	\$2,000

Capital Structure and Return: Example

Rate Base: \$2,000 million

Dollars in millions	Balance	% of Capitalization	Cost	Weighted Cost
Short-Term Debt	\$91	4.5%	1%	0.045%
Long-Term Debt	\$909	45.5%	5%	2.275%
Equity	\$1,000	50%	10%	5.000%
Total	\$2,000			7.32%

Capital Structure and Return: Summary

The realized return on equity can be higher or lower than the allowed return!

	Equity	Debt
% of Capitalization (regulatory)	Electric average ~ 48-49% Gas average ~ 50-52%	Lower ratio -> stronger credit metric
Principles determining the return	The return available on comparable investments (usually based on sample of similar companies)	Interest paid on debt
In practice	Commission determines Allowed ROE Electric* ~ 9.2 (T&D) 9.8 (I) Gas* ~ 9.6	Company calculated embedded interest on outstanding debt issuances

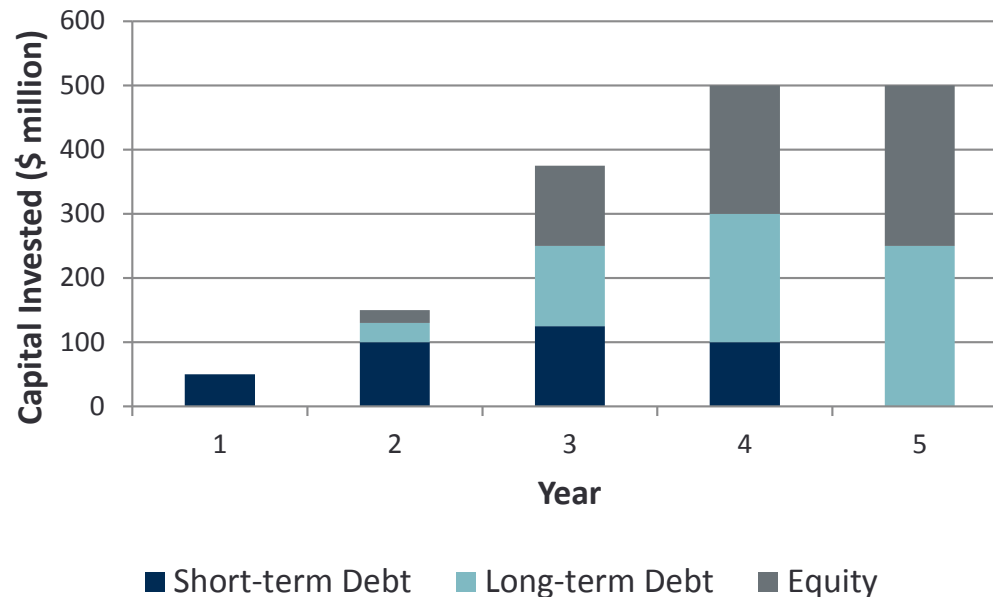
* Regulatory Research Associates, Average for 2018, January through June

Capital Structure: Western Massachusetts Electric Company – 2017 FERC Form 1, p. 112

Title of Account (a)	Page No. (b)	Current Year End of Quarter / Year Balance	Prior Year End Balance 12/31/2017
PROPRIETARY CAPITAL			
Common Stock Issued (201)	250-251	10,866,325	10,866,325
Preferred Stock Issued (204)	250-251	0	0
Capital Stock Subscribed (202, 205)		0	0
Stock Liability for Conversion (203, 206)		0	0
Premium on Capital Stock (207)		3,905,151	3,905,151
Other Paid-In Capital (208-211)	253	440,492,440	440,492,440
Installments Received on Capital Stock (212)	252	0	0
(Less) Discount on Capital Stock (213)	254	0	0
(Less) Capital Stock Expense (214)	254b	0	0
Retained Earnings (215, 215.1, 216)	118-119	199,430,887	218,917,697
Unappropriated Undistributed Subsidiary Earnings (216.1)	118-119	-695,347	-705,721
(Less) Required Capital Stock (217)	250-251	0	0
Noncorporate Proprietorship (Non-major only) (218)		0	0
Accumulated Other Comprehensive Income (219)	122(a)(b)	-1,928,364	-2,362,179
Total Proprietary Capital (lines 2 through 15)		652,071,092	671,113,713
LONG-TERM DEBT			
Bonds (221)	256-257	0	0
(less) Required Bonds (222)	256-257	0	0
Advances from Associated Companies (223)	256-257	0	0
Other Long-Term Debt (224)	256-257	565,000,000	565,000,000
Unamortized Premium on Long-Term Debt (225)		3,935,944	5,009,384
(Less) Unamortized Discount on Long-Term Debt-Debit (226)		626,175	762,695
Total Long-Term Debt		568,309,769	569,246,689

Capital Structure: Rate Base vs. Projects

- Rate base is financed using a long-term capital structure
- Project financing depends on the type of projects and often change during the project
 - Example: Aggregate spend is \$500 million over 4 years.
 - Asset placed in service in year 5.



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Credit Ratings

Credit rating is a measure of default risk

Creditors received a fixed periodical payment (interest) and the principal is repaid at maturity, so creditors have no upside and downside is default

Bank loans, contract clauses (*e.g.*, PPA), often stipulate that the company maintain an investment grade bond rating

Bond prices and interest depend on the bond's credit ratings

- Higher ratings → lower borrowing costs and easier access to credit markets during credit crunches (*e.g.*, 2008–09)

Credit ratings and changes hereof signal the creditworthiness and hence the value of claims against the company

Credit Rating Agencies

Independent evaluators of credit

Assign ratings to

- Company (issuer rating)—assess the overall credit worthiness of issuer
- Individual securities

3 major rating agencies: Standard & Poor's (S&P), Moody's, Fitch

- They use different measures and differ some in their evaluation
- Evaluate the risk of default using quantitative and qualitative assessments/measures of
 - Industry characteristics
 - Growth prospects, competition, regulation
 - Financial analysis
 - Cash flow, leverage
 - Regulatory environment
 - Management's ability to manage risk

Credit Ratings: What they Are

Rated by credit rating agencies: S&P, Moody's, Fitch

Investment Grade

	Very high Quality	High Quality	Relative Quality (High to low)
S&P and Fitch	AAA, AA	A, BBB	+ / nothing / -
Moody's	Aaa, Aa	A, Baa	1 / 2 / 3

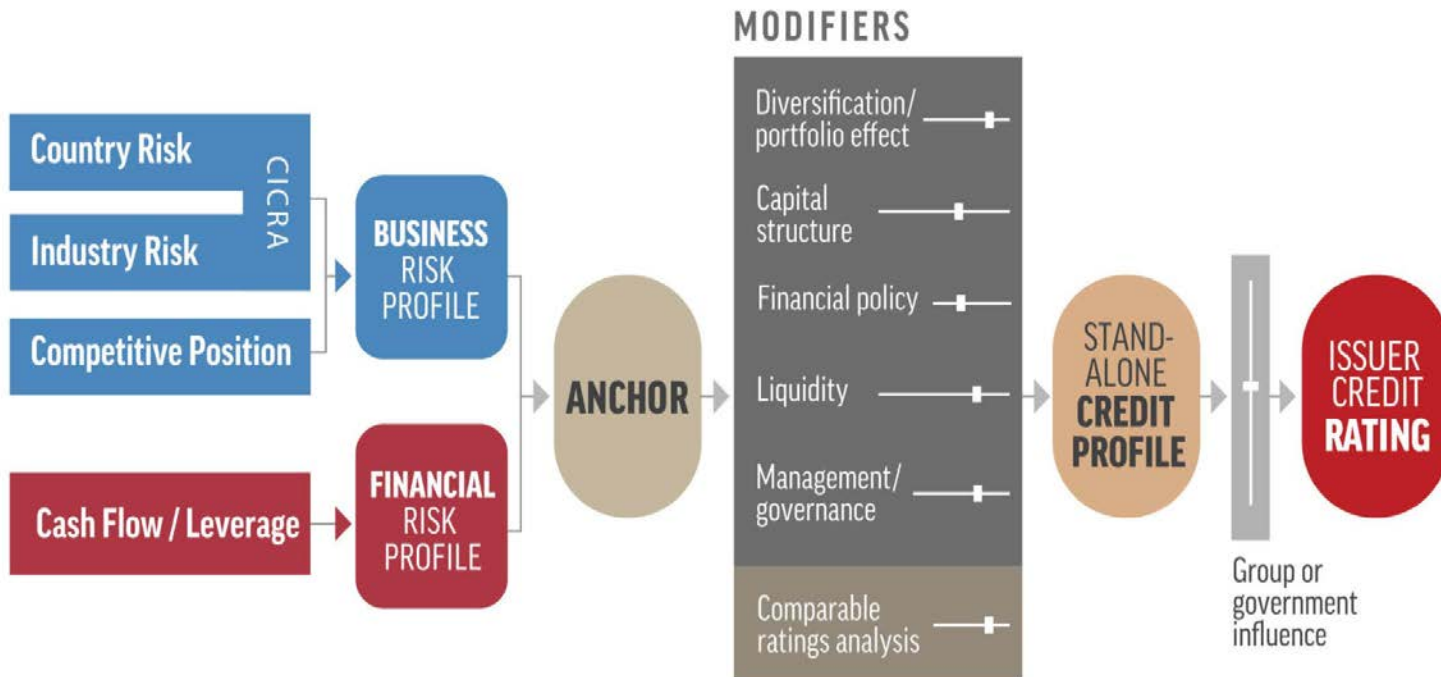
Non-Investment Grade (High yield, Junk)

	Speculative quality	Very poor quality	Relative Quality (High to Low)
S&P and Fitch	BB, B	CCC, CC, C, D	+ / nothing / -
Moody's	Ba, B	Caa, Ca, C, D	1 / 2 / 3

Credit Ratings: How Are They Determined?

For utilities all credit rating agencies emphasize the regulatory environment along with the level and trends in the issuer's financial ratios.

S&P recently revised its methodology:




Source: S&P Presentation

Credit Ratings: How Are They Determined?

Industry Risk:

- Industry cyclicality
- Industry competitive risk and growth environment

 Low Risk (1) ... to ... Extremely High Risk (6)

Cash Flow / Leverage:

- Analytical judgment
- Financial risk descriptors
- Ratios: FFO / Debt and Debt / EBITDA are key; other ratios are used but viewed as less important by S&P

 Minimal, Modest, Intermediate, Significant, Aggressive, Highly Leveraged

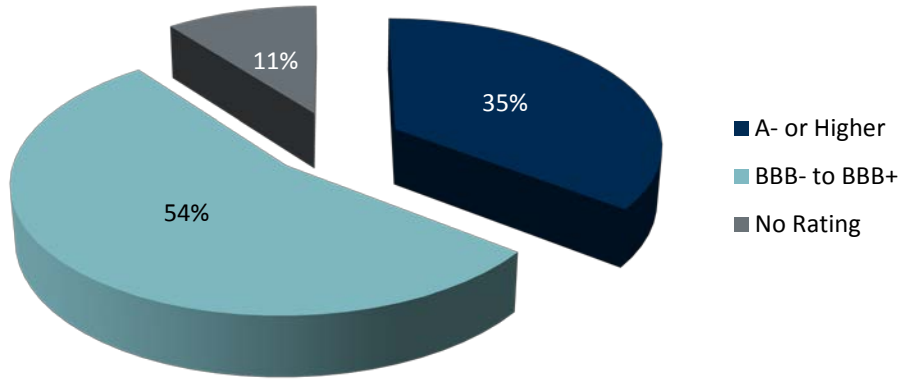
Funds From Operations (FFO) = Operating profits after tax plus depreciation and amortization plus deferred income tax plus other major non-cash items

Credit Ratings: S&P

	Financial Risk Profile					
Business Risk Profile	1 (minimal)	2 (modest)	3 (intermediate)	4 (significant)	5 (aggressive)	6 (highly leveraged)
1 (excellent)	aaa/aa+	aa	a+/a	a-	bbb	bbb-/bb+
2 (strong)	aa/aa-	a+/a	a-/bbb+	bbb	bb+	bb
3 (satisfactory)	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
4 (fair)	bbb/bbb-	bbb-	bb+	bb	bb-	b
5 (weak)	bb+	bb+	bb	bb-	b+	b/b-
6 (vulnerable)	bb-	bb-	bb-/b+	b+	b	b-

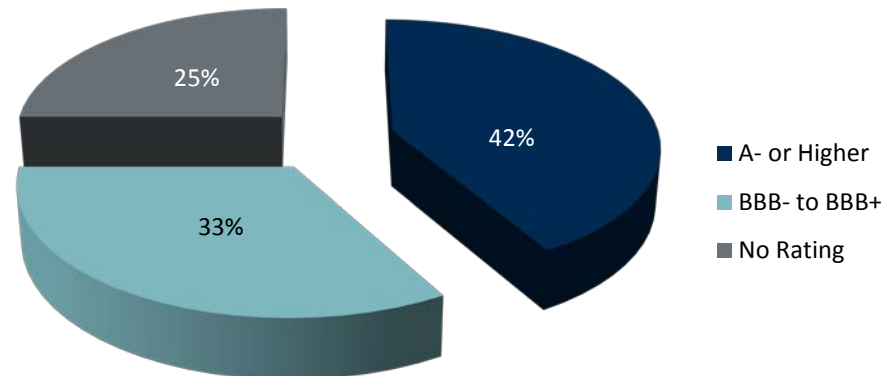
Source: S&P Presentation

Credit Ratings: Q2 2018



- The majority of electric utilities are BBB- to BBB+ rated.
- Electric utilities credit ratings have remained stable in recent years.

- The majority of natural gas utilities are A- to A+ rated.
- Credit ratings have declined slightly in recent years.



Source: S&P ratings as reported by Bloomberg

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Credit Ratings: Debt & Imputed Debt

Credit rating agencies generally look at total debt (long-term plus short-term) and may add to the debt amount for the presence of

- Off-balance sheet leases (e.g., operating leases)
- Power purchase agreements (PPAs)
 - Limited to the capacity payments
 - Depends on the regulatory recovery mechanism
- Unfunded pension plan obligations
 - Depends on the regulatory recovery mechanism

Credit Ratings: Tax Cut

In January 2018, Moody's put 25 utilities (electric, gas, water) on negative outlook due primarily to the tax cuts and JOBS Act

Why?

- Utilities collect taxes in rates using normalization (e.g., statutory rates), while tax law commonly allows for accelerated tax depreciation
 - Utilities collect more cash than what is paid to the tax authorities
 - The difference is deferred income taxes
 - As the tax rate dropped,
 - Less cash will be collected -> cash flow based credit metrics
 - Most utilities have collected more taxes in rates than what is now owed to tax authorities and thus have to return most of these amounts to customers, so even less cash and lower credit metrics
 - Some regulatory uncertainty on timing and exact nature of implementation

Credit Ratings: Interaction with Regulation

- Credit rating agencies view the regulatory environment as key to a solid credit rating
- Moody's placed a large number of U.S. utilities on negative outlook in January 2018 reflecting*
 - “incremental cash flow shortfall caused by tax reform on projected financial metrics that were already weak”
- Many commissions want investment grade or higher utilities
- Unique regulatory treatments are considered in ratings:
 - If the recovery of PPA costs is uncertain, S&P imputes debt in the determination of ratios
 - Early recovery of cost “cash is king” is viewed favorably

* Moody's Investor Service, “Moody's Changes Outlook on 25 US Regulated Utilities Primarily Impacted by Tax Reform, January 19, 2018.

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Liability Management and Interest Derivatives

Managing liabilities entail substantially more than managing debt—pension obligations, PPA, leases, deferred taxes and possibly asset retirement obligations are a large part of many utilities' obligations

- Credit rating agencies adjust for pension, PPA, lease and other obligations
- Equity investors pay attention to all obligations

Remainder of presentation focuses on debt and interest

Managing Debt and Interest Rate Risk

Interest Rate Risk

- Debt portfolio's overall cost
- Pre-issuance hedging
- Fixed and floating mix
 - Impact overall cost of debt
 - Volatility of interest expense



Debt Portfolio Risk

- Refinancing risk
- Duration balancing
- Options



Managing Risk: What We Can Do With Derivatives

- Some debt instruments are issued with a fixed interest rate—some are issued with a floating rate (*e.g.*, linked to Libor)
 - Derivatives can be used to manage the interest rate risk

- Derivatives can also be used to manage
 - Interest rate risk pre issuance
 - The horizon/duration of the debt portfolio
 - The goal is to manage risk—not to speculate!
 - Risk management does not in expectation change the cost of borrowing—only the distribution of cost!

Managing Risk: Interest Rate Swap and Futures

- Swaps: An agreement between two parties to exchange one kind of cash flow for another in the future
 - Defines the dates when the cash flows are to be paid and the way the cash flows will be calculated
 - Usually done with a bank under standard ISDA
 - Interest rate swap: Company enters into a floating interest rate loan with bondholders, so interest payments are variable. At the same time the Company enters into an interest rate swap with a bank. The bank pays/receives the difference between the floating rate and a fixed (agreed upon) interest. The fixed interest is such that the bank is indifferent.
- Swaps are the most common instruments used to exchange a variable interest (or commodity price) for a fixed interest (commodity price)

Managing Risk: Pre-Issuance Derivatives

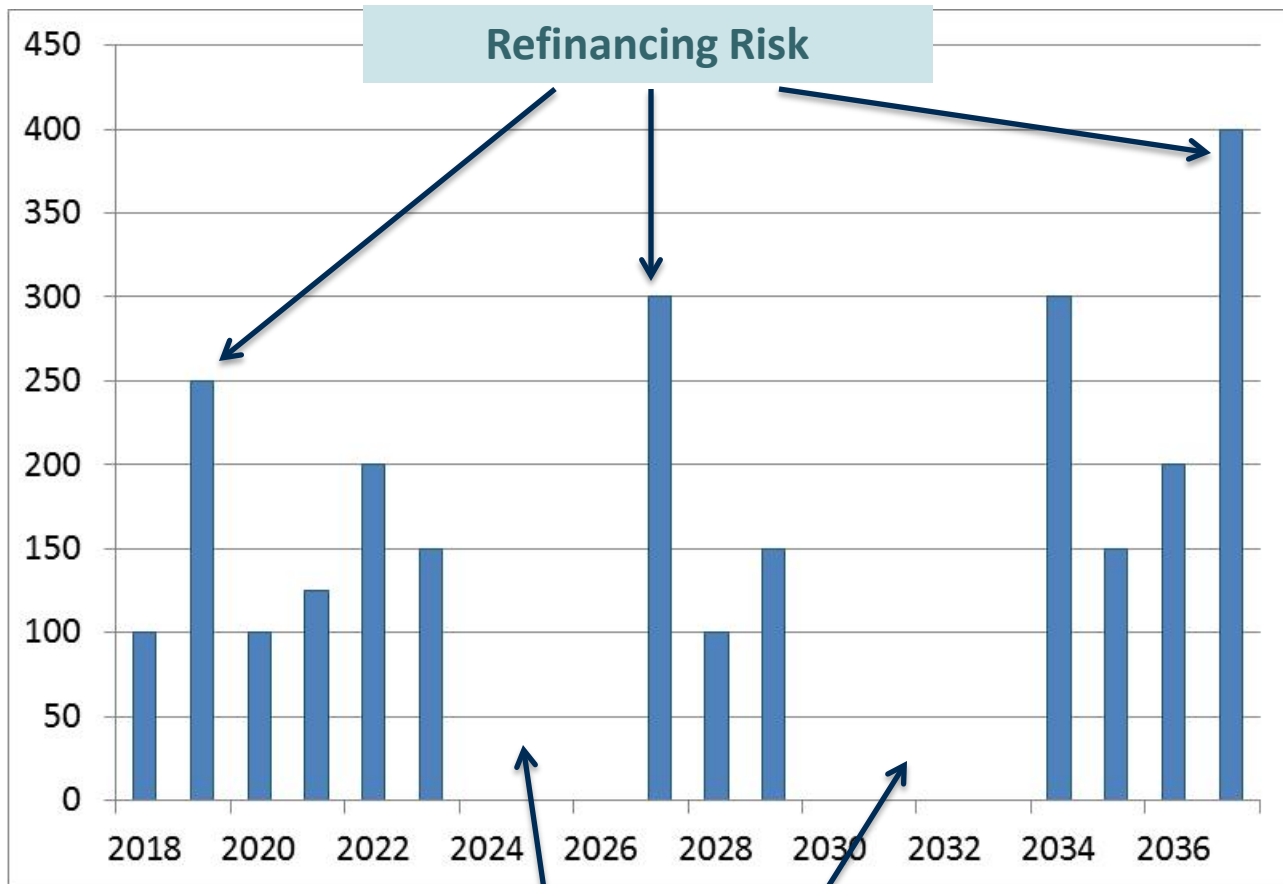
Forward swaps

- Used to lock in the rate today for an asset or liability to be created or sold in the future.
 - A company that plans to issue fixed rate debt at a future date can use a forward (or forward-starting) swap to hedge the future interest rate to lock in the current interest rate.

Treasury locks (sometimes called “bond lock”)

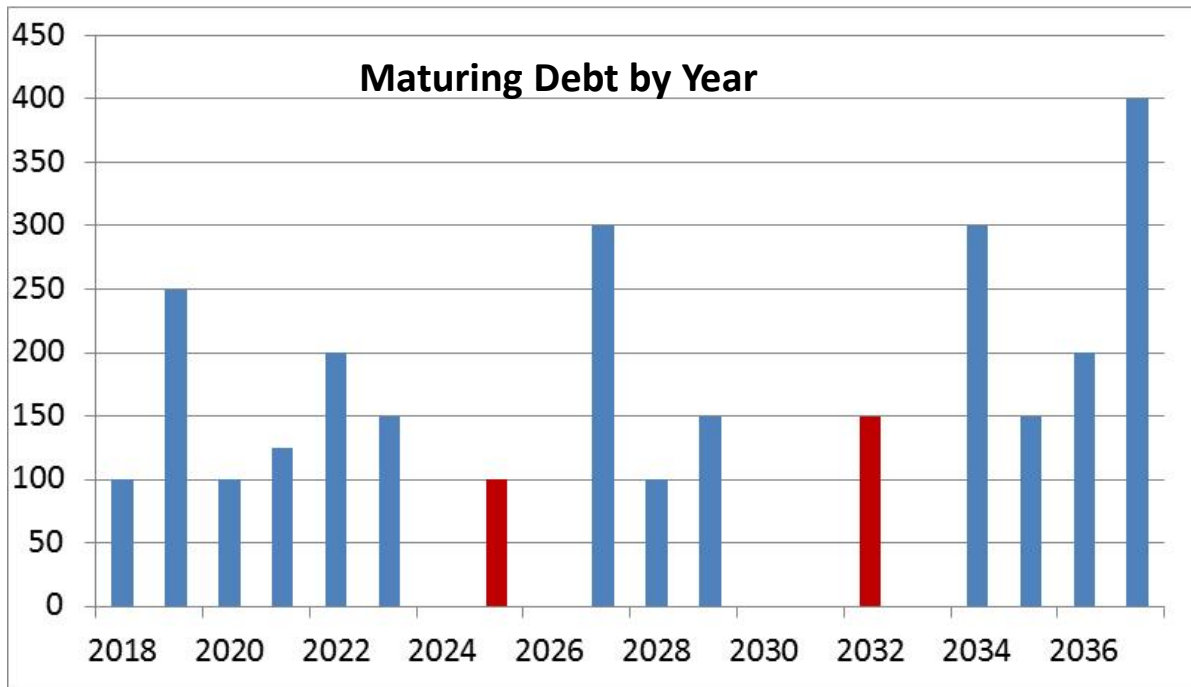
- A hedging tool used to manage interest-rate risk by effectively securing the current day's interest rates on federal government securities, to cover future expenses that will be financed by borrowing.
- Treasury locks are a type of customized derivative security that usually have a duration of one week to 12 months.
- They are cash settled, usually on a net basis, without the actual purchase of any Treasuries.

Managing Risk: Maturing Debt by Year



Managing Liabilities: Example

- Need to issue debt to finance \$250 project in 3 months
- Goal: Manage maturities and hedge 50% of interest rate risk (e.g., \$125 of the \$250 issuance)
- Manage maturities:
Issue \$100 million 8-year bonds and \$150 million 15-year bonds



Managing Liabilities: Example

- Hedge 50% of interest rate risk
 - Issuer enters into an agreement to pay fixed and receive floating (pay fixed swap) in 3 months
 - \$50 million 8-year fixed swap
 - \$75 million 15-year fixed swap
- If the swap curves (like the yield curve, it shows the relationship between swaps of differing maturities) increase over the next 3 months (expect higher interest), the issuer's swap increases in value (it will be in the money)
- If the swap curves decrease over the next 3 months, the issuer's swaps decrease in value (out of the money)
- To offset this, the issuer also enters into a treasury lock

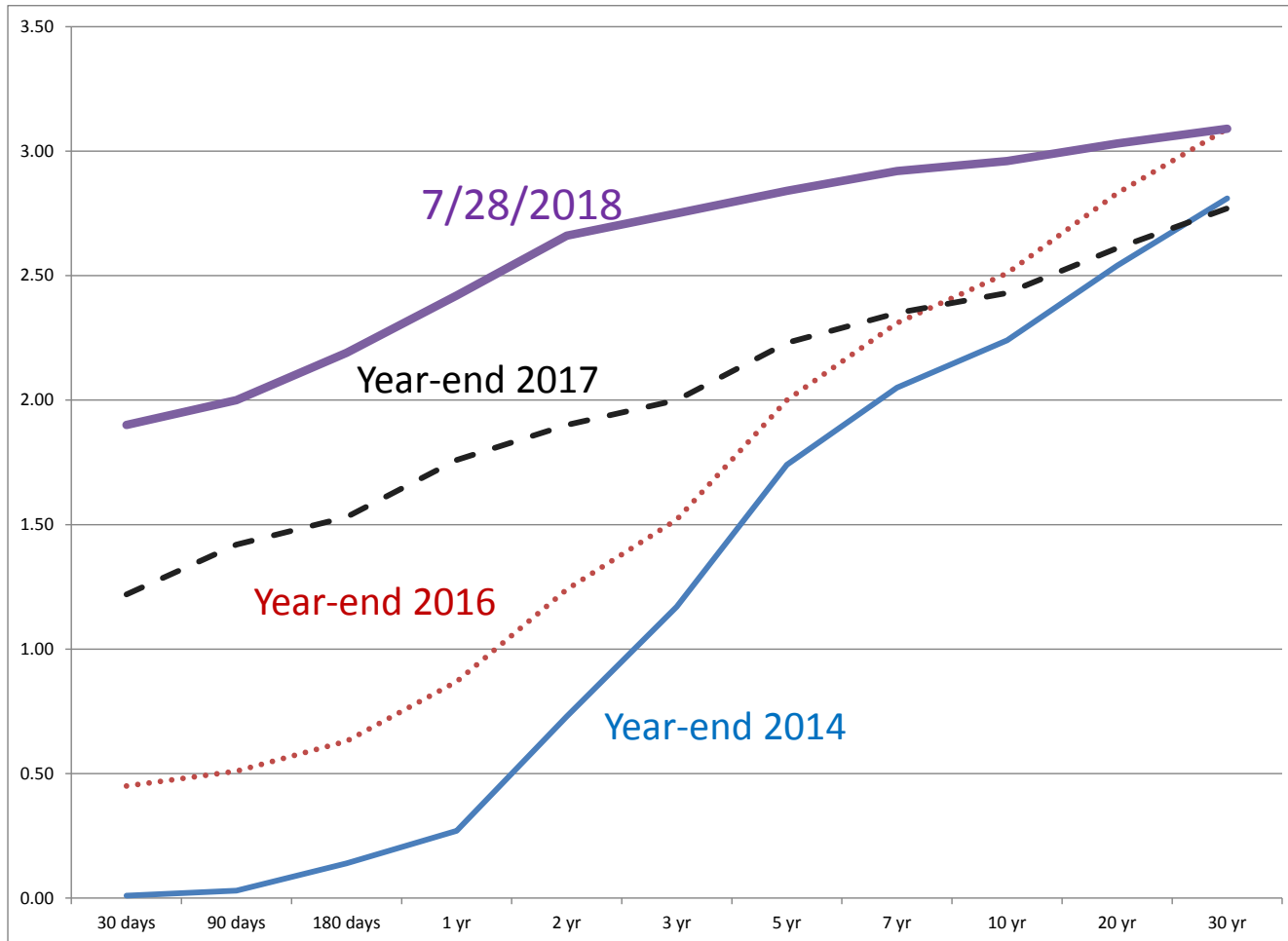
Managing Liabilities: Example

- Enter into treasury lock:
 - Sell \$50 million of 8-year Treasury futures
 - Current 8-year Treasury yield is 2.25%
 - Sell \$75 million of 15-year Treasury futures
 - Current 15-year Treasury yield is 3.0%

- If the market interest rate goes down in the future,
 - Treasury yields go up, the futures increase in value; the issuer has locked in the current rate
 - The swaps decrease in value
 - The treasury lock and the swap offset each other

- If the market interest rate goes up in the future,
 - Treasury yields go down, the futures decrease in value (out of the money)
 - The swaps increase in value

Current Consideration: The Yield Curve is Relatively Flat and the Cost of Short-Term Debt Increases Fast



The cost of short-term debt is currently increasing much faster than the cost of long-term debt
Euro-dollar futures indicate an increase of upwards 1% over the next 2-3 years

Key Economic Insights

- Risk management is *ex ante* reduction of risk (future uncertainty), not least cost planning (future average)
- No expected net present value advantages to hedging
- Risk versus regret have to be traded off—can't simultaneously reduce both
- No “one size fits all” for appropriate risk goals
 - Similarly situated companies often choose different strategies

Summary

- Capital structure consists of debt and equity
 - Consider appropriate mix
 - Consider upcoming gaps in structure and how to fill these gaps
- Equity and debt investors are important as they decide
 - The ability to access capital markets
 - The price of capital (cost of debt and cost of equity)
 - Liquidity
- Flexibility is important
 - Unforeseen events
 - Ability to finance investment opportunities using the preferred type of capital

QUESTIONS?

Additional Resources

FERC Uniform System of Accounts:

<https://www.ferc.gov/enforcement/acct-matts.asp>

Finance Text Books:

- *Principles of Utility Corporate Finance*, Giacchino and Lesser, 1st Ed., 2011
- *Principles of Corporate Finance*, Brealey, Myers and Allen, 11th Ed., 2014
- *Corporate Finance*, Ross, Westerfield and Jaffe, 10th Edition, 2013
- *Investments*, Bodie, Kane and Marcus, 9th Edition, 2010

Recent Articles and Reports:

- *Credit Ratings – Criteria for Utilities* by Gerit Jepsen, SURFA 46th Financial Forum, April 2014 (www.surfa.com)
- Fitch Ratings, “Rating U.S. Utilities, Power and Gas Companies,” 3/11/2014
- Moody’s, “Regulated Electric and Gas Utilities,” 12/23/2013
- Michael Tolleth, Bente Villadsen & Elliot Metzler, “Impact of the New Tax Law on Utilities Deferred Taxes,” CRRI June 2018

Speaker Bio



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Dr. Bente Villadsen is a principal at The Brattle Group's Boston office. She is an expert in regulatory finance with more than 18 years of experience in the utility regulatory matters. She has experience in electric, gas, pipeline, railroad, and water regulatory matters in both federal and state jurisdictions in the U.S. and abroad. She has testified on cost of capital as well as regulatory accounting and credit issues for regulated entities at FERC and state level. She recently co-authored the book "Risk and Return for Regulated Industries" and a paper on using gas forwards to hedge wind and a co-author of a recent paper on the impact of the 2017 tax law on utilities. She is a frequent author and speaker on rate of return and regulatory accounting issues.

Much of her recent work has focused on the impact of regulatory initiatives such as decoupling or riders and trackers on cash flow, credit metrics and the cost of capital, power and gas risk management, regulatory accounting and prudence issues.

Dr. Villadsen holds a Ph.D. from Yale University's School of Management and joint degree in mathematics and economics (BS & MS) from University of Aarhus in Denmark

Brattle's Practice Areas in Regulation and Electric Power and Natural Gas

Restructuring and Competitive Market Design

- Legal Management & Ownership Unbundling
- Access Pricing
- Privatization / Corporatization
- Competition versus Regulation

Financial Analysis

- Asymmetric Risk / Takings
- Cost of Capital and Allowed Rates of Return
- Credit Worthiness (Debt, Debt Equivalence)
- Valuation of Regulated Infrastructure

Tariff Design

- Incentive Regulation
- Ramsey Pricing
- Cost Allocation and Ratemaking
- Prudence and Hindsight Assessment

Utility Regulatory Policy and Rate Making

- Demand Forecasting, Weather Normalization
- Rate Design, Cost Allocation, Rate Structure
- Regulatory Strategy and Litigation Support
- Resource Planning
- Retail Access

Electric Power

- Auctions
- Climate Change Policy and Planning
- Demand Response, Energy Efficiency, and Smart Grid
- Electricity Market Modeling
- Energy Asset Valuation
- Energy Contract Litigation
- Energy Mergers and Acquisitions
- Energy Risk Management
- Environmental Compliance
- European Energy Markets
- Fuel and Power Procurement
- Market-Based Rates
- Market Design and Competitive Analysis
- Renewable Energy
- Transmission

Natural Gas

- Contract Litigation and Damages
- Ratemaking and Regulatory Policy
- Taxes and Royalties
- Risk Management and Procurement
- Business and Asset Valuation
- Market Assessment

About Brattle

The Brattle Group provides consulting and expert testimony in economics, finance, and regulation to corporations, law firms, and governments around the world. We aim for the highest level of client service and quality in our industry.

OUR SERVICES

Research and Consulting
Litigation Support
Expert Testimony

OUR PEOPLE

Renowned Experts
Global Teams
Intellectual Rigor

OUR INSIGHTS

Thoughtful Analysis
Exceptional Quality
Clear Communication

Our Practices and Industries

ENERGY & UTILITIES

Competition & Market Manipulation
Distributed Energy Resources
Electric Transmission
Electricity Market Modeling & Resource Planning
Electrification & Growth Opportunities
Energy Litigation
Energy Storage
Environmental Policy, Planning and Compliance
Finance and Ratemaking
Gas/Electric Coordination
Market Design
Natural Gas & Petroleum
Nuclear
Renewable & Alternative Energy

LITIGATION

Accounting
Analysis of Market Manipulation
Antitrust/Competition
Bankruptcy & Restructuring
Big Data & Document Analytics
Commercial Damages
Environmental Litigation & Regulation
Intellectual Property
International Arbitration
International Trade
Labor & Employment
Mergers & Acquisitions Litigation
Product Liability
Securities & Finance
Tax Controversy & Transfer Pricing
Valuation
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