



Basic Ratemaking

Key Concepts

Introduction

Topics to discuss:

- Why we regulate
- Basic ratemaking components
- Steps in calculating rates
- The rate approval process

Why We Regulate

- In most cases providing utility service functions better as a monopoly (more efficient provision of service)
- But by definition monopolies have no competition
- No competition means there is little incentive to keep rates down
- Rate regulation is intended to act as a substitution for competition, while still maintaining the efficiency of the monopoly
- Regulation is by no means perfect and some regulatory lag is inherently present because of due process

Ratemaking is an Art, not A Science

- Ratemaking is very subjective
 - > Key concepts provide the foundation but there is much room for interpretation and personal preference
 - > Basic ratemaking concepts have been shaped and molded over the last 100 years, primarily through experimentation and case law

Some Ratemaking Parameters

- Rates must be just and reasonable
 - > What does this mean? *Rates must adequately compensate the utility without overcharging the ratepayer*
 - > This does not necessarily mean rates will be cheap!
 - > Generally this means the utility is entitled to compensation for:
 1. Prudently incurred expenses used to provide safe and reliable service; and
 2. Provide a fair return on the utility's investment

Some Ratemaking Parameters (contd.)

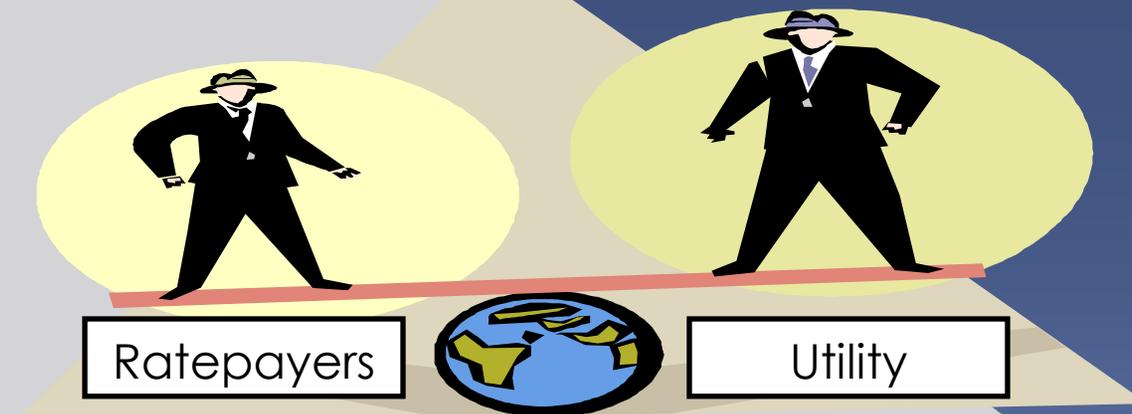
- ⦿ Rates must be “cost based” and cannot be confiscatory to the utility
- ⦿ Rates are implemented on a prospective basis ONLY
 - > Utilities cannot retroactively collect in current rates for a specific past cost
 - > Rates are intended to be representative of costs likely incurred while the rates are in effect
- ⦿ Costs included in rates must be prudent
 - > Plant cannot be “gold plated”
 - > Costs deemed to be extravagant, unnecessary, or excessive can be disallowed

Some Ratemaking Parameters (contd.)

- ⦿ Costs in rates must be “used and useful”
 - > Costs must actually be in use
 - > Costs must provide some benefit to the ratepayer
- ⦿ Some expenses are almost always disallowed such as:
 - > Charitable contributions
 - > Lobbying expenses
 - > Marketing expenses

Regulation is a Balancing Act

- Interests of both sides must be considered. Equity and fairness are key



- Consequences of a misbalance can be severely detrimental

Consequences of Misbalanced Rates

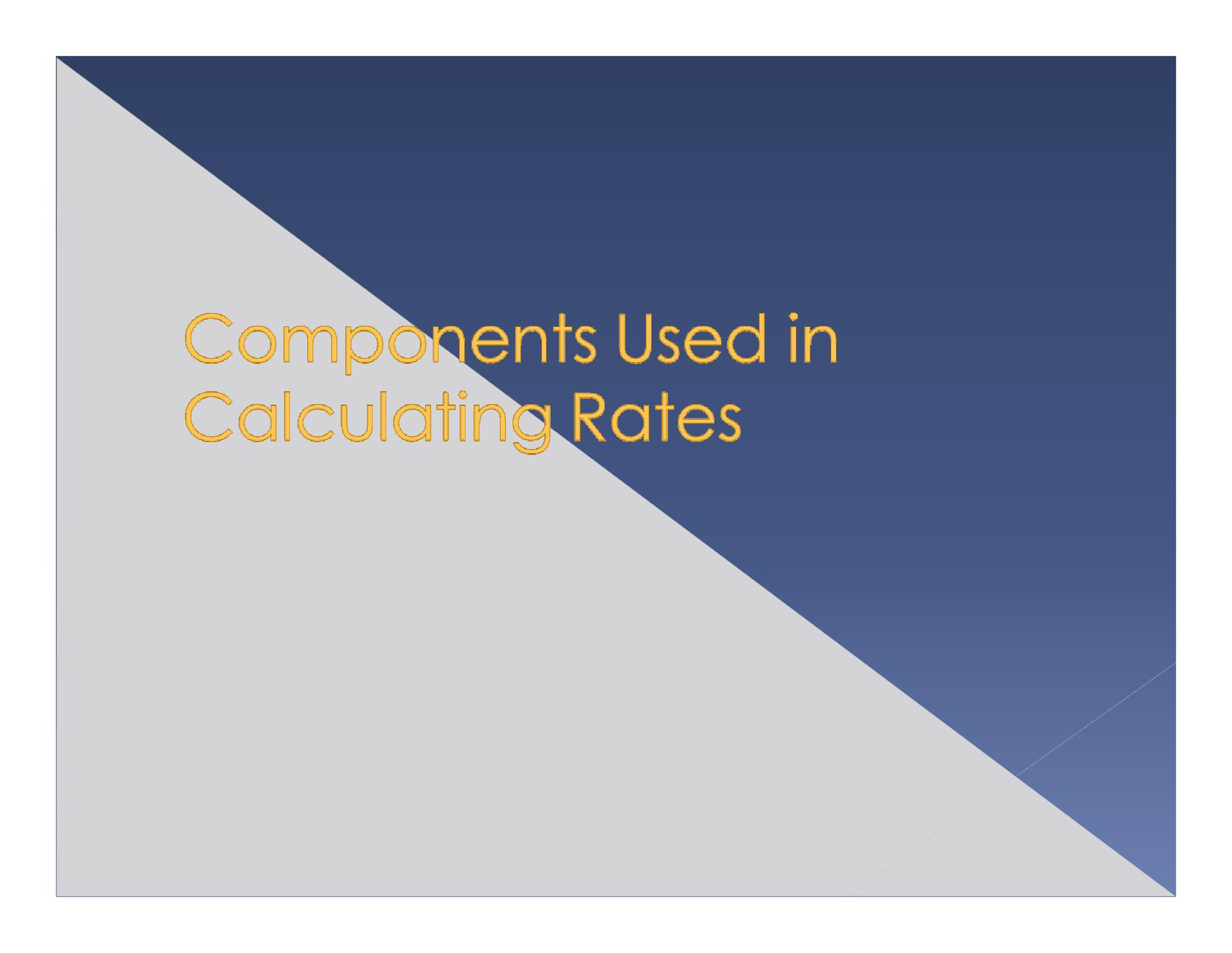
If rates are excessively high

- Ratepayers may be paying for excess costs the utility is not actually incurring
- Utility collects more than its allowed return
- This is unfair to ratepayers and could be considered to be price gouging

Consequences of Misbalanced Rates

If rates are excessively low

- Utility is deprived from collecting reasonably incurred costs and rates are confiscatory
- Utility may not be able to keep up with maintenance of plant, raising the risk of accidents and service failure
- Utility may not have sufficient equity to invest in needed upgrades and may not be able to attract much needed capital
- Utility could default on its debt, placing the utility in a higher credit risk. Utility may have to pay higher interest rates, which are passed on to customers
- It is in nobody's best interest to have their utility go bankrupt!



Components Used in Calculating Rates

The Revenue Requirement

- Sometimes also referred to as the “cost of service”
- The annual amount of revenue a utility needs to collect in order to recover prudent expenses and earn a fair return on its investment
- A study is performed using a “test year” to determine if rates should be revised. This is called a Rate Case or a Revenue Requirement Study
- Much controversy can occur in establishing a just and reasonable revenue requirement

Revenue Requirement

Basic components:

- Operations and maintenance
 - + General and Administrative
 - + Depreciation
 - + Fuel and/or Purchased Power
 - + Taxes other than income
 - + Allowance for Income Taxes
 - + Return
-
- = REVENUE REQUIREMENT

O&M Expenses

- Ongoing costs to physically run the utility
 - > Maintenance of equipment and power lines, street lights, generators, etc.
 - > Pole rentals
 - > Meter expenses
 - > Line operations
 - > Plant operations

G&A Expenses

- Expenses incurred that are not physically associated with production of the utility's service but still necessary to operate
 - > Overhead
 - > Wages and benefits/pensions, etc.
 - > Transportation
 - > Office space rents
 - > Office expenses and postage
 - > Outside professional services
 - > Rate case expense

Depreciation

- The allocation of cost to an asset with a useful life greater than one year
- Depreciation is how a utility gets recovery of its investment
- This is a key factor in a rate case because the goal is to match the recovery of cost over the period in which the asset will be in service
- Most common approach is “straight line” method, but other methods have also been used

Fuel and/or Purchased Power

- If fuel expense is volatile, either because consumption is volatile or price per gallon is volatile, etc. Commission allows for this to be passed through a separate surcharge, called a Cost of Power Adjustment (COPA)
- Allows for faster response to fluctuating fuel costs
- In a rate case, the base cost of fuel is reset and future fluctuations either increase or decrease the COPA as they occur
- In some rate cases the base cost of fuel is zeroed out and the entire cost of fuel is recovered through the COPA

Taxes Other Than Income

- Example: Ad valorem taxes
- Not usually controversial
- Typically easily verifiable,
- Usually recognized in full in rates (unless non-recurring) because they are beyond the control of the utility
- If tax rates have been rising, an adjustment may be allowed if it is known and measurable

Income Tax Allowance

- An allowance for income taxes is typically calculated to be representative of what the tax expense will be with new rates in effect
- The calculation is impacted by the *Return on Equity* because it establishes what anticipated taxable income will be
- Applicable state and federal tax rates are applied to derive the Tax Allowance

The Return Component

- Several different methods for deriving depending on the utility
- Rate Base Rate of Return method is most common for investor-owned utilities
 - > In its simplest terms:
Return= Rate Base x Rate of Return
- Rate Base is the net value of *property* (assets) used in providing service, on which a public utility is permitted to earn a specified rate of return, as determined by the commission
- Weighted average cost of capital is the rate of return

Rate Base

- Methods for calculating RB differ but the most preferred is the “Original Cost” method.
- Utility Plant makes up about 90% of Rate Base
- Based on average monthly account balances
- Contributed Capital is not allowed in rates!

Rate Base (Contd.)

Gross Plant in service (net of contributed capital)

- Accumulated Depreciation (net of CC)
- = Net Plant in Service (for rate purposes)
- + Materials and Supplies
- + Prepayments
- Customer Deposits and Advances
- Deferred Income Taxes
- + Cash Working Capital Component
- = RATE BASE

Rate Base (Contd.)

Net Plant

- Net Plant = gross plant less accumulated depreciation
- Represents the amount of plant that is not used up and is in service
- Cannot include contributed capital, such as from grants. Contributed capital is not included in rates because ratepayers should not be required to pay a return on money that investors did not supply

Other Items Increasing Rate Base

- Materials and Supplies such as fuel stock, inventory, materials held for maintenance
- Prepayments- allowed to earn a return if not recognized elsewhere
- Utility earns a return on these items because they are assets necessary for safe and reliable service and are part of the overall utility investment
- Based on average monthly balances

Rate Base (Contd.)- Other Items That Increase Rate Base

○ Cash Working Capital Allowance

- General concept is that if a utility bills in arrears (which is the norm), that utility was required to fund cash up-front to cover costs between the time service was provided and when payment was received
- Average lag period is about 45 days
- Utility is entitled to earn a return on these funds
- Generally computed by taking 12.5% ($=45/360$ days) of allowed operating expenses and including it in rate base

Items That Decrease Rate Base

- ◉ Contributed capital
- ◉ Customer deposits and advances
 - > General concept is that investors are not be permitted to earn a return on money they did not provide
- ◉ Deferred income taxes
 - > Liability created as a result of temporary timing differences when accelerated depreciation is used for tax purposes. Treated as a “cost free” source of capital

Rate of Return

- Utilities are allowed the opportunity to recover a fair return but it is not guaranteed
- Is typically very controversial because it is highly subjective
- Often the most expensive portion of a rate case proceeding
- Usually requires hiring expert consultants

Rate of Return (Contd.)

- ⦿ Must be a “fair” rate of return
 - > Should provide adequate earnings
 - > Should allow utility to meet its cost of debt
 - > Should allow the utility to attract capital for plant replacement and expansion

Rate of Return Components

- Capital Structure- % composition of debt and equity
 - > May be the utility's actual capital structure, but usually a hypothetical capital structure is used (either the utility's parent company or a well diversified proxy group)
 - > Capital structure used should result in the utility being able to generate capital at reasonable costs
 - > Commission usually uses a hypothetical capital structure and tends to prefer a cap structure in the range of 50%/50% debt-equity +/- 10% in either direction

Return Components

- Cost of debt

- > Rarely raises dispute and can be easily verified because of contractual debt obligations

- Return on equity

- > Where disputes often arise- very subjective
- > Fluctuates with changing market conditions
- > Cannot be definitively measured but techniques exist to compare past, present, and anticipated prices of company stock or earnings with those of comparable companies

Return Components

Return on Equity (Contd.)

- > Must be commensurate to the returns on other investments having commensurate risks
- > Consultants are hired because it requires the exercise of informed expert judgment to attempt to estimate investors' (collectively) required rate of return
- > Many different methods and financial models used involving risk profiles, various growth methods, and the time value of money

Rate of Return Example

	Capital Structure		Cost		Weighted Cost
Debt	60%	X	6.00%	=	3.60%
Equity	<u>40%</u>	X	10.50%	=	<u>4.20%</u>
Total	100%				7.80%

Actual or hypothetical

Comes from the financial statements

ROE- highly litigated

Weighted avg cost of capital

- 7.80% in this example, is what is multiplied by Rate Base to derive the return component in rates

Steps in a Rate Case

- Select a 12 month test year (usually the most recent fiscal year or calendar year)
- Derive historical costs (and revenues) for the selected test year
- Adjust the utility's expenses and revenues for all factors which might distort them prospectively
- Determine whether any of the numbers are either excessive or deficient and make appropriate adjustments for reasonableness
- Adjustments must be known and measurable

Steps in a Rate Case (Contd.)

- Determine rate base
- Determine Weighted Avg. Cost of Capital and calculate return
- Calculate the cost of service
- Compare pro forma cost of service to revenues at existing rates to determine the revenue deficiency
- If rates are being revised on an across-the-board basis, the rate increase is the amount of the % shortfall
- If rates are not being increased across-the-board, then a cost-of-service study is prepared, which reallocates the revenue requirement over the various classes of customers and reconfigures how rates will be collected from each class



The Rate Approval Process

The Rate Approval Process

- Utility prepares its revenue requirement study and files a rate increase as a tariff filing to the commission
 - Commission has 45 days to review and take some form of action. If commission misses this deadline, the rate revision takes effect by force of law
- Rate cases (like all tariff filings) cannot be rejected unless they fail to meet form and filing requirements
- Commission may approve the rate but most rate cases are suspended for investigation because of the large amount of data contained in them
- Suspension starts another clock
 - Usually 15 months from initial filing. However, the Commission is examining how to shorten that time period

The Rate Approval Process

- ◉ Interim rate relief may be approved, subject to refund, (with interest) if the utility can demonstrate it needs immediate relief
- ◉ Other economically impacted parties are invited to intervene in the case.
- ◉ RAPA may participate to represent rate payers
- ◉ A procedural schedule is established that allows parties to perform discovery and prepare rebuttal cases
- ◉ A hearing date is set to put on evidence for the commissioners to consider and make a ruling on new rates

The Rate Approval Process

- Many rate cases do not reach the hearing stage because they are settled with a stipulation among the parties. This reduces expensive litigation
- The Commission accepts stipulations when in the public interest to do so
- If no stipulation is reached, evidence is taken at a hearing and the commission rules on the issues before the end of the statutory deadline
- New rates take effect and any refunds due are paid (with interest)



Questions?