Cost of Service Concepts

Presented by
Michael Webb &
Erik Wetmore

Agenda

- **Why?**
- Concept
- Certain Key Elements
- Conclusion

Why Do We Have Cost of Service?

- Section 1(5) of the Interstate Commerce Act requires that rates for oil pipeline transportation be “just and reasonable.”
- FERC has a statutory responsibility under Section 15(1) of the Interstate Commerce Act to ensure that oil pipeline rates are “just and reasonable.”
- Cost of service is one method the FERC uses to evaluate if rates are just and reasonable.

What's Just and Reasonable Mean?

- The "just and reasonable" statutory standard is not very precise.

- An agency (e.g., FERC) may issue, and courts are without authority to invalidate, rate orders that fall within a "zone of reasonableness," where rates are neither "less than compensatory" nor "excessive."

Opinion No. 154-B

- “Devised generic cost of service principles for the setting of just and reasonable oil pipeline rates.”

- Established a cost of service methodology pursuant to which the FERC can evaluate the reasonableness of oil pipeline rates on a case-by-case basis.

Subsequent Commission Opinions

- Provided additional clarification about specific elements of the 154-B cost of service methodology. For example:
  - Opinion 351 provided additional clarification about the treatment of the SRB write-up
  - Opinion 435 provided additional clarification about the amortization of the SRB write-up and deferred return
  - Opinion 511-A provided additional clarification about the treatment of the SRB write-up when calculating deferred return

Opportunity v. Guarantee

- Cost-based rate regulation is intended to allow an oil pipeline the opportunity to recover its operating costs and earn a reasonable return on its investment (collectively referred to as “cost of service”).

- It is not intended to be a guarantee. For example, historic over-earnings may be subject to refund, whereas historic under-earnings may not be recaptured by the carrier.

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Conceptually, Cost of Service is Comprised of:

1. Expenses

+

2. Return of Capital

+

3. Return on Capital

Expenses

An oil pipeline carrier is allowed the opportunity to recover its prudently incurred expenses.

Return of Capital

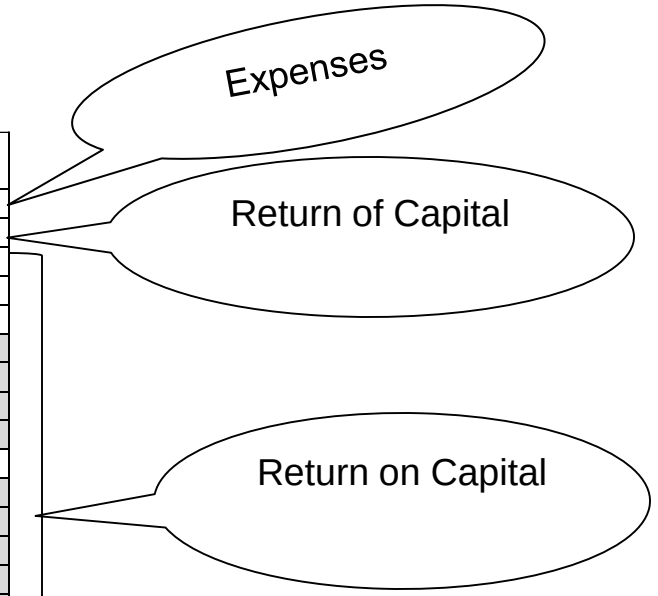
An oil pipeline carrier is allowed the opportunity to recover the cost of its investment in regulated assets over its life through periodic charges to depreciation (of carrier property).

Return on Capital
(i.e., Return on Rate Base)

An oil pipeline carrier is allowed the opportunity to earn compensation for the use of its capital to finance the investment necessary to provide regulated service.

Where Concept Meets Page 700

Line No.	Item (a)
1	Operating and Maintenance Expenses
2	Depreciation Expense
3	AFUDC Depreciation
4	Amortization of Deferred Earnings
5	Rate Base
5a	Rate Base – Original Cost
5b	Rate Base – Unamortized Starting Rate Base Write-Up
5c	Rate Base – Accumulated Net Deferred Earnings
5d	Total Rate Base –Trended Original Cost – (line 5a + line 5b + line 5c)
6	Rate of Return % (10.25% - 10.25)
6a	Rate of Return – Adjusted Capital Structure Ratio for Long Term Debt
6b	Rate of Return – Adjusted Capital Structure Ratio for Stockholders' Equity
6c	Rate of Return – Cost of Long Term Debt Capital
6d	Rate of Return – Real Cost of Stockholders' Equity
6e	Rate of Return – Weighted Average Cost of Capital – (line 6a x line 6c + line 6b x line 6d)
7	Return on Trended Original Cost Rate Base
7a	Return on Rate Base – Debt Component – (line 5d x line 6a x line 6c)
7b	Return on Rate Base – Equity Component – (line 5d x line 6b x line 6d)
7c	Total Return on Rate Base – (line 7a + line 7b)
8	Income Tax Allowance
8a	Composite Tax Rate % (37.50% - 37.50)
9	Total Cost of Service



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Key Elements

- Rate Base
- Return on Rate Base
- Income Tax Allowance
- Base and Test Period

Rate Base
Conceptual Overview

- Oil pipelines are entitled to the opportunity to earn a “reasonable” return on capital.

- Comprised of debt and equity components.
  - Portion associated with debt and equity is determined by capital structure.
  - Different rates of return for investment funded by debt and equity.

Rate Base
Common Methodologies

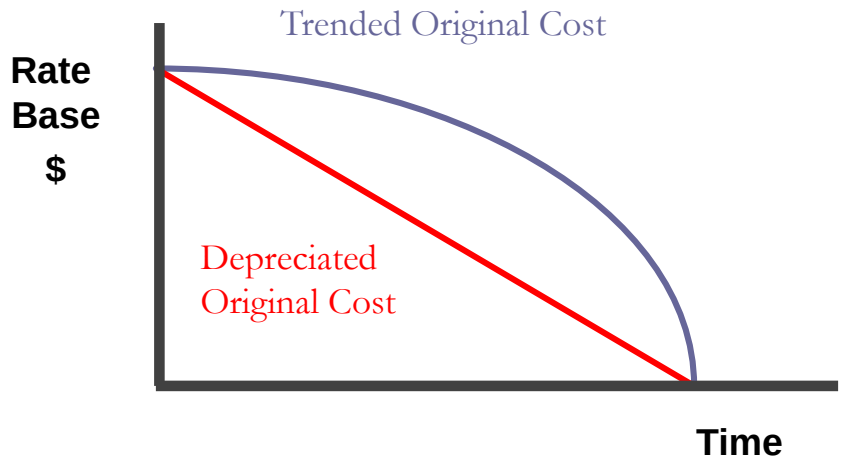
- Trended Original Cost[1] (TOC)
- Depreciated Original Cost[2] (DOC)
- *Valuation Rate Base*[3]

[1] Promulgated by Opinion 154-B
[2] Used for many state regulatory cost of service calculations
[3] Used by FERC before Opinion 154-B

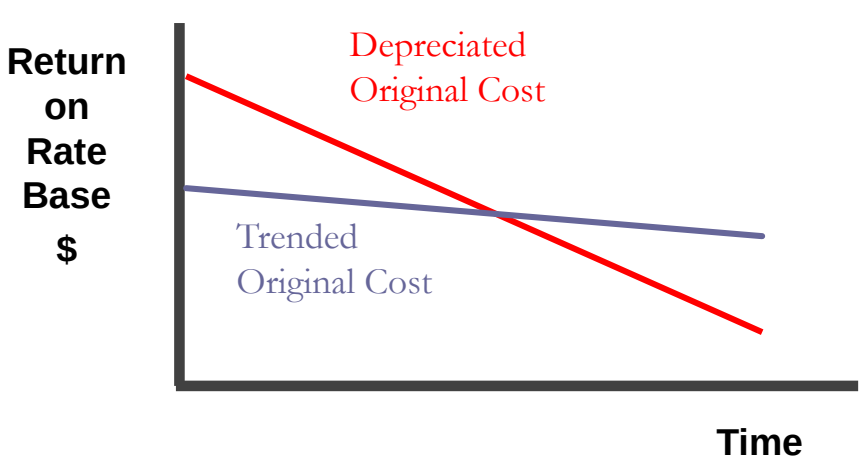
Rate Base
TOC vs. DOC

- Both start with original cost rate base, but inflation is treated differently:
  - TOC factors inflation into the equity portion of rate base. The trending, or deferred equity return, is amortized. The debt portion is not trended.
  - DOC immediately factors inflation into (nominal) return on equity rate base.

Rate Base Levels



Return on Rate Base Levels



Components of 154-B Rate Base

\+ Carrier Property in Service
\- Accrued Depreciation
\+ Net Allowance for Funds Used During Construction (“AFUDC”)
\- Accumulated Deferred Income Taxes (“ADIT”)
\+ Working Capital
= **DOC Rate Base**

\+ Net Deferred Return
= **TOC Rate Base**

\+ Net Starting Rate Base Write-Up
= **154-B Rate Base**

Carrier Property in Service and Accrued Depreciation

- Typically based on original cost property records and FERC prescribed composite depreciation rates.
  - There are exceptions when purchase price amounts may be used for ratemaking purposes.

- A Carrier needs to receive FERC approval to modify its depreciation rates.

AFUDC

- Compensates investors for funds expended to construct pipeline assets before the assets are placed in service.
- Allowed on both equity and debt expenditures.
- AFUDC is added to rate base at the same time the asset is placed in service.
- AFUDC is amortized, and its amortization is included in cost of service. The unamortized balance is included in rate base.

ADIT
Theory

- ADIT is a function of the difference in timing of depreciation for ratemaking and tax purposes.

- The difference between the annual regulatory income tax allowance and the annual income tax liability is tracked.

ADIT
Cost of Service Implications

- The standard convention is to deduct ADIT from rate base.
  - Theoretically, a pipeline is not permitted to earn a return on ADIT because ADIT is viewed as capital that is supplied by ratepayers, not by investors.
  - The FERC assumes that the pipeline uses the ADIT balances to finance its assets and operations.

ADIT
Under-/Over-Funded Taxes

- Under Normalization, since taxes are pre-funded, a change in the tax rate will theoretically result in under (or over) funding of taxes.

- If the tax rate increases, taxes will be under-funded.

- If the tax rate decreases, taxes will be over-funded.

Working Capital

- Working capital consists of investments and prepayments required to support the operation of a pipeline.

- Typically includes oil inventory, materials & supplies, and prepayments.

Deferred Return (or Deferred Earnings)

- Represents the inflationary trending component included in a 154-B rate base and amortized over the useful life of the pipeline.
  - Amortization of deferred return included in cost of service.

- The inflation factor multiplied by the equity rate base yields the inflationary trending component, or deferred return.

Starting Rate Base Write-Up

- Transition from ICC valuation rate base to 154-B TOC rate base.
  - One-time calculation as of December 31, 1983.
  - Uses June 1985 capital structure.
  - The SRB write-up must be divided between debt and equity so that only the equity portion of the SRB write-up is used to calculate deferred return.
- SRB write-up is included in 154-B rate base.
  - SRB write-up is amortized over time.
  - However, amortization of SRB write-up is excluded from cost of service.
  - For many companies it is fully amortized (started in 1983).

Key Elements

- Rate Base
- Return on Rate Base
- Income Tax Allowance
- Base and Test Period

WACC

- To calculate a pipeline's (after-tax) return on rate base, you multiply the rate base by the WACC
- WACC = weighted average cost of capital
- Reflects a weighted average of equity and debt return components
  - Remember that deferred return is 100% equity, so the capital structure needs to be adjusted when calculating the WACC for a TOC rate base

WACC Calculation (TOC Rate Base)

Adjusted Equity Capital Structure %

x Real Rate of Return on Equity %

+

Adjusted Debt Capital Structure %

x Cost of Debt %

= WACC

TOC v. DOC Return (conceptual)

	Trended Original Cost Rate Base	Depreciated Original Cost Rate Base
Debt Portion of Rate Base	Original cost rate base x Debt ratio x Cost of debt = Debt portion of return	Original cost rate base x Debt ratio x Cost of debt = Debt portion of return
Equity Portion of Rate Base	Original cost rate base + Net deferred return Net TOC rate base x **Adjusted** equity ratio x **Real** equity rate of return = Equity portion of return	Original cost rate base x Equity ratio x **Nominal** equity rate of return = Equity portion of return

Equity v. Debt

- Equity: intended to compensate investors for the use of their capital to finance carrier investment, on an after-tax basis.

- Debt: calculated as an allowance for interest incurred on long-term debt. Is a method for determining an allowable level of compensation.

Equity Rate of Return

The return on equity allowed a pipeline must be sufficient to:

1) fairly compensate capital presently invested in the pipeline;

2) enable the pipeline to offer a return adequate to attract new capital on reasonable terms; and

3) maintain the pipeline's financial integrity.

Equity Rates of Return
Nominal v. Real

- Nominal: Real rate of return + inflation.
  - Nominal rate of return is calculated using the DCF (discounted cash flow) Method using comparable companies (proxy group) and stock market and projected growth data.

- Real: Excludes inflationary component of return. Used for 154-B return on rate base calculation.

Capital Structure (3-pronged test)

- In evaluating the appropriate capital structure, the FERC will:
  - First look at the pipeline's actual capital structure
    - Unless it's anomalous or the pipeline does not provide it's own financing
  - Then the FERC will look at the parent company's capital structure
    - Unless it's anomalous
  - Finally, the FERC will look at the proxy group's average capital structure

Impact of Changes in Cost of Capital Components on Return

- Return is after-tax

- Equity v. Debt
  - The equity return is grossed up for income taxes
    - So any change in the equity rate of return will impact both return and income tax allowance
  - Interest expense is tax deductible, so the debt return is not grossed up for income taxes

Key Elements

- Rate Base
- Return on Rate Base
- **Income Tax Allowance**
- Base and Test Period

Income Tax Allowance
Conceptual Overview

- Return on rate base is an after-tax return.

- The income tax allowance grosses up the after-tax return on equity rate base to compensate investors for their estimated tax liability.

Net-To-Tax Multiplier Theory
Hypothetical Example

Line No.	Description	Source	
1	Statutory Federal Tax Rate	IRC	35.00%
2	Statutory State Tax Rate	FTB	8.84%
3	Weighted Average Tax Rate	Lines (1 + 2 [after FIT])	40.75%
4	Allowed Equity Return	Hypothetical	$10,000
5	Net-to-Tax Multiplier	Line 3 / (1.0 - Line 3)	68.76%
6	Income Tax Allowance	Lines (4 * 5)	$6,876
7	Taxable Return	Lines (4 + 6)	$16,876
8	Taxes Payable	Lines (3 * 7)	$6,876
9	Income After Taxes	Lines (7 - 8)	$10,000

Key Elements

- Rate Base
- Return on Rate Base
- Income Tax Allowance
- **Base and Test Period**

Base Period (FERC)

A base period consists of 12 consecutive months of actual operating experience, adjusted to “normalize” amounts that are not expected to recur each year.

Test Period (FERC)

A test period consists of a base period adjusted for changes in revenues and costs which are known and measurable with reasonable accuracy at the time of filing and which will become effective within nine months after the last month of available actual experience utilized in the filing.

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AOPL Training Opportunities

- The AOPL offers a Page 700 training course.
- Offered in conjunction with annual Form 6 training.
- Be sure and attend some of the other sessions for more details on this fascinating subject.

Questions?