Revenue Decoupling: Supplemental Information

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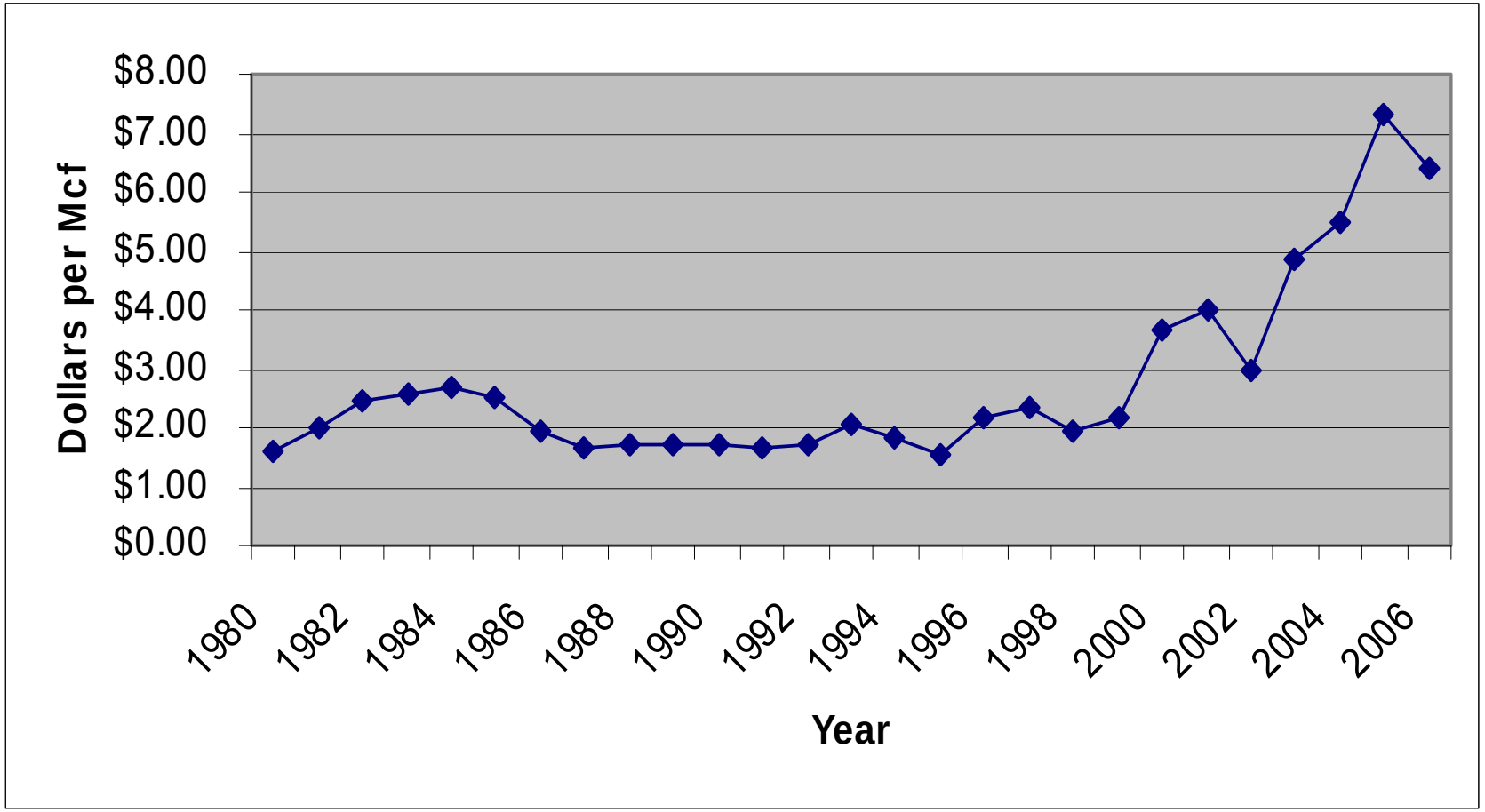
Wellhead Natural Gas Prices, 1980-2006



Revenue Decoupling under Different Labels

- Conservation margin tracker
- Conservation-enabling tariff
- Conservation tariff
- Conservation rider
- Conservation and usage adjustment tariff
- Innovative ratemaking
- Conservation tracker allowance
- Incentive equalizer
- Delivery margin normalization
- Usage per customer tracker
- Customer utilization tracker
- Trial billing determinant adjustment clause rider

Sample of Gas Utilities with RD

- Baltimore G&E
- Washington Gas Light (MD)
- Southwest Gas (CA)
- Northwest Natural (OR)
- 3 major California gas utilities
- Piedmont Natural Gas (NC)
- New Jersey Natural Gas
- South Jersey Gas
- Questar Gas (UT)
- Avista Utilities (WA)
- Cascade Natural Gas (OR,WA)
- Vectren Energy Delivery (OH,IN)
- Public Service Company of Colorado

Several RD Proposals Pending in

- Arizona
- Arkansas
- Delaware
- District of Columbia
- Kentucky
- Michigan
- Minnesota
- New York
- Virginia

Cases Where an RD Was Rejected, Withdrawn or Discontinued

- Southwest Gas (NV, AZ)
- Xcel (MN, ND)
- Maine (electric utilities)
- New York (electric utilities)
- Washington (electric utilities)
- PacifiCorp (WA)
- Portland GE (OR)
- Northwest Natural (WA)

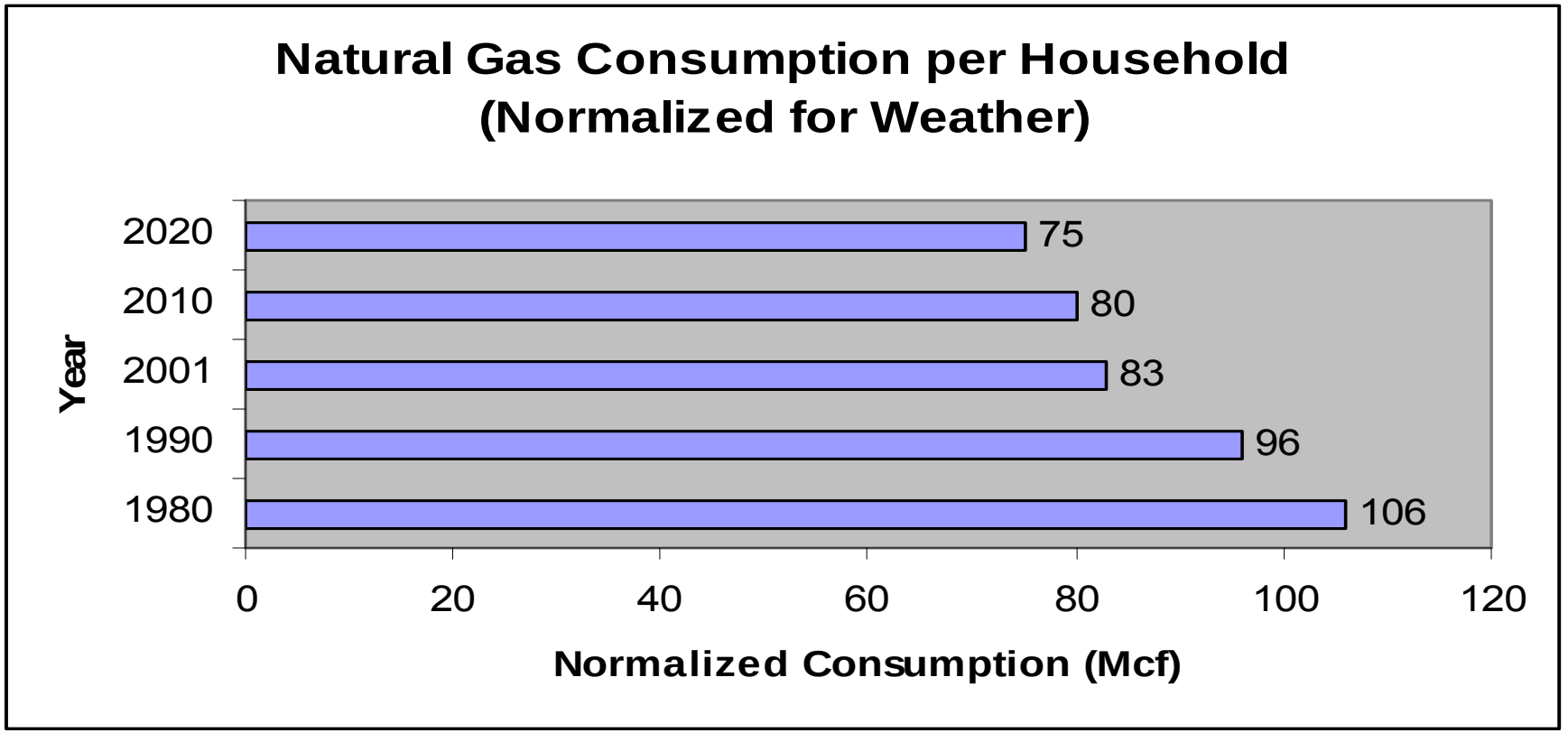
State Commission Arguments Rejecting RD

- In the absence of extraordinary circumstances, RD runs afoul of acceptable ratemaking
- Other ratemaking mechanisms are better for stabilizing a utility's earnings
- No evidence that past gas usage trends placed the utility in financial jeopardy
- Not sure that declining use per customer will continue and adversely affect a utility's future earnings

State Commission Arguments Rejecting RD -- *continued*

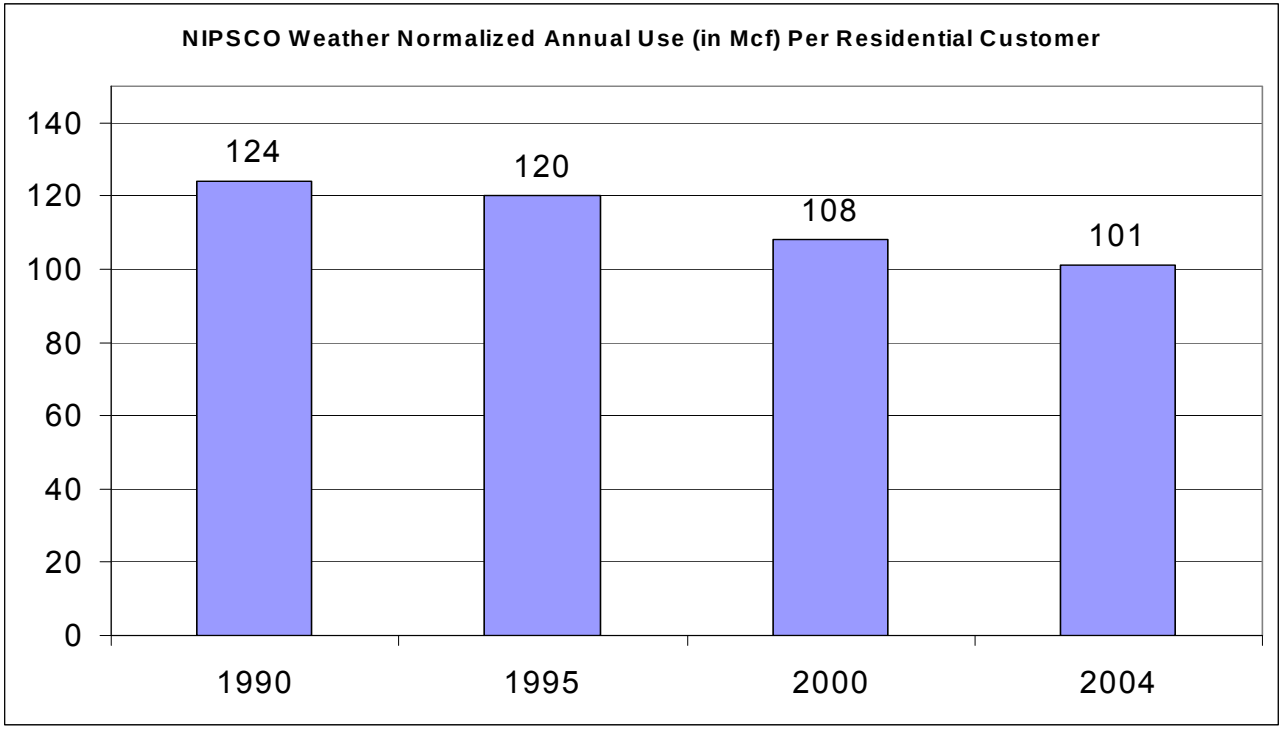
- RD shields the utility from sales risk by passing it on to consumers
- Don’t need RD to promote utility-initiated energy efficiency
- More appropriately, should explore fully in a broader investigation the issue of usage volatility and margin recovery
- Concern over the possible magnitude of periodic rate adjustments from RD

Declining Gas Consumption per Household since 1980 (*source: AGA*)



Example for a Gas Utility

NIPSCO's Residential Usage also on the Decline



A NiSource Company

Illustration of Effect of Declining Sales on Earnings

– Accounting relationships:

(1) $E^* = R^* - FC$

(2) $\Delta Q \times P = \Delta R = \Delta E$

(3) $\Delta R/E = \Delta E/E = \Delta ROE/ROE^*$

where * indicates targeted or baseline, Δ = change, E = earnings to equity shareholders, R = revenues, FC = fixed costs (including the interest on debt), Q = sales level, P = base rate, and ROE = rate of return on equity

– *Example*: R* = $400 million; FC (all costs except the return on equity) = $360 million; ROE = 12% (or authorized earnings to common equity holders = $40 million – thus, the source of equity capital equals $333 million [$40/0.12])

Illustration of Effect of Declining Sales on Earnings -- *continued*

- Assume that all distribution costs are fixed
- Assume that revenues fall 1% (or $4 million) short of the targeted revenue (R*) because of unexpected energy conservation by customers
- The decrease in earnings to common equity holders would equal $4 million, which is a decline of 10%; this translates into a decrease of ROE of also 10% (i.e.,120 basis points) or from 12% to 10.8%
- In sum, the decrease in revenues of 1% translates into lower earnings to equity holders of 10%

Effect of RD on Customer-Initiated Energy Conservation

- Assume that RD causes the base rate to increase by 2% with the base rate representing 30% of the delivered price
- Customers would see an aggregated rate increase of 0.6% (2%·30%)
- Customers would therefore realize 0.6 percent less benefits from energy conservation
- An individual customer undertaking conservation would not result in any rate adjustment, since that customer uses a minuscule amount of gas relative to total class usage

Some Ex Post Evidence on RD

- From the perspective of a senior staff member of the Maryland Public Service Commission, the Baltimore and Gas RD mechanism (Rider 8) has achieved the intended goals since its inception over seven years ago; it has
  - Produced more stable and predictable revenues for the utility between rate cases by accounting for revenue "attrition" caused by declining gas use per customer
  - Reduced the volatility of gas bills, especially under cold weather conditions
  - Allowed for the continuation of current rate designs that provide an incentive for consumers to conserve and that are non-discriminatory to low usage customers
  - Overall, the staff member concluded that the mechanism has "[fulfilled] more regulatory objectives with fewer shortcomings than other alternatives"

Some Ex Post Evidence on RD -- *continued*

- A study conducted for Northwest Natural concluded that
  - By reducing revenue fluctuations, the Distribution Margin Normalization (DMN) mechanism has reduced the utility's business and financial risks
  - DMN margin adjustments can largely be attributed to the effect of price changes, with economic activity and the utility's funded energy efficiency efforts having a statistically insignificant effect on use per customer
  - The utility's focus has shifted from marketing to promoting energy efficiency
  - Service quality did not decline
  - Most of the risk reductions experienced by the utility were eliminated rather than shifted to customers

Risk Effect on a Utility

- Lower risk from sales fluctuations
- For a utility, this creates more stability in revenues, cash flows and earnings
- Under RD, for example, revenue volatility for the utility caused by a downturn in the local economy or higher gas prices leading to fewer sales would be less pronounced
- Although a utility's overall risk would decline, exactly by how much would require a sophisticated quantitative analysis

Risk Effect on a Utility -- *continued*

- In the order approving Piedmont Gas' RD proposal, the North Carolina Utilities Commission said that

  "Piedmont argues that there is no evidence of reduced risk to shareholders, but the Commission disagrees on the basis of the Company's own case…In a period of declining per-customer usage, a mechanism that decouples recovery of margin from usage, without requiring the utility to file frequent rate cases or increase unpopular fixed charges, clearly reduces shareholder risk"
- Because of the company's RD mechanism (Rider 8), the Maryland PSC reduced the authorized rate of return on equity for Baltimore Gas and Electric by *50 basis points* to reflect reduced revenue risk for the utility

Risk Effect on Consumers

- *First scenario*
  - If the delivered gas price rises (say) by 20%, and assuming a price elasticity of -0.10 (or less than one in absolute terms), customers' bills would increase
  - With fewer sales, under RD the utility would adjust upward its base rate, aggravating the burden on customers

Risk Effect on Consumers -- *continued*

- *Second scenario*
  - If colder-than-normal weather occurs, customers' bills would not rise as much under RD
  - Bills would be lower because of higher actual sales translating into a downward adjustment of base rates
  - In this case, RD would have a hedging-type effect (i.e., risk-reducing effect) from reduced volatility of customers' bills

Risk Effect on Consumers -- *continued*

- *Third example*
  - Under RD fewer sales resulting from an economic recession would cause customers to pay higher rates at a time when many might be facing financial hardship

Bonbright's Eight Criteria for Ratemaking: The Guide for PUCs

- Simplicity, understandability, public acceptability and feasibility of implementation
- Uncontroversial as to proper interpretation
- Effectiveness in providing the utility with adequate revenues to recover costs
- Year-to-year revenue stability
- Rate stability
- Fairness among customer classes
- Avoidance of undue price discrimination
- Economically efficient in giving customers proper price signals, for example, in not over-consuming utility service

Ratemaking Objectives

• Public acceptability (e.g., minimal customer complaints and negative publicity)	• Equitable (e.g., fair cost allocation and rate design, balanced risk sharing between the utility and its customers)
• Revenue sufficiency (e.g., reasonable opportunity for a utility to earn its authorized rate of return)	• Efficient competition (e.g., avoidance of uneconomical bypass, no preferential treatment of utility affiliates)
• Rate stability (e.g., no sudden dramatic rise in rates)	• Promotion of specified social goals (e.g., energy efficiency, affordability, economic development)
• Efficient consumption (e.g., rates aligned with marginal cost)	• Avoidance of undue discrimination (e.g., rates below marginal cost, anticompetitive rates)

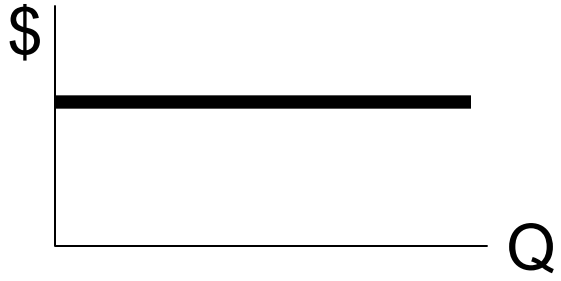
Straight-Fixed Variable Rate Design: Better than RD?

Advantages	Disadvantages
More compatible with sound economic (e.g., marginal cost) principles	Larger effect on low-usage customers, many of whom may be low income
More flexibility to a utility in competing with alternative fuel providers	Reduced incentives for customer-initiated energy efficiency
Elimination of intra-class subsidies	Possible noticeable increase in summer gas bills
Simpler to implement and for customers to understand	Likely stronger opposition from stakeholders and commission staff
How many capital-intensive services are priced	
Non-tracker with no periodic true-up or price changes between rate cases	
More stable gas bills	
More evenly allocates the recovery of fixed costs across seasons	

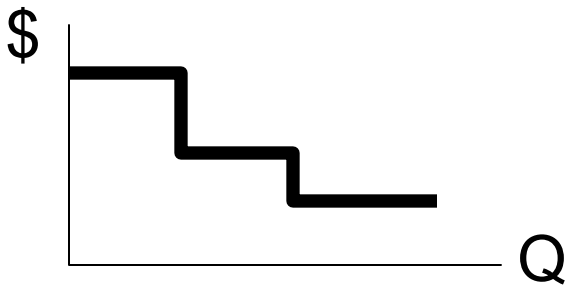
Examples of Rate Designs: Conflicts in Objectives

Flat Bill per period, no usage charge

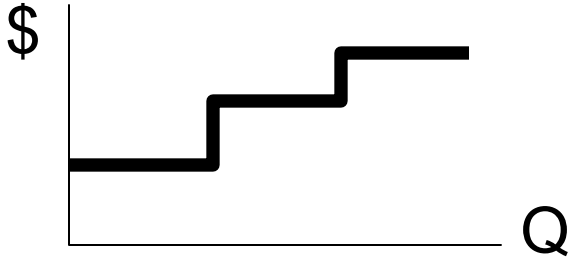
Uniform: Flat Rate per unit



Declining Block

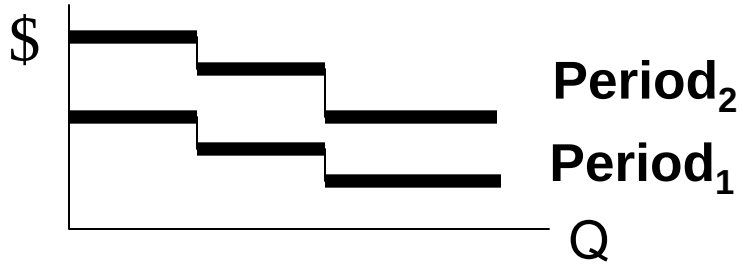


Inverted Block



Examples of Rate Designs --
continued

Seasonal or Time of Use



Suggested Alternatives to RD in Achieving Similar Objectives

- Raising the customer charge by removing fixed costs from the volumetric charge
- Allowing for weather-normalization adjustments
- Implementing declining block rates
- Using a multi-year forecast horizon in setting new rates
- Implementing a targeted incentive plan for energy efficiency (e.g., sharing of net benefits between shareholders and customers)

Contact

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