Price Cap/Alt-Reg:
from Telecom to Electric Utilities

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Price Cap Regulation

1. The Mechanics of Price Cap Regulation
2. Historic Emergence of Price Caps
3. Use of Price Caps in Canada, UK and US
4. Potential and Perils of Price Cap Regulation

BASIC FORMULA

$$\text{Growth}(PCI) = P - X \pm Z$$

PCI: Price Cap Index

P: Inflation factor

X: Productivity Factor

Z: External Factors

Purpose of Price Caps

- Solve incentive problems with cost-of-service regulation
- Efficiency and innovation incentives for utility
- Increase returns
- Avoid uncertainty and frequency of rate cases
- Solve regulatory lag, information asymmetry problems

How to think about price caps

- Conceptualize as a long-term, fixed price contract
- Can cap overall prices or revenue.
- Terms of cap plan present menu of choices for utility to account for different goals/ circumstances.
- Customize for generation, transmission and distribution (multi-part cap)

DEALING WITH COST UNCERTAINTIES UNDER PRICE CAP PLAN

- Cost adjustment mechanisms (e.g., GCA) can continue under price cap plan
- *Ad hoc* treatment of large capital investment projects (e.g., large generation and transmission facilities)
- Public policy measures (e.g., RPS and DSM) can continue as set-asides or be subsumed within cap plan

The Telecom Move to Price Caps

Year	Rate of Return Regulation	Earnings Sharing Regulation	Rate Case Moratoria	Price Cap Regulation
1985	50	0	0	0
1987	36	3	10	0
1990	23	14	9	1
1993	17	22	5	3
1995	18	17	3	9
1998	13	2	3	30
2000	7	1	1	39
2003	6	0	0	40
2007	3	0	0	33

Source: Price Cap Regulation: What Have We Learned from 25 Years Experience In the Telecommunications Industry, Sappington and Weisman (UF PURC 2010)

Lessons from Telecom

- Efficiency gains were real driven by silicon economics/Moore's Law
- States systematically underestimated productivity factors
- Telcos increased returns and boosted productivity
- Weak quality of service regulation marred success

A Real Price Cap Plan -- Enmax

$P_t = P_{t-1} * (1 + (I-X)) – E – S + F$ Where:

P_t	= Current year's customer rate for each customer class
P_{t-1}	= Prior year's customer rate for each customer class
I	= Inflation factor
X	= Productivity factor
E	= Customer portion of earnings sharing
S	= Service quality penalties, if any
F	= Flow through and uncontrollable costs

* ENMAX Power Corporation 2007-2016 Formula Based Ratemaking, Alberta Utilities Commission, Decision No. 2009-035 (Mar. 25, 2009)

ENMAX OFF-RAMPS AND RE-OPENERS

- Off-Ramps: (1) substantial or unforeseen circumstances, (2) change in regulatory status, (3) change in EPC control, (4) misrepresentation by EPC.

- Re-Openers: (a) failure to meet a specific performance standard for two consecutive years, (b) material changes in GAAP with an impact greater than $5 million, (3) expansion of the service territory by more than 10,000 customers, (c) actual ROE is 300 basis points ± target for two consecutive years, or (d) actual ROE is 500 basis points ± target for consecutive years

Promise and Peril

Increase Returns	**Degrade Quality of Service to Boost Return (e.g., US West in 1990s)**
Increase incentives for efficiency and DSM measures	**Mis-set cap or X-factor makes performance goals unachievable**
Reduce regulatory burden/cases	**Too much success results in backlash (see National Grid)**
Political economy positive: indifference to build/buy, supply/demand-side resources	**Second round of cap makes efficiencies harder to achieve**

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