POLITICAL ECONOMY OF REGULATION

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Outline

- What are utilities?
- Why regulate utilities?
- Regulatory hazards
  - Governmental and Third Party Opportunism
- Vertical integration into public bureaus
What are utilities?

• Three key features of utilities
  • Large sunk investments
  • Massive consumption
  • Politically sensitive pricing

• Examples
  • Why steel industry is not a “utility”
  • Why food industry is not a “utility” (even in poor countries)
  • Why oil production is not a utility
    • Is oil pipelines a utility
Why Regulate Utilities?

• What does “natural monopoly” mean
  • Economies of scale

• Why regulate a “natural monopoly”?
  • What are the sources of inefficiencies associated with monopoly
  • What are the distributional implications?

• Does the existence of a natural monopoly prevent entry?
  • Contestability
Contestable Markets

- Baumol, Panzar and Willig
  - Sunk costs as a barrier to entry
  - What about long term contracting?
Demsetz

- When regulate a monopolist?
- How regulate a monopolist?
  - Pricing
  - Quality/maintenance
  - Renewal
Implicit Assumptions in Demsetz framework

• Assets depreciate rapidly (1 yr)
  • No need for new investment
  • No relevant sunk investments
• Single product service
• No unexpected cost shocks
• Costless bidding
Implicit assumptions II

• Pricing
  • How to organize the bid if the service is multiproduct
    • Whiskey vs. sodas in concession stands
    • Local vs long distance telecom service
    • Industrial vs. residential electricity
      • Dangers of setting bids only on a single dimension

• Maintenance
  • How to assure the franchisee maintains the operation if it expects to lose the next bid?
    • Penalties?
    • Supervision?
    • Contract length?
Implicit assumptions III

• If contract is not one year, but long, how to adjust prices to unexpected shocks
  • Inflation?
  • Costs?
    • How to overcome informational advantages?
      • Supervision/control/audit?

• Re-auction
  • What do we do with investments undertaken by current operator?
    • How do we (or not) transfer of assets to new franchisee?
      • Extend length of franchise?
      • Approve investments?
  • Are informational advantages relevant at bidding time?
    • Is bidding costless?
What are Utilities’ Risks if

• Assets depreciate very slowly
  • And are largely specific
• Investment and maintenance are required over life of contract
• Service is complex and multiproduct
• Quality is difficult to measure
• Cannot avoid shocks
• Bidding is costly
Governmental Opportunism

• Changes in the rules of the game
  • Changes in interpretation
  • Subtle, does not imply taking over assets but just of quasi-rents
  • Working of administrative process
Governmental Opportunism and Utility Regulation

- Why is governmental opportunism a risk for utilities?
- Is governmental opportunism politically “profitable?”
- How can governmental opportunism be limited?
Governmental Opportunism

Spot contract w/state

A=0

A>0

S=0

S>0

P₁>P₀

P₀

A: degree of specificity
S: Governmental safeguards against opportunism
Implications of Governmental Opportunism

- Added safeguards over and beyond normal contract with private sector
  - More contract specificity than among private agents
  - More judicial independence
  - More procedural safeguards
  - Higher price / shorter return
Regulatory Process

- Alternative ways of limiting governmental opportunism
  - Contract
  - Administrative process
  - Highly specific legislation
- Institutional environment may hinder or facilitate implementation
Division of powers

- Judicial independence required to
  - Uphold contracts
  - Uphold procedures

- Unified vs divided government
  - Control of executive over legislature facilitates overturning of specific legislation
  - Party alternation generate political risk in unified gov’ts

- Bureaucratic capabilities
  - Facilitate complex rules
Regulation by Contract

- Individualized regulation
- Same hazards as public procurement
Third Party Opportunism

- Defining feature of contracts with the State
- Incentives for *third* parties to challenge “probity” of public agent in spite of action being ethic and legal
  - Political incentives (fundamental)
  - Economic incentives
Conditions for 3rd Party Opportunism

• **Action**
  • Must look improper
    • Seemingly large transfer to a private party
    • Seemingly improper implementation of contract
    • Others

• **Actors**
  • Interested third party competes with public agent in another (political) market
    • Democracies

• **Information**
  • Informational asymmetries between the third party and courts or public in general
    • The more complex the public/private transaction, the higher the incentive for third party opportunism
TPO Game: Hazards into Rigidities

- Four agents involved in public contracting:
  - Incumbent public agent
    - Given project’s size, selects extent of contract rigidity, given expectations concerning potential challenges and degree of success
  - Private contractor
    - Given project’s features and rigidity, selects price
  - Third-party challengers
    - Political opponents to the incumbent public agent, competitors to the contractor, and interest groups
    - Given its information about nature of project, choice of rigidity, cost of challenge, and potential internalization of benefits from challenge, decides whether to challenge the public agent or not
  - Public at large, i.e., voters and courts
    - Determines challenger’s success
Equilibrium

- Level of rigidity
  - Such that maximizes public agent expected benefits
- Probability of challenge (as perceived by public agent)
  - Consistent with optimal challenge choice by TP
- Price
  - Incorporates cost of rigidity
Some simple results

• Expected third-party opportunism costs are decreasing and strictly convex in rigidity
• Contracting and enforcement costs are rising and convex in rigidity
Endogeneous Opportunistic Challenge

- An increase in specificity and rigidity R carries two effects:
  - It lowers the likelihood of success of a TPO challenge
  - It increases cost of challenge c
- Thus it decreases the probability at which an opportunistic challenge pays off
Optimal choice of rigidity

![Graph showing the relationship between costs, price, and rigidity.](image)
Rigidity and TP challenge

![Graph showing cumulative probability and third parties' benefits from an opportunistic challenge.]

- High rigidity: litigation cost $c = 16$, $\sigma = .1$
- Low rigidity: litigation cost $c = 12$, $\sigma = .5$

$F(x/R, T_0^\zeta, \tau)$
Implications

- Contractual properties consistent with public contracting practice:
  - Larger contracts imply higher expected political benefits for opportunistic third parties (higher mean), thus higher probability of challenge, given costs
  - Probability of challenge is sensitive to success probability (the institutional environment). The more success probability moves with rigidity, the more probability of challenge falls with rigidity
    - Rule of law implies higher probability of challenge
  - Higher dispersion in TP’s beliefs leads to lower (higher) challenge equilibrium probability in relatively low (high) cost environments
    - Role of public access to information
Scrutiny: changes in TP’s benefit expectations
Political Market Structure

• If the political opposition is fragmented, benefits from a challenge can go to any of the political competitors, not necessarily to the challenger who bears costs.

• With atomized political opposition, challenger will face no benefits, and there will be no TPO challenges (mono-partisan or autarky system).
Applications

- Bureaucracies
- Fixed-Price vs. Cost-Plus Contracts
- PPPs and Key Performance Indicators
- Public-to-Public Contracts
- External Consultants and Certification of Contractors
- Efficient Small Communities and Authoritarian Regimes
- Privatization of Government-Owned Companies
- Regulation
(In)Efficient Regulation

• Utility regulation governance of public procurement of public services
  • Subject to same pressures for rigidity in implementation
  • 2nd best “optimal regulation” schemes generate too high TPO risks
    • Large cash transfers politically not credible
      • Penalties > bonuses
    • Price rigidity
    • Higher ex-ante prices
Implications of Third Party Opportunism

• Added safeguards over and beyond normal contract with private sector
  • Improve contractual completeness
    • Higher contract specificity
  • Limit claims of improper behavior
    • Higher contract specificity
    • Limit high power incentive clauses
    • Higher procedural rigidity
      • More requirements for formal renegotiation
      • More conflicts

• Can “relational public contracting” operate?
Vertical Integration into Public Bureaus Revisited

• Alternatives
  • Outsourcing
    • One shot public contracting
    • Long term public contracting
      • Nature of outsourcing process
      • Characteristics of transaction
      • Need to reduce TPO
  • Integration
Public Contractual Hazards and Public Integration

- \( A = 0 \)
  - TPO high
    - Simple 1 shot outsourcing
  - TPO low
    - Complex 1 shot outsourcing

- \( A > 0 \)
  - S = 0
    - Public integration
  - S > 0
    - TPO high
      - Public integration
    - TPO low
      - Complex long term outsourcing
Public Outsourcing

• Complex Long Term
  • Highly detailed contracting
  • Low power incentives throughout
  • Formal renegotiation requirements
    • Looks very much like rate of return

• Complex one shot
  • Formalized procedures
  • Limited selection discretion
    • Looks very much like computer procurement

• Simple one shot
  • Officemax
Public Integration

- Bureaucracy comparatively efficient
  - Under right conditions
  - However, looks inefficient
    - Low power incentives throughout
    - Formal procedures for HR
      - Looks like civil service provisions
### Evidence from Guasch/Laffont/Straub

<table>
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<tr>
<th>Dependent variable: Dummy variable indicating the occurrence of renegotiation initiated by the firm</th>
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<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
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<tr>
<td>Existence of regulatory body</td>
<td>0.41</td>
<td>0.03</td>
<td>-1.20</td>
<td>0.84***</td>
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<td>Price cap (IV)</td>
<td>8.42*</td>
<td>8.09*</td>
<td>6.57*</td>
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<td>Duration since award</td>
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<td>0.23*</td>
<td>0.20*</td>
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<td>Investment requirements</td>
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<td>0.79***</td>
<td>0.93***</td>
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<td>Private financing (IV)</td>
<td>-4.56*</td>
<td>1.48</td>
<td>2.89**</td>
<td>3.87*</td>
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<td>Bureaucratic quality</td>
<td>-0.75*</td>
<td>-0.85*</td>
<td>-0.21</td>
<td>-0.23</td>
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<td>Arbitration process (IV)</td>
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<td>(1.61)</td>
<td>7.98**</td>
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<td>Minimum income guarantee (IV)</td>
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<tr>
<td>Bidding process (IV)</td>
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<tr>
<td>Duration of contract (TV)</td>
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<td>Election-1</td>
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<td>(1.02)</td>
<td>0.23</td>
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<td>GDP growth-1</td>
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<td>GDP growth-2</td>
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<td>Transport sector</td>
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<td>Log Likelihood</td>
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<td>-125.08</td>
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<td>-119.60</td>
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Note: TV in parenthesis denotes an instrumented variable. Coefficients significant at the 1% (*), 5% (**) and 10% (***).
Conclusions

• Utility regulation comes to solve a contracting problem
  • Sunk investments
  • Governmental opportunism
  • Third party opportunism

• Regulatory process and nature it takes will depend on the institutional structure