14.23 Government Regulation of Industry

Class 5

MIT & University of Cambridge
Outline

• Instruments of Regulation
• History of Regulation in the US
• Overview of process of regulation
• Theories of Regulation
• Theory of Natural Monopoly
• Pricing under Monopoly
• Conclusions
Regulation

• A definition:

• ‘A government imposed limitation on the behavior of individuals or organizations.’

• e.g. minimum wage restrictions, pollution targets and information requirements.
Instruments of Regulation

• Control of price
  – This aims to prevent both predatory pricing and over charging.

• Control of quantity
  – Universal service obligations, maximum production limits.

• Control of entry
  – e.g. in long distance telecoms and NYC taxicabs

• Control of quality
  – e.g. of emissions, customer service levels, safety etc.
History of Regulation

• Religious leaders have restricted the price of credit and discussed ‘Just Prices’ (e.g. Aquinas)

• Modern economic regulation begins in 1870s with regulation of water and gas rates.

• In US case law develops scope for regulatory action.
History of Regulation

• Munn v. Illinois (1877)
  – 1871 Illinois sets a ceiling on rates for grain elevators
  – Munn and Scott claim law deprives them of private property without due process (5th amendment).
  – Ruling establishes public interest defense for regulation of private property.

• Interstate Commerce Act of 1887
  – Railroads affected by high prices with periodic price wars.
  – Act establishes Interstate Commerce Commission (ICC) to regulate railroad rates.
History of Regulation

• Nebbia vs New York (1934)
  – NY regulating price of milk
  – Nebbia undercuts price of milk and is sued.
  – Claimed that: 1. Market is competitive, 2. Market is not a utility, 3. Due process violated.
  – Court ruled: 1.& 2. Yes; 3. No.
  – This establishes that any industry can be regulated.

• MA was regulating utilities in 1885 and by 1930 most states had Public Service Commissions.
Growth of Regulation


• 1930s:
  – ICC expanded into trucks, water barges, oil pipelines, passenger buses.
  – 1934 Federal Communications Commission (FCC)
  – 1935 Federal Power Commission (Electricity and Natural Gas)
  – 1934 Securities and Exchange Commission (SEC)

• Steady growth, in 1977 17% of GNP was fully regulated.
Government Ownership

• Parallel trends around the world except that in many cases public ownership was adopted in order to better regulate industries.

• In United Kingdom large scale nationalizations:
  – Telecoms (1912)
  – Bank of England (1946)
  – Rail (1948)
  – Electricity (1948)

• This allowed the state to better regulate pricing and service than the private sector was doing at the time.
De-regulation

- Worldwide wave of de-regulation begins towards the end of the 1970s.
- In the US: Airlines, railroads, trucking, passenger buses, long distance telephone, wholesale power.
- In Europe: Rail, Telecoms, Electricity, Gas, Postal Services, Air transport all subject to national and European Union wide legislative changes.
- In the US: only 6.6% of GNP fully regulated by 1988 (17% in 1977).
- In the UK: 10% of GNP transferred from state control to private (usually competitive) ownership between 1979 and 1997.
Overview of Process of Regulation

• Legislation (e.g. Federal Power Act, 1935):
  – Specifies a regulatory agency
  – Specifies powers of the agency
  – Specifies policy objectives
    • E.g. reasonable and just service to all consumers.

• Implementation:
  – Federal regulatory commissions usually have 5 members, can be experts or political friends.
  – Commissioner may be fired for cause but not at will (independent). They can use case by case hearings or an across the board ruling.
  – Staff of Commission collect data and advocate against industry.
Overview of Process of Regulation

• 3 types of Commission Employee:
  – Careerist (wants agency to exist and grow)
  – Politician (will leave agency for other office)
  – Professional (will move on to other work)
  – In pricing legislation for instance, professional wants complex regime with nice theoretical properties, careerist wants simple set up to avoid problems and politician wants to please interest groups.

• Other players include:
  – Consumer groups – want lower prices
  – Incumbent firms – want high stable profits
  – Competitors – want more liberalised markets
Theories of Regulation

• Normative Analysis as a Positive Theory or Public Interest Theory
  – In some markets unconstrained competition does not work e.g. under natural monopoly or externalities.
  – Under natural monopoly productive efficiency suggests we should have one firm and p=mc but this does not happen in an unconstrained market.
  – Normative analysis suggests that in this circumstance we should have regulation.
  – Positive analysis says that regulation does occur when we have these sorts of circumstances.
  – This suggests a pro-social welfare motive for regulation.
Theories of Regulation

• Capture Theory (Stigler)
  – Regulation is supplied in response to the industry’s demand for regulation.
  – Regulatory agencies are created by captured legislatures.
  – Regulatory agencies come to be controlled by industry.
  – This suggests a pro-producer theory (i.e. pro-producer surplus theory) of regulation.

Most regulation would seem to be motivated by a combination of the above two theories.
Theories of Regulation

- Economic Theory of Regulation
  - Stigler-Peltzman Model predicts that:
    - Regulatory legislation redistributes wealth.
    - Behavior of legislators is driven by desire to remain in office.
    - Interest groups compete by offering political support in return for favorable legislation.
    - Example of electric power rates: residential, commercial and industrial power rates showed lower price-cost ratios for industrial and industrial customers relative to commercial ones, why?
  - Becker Model:
    - Focuses just on role of interest groups and assumes that they compete with one another to gain most influence.
Peltzman Model

\[ \pi(p) \]

\[ M_1, M_2 \]

\[ p^c, p^*, p^m \]

Price, p
Increase in costs of regulation increases the influence activity of firm, 2 and reduces it for consumer, 1. This is because a given wealth transfer to 2 from 1 is more costly to firm 2 (increased incentive to pay to avoid it) and is more costly to acquire for consumer 1 (less incentive to pay to get it).

\[
\begin{align*}
I_{12}(p_2) \\
I_{11}(p_2) \\
I_{22}(p_1) \\
I_{21}(p_1)
\end{align*}
\]
Conclusions of Economic Theory of Regulation

- Tendency for regulation to be designed to benefit relatively small groups with strong preferences relative to big groups with weak preferences.
- Pro-producer tendencies are disciplined by consumer groups meaning that price is less than the monopoly level.
- Regulation most likely in competitive or monopoly industries as there is strong incentive for one group to lobby for regulation.
- In the presence of market failure regulation is likely because of the large losses this inflicts on some interest groups.
Can Economic Theory of Regulation explain de-regulation?

• Partly:
  – Consider:
    • Role of New Technology
    • Demand Growth
    • Inefficiency and budget deficits
  – How do these affect interest groups around legislation?

• However there was a strong role for public interest theory as well e.g. was Mrs Thatcher economically rational?

• One should be careful in moving towards non-falsifiable economic theories of human behavior as all insights may be lost.
Solving the Natural Monopoly pricing problem

- Is it really a natural monopoly?
- Linear pricing
- Two part tariffs
- Loeb-Magat proposal
- Franchise Bidding e.g. Cable TV
- Ramsey Pricing e.g. telephone service?
- Public Enterprise e.g. MBTA
A natural monopoly has a sub-additive cost function. A natural monopoly has as a sub-additive cost function.
Linear Pricing

P=AC or P=MC?
P=MC may be efficient but how are losses to be funded?
If we have a private firm how does regulator know costs?
Loeb-Magat proposal can encourage private firm to charge P=MC if you give it all of the consumer surplus generated at price charged. This solves the information problem put worsens the losses problem.
Two Part Pricing and Ramsey Pricing

- Two part pricing: fixed fee plus per unit charge.
- Unit charge could equal marginal cost.
- Problem fixed charge may discourage some people from taking service at all.
- Solution vary fixed charge to cross-subsidise low users.

- Ramsey pricing minimises the deadweight losses incurred in raising prices to cover costs for multi-product monopolists. This happens when \((P-MC)/P = \alpha/\text{price elasticity of demand}\), where \(\alpha=\text{some constant}\).
Next

- *Public Enterprise*

- Read VVH Chapter 14.