The Cambridge-MIT Institute Electricity Project

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

- 3 spurts of regulation: 1909-1916, 1933-40, 1973-80.
- 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

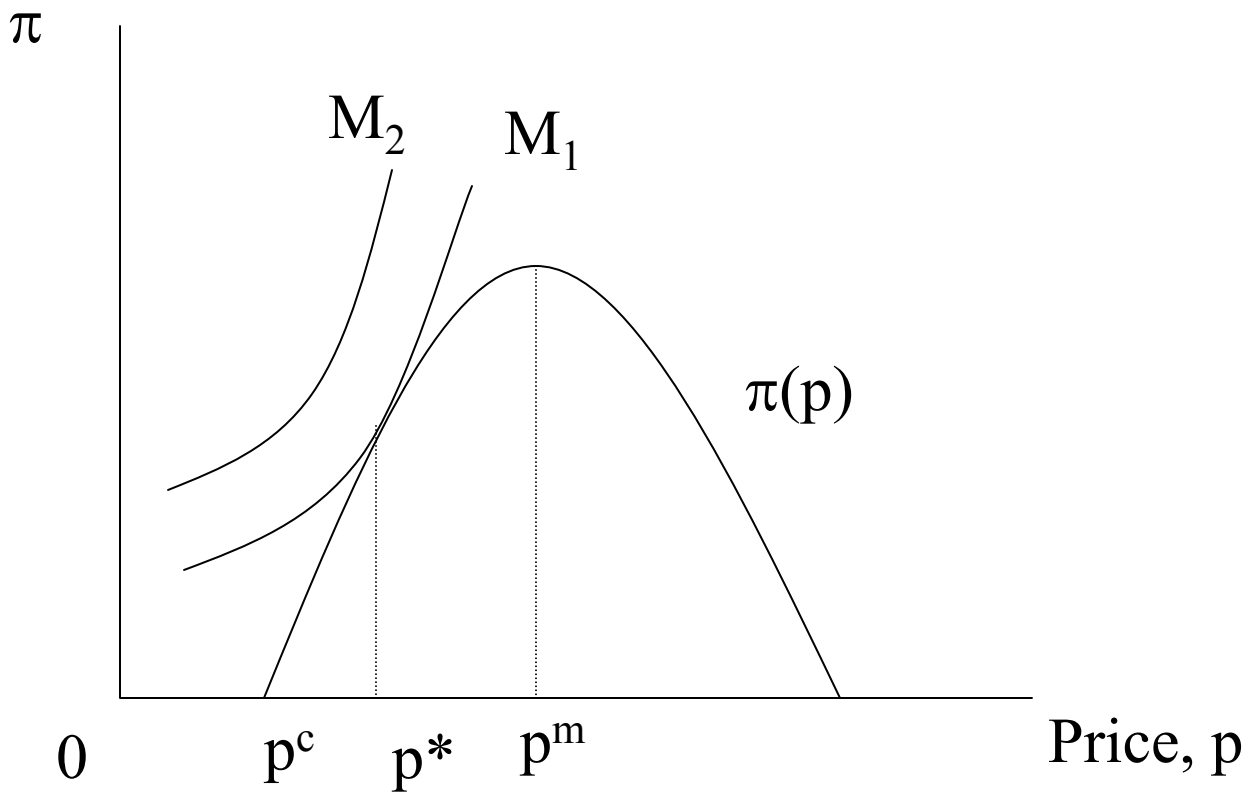
- Capture Theory (Stigler)
  - Regulation is supplied in response to the industry's demand for regulation.
  - Regulatory agencies are created by captured legislatures.
  - Regulatory agencies come to be controlled by industry.
  - This suggests a pro-producer theory (i.e. pro-producer surplus theory)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

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

Theories of Regulation

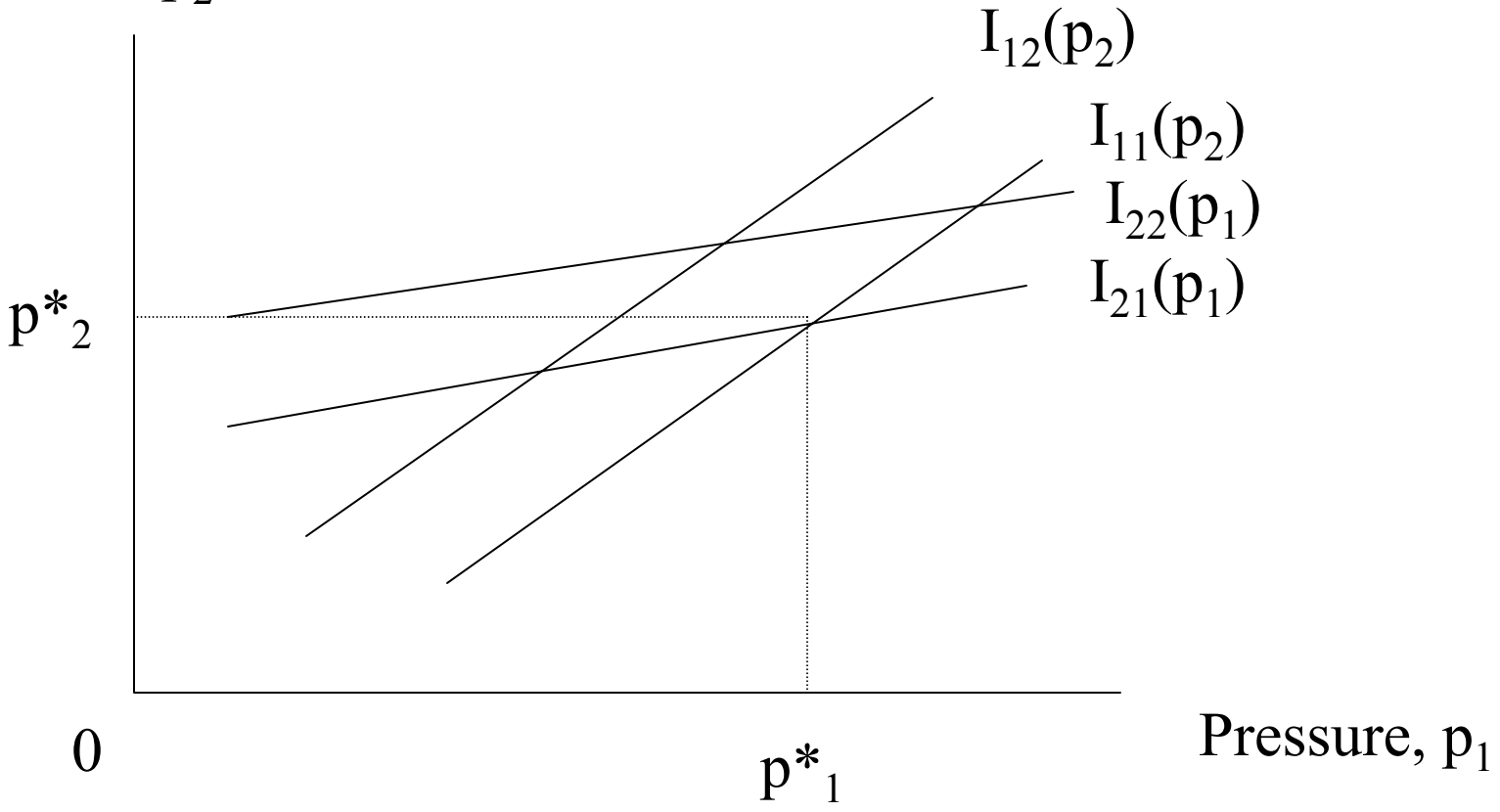
- Economic Theory of Regulation
  - Stigler-Peltzman Model predicts that:
    - Regulatory legislation redistributes wealth.
    - Behavior of legislators is driven by desire to remain in office.
    - Interest groups compete by offering political support in return for favorable legislation.
    - Example of electric power rates: residential, commercial and industrial power rates showed lower price-cost ratios for industrial and industrial customers relative to commerical 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



Becker Model

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).



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.

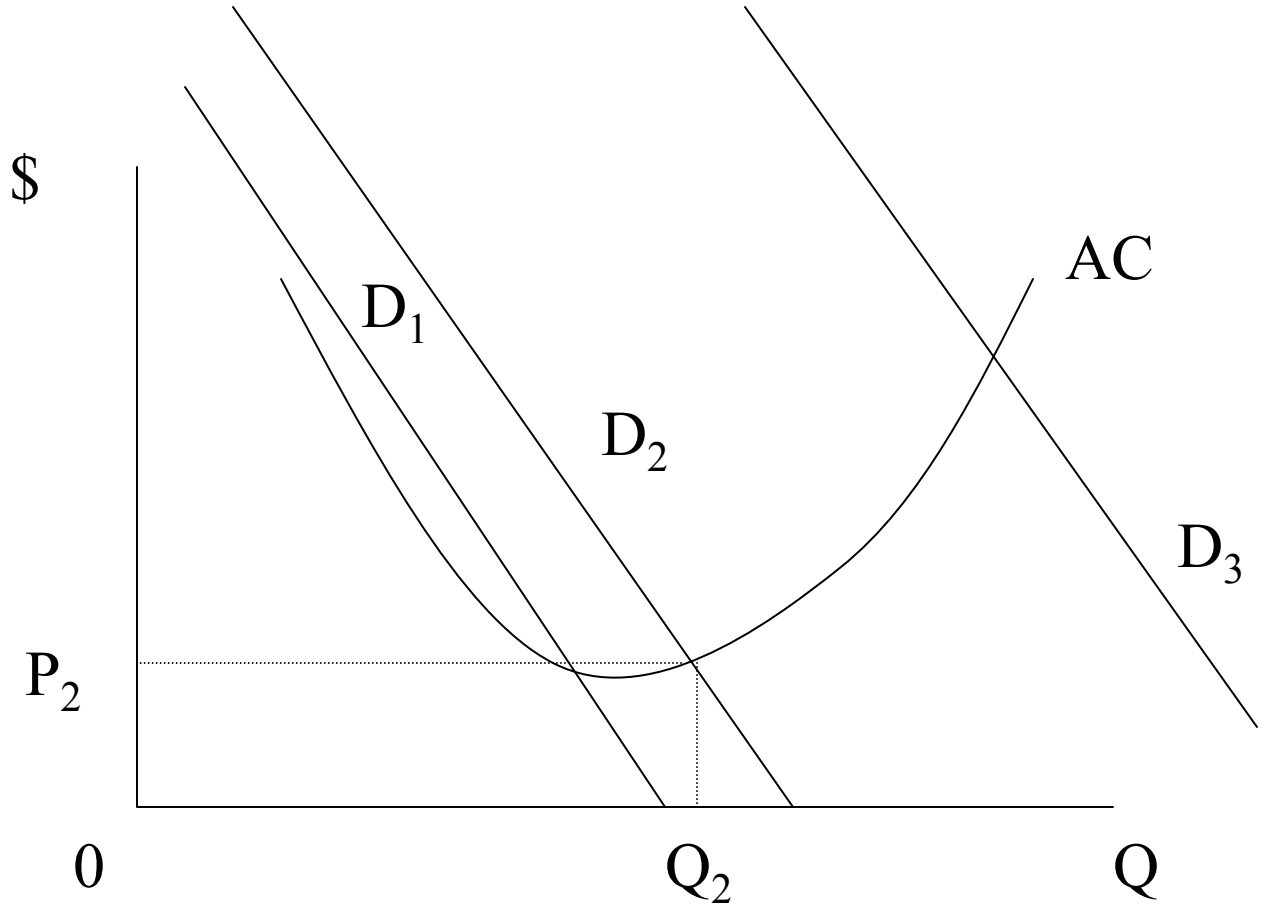
Can Economic Theory of Regulation explain de-regulation?

- 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

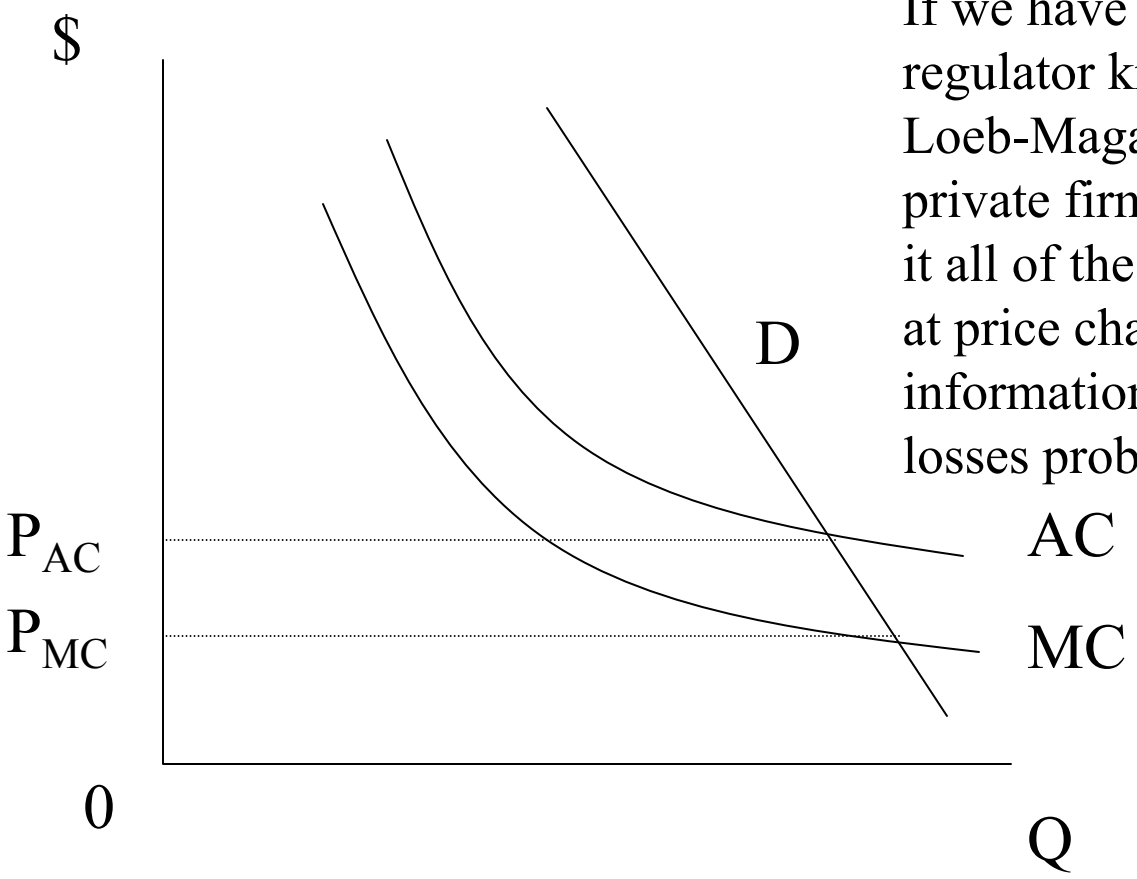
- Is it really a natural monopoly?
- Linear pricing
- Two part tariffs
- Loeb-Magat proposal
- Franchise Bidding e.g. Cable TV
- Ramsey Pricing e.g. telephone service?
- Public Enterprise e.g. MBTA

A Natural Monopoly?



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 = α/price elasticity of demand, where α=some constant.

Next

- *Public Enterprise*
- Read VVH Chapter 14.