The Cambridge-MIT Institute Electricity Project

14.23 Government Regulation of Industry

Class 25: Conclusion and Exam Syllabus

MIT & University of Cambridge

General Conclusions

- Economic regulation is concerned with control price and quantity sold and using economic instruments (e.g. tradeable permits) to control ‘quality’.
- A lot of good economic analysis of regulation exists which suggests how profit maximising firms can be efficiently incentivised to achieve social goals.
- Actual regulation has often yielded perverse effects and hence moves towards deregulation.
- Social cost benefit analysis of regulation is very important but surprisingly rare in US.
- Any other lessons from the course?

How to study for Final Exam

- Go through all numeric problems that were covered in classes and the problem sets and be sure that you are comfortable with how to solve those models.
- One numeric question will be taken directly from the problem sets. 1/3 of the marks will go to pre-mid term material.
- For each of the industries that we have covered ensure that you know:
  - The basic outline of the industry
  - Why it was regulated
  - Why it was deregulated (if that happened to be the case)
  - How it was regulated (e.g. price controls, entry controls)
  - The economic consequences of the regulation (in terms of efficiency, ability to do what it was supposed to do, profits, etc.).
  - The level of detail required is that discussed in class.

How to study for Final Exam

- You do NOT need to remember all the acronyms for the various government agencies, the names of regulations, the dates of regulation (or similar).
- There are 3 sections to the exam:
  - Part I consists of *short questions/answers* (6 worth 5 points, each). Each should invite 3 - 4 sentence accurate but brief responses. Numeric calculations are short with a few sentences for explanation.
  - Part II consists of two *numeric problems* (worth 25 points, each). This will take the same format as one of the problem set questions.
  - Part III is an *essay question* (worth 40 points).

Industries Covered

- Electricity
- Cable
- Telephone: Fixed Line
- Telephone: Mobile
- Potentially competitive markets: railroads, trucking and airlines
- US air pollution regulation
- Pharmaceuticals
- Music industry

Outline of Topics

- 1. *Review of theory of the firm:* monopoly, oligopoly, surplus, government intervention, deadweight loss, strategic competition: limit pricing, dynamic entry deterrence. You should be familiar with these models and be able to solve a simple numeric problem using them.

- 2. *Motivations for regulation:* economic, public interest, capture theory. You should know what they are and how they differ from one another. The costs and benefits of regulation.

Outline of Topics

- 3. *Public ownership:* historical roots of public ownership, theory of when public ownership is a good idea (e.g. situations of uncontractable quality, corruption of local government worries), advantages of private ownership; privatization: its objectives and effects.

- 4. *Natural monopoly Regulation:* pricing strategies (average cost, marginal cost, fully distributed costs, Ramsey pricing, peak load pricing); consequences of pricing strategy (cross-subsidization – stand alone and incremental cost tests; cream skimming; inefficiencies); rate of return regulation (how does it work; consequences such as Averch-Johnson effect, inefficiencies). ELECTRIC POWER EXAMPLE.

Outline of Topics

- 5. *Do we need regulation at all?* Example of cable and franchise bidding. What are the consequences of franchise bidding? Do we get marginal cost pricing? Do we need to worry about quality? CABLE TV EXAMPLE.

- 6. *Changing markets 1:* role of technology and how it can affect the regulation of a natural monopoly (changes in demand, changes in costs – fixed and variable: are you more or less likely to remain a natural monopoly with these changes?). WIRELINE TELECOMMUNICATIONS EXAMPLE.

Outline of Topics

- 7. *Changing markets 2:* importance of common standards and economic success, spectrum allocation, auction theory, the determination of prices by the number of companies and the independence of pricing from auction fee, English and Dutch Auctions. EUROPEAN 3G MOBILE PHONE AUCTION EXAMPLES.

- 8. *Regulation of potentially competitive markets:* price and entry controls and the economic effects of regulation on the market and on the incumbents and potential entrants. SURFACE FREIGHT AND AIRLINES EXAMPLES.

Outline of Topics

- 9. *Problems of regulation.* How market design effects performance, how regulation can create perverse incentives, social cost benefit analysis of regulatory change. EXAMPLES OF CALIFORNIAN ELECTRICTY CRISIS and UK RAIL DEREGULATION.

- 10. *Externalities/public goods.* Use of Coase Theorem (when it might work, potential reasons it fails), taxes, subsidies, (prices vrs. quantities: what happens with heterogeneous polluters? What happens under uncertainty?), Pigouvian taxes (instrument choice), tradeable permits. Valuing non-market goods such as value of life and safety (hedonics, travel cost method, contingent valuation and how they compare). Option value. Use and non-use of cost benefit analysis. SO2 and CO2 EXAMPLES.

Outline of Topics

- 11. *Patents:* why do we need patents? What would motivate a firm to innovate? Does it matter if they are in a competitive or non-competitive market? Optimal patent length. Optimal number of firms entering a patent race. Innovation when there are close substitutes. PHARMACEUTICALS EXAMPLE.

- 12. *Copyright:* technology as driver of copyright protection. Economic harm caused by illegal copying, how the internet effects copying, calculations of the value of copying. MUSIC INDUSTRY EXAMPLE.

Next

- *2002 Final Exam*