

## **14.23: GOVERNMENT REGULATION OF INDUSTRY**

**SPRING 2003**

### **OVERVIEW**

The objective of this course is to introduce you to the role of government in markets where competitive equilibria “fail.” In this course we will emphasize the importance of market structure and industrial performance, including the strategic interaction of firms. We will examine the behavior of individual markets in some detail, focusing on cost analysis, the determinants of market demand, investment behavior, market power, and the implications of government regulatory behavior. The course will be broken into three parts. In the first part, we will review firm behavior and the theory of the market. Here, we will discuss perfectly competitive markets (our “benchmark”), efficiency, market structure, strategic competition, and productivity. Once the foundations of the market are well understood, we will then move on to the second part of the course, where we will study “economic” regulation. Here, we will look at the behavior of natural monopolies and regulatory options for dealing with them. And in the third part of the course, we will study “social” regulation – focusing on environmental, health, and safety regulation.

The assigned readings in this course have been selected to provide a balance of principles, tools and applications; they are detailed in the course syllabus. The basic text for the course is W. Kip Viscusi, John M. Vernon, and Joseph E. Harrington, *Economics of Regulation and Antitrust 3<sup>rd</sup> Edition*, (Cambridge, MA: MIT Press, 2000) and will be referred to as “VVH.”

All other materials will be handed out in lecture or will be available on the web. **You will be expected to have read the required material before class.** Doing so will make the lectures more profitable.

In addition to these readings, you should keep informed about current economic issues by reading *The Wall Street Journal* or the Business section of *The New York Times* on a regular basis. A magazine such as *Business Week* or *The Economist* is also useful for this purpose.

I will assign 5 homework sets in this course. The stars by various lecture dates indicate provisional hand-in dates. My policy regarding cooperative work on these homework sets is discussed on the next page; please read it carefully. I assume that you will work on the individual problems as the material is covered in the lectures, not leaving the whole set to be done on the day before it is due.

There will be one midterm examination. The midterm will be given in class and is scheduled for Class #13. The final exam is scheduled **during the regular examination period**. Please note that there will be NO make-up exams for the midterm examination. If you miss the midterm, you either must have a doctor's note to verify that you were sick or a note regarding a family emergency that I can verify. No other excuses will be accepted. Please note that if you miss more than one exam for any reason, credit will not be given for the course.

Grading will be based on the examinations and homework sets as follows:

Midterm examination:	40%
Final examination:	40%
Problem sets:	20%

#### **POLICY ON HOMEWORK SETS AND EXAMS**

1. Homework sets are designed to help you learn how to apply the material presented in lectures. You are permitted and indeed encouraged to discuss course material, including homework, with other students in the class. However, you are expected to turn in your own individual solutions for each homework set. Discussion with others is intended to clarify ideas, concepts, and technical questions, not to derive group homework set solutions. Identical homework set answers (especially when the steps used to derive answers are not shown or when questions of interpretation are involved) violate this policy and may receive no credit or occasion disciplinary action.
2. Handwritten solutions are fine, as long as they are legible and neat. Please remember: if we can't read it, we can't grade it.
3. In fairness to students who complete assignments on time, late homework sets will not be accepted. You must turn in assignments during the lecture on the day they are due or earlier in the day to my mailbox. **Please note that assignments put under my office door will be discarded.**
4. During exams, you may consult the proctor administering the exam if you need clarification of exam questions. No discussion **or other form of communication with anyone else will be permitted after the exams have been handed out, until all students have turned in their exam books.** Students **found to have cheated or engaged in any other unethical behavior will be given a grade of F on the examinations involved, and will be turned over to the appropriate disciplinary committees within MIT for further action.**
5. **The only calculators permitted in exams are those with basic mathematical functions.** Calculators that are capable of storing spreadsheets, user-defined functions, etc. (such as the Hewlett-Packard Palmtop) may not be used in exams.

If you have any questions regarding these policies, please raise them with me.

## COURSE OUTLINE

### Part I: Review of Firm Behavior and Market Theory

*Class #1*      **1. The Role of Government.** Introduction to the course. The making of a regulation. Possible instrument choices. Why one instrument over another? Social Cost Benefit Analysis. Consequences of regulation.

Read: VVH Chapters 1,2.

*Class #2*      **2. Markets.** Types of markets: competitive, monopoly monopsony, oligopoly, oligopsony, and monopolistic competition. Measurement of consumer surplus and producer surplus. The competitive market and economic efficiency. Monopolies and deadweight loss. Gains and losses from government intervention: price controls, price supports, taxes, subsidies, tariffs, import quotas.

Read: VVH Chapter 4.

*Class #3*      **3. Markets cont'd.** Oligopoly and collusion. Cournot-Nash equilibrium. Bertrand competition. More on efficiency, relative to the perfectly competitive market model.

Read: VVH Chapter 5.

*Class #4*      **4. The Dominant Firm and Strategic Competition.** The dominant firm and the competitive fringe. Limit pricing and methods for deterring entry.

Read: VVH Chapter 6.

### Part II: Economic Regulation

*Class #5*      **5. Introduction to Economic Regulation.** Motivation behind economic regulation. Potential instruments for regulation. Goals of regulation. Historic background.

Read: VVH Chapter 10.

*Class #6*      **6. Public Enterprise.** The origins of public ownership as a way to regulate economic activity. Public vs Private ownership. Does the threat of nationalization/municipalization discipline private firms?

Read: VVH Chapter 14.

*Class #7\**      **7. Regulating Natural Monopolies: Electric Power Example.** Theory of natural monopoly. Example using electric power. Pricing strategies, rate structure, peak load pricing. Consequences: Averch-Johnson effect.

Read: VVH Chapter 11, 12.

- Class #8*      **8. Franchise Bidding: The Case of Cable Television.** Using franchise bidding as an alternative to regulation in the case of a natural monopoly.
- Read: VVH Chapter 13.
- Class #9*      **9. Dynamic Issues in Natural Monopoly Regulation: Telecommunication Example.** What should a regulator do when an industry transforms over time due to exogenous changes that can either (1) change the optimal price or (2) change the industry from a natural monopoly into “something else”?
- Read: VVH Chapter 15.
- Class #10\**      **10. Dynamic Issues in Natural Monopoly Regulation: Telecommunication Example 2.** The regulation of wireless telephony. The importance of common standards. Lessons from Europe. Spectrum Auctions.
- Read: Council of Economic Advisors (2000), *The economic impact of third-generation wireless technology*. Appendix 2: ‘Case study of Finnish wireless cluster’  
<http://www.wireless.co.il/whitePapers/3geconomic.pdf>
- Read: Klemperer, P. (2002), How (not) to run auctions: The European 3G telecom auctions, *European Economic Review*, Vol.46, No.4-5, pp.829-845.
- Class #11*      **11. Transportation Regulation:** Surface Freight (Railroads and Trucks).
- Read: VVH Chapter 17.
- Class #12*      **12. Review for Midterm Examination.**
- Class #13*      **13. Midterm examination in class, closed book.**
- Class #14*      **14. Midterm examinations returned.** Go over examination in class.
- Class #15*      **15. Problems of regulation: The case of UK Railway Privatisation.** Background to the restructuring. Regulatory changes and problems. Assessing the effects. Possible remedies.
- Read: Pollitt, M.G. and Smith, A.J. (2002) The Restructuring and Privatisation of British Rail: Was it really that bad?, *Fiscal Studies*, Vol.23, No.4, pp.463-502.
- Class #16\**      **16. Problems of regulation: The Case of Californian Electricity Deregulation.** The nature of the reforms in California. How regulatory failure occurred. The costs of regulatory failure. Lessons for deregulation.
- Read: Joskow, P. (2001), “California’s electricity crisis.” *Oxford Review of Economic Policy*, 17(3): pp.365-388.

Part III: Social Regulation.

- Class #17*      **17. Externalities.** Positive and negative externalities. Market “failure” and forms of government intervention. Property rights and common property resources.

Read: VVH, chapter 19.

- Class #18*      **18. The Value of Life.** Why do we need to put an economic value on life? The calculation of the value of life and how it is used in economic analysis.

Read: VVH, chapter 20.

- Class #19*      **19. Environmental Regulation 1.** Background of regulation in the United States. Price versus quantity restrictions. Command and control versus market based incentive programs.

Read: VVH chapter 21.

Hahn, Robert W. (1989). ‘Economic Prescriptions for Environmental Problems: How the Patient Followed the Doctor’s Orders.’ *Journal of Economic Perspectives*, Vol. 3, No. 2, 95-114.

- Class #20*      **20. Environmental Regulation 2 – Markets for clean air.** The example of markets for SO<sub>2</sub> permits and how they operate.

Read: Joskow, P.L., Schmalensee, R. and Bailey, E.M. (1998), ‘The Market for Sulfur Dioxide Emissions’, *American Economic Review*, Vol.88 (September), pp.669-85.

- Class #21\**      **21. Environmental Regulation 3 – Regulating the global commons.** The problem of the global commons and international markets for environmental goods. The value of waiting.

Read: Chichilinsky, G. and Heal, G. (1993), ‘Global Environmental Risks’, *The Journal of Economic Perspectives*, Vol. 7, No. 4. (Autumn, 1993), pp. 65-86.

- Class #22*      **22. The regulation of Workplace Safety.** Markets and safety. Regulatory approaches to safety evaluation and enforcement. Assessment of the benefits of health and safety legislation.

Read: VVH chapter 23.

- Class #23*      **23. Pharmaceuticals.** Patents.

Read: VVH chapter 24.

- Class 24\**      **24. Regulation of the Internet: Should the state have protected Napster?** The economics of copyright. The nature of the internet as a music distribution channel. What are the costs and benefits of tougher enforcement of record companies property rights?

Read: Klein, B., Lerner, A.V. & Murphy, K.M. (2002) “The economics of copyright ‘fair use’ in a networked world.” and Boldrin, M. & Levine, D. (2002) “The case against intellectual property.” *American Economic Review*, 92(2): pp.204-208 and pp.209-212.

Silva, F. & Ramello, G.B. (2000) "Sound recording market: the ambiguous case of copyright and piracy." *Industrial and Corporate Change*, 9(3): pp.415-442

*Class #25*      **25. Conclusion. Revision for Final Exam.**

*Class #26*      **26. Final Exam**