

INDUSTRIAL ORGANIZATION

IEF 335B
Brandeis University
Dept. of Economics
Spring 2002

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Lectures: Mon, Wed: 12:40 – 2 pm, Sachar 130

Office Hours: Monday, Wed 11 – 12 noon. You can also see me by appointment at other times.

Objective

This course will offer a broad survey of important topics in Industrial Organization, focusing on questions of current research with some applications in the international context. For each topic both, the basic theory, and the empirical evidence related to the theory will be studied. This course is intended for Ph.D. students in Economics. It is an advanced level course and knowledge of game theory, calculus, microeconomics and basic econometrics is required.

Textbooks

Required Texts

The Theory of Industrial Organization, Jean Tirole (MIT Press, 1988)

The Structure of the American Industry, Walter Adams & James Brock (Prentice Hall, Tenth Edition, 2001)

Recommended Text

Handbook of Industrial Organization, Richard Schmalensee & Robert Willig, eds., (Elsevier Science Publishers, 1989)

(We will make use of some chapters from this book. You do not have to buy this book)

As an additional reading, you may find '*Industrial Market Structure and Economic Performance*', by **Scherer & Ross**, helpful. The difficulty level is lower than Tirole and hence is a good introductory reading.

Course Requirements

There will be some problem sets (10%), a midterm (20%), five written assignments based on articles (25%), oral presentations in class of assigned papers (25%) and a final paper (20%). The paper will be done in three stages – a short proposal, first draft and a final draft (the times of these submissions will be determined later). Late papers will be accepted but their grades will be discounted.

In view of the limited class time and amount of material to be covered, students will be expected to undertake a substantial amount of work independently.

Readings denoted by “o” are not required for this course, but are recommended for students who want to consider industrial organization as a specialization.

Disability Information

If you are a student with a documented disability at Brandeis University and if you wish to request a reasonable accommodation for this class please see me immediately. Please keep in mind that accommodations are not provided retroactively.

Course Outline

I Introduction

Tirole, Introduction

- o Schmalensee, Richard: “Industrial Economics: An Overview”, *The Economic Journal*, vol. 98, no. 392., 1988, pp. 643-681.

II Theory Of The Firm

A Theory

Tirole, pp. 15 - 51

Chandler, Alfred: “Organizational Capability and the Economic History of the Industrial Enterprise”, *Journal of Economic Perspectives*, Summer 1992, pp. 79 – 100.

Coase, Ronald: “The New Institutional Economics”, *American Economic Review*, vol. 88, no. 4, 1998, pp. 72 – 74.

Holstrom, Bengt and John Roberts: “The Boundaries of the Firm Revisited”, *Journal of Economic Perspectives*, vol. 12, no. 4, 1998, pp. 73 – 94.

Grossman, S. & O. Hart: The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration”, *Journal of Political Economy*, August 1996, pp. 691 – 719.

- o Brander, James A. & Barbara, J. Spencer: “Moral Hazard and Limited Liability: Implications for the Theory of the Firm”, *International Economic Review*, Vol. 30, no. 4, 1989, pp. 833-849
- o Gibbons, Robert: “Incentives in Organizations”, *Journal of Economic Perspectives*, vol. 12, no. 4, 1998, pp. 115 – 132.

- Greenwald, Bruce C. & Joseph E. Stiglitz: “Assymmetric Information and the New Theory of the Firm: Financial Constraints and Risk Behavior”, AEA Papers and Proceedings, vol. 80, no. 2, 1990, pp. 160 – 165.
- HIO, “The Theory of the Firm”, by Holstrom and Tirole.
- Williamson, Oliver E.: “The Modern Corporation: Origins, Evolution and Attributes”, *Journal of Economic Literature*, Vol. 19, no. 4, 1989, pp. 1537 – 1568.
- Williamson, Oliver E.: “Transaction Cost Economics: The Governance of Contractual relations”, *Journal of Law and Economics*, vol. 22, 1979, pp. 233 – 261

B. **Empirical Evidence**

Joskow, Paul: “Contract Duration and Relation-Specific Investments: Empirical Evidence from Coal Markets”, *American Economic Review*, vol. 77, 1987, pp.168 – 185.

Monteverde, K. & D. Teece: “Supplier Switching Costs and Vertical Integration in the Automobile Industry”, *Bell Journal of Economics*, vol. 13, no. 1, 1982, pp. 206 – 21.

Masten, S: “The Organization of Production: Evidence from the Aerospace Industry”, *Journal of Law and Economics*, vol. 27, 1984, pp. 403 – 417.

III **Monopoly**

A. **Theory**

Tirole: Chapters, 1, 2.1, 3

Bulow, J.: “Durable Goods Monopolists”, *Journal of Political Economy*, vol. 15, 1982, pp. 314 – 332

- Fudenberg, D. & J. Tirole: “Upgrades, Tradeins and Buybacks”, *Rand Journal of Economics*, vol. 29, 1998, pp. 235 – 258.
- HIO: Chapter 10
- Maskin, E. & J. Riley: “Monopoly with Incomplete Information”, *Rand Journal of Economics*, vol. 15, 1984, pp. 171 – 196

B. **Empirical Evidence**

Shephard, A.: “Price Discrimination and Retail Configuration”, *Journal of Political Economy*, vol. 99, 1991, pp. 30 – 53.

- Gerstner, E., J. Hess & D. Holthausen: “Price Discrimination through a Distribution Channel”, *American Economic Review*, vol. 84, 1994, pp. 1437 – 1445.

IV Oligopoly Models

A. Static Oligopoly

Tirole: pp. 206 – 208, Chapter 5, 7

Rotemberg, Julio J., & Saloner, Garth: “Tariffs v/s Quotas with Implicit Collusion”, *The Canadian Journal of Economics*, vol. 22, no. 2., 1989, pp. 237-244.

- HIO: Chapter 6 (Section 1 & 2)
- Klemperer, P: “The Competitiveness of Markets with Switching Costs”, *Rand Journal of Economics*, vol. 18, 1987, pp. 138 – 150.

B. Dynamic Oligopoly Theory

Tirole: Chapter 6

Bagwell, K & R. Staiger: “Collusion Over the Business Cycle”, *Rand Journal of Economics*, vol. 27, 1997, pp. 82 – 106.

- Green, E. & Porter, R.: “Non-cooperative Collusion Under Imperfect Price Information”, *Econometrics*, 1984, pp. 87 – 104.
- Haltiwanger, J & J. Harrington: “The Impact of Cyclical Demand Movements on Collusive Behavior”, *Rand Journal of Economics*, vol. 22, 1991, pp. 89 - 106
- HIO: Chapter 6 (Section 3, 4 & 5), Chapter 7
- Rotemberg, Julio J. & Saloner, Garth.: “Supergame-Theoretic Model of Price Wars During Booms”, *American Economic Review*, vol. 76, no. 3, 1986, pp. 390 – 407

C. Empirical Evidence

HIO: Chapter 16, “Interindustry Studies of Structure and Performance” by *Richard Schmalensee*.

HIO: Chapter 17, “Empirical Studies of Industries with Market Power”, by *Timothy Bresnahan*

Genesove, D. & W. Mullin: “Testing Static Oligopoly Models: Conduct and Cost in the Sugar Industry, 1890-1914”, *Rand Journal of Economics*, vol. 29, 1998, pp. 355 – 377.

Goldberg, P. K.: “Product Differentiation and Oligopoly in International Markets: The Case of the US Automobile Industry” *Econometrica*, vol. 63, 1995, pp. 891 – 952.

Porter, Robert H.: “A Study of Cartel Stability: The Joint Executive Committee, 1880-1886”, *The Bell Journal of Economics*, vol. 14, no. 2., 1983, pp. 301-314.

- Borenstein, Severin & Bushnell, James - “An Empirical Analysis of Market Power in a Deregulated California Electricity Market”, *Power Working Paper*, no. 44r, 1997, *University of California Energy Institute, Berkeley*
- Bresnahan, Timothy: “Competition and Collusion in the American Automobile Industry: The 1955 War”, *Journal of Industrial Economics*, vol. 45, no. 4, 1987, pp. 457 – 482
- Hummels, David, & Levinsohn, James: “Monopolistic Competition and International Trade: Reconsidering the Evidence”, *The Quarterly Journal of Economics*, vol. 110, no. 3., 1995, pp. 799-836.
- Klemperer, Paul: “Competition when Consumers have Switching Costs: An Overview with Applications to Industrial Organization, Macroeconomics, and International Trade”, *Review of Economic studies*, vol. 62, no. 4, 1995, pp. 515 – 539.
- Salinger, M.: “The Concentration-Margin Relationship Reconsidered” *Brookings Papers on Economic Activity: Microeconomics*, 1990, pp. 287 – 335.
- Slade, Margaret E.: “Interfirm Rivalry in a Repeated Game: An Empirical Test of Tacit Collusion”, *Journal of Industrial Economics*, vol. 35, no. 4, 1987, pp. 499-516.

V. **Antitrust And Competition Policy**

Evans, David S.: “Market Definition in Antitrust and Patent Infringement Litigation”, *Intellectual Property and Antitrust Program*, *National Economic Research associates*, 1995.

Maskus, Keith E. & Lahouel, Mohamed: “Competition policy and Intellectual Property Rights in Developing Countries”, *The World Economy*, vol. 23, no. 4, 2000, pp. 595 – 610.

Messerlin, Patrick A. & Reed Geoffrey: “Antidumping Policies in the United States and the European Community”, *Economic Journal*, vol. 105, no. 433, 1995, pp. 1565 – 1575

- Viscusi, W. K., John M. Vernon & Joseph E. Harrington Jr.: “Economics of Regulation and Antitrust”, Chapters 3, 4, 5, 7, 8, 9, MIT Press.

VI Entry And Exit

A. Theory

Tirole: Chapter 8

- HIO: Chapter 8, “Mobility Barriers and the Value of Incumbency”, by *Richard Gilbert*.
- Innes, R. & R. Sexton: “Strategic Buyers and Exclusionary Contracts”, *American Economic Review*, vol. 84, 1994, pp. 566 – 584.
- Jovanovic, B. “Selection and Evolution of Industry” *Econometrica*, vol. 50, 1982, pp. 649 - 670

B. Empirical Evidence

Bresnahan, Timothy & Peter Reiss: “Entry and Competition in Concentrated Markets” *Journal of Political Economy*, October 1991, pp. 977 – 1009.

Dunne, Timothy, Mark Roberts & Larry Samuelson: “Patterns of Firm Entry and Exit in U.S. Manufacturing”, *Rand Journal of Economics*, Winter 1988, pp. 495 – 515.

- Berry, S: “Estimation of a Model of Entry in the Airline Industry”, *Econometrica*, vol. 60, 1992, pp. 889 – 918.
- Lieberman, M: “Excess Capacity as a Barrier to Entry: An Empirical Approach”, *Journal of Industrial Economics*, vol. 35, 1987, pp. 607 – 627.

VII Information and Strategic Behavior

Tirole: Chapter 9 (Section 9.0 – 9.7)

Milgrom, Paul & John Roberts: “Predation, Reputation and Entry Deterrence” *Journal of Economic theory*, August 1982, pp. 288 – 312.

- Fudenberg, Drew & Garth Saloner: “A ‘Signal-Jamming’ Theory of Predation”, *Rand Journal of Economics*, Autumn 1986, pp. 366 – 376.
- Saloner, Garth: “Predation, Merger and Incomplete Information”, *Rand journal of Economics*, Summer 1987, pp. 165 – 186.
- Viscusi, W. K., John M. Vernon & Joseph E. Harrington Jr.: “Economics of Regulation and Antitrust”, Chapters 6, MIT Press.

VIII Product Differentiation and Advertising

Tirole: Chapter: 2, 7

Nevo, Aviv: “Measuring Market Power in the Ready-to-Eat Cereal Industry” *National Bureau of Economic Research, Working Paper # 6387, January 1998.*

Roberts, M. & L. Samuelson: “An Empirical Analysis of Dynamic Nonprice Competition in an Oligopoly Industry”, *Rand Journal of Economics, vol. 19, 1988, pp. 200 – 220.*

- Berry, Steven, James Levinsohn and Ariel Pakes: “Differentiated Products Demand Systems from a Combination of Micro and Macro Data: the New Car Market”, *National Bureau of Economic Research, Working Paper # 6481, March 1998.*
- Berry, Steven, James Levinsohn and Ariel Pakes: “Automobile Prices in Market Equilibrium”, *Econometrica, July 1995, pp. 841 – 890.*
- Sutton, John: “Sunk Costs and market Structure”, MIT Press, 1991, Chapter 3.

IX Some Specific Industries, Regulation & Public Policy

A. Industry Structure

Adams, Walter & Brock, James: “The Structure of the American Industry”, *Prentice Hall, 10th Edition.*

Chapters: 3, 5, 6, 8, 11

Joskow, Paul – “Deregulation and Regulatory Reform in the US Electric Power Sector”. *Discussion draft for Brookings AEI Conference on Deregulation in Network Industries, 1999.* (Selected sections)

B. Regulation and Deregulation

Ando, A. W. & Palmer, K. L. – “Getting on the Map: The Political Economy of State-Level Electricity restructuring”, *Discussion Paper 98-19-REV, Resources for the Future, 1998.*

HIO: Chapter “Economic Perspectives on the Politics of Regulation” by Noll, R. G.

Meyer, John R. & Tye, William B. - “The Consequences of Deregulation In the Transportation and Telecommunications Sector”, *AEA Papers and Proceedings, Vol. 72, no. 2, May 1985, pp. 46-51*

Joskow, Paul: “California’s Electricity Crisis”, *National Bureau of Economic Research Working Paper # 8442, August 2001*

- Joskow, Paul L. & Rose, Nancy L. - “The Effects of Economic Regulation”, *Handbook of Industrial Organization, Vol. II, Edt. By R. Schmalensee & R. D. Willig, Elsevier Science Publishers, 1989*
- Laffont, J-J & Tirole, Jean - “The Politics of Government Decision-Making: A Theory of Regulatory Capture”, *Quarterly Journal of Economics, Vol. 106, no. 4, Nov 1991, pp.1089-1127.*
- Peltzman, Sam – “The Economic Theory of Regulation After a Decade of Deregulation”, *Brookings Papers: Microeconomics, 1989.*
- Stigler, George J. - “The Theory of Economic Regulation”, *Bell Journal of Economics and Management Science, Vol. 2, 1971, Spring, pp. 3-21*

X R&D, Innovation and Technological Change

A. Theory

Tirole: Chapter 10

d’Aspremont & A. Jacquemin: “Cooperative and Noncooperative R&D in Duopoly with Spillovers”, *American Economic Review, vol. 78, 1988, pp. 1133 – 1137*

- Cohen, L. R.: “When Can Government Subsidize Research Joint Ventures? Politics, Economics, and Limits to Technology Policy”, *AEA Papers and Proceedings, 1994, vol. 84, no. 2, pp.159-163*
- Dasgupta, P. & J. Stiglitz: “Industrial Structure and the Nature of Innovative Activity”, *Economic Journal, vol. 90, 1980, pp. 266 – 293*
- Gallini, N: “Patent Policy and Costly Imitation”, *Rand journal of Economics, vol. 23, 1992, pp. 52 - 63*
- Gilbert, R. & D. Newberry: “Preemptive Patenting and the Persistence of Monopoly”, *American economic review, vol. 72, 1982, pp. 514 – 526.*
- HIO: Chapter 14, “The timing of Innovation: Research, Development and Diffusion”, *by Jennifer Reinganum.*
- Katz, Michael & Carl Shapiro: “Technology Adoption in the Presence of Network Externalities”, *Journal of Political economy, 1986, pp. 822 – 841*
- Levin, Richard & Peter Reiss: “Cost-Reducing and Demand Creating R&D with Spillovers”, *Rand journal of Economics, 1988, pp. 538 – 556*

B. Empirical Evidence

Adams, J & Adam Jaffe: “Bounding the Effects of R&D: An Investigation Using Matched Establishment-Firm Data”, *Rand Journal of Economics*, vol. 27, 1996, pp. 700 – 721

Griliches, Z.: “Productivity, R&D and the Data Constraint”, *American Economic Review*, 1994, vol. 84, no. 1, pp. 1-23

Keller, Wolfgang: “How trade Patterns and Technology Flows Affect Productivity Growth”, *National Bureau of Economic Research Working Paper # 6990*, March 1999

Kortum, Samuel, & Josh Lerner: “Stronger Protection or Technological Revolution: What is Behind the Recent Surge in Patenting?” *Carnegie-Rochester Series on Public Policy*, vol. 48, 1998, pp. 247 – 304.

Mansfield, E.: “Industrial R & D in Japan and the United States : A Comparative Study”, *American Economic Review*, 1988, vol. 78, pp.

Rose, Nancy & Paul Joskow: “The Diffusion of New Technologies: Evidence fro the Electric Utility Industry”, *Rand Journal of Economics*, vol. 21, 1990, pp. 354 – 373

- Jaffe, A. B.: “Technological Opportunity and Spillovers of R&D: Evidence from Firms’ Patents, Profits and Market Value”, *American Economic Review*, 1986, vol. 76, pp. 984-1001.
- Jaffe, A. B., Trajtenberg, M. & Henderson, R.: “Geographic Location of Knowledge Spillovers as Evidence by Patent Citations”, *Quarterly Journal of Economics*, 1993, vol. 108, no. 3, pp. 577-598.
- HIO: Chapter 18, “Empirical studies and Market Structure and Innovation”, by Wesley M. Cohen an Richard Levin.
- Lichtenberg, F. R.: “The Relationship between Federal Contract R&D and Company R&D”, *AEA Papers and Proceedings*, 1984, vol. 74, no. 2, pp. 73-78.
- Scherer, F. M.: “Firm Size Market Structure, Opportunity and the Output of Patented Inventions”, *American Economic Review*, 1965, vol. 55, no. 5, pp. 1097-1125.
- Scotchmer, Suzanne: “Standing on the Shoulder of Giants: Cumulative Research and Patent Law”, *Journal of Economic Perspectives*, 1991, vol. 5, no. 1, pp. 29-41.