

**ECONOMICS 220A  
INDUSTRIAL ORGANIZATION**

This is the first course in the graduate sequence on industrial organization and regulation. The course and the readings apply price theory and game-theoretic techniques to explain industry structure, conduct and performance. Among the topics we will study are the determinants of market structure, strategic interactions among firms, the effects of structure and conduct on prices and non-price dimensions of market performance, economics of R&D, and network effects. The emphasis is on general theoretical principles, although there will be some discussion of empirical approaches.

Students are expected to have a background in price and game theory at the level of Econ 201A and 201B. This course is preparation for Economics 220B (Regulation and Public Policy) and Economics 220C (Empirical Methods in Industrial Organization).

My office hours are Tuesdays 2:00-3:30 in 591A Evans, and by appointment. You can reach me at 642-1507, or (preferably) e-mail gilbert@econ.

There will be occasional problem sets. The main requirement is either a final paper or a final exam. The paper should be on an issue directly related to a topic covered in the course. The issue may be a theoretical point in industrial organization, an empirical study, or an analysis of a market institution.

Required text: J. Tirole, *The Theory of Industrial Organization*, MIT Press, 1997.

Other useful texts are:

Scherer & Ross, *Industrial Market Structure and Economic Performance*, Houghton Mifflin, third edition, 1990. (good empirical and institutional detail)

Carlton & Perloff, *Modern Industrial Organization*, Harper Collins, 1994. (less math than Tirole)

Cabral, *Introduction to Industrial Organization*, MIT Press, 2000. (also less math than Tirole)

Fudenberg & Tirole, *Game Theory*, MIT Press, 1992. (full bore game theory)

J. Kwoka & L. White, *The Antitrust Revolution: Economics, Competition and Policy*, Oxford Press, 1999. ("real world" applications of industrial organization)

Assignments and Grading:

Problem sets	25%
Final paper/final exam	65%
Classroom participation	10%

## COURSE OUTLINE

(\* readings are optional)

### I. Paradigms and methodologies (Week 1)

Tirole, "Introduction" and "The Theory of the Firm"

Panzar, "Technological determinants of firm and industry structure," in *Handbook of Industrial Organization*, North-Holland, 1989.

\*Salinger, "The concentration-margins relationship revisited," *Brooking Papers (Microeconomics)*, 1990.

\*Scherer & Ross, *Industrial Market Structure and Economic Performance*, Ch 3.

\*White, "Trends in aggregate concentration in the United States," *J. Econ. Perspectives.*, vol. 16, no. 4, 2002.

\*Yellen, *Testimony before the Senate Judiciary Committee*, June 16, 1998.

### II. Monopoly, price discrimination and product differentiation (Weeks 2-3)

Tirole, Chs. 1-3

Klemperer, "Competition when consumers have switching costs," *Rev Econ Studies*, vol. 62, 1995.

*U.S. v. Aluminum Comp. of America*

### III. Vertical integration and vertical control (Weeks 4-5)

Tirole, Ch. 4

Holmstrom & Roberts, "The boundaries of the firm revisited," *J Econ Perspectives*, vol. 12, 1998.

Baker, Gibbons and Murphy, "Relational Contracts and the Theory of the Firm", *Quart J. Econ*, February 2002.

Ordover, Saloner & Salop, "Equilibrium vertical foreclosure," *Am Econ Rev*, vol. 80, March, 1990.

Whinston, "Tying, foreclosure, and exclusion," *Am Econ Rev*, vol. 80, September, 1990.

\*Joskow, "Contract duration and relation-specific investments: empirical evidence from coal markets," *Amer Econ Rev*, vol. 77, March, 1987.

\*Klein, Crawford, & Alchian, "Vertical integration, appropriable rents, and the competitive contracting process," *J Law & Econ*, vol. 21, 1978.

\*Williamson, "Credible commitments: using hostages to support exchange," *Am Econ Rev*, vol. 73, Sep., 1983.

### IV. Multi-firm behavior (Week 6)

Tirole, Chs. 5-7

Bulow, Geanakoplis and Klemperer, "Multi-market oligopoly: strategic substitutes and complements", *J Pol Econ*, vol. 93, June 1985.

Farrell & Shapiro, "Horizontal mergers: an equilibrium analysis," *Am Econ Rev*, vol. 80, March, 1990.

- Porter, "A study of cartel stability; the joint executive committee, 1880-1886," *Bell J Econ*, vol. 14, 1983.
- Bernheim & Whinston, "Multi-market contact and collusive behavior," *Rand J*, vol. 21, Spring 1990.
- DOJ & FTC, *Horizontal Merger Guidelines*, 1992.
- \*Rotemberg & Saloner, "A supergame-theoretic model of price wars during booms," *Am Econ Rev*, vol. 76, June 1986.

## **V. Economics of research and development (Weeks 7-8)**

- Tirole, Ch. 10, pp. 389-404
- Aghion et al., "Competition and innovation: an inverted U relationship," NBER working paper, October 2002.
- Dasgupta and Stiglitz, "Industrial structure and the nature of innovative activity," *Economic Journal*, vol. 90, 1980.
- \*Bernstein & Nadiri, "Interindustry R&D spillovers, rates of return, and production in high-tech industries," *Amer Econ Rev*, vol. 78, May, 1988.

## **VI. Patents and licensing (Weeks 9-10)**

- Gilbert & Shapiro, "Optimal patent length and breadth," *Rand J*, vol. 21, Spring, 1990.
- Kamien, "Patent Licensing," in Aumann and Hart, *Handbook of Game Theory*, 1992.
- Klemperer, "How broad should the scope of patent protection be?," *Rand J*, vol. 21, Spring, 1990.
- \*Besen & Raskind, "An introduction to the law and economics of intellectual property," *J Econ Perspectives.*, vol. 5, 1991.
- \*Chang, "Patent scope, antitrust policy, and cumulative innovation," *Rand J*, vol. 26, Spring, 1995.
- \*Gilbert and Shapiro, "Antitrust issues in the licensing of intellectual property," *Brookings Papers (Microeconomics)*, 1997.
- \*Katz & Shapiro, "How to License Intangible Property," *QJE*, August, 1986.
- \*Scotchmer, "Standing on the shoulders of giants: cumulative research and the patent law," *J Econ Perspectives.*, vol. 5, 1991.

## **VII. Network effects, compatibility and standards (Weeks 11-12)**

- Tirole, Ch. 10, pp. 404-414
- Katz & Shapiro, "Network externalities, competition, and compatibility," *Am Econ Rev*, vol. 75, 1985.
- Farrell & Saloner, "Installed base and compatibility: innovation, product preannouncement, and predation," *Amer Econ Rev*, vol. 76, 1986.
- Matutes & Regibeau, "Mix and match: product compatibility without network externalities," *Rand J*, vol. 19, Summer, 1988.
- \*Besen & Farrell, "Choosing how to compete: strategies and tactics in standardization," *J Econ Perspectives*, vol. 8(2), 1994.
- \*David, "Clio and the economics of QWERTY," *Am Econ Rev*, vol. 75, 1985.
- \*Farrell & Saloner, "Converters, compatibility and the control of interfaces," *J Industrial Econ*,

vol. 15, March, 1992.

\*Katz & Shapiro, "Technology adoption in the presence of network externalities," *J Pol Econ*, vol. 94, 1986.

\*Liebowitz & Margolis, "The fable of the keys," *J Law and Econ*, April 1990.

### **VIII. Entry deterrence, foreclosure, and predatory conduct (Weeks 13-14)**

Tirole, Chs. 8-9

Bresnahan & Reiss, "Entry and competition in concentrated markets," *J Pol Econ*, vol 99, 1991

Aghion & Bolton, "Contracts as a barrier to entry," *Am Econ Rev*, vol. 77, June 1987

Segal & Whinston, "Naked exclusion: comment," *Am Econ Rev*, vol. 90, 2000

\*Gilbert, "Mobility barriers and the value of incumbency," *Handbook of Industrial Organization*, vol I, Schmalensee & Willig (eds.), 1989

\*Katz and Gilbert, "An economist's guide to US v. Microsoft," *J Econ Perspectives*, vol. 15, Spring, 2001.

\*Mankiw & Whinston, "Free entry and social inefficiency," *Rand J*, Spring 1986.

\*Ordover & Saloner, "Predation, monopolization and antitrust," *Handbook of Industrial Organization*, vol I, Schmalensee & Willig (eds.), 1989.

\*Rey and Tirole, "A primer on foreclosure," working paper, 1997.