ECON5313   Industrial Organization

Fall 2017

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Class Time: T/R, 10:30-11:45am

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Course Description

Industrial Organization studies the behavior of firms and the functioning of markets, as well as the role of public policy in promoting efficiency. This course will cover selected topics in industrial organization theory. Recommended textbooks include: (1) *The Theory of Industrial Organization* by Jean Tirole, MIT Press, (2) *Oligopoly Pricing* by Xavier Vives, MIT Press and (3) *Industrial Organization* by Oz Shy, MIT Press. A good source for references is the *Handbook of Industrial Organization, Vol. 1, 2, and 3. HIO3* (2007, Mark Armstrong and Robert Porter edits) surveys the major developments in IO since Tirole.

Grading

Your grade will be based on homework and class participation (25%), a midterm exam (25%) and a research component consisting of a term paper and presentation (30%), two referee reports (10%) and two presentations (2-person groups, 10%). You are encouraged to form study groups to discuss homework and lecture materials. More details about the research component will be discussed later.

Honor Policy

You may not access any old problem sets, old exams, answer keys without my explicit permission. When collaborating with others, do not copy answers from another student. Always cite any resources or individuals you consult to complete an assignment.

Course Schedule

The course materials are arranged by topics, each usually covered over several classes. Several problem sets are assigned and I will also ask you to write short reviews for papers

(each review is about two pages long, double spaced). You are also encouraged to work out the various exercise problems in Tirole.

A tentative course schedule is listed below. Approximate number of lectures to cover each chapter is listed in parenthesis. There can be changes to this schedule during the semester, which will be announced in class. It is your responsibility to update information about the course according to announcements made in class.

I Monopoly Pricing (1.5)

- Single-/Multi-product monopolist
- Learning-by-doing
- Durable good monopolist

Tirole exercise 1.1-1.2 (p. 67), 1.3 (p. 68), 1.4 (p. 69), 1.5, (p. 71), 1.7 (p. 72).

Readings: Tirole Ch. 1

- Bulow, J., "Durable Goods Monopolists," JPE (1982), 90, pp. 314-332.
- Gul, F., H. Sonnenschein, and R. Wilson, "Foundations of Dynamic Monopoly and the Coase Conjecture." JET (1986) 39 pp. 155-190.
- Mussa, M. and S. Rosen "Monopoly and Product Quality," JET (1978) 18, pp. 301-317.
- Posner, R., "The Social Cost of Monopoly and Regulation", JPE (1975) 83 pp. 807-827.

II Static Models of Oligopoly (7.5)

- Bertrand and Cournot competition
  Tirole 5.1 (p. 211), 5.3-5.5 (p. 221), 5.6-5.7 (p. 223).
  Problem set 1: Shy Q1 (p. 128 skip a)), Q2 (p. 128), Q5 (p. 129)
  Readings: Tirole Ch. 5
  - Kreps, D., and J. Scheinkman, (1983) "Quantity Precommitment and Bertrand Competition Yield Cournot Outcomes", BELL 14, pp. 326-337.

- Bulow, Jeremy, John Geanakoplos, and Paul Klemperer (1985), "Multi-market Oligopoly: Strategic Substitutes and Complements," JPE, 488-511.

- Farrell, J. and C. Shapiro, "Horizontal Mergers: An Equilibrium Analysis," AER, 1990

- Bresnahan, T. and P. Reiss, "Entry and Competition in Concentrated Markets," JPE 99 (1991), pp. 977-1009.

- Mankiw, G. and M. Whinston, "Free Entry and Social Inefficiency," RAND 17 (1986), pp. 48-58.

- Quadratic utility

Problem set 2

- Singh, N. and X. Vives, "Price and Quantity Competition in a Differentiated-Product Oligopoly," RAND 15 (1984), pp. 546-554.

- Spatial competition

Tirole 7.1 (p. 281), 7.2 (p. 282), 7.3 (p. 284).

Problem set 3

Readings: Tirole Ch. 7.1

- Anderson, S.P., de Palma, A. and Thisse, J-F. (1992). Discrete Choice Theory of Product Differentiation, Cambridge: The MIT Press.

- Hotelling, H. (1929). "Stability in Competition", EJ, vol. 39, pp. 41-57.

- D'Aspremont, C.J. Gabszewicz, and J-F Thisse, "On Hotelling's Stability in Competition," EM 47 (1979), pp. 1145-50.

- Salop, S.C. (1979). "Monopolistic competition with outside goods", BELL, vol. 10, pp. 141-156.

- Liu, Q. and J. Shuai (2013). "Multi-dimensional product differentiation," working paper.

- Gong, Q., Q. Liu and Y. Zhang (2013). "Optimal Product Differentiation in a Circular Model," Working paper.

- Vertical differentiation

Problem set 3 (continued)

Readings:

- Shaked and Sutton (1982), "Relaxing Price Competition through Product Differentiation, REStud, 3-13.

- Monopolistic competition

  Problem set 4

  - Dixit, A. and J. Stiglitz, "Monopolistic Competition and Optimum Product Diversity," AER, 67 (1977), pp. 297-308.

1st referee report

Planning for Term Paper

III Dynamic Models of Oligopoly (4)

- Dynamic pricing

  Problem set 5

  Readings:

  - Klemperer, P. "The Competitiveness of Markets with Switching Costs", RAND (1987), 138-150.
  - Farrell, J. and P. Klemperer, "Competition in Markets with Switching Costs and Lock-In", HIO 3.
  - Chen, Y. "Paying Customers to Switch," JEMS (1997), 877-897.
  - Fudenberg, D and J. Tirole, "Consumer Poaching and Brand Switching," RAND (2001), 634-657
  - Taylor, C. "Supplier Surfing: Competition and Consumer Behavior in Subscription Markets," RAND, 2003

- Collusion

Tirole exercises 6.2-6.3 (p. 247), 6.4 (p. 250), 6.7 (p. 252).

Problem Set 5 (continued)

Readings: Tirole Ch. 6

- Green, E. and R. Porter, "Noncooperative Collusion under Imperfect Price Information," EM (1984), pp. 87-100.

- Abreu, D. "Extremal Equilibria of Oligopolistic Supergames," JET (1986), pp. 191-225.

- Rotemberg, J. and G. Saloner, "A Supergame-Theoretic Model of Price Wars during Booms," AER (1986) pp. 390-407.

- Bernheim, D. and M. Whinston, "Multimarket contact," RAND (1990).
- Liu, Q. and K. Serfes, "Market segmentation and collusive behavior," IJIO (2007).

Proposal for Term Paper

IV Entry and Exit (4)

- Natural monopolies

  Tirole exercises 8.1 (p. 310), 8.2 (p. 312).

  Readings: Tirole Ch. 8

  – Spence, A. M. (1983): "Contestable Markets and the Theory of Industry Structure: A Review Article." JEL 21, pp. 981-990.
  – Schmalensee, R., (1981): "Economies of Scale and Barriers to Entry," JPE, 89, pp. 1228-1238.

- Accommodated, deterred and blockaded entry

  Tirole exercises 8.4 (p. 319), 8.7 (p. 325)

  Readings: Tirole Ch. 8

  Problem set 6

  – Aghion, P. and P. Bolton, "Contracts as a Barrier to Entry," AER 77 (1987), pp. 388-401.
  – Dixit, A., "The Role of Investment in Entry Deterrence," EJ (1980), pp. 95-106.
  – Eaton, B. and R. Lipsey, "Exit Barriers and Entry Barriers: The Durability of Capital as a Barrier to Entry," BELL (1980), pp. 721-729.
  – Fudenberg, D. and J. Tirole, "Capital as a Commitment: Strategic Investment to Deter Mobility," JET v31, n2 (December 1983): 227-50.

  – Jovanovic, B. "Selection and the Evolution of Industry." EM (May 1982): 649-670.
  – Dunne, T., M. Roberts, and L. Samuelson. (1988) "Patterns of Firm Entry and Exit in U.S. Manufacturing." RAND 19 pp. 495-515.
  – Klepper, S. (2002) "Firm Survival and the Evolution of Oligopoly," RAND 33, pp. 37-61.

- Seim, K. (2006) "An empirical model of firm entry with endogenous product-type choices," RAND 37 (3), 2006, pp. 619640.

- Basker, E. "Job Creation or Destruction? Labor Market Effects of Wal-Mart Expansion", REStat, Vol. 87, No. 1 (Feb., 2005), pp. 174-183.
- Neumark, D., Zhang J., and S. Ciccarella. "The effects of Wal-Mart on local labor markets," *Journal of Urban Economics* 63 (2), (2008), 405-430.
- Holmes, T. "The Diffusion of Wal-Mart and Economies of Density" EM, Vol. 79, No. 1 (January, 2011), 253-302.

- Limit pricing and signal jamming

  Problem set 6 (continued)

  Readings: Tirole Ch. 9

  - Milgrom, P. and J. Roberts, "Limit Pricing and Entry Under Incomplete Information: An Equilibrium Analysis," EM, Vol. 50, No. 2. (Mar., 1982), pp. 443-460.
  - Bagwell, K. and G. Ramey, "Oligopoly Limit Pricing," RAND v22, n2 (Summer 1991): 155-72
  - Bagwell, K. "A Model of Competitive Limit Pricing, JEMS v1, n4 (Winter 1992): 585-606

  Exam

V Alternative Theories of Competition (6)

Term Paper Due

Final referee report

- Consumer search (Will not be covered, read on your own)

  Readings:

  - Diamond, P., "A Model of Price Adjustments," JET (1971), pp. 156- 168.
  - Stahl (1989): "Oligopolistic Pricing with Sequential Consumer Search," AER, pp. 700-712.
  - Baye, M, and J Morgan. "Information Gatekeepers on the Internet and the Competitiveness of Homogeneous Product Markets." AER 91, no. 3 (June 2001): 454-474.

- Price discrimination

  Readings:

  - Varian (1980), "A Model of Sales," AER, pp. 651-659.
  - Armstrong, M. (2006) "Recent Developments in the Economics of Price Discrimination."
  - Borenstein, S., and N Rose. "Competition and Price Dispersion in the US. Airline Industry." JPE (August 1994): 653-683.
  - Dai, M., Q. Liu and K. Serfes (2014). "Is the Effect of Competition on Price Dispersion Non-Monotonic? Evidence from the U.S. Airline Industry," REStat.
  - Leslie, P. (2004) "Price Discrimination in Broadway Theater." RAND 35, pp. 520-541.
  - Shaffer, G. and Z.J. Zhang (2002) Competitive one-to-one promotions," Management Science 48, pp.l143-1160.
  - Thisse, J. and X. Vives (1988), "On the Strategic Choice of Spatial Price Policy", AER, pp. 122-137.
  - Ferrier, P. and Q. Liu (2010), "Consumer sorting of vertically differentiated goods," Economics Letters, v109, 11-13.

- Low-price guarantees

  - Edlin, A. (1997). "Do guaranteed-low-price policies guarantee high prices, and can antitrust rise to the challenge?" *Harvard Law Review* 111(2), 528-575.
  - Hviid, M. and G. Shaffer (1999). "Hassle costs: the Achilles' heel of price-matching guarantees," JEMS 8(4), 489-521.
  - Moorthy, S. and R. Winter (2006), "Price-matching guarantees," RAND 37(2), 449-465.
  - Cooper, T. (1986). "Most-favored-customer pricing and tacit collusion," RAND 17, 377-388.
  - Chen, J. and Q. Liu (2011). "The Effect of Most-Favored Customer Clauses on Prices," JIE, v59, 343-371.
  - Liu (2013). "Tacit Collusion with Low-Price Guarantees," *Manchester School*.

- Two-sided markets

- Armstrong, M. (2006) "Competition in two-sided markets," RAND 37 (3), pp. 668-691.

- Rochet, J. and J. Tirole (2006) "Two-sided markets: a progress report," RAND 37(3), pp. 645-667.

- Anderson, S. and S. Coate (2005) "Market provision of broadcasting: A welfare analysis," REStud 72(4), pp. 947-972.

- Anderson, S. and J. Gans (2011) "Platform Siphoning: Ad-Avoidance and Media Content," AEJ: Micro, 3(4), pp. 1-34.

- Liu, Q. and K. Serfes (2013) "Price Discrimination in Two-sided Markets," JEMS 22(4), pp. 768-786.

- Liu, Q. and J. Shuai (2013) "TrueView ads," Working paper.

VI Auction (2)

Details to be announced ...

Abbreviations for journals:

AER:	American Economic Review
EJ:	Economic Journal
EM:	Econometrica
IJIO:	International Journal of Industrial Organization
JB:	Journal of Business
JEL:	Journal of Economic Literature
JEMS:	Journal of Economics and Management Strategy
JIE:	Journal of Industrial Economics
JLEO:	Journal of Law, Economics, and Organization
JPE:	Journal of Political Economy
QJE:	Quarterly Journal of Economics
RAND (BELL):	Rand (Bell) Journal of Economics
REStat:	Review of Economics and Statistics
REStud:	Review of Economic Studies