

Econ 543
Spring 2008
Professor Kala Krishna Tel: 865-1106
Class times: Tuesdays and Thursdays 11:15 -12:30 in 413 Kern

This course deals with Industrial Organization Theory and Policy at a graduate level. The aim of the course is to give students some idea of the kind of issues that are important in practice and how the models help understand them. It will be assumed that students have taken the graduate courses in micro-economic theory or have the equivalent background. Students who have any doubt about their ability to deal with the course should see me.

This is a two semester course. The fall was more empirical while this course is more theoretical. We will develop the models used as needed with a view to getting to recent work fast without ignoring the basics. The reading list is long, but rest assured, we will not read everything on it! Important papers are denoted by a “*”.

Course Requirements:

Class Presentation	20%
Midterm Exam	40%
Final Exam	40%

The form of the class presentation will be determined in the first class. For the class presentation you need to choose a paper, clear it with me, and present it in class. Make your choice as soon as possible.

Required readings are indicated by an asterisk(*). If you plan on working in the area, you might want to buy some or all of these books since they are useful references.

*Tirole, Jean (1988), *The Theory of Industrial Organization*.

*Bolton, Patrick and Mathias Dewatripont (2005), *Contract Theory*, MIT Press.

**Handbook of Industrial Organization Vol. 3*, North Holland

Whinston, Michael (2006), *Lectures on Antitrust Economics*, MIT Press.

Hart, Oliver (1995), *Firms, Contracts and Financial Structure*, Oxford University Press.

Salanie, Bernard (1997), *The Economics of Contracts: A Primer*, MIT Press.

Kuenne, Robert E. (2000), *Readings in Applied Microeconomic Theory: Market Forces and Solutions*.

Readings

I. The Firm

a. What is a Firm?

*Gibbons, Robert (2005), "Incentives between Firms (and Within)," *Management Science*, 51(1), pp. 2-17.

*Gibbons, R. (2005), "Four Formalizable Theories of the Firm?" *Journal of Economic Behavior and Organization*.

Whinston, M. (2001), "Assessing the Property Rights and Transaction-Cost Theories of Firm Scope," *American Economic Review, Papers and Proceedings*, 91, May, pp. 184-188.

Hart, O. and John Moore (1990), "Property Rights and the Nature of the Firm," *Journal of Political Economy*, 98.

b. Organization of the Firm

Garicano, Luis (2000), "Hierarchies and the Organization of Knowledge in Production," *Journal of Political Economy*, 108(5), October, pp. 874-904.

Garicano, L. and Tom Hubbard (2007), "Earnings Inequalities and Coordination Costs: Evidence from U.S. Law Firms," Mimeo.

Aghion, Philippe and J. Tirole (1997), "Real and Formal Authority in Organizations," *Journal of Political Economy*, 105(1), pp.1-29.

Garicano, L. and Tano Santos (2004), "Referrals," *AER*, 94(3), June, pp. 499-525.

II. Firm Behavior: Static Models

a. Bertrand, Cournot and in Between

*Ch. 5 in Tirole.

Kreps, David M. and Jose A. Scheinkman (1983), "Quantity Precommitment and Bertrand Competition Yield Cournot Outcomes," *Bell Journal of Economics*, 14(2), Autumn, pp. 326-337.

Davidson, Carl and Raymond Deneckere (1986), "Long-Run Competition in Capacity, Short-Run Competition in Price, and the Cournot Model," *RAND Journal of Economics*, 17(3), Autumn, pp. 404-415.

Bulow, Jeremy, John Geanakoplos and Paul Klemperer (1985), "Multimarket Oligopoly: Strategic Substitutes and Complements," *Journal of Political Economy*.

Bernheim, B. Douglas and M. Whinston (1990), "Multi Market Contact and Collusive Behavior," *RAND Journal Of Economics*, 21(1), pp. 1-26.

Maggi, Giovanni (1996), "Strategic Trade Policies with Endogenous Mode of Competition," *American Economic Review*, 86(1), March, pp. 237-258.

b. Offering Schedules

Klemperer, P. and Margaret Meyer (1989), "Supply Function Equilibria in Oligopoly Under Uncertainty," *Econometrica*.

Bernheim, B.D. and M.D. Whinston (1986), "Menu Auctions, Resource Allocation, and Economic Influence," *Quarterly Journal of Economics*, 101(1), February, pp. 1-32.

Krishna, Kala and Torben Tranaes (2003), "Providing Uncertain Quantities Efficiently," Mimeo.

c. Dynamic Models

*Ch. 6 in Tirole.

III. Influencing Costs

a. Investment in Labor

Acemoglu, D. and J.S. Pischke (1998), "Why Do Firms Train? Theory and Evidence," *Quarterly Journal of Economics*, 113(1), pp. 78-118.

Acemoglu, D. and J.S. Pischke (1999), "The Structure of Wages and Investment in General Training," *Journal of Political Economy*, 107(3), pp. 539-572.

Acemoglu, D. and J.S. Pischke. (1997), "Training and Innovation in an Imperfect Labour Market," *Review of Economic Studies*, 64(3), pp. 445-464.

Spence, Michael (1973), "Job Market Signaling," *Quarterly Journal of Economics*, pp. 355-374.

b. Investment in Technology: R&D and Licensing.

*Tirole, J., Ch. 10 in *Industrial Organization*.

Kamien, Morton I. (1992), "Patent Licensing," Chapter 11 in *Handbook of Game Theory with Economic Applications*, Robert J. Aumann and Sergiu Hart (eds.), Vol. 1, pp. 331-354, Elsevier.

Shapiro, Carl (1985), "Patent Licensing and R & D Rivalry," *American Economic Review*, 75(2), pp. 25-30.

Katz, Michael L. and C. Shapiro (1986), "How to License Intangible Property," *Quarterly Journal of Economics*, 101(3), August, pp. 567-590.

Jaffe, Adam B. and Manuel Trajtenberg (2002), *Patents, Citations, and Innovations: A Window on the Knowledge Economy* available online at books.google.com.

*Shapiro, C. and Joseph Farrell (2008), "How Strong are Weak Patents?" *American Economic Review* (forthcoming).

Boldrin, Michele and David Levine (2008), *Against Intellectual Monopoly*. Book available online at <http://levine.sscnet.ucla.edu/general/intellectual/againstnew.htm>.

Boldrin, M. and D. Levine (2005), "Intellectual Property and the Efficient Allocation of Social Surplus from Creation."

Boldrin, M. and D. Levine (2006), "Perfectly Competitive Innovation," Mimeo.

Kremer, Michael (1998), "Patent Buyouts: A Mechanism for Encouraging Innovation," *Quarterly Journal of Economics*, November, pp. 1137-1167.

Jones, Ben (2007), "The Burden of Knowledge and the Death of the Renaissance Man: Is Innovation Getting Harder?" Mimeo.

IV. Influencing Consumers: Making Demand Larger and More Inelastic

a. Advertising

*Ch. 2.4 in Tirole.

Bagwell, Kyle (2007), "The Economic Analysis of Advertising," Chapter 28 in *The Handbook of Industrial Organization, Volume 3*, M. Armstrong and R. Porter (eds.), North Holland.

b. Switching Costs

*Klemperer, P. (1995), "Competition when Consumers have Switching Costs: An Overview with Applications to Industrial Organization, Macroeconomics, and International Trade," *Review of Economic Studies*, 62, pp. 515-539.

Farrell, J. and P. Klemperer (2007), "Coordination and Lock in: Competition with Switching Costs and Network Effects," Chapter 31 in *The Handbook of Industrial Organization, Volume 3*, M. Armstrong and R. Porter (eds.), North Holland.

Klemperer, P. (1987), "Markets with Consumer Switching Costs," *Quarterly Journal of Economics*, 102(2), May, pp. 375-394.

Farrell, J. and Garth Saloner (1988), "Dynamic Competition with Switching Costs," *RAND Journal of Economics*, 19(1), Spring, pp. 123-137.

c. Using Consumer Weaknesses

*Pesendorfer, Wolfgang (1995), "Design Innovation and Fashion Cycles," *American Economic Review*, 85(4), September, pp. 771-792.

*DellaVigna, Stefano and Ulrike Malmendier (2004), "Contract Design and Self-Control: Theory and Evidence," *Quarterly Journal of Economics*, 119, May, pp. 353-402.

*DellaVigna, S. and U. Malmendier (2006), "Paying Not to Go to the Gym," *American Economic Review*, 96, June, pp. 694-719.

d. Product Differentiation: Vertical and Horizontal

*Ch. 7 in Tirole.

Mussa and Rosen

d'Aspremont, C., J. Jaskold Gabszewicz and J.-F. Thisse (1979), "On Hotelling's 'Stability in Competition'," *Econometrica*, 47(5), September, pp. 1145-1150.

Sutton, John (1986), "Oligopolistic Markets with Price-Setting Firms: Vertical Product Differentiation: Some Basic Themes," *American Economic Review*, 76(2), Papers and Proceedings of the Ninety-Eighth Annual Meeting of the American Economic Association, May, pp. 393-398.

Sutton, J. (2007), "Market Structure: Theory and Evidence," Chapter 28 in *The Handbook of Industrial Organization, Volume 3*, M. Armstrong and R. Porter (eds.), North Holland.

Krishna, K. and Tor Winston (2003), "If at First You Don't Succeed...: Profits, Prices, and Market Structure in a Model of Quality with Unknowable Consumer Heterogeneity," *International Economic Review* 44 (2), pp. 573-595.

Sutton, J. (2005), "Competing In Capabilities: An Informal Overview," Mimeo.

Vogel, Jon (2007), "Spatial Competition with Heterogeneous Firms," Mimeo.

V. Contracts

a. Overview

*Bolton, Patrick and Mathias Dewatripont (2005), *Contract Theory*, MIT Press.

Aghion, P. and P. Bolton (1992), "An Incomplete Contracts Approach to Financial Contracting," *Review of Economic Studies*, 59(3), pp. 621-654.

Whinston, M. and Ilya Segal (2003), "Robust Predictions for Bilateral Contracting with Externalities," *Econometrica*, 71(3), May, pp. 757-791.

Bernheim, B.D. and M. Whinston (1998), "Incomplete Contracts and Strategic Ambiguity," *American Economic Review*, 88, September, pp. 902-932.

Segal, I. (1999), "Contracting with Externalities," *Quarterly Journal of Economics*, pp. 337-388.

*Marx, Leslie M. and Greg Shaffer (2007), "The Bumping Problem: Contracting in a Multi-Principal Multi-Agent Framework," Mimeo.

Che, Yeon-Koo and Seung-Weon Yoo (2001), "Optimal Incentives for Teams," *American Economic Review* 91(3), June, pp. 525-541.

Levin, Jonathan (2003), "Relational Incentive Contracts," *American Economic Review*, 93(3), June, pp. 835-857.

Holmström, Bengt (1999), "Managerial Incentive Problems: A Dynamic Perspective," *Review of Economic Studies*, 66(1), January, Special Issue: Contracts, pp. 169-182. Also available as National Bureau of Economic Research Working Paper No. 6875, January.

Hart, O. and J. Moore (2004), "Agreeing Now to Agree Later: Contracts that Rule Out but do not Rule In," National Bureau of Economic Research Working Paper No. 10397, March.

Maskin, E. and J. Tirole (1999), "Unforeseen Contingencies and Incomplete Contracts," *Review of Economic Studies*, 66, pp. 83-114.

b. The Holdup Problem

Klein, Benjamin (2006), "The Economic Lessons of Fisher Body - General Motors," available at SSRN: <http://ssrn.com/abstract=937510>.

Felli, L. and K. Roberts (2002), "Does Competition Solve the Hold-up Problem?" STICERD Theoretical Economics Discussion Paper No. TE/01/414, London School of Economics.

Che, Y.K. and D. Hausch (1999), "Cooperative Investments and the Value of Contracting," *American Economic Review*, 89, pp. 125-147.

Edlin, Aaron S. and Stefan Reichelstein (1996), "Holdups, Standard Breach Remedies, and Optimal Investment," *American Economic Review*, 86(3), June, pp. 478-501.

c. Integration

Whinston, M. (2003), "On the Transaction Cost Determinants of Vertical Integration," *Journal of Law, Economics, and Organization*, 19(1), pp. 1-23.

Bolton, P. and M. Whinston (1993), "Incomplete Contracts, Vertical Integration, and Supply Assurance," *ReStud*, 60, pp. 121-148.

Grossman, Sanford and O. Hart (1986), "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy*, August.

Tadelis, Steven (2002), "Complexity, Flexibility, and the Make-or-Buy Decision," *American Economic Review*, 92(2), May, pp. 433-437.

Bajari, Patrick and S. Tadelis (2001), "Incentives versus Transaction Costs: A Theory of Procurement Contracts," *RAND Journal of Economics*, 32(3), Autumn, pp. 387-407.

Banerjee, Abhijit and Esther Duflo (2000), "Reputation Effects and the Limits of Contracting: A Study of the Indian Software Industry," *Quarterly Journal of Economics*, 115(3), August, pp. 989-1017.

VI. Regulation

a. Exclusion, Tying and Foreclosure

*Ch. 4. in Tirole.

*Rey, Patrick and J. Tirole (2007), "A Primer on Foreclosure," Chapter 33 in *The Handbook of Industrial Organization, Volume 3*, M. Armstrong and R. Porter (eds.), North Holland.

Lafontaine, Francine and Margaret Slade (2008), "Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy," *Handbook of Antitrust Economics*, Paolo Buccirossi (ed.), Cambridge: MIT Press, forthcoming.

Rasmusen, Eric B., J. Mark Ramseyer and John Wiley (1991), "Naked Exclusion," *American Economic Review*, 81(5), pp. 1137-1145.

Marx, L.M. and G. Shaffer (2007), "The Bumping Problem: Contracting in a Multi-Principal Multi-Agent Framework," Mimeo.

Segal, I. (1999), "Contracting with Externalities," *Quarterly Journal of Economics*, pp. 337-388.

Segal, I. and M. Whinston. (2000), "Naked Exclusion: Comment," *American Economic Review*, 90(1), pp. 296-309.

Rasmusen, E.B., J.M. Ramseyer and J. Wiley (2000), "Naked Exclusion: Reply," 90(1), pp. 310-311.

Whinston, M. (2001), "Exclusivity and Tying in U.S. versus Microsoft: What We Know and Don't Know," *Journal of Economic Perspectives*, 15, pp. 63-80.

Whinston, M. (1990), "Tying, Foreclosure and Exclusion," *American Economic Review*, September, pp. 837-859.

Whinston, M. and B.D. Bernheim (1998), *Journal of Political Economy*, pp. 64-103.

Farrell, J. (2004), "A Simple Price-Theory Model of Anticompetitive Exclusive Dealing," Mimeo.

Farrell, J. (2005), "Deconstructing Chicago on Exclusive Dealing," Mimeo.

b. Mergers

*Whinston, M. (2007), "Antitrust Policy towards Horizontal Mergers," Chapter 36 in *The Handbook of Industrial Organization, Volume 3*, M. Armstrong and R. Porter (eds.) , North Holland.

Erdem, Tülin, Susumu Imai and Michael P. Keane (2003), "Brand and Quantity Choice Dynamics Under Price Uncertainty," *Journal of Quantitative Marketing and Economics*, 1(1), March.

c. Price Discrimination

*Ch. 3 in Tirole.

Armstrong, M. (2006), "Recent Developments in the Economics of Price Discrimination," Ch. 4 in *Advances in Economics and Econometrics*. <http://www.econ.ucl.ac.uk/downloads/armstrong/pd.pdf>.

Bulow, J. (1982), "Durable-Goods Monopolists," *Journal of Political Economy*, 90(2), pp. 314-332.

Stole, Lars (2007), "Price Discrimination and Competition," Ch. 34 in the *Handbook of Industrial Organization, Volume 3*, North Holland.

d. Entry Deterrence and Antitrust

*Ch. 8 and 9 in Tirole.

Wilson, Robert (1992), "Strategic Models of Entry Deterrence," Ch. 10 in *Handbook of Game Theory with Economic Applications, Volume 1*, Robert J. Aumann and Sergiu Hart (eds.), North Holland, pp. 305-329.

Bagwell, Kyle and Asher Wolinski (2001), "Game Theory and Industrial Organization," In *Handbook of Game Theory*.

Dixit, Avinash (1980), "The Role of Investment in Entry Deterrence," *Economic Journal*, 90, March, pp. 95-106.

Shapiro, C. and M.L. Katz (1999), "Antitrust in Software Markets" in *Competition, Innovation, and the Microsoft Monopoly*.

Whinston, M. and I. Segal (2007), "Antitrust in Innovative Industries," *American Economic Review* (forthcoming).

Krishna, K. "Auctions with Endogenous Valuations: The Persistence of Monopoly Revisited."

Aghion, P. and P. Bolton (1987), "Contracts as a Barrier to Entry," *American Economic Review*, 77(3), pp. 388-401.

Mankiw, N. Gregory and M. Whinston (1996), "Free Entry and Social Efficiency," *RAND Journal of Economics*, 17(1), Spring, pp. 48-58.

Academic Integrity: Dishonesty of any kind is not tolerated in this course. Dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with academic work of other students. Students who are found dishonest will receive the most severe academic sanction consistent with PSU policies. A minimum penalty for any breach of academic integrity is the grade of "F" for the course. The Department of Economics has information at its web site (<http://econ.la.psu.edu/> click on "undergraduate program" and then click on "academic integrity"). Be sure to read the contents of this site.

Valid Excuses: Guidelines for the Department of Economics, Penn State University

The text below has been directly obtained from the Department of Economics web-page. For the full version, see <http://www.econ.psu.edu/undergraduate/index.html#valid>

During the course many possible situations may arise that would result in your inability to attend class, attend exams, or perform at a minimally acceptable level during an examination. Illness or injury, family emergencies, certain University-approved curricular and extra-curricular activities, and religious holidays can be legitimate reasons to miss class or to be excused from a scheduled examination.

In the case of your own illness or injury, confirmation from a physician, physician's assistant, a nurse-practitioner, or a nurse is required. . . . Further, barring extraordinary circumstances, the confirmation must be available to the instructor prior to the missed course event.

With regard to family emergencies, you must provide verifiable documentation of the emergency. Unless the emergency is critical you should notify the instructor in advance of your absence from the scheduled course event.

In cases of critical emergencies, you must notify the instructor within one week of your absence.

For University-approved curricular and extra-curricular activities, verifiable documentation is also required. The student should obtain from the unit or department sponsoring the activity a letter (or class absence form) indicating the anticipated absence(s). The letter must be presented to the instructor at least one week prior to the first absence.

In the case of religious holidays, the student should notify the instructor by the third week of the course of any potential conflicts.

DISABILITY MESSAGE: The Pennsylvania State University encourages qualified people with disabilities to participate in its programs and activities and is committed to the policy that all people shall have equal access to programs, facilities, and admissions without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. If you anticipate needing any type of accommodation in this course or have questions about physical access let me know as soon as possible.