

Professor Michael Noel

The course provides a graduate level introduction to Industrial Organization. It is the first of two courses in the IO sequence, each of which can be taken independently. This course deals primarily with price discrimination, monopoly power, entry, information and estimation techniques; the second course continues with mergers, vertical relationships, networks, and regulation. Each assumes a familiarity with micro theory, basic game theory and some econometrics.

The primary text for the course is Jean Tirole's, *The Theory of Industrial Organization*, (Cambridge: MIT Press, 1988). For additional background, Schmalensee, R. and R. Willig, *Handbook of Industrial Organization*, Amsterdam: North Holland, 1989 is also helpful. The Tirole text provides an overview of most of the theoretical topics, while the journal articles below are primarily of an empirical nature. Follow the links; there is no course reader. The starred readings are required. Some readings may be added or deleted depending on time considerations.

There will be two problem sets, ungraded, to help you work through some theoretical problems and to think critically about the claims and conclusions made in the empirical papers we read.

## **I. Introduction**

\* Tirole, Introduction.

\* R. Schmalensee, "Industrial Economics- An Overview," *Economic Journal*, 98 (September 1988), 643-681.

## **II. Monopoly Pricing & Price Discrimination**

\* Tirole, Chapter 1 & 3.

W. Oi. "A Disneyland Dilemma: Two Part Tariffs for a Mickey Mouse Monopoly," *Quarterly Journal of Economics*, 85 (Feb. 1971), pp. 77-96.

E. Blackstone, "Restrictive Practices in the Marketing of Electrofax Copying Machines: The SCM Corporation Case," *Journal of Industrial Economics* 23 (March 1975), 189-202.

\* A. Shepard, "Price Discrimination and Retail Configuration," *Journal of Political Economy* 99 (February 1991), pp. 30-53.

S. Borenstein. "Selling Costs and Switching Costs: Explaining Retail Gasoline Markets," *RAND Journal of Economics* 22 (1991), pp.354-360.

S. Borenstein and N. Rose, "Competition and Price Dispersion in the U.S. Airline Industry," *Journal of Political Economy*, 102 (August 1994), pp. 653-683

\* Ayres and Siegelman, "Race and Gender Discrimination in Bargaining for a New Car," *American Economic Review* 85 (June 1995): pp.304-321.

\* P. K. Goldberg, "Dealer Price Discrimination in New Car Purchases- Evidence from the Consumer Expenditure Survey," *Journal of Political Economy*, 104 (June 1996), 622-654.

W. Harris, "Captive Audiences and the Price of Popcorn," *Pennsylvania Economic Review*, 5 (1996), pp. 39-46.

A. Nevo and C. Wolfram. "Prices and Coupons for Breakfast Cereals," *RAND Journal of Economics*, 33 (2002), pp.319-339.

J. Chevalier, A. Kashyap and P. Rossi, "Why Don't Prices Rise During Periods of Peak Demand? Evidence from Scanner Data," mimeo, 2001.

A. Nevo and I. Hendel, "Sales and Consumer Stockpiling," NBER Working Paper No. 9048, 2003.

A. Nevo and I. Hendel, "Measuring the Implications of Sales and Consumer Stockpiling Behavior," mimeo, July 2002.

F. Scott Morton, F. Zettelmeyer and J. Silva Risso, "Consumer Information and Price Discrimination: Does the Internet Affect the Pricing of New Cars to Women and Minorities?," NBER Working Paper 8668.

A. Nevo and C. Wolfram, "Why Do Manufacturers Issue Coupons? An Empirical Analysis of Breakfast Cereals," *RAND Journal of Economics*, 33 (Summer 2002), 319-339

B. McManus "Nonlinear Pricing in an Oligopoly Market: the Case of Specialty Coffee." Washington University Olin School of Business, mimeo 2001.

\* M. Busse and M. Rysman. "Competition and Price Discrimination in Yellow Pages Advertising," UC Berkeley mimeo 2002.

G. Ellison. "A Model of Add-On Pricing." NBER Working Paper No. 9721, 2003.

\* P. Leslie, "Price Discrimination in Broadway Theatre," *Rand Journal of Economics* 35(3), (2004), pp. 520-541.

### III. Homogeneous Goods Markets and Collusion

\* Tirole, Section 6.

\* E. Green and R. Porter, "Non-cooperative Collusion Under Imperfect Price Information," *Econometrica*, 52 (January 1984), pp. 87-100.

\* J. Rotemberg and G. Saloner, "A Supergame-Theoretic Model of Price Wars During Booms," *American Economic Review*, 76 (June 1986), 390-407.

\* R. Porter, "A Study of Cartel Stability: The Joint Economic Committee, 1880-1886," *Bell Journal of Economics*, 14 (Autumn 1983), pp. 301-314.

\* G. Ellison, "Theories of Cartel Stability and the Joint Executive Committee," *Rand Journal of Economics*, 25 (Spring 1994), pp. 37-57.

D. Genesove and W. Mullin. "Testing Static Oligopoly Models: Conduct and Cost in the Sugar Industry, 1890-1914," *Rand Journal of Economics*, 29 (Summer 1998), 355-377.

D. Genesove and W. Mullin, "Rules, Communication, and Collusion: Narrative Evidence from the Sugar Institute Case," *American Economic Review*, 91 (June 2001), pp. 379-398.

\* C. Wolfram, "Measuring Duopoly Power in the British Electricity Spot Market," *American Economic Review*, 89 (September 1999), 805-826.

\* S. Borenstein and A. Shepard. ♦ "Dynamic Pricing in Retail Gasoline Markets," *Rand Journal of Economics* 27 (Autumn 1006), pp. 429-51.

E. Maskin and J. Tirole, "A Theory of Dynamic Oligopoly, I: A Theory of Dynamic Oligopoly, I: Overview and Quantity Competition with Large Fixed Costs", *Econometrica* 56(3), (May 1988), pp. 549-69.

\* E. Maskin and J. Tirole, "A Theory of Dynamic Oligopoly, II: Price Competition, Kinked Demand Curves, and Edgeworth Cycles", *Econometrica* 56(3), (May 1988), pp. 571-99.

\* M. Noel, "Edgeworth Price Cycles, Cost-based Pricing and Sticky Pricing in Retail Gasoline Markets," UCSD working paper, 2004.

\* M. Noel, "Price Cycles in Retail Gasoline Markets: A Microstudy of Firm Behavior," UCSD working paper 2004.

#### IV. Differentiated Goods Oligopolies

\* Tirole, Chapter 2.

R. Coterill, "Market Power in the Retail Food Industry: Evidence from Vermont," *Review of Economics and Statistics*, 68 (August 1986), 379-386.

\* T. Bresnahan, "Competition and Collusion in the American Automobile Industry: The 1955 Price War," *Journal of Industrial Economics*, 35 (June 1987), 457-482.

M. Trajtenberg, "The Welfare Analysis of Product Innovations, with an Application to Computed Tomography Scanners," *Journal of Political Economy* 97, (1989), pp. 444-479.

R. Palmquist, "Estimating Demand for the Characteristics of Housing," *Review of Economics and Statistics*, 66 (August 1994), pp. 394-404.

S.P. Anderson, A. dePalma and J.F. Thisse. *Discrete Choice Theory of Product Differentiation*. Cambridge, MA: MIT Press, (1992).

\* P. Goldberg, "Product Differentiation and Oligopoly in International Markets: The Case of the U.S. Automobile Industry," *Econometrica*, 63 (July 1995), pp. 891-952.

\* S. Berry, "Estimating Discrete-Choice Models of Product Differentiation," *Rand Journal of Economics*, 25 (2) (Summer 1994), pp. 242-262.

\* S. Berry, J. Levinsohn, and A. Pakes, "Automobile Prices in Market Equilibrium," *Econometrica*, 63 (July 1995), pp. 841-890.

A. Nevo, "A Practitioner's Guide to Estimation of Random Coefficients Logit Models of Demand," *Journal of Economics and Management Strategy*, 9 (4) (Winter 2000) pp. 513-548.

\* S. Ellison, I. Cockburn, Z. Griliches and J. Hausman, "Characteristics of Demand for Pharmaceutical Products- An Exploration of Four Cephalosporins," *Rand Journal of Economics*, 28 (Autumn 1997), pp. 426-446.

A. Nevo, "Measuring Market Power in the Ready-to-Eat Cereal Industry," *Econometrica*, 69 (2001), 307-342.

P. Bajari and L. Benkard. "Demand Estimation With Heterogeneous Consumers and Unobserved Product Characteristics: A Hedonic Approach." Stanford University. Mimeo 2002.

\* A. Pakes and Paul McGuire. "Computing Markov-perfect Nash Equilibria: Numerical Implications of a Dynamic Differentiated Product Model," *Rand Journal of Economics* 25 (Winter 1994), 555-589.

\* R. Ericson and A. Pakes. "Markov-Perfect Industry Dynamics: A Framework for Empirical Work," *Review of Economic Studies*, 62 (Jan 1995), pp. 53-82.

D. Akerberg and M. Rysman, "Unobservable Product Differentiation in Discrete Choice Models: Estimating Price Elasticities and Welfare Effects," BU/UCLA mimeo, 2002.

## **V. Entry and Strategic Investments**

\* Tirole, Sections 7.1-7.2, 8.

R. Schmalensee, "Entry Deterrence in the Ready-to-Eat Breakfast Cereal Industry," *Bell Journal of Economics*, 9 (Autumn 1978), pp. 305-327.

P. Aghion and P. Bolton, "Entry Prevention Through Contracts with Customers," *American Economic Review*, 77, (June 1987), pp. 388-401.

R. Smiley, "Empirical Evidence on Strategic Entry Deterrence," *International Journal of Industrial Organization*, 6 (June 1988), pp. 167-180.

\* T. Bresnahan and P. Reiss, "Entry and Competition in Concentrated Markets," *Journal of Political Economy*, 99 (October 1991), pp. 977-1009.

\* J. Chevalier, "Capital Structure and Product Market Competition: Empirical Evidence from the Supermarket Industry," *American Economic Review*, 85 (3) (June 1995), pp. 415-435.

Kadiyali, V., "Entry, its Deterrence, and its Accommodation: A Study of the U.S. Photographic Film Industry," *The Rand Journal of Economics*, 27 (Autumn 1996), pp. 452-478.

S. Berry and J. Waldfogel, "Free Entry and Social Inefficiency in Radio Broadcasting," *Rand Journal of Economics*, 30 (Autumn 1999), pp. 397-420.

\* G. Ellison and S. Ellison, "Strategic Entry Deterrence and the Behavior of Pharmaceutical Incumbents Prior to Patent Expiration," mimeo 2000.

\* K. Seim, "Spatial Differentiation and Firm Entry: The Video Retail Industry," mimeo, 2001.

F. Scott Morton. "Entry Decisions in the Generic Pharmaceutical Industry." *Rand Journal of Economics* 30(3), 1999, 421-40.

## **VI. Asymmetric Information**

\* Tirole, Sections 9.0-9.7.

D. Stahl, "Oligopolistic Pricing with Heterogeneous Consumer Search," *International Journal of Industrial Organization*, 14 (April 1996), pp. 243-268.

\* A. Sorensen, "Equilibrium Price Dispersion in Retail Markets for Prescription Drugs," *Journal of Political Economy*, 108 (August 2000), pp. 833-850.

\* A. Sorensen, "Price Dispersion and Heterogeneous Consumer Search for Retail Prescription Drugs," *NBER working paper 8548*, 2001.

\* G. Ellison and S.F. Ellison, "Search, Obfuscation, and Price Elasticities on the Internet," mimeo 2002.

D. Genesove, "Adverse Selection in the Wholesale Used Car Market," *Journal of Political Economy*, 101 (August 1993), pp. 644-665.

\* T. Hubbard, "An Empirical Examination of Moral Hazard in the Vehicle Inspection Market," *The Rand Journal of Economics*, 29 (Summer 1998), pp. 406-426.

\* R. Porter and P. Sattler, "Information Sharing and Competition in the Motor Vehicle Industry," *NBER working paper 7149*, 1999.

D. Akerberg, D. "Empirically Distinguishing Informative and Prestige Effects of Advertising," *RAND Journal of Economics*, Vol. 32, No. 2, Summer 2001. pp100-118.

D. Akerberg, "Advertising, Learning, and Consumer Choice in Experience Good Markets: An Empirical Examination", UCLA mimeo, 2001.

J. Milyo and Joel Waldfogel. "The Effect of Price Advertising on Prices: Evidence in the Wake of 44 Liquormart," *American Economic Review* 89, 1999, pp.1081-96.

M. Baye and J. Morgan, "Information Gatekeepers on the Internet and the Competitiveness of Homogeneous Product Markets," *American Economic Review*, 91 (3) (June 2001), pp. 454-474.

I. Hendel and Alessandro Lizzeri. "Adverse Selection in Durable Goods Markets," *American Economic Review* 89(5), 1999.

\* Jin, G. and P. Leslie (2003): "The Effect of Information on Product Quality: Evidence from Restaurant Hygiene Grade Cards," *Quarterly Journal of Economics*, 118(2), 409-51.

## **VII. Welfare**

\* A. Petrin, "Quantifying the Benefits of New Products- The Case of the Minivan," *Journal of Political Economy* 110 (2002), pp. 705-729.

A. Goolsbee and A. Petrin, "The Consumer Gains from Direct Broadcast Satellites and the Competition with Cable Television," *NBER working paper 8317*, 2001.

A. Nevo, "New Products, Quality Changes and Welfare Measures Computed from Estimated Demand Systems," *The Review of Economics and Statistics*, 85(2), 2003, 266-275.

J. Mortimer "The Effect of Revenue-Sharing Contracts on Welfare in Vertically-Separated Markets: Evidence from the Video Rental Industry," Harvard University, mimeo 2001.