

Winter 2009

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450-2: INDUSTRIAL ORGANIZATION AND PRICES II

The course provides a graduate-level introduction to Industrial Organization (IO). It is designed to provide a broad introduction to topics and industries that current researchers are studying as well as to expose students to a wide variety of techniques. It will start the process of preparing economics Ph.D. students to conduct thesis research in the area, and may also be of interest to doctoral students in other fields.

Lectures: Monday/Wednesday 11-1, Andersen 3245

Course Web Page: <http://www.faculty.econ.northwestern.edu/faculty/nevo/teaching/450-2.html>

The required text for this course sequence concentrates on theoretical principles:

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

For a broader coverage of empirical and public policy issues, you should also read:

D. Carlton and J. Perloff, *Modern Industrial Organization*, 4th ed., Addison-Wesley, 2005.

K. Viscusi, J. Vernon and J. Harrington, *Economics of Regulation and Antitrust*, 4th ed., MIT, 2005.

You also might want to read several of the surveys in:

R. Schmalensee and R. Willig, eds., *Handbook of Industrial Organization*, Volumes 1 and 2, North-Holland, 1989. (*HIO1 and HIO2*).

M. Armstrong and R. Porter, eds., *Handbook of Industrial Organization*, Volume 3, North-Holland, 2007. (*HIO3*).

Grading will be based on several problem sets and either a final exam or paper. In the list that follows starred items are especially important.

The following abbreviations are used for journal titles:

AER	American Economic Review	JET	Journal of Economic Theory
BJE	Bell Journal of Economics	JIE	Journal of Industrial Economics
EMA	Econometrica	JLE	Journal of Law and
EJ	Economic Journal	JPE	Journal of Political Economy
IJIO	International Journal of Industrial Organization	QJE	Quarterly Journal of Economics
JE	Journal of Econometrics	RJE	Rand Journal of Economics
JEH	Journal of Economic History	ReStat	Review of Economics and Statistics
JEL	Journal of Economic Literature	ReStud	Review of Economic Studies
JEMS	Journal of Economics & Management Strategy		

I. Introduction

D. Akerberg, L. Benkard, S. Berry and A. Pakes, “[Econometric Tools for Analyzing Market Outcomes](#),” *Handbook of Econometrics*, Volume 6A, Chapter 63.

P. Reiss and F. Wolak, “[Structural Econometric Modeling: Rationales and Examples from Industrial Organization](#),” *Handbook of Econometrics*, Volume 6A, Chapter 64.

II. Production, Technology and Industry Structure

* D. Akerberg, K. Caves and G. Frazer, “Structural Estimation of Production Functions,” mimeo, UCLA, 2007.

L. Benkard, “Learning and Forgetting: The Dynamics of Aircraft Production,” AER, September 2000, 1034-54.

U. Doraszelski and J Jaumandreu, “[R&D and Productivity: The Knowledge Capital Model Revisited](#),” mimeo, Harvard, 2006.

* Z. Griliches and J. Mairesse, “[Production Functions: The Search for Identification](#),” NBER Working Paper No. 5067.

D. Greenstreet, “Exploiting [Sequential Learning to Estimate Establishment-Level Productivity Dynamics and Decision Rules](#),” mimeo, Michigan 2006.

J. Levinsohn and A. Petrin, “Estimating Production Functions Using Intermediate Inputs to Control for Unobservables,” ReStud, April 2003, 317-41.

* S. Olley and A. Pakes, “[The Dynamics of Productivity in the Telecommunications Industry](#),” EMA, November 1996, 1263-97.

J. Panzar, “Technological Determinants of Firm and Industry Structure,” HIO1, Chapter 1.

F. Wolak, “An Econometric Analysis of the Asymmetric Information, Regulator-Utility Interaction,” *Annales d’Economie et de Statistique*, 1994, 13-69.

III. Empirical Studies of Pricing

1. Static Models

O. Ashenfelter and D. Sullivan, “Nonparametric Tests of Market Structure: An Application to the Cigarette Industry,” JIE, June 1987, 483-98.

J. Baker and T. Bresnahan, “Estimating the Residual Demand Curve Facing a Single Firm,” IJIO,

September 1988, 283-300.

S. Borenstein, J. Bushnell and F. Wolak, "Measuring Market Inefficiencies in California's Restructured Wholesale Electricity Market," AER, December 2002, 1396-405.

* T. Bresnahan, "The Oligopoly Solution is Identified," Economics Letters, 1980, 10, 87-92.

* T. Bresnahan, "Empirical Studies of Industries with Market Power," HIO2, Chapter 17.

K. Corts, "Conduct Parameters and the Measurement of Market Power," JE, November 1998, 227-50.

D. Genesove and W. Mullin, "Testing Static Oligopoly Models: Conduct and Cost in the Sugar Industry, 1890-1914," RJE, Summer 1998, 355-77.

C. Holt, "Industrial Organization: A Survey of Laboratory Research," in J. Kagel and A. Roth, eds., *Handbook of Experimental Economics*, Princeton, 1995, 349-443.

J. Panzar and J. Rosse, "Testing for 'Monopoly' Equilibrium," JIE, June 1987, 443-56.

M. Salinger, "The Concentration-Margin Relationship Reconsidered," Brookings Papers on Economic Activity Micro, 1990, 287-335.

R. Schmalensee, "Inter-industry Studies of Structure and Performance," in HIO2, Chapter 16.

C. Wolfram, "Measuring Duopoly Power in the British Electricity Spot Market," AER, September 1999, 805-26.

2. **Repeated Interaction**

V. Aguirregabiria, "The Dynamics of Markups and Inventories in Retail Firms," ReStud, April 1999, 275-308.

* S. Borenstein and A. Shepard, "[Dynamic Pricing in Retail Gasoline Markets](#)," RJE, Autumn 1996, 429-51.

G. Ellison, "Theories of Cartel Stability and the Joint Executive Committee," RJE, Spring 1994, 37-57.

* R. Porter, "[A Study of Cartel Stability: The Joint Executive Committee, 1880-1886](#)," BJE, Autumn 1983, 301-14.

Evans, W. and I. Kessides, "Living by the 'Golden Rule': Multimarket Contact in the U.S. Airline Industry," QJE, May 1994, 341-66.

3. **Differentiated Products Industries**

- S. Anderson, A. dePalma and J. Thisse. Discrete Choice Theory of Product Differentiation, 1992, MIT Press.
- J. Baker and T. Bresnahan, "Estimating the Residual Demand Curve Facing a Single Firm," *IJIO*, 1988, 283-300.
- * S. Berry, 1994, "[Estimating Discrete-Choice Models of Product Differentiation](#)," *RJE*, Summer 1994, 242-62.
- * S. Berry, J. Levinsohn and A. Pakes, "[Automobile Prices in Market Equilibrium](#)," *EMA*, July 1995, 841-90.
- S. Berry, J. Levinsohn and A. Pakes, "[Differentiated Products Demand Systems from a Combination of Micro and Macro Data: The New Car Market](#)," *JPE*, February 2004, 68-105.
- S. Berry and A. Pakes, "The Pure Characteristics Demand Model," mimeo, Harvard, 2007; forthcoming, *IER*.
- * T. Bresnahan, "[Competition and Collusion in the American Automobile Market: The 1955 Price War](#)," *JIE*, June 1982, 457-482.
- F. Gasmi, J. Laffont and Q. Vuong, "Econometric Analysis of Collusive Behavior in a Soft-Drink Market," *JEMS*, Summer 1992, 277-311.
- * P. Goldberg, "[Product Differentiation and Oligopoly in International Markets: The Case of the U.S. Automobile Industry](#)," *EMA*, July 1995, 891-951.
- J. Hausman, G. Leonard and J. Zona, "Competitive Analysis with Differentiated Products," *Annales D'Economie et de Statistique*, April/June 1994, 159-80.
- I. Hendel, "Estimating Multiple Discrete Choice Models: An Application to Computerization Returns," *ReStud*, April 1999, 423-46.
- D. McFadden, "Econometric Analysis of Qualitative Response Models," *Handbook of Econometrics*, Volume 2, 1984, Chapter 24.
- * A. Nevo, "A Practitioner's Guide to Estimation of Random Coefficients Logit Models of Demand," *JEMS*, Winter 2000, 513-48.
- * A. Nevo, "[Measuring Market Power in the Ready-to-Eat Cereal Industry](#)," *EMA*, March 2001, 307-42.

4. **Welfare and Hedonic Prices**

Hedonic Price Regressions and Price Indices

- * P. Bajari and L. Benkard, "[Demand Estimation With Heterogeneous Consumers and Unobserved Product Characteristics: A Hedonic Approach](#)," JPE, December 2005, 1239-76.
- D. Epple, "Hedonic Prices and Implicit Markets: Estimating Demand and Supply Functions for Differentiated Products," JPE, January 1987, 59-80.
- R. Feenstra, "Exact Hedonic Price Indexes," ReStat, 1995, 634-53.
- Z. Griliches, "Hedonic Price Indexes for Automobiles: An Econometric Analysis of Quality Change," In The Price Statistics of the Federal Government (General Series No. 73). New York: National Bureau of Economic Research, 1961, 173-176. Reprinted in Griliches (ed.), Price Indices and Quality Change: Studies in New Methods of Measurement. Cambridge, Mass.: Harvard University Press, 1971.
- A. Pakes, "[A Reconsideration of Hedonic Price Indices with an Application to PC's](#)," AER, December 2003, 1578-96.
- * S. Rosen, "[Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition](#)," JPE, Jan./Feb. 1974, 34-55.

Welfare Measures Computed from Estimated Demand Systems

- D. Akerberg and M. Rysman, "[Unobservable Product Differentiation in Discrete Choice Models: Estimating Price Elasticities and Welfare Effects](#)," RJE, Winter 2005, 771-88.
- T. Bresnahan, S. Stern and M. Trajtenberg, "Market Segmentation and the Sources of Rents from Innovation," RJE, 1997, S17-S44.
- M. Gentzkow, "Valuing New Goods in a Model with Complementarity: Online Newspapers," AER, June 2007, 713-44.
- * J. Hausman, "Valuation of New Goods Under Perfect and Imperfect Competition," in Bresnahan and Gordon (eds) The Economics of New Goods, Studies in Income and Wealth, 1996, Vol. 58, Chicago: NBER. Including comment by Bresnahan (in the same volume) and [reply to comment](#) (and [reply to reply](#)).
- J. Hausman, "Cellular Telephone, New Products and the CPI," Journal of Business and Economic Statistics, 1999, 188-94.
- A. Nevo, "New Products, Quality Changes and Welfare Measures Computed from Estimated Demand Systems," ReStat, 2003, 266-75.

A. Petrin, "Quantifying the Benefits of New Products: The Case of the Minivan," JPE, August 2002, 705-29.

- * M. Trajtenberg, "[The Welfare Analysis of Product Innovations, with an Application to Computed Tomography Scanners](#)," JPE, April 1989, 444-79.

5. **Price Discrimination**

Static

E. Blackstone, "Restrictive Practices in the Marketing of Electrofax Copying Machines: The SCM Corporation Case," JIE, March 1975, 189–202.

S. Borenstein, "Selling Costs and Switching Costs: Explaining Retail Gasoline Markets," RJE, Autumn 1991, 354–69.

S. Borenstein and N. Rose, "Competition and Price Dispersion in the U.S. Airline Industry," JPE, August 1994, 653–83.

M. Busse and M. Rysman, "Competition and Price Discrimination in Yellow Pages Advertising," RJE, Summer 2005, 378-90.

P. Goldberg, "Dealer Price Discrimination in New Car Purchases: Evidence from the Consumer Expenditure Survey," JPE, June 1996, 622-54.

M. Ivaldi and D. Martimort, "Competition under Nonlinear Pricing," Annales d'Economie et de Statistique, 1994, 71-114.

P. Leslie, "Price Discrimination in Broadway Theater," RJE, Autumn 2004, 520-41.

B. McManus, "[Nonlinear Pricing in an Oligopoly Market: The Case of Specialty Coffee](#)," RJE, Summer 2007, 512-32.

J. Mortimer, "Price Discrimination, Copyright Law and Technological Innovation: Evidence from the Introduction of DVDs," QJE, August 2007, 1307-50.

A. Nevo and C. Wolfram, "Why Do Manufacturers Issue Coupons? An Empirical Analysis of Breakfast Cereals," RJE, Summer 2002, 319-39.

- * A. Shepard, "[Price Discrimination and Retail Configuration](#)," JPE, February 1991, 30–53.

L. Stole, "Price Discrimination and Competition," HIO3, Chapter 34.

H. Varian, "Price Discrimination," HIO1, Chapter 10.

Price Dispersion, Search and Loss leaders

- A. Sorensen., "Equilibrium Price Dispersion in Retail Markets for Prescription Drugs , " JPE, 108 (August), 833-850.
- G. Ellison and S. Ellison, "[Search, Obfuscation, and Price Elasticities on the Internet](#)," MIT mimeo. Forthcoming EMA
- H. Hong and M. Shum, "Using Price Distributions to Estimate Search Costs", RJE, 2006, 37(2), 257-275.
- Hortacsu and C. Syverson, "Product Differentiation, Search Costs and Competition in the Mutual Fund Industry", QJE, 2004, 119(2), 403-456
- James MacDonald. "Demand, Information, and Competition: Why Do Food Prices Fall at Seasonal Demand Peaks?" JIE, 2000, 48(1), 27-45.
- Chevalier, Judy, Anil Kashyap and Peter Rossi. "Why Don't Prices Rise During Periods of Peak Demand? Evidence from Scanner Data," AER, 2003, 93(1), 15-37.

Dynamic

- Martin Pesendorfer. 2002. "Retail Sales. A Study of Pricing Behavior in Supermarkets," *Journal of Business*, 75, 33-66
- * I. Hendel and A. Nevo, "[Measuring the Implications of Sales and Consumer Inventory Behavior](#)," EMA, November 2006, 1637-73.
- A. Sweeting, "[Equilibrium Price Dynamics in Perishable Goods Markets: The Case of Secondary Markets for Major League Baseball Tickets](#)". Duke mimeo
- P. Leslie and A. Sorenson "The Welfare Effects of Ticket Resale," Stanford GSB mimeo.

IV. Market Structure**1. Entry Models**

- P. Bajari, H. Hong and S. Ryan, "Identification and Estimation of Discrete Games of Complete Information," mimeo, Minnesota, 2007.
- * S. Berry, "Estimation of a Model of Entry in the Airline Industry," EMA, July 1992, 889-918.
- S. Berry and P. Reiss, "Empirical Models of Entry and Market Structure," HIO3, Chapter 29.

- S. Berry and E. Tamer, "Identification in Models of Oligopoly Entry," in R. Blundell, W. Newey and T. Persson, eds., *Advances in Economics and Econometrics: Theory and Applications*, Vol. 2, Cambridge, 2007, 46-85.
- S. Berry and J. Waldfogel, "Free Entry and Social Inefficiency in Radio Broadcasting," *RJE*, Autumn 1999, 397-420.
- * T. Bresnahan and P. Reiss, "Entry in Monopoly Markets," *ReStud*, October 1990, 531-53.
- T. Bresnahan and P. Reiss, "Entry and Competition in Concentrated Markets," *JPE*, October 1991, 977-1009.
- J. Chevalier, "Capital Structure and Product Market Competition: Empirical Evidence from the Supermarket Industry," *AER*, June 1995, 415-35.
- F. Cilberto and E. Tamer, "Market Structure and Multiple Equilibria in Airline Markets," mimeo, Northwestern, 2007.
- P. Jia, "What Happens When Wal-Mart Comes to Town: An Empirical Analysis of the discount Retail Industry," mimeo, MIT, 2007.
- M. Mazzeo, "Product Choice and Oligopoly Market Structure," *RJE*, Summer 2002, 221-42.
- K. Seim, "An Empirical Model of Firm Entry with Endogenous Product-Type Choices," *RJE*, Autumn 2006, 619-40.
- E. Tamer, "Incomplete Simultaneous Discrete Response Model with Multiple Equilibria," *ReStud*, January 2003, 147-65.
- M. Whinston and S. Collins, "Entry and Competitive Structure in Deregulated Airline Markets: An Event Study Analysis of People Express," *RJE*, Winter 1993, 445-62.

2. **Entry, Growth, and Turnover**

- M. Asplund and V. Nocke, "Firm Turnover in Imperfectly Competitive Markets," *ReStud*, April 2006, 295-327.
- T. Bresnahan and D. Raff, "Inter-industry Heterogeneity and the Great Depression: The American Motor Vehicles Industry, 1929-1935," *JEH*, June 1991, 317-31.
- B. Bronnenberg, S. Dhar and J.-P. Dube, "Market Structure and the Geographic Distribution of Brand Shares in Consumer Package Goods Industries", mimeo, Chicago GSB, 2005.

- J. Campbell and H. Hopenhayn, "Market Size Matters," JIE, March 2005, 1-25, and "Erratum," JIE, June 2007, 373-8.
- R. Caves, "Industrial Organization and New Findings on the Turnover and Mobility of Firms," JEL, December 1998, 1947-82.
- T. Dunne, M. Roberts, and L. Samuelson, "Patterns of Firm Entry and Exit in U.S. Manufacturing," RJE, Winter 1988, 495-515.
- T. Dunne, M. Roberts, and L. Samuelson, "The Growth and Failure of U.S. Manufacturing Plants," QJE, November 1989, 671-98.
- P. Ellickson, "Does Sutton Apply to Supermarkets?" RJE, Spring 2007, 43-59.
- T. Holmes and J. Schmitz, "On the Turnover of Business Firms and Business Managers," JPE, October 1995, 1005-38.
- H. Hopenhayn, "Entry, Exit and Firm Dynamics in Long Run Equilibrium," EMA, September 1992, 1127-50.
- B. Jovanovic, "Selection and the Evolution of Industry," EMA, May 1982, 649-70.
- S. Klepper and P. Thompson, "Submarkets and the Evolution of Market Structure," RJE, Winter 2006, 861-86.
- M. Mitchell, "The Scope and Organization of Production: Firm Dynamics Over the Learning Curve," RJE, Spring 2000, 180-205.
- J. Sutton, "Gibrat's Legacy," JEL, March 1997, 40-59.
- J. Sutton, "Market Structure: Theory and Evidence," HIO3, Chapter 36.

V. Advertising

- D. Akerberg, "Empirically Distinguishing Informative and Prestige Effects of Advertising," RJE, Summer 2001, 316-33.
- K. Bagwell, "The Economic Analysis of Advertising," HIO3, Chapter 28.
- L. Benham, "The Effects of Advertising on the Price of Eyeglasses," JLE, October 1972, 337-5
- G. Jin and P. Leslie, "The Effect of Information on Product Quality: Evidence from Restaurant Hygiene Grade Cards," QJE, May 2003, 409-51.

A. Mathios, "The Impact of Mandatory Disclosure Laws on Product Choice: An Analysis of the Salad Dressing Market," JLE, October 2000, 651-77.

* J. Milyo and J. Waldfogel, "The Effect of Price Advertising on Prices: Evidence in the Wake of 44 Liquormart," AER, December 1999, 1081-96.

* R. Sauer and K. Leffler, "Did the Federal Trade Commission's Advertising Substantiation Program Promote More Credible Advertising?" AER, March 1990, 191-203.

A. Sorenson, "Equilibrium Price Dispersion in Retail Markets for Prescription Drugs," JPE, August 2000, 833-50.

VI. Strategic Investment

Tirole, pp. 207-8, Chapter 8.

R. Schmalensee. "[Entry Deterrence in the Ready-to-Eat Breakfast Cereal Industry](#)," BJE, 1978, 9, 305-327.

K. Judd. "Credible Spatial Preemption," RJE. 1985, 16, 153-166.

* Glenn Ellison and Sara Ellison, "[Strategic Entry Deterrence and the Behavior of Pharmaceutical Incumbents Prior to Patent Expiration](#)," MIT mimeo.

V. Kadiyali, "Entry, its Deterrence, and its Accommodation: A Study of the U.S. Photographic Film Industry," RJE, 1996, 27, 452-478.

* M. Lieberman. "Post Entry Investment and Market Structure in the Chemical Processing Industry," RJE, 1987, 18, 533-549.

R. Smiley. "Empirical Evidence on Strategic Entry Deterrence," IJIO, 6, 167-180.

VII. Adoption of Technology and Network Externalities

Z. Griliches. "Hybrid Corn: An Exploration in the Economics of Technological Change," EMA, 1957, 25 (4), 510-522.

* G. Saloner, and A. Shepard, "Adoption of Technologies with Network Effects: An Empirical Examination of the Adoption of Automated Teller Machines," RJE, 1995, 26, 479-501.

S. Postrel, "Competing Networks and Proprietary Standards: The Case of Quadraphonic Sound," JIE, 1990, 39, 169-185.

* N. Gandal, M. Kende and R. Rob, "The Dynamics of Technological Adoption in Hardware/Software Systems: The Case of Compact Disk Players," RJE, 2000, 31(1), 43-61.

A. Goolsbee, and P. Klenow, 2002, "Evidence on Learning and Network Externalities in the

Diffusion of Home Computers.” JLE, 2002, XLV (2), 317-344

- * M. Rysman, “Competition Between Networks: A Study of the Market for Yellow Pages,” Restud. 2004, 71, 483-512.
- A. Augereau, S. Greenstein, S., and M. Rysman, “Coordination vs. Differentiation in a Standards War: 56K Modems,” RJE, 2006, 37, 887-909.
- D. Akerberg, and G. Gowrisankaran, “Quantifying Equilibrium Network Externalities in the ACH Banking Industry,” RJE, 2006, 37(3).
- C. Tucker, “Formal and Informal Influence in the Adoption of Technologies with Network Effects”, MIT mimeo.

VIII. Vertical Relations

- * S. Villas-Boas, “Vertical Contracts Between Manufacturers and Retailers: An Empirical Analysis,” University of California, Berkeley, Restud, 2007, 74(2), 625-652.
- J. Asker, “Diagnosing Foreclosure due to Exclusive Dealing”, 2004, HYU Stern mimeo.
- J. B. Heide, et.al., “Exclusive Dealing and Business Efficiency: Evidence from Industry Practice” JLE, October 1998, 387-407.
- K.S. Corts, “The Strategic Effects of Vertical Market Structure: Common Agency and Divisionalization in the US Motion Picture Industry,” JEMS, 2001, 10, 509-552
- R. Gilbert and J. Hastings, “Pricing Vertical Integration in Gasoline Supply: An Empirical Test of Raising Rivals' Costs,” JIE, December 2005.
- J. Mortimer, “Vertical Contracts in the Video Rental Industry”, Restud. Forthcoming.
- S.J. Ornstein and D.M. Hanssens, “Resale Price Maintenance: Output Increasing or Restructuring? The Case of Distilled Spirits in the United States”, JIE, 1987, 36, 1-18.
- F. Lafontaine, “Agency Theory and Franchising: Some Empirical Results”, RJE, 1992, 23, 263-283,
- C.A. Evans, C.M. Grimm and C. Winston, “Foreclosure of Railroad Markets: A Test of the Chicago Leverage Theory”, JLE, 1992, 295-310.
- A. Hortcasu and C. Syverson, “Cementing Relationships: Vertical Integration, Foreclosure, Productivity, and Prices”, JPE, 2007.

T. Chipty, "Vertical Integration, Market Foreclosure, and Consumer Welfare in the Cable Television Industry", AER, 2001, 428-453.

IX. Auctions

1. Theory

V. Krishna, *Auction Theory*, Academic Press, 2002.

P. Milgrom, *Putting Auction Theory to Work*, Cambridge University Press, 2004.

2. Empirics

S. Athey and P. Haile, "Identification of Standard Auction Models," EMA, November 2002, 2107-40.

S. Athey and P. Haile, "Nonparametric Approaches to Auctions," *Handbook of Econometrics*, Volume 6A, 2007, Chapter 60.

S. Athey and P. Haile, "Empirical Models of Auctions," in R. Blundell, W. Newey and T. Persson, eds., *Advances in Economics and Econometrics, Theory and Applications: Ninth World Congress of the Econometric Society*, Cambridge University Press, 2007.

E. Guerre, I. Perrigne and Q. Vuong, "Optimal Nonparametric Estimation of First-Price Auctions," EMA, May 2000, 525-74.

K. Hendricks and R. Porter, "An Empirical Perspective on Auctions," HIO3, Chapter 32.

J. Laffont, "Game Theory and Empirical Economics: The Case of Auction Data," EER, January 1997, 1-35.

J. Laffont, H. Ossard and Q. Vuong, "Econometrics of First Price Auctions," EMA, July 1995, 953-80.

H. Paarsch and H. Hong, *An Introduction to the Structural Econometrics of Auction Data*, MIT Press, 2006.

3. Recent Papers

S. Athey and J. Levin, "Information and Competition in U.S. Forest Service Timber Auctions," JPE, April 2001, 375-417.

S. Athey, J. Levin and E. Seira, "Comparing Open and Sealed Bid Auctions: Theory and Evidence from Timber Auctions," mimeo, Stanford, 2004.

- P. Bajari and A. Hortacsu, "The Winner's Curse, Reserve Prices and Endogenous Entry: Empirical Insights from eBay Auctions," RJE, Summer 2003, 329-55.
- P. Haile, H. Hong and M. Shum, "Nonparametric Tests for Common Values at First-Price Sealed Bid Auctions," mimeo, Yale, 2003.
- P. Haile and E. Tamer, "Inference with an Incomplete Model of English Auctions," JPE, February 2003, 1-51.
- K. Hendricks, J. Pinkse and R. Porter, "Empirical Implications of Equilibrium Bidding in First Price, Symmetric, Common Value Auctions," ReStud, January 2003, 115-45.
- A. Hortacsu, "Mechanism Choice and Strategic Bidding in Divisible Good Auctions: An Empirical Analysis of the Turkish Treasury Auction Market," mimeo, University of Chicago, 2002.
- M. Jofre-Bonet and M. Pesendorfer, "Estimation of a Dynamic Auction Game," EMA, September 2003, 1443-89.
- J. Kastl, "Discrete Bids and Empirical Inference in Divisible Goods Auctions," mimeo, Stanford, 2007.
- G. Lewis, "Asymmetric Information, Adverse Selection and Seller Disclosure: The Case of eBay Motors," mimeo, Harvard, 2007.
- A. Shneyerov, "An Empirical Study of Auction Revenue Rankings: The Case of Municipal Bonds," RJE, Winter 2006, 1005-22.
- U. Song, "Nonparametric Estimation of an eBay Auction Model with an Unknown Number of Bidders," mimeo, University of British Columbia, 2004.

X. Dynamics

1. Single Agent

- D. Akerberg, "Advertising, Learning, and Consumer Choice in Experience Good Markets: An Empirical Examination," International Economic Review, August 2003, 1007-40.
- V. Aguirregabiria, "[The Dynamics of Markups and Inventories in Retailing Firms](#)," ReStud, May 1999, 275-308.
- V. Aguirregabiria and P. Mira, "Swapping the Nested Fixed Point Algorithm: A Class of Estimators for Discrete Markov Decision Models," EMA, July 2002, 1519-43.

- Z. Eckstein and K. Wolpin, "The Specification and Estimation of Dynamic Stochastic Discrete Choice Models," *Journal of Human Resources*, 1989, 562-98.
- G. Gowrisankaran and M. Rysman, "Dynamics of Consumer Demand for New Durable Goods," mimeo, BU, 2007.
- * I. Hendel and A. Nevo, "[Measuring the Implications of Sales and Consumer Inventory Behavior](#)," EMA, November 2006, 1637-73.
- T. Holmes, "Diffusion of Wal-Mart and Economies of Density," mimeo, Minnesota, 2007.
- J. Hotz, and B. Miller, "Conditional Choice Probabilities and the Estimation of Dynamic Models," *ReStud*, July 1993, 497-529.
- J. Hotz, B. Miller, Sanders and Smith, "A Simulation Estimator for Dynamic Models of Discrete Choice," *ReStud*, April 1994, 265-89.
- * A. Pakes, "[Patents as Options: Some Estimates of the Value of Holding European Patent Stocks](#)," EMA, July 1986, 755-84.
- * J. Rust, "[Optimal Replacement of GMC Bus Engines: An Empirical Model of Harold Zurcher](#)," EMA, September 1987, 999-1033.
- J. Rust, "Structural Estimation of Markov Decision Processes," *Handbook of Econometrics*, 1996, Volume 4, Chapter 51.
- C. Timmins, "Measuring the Dynamic Efficiency Costs of Regulators' Preferences: Municipal Water Utilities in the Arid West," EMA, March 2002, 603-29.

2. Multi-Agent Models

- V. Aguirregabiria and P. Mira, "[Sequential Estimation of Dynamic Discrete Games](#)," EMA, January 2007, 1-53.
- P. Bajari, L. Benkard, and J. Levin, "[Estimating Dynamic Models of Imperfect Competition](#)," EMA, September 2007, 1331-70.
- L. Benkard, "A Dynamic Analysis of the Market for Wide-Bodied Commercial Aircraft Market," *ReStud*, July 2004, 581-611.
- A. Collard-Wexler, "Demand Fluctuations and Plant Turnover in the Ready-Mix Concrete Industry," mimeo, NYU, 2006.
- U. Doraszelski and A. Pakes, "[A Framework for Applied Dynamic Analysis in IO](#)," HIO3, Chapter 30.

- U. Doraszalski and M. Satterthwaite, “Computable Markov-Perfect Industry Dynamics: Existence, Purification and Multiplicity,” mimeo, Harvard, 2007.
- R. Ericson and A. Pakes, “Markov-Perfect Industry Dynamics: A Framework for Empirical Work,” *ReStud*, January 1996, 53-82.
- A. Pakes and P. McGuire, “[Computing Markov-perfect Nash Equilibria: Numerical Implications of a Dynamic Differentiated Product Model](#),” *RJE*, Winter 1994, 555-89.
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