ECON 737 - Empirical Industrial Organization

Laura Lasio

Winter 2023
Lectures: Thursday, 2.35-5.25 pm - LEA 541
Office hours: on appointment

COURSE SUMMARY

The objective of the course is to introduce the students to the structural econometric methods used in empirical industrial organization, with a focus on demand estimation. Those methods will be analyzed with an emphasis on their applications to public policy evaluation, merger control, estimation of market power and anticompetitive behavior.

COURSE PREREQUISITES

ECON 637 or equivalent graduate Industrial Organization (to be approved by the instructor).

Students are supposed to be familiar with the theory behind the economic models discussed and with the standard econometric methods.

IO References:
Jean Tirole, "The Theory of Industrial Organization" (MIT Press)
Paul Belleflamme and Martin Peitz, "Industrial Organization: Markets and Strategies", 2nd edition, 2015 (Cambridge University Press).
Jeffrey Church and Roger Ware, "Industrial Organization: A Strategic Approach", downloadable from Jeffrey Church's website.
A more advanced reference is the Handbook of Industrial Organization (Vol. 1-2-3), which provides a thorough and fairly advanced description of the literature and approaches for the main topics the course will cover. Single chapters can be downloaded.

For econometric methods, you can refer to any graduate econometrics book, lecture notes and slides from graduate econometrics courses.

COURSE REQUIREMENTS AND EVALUATION

There is no mandatory textbook for the course: the material comprises a mix of lecture slides and papers to be discussed.

Students are expected to read in advance the mandatory material (indicated on the syllabus with an asterisk, or communicated the week before), come to class, and actively participate during the lecture.

Evaluation will be based on the following:
1. 40%: in-class presentation of a paper from the non-mandatory material.
2. 40%: research proposal to be handed in at the end of the course.
3. 20%: in-class participation (includes discussion and small coding assignments to hand in).

Criteria for paper presentation evaluation:

- Understanding of the paper
- Quality of the slides (clear, readable, exhaustive)
- Focus (major points well explained, no unnecessary detail)
- Critique and extension
- Time management and communication

Criteria for research proposal evaluation:

- Interest: important and interesting topic in IO
- Clarity: well stated objective, clear references to existing literature
- Originality: original topic and/or method, no simple replica of existing literature
- Feasibility: method and data are appropriate to reach the goal of the research, well stated limitations
- Presentation: clear format, well written, clear and easy to read, length

COURSE OUTLINE

1. INTRODUCTION TO STRUCTURAL MODELING IN IO

- * P. Reiss and F. Wolak, "Structural Econometric Modeling: Rationales and Examples from Industrial Organization", Handbook of Econometrics, Volume 6A, Chapter 64, 2007, 4277-4314, Sections 1-4.
- * L. Einav and J. Levin, "Empirical Industrial Organization: A Progress Report", Journal of Economic Perspectives, 2010.

2. STATIC DEMAND ESTIMATION FOR HOMOGENEOUS PRODUCTS

- * T. Bresnahan, "The Oligopoly Solution Concept is Identified", Economics Letters 10 (1982): 87-92.
- * R. Porter, "A Study of Cartel Stability: The Joint Executive Committee, 1880-1886", Bell Journal of Economics 14 (Autumn 1983): 301-314.

3. STATIC DEMAND ESTIMATION FOR DIFFERENTIATED PRODUCTS

- * K. Train, "Discrete Choice Methods with Simulation". http://elsa.berkeley.edu/books/choice2.html
- * S. Berry, "Estimating Discrete Choice Models of Product Differentiation", RAND Journal of Economics, 1994.
- * S. Berry, J. Levinsohn, and A. Pakes, "Automobile Prices in Market Equilibrium", Econometrica, 1995.
- * A. Nevo, "A Practitioner's Guide to Estimation of Random Coefficients Logit Models of Demand", Journal of Economics and Management Strategy, 9(4), 513-548, 2000.
- C. Knittel and K. Metaxoglou, "Estimation of Random Coefficient Demand Models: Two Empiricists Perspective", The Review of Economics and Statistics, 2014.

- J.P.H. Dube, J.T. Fox and C. Su, "Improving the Numerical Performance of BLP Static and Dynamic Discrete Choice Random Coefficients Demand Estimation", Econometrica, Vol. 80 (5), 2231-2267, September 2012.
- M. Reynaert and F. Verboven, "Improving the Performance of Random Coefficients Demand Models the Role of Optimal Instruments", Journal of Econometrics, 2014 (April 2012), 179(1), 83-98.
- A. Gandhi and J.F. Houde, "Measuring Substitution Patterns in Differentiated Products Industries", working paper.
- A. Deaton and J. Muellbauer, "An Almost Ideal Demand System", American Economic Review, Vol. 70, No. 3. (Jun., 1980), pp. 312-326.
- J. Hausman, G. Leonard and J. D. Zona, "Competitive Analysis with Differentiated Products". Annals of Economics and Statistics / Annales d'Economie et de Statistique , No. 34, Econometrie de la concurrence imparfaite / Econometrics of Imperfect Competition, pp. 159-180
- J. Hausman, "Valuation of New Goods Under Perfect and Imperfect Competition", ed. T.Bresnahan and R. Gordon, The Economics of New Goods, University of Chicago Press, 209-237, 1997.
- L. Grigolon and F. Verboven, "Nested Logit or Random Coefficients Logit? A Comparison of Alternative Discrete Choice Models of Product Differentiation", The Review of Economics and Statistics, December 2014, 96(5): 916935

4. STATIC DEMAND ESTIMATION: APPLICATIONS

MARKET POWER AND COLLUSIVE BEHAVIOR

- * A. Nevo, "Measuring Market Power in the Ready-to-Eat Cereal Industry", Econometrica, 69(2), 307-342, 2001.

MERGERS

- * A. Nevo, "Mergers with Differentiated Products: The Case of the Ready-To-Eat Cereal Industry", RAND Journal of Economics, 2000.
- J. Bjornerstedt and F. Verboven, "Does Merger Simulation Work? Evidence from the Swedish Analgesics Market", American Economic Journal: Applied Economics 2016, 8(3): 125164
- N. Miller and M. Weinberg, "Understanding the Price Effects of the Miller-Coors Joint Venture", Econometrica, Vol. 85, No. 6 (November, 2017), 17631791

MICRO-MACRO DATA

- * A. Petrin, "Quantifying the Benefits of New Products: The Case of the Minivan", Journal of Political Economy, 2002.
- S. Berry, J. Levinsohn, and A. Pakes, Differentiated Products Demand Systems from a Combination of Micro and Macro Data: the New Car Market, Journal of Political Economy, 2004.
- A. Ching, F. Hayashi and H. Wang, "Quantifying the Impacts of Limited Supply: The Case of Nursing Homes", International Economic Review vol. 56, No. 4, November 2015

IO AND TRADE

- * P. Goldberg, "Product Differentiation and Oligopoly in International Markets: The Case of the U.S. Automobile Industry", Econometrica, 1995.
- S. Berry, J. Levinsohn, and A. Pakes, "Voluntary Export Restraints on Automobiles: Evaluating a Trade Policy", American Economic Review 1999

ADVERTISING AND INFORMATION

- * D. Ackerberg, "Advertising, Learning, and Consumer Choice in Experience Good Markets: an Empirical Examination", International Economic Review 2003
- * M. Sovinski, "Limited Information and Advertising in the US Personal Computer Industry", Econometrica, 76(5):1017-1074, Sept 2008
- D. Ackerberg, "Empirically Distinguishing Informative and Prestige Effects of Advertising", The RAND Journal of Economics, Vol. 32, No. 2 (Summer, 2001), pp. 316-333
- P. Dubois, R. Griffith and M. O'Connell, "The Effects of Banning Advertising in Junk Food Markets", Review of Economic Studies (2018) 85, 396436

REGULATION

- P. Dubois and L. Lasio, "Identifying Industry Margins with Price Constraints: Structural Estimation on Pharmaceuticals", American Economic Review 2018, 108(12): 3685-3724
- P.K. Goldberg and F. Verboven, "The Evolution of Price Dispersion in the European Car Market", Review of Economic Studies, 2001, 68(4), 811-848.
- L. Grigolon, M. Reynaert and F. Verboven, "Consumer valuation of fuel costs and the effectiveness of tax policy: Evidence from the European car market", 2015

VERTICAL RESTRAINTS

- * C. Bonnet and P. Dubois, "Inference on vertical contracts between manufacturers and retailers allowing for nonlinear pricing and resale price maintenance", RAND Journal of Economics Vol. 41, No. 1, Spring 2010 pp. 139164
- L. Nurski and F. Verboven, "Exclusive Dealing as a Barrier to Entry? Evidence from Automobiles", Review of Economic Studies (2016) 83, 11561188
- R. Brenkers and F. Verboven, "Liberalizing a Distribution System: The European Car Market", Journal of the European Economic Association Vol. 4, No. 1 (Mar., 2006), pp. 216-251

PRICE DISCRIMINATION AND BARGAINING

- * X. D'Haultfoeuille, I. Durrmeyer and P. Février, "Automobile Prices in Market Equilibrium with Unobserved Price Discrimination", forthcoming, Review of Economic Studies
- G. Gowrisankaran, A. Nevo, R. Town "Mergers When Prices Are Negotiated: Evidence from the Hospital Industry", American Economic Review Vol. 105 No. 1 January 2015
- M. Grennan, "Price Discrimination and Bargaining: Empirical Evidence from Medical Devices", American Economic Review 2013, 103(1): 145177

EXTENSIONS

- * I. Hendel, "Estimating Multiple-Discrete Choice Models: An Application to Computerization Returns", The Review of Economic Studies, Vol. 66, No. 2 (Apr., 1999), pp. 423-446
- * D. Ackerberg and M. Rysman, "Unobserved product differentiation in discrete-choice models: estimating price elasticities and welfare effects", RAND Journal of Economics Vol. 36, No. 4, Winter 2005
- * G. Crawford, "Accommodating Endogenous Product Choices: A Progress Report", International Journal of Industrial Organization , v30 (2012), 315-320.
- W. M. Hanemann, "Discrete/Continuous Models of Consumer Demand", Econometrica, Vol. 52, No. 3 (May, 1984), pp. 541-561
- A. Gandhi, Z. Lu and X. Shi, Estimating Demand for Differentiated Products with Zeroes in Market Shares working paper
- G. Crawford, A. Iaria and R. Griffith, "Preference estimation with unobserved choice set heterogeneity using sufficient sets", working paper
- P. Dubois, R. Griffith and A. Nevo, "Do Prices and Attributes Explain International Differences in Food Purchases?", American Economic Review 2014, 104(3): 832867

5. DYNAMIC DEMAND

- * A. Nevo and I. Hendel, "Measuring the Implications of Sales and Consumer Inventory Behavior", Econometrica, 74(6), 1637-1673, 2006
- A. Ching and M. Osborne, "Identification and Estimation of Forward-Looking Behavior: The Case of Consumer Stockpiling", Rotman School of Management Working Paper No. 2594032

6. ENTRY AND EXIT

- * T. Bresnahan and P. Reiss, "Econometric Models of Discrete Games", Journal of Econometrics, 1991.
- * T. Bresnahan, and P. Reiss, "Entry and Competition in Concentrated Markets", Journal of Political Economy, 1991.
- * S. Berry, "Estimation of a Model of Entry in the Airline Industry", Econometrica, 1992.
- S. Berry and P. Reiss, "Empirical Models of Entry and Market Structure", Handbook of Industrial Organization (VOL. III), 2006, 148 (WP version).
- F.M. Scott Morton, "Entry Decisions in the Generic Pharmaceutical Industry", The RAND Journal of Economics, Vol. 30, No. 3 (Autumn, 1999), pp. 421-440
- F. Ciliberto and E. Tamer, "Market Structure and Multiple Equilibria in Airline Markets", Econometrica, Vol. 77, No. 6 (November, 2009), 17911828
- M. Xiao and P. Orazem, "Does the fourth entrant make any difference?: Entry and competition in the early U.S. broadband market", International Journal of Industrial Organization 29 (2011) 547561

7. PRODUCTION FUNCTION ESTIMATION (if time allows)

- S. Olley and A. Pakes, "The Dynamics of Productivity in the Telecommunications Equipment Industry", Econometrica, 1996.
- J. Levinsohn and A. Petrin, "Estimating Production Functions Using Inputs to Control for Unobservables", Review of Economic Studies, 2003.
- J. De Loecker, "Product Differentiation, MultiProduct Firms and Estimating the Impact of Trade Liberalization on Productivity", Econometrica, 2011.