Empirical Industrial Organization
ECON 4825

Alfonso Irarrazabal

I. Overview

Course content

The course provides an overview of main empirical models used to study oligopolistic markets and teaches the students how to analyze and apply different econometrics tools to the study of competition and regulation.

The course will cover the following topics: 1) basic nonlinear econometrics, 2) estimation of demand and production/cost functions, 3) entry models, 4) applications to merger analysis, advertising and auctions. This course will not cover advanced dynamic models of oligopolistic competition.

Learning outcomes:

The students shall become familiar with the relevant literature on empirical industrial organization. They should be familiar with a set of econometric techniques to estimate basic models of supply and demand in most markets. They should be able to formulate structural models of competition, design feasible econometric techniques, implement computational estimation, test hypothesis and perform policy analysis.

II. Administrative

Lectures (time/place)

Thursday 12:15 -14:00, Auditorium 5 Eilert Sundts hus, A-blokka (18. January to 10. May)
Seminars
Monday 16:15 -18:00, Seminarrom 201 Harriet Holters hus (29. January to 7. May)
Grading:

Grading will be based on a final exam. To prepare for the exam it will be extremely useful to work through the problem sets. You can work in groups but you should hand in your problem sets individually.

Office hours

Monday 3-4 pm. My temporary email address is aai208@nyu.edu

III. References

Theory

Tirole, J . The Theory of Industrial Organization. MIT Press.

Econometrics

Cameron and Trivedi. Microeconometrics: Methods and Applications. Cambridge University Press.

Hayashi, F. Econometrics. Princeton Press.

Greene, W. Econometrics Analysis. Prentice Hall.

Paarsch and Hong. An Introduction to the Structural Econometrics of Auction Data. The MIT Press.

Empirical IO references:

Ackerberg, D., Benkard, L., Berry, S., and Pakes, A. "Econometric Tools for Analyzing Market Outcomes", Forthcoming chapter in Handbook of Econometrics, Volume 6

Berry, S. and P. Reiss .2006. Empirical Models of Entry and Market Structure. Handbook manuscript

Reiss, P. and F. Wolak. 2006. Structural Econometric Modeling: Rationales and Examples from Industrial Organization. Manuscript Bekeley.

Undergraduate texbooks

Carlton and Perloff: Modern Industrial Organization.

Cabral, L. Introduction to Industrial Organization.

IV. Topics and selected reading

Section I: Introduction: Facts and basic methods

1. Overview

Sutton, J. (1997); "Gibrat's Legacy", Journal of Economic Literature, vol. 35,no. 1, pp.40-59.

* Dunne, T., M. Roberts and L. Samuelson (1988); "Patterns of Firm Entry and Exit in U.S. Manufacturing Industries", RAND, vol. 19, no. 4, pp. 495-515.

2. Nonlinear econometrics

Maximum Likelihood /Nonlinear regression: Cameron, Ch 5

Method of moments /GMM: Cameron, Ch 6.

3. Static equilibrium models

Caplin, Andrew and Barry Nalebuff (1991); "Aggregation and Imperfect Competition: On the Existence of Equilibrium" Econometrica, vol. 59, no. 1, pp.
25-59.

*Bresnahan, T., (1982): "The Oligopoly Solution Concept is Identified", Economics Letters, vol. 10, pp. 87-92.

Section II: Basic models and estimation strategies

4. Production and cost functions

*Griliches, Z. and J. Mairesse (1995); "Production Functions: The Search for Identification"; NBER-Working paper No. 5067, and chapter 6 in S. Strom (ed.). Econometrics and Economic Theory in the 20th Century, Econometric Society Monographs No. 31, Cambridge University Press.

Nerlove M. (1963); "Returns to Scale in Electricity Supply", in C. Christ (ed.), Measurement in Economics.

*S. Olley and A. Pakes (1996); "The Dynamics of Productivity in the Telecommunications Equipment Industry", Econometrica, vol. 64, no. 6, pp. 1263-1297.

Pavcnik, N. (2002); "Trade Liberalization, Exit, and Productivity Improvements: Evidence From Chilean Plants", The Review of Economic Studies 69, pp. 245-76.

5. Demand estimation : homogeneous goods

*Porter, R.H. (1983), "A Study of Cartel Stability: The Joint Executive Committee, 1880-1886", Bell Journal of Economics 14(2): 301-314.

*Wolak, F. A. (1996): "The Welfare Impacts of Competitive Telecommunications Supply: A Household Level Analysis," Brooking Papers: Microeconomics, pp. 269–340.

6. Discrete choice models (Greene/Cameron)

Binary choice model/ Multinomial models: Cameron Ch 14-15

Random coefficient model: Nevo. 2000. A Practitioner's Guide to Estimation of Random-Coefficients Logit Models of Demand.Journal of Economics & Management Strategy, Volume 9, Number 4, Winter 2000, 513–548.

7. Demand estimation: product space approach

*Bresnahan T. (1987); "Competition and Collusion in the American Automobile Industry: The 1955 Price War", Journal of Industrial Economics, vol. 35, no. 4, pp. 457-482.

Gorman, W. (1959); "Separable Utility and Aggregation", Econometrica, vol. 27, no. 3, pp. 469-81.

*Hausman, J. (1997); "Valuation of New Goods Under Perfect and Imperfect Competition" in T. Bresnahan and R. Gordon (ed.) The Economics of New Goods, the University of Chicago Press.

8: Demand estimation : characteristic space approach

Anderson, S., A. de Palma, and J. Thisse (1992); Discrete Choice Theory of Product Differentiation, M.I.T. Press.

*Berry (1994): "Estimating Discrete Choice Models of Product Differentiation", RAND, vol. 25, no. 2, pp. 242-262

Problem set IV: estimation of demand

9. Simply entry models

*Berry, S. and P. Reiss .2006. Empirical Models of Entry and Market Structure. Handbook manuscript

*Bresnahan, T. F. and P. C. Reiss (1991). "Entry and Competition in Concentrated Markets." Journal of Political Economy 99(5): 33.

Berry, S. (1992); "Estimation of a Model of Entry in the Airline Industry", Econometrica, vol. 60, no. 4, pp. 889-917.

Mazzeo, M. (2002); "Product Choice and Oligopoly Market Structure", Rand, vol. 33 (2). p 221-242.

Section III: Applications

10. Mergers

*Nevo, Aviv (2001); "Measuring Market Power in the Ready-to-Eat Cereal Industry", Econometrica, vol. 69, no. 2, pp. 307-322.

Peters, C. (2003). "Evaluating the Performance of Merger Simulation: Evidence from the US Airline Industry", US Dept. of Justice, Antitrust Division.

11. Auctions

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

12: Advertising

Ackerberg, Dan (2001)"Empirically Distinguishing Informative and Prestige Effects of Advertising", RAND, vol. 32, no. 2, pp. 100-118.

V.Tentative class schedule

Topic	week		
Introduction: Facts and methods	1		lecture
Nonlinear econometrics: ML/NLS	2		lecture
Nonlinear econometrics: MM/GMM	3		seminar
Static equilibrium: basic supply and demand/review Cournot	3		lecture
Static equilibrium: basic supply and demand/review Cournot	4		seminar
Static equilibrium: estimating Cournot/Bresnahan(1992)	4	Hand in PS# 1	lecture
Review PS#1	5		seminar
Production function/cost functions	5		lecture
Production function/cost functions	6		seminar
Demand estimation:homogenous goods	6	Hand in PS# 2	lecture
Review PS#2	7		seminar
Discrete choice models: binary/multinomial models	7		lecture
Discrete choice models: random coefficient	8		seminar
Demand estimation: product space/demand system	8		lecture
Demand estimation: discrete choice models	9		lecture
Demand estimation: Berry (1992) example/extensions	10	Hand in PS# 3	seminar
Entry models: homogeneous firms	10		lecture
Break			
Review PS#3	11		seminar
Entry models: heterogenous firms	11		lecture
Applications: auctions	12	Hand in PS# 4	seminar
Applications: mergers/advertising	12		lecture
Review of the course	13		lecture