COURSE OUTLINE

Econ 621: Empirical Industrial Organization

Office hours by appointment, Krannert Center, Office #233

COURSE DESCRIPTION
The purpose of this course is to introduce the student to the major areas encompassed by industrial organization, focusing on recent empirical studies based on modern theoretical approaches. Throughout the course we study mainly empirical analyses which clarify the interactions between market structure, technological innovation and firm behavior. Topics are shown in the reading list below.

NOTES
-Industrial Organization concentrates on the question how differences between firms and markets affect market structure, conduct and performance.
-Industrial Organization mainly focuses on imperfectly competitive markets, real world institutions, and the internal organization of firms.
-Non-cooperative game theory is a widely used theoretical tool in IO
-IO also has a long tradition as an empirically oriented field.
-Modern Empirical Industrial Organization: Theory, Data, Econometrics, Reduced form and Structural Models

COURSE PREREQUISITES
Mandatory: Microeconomics, Econometrics
Strongly recommended: Industrial Organization (theory), Microeconometrics
Optional: Time Series, Panel Data

COURSE COMPLEMENTARITIES
Trade, Experimental Economics, Strategy, Marketing, Finance, Agricultural Economics.

COURSE WORK
Students will be evaluated on the basis of
- Two assignments (each one to work on, max 2 students, econ understanding and programming)
- final take home exam
Textbooks

We will not use a textbook in this course. However, I recommend some very useful background texts:


Class 1: Structure/Conduct/Performance
- Traditional Approaches: SCP, reduced form


Class 2: Definition and Examples of Structural Modeling
- Definition for structural models (correlation versus endogeneity, counterfactuals, Econometric into theory, interpretation of error term

Class 3: Gibrat’s Law

- Market structure and firm size distributions in industries, Gibrat’s Law
- Growth, entry, exit
- Truncated Regression and Sample selection bias


Class 4: Ongoing PhD Work Presentation

Class 5: Selection (Tobit) Models

- Cont’d growth, entry, exit
- Truncated Regression and Sample selection bias


Class 6: Cost Functions (Cobb Douglas and Translog)

- Single- and Multiproduct cost functions


Class 7: Multiproduct Cost Functions
Scale and Scope and Subadditivity
Natural monopoly in multiproduct setting, AT&T, necessary and sufficient conditions


Problem Set 1: “A Cost Function Model for the Pre-divestiture U.S. Telecommunication Industry”

Class 8: Ongoing PhD Work Presentation

Class 9: Efficiency and Productivity
- Unobserved firm-level productivity
- Input distance and output distance functions


Class 10: Production Functions (Productivity, Simultaneity and Selection Problems)
- Unobserved firm-level productivity
- Simultaneity and selection bias
- IV versus proxy approach


James Tybout, Entry in Exporting Markets, Penn State University.

Class 11: Demand-Side Structural Models: Vertical Product Differentiation
• Vertical product differentiation: Own and Cross price elasticities


Class 12: Demand-Side Structural Models: Logit
• Product differentiation: Own and Cross price elasticities, Logit, IIA

Class 13: Demand-Side Structural Models: Random Coefficient Models

- Random Coefficient Models


Berry, S., J. Levinsohn, and A. Pakes, 2003, "Differentiated Product Demand Systems From a Combination of Micro and Macro Data: The New Car Market", Harvard University working paper, JPE.


Goerreee, Marketing BLP paper. Econometrica.

Class 14: Housing Market


Class 15: Single Agent Dynamic Models

- Fixed Point Algorithms and optimal stopping time


Topics that we be covered depending on interest

Multi Agent Dynamic Models

- Two stage models
- Nested Pseudo Likelihood


Aguirregabiria, V. and Siebert, R., “A Simple Method to Estimate Dynamic Games.”

Suzuki paper on locations, IER.


Aguirregabiria and Ho, 2010, IJIO.

Pakes and Ho, Moment Inequality estimators, presented in Toronto.

**Productivity Estimation**

*Problem Set: “Productivity Estimation in the Airline Industry”*

**Adoption of New Technologies**


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Identification of Market Power and Semi-Structural Approaches
- Identification of Market Power, identification of demand and supply


Problem Set: “A Structural Model of the Airline Industry”

(Static) Entry Models and Sunk Costs
- Equilibrium firms in different industries, retrieve fixed costs


Mazzeo, Rand Journal of Economics

Seim

**Strategic Alliances/Mergers/RJVs/Innovation**


Collard-Wexler, A., 2010, Mergers and Sunk Costs: An application to the ready-mix concrete industry

Collard-Wexler, A., 2010, Mergers in Two-Sided Markets: An Application to the Canadian Newspaper Industry
Supply-Side Structural Models
- Estimation of Market Power: Mergers, Collusion


Auctions


Other Topics

Collusion and Cartels (Bresnahan, deRoos Ellison, Martin, Pakes, Porter)

Dynamic Demand (Aguirregabiria, Gowrisankaran, Hendel, Nevo, Rysman)\nIntertemporal Price Discrimination (Cason, Chintagunta, Gowrisankaran)
Price Discrimination and Willingness to Pay


Learning by Doing


Other papers to discuss

Ghemawat and Spence, Learning by Doing and Entry and Spillovers, QJE


Röller and Steen, 2006, Collusion in the Cement industry, AER.