
COURSE SYLLABUS

Overview

In this course we will discuss key articles in Industrial Organization, that cover topics such as static demand, dynamic models (supply and demand side), production function, and bargaining. The focus here will be on **empirical** methods and applications. However, on occasion, some review and discussion of the relevant theory will be needed because empirical analysis in Industrial Organization is typically heavily informed by economic models.

Evaluation

Evaluation will consist of a problem set, a presentation, and a research proposal:

- **Problem set (20%).** There will be a PS covering topics on demand estimation.
Due date: May 30.
- **Presentation in class (20%).** Each student will choose a recent IO paper to present in class that is related with the methodologies learned in class. Students should email Andre their choice of paper before June 10. Presentations will take place in an online class on July 1st. Each student is expected to prepare a short slide deck (targetting a 15 minute presentation) that should describe the paper research question, data, model, estimation, and how it is related with the papers seen in class. **Due date: July 1st.**
- **Research Proposal (60%).** Students must prepare a 4-10 page research proposal describing an original research project. Projects should include:
 - Clearly stated research questions;
 - Contribution to the literature;
 - Brief description of datasets to be used (that project should be feasible);

- Discussion of modeling and identification approaches.

The project may address any IO topic, even those not covered in the course. Projects on non-traditional IO topics should still incorporate insights or methods from the course. Students are encouraged to discuss their ideas with instructors and seek approval if uncertain about project validity.

Due date: July 18.

Tentative program

#	Date	Time	Instructor	Topic
1	Apr-15	9-11h	MS	Intro - Supply and Demand
2	Apr-22	9-11h	MS	Demand: Product Space
3	Apr-24	9-11h	MS	Demand: Product Space
4	Apr-29	9-11h	MS	Demand: Discrete Choice Foundations
5	Apr-30	9-11h	MS	Demand: Logit and Nested Logit
6	May-6	9-11h	MS	Demand: Random Coefficients Logit (BLP)
7	May-8	9-11h	MS	Demand: Supply-Side Integration & Applications
8	May-13	9-11h	MS	Dynamic Models
9	May-15	9-11h	MS	Dynamic Models
10*	Jun-3	9-11h	AT	Consumer Dynamics: Stockpiling
11*	Jun-10	9-11h	AT	Consumer Dynamics: Durables
12*	Jun-17	9-11h	AT	Consumer Dynamics: Frictions
13	Jun-24	9-11h	AT	Intro - Prod Function
14	Jun-26	9-11h	AT	Prod Function
15	Jun-26	11-13h	AT	Prod Function
16	Jun-27	9-11h	AT	Bargaining Models
17	Jun-27	11-13h	AT	Bargaining Models
18*	Jul-1	9-11h	AT	Student Presentations

Note: classes marked with * will take place online using the following Zoom Link:
TBD

Bibliography

- There is one very good empirical IO graduate level textbook that is currently being written and for which there is a draft online:

- Victor Aguirregabiria. *Empirical Industrial Organization: Models, Methods, and Applications*. University of Toronto, 2021
- Other general readings in empirical IO:
 - (BOOK) Ali Hortaçsu and Joonhwi Joo. *Structural Econometric Modeling in Industrial Organization and Quantitative Marketing: Theory and Applications*. Princeton University Press, 2023
 - Akerberg, D., Benkard, L., Berry, S., and Pakes, A. “Econometric Tools for Analyzing Market Outcomes”, Chapter in Handbook of Econometrics: Volume 6A, North Holland 2007.
 - Einav and Levin, ”Empirical Industrial Organization: A Progress Report,” Journal of Economic Perspectives, 2010
 - Gandhi, A., & Nevo, A. (2021). Empirical models of demand and supply in differentiated products industries. In Handbook of Industrial Organization (Vol. 4, No. 1, pp. 63-139). Elsevier.
 - Berry, S. T., & Haile, P. A. (2021). Foundations of demand estimation. In Handbook of Industrial Organization (Vol. 4, No. 1, pp. 1-62). Elsevier.
- Coding resources:
 - Aviv Nevo, ”A Practitioner’s Guide to Estimation of Random Coefficients Logit Models of Demand”, JEMS, 2000, 513-548
 - Vincent, D. W. (2015). The Berry–Levinsohn–Pakes estimator of the random-coefficients logit demand model. The Stata Journal, 15(3), 854-880.
 - Conlon, C., & Gortmaker, J. (2020). Best practices for differentiated products demand estimation with pyblp. The RAND Journal of Economics, 51(4), 1108-1161

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- Intro - Supply & Demand:

- (*) Michael J Roberts and Wolfram Schlenker. Identifying supply and demand elasticities of agricultural commodities: Implications for the US ethanol mandate. *American Economic Review*, 103(6):2265–95, 2013

- Demand:

- Angus Deaton and John Muellbauer. An almost ideal demand system. *The American economic review*, 70(3):312–326, 1980a
- Angus Deaton and John Muellbauer. *Economics and consumer behavior*. Cambridge university press, 1980b
- (*) Jerry Hausman, Gregory Leonard, and J Douglas Zona. Competitive analysis with differentiated products. *Annales d'Economie et de Statistique*, pages 159–180, 1994
- Daniel McFadden. Modeling the choice of residential location. *Transportation Research Record*, (673), 1978
- Kenneth E Train. *Discrete choice methods with simulation*. Cambridge university press, 2009
- (*) Steven Berry. Estimating discrete-choice models of product differentiation. *The RAND Journal of Economics*, pages 242–262, 1994
- (*) Pinelopi Koujianou Goldberg. Product differentiation and oligopoly in international markets: The case of the US automobile industry. *Econometrica: Journal of the Econometric Society*, pages 891–951, 1995
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- (*) Steven Berry, James Levinsohn, and Ariel Pakes. Automobile prices in market equilibrium. *Econometrica: Journal of the Econometric Society*, pages 841–890, 1995
- (*) Aviv Nevo. Measuring market power in the ready-to-eat cereal industry. *Econometrica*, 69(2):307–342, 2001
- Steven Berry, James Levinsohn, and Ariel Pakes. Differentiated products demand systems from a combination of micro and macro data: The new car market. *Journal of political Economy*, 112(1):68–105, 2004

- Cory Capps, David Dranove, and Mark Satterthwaite. Competition and market power in option demand markets. *RAND Journal of Economics*, pages 737–763, 2003
- Christopher Conlon and Jeff Gortmaker. Best practices for differentiated products demand estimation with PyBLP. *The RAND Journal of Economics*, 2020
- (*) Nathan H Miller and Matthew C Weinberg. Understanding the price effects of the MillerCoors joint venture. *Econometrica*, 85(6):1763–1791, 2017
- Dynamic Models:
 - Victor Aguirregabiria and Pedro Mira. Dynamic discrete choice structural models: A survey. *Journal of Econometrics*, 156(1):38–67, 2010
 - (*) John Rust. Optimal replacement of GMC bus engines: An empirical model of Harold Zurcher. *Econometrica: Journal of the Econometric Society*, pages 999–1033, 1987
 - (*) V Joseph Hotz and Robert A Miller. Conditional choice probabilities and the estimation of dynamic models. *The Review of Economic Studies*, 60(3):497–529, 1993
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 - Stephen P Ryan. The costs of environmental regulation in a concentrated industry. *Econometrica*, 80(3):1019–1061, 2012
- Consumer Dynamics: sockpiling and durables
 - Erdem, Tülin, Susumu Imai, and Michael P. Keane. "Brand and quantity choice dynamics under price uncertainty." *Quantitative Marketing and Economics* 1, no. 1 (2003): 5-64.

- (*) Hendel, Igal, and Aviv Nevo (2006), "Measuring the implications of sales and consumer inventory behavior". *Econometrica*, 74(6):1637-1673
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 - (*) Gowrisankaran, Gautam, and Marc Rysman. "Dynamics of consumer demand for new durable goods." *Journal of political Economy* 120, no. 6 (2012): 1173-1219.
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