

GRADUATE – Disciplines Menu  
Doctorate and Masters in Economics

DISCIPLINE: Industrial Organization I	CODE: MDPEID001
ACRONYM: ORIN	
PROFESSOR: André Garcia de Oliveira Trindade	WORKLOAD: 40h  CREDIT HOUR: 4
MANDATORY: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	COURSE: <input type="checkbox"/> M <input type="checkbox"/> D <input checked="" type="checkbox"/> MD
PREREQUISITES: None	
CONCENTRATION AREA: Industrial Organization	
STUDY PLAN	
<p><b>Course in Industrial Organization I</b></p> <p>The course focuses mostly in Empirical Methods in Industrial Organization. For an overview of the theory, a good reference is Tirole's "The Theory of Industrial Organization" Topics covered include estimation of production functions, static demand models, single agent dynamic models, static discrete games and dynamic games.</p> <p>Other topics may be added, depending on the speed that we go through the material. Among the topics that will not be covered, estimation of auctions is probably the most relevant. For a nice survey check the following reference: Hendricks, Ken, and Robert H. Porter. "An Empirical Perspective on Auctions." Handbook of Industrial Organization 3 (2007): 2073-2143.</p> <p><b>Evaluation</b></p> <p>The final grading for the course will be a combination of a final exam (40%), a Matlab project (30%), a presentation of a paper (20%) and participation in class (10%).</p> <p>The exam will cover the papers in the reading list below that are marked with (*) 1 Matlab project. Students should estimate a random coefficient demand model using the matlab code provided with the paper: Nevo, Aviv, "A Practitioner's Guide to Estimation of Random Coefficients Logit Models of Demand, Journal of Economics &amp; Management Strategy, 9(4), 513-548, 2000. The matlab codes and the appendix to the paper (very useful!) can be found in the following site: <a href="http://faculty.wcas.northwestern.edu/ane686/supplements/supplements.html">http://faculty.wcas.northwestern.edu/ane686/supplements/supplements.html</a>.</p> <p>Two options: i) generate some fake data and estimate the model on that data; ii) get some original real data (in this case, the project can be done in groups of, at most, two) The output (to be handed in the last week of classes) should consist of two tables (descriptive statistics and estimates) plus the matlab code used. Presentation of a paper Each student should choose a paper to present in class from the list of recent job-market papers (in the end of this document). Students should email the professor their choice of paper.</p>	
GOALS	

Learn the fundamental methods of empirical structural models in Industrial Organization. Topics include: Production Function, Demand Estimation, Static Oligopoly Games, Single Agent Dynamic Problems, Dynamic Games.

#### BIBLIOGRAPHY

##### Literature General Readings

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.

Aguirregabiria, Victor. 2012. "Empirical Industrial Organization: Models, Methods, and Applications".

##### Production Function

Mundlak, Yair. "Empirical production function free of management bias." Journal of Farm Economics 43, no. 1 (1961): 44-56.

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

Z. Griliches and J. Mairesse, "Production Functions: The Search for Identification, 1995," NBER Working Paper No.w5067.

(\*) Olley, Steven, and Ariel Pakes. "The dynamics of productivity in the telecommunications equipment industry." Econometrica 64 (1996): 1263-97.

Levinsohn, James and Amil Petrin. "Estimating Production Functions Using Inputs To Control For Unobservables," Review of Economic Studies, 2003, v70(2, Apr), 317-341.

Akerberg, Caves and Frazer, "Structural Identification of Production Functions," working paper, 2006.

Gandhi, Amit, Salvador Navarro, and David Rivers. On the identification of production functions: How heterogeneous is productivity?. No. 2011-9. CIBC Working Paper, 2011.

Grieco, Paul LE, and Ryan C. McDevitt. "Productivity and Quality in Health Care: Evidence from the Dialysis Industry." Penn State Univ (2012). Static Demand Models.

Hausman, Jerry, Gregory Leonard, and J. Douglas Zona. "Competitive analysis with differentiated products." Annales d'Economie et de Statistique (1994): 159-180.

(\*) S. Berry (1994), "Estimating Discrete-Choice Models of Product Differentiation", The RAND Journal of Economics, Summer 1994, 242-262.

(\*) S. Berry, J. Levinsohn, and A. Pakes, "Automobile Prices in Market Equilibrium", Econometrica, July 1995, 841-990.

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Hendel, Igal. "Estimating multiple-discrete choice models: An application to computerization returns." *The Review of Economic Studies* 66, no. 2 (1999): 423-446.

Aviv Nevo, "A Practitioner's Guide to Estimation of Random Coefficients Logit Models of Demand", *JEMS*, 2000, 513-548.

(\*) Aviv Nevo, "Measuring Market Power in the Ready-to-Eat Cereal Industry", *Econometrica*, March 2001, 307-342.

(\*) Amil Petrin, "Quantifying the Benefits of New Products: The Case of the Minivan", *JPE*, 110(4), 2002, 705-729.

(\*) Steve Berry, J. Levinsohn and Ariel Pakes, "Differentiated Products Demand Systems from a Combination of Micro and Macro Data: The New Car Market", *JPE*, 2004, 68-105 4.

Dubé, Jean-Pierre. "Multiple discreteness and product differentiation: Demand for carbonated soft drinks." *Marketing Science* 23, no. 1 (2004): 66-81.

D. Akerberg and M. Rysman., "Unobservable Product Differentiation in Discrete Choice Models: Estimating Price Elasticities and Welfare Effects," *RAND*, Winter 2005, 771-788.

Davis, Peter. "Spatial competition in retail markets: movie theaters." *The RAND Journal of Economics* 37, no. 4 (2006): 964-982.

Ariel Pakes and S. Berry (2007), "The Pure Characteristics Demand Model", *International Economic Review*, 48(4).

Gentzkow, Matthew. "Valuing New Goods in a Model with Complementarity: Online Newspapers." *American Economic Review* 97, no. 3 (2007): 713-744.

Knittel, Christopher R., and Konstantinos Metaxoglou. Estimation of random coefficient demand models: Challenges, difficulties and warnings. No. w14080. National Bureau of Economic Research, 2008.

Dubé, Jean Pierre, Jeremy T. Fox, and Che Lin Su. "Improving the numerical performance of static and dynamic aggregate discrete choice random coefficients demand estimation." *Econometrica* 80, no. 5. (2012): 2231-2267. *Dynamic Demand Models*

J. Rust, "Optimal Replacement of GMC Bus Engines: An Empirical Model of Harold Zurcher" *Econometrica*, 1987, 55(5), 999-1033.

Hotz, V. Joseph, and Robert A. Miller. "Conditional choice probabilities and the estimation of dynamic models." *The Review of Economic Studies* 60, no. 3 (1993): 497-529.

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.

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(\*) Hendel, Igal, and Aviv Nevo (2006), "Measuring the implications of sales and consumer inventory behavior". *Econometrica*, 74(6):1637-1673.

Hendel, Igal, and Aviv Nevo (2006), "Sales and consumer inventory". *RAND*, 37(3):543-561.

Gautam Gowrisankaran and Mark Rysman (2009), "Dynamics of consumer demand for new durable goods", mimeo.

Hendel, Igal, and Aviv Nevo. Intertemporal Price Discrimination in Storable Goods Markets. *American Economic Review* 103, no. 7 (2013): 2722-51. *Static Oligopoly Models (aka Entry Models)*.

T. Bresnahan and P. Reiss, "Entry in Monopoly Markets," *Review of Economic Studies*, 1990, 531-53

(\*) Bresnahan, Timothy F. and Peter C. Reiss. 1991. "Entry and Competition in Concentrated Markets" *Journal of Political Economy* 99 (5):pp. 977–1009.

Berry, S., "Estimation of a Model of Entry in the Airline Industry," *Econometrica*, 1992.

(\*) Michael Mazzeo, "Product Choice and Oligopoly Market Structure," *RAND Journal of Economics*, 2002.

(\*) Katja Seim, "An Empirical Model of Firm Entry with Endogenous Product-Type Choices," *RAND Journal of Economics*, 2006.

Berry, S. and E. Tamer, "Identification in Models of Oligopoly Entry", *Advances in Economics and Econometrics*, Vol 2, Ninth World Congress, 46-85, Cambridge University Press, 2006.

Berry, S. and Peter Reiss. "Empirical models of entry and market structure." *Handbook of Industrial organization* 3 (2007): 1845-1886.

Jia, Panle. "What Happens When WalMart Comes to Town: An Empirical Analysis of the Discount Retailing Industry." *Econometrica* 76, no. 6 (2008): 1263-1316.

Ciliberto, Federico, and Elie Tamer. "Market structure and multiple equilibria in airline markets." *Econometrica* 77, no. 6 (2009): 1791-1828.

Sweeting, Andrew. "The strategic timing incentives of commercial radio stations: An empirical analysis using multiple equilibria." *The RAND Journal of Economics* 40, no. 4 (2009): 710-742. *Static Oligopoly Models with price and quantity data*.

S. Berry and J. Waldfogel, "Free Entry and Social Inefficiency in Radio Broadcasting" *Rand Journal of Economics*, 30 (Autumn 1999), 397-420.

Eizenberg, Alon. "Upstream innovation and product variety in the us home pc market." *Unpublished Manuscript* (2008): 1-52.

Draganska, M, M Mazzeo, and K Seim, 2009, Beyond plain vanilla: Modeling joint product assortment and pricing decisions, *Quant Mark Econ*, 7, 105-146.

Nosko, Chris. "Competition and quality choice in the cpu market." Manuscript, Harvard University (2010), *Dynamic Oligopoly Models*.

J. Hotz, and B. Miller, "Conditional Choice Probabilities and the Estimation of Dynamic Models," *Review of Economic Studies*, 1993, 60, 497-529.

(\*) Ericson, Richard and Ariel Pakes. 1995. "Markov-perfect industry dynamics: A framework for empirical work" *The Review of Economic Studies* 62 (1):53–82.

L. Benkard, "Learning and Forgetting: the Dynamics of Aircraft Production", *AER*, 2000, 1034-1054.

Aguirregabiria, Victor and Pedro Mira. 2007. "Sequential Estimation of Dynamic Discrete Games" *Econometrica* 75 (1):pp. 1–53.

Pakes, Ostrovsky, and Berry, "Simple Estimators for the Parameters of Discrete Dynamic Games (with entry/exit examples)," *RAND Journal of Economics*, 2007.

(\*) Bajari, Patrick, C. Lanier Benkard, and Jonathan Levin. 2007. "Estimating Dynamic Models of Imperfect Competition" *Econometrica* 75 (5):pp. 1331–1370.

Doraszelski, Ulrich, and Ariel Pakes. "A framework for applied dynamic analysis in IO." *Handbook of industrial organization* 3 (2007): 1887-1966.

Pesendorfer and Schmidt-Dengler, "Asymptotic Least Squares Estimators for Dynamic Games," *Review of Economic Studies*, 2008.

Besanko, David, Ulrich Doraszelski, Yaroslav Kryukov, and Mark Satterthwaite. "Learning by Doing, Organizational Forgetting, and Industry Dynamics." *Econometrica* 78, no. 2 (2010): 453-508.

Holmes, T.J. 2011. "The Diffusion of Wal-Mart and Economies of Density" *Econometrica* 79 (1): 253–302.

(\*) Ryan, Stephen P. "The costs of environmental regulation in a concentrated industry." *Econometrica* 80, no. 3 (2012): 1019-1061.

Collard Wexler, Allan. "Demand Fluctuations in the Ready Mix Concrete Industry." *Econometrica* 81, no. 3 (2013): 1003-1037.

#### **Other Topics**

To be defined: Recent job-market papers (to be presented by students)

1. Abito, Jose Miguel. *Welfare Gains from Optimal Pollution Regulation*. Mimeo Northwestern University, 2012.

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2. Agarwal, Nikhil. "An Empirical Model of the Medical Match." (2013).

3. Conlon, Christopher T. "A Dynamic Model of Costs and Margins in the LCD TV Industry." Unpublished manuscript, Yale Univ (2010).

4. Covert, Thomas R. "Experiential and Social Learning in Firms: The Case of Hydraulic Fracturing in the Bakken Shale, Harvard Univeristy, 2013.

5. Handel, Benjamin. "Adverse Selection and Inertia in Health Insurance Markets: When Nudging Hurts." American Economic Review, forthcoming (2012).

6. Kalouptside, Myrto. Time to build and fluctuations in bulk shipping. Working Paper, Princeton University, Department of Economics, 2011.

7. Kawai, Kei, Ken Onishi, and Kosuke Uetake. "Signaling in Online Credit Markets." (2013) [not a jobmarket paper].

8. Lazarev, John. "The Welfare Effects of Intertemporal Price Discrimination: An Empirical Analysis of Airline Pricing in US Monopoly Markets." Manuscript, Grad. School Bus., Stanford Univ (2011).

9. Marshall, Guillermo. "Search and Wholesale Price Discrimination." (2013). 10. Starc, Amanda. "Insurer pricing and consumer welfare: Evidence from medigap." Manuscript. Harvard University (2010).