
Northwestern University
Mar Reguant
Econ 450-2

MW 11:00-12:30pm
KGH 3383
Winter 2019

Topics in Dynamics - Econ 450-2

Course Description This course sequence provides a graduate-level topics class in Industrial Organization (IO). I will teach for about five weeks. In this part of the sequence, I will focus on covering dynamics. I will sometimes emphasize applications in energy and environmental to show how to use these models and tools in practice, with applications close to my research agenda.

Lecture notes and textbooks Most of the classes will be based on slides that will be made available through Canvas. Even though the class will be mostly structured around papers, I strongly recommend that you read handbook chapters. Handbook chapters are an extraordinary resource to get started in a research area. I could not have written my thesis without reading in detail several handbook chapters (IO and Econometrics).

Grading Your course grade will be based on the problem sets and other assignments (e.g., discussion or referee report).

Assigned readings There will be required readings for each class, which will be marked with an asterisk (*). I strongly recommend you to do the readings before class, as it will allow you to understand the material better. For up-to-date assignments, it is best to check Canvas.

Problem sets There will be two problem sets during this half course. The problem sets will enable you to learn how to practically implement the methods learnt in class. You can work on the problem sets in groups of two people.

Module 1 - Week 1: Single Agent Dynamics I

Methods. Applications.

- Section 3 in Akerberg, Benkard, Berry, and Pakes (2007) “Econometric tools for analyzing market outcomes”
- Judd, Ken.1998. Numerical Methods in Economics, MIT Press.
- Rust, John. 1996. Structural Estimation of Markov Decision Processes, Handbook of Econometrics, Volume 4, Chapter 51.
- Aguirregabiria and Mira (2010) “Dynamic discrete choice structural models: A survey”
- (*) Rust (1987) “Optimal replacement of GMC bus engines: An empirical model of Harold Zurcher”
- Hotz and Miller (1993) “Conditional Choice Probabilities and the Estimation of Dynamic Models”
- (*) Aguirregabiria and Mira (2002) “Swapping the Nested Fixed Point Algorithm: A Class of Estimators for Discrete Markov Decision Models”
- (*) Su and Judd (2012) “Constrained Optimization Approaches to the Estimation of Structural Models”

Module 1 - Week 2: Single Agent Dynamics II

Applications. Identification.

- (*) Hendel and Nevo (2006) “Measuring the Implications of Sales and Consumer Inventory Behavior,” *Econometrica* Vol. 74, No. 6 (Nov., 2006), pp. 1637-1673.
- (*) Kalouptsi, Myrto (2014) “Time to Build and Fluctuations in Bulk Shipping,” 2014, *American Economic Review*, 104(2): 564-608.
- (*) Arcidiacono and Miller (2011) “Conditional Choice Probability Estimation of Dynamic Discrete Choice Models With Unobserved Heterogeneity,” *Econometrica*, Volume 79, Issue 6, pages 1823-1867.
- (*) Scott (2013) “Dynamic Discrete Choice Estimation of Agricultural Land Use,” mimeo.

- Magnac and Thesmar (2002) “Identifying Dynamic Discrete Decision Processes,” *Econometrica*, 70, 801-816.
- Aguirregabiria, Victor. 2005. “Nonparametric Identification of Behavioral Responses to Counterfactual Policy Interventions in Dynamic Discrete Decision Processes,” *Economics Letters*.
- Kalouptsi, Myrto, Paul Scott and Eduardo Souza-Rodrigues (2015) “Identification of Counterfactuals and Payoffs in Dynamic Discrete Choice with an Application to Land Use.”

Module 2 - Week 1: Multiple Agent Dynamics I

Building blocks. Computational approaches and estimation.

- Reference: Doraszelski and Pakes (2007) “A Framework for Applied Dynamic Analysis in IO”
- (*) Ericson and Pakes, (1995) “Markov-Perfect Industry Dynamics: A Framework for Empirical Work,” *The Review of Economic Studies*, Vol. 62, No. 1, pp. 53-82
- (*) Pakes and McGuire (1994) “Computing Markov Perfect Nash Equilibrium: Numerical Implications of a Dynamic Differentiated Product Model”
- (*) Berry, Steven, Ariel Pakes and Michael Ostrovsky (2007) “Simple Estimators for the Parameters of Discrete Dynamic Games,” *RAND Journal of Economics*, v. 38(2), Summer 2007, pp. 373-399.
- (*) Bajari, Benkard and Levin (2007) “Estimating Dynamic Models of Imperfect Competition.”
- Doraszelski, Ulrich and Mark Satterthwaite (2010). “Computable Markov- perfect industry dynamics.” *The RAND Journal of Economics* 41.2, pp. 215-243.
- Besanko et al. (2010) “Learning-by-Doing, Organizational Forgetting, and Industry Dynamics,” *Econometrica* Volume 78, Issue 2, pages 453-508, March 2010.
- Pesendorfer, Martin and Philipp Schmit-Dengler (2004). “Least Squares Estimators for Dynamic Games,” *Review of Economic Studies*.
- Aguirregabiria and Mira (2007) “Sequential Estimation of Dynamic Discrete Games,” *Econometrica*, Econometric Society, vol. 75(1), pages 1-53, 01.

Module 2 - Week 2: Multiple Agent Dynamics II

Applications. Solutions to the curse of dimensionality.

- (*) Collard-Wexler, A. (2013) “Demand Fluctuations in the Ready-Mix Concrete Industry,” *Econometrica* (2013) pp. 1003-1037.
- (*) Ryan (2012) “The Costs of Environmental Regulation in a Concentrated Industry,” *Econometrica*.
- (*) Fowlie, Reguant and Ryan (2016) “Pollution Permits and the Evolution of Market Structure,” *Journal of Political Economy*.
- (*) Weintraub, Benkard, and Van Roy (2008) “Markov Perfect Industry Dynamics with Many Firms,” *Econometrica*, Vol. 76, No. 6, 1375-1411.
- Fershtman C., Pakes A. (2012) “Dynamic Games with Asymmetric Information: A Framework for Empirical Work.” *Quarterly Journal of Economics*. 127 (4):1611-1661.
- Benkard, Jeziorski, and Weintraub (2015) “Oblivious Equilibrium for Concentrated Industries,” *The RAND Journal of Economics*, Vol. 46, No. 4, 671-708.

Module 3: Regulation and Dynamics

Applications.

- (*) Timmins (2002) “Measuring the Dynamic Efficiency Costs of Regulators’ Preferences: Municipal Water Utilities in the Arid West.” *Econometrica*, 70(2), 603-629.
- (*) Lim, and Yurukoglu (2015) “Dynamic Natural Monopoly Regulation: Time Inconsistency, Moral Hazard, and Political Environments.” *Journal of Political Economy*.
- Fowlie (2010) “Emissions Trading, Electricity Industry Restructuring, and Investment in Pollution Control.” *American Economic Review*, Vol. 100, No. 3.
- Abito (2014) “Agency Costs in Environmental Regulation: Evidence from Regulated Electric Utilities”
- Cicala (2015) “When Does Regulation Distort Costs? Lessons from Fuel Procurement in U.S. Electricity Generation.” *American Economic Review*.

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450-2: INDUSTRIAL ORGANIZATION AND PRICES II **Winter 2019**

This course sequence provides a graduate-level introduction to Industrial Organization (IO). It is designed to provide a broad introduction to topics and industries that current researchers are studying as well as to expose students to a wide variety of techniques. It will start the process of preparing Ph.D. students to conduct thesis research in the area.

Lectures: Monday/Wednesday 11:00-12:50, KGH 1410

Course Web Page: see Canvas

Grading will be based on several problem sets. We will not discuss all of the papers on the reading list, but *we expect you to read all of the papers we discuss in detail in class.*

The following abbreviations are used for journal titles:

AER	American Economic Review
AEJ: Micro	American Economic Journal: Microeconomics
BJE	Bell Journal of Economics
EMA	Econometrica
IER	International Economic Review
IJIO	International Journal of Industrial Organization
JE	Journal of Econometrics
JEH	Journal of Economic History
JEL	Journal of Economic Literature
JEMS	Journal of Economics & Management Strategy
JEP	Journal of Economic Perspectives
JET	Journal of Economic Theory
JIE	Journal of Industrial Economics
JLE	Journal of Law and Economics
JPE	Journal of Political Economy
QJE	Quarterly Journal of Economics
QME	Quantitative Marketing and Economics
ReStat	Review of Economics and Statistics
ReStud	Review of Economic Studies
RJE	Rand Journal of Economics

I. General References

- D. Akerberg, L. Benkard, S. Berry and A. Pakes, “Econometric Tools for Analyzing Market Outcomes,” *Handbook of Econometrics*, Volume 6A, Chapter 63.
- M. Armstrong and R. Porter, eds., *Handbook of Industrial Organization*, Volume 3, North-Holland, 2007. (HIO3)
- P. Davis and E. Garces, *Quantitative Techniques for Competition and Antitrust Analysis*, Princeton University Press, 2010.
- L. Einav and J. Levin, “Empirical Industrial Organization: A Progress Report,” JEP, Spring 2010, 145-62.
- K. Ho and A. Rosen, “Partial Identification in Applied Research: Benefits and Challenges,” in L. Samuelson, B. Honore, M. Piazzesi and A. Pakes, eds., *Advances in Economics and Econometrics: Eleventh World Congress*, Vol. 2, Cambridge, 2017, Chapter 10.
- P. Reiss and F. Wolak, “Structural Econometric Modeling: Rationales and Examples from Industrial Organization,” *Handbook of Econometrics*, Volume 6A, Chapter 64.
- R. Schmalensee and R. Willig, eds., *Handbook of Industrial Organization*, Volumes 1 and 2, North-Holland, 1989. (HIO1 and HIO2)

II. Market Structure (Bhattacharya)

1. Entry Models (mostly covered in 450-1)

- P. Bajari, H. Hong and S. Ryan, “Identification and Estimation of Discrete Games of Complete Information,” EMA, September 2010, 1529-68.
- S. Berry, “Estimation of a Model of Entry in the Airline Industry,” EMA, July 1992, 889–918.
- S. Berry and P. Reiss, “Empirical Models of Entry and Market Structure,” HIO3, Chapter 29.
- S. Berry and E. Tamer, “Identification in Models of Oligopoly Entry,” in R. Blundell, W. Newey and T. Persson, eds., *Advances in Economics and Econometrics: Theory and Applications*, Vol. 2, Cambridge, 2007, Chapter 2.
- T. Bresnahan and P. Reiss, “Entry in Monopoly Markets,” ReStud, October 1990, 531-53
- T. Bresnahan and P. Reiss, “Entry and Competition in Concentrated Markets,” JPE, October 1991, 977–1009.

- F. Cilberto and E. Tamer, "Market Structure and Multiple Equilibria in Airline Markets," EMA, November 2009, 1791-828.
- P. Ellickson, S. Houghton and C. Timmins, "Estimating Network Economies in Retail Chains: A Revealed Preference Approach," RJE, Summer 2013, 169-93.
- J. Espin-Sanchez and A. Parra, "Entry Games Under Private Information," mimeo, Yale, 2017.
- P. Grieco, "Discrete Games with Flexible Information Structures: An Application to Local Grocery Markets," RJE, Summer 2014, 303-40.
- * P. Jia, "What Happens When Wal-Mart Comes to Town: An Empirical Analysis of the Discount Retail Industry," EMA, November 2008, 1263-316.
- A. Sweeting, "The Strategic Timing Incentives of Commercial Radio Stations: An Empirical Analysis Using Multiple Equilibria," RJE, Winter 2009, 710-42.
- Y. Takahashi, "Estimating a War of Attrition: The Case of the US Movie Theater Industry," AER, July 2015, 2204-41.
- E. Tamer, "Incomplete Simultaneous Discrete Response Model with Multiple Equilibria," ReStud, January 2003, 147-65.
- 2. Entry and Product Quality (covered in 450-1)**
- S. Berry, A. Eizenberg and J. Waldfogel, "Optimal Product Variety in Radio Markets," RJE, Fall 2016, 463-97.
- S. Berry and J. Waldfogel, "Free Entry and Social Inefficiency in Radio Broadcasting," RJE, Autumn 1999, 397-420.
- S. Berry and J. Waldfogel, "Product Quality and Market Size," JIE, March 2010, 1-31.
- A. Eizenberg, "Upstream Innovation and Product Variety in the U.S. Home PC Market," REStud, July 2014, 1003-45.
- P. Ellickson, "Does Sutton Apply to Supermarkets?" RJE, Spring 2007, 43-59.
- Y. Fan, "Ownership Consolidation and Product Characteristics: A Study of the US Daily Newspaper Market," AER, August 2013, 1598-1628.
- M. Gentzkow, J. Shapiro and M. Sinkinson, "Competition and Ideological Diversity: Historical

Evidence from US Newspapers,” *AER*, October 2014, 3073-114.

D. Matsa, “Competition and Product Quality in the Supermarket Industry,” *QJE*, August 2011, 1539-91.

M. Mazzeo, “Product Choice and Oligopoly Market Structure,” *RJE*, Summer 2002, 221-42.

K. Seim, “An Empirical Model of Firm Entry with Endogenous Product-Type Choices,” *RJE*, Autumn 2006, 619-40.

J. Sutton, “Market Structure: Theory and Evidence,” *HIO3*, Chapter 36.

A. Sweeting, “The Effects of Mergers on Product Positioning: Evidence from the Music Radio Industry,” *RJE*, Summer 2010, 372-97.

R. Watson, “Product Variety and Competition in the Retail Market for Eyeglasses,” *JIE*, June 2009, 217-51.

T. Wollman, “Trucks without Bailouts: Equilibrium Product Characteristics for Commercial Vehicles,” mimeo, Booth, 2017.

3. Entry Deterrence

J. Chevalier, “Capital Structure and Product Market Competition: Empirical Evidence from the Supermarket Industry,” *AER*, June 1995, 415-35.

* G. Ellison and S. Ellison, “Strategic Entry Deterrence and the Behavior of Pharmaceutical Incumbents Prior to Patent Expiration,” *AEJ: Micro*, February 2011, 1-36.

* A. Goolsbee and C. Syverson, “How do Incumbents Respond to the Threat of Entry? Evidence from the Major Airlines,” *QJE*, November 2008, 1611-33.

V. Kadiyali, “Entry, Its Deterrence, and Its Accommodation: A Study of the U.S. Photographic Film Industry,” *RJE*, Autumn 1996, 452-78.

C. Snider, “Predatory Incentives and Predation Policy: The American Airlines Case,” mimeo, UCLA, 2009.

C. Snider and J. Williams, “Barriers to Entry in the Airline Industry: A Multi-Dimensional Regression Discontinuity Analysis of AIR-21,” *REStat*, December 2015, 1002-22.

4. Entry, Growth, and Turnover

- J. Abbring and J. Campbell, "Last-in First-out Oligopoly Dynamics," *EMA*, September 2010, 1491-527.
- T. Bresnahan and D. Raff, "Inter-industry Heterogeneity and the Great Depression: The American Motor Vehicles Industry, 1929-1935," *JEH*, June 1991, 317-31.
- B. Bronnenberg, S. Dhar, and J.-P. Dube, "Brand History, Geography, and the Persistence of Brand Shares," *JPE*, February 2009, 87-115.
- B. Bronnenberg, J.-P. Duke, and M. Gentzkow, "The Evolution of Brand Preferences: Evidence from Consumer Migration," *AER*, October 2012, 2472-2508.
- A. Collard-Wexler, "Mergers and Sunk Costs: An Application to the Ready-Mix Concrete Industry," *AEJ: Micro*, November 2014, 407-47.
- A. Collard-Wexler, "Productivity Dispersion and Plant Selection in the Ready-Mix Concrete Industry," mimeo, Duke, 2011.
- A. Collard-Wexler and J. De Loecker, "Reallocation and Technology: Evidence from the U.S. Steel Industry," *AER*, January 2015, 131-71.
- T. Dunne, M. Roberts, and L. Samuelson, "Patterns of Firm Entry and Exit in U.S. Manufacturing," *RJE*, Winter 1988, 495-515.
- T. Dunne, M. Roberts, and L. Samuelson, "The Growth and Failure of U.S. Manufacturing Plants," *QJE*, November 1989, 671-98.
- P. Golder and G. Tellis, "Pioneer Advantage: Marketing Logic or Marketing Legend," *JMR*, May 1993, 158-70.
- H. Hopenhayn, "Entry, Exit and Firm Dynamics in Long Run Equilibrium," *EMA*, September 1992, 1127-50.
- B. Jovanovic, "Selection and the Evolution of Industry," *EMA*, May 1982, 649-70.
- L. Foster, J. Haltiwanger, and C. Syverson, "The Slow Growth of New Plants: Learning about Demand?" *Economica*, January 2016, 91-129.
- A. Pakes and R. Ericson, "Empirical Applications of Alternative Models of Firm Dynamics," *JET*, March 1998, 1-45.
- J. Sutton, "Gibrat's Legacy," *JEL*, March 1997, 40-59.

III. Price Discrimination and Price Dispersion (Bhattacharya)

1. Price Discrimination

M. Busse and M. Rysman, "Competition and Price Discrimination in Yellow Pages Advertising," RJE, Summer 2005, 378-90.

K. Gerardi and A. Shapiro, "Does Competition Reduce Price Dispersion? New Evidence from the Airline Industry," JPE, February 2009, 1-37.

P. Goldberg, "Dealer Price Discrimination in New Car Purchases: Evidence from the Consumer Expenditure Survey," JPE, June 1996, 622-54.

* J. Lazarev, "The Welfare Effects of Intertemporal Price Discrimination: An Empirical Analysis of Airline Pricing in U.S. Monopoly Markets," mimeo, NYU, 2013.

P. Leslie, "Price Discrimination in Broadway Theater," RJE, Autumn 2004, 520-41.

* B. McManus, "Nonlinear Pricing in an Oligopoly Market: The Case of Specialty Coffee," RJE, Summer 2007, 513-33.

E. Miravete, "Estimating Demand for Local Telephone Service with Asymmetric Information and Optional Calling Plans," ReStud, October 2002, 943-71.

E. Miravete, K. Seim, and J. Thurk, "One Markup to Rule Them All: Taxation by Liquor Pricing Regulation," mimeo, Texas, 2017.

J. Mortimer, "Price Discrimination, Copyright Law and Technological Innovation: Evidence from the Introduction of DVDs," QJE, August 2007, 1307-50.

A. Nevo and C. Wolfram, "Why Do Manufacturers Issue Coupons? An Empirical Analysis of Breakfast Cereals," RJE, Summer 2002, 319-39.

F. Scott Morton, F. Zettelmeyer, and J. Silva-Risso, "Consumer Information and Price Discrimination: Does the Internet Affect the Pricing of New Cars to Women and Minorities," QME, March 2003, 65-92.

A. Shepard, "Price Discrimination and Retail Configuration," JPE, February 1991, 30-53.

B. Shiller and J. Waldfogel, "Music for a Song: An Empirical Look at Uniform Song Pricing and its Alternatives," JIE, December 2011, 630-60.

L. Stole, "Price Discrimination and Competition," *HIO3*, Chapter 34.

* A. Sweeting, “Dynamic Pricing Behavior in Perishable Goods Markets: Evidence from Secondary Markets for Major League Baseball Tickets,” *JPE*, December 2012, 1133-72.

H. Varian, “Price Discrimination,” *HIOI*, Chapter 10.

S. Villas-Boas, “An Empirical Investigation of the Welfare Effects of Banning Wholesale Price Discrimination,” *RJE*, Spring 2009, 20-46.

K. Williams, “Dynamic Airline Pricing and Seat Availability,” mimeo, Yale SoM, 2017.

2. Bargaining (possibly in 450-3)

A. Collard-Wexler, G. Gowrisankaran, and R. Lee, “‘Nash-in-Nash’ Bargaining: A Microfoundation for Applied Work,” Forthcoming in *JPE*, 2017.

* G. Crawford and A. Yurukoglu, “The Welfare Effects of Bundling in Multi-Channel Television Markets,” *AER*, March 2012, 643-85.

* M. Grennan, “Price Discrimination and Bargaining: Empirical Evidence from Medical Devices,” *AER*, February 2013, 145-77.

K. Ho and R. Lee, “Equilibrium Provider Networks: Bargaining and Exclusion in Health Care Markets,” mimeo, Harvard, 2017.

K. Ho and R. Lee, “Insurer Competition in Health Care Markets,” *EMA*, March 2017, 379-417.

3. Search

J. Allen, R. Clark and J.-F. Houde, “The Effect of Mergers in Search Markets: Evidence from the Canadian Mortgage Industry,” *AER*, October 2014, 3365-96.

B. De Los Santos, A. Hortacsu, and M. Wildenbeest, “Testing Models of Consumer Search using Data on Web Browsing and Purchasing Behavior,” *AER*, October 2012, 2955-80.

P. Diamond, “A Model of Price Adjustment,” *JET*, June 1971, 156-58.

* G. Ellison and S. Ellison, “Search, Obfuscation and Price Elasticities on the Internet,” *EMA*, March 2009, 427-52.

G. Ellison and S. Ellison, “Match Quality, Search, and the Internet Market for Used Books,” mimeo, MIT, 2014.

K. Hendricks, A. Sorensen, and T. Wiseman, "Observational Learning and Demand for Search Goods," *AEJ: Micro*, February 2012, 1-31.

* H. Hong and M. Shum, "Using Price Distributions to Estimate Search Costs," *RJE*, Summer 2006, 257-75.

* A. Sorensen, "Equilibrium Price Dispersion in Retail Markets for Prescription Drugs," *JPE*, August 2000, 833-50.

A. Sorensen, "Price Dispersion and Heterogeneous Consumer Search for Retail Prescription Drugs," mimeo, Wisconsin, 2001.

* D. Stahl, "Oligopolistic Pricing with Sequential Consumer Search," *AER*, September 1989, 700-12.

D. Stahl, "Oligopolistic Pricing with Heterogeneous Consumer Search," *IJIO*, April 1996, 243-68.

4. Bundling

L. Cabral and G. Natividad, "Mixed Bundling in Retail DVD Sales: Facts and Theories," mimeo, NYU, 2017.

C. Chu, P. Leslie and A. Sorensen, "Bundle-Size Pricing as an Approximation to Mixed Bundling," *AER*, February 2011, 263-303.

N. Hagpanah and J. Hartline, "When is Pure Bundling Optimal?" mimeo, Penn State, 2018.

K. Ho, J. Ho, and J. Mortimer, "The Use of Full-Line Forcing Contracts in the Video Rental Industry," *AER*, April 2012, 686-719.

P. McAfee, J. McMillan, and M. D. Whinston, "Multiproduct Monopoly, Commodity Bundling, and Correlation of Values," *QJE*, May 1989, 371-383.

IV. Moment Inequalities (Illanes)

Partial Identification: An Introduction

K. Ho and A. Rosen (2016) "Partial Identification in Applied Research: Benefits and Challenges," mimeo.

C. Manski (2007) *Identification for Prediction and Decision*, Harvard University Press.

C. Manski (2013) *Public Policy in an Uncertain World: Analysis and Decisions*, Harvard University Press.

E. Tamer (2010) “Partial Identification in Econometrics,” *Annual Review of Economics*, 2, 167-95

Reduced-form Approach

M. Gentzkow, J. Shapiro, and M. Sinkinson, (2011) “The Effect of Newspaper Entry and Exit on Electoral Politics,” *AER*, 101(7), 2980-3018.

Revealed-Preference Moment Inequalities: Theory

A. Pakes (2010) “Alternative Models for Moment Inequalities”, *EMA*, 78(6), 1783-822.

A. Pakes, J. Porter, K. Ho, and J. Ishii (2015) “Moment Inequalities and Their Application,” *EMA*, 83(1), 315-34.

Inference in Moment Inequality Models

D. Andrews and G. Soares (2010) “Inference for Parameters Defined by Moment Inequalities Using Generalized Moment Selection,” *EMA*, 78, 119-57.

I.A. Canay and A.M. Shaikh (2017) “Practical and Theoretical Advances for Inference in Partially Identified Models,” *Advances in Economics and Econometrics: Volume 2: Eleventh World Congress. Econometric Society Monographs*, pp. 271-306

V. Chernozhukov, D. Chetverikov, K. Kato (2018) “Inference on causal and structural parameters using many moment inequalities,” forthcoming, *ReStud*.

V. Chernozhukov, H. Hong and E. Tamer (2007) “Estimation and Confidence Regions for Parameter Sets in Econometric Models,” *EMA* 75, 1243-84.

G. Imbens, and C. Manski (2004) “Confidence Intervals for Partially Identified Parameters,” *EMA*, 72, 1845-57.

E. Tamer (2010) “Partial Identification in Econometrics,” *Annual Review of Economics*, 2, 167-195.

Revealed-Preference Moment Inequalities: Applications

A. Eizenberg (2014) “Upstream Innovation and Product Variety in the U.S. Home PC Market,” *ReStud*, 81, 1003-45.

T. Holmes (2011) “The Diffusion of Wal-Mart and Economies of Density”, *EMA*, 79(1), 253-302.

E. Morales, G. Sheu and A. Zahler (2019) “Extended Gravity,” forthcoming, *ReStud*.

Other Moment Inequality Estimators for Discrete Choice Models

M. Dickstein and E. Morales (2018) “What do Exporters Know?” , *QJE*, 133(4). 1753-1801.

K. Ho, and A. Pakes (2014) “Hospital Choices, Hospital Prices, and Financial Incentives to Physicians”, *AER*, 104(12), 3841-84.

G. Illanes (2015) “Switching Costs in Pension Plan Choice,” mimeo.

A. Pakes and J. Porter (2014) “Moment Inequalities for Multinomial Choice with Fixed Effects,” mimeo.

Moment Inequalities and Strategic Interactions

A. de Paula (2013) “Econometric Analysis of Games with Multiple Equilibria,” *Annual Review of Economics*, 5, 107-31.

F. Ciliberto and E. Tamer (2009) “Market Structure and Multiple Equilibria in Airline Markets,” *EMA*, 77(6), 1791-828.