

Empirical Industrial Organization

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| Course title - Intitulé du cours | Empirical Industrial Organization |
| Level / Semester - Niveau /semestre | M2 / S2 |
| School - Composante | Ecole d'Economie de Toulouse |
| Teacher - Enseignant responsable | DURRMEYER - BONTEMPS |
| Other teacher(s) - Autre(s) enseignant(s) | |
| Other teacher(s) - Autre(s) enseignant(s) | |
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| Other teacher(s) - Autre(s) enseignant(s) | |
| Lecture Hours - Volume Horaire CM | 30 |
| TA Hours - Volume horaire TD | 0 |
| TP Hours - Volume horaire TP | 0 |
| Course Language - Langue du cours | Anglais |
| TA and/or TP Language - Langue des TD et/ou TP | |

Teaching staff contacts - Coordonnées de l'équipe pédagogique :

Christian Bontemps (MF407), email: christian.bontemps@tse-fr.eu, Office hours to be determined. Preferred mean of interaction: meeting by appointment. Pr. Bontemps teaches the second part.

Isis Durrmeyer (MF423), email: isis.durrmeyer@tse-fr.eu, Office hours to be determined. Preferred mean of interaction: meeting by appointment. Pr. Durrmeyer teaches the first part.

Course's Objectives - Objectifs du cours :

This is a course in the Graduate Industrial Organization sequence. We aim to give a solid grounding in understanding the structure of markets, and the strategic behavior of firms and their consumers. The objective of the course is to familiarize students with the structural econometric methodologies used in empirical industrial organization. At the end of the course, students are expected to know how to interpret the results in an empirical study, how to provide constructive criticism, and how to carry out an empirical research project. The course will be devoted to the study of demand modeling in IO and their applications, to the analysis of structural estimation of auction models, to regulation, asymmetric information models and entry models.

Beyond academic careers, there are clear policy issues (on antitrust and regulation) and commercial implications (reflected by the growing economics consulting sector, which is based primarily around IO issues including pricing and competitive analysis). In addition to the economics discipline, estimating demand, understanding product positioning, pricing, the communication, gathering and use of product information, merger analysis, reputation and the other topics that we cover are central concerns in the literatures on marketing, strategy and information systems.

The course will consist of two parts:

Part I: Demand modeling in IO and applications, taught by Isis Durrmeyer

Part II: Five applied Topics in IO (entry models, productivity and production function, cost frontier estimations, estimation of auction models, models of regulation) taught by Christian Bontemps

Prerequisites – Pré-requis :

Knowledge of linear and non linear econometric methods, generalized method of moments is required.

To perform the assignments, you will need to use Matlab and/or R

Practical information about the sessions - Modalités pratiques de gestion du cours :

Readings marked with one asterisk (*) are mandatory.

Grading system - Modalités d'évaluation :

The students have to do two small research projects (one for each part of the lecture) that determine the grade (1/2 each). You have to work in groups of two. You'll have the opportunity to discuss progress during office hours.

Bibliography/references - Bibliographie/références :

References:

Part I. Demand for differentiated products and IO applications

Introduction

1. Differentiated products demand

1.1. Theory and estimation on micro data

Hausman J., G. Leonard, and D. Zona (1994) "Competitive Analysis with Differentiated Products" *Annales d'Économie et de Statistique*, 34, 159-180

McFadden D. and K. Train (2000) "Mixed MNL Models for Discrete Response" *Journal of Applied Econometrics*, 15, 5, 447-470.

Train K. (2009) *Discrete Choice Methods with Simulation*, Cambridge University Press

1.2. Theory and estimation on aggregate data

(*) Berry, S. T. (1994) "Estimating discrete-choice models of product differentiation", *RAND Journal of Economics*, 25, 2, 242-262

(*) Berry S. T., J. Levinsohn, and A. Pakes (1995) "Automobile prices in market equilibrium", *Econometrica*, 63, 4, 841-890

Nevo, A. (2000) "A practitioner's guide to estimation of random coefficients logit models of demand", *Journal of Economics & Management Strategy*, 9, 4, 513-548

Knittel C. R. and K. Metaxoglou (2014) "Estimation of Random Coefficient Demand Models: Challenges, Difficulties and Warnings", *Review of Economics and Statistics*, 96, 1, 34-59

Petrin A. and K. Train (2010) "A Control Function Approach to Endogeneity in Consumer Choice Models" *Journal of Marketing Research*, 47, 1, 3-13

2. Measuring market power and merger analysis

2.1 Market power estimation

(*) Nevo, A. (2001) "Measuring Market Power in the Ready-to-Eat Cereal Industry", *Econometrica*, 69(2), 307-342

2.2. Merger analysis and simulation

(*) Nevo, A. (2000) "Mergers with Differentiated Products: the Case of the Ready-to-Eat Cereal Industry", *RAND Journal of Economics*, 31, 395-421.

Gowrisankaran, G., A. Nevo, and R. Town (2015) "Mergers When Prices Are Negotiated: Evidence from the Hospital Industry" *American Economic Review*, 105(1): 172-203

Miller, N. H. and Weinberg, M. C. (2017), *Understanding the Price Effects of the MillerCoors Joint Venture*. *Econometrica*, 85: 1763-1791

Björnerstedt J. and F. Verboven (2013) "Does Merger Simulation Work? Evidence from the Swedish Analgesics Market", Working Paper

Houde, J.-F. (2012) "Spatial Differentiation and Vertical Mergers in Retail Markets for Gasoline" *American Economic Review*, 102(5): 2147-82.

3. Measuring consumer welfare

(*) Petrin (2002) "Quantifying the Benefits of New Products: The Case of the Minivan," *Journal of Political Economy*, 110:705-729

Bhattacharya D. (2015) "Nonparametric Welfare Analysis for Discrete Choice" forthcoming *Econometrica*

Fan Y. and C Yang (2016) "Competition, Product Proliferation and Welfare: A Study of the US Smartphone Market"

Dubois P., R. Griffith and M. O'Connell 2019 "How well Targeted are Soda Taxes?"

4. Topics on vertical relations

Bonnet C. and P. Dubois (2010) "Inference on Vertical Contracts between Manufacturers and Retailers Allowing for Non Linear Pricing and Resale Price Maintenance" *RAND Journal of Economics*, 41, 1, 139-164

Brenkers R. and F. Verboven (2006) "Liberalizing a distribution system: the European Car Market" Journal of the European Economic Association

Villas-Boas, S. B. (2007) "Vertical Relationships between Manufacturers and Retailers: Inference with Limited Data," Review of Economic Studies, 74, 2, 625-652

(*) Nurski L. and F. Verboven (2016) "Exclusive Dealing as an Entry Barrier - Evidence from the Car Market", Review of Economic Studies, 83, 3, 1156-1188

Donna J, P. Pereira, T. Pires and A. Trindade (2018) "Measuring the Welfare of Intermediation in Vertical Markets"

5. New models of price determination

Adams B. and K. Williams (2014) "Zone Pricing and Spatial Menu Costs: Evidence from Drywall"

(*) Crawford G., O. Shcherbakov & M. Shum (2018) "Quality Overprovision in the Cable Television Markets" American Economic Review

Dubois P. and L. Lasio (2018) "Identifying Industry Margins with Unobserved Price Constraints: Structural Estimation on Pharmaceuticals" American Economic Review

D'Haultfoeuille X., Durrmeyer I., P. Février, (2018) "Automobile Prices in Market Equilibrium with Unobserved Price Discrimination", Review of Economic Studies

Grennan, M. (2013) "Price discrimination and bargaining: Empirical evidence from medical devices", American Economic Review 103(1), 145--177.

Grennan M and A Swanson (2016) "Transparency and Negotiated Prices: The Value of Information in Hospital-Supplier Bargaining

Byrne D. (2015) "Testing Models of Differentiated Products Markets: Consolidation in the Cable TV Industry"

6. Consumer demand with limited information and advertising

Dubois P., R. Griffith, M. O'Connell (2017) "The Effects of Banning Advertising in Junk Food Markets" Review of Economic Studies

(*) Sovinsky-Goeree, M. (2008) "Limited information and advertising in the us personal computer industry" Econometrica 76 (5), 1017-1074.

Moraga-Gonzalez J., Z. Sándor and M. Wildenbeest (2015) "Consumer Search and Prices in the Automobile Market"

7. Industry regulation

Berry S. T., J. Levinsohn, and A. Pakes (1999) "Voluntary Export Restraints on Automobiles: Evaluating a Trade Policy" American Economic Review, 89, 3, 400-430

Goldberg, P.K. (1998) "The Effects of the Corporate Average Fuel Efficiency Standards in the US", *The Journal of Industrial Economics*, 46

(* Durrmeyer I. and M. Samano (2018) "To Rebate or not to rebate: Fuel Economy Standards versus Feebates" *The Economic Journal*

Part II

Topic 1 - Entry models

(*Berry, S. (1992), "Estimation of a Model of Entry in the Airline Industry", *Econometrica*, 60, 889-918.

Bresnahan, T. and P. Reiss (1991), "Entry and Competition in Concentrated Markets", *Journal of Political Economy*, 99, 977-1009.

(*Bresnahan, T. and P. Reiss (1990), "Entry in Monopoly Markets", *Review of Economic Studies*, 57, 531-553.

Cleeren, K., Verboven, F., Deekimpe, M.G., Gielens, K. (2010), "Intra- and Inter- Format Competition Among Discounters and Supermarkets", *Marketing Science*, 29, 456-473.

(*Mazzeo, M.J. (2002), "Product Choice and Oligopoly Market Structure", *Rand Journal of Economics*, 33, 221-242.

Seim, K. (2006), "An Empirical Model of Firm Entry with Endogenous Product-type Choices", *Rand Journal of Economics*, 37, 619-640.

Topic 2 - Productivity and production functions

(*Blundell, R., and S. Bond (2000), "GMM Estimation with persistent panel data: an application to production functions", *Econometric Reviews*, 19:3, 321-340

Christensen, L.R., D.W. Jorgenson and L.J. Lau (1971), "Conjugate Duality and the Transcendental Logarithmic Production Function", *Econometrica*, 39, 255-256.

Diewert, W.E. (1971), "An Application of The Shephard Duality Theorem: A Generalized Leontief Production Function", *Journal of Political Economy*, 79, 481-507.

Greene, W. P (1997), "Frontier production functions" in *Handbook of applied econometrics*.

(*Levinsohn, J., and A. Petrin (2003), "Estimating Production Functions Using Inputs to Control for Unobservables", *Review of Economic Studies*, 70, 317-342.

(*Olley, G. Steven, and Ariel Pakes (1996), "The Dynamics of Productivity in the Telecommunications Equipment Industry", *Econometrica*, 64, 1263-1297.

Topic 3 - Cost and production frontiers

(*Aigner, C. A. K. Lovell, and P. Schmidt, "Formulation and estimation of stochastic frontier production function models," *Journal of Econometrics*, 6, 21-37, 1977.

(*Meeusen and J. van den Broeck, "Efficiency estimation from Cobb-Douglas production functions with composed error", *International Economic Review*, vol. 18, no. 2, pp. 435-444, 1977.

S. C. Kumbhakar and C. A. K. Lovell, *Stochastic Frontier Analysis*, Cambridge University Press, Cambridge, UK, 2000.

S. C. Kumbhakar and E. G. Tsionas, "Estimation of stochastic frontier production functions with input-oriented technical efficiency," *Journal of Econometrics*, vol. 133, no. 1, pp. 71–96, 2006.

Schmidt P. (1984), "An error structure for system of translog cost and share equations", Department of Economics, Michigan State University.

(*)Schmidt P. and C.A.K. Lovell (1979), "Estimating technical and allocative inefficiency relative to stochastic production and cost frontiers", *Journal of Econometrics*, 9, 343-366.

Topic 4 - Empirical models of auctions

Athey, S., and P. Haile (2002): "Identification of Standard Auction Models", *Econometrica*, 70, 2107-2140.

(*)Guerre, E., I. Perrigne and Q. Vuong, 2000, "Optimal Nonparametric Estimation of First Price Auctions", *Econometrica*, 68, 525-574.

(*)Haile, P., and E. Tamer (2003), "Inference with an Incomplete Model of English Auctions", *Journal of Political Economy*, 111, 1-51.

Hendricks, K., J. Pinkse, and R. Porter (2003), "Empirical Implications of Equilibrium Bidding in First-Price, Symmetric, Common-Value Auctions", *Review of Economic Studies*, 70, 115-145.

Laffont, J. J. (1997), "Game Theory and Empirical Economics: the Case of Auction Data", *European Economic Review*, 1-36.

Laffont, J. J., and Q. Vuong (1996), "Structural Analysis of Auction Data", *American Economic Review, Papers and Proceedings*, 86, 414-420.

Li, T., I. Perrigne, and Q. Vuong (2000), "Conditionally Independent Private Information in OCS Wildcat Auctions", *Journal of Econometrics*, 98, 129-161.

(*)Li, T., I. Perrigne, and Q. Vuong (2002), "Structural Estimation of the Affiliated Private Value Auction Model", *RAND Journal of Economics*, 33, 171-193.

Topic 5 - Empirical models of regulation

(*)Gagnepain, P. and M. Ivaldi (2002), "Incentive Regulatory Policies: The Case of Public Transit Systems in France", *RAND Journal of Economics*, 33:4, 605-629.

Gagnepain, P., M. Ivaldi and D. Martimort (2013), "The Cost of Contract Renegotiation: Evidence from the Local Public Sector", *American Economic Review*, 103, 2352-2383.

Miravete, E. J. and Lars-Hendrik Röller (2004), "Estimating Markups under Nonlinear Pricing Competition", *Journal of the European Economic Association*, 2, 526-535.

(*)Miravete, E. J. (2002), "Estimating Demand for Local Telephone Service with Asymmetric Information and Optimal Calling Plans", *The Review of Economic Studies*, 69, 943–971.

Perrigne I. and Q. Vuong, (2011) "Nonparametric Identification of a Contract Model With Adverse Selection and Moral Hazard", *Econometrica*, 79, 1499–1539.

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