Course Syllabus

Industrial Organization

Instructor: Sergey Lychagin

Department of Economics
Central European University
Fall 2016
Course level: PhD, advanced MA
credits (# ECTS credits): 4 (8)
Prerequisites: 1st-year MA sequence of microeconomics and econometrics.
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Course Description: This course gives an introduction into empirical methods used in modern industrial organization. We will discuss typical issues and solutions that come up in the estimation of production functions, demand systems, and models of industry competition. We will examine some applications of the above methods such as merger simulations and prediction of welfare effects of market interventions. There is no textbook in this course; we will discuss papers on the reading list spending approximately one class per paper.

Learning Outcomes:

1. Familiarity with econometric tools used to estimate models of industry competition.
2. Analytic skills that can be used to predict the impact of outside interventions on consumer welfare, profits and other market outcomes.
3. Programming skills useful in modeling industry competition.
4. Ability to follow and critically evaluate current research literature in the area of empirical industrial organization.

Assessment: There will be two home assignments, each contributing 30% to the final grade. Each student will present a paper (20%) and submit a referee report (20%).

Prerequisites: Students must have completed at least the first-year MA sequence of microeconomics and econometrics. Prior knowledge of advanced econometrics (the method of maximum likelihood and the generalized method of moments) and programming experience

are a plus (for those who are new to programming in Stata and Matlab we will have an overview session).

Reading List and Course Schedule:

Overview papers:

- Ackerberg, D., L. Benkard, S. Berry, and A. Pakes, "Econometric tools for analyzing market outcomes," *Handbook of Econometrics*, vol. 6 (2007).
- Reiss, P., and F. Wolak, "Structural econometric modeling: Rationales and examples from industrial organization," *Handbook of Econometrics*, vol. 6 (2007).

We will follow the reading list spending approximately one class per paper (excluding the overview papers).

1. Production functions
   - Griliches, Z., and J. Mairesse, "Production functions: The search for identification," *NBER Working Paper No. 5067* (1995).
   - Klette, T., and Z. Griliches, "The inconsistency of common scale estimators when output prices are unobserved and endogenous," *Journal of Applied Econometrics*, 11 (1996).
   - Olley, G., and A. Pakes, "The dynamics of productivity in the telecommunications equipment industry," *Econometrica*, 64 (1996).
   - Levinsohn, J., and A. Petrin, "Estimating production functions using inputs to control for unobservables," *Review of Economic Studies*, 70 (2003).
   - Ackerberg, D., K. Caves, and G. Frazer, "Structural identification of production functions," unpublished manuscript, (2006).
   - Blundell, R., and S. Bond, "GMM estimation with persistent panel data: An application to production functions," *Econometric Reviews*, 19 (2000).
2. Models of demand and their applications
   - Porter, R., "A study of cartel stability: The Joint Executive Committee, 1880–1886," *Bell Journal of Economics*, 14 (1983).
   - Bresnahan, T., "Competition and collusion in the American automobile industry: The 1955 price war," *Journal of Industrial Economics*, 35 (1987)
   - Nevo, A., "A practitioner's guide to estimation of random-coefficients logit models of demand," *Journal of Economics & Management Strategy*, 9 (2000)
   - Berry, S., J. Levinsohn, and A. Pakes, "Automobile prices in market equilibrium," *Econometrica*, 63 (1995).

- Berry, S., "Estimating Discrete-choice Models of Product Differentiation," *RAND Journal of Economics*, 25 (1994).
- Nevo, A., "Measuring market power in the ready-to-eat cereal industry," *Econometrica*, 69 (2001).
- Nevo, A., "Mergers with differentiated products: The case of the ready-to-eat cereal industry," *RAND Journal of Economics*, 31 (2000).
- Petrin, A., "Quantifying the benefits of new products: The case of the minivan," *Journal of Political Economy*, 110 (2002).

3. Static Models of Market Entry

- Berry, S., and P. Reiss, "Empirical models of entry and market structure," *Handbook of Industrial Organization*, vol. 3 (2007).
- Bresnahan, T., and P. Reiss, "Entry and competition in concentrated markets," *Journal of Political Economy*, 99 (1991).
- Berry, S., "Estimation of a model of entry in the airline industry," *Econometrica*, 60 (1992).
- Mazzeo, M., "Product choice and oligopoly market structure," *RAND Journal of Economics*, 33 (2002).
- Seim, K., "An empirical model of firm entry with endogenous product-type choices," *RAND Journal of Economics*, 37 (2006).
- Syverson, C., "Market structure and productivity: A concrete example," *Journal of Political Economy*, 112 (2004).

4. Industry Dynamics

- Caves, R., "Industrial organization and new findings on the turnover and mobility of firms," *Journal of Economic Literature*, 36 (1998).
- Dunne, T., M. Roberts, and L. Samuelson "Patterns of firm entry and exit in U.S. manufacturing industries," *RAND Journal of Economics*, 19 (1988).
- Dunne, T., M. Roberts, and L. Samuelson "The growth and failure of U.S. manufacturing plants," *Quarterly Journal of Economics*, 104 (1989).
- Jovanovic, B., "Selection and the evolution of industry," *Econometrica*, 50 (1982).
- Hopenhayn, H., "Entry, exit, and firm dynamics in long run equilibrium," *Econometrica*, 60 (1992).
- Rust, J., "Optimal replacement of GMC bus engines: An empirical model of Harold Zurcher," *Econometrica*, 55 (1987).
- Ericson, R., and A. Pakes, "Markov-perfect industry dynamics: A framework of empirical work," *Review of Economic Studies*, 62 (1995).

- Doraszelski, U., and A. Pakes "A framework for dynamic analysis in IO," *Handbook of Industrial Organization*, vol. 3 (2007).
- Bajari, P., L. Benkard, and J. Levin, "Estimating dynamic models of imperfect competition," *Econometrica*, 75 (2007).
- Pakes, A., M. Ostrovsky, and S. Berry, "Simple estimators for the parameters of discrete dynamic games," *RAND Journal of Economics*, 38 (2007).
- Aguirregabiria V., and P. Mira, "Sequential estimation of dynamic discrete games," *Econometrica*, 75 (2007).