

**ECON 8757-001 INDUSTRIAL ORGANIZATION AND PUBLIC POLICY****Empirical Methods in Industrial Organization**

Instructor: Professor Scott James Savage

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Class time and location: TTH 9.30 to 10.45pm, ECON 5

**Course Description**

Industrial organization studies firm behavior in markets where the assumptions of perfect competition do not hold. The focus is on the firm's choice of price, quantity of output, product variety, quality and market entry, and how public policy is used to promote competitive outcomes and control market power.

This course introduces the fundamental methods required to do empirical research in industrial organization. The course will be taught with formal lectures, the discussion of papers that emphasize relevant empirical issues and methods, and with regular problem sets in applied econometrics and empirical industrial organization. Theoretical work will also be discussed to show how theories can be tested and how theoretical models can be developed into empirical models to estimate structural parameters.

By the end of the course, you will be able to use Stata/Mata to estimate a standard oligopoly model of price competition in a differentiated products market. Model estimates can be used to recover marginal costs, estimate market power, conduct horizontal and vertical merger analyses, test different pricing assumptions, and to examine the effects of technology change, regulations, subsidies, and tariffs, etc. on equilibrium prices, demand, and welfare.

**Class requirements and office hours**

The class meets Tuesday and Thursday from 9.30 to 10.45am. You are required to keep up with the weekly course readings and come to class prepared for lectures and the discussion of material with your classmates.

The spring term will begin on January 11 with fully remote instruction for the first two weeks of the semester. See Canvas for the Zoom link.

There will be no in-person office hours this semester. Virtual office hours will be held on Tuesday and Thursday from 2.15 to 3.45pm. Please email your carefully written questions and I will answer them by email and, if necessary, organize a Zoom call.

**Assessment**

Your grade will be based on the following assessments: class preparation (30 percent); class presentation (10 percent); problem sets (30 percent); and exams (30 percent).

*Class preparation:* We will discuss about ten papers during the semester. Please read the assigned paper each week and come to class prepared for discussion. To help you organize your thoughts, please prepare a summary of the paper of two pages or fewer and submit the summary for assessment. In your summary, you will need to state the research question, explain why the question is important to industrial organization (and economics in general), briefly explain the estimation approach and data, and outline what you think are the most interesting aspects of the paper. See page 8 below for specific guidance. I will collect all your summaries during the semester and grade six.

*Class presentation:* Each student will be required to present one of the ten papers mentioned above to the class and will lead the discussion.

*Problem sets:* You are required to complete one problem set about every two weeks for a total of seven during the semester. The lowest scoring problem set will be dropped from your final grade. Typically, each problem set will require you to use Stata/Mata to execute econometric procedures to address an industrial organization question. You will also have to interpret your findings and sometimes answer some theoretical and/or conceptual questions.

*Exams:* There will be one mid-term exam on Tuesday, March 1 during class. There will also be one take-home final exam to be completed during April 30 to May 4.

There will be no make up for late submissions unless there is an unusual circumstance that is discussed with the instructor. If you aware of any problems that may hinder your performance in the class, please discuss with me sooner than later. Please feel free to form study groups to review and discuss lecture/reading material, but you must submit your own individual work for grading. If you work with classmates on assignments, please list the names of these persons on the front page of your submitted work.

### **Proposed topics**

The proposed topics for this semester are:

- Introduction to Empirical Industrial Organization
- Consumer Demand
- Firm Conduct
- Market Entry and Competition
- Product Quality
- Economic and Policy Applications

### **Readings**

#### *General references*

The course will help you develop the empirical skills needed to research interesting questions in industrial organization and related fields, e.g., energy, trade, transport. I assume that you have the appropriate micro and econometrics skills to complete the



Savage, S., and Waldman, D. 2008. "Learning and Fatigue During Choice Experiments: A Comparison of Online and Mail Survey Modes," *Journal of Applied Econometrics*, 23(3), 351-371.

Firm Conduct

*Homogenous products*

Bresnahan, T. 1982, "Th

Market Entry and Competition

- Berry, S., and Waldfogel, J. 1999. "Free Entry and Social Inefficiency in Radio Broadcasting." *Rand Journal of Economics*, 30(3), 397-420.
- Bresnahan, T., and Reiss, P. 1991. "Entry and Competition in Concentrated Markets." *Journal of Political Economy*, 99(5), pp. 977-1009.
- Bresnahan, T., and Reiss, P. 1990. "Entry in Monopoly Markets." *Review of Economics Studies*, 57(4), 531-553.
- Manuszak, M., and Moul, C., 2008, "Prices and Endogenous Market Structure in Office Supply Superstores." *The Journal of Industrial Economics*, 56, 94-112.
- Mazzeo, M. 2002. "Product Choice and Oligopoly Market Structure." *Rand Journal of Economics*, 33(2), 221-242.
- Toivanen, O., and Waterson, M. 2005. "Market Structure and Entry: Where's the Beef?" *Rand Journal of Economics*, 36(3), 680-699.
- Xiao, M., and Orazem, P. 2011. "Does the Fourth Entrant Make Any Difference? Entry and Competition in the Early U.S. Broadband Market." *International Journal of Industrial Organization*

- Olivares, M., and Cachon, G. 2009. "Competing Retailers and Inventory: An Empirical Investigation of General Motors' Dealerships in Isolated U.S. Markets." *Management Science*, 55(9), 1586–1604.
- Prince, J., and Simon, D. 2015. "Do Incumbents Improve Service Quality in Response to Entry? Evidence from Airlines' On-Time Performance." *Management Science*, 61(2), 372-390.

#### Economic and Policy Applications

- Bonnet, C., and P. Dubois. 2010. "Inference on Vertical Contracts between Manufacturers and Retailers Allowing for Nonlinear Pricing and Resale Price Maintenance." *RAND Journal of Economics*, 41(1), 139-164.
- Chu, Chenghuan S. 2010. "The Effect of Satellite Entry on Cable Television Prices and Product Quality." *RAND Journal of Economics*, 41(4), 730-764.
- Crawford, G. 2000. "The Impact of the 1992 Cable Act on Household Demand and Welfare." *RAND Journal of Economics*, 31(3), 422–49.
- Crawford, G., Lee, R., Whinston, M., and Yurukoglu, A. 2018. "The Welfare Effects of

**Guide for paper summary**

We will discuss about ten papers during the semester. Please prepare a one-to-two-page summary for the designated paper that considers the following questions:

1. What is the research question and why is it interesting?
2. What theory is related to the question and what is the empirically testable implication of the theory?
3. Which market/industry is studied? Do the results generalize to other industries?
4. How were the data obtained, e.g., experimental and/or observational, public availability, single vs. multiple data sources, etc.?
5. Describe the dependent variable and the important independent variable(s) of interest. State the parameter(s) of interest and describe how it relates to theory.
6. How is the parameter(s) of interest identified (i.e., how does the study use information from the sample data to estimate the population parameter of interest)? Can you think of alternative means of identification?
7. Interpret the estimated parameter(s) of interest.
8. Are there plausible alternative interpretations of the estimated parameter(s)?
9. Do the findings from the study have public policy implications?
10. What have you learned from the paper? What did you like and/or dislike about the paper (*this is especially important: I am interested in your personal views*)?