

Economics 1644

Market Power in the New Economy

Mondays 9-11:45, Harvard Hall 101

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Syllabus (*Tentative!*)

1 Course Description

This course studies firms, markets and competition, in the context of today's (globalized) world. Nowadays, in several markets, a handful of firms interact strategically and compete in numerous dimensions, including prices, products offered, advertising and investment. We will use formal models in order to address questions like: Why are markets organized the way they are? How does market organization affect firm behavior, such as firm production or pricing? How does the behavior of firms in turn affect the market structure? How does government policy shape firm behavior and market structure? What is the impact on welfare? Through the use of both theory and data, we will attempt to answer these questions.

The course will proceed in three parts. We will first tackle decentralized markets; i.e. markets where many small firms compete in an ad hoc fashion (e.g. taxis, oceanic shipping, real estate). A recent and growing phenomenon in this setup is the emergence of platforms, such as Uber and Lyft, Uber Freight, Airbnb, etc. We will discuss their impact on markets and societal welfare.

Then, we will introduce key concepts from the field of Industrial Organization in order to study oligopolistic markets. Through the use of models (mainly game theory) but also empirical analysis, we will explore the strategic interactions between firms and the impact of market power on society. Using these tools, we will study collusion and mergers. We will rely on game theory to analyze the strategic environment under study.

Finally, we will study market power in global markets. Recently, governments around the world are engaging in industrial policy (e.g. Made in China 2025). What are the rationales behind these initiatives? Are they effective? What is their impact on both domestic and global societal welfare? In this last part of the course we will focus on the role of governments in shaping global competition.

The goal of this class is to get you engaged in topics of current interest and heated policy debates; “what is market power and how does it affect the world?”, “how has uber changed transportation?”,

“does industrial policy work?” but also to get you to think about these questions through the rigorous lens of an economist armed with a good combination of formal modeling and empirical tools.

Prerequisites Intermediate microeconomics (Ec1010a or 1011a), multivariable calculus (differentiation) and statistics. All students should be comfortable using basic calculus to solve problems. We will not use a great deal of math, but we will use a little math a great deal. Students are also expected to have experience with data manipulation and prior exposure to econometrics is very useful.

Website The Canvas course website will be used to post announcements and problem sets.

<https://canvas.harvard.edu/courses/131684>

I may also contact you via email regarding course information.

Textbook and Readings The course will rely heavily on material presented in class (slides and other notes). I will post the slides on Canvas after each lecture.

The textbook followed most closely at certain parts of this course is,

- “Industrial Organization, A Strategic Approach”, by Church and Ware. It is available free in PDF format at <http://homepages.ucalgary.ca/~jrchurch/page4/page5/page5.html>

I will also assign HBS Cases from the Harvard Business Publishing, which I will make available on Canvas. We will cover the following cases (*please note that this is tentative and subject to change!*)

- Case 9-718-481, “Walmart Inc. Takes on Amazon.com” by D. Collins, A. Wu, R. Koning and H.C. Sun
- Case 9-316-101, “Uber: Changing the Way the World Moves” by Y. Moon
- Case 5-620-034, “Innovation at Uber: The Launch of Express POOL” by C. Farronato and S. Mehta
- (*Tentative*) Case 2044.0, “Airlines and Antitrust: Scrutinizing the American Airlines-US Airways Merger” by D.C. Bok and A. Datla

Two other useful textbooks are:

- Luis Cabral, Introduction to Industrial Organization, 2ed (MIT Press), which is available at Coop
- Jean Tirole, The Theory of Industrial Organization (Second Edition), MIT Press, 2000.

TFs and Office Hours The TF for this class is Stephanie Kastelman (skestelman@g.harvard.edu). She will hold office hours, as well as occasional sections. I will hold office hours on Wednesdays, 11:30-12:30pm. Please use this link to sign up for a slot.

2 Course Requirements

The course requirements for the class are as follows (the weight of each requirement is still tentative):

1. Problem sets (total 60%): We will work through *about* 6 problem sets and 4 HBS cases; one of the problem sets will be empirical (all tentative!). Problem sets are a critical component of the course. Extensions to problem sets can only be granted if you have a letter from your Dean or the Health Services. Extensions on assignments related to cases cannot be granted once we have gone over the case in class.

Team work is encouraged in certain homework assignments (it will be clearly denoted on the problem set); learning from your peers is an important aspect of overall learning. However problem set solutions should be written up individually. To receive credit you must clearly write your name, as well as the names of the students you worked with. Identical write-ups will be treated as a violation of academic integrity and receive zero points. Similarly, in problems which require mathematical solutions, points will be deducted if you do not show how you arrived at the solution and explain your steps. Solving or at least trying to solve the assignments is the key to understand the material and also to perform well in exams (ancient wisdom).

In lieu of a Midterm, one of the assignments will carry weight 20% of your grade. You are not allowed to cooperate with fellow students for this one problem set. The remaining problem sets carry a weight of 40%.

Here is a *tentative* schedule of the assignments; this is more speculative for the later dates (I will try to update this as we go):

- (a) Amazon vs. Walmart Case: discussed 2nd week of class.
 - (b) Problem set 1 (monopoly): due 3rd or 4th week of class.
 - (c) Uber Case: discussed around the 5th week of class.
 - (d) Problem set 2 (bargaining): due around the 6th week of class.
 - (e) Uber Pool Case: discussed around the 7th or 8th week of class.
 - (f) Empirical problem set on taxi and ride-hail data.
 - (g) Merger Case: discussed around the 10th or 11th week of class.
 - (h) Problem set 3 (oligopolies): due around the 10th week of class.
 - (i) Problem set 4 (collusion): due around the 12th week of class.
 - (j) Problem set 5 (strategic trade): due after the end of class.
2. Class participation (10%): you are strongly encouraged to participate in class with your questions and comments. From time to time I will assign readings/cases, in which case you are particularly expected to engage in class discussion.
 3. Final (30%): the final will be inclusive of the entire material. No makeup exams will be held. Please ensure that you will be available on the exam dates.

Academic Integrity Students are advised to familiarize themselves with the Harvard College Honor Code (<http://honor.fas.harvard.edu/>).

All materials for this course are for personal use only; they may not be posted online or shared without permission.

3 Course Outline and Readings (Tentative!)

Following is a sketch of topics we are likely to cover (in sequence). When relevant, I note the corresponding chapters from Church and Ware (CW) or other material. Modifications are likely along the way. “*” denotes optional reading.

1. Introduction and review of monopoly and perfect competition (about 2 lectures)

- CW Chapters 2, 3 (up to page 62), 4.1
- Case 9-718-481, “Walmart Inc. Takes on Amazon.com” by D. Collins, A. Wu, R. Koning and H.C. Sun

2. Decentralized Markets and Online Platforms (about 5-6 lectures)

- Case 9-316-101, “Uber: Changing the Way the World Moves” by Y. Moon
- Case 5-620-034, “Innovation at Uber: The Launch of Express POOL” by C. Farronato and S. Mehta
- *Branaccio G., Kalouptsi M. and T. Papageorgiou, 2020, “Geography, Transportation and Endogenous Trade Costs”, *Econometrica*
- *Frechette G., A. Lizzeri and T. Salz. 2020. “Frictions in a Competitive Regulated Market: Evidence from Taxis”, *American Economic Review*
- *Buchholz, N., 2020, “Spatial Equilibrium, Search Frictions and Dynamic Efficiency in the Taxi Industry”, Mimeo Princeton University
- *Graddy, K., 1995, “Testing for Imperfect Competition at the Fulton Fish Market,” *The RAND Journal of Economics*.

3. Game Theory and Oligopolies (about 4 lectures)

(a) Game theory review

- CW Chapters 7, 9

(b) Classic oligopoly models: Cournot, Bertrand, Stackelberg, Firm entry

- CW Chapters 8, 9, 13.2

(c) Collusion

- CW Chapter 10
- Ivaldi, M., Jullien, B., Rey, P., Seabright, P., and Tirole, J., “Economics of Tacit Collusion,” Final Report for DG Competition, European Commission, 2003.

- *Porter R.H., 1983, “A Study of Cartel Stability: The Joint Executive Committee: 1880-1886”, The Bell Journal of Economics, 14(2).

(d) Mergers, Vertical Relations

- CW Chapters 22, 23
- Case 2044.0, “Airlines and Antitrust: Scrutinizing the American Airlines-US Airways Merger” by D.C. Bok and A. Datla

4. Market Power in International Markets (about 1-2 lectures)

(a) Strategic Investment and Entry Deterrence

- CW Chapters 13.3, 15, 16

(b) Strategic Trade

- Brander, J., 1995, “Strategic Trade Policy”, Handbook of International Economics

(c) Industrial Policy: Rationales, Policy debate

- World Trade Report, 2006, “Exploring the links between subsidies, trade and the WTO”