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Economics 349
Industrial Economics
Fall 2021

This is an advanced undergraduate course in industrial organization. We will study the behavior of firms and the structure of markets. The first goal is to apply microeconomic theory to understand when and how firms exercise market power, and the impact of market power on market efficiency and consumer welfare. The second goal is to apply these insights to analyze antitrust cases.

The text for this course is by Luis Cabral, *Introduction to Industrial Organization*, 2nd edition, MIT Press, 2017 (ISBN: 978-0-262-03594-1). This book provides a description of the basic theory and it contains many illustrative examples. The level of the exposition is similar to that of the class lectures. Readings on several of the antitrust cases discussed in class can be found in *The Antitrust Revolution*, edited by John Kwoka and Lawrence White, 7th edition, Oxford, 2019 (ISBN: 978-0-190-66885-3), as well as some earlier editions of Kwoka & White. Many Kwoka & White cases and some additional readings will be posted on Canvas.

There will be weekly problem sets. Problem sets must be submitted by 11 am on their due dates, via Crowdmark. Late problem sets will not be accepted. You may work in groups on problem sets, and turn in your answers as a group, as long as the group has no more than three people. Discussing problem sets with other groups is allowed and encouraged, but problem sets are meant to be reflective of each group's work. Copying another group's assignment, permitting another group to copy from your assignment, or jointly writing up answers across groups will result in no credit for the entire assignment for all involved students. Furthermore, dividing up problem set questions across students is discouraged. Problem sets are intended to help you study the material and to learn important skills, and skipping a problem entirely will be detrimental to your learning.

There will be one midterm exam and a final exam. The midterm will be during class time on Monday, October 25. The final is scheduled for Thursday, December 9 at 3pm. The final will be cumulative and cover material from the entire quarter, but it will emphasize material covered after the midterm. Both exams will be in person, and open book and open notes. The approximate weighting scheme for the final grade will be:

Problem Sets	25%
Midterm Exam	30%
Final Exam	45%

Any student who misses the midterm or final without a good reason will receive no credit for the exam. Medical reasons require written confirmation from the Student Health service or your doctor. Non-medical reasons require a written excuse from the WCAS Office of Studies. A makeup for the midterms will be permitted only if there is a good reason for missing the exam. Suspicion of academic dishonesty will be immediately referred to the Dean's office.

Any student requesting accommodations related to a disability or other condition is required to register with AccessibleNU (accessiblenu@northwestern.edu; 847-467-5530) and provide professors with an accommodation notice from AccessibleNU, preferably within the first two weeks of class. All information will remain confidential.

The Teaching Assistant for the course is Eilidh Geddes, eilidhgeddes2022@u.northwestern.edu. Eilidh will hold a discussion section each week, on Fridays at 9:30, in which she will discuss the problem sets, review class material and cover some supplemental material.

The plans for how the course will be run are described below. However, we may modify various aspects, depending on campus restrictions, as well as feedback we receive from you and our own evaluations. We always welcome feedback on how to improve the course, and your feedback is especially welcome this year.

All lectures and discussion sections will be conducted in person, and attendance is strongly recommended. Current university guidelines stipulate that students must wear masks in class, but instructors may remain unmasked while teaching as long as they do not have close contact with others. Office hours will be conducted as open Zoom sessions where all students attending office hours are admitted to the ongoing session. Office hours will not be recorded. If you would like a private meeting, either in person or via Zoom, this can be arranged by appointment with either myself or Eilidh. Links to office hours will be posted on Canvas.

I will post copies of the slides used during lectures before the topics are covered in class. You may find it useful to download or print out hard copies of the lecture slides before attending lectures in order to review the material in advance and/or to take notes during the lecture. The slides contain material that will be covered in class, as well as supplemental material, some of which will be covered in class. I plan on annotating the slides while I lecture, and the annotated slides will also be posted on Canvas after the lecture. As far as exams are concerned, you are only responsible for the material covered in class.

Course Outline

Class discussion will cover the following topics. The chapters and cases referred to are those in Cabral and Kwoka & White (KW).

1. Introduction

Cabral, Chapter 1

H. Boushey and H. Knutson, "The Importance of Competition for the American Economy," Council of Economic Advisors, July 2021.

S. Berry, M. Gaynor and F. Scott Morton, "Do Increasing Markups Matter? Lessons from Empirical Industrial Organization," *Journal of Economic Perspectives*, 2019.

N. Lamoreaux, "The Problem of Bigness: From Standard Oil to Google," *Journal of Economic Perspectives*, 2019.

- C. Shapiro, “Antitrust in a Time of Populism,” *International Journal of Industrial Organization*, 2018.
- C. Shapiro, “Protecting Competition in the American Economy: Merger Control, Tech Titans, Labor Markets,” *Journal of Economic Perspectives*, 2019.
- “What More Should Antitrust be Doing?” *Economist*, August 8, 2020.
- “Anti-trust in me: Can the federal bureaucracy resuscitate market dynamism in America?” *Economist*, July 15, 2021.
2. Cost Functions and Perfect Competition
Cabral, Chapters 3 and 4
3. Monopoly
Cabral, Chapter 5
4. Market Definition and Durable Goods
“Horizontal Merger Guidelines,” US Department of Justice and Federal Trade Commission, 2010, Sections 3 and 4.
- L. Benkard, A. Yurukoglu and A. Zhang, “Concentration in Product Markets,” mimeo, Stanford, 2021.
5. Price Discrimination
Cabral, Chapter 6
“For the First Time, Cubs are Offering a Cheap-Seat Lottery at Wrigley. It’s a Smokescreen,” *Chicago Tribune*, April 8, 2018.
“Luxury’s Gray Market is Emerging from the Shadows,” *NY Times*, August 24, 2021.
6. Oligopoly Competition with Homogeneous Products
Cabral, Chapter 8
7. Oligopoly Competition with Differentiated Products
Cabral, Chapter 14, Sections 1 and 2
8. Collusion and Pricing in Repeated Games
Cabral, Chapter 9
KW (6th edition) Case 11: “Global Cartels Redux: The Lysine Antitrust Litigation (1996)”
KW (5th edition) Case : “Bidding, Bid Rigging, and School Milk Prices: Ohio v. Trauth (1994)”
KW (3rd edition) Case : “Rapid Communication and Price Fixing: The Airline Tariff Publishing Company Case”
A. Barkley, “The Human Cost of Collusion: Health Effects of a Mexican Insulin Cartel,” mimeo, Melbourne, 2021.
E. Calvano, G. Calzolari, V. Denicolò and S. Pastorello, “Artificial Intelligence, Algorithmic Pricing and Collusion,” *Vox*, 2019.
W. Christie and P. Schultz, “Did Nasdaq Market Makers Implicitly Collude?” *Journal of Economic Perspectives*, 1995.

- C. Sullivan, “Split Apart: Differentiation, Diversion, and Coordination in the Market for Superpremium Ice Cream,” AEA Papers and Proceedings, 2020.
- “Chicken Industry Executives, Including Pilgrim’s Pride CEO, Indicted on Price-Fixing Charges,” Wall Street Journal, June 3, 2020.
- “Former Bumble Bee CEO is Sentenced in Tuna Price-Fixing Scheme,” NY Times, June 16, 2020.
- “Teva Pharmaceutical’s U.S. Unit Indicted on Price-Fixing Charges,” Wall Street Journal, August 25, 2020.
- “Your Steak is More Expensive, but Cattle Ranchers are Missing Out,” NY Times, June 23, 2021.

9. Product Differentiation

Cabral, Chapter 14, Section 2

10. Entry and Market Structure

Cabral, Chapters 10 and 12

- KW Case 16: “Predatory Pricing in the Airline Industry: Spirit vs. Northwest (2005)”
- “Slack Accuses Microsoft of Illegally Crushing Competition,” NY Times, July 2020.

11. Horizontal Mergers

Cabral, Chapter 11

- “Horizontal Merger Guidelines,” US Department of Justice and Federal Trade Commission, 2010.
- KW Case 6: “The Proposed Merger of AT&T and T-Mobile: Rethinking Possible (2011)”
- KW Case 8: “Rockonomics: The Ticketmaster-Live Nation Merger and the Rock Concert Business (2010)”
- KW Case 9: “Prices, Market Definition and the Effects of Merger: Staples, Office Depot and Office Max”
- KW Case 19: “End of an Era: The American Airlines-US Airways Merger (2014)”
- M. Gaynor, “Examining the Impact of Health Care Consolidation,” Statement before the Committee on Energy and Commerce Oversight and Investigations Subcommittee, U.S. House of Representatives, 2018.
- R. Pittman, “Merger Law and Enforcement in the United States,”
- E. Prager and M. Schmitt, “Employer Consolidation and Wages: Evidence from Hospitals,” American Economic Review, 2021.
- “Hospital Mergers Improve Health? Evidence Shows the Opposite,” NY Times, February 11, 2019.
- “When Hospitals Merge to Save Money, Patients often Pay More,” NY Times, November 14, 2018.

12. Vertical Price Restraints and Vertical Mergers

Cabral, Chapter 13

- “Vertical Merger Guidelines,” US Department of Justice and Federal Trade Commission, 2020.
- KW (6th edition) Case 17: “A Vertical Merger in the Video Programming and Distribution Industry: Comcast-NBCU (2011)”

- KW Case 20: “Cartel Ringmaster or Competition Creator? The Ebooks Case against Apple (2013)”
- J. Ale-Chilet and J.P. Atal, “Countervailing Market Power and Consumer Surplus: An Empirical Examination,” AEA Papers and Proceedings, 2020.
- J. Asker and H. Bar-Isaac, “Advertising and Related Restraints,” CPI, 2018.
- G. Crawford, R. Lee, M. Whinston and A. Yurukoglu, “Effects of Vertical Mergers in Multichannel TV Markets: Evidence from Regional Sports Programming,” Microeconomic Insights, 2019.
- R. Habash, S. Tenn and O. Farooque, “5 Things to Expect in Vertical Merger Reviews,” CRA, May 22, 2020.
- E. Hovenkamp and N. Sukhatme, “Vertical Mergers and the MFN Thicket in Television,” CPI, 2018.
- C. Shapiro, “Vertical Mergers and Input Foreclosure Lessons from the AT&T/Time Warner Case,” Review of Industrial Organization, 2021.
- “How Apple’s 30% App Store Cut Became a Boon and a Headache,” NY Times, August 14, 2020.
- “Judge Orders Apple to Loosen App Store Restrictions in Mixed Verdict,” Wall Street Journal, September 10, 2021.

13. Research and Development and Innovation

Cabral, Chapter 15

- KW Case 15: “Pharmaceutical Patents and Pay-for-Delay: Actavis (2013)”
- E. Argentesi, P. Buccirosi, E. Calvano, T. Duso, A. Marrazzo and S. Nava, “Tech-Over: Mergers and Merger Policy in Digital Markets,” Vox, 2020.
- L. Cabral, “Merger Policy in Digital Industries,” Information Economics and Policy, 2021.
- C. Caffarra, G. Crawford and T. Valletti, “How Tech Rolls: Potential Competition and Reverse Killer Acquisitions,” Vox, 2020.
- C. Cunningham, F. Ederer and S. Ma, “Killer Acquisitions,” Journal of Political Economy, 2021.
- M. Katz, “Big Tech Mergers: Innovation, Competition for the Market, and the Acquisition of Emerging Competitors,” Information Economics and Policy, 2021.
- F. Scott Morton and D. Dinielli, “Roadmap for a Digital Advertising Monopolization Case Against Google,” May 2020.
- F. Scott Morton and D. Dinielli, “Roadmap for a Monopolization Case Against Google Regarding the Search Market,” June 2020.
- F. Scott Morton and D. Dinielli, “Roadmap for an Antitrust Case Against Facebook,” June 2020.
- “Collusion and Collisions: The New Rules of Competition in the Technology Industry,” Economist, February 27, 2021.