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Economics 349  
Industrial Economics  
Fall 2024

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 policy.

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 describes the basic theory and it contains many illustrative examples. 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, as well as some earlier editions of Kwoka & White. Many Kwoka & White cases and some additional readings will be posted on the course Canvas site. I will also post some cases from *Antitrust Economics at a Time of Upheaval: Recent Competition Policy Cases on Two Continents*, edited by Kwoka, Tommaso Valletti, and White, CPI, 2023.

There will be weekly problem sets. Problem sets must be submitted by 9:30 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.

The class on Monday, November 25 will involve a discussion of some prominent recent antitrust cases. Potential cases are listed in Section 14 of the Course Outline, and some will be selected for the class discussion. The goal is to consider how the economic arguments in the case involve concepts covered in the course. You will be expected to prepare for the class, and your participation in the discussion will be graded.

There will be one midterm exam and a final exam. The midterm will be held during class time on Monday, October 28. The final is scheduled for Thursday, December 12 at 3pm. The final will be cumulative and cover material from the entire quarter, but the emphasis will be on material covered after the midterm. Both exams will be in person. You may refer to one page of notes during the exams, double sided, but not to any other material, nor to any electronic device. The approximate weighting scheme for the final grade will be:

Problem Sets	20%
Case Discussion	5%
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. Makeup exams for the midterm 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.

This course follows the [Northwestern University Syllabus Standards](#). Students are responsible for familiarizing themselves with this information.

The Teaching Assistant for the course is Rosario Cisternas, rcisternas@u.northwestern.edu. Rosario 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 feedback we receive from you and our own evaluations. We always welcome feedback on how to improve the course.

All lectures and discussion sections will be conducted in person, and attendance is strongly recommended. Office hours will also be in person. Meetings outside of office hours, either in person or via Zoom, can be arranged by appointment with either myself or Rosario.

I will post copies of the lecture slides before the topics are covered in class. You may find it useful to download the slides before attending lectures in order to review the material in advance and/or to take notes during the lecture. I will distribute paper copies of the slides to those who request them. The slides contain material that will be covered in class, as well as supplemental material, some of which may 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 the 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, Kwoka and White (KW) and Kwoka, Valletti, and White (KVW).

#### 1. Introduction

Cabral, Chapter 1

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

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

- N. Lamoreaux, “The Problem of Bigness: From Standard Oil to Google,” *Journal of Economic Perspectives*, 2019.
- C. Shapiro, “Protecting Competition in the American Economy: Merger Control, Tech Titans, Labor Markets,” *Journal of Economic Perspectives*, 2019.

## 2. Cost Functions and Perfect Competition

Cabral, Chapters 3 and 4

## 3. Monopoly

Cabral, Chapter 5

## 4. Market Definition and Durable Goods

“Merger Guidelines,” US Department of Justice and Federal Trade Commission, 2023, Sections 4.3 and 4.4.

L. Benkard, A. Yurukoglu, and A. Zhang, “Concentration in Product Markets,” mimeo, Stanford, 2023.

C. Shapiro and A. Yurukoglu, “Trends in Competition in the United States: What Does the Evidence Show?” mimeo, Stanford, 2024, Section 2.

## 5. Price Discrimination

Cabral, Chapter 6

“Luxury’s Gray Market is Emerging from the Shadows,” *NY Times*, August 24, 2021.

“Head’s Up: A Better Movie Seat May Cost You,” *NY Times*, March 5, 2023.

“Unhappy Hour: U.K. Pubs Adopt Surge Pricing for Pints,” *NY Times*, September 13, 2023.

## 6. Oligopoly Competition with Homogeneous Products

Cabral, Chapter 8

## 7. Oligopoly Competition with Differentiated Products

Cabral, Chapter 14, Sections 1 and 2

L. Davis, S. McRae, and E. Seira, “Does Station Competition Drive Gas Prices?” *Energy Institute Blog*, December 11, 2023.

## 8. Collusion and Pricing in Repeated Games

Cabral, Chapter 9

KW (5<sup>th</sup> edition) Case 12: “Bidding, Bid Rigging, and School Milk Prices: *Ohio v. Trauth* (1994)”

KW (3<sup>rd</sup> edition) Case 13: “Rapid Communication and Price Fixing: The *Airline Tariff Publishing Company Case*”

- KVW Case 17: “No-Poaching Agreements as Antitrust Violations: Animation Workers Antitrust Litigation”
- W. Christie and P. Schultz, “Did Nasdaq Market Makers Implicitly Collude?” *Journal of Economic Perspectives*, 1995.
- R. Clark and D. Ershov, “Algorithmic Pricing and Competition,” *Antitrust Chronicle*, 2023.
- E. Cuddy, R. Porter, A. Starc, and T. Wollmann, “Entry Barriers, Personal Relationships, and Cartel Formation: Generic Drugs in the United States,” *Northwestern*, 2024.
- M. Kim, R. Mansley, N. Miller, M. Remer, and M. Weinberg, “Price-Fixing Allegations in the Canned Tuna Industry: A Look at the Data,” *Antitrust Bulletin*, 2023.
- C. Sullivan, “Split Apart: Differentiation, Diversion, and Coordination in the Market for Superpremium Ice Cream,” *AEA Papers and Proceedings*, 2020.
- “The Ice Cream Conspiracy,” *Planet Money* podcast, February 6, 2023.
- “Your Steak is More Expensive, but Cattle Ranchers are Missing Out,” *NY Times*, June 23, 2021.
- “Colleges Sued Over How Aid is Calculated,” *Wall Street Journal*, January 10, 2022.

## 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)”
- KVW Case 15: “Using and Misusing Microeconomics: FTC vs. Qualcomm”
- C. Syverson, “Spatial Competition, Strategic Entry Responses, and the North Dakota Railroad War of 1905,” *NBER working paper*, 2024.

## 11. Horizontal Mergers

Cabral, Chapter 11

- “Merger Guidelines,” *US Department of Justice and FTC*, 2023.
- KW Case 6: “The Proposed Merger of AT&T and T-Mobile: Rethinking Possible (2011)”
- 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)”
- KVW Case 3: “Efficiencies, Remedies and Competition: The Sprint/T-Mobile Merger”
- KVW Case 4: “Upward Pricing Pressure in Supermarket Mergers: The UK’s Asda/Sainsbury Case”
- KVW Case 7: “Mergers and Monopsony: The Anthem-Cigna Merger”

- V. Bhattacharya, G. Illanes, and D. Silverman, “Merger Effects and Antitrust Enforcement: Evidence from US Consumer Packaged Goods,” *Northwestern*, 2024.
- N. Miller and M. Weinberg, “How the MillerCoors Joint Venture Changed Competition in U.S. Brewing,” *Microeconomic Insights*, 2017.
- N. Miller *et al*, “On the Misuse of Regressions of Price on the HHI in Merger Review,” *Journal of Antitrust Enforcement*, 2022.
- R. Pittman, “Merger Law and Enforcement in the United States.”
- E. Prager and M. Schmitt, “Competitive Labor Markets Boost Wage Growth,” *Microeconomic Insights*, 2021.

## 12. Vertical Price Restraints and Vertical Mergers

Cabral, Chapter 13

- “Merger Guidelines,” US Department of Justice and FTC, 2023, Section 2.5.
- 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.
- F. Luco and G. Marshall, “Effects of Vertical Mergers on Competition: Evidence from the Carbonated Drinks Industry,” *Microeconomic Insights*, 2021.
- 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)”
- KVW Case 2: “Innovation Concerns in European Merger Control: Dow/DuPont and Bayer/Monsanto”
- L. Cabral, “Merger Policy in Digital Industries,” *Information Economics and Policy*, 2021.
- C. Cunningham, F. Ederer, and S. Ma, “Killer Acquisitions,” *Microeconomic Insights*, 2022.
- F. Scott Morton and D. Dinielli, “Roadmap for an Antitrust Case Against Facebook,” June 2020.
- L. Pepall and D. Richards, “Antitrust in the Digital Age – Google, Amazon, and What Follows,” *EconoFact Network*, 2020.
- “What’s the Matter with Madden?” *New York Times*, July 22, 2024.

## 14. Recent Antitrust Cases

U.S. v. Agri Stats, Second Amended Complaint, November 2023.

F.T.C. v. Amazon, Amended Complaint, March 2024.

U.S. v. Google, Amended Complaint, January 2021.

“U.S. v. Google: What to Know About the Biggest Antitrust Trial in 20 Years,” Wall Street Journal, September 11, 2023.

U.S. v. Google, Plaintiff’s Post-Trial Brief (redacted), February 2024.

U.S. v. Google, Closing Deck Summation, May 2024.

U.S. v. Google, Memorandum Opinion, August 2024.

F. Scott Morton and D. Dinielli, “Roadmap for a Digital Advertising Monopolization Case Against Google,” May 2020.

U.S. v. Google [Ads], Complaint, January 2023.

F.T.C. v. Illumina Grail, Commission Opinion, March 2023.

F.T.C. v. Illumina Grail, FTC Brief, August 2023.

F.T.C. v. Kroger and Albertsons, Complaint, February 2024.

F.T.C. v. Kroger and Albertsons, Pretrial Brief, July 2024.

“Kroger’s Nearly \$25 Billion Merger is Bad for Shoppers, F.T.C. Says,” NY Times, August 26, 2024.

KW Case 8: “Rockonomics: The Ticketmaster-Live Nation Merger and the Rock Concert Business (2010)”

U.S. v. Live Nation and Ticketmaster, Complaint, May 2024.

U.S. v. RealPage, Complaint, August 2024.

“Thanks to Big Data, Landlords Know How to Squeeze the Most Out of Renters,” Wall Street Journal, October 24, 2023.