

Professor Robert Porter
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Economics 349
Industrial Economics
Fall 2020

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. The midterm will be during class time on Monday, October 19. The final is scheduled for Monday, December 7 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 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 Junyan Guan, junyanguan2016@u.northwestern.edu. Junyan will hold a discussion section each week, on Fridays at 9:50, in which he will discuss the problem sets, review class material and cover some supplemental material. His office hours will be on Thursdays, 2:30-4:30.

Provisions for remote learning:

The plans for how the course will be run are described below. However, I may modify various aspects, depending on feedback I receive from you and my own evaluation. I always welcome feedback on how to improve the course, but your feedback is especially welcome this year.

All lectures, TA sessions and office hours will be conducted through Zoom. The Zoom passcode for these meetings is: econ349. Links to these events will be posted on Canvas. Lectures and TA sessions will be broadcast “live” over Zoom at the times scheduled by the registrar. These will be recorded and links to the recordings will also be posted on Canvas. Office hours will be held “live” on Zoom and will not be recorded. Office hours will be conducted as open Zoom sessions where all students attending office hours are admitted to the ongoing Zoom session. If you would like a private meeting, this can be arranged by appointment with either myself or Junyan. I will remain in the Zoom session for 10 minutes after every lecture to answer additional questions.

I will lecture by sharing the screen of an iPad that has slides that I can write on. You will be able to see my face in one of the smaller screens off to the side, along with the faces of your classmates attending the lecture. I will post copies of the slides used during lectures before the topics are covered in class. You may find it useful to 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. As far as exams are concerned, you are only responsible for the material covered in class.

I encourage you to attend the live class, if possible. Students gain a lot from listening to others’ questions and from asking clarification questions. Students attending live lectures will have their audio muted. Audio will be turned on when you ask a question or make a comment. (This helps reduce background noise.) I encourage you to keep your video on while attending live lectures, if you feel comfortable doing so. It will help me to stay engaged if I am able to see you. I hope that we will have a lot of class interaction and discussion. Junyan will co-host all lectures and help manage the class. There will be many different ways to ask a question in class. One way to ask a question will be to use the chat function. Junyan will monitor the chat. If Junyan determines that it would be useful to get an immediate answer from me to a question posed in chat, he will interrupt me. Junyan may answer some questions in chat. I plan to stop frequently to ask if there are questions, and Junyan will pose some of the chat questions in these stopping points. You may also use the “raise your hand” feature during lectures. Junyan will monitor

raised hands and may stop me if a number of hands are raised. Alternatively, I will turn first to students with raised hands whenever I pause to ask if there are any questions.

Both the midterm and the final will be administered synchronously. I will upload the tests at the scheduled starting times, and you will be responsible for uploading your answers in the allotted time. You will have one and a half hours to complete the midterm, which will be designed to take 80 minutes. Similarly, you will have 130 minutes to complete the final, which will be designed to take two hours. In both cases, the additional 10 minutes are allocated so you can upload the exam. Further delays will be penalized. If you have any logistical issues while taking a test, please email me immediately and I'll help you sort them out without incurring this penalty. Students with ANU accommodations will receive the appropriate extensions (with the same 10 minutes to upload their exams).

Students will be required to upload answers to homework and exams as pdf files. This will allow students to submit handwritten answers. If you have access to a scanner, you can use it to create a pdf of your answers once you have completed the homework or exam. If not, a number of apps exist for smart phones that will allow you to take a picture of each page of your answer and then convert the pictures into a single pdf. Junyan will post an announcement with more information about the different apps that are available. (On exams, where there is some time pressure, I recommend that everyone plan to submit pdfs of hand written answers.) You will have had the chance to upload several problem sets before you take the midterm, so everyone should have experience with the uploading process before taking an exam under some time pressure.

Recordings of Synchronous Remote Class Sessions:

This class will be recorded by the instructor for educational purposes. These recordings will be shared only with students enrolled in the course and will be deleted at the end of Fall Quarter.

Unauthorized student recording of classroom or other academic activities (including advising sessions and office hours) is prohibited. Unauthorized recording is unethical and may also be a violation of University policy and state law. Students requesting the use of assistive technology or an accommodation should contact [AccessibleNU](#).

Unauthorized use of classroom recordings –including distributing or posting them – is also prohibited. Under the University's Copyright Policy, faculty own the copyright to instructional materials – including those resources created specifically for the purposes of instruction, such as syllabi, lectures and lecture notes, and presentations. Students cannot copy, reproduce, display or distribute these materials. Students who engage in unauthorized recording, unauthorized use of a recording or unauthorized distribution of instructional materials will be referred to the appropriate University office for follow-up.

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

“Benefits of Competition and Indicators of Market Power,” Council of Economic Advisors Issue Brief, 2016.

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?”, *The Economist*, August 8, 2020.

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.

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.

6. Oligopoly Competition with Homogeneous Products

Cabral, Chapter 8

7. Oligopoly Competition with Differentiated Products

Cabral, Chapter 14, Section

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”

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,” New York Times, June 16, 2020.

9. Product Differentiation

Cabral, Chapter 14, Section

10. Entry and Market Structure

Cabral, Chapters 10 and 12

KW Case 16: “Predatory Pricing in the Airline Industry: Spirit vs. Northwest (2005)”

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. Porter, “Mergers and Coordinated Effects,” International Journal of Industrial Organization, 2020.

E. Prager and M. Schmitt, “Employer Consolidation and Wages: Evidence from Hospitals,” mimeo, Northwestern University, 2019.

“Hospital Mergers Improve Health? Evidence Shows the Opposite,” New York Times, February 11, 2019.

“When Hospitals Merge to Save Money, Patients often Pay More,” New York 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. Asjer 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.
- “How Apple’s 30% App Store Cut Became a Boon and a Headache,” New York Times, August 14, 2020.

13. Research and Development and Innovation

Cabral, Chapter 15

- KW Case 15: “Pharmaceutical Patents and Pay-for-Delay: Actavis (2013)”
- E. Argentesi, P. Buccirossi, 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, 2020.
- 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,” mimeo, Yale University, 2020.