

Industrial Organization: 461 (U/G)

The Subject. Industrial Organization is the branch of microeconomics that studies the behavior of firms and performance of markets when the conditions of the perfectly competitive model don't apply. IO addresses very "real-world" issues, both positive (explaining various practices) and normative (devising public policy, such as antitrust or regulation). To make serious headway on these applied issues one must develop the relevant theory, so I will spend considerable time on this. But I will weave in various examples from antitrust court cases, regulation, and elsewhere. The class debates (discussed below) will also focus on applications of the theory.

Topics include: sources and effects of market power; price discrimination and related practices such as tying; vertical control — contractual arrangements between firms at complementary stages (e.g. manufacturers / distributors); welfare tradeoffs from adding firms when there are fixed costs or asymmetries in firms' costs or products; oligopoly and strategic behavior towards competitors. I defer to my other course (Topics in Competition & Regulation) a deeper treatment of some core antitrust areas, such as Exclusion and Cooperation Among Competitors.

Course Requirements. Intermediate micro is a prerequisite. The grade is based on a mid-term exam (20%), final (40%), four exercises (20%), and a class debate (20%). In exceptional cases, I will give credit for class participation. I will post on Blackboard more information about the class debates. Work on the exercises in groups, but write your answers individually! Due dates:

Exercise 1	M, Sep 16 (<i>all exercises due in TA's mailbox by 5 pm sharp</i>)
Exercise 2	M, Oct 7
Mid-Term	Tr, Oct 10 (Final: Tuesday, Dec 17, 9-11)
Exercise 3	M, Oct 28
Exercise 4	M, Nov 25
Class debates	<i>Kodak</i> Nov 19, <i>iPhone</i> Nov 21, <i>CO/Star</i> Dec 3, <i>Reverse Payments</i> Dec 5

Readings. The text is: J. Church and R. Ware, *Industrial Organization: A Strategic Approach*, Irwin/McGraw-Hill 2000 ("CW"). It's out of print (being revised) but the authors have authorized free download of one copy for personal use. The book is long so print only the pages referenced below in the syllabus. The book, and an errata sheet, are available on Blackboard, and can also be downloaded from: <<http://homepages.ucalgary.ca/~jrchurch/page4/page4.html>>

Additional useful sources:

J. Tirole, *The Theory of Industrial Organization*, MIT Press, 1988, ("Tirole 1988").

D. Collins, Applied Antitrust, NYU Law School: <<http://www.appliedantitrust.com/index.htm>> (contains an excellent bibliography of antitrust cases & filings, often with web links).

J. Kwoka and L. White Eds. *The Antitrust Revolution*, Oxford U Press. The book comes in several editions, each offering useful overviews of the economics & law, and chapters on important antitrust cases. I'll reference them by the edition's # and year, e.g. "K&W 4th, 2004." A full list of the cases (many of which can be downloaded) in the various editions is available at:

<http://www.oup.com/us/companion.websites/9780195322972/cases_edition/?view=usa>

Strongly recommended readings are noted by *. All items will be on Blackboard or available on the web — many economic journals are at <www.jstor.org> accessible from any GU computer.

Approximate # of classes per topic is shown at right tab (e.g., Introduction is 1 class).

0 Introduction and Welfare Background (1)

- * CW, ch. 1 (Introduction to IO)
- * CW, ch. 2, pp. 19-29 (competitive model and welfare background)

1 Uniform Price Monopolist and Product Choice (5)

1.1 Monopoly Price, Output Restriction, and Welfare Loss (2)

- * CW, ch. 2, 29-40 (monopoly price and effects of MC and demand elasticity; welfare loss)
- D. Malueg, "Monopoly Output and Welfare: The Role of Curvature of the Demand Function," *Journal of Economic Education*, 25, 1994, 235-250

1.2 Other Potential Welfare Losses or Gains from Monopoly, and Policy Overview (1.5)

- * M. Schwartz, "Welfare Losses or Gains from Monopoly," class notes (3 pp.)
- * CW, ch. 3.1, 50-62 (cost functions review); ch. 4.1, 113-24 (Sources of Market Power ch. 4.4, 145-8 (Market Power: A Second Look); ch. 4.5, 148-9 (Benefits of Monopoly)
- * CW, Appendix, 889-900 (antitrust overview; note EC Articles 85 & 86 are now called 81 & 82)

1.3 Product Choice: Quality & Variety (1.5)

- * CW, ch. 6.1.1, 186-9 (Monopoly Provision of Quality – "marginal" vs. "average" consumer)
- * Tirole 1988, 97–99 (horizontal product differentiation – Hotelling model; this model will also be useful when discussing oligopoly), 104-6 (too many or too few products?)

2 Price Discriminating Monopolist (6)

2.1 Overview and Perfect Price Discrimination ("1st degree") (0.5)

- * CW, ch. 5, 155-62 (purpose of price discrimination, examples, and necessary conditions), 162-4 (perfect discrimination)
- * M. Schwartz, "Price Discrimination," class notes, pp. 1-5
- * J. Zaslav, "If TiVo Thinks You Are Gay, Here's How to Set It Straight," *WSJ*, Nov. 26, 2002, A1

2.2 Direct Price Discrimination ("3rd degree") (2)

- * CW, ch. 5, 164-66
- * M. Schwartz, "Price Discrimination," class notes, pp. 6-10
- D. Malueg and M. Schwartz, "Parallel Imports, Demand Dispersion, and International Price Discrimination," *JIntE*, 37, 1994, 167-195
- A. Odlyzko, "The Evolution of Price Discrimination in Transportation and its Implications for the Internet," *RNE*, 3, 2004 323-46
- Y. Chen and M. Schwartz, "Differential Pricing When Costs Differ: A Welfare Analysis," 2013

- 2.3 Indirect Price Discrimination (“2nd degree”) (2)**
- * M. Schwartz, “Price Discrimination,” class notes, p. 11-12 (skip 13), 14-17 and Figure 1
CW, ch. 5, 166-8 (two-part tariffs)
 - R. Deneckere and P. McAfee, “Damaged Goods,” *JEMS*, 5, 1996, 149-174 (math is a bit hard,
but Introduction has nice examples)
- 2.4 Tying and Bundling for Indirect Price Discrimination (1)**
- * CW, ch. 5, 168-70 (tying for metering, bundling); ch. 22, 697-8 (tying as an inferior
alternative to two-part tariffs)
 - * M. Schwartz, “Vertical Restraints,” class notes, pp. 13-14 (tying-for-metering)
 - * M. Schwartz, “Price Discrimination,” class notes, p. 18 (bundling)
- 2.5 Policy towards Price Discrimination, and Identification Problems (0.5)**
- * CW, ch. 5, 177-8 (antitrust treatment of price discrimination)
 - * M. Schwartz, “The Perverse Effects of the Robinson–Patman Act,” *AB*, 31, 1986, 733-757
 - M. Schwartz, “Price Discrimination,” class notes, pp. 19-20
- 3 Vertical Control by Monopolist: Methods & Incentives (5)**
- 3.1 Vertical / Horizontal Distinction, and Methods of Vertical Control;
Fixed-Proportions Case and “One-Monopoly-Rent” Argument (1)**
- * M. Schwartz, “Vertical Restraints,” class notes, 1-5
CW, ch. 22, 683-4, 688-90 (until 22.2.1)
 - J. Kowka and L. White “Vertical and Complementary Market Issues: The Economic and
Legal Context,” in *K&W* 3rd, 1999, 328-41
 - W. Lynk, “Tying and Exclusive Dealing: *Jefferson Parish Hospital v. Hyde* (1984),” in *K&W*
3rd, 1999, 342-63
- 3.2 Remove Double Marginalization by Complementary Monopolists (0.5)**
- * M. Schwartz, “Vertical Restraints,” 5-6
CW, ch. 22, 684-7 (until 22.1.4)
 - M. Schwartz and D. Vincent, “The No Surcharge Rule and Card User Rebates: Vertical
Control by a Payment Network,” *RNE*, 5, 2006, 72-102 (application of double-
marginalization, price discrimination, and 2-sided markets)
- 3.3 Address Contracting Problems with Services or Specialized Investments (2)**
- Non-contractible Services*
- * M. Schwartz, “Vertical Restraints,” class notes, 7-9
 - L. Telser, “Why Should Manufacturers Want Fair Trade?” *JLE* 3, 1960, 86–105
 - CW, Ch. 22, 690-6 (RPM, and intrabrand vs. interbrand competition)
 - R. Winter, “Vertical Control and Price versus Non–Price Competition,” *QJE*, 108, 1993, 61-76
 - H. Marvel, “Exclusive Dealing,” *JLE*, 25, 1982, 1–25
 - B. Klein, “Transaction Cost Determinants of ‘Unfair’ Contractual Arrangements,” *AER*, 70,
1980, 352–62

Specialized Investments and Holdups (“ex post opportunism”)

- * CW, ch. 3, 69-79 (on holdups, and contracts vs. integration; read through Case Study 3.6)
- B. Klein, R. Crawford, and A. Alchian, “Vertical Integration, Appropriable Rents, and the Competitive Contracting Process,” *JLE*, 21, 1978, 297–326
- P. McAfee and M. Schwartz, “Opportunism in Multilateral Vertical Contracting: Nondiscrimination, Exclusivity, and Uniformity,” *AER*, 84, 1994, 210-30

Vertical Integration vs. Contracts, and Limits to Firm Size

- * M. Schwartz, “Vertical Restraints,” 10-11
- * CW, Ch. 3, 81-86 (paradox of selective intervention), 101-102 (chapter summary)
- P. Milgrom and J. Roberts, *Economics, Organization and Management*, 1992: 126-40 (Perfect, Complete Contracts; Bounded Rationality and Contractual Incompleteness); 192-4 (Influence Activities and Unified Ownership)

3.4 Facilitate Price Discrimination (0.5)

- * M. Schwartz, “Vertical Restraints,” 12-13 (integration to enforce 3rd degree discrimination)
- M. Perry, “Forward Integration by Alcoa: 1888-1930,” *JIE*, 29, 1980, 37-53

3.5 Evade Price Regulation by Integrating into Adjacent Unregulated Markets (1)

- * M. Schwartz, “Vertical Restraints,” 16-17
- * CW, ch. 26.3, 861-70 (concerns with regulated monopolists operating also in unregulated adjacent markets: cross-subsidies, and competitors’ access to monopoly bottleneck)
- M. Schwartz, “Reforming Telecom Regulation: An Essay Review of Nuechtelein and Weiser’s *Digital Crossroads*,” *RNE*, 7, 2008, 415-47 (read only section 4: pp. 422-31; if you’re interested, 428-31 discuss the often amorphous debate over “Net Neutrality”)
- J. Farrell and P. Weiser, “Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age,” *Harvard Jr. of Law and Technology*, 17, Fall 2003, 85-134
- G. Faulhaber, “Policy-Induced Competition: The Telecommunications Experiments,” *Information Economics & Policy*, 15, 1, March 2003, 73-97

4 Oligopoly: Theory and Applications (6)

4.1 Static Non-Cooperative Oligopoly: Cournot and Bertrand (2)

- * CW, ch. 7, 215-8, 220-6 (game theory background)
- * CW, ch. 8. 231-246 (Cournot competition), 256-262 (Bertrand competition)
- Tirole 1988, 221-3 (concentration indices and industry profitability)

4.2 Welfare Tradeoffs from Entry: Fixed Costs, Asymmetric Costs or Demands (0.5)

- * CW, ch. 8, 247-56 (entry under Cournot competition)
- M. Schwartz, “Investments in Oligopoly: Welfare Effects and Tests for Predation,” *OEP*, 41 1989, only pp. 698–709
- J. Brander and P. Krugman, “A Reciprocal Dumping Model of International Trade,” *JIntE*, 15, 1983, 313-21

- 4.3 Horizontal Mergers** (0.5)
- * M. Schwartz, “Cournot Competition and Mergers,” class notes, mainly pp. 6-7
 - * M. Schwartz, “Differentiated Bertrand Competition and Mergers,” class notes, mainly pp. 2-4
- 4.4 Vertical Mergers: Double Marginalization vs. Rent Shifting** (0.5)
- * S. Salop, C. Shapiro, D. Majerus, S. Moresi and J. Murdoch, “News Corporation’s Partial Acquisition of DIRECTV: Economic Analysis of Vertical Foreclosure Claims,” July 1, 2003, read pp. 62-64, 74-79
 - * W. Rogerson, “A Further Economic Analysis of the Proposed Comcast-NBCU Transaction,” Aug. 19, 2010, read pp. 1-18
- 4.5 Sequential Moves and Strategic Commitments** (1.5)
- Introduction: Sequential Rationality and Gains from Commitment*
- * CW, ch. 13, 461-2, 465-72 (commitment examples, Stackelberg model)
 - * CW, ch. 9, 283-92 (extensive form games, subgame-perfect Nash equilibrium, 2-stage games)
- Strategic Substitutes vs. Strategic Complements, and Reasons to Act Tough or Soft*
- * Tirole 1988, 207-8 and 336-7 (strategic substitutes vs. strategic complements)
 - * Tirole 1988, 323-8 or CW ch. 15, 525-38 (two-stage games and the “animals taxonomy”)
 - * Google-Yahoo search-advertising deal, abandoned 2008: M. Schwartz, class notes, pp. 2, 5-9
CW, ch.16, 552-4 (strategic trade policy)
- 4.5 Innovation Incentives under Monopoly vs. Rivalry, and Bidding for Monopoly** (1)
- * Y. Chen and M. Schwartz, “Product Innovation Incentives: Monopoly vs. Competition,” *JEMS* 22, 2013, 513-528
CW, Ch. 18, 578-82
 - * R. Gilbert and D. Newbery, “Preemptive Patenting and the Persistence of Monopoly,” *AER*, 72, 1982, 514–526
 - * M. Kamien and I. Zang, “The Limits of Monopolization Through Acquisition,” *QJE*, 105, 1990, 465–500
- 4.6 Collusion** (1)
- * CW, Ch. 10, 305-28 (reaching an agreement); 328-34 (punishing cheaters); 340-58 (factors and practices that facilitate collusion); 355-8 (antitrust approach to collusion)
 - * U.S. v. US Airways and American Airlines, Complaint, August 13, 2013 (see Advantage fares)
- 5 Class Debates** (Readings will be assigned later in the course)
- 5.1 U.S. v. Kodak** (switching costs and aftermarkets)
- 5.2 Cellphone Exclusive Dealing** (contractual efficiency or exclusion?)
- 5.3 Airline Alliances** (effects on overlap routes vs. on complementary routes)
- 5.4 Reverse Payments in Drug Infringement Suits** (monopoly maintenance?)