ECONOMICS 420: Economics of Antitrust and Regulation
Fall 2022

Mr. Kearl
- office: 2103 WVB
- email: J_R_Kearl@byu.edu
- office hours: TTh 9:45-11:30 via Zoom

Texts: *Economics of Antitrust and Regulation,* 5th ed. (Viscusi, Harrington, and Sappington)
The Antitrust Revolution, 7th ed. (Kwoka)

Grading:
midterm	50 points
final	100 points
research memo	50 points (but you must submit a memo to get a passing grade)
homework	neutral if 9 of 10 assignments completed; half-grade penalty if < 9 are completed, i.e., you get one free miss

IMPORTANT DATES:
October 27, Midterm, Testing Center
November 17, 12:05 p.m., research memo due
December 16, 11:00-2:00, Final, 2145 WVB

Research Memo: This is a research project with five parts.

First, select a behavior from the list below.

Second, find the relevant Supreme Court and/or Federal Appellate court decisions dealing with the behavior. Provide a very brief summary of what you believe the law to be, citing to the cases you've found. (By brief, I mean no more than a paragraph.). The cases you reviewed should be included at the end of the comprehensive bibliography (see below) using standard legal citation format.

Third, assemble a comprehensive bibliography of **all** economics journal articles and monographs dealing with the behavior. (You may include law review or more general academic publications but only if written by either an economist or a law faculty member. Please exclude anything written by law students – fyi, most law review articles are written by law students.)

Fourth, select the articles that you believe to be the most insightful or helpful or informative. (Note that this means that you will have to scan through every paper in your bibliography; which means, in turn, that you will need to assemble your comprehensive bibliography as soon as possible.) Provide a synthesis of the papers you're selected – include key assumptions, the "model", and the insights provided by the economists into the law you've described in the first paragraph of your memo.

Five, conclude with a one paragraph justification for your choice of the articles you've just discussed.

The memo must have your comprehensive bibliography attached (in standard bibliography format).

Behavior:
- Tying
- Aftermarket Monopolization
- Two-sided Market Pricing and Market Power
- Resale Price Maintenance
- Unilateral Refusals to Deal

<u>COURSE OUTLINE</u>   **Viscusi**   **Kwoka**

ANTITRUST

Lecture 1	intro to law		
Lecture 2	antitrust norms; market power	Chpt 3	
Lecture 3	elements of an antitrust lawsuit		
Lectures 5-10	collusion (Sherman Section 1) (through the end of the first week of October)	Chpt 4	10,11,12,14
Lecture 11	relevant antitrust markets, SSNIP, critical elasticities, critical loss, GUPPI		
Lectures 12-18	monopolization (Sherman Section 2) (through, approximately, the first week of October)	Chpt 5 Chpt 8 Kwoka pp 212-228 Chpt 9	16,15,22
Lectures 19-20	horizontal mergers (Clayton Section 7)	Chpt 6 Kwoka pp 2-23	2,4,6,8,9
Lectures 21-23	vertical issues (through, approximately, the Thanksgiving break)	Chpt 7	17,18,20

SELECED TOPICS IN MONOPOLY REGULATION

Lecture 24-27	subadditivity natural monopoly net neutrality	pp 511-516 pp 561-570 pp 581-588
	franchise bidding	Chpt 11
	non-linear pricing Ramsey pricing two-sided market pricing fully distributed cost pricing peak load pricing	Chpt 12
	rate of return regulation Averch-Johnson effect regulatory lag price cap regulation yard stick regulation	Chpt 13
Lecture 28	Theories of Regulation Behavioral Economics and Regulation	pp 453-476 Chpt 24

HOMEWORK:

	due date	page	assignment	chapter
#1	Sept 15	p 109	1, 2, 3, 5, 6, 10	Chpt 3
#2	Sept 22	p 168	1,2,3,5,6,7,8,9	Chpt 4
#3	Sept 29	p 210	2,4,5,6,9,10	Chpt 5
#4	Oct 13	p 373	1,2,5,6,7,8,9	Chpt 8
#5	Oct 27	p 429	5,6,8	Chpt 9
#6	Nov 3	p 256	1,2,3,4,9	Chpt 6
#7	Nov 10	p 321	2,3,4,5,6,7	Chpt 7
#8	Nov 17	p 509	9,10,11, A1, A2, A3	Chpt 11
		p 588	1,4, A4	Chpt 14
#9	Dec 1	p 537	1,2,3,4,5,7 (read 6 first) A5	Chpt 12
			NOTE: there is a typo in 31, it should be C(Q) = 500 + 20Q	
#10	Dec 8	p 588	2, A6, A7	Chpt 13

Please prominently identify your home work with your name and the assignment # in the top RH corner. Please submit the homework on standard 8 1/2 x 11 paper.

A1.   If a firm has cost $C(Q) = 1 + Q^2$ is the range over which the firm is a natural monopolist from 0 to the output corresponding to the minimum average cost?

A2.   If there a multiproduct natural monopoly with respect to X and Y if the firm's cost curve is $C(Q_X, Q_Y) = 100 + 20Q_X + 10Q_Y - Q_XQ_Y$?

A3.   Assume $D(P) = 1000 - 2P$ and each of 20 firms in the market has a cost $C(q) = 10q$. Suppose that there is an innovation that reduces unit cost from 10 to 5. The cost to adopt the innovation is 50. Assume that only one firm can adopt the innovation (it might be, for example, protected by a patent). Assume that there is a regulated price of 20.
   a.   Is this a natural monopoly?
   b.   Assume that the firm's price is regulated at 20. What is the value of the innovation with regulation?
   c.   What is the value of the innovation with no regulation?

A4.   You have to have a medallion (essentially a license) to operate a cab in NYC. In 1198, the price of a medallion was $230,000.
   a.   If the interest rate is 6%, what are above normal profits earned yearly if the regulation is not expected to change in the future and there is no innovation like Uber or Lyft?
   b.   If you bought a medallion for $230,000, would you be earning an above normal rate of return on your investment?
   c.   Suppose that a cab company expected to earn above normal profits of $10,000. What would be the minimum price it would ask for a medallion if the interest rate is 5%?

A5.   Assume that a water distribution monopoly serves two types of consumers: industrial and residential. Demands are $Q = 20 - P_i$ and $Q = 24 - P_r$. The only costs are for a pipeline at $328. Find the Ramsey prices?

A6.   Consider an electric company production function $Q = K^{.05}L^{.05}$. The market rental rate for capital is $0.50 and the wage rate is also $0.50. The utility commission has set the allowed rental rate at $0.80. The company faces a demand with constant elasticity equal to 2.857 (i.e., $Q = P^{-2.857}$)

NOTE: rental rates are in dollars per unit of capital per year. With zero depreciation, they are related to the cost of capital in the following way: Suppose that the company must invest in a generator at a cost of $5 per kilowatt of capacity, and 10% is its cost of capital. Then the rental rate per year is 10% of the $5, or $0.50. Similarly, the percentage allowed rate of return would be 16% since 16% of $5 is $0.80. Rental rates are, therefore, comparable to wage rates and other factor costs in applying standard static production theory.

If the company were unregulated, it would produce efficiently at a constant average and marginal cost of $1. However, because of the Averch-Johnson effect, it uses too much capital under regulation and produces at an average cost of $1.01. The company will set the price at $1.35 and sell $Q = 0.42$ units.

a.   Find the price and quantity if the company were an unregulated monopoly. HINT: marginal revenue is $P(1-1/2.857)$

b.   Find the sum of CS and PS for the cases where the company is regulated and not regulated. Does regulation, even though imperfect because of the Averch-Johnson effect, result in an increase in welfare? HINT: Using calculus it can be shown that consumer surplus is $.54Q^{0.65}$

c.   The first-best case of price = MC and efficient production is superior to regulation. Find the efficient solution. Diagram the two types of losses that regulation causes as compared to the efficient solution.

d.   Assume that the utility commission decides to reduce the allowed rental rate from $0.80 closer to the market rate of $0.50. Assume that, in doing so, it picks $0.58. It can be shown that the company will now choose to sell 0.67 units at a price of $1.15. Its average cost of production will rise to $1.04. Compare this Averch-Johnson equilibrium to b. in terms of total surplus. This, it turns out, is the socially optimal regulated rental rate. Note that lower rates actually reduce the total surplus. For details see A. Klevorick "The Optimal Fair Rate of Return, *Bell Journal of Economics and Management Science* (Spring 1971).

A7.   In a city where all parking is controlled by the city government, it is possible to provide parking facilities in the downtown area at a constant marginal capital investment of $10,000/space. Costs of operations are negligible and can be ignored. There are three equal periods during the day of eight hours each and spaces are rented only for 8-hour blocks. During the peak period of each of 250 days per year, the demand for parking is given by $P = a - bQ$, where P is the price per 8-hour period for a single parking space. During the two off-peak periods during those 250 days, the spaces demanded are half that in the peak period for each possible price. On other days, demand is zero. Assume that the interest rate is 10% and that the facilities do not depreciate.

a.   If $a = $16, b = 0.08$ and there are 120 parking spaces, what would be the socially optimal prices during these periods?

b.   What is the optimal number of spaces and the corresponding prices?

c.   Now suppose that $a = 5 and $b=0.08$. If peak demanders pay all of the capital costs, what quantity is demanded by peak demanders? If off-peak demanders pay zero, what is their quantity demanded? (fractions of a space are legitimate)

d.   For the demand curves in part c, find the optimal number of spaces and the corresponding prices.

UNIVERSITY POLICIES

Honor Code

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and every instructor's expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

Preventing Sexual Misconduct

Brigham Young University prohibits all forms of sexual harassment—including sexual assault, dating violence, domestic violence, and stalking on the basis of sex—by its personnel and students and in all its education programs or activities. University policy requires all faculty members to promptly report incidents of sexual harassment that come to their attention in any way and encourages reports by students who experience or become aware of sexual harassment. Incidents should be reported to the Title IX Coordinator at t9coordinator@byu.edu or (801) 422-8692 or 1085 WSC. Reports may also be submitted online at https://titleix.byu.edu/report or 1-888-238-1062 (24-hours a day). BYU offers a number of resources and services for those affected by sexual harassment, including the university's confidential Sexual Assault Survivor Advocate. Additional information about sexual harassment, the university's Sexual Harassment Policy, reporting requirements, and resources can be found in the University Catalog, by visiting http://titleix.byu.edu, or by contacting the university's Title IX Coordinator.

Student Disability

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. A disability is a physical or mental impairment that substantially limits one or more major life activities. Whether an impairment is substantially limiting depends on its nature and severity, its duration or expected duration, and its permanent or expected permanent or long-term impact. Examples include vision or hearing impairments, physical disabilities, chronic illnesses, emotional disorders (e.g., depression, anxiety), learning disorders, and attention disorders (e.g., ADHD). If you have a disability which impairs your ability to complete this course successfully, please contact the University Accessibility Center (UAC), 2170 WSC or 801-422-2767 to request a reasonable accommodation. The UAC can also assess students for learning, attention, and emotional concerns. If you feel you have been unlawfully discriminated against on the basis of disability, please contact the Equal Opportunity Office at 801-422-5895, eo_manager@byu.edu, or visit https://hrs.byu.edu/equal-opportunity for help.