UCLA Department of Economics

Industrial Organization Comprehensive Examination
Fall 1998
(4 hours)

Answer all six questions. All questions have equal weight. You have four hours to complete the examination, or 40 minutes per question. Make sure you do not spend too much time on any individual question.

1. The models of monopoly, Cournot oligopoly and Chamberlin's monopolistic competition all depict the firm as facing a negatively sloped demand curve. This distinguishes these models from perfect competition, but not from each other. Do they really differ from each other, and if so, in which way(s)? A good answer to this question must go beyond superficial comparison of the assumptions on which these models are presumed to rest.

2. The U.S. Justice Department brought a case against Ivy League colleges and universities, alleging that they colluded illegally in offering aid to needy students. The practice attacked by the Justice Department involved meetings between representatives of these schools in cases where needy applicants had been accepted by more than one member school. The purpose of the meetings was to reach agreement on an equalized aid package that the involved schools would extend to these students with the immediate objective of preventing competition from increasing financial aid to more meritorious students. All parties agreed that these meetings took place for the above-stated purpose. Defendants alleged that this was done so that financial aid could be extended to larger numbers of needy students. The Justice Department alleged that this was simply a collusion to fix the discounts from tuition that would be granted to students by these institutions.

   A recent RAND Journal article (by Carlton, Bamberger and Epstein) claimed that the Justice Department's case against the schools participating in these meetings was wrong for two reasons. One reason was that collusion could not be substantiated by a comparison of the tuition price charged by defendant schools and other schools. The authors compared, for each of several years, the average net tuition (gross average tuition minus financial aid grant per student) paid by students attending defendant schools and students attending schools not party to these agreements. After controlling for quality differences in the education programs, the study failed to find that average net tuition differed significantly between these two sets of schools. (The authors also noted, in reference to studies made by others, that going to the best school that one is admitted to is likely to be a worthwhile investment because of the relatively small tuition premium assessed for higher quality education.)

a) Do you think this empirical finding should be given great weight in assessing the validity of the claim made by the Justice Department? Explain.

The second reason the article gave for the incorrectness of the Justice Department's case was based on legal rather than statistical argument. The article claimed that the application of antitrust laws should be more permissive of collusive agreements between not-for-profit institutions such as universities, which are legally barred from disbursing any excess of revenues over cost, than when these laws are applied to for-profit institutions.

b) Do you agree with this policy position? Why or why not?

3. In a recent antitrust case, Pepsi has sued Coke, claiming that Coke's exclusive contracts with independent food service distributors (companies that provide a broad variety of food products, paper products and other supplies including fountain-dispensed soft drinks to restaurant chains, movie theater chains and other customers) unfairly freezes Pepsi out of this market segment. Pepsi alleges that if a distributor supplies Pepsi to a customer that wishes it, Coke will cut off all Coca-Cola supplies to the distributor.

The fountain business accounts for 24 percent of the U.S. soft drink market and Coke has a 65 percent share of the fountain business, with Pepsi possessing a 25 percent share.

a) Analyze whether Coke's contractual arrangement is anti-competitive. What other information would you wish to know before reaching a conclusion?

b) What pro-competitive rationale can you think of to justify this contract? How would you test this rationale?

4. In a recent antitrust case Rolm, a manufacturer of PBXs (a "switch" consisting of hardware and software that allows businesses with more than 50 telephone lines to send and receive telephone calls, both internally and externally), was sued by ISOs (independent service organizations) for allegedly "leveraging" its monopoly power in its branded product into the service market for Rolm PBXs.

Rolm actively competes with numerous PBX manufacturers, including Lucent, Nortel and NEC. But the ISOs claim that once a PBX choice is made, the customer is "locked in". Failure to make the Rolm copyrighted diagnostic software available to ISOs places them at a competitive disadvantage and permits them to charge 30 percent to 60 percent higher prices for service than is charged by ISOs.

a) Does the "lock-in" argument make economic sense in a world where consumers are not fully aware of probable service prices they will face after they make their PBX purchase? Will such imperfect information conditions necessarily lead to higher package prices?

b) Is the evidence of higher Rolm service prices indicative of market power?

c) Why does Rolm set relatively high service prices and refuse to make its diagnostic software and replacement parts available to ISOs?

d) What will be the likely effect on PBX prices if Rolm is required to make its copyrighted and patented diagnostic software and replacement parts available to ISOs at "reasonable" prices?

5. Governments sometimes address externalities by regulating production technologies. For example, in response to complaints about noise, the Los Angeles city government banned the use of gasoline-powered leaf blowers last February.

This regulation may have affected the market for gardening in various ways. Gardening is supplied by a large number of small firms, and by individuals choosing to take care of their yards themselves. Entry barriers are low. Production requires capital and labor, both of which are supplied in competitive markets. Assume that the gardening service provided in the for-hire sector is very similar across firms.

You are hired by the L.A. City Council to provide an objective theoretical and empirical analysis of the leaf blower ban. The City Council is particularly interested in the ban's effect on prices and quantities in the for-hire sector of the market, and the extent to which changes in prices and quantities are attributable to cost or demand shifts. They are willing to supply you with any current or historical data you require about the industry.

a) Provide a simple theoretical analysis which depicts the effect of the leaf blower ban on prices and quantities of for-hire gardening. These effects may be positive, negative or ambiguous. If your analysis requires any additional assumptions, state them clearly.

b) Outline your empirical approach. What data do you ask from the City Council? What are the important identifying assumptions in your framework?

c) Environmental regulators have similarly established technological requirements for power plants. For example, in the past they required utilities to install "scrubbers" in the mouths of smokestacks. Would your theoretical analysis or empirical approach differ from that in a) and b)? If so, how? If not, why not?

6. In a series of articles written in the late 1980s and early 1990s, Bresnahan and Reiss investigate how entry conditions vary across markets. In particular, these authors focus on estimating "entry thresholds" -- the market size just large enough to support one firm, that just large enough to support two firms, etc. Call these thresholds s_{01}, s_{12}, s_{23}, . . . They argue that examining how "entry threshold ratios" -- for example, s_{12}/s_{01} -- differ across markets allows one to infer differences in entry conditions. In particular, they may allow researchers to detect classes of markets in which *strategic barriers to entry* such as predatory pricing or limit pricing play an important role in determining market structure.

a) What is the intuition behind using entry thresholds or entry threshold ratios to detect differences in entry conditions?

b) How might the presence of strategic barriers to entry affect entry threshold ratios?

c) Suppose one finds that entry threshold ratios are systematically higher in some classes of markets than in others -- for example, they are higher in consumer product markets than in intermediate product markets. What inferences might you draw from this fact? What additional information would help in distinguishing among these inferences?