UCLA Department of Economics

Industrial Organization Comprehensive Examination
Spring 1998

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. Suppose the Securities and Exchange Commission effectively barred all insider trading through a regulation that came as a complete surprise to investors. Examine the consequences this is likely to have for:

   a) the ownership and operation of publicly held corporations,

   b) the difference between the bid and ask prices quoted on stocks, and

   c) the level of actual transaction prices.

2. Construct a theory of accounting profit rates of firms that is consistent with all three of the following facts:

   a) There is a cross-section correlation between profit rate and industry concentration for that group of industries for which market concentration varies between moderate and high but not for that group for which market concentration varies between low and moderate.

   b) The difference between profit rate of large and small firms in a given industry is correlated across industries with market concentration.

   c) A cross-firm regression of firm profit rate on size of the firm and the concentration of the market in which its primary product is sold reveals that market concentration, of the two explanatory variables, explains more of the variation in firm profit.

3. Microsoft was recently charged by the Department of Justice with bundling its browser software, "Internet Explorer", with its operating system software, "Windows 95". DOJ claims that Microsoft did this to drive Netscape from the browser market and thereby protect its operating system market power.

a) What is the DOJ theory regarding how Microsoft's operating system market power is protected by driving Netscape from the browser market? Does it make economic sense?

b) How does bundling drive Netscape out of the browser market? If Microsoft had not substantially improved Explorer and had not priced Explorer at zero and had just bundled Explorer with Windows, would Netscape's browser market share have declined?

c) Even if Microsoft were not trying to protect its operating system, are there good economic reasons for it to price Explorer at zero and bundle Explorer with Windows?

d) Does bundling prevent Microsoft from using browser software to price discriminate across consumers?

e) Why would some OEMs in 1995-96 be opposed to Microsoft's bundling policy, even though Microsoft was offering Explorer at a zero price, i.e., offering its version of Windows with Explorer at the same price it was previously charging for Windows without Explorer?

f) DOJ is arguing that to remedy the anticompetitive effects of bundling, Microsoft must make available to OEMs a "commercially viable" alternative to a bundled product. This implies, they claim, that Microsoft offer OEMs a version of Windows without Explorer at a significantly lower price. Does this make economic sense? (Assume in your answer that because of Microsoft's R&D investments in browser software since 1995-96, Explorer is now valuable to OEMs, i.e., they are willing to pay a higher price for Windows with Explorer than for Windows without Explorer.)

4. A number of recent antitrust cases deal with manufacturer attempts to control the quantity and type of retail outlets in which the manufacturer's products are sold. In particular, there is a concern that if warehouse-club discounters carry a product, many traditional retailers selling the product will be driven out of business.

a) <u>Absent a classic free-riding problem</u>, i.e., absent a condition where consumers obtain services at a traditional retailer before purchasing the product at a discount outlet, there are general market forces that lead to the supply of the correct (i.e., manufacturer profit maximizing and consumer welfare maximizing) quantity and type of retail outlets. Describe this market process.

b) Continuing to assume the absence of classic consumer free riding (e.g., assume the discount store has the same inventory and sales assistance and no consumers go to a traditional outlet first to determine what to purchase before going to a discount store), why would a manufacturer not want to "leave it up to the market" to determine the type and quantity of stores that result from the market process described in a)? Make explicit any assumptions you are making in describing why the general result in a) may not hold.

c) How would you test your analysis in b)? For example, assume that music companies are concerned that discount stores (such as Best Buy) are driving out more traditional record stores. What specific record industry information would you want to look at to determine the companies' motivation for not leaving retail competition "up to the market"?

5. During the past fifteen to twenty years, many game-theoretic models have been developed to investigate a wide variety of issues in industrial organization. Unlike most price-theoretic models, these explicitly allow individuals' decisions to have strategic elements.

This literature has been criticized persistently for generating models which are "inherently untestable". Part of this criticism is based on the observation that many game-theoretic models generate multiple equilibria. Part of it arises because the equilibria in such models tend to be very sensitive to assumptions about variables most data sets do not contain, such as the information held by individual decision-makers. These features hinder the development of hypothesis tests in which rejecting such models is at all possible, or at least a reasonable possibility.

Nevertheless, many empirical researchers have tried to test game-theoretic models. Some of these tests have been relatively convincing.

a) Describe two such attempts, and explain why they succeeded or failed.

b) What elements of game-theoretic models appear to be testable, and in what contexts?

c) What appears to be untestable except in very special circumstances?

6. Many movie theaters offer discounts to senior citizens, children and students. Most economists interpret such discounts as price discrimination. Suppose that these economists are correct.

Consumer surplus may either be higher or lower when firms price discriminate, relative to when firms set uniform prices. Whether price discrimination benefits consumers is therefore an empirical issue.

The Nuart Theater (on Santa Monica Boulevard) is willing to provide you data for a study which investigates how price discrimination affects consumer surplus. They have agreed to collect any variable related to their theater you wish over a period of two months. They will not allow you to change ticket prices, choose which films to offer, etc.

On Fridays and Saturdays, the Nuart charges $6.00 admission, with a 50% discount for students, seniors and children. From Sunday-Thursday, the Nuart charges $3.00 for all consumers. The Nuart is a single-screen theater which offers a different film about every two weeks. It is, of course, located in a region which contains many competing theaters showing many different films.

Outline your research strategy. Be sure to include:

a) A description of the overall steps

b) What data you would ask the Nuart manager to collect for you

c) What other data you would use, and where you would find it

d) What you plan to estimate, including descriptions of the dependent variable and the most important independent variables

e) How you would apply the estimates to the research question at hand

f) The scope of the study, that is, what your study will allow you to say about the issue at hand, and what it will not allow you to say.