UCLA Department of Economics

Industrial Organization Comprehensive Examination
Spring 1999
(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 market concentration doctrine, initially due to Joe Bain, was based on the belief that firms in markets that are more concentrated have an easier time colluding. The proposition is reasonable, and it found support in empirical cross-section studies of the relationship between measured profit rates and measured market concentration. A second set of studies were produced by Bain and his students. These placed markets into three barrier to entry categories, low, medium, and high. Placement was based on investigator judgments concerning the importance of scale economies and product differentiation in a market. The explanatory power of market concentration was examined again, this time in each barrier category. It was found to increase across these categories, being lowest in the low barrier to entry markets and highest in the high barrier to entry markets. Consider only this second set of studies in answering questions A and B.

   A. Are these results inconsistent with Cournot's oligopoly model and Demsetz's *breakthrough* theory? Explain.

   B. Does your answer to question A strengthen or weaken the collusion interpretation given to these results by Bain and his students? Explain.

2. Berle and Means, in their important 1932 book on *The Modern Corporation and Private Property,* brought to our attention the problem of separation between ownership and control in the modern corporation. It was not until the mid 1960s that Henry Manne theorized that there was a "cure" for this problem-- the existence of a market for corporate control that disciplined corporate management through mergers and takeovers.

   A. Must there be a difference, in general, between the acquiring and acquired firms if the market for corporate control is to ameliorate the agency problem inherent in the separation between ownership and control problem?

B. Scholars of financial economics have studied the market for corporate control intensely, mainly through "before and after" event studies of hostile takeovers. These have measured returns to shareholders of acquiring and to acquired companies. Broadly discuss the findings of these studies and assess what these findings imply about how well the market for corporate control is working.

3. Microsoft is alleged to have recently imposed a "tie" on computer manufacturers that license its Windows operating system by requiring them to also include Internet Explorer, and in particular the *e* icon on all the machines shipped with Windows.

A. Why would computer manufacturers wish to eliminate the *e* icon from the screens of their machines, even though manufacturers do not save any license fee by doing so, i.e. even though Microsoft licenses Explorer at a zero price?

B. What anti-competitive purposes could be served by Microsoft's "tie"? How would you empirically determine if such anti-competitive effects were significant?

C. What pro-competitive purposes could be served by Microsoft's "tie"? How would you empirically determine if such pro-competitive effects were significant?

D. One proposed remedy for Microsoft's "tie" is preventing Microsoft from controlling what computer manufacturers include on their desktop screens and forcing Microsoft to license Windows in a nondiscriminatory way (i.e. at the same price) to all computer manufacturers. Analyze the economics of this proposal.

E. Microsoft also signed de facto exclusive dealing contracts with a number of ISPs, including AOL, where in return for placement of the ISP in the Microsoft desktop online folder the ISP would agree to use exclusively Internet Explorer as its browser. Present the framework for determining whether such contracts are anti-competitive and apply this framework to the Microsoft contract.

F. One proposed remedy suggested for Microsoft's behavior with respect to ISPs is preventing Microsoft from using exclusive contracts. Analyze the economics of this proposal.

4. An author of a recent article has argued that franchisors almost always possess market power since franchisees almost always make nonsalvageable investments and, therefore, under the *Kodak* standard, post-contract market power is present.

   A. Describe the facts of the Kodak case and what the court described as post-contract market power.

   B. Why did Kodak find it profitable to tie the sale of service to replacement parts rather than merely increasing the prices of replacement parts?

   C. What is the fundamental economic difference between the facts of Kodak and a normal franchise requirements contract, which forces franchisees to purchase inputs from the franchisor or from a franchisor-approved supplier?

   D. If franchise outlets were highly liquid, i.e., freely saleable in a second-hand market, would franchisees not be "locked-in" and, therefore, the Kodak analysis not be applicable? Explain.

5. In the study of Olley and Pakes (1996), *The Dynamics of Productivity in the Telecommunications Equipment Industry*, the authors seek to analyze plant-level productivity using panel data in a manner that addresses the problems of endogeneity and sample selection.

   Olley and Pakes posit the following production function for plant i in period t:

$$Y_{it} = \beta_0 + \beta_a a_{it} + \beta_k k_{it} + \beta_l l_{it} + \omega_{it} + \eta_{it}$$

   in which the βs are coefficients to be estimated, Y is output (in fact they use revenue), a is age, k is capital, l is labor and ω and η are productivity and measurement errors, respectively. The specific goal of their analysis is to accurately and correctly estimate the βs.

   A. Intuitively describe the nature of the endogeneity problem.

   B. Intuitively describe the nature of the selection problem.

C. Olley and Pakes motivate their model by reference to an underlying framework of dynamic oligopoly in which the equilibrium is a Markov perfect Nash equilibrium. What is a Markov perfect Nash equilibrium?

D. The usefulness of the dynamic oligopoly foundation is that it gives rise to a monotonic relationship between firm productivity and firm investment. This relationship is exploited in their econometric model. Describe one strategy for analyzing firm-level productivity.

6. In January 1998 the Los Angeles County Department of Health Services introduced a new requirement that restaurants must publicly exhibit a hygiene grade card which they will be issued after a health inspection. The standards of the health inspections are the same now as they were before this new requirement. The regulatory change was simply to provide information to consumers which was previously difficult to obtain. There are more than 20,000 restaurants in Los Angeles County that have been affected. While there are a small number of other areas in the United States which also use hygiene grade cards, this is the first program to adopt a highly quantitative scoring approach.

A. Propose a specific research question that you think would be interesting to investigate with respect to this change.

B. What specific data would you ideally like to obtain to undertake an analysis of the research questions you proposed in (A)?

C. What is the variation in the data that will allow you to identify the effect(s) you are interested in?

D. Briefly outline the methodology you would seek to implement in analyzing the data. You may, if you like, propose a particular specification, but this is not necessary. Though you should identify potential sources of problems in whatever approach you suggest.