

**SYRACUSE UNIVERSITY
DEPARTMENT OF ECONOMICS**

Economics 741, Urban Economics
Professor Yinger

Fall 2019

Final Exam

This is a closed-book exam. You have two hours to complete it. Please turn the exam in to the professor or to the CPR receptionist when you are finished.

You must answer any two of the following four questions.

1. Housing Prices and Access to Jobs

Suppose one of your colleagues has obtained a detailed house-sales data set for a large metropolitan in a single year. This data set includes information on sales price, structural housing characteristics, neighborhood amenities, and distance to major worksites. Your colleague wants to determine whether homebuyers care about access to the CBD (as in urban models) or access to all major worksites. She has identified the locations of three major worksites plus the CBD. She has asked you to join her on this project.

You have decided to write a memo to your colleague about the best way to proceed. Start this memo by explaining the simplest way to answer the question she has posed. Then add at least one major complexity to the analysis and explain how you would incorporate it into the study. At all points, indicate how you would use the above data and whether you would need additional data. In addition, be clear about the methods you would employ.

2. Gentrification

Many American cities are experiencing “gentrification,” defined as a situation in which higher-income households displace lower-income households in a given neighborhood. In principle, gentrification is particularly hard on low-income renters, who are likely to experience an increase in their rent. You want to know whether increase rents or other factors actually drive low-income people out of gentrifying neighborhoods. You have obtained a data set that follows individual renter families over time, so you can determine when a household moves out of a neighborhood. You also have data on the characteristics (including income) of the census tract in which their apartment is located. Your job is to build a model of a household’s decision to move as a function of its income, whether their neighborhood has gentrified, the interaction between these two variables, and other factors. Indicate how you would use the above data, whether additional data are needed, and how you would specify your econometric model.

3. Estimating Mortgage Discrimination

Suppose you work in the fair lending office at the Consumer Finance Protection Bureau. You are on a task force to determine the best way to test for mortgage discrimination when you can observe many loans by one large lender.

- a. The lawyers on the task force argue that the best place to start is with a regression of mortgage default on all loan, buyer, and property traits observed at the time of application except buyer race or ethnicity. They say this yields discrimination-free underwriting scores (i.e. predicted values), which make it possible to see if the highest-scoring applications are the ones that actually get the loans. Do you think the lawyers are right? Explain.
- b. Design a scheme that the CFPB could use to identify discrimination in mortgage lending by a single, large lender. Explain the data you would need and the methods you would use.

4. Estimating School Quality Capitalization

Suppose you want to study this question: Are changes in school quality both salient and important to homebuyers? To study this issue you have assembled a large sample of house sales in a large metropolitan area over a ten-year period. Your data set includes not only sales prices but also many structural characteristics of the houses that sell and a large set of neighborhood amenities. School quality is measured by an index of fourth grade proficiency rates on math and English tests and the high school graduation rate. Thanks to changes in state aid to education, this school quality measure varies considerably over time for many school districts.

Explain how you would use these data to answer the above question. Explain your methodology in detail. Explain how you would use the data described above—and any other data that you would need. Explain how you would interpret the results of your estimation.