Economics 741, Urban Economics   Fall 2014
Professor Yinger

Final Exam

This is a closed-book exam. You have two hours to complete it. Please turn the exam in to the economics office when you are finished.

This exam has two parts. **You must answer one question from each part**.

PART I.

1. Suppose you are studying housing prices in the Maxwell Metropolitan Area. More specifically, a beltway was built in the Maxwell Area a couple decades ago, and employment is now concentrated along this beltway (as well as in the CBD). You want to determine how the introduction of this beltway has altered housing prices.

    Use graphs to explain the pattern of housing prices without and with a beltway according to a standard urban model. Explain how you would determine whether the predictions of this model hold up in practice. Assume that you can obtain a large sample of double-sales data (that is, data with two sales for each house) for the Maxwell Area covering several years before and many years after the beltway was built. Assume that you also have locational information for each house (and any other data you need). Explain how you would test the urban model predictions in your graph.

2. Before financial deregulation, home mortgage lenders had a single product and a loan application was either approved or denied. After deregulation, these lenders had many products with different interest rates, and most loan applications were approved—but with interest rates that varied. For the first few years after the financial crisis, lenders largely reverted to the pre-deregulation approach in the sense that they provided very few high-interest loans and turned down many more applications.

    Your job is to write a proposal for studying discrimination in mortgage lending in this post-crisis period. Write down a model of mortgage discrimination and explain how it could be estimated. What data would you need? How would you test for discrimination?

PART II.

3. Suppose you are reviewing a paper using hedonics that has been submitted to the *Journal of Urban Economics*. This paper has data for a large sample of house sales in a major metropolitan area. It has extensive data on the structural traits of housing, along with data on neighborhood amenities and household traits. The neighborhoods are census block groups. The amenities are elementary test scores, crime rates, an air quality measure, and distance to the CBD. The household traits are income and education. The author proceeds in three steps. First, he regresses the log of house value on the structural housing traits and the four amenity measures. Then he adds border fixed effects (BFEs) and finds that the coefficient of the elementary school variable drops considerably. The set of BFEs is highly significant. Then he adds household income and education and finds that the coefficient of the elementary school variable drops even more. The income and education variables are also highly significant. He concludes that studies without BFEs and household demographics dramatically overstate the impact of elementary school quality on house values.

   Your job is to evaluate this study and to provide a recommendation concerning its suitability for publication. The editor has also asked you to indicate briefly whether (and how) the main flaws of the paper, if any, could be fixed.

4. For many years, State X has required local governments to reassess all their property every ten years. New property obviously has to be assessed whenever it is built, and assessments are adjusted for renovations or additions, but otherwise assessments do not change in the intermediate years, even when a house sells. This policy gives you an opportunity to study property tax capitalization, and in particular to estimate the role of buyers' expectations.

   You have collected a large sample of double-sales data for houses in a large metropolitan area in State X. You do not have data on housing or neighborhood traits, but you do have data on renovations and additions. How would you model property tax capitalization in State X, with particular attention to expectations? How would you use these data to estimate your model?