REAL 945: Urban Economics and Real Estate
Spring 2008
Fridays, 10am to 1pm
Room 209, SHDH

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Introduction

This course covers fundamental and cutting-edge topics in urban economics and real estate as well as the most important econometric issues that arise in the estimation of urban economics and real estate models. The first part of the course focuses on the application of modern econometric methods to analyze empirical questions in the broad urban economics field, which includes topics from public economics and local finances, such as household sorting and valuation of public goods. This part of the course is especially concerned about dealing with non-experimental data, and also provides a guide for tools that are useful for applied research. The second and third parts of the course examine the economic modeling and intuition of a range of topics in urban economics and real estate, such as spatial equilibrium, supply and demand of space, house prices and cycles. In addition, special emphasis is given to how the understanding of economic theory and institutions can help any empirical analysis. At the end of the course students should have a firm grasp of theory and econometric tools that lead to convincing empirical applications.

Requirements:

The course assumes that students have familiarity with standard first year econometrics and microeconomics. The following econometric books are useful references to supplement the journal articles covered in class: Johnston and Dinardo "Econometric Methods", Greene "Econometric Analysis", Ruud "An Introduction to Classical Econometric Theory", and Wooldridge "Econometric Analysis of Cross Section and Panel Data".

Students should read all assigned readings before class (the bulkpack is available at Wharton Reprographics). There will be 2 or 3 applied exercises during the semester. Late problem sets will not be accepted. The students will also present an original empirical research paper at the end of the semester, applying the theory and techniques learned in class. Topics and research design will be discussed with the Professors during the semester. There will be no final exam. 70% of the grade is based on the final presentation, and 30% is based on the problem sets.

Topics and Reading List

Part I: Econometric Tools and Selected Applications
Part II: Spatial Equilibrium, Agglomeration Economies and Housing Supply and Demand
Part III: Housing Pricing, Taxes and Behavior

Part I:

1. Regression Analysis as a Statistical Tool and Causal Inference

Freedman, David (1991) "Statistical Models and Shoe Leather," *Sociological Methodology*, v. 21, pp. 291-313.

Freedman, David (1999): "From Association to Causation: Some Remarks on the History of Statistics," *Statistical Science*, v. 14 (3), pp. 243-258.

Holland, Paul (1986) "Statistics and Causal Inference," *Journal of the American Statistical Association*, v. 81, No. 396, pp. 945-960.

Angrist, Joshua and Alan Krueger (1998): "Empirical Strategies in Labor Economics," *The Handbook of Labor Economics*, eds. O. Ashenfeleter and D. Card, v. III, North Holland.

Moulton, Brent (1986): "Random Group Effects and the Precision of Regression Estimates," *Journal of Econometrics*, v. 32 (3), pp. 385-397.

Application: Does neighborhood matter?

Katz, Lawrence, Jeffrey Kling, and Jeffrey Liebman (2001): "Moving to Opportunity in Boston: Early Results of a Randomized Mobility Experiment," *Quarterly Journal of Economics*, v. 116 (2), pp. 607-654.

2. Selection on Observables and Program Evaluation

Ashenfelter, Orley and David Card (1985): "Using the Longitudinal Structure of Earnings to Estimate the Effect of Training Programs," *Review of Economics and Statistics*, v. 67 (4), pp. 648-660.

Rosenbaum and Rubin (1984): "Reducing Bias in Observational Studies Using Subclassification on the Propensity Score," *Journal of the American Statistical Association*, v. 79, (387), pp. 516-524.

Lalonde, Robert (1986): "Evaluating the Econometric Evaluations of Training Programs with Experimental Data," *American Economic Review*, v. 76 (4), pp. 604-620.

Dehejia, Rajeev and Sadek Wahba (1999): "Causal Effects in Non-Experimental Studies: Re-evaluating the Evaluation of Training Programs," *Journal of the American Statistical Association*, v. 94 (448), pp. 1053-1062.

Smith, Jeffrey and Petra Todd (2005): "Does Matching Overcome Lalonde's Critique of Nonexperimental Methods?" *Journal of Econometrics*, v. 125 (1-2) , pp. 305-353.

Application: Evaluation of Governmental Programs:

Busso, Matias and Patrick Kline (2007): "Do Local Economic Development Programs Work? Evidence from the Federal Empowerment Zone Program," mimeo.

Greenstone, Michael and Enrico Moretti (2004) "Bidding for Industrial Plants: Does Winning a 'Million Dollar Plant' Increase Welfare?", mimeo.

3. Regression Discontinuity Design

Cook and Campbell, "Quasi-Experimentation, Design & Analysis Issues for Field Settings"

Angrist, Joshua and Victor Lavy (1999), "Using Maimonides' Rule to Estimate the Effect of Class Size on Scholastic Achievement," *Quarterly Journal of Economics*, v. 114 (2), pp. 533-575.

Lee, David (2007) "Randomized Experiments from Non-random Selection in U.S. House Elections," *Journal of Econometrics*, (Currently in press).

Hahn, Todd, Van der Klaauw (2001): "Identification and Estimation of Treatment Effects with a Regression Discontinuity Design," *Econometrica*, v.69 (1), pp. 201-209.

Application: Hedonic Models and Valuation of Public Goods:

Black, Sandra (1999): "Do Better Schools Matter? Parental Valuation of Elementary Education," *Quarterly Journal of Economics*, v. 114 (2), pp. 577-599.

Chay, Kenneth and Michael Greenstone (2005): "Does Air Quality Matter? Evidence from the Housing Market," *Journal of Political Economy*, v. 113 (2), pp. 376-424.

4. Selection on Unobservables

Heckman, James (1979): "Sample Selection Bias as a Specification Error," *Econometrica*, v. 47 (1), pp. 153-161.

Heckman, James and Bo Honoré (1990): "The Empirical Content of the Roy Model," *Econometrica*, v. 58 (5) pp. 1121-1149.

Angrist, Joshua, Guido Imbens and Don Rubin (1996): "Identification of Causal Effects Using Instrumental Variables," *Journal of the American Statistical Association*, v. 91, pp. 444-455.

Angrist and Imbens (1994): "Identification and Estimation of Local Average Treatment Effects," *Econometrica*, v. 62 (2), pp. 467-475.

Angrist and Krueger (1991): "Does Compulsory School Attendance Affect Schooling and Earnings," *Quarterly Journal of Economics*, v. 106 (4), pp. 979-1014.

Bound, John, David Jaeger and Regina Baker (1995): "Problems With Instrumental Variables Estimation When the Correlation Between the Instruments and the Endogenous Explanatory Variable is Weak," *Journal of the American Statistical Association*, v. 90 (430), pp. 443-450.

Application: Causes of Suburbanization

Baum-Snow, Nathaniel (2007): "Did Highways Cause Suburbanization," *Quarterly Journal of Economics*, v. 122 (2), pp. 775-805.

5. Discrete Choice Models

McFadden (1974): "Conditional Logit Analysis of Qualitative Choice Behavior," Frontiers in Econometrics, P. Zarembka (ed.), Academic Press: New York, 1974, pp. 105-142.

Berry, Steven, James Levisohn and Ariel Pakes (1995): "Automobile Prices in Market Equilibrium," *Econometrica*, v. 63 (4), pp. 841-890.

Petrin and Train (2006): "Control Function Corrections for Omitted Attributes in Differentiated Product Markets," (Solicited by *Quantitative Marketing and Economics*).

Application: Tiebout Sorting and Valuation of Housing Amenities:

Ferreira, Fernando: "You Can Take it With You: Transferability of Proposition 13 Tax Benefits, Residential Mobility, and Willingness to Pay for Housing Amenities." Mimeo.

Bayer, Patrick, Fernando Ferreira and Robert McMillan: "A Unified Framework for Measuring Preferences for Schools and Neighborhoods," *Journal of Political Economy*,. August 2007, v. 115(4), p. 588-638.

Part II:

6. Spatial Equilibrium Across Housing Markets

Alonso, William (1964): "Location and Land Use", Cambridge, MA: Harvard University Press.

Rosen, Sherwin (1979): "Wage-Based Indexes of Urban Quality of Life". In *Current Issues in Urban Economics*, edited by Peter Mieszkowski and Mahlon Straszheim. Baltimore: Johns Hopkins University Press, 1979.

Roback, Jennifer (1982): "Wages, Rents, and the Quality of Life," *Journal of Political Economy*, v. 90(6), pp. 1257-78.

Gyourko, Joseph and Tracy, Joseph (1989): "The Importance of Local Fiscal Conditions in Analyzing Local Labor Markets," Journal of Political Economy, v. 97(5), p.1208-1231.

Other Applications and Empirical Challenges.

7. Agglomeration Economies:

a. Production

Krugman, Paul (1991): "Increasing Returns and Economic Geography," *Journal of Political Economy*, v. 99(3), pp. 483-499.

Moretti, Enrico (2004) "Human Capital Externalities in Cities", Handbook of Regional and Urban Economics, North Holland-Elsevier.

Moretti, Enrico (2004): "Workers' Education, Spillovers and Productivity: Evidence from Plant-Level Production Functions," *American Economic Review*, v. 94 (3), pp. 656-690.

Greenstone, Hornbeck, and Moretti (2007) "Identifying Agglomeration Spillovers: Evidence from Million Dollar Plants", mimeo.

Rauch, Jonathan (1993). "Productivity Gains from Geographic Concentration of Human Capital: Evidence from the Cities", *Journal of Urban Economics*, 34: 380-400.

Rosenthal, Stuart and William Strange (2003). "Geography, Industrial Organization, and Agglomeration", *Review of Economics and Statistics*, 85(2): 377-393.

Rosenthal, Stuart S. & Strange, William C., 2004. "Evidence on the nature and sources of agglomeration economies," *Handbook of Regional and Urban Economics*, in: J. V. Henderson & J. F. Thisse (ed.), Handbook of Regional and Urban Economics, edition 1, volume 4, chapter 49, pages 2119-2171 Elsevier.

Shapiro, Jesse (2005). "Smart Cities: Quality of Life, Productivity, and the Growth Effects of Human Capital", *Review of Economics and Statistics*, forthcoming.

b. Consumption

Glaeser, Kolko & Saiz (2001): "Consumer City," *Journal of Economic Geography*, v. 1, pp. 51-80.

Waldfogel, Joel (2003). "Preference Externalities: An Empirical Study of Who Benefits Whom in Differentiated Product Markets" *RAND Journal of Economics*.

8. The Demand Side of the Market

a. User Cost and Taxes

Poterba, James (1984): "Tax Subsidies to Owner-Occupied Housing: An Asset Market Approach", *Quarterly Journal of Economics*, v. 99 (4), pp. 729-52.

Gyourko, Joseph and Todd Sinai. "The (Un)Changing Geographical Distribution of Housing Tax Benefits: 1980 to 2000." *In Tax Policy and the Economy Volume 18*, James Poterba, ed. (2004, Cambridge: MIT Press.), pp. 175-208. [Revised version of NBER w10322, February 2004.]

Poterba, James (1992): "Taxation and Housing: Old Questions, New Answers," *American Economic Review*, v. 82 (2), pp. 237-242.

b. Hedging/Portfolio Aspects

Sinai, Todd and Nicholas Souleles (2005): "Owner-Occupied Housing as a Hedge Against Rent Risk," *Quarterly Journal of Economics*, v. 120 (2), pp. 763-789.

9. The Supply Side of the Market

a. Construction Costs and Land Across Markets Over Time

Gyourko, Joseph and Albert Saiz (2006): "Construction Costs and the Supply of Housing Structure," *Journal of Regional Science*, v. 46 (4), pp. 661-680.

Davis, Morris and Jonathan Heathcote (2007): "The Price and Quantity of Residential Land in the United States," *Journal of Monetary Economics* (Currently In Press).

Glaeser, Edward and Joseph Gyourko (2005): "Urban Decline and Durable Housing," *Journal of Political Economy*, v. 113 (2), pp. 345-375.

b. Inelasticity and the Impact of Regulation

Glaeser, Edward, Joseph Gyourko and Raven Saks (2005): "Why Is Manhattan So Expensive? Regulation and the Rise in House Prices," *Journal of Law & Economics*, v. 48 (2), pp. 331-370.

Quigley, John and Steven Raphael (2005): "Regulation and the High Cost of Housing in California," *American Economic Review Papers and Proceedings*, v. 95 (2), pp. 323-328.

Gyourko, Joseph, Albert Saiz and Anita A. Summers (2006). "A New Measure of the Local Regulatory Environment in Housing Markets: The Wharton Residential Land Use Regulatory Index", Zell/Lurie Real Estate Center at Wharton working paper, 2006.

<u>Part III:</u>

10. Pricing Across Markets

a. Long run trends

Gyourko, Joseph, Christopher Mayer and Todd Sinai (2006): "Superstar Cities," NBER Working Paper No. W12355.
Van Nieuwerburg & Weill (2006): "Why Has House Price Dispersion Gone Up," Working Paper (SSRN id 923472).Case, Karl and Robert Shiller (1989): "The Efficiency of the Market for Single-Family Homes," *The American Economic Review*, v. 79 (1), pp. 125-137.

b. Short run dynamics

Himmelberg, Charles, Christopher Mayer and Todd Sinai (2005): "Assessing High House Prices: Bubbles, Fundamentals, and Misperceptions," *Journal of Economic Perspectives*, v. 19 (4), pp. 67-92.
Case, Karl and Robert Shiller (2003): "Is There a Bubble in the Housing Market?," *Brookings Papers on Economic Activity*, v. 2, pp. 299-362.
Smith, Gary and Margaret Hwang Smith, (2006), "Bubble, Bubble, Where's the Housing Bubble," Brookings Papers on Economic Activity, v.1, pp. 1-50.
Glaeser & Gyourko (2006) "Housing Dynamics", mimeo.

11. Price/volume correlations, behavioral factors, and other anomalies

Stein, Jeremy (1995). "Prices and Trading Volume in the Housing Market: A Model with Downpayment Effects," *Quarterly Journal of Economics* 110, May, pp. 379-406.
Lamont, Owen and Jeremy Stein (1999), "Leverage and House Price Dynamics in U.S. Cities", *Rand Journal of Economics* 30, Autumn, pp. 466-486.
Genesove, David and Christopher Mayer. 1997. "Equity and Time to Sale in the Real Estate Market." *The American Economic Review*, Vol. 87(3), 255-69.
Genesove, David and Christopher Mayer (2001): "Loss Aversion and Seller Behavior: Evidence from the Housing Market," *Quarterly Journal of Economics*, v. 116(4), pp. 1233-1260.
Levitt, Steven and Chad Syverson (2005): "Market Distortions when Agents are Better Informed: The Value of Information in Real Estate Transactions," Working Paper.
Hsieh, Chang-Tai and Enrico Moretti (2003): "Can Free Entry be Inefficient? Fixed Commissions and Social Waste in the Real Estate Industry," *Journal of Political Economy*, v. 111 (5), pp. 1076-1122.

12. Housing and Consumption

Campbell, John and Joao Cocco (2007): "How do house prices affect consumption? Evidence from micro data," *Journal of Monetary Economics*, vol 54(3), pp 591-621.
Case, Karl, John Quigley and Robert Shiller (2005): "Comparing Wealth Effects: The Stock Market versus the Housing Market," *Advances in Macroeconomics*, v. 5 (1), pp. 1-34.
Chetty, Raj and Adam Szeidl (2007) "Consumption Commitments and Risk Preferences" *Quarterly Journal of Economics* 122(2): 831-877.
Shore, Stephen and Todd Sinai. (2006) "Commitment, Risk, and Consumption: Do Birds of a Feather Have Bigger Nests?" *Mimeo.*
Hurst, Erik and Frank Stafford (2004) "Home Is Where the Equity Is: Mortgage Refinancing and Household Consumption", *Journal of Money, Credit & Banking*, Vol. 36.