

**REAL 947: Advanced Real Estate and Urban Economics**  
**Fall 2018**  
**Fridays, 10:00am to 1:00pm, at SH-DH 116**

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**Introduction**

This course covers fundamental topics in the broad fields of urban economics and real estate. The first part of the course focuses on the application of econometric methods to analyze important empirical issues, such as household sorting and valuation of public goods. The second part of the course examines economic modeling and empirical work of specific issues such as racial segregation, spatial equilibrium, provision of local public and private goods, housing supply, demand, financing, prices and cycles.

**Requirements:**

The course assumes that students have familiarity with standard first year econometrics and microeconomics.

Students should read all assigned articles before class. The articles are available on Canvas.

**Grades**

There will be three applied exercises in the first part of the semester. Late problem sets will not be accepted. The students will also present an original empirical research at the end of the semester. Topics and guidelines for the presentations will be discussed with the Professor during the semester. One-third of the final grade will be based on problem sets, and two-thirds on the final presentation.

## Topics and Reading List

Part I: Econometric Tools and Selected Applications in Urban and Public Economics

Part II: Racial Segregation, Spatial Equilibrium, Local Public and Private Goods, and Selected Housing Topics

### 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.

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 (1999): "Empirical Strategies in Labor Economics," *The Handbook of Labor Economics*, eds. O. Ashenfelter and D. Card, v. III, North Holland.

Imbens, Guido and Jeffrey Wooldridge (2009) "Recent Developments in the Econometrics of Program Evaluation", *Journal of Economic Literature*, vol. 47(1): p. 5-86.

Baum-Snow, Nathaniel and Fernando Ferreira (2015) "Causal Inference in Urban and Regional Economics", in *Handbook of Regional and Urban Economics*, edited by Gilles Duranton, J. Vernon Henderson, and William Strange.

*Application: Do Neighborhoods 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.

Chetty, Raj, Nathaniel Hendren, and Lawrence Katz (2016): "The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment", *American Economic Review* 106(4): 855-902.

Chetty, Raj and Nathaniel Hendren (2018) "The Effects of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects", *Quarterly Journal of Economics*, 133(3): p. 1163-1228.

Chetty, Raj and Nathaniel Hendren (2018) "The Effects of Neighborhoods on Intergenerational Mobility II: County-Level Estimates", *Quarterly Journal of Economics*, 133(3): p. 1163-1228.

#### **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.

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

Abadie, Alberto, Alexis Diamond, and Jens Hainmueller (2010) “Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California’s Tobacco Control Program”, *Journal of the American Statistical Association*, vol. 105, issue 490, p. 493-505.

*Application: Evaluation of Governmental Programs:*

Busso, Matias, Jesse Gregory, and Patrick Kline (2013): "Assessing the Incidence and Efficiency of a Prominent Place Based Policy," *American Economic Review*, 103, pp. 897-947.

Kline, Patrick and Enrico Moretti (2014) “Local Economic Development, Agglomeration Economies, and the Big Push: 100 Years of Evidence from the Tennessee Valley Authority”, *The Quarterly Journal of Economics*, vol. 129(1), p. 275-331.

### **3. Regression Discontinuity Design**

Cook, Thomas D. and Donald T. Campbell (1979): *Quasi-Experimentation, Design & Analysis Issues for Field Settings*, Boston: Houghton Mifflin.

Lee, David (2007): “Randomized Experiments from Non-random Selection in U.S. House Elections,” *Journal of Econometrics*, v. 142 (2), pp. 675-697.

Lee, David and Thomas Lemieux (2010): “Regression Discontinuity Designs in Economics,” *Journal of Economic Literature*, vol. 48, p. 281-355.

DiNardo, John and David Lee (2011) “Program Evaluation and Research Designs”, in *Handbook of Labor Economics*, edited by Orley Ashenfelter and David Card.

Pei, Zhuan, David Card, David Lee, and Andrea Weber (2018) “Local Polynomial Order in Regression Discontinuity Designs,” Princeton University Industrial Relations Section Working Paper #622.

*Application: Valuation of Investments in School Infrastructure:*

Cellini, Stephanie, Fernando Ferreira and Jesse Rothstein (2010) “The Value of School Facilities: Evidence from a Dynamic Regression Discontinuity Design,” *The Quarterly Journal of Economics*, vol. 125(1), p. 215-261.

### **4. Selection on Unobservables**

Heckman, James (1979) “Sample Selection Bias as a Specification Error”, *Econometrica*, vol. 47(1), p. 153-161.

Imbens, Guido and Joshua Angrist (1994) “Identification and Estimation of Local Average Treatment Effects” *Econometrica*, 62, 467-475.

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.

Ahn, Hyungha, and James Powell (1993) “Semiparametric Estimation of Censored Selection Models with a Nonparametric Selection Mechanism,” *Journal of Econometrics* 58: 3-29.

Garen, John (1984) “The Returns to Schooling: A Selectivity Bias Approach with a Continuous Choice Variable,” *Econometrica* 52: 1199-1218.

Kline, Patrick and Christopher Walters (2018) “On Heckits, LATE, and Numerical Equivalence”, NBER Working Paper #24477.

Goldsmith-Pinkham, Paul, Isaac Sorkin, and Henry Swift (2018) “Bartik Instruments: What, When, Why, and How?” NBER Working Paper #24408.

*Application 1: Causes of Suburbanization*

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

*Application 2: Valuation of Air Quality*

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.

Isen, Adam, Maya Rossin-Slater, and W. Reed Walker (2017): “Every Breath You Take – Every Dollar You’ll Make: The Long Term Consequences of the Clean Air Act of 1970”, *Journal of Political Economy*, vol. 125(3), p. 848:902.

## **5. Discrete Choice Models**

McFadden, Daniel (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.

Train, Kenneth (2009) “Discrete Choice Methods with Simulation”, Cambridge University Press (also available in Ken Train’s website).

*Application: Tiebout Sorting and Valuation of Schools and Neighborhoods:*

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

Galiani, Sebastian, Alvin Murphy, and Juan Pantano (2015) “Estimating Neighborhood Choice Models: Lessons from a Housing Assistance Experiment”, *American Economic Review*, vol. 105(11), p. 3385-3415.

## **Part II:**

### **6. Residential Segregation and Discrimination**

Yinger, John (1986): “Measuring Racial Discrimination with Fair Housing Audits: Caught in the Act,” *The American Economic Review*, v. 76 (5), pp. 881-893.

Bayer, Patrick, Marcus Casey, Fernando Ferreira, and Robert McMillan (2017) “Racial and Ethnic Price Differentials in the Housing Market” *Journal of Urban Economics*, vol 102, p. 91-105.

Bayer, Patrick, Fernando Ferreira, and Stephen Ross (2018) “What Drives Racial and Ethnic Differences in High-Cost Mortgages? The Role of High-Risk Lenders” *The Review of Financial Studies*, vol. 31(1), p. 175-205.

Card, David, Alexandre Mas and Jesse Rothstein (2008): “Tipping and the Dynamics of Segregation,” *The Quarterly Journal of Economics*, v. 123(1), pp. 177-218.

Caetano, Gregorio and Vikram Maheshri (2017): “School Segregation and the Identification of Tipping Behavior”, *Journal of Public Economics*, vol. 148, p. 115-135.

Wong, Maisy (2013): “Estimating Ethnic Preferences Using Ethnic Housing Quotas in Singapore”, *Review of Economic Studies*, 80(3), p. 1178-1214.

Chetty, Raj, Nathaniel Hendren, Maggie Jones, and Sonya Porter (2018) “Race and Economic Opportunity in the United States: An Intergenerational Perspective”, NBER Working Paper #24441.

## **7. Spatial Equilibrium Across Housing Markets**

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.

Moretti, Enrico (2013): “Real Wage Inequality”, *American Economic Journal: Applied Economics*, 5(1), p. 65-103.

Diamond, Rebecca (2015): “The Determinants and Welfare Implications of US Workers’ Diverging Location Choices by Skill: 1980-2000”, forthcoming *American Economic Review*.

Bottan, Nicolas and Ricardo Perez-Truglia (2018) “Choosing Your Pond: Location Choices and Relative Income”, NBER Working Paper #23615.

## **8. Local Governments**

Glaeser, Edward (2013): “Urban Public Finance”, in *Handbook of Public Economics*, Edited by Alan Auerbach, Raj Chetty, Martin Feldstein, and Emmanuel Saez.

Ferreira, Fernando and Joseph Gyourko (2009): “Do Political Parties Matter? Evidence from U.S. Cities”, *The Quarterly Journal of Economics*, 124(1), p. 349-397.

Rothstein, Jesse (2006): “Good Principals or Good Peers? Parental Valuation of School Characteristics, Tiebout Equilibrium, and the Incentive Effects of Competition Among Jurisdictions”, *American Economic Review*, v. 96(4), p. 1333-1350.

Lafortune, Julien, Jesse Rothstein, and Diane Whitmore Schanzenbach (2018) “School Finance Reform and the Distribution of Student Achievement”, *American Economic Journal: Applied Economics*, vol 10(2), p. 1-26.

Davis, Matthew and Fernando Ferreira (2017) “Housing Disease and Public School Finances”, NBER Working Paper #24140.

Mukherjee, Anita (2017) “Impacts of Private Prison Contracting on Inmate Time Served and Recidivism”, mimeo.

Ferraz, Claudio and Frederico Finan (2011): “Electoral Accountability and Corruption: Evidence from the Audits of Local Governments”, *American Economic Review*, v. 101(4), p. 1274-1311.

## **9. Provision of Other Local Public and Private Goods**

Glaeser, Edward, Jed Kolko, and Albert Saiz (2001) “Consumer city” *Journal of Economic Geography*, vol 1(1) p. 27-50.

Couture, Victor (2016) “Valuing the Consumption Benefits of Urban Density”, mimeo.

Davis, Donald, Jonathan Dingel, Joan Monras, and Eduardo Morales (2018) “How Segregated is Urban Consumption”, *Journal of Political Economy*, forthcoming.

Handbury, Jessie, Ilya Rahkovsky, and Molly Schnell (2016): “Is the Focus on Food Deserts Fruitless? Retail Access and Food Purchases across the Socioeconomic Spectrum”, NBER Working Paper #21126.

Waldfogel, Joel (2008): “The Median Voter and the Median Consumer: Local Private Goods and Population Composition”, *Journal of Urban Economics*, v. 63(2), p. 567-582.

Sinai, Todd and Joel Waldfoegel (2004): “Geography and the Internet: Is the Internet a Substitute or a Complement for Cities?”, *Journal of Urban Economics*, v. 56(1), p. 1-24.

Relihan, Lindsay (2017) “Is Online Retail Killing Coffee Shops? Estimating the Winners and Losers of Online Retail Using Customer Transaction Microdata”, mimeo.

## **10. Housing**

### **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.

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

### **b. Prices**

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.

Case, Karl and Robert Shiller (2003): “Is There a Bubble in the Housing Market?,” *Brookings Papers on Economic Activity*, v. 2, pp. 299-362.

Himmelberg, Charles, Christopher Mayer, and Todd Sinai (2005) “Assessing High House Prices: Bubbles, Fundamentals and Misperceptions”, *Journal of Economic Perspectives*, vol. 19(4), p. 67-92.

Ferreira, Fernando and Joseph Gyourko (2011): “Anatomy of the Beginning of the Housing Boom: U.S. Neighborhoods and Metropolitan Areas, 1993-2009”, mimeo, The Wharton School, University of Pennsylvania.

Soo, Cindy (2013) “Quantifying Animal Spirits: News Media and Sentiment in the Housing Market”, Ross School of Business Working Paper #1200.

Charles, Kerwin, Erik Hurst, and Matthew Notowidigdo (2018): “Housing Booms and Busts, Labor Market Opportunities, and College Attendance”, forthcoming.

### **c. Housing Finance**

Mian, Atif and Amir Sufi (2009): “The Consequences of Mortgage Credit Expansion: Evidence from the U.S. Mortgage Default Crisis”, *Quarterly Journal of Economics*, 124(4), p. 1449-1496.

Adelino, Manuel, Antoinette Schoar, and Felipe Severino (2016): “Loan Originations and Defaults in the Mortgage Crisis: the Role of the Middle Class”, *The Review of Financial Studies*, vol. 29(7), p. 1635-1670.

Keys, Benjamin, Tanmoy Mukherjee, Amit Seru, and Vikrant Vig (2010) “Did Securitization Lead to Lax Screening? Evidence from Subprime Loans”, *The Quarterly Journal of Economics*, vol. 125(1), p. 307-362.

Favara, Giovanni and Jean Imbs (2015) “Credit Supply and the Price of Housing”, *American Economic Review*, vol. 105(3), p. 958-992.

DeFusco, Anthony (2017): “Homeowner Borrowing and Housing Collateral: New Evidence from Expiring Price Controls”, *Journal of Finance*, 73(2) p. 523-573.

### **d. Supply**

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

- 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.
- Saiz, Albert (2010): “The Geographic Determinants of Housing Supply”, *Quarterly Journal of Economics*, vol. 125(3), p. 1253-1296.
- Glaeser, Edward and Joseph Gyourko (2018) “The Economic Implications of Housing Supply”. *Journal of Economic Perspectives*, vol. 32(1), p. 3-30.

### **11. Other Housing-Neighborhood Issues**

- Ferreira, Fernando (2010): “You Can Take It with You: Proposition 13 Tax Benefits, Residential Mobility, and Willingness to Pay for Housing Amenities”, *Journal of Public Economics*, v. 94, p. 661-673.
- Struyven, Daan (2014): “Housing Lock: Dutch Evidence on the Impact of Negative Home Equity on Household Mobility”, mimeo MIT.
- Greenstone, Michael, Alexandre Mas, and Hoai-Luu Nguyen (2014): “Do Credit Market Shocks affect the Real Economy? Quasi-Experimental Evidence from the Great Recession and ‘Normal’ Economic Times”, NBER Working Paper #20704.
- Guerrieri, Veronica, Daniel Hartley, and Erik Hurst (2013): “Endogenous Gentrification and Housing Price Dynamics”, *Journal of Public Economics*, v. 100, p. 45-60
- Couture, Victor and Jessie Handbury (2017) “Urban Revival in America, 2000 to 2010”, mimeo.
- Diamond, Rebecca, Timothy McQuade, and Franklin Qian (2018) “The Effects of Rent Control Expansion on Tenants, Landlords, and Inequality: Evidence from San Francisco”, NBER Working Paper #2481.