Sample Syllabus – Graduate Urban Economics

Course Overview

This one-semester course teaches theoretical tools and quantitative techniques to do research in urban economics, real estate, and similar fields. Knowledge of first-year microeconomic theory, game theory, and econometric theory is essential. "Good to haves" are first courses in industrial organization and international trade, but are not necessary. This course is self-contained.

In terms of methods, we will see (1) Applied theory; (2) Model-based empirical applications, featuring partial and general equilibrium approaches to neighborhood choice; and (3) Design-based analyses.

This course will cover five main areas: (i) spatial equilibrium and econometric foundations; (ii) agglomeration, housing supply and sorting; (iii) transportation markets; (iv) markets, online and offline; and (v) neighborhood choice and housing assistance.

I. **Spatial equilibrium and econometric foundations.** We will cover the foundational Alonso-Muth-Mills monocentric city model, the Rosen-Roback model of discrete choice between cities, and subsequent work. To help you take these models to the data, we discuss threats to their identification, as well as quasi-experimental designs to deal with these threats.
II. **Agglomeration, housing supply, and sorting.** Cities feature agglomeration and congestion forces, molding the spatial distribution of economic activity. We discuss sources of agglomeration effects and the estimation of housing supply elasticities and hedonics.
III. **Transportation markets.** Workers commute, but also travel for pleasure. How should we design "better" transit networks, and are these gains shared evenly between the rich and the poor?
IV. **Markets, online and offline.** As the economy digitizes, with one click, consumers can deliver the world to their doorstep. What, then, is the future of retail? For us researchers, what opportunities do these new data bring?
V. **Neighborhood choice and housing assistance.** As a scarce resource, housing assistance is rationed, often by something other than the price mechanism. How can we better disburse housing assistance, and what are the effects of better housing on health, education, and criminal behavior?

Course Requirements

- The course requirements comprise (1) two empirical problem sets; (2) class preparation and participation; and (3) a draft research proposal, to be presented at the end of the course.
- Assigned papers are marked with an asterisk. Students are expected to read them and submit (1) a two-sentence summary of each paper; and (2) two questions about the research design, identification, as well as possible extensions.
- Grading is based on problem sets (30%), class preparation and participation (30%), and the research proposal and presentation (40%).

Course Outline and Short Reading List

I. (3 weeks) Spatial Equilibrium and Econometric Foundations

1. **Spatial equilibrium and land use theory**
   - *Albouy, David. "What are cities worth? Land rents, local productivity, and the total value of amenities." Review of Economics and Statistics 98, no. 3 (2016): 477-487.
   - *M. Fujita. "Urban Economic Theory." Cambridge University Press, Cambridge (1989). Read chapters 1 and 2.
2. **Taking Rosen-Roback to data**
   - Albouy, David, and Bryan A. Stuart. "Urban population and amenities: The neoclassical model of location." International Economic Review 61, no. 1 (2020): 127-158.
   - *Baum-Snow, Nathaniel, Matthew Freedman, and Ronni Pavan. "Why has urban inequality increased?" American Economic Journal: Applied Economics 10, no. 4 (2018): 1-42.

- *Diamond, Rebecca. "The determinants and welfare implications of US workers' diverging location choices by skill: 1980-2000." American Economic Review 106, no. 3 (2016): 479-524.

3. **Identification in spatial settings**
   - *Baum-Snow, Nathaniel, and Fernando Ferreira. "Causal inference in urban and regional economics." In Handbook of Regional and Urban Economics, vol. 5, pp. 3-68. Elsevier, 2015.
   - *Gibbons, Steve, Henry G. Overman, and Eleonora Patacchini. "Spatial methods." In Handbook of Regional and Urban Economics, vol. 5, pp. 115-168. Elsevier, 2015.
   - Dingel, Jonathan I., and Felix Tintelnot. "Spatial economics for granular settings." R&R ECMA.
   - Yap, Luther. "Design-based justification for clustering with multiway assignment." Mimeo, 2022.
4. **Shift-share designs**
   - *Adao, Rodrigo, Michal Kolesár, and Eduardo Morales. "Shift-share designs: Theory and inference." The Quarterly Journal of Economics 134, no. 4 (2019): 1949-2010.
   - *Goldsmith-Pinkham, Paul, Isaac Sorkin, and Henry Swift. "Bartik instruments: What, when, why, and how." American Economic Review 110, no. 8 (2020): 2586-2624.
5. **Bid-rent and non-monocentric land use**
   - *Duranton, Gilles, and Diego Puga. "Urban land use." In Handbook of Regional and Urban Economics, vol. 5, pp. 467-560. Elsevier, 2015.
   - Fujita, Masahisa, and Hideaki Ogawa. "Multiple equilibria and structural transition of non-monocentric urban configurations." Regional Science and Urban Economics 12, no. 2 (1982): 161-196.
   - *Krugman, Paul. "Increasing returns and economic geography." Journal of Political Economy 99, no. 3 (1991): 483-499.
6. **Modern quantitative spatial models: A preview**
   - *Ahlfeldt, Gabriel M., Stephen J. Redding, Daniel M. Sturm, and Nikolaus Wolf. "The economics of density: Evidence from the Berlin Wall." Econometrica 83, no. 6 (2015): 2127-2189.

II. (1.5 weeks) Agglomeration, Housing Supply, and Sorting

1. **What are the spillovers from agglomeration?**
   - *Duranton, Gilles, and Diego Puga. "Micro-foundations of urban agglomeration economies." In Handbook of Regional and Urban Economics, vol. 4, pp. 2063-2117. Elsevier, 2004.
   - *Combes, Pierre-Philippe, and Laurent Gobillon. "The empirics of agglomeration economies." In Handbook of Regional and Urban Economics, vol. 5, pp. 247-348. Elsevier, 2015.
2. **Housing supply and urban growth**
   - *Glaeser, Edward L., and Joseph Gyourko. "Urban decline and durable housing." Journal of Political Economy 113, no. 2 (2005): 345-375.
   - Glaeser, Edward L., and Bryce A. Ward. "The causes and consequences of land use regulation: Evidence from Greater Boston." Journal of Urban Economics 65, no. 3 (2009): 265-278.
   - *Saiz, Albert. "The geographic determinants of housing supply." The Quarterly Journal of Economics 125, no. 3 (2010): 1253-1296.
   - Baum-Snow, Nathaniel, and Lu Han. "The microgeography of housing supply." R&R JPE.
3. **Tiebout sorting and hedonics**
   - *Calabrese, Stephen M., Dennis N. Epple, and Richard E. Romano. "Inefficiencies from metropolitan political and fiscal decentralization: Failures of Tiebout competition." The Review of Economic Studies 79, no. 3 (2012): 1081-1111.
   - Bishop, Kelly C., and Christopher Timmins. "Estimating the marginal willingness to pay function without instrumental variables." Journal of Urban Economics 109 (2019): 66-83.
   - *Diamond, Rebecca, and Tim McQuade. "Who wants affordable housing in their backyard? An equilibrium analysis of low-income property development." Journal of Political Economy 127, no. 3 (2019): 1063-1117.

III. (3 weeks) Transportation Markets

1. **Foundations: Discrete choice methods and equilibrium**

- *Berry, Steven T., and Philip A. Haile. "Foundations of demand estimation." In Handbook of Industrial Organization, vol. 4, no. 1, pp. 1-62. Elsevier, 2021.
- Rust, John. "Optimal replacement of GMC bus engines: An empirical model of Harold Zurcher." Econometrica: Journal of the Econometric Society (1987): 999-1033.
- *Ericson, Richard, and Ariel Pakes. "Markov-perfect industry dynamics: A framework for empirical work." The Review of Economic Studies 62, no. 1 (1995): 53-82.

2. **Valuing travel time**
   - *Small, Kenneth A., Clifford Winston, and Jia Yan. "Uncovering the distribution of motorists' preferences for travel time and reliability." Econometrica 73, no. 4 (2005): 1367-1382.
   - *Buchholz, Nicholas, Laura Doval, Jakub Kastl, Filip Matějka, and Tobias Salz. "The value of time: Evidence from auctioned cab rides." R&R ECMA.
3. **Mobility and congestion**
   - *Akbar, Prottoy A., Victor Couture, Gilles Duranton, and Adam Storeygard. Mobility and congestion in urban India. Forthcoming, AER.
   - *Allen, Treb, and Costas Arkolakis. "The welfare effects of transportation infrastructure improvements." Review of Economic Studies, forthcoming.
   - Kreindler, Gabriel. "Peak-hour road congestion pricing: Experimental evidence and equilibrium implications." R&R ECMA.
4. **Taxi and ride-hailing markets**
   - *Frechette, Guillaume R., Alessandro Lizzeri, and Tobias Salz. "Frictions in a competitive, regulated market: Evidence from taxis." American Economic Review 109, no. 8 (2019): 2954-92.
   - *Buchholz, Nicholas. "Spatial equilibrium, search frictions, and dynamic efficiency in the taxi industry." The Review of Economic Studies 89, no. 2 (2022): 556-591.
   - Gaineddenova, Renata. "Pricing and Efficiency in a Decentralized Ride-Hailing Platform." Mimeo, 2022.
5. **Equilibrium effects of transit expansion**
   - Severen, Christopher. "Commuting, labor, and housing market effects of mass transportation: Welfare and identification." The Review of Economics and Statistics (2019): 1-99.
   - *Heblich, Stephan, Stephen J. Redding, and Daniel M. Sturm. "The making of the modern metropolis: Evidence from London." The Quarterly Journal of Economics 135, no. 4 (2020): 2059-2133.
   - *Tsivanidis, Nick. "Evaluating the impact of urban transit infrastructure: Evidence from bogota's transmilenio." R&R AER.
   - Miyauchi, Yuhei, Kentaro Nakajima, and Stephen J. Redding. "Consumption access and agglomeration: Evidence from smartphone data." Mimeo, 2022.
   - Lee, Kwok Hao, and Brandon Joel Tan. "Urban Transit Infrastructure and Inequality: The Role of Access to Non-Tradable Goods and Services." Mimeo, 2022.

IV. (1.5 weeks) Markets, Online and Offline

1. **How has digital technology changed the retail landscape?**
   - *Goldfarb, Avi, and Catherine Tucker. "Digital economics." Journal of Economic Literature 57, no. 1 (2019): 3-43.
   - Gorback, Caitlin. "Ridesharing and the redistribution of economic activity." Mimeo, 2020.
   - *Almagro, Milena, and Tomás Domınguez-Iino. "Location sorting and endogenous amenities: Evidence from Amsterdam." Mimeo, 2021.
   - Sullivan, Michael. "Price controls in a multi-sided market." Mimeo, 2022.
2. **Retail (non)-entry and investment**
   - *Allcott, Hunt, Rebecca Diamond, Jean-Pierre Dubé, Jessie Handbury, Ilya Rahkovsky, and Molly Schnell. "Food deserts and the causes of nutritional inequality." The Quarterly Journal of Economics 134, no. 4 (2019): 1793-1844.
   - *Houde, Jean-François, Peter Newberry, and Katja Seim. "Nexus Tax Laws and Economies of Density in E-Commerce: A Study of Amazon's Fulfillment Center Network." Econometrica, forthcoming.

3. **New spatial data: Perks and perils**
   - *Couture, Victor, Jonathan I. Dingel, Allison Green, Jessie Handbury, and Kevin R. Williams. "JUE Insight: Measuring movement and social contact with smartphone data: a real-time application to COVID-19." Journal of Urban Economics 127 (2022): 103328.
   - *Kuchler, Theresa, Dominic Russel, and Johannes Stroebel. "JUE Insight: The geographic spread of COVID-19 correlates with the structure of social networks as measured by Facebook." Journal of Urban Economics 127 (2022): 103314.
   - Chevalier, Judith A., Jason L. Schwartz, Yihua Su, and Kevin R. Williams. "JUE insight: distributional impacts of retail vaccine availability." Journal of Urban Economics 127 (2022): 103382.

V. (3 weeks) Neighborhood Choice and Housing Assistance

1. **Demand for schools and neighborhoods**
   - *S. E. Black, "Do better schools matter? Parental valuation of elementary education," Quarterly Journal of Economics, 1999, 577–599.
   - *P. Bayer, F. Ferreira, and R. McMillan, "A Unified Framework for Measuring Preferences for Schools and Neighborhoods," Journal of Political Economy, 2007.
   - P. Bayer, R. McMillan, A. Murphy, and C. Timmins. "A dynamic model of demand for houses and neighborhoods," Econometrica, 2017
2. **Housing markets**
   - *S. Galiani, A. Murphy, and J. Pantano, "Estimating neighborhood choice models: Lessons from a housing assistance experiment," American Economic Review, 2015.
   - C. Fu and J. Gregory, "Estimation of an Equilibrium Model with Externalities: Post-Disaster Neighborhood Rebuilding," Econometrica 2018.
   - *Diamond, Rebecca, Tim McQuade, and Franklin Qian. "The effects of rent control expansion on tenants, landlords, and inequality: Evidence from San Francisco." American Economic Review 109, no. 9 (2019): 3365-94.
3. **Allocating public housing**
   - Sieg, Holger, and Chamna Yoon. "Waiting for affordable housing in New York City." Quantitative Economics 11, no. 1 (2020): 277-313.
   - *Waldinger, Daniel. "Targeting in-kind transfers through market design: A revealed preference analysis of public housing allocation." American Economic Review 111, no. 8 (2021): 2660-96.
   - Ferdowsian, Andrew, Kwok-Hao Lee, and Luther Yap. "Build to Order: Endogenous supply in centralized mechanisms." Mimeo, 2022.
   - *Lee, Kwok-Hao, Andrew Ferdowsian, and Luther Yap. "The dynamic allocation of public housing: Policy and spillovers." Mimeo, 2022.
4. **Long run effects of neighborhoods and housing assistance**
   - *Chetty, Raj, Nathaniel Hendren, and Lawrence F. Katz. "The effects of exposure to better neighborhoods on children: New evidence from the moving to opportunity experiment." American Economic Review 106, no. 4 (2016): 855-902.
   - Chetty, Raj, and Nathaniel Hendren. "The impacts of neighborhoods on intergenerational mobility I: Childhood exposure effects." The Quarterly Journal of Economics 133, no. 3 (2018): 1107-1162.
   - Chyn, Eric. "Moved to opportunity: The long-run effects of public housing demolition on children." American Economic Review 108, no. 10 (2018): 3028-56.
   - Chyn, Eric, and Lawrence F. Katz. "Neighborhoods matter: Assessing the evidence for place effects." Journal of Economic Perspectives 35, no. 4 (2021): 197-222.
   - *van Dijk, Winnie. "The socio-economic consequences of housing assistance." Mimeo, 2019.
5. **Path dependence**
   - *Ambrus, Attila, Erica Field, and Robert Gonzalez. "Loss in the time of cholera: long-run impact of a disease epidemic on the urban landscape." American Economic Review 110, no. 2 (2020): 475-525.
6. **Place-based policies**
   - *Glaeser, Edward L., and Joshua D. Gottlieb. "The economics of place-making policies." No. w14373. National Bureau of Economic Research, 2008.

- *Busso, Matias, Jesse Gregory, and Patrick Kline. "Assessing the incidence and efficiency of a prominent place based policy." American Economic Review 103, no. 2 (2013): 897-947.