

ECON 7390– Section 18435
Research and Readings
ECONOMIC ANALYSIS OF URBAN AREAS

Meets TTh 11:30am-1:00pm in 212 McElhinney Hall

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hours: by appointment
email: jkohlhase@uh.edu
web pages: <http://www.uh.edu/~kohlhase> (general information)
<http://www.uh.edu/blackboard> (class website, use Blackboard Learn;
password access)

Overview: This course is a Ph.D.-level applied microeconomics course focusing on urban economics. The field is quite diverse and could easily take up a two-semester sequence, so we will only be able to cover selected topics in this one-semester course. The course begins by examining the monocentric city model by developing bid-rent functions and performing comparative static predictions of the model. We empirically test the predictions of the monocentric model and analyze extensions to polycentric cities. Other topics include the economics of agglomeration economies, hedonics and housing markets, spatial equilibrium across cities and urban transportation issues. We explore some current issues in urban economics by looking at research on natural disasters, climate change and COVID in the urban economy. Other topics may be added depending on the interests of the class.

Recommended Textbooks:

Edward L. Glaeser, *Cities, Agglomeration and Spatial Equilibrium*,
2008, Oxford University Press, ISBN978-0-19-929044-4 (**Glaeser**)
Masahisa Fujita, *Urban Economic Theory: Land Use and City Size*,
1989, Cambridge University Press, ISBN 0-521-34662-2 (**Fujita**)

Handbooks of Urban and Regional Economics:

1. *Handbook of Urban and Regional Economics, vol. 2, Urban Economics*, edited by E.S. Mills (Amsterdam: Elsevier, 1988), (**Handbook 2**)
2. *Handbook of Urban and Regional Economics, vol. 3, Applied Urban Economics*, edited by P. Cheshire and E.S. Mills (Amsterdam: Elsevier, 1999), (**Handbook 3**)
3. *Handbook of Regional and Urban Economics, vol. 4, Cities and Geography*, edited by J.V. Henderson and J. F. Thisse (Amsterdam: Elsevier, 2006), (**Handbook 4**). Draft papers available at <http://www.econ.brown.edu/Faculty/henderson/handbook.html>.
4. *Handbook of Regional and Urban Economics, vol.5A & vol. 5B*, edited by Gilles Duranton, J. Vernon Henderson and William C. Strange (Amsterdam: Elsevier, 2015), (**Handbook 5**). Drafts of each chapter are available at <http://real.wharton.upenn.edu/~duranton/handbook.html>

Course Evaluation: (*subject to revision*)

50% Class Research Project (ongoing throughout the semester)

30% Problem sets

20% Class presentation(s) of articles

There will be 2-3 problem sets, and at least one will involve the use of Stata. We will also learn some digital mapping and may use QGIS and/or ArcGIS. The goal of the class research project is to develop the beginnings of an empirical project by the end of the course, with the ultimate goal to submit the finished project to a journal sometime after the course is completed. Each student will also be required to present one or more articles to the class in the style of a referee report and to lead the class discussion.

Course Policies: I expect you to attend all classes and to be an active participant in each.

Problem sets and other course materials will be posted on our class Blackboard website. I may have to post large data sets on Dropbox. All assignments are mandatory. No late assignments accepted. Original hard copies (but no Xeroxes) of problem sets are required; no electronic submissions will be accepted. However, sometimes I will request that you submit copies of your statistical programs electronically. You may form study-groups (in fact I encourage you to do so), but each student must turn in her/his own problem sets. Each problem set turned in must be unique and original. **The Honesty code of the University of Houston applies in this course:**

(see <http://publications.uh.edu/content.php?catoid=33&navoid=12165>)

Course Preparation: Students should have completed the first-year Ph.D. sequence in microeconomic theory, and at least one course in econometrics. Familiarity with Stata is also assumed.

Learning Outcomes:

- Students will attain through lectures, problem sets, and readings, substantive knowledge about the economics of cities and regions.
- Students will improve their technical knowledge about a number of modelling aspects, econometrics techniques, and the link between the two.
- Students will improve their critical thinking (and hopefully creativity) about existing research on cities and regions.
- Students will improve their ability to present complex research output in a clear and succinct way.

Required Information from the University of Houston

Face Covering Policy

To reduce the spread of COVID-19, the University strongly encourages everyone (vaccinated or not) to wear face coverings indoors on campus including classrooms for both faculty and students.

Presence in Class

Your presence in class each session means that you:

- Are NOT exhibiting any [Coronavirus Symptoms](#) that makes you think that you may have COVID-19
- Have NOT tested positive or been diagnosed for COVID-19
- Have NOT knowingly been exposed to someone with COVID-19 or suspected/presumed COVID-19

If you are experiencing any COVID-19 symptoms that are not clearly related to a pre-existing medical condition, do not come to class. Please see [Student Protocols](#) for what to do if you experience symptoms and [Potential Exposure to Coronavirus](#) for what to do if you have potentially been exposed to COVID-19. Consult the [Graduate Excused Absence Policy](#)) for information regarding excused absences due to medical reasons.

COVID-19 Information

Students are encouraged to visit the University's [COVID-19](#) website for important information including on-campus testing, vaccines, diagnosis and symptom protocols, campus cleaning and safety practices, report forms, and positive cases on campus. Please check the website throughout the semester for updates.

Vaccinations

Data suggests that vaccination remains the best intervention for reliable protection against COVID-19. Students are asked to familiarize themselves with pertinent [vaccine information](#), consult with their health care provider. The University strongly encourages all students, faculty and staff to be vaccinated.

Reasonable Academic Adjustments/Auxiliary Aids

The University of Houston complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for disabled students. In accordance with Section 504 and ADA guidelines, UH strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please contact [the Justin Dart Jr. Student Accessibility Center](#) (formerly the Justin Dart, Jr. Center for Students with DisABILITIES).

Excused Absence Policy

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston [Graduate Excused Absence Policy](#) for reasons including: medical illness of

student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Under these policies, students with excused absences will be provided with an opportunity to make up any quiz, exam or other work that contributes to the course grade or a satisfactory alternative. Please read the full policy for details regarding reasons for excused absences, the approval process, and extended absences. Additional policies address absences related to [military service](#), [religious holy days](#), [pregnancy and related conditions](#), and [disability](#).

Recording of Class

Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the [Justin Dart, Jr. Student Accessibility Center](#). If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with *anyone* without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.

Syllabus Changes

Due to the changing nature of the COVID-19 pandemic, please note that the instructor may need to make modifications to the course syllabus and may do so at any time. Notice of such changes will be announced as quickly as possible through email and postings on Blackboard.

UH Email

Please check and use your Cougarnet email for communications related to this course. To access this email, [login](#) to your Microsoft 365 account with your Cougarnet credentials.

Webcams

Access to a webcam is required for students participating remotely in this course. Webcams must be turned on during exams to ensure the academic integrity of exam administration.

Honor Code Statement

Students may be asked to sign an honor code statement as part of their submission of any graded work including but not limited to projects, quizzes, and exams: *"I understand and agree to abide by the provisions in the [University of Houston Graduate Academic Honesty Policy](#). I understand that academic honesty is taken very seriously and, in the cases of violations, penalties may include suspension or expulsion from the University of Houston."*

Helpful Information from the University of Houston

Emergency Updates (weather and other): www.uh.edu/emergency

COVID-19 Updates: <https://uh.edu/covid-19/>

Coogs Care: <https://www.uh.edu/dsaes/coogscare/>

Laptop Checkout Requests: <https://www.uh.edu/infotech/about/planning/off-campus/index.php#do-you-need-a-laptop>

Health FAQs: <https://uh.edu/covid-19/faq/health-wellness-prevention-faqs/>

Student Health Center: <https://uh.edu/class/english/lcc/current-students/student-health-center/index.php>

Counseling and Psychological Services: Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (www.uh.edu/caps) by calling 713-743-5454 during and after business hours for routine appointments or if you or somebody you know is in crisis. No appointment is necessary for the “Let’s Talk” program, a drop-in consultation service at convenient locations and hours around campus (<https://uh.edu/caps/outreach/lets-talk/index>).

Course Outline

Note: The course outline is subject to revision; not all papers and topics will be covered. More papers may be added.

Pre-1. Symposiums & Review Articles of Urban Economics

Anas, Alex, Richard Arnott and Kenneth A. Small, "Urban Spatial Structure," *Journal of Economic Literature*, vol 36 (Sept. 1998), pp. 1426-1464.

Symposiums: Productivity Advantages of Cities, Place-Based Policies & Cities in Developing Countries, 8 articles in the *Journal of Economic Perspectives*, vol. 34 (3), Summer 2020.

Glaeser, Edward L. & Joshua D. Gottlieb, "The Wealth of Cities: Agglomeration Economies and Spatial Equilibrium in the United States," *Journal of Economic Literature*, 47 (4) (Dec. 2009), pp.983-1028.

Special Issue on the Delineation of Urban Areas, 10 articles in the *Journal of Urban Economics*, forthcoming 2021 (a few available online now).

1. The Monocentric City Model

Glaeser, Chapter 2.

Fujita, Chapter 2.

Zenou, Yves, "Appendix A: Basic Urban Economics," in *Urban Labor Markets*, 2009, Cambridge University Press.

Brueckner, Jan, "The Structure of Urban Equilibria: A Unified Treatment of the Muth-Mills Model," *Handbook 2*.

Anas, Alex, Richard Arnott, and Kenneth A. Small, "Urban Spatial Structure," *Journal of Economic Literature* 36 (1998), 1426-1464.

Berliant, Marcus and Courtney LaFountain, "Space in General Equilibrium," in Richard J. Arnott and Daniel P. McMillen (eds.), *A Companion to Urban Economics* (2006), 109-127.

Kraus, Marvin, "Monocentric Cities," in Richard J. Arnott and Daniel P. McMillen (eds.), *A Companion to Urban Economics* (2006), 96-108.

Three Classics:

W. Alonso, *Location and Land Use*, Harvard University Press (1964).

E. S. Mills, "An Aggregative Model of Resource Allocation in a Metropolitan Area." *The American Economic Review* 57:2 (1967), 197—210.

R.F. Muth, *Cities and Housing*, University of Chicago Press (1969).

2. The Monocentric City Model--Extensions

Glaeser, Chapter 2

Baum-Snow, Nathaniel, "Suburbanization and Transportation in the Monocentric Model," *Journal of Urban Economics* 62 (2007), 405-423.

Brueckner, Jan K., "Residential Succession and Land-Use Dynamics in a Vintage Model of Urban Housing," *Regional Science and Urban Economics* 10 (1980), 225-240.

Brueckner, Jan K., "A Dynamic Model of Housing Production," *Journal of Urban Economics* 10 (1981), 1-14.

Brueckner, Jan K., Jacques-Francois Thisse, and Yves Zenou, "Why is Central Paris Rich and Downtown Detroit Poor? An Amenity-Based Theory," *European Economic Review* 43 (1999), 91-107.

Hanson, Andrew, Kurt Schnier, and Geoffrey K. Turnbull, "Drive 'Til You Qualify: Credit Quality and Household Location," *Regional Science and Urban Economics*, 42 (2012), pp.63-77.

Leroy, Stephen F. and Jon Sonstelie, "Paradise Lost and Regained: Transportation Innovation, Income, and Residential Location," *Journal of Urban Economics* 13 (1983), 67-89.

Wheaton, William C., "Urban Spatial Development with Durable but Replaceable Capital," *Journal of Urban Economics* 12 (1982): 53-67.

3. The Monocentric City Model--Empirics

Ahlfeldt, Gabriel M. and Nicolai Wendland, "Fifty Years of Urban Accessibility: The Impact of Urban Railway Network on the Land Gradient in Berlin 1890-1936," *Regional Science and Urban Economics*, 41:2 (March 2011), 77-88.

Burchfield, Marcy, Henry G. Overman, Diego Puga, and Matthew A. Turner, "Causes of Sprawl: A Portrait from Space," *Quarterly Journal of Economics* 121 (2006), 587-633.

Coulson, N. Edward, "Really Useful Tests of the Monocentric City Model," *Land Economics* (1991), 299-307.

Gin, Alan and Jon Sonstelie, "The Streetcar and Residential Location in Nineteenth Century Philadelphia," *Journal of Urban Economics* 32 (1992), 92-107.

Glaeser, Edward L, Matthew E. Kahn, and Jordan Rappaport, "Why Do the Poor Live in Cities? The Role of Public Transportation," *Journal of Urban Economics* 63 (2008), 1-24.

Glaeser, Edward L. and Matthew E. Kahn, "Sprawl and Urban Growth," in J.V. Henderson

and J.F. Thisse (eds.), *Handbook 4* (2004), 2481-2527.

Hamilton, Bruce W., "Wasteful Commuting," *Journal of Political Economy* 90 (1982), 1035-58.

Kau, James B., and C.F. Sirmans, "Urban Land Value Functions and the Price Elasticity of Demand for Housing," *Journal of Urban Economics* 6 (1979), 112-121.

McGrath, Daniel T., "More Evidence on the Spatial Scale of Cities," *Journal of Urban Economics* 58 (2005), 1-10.

McMillen, Daniel P., "One Hundred Fifty Years of Land Values in Chicago: A Nonparametric Approach," *Journal of Urban Economics* 40 (1996) 100-124.

McMillen, Daniel P., "Testing for Monocentricity," in Richard J. Arnott and Daniel P. McMillen (eds.), *A Companion to Urban Economics* (2006), 128-140.

McMillen, Daniel, Ronald Jarmin & Paul Thorsnes, "Selection Bias and Land Development in the Monocentric City Model," *Journal of Urban Economics* 31 (1992), 273-284.

The Classic:

Clark, Colin, "Urban Population Densities," *Journal of the Royal Statistical Society, Series A* (1951), 490-496.

4. Agglomeration Economies—Theory and Empirics

Glaeser, Chapter 4.

Krugman, Paul, Ch. 2 "Localization" and Appendix C "Labor Pooling," in *Geography and Trade*, 1991.

Rosenthal, Stuart S. and William C. Strange, "Evidence on the Nature and Sources of Agglomeration Economies," *Handbook 4*, 2119-2171.

Duranton, Gilles and Diego Puga, "Micro-foundations of urban agglomeration economies." *Handbook 4*, 2063-2117.

Combes, Peirre-Philippe and Laurent Gobillon, "The Empirics of Agglomeration Economies," *Handbook 5*, 247-348.

Arbia, Giuseppe, Giuseppe Espa, Diego Giuliani, and Andrea Mazzitelli, "Detecting the Existence of Space-Time Clustering of Firms," *Regional Science and Urban Economics* 40 (2010), 311-323.

Ciccone, Antonio and Robert E. Hall, "Productivity and the Density of Economic Activity," *American Economic Review* 86 (1996), 54-70.

Duranton, Gilles and Henry G. Overman, "Testing for Localisation using Microgeographic

Data,” *Review of Economic Studies* 72 (2005), 1077-1106.

Ellison, Glenn and Edward L. Glaeser, “Geographic Concentration in U.S. Manufacturing Industries: A Dartboard Approach,” *Journal of Political Economy* 105 (1997), 889-927.

Henderson, J. Vernon, “Marshall’s Scale Economies,” *Journal of Urban Economics* 53 (2003), 1-28.

Holmes, Thomas J., “The Effects of State Policies on the Location of Manufacturing: Evidence from State Borders,” *Journal of Political Economy* 106 (1998), 667-705.

Kim, Sukkoo, “Regions, Resources, and Economic Geography, “Sources of U.S. Regional Comparative Advantage, 1880-1987,” *Regional Science and Urban Economics* 29 (1999), 1-32.

McMillen, Daniel P. and Thomas Klier, “Evolving Agglomeration in the U.S. Auto Industry,” *Journal of Regional Science* 48 (2008), 245-267.

Melo, Patricia, Daniel J. Graham, and Robert B. Noland, “A Meta-Analysis of Urban Agglomeration Economies,” *Regional Science and Urban Economics* 39 (2009), 332-342.

Rosenthal, Stuart S. and William C. Strange, “The Determinants of Agglomeration,” *Journal of Urban Economics* 50 (2001), 191-229.

Combes, Pierre-Philippe, Gilles Duranton, Laurent Gobillon, Diego Puga, Sebastien Roux, “The Productivity Advantages for Large Cities: Distinguishing Agglomeration from Firm Selection,” *Econometrica*, 80:6 (2012), 2543-3594.

5. Polycentric Cities--Theory

Fujita, M. and F. Ogawa, “Multiple Equilibria and Structural Transition of Non-Monocentric Urban Configurations,” *Regional Science and Urban Economics* 12 (1982), 161-196.

Ogawa, M. and M. Fujita, “Equilibrium Land Use Patterns in a Non-Monocentric City,” *Journal of Regional Science* 20 (1980), 455-465.

Berliant, Marcus and Ping Wang, “Urban Growth and Subcenter Formation: A Trolley Ride from the Staples Center to Disneyland and the Rose Bowl,” *Journal of Urban Economics* 63 (2008), 679-693.

Jan K. Brueckner, “A Model of Non-Central Production in a Monocentric City,” *Journal of Urban Economics* 6 (1979), 444-463.

A. Anas and I. Kim, “General Equilibrium Models of Polycentric Urban Land Use with Endogenous Congestion and Job Agglomeration,” *Journal of Urban Economics* 40 (1996), 232-256.

Fujita, M., J.F. Thisse, and Y. Zenou, “On the Endogenous Formation of Secondary

Employment Centers in a City,” *Journal of Urban Economics* 41 (1997), 337-357.

Henderson, J.V. and A. Mitra, “The New Urban Landscape: Developers and Edge Cities,” *Regional Science and Urban Economics* 26 (1996), 613-643.

Henderson, J.V. and E. Slade, “Development Games in Non-Monocentric Cities,” *Journal of Urban Economics* 34 (1993), 207-229.

6. Polycentric Cities--Empirics

Baumont, C., C. Ertur, and J. LeGallo, Spatial Analysis of Employment and Population Density: The Case of the Agglomeration of Dijon 1999,” *Geographical Analysis*, **36**, 146-176 (2004).

Craig, S. and P. Ng, “Using Quantile Smoothing Splines to Identify Employment Subcenters in a Multicentric Urban Area,” *Journal of Urban Economics* 49 (2001), 100-120.

McDonald, John F., “The Identification of Urban Employment Subcenters,” *Journal of Urban Economics* 21 (1987), 242-258.

Giuliano, Genevieve, Christian Redfearn, Ajay Agarwal, Chen Li, and Duan Zhuang, “Employment Concentrations in Los Angeles, 1980-2000,” *Environment and Planning A* 39 (2007), 2935-2957.

Craig, Steven, Janet Kohlhase and Adam Perdue, “Empirical Polycentricity: The Complex Relationship Between Employment Centers,” *Journal of Regional Science*, 56(1), January (2016), 25-52.

Giuliano, Genevieve and Kenneth A. Small, “Subcenters in the Los Angeles Region,” *Regional Science and Urban Economics* 21 (1991), 163-182.

McMillen, Daniel P., “Nonparametric Subcenter Identification,” *Journal of Urban Economics* 50 (2001), 448-473.

McMillen, Daniel P., “Identifying Urban Subcenters using Contiguity Matrices,” *Urban Studies* 40 (2003), 57-69.

McMillen, Daniel P. and Stefani C. Smith, “The Number of Subcenters in Large Urban Areas,” *Journal of Urban Economics* 53 (2003), 321-338.

Redfearn, Christian, “Persistence in Urban Form: The Long-Run Durability of Employment Centers in Metropolitan Areas,” *Regional Science and Urban Economics* 39 (2009), 224-232.

Small, K.A. and S. Song, “Population and Employment Densities: Structure and Change,” *Journal of Urban Economics* 36 (1994), 292-313.

7. Spatial Equilibrium across Cities

Glaeser, Chapter 3.

N. Baum-Snow, Matthew Freedman and Ronni Pavan, "Why Has Urban Inequality Increased?" *American Economic Journal: Applied Economics*, (forthcoming), WP August 2017.

Desmet, Klaus, and Esteban Rossi-Hansberg, "Urban Accounting and Welfare." *American Economic Review*, 103:6 (2013), 2296-2327.

Albouy, David, "What are Cities Really Worth? Local Rents, Local Productivity, and the Total Value of Amenities," *RESTAT*, 98:3 (July 2016), 477-487 (earlier version NBER working paper 14981).

Albouy, David, "Are Big Cities Really Bad Places to Live? Improving Quality of Life Estimates across Cities," (2012) working paper.

Beeson, Patricia E. and Randall W. Eberts, "Identifying Productivity and Amenity Effects in Interurban Wage Differentials," *Review of Economics and Statistics* 71 (1989), 443-452.

Blomquist, M.C., M.C. Berger, and J.P. Hoehn, "New Estimates of Quality of Life in Metropolitan Areas," *American Economic Review* 78 (1988), 89-107.

Carlino, Gerald and N. Edward Coulson, "Compensating Differentials and the Social Benefits of the NFL," *Journal of Urban Economics* 56 (2004), 25-50.

Chan, Yong and Stuart S. Rosenthal, "Local Amenities and Life-Cycle Migration: Do People Move for Jobs or Fun," *Journal of Urban Economics* 64 (2008), 519-537.

Gabriel, Stuart A. and Stuart S. Rosenthal, "Quality of Business Environment versus the Quality of Life: Do Firms and Households Like the Same Cities," *Review of Economics and Statistics* 86 (2004), 438-444.

Gyourko, Joseph and Joseph Tracy, "The Structure of Local Public Finance and the Quality of Life," *Journal of Political Economy* 99 (1991), 774-806.

Gyourko, Joseph, Matthew Kahn, and Joseph Tracy, "Quality of Life and Environmental Considerations," in Paul Cheshire and Edwin Mills, eds., *Handbook of Regional and Urban Economics Vol. 3* (1999).

Gyourko, Joseph, Christopher Mayer, and Todd Sinai, "Superstar Cities," *American Economic Journal: Economic Policy*, 5(4): 167-99.

Rappaport, Jordan, "Moving to Nice Weather," *Regional Science and Urban Economics* 37 (2007), 375-398.

Rappaport, Jordan, "Consumption Amenities and City Population Density," *Regional Science and Urban Economics* 38 (2008), 533-552.

Edward L. Glaeser & Joshua D. Gottlieb, 2009. "The Wealth of Cities: Agglomeration Economies and Spatial Equilibrium in the United States," *Journal of Economic Literature*, vol. 47(4), pp. 983-1028, (earlier version as NBER Working Paper #14806).

The Classic:

Roback, Jennifer, "Wages, Rents, and the Quality of Life," *Journal of Political Economy* 90, 1257-1278 (1982).

8. Tiebout Sorting, Local Public Finance Theory and Fiscal Federalism

R. Fernandez and R. Rogerson. Income distribution, communities, and the quality of public education. *Quarterly Journal of Economics* 111:1 (1996), 135—164.

Epple, Dennis and Glenn J. Platt, "Equilibrium and Local Redistribution in an Urban Economy when Households Differ by Preferences and Incomes," *Journal of Urban Economics*, 43, (1998), 23-51.

D. Epple and H. Sieg. Estimating equilibrium models of local jurisdictions. *Journal of Political Economy* 107:4 (1999), 645—681.

H.S. Banzhaf & R. Walsh. 2008. "Do People Vote with Their Feet? An Empirical Test of Tiebout's Mechanism" *American Economic Review*, 98:3 (2008), 843-863.

Calabrese, Epple & Romano, "Inefficiencies from Metropolitan Political and Fiscal Decentralization: Failures of Tiebout Competition" *Review of Economic Studies*, 79: 3 (July 2012), 1081-1111.

L. Boustan "Was Postwar Suburbanization White Flight? Evidence from the Black Migration" *Quarterly Journal of Economics*, 125:1 (2010), 417-443.

Alesina, R. Baqir, and C. Hoxby. Political jurisdictions in heterogeneous communities. *Journal of Political Economy* 112:2 (2004), 348—396.

Bucovetsky "Optimal Jurisdictional Fragmentation and Mobility" *Journal of Public Economics*, 16:2 (1981), 171-191.

P. Rhode & K. Strumpf "Assessing the Importance of Tiebout Sorting: Local Heterogeneity from 1850 to 1990," *American Economic Review*, 93 (2003) 1648-77

N. Baum-Snow & Byron Lutz "School Desegregation, School Choice, and Changes in Residential Location Patterns by Race" *American Economic Review*, 101:7 (2011), 3019-46.

T. J. Nechyba, "Local Property and State Income Taxes: The Role of Interjurisdictional Competition and Collusion," *Journal of Political Economy* 105:2 (1997) , 351—384

Fujita Chapter 6

Oates, W. E., *Fiscal Federalism*, New York: Harcourt Brace Jovanovich (1972).

C. M. Tiebout, "A Pure Theory of Local Expenditures," *Journal of Political Economy* 64:5 (1956), 416—424.

9. Hedonic Models

Garcia-Lopen, Miquel-Angel, Jordi Jofre-Monseny, Rodrigo Martinez-Mazza & Mariona Segu, "Do Short-Term Rental Platforms Affect Housing Markets? Evidence from Airbnb in Barcelona," *Journal of Urban Economics*, vol. 119 (Sept. 2020).

Bajari, Patrick and Lanier Benkard, "Demand Estimation with Heterogeneous Consumers and Unobserved Product Characteristics: A Hedonic Approach," *Journal of Political Economy* 113 (2005), 1239-1276.

Bajari, Patrick and Matthew E. Kahn, "Estimating Housing Demand with an Application to Explaining Racial Segregation in Cities," *Journal of Business and Economic Statistics* 23 (2005), 20-33.

Bartik, Timothy J., "The Estimation of Demand Parameters in Hedonic Price Models," *Journal of Political Economy* 95 (1987), 81-88.

Ekeland, Ivar, James J. Heckman, and Lars Nesheim, "Identification and Estimation of Hedonic Models," *Journal of Political Economy* 112 (2004), S60-S108.

Sheppard, Stephen, "Hedonic Analysis of Housing Markets," in Paul Cheshire and E.S. Mills, (eds.), *Handbook 3*.

Kohlhase, Janet, "The Impact of Toxic Waste Sites on Housing Values," *Journal of Urban Economics*, 30, (July 1991), 1-26.

N. Kuminoff, V. Kerry Smith and Christopher Timmins, "The New Economics of Equilibrium Sorting and Policy Evaluation Using Housing Markets" *Journal of Economic Literature*, 51:4 (2013), 1007-1062.

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

The Classic:

Rosen, Sherwin, "Hedonic Markets and Implicit Prices," *Journal of Political Economy* 82 (1974), 34-55.

10. Housing Supply

Albert Saiz, "The Geographic Determinants of Housing Supply" *Quarterly Journal of Economics*, 125:3 (2011), 1253-1296.

D. Epple, Holger Sieg, B. Gordon "A New Approach for Estimating the Housing Production Function" *American Economic Review* 100:3 (2010), 905-924.

Davidoff, 2017. Supply Constraints are Not Valid Instrumental Variables for Home Prices Because They are Correlated with Many Demand Factors, *Critical Finance Review*, 5:2 (2016), 177-206.

11. House Price Dynamics

Bailey, M. J., R. Muth, and H. O. Nourse, "A Regression Method for Real Estate Price Index Construction," *Journal of the American Statistical Association* 4 (1963), 933-942

Bostic, Raphael W., Stanley D. Longhofer, and Christian L. Redfearn, "Land Leverage: Decomposing Home Price Dynamics," *Real Estate Economics* 35 (2007), 183-208.

Case, Bradford and John M. Quigley, "The Dynamics of Real Estate Prices," *Review of Economics and Statistics* 83 (1991), 50-58.

Case, Karl and Robert Shiller, "The Efficiency of the Market for Single-Family Homes," *American Economic Review* 79 (1989), 125-137.

Englund, Peter, John M. Quigley, and Christian L. Redfearn, "Improved Price Indexes for Real Estate: Measuring the Course of Swedish Housing Prices," *Journal of Urban Economics* 44 (1998), 171-196.

Glaeser, Edward L. and Joseph Gyourko, "Urban Decline and Durable Housing," *Journal of Political Economy* 113 (2005), 343-375.

Glaeser, Edward L., Joseph Gyourko, and Albert Saiz, "Housing Supply and Housing Bubbles," *Journal of Urban Economics* 64 (2008), 198-217.

Glaeser, Edward L., Joseph Gyourko, and Raven Saks, "Urban Growth and Housing Supply," *Journal of Economic Geography* 6 (2006), 71-89.

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

Himmelberg, C., C. Mayer, and T. Sinai, "Assessing High House Prices: Bubbles, Fundamentals, and Misperceptions," *Journal of Economic Perspectives* 19 (2005), 67-92.

McMillen, Daniel P., "Changes in the Distribution of House Prices over Time: Structural Characteristics, Neighborhood or Coefficients?" *Journal of Urban Economics* 64 (2008), 573-589.

Quigley, John M., "A Simple Hybrid Model for Estimating Real Estate Price Indexes," *Journal of Housing Economics* 4 (1997), 93-118.

12. Race and Ethnicity: Discrimination in Housing

S. J. Oh and J. Yinger. 2015. "What Have We Learned from Paired Testing in Housing Markets?" *Cityscape: A Journal of Policy Development and Research* 17 (3), pp. 15-60.

P. Bayer, M. Casey, F. Ferreira, and R. McMillan. 2017. "Racial and Ethnic Price Differentials in the Housing Market," *JUE*, 102(November) pp. 91-105.

K. Ihlanfeldt and T. Mayock. 2009. "Price Discrimination in the Housing Market, *JUE*, (September), pp. 125-140.

L. Boustan, 2010. "Was Postwar Suburbanization 'White Flight'? Evidence from the Black Migration." *Quarterly Journal of Economics* (February). (Available at: http://www.princeton.edu/~lboustan/research_pdfs/research02_whiteflight.pdf.)

P. Bayer, H. Fang, R. McMillan. 2014. "Separate When Equal? Racial Inequality and Residential Segregation." *JUE*, (July), pp.32-48.

E. Fesselmeier, K.T. Le and K.Y. Seah. 2012. "A Household-Level Decomposition of the White-Black Homeownership Gap," *RSUE*, (January), pp. 52-62.

13. Urban Transportation and Mode Choice

Small, Ken, Clifford Winston and Jia Yan, "Uncovering the Distribution of Motorists' Preferences for Travel Time and Reliability: Implications for Road Pricing," *Econometrica*, 73 (July 2005), pp. 1367-1382.

Small, Ken, Clifford Winston and Jia Yan. "Differentiated Road Pricing, Express Lanes, and Carpools: Exploiting Heterogeneous Preferences in Policy Design," *Brookings-Wharton Papers on Urban Affairs* (2006) 53-96.

Parry, Ian and Ken Small. "Should Urban Transport Subsidies be Reduced?" *American Economic Review* (2009) 99:3 700-724.

Baum-Snow, Nathaniel and Matt. Kahn. "The Effects of Urban Rail Transit Expansions: Evidence from Sixteen Cities." *Brookings-Wharton Papers on Urban Affairs* (2005)

Duranton, Gilles and Matt Turner "The Fundamental Law of Road Congestion: Evidence from U.S. Cities," *American Economic Review*, 101 (Oct 2011), 2616-2652.

McFadden, Daniel, "The Measurement of Urban Travel Demand," *Journal of Public Economics*, 3: 4 (1974), 303-328,

Leroy, Stephen and Jon Sonstelie, "Paradise Lost and Regained: Transportation Innovation, Income and Residential Location." *Journal of Urban Economics*, 13:1 (1983), 67-89.

Brueckner, Jan and Harris Selod, "The Political Economy of Urban Transport-System Choice," *Journal of Public Economics*, 90:6-7 (2006), 985-1005.

Brueckner, Jan, "Transport Subsidies, System Choice, and Urban Sprawl," *Regional Science and Urban Economics*, 35:6 (2005), 715-733.

Vickrey, W. S., "Congestion theory and transport investment," *American Economic Review* 59:2 (1969), 251—260.

Wheaton, William, "Income and urban residence: An analysis of consumer demand for location," *American Economic Review* 67:4 (1977) , 620—632.

Small, Ken, Urban Transportation Economics, *Harwood Fundamentals of Pure and Applied Economics series*, 1992.

Glaser, Edward and Janet E. Kohlhasse, "Cities, Regions and the Decline in Transport Costs," *Papers of the Regional Science Association*, 83 (Jan. 2004), 197-228.

14. New Economic Geography

Fujita, Masahisa and Jacques Thisse, "The Core-Periphery Model," ch.8.2 in *Economics of Agglomeration*, 2nd ed., Cambridge University Press (2013), pp.306-317.

Brakman, Steven, Harry Garretsen, and Charles van Marrewijk, "The Core Model of Geographical Economics," ch.3 in *The New Introduction to Geographical Economics*. 2009. Cambridge UK: Cambridge University Press, pp.81-133.

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

Combes, Pierre-Philippe, Thierry Mayer & Jacques-François Thisse, *Economic Geography: The Integration of Regions and Nations*, Ch. 2 "Space in Economic Thought," pp. 26-52 and Ch. 6 "The Core-Periphery Structure," pp. 130-165, Princeton University Press, 2008.

Redding, Stephen and Daniel Sturm, "The Cost of Remoteness: Evidence from German Division and Reunification," *American Economic Review*, 98:5 (2008), 1766-1797.

Ahlfeldt, Redding, Sturm, Wolf "The Economics of Density: Evidence from the Berlin Wall" *Econometrica* 83 (2015), 2127–2189.

Stephen J. Redding & Esteban Rossi-Hansberg "Quantitative Spatial Economics" *Annual Review of Economics*, 9 (2017), 21-58.

15. Place-Based Policies

Glaeser, Edward L., and Joshua D. Gottlieb, "The Economics of Place-Making Policies," *Brookings Papers on Economic Activity* (2008) 155-253 (Also NBER WP w14373).

David Neumark & Helen Simpson, "Place-Based Policies," Ch. 18, *Handbook 5*, 1197-1287.

M. Busso, J. Gregory and P. Kline. "Assessing the Incidence and Efficiency of a Prominent Place Based Policy" *American Economic Review*, 103:2 (April 2013), 897-947.

16. Natural Disasters, Climate Change and COVID-related topics

Brueckner, Jan, Matthew E. Kahn & Gary C. Lin, "A New Spatial Hedonic Equilibrium in the Emerging Work-from-Home Economy?", NBER working paper 28526, March 2021.

Boustan, Leah Platt & Kahn, Matthew E. & Rhode, Paul W. & Yanguas, Maria Lucia, "The effect of natural disasters on economic activity in US counties: A century of data," *Journal of Urban Economics*, (July 2020), vol. 118.

Ortega, Francesc & Suleyman TaSpinar, "Rising Sea Levels and Sinking Property Values: Hurricane Sandy and New York's Housing Market," *Journal of Urban Economics*, vol. 106 (July 2018) pp. 81-100.

Francke, Marc & Matthijs Korevaar, "Housing Markets in a Pandemic: Evidence from Historical Outbreaks," *Journal of Urban Economics*, vol. 123, May 2021.

17. Econometric Issues

Baum-Snow, Nathaniel & Fernando Ferreira, "Causal Inference in Urban Economics," *Handbook 5*, pp.1-68.

Gibbons, Steve, Henry Overman and Eleonora Patacchini, "Spatial Methods," *Handbook 5*, 115-164.

Cameron, A. Colin, Jonah B. Gelbach, and Douglas L. Miller. "Bootstrap-based Improvements for Inference with Clustered Errors." *The Review of Economics and Statistics* 90:3 (2008): 414-427.

Bester, C. Alan, Timothy G. Conley & Christian B. Hansen, "Inference with Dependent Data Using Cluster Covariance Estimators" *Journal of Econometrics*, 165 (2011), 137-151,

18. Empirical Methods: Parametric Spatial Models

Anselin, Luc, Anil K. Bera, Raymond Florax, and Mann J. Yoon, "Simple Diagnostic Tests for Spatial Dependence," *Regional Science and Urban Economics* 26 (1996), 77-104.

Brown, R.P., Rork, J.C., "Copycat Gaming: A Spatial Analysis of State Lottery Structure," *Regional Science and Urban Economics* 35 (2005), 795-807.

Brueckner, Jan K., "Testing for Strategic Interaction among Local Governments: The Case of Growth Controls," *Journal of Urban Economics* 44 (1998), 438-467.

Brueckner, Jan K., "Strategic Interaction Among Governments," in Richard Arnott and

Daniel P. McMillen (eds.), *A Companion to Urban Economics*, (2006) Blackwell.

Brueckner, Jan K. and Saavedra, Luz A., "Do Local Governments Engage in Strategic Property-Tax Competition?" *National Tax Journal* 54 (2001), 203-229.

Fredriksson, P. G. and Millimet, D. L., "Strategic Interaction and the Determinants of Environmental Policy across U.S. States," *Journal of Urban Economics* 51 (2002), 101-122.

Gérard, Marcel, Hubert Jayet, and Sonia Paty, "Tax Interactions among Belgian Municipalities: Do Interregional Differences Matter," *Regional Science and Urban Economics* 40 (2010), 336-342.

Kelijian, H. H. and Prucha, I. R., "A Generalized Spatial Two-Stage Least Squares Procedure for Estimating a Spatial Autoregressive Model with Autoregressive Disturbances," *Journal of Real Estate Finance and Economics* 17 (1998), 99-121.

Lee, Lung-Fei, and Jihai Yu, "Some Recent Developments in Spatial Panel Data Models," *Regional Science and Urban Economics* 40 (2010), 255-271.

McMillen, Daniel P., "Spatial Autocorrelation or Model Misspecification?" *International Regional Science Review* 26 (2003), 208-217.

Revelli, F., "Reaction or Interaction: Spatial Process Identification in Multi-Tiered Governmental Structures," *Journal of Urban Economics* 53 (2003), 29-53.

Rincke, Johannes, "A Commuting-Based Refinement of the Contiguity Matrix for Spatial Models, and an Application to Local Police Expenditures," *Regional Science and Urban Economics* 40 (2010), 324-330.

Saavedra, Luz A., "Tests for Spatial Lag Dependence Based on Method of Moments Estimation," *Regional Science and Urban Economics* 33 (2003), 27-58.

19. Empirical Methods: Spatial Probit and Logit

Case, Anne C., "Neighborhood Influence and Technological Change," *Regional Science and Urban Economics* 22 (1992), 491-508.

LeSage, James P., "Bayesian Estimation of Limited Dependent Variable Spatial Autoregressive Models," *Geographical Analysis* 32 (2000), 19-35.

McMillen, Daniel P., "Probit with Spatial Autocorrelation," *Journal of Regional Science* 32 (1992), 335-348.

McMillen, Daniel P. and Thomas Klier, "Clustering of Auto Supplier Plants in the United States: Generalized Method of Moments Spatial Logit for Large Samples," *Journal of Business and Economic Statistics* 26 (2008), 460-471.

Pinkse, J. and Slade, M. E. (1998), "Contracting in Space: An Application of Spatial

Statistics to Discrete-Choice Models,” *Journal of Econometrics*, 85, 125-154.

20. Empirical Methods: Nonparametric Approaches

Brunsdon, C., A. S. Fotheringham, and M. E. Charlton, “Geographically Weighted Regression,” *Geographical Analysis*, 28 (1996) 281-298.

Brunsdon, Chris and A. Stewart Fotheringham, “Some Notes on Parametric Significance Tests for Geographically Weighted Regression,” *Journal of Regional Science* 39 (1999), 497-524.

Cameron, Trudy Ann, “Directional Heterogeneity in Distance Profiles in Hedonic Property Value Models,” *Journal of Environmental Economics and Management* 51 (2006), 26-45.

William S. Cleveland and Susan J. Devlin, “Locally Weighted Regression: An Approach to Regression Analysis by Local Fitting,” *Journal of the American Statistical Association* 83 (1988) 596-610.

Fu, Yuming and Tsur Somerville, “Site Density Restrictions: Measurement and Empirical Analysis,” *Journal of Urban Economics* 49 (2001), 404-423.

Gibbons, Steve and Stephen Machin, “Valuing Primary Schools,” *Journal of Urban Economics* 53 (2003), 197-219.

McMillen, Daniel P., “Issues in Spatial Data Analysis,” *Journal of Regional Science* 50 (2010), 119-141.

McMillen, Daniel P. and Thomas Klier, “Clustering of Auto Supplier Plants in the United States: Generalized Method of Moments Spatial Logit for Large Samples,” *Journal of Business and Economic Statistics* 26 (2008), 460-471.

McMillen, Daniel P. and Christian Redfearn, “Estimation and Hypothesis Testing for Nonparametric Hedonic House Price Functions,” *Journal of Regional Science* 50 (2010), 712-733.

Richard Meese and Nancy Wallace, “Nonparametric Estimation of Dynamic Hedonic Price Models and the Construction of Residential Housing Price Indices,” *Journal of the American Real Estate and Urban Economics Association* 19 (1991) 308-332.

James H. Stock, “Nonparametric Policy Analysis: An Application to Estimating Hazardous Waste Cleanup Benefits,” in W. A. Bennett, J. Powell, and G. E. Tauchen (Eds.), *Nonparametric and Semiparametric Methods in Econometrics and Statistics* (New York: Cambridge University Press, 1991).