

# Urban Economics

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March 13, 2012

## Overview

Urban economics is the study of cities, what happens in them, and why most people live there when there is much more space outside them. In this course, we will study the spatial distribution of activity within and across cities: our fundamental tool will be the notion of a spatial equilibrium in which agents can move across space and choose their optimal location. To understand urbanization, we must consider the advantages that result from eliminating the distance between people: this facilitates the transport of goods, the matching between workers and employers, the circulation of ideas and the spread of entrepreneurship, all of which can be sources of agglomeration economies. On the other hand, the course will also deal with city problems such as urban poverty, segregation, and crime. We will also approach the study of the real-estate market: why do people buy or rent? How much housing do they want to consume? How are the dynamics of construction and housing prices determined by the interplay between residents' willingness to pay for a location, the supply and durability of the housing stock, and land-use regulations and housing policy? The broader role of public policy at the local level will be a final topic.

## Course Administration

**Instructor:** Giacomo Ponzetto, e-mail: [gponzetto@crei.cat](mailto:gponzetto@crei.cat).

**Lectures:** Monday and Tuesday, 11:00–13:00. Classroom: Ramon Turró 13.104.

**Office Hours:** Wednesday, 11:00–13:00. Office: Mercè Rodoreda 23.410.

## Grading

There will be no problem sets nor a final exam. Instead, there are two requirements:

1. The material covered in the course is divided by weeks. Before 9 a.m. each Sunday, every student must send the instructor an e-mail with personal thoughts and criticism on the topics to be covered in the following week. The expected length is around one page and no more than two. Advance reading of at least some of the materials will help frame the questions and organize ideas, but the goal is not to read and summarize the readings, but rather to think about the subject and directions for future research on it.

2. By 1 p.m. on March 27th, two weeks after the end of classes, each student must submit a final project. The project should be no more than 5–10 pages long and can be any of the following:
  - (a) The proposal for an original paper. This will start with a motivation that explains the importance of the question and the reasons why it is not satisfactorily answered in the existing literature. It will then sketch a model or present some suggestive evidence that lies at the core of the proposed contribution. Finally, it will broadly outline the modelling approach or the empirical strategy to be pursued.
  - (b) An extension of an existing model, which might become the basis of a paper. Ideally the extension will explain real-world phenomena that the original model could not account for, or it will yield additional empirical predictions that improve our ability to test the model with available data. However, the exercise can also be praiseworthy on purely technical grounds, if it is analytically sophisticated and shows, e.g., that existing results obtain under significantly weaker conditions than those assumed by the original authors.
  - (c) Referee reports on two articles published in a top journal in the last few years. The articles must be agreed upon with the instructor. Each report will summarize the paper very briefly (1–2 paragraphs), paying particular attention to the tightness of fit between the results in the body of the paper and their presentation in the introduction and conclusion. It will highlight the main contributions and shortly assess their importance. It will dwell more closely on the limitations of the paper, and provide specific, concrete suggestions for improving the analysis. For empirics, you should specify precisely what regression the paper should run in addition to or instead of the current ones, and why it is a necessary control or a more desirable specification. For theory, you should specify equally precisely which assumptions need to be changed and why exactly doing so either risks overturning the existing conclusions, or would add something so relevant to be worth the additional effort.
  - (d) A critical survey of the literature on a narrow topic that was not extensively covered in class. Such a survey will review the relevant literature in greater detail than the lectures and assigned readings, paying attention to working papers by the leading authors in the area. It should cover both theoretical and empirical contributions, although it may be unbalanced in favour of either. Special emphasis should be given to the questions that remain unanswered.

Class participation (1) will count for 30% of the final grade, and the final project (2) for the remaining 70%. Grading will take into account that projects belonging to types (a) and (b) are more challenging than those of types (c) and (d). Students are advised to consult with the instructor before starting to work on any project.

# Syllabus

## Readings

The textbook for the course is:

Glaeser, Edward L. 2008. *Cities, Agglomeration and Spatial Equilibrium*. Oxford: Oxford University Press.

In addition, a non-technical presentation of most of the topics we will cover is provided by:

Glaeser, Edward L. 2011. *Triumph of the City*. New York: Penguin Press.

This is not a textbook, and we will not follow it in class. Nonetheless students should read it, either during the course or indeed beforehand to get involved with the subject from the start.

A detailed list of readings for each topic will be given in class. As the course progresses, minor changes to the list currently provided below are to be expected.

## Course outline

### 1. Introductory readings

Glaeser, Edward L. 1998. “Are Cities Dying?” *Journal of Economic Perspectives* 12(2):139–60.

———. 2007. “The Economic Approach to Cities.” NBER Working Paper No. 13696.

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

Quigley, John M. 1998. “Urban Diversity and Economic Growth.” *Journal of Economic Perspectives* 12(2):127–38.

### 2. Spatial equilibrium within a city

#### (a) The Alonso-Muth-Mills model of a monocentric city

Brueckner, Jan K. 1987. “Structure of Urban Equilibria: A Unified Treatment of the Muth-Mills Model.” In *Handbook of Regional and Urban Economics*, vol. 2, edited by Edwin S. Mills, 821–45. Amsterdam: Elsevier.

#### (b) Transportation, poverty, and residential location

Brueckner, Jan K., Jacques-François Thisse, and Yves Zenou. 1999. “Why Is Central Paris Rich and Downtown Detroit Poor? An Amenity-Based Theory.” *European Economic Review* 43:91–107.

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

LeRoy, Stephen, and Jon Sonstelie. 1983. “Paradise Lost and Regained: Transportation Innovation, Income, and Residential Location.” *Journal of Urban Economics* 13:67–89.

(c) Transportation technologies and urban change

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

Burchfield, Marcy, Henry G. Overman, Diego Puga, and Matthew A. Turner. 2006. "Causes of Sprawl: A Portrait from Space." *Quarterly Journal of Economics* 121(2):587–633.

Duranton, Gilles, and Matthew A. Turner. 2011. "The Fundamental Law of Road Congestion: Evidence from U.S. Cities." *American Economic Review*, 101(6):2616–52..

Glaeser, Edward L., and Matthew E. Kahn. 2004. "Sprawl and Urban Growth." In *Handbook of Regional and Urban Economics*, vol. 4, edited by J. Vernon Henderson and Jacques-François Thisse, 2481–527. Amsterdam: Elsevier.

3. Spatial equilibrium across cities

(a) Static spatial equilibrium and optimal location choice

Black, Sandra. 1999. "Do Better Schools Matter? Parental Valuation of Elementary Education." *Quarterly Journal of Economics* 114(2):577–99.

Gyourko, Joseph, and Joseph Tracy. 1991. "The Structure of Local Public Finance and the Quality of Life." *Journal of Political Economy* 99(4):774–806.

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

(b) Dynamic spatial equilibrium and city growth

Blanchard, Olivier, and Lawrence Katz. 1992. "Regional Evolutions." *Brookings Papers on Economic Activity* 1:1–75.

Glaeser, Edward L., Giacomo A. M. Ponzetto, and Kristina Tobio. 2011. "Cities, Skills, and Regional Change." NBER Working Paper No. 16934.

Glaeser, Edward L., José Scheinkman, and Andrei Shleifer. 1995. "Economic Growth in a Cross-Section of Cities." *Journal of Monetary Economics* 36:117–43.

Glaeser, Edward L., and Jesse Shapiro. 2003. "Urban Growth in the 1990s: Is City Living Back?" *Journal of Regional Science* 43(1): 139–65.

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

4. Agglomeration economies

Duranton, Gilles, and Diego Puga. 2004. "Micro-Foundations of Urban Agglomeration Economies." In *Handbook of Regional and Urban Economics*, vol. 4, edited by J. Vernon Henderson and Jacques-François Thisse, 2063–2117. Amsterdam: Elsevier.

Puga, Diego. 2010. "The Magnitude and Causes of Agglomeration Economies." *Journal of Regional Science* 50(1):203–19.

Rosenthal, Stuart S., and William C. Strange. 2004. "Evidence on the Nature and Source of Agglomeration Economies." In *Handbook of Regional and Urban*

*Economics*, vol. 4, edited by J. Vernon Henderson and Jacques-François Thisse, 2119–72. Amsterdam: Elsevier.

———. 2006. “The Micro-Empirics of Agglomeration Economies” In *A Companion to Urban Economics*, edited by Richard J. Arnott and Daniel P. McMillen, 7–23. Oxford: Blackwell.

(a) Measuring agglomeration

Ciccone, Antonio, and Robert E. Hall. 1996. “Productivity and the Density of Economic Activity.” *American Economic Review* 86(1):54–70.

Duranton, Gilles, and Henry G. Overman. 2005. “Testing for Localization Using Micro-Geographic Data.” *Review of Economic Studies* 72(4):1077–106.

Ellison, Glenn, and Edward L. Glaeser. 1997. “Geographic Concentration in U.S. Manufacturing Industries: A Dartboard Approach.” *Journal of Political Economy* 105(5):889–927.

Glaeser, Edward L., and David C. Maré. 2001. “Cities and Skills.” *Journal of Labor Economics* 19(2):316–42.

Greenstone, Michael, Richard Hornbeck, and Enrico Moretti. 2010. “Identifying Agglomeration Spillovers: Evidence from Winners and Losers of Large Plants Openings.” *Journal of Political Economy* 118(3):536–98.

• For further reading:

Davis, Donald R., and David E. Weinstein. 2002. “Bones, Bombs, and Break Points: The Geography of Economic Activity.” *American Economic Review* 92(5):1269–89.

Henderson, J. Vernon. 2003. “Marshall’s Scale Economies.” *Journal of Urban Economics* 55(1):1–28.

(b) Transport costs and the New Economic Geography

Fujita, Masahisa, Paul Krugman, and Anthony Venables. 1999. *The Spatial Economy*. Cambridge, MA: MIT Press.

Glaeser, Edward L., and Janet Kohlhase. 2004. “Cities, Regions, and the Decline of Transport Costs.” *Papers in Regional Science* 83(1):197–228.

Krugman, Paul. 1991. “Increasing Returns and Economic Geography.” *Journal of Political Economy* 99(3):483–99.

(c) Input sharing and urban labor markets

Bartik, Timothy J., and Randall W. Eberts. 2006. “Urban labor markets.” In *A Companion to Urban Economics*, edited by Richard J. Arnott and Daniel P. McMillen, 389–403. Oxford: Blackwell.

Becker, Gary S., and Kevin M. Murphy. 1992. “The Division of Labor, Coordination Costs, and Knowledge.” *Quarterly Journal of Economics* 107(4):1137–60.

Costa, Dora, and Matthew E. Kahn. 2000. “Power Couples: Changes in the Locational Choice of the College Educated, 1940–1990.” *Quarterly Journal of Economics* 115(4):1287–315.

Helsley, Robert W., and William C. Strange. 1990. “Matching and Agglomeration Economies in a System of Cities.” *Regional Science and Urban Economics* 20:189–212.

Rosenthal, Stuart S., and William C. Strange. 2008. "Agglomeration and Hours Worked." *Review of Economics and Statistics* 90(1):105–18.

- For further reading:

- Diamond, Charles A., and Curtis J. Simon. 1990. "Industrial Specialization and the Returns to Labor." *Journal of Labor Economics* 8(2):175–201.

- Simon, Curtis J. 1988. "Frictional Unemployment and the Role of Industrial Diversity," *Quarterly Journal of Economics* 103(4):715–28.

(d) Non-pecuniary agglomeration economies

Cullen, Julie Berry, and Steven Levitt. 1999. "Crime, Urban Flight, and the Consequences for Cities." *Review of Economics and Statistics* 81(2):159–69.

Glaeser, Edward L., Jed Kolko, and Albert Saiz. 2001. "Consumer City." *Journal of Economic Geography* 1:27–50.

Kahn, Matthew E. 1999. "The Silver Lining of Rust Belt Manufacturing Decline." *Journal of Urban Economics* 46:360–76.

(e) Ideas in cities

Audretsch, David B., and Maryann P. Feldman. 1996. "R&D Spillovers and the Geography of Innovation and Production." *American Economic Review* 86(3):630–40.

Duranton, Gilles, and Diego Puga. 2001. "Nursery Cities: Urban Diversity, Process Innovation, and the Life Cycle of Products." *American Economic Review* 91(5):1454–77.

Glaeser, Edward L. 2005. "Reinventing Boston, 1630–2003." *Journal of Economic Geography* 5(2):119–53.

Glaeser, Edward L., Hedi Kallal, José Scheinkman, and Andrei Shleifer. 1992. "Growth in Cities." *Journal of Political Economy* 100:1126–52.

(f) Human-Capital Spillovers

Acemoglu, Daron, and Josh Angrist. 2000. "How Large Are the Social Returns to Education? Evidence from Compulsory Attendance Laws." In *NBER Macroeconomics Annual 2000*, vol. 15, edited by Ben S. Bernanke and Kenneth Rogoff, 9–74. Cambridge, MA: MIT Press.

Glaeser, Edward L. 1999. "Learning in Cities." *Journal of Urban Economics* 46:254–77.

Glaeser, Edward L., and Albert Saiz. 2004. "The Rise of the Skilled City." *Brookings-Wharton Papers on Urban Affairs* 5:47–94.

Moretti, Enrico. 2004. "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data." *Journal of Econometrics* 121(1-2): 175–212.

Rauch, James E. 1993. "Productivity Gains from Geographic Concentration of Human Capital: Evidence from the Cities." *Journal of Urban Economics* 34(3):380–400.

- For further reading:

- Berry, Christopher R., and Edward L. Glaeser. 2005. "The Divergence of Human Capital Levels Across Cities." *Papers in Regional Science* 84(3):407–44.

(g) Agglomeration Economies in Transition

Duranton, Gilles, and Diego Puga. 2005. “From Sectoral to Functional Urban Specialisation.” *Journal of Urban Economics* 57(2):343–70.

Gaspar, Jess, and Edward L. Glaeser. 1998. “Information Technology and the Future of Cities.” *Journal of Urban Economics* 43:136–56.

Glaeser, Edward L., and Giacomo A. M. Ponzetto. 2010. “Did the Death of Distance Hurt Detroit and Help New York?” In *Agglomeration Economics*, edited by Edward L. Glaeser, 303–37. Chicago, IL: University of Chicago Press.

- For further reading:

Glaeser, Edward L., William R. Kerr, and Giacomo A. M. Ponzetto. 2010. “Clusters of Entrepreneurship.” *Journal of Urban Economics* 67:150–68.

(h) Measuring the sources of agglomeration economies

Ellison, Glenn, and Edward L. Glaeser. 1999. “Does Natural Advantage Explain Geographic Concentration?” *American Economic Review* 89(2): 311–16.

Ellison, Glenn, Edward L. Glaeser, and William R. Kerr. 2010. “What Causes Industry Agglomeration? Evidence from Coagglomeration Patterns.” *American Economic Review* 100(3):1195–213.

Holmes, Thomas J. 1998. “The Effects of State Policies on the Location of Industry: Evidence from State Borders.” *Journal of Political Economy* 106(4):667–705.

———. 1999. “Localization of Industry and Vertical Disintegration.” *Review of Economics and Statistics* 81(2):314–25.

Redding, Stephen J., and Daniel M. Sturm. 2008. “The Costs of Remoteness: Evidence from German Division and Reunification.” *American Economic Review* 98(5):1766–97.

- For further reading:

Brühlhart, Marius, Céline Carrère, and Federico Trionfetti. 2012. “How Wages and Employment Adjust to Trade Liberalization: Quasi-Experimental Evidence from Austria.” *Journal of International Economics* 86(1):68–81.

5. Urban distress

(a) Discrimination, segregation, and ghettos

Bénabou, Roland. 1993. “Workings of a City: Location, Education, and Production.” *Quarterly Journal of Economics* 108(3):619–52.

———. 1996. “Heterogeneity, Stratification, and Growth: Macroeconomic Implications of Community Structure and School Finance.” *American Economic Review* 86(3):584–609.

Cutler, David M., and Edward L. Glaeser. 1997. “Are Ghettos Good or Bad?” *Quarterly Journal of Economics* 112(3):827–72.

Cutler, David M., Edward L. Glaeser, and Jacob L. Vigdor. 1999. “The Rise and Decline of the American Ghetto.” *Journal of Political Economy* 107(3):455–506.

Echenique, Federico, and Roland G. Fryer, Jr. 2007. "A Measure of Segregation Based on Social Interactions." *Quarterly Journal of Economics* 72(2):441–85.

Edin, Per-Anders, Peter Fredriksson, and Olof Åslund. 2003. "Ethnic Enclaves and the Economic Success of Immigrants: Evidence from A Natural Experiment." *Quarterly Journal of Economics* 118(1):329–57.

Fernández, Raquel, and Richard Rogerson. 1996. "Income Distribution, Communities, and the Quality of Public Education." *Quarterly Journal of Economics* 111(1):135–64.

Kain, John F. 1968. "Housing Segregation, Negro Employment, and Metropolitan Decentralization." *Quarterly Journal of Economics* 82(2):175–97.

Kain, John F., and John M. Quigley. 1972. "Housing Market Discrimination, Homeownership, and Savings Behavior." *American Economic Review* 62(3):263–77.

Kling, Jeffrey R., Jeffrey B. Liebman, and Lawrence F. Katz. 2007. "Experimental Analysis of Neighborhood Effects." *Econometrica* 75:83–119.

- For further reading:

Card, David, Alexandre Mas, and Jesse Rothstein. 2008. "Tipping and the Dynamics of Segregation." *Quarterly Journal of Economics* 123(1):177–218.

Katz, Lawrence F., Jeffrey R. Kling, and Jeffrey B. Liebman. 2001. "Moving to Opportunity in Boston: Early Results of a Randomized Mobility Experiment." *Quarterly Journal of Economics* 116(2):607–54.

## (b) Crime

DiPasquale, Denise, and Edward L. Glaeser. 1998. "The Los Angeles Riot and the Economics of Urban Unrest." *Journal of Urban Economics* 43(1):52–78.

Glaeser, Edward L., and Bruce Sacerdote. 1999. "Why Is There More Crime in Cities?" *Journal of Political Economy* 107(6):S225–58.

Glaeser, Edward L., Bruce Sacerdote, and José Scheinkman. 1996. "Crime and Social Interactions." *Quarterly Journal of Economics* 111:507–48.

- For further reading:

Levitt, Steven D. 1996. "The Effect of Prison Population Size on Crime Rates: Evidence from Prison Overcrowding Litigation." *Quarterly Journal of Economics* 111(2):319–51.

Di Tella, Rafael, and Ernesto Schargrotsky. 2004. "Do Police Reduce Crime? Estimates Using the Allocation of Police Forces after a Terrorist Attack." *American Economic Review* 94(1):115–133.

## 6. Real estate

### (a) Housing demand and housing markets

#### i. The demand for housing

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

Epple Dennis. 1987. "Hedonic Prices and Implicit Markets: Estimating Demand and Supply functions for Differentiated Products." *Journal of Political Economy* 95(1):59–80



Glaeser, Edward L., and Joseph Gyourko. 2009. "Arbitrage in Housing Markets." In *Housing Markets and the Economy*, edited by Edward L. Glaeser and John M. Quigley, 113–46. Cambridge, MA: Lincoln Institute of Land Policy.

Glaeser, Edward L., and Jesse M. Shapiro. 2003. "The Benefits of the Home Mortgage Interest Deduction." *Tax Policy and the Economy* 17:37–82.

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

Rosen, Sherwin. 1974. "Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition." *Journal of Political Economy* 82(1):34–55.

Sinai, Todd, and Nick Souleles. 2005. "Owner-Occupied Housing as a Hedge Against Rent Risk." *Quarterly Journal of Economics* 120(2):763–89.

- For further reading:

- DiPasquale, Denise, and Edward L. Glaeser. 1999. "Incentives and Social Capital: Are Homeowners Better Citizens?" *Journal of Urban Economics* 45:354–84.

- Sinai, Todd, and Joel Waldfogel. 2005. "Do Low-Income Housing Subsidies Increase the Occupied Housing Stock?" *Journal of Public Economics* 89(11–12):2137–64.

ii. The operation of housing markets

Genesove, David, and Christopher Mayer. 1997. "Equity and Time to Sale in the Real Estate Market." *American Economic Review* 87(3):255–69.

———. 2001. "Loss Aversion and Seller Behavior: Evidence from the Housing Market." *Quarterly Journal of Economics* 116(4):1233–60.

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* 111:1076–1122.

Levitt, Steven D., and Chad Syverson. 2008. "Market Distortions When Agents Are Better Informed: The Value of Information in Real Estate Transactions." *Review of Economics and Statistics* 90(4):599–611.

(b) Housing supply and housing dynamics

i. Housing supply and growth

Glaeser, Edward L., and Joseph Gyourko. 2005. "Urban Decline and Durable Housing." *Journal of Political Economy* 113(2):345–75.

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

Glaeser, Edward L., Joseph Gyourko, and Raven Saks. 2005. "Why Is Manhattan so Expensive? Regulation and the Rise in House Prices." *Journal of Law and Economics* 48(2):331–70.

Glaeser, Edward L., and Bryce A. Ward. 2009. "The Causes and Consequences of Land Use Regulation: Evidence from Greater Boston." *Journal of Urban Economics* 65(3):265–78.

- For further reading:

- Glaeser, Edward L., and Kristina Tobio. 2008. "The Rise of the Sunbelt."

*Southern Economic Journal* 74(3):610–43.

Katz, Lawrence F., and Kenneth T. Rosen. 1987. “The Interjurisdictional Effects of Growth Controls on Housing Prices.” *Journal of Law and Economics* 30(1):149–60.

Saiz, Albert. 2010. “The Geographic Determinants of Housing Supply.” *Quarterly Journal of Economics* 125(3):1253–1296.

Topel, Robert, and Sherwin Rosen. 1988. “Housing Investment in the United States.” *Journal of Political Economy* 96(4):718–40.

ii. Housing dynamics

Glaeser, Edward L., Joshua D. Gottlieb, and Joseph Gyourko. 2010. “Can Cheap Credit Explain the Housing Boom?” NBER Working Paper No. 16230.

Glaeser, Edward L., Joseph Gyourko, Eduardo Morales, and Charles G. Nathanson. 2011. “Housing Dynamics.” Mimeo, Harvard University.

- For further reading:

Case, Karl E., and Robert J. Shiller. 1989. “The Efficiency of the Market for Single Family Homes.” *American Economic Review* 79(1):125–37.

Gyourko, Joseph, Christopher Mayer, and Todd Sinai. 2006. “Superstar Cities.” NBER Working Paper No. 12355.

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

7. Cities and public policy

(a) The Tiebout model of local public goods and sorting

Bewley, Truman F. 1981. “A Critique of Tiebout’s Theory of Local Public Expenditures.” *Econometrica* 49(3):713–40.

Glaeser, Edward L., and Andrei Shleifer. 2005. “The Curley Effect: The Economics of Shaping the Electorate.” *Journal of Law, Economics, and Organization* 21(1):1–19.

Tiebout, Charles M. 1956. “A Pure Theory of Local Public Expenditures.” *Journal of Political Economy* 64(5):416–24.

- For further reading:

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

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

Hoxby, Caroline M. 2000. “Does Competition Among Public Schools Benefit Students and Taxpayers?” *American Economic Review* 90(5):1209–38.

—. 2007. “Does Competition Among Public Schools Benefit Students and Taxpayers? Reply.” *American Economic Review* 97(5):2038–55.

Rothstein, Jesse. 2007. “Does Competition Among Public Schools Benefit Students and Taxpayers? Comment.” *American Economic Review* 97(5):2026–37.

(b) Place-based policies

Ades, Alberto F., and Edward L. Glaeser. 1995. "Trade and Circuses: Explaining Urban Giants." *Quarterly Journal of Economics* 110:228–58.

Glaeser, Edward L. 1998. "Should Transfer Payments Be Indexed to Local Price Levels?" *Regional Science and Urban Economics* 28(1):1–20.

- For further reading:

Greenstone, Michael, and Enrico Moretti. 2003. "Bidding for Industrial Plants: Does Winning a 'Million Dollar Plant' Increase Welfare?" NBER Working Paper No. 9844.