

# Spatial Economics

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Chair of Economics and Social Policy



# Syllabus

- Prerequisites: Microeconomics, Econometrics I
- Language: English
- Availability: annually (summer semester)
- Credible for (D)MSE
- Lecture (2 h per week) + Tutorial (2 h per week)
- Workload 150 h (including contact hours 60 h)  $\equiv$  5 ECTS
- 60-minutes written examination + presentation
- Slides and papers on StudON (password protected)
- Teaching assistant: M.Sc. Benjamin Wirth ([benjamin.wirth@fau.de](mailto:benjamin.wirth@fau.de))

## Aim

- At the end of this course,
  - Students are able to describe and to internationally compare the regional patterns of major economic activities in terms of stylized facts.
  - Students are able to present, interpret, and discuss selected theories in regional and urban economics.
  - Students are able to assess empirical tests of selected hypotheses from theories in regional and urban economics to evaluate and critically examine their informative value.
  - Students are able to discuss and critically examine economic policy implications of selected theories in regional and urban economics.
  - Students will assess, evaluate and discuss selected recent research papers in English.

# Contents

- Part I: Foundations
- Part II: Urban economics and transport costs
- Part III: Spatial externalities
- Part IV: Labor markets and space
- Part V: Amenities
- Part VI: Place-based policy

## Some sources/organizations

- Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR) [Federal Institute for Research on Building, Urban Affairs and Spatial Development]: [www.bbsr.bund.de](http://www.bbsr.bund.de)
- Bundesinstitut für Bevölkerungsforschung (BIB) [Federal Institute for Population Research]: [www.bib-demografie.de](http://www.bib-demografie.de)
- Deutsches Institut für Urbanistik (DIFU) [German Institute of Urban Affairs]: [www.difu.de](http://www.difu.de)
- Bayerisches Landesamt für Statistik und Datenverarbeitung:  
[www.statistik.bayern.de/regionalstatistik/](http://www.statistik.bayern.de/regionalstatistik/)
- Regionaldatenbank Deutschland der Statistische Ämter des Bundes und der Länder:  
[www.regionalstatistik.de](http://www.regionalstatistik.de)
- EU Commission - Regional Policy: [ec.europa.eu/regional\\_policy/en/](http://ec.europa.eu/regional_policy/en/)

## Main textbooks

- Brakman, S., Garretsen, H. & van Marrewijk, C. (2010). *The New Introduction to Geographical Economics*. Second Edition. Cambridge, UK: Cambridge University Press.
- Brueckner, J.K. (2011). *Lectures on Urban Economics*. Cambridge: MIT Press.
- Combes, P.-P., Mayer, T. & Thisse, J.-F. (2008). *Economic Geography*. Princeton and Oxford: Princeton University Press.
- Fujita, M. & Thisse, J.-F. (2002). *Economics of Agglomeration. Cities, Industrial Location, and Regional Growth*. Cambridge, UK: Cambridge University Press.

## Further references

- Albouy, D. (2009). The Unequal Geographic Burden of Federal Taxation. *Journal of Political Economy* 117. 635-667.
- Anselin, L. (1999). *Spatial Econometrics*. Mimeo.
- Bacolod, M., Blum, B. & Strange, W.C. (2009). Skills and the City. *Journal of Urban Economics* 65. 136-153.
- Baldwin, R., Forslid, R., Martin, P., Ottaviano G. & Robert-Nicoud, F. (2003). *Economic Geography and Public Policy*. Princeton and New Jersey: Princeton University Press.
- Baldwin, R. & Wyplosz, C. (2009). *The Economics of European Integration*. Third Edition. Maidenhead: McGraw-Hill.
- Baum-Snow, N. & Ferreira, F. (2014). Causal Inference in Urban and Regional Economics. In: Duranton, G. Henderson, J.V. & Strange, W.C. (Ed.) *Handbook of Regional & Urban Economics*. Vol. 5. Forthcoming.

- Baum-Snow, N. & Pavan, R. (2013). Inequality and City Size. *Review of Economics and Statistics* 95. 1535-1548.
- Baum-Snow, N. & Pavan, R. (2012). Understanding the City Size Wage Gap. *Review of Economic Studies* 79. 88-127.
- Becker, S.O., Egger, P.H. & von Ehrlich, M. (2010). Going NUTS: The Effect of EU Structural Funds on Regional Performance. *Journal of Public Economics* 94. 578-590.
- Becker, S.O., Egger, P.H. & von Ehrlich, M. (2012). Too Much of a Good Thing? On the Growth Effects of the EU's Regional Policy. *European Economic Review* 56. 648-668.
- Becker, S.O., Egger, P.H. & von Ehrlich, M. (2013). Absorptive Capacity and the Growth and Investment Effects of Regional Transfers: A Regression Discontinuity Design with Heterogeneous Treatment Effects. *American Economic Journal: Economic Policy* 5. 29-77.
- Behrens, K., Duranton, G. & Robert-Nicoud, F. (2014). Productive Cities: Sorting, Selection, and Agglomeration. *Journal of Political Economy* 122. 507-553.

- Berry, C.R. & Glaeser, E.L. (2005). The Divergence of Human Capital Levels across Cities. *Papers in Regional Science* 84. 407-444.
- Borck, R., Pflüger, M. & Wrede, M. (2010). A Simple Theory of Industry Location and Residence Choice. *Journal of Economic Geography* 10. 913-940.
- Borck, R. & Wrede, M. (2008). Commuting Subsidies with Two Transport Modes. *Journal of Urban Economics* 63. 841-848.
- Borck, R. & Wrede, M. (2009). Subsidies for Intracity and Intercity Commuting. *Journal of Urban Economics* 66. 25-32.
- Borjas, G.J. (1987). Self-selection and the Earnings of Immigrants. *American Economic Review* 77. 531-553.
- Brakman, S. & van Marrewijk, C. (2013). Reflections on Cluster Policies. *Cambridge Journal of Regions, Economy and Society*. doi:10.1093/cjres/rst001
- Brueckner, J.K., Thisse, J.-F. & Zenou, Y. (1999). Why is Central Paris Rich and Downtown Detroit Poor? An Amenity-based Theory. *European Economic Review* 43. 91-107.

- Buettner, T. & Ebertz, A. (2009). Quality of Life in the Regions: Results for German Counties. *Annals of Regional Science* 43. 89-112.
- Busso, M., Gregory, J. & Kline, P. (2013). Assessing the Incidence and Efficiency of a Prominent Place Based Policy. *American Economic Review* 103. 897-947.
- Cheshire, P.C., Nathan, M. & Overman, H.G. (2014). *Urban Economics and Urban Policy*. Cheltenham, UK: Edward Elgar.
- Ciccone, A. & Hall, R.E. (1996). Productivity and the Density of Economic Activity. *American Economic Review* 86. 54-70.
- Combes, P.-P., Duranton, G. & Gobillon, L. (2008). Spatial Wage Disparities: Sorting Matters! *Journal of Urban Economics* 63. 723-742.
- Combes, P.-P., Duranton, G., Gobillon, L. & Roux, S. (2010). Estimating Agglomeration Economies with History, Geology, and Worker Effects. In: E.L. Glaeser (ed.). *The Economics of Agglomeration*. Cambridge (Mass.). National Bureau of Economic Research. 15-65.
- Combes, P.-P., Duranton, G., Gobillon, L. & Roux, S. (2012). Sorting and Local Wage and Skill Distributions in France. *Regional Science and Urban Economics* 42. 913-930.

- Davis, D.R. & Dingel, J.I. (2012). A Spatial Knowledge Economy. *NBER Working Paper* 18188.
- Drukker, D.M., I.R. Prucha, & R. Raciborski (2013a). Maximum Likelihood and Generalized Spatial Two-stage least-squares Estimators for a Spatial-autoregressive Model with Spatial-autoregressive Disturbances. *Stata Journal* 13. 221-241.
- Drukker, D.M., I.R. Prucha, & R. Raciborski (2013b). A Command for Estimating Spatial-autoregressive Models with Spatial-autoregressive Disturbances and Additional Endogenous Variables *Stata Journal* 13. 287-301.
- Eckey, H.-F., Kosfeld, R. & Türck, M. (2006). Räumliche Ökonometrie. *WiSt.* 548-554.
- Eeckhout, J. & Kircher, P. (2011). Identifying Sorting - In Theory. *Review of Economic Studies* 78. 872-906.
- Elhorst, J.P. (2014a). Spatial Panel Methods. In: Fischer, M.M. & Nijkamp P. (Ed.) *Handbook of Regional Science*. Berlin, Heidelberg: Springer-Verlag.
- Elhorst, J.P. (2014b). *Spatial Econometrics*. Berlin, Heidelberg: Springer-Verlag.

- Ellison, G., Glaeser, E.L. & Kerr, W. (2010). What Causes Industry Agglomeration? Evidence from Co-agglomeration Patterns. *American Economic Review* 100. 1195-1213.
- Fujita, M. (2010). The Evolution of Spatial Economics: From Thünen to the New Economic Geography. *Japanese Economic Review* 61. 1-32.
- Fujita, M. (2012). Thünen and the New Economic Geography. *Regional Science and Urban Economics* 42. 907-912.
- Fujita, M., Krugman, P. & Venables, A. (2000). *The Spatial Economy. Cities, Regions, and International Trade*. Cambridge, Mass: MIT Press.
- Gibbons, S. & Overman, H.G. (2012). Mostly Pointless Spatial Econometrics? *Journal of Regional Science* 52. 172-191.
- Gibbons, S., Overman, H.G. & Patacchini, E. (2014). Spatial Methods. In: Duranton, G. Henderson, J.V. & Strange, W.C. (Ed.) *Handbook of Regional & Urban Economics*. Vol. 5. Forthcoming.
- Glaeser, E. (2001). The Economics of Location-Based Tax Incentives. *Harvard Discussion Paper* 1932.

- Glaeser, E. (2003). Reinventing Boston: 1640-2003. *Harvard Discussion Paper* 2017.
- Glaeser, E. (2008). *Cities, Agglomeration and Spatial Equilibrium*. Oxford: Oxford University Press.
- Glaeser, E.L. & Gottlieb, J.D. (2008). The Economics of Place-Making Policies. *Brookings Papers on Economic Activity* 2008-1. 155-239.
- Glaeser, E.L. & Mare, D.C. (2001). Cities and Skills. *Journal of Labor Economics* 19. 316-342.
- Glaeser, E.L. & Resseger, M.G. (2010). The Complementarities Between Cities and Skills. *Journal of Regional Science* 50. 221-244.
- Gould, E.D. (2007). Cities, Workers, and Wages: A Structural Analysis of the Urban Wage Premium. *Review of Economic Studies* 74. 477-506.
- Greenstone, M., Hornbeck, R. & Moretti, E. (2010). Identifying Agglomeration Spillovers: Evidence from Winners and Losers of Large Plant Openings. *Journal of Political Economy* 118. 536-598.

- Heuermann, D., Halfdanarson, B. & Südekum, J. (2010). Human Capital Externalities and the Urban Wage Premium: Two Literatures and their Interrelations. *Urban Studies* 47. 749-767.
- Kline, P. (2010). Place Based Policies, Heterogeneity, and Agglomeration. *American Economic Review* 100. 383-387.
- Kline, P. & Moretti, E. (2014). People, Places, and Public Policy: Some Simple Welfare Economics of Local Economic Development Programs. *Annual Review Economics* 6. 629-662.
- Kosfeld, R., Eckey, H.-F. & Lauridsen, J. (2011). Spatial Point Pattern Analysis and Industry Concentration. *Annals of Regional Science* 47. 311-328.
- Koster, H.R.A., van Ommeren, J. & Rietveld, P. (2014). Historic Amenities, Income and Sorting of Households. *Journal of Economic Geography*. 1-34.
- Krugman, P. (1991a). *Geography and Trade*. Cambridge, MA: MIT Press.
- Krugman, P. (1991b). Increasing Returns and Economic Geography. *Journal of Political Economy* 99. 483-499.

- Lee, S.H. (2010). Ability Sorting and Consumer City. *Journal of Urban Economics* 68. 20-33.
- LeSage, J. & Pace, R.K. (2009). *Introduction to Spatial Econometrics*. Boca Raton: CRC Press.
- Neumark, D. & Helen Simpson, H. (2014). Place-Based Policies. *NBER Working Paper* 20049.
- Matano, A. & Naticchioni, P. (2012). Wage Distribution and the Spatial Sorting of Workers. *Journal of Economic Geography* 12. 379408.
- Michel, P., Perrot, A. & Thisse, J.-F. (1996). Interregional Equilibrium with Heterogeneous Labor. *Journal of Population Economics* 9. 95-113.
- Mion, G. & Naticchioni, P. (2009). The Spatial Sorting and Matching of Skills and Firms. *Canadian Journal of Economics* 42. 28-55.
- Moretti, E. (2011). Local Labor Markets. In: D. Card & O. Ashenfelter (Ed.). *Handbook of Labor Economics*. Vol. 4b. 1237-1313.

- Mori, T. & Turrini, A. (2005). Skills, Agglomeration and Segmentation. *European Economic Review* 49. 201-225.
- Neumark, D. & Simpson, H. (2014). Place-Based Policies. *NBER Working Paper* 20049.
- Neumark, D., & Kolko, J. (2010). Do Enterprise Zones Create Jobs? Evidence from California's Enterprise Zone Program. *Journal of Urban Economics* 68. 1-19.
- Newman M.E.J. & Girvan, M. (2004). Finding and Evaluating Community Structure in Networks. *Physical Review E* 69, 026113.
- Nocke, V. (2006). A Gap for Me: Entrepreneur and Entry. *Journal of the European Economic Association* 4. 929-956.
- Ottaviano, G.I.P. & Puga, D. (1998). Agglomeration in the Global Economy: A Survey of the 'New Economic Geography'. *World Economy* 21. 707731.
- Ottaviano, G., Tabuchi, T. & Thisse, J.-F. (2002). Agglomeration and Trade Revisited. *International Economic Review* 43. 409-435.
- Ottaviano, G. & Thisse, J.-F. (2004). Agglomeration and Economic Geography. In:

Henderson, J.V. & J.-F. Thisse (Eds.). *Handbook of Regional and Urban Economics* vol. 4. Elsevier. Amsterdam. 2563-2608.

- OECD (2005). OECD Employment Outlook 2005. Paris
- Osland, L., Thorsen, I. & Gitlesen, J.P. (2007). Housing Price Gradients in a Region with One Dominating Center. *Journal of Real Estate Research* 29. 321-346.
- Overman, H.G. & Puga, D. (2010). Labour Pooling as a Source of Agglomeration: An Empirical Investigation. In: E.L. Glaeser (ed.). *The Economics of Agglomeration*. Cambridge (Mass.). National Bureau of Economic Research. 133-150.
- Pflüger, M. (2008). Die Neue Ökonomische Geographie: Ein Überblick. *WiSt*. 150-158.
- Pflüger, M. (2004). A Simple, Analytically Solvable Chamberlinian Agglomeration Model. *Regional Science and Urban Economics* 34. 565573.
- Pflüger, M. & Südekum, J. (2008). Integration, Agglomeration and Welfare. *Journal of Urban Economics* 63. 544-566.

- Pinkse, J. & Slade, M.E. (2010). The Future of Spatial Econometrics. *Journal of Regional Science* 50. 103-117.
- Roback, J. (1982). Wages, Rents, and the Quality of Life. *Journal of Political Economy* 90. 1257-1278.
- Rodrik, D. (2004). *Getting Institutions Right*. Mimeo.
- Rodrik, D. (2007). *One Economics, Many Recipes: Globalization, Institutions, and Economic Growth*. Princeton: Princeton University Press.
- Rosen, S. (1979). Wages-based Indexes of Urban Quality of Life. In: P. Mieszkowski & M. Straszheim (eds.). *Current Issues in Urban Economics*. John Hopkins University Press, Baltimore.
- Rosenthal, S. & Strange, W. (2004). Evidence on the Nature and Sources of Agglomeration Economies. In: J.V. Henderson & J.F. Thisse (eds.). *Handbook of Regional and Urban Economics*, vol. 4. Elsevier, North Holland. 2713-2739.
- Roy, A. D. (1951). Some Thoughts on the Distribution of Earnings. *Oxford Economic Papers* 3. 135-146.

- O'Sullivan, A. (2012). *Urban Economics*. Eight Edition. New York: McGraw-Hill/Irwin.
- Sveikauskas, L.A. (1975). The Productivity of Cities. *Quarterly Journal of Economics* 89. 392-413.
- Syverson, C. (2004). Market Structure and Productivity: A Concrete Example. *Journal of Political Economy* 112. 1181-1222.
- Venables, A.J. (2011). Productivity in Cities: Self-selection and Sorting. *Journal of Economic Geography* 11. 241-251.
- Wheeler, C.H. (2001). Search, Sorting, and Urban Agglomeration. *Journal of Labor Economics* 19. 879-899.
- Wheeler, C.H. (2006). Cities and the Growth of Wages Among Young Workers: Evidence from the NLSY. *Journal of Urban Economics* 60. 162-184.
- World Bank (2009). *Reshaping Economic Geography*. *World Development Report*. Washington, DC.

- Wrede, M. (2009). A Distortive Wage Tax and a Countervailing Commuting Subsidy. *Journal of Public Economic Theory* 11. 297-310.
- Wrede, M. (2013). Heterogeneous Skills and Homogeneous land: Segmentation and Agglomeration. *Journal of Economic Geography* 13. 767-798.
- Wrede, M. (2015a). Akzeptanz der Förderung gleichwertiger Lebensverhältnisse und Arbeitsbedingungen. *Review of Regional Research*. 35. 103-119.
- Wrede, M. (2015b). Wages, Rents, Unemployment, and the Quality of Life: A Consistent Theory-based Measure. *Journal of Regional Science*. Forthcoming.
- Yankow, J.J. (2006). Why do Cities Pay More? An Empirical Examination of Some Competing Theories of the Urban Wage Premium. *Journal of Urban Economics* 60. 139-161.
- Zenou, Y. (2009). *Urban Labor Economics*. Cambridge, U.K.: Cambridge University Press.

## **Publications on regions in Germany, Europe, and the OECD**

- BBSR (2011a). Metropolitan Areas in Europe. Bonn.
- BBSR (2011b). Regionales Monitoring 2010. Daten und Karten zu den Europäischen Metropolregionen in Deutschland. Bonn.
- Eurostat (2014). Eurostat Regional Yearbook 2014. Luxembourg.
- OECD (2011). OECD Regional Outlook 2011: Building Resilient Regions for Stronger Economies. Paris.
- OECD (2013). Regions at a Glance 2013. Paris.

