Main Seminar Empirical Economics: 
The Distribution of Economic Activity over 
Space

for Bachelor- and Master students

Prof. Dr. Mario Larch and Steffen Sirries
Chair of Empirical Economics

25. September 2013

1 General Issues

The main seminar empirical economics addresses diploma students of VWL and BWL, as well as Bachelor- and Master students of Business Administration, Economics, International Economics and Development (Internationale Wirtschaft und Entwicklung), Philosophy & Economics, Health Economics (Gesundheitsökonomie) and International Economics and Governance (Internationale Wirtschaft & Governance).

In the seminar empirical questions from different aspects of the distribution of economic activity over space will be discussed. The motivation is that “mainstream economics has traditionally paid remarkably little attention to the location of economic activity—to the choices firms and households make about where to produce and consume, and about how these choices interact” (Fujita, Krugman, Venables (2001), The Spatial Economy-Cities, Regions, and International Trade). Strands of literature which will be covered are therefore regional and urban economics, economics of agglomeration and new economic geography. Examples include the evaluation of causes and effects of
economic prosperity of cities or regions with respect to spatial neighborhood, agglomeration of economic activity over space after changes of borders (Berlin wall, German reunification) and migration into cities.

The aim of the seminar is to offer the possibility for students to talk about empirical problems and methods dealing with distribution of economic activity over space. The topics (which we will provide soon) will not be exhaustive and own proposals of students are very welcome. However, every proposal should be clearly outlined and should have an empirical part. Interested students are encouraged to contact the chair.

2 Requirements

In order to participate in the seminar, a basic knowledge of empirical economics is assumed, similar to the context of Empirical Economics I, for instance. Since the seminar is open for both Bachelor- and Master students with different previous knowledge in empirical methods, the topics will be given according to the previous knowledge. For this reason the topic selection has to be understood only as suggestions.

If you write a Diploma-, Bachelor- or Master thesis at another chair and you are confronted with a method or an empirical problem, it is possible to write your assignment in this seminar about your method respectively your empirical problem.

3 Requirements for seminar participants

In detail the following requirements for seminar participants exist:

- Active seminar participation (including attendance at the compulsory introduction).
- Presentation (ca. 30 minutes) including a discussion of around 10 minutes.
• Written assignment (Bachelor degree 4000-5000 words, Master- and Diploma degree 5500-6500 words).

• Students from the degree course Philosophy & Economics, who just want to acquire 2 performance points, do not have to hand in a written assignment. Please announce at the beginning of the seminar that you just want to do a presentation.

4 Target group and LP/ECTS

The seminar addresses students from the following degree courses:

• Betriebs- and Volkswirtschaftslehre (Diplom).

• Betriebswirtschaftslehre (BA, advanced semester and MA).

• Economics (BA, advanced semester and MA).

• Internationale Wirtschaft und Entwicklung (BA, advanced semester).

• Philosophy and Economics (BA).

• Gesundheitsökonomie (BA, advanced semester and MA).

• Internationale Wirtschaft und Governance (MA).
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5 Organisation

The seminar will be blocked and take place on December 13th and 14th, 2013. The slides for your presentation have to be handed in two days before the presentation. After your presentation you write your term paper based on the discussion and the suggestions collected during the presentation. The date of submission of the term paper will be the March 31th, 2014 (of course an earlier submission is possible at any time).

Interested students are asked to sign up in the secretary of the chair of empirical economics (Mrs. Cynthia Kade). Applications are requested before the October 1st, 2013. Please indicate your previous knowledge in statistics and empirical economics as well as your topic suggestion or your preferred topic from the suggestions, respectively, in the application.

Additionally there is a compulsory introduction to the seminar on October 24th, 2 pm (c.t.), 2013, in which the course content and open questions will be discussed.

The language of the course is English, hence your slides and your presentation should be in English. The assignment can be written in German or in English, respectively. (The literature is in English). For more details concerning the formal requirements of the written assignments please see the stylesheet available in [German] (Hinweis zur Formatierung von Seminar- und Abschlussarbeiten) and in [English] (Formal requirements for term papers and Bachelor’s/Master’s theses at the Chair of Economics VI: Empirical Economics).

Mario Larch (mario.larch@uni-bayreuth.de) and Steffen Sirries (steffen.sirries@uni-bayreuth.de) are available for any further questions.
6 Topic Suggestions

Please note that the topics which are signed by an asterisk are suggested to master students.

6.1 Industry Agglomeration


Abstract: Why do firms cluster near one another? We test Marshall’s theories of industrial agglomeration by examining which industries locate near one another, or coagglomerate. We construct pairwise coagglomeration indices for US manufacturing industries from the Economic Census. We then relate coagglomeration levels to the degree to which industry pairs share goods, labor, or ideas. To reduce reverse causality, where collocation drives input-output linkages or hiring patterns, we use data from UK industries and from US areas where the two industries are not collocated. All three of Marshall’s theories of agglomeration are supported, with input-output linkages particularly important.

Method: OLS Estimation, IV
6.2 Urban Evolutions*


**Abstract:** With the use of French and US data, new and systematic evidence is provided about the rapid location changes of industries across cities (the fast). Cities are also slowly moving up and down the urban hierarchy (the slow), while the size distribution of cities is skewed to the right and very stable (the still). The model proposed here reproduces these three features. Small, innovation-driven shocks lead to the churning of industries across cities. Then, cities slowly grow or decline following net gains or losses of industries. These changes occur within a stable distribution. The quantitative implications of the model are also explored.

**Method:** Simulation exercise with GAUSS or comparable
6.3 Agglomeration Economies

**Literature:** Wheeler (2003), Evidence on agglomeration economies, diseconomies, and growth, *Journal of applied Econometrics* 18, pp. 79-104

**Abstract:** Conventional urban economic analysis suggests that a local economy’s size is closely related to a number of features, including levels of human capital and the availability of specialized inputs, which are likely to influence positively the rate at which it accumulates further economic activity. At the same time, urban theory also suggests that once cities reach a certain level of size, these agglomeration benefits begin to peter out, while diseconomies rise rapidly. Consequently, we should see an ‘inverted U-shaped’ pattern of growth with respect to economic size—rates of growth first rise, then fall as size increases. This paper shows that, while such a pattern is largely absent from recent data on growth in metropolitan area population and employment, it emerges strikingly in county-level data.

**Method:** OLS Estimation
6.4 Distance to Headquarters and Performance of Establishments


**Abstract**: In the population of over 1.7 million Texan sales-tax collecting business establishments, we show that greater distance to owner headquarters is associated with shorter establishment longevity. For the lodging industry, where we have revenue data, increases in distance to headquarters due to HQ-moving owners or acquisitions are associated with reductions in revenues per room. We argue that this detrimental distance effect is robust and causal, arising even when we control for the potential endogeneity of HQ distance using instrumental variable and matched pair analyses. We interpret this as evidence of monitoring and local information asymmetry problems for distant owners.

**Method**: Duration model, Probit, Probit IV
6.5 House Prices and Peace


**Abstract**: This article exploits data on the pattern of violence across regions and over time to estimate the impact of the peace process in Northern Ireland on house prices. After establishing a negative correlation between killings and house prices, we estimate the parameters of a Markov switching model with conflict and peace as latent states. We use the model to estimate the size of the peace dividend as captured in house price changes.

**Method**: OLS Estimation, Fixed effects, Moving average, Markov Switching model
6.6 Natural Resources and Regional Development


Abstract: This paper examines the local economic impact of Yanacocha, a large gold mine in Northern Peru. Using annual household data from 1997 to 2006, we find evidence of a positive effect of the mine’s demand for local inputs on real income. The effects are only present in the supply market and surrounding areas, and reach unskilled workers in non-mining sectors. Consistent with a general equilibrium framework, we also find an increase in the local price of nontradable goods. Taken together, our results underline the potential of backward linkages from extractive industries to create positive spillovers in less developed economies.

Method: Difference-in–Difference
6.7 Geographical Skill-Distribution and Housing


**Abstract**: While nominal wage differences between skilled and unskilled workers have increased since 1980, college graduates have experienced larger increases in cost of living because they have increasingly concentrated in cities with high cost of housing. Using a city-specific CPI, I find that real wage differences between college and high school graduates have grown significantly less than nominal differences. Changes in the geographical location of different skill groups are to a significant degree driven by city-specific shifts in relative demand. I conclude that the increase in utility differences between skilled and unskilled workers since 1980 is smaller than previously thought based on nominal wage differences.

**Method**: OLS Estimation, Fixed effects, IV
6.8 The Costs of Remoteness


Abstract: This paper exploits the division of Germany after the Second World War and the reunification of East and West Germany in 1990 as a natural experiment to provide evidence for the importance of market access for economic development. In line with a standard new economic geography model, we find that following division cities in West Germany close to the East-West German border experienced a substantial decline in population growth relative to other West German cities. We show that the model can account for the quantitative magnitude of our findings and provide additional evidence against alternative possible explanations.

Method: OLS Estimation, Difference–in–Difference, Fixed effects
6.9 Regional Evolution and Communication Technologies


**Abstract**: How did the diffusion of the internet affect regional wage inequality? We examine the relationship between business investment in advanced internet technology and local variation in US wage growth between 1995 and 2000. We identify a puzzle. The internet is widespread, but the economic payoffs are not. Advanced internet technology is only associated with substantial wage growth in the 6 percent of counties that were already highly wealthy, educated, and populated and had IT-intensive industry. Advanced internet and wage growth appear unrelated elsewhere. Overall, advanced internet explains over half the difference in wage growth between already well-off counties and all others.

**Method**: OLS Estimation, IV
6.10 Spatial Spillovers of Technology and Growth


**Abstract**: This paper presents a theoretical growth model which explicitly takes into account technological interdependence among economies and examines the impact of neighborhood effects. Technological interdependence is assumed to operate through spatial externalities. The magnitude of the physical capital externalities at steady state, which is not usually identified in the literature, is estimated using a spatial econometric specification. Spatial externalities are found to be significant. This spatially augmented Solow model yields a conditional convergence equation which is characterized by parameter heterogeneity. A locally linear spatial autoregressive specification is then estimated providing a convergence speed estimate for each country of the sample.

**Method**: OLS Estimation, Spatial weights, Maximum Likelihood
6.11 Agglomeration and Innovation


Abstract: Where does adaptation to innovation take place? I present evidence on the role of agglomeration economies in the application of new knowledge to production. All else equal, workers are more likely to be observed in new work in locations initially dense in college graduates and industry variety. This pattern is consistent with economies from the geographic concentration of factors and markets related to technological adaptation. A main contribution is a new measure, based on revisions to occupation classifications, that characterizes cross-sectional differences across cities in technological adaptation. Worker-level results also provide new evidence on the skill bias of recent innovations.

Method: two-step-estimation, OLS Estimation, Minimumn Distance Estimator
6.12 Spatial Autocorrelation and Fixed Effects*


**Abstract:** This paper derives several Lagrange Multiplier statistics and the corresponding likelihood ratio statistics to test for spatial autocorrelation in a fixed effects panel data model. These tests allow discriminating between the two main types of spatial autocorrelation which are relevant in empirical applications, namely endogenous spatial lag versus spatially autocorrelated errors. In this paper, five different statistics are suggested. The first one, the joint test, detects the presence of spatial autocorrelation whatever its type. Hence, it indicates whether specific econometric estimation methods should be implemented to account for the spatial dimension. In case they need to be implemented, the other four tests support the choice between the different specifications, i.e. endogenous spatial lag, spatially autocorrelated errors or both. The first two are simple hypothesis tests as they detect one kind of spatial autocorrelation assuming the other one is absent. The last two take into account the presence of one type of spatial autocorrelation when testing for the presence of the other one. We use the methodology developed in Lee and Yu (2008) to set up and estimate the general likelihood function. Monte Carlo experiments show the good performance of our tests. Finally, they are applied to the Feldstein-Horioka puzzle. They indicate a misspecification of the investment-saving regression due to the omission of spatial autocorrelation. The traditional saving-retention coefficient is shown to be upward biased. In contrast our results favor capital mobility.

**Method:** Monte Carlo Simulation, Fixed Effects, Maximum Likelihood, LM and LR statistics for testing spatial autocorrelation
6.13 Agglomeration and Collusion*


**Abstract:** Agglomeration is a location pattern frequently observed in service industries such as hotels. This paper empirically examines whether agglomeration facilitates tacit collusion in the lodging industry using a quarterly data set of hotels in Texas. We jointly model a price and occupancy rate equation under a switching regression model to identify a collusive and noncollusive regime. The estimation results indicate that clustered hotels have a higher probability of being in the potential collusive regime than isolated properties in the same town. The identification of a collusive regime is also consistent with other factors considered to affect the sustainability of tacit collusion.

**Method:** IV, Switching Regression Model