**Economics and the City: What Can Urban Economics Learn from the Division and Reunification of Berlin?**

*BOSP Berlin, Winter 2017, Dave Donaldson (Economics)*

*Logistics:*

We will meet on Mondays and Wednesdays from 11:30-1:20 in the BOSP Berlin building.

*Background:*

At some point in 2008 a remarkable threshold was crossed for the first time in history: the median member of the human race became an urban resident. Surprisingly, this is something of a puzzle for the field of Economics. The many disadvantages of living in a city – traffic, crime, pollution, the high price of nearly everything – are in plain sight. So why does more than half of humanity go out of its way to live in urban areas? The answer must be that there are significant advantages of city living that increasingly outweigh the downsides.

But what are those benefits? The field of Economics has never been short of theoretically possible answers to this question. For example, there may be "economies of scale" in production or job search and hiring; or there may be "productivity spillovers," where firms simply learn from one another because of their proximity; or there may be similar economies of scale or positive spillovers but in non-production spheres such as the provision of cultural goods or consumption amenities. The problem is that we have very little hard evidence on any of these phenomena.

The goal of this course is to involve Stanford (BOSP Berlin) students in an empirical exploration of what Berlin has to say about the pros and cons of city life. Why Berlin? The central challenge in any science, like Economics, that lacks experimental control – and we certainly can't run randomized controlled trials on entire cities – comes about when one tries to use observed co-relationships ("correlation") to say something about causation. However, like Astronomy, another field without access to controlled experiments, economists try as hard as they can to creatively look at the world around us in search of "natural experiments".

This is where Berlin enters the picture. The division and reunification of Berlin can potentially be thought of as a massive experiment in urban formation. In 1961 a leading commercial, cultural and political capital was severed in two. The newly created West Berlin – which remained a market economy, making it of greater relevance than East Berlin to most of the world's cities today – lost proximity to numerous amenities, sources of scale and potential spillovers that were on the far side of the Berlin wall. Importantly, this loss was forced upon West Berlin by forces outside of its control, creating quasi-experimental

conditions under which we can learn about the harm that is done to regions of a city when the beneficial aspects of proximity to other regions (those placed out of reach, in the East) were lost. Similarly, when Berlin was reunified in 1989 we are offered a unique chance to see the same experiment but in reverse – now West Berlin was suddenly able to potentially gain from its access to amenities, scale and spillovers from East Berlin (as well as, of course, the East can potentially gain from the West).

*Topic coverage week by week:*
This course will allow students to explore the above logic for themselves, in the following steps:

1. [2 weeks] The basic ideas of Urban Economics (concepts referred to above, and more), such as: congestion costs, traffic, why the price of non-tradable goods (such as housing) is higher in cities, crime, neighborhood effects, gentrification, economies of scale, and productivity spillovers.

2. [3 weeks] The basics of causal inference in statistics: why correlation does not (necessarily) reveal causation, why randomized controlled trials are useful considered, and the methods by which economists and other scientists use natural experiments to identify the strength of causal forces in the absence of experimental control.

3. [2 weeks] The evidence that currently exists for the theoretical ideas in #1 above.

4. [1 week] Class discussions about what Berlin's natural experiment can teach us about the plausibility of the ideas in #1 above. This discussion is intended to help generate ideas for students' independent research projects (#6 below).

5. [1 week] An in-depth look at one of the most important papers in Urban Economics in recent decades (Ahlfeldt, et al., 2015), entitled "The Economics of Density: Evidence from the Berlin Wall."

6. [1 week] Student presentations of student research projects. Students will be asked to prepare a formal argument explaining how something that they have observed in Berlin (or in historical or secondary sources, if they prefer) can be used as a natural experiment to improve our understanding of the economics of cities.

*Materials:*
This course will not follow any specific textbook. However, the following will be useful:

- Brueckner, Jan K. (2011), *Lectures on Urban Economics*, MIT Press. This will cover background theory on urban economics (though in more detail than our brief coverage will allow).
- Angrist, Joshua and Stephen Pischke (2014), *Mastering 'Metrics*, MIT Press. This is a great introduction to the natural experiments approach to empirical work in the social sciences.

In addition, we will cover material in some research papers, including:

- Ahlfeldt, Gabriel, Stephen Redding, Daniel Sturm and Nikolaus Wolf (2015), "The Economics of Density: Evidence from the Berlin Wall", *Econometrica*. As discussed under point #5 above.
- And others to be added as we go along.

*Pre-requisites:*

This course will cover material (in both Economics and Statistics) that would ordinarily be taught in an advanced-level undergraduate course (after one has taken intermediate-level Microeconomics and intermediate-level Statistics/Econometrics class). But we will go through it slowly, stressing intuition rather than mathematical results. Students who have taken introductory or intermediate-level Economics and Statistics classes will definitely be at an advantage in digesting this material but I intend it to be something that any Stanford student can understand, conditional on putting in the effort. (Though a student who is completely uncomfortable with mathematical arguments may find that there is too much material to catch up on.)

*Evaluation:*

Final grades will be calculated as follows:

1. Problem sets: 40%. (There will be two of these, relating to the material in the first half of the course. They will not contain mathematical problems but questions that have right/wrong answers and for which you will have to explain your reasoning.)
2. Final project: 40%. (This will entail both the in-class presentation referred to above and a 15-page, double-spaced written description of your project.)
3. Class participation: 20%. (This is meant to be a collaborative class so we value everyone's participation, throughout the quarter – not just during items #4 and #6 above.)