Lecture 1: Introduction to Urban and Regional Economics

Pablo E. Warnes and Prottoy A. Akbar

ECON-L6000 - Urban and Regional Economics
Aalto University School of Business

21.04.2022

Introduction

Basic Information

- **This course:** Urban and Regional Economics - ECON-L6000.
- **Instructors:** Prottoy Akbar (prottoy.akbar@aalto.fi) and Pablo Warnes (pablo.warnes@aalto.fi).
- **Office hours:** by appointment.
- **Teaching Assistant:** Kimmo Palanne. (kimmo.palanne@aalto.fi)
- **Lecture Locations:** T004, Ekonominaukio 1 (Mon), V001, Ekonominaukio 1 (Thu).
- **Class Times:** Mon & Thu, 10:15 - 12:00?

Getting to know everyone

- Please say your:
  - name,
  - program,
  - year in program,
  - research interests (if any)
  - what motivated you to join this class?
  - preferred pronouns (if desired)

Agenda For Today

- Assignments and Grading
- Road Map for Next Classes
- Introduction to Urban and Regional Economics
  - Some motivating facts.
  - What is Urban Economics?
  - What is Regional Economics?
  - Some Motivating Theory

Assignments and Grading

- 4 referee reports (20%)
- 1 replication problem set (50%)
- 1 paper presentation (30%)

Collaboration is highly encouraged, but everyone must hand in their own referee reports and problem set solutions. Presentations will also be individual.

Assignments and Grading: Referee Reports

- For 4 topics (lectures) starting from lecture 3:
- Write **short** referee report for paper assigned.
- See guide on MyCourses on what we expect from this short referee report.
- Reports must be handed in (electronically) before the lecture on that topic.
- Later today we will send you a link to a poll where you will list your preferences for topics to write reports on. We will then use those preferences to assign you the 4 referee reports.

Assignments and Grading: Replication Problem Sets

- Probably the most time consuming assignment.
- We will give you a problem-set-style guide on how to replicate a set of specific papers:
  - Redding, S.J. and Sturm, D.M., 2008. The costs of remoteness: Evidence from German division and reunification. American Economic Review, 98(5), pp.1766-97.
  - Su, Yichen. 2022. "The Rising Value of Time and the Origin of Urban Gentrification." American Economic Journal: Economic Policy, 14 (1): 402-39.
- Choose one of these papers and follow the guide/problem set.
- Due two weeks after the end of classes (June 13th at 23:59 hs).

Assignments and Grading: Presentation

- Each student will choose a paper from a list of papers to present on one of the two last lecture dates.
- Goal: present the paper as if you were the author. Be ready to defend it (with reasonable arguments), but also accept it's potential shortcomings.
- Later today we will send you a link to a poll where you will list your preferences for topics to present on. We will then use those preferences to assign a paper on each topic to each student.

Road Map for Course

Schedule of Classes

Lecture	**Date**	**Topic**
1	21 April	Introduction to Urban and Regional Economics
2	25 April	Spatial equilibrium: canonical urban models
3	28 April	Housing markets
4	2 May	Land use, zoning and slums
5	5 May	Location sorting and preferences over amenities
6	9 May	Migration and urbanization
7	12 May	Quantitative spatial equilibrium models
8	16 May	Segregation and neighborhood effects
9	19 May	Regions, cities, and the environment
10	23 May	Transportation
11	~~26 May~~	Student presentations
12	30 May	Student presentations

Some stylized facts

The World is Increasingly Urban: Population

- Around 1900, 16% of the world's population was living in cities (Michaels, Rauch and Redding 2008).
- In 2022, 55% of the world's population is urban (World Bank 2022).
- By 2050, nearly 70% of the world's population will be living in cities!
- Most of the new urbanization is coming from developing countries.

The World is Increasingly Urban: Developing Countries

- From 1970 to 2020, China more than tripled its urban population: from about 18% to more than 60% (World Bank 2022).
- About 75% of this urban pop. growth came from rural to urban migration (Zhang and Song 2003). Which implies between 10 and 15 million rural to urban migrants per year!
- From 1970 to 2020, India went from about 20% urban population to 35% urban population.
- About 80% of the population in high-income countries is urban.
- But only 50% of the population in developing countries is urban.

Most of the GDP is produced in cities

- More than 80% of global GDP generated in cities.
- As a consequence, cities consume two thirds of global energy consumption and account for more than 70% of greenhouse gas emissions (World Bank 2022).

Urban Population is very agglomerated

- Although 55% of the population is urban, cities only occupy 3% of the World's land.
- However, the expansion of urban land consumption is expected to outpace urban population growth by 50% in the next 30 years (World Bank 2022).
- This will imply a very large investment in **urban infrastructure**. Most of which will be concentrated in developing countries.

Introduction to Urban and Regional Economics

What is Urban Economics?

Fujita and Thisse (2009): "*[Urban Economics] aims to explain the internal structure of cities, that is, (i) how land is distributed among plants, offices, dwellings, and infrastructure, and (ii) why cities have one or several central business districts. The basic concept of urban economics is the land market, which serves to allocate both economic agents and activities across space.*"

What is Regional Economics?

Fujita and Thisse (2009): "*In contrast, economic geography or, to use the most common terminology, New Economic Geography (henceforth, NEG) has a well-defined and yet broad objective: it is the first body of economics that seeks to provide a detailed description of spatial inequalities that emerge as the outcome of a full-fledged general equilibrium model.*"

My view on the subject

- Urban Economics as a field has changed a lot since Fujita and Thisse (2009). A lot of the "full-fledged general equilibrium" modelling of economic geography has appeared in urban econ. as well.
- However, in my view, the key distinguishing feature of urban and regional economics is that **it takes the idea of space seriously when thinking about economic questions.**
- Doesn't International Trade do this as well?

Some Motivating Theory

The Spatial Impossibility Theorem

- Consider an economy with CRS production technology, perfect competition, a homogeneous set of locations and where movement of factors across locations was costless and frictionless.
- Any inequalities in profits, prices and utility would be eliminated by the movement of factors across space.
- "At spatial equilibrium, the remuneration of each production factor must then be the same across regions." (Fujita and Thisse 2009)

The Spatial Impossibility Theorem

- Let's now add transport costs to our very simple model. Factor mobility is still frictionless, but trading goods between locations is costly.
- As a result: all locations become autarkic. They will produce for their local market and consume all the production locally. Effectively making transport costs payed equal to zero.
- This is the idea behind the "death of distance."

The Spatial Impossibility Theorem

- Now let's add indivisibilities: only a finite number of agents can occupy each location in space.
- Starrett (1978): "*Consider an Arrow-Debreu economy with a finite number of agents and locations. If space is homogeneous and transport is costly, then there is no competitive equilibrium involving transportation.*"

The Spatial Impossibility Theorem cont.

- What does this mean?
- If economic activities are perfectly divisible, then a competitive equilibrium exists in which each location operates autonomously.
- However, when economic activities are not perfectly divisible, the transport of some goods between some places becomes unavoidable.
- In this case, the Spatial Impossibility Theorem tells us that no competitive equilibrium exists.
- This is a very strong result.
- But if we think that we are in an equilibrium, and clearly we aren't in a world where every place looks the same, then one of the assumptions of the model must be wrong.

The Spatial Impossibility Theorem: consequence

- In particular, one of three assumptions must fail:
  - Space is **not** homogeneous $\Rightarrow$ space is **heterogenous**.
  - There are externalities in production or consumption (we don't live in a CRS world).
  - Markets are imperfectly competitive.

Alternative Models in Spatial Economics

- **Comparative Advantages**
  - Spatial heterogeneity between regions or neighborhoods in productivity or amenities.
- **Agglomeration Externalities**
  - Spatial interactions that yield increasing returns to agglomeration external to the firm: knowledge spillovers, business communications, face-to-face communication, etc.
- **Imperfect Competition**
  - Firms are no longer price-takers, but have some form of market power (e.g. monopolistic competition).

Next Class

Spatial equilibrium: canonical urban models

- What determines the internal structure of cities?
- Basic monocentric city model: Alonso-Muth-Mills model.
- Traditional Spatial Equilibrium model: Rosen-Roback.