

Course Syllabus
“Causal Inference with Spatial Data”
ECON Department of Economics

Instructor

Elena Esposito

Tel.: (+39)-055-4685-670 (ext. 2670)

European University Institute

Via dei Roccettini, 9

1-50014 San Domenico di Fiesole

Course Information:

“Causal Inference with Spatial Data”

Spring 2016 - 10 hours

Prerequisite: Econometrics I, II, III

Course location, meeting times and days: coming soon

Course Overview and Approach/Framework:

An exciting empirical literature exploiting for identification the richness of spatial data accessible through the geographic information system (GIS) has recently emerged. This course intends to:

1. Guide the students through the major contributions in the field, emphasizing key insights for causal identification:
 - Stuck with growth regressions? The Grid Approach
Readings: Michalopoulos (2012), Harari & La Ferrara (2013)
 - The power of spatial data in a cross-sectional framework:
Identification with Cross-Sectional Variability
Readings: Dell (2010), Dell (2012), Michalopoulos & Papaioannou (2012))
 - New variables for Cross-country regressions
Readings: Nunn (2007), Ashraf et al. (2010), Alesina et al. (2011), Alesina et al. (2012))
 - Answering Old Questions with New Empirical Frameworks
Readings: Acemoglu et al. (2001), Feyrer & Sacerdote (2009), Rodrik et al. (2004), Dell et al. (2015)
2. Offer an introduction to the methods/tools employed for the construction of spatial dataset (ArcGIS and Python)

- What are spatial data?
- How to work spatial data?
- Replication of one important study from the literature.

NOTE: The course will rely heavily on empirical macro papers published or circulated over the last ten years, however the course could be of interest to applied economists working in all fields and disciplines.

Course Goals and Learning Outcomes:

At the end of this course students will be able to:

- Analyze key aspects of the identification strategy of a paper exploiting spatial data.
- Replicate the construction of a spatial dataset replicating a major contribution from the literature.
- Produce a research proposal for a possible thesis topic.

Assessment:

Student assessment will be based on two exercises:

- *In-class presentation*
Each student will be asked to read and critically evaluate one relevant article in the literature. Particular emphasis will be placed on the assumptions exploited for identification, and on the techniques used for the production of the data.
- *Project Proposal*
Each student must submit one project proposal for a possible thesis topic (max 1000 words). The proposal should highlight the empirical strategy that he/she intends to exploit for identification. Moreover, the student will have to indicate which kind of data he/she would need to exploit for the research and draft a proto-script for the production of the data.

Evaluation:

In-class presentation (20 min)	33%
Project Proposal	66%

References

- D. Acemoglu, et al. (2001). ‘The Colonial Origins of Comparative Development: An Empirical Investigation’. *American Economic Review* **91**(5):1369–1401.
- A. Alesina, et al. (2011). ‘On the origins of gender roles: Women and the plough’ .
- A. F. Alesina, et al. (2012). ‘Ethnic inequality’. *NBER Working Paper* (w18512).
- Q. Ashraf, et al. (2010). ‘Isolation and Development’. *Journal of the European Economic Association* **8**(2-3):401–412.
- M. Dell (2010). ‘The persistent effects of Peru’s mining Mita’. *Econometrica* **78**(6):1863–1903.
- M. Dell (2012). ‘Path dependence in development: Evidence from the Mexican Revolution’. *Ms., Harvard University* .
- M. Dell, et al. (2015). ‘State Capacity, Local Governance, and Economic Development in Vietnam’ .
- J. Feyrer & B. Sacerdote (2009). ‘Colonialism and modern income: islands as natural experiments’. *The Review of Economics and Statistics* **91**(2):245–262.
- M. Harari & E. La Ferrara (2013). ‘Conflict, Climate and Cells: A disaggregated analysis’ .
- S. Michalopoulos (2012). ‘The origins of ethnolinguistic diversity’. *The American Economic Review* **102**(4):1508–1539.
- S. Michalopoulos & E. Papaioannou (2012). ‘National institutions and subnational development in Africa’. Tech. rep., National Bureau of Economic Research.
- N. Nunn (2007). ‘The long-term effects of Africa’s slave trades’ .
- D. Rodrik, et al. (2004). ‘Institutions rule: the primacy of institutions over geography and integration in economic development’. *Journal of economic growth* **9**(2):131–165.