

Research Methods in Microeconometrics

(PhD in Economics)

Instructors:

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The course introduces basic tools used in microeconometrics as well as techniques to estimate the causal effect of a treatment variable on an outcome variable. These tools are widely used in all fields of microeconomics (labour and public economics, industrial economics, household economics, public policies, economics of education) and its applications are increasing also in macroeconomics fields (for instance, development economics and empiric growth).

The course takes place in 9 lectures and 3 practices with examples and applications using STATA. The topics of the course are the following:

PART I: Panel data analysis – M. Belloc (3 classes, 2 hrs each)

- Introduction on causal inference
- Assumptions about the unobserved effects and explanatory variables
- Pooled OLS
- Fixed effects (within) estimator:
 - Least squares dummy variable regression
 - Fixed effects estimator and measurement errors
 - Fixed effects estimator and lagged dependent variable
- First differencing methods
- Random effects estimator
- The Hausman test

References

Wooldridge, J.M. (2002). *Econometrics Analysis of Cross Section and Panel Data*, MIT Press, Cambridge, MA, 2nd ed. Sections: 10.1, 10.2, 10.3, 10.4.1, 10.4.4, 10.5.1, 10.6.1, 10.7.3 (+ 2.2.3, 7.2). Course handouts.

PART II: Estimation of treatment effects –P. Naticchioni (3 classes, 2 hrs each)

- Introduction: sample selection, randomization and the potential outcome model. Selection on observables and unobservables. Basic notation.
- Selection on observables: Matching, exact matching, propensity score matching
- A simulation of a natural experiment: the Regression Discontinuity Design (RDD)
- Estimates of causal effects using longitudinal data: the Difference-In-Differences (DID)

References

“The problem of causality in microeconometrics”, Andrea Ichino, available at http://www2.dse.unibo.it/ichino/newcausa_1.pdf

PART III: Lab lectures – F. Subioli (3 classes, 2 hrs each)

- Lab lectures will be devoted to the use of the main packages in STATA to implement microeconomic techniques, with application to labour and industrial economics, and evaluation of public policies.