Optional 1: Introduction to the econometrics of causality

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Topic 1

Introduction to the problem of causal inference: A formal framework to thing about causality; the fundamental problem of causal inference; different average treatment effects; randomized experiments .

Lecture notes.

Topic 2

Causality in a regression framework: Self selection into treatment; regressione and the ATE; regression and the ATT .

Lecture notes.

Topic 3

Endogenous dummy variable models: Heckman's solution.

Lecture notes.

Topic 4

Control functions: .

Lecture notes.

Topic 5

Instrumental Variable estimation and quasi-experiments: The Angrist-Imbens-Rubin caual model; the LATE the ATT and IV estimation .

Lecture notes.

Topic 6

Regression discontinuity designs: Treatment effects in a RDD; sharp designs; fuzzy designs; multitple thresholds and stacking; estimation of RD models

Lecture notes.

Topic 7

Selection on observables and matching: the Conditional Independence Assumption; exact matching; propensity score matching

Lecture notes.

Topic 8

Synthetic control methods A promising approach to matching.

Lecture notes.

Exercise classes

No exercise class

Teaching material

- Articles in journals
- Lecture notes by the instructor.

Final exam and Grading

There will be final class room exam and a take home exam.