

# Introduction to Modern Econometrics

Fundamental evaluation problem

Observable outcome

Unobservable counterfactual

Endogeneity bias

Average treatment effect on the treated (ATT)

Identifying assumption

Estimated ATT = ATT [ATT hat]

Omitted variable bias (OVB)

a) Underestimation of true effect

b) Overestimation of true effect

Selection bias = OVB

- a) Selection on observables
- b) Selection on unobservables

Treatment group dropout bias

Control group substitution bias

Instrumental variable estimation

Relevance condition

Exclusion restriction

Population variance

Sample variance

Sampling variance

Standard deviation

## Standard errors

- a) robust standard error
- b) clustered standard error
- c) bootstrapped standard error

## t-Test

## Treatment effects

- a) ATT
- b) ATU
- c) ATE
- d) LATE
- e) ITT

## Effect sizes

- a) ATT in percentage points
- b) ATT in percent
- c) ATT in standard deviations (sigma\_units)

## Identifying assumptions

- a) OLS (RCT)
- b) Matching (NNM)
- c) IV (2SLS)
- d) RDD (fuzzy)
- e) DiD
- f) DiDiD