Welcome to ARE 256B Sections!

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Outline I

Introduction I

- I'm Mahdi Shams, your TA for this course.
- I'm a second-year PhD student in Davis ARE.
- Originally from Tehran, Iran, I pursued my undergraduate studies in engineering there and later earned my master's degree in economics in Toulouse, France.
- I'm interested in the intersection of environmental policy and public economics, and I believe econometrics plays a crucial role in my work.
- I'm here to assist you, so feel free to reach out with any questions or concerns!
- my email is mashams[at]ucdavis[dot]edu.

It's your turn now!

Announcements I

Announcements:

- Sections: Fridays 9:00-9:50 am at Veihmeyer Hall 116
- Mahdi OHs: Fridays 10:00-11:00 am at SSH 2136

Setup I

Access to Stata:

- option 1: https://stata-support.ucdavis.edu/
- option 2: https://virtuallab.ucdavis.edu/
- option 3: ARE Computer Lab

Week 1: Stata Basics I

- type `doed` in the command window to open the do-file editor
- asking help 1: `help "command"`
- asking help 2: google *help "command" stata*
- basic stata syntax: `command varlist if in, options`
- setting working directory
- importing data
- `browse, describe, ...`
- operators
- getting summary statistics: `summ, tabulate|, ...`
- `gen, replace, drop, keep, ...`
- using functions: `log(x)`

Week2: Lectures 1 to 3 (limited dep. variable) and presentation I

Lectures

1. estimating linear models
2. estimating probit models
3. plotting the scatter plot
4. computing the rmse

Presentation

Motivation: Fixed costs + now you have more time

1. template do file
2. making log file and converting it to pdf
3. making the tex file (look at the example.tex)

Week 3 I

- creating a random subsample
- Censoring
- Sample Selection
- exporting plots
- exporting regression tables using estout –
- HA1 Questions!

Censoring I

- Y is known exactly if some criterion defined in terms of Y is met.
- X variables are observed for the entire sample
- Example: Determinants of income; income is measured exactly only if it is above the poverty line. All other incomes are reported at the poverty line (the lower threshold).

Sample Selection I

- is observed only if a criteria defined in terms of some other random variables (B) is met (e.g. In our example, the criteria is employment status).
- We observe the determinants of B (which we call by Q) for the entire sample.
- Example: Survey data with item or unit non-response

Week 4 I

- 'Locals' and $globals in Stata
- Loops in Stata
- MT 2022 Review?

Week 8 I

Pooled OLS

$$Y_i t = \beta_0 + \beta_1 X_{it} + e_{it}$$

for causal interpretation we need exogeneity

$$\mathbb{E}[e_{it}|X_{it}] = 0$$

This rules out that W_i, W_t (national trend), or W_{it} (state-specific trend) exist.

FE model with State + time fixed effects

$$Y_{it} = \beta_0 + \beta_1 X_{it} + u_i + \lambda_t + v_{it}$$

for causal interpretation we need exogeneity

$$\mathbb{E}[v_{it}|X_{it}, u_i, \lambda_t] = 0$$

Week 8 II

This rules out that W_{it} exists. That is as long as any all the omitted variables are state-invariant, or time-invariant we are good.
FE Model with State FEs + time FEs + State-level time trends

$$Y_{it} = \beta_0 + \beta_1 X_{it} + u_i + \lambda_t + \gamma_i t + v_{it}$$

Links I

- Example .do file
- Example .tex file
- Stata Visual overview for creating graphs
- exporting regression tables using estout
- LaTeXin 30 Minutes