Overview and Objectives of the Workshop

By Chahir Zaki

Training on Applied Micro-Econometrics and Public Policy Evaluation

Economic Research Forum

Day 1

- Fundamental Problem of Causal Inference
- Overview of Potential Solutions:
    - Randomization
    - Non-Experimental Methods

Objectives

- Discuss fundamental problem of causal inference in program or policy evaluation
- Propose methodological solutions
- Understand the underlying econometrics
- Gain experience in applying the techniques

Days 2 and 3

- Solutions (1) Matching Methods
  - Propensity score matching and propensity score weighted regressions
- Application in STATA (1): Propensity score matching and propensity score weighted regressions
- Solutions (2)
  - Difference-in-Difference Methods
- Applications in STATA (2)
  - Difference-in-difference in practice

Day 4

- Solutions (3)
  - Panel Data Models: fixed and random effects
- Applications in STATA (3)
  - Panel data models

STATA skills

- Commands to undertake microeconometric program evaluation
  - Descriptive statistics
  - Graphing
  - Multivariate estimation commands
  - Post-estimation commands

- Commands to support reproducible results and documentation

- Programming skills

Descriptive Statistics and Graphing

- Descriptive statistics present key characteristics of the analysis in an accessible format
  - Critical for:
    - Understanding your data
    - Providing background and motivation for a policy issue
    - Checking assumptions of microeconometric models
  - Can be presented graphically

- Appropriate descriptive statistics and graphs are particularly important to help communicate results to policy makers

Multivariate estimation commands

- Propensity score matching
  - Propensity score weighted regressions

- Difference-in-difference estimation

- Panel data models
  - Fixed effects & random effects

Post-estimation commands

- After estimating a model, can undertake post-estimation commands

- Types of post-estimation commands:
  - Saving your results
  - Checking the assumptions of your estimator
  - Testing hypotheses about coefficients
  - Obtaining predicted values or marginal effects

Documentation and Reproducibility

- When you (or others) re-run your analyses, want to get the same results

- A study is **reproducible** if all the numbers presented in the study can be reproduced
  - When re-running the STATA do files

- A study is **replicable** if a re-study repeats the finding

- Documenting your findings is critical to reproducing your own results and allowing others to reproduce your results
  - STATA commands should all be saved in **do files** to allow results to be reproduced (re-run) later
  - **Log** files and other forms of output (graphs, tables) saved from STATA

STATA programming

- STATA has many commands that are built in to the program
  - Newer releases expand the set of commands available

- Sometimes you will want to undertake econometrics that are not built in to STATA

- Skills that allow you to go beyond STATA's built-in commands:
  - Locating, installing, and applying user-written programs in STATA
    - Based on **.ado** files
  - Writing and using your own programs
    - Creating your own commands through programs in **.do** files

References

- Slides of Ragui Assad and Caroline Kraftt.

- Cameron, A. C., & Trivedi, P. K. (2005). *Microeconometrics: methods and applications*. Cambridge university press.

- Cameron, A. C., & Trivedi, P. K. (2009). Microeconometrics using stata. *Indicator*, *2*, 47.