ECON 613: Applied Econometrics

Introduction

January 10, 2019

Objectives

- Present a set of models to understand, evaluate and predict the behaviour of economic agents.
  - Why?
  - How?
  - What?
- Model Selection.
- Implementation.
- Interpretation.

Program

- Methods
  - Maximum Likelihood Estimation Techniques
  - GMM
  - Numerical Optimization
  - Bootstrap
- Methods for cross section data.
- Panel data analysis
- Treatment Evaluation
- Semiparametric Methods (Time)

Method

- Final objective is to be able to carry out economic research using a "commercial", push button software i.e. Stata
- My objective is to make sure that students understand what goes on behind the black box. As a consequence, you won't be doing any stata before the last two sessions of the class.
- Instead econometrics models will be computed using matrix based languages like R and Matlab.

Organization

- Class time
- Office hours: Email appointment
- TAs:
  - Chengdai Huang: chengdai.huang@duke.edu
  - Shijie Jin: shijie.jin@duke.edu
- Questions?

Evaluation (1): Problem sets (individual)

- Data Manipulation (R/Stata/...)
- OLS (Matlab/R)
- Discrete Choice (Matlab/R)
- Limited Dependent Variables (Matlab/R)
- Panel Data (Matlab/R)
- Recap (Stata)

Evaluation (2): Reading notes

- Motivation.
- How: Which models? Which specification? Measurement issues.
- Findings. Re-interpretation.

Evaluation (2): Reading notes (individual)

- Gender Gaps in Performance: Evidence from Young Lawyers (Azmat & Ferrer)
- Bargaining, Sorting, and the Gender Wage Gap: Quantifying the Impact of Firms on the Relative Pay of Women (Card, Cardoso & Kline)
- Children and Gender Inequality: Evidence from Denmark (Kleven, Landais & Sogaard)
- Gender Identity, Relative Income Within Households: (Bertrand, Kamenica & Pan)
- Selection, Investment, and Women's Relative Wages over Time (Mulligan & Rubinstein)

Evaluation (3): Research Proposal (groups of 2 or 3)

- Topic on gender.
- Ideal data and Model.

Details

- Github
- Learn about R and Matlab
- Reference: A. Colin Cameron and Pravin K. Trivedi (2005), Microeconometrics: Methods and Applications, Cambridge University Press.