Summary and goals

The primary goal of this course is to teach students how to conduct empirical research on corporate finance and related fields (e.g., household finance, financial intermediation). The emphasis will be on econometric tools. The course will also expose students to papers on the research frontier. Topics will include OLS regression, difference in differences, instrumental variables, regression discontinuity design, regression kink design, sufficient statistics, binary choice models, duration models, inference, solving models using GPUs, and an introduction to structural estimation. The course will cover recent papers using these tools, which will expose students to the wide range of topics within corporate finance and related fields.

Prerequisites

We will assume students have taken at least one semester of a PhD-level econometrics class. We will also assume students know how to numerically solve dynamic optimization problems by value-function iteration.

Deliverables and evaluation

Problems sets will be due every one to two weeks. Problems sets will have a strong coding component. You will be expected to code in Stata, Matlab, and potentially other languages. Grades will be based on the problems sets and classroom participation.
Textbook

Course readings, detailed below, come from many sources. You should buy *Mostly Harmless Econometrics*, by Angrist and Pischke (Amazon link).

Communication

Instructors will use Canvas announcements to send extra details on assignments, readings, and course logistics. Feel free to email the TA or individual professors as needed.

Schedule, topics, and readings

An asterisk (*) denotes a required, high-priority reading. PDFs of most high-priority readings can be found on Canvas >> Files >> Readings.

- **Session 1 (Jan. 17): Regression Part 1: identification, causality, omitted variables, measurement error, RCTs**
  
  Instructor: Sasha Indarte

  * Chapters 2 and 3: *Mostly Harmless*


- **Session 2 (Jan. 24): Regression Part 2: panel data, lagged dependent variables, fixed effects, difference in differences, and triple differences**
  
  Instructor: Dan Garrett


  * Chapters 5: *Mostly Harmless*


- **Session 3 (Jan. 31):** Regression Part 3: heterogeneous treatment effects, matching, synthetic control, quantile regression, and semiparametrics
  
  Instructor: Dan Garrett

  * Chapters 5.2 and 7.1: *Mostly Harmless*


- **Session 4 (Feb. 7):** Instrumental variables
  
  Instructor: Sasha Indarte

  * Chapter 4: *Mostly Harmless*

Bartik papers:


Simulated IV papers:


Examiner IV papers:


- Session 5 (Feb. 14): Regression discontinuity design

Instructor: Michael Roberts

Read the papers below in the following order:


• Session 6 (Feb. 21): Regression kink design and sufficient statistics

Instructor: Sasha Indarte


• Session 7 (Feb. 28): Binary-choice and duration models

Instructor: Marius Guenzel


* Chapters 3.2.3 (“Bad Control” only): *Mostly Harmless*

• Session 8 (Mar. 14): Additional issues in reduced-form estimation

Instructor: Marius Guenzel


- **Session 9 (Mar. 21): Introduction to structural estimation**

  Instructor: Luke Taylor

  * Keane, Michael. 2015. Practical issues in structural estimation. 90-minute Youtube video: [https://www.youtube.com/watch?v=0hazaPBAYWE](https://www.youtube.com/watch?v=0hazaPBAYWE)


  Whited, Toni M. 2018. A primer on how to do dynamic programming. Lecture note, available on our Canvas page (Canvas >> Files >> Readings)


- **Session 10 (Mar. 28): Solving models using GPUs**

  Instructor: Sylvain Catherine


- **Session 11 (Apr. 4): Simulation estimators**

  Instructor: Luke Taylor


• Session 12 (Apr. 11): Inference
  
  o Instructor: Luke Taylor
    
    * Chapters 8: Mostly Harmless

• Session 13 (Apr. 18): Structural estimation applications

  Instructor: Sylvain Catherine


• Session 14 (Apr. 25): Additional topics TBD and course wrap-up

  o Instructor: Luke Taylor

  * Berk, Jonathan B., Campbell R. Harvey, and David Hirshleifer. 2017. How to write an effective referee report and improve the scientific review process. *Journal of Economic Perspectives* 31, 231-244