Economics 718
Applied Econometrics
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Office Hours: Wed 2:00-3:00

The goal of this course is to link students preperation in formal Econometrics to data. I will cover a number of topics that are important in applied research. The general theme of the course is "Treatment Effects" as we will think about estimation of various types of treatment effects.

The requirements of the class are problem sets and an applied paper. I am flexible about the type of paper for the class. For students who do not have previous experience writing papers it would probably help if the paper for this class was closely linked to a previous paper, for example applying the same ideas and estimator to a different data set and then extending in some non-trivial way using the ideas in the class. Of course original papers are fine as well, and more appropriate for students who are beyond their second year in the PhD program. I am not going to force you to talk to me, but expect you to schedule appointments periodically to discuss your plans for the paper.

In terms of office hours, please do not use these to discuss the paper. My experience is that these conversations can be long and lead to a long queue of people waiting to talk. I would rather you schedule an appointment to talk to me. I will be flexible about times. Office hours are intended for people questions directly about material discussed in the lectures.

I am not going to give a specific reading list. There are two types of sources. First is an econometrics text and almost any would be useful. I have been told that the Angrist and Pishke book, Not So Harmless Econometrics is a good complement to my class, but I haven't read it. I will talk about applied papers and applied econometrics papers as well. I have not included them in a reading list because some will be covered in detail and should obviously be read while others will be reviewed fairly quickly as an example of a method. I will leave it to you to decide which papers are most important to read. You may also work in groups of up to 3 people.

In terms of office hours, my official hours are Wedensdays 2:00-3:00, but I would rather set up appointments with graduate students for anything but real quick questions.

Here is an Outline of the Course.

1. Estimation of Causal Effects of a Program

(a) Instrumental Variables

    i. OLS/IV as GMM

    ii. Simultaneous Equations

    iii. Measurement Error

(b) Difference in Differences

(c) Regression Discontinuity

(d) Using Selection on Observables to think about Selection on Unobservables

2. Heterogenous Treatment Effects

(a) Propensity Score Matching

(b) IV with Heterogenous Treatment Effects

(c) Generalized Roy Model

    i. Heckman 2 step

    ii. Semiparametric Identification

(d) Local IV

3. Structural Approaches to Estimation

(a) Estimation of a policy that has never been implemented

(b) Maximum Likelihood, GMM, Indirect Inference, Etc.

    i. Standard Error Construction

    ii. Testing

(c) Dynamic Discrete Choice Models

    i. Discrete Time Duration Models

        A. Heterogeneity and Selection

        B. Initial Conditions Problem

    ii. Forward Looking Dynamic Models