Econometrics 883-03 : Special Topics- Identification  
Spring 2014

Instructor: Shakeeb Khan
Office: 221b
Phone: 660-1873
E-mail: shakeebk@duke.edu
Office Hours: By appointment.

Time and location: M, 7:30- 955 PM (?)

Textbook No specific textbook- this is a "papers" class. Will be referring to specific papers as well as some length manuscripts.

Grading: There will be bi-weekly assignments, a discussion and final.

Scheme :

- Assignments : 25%
- Discussion: 25%
- Final: 50%

Course Objectives

Economics 883 is part of the second-year sequence in econometric methodology. It will represent quite the break from Econometrics 1,2, and 3 in the sense that is designed to be more specialized and encourage students to start thinking about their dissertation and what topics to work on. Consequently, it will be less about answering problem set and exam questions and more about discussing recent research papers from a critical perspective. This particular specialized module will be about the notion/concept of identification, which in one sense is the most broad and deep of a topic in econometrics, as the profession is increasingly recognizing in usefulness in both micro and macro.
After beginning the class with very broad notions of what identification means (as well as a bit on which parameters in a model we want to identify) we will then classify the types of models we consider as well as the types of identification we will focus on. Regarding the types of models we will consider, much like the previous module, we will consider parametric, semi parametric and nonparametric models. Regarding the types of identification we will focus on, we will consider three types- point identification, partial identification, and what I consider the in between case, irregular identification. Of these three we will spend the most time on partial identification, which is becoming increasingly relevant in both micro and macro models, where unfortunately point identification is unattainable under standard assumptions. We will see why when we consider models that are studied a lot in empirical work, such as static games, models of social interaction, and treatment effect models. To see the relevance in macro models we will also look at recent work on identification in DSGE models.

Course Outline

1. **Broad Overview of Identification:** Observational equivalence, Instruments, randomization


2. **Point Identification:**

   A. **Point Identification in Standard Models:** Point identification in linear models, parametric models (MLE), and GMM.


   B. **Point Identification in Semiparametric Models**


C. Point Identification in Nonparametric Models: completeness, support conditions


3. Partial Identification:

A. Basic Concepts and definitions: bounds, incomplete models, interval data.


B. Specific Examples of Partial Identification: social interaction models, games, moment inequality models, DSGE models


4. Irregular Identification:

**A. Definitions and Implications:** identification at infinity, identification on "thin sets".

