Instructor: Shakeeb Khan

Office: SS-221b

Phone: 660-1873

E-mail: shakeebk@duke.edu

My Office Hours: Mondays 9:00 AM -10:00 AM, or by appointment.

Preceptors: Dan Lee and Ben Zhao

Preceptor Office Hours: TBA

Lecture time and location: T, TH, 10:05 PM - 11:20 PM, SP 126.

Recitation time and location: 6:30PM-7:20PM, 7:30PM-8:20PM.

Final Exam time and location: Feb. 28, 2013, 10:05 PM-11:20 PM, SP 126.

Required Textbooks: 


Software Package: Matlab.

Grading: There will be (roughly) weekly assignments and a final examination.
Scheme: The grading scheme is:

- Assignments : 20% Exam : 80%

Course Objectives/Description

Economics 707 is the first half of the second semester of the first year sequence in econometrics. The course is decidedly different from 703 in the sense that there will be less focus on the basic topics in probability and statistics, and more on the main topics in econometrics, like Generalized Method of Moments (GMM) and its special cases. Beyond that, we will cover more advanced topics such as multiple equation GMM, panel data, hypothesis testing with extremum estimators, computational methods.

Most of the course will follow Hayashi closely. The more specialized topics will follow the other references listed below.

Course Outline

1. **Review/ Single Equation GMM** Identification, Rank and Order Conditions, GMM, Large Sample Properties, Efficiency, J test, Homoskedasticity.
   Reading: 3.3-3.8.


2. **Multiple Equation GMM**: Orthogonality conditions and identification; multiple equation GMM defined; asymptotic theory; relation to single equation models; widely used models FIVE, 2SLS, SUR; implications of homoskedasticity;
   Reading: 4.1-4.5.

3. **Panel Data**: Error-components models; fixed effects estimators; random vs. fixed effects.
   Reading: 5.1-5.2.
4. **Computational Methods-Optimization**: Numerical optimization (G-N)/(N-R).
   Reading: 7.5

5. **Extremum Estimation**: ML, NLS, GMM; Consistency, Asymptotic Normality; Testing: Wald, LM, LR, Distance, Gradient Tests.
   Reading: 7.1-7.4

6. **MLE**: QRM, censored, truncated, MVR, FIML, LIML.
   Reading: 8.