

Topics in Microeconometrics

Fall 2013

Instructor: Taisuke Otsu
Department of Economics, London School of Economics
Email: t.otsu@lse.ac.uk
Course Time & Location: TBA

Course Description

This course is designed for second year PhD students in economics. Students are assumed to have knowledge of the of a typical first year graduate econometrics sequence. Rigorous and broad knowledge of microeconomic methods on selected topics is provided. The course is not designed to train theoretical econometricians. Broadly speaking, this course is divided into three parts; (i) Maximum likelihood method, (ii) Generalized method of moments, and (iii) Nonparametric method. For each part, after discussion of asymptotic theory, some advanced applied topics are discussed.

Evaluation

The evaluation will be based on a combination of attendance and take home exam.

Course Outline

1. Maximum Likelihood

- (a) Asymptotic theory
- (b) Limited dependent variable models
- (c) Game theoretic models
- (d) Structural estimation for dynamic programming models

2. Generalized Method of Moments

- (a) Asymptotic theory
- (b) Instrumental variable regression
- (c) Panel data models
- (d) Weak and many instrumental variables
- (e) Moment inequality and set identified models

3. Nonparametric Method

- (a) Asymptotic theory
- (b) Semiparametric models
- (c) Nonparametric bound analysis for partially identified models
- (d) Nonparametric auction models

Reading List

In several places, I use Bruce Hansen's lecture note, which is downloadable at <http://www.ssc.wisc.edu/~bhansen/econometrics/Econometrics.pdf>

1. Maximum Likelihood

- Asymptotic theory
 - Handout
 - Hansen, chapter B.11
 - Newey, W. K. and D. L. McFadden (1994) Large sample estimation and hypothesis testing, *Handbook of Econometrics*, chapter 36, volume 4.
- Limited dependent variable models
 - Handout
 - Hansen, chapter 19
- Game theoretic models
 - Tamer, E. (2003) Incomplete simultaneous discrete response model with multiple equilibria, *Review of Economic Studies*, 70, 147-165.
- Structural estimation for dynamic programming models
 - Rust, J. (1994) Structural estimation of Markov decision processes, *Handbook of Econometrics*, chapter 51, volume 4.

2. Generalized Method of Moments

- Asymptotic theory
 - Handout
 - Hansen, chapters 6 and 14
- Instrumental variable regression
 - Hansen, chapter 16
- Panel data models
 - Hansen, chapter 20
- Weak and many instrumental variables
 - Handout
 - Hansen, chapter 16
 - Newey, W. K. and F. Windmeijer (2009) Generalized method of moments with many weak moment conditions, *Econometrica*, 77, 687-719.
- Moment inequality and set identified models
 - Handout

- Chernozhukov, V., Hong, H. and E. Tamer (2007) Estimation and confidence regions for parameter sets in econometric models, *Econometrica*, 75, 1243-1284.

3. Nonparametric Method

- Asymptotic theory
 - Handout
 - Hansen, chapters 11 and 21
- Semiparametric models
 - Handout
- Nonparametric bound analysis for partially identified models
 - Blundell, R., Gosling, A., Ichimura, H. and C. Meghir (2007) Changes in the distribution of male and female wages accounting for employment composition using bounds, *Econometrica*, 75, 323-363.
- Nonparametric auction models
 - Athey, S. and P. A. Haile (2007) Nonparametric approaches to auctions, *Handbook of Econometrics*, chapter 60, volume 6A.