SYLLABUS

Advanced Microeconometrics

NHH Norwegian School of Economics
CELE Center for Empirical Labor Economics
Bergen, Norway, August 28 - September 1, 2017

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GOAL

This course presents several special topics in microeconometrics.
The course will illustrate the various methods using Stata, and Stata programs and datasets will be provided. A complete set of overheads will be provided.

PRESUMED BACKGROUND

Nonlinear methods: Maximum likelihood estimator, nonlinear least squares estimator, asymptotic theory for m-estimators, statistical inference, gradient methods, computation of marginal effects.

ORGANIZATION

All lectures and computer labs in Karl Borch
The Monday and Tuesday schedule is:
9:00 - 10:30: First lecture; **11:00 - 12.30**: Second lecture; **13:30 - 15:00:** Computer lab
The Wednesday and Thursday schedule is:
8:30 - 10:00: First lecture; **10:30 - 12.00**: Second lecture; **13:00 - 14:30:** Computer lab
The Friday schedule is:
10:00 - 15:00: Student presentations.

COURSE OUTLINE

DAY 1: Count Regression (a leading example of nonlinear regression)

Lecture 1: Basic cross-section methods: Poisson, negative binomial, hurdle, zero-inflated.

Lecture 2: More advanced methods: mixtures, endogeneity, panel data.

Computer Lab: Some general Stata and Stata for Counts.

DAY 2: Inference for Clustered Data

Lecture 1: Clustered Data: Focus on panel data example. OLS with cluster-robust standard errors, feasible GLS, serially correlated errors, random effects, fixed effects, bootstrap without asymptotic refinement.

Lecture 2: Clustered Data: Focus on cross-section example. Mixed models, what to cluster over, twoway clustering, spatial correlation, few clusters, bootstrap with asymptotic refinement, nonlinear models, endogenous regressors.

Computer Lab: Stata for clustered data.

COURSE OUTLINE (continued)

DAY 3: Simulation Methods

Lecture 1: Simulation: Pseudo random draws, Monte Carlo integration, Gaussian quadrature, Monte Carlo experiment.

Lecture 2: Maximum simulated likelihood, Bayesian approach, Bayesian analytical example, Bayesian data example.

Computer Lab: Stata for Monte Carlo experiments and Bayesian estimation.

DAY 4: Nonparametric and Semiparametric Estimation.

Lectures 1 and 2: Nonparametric estimation, semiparametric regression, bootstrap.

Computer Lab: Stata for MSL and for non and semi-parametric regression.

DAY 5: Student presentations.

COURSE MATERIAL

The main material is overhead slides that will be provided and that are self-contained.
This will be posted at http://cameron.econ.ucdavis.edu/nhh2017/
Stata programs and data sets will be posted at the course website. My programs assume access to Stata 14. I may also use a little Stata 15 in class.
The main references will be
A.C. Cameron and P.K. Trivedi (2005), *Microeconometrics: Methods and Applications*, Cambridge University Press.
A.C. Cameron and P.K. Trivedi (2005) *Microeconometrics using Stata*.
Plus some relevant papers including A.C. Cameron and D.L. Miller (2015) "A Practitioner's Guide to Cluster-Robust Inference."
Available at http://cameron.econ.ucdavis.edu/research/Cameron_Miller_JHR_2015_February.pdf