

ECON 631—Econometrics II

T,TH 1:00-2:15 Holman 132

Spring 2012

Walt Mayer

Holman 342

915-5980

wmayer@olemiss.edu

Office hours: T,Th 3:30-5:00 and by appointment.

Course Description

Advanced econometric methods and applications, including nonlinear regression, instrumental variables, systems of equations, generalized least squares, panel data models, method of moments, maximum likelihood, serial correlation, binary choice models, censored and truncated regressions.

The prerequisite is Econ 630. Consequently, students are assumed to be familiar with the basics of multiple regression covered in the textbooks by Wooldridge and Goldberger.

Objective

The objective is to give Ph.D. students a working knowledge of the theory and application of econometrics.

Textbooks and Software

Greene, William H. (2012) *Econometric Analysis*, 7th edition, Prentice Hall.

Wooldridge, Jeffrey M. (2009) *Introductory Econometrics*, 4th edition.

Stata 11 or 12 (6 month student version available through Grad Plan for as low as \$32.95)

Grades

Midterm: 25%

Final: 40%

Problem sets: 15%

Project 20%

Project

The purpose of the project is explore topics from the textbook in more depth. Find a paper published in 2010 or 2011 that uses panel data and could be improved by using instrumental variables, the delta method *and* by allowing a more general form of heterogeneity. The paper must be approved in advance.

Two parts:

- I. Write a short paper (10-15 pages?) describing how you the paper you found could be improved. Your paper must emphasize the econometric issues. (Avoid lengthy discussions of non-econometric economic and financial issues!)
- II. Collect data and compute estimates that illustrate the approach you advocate in part I. The data do not necessarily have to be from the article.

Course Outline and Readings

Review of Classical Regression

Chapter 1 -7 and Appendices A-D

Review of matrix algebra, random vectors, variance-covariance matrices, conditional expectations, least squares, Gauss-Markov Theorem, F-test.

Asymptotics for classical regression: consistency, asymptotic normality, asymptotic standard errors, Wald test, delta method.

Nonlinear Regression: Chapter 7

Endogeneity and Instrumental Variables: Chapter 8

Generalized Regression: Chapter 9

Systems of Equations: Chapter 10

Panel Data Models: Chapter 11

GMM and Maximum Likelihood: Chapters 13-14

Serial Correlation: Chapter 20

Microeconomic Models: Chapters 17-19

