EC 327: Advanced Econometrics

Boston College

Fall 1999

Professor: Serena Ng, Carney 238

Class meets Tuesdays and Thursdays, noon-1:30pm at Campion 236

Office Hours: T, Th 10:30-noon

Pre-requisite: Elementary Statistics, EC 228. and Linear Algebra.

Matrix manipulations will be used throughout the course.

Grading: Mid-Term (Nov 2, 1999) 30%

Final Exam (Term Paper due Monday Dec 13, 1999) 40%

3 Problem Sets 30%

Text Books:

Recommended:

[GHJ] W. E. Griffiths, R. C. Hill, and G. C. Judge, Learning and Practicing Econometrics, Wiley, 1993.

Alternative or Supplementary Textbook:

[JJ] J. Johnston and J. Dinardo, Econometric Methods, Mcgraw Hill, 1997.

[GHJ] provides a more in-depth treatment of basic statistics and of the classical linear regression model. [JJ] covers more topics of practical interest but is less rigorous. Both books cover the topics we will touch on in class.

Problem sets will involve the use of an econometrics software package of your choice (such as Eviews, Stata, SPSS). When appropriate, students will also be instructed to use Matlab, a matrix programming language. The software is available on university servers. We are also licensed to distribute the software for class use.

Topics

1. Review: CHJ, Chapters 3 and 4. [4]

Estimation and Inference of the population mean and the variance

2.The General Linear Statistical Model: [8]

Estimation: CHJ, Chapters 5,6, 9 and 10.

Least Squares Estimation

Maximum Likelihood Estimation

Method of Moments

Inference and Model Selection: CHJ, Chapters 10, 11

Large Sample Properties of the Least Squares Estimator: CHJ Chapter 14 [2]

3.Extensions to the Classical Linear Regression Model: [6]

Errors in Variables: CHJ Chapter 14

Instrumental Variables Chapter 14

Generalized Least Squares: CHJ Chapter 15

Seemingly Unrelated Regressions: CHJ Chapter 17

4.Panel Data [3]

Fixed and Random Effects Model: JJ Chapter 12

5.Discrete and Limited Dependent Variable Models [4]

Probit and Logit Models: JJ Chapter 13

6. Non-linear Least Squares