ECONOMETRICS II

List of topics (2008/09)

1. Asymptotic results in the General Linear Model

1.1 Asymptotic theory

1.2 Asymptotic properties of the estimators in the GLM

1.3 Asymptotic tests in the GLM

2. Heteroskedasticity

2.1 Introduction

2.2 OLS estimation with heteroskedastic errors

2.2.1 Finite-sample properties

2.2.2 Large-sample properties

2.2.3 Hypothesis testing

2.3 Heteroskedasticity as a function of known variables

2.3.1 Testing for heteroskedasticity

2.3.2 GLS estimation when Ω is known

2.3.3 GLS estimation when Ω is unknown: FGLS

3. Time series

3.1 Basic statistical concepts: stochastic process; stationarity

3.2 Autoregressive processes (AR(p))

3.3 Moving average processes (MA(q))

3.4 Mixed processes (ARMA(p,q))

4. Autocorrelation

4.1 Introduction

4.2 OLS estimation with autocorrelated errors

4.3 Testing for autocorrelation

4.4 GLS estimation in the presence of autocorrelation

4.4.1 Estimation with AR(1) errors and Ω is known

4.4.2 Estimation with AR(1) errors and Ω is unknown: FGLS

4.4.3 Estimation with AR(p) errors

5. Stochastic regressors and endogeneity

5.1 Stochastic regressors

5.2 Endogeneity

5.3 The Instumental Variables estimator

5.3.1 The simple linear model

5.3.2 The multiple linear model with a single endogenous explanatory variable

5.3.3 The multiple linear model with multiple endogenous explanatory variables

5.3.4 Asymptotic properties of the IV estimator

5.4 Hypothesis testing with the IV estimator

5.5 Testing for endogeneity

BIBLIOGRAPHY

a) Prime bibliography:

Alonso, A., J. Fernández e I. Gallastegui. *Econometría*. Pearson Prentice Hall. 2005. (EC 330.4/ALO/ECO)

Greene, W. H. *Econometric Analysis*. Prentice Hall. 2003. (EC 330.4/GRE/ECO)

Wooldridge, Jeffrey M. *Introductory Econometrics: A modern approach.* Thomson 2006. (EC XX)

b) Prime bibliography for exercises:

Fernández, A. et al. *Ejercicios de econometría*. McGraw-Hill. (2 ed.) 2005. (EC 330.4/EJE/EJE)

c) Complementary bibliography:

Goldberger, Arthur S. *Introductory Econometrics***.** Harvard University Press. 1998. (EC 330.4/GOL/INT)

Novales, A. *Econometría*. McGraw-Hill. (2 ed.) 1994. (EC 330.4/NOV/ECO)

d) Other books with exercises:

Aznar, A. et al. *Ejercicios de econometría*. Pirámide. 1994. (EC 330.4/AZN/EJE)

PRACTICAL SESSIONS

Each topic will be supplemented with a problem set. Additionally, there will be several computer sessions in which students will learn how to use the statistical software package EVIEWS. Students will be informed about the date and place of the computer sessions well in advance. Both the problem sets and the computer sessions make up exam materials.

GRADING

Grades will be solely based upon the exam. The exam will contain a theoretical question plus several practical problems similar to those in the problem sets and the computer sessions.