

Course Outline for Econometrics II

Robert M. Kunst
Institute for Advanced Studies
and
University of Vienna

September 2010

1 Introduction to Time Series Analysis

Stochastic processes, stationarity, moving-average and autoregressive models.

Recommended literature:

BROCKWELL, P.J., DAVIS, R.A. (1991) *Time Series: Theory and Methods*. Springer.

--- (2002) *Introduction to Time Series and Forecasting*. 2nd edition, Springer.

FRANSES, P.H. (1998) *Time series models for business and economic forecasting*. Cambridge University Press.

FULLER, W.A. (1996) *Introduction to statistical time series*. 2nd edition, Wiley.

GOURIEROUX, C. AND MONFORT, A. (1997) *Time Series and Dynamic Models*. Cambridge University Press. [Ch.1]

HAMILTON, J.D. (1994) *Time series analysis*. Princeton University Press.

2 Unit Roots

Random trends, integrated processes, unit roots, seasonality.

Recommended literature (additional to the literature for topic #1)

BANERJEE, A., DOLADO, J., GALBRAITH, J.W., AND HENDRY, D.F. (1993) *Co-integration, Error-Correction, and the Econometric Analysis of Non-Stationary Data*. Oxford University Press.

DHRYMES, P. (1998) *Time Series, Unit Roots, and Cointegration*. Academic Press.

TANAKA, K. (1996) *Time Series Analysis: Nonstationary and Noninvertible Distribution Theory*. Wiley.

3 Vector Autoregressions

Stability of VAR models, impulse response, variance decomposition.

Recommended literature (additional to the literature for topic #1):

LÜTKEPOHL, H. (2005) *New Introduction to multiple time series analysis*. Springer.

4 Integration and Cointegration

EG 2-step procedure and Johansen's maximum-likelihood procedure.

Recommended literature (additional to the literature for topics #1 to #3)

ENGLE, R.F., AND GRANGER, C.W.J. (1987) 'Co-integration and Error Correction: Representation, Estimation and Testing', *Econometrica* 56, 1333–1354.

JOHANSEN, S. (1995) *Likelihood-Based Inference in Cointegrated Vector Autoregressive Models*. Oxford University Press.

5 Dynamic Linear Regression

Estimation in autoregressive models (Hurwicz bias), OLS in dynamic regression models, Granger causality, strict, weak, and strong exogeneity.

Recommended literature:

CHAREMZA, W.W. AND DEADMAN, D.F. (1997) *New Directions in Econometric Practice*. Edward Elgar (2nd edition).

ENGLE, R.F., HENDRY, D.F., AND RICHARD, J.F. (1988) 'Exogeneity', *Econometrica* 51, 277–304.

GOURIEROUX, C. AND MONFORT, A. (1995) *Statistics and Econometric Models*. Cambridge University Press. [Ch.1]

GREENE, W.H. (2007) *Econometric Analysis*. Prentice-Hall (6th edition)

6 Systems of Simultaneous Equations

Seemingly unrelated regressions (SUR), identification in simultaneous equations, consistent (two-stage) and efficient (three-stage) estimation of simultaneous systems.

Recommended literature:

GREENE, W.H. (2007) *Econometric Analysis*. Prentice-Hall (6th edition)