

Econometrics II

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Course Description

The aim of this module is to provide students with the skills required to undertake independent applied research using modern econometric methods. The course builds on the fundamental concepts developed in Module I and aims to extend students' understanding of the subject to a more advanced level. The course attempts to provide a balance between theory and applied research.

Module II Assessment

Students will be required to complete 4 homework exercises and to undertake one individual project. Twenty percent of the marks for the course will be awarded for the combination of homework (5%) and project (15%).

Topics

1. Stationary time series
 - a. AR, MA, ARMA models
 - b. Autocorrelations and Partial Autocorrelation Functions. Identification, estimation, testing and forecasting
 - c. ARCH/GARCH models
 - d. ADL and VAR models
 - e. Seasonality and trends
2. Unit roots and cointegration
 - a. Unit roots and Units roots tests
 - b. Cointegration: Engle-Granger and Johansen procedures
3. Systems of Equations
 - a. The seemingly unrelated regression model (SUR)
4. Simultaneous equations models
 - a. Simultaneous equation models: identification
 - b. Estimation by 2SLS, 3SLS
5. Non-linear regressions and Nonlinear least squares
 - a. Nonlinear regression models
 - b. Nonlinear systems of Equations

Readings

Wooldridge, J.M. (2002), *Econometric Analysis of Cross-Section and Panel Data*, Princeton, University Press

Davidson, R.D. and MacKinnon J. G. (2004), *Econometric Theory and Methods*, Oxford University Press

Verbeek M. (2004), *A guide to Modern Econometrics*, Wiley

Greene, W. (2003), *Econometric Analysis*, Prentice Hall

Enders, W. (2004), *Applied Econometric Time Series*, Wiley