CONTINUING EDUCATION
UNIVERSITY OF PRETORIA

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Course Brochure

Certificate Course in

ECONOMETRIC ANALYSIS OF COINTEGRATION

Presented by the Department of Economics, University of Pretoria

7 – 10 June 2011
15 – 18 November 2011

COURSE DESCRIPTION

This course addresses appropriate modelling techniques for time-series data when unit roots are present in the data (i.e. data is non-stationary) - a problem that applied economists encounter in almost all economic time-series applications. To ignore the fact that data may be non-stationary and to proceed to estimate a regression model containing non-stationary variables, at best ignores important information about the underlying statistical and economic processes generating the data, and at worst leads to nonsensical (or spurious) results. Therefore, to begin with, an overview of the common technical characteristics of time-series data and the concept of stationarity is provided. The econometric techniques of cointegration and error-correction models are revised in single equations (residual-based cointegration), with emphasis on their empirical application. Thereafter, the notion of multivariate cointegration (the main focus of this course) is discussed and applied.

LEARNING OUTCOMES

After completion of this course candidates should be able to: understand and apply non-stationary time-series analysis; understand the concept of stationarity and unit root testing, and to apply the advanced econometric techniques of cointegration and error-correction modelling, especially in the multivariate context.

WHO SHOULD ENROL?

The course is relevant for researchers and analysts in all fields of economic application: business, financial markets, socio-economics and health, development economics, public finance and tax policy, as well as international trade and finance.

LEARNING ASSUMED TO BE IN PLACE

This is an advanced course and requires an Honours level qualification in time-series Econometrics (including knowledge of the concepts of unit root testing and residual-based (Engle-Granger) cointegration, as these are merely included as revision). An understanding of matrix algebra is essential as well as experience as a researcher or analyst in any of the fields of economic application. Proficiency in EViews is also advised.

PRESENTERS

Lecturers from the Department of Economics, University of Pretoria.

COURSE STRUCTURE AND VENUE

Delegates attend a four-day course, presented in a computer lab on the main campus, University of Pretoria.

CONTENT

Overview of residual-based cointegration
- Data generating processes
- Stationary vs. non-stationary time series
- Cointegration in single equations (Engle-Granger)
- Error-correction models (ECM)

Multivariate cointegration (focus of course)
- Vector autoregressive (VAR) models
- Impulse response functions and variance decompositions
- Johansen cointegration methodology
- Vector error-correction models (VECM)

REFERENCE MATERIAL

Enders, W. 2010. *Applied Econometric Time Series*. 3rd Edition. New York: John Wiley and Sons.
Harris, R. and Sollis, R. 2003. *Applied Time Series Modelling and Forecasting*. John Wiley and Sons. (This text is based on an earlier title, which is out of print: Harris, R. 1995. *Using Cointegration Analysis in Econometric Modelling*. London: Prentice Hall.)

APPLICATION SOFTWARE

EViews version 7

ASSESSMENT AND ACCREDITATION

A University of Pretoria certificate will be awarded upon successful completion of the course. (Recommended new NQF level 8)

COURSE FEE (CE at UP IS EXEMPT FROM VAT)

The course fee is R10 500 per delegate and includes comprehensive lecture notes, text books, computer lab fees, lunch and refreshments. The fee excludes travel, accommodation and subsistence allowance.

REGISTRATION & ENQUIRIES

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ENQUIRIES REGARDING CONTENT

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