Freie Universität Berlin   Prof. Dr. Christian Offermanns
School of Business & Economics   Summer 2011
Department of Statistics and Econometrics

Advanced Master's & Ph.D. Course in

Time Series Analysis

Description:

The course introduces participants to fundamental approaches of economic time series analysis. Part I covers univariate models with a focus on testing for non-stationarity and conditional heteroskedasticity. Part II covers multivariate models, in particular approaches to the estimation of integrated and cointegrated systems of time series, to structural identification of impulse-response functions and to state-space representations. While providing the concepts and foundations of the econometric methods, the course also aims at enabling participants to carry out their own empirical research by applying these methods to economic questions.

The course is open to students enrolled in one of the following programs: M.Sc. in Economics (5 Credit Points), M.Sc. in Statistics (5 CP), Diplom-Wahlfach Ökonometrie (as "Spektralanalyse", 3 CP) and the BDPEMS (6 CP).

Time and Location (updated):

Thursday, 10-1 p.m. (c.t.), weekly; FUB, Garystr. 21, Hs 106.

Requirements and grading:

The lecture will be held in **English**. All requirements may be satisfied in German or English. Grading of the course is based on two exams: a mid-term exam at the end of May and a final exam around mid of July, with a length of 60 minutes each.

For *participants of the BDPEMS*, it is possible to take either part I or part II (and thus, only one of the two exams), providing 3 CP each. You should nevertheless register as soon as possible to obtain access to slides and announcements.

Outline:

I.   Univariate time series
      1.   Stationary processes
      2.   Unit root asymptotics
      3.   Nonstationarity in dynamic panel data
      4.   Conditional heteroskedasticity
II.   Multivariate time series
      1.   Vector autoregressive models
      2.   Vector error-correction models
      3.   Structural identification of impulse-response functions
      4.   State-space models and the Kalman filter

Literature:

Hamilton, J.D.: *Time Series Analysis*, Princeton University Press, 1994.
Lütkepohl, H.: *New Introduction to Multiple Time Series Analysis*, Springer, 2006.
Greene, W.: *Econometric Analysis*, Pearson, 2008.