

Time series analysis for financial markets

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COURSE DESCRIPTION:

This course introduces to the time series methods and practices which are most relevant to the analysis of financial time series. We will cover univariate and multivariate models of stationary and non-stationary time series in the time domain.

OBJECTIVES:

a) SKILLS:

- Develop a comprehensive set of tools and techniques for analyzing various forms of univariate and multivariate macroeconomic and financial time series.
- Develop the econometric methodology to analyse non-stationary time series.
- Handle the non-stationarity of financial time series in relation to empirical modelling and forecasting.

b) KNOWLEDGE:

- Acquire knowledge of recent changes in the methodology of econometric analysis of time series.
- Understand and analyse the short and long run structure of the dynamic econometric models.

c) ATTITUDES:

- Acquire ability to perform and judge unit roots test.
- Acquire ability to estimate and evaluate some relevant relationships and models of financial markets.
- Be able to use software such as E-Views, PcGive, and Gretl.

MAIN CONTENTS:

- Univariate time series models
- Estimation of ARMA models
- Modeling volatility (ARCH, GARCH and EGARCH).
- Non-stationarity and unit root tests
- Spurious regressions and cointegration
- Introduction to stationary and non-stationary Vector Autoregressive Model
- Practical exercises and case study: analysis of prices-earnings ratio, Fed model, the expectations theory of the term structure, volatility in daily exchange rates, long-run purchasing power parity.