

Quantitative Methods / Lab sessions (5-6 3hours sessions)

MSc in Banking & Finance

Athens University of Economics & Business

Instructor: A. Demos

Aims and objectives:

The aim of the course is to introduce students to quantitative methods with emphasis on their application to decision taking. The scope of the lectures is to familiarize the students with the basic theoretical principles and the models applied to Finance. The course also includes lab applications with real economic and financial data. The practical significance of this course is of great importance, as the statistical and econometric analysis is necessary to create Portfolios, to the rational decisions making, in the Banking Sector, in the Capital and Money markets, to asses Portfolio performance, etc.

Course outline:

Econometric package EVIEWS

1. Linear Multiple Regression (real stock market data)
 - a. Applications CAPM
2. Hypothesis Testing and Confidence Intervals in Multiple Regression.
 - a. Testing Normality
 - b. Testing autocorrelation
 - c. Testing Heteroskedasticity (in particular Conditional one)
3. Introduction to Time Series Regression and Forecasting.
 - a. ARMA modelling (real stock market data).
 - b. Forecasting (real stock market data).
 - c. Unit roots and Cointegration (simulated data)
4. Additional Topics in Time Series Regression (real stock market data).
 - a. Autoregressive Conditional Heteroskedasticity
 - b. Exponential GARCH
 - c. GARCH in Mean (efficiency of the stock market)
5. Regression with Binary Dependent Variable
 - a. Logit and Probit Models
 - b. Application Credit Risk (real US data)