FINANCIAL ECONOMETRICS (m63107p)

Instructor: I. VRONTOS

Core Course, 3rd semester, 5 ECTS units
Course level: Graduate (MSc)
Language: Greek

Course Description

This course provides a broad introduction to the theory and empirical analysis of advanced econometric models in financial applications such as construction of optimal portfolios, evaluating managers' performance, and forecasting financial returns. Multi-factor models are introduced, which can be used to estimate the expected returns of financial assets, and univariate and multivariate heteroscedasticity models (ARCH/GARCH), which can be used to model the variations and covariances/correlations of financial returns. Indicative examples of the application of these advanced statistical and econometric models and techniques are (a) the construction of optimal portfolios, (b) the evaluation of the performance of the various mutual fund or hedge fund investment managers, (c) forecasts of financial series, e.g. stock returns.

Prerequisites

No prerequisites.

Target Learning Outcomes

The aim of this module is to provide students with advanced statistical and econometric skills required to analyze empirical problems in finance. After successfully completing the course, students will be able to:

- interpret the concepts of return and risk in financial markets
- model the expected returns of financial assets
- model the variances and covariances/correlations of financial returns
- use advanced econometric tools to analyze models used in financial applications
- forecast financial returns
- assess the performance of portfolio managers
- understand modern portfolio theory
- solve mean-variance optimization problems
- estimate the risk of financial assets

Recommended Bibliography

- Elton, E.J., Gruber, M.J., Brown, S.J., and Goetzmann W.N. (2014). Modern Portfolio Theory and Investment Analysis, 9th edition, Wiley.
- Sharpe, W.F., Alexander, G.J, and Bailey, J.V. (1999). Investments, 6th edition, Prentice-Hall.
- Tsay, Ruey S. (2010). Analysis of Financial Time Series, New York: Wiley.
- Vrontos, I.D. (2016) Financial Econometrics, Lecture Notes (In Greek).
- Selected papers.

Teaching and Learning Activities

One three-hour lecture per week, study exercises, and programming exercises as homework (some to be submitted).

Assessment and Grading Methods

The final grade is the average of the final examination grade (weight 80%) and the grade of the study and programming exercises to be submitted (weight 20%), provided that the final examination grade is at least 5/10. Otherwise, the final grade equals the final examination grade.