Econometrics for Finance

Academic Year: (2017 / 2018)   **Review date: 07-06-2016**

Department assigned to the subject:

Coordinating teacher: MORA VILLARRUBIA, RICARDO

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 1

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Target Audience: This course is adequate for any student in the MSc in Finance. A basic understanding of probability theory and of the properties of the conditional expectation is assumed.

Course Language: English.

The course of Financial Statistics (First Term) should have been completed previously.

Computer exercises will be done using Eviews.

OBJECTIVES

This course aims at providing the student with basic econometric skills used in empirical economic research. This goal will be accomplished through classroom lectures, practical sessions, and problem sets. Specifically, by the end of the course the student should be able to:
1) Apply basic linear regression techniques in economic problems.
2) Use appropriate software (Eviews) to implement quantitative research.
Skills the student will be able to gain during the course are:
1) Understanding data limitations and their consequences in empirical analysis.
2) Understanding the merits of alternative quantitative methods.
3) Interpreting results in terms of policy implications and prediction purposes.
4) Programming skills in quantitative research

DESCRIPTION OF CONTENTS: PROGRAMME

1. Multiple Regression Analysis: Estimation. The model with two independent variables. The model with k independent variables. Mechanics & interpretation of OLS. Simple and multiple regression. Goodness-of-Fit. (Ch. 3.1, Ch. 3.2)

2. Multiple Regression Analisis: Small sample properties. The expected value of the OLS estimators. Omitted Variable Bias. The variance of OLS estimators. The Gauss-Markov Theorem. (Ch. 3.3, Ch. 3.4, Ch. 3.5)

3. MLR: Inference: Sampling distributions of OLS. The t-test. Confidence intervals. Testing linear combinations. The F-test. (Ch. 4)

4: Large sample results: Consistency. Asymptotic normality. Heteroskedasticity-robust inference after OLS estimation. (Ch. 5.1, Ch. 5.2, Ch. 8.2)

5. Regression with Time Series Data: Introduction. Examples of Time Series Regression Models. Trends and Seasonality. Asymptotic properties. Testing for Serial Correlation. HAC standard errors. (Ch. 10.2, Ch. 10.5, Ch. 11.2, Ch. 12.2, Ch. 12.5)

6. Non-stationary processes and cointegration: Non-stationary processes. Random Walk models. Unit root Dickey-Fuller test. Cointegration and Spurious regressions. Error-Correction models. (Ch. 18)

LEARNING ACTIVITIES AND METHODOLOGY

Learning activities will consist on lectures, computer practice sessions (illustrating the implementation of the econometrics techniques using real economic and financial data), and solving exercises from problem sets.

Computer exercises will be done using Eviews.

Practice is essential to learning and understanding econometric tools. Therefore, there will be computer practice sessions and also computer exercises as homework. The course will focus on how to implement basic econometric techniques.

Slides and book references are provided to facilitate successful course attendance. Slides, exercises, and other materials will be available at Aula Global. The chosen software to practice with econometric tools is Eviews.

No late work will be accepted. Students will also be encouraged to attend the office hours in order to receive clarification on material covered in class. Office hours will not be available for checking if answers to homework are correct: Students will be encouraged to compare answers with their classmates for this purpose.

ASSESSMENT SYSTEM

Evaluation of student performance is based on:

(1) Final exam (50% of the final grade).

(2) Continuous Evaluation (40% of the final grade).

Important: A minimum of 4 over 10 in the exam is required to pass the course.

% end-of-term-examination:	50
% of continuous assessment (assigments, laboratory, practicals…):	50

BASIC BIBLIOGRAPHY
   - Wooldridge, J.M Introductory Econometrics: A Modern Approach,, 2nd ed., Thomson South-Western, 2003

ADDITIONAL BIBLIOGRAPHY
   - Stock, J. and Watson, M. Introduction to Econometrics, Addison-Wesley, 2003