



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Econometrics

2021-1-F1601M050

Learning area

Learning objectives

The objective of this course is to teach econometric techniques useful for the analysis of financial and macroeconomic data, using both a theoretical and applied approach, providing the students with the skills to estimate and interpret models at an intermediate level, while having a sound understanding of the underlying theoretical concepts. Applications will be carried out using the E-Views package.

Contents

The course deals with major topics in econometric theory and methodology, useful for the analysis of financial and macroeconomic data, with application carried out in the computing lab. In the first part, core econometric tools for the specification and estimation of the regression function, as well as for hypothesis testing, are introduced. The study of theoretical tools is coupled with their application for the assessment of fundamental models in financial economics, portfolio selection and performance analysis. In the second part, advanced time series tools for the modeling of financial prices and returns and their volatility are introduced. Applications of time series models to the specification, estimation and forecasting of the conditional mean and variance of financial returns, forecasting of value at risk and the investigation of long run linkages between financial prices and their fundamentals are also carried out.

Detailed program

Introduction to financial time series and their properties

The classical linear regression model

- Assumptions
- OLS, ML, GMM estimation
- Misspecification tests
- Applications: CAPM, portfolio selection, performance analysis.

Time series models

- Stochastic processes and their properties
- ARMA processes
- GARCH processes
- Dynamic models and VAR
- Cointegration and nonstationarity

Applications: financial returns modeling: conditional mean and variance; value at risk forecasting; long-run linkages between financial activity prices and their fundamental values; other macro-financial applications.

Prerequisites

None

Teaching methods

Lectures in classroom and computing lab.

In the case of an epidemics emergency, lectures will be delivered remotely and asynchronously, with additional videoconferencing events, organized synchronously.

Assessment methods

Written exam composed of 3/4 theoretical open questions (a total of 20/31) and 1/2 empirical questions (a total of 11/31). An oral exam is available upon requests from the students.

In the case of an epidemics emergency, exams will be held online through the WebEx e Moodle platforms. Additional details about exam logistics will be provided on the e-learning webpage of the course, as well as a link for online access to the exam to potential auditors.

Textbooks and Reading Materials

Enders W. (2014) Applied Econometric Time Series, 4th edition, John Wiley.

Verbeeck M. (2017) A Guide to Modern Econometrics, 5th edition, John Wiley.

Lecture notes/slides available online.
