UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Econometrics

2122-1-F1601M050

Learning area

Learning objectives

The course aims to offer an introduction to the econometrics techniques in the area of financial econometrics. In particular, the interaction between theory and empirical applications is emphasized. At the end of the course, the students will be able to choice, estimate and interpret linear models for financial applications. Applications will be carried out using Matlab.

Contents

The course deals with econometrics methodology concerning cross-sectional, time-series, and panel data. The first block of the course covers an overview of the classical linear regression model and generalizes it in a multiple linear setting. Empirical applications on the linear factor models and principal components analysis are carried out. The second block covers univariate and multivariate time series analysis. The applications concern estimation and forecasting applications. Finally, the third block of the course covers panel data.

Detailed program

1. Classical linear regression:

- Model assumptions
- Ordinary Least Squared (OLS)
- Properties of estimators
- Gauss-Markov theorem
- Diagnostic tests
- Goodness of fit statistics

2. Time series modelling and forecasting

- Moving average processes
- Autoregressive processes
- ARMA processes
- VAR models
- Modelling volatility and correlation: ARCH and GARCH models

3. Panel Data

- Fixed effects models
- Random effects models

Prerequisites

Teaching methods

Face-to-face lectures

Assessment methods

Written exam. An oral exam is available upon requests from the students.

Textbooks and Reading Materials

Brooks, C. (2019). Introductory Econometrics for Finance, Cambridge University Press.

Greene, W. (2008). Econometric Analysis, 7th ed. Prentice Hall. New York, 7.

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

Lecture notes/slides.