Financial Econometrics I

ECTS : 3

Description du contenu de l'enseignement :

This course is an introduction and/or refresher course in Econometrics that focuses on techniques for estimating regression models, on problems commonly encountered in estimating such models, and on interpreting the estimates. The goal is to provide participants with the basic skills and knowledge necessary to undertake empirical research and to prepare them to the advanced course in Econometrics of Financial Markets. If Gretl will be the econometric software used in the course, it is possible to use Python or R.
Course outline

- How to build an econometric model and how to use it?
- The (simple and multiple) linear regression model
- Inference, hypothesis testing and prediction
- Specification and diagnostic testing (heteroskedasticity, autocorrelation, model specification ...)
- Dealing with autocorrelation and heteroskedasticity
- Selection criteria, and model selection
- OLS Adaptation and beyond (outliers, dummies and piecewise regressions, revisiting explanatory variables)
- Alternative to OLS (2 Stage Least Squares, Maximum Likelihood, Generalized Least Squares, Quantile regression)

Compétence à acquérir :

Theoretical and practical knowledge of linear regression models estimation technics. Being able to set up an econometric analysis.

Bibliographie, lectures recommandées :

- ADKINS L. C., Using gretl for Principles of Econometrics, Version 1.041, August 2018, Free copy;
- BROOKS C., Introductory Econometrics for Finance, Second Edition, 2019, , 4th Edition, Cambridge University Press, 724 pages
- CARTER HILL R., W. E. GRIFFITHS and GUAY C. LIM, 2018, Principles of Econometrics, 5th Edition, John Wiley & Sons, 912 pages
- GELMAN A., J. HILL and A. VENHTARI, 2021, Regression and Other Stories, 1st Edition, Cambridge University Press, 2021;
- GUJARATI D., Basic Econometrics, McGraw Hill Higher Education; 5th Revised edition edition, 2009

Pre-requisites:

- ANDERSON, D., D. SWEENEY, T. WILLIAMS, J. CAMM, and J. COCHRAN, 2019, Statistics for Business & Economics, 14th Edition, Cengage Learning, 1120 pages
- JACQUES, J., 2018, Mathematics for Economics and Business, 9th Edition, Pearson, 752 pages;
- LE FOL, G., 2022, A (Very) Short introduction to Gretl using scripts, Mimeo, 6 pages