Econometrics & Financial Markets

INTRODUCTION

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MSc BIF

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Course contents

- Overview of some classical statistical methods to *model strategic financial data*.

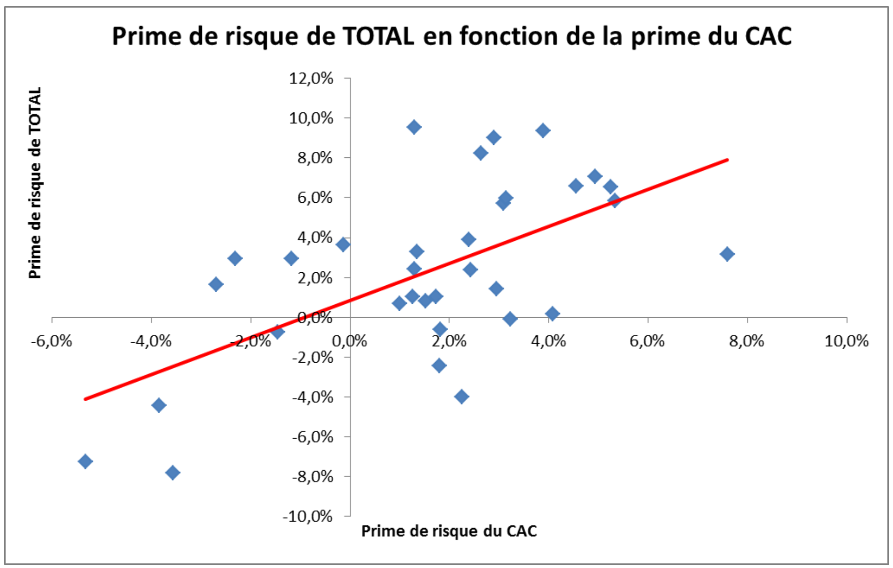
- Theoretical concepts applied on practical empirical cases in finance, using the software XLSTAT.

- The main models we will work on are:
  - Linear regression models (Simple and Multiple)
  - Time series models

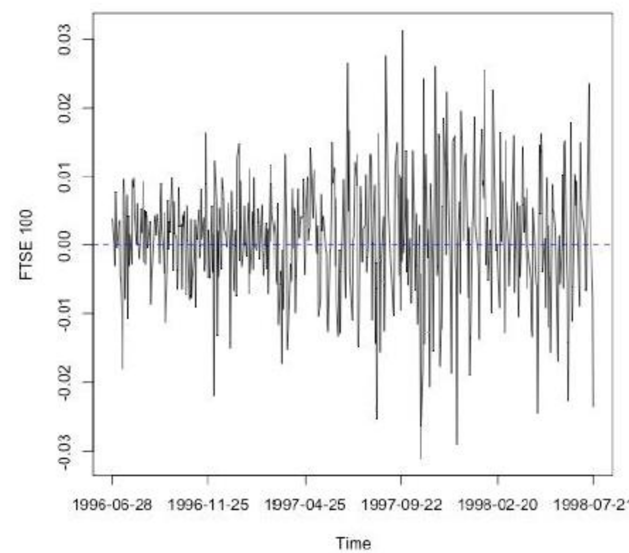
- Course outline:
  - ➔ General presentation
  - ➔ Descriptive statistics and Introduction to XLSTAT
  - ➔ Linear regression model and tutorial on XLSTAT
  - ➔ Time series analysis and tutorial on XLSTAT
  - ➔ Other tools and methods: qualitative variables; panel data, event study

Objectives

The objective of this course is to learn how use statistical tools and quantitative methods to model and forecast finance data and test empirical relations in finance.



CAPM validity? Test asset pricing models and check the ability of a portfolio manager to outperform the market



Return forecasts? Model and predict strategic variables

Teaching method and evaluation

- Theoretical classes + Quizz
- Tutorials with XLSTAT
- Further reading, Personal work
- Group project

Evaluation:

Empirical project, by groups of 3 or 4 (maximum) students

→ Data to be downloaded using Bloomberg, specialized financial websites (yahoo finance, google finance, …), or companies websites.

→ Submission date: **22 April 2022**

→ Refer to *''Econometrics and financial markets project''*

Group project

Empirical project, by groups (3 students)

- Download data from web
- Data and variable description (presentation, descriptive statistics, plots)
- Test for stationarity (ACF)
- CAPM regression: model estimation, table of results, results interpretation and discussion (t-tests, R2)
- Residuals check: plot residuals and check assumptions
- Interpret and discuss results

Group project submission

- Each group will have to submit on Campus (or by email):

  - ➔ An Excel file containing the data and analysis (the name of the file should be data_namesof students.xls)

  - ➔ A report file (Word, Pdf, PowerPoint) reporting tables and plots and summarizing and interpreting the results (report_namesof students.docx)

    - ❖ Submit both files (excel+report). One file alone will not be considered.
    - ❖ One project per group, with the names of all participants.

Documents on Campus

- All the documents are available on **C@mpus:**
  - Lecture Notes:
    I. Introduction
    II. Financial data and descriptive statistics
    III. Linear regression model
    IV. Time series analysis
    V. Other tools and methods
  - Data file for tutorials: Data2022
  - Econometrics and financial markets GROUP PROJECT

- The software **XLSTAT** can be downloaded on **C@mpus**
  - https://campus.tbs-education.org/documents/informatique/Logiciels/Logiciels.pdf
  - follow the installation procedure and use the code provided to activate the licence

Readings

- Textbook for this course:

***Introductory Econometric for Finance*, C.BROOKS, Cambridge, 2nd Edition**

Other recommended books:

- *Applied Econometrics*, Dimitri Asteriou, Stephen G. Hall, Palgrave, 2nd edition
- *Introductory Econometrics*: A Modern Approach, Wooldridge Jeffrey M. (2009),4th ed., South-Western
- *The Econometrics of Financial Markets*, John Y. Campbell, Andrew W. Lo, & A. Craig MacKinlay, Princeton University Press, 1997

Useful Data links

- TBS Library Services provides a broad portfolio of specialist business resources, including **Bloomberg** (Alaric library in Toulouse or Paris Campus), **Datastream** (Refinitiv online access – ask Helpdesk), **Infinancials**, **Orbis**, etc
- https://bibliotheque.tbs-education.fr/nos-bases-de-donnees.aspx
- Also, available on the web:
  - Yahoo Finance: https://finance.yahoo.com/
  - Google Finance: https://www.google.com/finance/
  - Fama French Factors: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html
  - Federal Reserve Bank: https://fred.stlouisfed.org/
  - Fanque de France: https://www.banque-france.fr/page-sommaire/taux-et-cours