Financial Econometrics
Olivier Scaillet's Financial Econometrics

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Financial Econometrics

Course description

The lectures start with complementing basic statistical knowledge and are divided into two parts depending on the presence of temporal dependencies or not in the data. We illustrate the studied statistical and econometric methods via applications in finance, insurance, and economics: Value at Risk, Expected Shortfall, portfolio selection, CAPM, APT, dynamic modelling of financial asset prices via ARMA, ARCH models and stochastic volatility models, etc. The analysed techniques cover parametric and nonparametric tools.

Objectives / outcomes

Develop concepts necessary to applications of econometrics in finance and economics.

Be able to answer questions related to finance and economics via quantitative tools applied on data.

Outline

The course focuses on two types of analyses: static (marginal) and dynamic (conditional).

Static (marginal) analysis

You can find the related material in the `slides/static_analysis` folder.

- A.I.: Descriptive Statistics
- A.II.: Kernel Estimation of Densities
- A.III.: Asymptotic Properties
- A.IV.: Linear Regressions
- A.V.: Application to CAPM
- A.VI.: Application to APT
- A.VII.: Life Cycle Models and CCAPM
- A.VIII.: Optimisation Algorithms
- A.IX.: Kernel Estimation of the Conditional Mean
- A.X.: Applications: Sensitivity Analysis of VaR and ES
- A.XI.: Introduction to Extreme Value Theory
- A.XII.: Scoring Procedures
- A.XIII.: Bootstrap Procedures

Dynamic analysis

You can find the related material in the `slides/dynamic_analysis` folder.

- B.I.: Stationary Processes

About

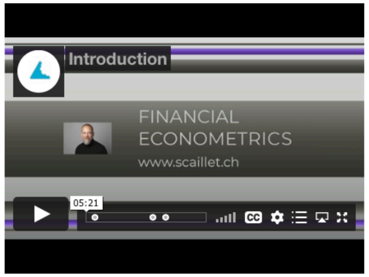
Master

The master instance

Material in the master instance is not directly visible to students, it has to be distributed.

LEARN MORE

Videos SEE ALL



Resources

Files
Browse and manage files

Tables
Query and export data

Applications
Create and launch applications

Snapshots
Review timeline of saved course versions

Additional Reading

The slides are self-contained, but you might wish to deepen your knowledge with the above references. You might also wish to have a look at the additional materials on www.scaillet.ch or the `references` folder to be better prepared for job interviews.

Assessment

Assessment of students' performance is based on three criteria:

- Written exam
- Home project
- Seminar participation

The final grade is calculated as:

`final mark = 0.7 * exam + 0.2 * max(project, exam) + 0.1 * max(seminar participation, exam).`

Final Exam Details

- Written exam on an online platform (to be determined)
- Duration 1h45
- Multiple choice questions + Open questions

Course organization and schedule

Please check the `schedule` *folder for the course organization details such as time slots, dates, visio conference invitations, rooms, as well as what to do for next week.*

Contacts

Professor:

- Olivier Scaillet: olivier.scaillet@unige.ch

Teaching Assistants:

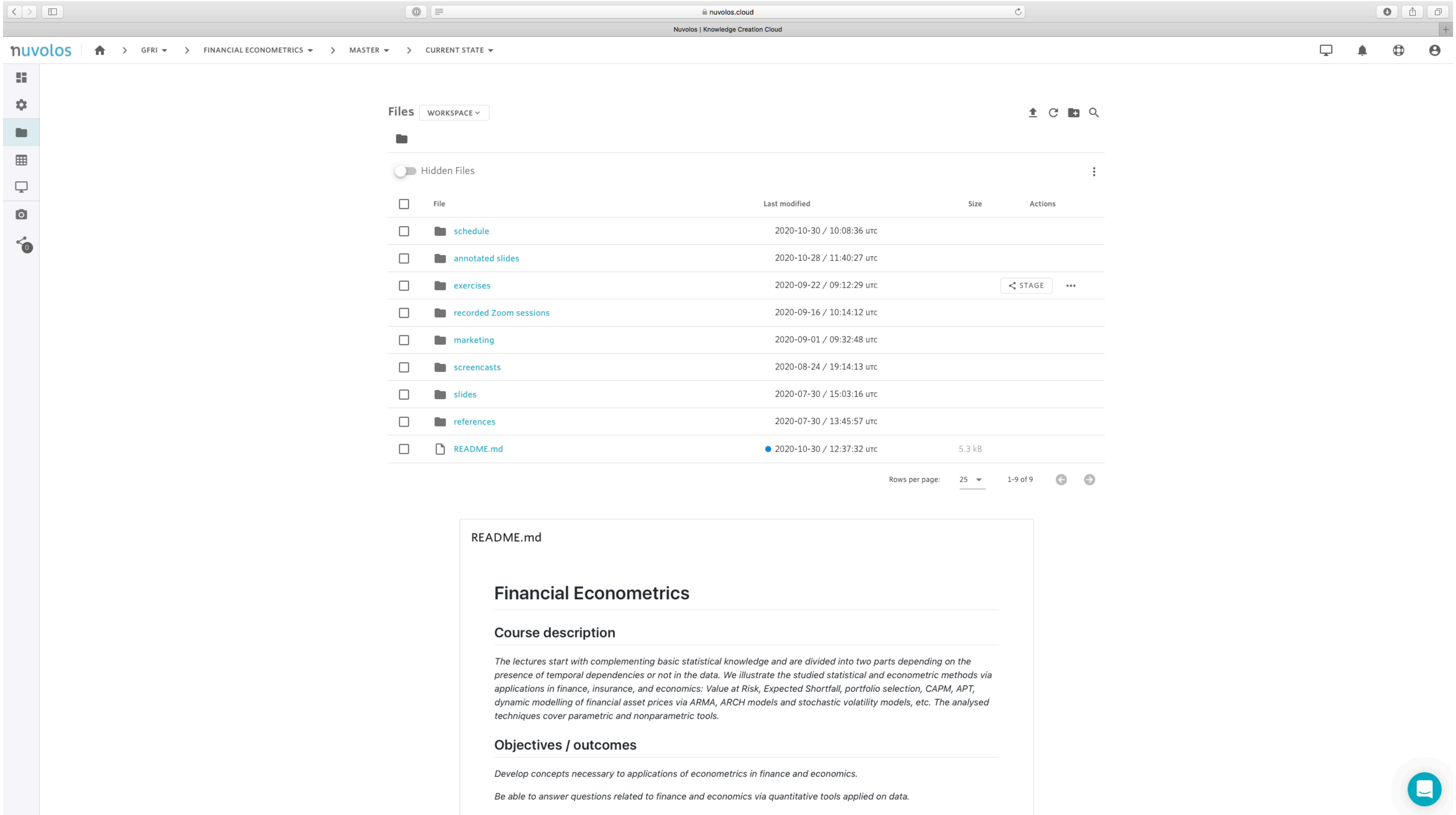
- Gaetan Bakalli: gaetan.bakalli@unige.ch
- Alain-Philippe Fortin: Alain-Philippe.Fortin@unige.ch

Reception Hours

- Alain-Philippe Fortin: Friday 11h-12h (zoom link https://us04web.zoom.us/j/77304264584?pwd=NG45Zk5VaXZHbjNmNWhzQ00xMnRhZz09)
- Gaetan Bakalli: Thursday 13h30-14h (zoom link https://unige.zoom.us/j/92166968547)
- Please email us before connecting to zoom.

Screencasts

You can fine the entire list of the lecture screencasts in the `screencasts` folder.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references
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README.md
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Files WORKSPACE

» schedule

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README.md

Financial Econometrics

Course organization and schedule

Please find below the information for the Q&A sessions and seminars.

NEXT Q&A session and seminar

| Lecture # | Date | Timeslot | Location | To do

| 8 | 11/11/2020 | 10:15-12:00 | https://unige.zoom.us/j/92544203237?pwd=Mmp0bmVVMFBtK0lhTW1oMVVMelR1dz09 |

Please watch the screencast 13 (Bootstrap procedures)

| Seminar # | Date | Timeslot | Location | To do

| 7 | 27/10/2020 | 16:15-18:00 | https://unige.zoom.us/j/91082161052 |

Topic: VaR

PAST Q&A sessions and seminars

| Lecture # | Date | Timeslot | Topics |

| 1 | 16/09/2020 | 10:15-12:00 | Introduction and Descriptive Statistics |

| 2 | 23/09/2020 | 10:15-12:00 | Kernel Estimation of Densities |

| 3 | 30/09/2020 | 10:15-12:00 | Asymptotic, regression, CAPM, APT |

| 4 | 07/10/2020 | 10:15-12:00 | CCAPM, Optimisation |

| 5 | 14/10/2020 | 10:15-12:00 | Cond. Mean, Applications: VaR |

| 6 | 21/10/2020 | 10:15-12:00 | Applications: ES, Extreme Value Theory |

| 7 | 27/10/2020 | 16:15-18:00 | Scoring procedures |

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» annotated slides

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Files WORKSPACE

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	Solutions	2020-09-07 / 12:12:50 UTC		
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README.md

General Informations

- Each homework will be distributed to you on the monday before of the seminar session.
- First hour of each session will be dedicated to correction of previous week assignment as well as interpretation of the results.
- Second hour we'll introduce the homework due for next week and give hints on potential difficulties.
- Homework must be done in groups of 3 to 4 students (not 1, 2, 5, etc...), and are due by the following Sunday @11.59 pm latest.
- To handle you homework, you just have to work it on the platform, and than stage them to us. Please send us an email with the group participants and the name of the students responsible for the homeworks.

Update for seminars

Please check this section for news about the seminar sessions.