

FIN-604

**Financial Econometrics I**

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Cursus	Sem.	Type
Finance		Opt.

Language of teaching	English
Credits	3
Session	
Exam	Written
Workload	90h
<b>Hours</b>	<b>28</b>
Lecture	28
<b>Number of positions</b>	

**Frequency**

Every year

**Remark**

If you would like to attend this course, please send an email to: [edfi@epfl.ch](mailto:edfi@epfl.ch) to register

**Summary**

We provide a comprehensive overview of the econometric tools that are essential to estimate financial models, both for asset pricing and for corporate finance.

**Content**

Financial Econometrics - Time series

We focus on the empirical techniques used most often in the analysis of financial markets and how they are applied to actual market data.

We model different aspects of the distribution of asset returns: conditional mean, conditional volatility, conditional distribution. For this

purpose, we analyze several estimation techniques: Time Series Analysis, Maximum likelihood (ML), Quasi ML.

1. Characteristics of Financial Time Series
2. Modeling Volatility: GARCH Models
3. Modeling Non-Normality
4. Multivariate Models

Financial Econometrics - Panel data

This part of the course provides students with a toolbox of empirical methods used in corporate finance research. These methods include

panel data and various methods to deal with problems of endogeneity. Students will learn the economic intuition behind each method and

how to implement the methods on real data.

1. Panel data
2. Instrumental Variables
3. Difference-in-Differences
4. Regression Discontinuity Design

**Learning Outcomes:**

- Understand and apply fundamental concepts in financial econometrics and panel data
- Learn how to use statistical software to analyze data for empirical research
- Develop a deeper understanding of and critical thinking about topics in financial econometrics and corporate finance research
- Acquire the knowledge and skills to design and carry out empirical research projects

**Keywords**

Times series, volatility, non-normality, panel data, endogeneity

**Learning Prerequisites**

**Important concepts to start the course**

Basics in statistics and econometrics