

No. 10146-01

## Finanzmarkttheorie I

### Portfolio Theory and Asset Pricing

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#### 1. Course Objective

The course gives a thorough introduction to portfolio theory and capital market equilibrium. These are the building blocks of modern asset pricing theory with relevance for investment management, banking, corporate finance and capital budgeting. The material presented pertains to all kind of asset classes though we will focus on applications to stock investments. Specifics of fixed income and derivative securities will be covered in separate classes (e.g. Dr. Philippe Mangold). Specifically, the following topics are covered:

- The measurement of risk and return
- Diversification, systematic and unsystematic risk
- Mean-variance portfolio frontier
- Asset allocation principles and portfolio selection
- Asset pricing models (CAPM and multifactor models)
- Applications of the CAPM
- Performance measurement

The lecture requires some mathematical, statistical and empirical skills: this is part of modern finance. You should be comfortable with these technical issues. However, we take a hands-on approach and cover it in an applied way.

## 2. Grading, Exam, Credit Points

Credit Points: 6 ECTP. Grading is based on a final written exam at the end of the semester. The exam is open book, and a non-programmable calculator without network connections is required.

Details about the organisation (online or in-class) will be announced at the end of the semester.

## 3. Handouts

There is no required textbook; some recommended texts can be found at the end of the syllabus. For most topics, handouts/ lecture notes are available on our website / ADAM a few days before the lecture. Notice that this material does not fully substitute your own notes in the lectures.

## 4. Exercise Sessions

Exercises sessions are held for reviewing and applying the contents of the course; mostly, the sessions discuss numerical examples, illustrations or some empirical stuff.

The exercises are put on the department website one week before discussion. We strongly recommend that you try to solve the exercise before in-class discussion, individually or in groups. You need not be able to work-out full solutions, but find out your question marks.

## 5. eLearning

The eLearning course "financial markets" also covers most of the material; however, it is not part of the course. Interested students can register under the link that will be published on the course webpage. Note that registration is only possible until March 31, 2021.

## 6. Organization

The first part will take place as an online-only lecture (zoom) at the scheduled hours.

The second part, if possible, will take place in the classroom (Kollegienhaus, Aula 033) with simultaneous live streaming and subsequent provision as a video.

Date and time:	Tuesday: 16:15-19:30 1st lecture: 02 March, 2021 Last lecture: 26 May, 2021
Lecturers:	Prof. Dr. Heinz Zimmermann, HZI (1st part) <a href="mailto:heinz.zimmermann@unibas.ch">heinz.zimmermann@unibas.ch</a> <a href="https://www.unibas.ch/de/zimmermann/">https://www.unibas.ch/de/zimmermann/</a>  Prof. Dr. Tim Kröncke, TKR (2nd part) <a href="mailto:t.kroencke@unibas.ch">t.kroencke@unibas.ch</a> <a href="https://www.unine.ch/iaf/home/equipe/tim-kroencke.html">https://www.unine.ch/iaf/home/equipe/tim-kroencke.html</a>
Assistant:	Kaspar Burghartz, KBU <a href="mailto:kaspar.burghartz@unibas.ch">kaspar.burghartz@unibas.ch</a>
Offices:	HZI: Peter-Merian Weg 6, 4002 Basel TKR: Rue A.-L. Breguet 2 - 2000 Neuchâtel, or WWZ Basel Office Hours: By appointment (please send an email)

Please check regularly our department website:

<https://www.unibas.ch/de/finanzmarkttheorie/> → Teaching

## 7. Course Outline

Date	No	Topic	
		Part 1 - Portfolio Theory (HZI, KBU)	
02.03.2021	1	Risk and Return I – Returns and Volatility	
09.03.2021	2	Risk and Return II – Stochastic Model	
16.03.2021	3	Risk and Return III – Risk Measures	
23.03.2021	4	Risk aversion. Portfolios and Diversification	
30.03.2021	5	Efficient Diversification	
06.04.2021	6	Efficient Diversification	
13.04.2021	7a	Systematic Risk	
		Part 2 - Asset Pricing (TKR)	
13.04.2021	7b	The Capital Asset Pricing Model (CAPM)	
20.04.2021	8	Empirical Tests of the CAPM	
27.04.2021	9	Anomalies	
04.05.2021	10	Alternative Responses to the Empirical Evidence	
11.05.2021	11	Performance Measurement and Attribution	
18.05.2021	12	Market Efficiency, the Present-Value Relationship Case study: The Coronavirus and Financial Markets	
25.05.2021	13	Exercise & Review	
01.06.2021		Reserve	

## 8. Recommended books

A good German textbook with Excel applications is

- Poddig, T./ H. Brinkmann/ K. Seiler (2009): „Portfoliomanagement: Konzepte und Strategien“, 2. Auflage, Uhlenbruch Verlag

An excellent book for working with concrete examples in Excel is

- Benninga, S. (2014): “Financial modeling”, MIT-Press, CambridgeMA, 4th edition

An extremely useful introduction in empirical (econometric) methods used in finance with EViews applications is

- Brooks, C. (2019): “Introductory Econometrics for Finance”, Cambridge University Press, 4th edition

A lot of empirical material related to asset classes, return and risk estimates etc. can be found in

- Ilmanen, A. (2011): “Expected returns”, Wiley

Several advanced but practically extremely useful topics in portfolio management and asset allocation are covered by

- Scherer, B. (2015): “Portfolio Construction and Risk Budgeting”, Risk Books, 5th edition

Two textbooks emphasizing international issues in finance are

- Solnik, B./ D. McLeavey (2008): “Global investments”, 6<sup>th</sup> edition, Pearson/AddisonWesley
- Zimmermann, H./ W. Drobetz/ P. Oertmann (2002): “Global Allocation”, Wiley (slightly outdated, available from the first author at a discount)

A very readable and still elaborate introduction into the quantitative foundations of financial markets is given by

- Wilmott, P. (2007): „Paul Wilmott introduces Quantitative Finance“, 2<sup>nd</sup> edition, Wiley

This book provides an introduction to theoretical models and empirical methods in finance:

- Cuthbertson, K./ D. Nitzsche (2004): “Quantitative Financial Economics: Stocks, Bonds and Foreign Exchange”, 2nd edition, Wiley