Discipline: Finance

1. Language

English

2. Title

Advanced Topics in Asset Pricing and Capital Market Research

3. Lecturer

Prof. Dr. Joachim Grammig (University of Tübingen)

Prof. Dr. Jantje Sönksen (University of Hannover)

Prof. Dr. Erik Theissen (University of Mannheim)

4. Date and Location

February 17 – February 20, 2025

MLP Campus

Alte Heerstraße 40

69168 Wiesloch

5. Course Description

5.1 Abstract and Learning Objectives

Starting from a solid theoretical foundation, this course provides students with an understanding of important empirical methods and their application in asset pricing. It covers both the classical approaches based on Fama and MacBeth (1973) and Black, Jensen and Scholes (1972) - which are still widely used in current research - and GMM-based estimation methods. Furthermore, it shows how machine learning approaches can be meaningfully incorporated into modern asset pricing.

The course intends to enable students to plan and carry out empirical research in asset pricing on their own and prepares for an empirical PhD thesis in this area of finance.

5.2 Content

Part I

I.1 Theory Brush Up

I.2 Risk and Return

I.3 Efficient Markets

I.4 Empirical Tests of Portfolio Theory and Individual Investor Behavior

I.5 Tests of the CAPM

I.6 Testing the APT

I.7 Anomalies or Priced Risk Factors?

I.7 Further Topics (if time permits)

Part II

II.1 Bridging Financial Economics and Econometrics: Basic Asset Pricing Equation, Stochastic Discount Factors, and Generalized Method of Moments (GMM)

II.2 Preference-Based Asset Pricing: Habit, Long-Run-Risk, Rare Disasters, Investor Heterogeneity, …..

II.3 Linear Factor Models: Financial economic motivation, and how to estimate and test them (Scaled factors, scaled returns, the use of GMM)

II.4 Implementation issues

II.5 Econometric Theory of Asset Pricing (if time permits)

Part III

III.1 Popular machine learning methods in asset pricing

III.2 Using ML for empirical asset pricing, e.g.,

- …for conditional linear factor models
- ...for constructing test assets
- ...for recovering the SDF
- ...for predicting (excess) returns

III.3 Some practical considerations

5.3 Schedule

Part I: February 17 - 18, Erik Theissen

9:15-12:45 Break 14:00 -17:30

Part II: February 19, Joachim Grammig

9:15-12:45 Break 14:00 -17:30

Part III: February 20, Jantje Sönksen

9:15-12:45 Break 14:00 -17:30

6. Preparation and Literature

6.1 Prerequisites

Good knowledge of standard capital market theory (theory of portfolio selection, CAPM, APT) at the level of a standard Master course. Good knowledge of econometrics at the level of a Master course.

6.2 To prepare

Lecture slides will be provided upfront. Specific preparation for this course is not required, but some revision of capital market theory and econometric foundations might be beneficial to meet the prerequisites outlined above.

7. Administration

7.1 Max. number of participants

20 participants

7.2 Exam

Take home exam. The date will be coordinated with course participants during the course.

7.3 Credits

The course corresponds to a scope of 6 LP/ECTS

8. Work Time Expenditure

Distribution of Study Hours	**Hours**
Lectures	28
Revision	84
Preparation Take-Home Assignment	63
Take-Home Assignment	5
SUM	**180 h**