



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Portföljvalsteori **Portfolio Selection**

EXTF35, 7,5 credits, G2 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED I

Date of Decision: 2023-04-14

General Information

Elective for: I4

Language of instruction: The course will be given in English

Aim

The aim of the course is to provide a firm understanding of portfolio theory and investment analysis.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

have demonstrated a knowledge of portfolio theory and investment analysis, with particular emphasis on:

- the mean-variance model, especially ability to explain and critically appraise how the optimal portfolio is identified with and without a risk-free asset,
- factor models, including both the single index model and multifactor models,
- equilibrium models, with emphasis on the standard capital asset pricing model and the arbitrage pricing model,
- the efficient market hypothesis, especially knowledge of, and explanations of anomalies and how to test for inefficiencies by event-studies,
- valuation models, including both single-period and multi-period growth models,
- evaluation of portfolio management by benchmarking as well as by single parameter techniques.

Competences and skills

For a passing grade the student must

have demonstrated an ability to independently:

- make calculations in order to construct a mean-variance efficient optimal portfolio by means of suitable software and empirical data,
- make calculations in order to construct efficient portfolios based on factor models,
- make calculations in order to test equilibrium pricing models such as the capital asset pricing model,
- analyse and interpret the results of their own applied work and testing.
- communicate the results, analyses and conclusions of an empirical financial investigation clearly and unambiguously to non-specialist audiences.

Students shall also have sufficient competence to individually write an empirically orientated paper.

Judgement and approach

For a passing grade the student must

Students shall have the ability to pursue further studies in the subject and should be able to search for and evaluate information with a high degree of independence.

Contents

This is a course in both theoretical and applied portfolio analysis. Topics covered include problems related to mean-variance theory, index models, equilibrium and arbitrage pricing models, theories about efficient markets, valuation and evaluation of portfolio management and investment analysis. The course aims at training students in using software in order to identify optimal portfolios under different market conditions.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Tuition consists of lectures, discussions and computer exercises. Assigned readings are an integral part of the teaching methods. The examination consists of computer-based assignments and a written examination covering the reading materials and lectures. Each part of the examination must be passed. The written exam takes place at the end of the course. There will be further opportunities for examination close to this date. Other forms of examination may be used to a limited extent.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

Admission requirements:

- FMS012 Mathematical Statistics, Basic Course or FMSF45 Mathematical Statistics, Basic Course or FMSF80 Mathematical Statistics, Basic Course

The number of participants is limited to: No

The course overlaps following course/s: NEKH81, NEKK11, TEK030

Reading list

- Benninga, Simon (2008): "Financial Modeling", MIT Press, third edition.
- Bodie, Zvi, Alex Kane & Alan J. Marcus(2013): Investments and Portfolio Management, McGraw Hill, Global Edition tenth edition, ISBN 978-007-716114-9.
- Supplementary material.

Contact and other information

Course coordinator: Thomas Fischer, thomas.fischer@nek.lu.se

Course homepage: <http://www.nek.lu.se/GU/GUB.asp>

Further information: Identical with NEKH81