

M1 Financial Market Decisions	
Lecturer Prof. Dr. Michael Feucht	Module coordinator Prof. Dr. Michael Feucht
Content <ul style="list-style-type: none"> • Introduction to (Mathematical) Decision Theory • Modelling Risk and Uncertainty • Term Structure of Interest Rates, Forward Contracts and Futures • Fixed-Income Securities I: Duration • Fixed-Income Securities II: Convexity • Mean-Variance Portfolio Theory • Market Equilibrium I: CAPM • Market Equilibrium II: Arbitrage Pricing Theory • Modelling Equity, Debt, Currency and Commodity Markets • Introduction to Option Pricing • Structured Products • Markets and Psychology: Brief Introduction to Behavioural Finance 	
Prerequisite for participation <ul style="list-style-type: none"> • Basic knowledge about financial instruments and financial markets from any business or management related bachelor program 	
Preparation / Reading Recommended reading for course preparation: <ul style="list-style-type: none"> • David K. Eiteman, Arthur I. Stonehill, Michael H. Moffett: Multinational Business Finance, 13th ed., Addison-Wesley 2012 (Pearson International Edition) • Richard A. Brealey, Stewart C. Myers, Franklin Allen: Principles of Corporate Finance, 11th ed., McGrawHill 2013 	
Intendend learning outcomes <ul style="list-style-type: none"> • Students understand the essentials of mathematical decision theory as well as the psychological aspects of market participant behavior • They critically reflect the concepts for performance and risk measurement which are used to support decision taking in financial markets • Students are able to implement financial models for the valuation and analysis of fixed-income instruments (net present value, yield-to-maturity, duration, modified duration, convexity) in Excel and R. They know how to interpret the results of their calculations. • Students are able to simulate the results of CAPM (with given model parameters) in R. They are able to interpret the results for the minimum variance portfolio and the optimal market portfolio. They are aware of the fact that the major challenge in real life is the dynamic estimation of model parameters, which they will learn to implement in R (based upon real market data) in the elective module M6.2 “Advanced Risk Management” • This module M1 provides (in connection with M4 Financial Economics, Financial Institutions and Monetary Policy) a necessary basis for “Advanced Risk Management” • It can be used as stand-alone-module within any program with an advanced focus on financial markets 	
Teaching & Learning methods <ul style="list-style-type: none"> • „Seminaristischer Unterricht“ (Lecture with integrated practical problems) 	

- The lecture is supplemented by questions for discussion/practical problems/case studies which are either solved as teamwork in class or assigned as homework problems using statistical tools such as MS Excel and R.
- It is expected that students make use of the online learning tracks offered free of charge on <https://www.datacamp.com>. Assignments are the online courses (including online exercises)
 - Introduction to R for Finance
 - Intermediate R for Finance
 - Bond Valuation and Analysis in R

Completion of DataCamp courses is compensated with bonus points for the exam. Students are encouraged to complete further DataCamp courses for the DataCamp Study tracks “Finance Basics in R” and “Applied Finance in R”.
- Every student has to work on a semester project covering a historic case study on “Misbehavior of Markets versus Misbehavior of Market Participants”. The topic is assigned in the first classroom session. Depending on group size, topics may be assigned to groups of two. The semester project consists of a scientific paper and a professional presentation.

Literature

- Hansson, S., Decision Theory – A Brief Introduction, <http://www.infra.kth.se/~soh/decisiontheory.pdf> (link provided in Moodle)
- Hansson, S., Fallacies of Risk, <http://www.infra.kth.se/~soh/fallaciesofrisk.pdf> (link provided in Moodle)
- Hansson, S., Philosophical Perspectives on Risk, <http://www.infra.kth.se/~soh/PhilPerspRisk-text.pdf> (link provided in Moodle)
- Copeland, T., Weston, J., Shastri, K., Financial Theory and Corporate Policy, 4th ed., Amsterdam 2013 (chapters 1 through 8)
- Hull, J., Options, Futures and Other Derivatives, 8th edition, Toronto 2011
- Additional learning material (scientific papers, newspaper articles, corporate publications) will be provided in Moodle.
- Clifford S. Ang, Analyzing Financial Data and Implementing Financial Models Using R, Springer 2015 (available as e-Book in HSA’s library)

Course organisation

ECTS-Credits 6	SWS 4 (blocked in 6 weeks with 6 lecture hours each and 2 weeks with semester project presentations)	Language English
Kind of module Compulsory module	Turnus Winter term	Duration 1 semester
Workload 6 ECTS-Credits: 180 hours combined out of:		
<ul style="list-style-type: none"> • 27 hours lecture • 56 hours preparation/homework/self-study (including 20 hours for DataCamp courses on finance in R) • 24 hours for exercises and group work 		

<ul style="list-style-type: none"> • 49 hours for semester project and presentations • 12 hours exam preparation • 2 hours exam 		
Attendance (lectures) 6 weeks * 4.5 hours = 27 hours	Preparation / Homework / Self-study 12 weeks * 3 hours = 36 hours + 20 hours for DataCamp Courses	Time for exercises and group work 12 weeks * 2 hours = 24 hours
Semester project / Presentation <ul style="list-style-type: none"> • 40 hours for scientific work • 9 hours for presentations 	Exam preparation 24 hours	Exam time 120 minutes
Prerequisite for the exam <ul style="list-style-type: none"> • All students have to work on a semester project. As a prerequisite for the exam, students have to hand in a 20 page scientific paper and present their topic in a 20 minute presentation plus 10 minutes discussion. 		
Exam requirements <ul style="list-style-type: none"> • Pocket calculator • No other material allowed in the exam („closed book“) • Semester project and final exam are combined into one grade. They don't have to be passed separately. 	Weighting in examination Final grade: <ul style="list-style-type: none"> • 50% written exam • 25% scientific paper from semester project • 25% presentation 	