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# Financial Economics

A Concise Introduction  
to Classical and Behavioral  
Finance

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Financial Economics

Financial economics is a fascinating topic where ideas from economics, mathematics and, most recently, psychology are combined to understand financial markets. This book gives a concise introduction into this field and includes for the first time recent results from behavioral finance that help to understand many puzzles in traditional finance. The book is tailor made for master and PhD students and includes tests and exercises that enable the students to keep track of their progress. Parts of the book can also be used on a bachelor level. Researchers will find it particularly useful as a source for recent results in behavioral finance and decision theory.

The text book to this class is  
available at [www.springer.com](http://www.springer.com)

On the book's homepage at  
[www.financial-economics.de](http://www.financial-economics.de) there is  
further material available to this  
lecture, e.g. corrections and updates.

# Financial Economics

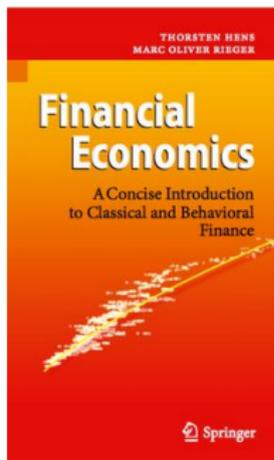
## A Concise Introduction to Classical and Behavioral Finance Chapter 1

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The contents of this course is based on the following book:



Hens, T. and Rieger, M.O. (2010).  
Financial Economics -  
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*Springer Verlag, Berlin Heidelberg.*  
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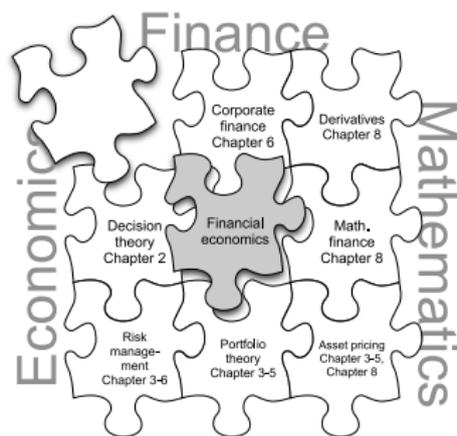


## Introduction

*“Advice is the only commodity on the market where the supply always exceeds the demand.” Anonymous*

*Let's give some advice to you!*

# Scientific Map



- Topics of finance include: public finance, international finance, corporate finance, derivatives, risk management, portfolio theory, asset pricing, and financial economics.
- Financial economics is the interface that connects finance to economics.

# Financial Economics

Financial economics is about trade among agents.

- Agents trade interest bearing, dividends paying assets, derivatives.
- Economic perspective: agents trade time, risks and beliefs on financial markets.
- Aggregation of different valuations at a market equilibrium into market prices.

Classical Finance: aggregation approach sufficient to describe financial markets. Example: Trading risks

- A farmer is naturally exposed to the risk of falling crop prices.
- A food company is exposed to the risk of increasing crop prices.
- In the market for commodities, forwards can be used to agree on a price for a commodity and thus trade risk.
- Both parties' risk exposure has been reduced.

Examples for trading time and beliefs can be found in the text book on page 6 f.

# Arbitrage and excess Returns

An efficient financial market is a market without any further gains from trade. It is arbitrage-free, since arbitrage opportunities give gains from trades. (Arbitrage opportunity: self-financing trading strategy)

Example: Derivative valuation

- The payoff of the derivative can be duplicated by a portfolio of the underlying and e.g. a risk-free asset.
- The price of the derivative must be the same as the value of the duplicating portfolio.
- Why? Otherwise, one could build an arbitrage strategy by shorting the asset and hedging the payoff by holding the duplicating portfolio.

# Arbitrage and Excess Returns

An excess return is a return higher than the risk-free rate adjusted by the risk involved.

- An excess return is usually no arbitrage opportunity since it carries some risks.
- One reason to trade on financial markets is to gain excess returns or “a positive Alpha”.
- Since efficient financial markets are arbitrage-free, it is often argued that such gains are not possible and thus one cannot profit from trades.
- But: there are more reasons for trading on financial markets: risk and time.
- By trading, the risk of an initial portfolio can be controlled, e.g. by buying capital protection (insurance against losses).

# Market Efficiency

Double meaning of “efficiency” in financial markets:

- 1** Markets are efficient if prices incorporate all information (Fama).  
Makes paying analysts to research the opportunities and the risks of certain companies worthless since the market has already priced the company reflecting all available information.
- 2** Efficient markets do not have any unexploited gains from trade.  
Allocation on efficient markets cannot be improved by raising the utility of one agent without lowering the utility of some other agent (Pareto efficiency).

# Equilibrium

## Competitive market equilibrium:

- In a competitive equilibrium all agents trade in such a way as to achieve the most desirable consumption pattern, and market prices are such that all markets clear, i.e., in all markets demand is equal to supply.
- Equilibrium prices reflect the relative scarcity of consumption in different states, the agents' beliefs of the occurrence of the states and their risk preferences.
- At equilibrium, there are no further gains from trade.
- For one given initial allocation there can be multiple equilibria.
- Which equilibrium is actually obtained depends on exogenous factors.
- Asset prices at equilibrium can be determined without knowing all agents' beliefs, risk attitudes and initial endowments.

# Time Scale of Investment Decisions

- Investors differ in their horizon, information processing and reaction time (day traders vs. investors with long investment horizons).
- Intraday price movements reflect how the average investor perceives incoming news.
- The very long run price movements are determined by trends in the fundamental data.
- Excess volatility (Shiller): stock prices fluctuate around the long terms trend by more than economic fundamentals indicate.
- Three different time scales usually used:
  - Short run (intraday market clearing of demand and supply orders)
  - Medium run (monthly equalization of expectations).
  - Long run (yearly wealth dynamics).

# Behavioral Economics

- A rational investor should follow expected utility theory.
- Agents do often not behave according to this rational decisions model.
- Concepts of classical (rational) decision theory have often been replaced with a more descriptive approach (“behavioral decision theory”).
- Behavioral finance is used to study deviations from perfectly rational behavior.
- Example for a behavioral model: Prospect Theory (Kahnemann & Tversky).

Definition of behavioral finance by Richard Thaler:

*Behavioral finance is simply open-minded finance. [...] Sometimes in order to find a solution to an [financial] empirical puzzle it is necessary to entertain the possibility that some of the agents in the economy behave less than fully rational some of the time.*

More details can be found in the text book on page 11f.

# Research Methods

A good theory is based on observable assumptions, testable implications, and a broad generalization of reality.

Two ways to gather empirical evidence to support or falsify a theory on financial markets:

- Study of financial markets data.
- conduction of surveys and laboratory experiments.

Both approaches have their advantages and limitations:

	Advantages	Limitations
Market Data	Always comes from real life situations	often noisy; uncontrollable factors; might not be able to be specific
Surveys and laboratory experiments	can be collected under controlled conditions	small number of subjects; unrealistic settings

Today, both methods are frequently used together.

More details can be found in the text book on page 12f.

# Overview on this book

What the book covers:

- 1 Introduction (we are here!)
- 2 Decision Theory
- 3 Two-Period Model: Mean-Variance Approach
- 4 Two-Period Model: State-Preference Approach
- 5 Multiple-Periods Model
- 6 Theory of the Firm
- 7 Information Asymmetries on Financial Markets
- 8 Time-Continuous Model

# Overview on this book

## Structure of the book:

- Each chapter contains a short summary at the end.
- The main chapters contain exercises and tests.
- Solutions to tests are given in the Appendix.
- Solutions to exercises and further information is available at [www.financial-economics.de](http://www.financial-economics.de)

We wish you a successful lecture!