GUTENBERG SCHOOL OF MANAGEMENT & ECONOMICS

JG|U

Johannes-Gutenberg Universität Mainz
Master in International Economics and Public Policy

Financial Economics II

Syllabus

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Winter term 2016/17

Outline

This course deals with current research in financial economics with a particular emphasis on *asset pricing*. The general goal is to provide a survey of both the theory and the econometrics of asset pricing. In a nutshell, we seek to take models to the data, i.e., to first motivate and build a theoretical model and then use econometric methods to test how well it holds up against the data. In addition, we will apply econometric methods to describe the behavior of financial markets from a purely empirical perspective which can then serve to develop better theory.

With the previous objective, the material presented in this course can be divided into two parts. **Part 1** covers the *Theory of Asset Pricing*. Motivated by a set of empirical phenomena, the goal is to provide a survey of mathematical models aiming to explain the mechanics of financial markets, e.g., which factors affect individual portfolio decisions, how asset prices are determined, which role expectations about future returns play, etc. In this regard, we will study models such as the Consumption-Based Capital Asset Pricing model and linear factor models, and introduce concepts such as a pricing kernel, mean-variance efficiency, expected return betas, etc.

Part 2 focuses on the *Econometrics of Asset Pricing*. The first step is to review (or introduce) a set of standard econometric techniques such as OLS/GLS regression, Generalized Method of Moments (GMM), Maximum Likelihood, etc. which can be employed to estimate the parameters of linear and non-linear models. In a second step, we will apply these methods to test and evaluate the performance of our models from Part 1 empirically. In addition, we can and will also use econometric methods to identify empirical facts which are independent of a particular theory, e.g., which variables predict future returns or signal the emergence of financial crises. Such insights often turn out to be the driver for the development of better theories and models.

Prerequisites

Basic knowledge in mathematics (calculus, linear algebra,...) and statistics (probability theory, regression analysis,...) is required. The course structure outlined above allows you to build some prior econometric knowledge by attending the MIEPP course '*Introductory Econometrics*' which is taught in the first half of the semester. As we will make extensive use of econometric methods, you are strongly encouraged to take this course.

Readings

The course is mainly based on the book '*Asset Pricing*' by Cochrane (2005), which covers both the theory as well as the econometrics. For a deeper foundation of the econometric methods, we will draw on '*A Primer in Econometric Theory*' by Stachurski (2016). Additional references and material (data sets, etc.) will be provided in class!

Organization

Lecture classes are accompanied by tutorial classes in which problem sets are discussed.

- Lecture classes: Thursday, 12:15 - 13:45 in RW2 starting **November 3**.
- Tutorial classes: Tuesday, 16:15 - 17:45 in HS 10 (Forum) starting on **November 15**.
- Course website: `http://www.financial.economics.uni-mainz.de/732.php`.
- Slides, problem sets, and additional material disseminated via `Reader`.
- Any and all questions to `mhillebr@uni-mainz.de`.

Objectives and style

- General objectives:
  - offer a survey of current research in financial economics
  - connect theoretical results with empirical observations
  - provide mathematical tools and methods required to solve asset pricing models
  - review econometric methods needed to estimate and evaluate these models
  - enable participants to understand the *literature* in the field
  - whet your appetite for further *specialization* on a particular topic.
- *Quantitative style*, focus on selected models representative for entire field.
- *Problem sets* serve to illustrate and amplify all results presented in class.

Exam

There are several options. All details will be discussed in the first class on November 3.

References

Cochrane, J. H. (2005): *Asset Pricing*. Princeton University Press, Princeton and Oxford.

Stachurski, J. (2016): *A Primer in Econometric Theory*. MIT Press, Cambridge, Mass.