The Doctoral Program in Finance at the University of Zurich

Prerequisite reading material

The suggested material below serves as prerequisite reading for the courses in the first year of coursework. As such, we strongly encourage you to study it before the program starts. Some of the books mentioned will be also used in your coursework and/or serve as good reference material, and so we recommend you include them in your personal library.

A. Core: Finance and Economics

1. Microeconomic Theory

You should begin reading the first few chapters of the same-named textbook by Mas-Colell, Whinston and Green, the book used in our program. If you are very weak in microeconomics, you might want to start with a good undergraduate, but still calculus-based, book, such as Microeconomic Theory: Basic Principles and Extensions, by Nicholson, or Microeconomics, by Gravelle and Rees (which is, according to the authors, designed to fit in between beginner books and the "magisterial" Mas-Colell et al). Another useful book is Advanced Microeconomic Theory by Jehle and Reny.

2. Financial Economics and Asset Pricing

You should have subject knowledge at least at the level of the popular book: Modern Portfolio Theory and Investment Analysis, by Elton, Gruber, Brown and Goetzmann, and potentially at the level of Investment Science, by Luenberger. The book Financial Economics, by Eichberger and Harper is also worth looking at.

3. Corporate Finance

The prerequisite subject knowledge is at the level of the popular book: Principles of Corporate Finance, by Brealey and Myers, though you do not have to purchase this book if you do not already own it. In Corporate Finance theory, early on, you will become exposed to models of asymmetric information. Thus, you may wish to review some suitable background material, such as Salanie, The Economics of Contracts, chapters 1-5.

B. Tools: Mathematics and Quantitative Methods

4. Fundamental Mathematics

We recommend something at the level of Essential Mathematics for Economic Analysis, by Sydsaeter and Hammond, as well as Further Mathematics for Economic Analysis, 2005, by the same authors. There are several such "math for economists" books, and you probably already own one.

5. Probability Theory and Stochastic Calculus

For basic probability theory as needed for graduate level econometrics, financial econometrics, and quantitative risk management, we recommend Fundamental Probability by Paolella. In addition to all the prerequisite material in basic probability and distribution theory, the book has the associated relevant material on real analysis and computer programming (in Matlab and R). It also serves as the basis, and is referred to, in the book Intermediate Probability by Paolella, which is used in the program.

For background in stochastic calculus, have a look at Introduction to Stochastic Calculus Applied to Finance, by Lamberton and Lapeyre, and Introduction to Mathematical Finance, by Pliska. A new book which appears very accessible is Brownian Motion Calculus, by Wiersema.

6. Computer Programming.

If you have little or no computer programming experience, you might find yourself at a disadvantage in several courses, and also for your empirical and/or simulation-based theoretical research interests. Languages such as R or Matlab are ideal. Note that R is free and can be downloaded from the web. The internet also contains free tutorial material for both packages.