

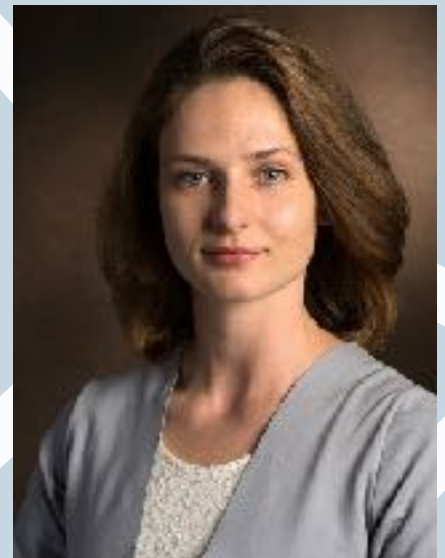
High Dimensional Nonstationary Time Series

IRTG 1792 Short Course

Maria Grith

Pricing Kernels in Option Pricing

Pricing kernels lie at the heart of asset pricing. In particular, cross-sectional European option prices contain important information about the expectations of investors. To illustrate the concept, we first examine the derivation of the pricing kernel in the casebook studies (e.g., binomial model and Geometric Brownian Motion). This part relies on basic concepts in financial mathematics. In the second part of the course, we discuss the nonparametric estimation of the pricing kernel from traded options and asset returns. For this purpose, we use nonparametric and functional data analysis methods. We illustrate the methods with DAX and S&P 500 data and discuss the implications for the risk behavior in the market.



Dr. Maria Grith is an Assistant professor in Econometrics at Erasmus University Rotterdam. She received her Ph.D. in Economics in 2013 from Humboldt University of Berlin. Before joining Erasmus, she had postdoctoral appointments at the University of Pennsylvania, Singapore Management University, and Humboldt University of Berlin. Her work focuses on developing and applying statistical methods for studying dynamic high-dimensional data settings. It relies on nonparametric and semiparametric approaches, functional data, as well as graphical models. The applications of the research lie mostly in the field of finance. She has co-authored articles published in statistics, econometrics, and finance journals, such as Statistica Sinica, Review of Finance, and Journal of Financial Econometrics. Dr. Grith is a coordinator of the Erasmus School of Economics (ESE) Female Network aimed to enhance the representation of women in economics.

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