

Asset Pricing

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Material:

- Lecture notes

Additional references:

- [1] Cochrane, J. 2001, *Asset Pricing*, Princeton University Press.
- [2] Gouriéroux, C. and J. Jasiak, 2001, *Financial Econometrics: Problems, Models, and Methods*, Princeton University Press.

Course description: This course presents the modern approach to the pricing of financial assets based on the stochastic discount factor (SDF) methodology. This methodology gives the representation of the price of any financial asset as the expectation of its stochastically discounted final payoff. It allows to treat in a unified way the pricing problem of financial assets under general market conditions, including settings with, for instance, stochastic interest rates and volatilities. We first introduce the SDF approach to the representation and the computation of asset prices. Applications to the pricing problem under stochastic volatilities or stochastic interest rates will be also highlighted. Depending on time availability, we will then address the empirical analysis of SDF models, by showing how it can be naturally developed within the Generalized Method of Moments (GMM) setting. Examples of real data applications to asset pricing problems, relevant both for academic research and in the practice, will be discussed.

Contents:

1. The stochastic discount factor (SDF) approach
 - (a) Intertemporal utility
 - (b) The SDF in a (time-additive) intertemporal utility framework
 - (c) The SDF in an arbitrage-free market context
 - (d) Arbitrage-free SDF models for stochastic interest rates and stochastic volatility
 - (e) The SDF in a recursive utility framework
2. Econometric analysis of asset pricing models
 - (a) Conditional and unconditional moment restrictions
 - (b) Generalized Method of Moments (GMM) estimation
 - (c) Testing asset pricing models
3. Selected applications
 - (a) GMM inference in empirical asset pricing models
 - (b) Calibration of Gaussian term structure models
 - (c) Calibration of consumption based asset pricing models