SFB Colloquium Series

It is a pleasure to announce a guest lecture with the title

Consistent Price Systems and a Utility-Based Proof of the Fundamental Theorem of Asset Pricing under Transaction Costs

SPEAKER: **Prof. Dr. Jörn Sass**, Technical University Kaiserslautern
TIME: Thursday, August 28, 2014, 10.30
LOCATION: S3 047

Even in a complete discrete-time model like a simple binomial model it might happen that with proportional transaction costs the replication price for a financial derivative is higher than the superhedging price. In such a case, the price system based on replication is not consistent, it may lead to riskless profits, i.e. to arbitrage. This is different to the model without costs.

How can we find a consistent price system? In an incomplete market without transaction costs, consistent prices for financial derivatives can be obtained by taking expectation of the claim with respect to some martingale measure. With costs, a consistent price system consists of a choice of a price process within the bid-ask prices and a corresponding measure.

Does there exist a consistent price system? The fundamental theorem of asset pricing states an equivalence of the existence of consisten price systems and the absence of arbitrage. In our setting this has been proved by W. Schachermayer (2004).

After explaining in detail the concept of consistent price systems under transaction costs, we provide an new proof of this theorem based on utility maximization arguments. This extends an approach of L.C.G. Rogers (1994) to the setting with transaction costs.

The lecture will be followed by a general discussion.