



Actuarial Studies Seminar
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Risk Minimization in Stochastic Volatility Models: Model Risk and Empirical Performance

In this paper the performance of locally risk-minimizing delta hedge strategies for European options in stochastic volatility models is studied from an experimental as well as from an empirical perspective. These hedge strategies are derived for a large class of diffusion-type stochastic volatility models, and they are as easy to implement as usual delta hedges. Our simulation results on model risk show that these risk-minimizing hedges are robust with respect to uncertainty and misconceptions about the underlying data generating process. The empirical study, which includes the U.S. sub-prime crisis period, documents that in equity markets risk-minimizing delta hedges consistently outperform usual delta hedges by approximately halving the standard deviation of the profit-and-loss ratio.

This is joint work with Rolf Poulsen (Copenhagen) and Klaus-Reiner Schenk-Hoppe (Leeds).

The paper is forthcoming in Quantitative Finance. An old version can be obtained from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=964739