Risk Management for Derivatives in Illiquid Markets: A Simulation Study

Chapter

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Rüdiger Frey & Pierre Patie

Summary

In this paper we study the hedging of derivatives in illiquid markets. More specifically we consider a model where the implementation of a hedging strategy affects the price of the underlying security. Following earlier work we characterize perfect hedging strategies by a nonlinear version of the Black-Scholes PDE. The core of the paper consists of a simulation study. We present numerical results on the impact of market illiquidity on hedge cost and Greeks of derivatives. We go on and offer a new explanation of the smile pattern of implied volatility related to the lack of market liquidity. Finally we present simulations on the performance of different hedging strategies in illiquid markets.

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Author information

Authors and Affiliations

Swiss Banking Institute, University of Zurich, Switzerland

Rüdiger Frey

RiskLab, Department of Mathematics, ETH Zurich, Switzerland

Pierre Patie

Editor information

Editors and Affiliations

Lehrstuhl für Bankbetriebslehre, Johannes Gutenberg-Universität Mainz, Jakob Welder-Weg 9, 55128, Mainz, Germany

Klaus Sandmann

Inst. f. Gesellschafts- u. Wirtschaftswissenschaften Statistische Abteilung, Rheinische Friedrich-Wilhelms-Universität Bonn, Adenauerallee 24-42, 53113, Bonn, Germany

Philipp J. Schönbucher

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