

Performance of Hedging Strategies in Interval Models

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Abstract: For a proper assessment of risks associated with the trading of derivatives, the performance of hedging strategies should be evaluated not only in the context of the idealized model that has served as the basis of strategy development, but also in the context of other models. In this paper we consider the class of so-called interval models as a possible testing ground. In the context of such models the fair price of a derivative contract is not uniquely determined and we characterize the interval of fair prices for European-style options with convex payoff both in terms of strategies and in terms of martingale measures. We compare interval models to tree models as a basis for worst-case analysis. It turns out that the added flexibility of the interval model may have an important effect on the size of the worst-case loss.

Keywords: uncertain volatility; robustness; option pricing; delta hedging; binomial tree martingale measure;

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