The implied integrated variance a Bayesian approach

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Abstract

We consider the inverse problem of option implied integrated variance in a Bayesian framework. We present a method to estimate both the implied integrated variance and the correlation between stock price and volatility shocks, and discuss the problems and effect of noisy option price data. We suggest possible applications of the implied integrated variance: volatility derivatives, risk-neutral price densities and related option pricing, and hedging. The Bayesian approach provides not only estimates of the unknowns of interest, but also information on the reliability of these estimates.

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