Dante Amengual: “Market-based Estimation of Stochastic Volatility Models”

Abstract:

No-arbitrage arguments are used to characterize families of consistent variance curve models parameterized in terms of observed variance swap rates. As a by-product, the dynamics of the spot volatility of the underlying stock is recovered. Absence of latent variables makes MLE straightforward and no-arbitrage restrictions lead to significant efficiency gains in the estimation of drift parameters when inference is based on observations of several variance swap rates. Empirical results using variance swap rates on S&P500 suggest that linear mean-reverting one factor models provide inaccurate representation of the dynamics of the stochastic volatility.