

PDE pricing of financial instruments with stochastic correlation

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Correlation between financial quantities plays an important role in pricing financial derivatives. Existing popular models assume that correlation either is constant, or exhibits some deterministic behaviour. However, market observations suggest that correlation is a stochastic process.

We are interested in deriving the Partial Differential Equation (PDE) problems for pricing financial derivatives assuming stochastic correlation, solving them by accurate and efficient numerical methods, and studying the effect of the model to the prices. We present the PDE, the numerical solution, and comparison of the PDE results to a Monte-Carlo simulation. We also discuss the relevant numerical challenges.