

PDE pricing for options under stochastic correlation

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We formulate an option pricing problem and its corresponding PDE in the presence of stochasticity in correlations. The correlation process is treated as an extra variable driven by a Brownian motion. Numerical and asymptotic approximations are presented. Various types of options are discussed, including quanto and rainbow options. Experiments demonstrate good agreement between our numerical and asymptotic approximations. We conclude with a numerical demonstration of effects of model parameters on option prices.

Joint work with Christina Christara.