

The dependence structure in the Risk Neutral World and in the Real World

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In the multivariate Samuelson model of market prices, on which Black-Scholes formula is based, the copula of joint distribution of asset prices in the Risk Neutral World remains the same as in Real World. This fact remains valid when we soften the model assumptions and allow the coefficients of the underlying diffusions to vary but only in a deterministic way.

In my talk I am going to discuss the case when these coefficients are stochastic and show that then the copulas of the same stochastic price process in risk neutral and objective measures may be different.