Abstract

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Black and Scholes' (1973) classic model of valuation of European options assumes that the logarithmic returns of a financial asset are distributed normally, even though several empirical studies show, first, that this distribution may be asymmetric and have "heavy tails", and second, that the variance of the price of the asset is not finite. This article presents the numerical implementation of three alternative models: constant elasticity of variance (1976), jump-diffusion (1976), and stochastic volatility (1987).

Key words: stochastic differential equations, Itô's lemma, valuation of options, Monte Carlo simulation. **JEL:** C15, C63, G1