

Pricing Options using the Hedged Monte Carlo Method

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Abstract:

The goal of this work is to analyze the effect of underlying asset model selection on option prices. This is performed by using the Hedged Monte Carlo Method, originally proposed by Potter et al. This method was chosen because it allows the use of the data on the historical measure. Furthermore, it allows the pricing of various types of derivatives (including merican options) for any underlying asset model that can be effectively simulated.

For this comparative analysis, we used data from the Brazilian market in the context of several models, including: Geometric Brownian Motion, Geometric Brownian Motion with Jumps and Generalized Autoregressive Model Conditional Heteroscedasticity (GARCH).