

Geometric fractional Brownian motion model for commodity market simulation

ABSTRACT

The geometric Brownian motion (GBM) model is a mathematical model that has been used to model asset price paths. By incorporating Hurst parameter to GBM to characterize long-memory phenomenon, the geometric fractional Brownian motion (GFBM) model was introduced, which allows its disjoint increments to be correlated. This paper investigates the accuracy of GBM and GFBM in modelling Malaysia's crude palm oil price simulation, and to see display of persistent or anti-persistent behaviour across different periods. Results show that the GFBM model is more accurate than the GBM model in simulating future price path for the given data set.

Keyword: Stochastic model; Regression; Data analysis; Crude palm oil