

عنوان مقاله:

Pricing of Commodity Futures Contract by Using of Spot Price Jump-Diffusion Process

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خلاصه مقاله:

Futures contract is one of the most important derivatives that is used in financial markets in all over the world to buy or sell an asset or commodity in the future. Pricing of this tool depends on expected price of asset or commodity at the maturity date. According to this, theoretical futures pricing models try to find this expected price in order to use in the futures contract. So in this article, three futures pricing models have been considered. In the first model, one-factor pricing model without spot price jump has been presented. In this model futures price of commodity is a function of spot price and remaining time to maturity. In the others, the models have been expanded by using jump-diffusion processes and stochastic jump in spot price. Then, to empirically study the models, NYMEX WTI crude oil futures price data has been used and parameters have been estimated with Kalman filter algorithm. The empirical results show that the one factor model with uniform jump is suitable to explain the crude oil spot price behavior and its futures price. This model and estimated parameters provide the useful tool to predict NYMEX WTI oil future prices.

کلمات کلیدی:

futures contract, spot price, jump-diffusion, Kalman Filter, Oil futures

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