

A comparison of the prices of European and American-style Commodity Options in the WTI Oil Market*

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Abstract

Both individual investors and large companies widely use commodity options to hedge against fluctuations in commodity prices and the prices of commodities traded on exchanges. The asymmetric distribution of risk enables option buyers to transfer the consequences of adverse price movements to option writers. However, the most important factor is choosing the right parameters and types of options for hedging strategies.

The study aims to compare option premium levels for WTI crude oil futures options. The study focuses on European and American-style options with maturities ranging from one to six months. European options were priced using the Black model, while American options were given their actual values from the NYMEX exchange. The comparative analysis revealed that American options had the largest price increments in the out-of-the-money (OTM) options group. This was particularly evident for put options. Significantly smaller value increments were recorded for in-the-money (ITM) options. For all analysed option groups, a decrease in value increments was noted as the exercise time lengthened. These results may help investors select the exercise time and strike price of options to hedge against oil price fluctuations.

Keywords: option pricing, American-style option, European-style option, WTI crude oil, implied volatility.