RETURN AND VOLATILITY SPILLOVERS IN CRUDE OIL MARKET AND GOLD MARKETS

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Abstract

Much of the economics literature asserts that crude oil and gold prices consistently affect global economic growth. Most studies have examined the existence of a long-term co-integration relationship between these two commodities' index returns, but none of the studies investigates their short-term volatility spillover effect relationship, if any. The current study fills this research gap by using an exponential generalized autoregressive conditional heteroskedasticity model with two variables(Bi-EGARCH) to examine the series-based short-term relationships (i.e., the return rate, volatility interrelation, and spillover effect) between crude oil and gold prices. The results indicated that crude oil and gold returns in our model containing an unrestricted intercept and an unrestricted trend were found to have a long-term co-integration relationship. In the short-term volatility leverage effect, the gold and oil return rate were found to be significant and have the same market leverage effect.
Moreover, the standardized residual from the previous gold and oil session had a significant impact on current volatility. Regarding the cross-market spillover effect, the impact of the market retreat of oil indices on the conditional volatility of gold indices was weakened and found to be insignificant, but the impact of the market advance of gold indices on the conditional volatility of oil indices, owing to the sign effect, was found to be significant and to have more stronger.

Keyword：Crude oil prices, Gold prices, An exponential generalized autoregressive