
Volatility and Jump spillovers between Crude Oil Price and the Exchange rate: An Intraday Analysis

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Abstract

The aim of this paper is to examine volatility co-movement between the oil market and the dollar exchange rate against the three main international currencies: Euro, GBP and JPY. We use recent intraday data from December, 2014 to February, 2016, to investigate the instantaneous intraday linkages between these two markets. Specifically, we investigate the spillover of extreme price changes (jumps) from the foreign market to the oil market and from the oil market to the foreign market. Our intraday analysis reveals several results. First, we show that there is a bidirectional complex volatility spillover between the foreign exchange market and the oil market. Second, we highlight a negative relationship between oil returns and dollar/euro and dollar/GBP returns, which means that an appreciation of US dollars against these currencies decreases oil prices. Third, it seems also that intraday jumps occurred in the foreign market have a significant impact on oil market conditional volatility. Finally, we show that intraday jumps occur simultaneously in the foreign exchange rate market and in the oil market, which validates the hypothesis of co-jumps.

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