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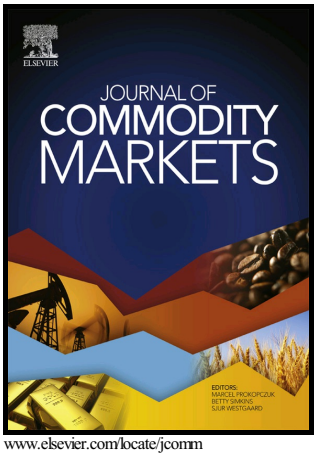

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The connectedness between crude oil and financial markets: Evidence from implied volatility indices

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Abstract

In this paper we exploit newly introduced implied volatility indexes to investigate the directional risk transfer from oil to US equities, Euro/Dollar exchange rates, precious metals and agricultural commodities. We find significant volatility transmission from oil to equities but little transmission to agricultural commodities. The total pairwise directional connectedness to equities is around 20.4%, while it is only 1.6%, 1.0% and 2.0% to wheat, corn, and soybeans respectively. The risk spillover from oil to precious metals and Euro/Dollar foreign exchange rates is moderate. For instance, the oil market uncertainty spills 11.0%, 11.1% and 8.9% to gold, silver and Euro/Dollar exchange rate respectively. The volatility crossover from all of these markets to oil is tiny, implying that oil is the main driver of its association with these markets. Finally, we provide evidence that the transmission from oil to other markets has increased since the collapse of oil prices in July 2014.

Keywords: Oil price volatility; equity volatility, directional connectedness; implied volatility.

JEL Classification: E32, C32

1. Introduction

Recently, a number of papers have studied the co-movement of oil with equities, agricultural commodities and precious metals. Prior studies provide evidence on the connectedness between oil and one or more markets. However, the bulk of these studies have so far focused on price connectedness. Little research has been dedicated to volatility association. Like prices, volatilities are