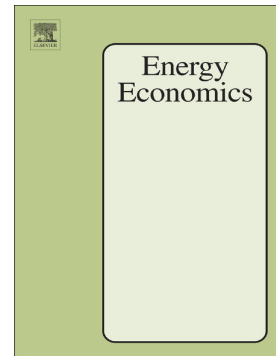


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Analyzing Volatility Transmission Using Group Transfer Entropy

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Abstract

We analyze the transmission of volatility between the oil, stock, gold, and currency markets using transfer entropy. Our approach, which we denote by group transfer entropy, measures the overall sensitivity of a process to lagged realizations of a group of other processes. We supplement our measure by a suitable block bootstrap approach which allows to conduct inference. Our empirical analysis uses daily data of OVX, VIX, GVZ, and EVZ from 2008 to 2017. The results show that oil and stock market volatility are the most affected by past volatility changes in the other markets, which highlights the importance for investors to hedge against this predictable risk transmission. Furthermore, we show that group transfer entropy can unveil nonlinear dynamics beyond the standard vector autoregressive methodology and provides a useful basis for forecast averaging.

Keywords: transfer entropy, volatility transmission, oil market, forecast averaging

JEL: C32, C35, G19

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