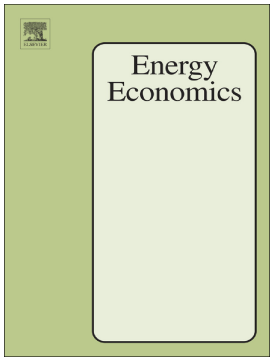

"De-financialization" of commodities? Evidence from stock, crude oil and natural gas markets

Yue-Jun Zhang, Julien Chevallier, Khaled Guesmi

PII: S0140-9883(17)30327-4
DOI: doi:10.1016/j.eneco.2017.09.024
Reference: ENEECO 3772

To appear in:

Received date: 29 April 2017
Revised date: 20 September 2017
Accepted date: 28 September 2017

Please cite this article as: Yue-Jun Zhang, Julien Chevallier, Khaled Guesmi , "De-financialization" of commodities? Evidence from stock, crude oil and natural gas markets. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Eneeco(2017), doi:10.1016/j.eneco.2017.09.024

"De-financialization" of commodities? Evidence from stock, crude oil and natural gas markets

Yue-Jun Zhang [a,b*], Julien Chevallier [c,d*] and Khaled Guesmi [c]

[a] *Business School, Hunan University, Changsha 410082, China*

[b] *Center for Resource and Environmental Management, Hunan University, Changsha 410082, China*

[c] *IPAG Business School (IPAG Lab), 184 Boulevard Saint-Germain, 75006 Paris, France*

[d] *Université Paris 8 (LED), 2 rue de la Liberté, 93526 Saint-Denis Cedex, France*

Abstract:

In order to investigate whether the crude oil and natural gas market volatility is influenced by the volatility in the stock market or whether these different variables move all together, we introduce the Volatility Threshold Dynamic Conditional Correlations (VT-DCC) approach to investigate the spillover effect of stock market volatility index (VIX, VSTOXX) on crude oil and natural gas markets during 1999-2015, and make the correlation dynamics dependent on conditional variance values through a threshold grid search algorithm. By detecting one endogenous break point in the raw series, we identify two clusters: one in 2008 and another in 2014, due to the financial crisis and the structural low oil prices linked to changing fundamentals, respectively. Also, the U.S. Henry Hub gas seems to be associated with the stock market volatility indexes, contrary to the European NBP gas, which is linked to the Brent. Besides, regarding the volatility behaviors of our series, the four energy variables violate their thresholds at similar moments, and the stock market VIX and VSTOXX exhibit logically similarities. Co-movements are detectable as well between the VIX and crude oil series, when investigating the volatility extracted from the GARCH model. In addition, the Block-DCC estimates provide ample evidence of similarities in the correlation dynamics between the crude oil and stock volatility series. It should be noted that the modeling framework proposed in this paper represents a useful tool for the study of cross-market contagion.

Keywords: financialization of commodities; stock market volatility; VIX; VSTOXX; crude oil; natural gas

JEL Codes: C5; G1; Q4

[*] *Corresponding author*. E-mail : zyjmis@126.com (Yue-Jun Zhang), julien.chevallier@ipag.fr(Julien Chevallier).