

Multiscale relationship between oil prices and China inflation revisited: using wavelet coherence analysis

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Abstract

This paper investigated the multiscale relationship between the crude oil prices and China's macroeconomy under different time-frequency domains. The continuous wavelet transforms have been applied to analyse the time-frequency lead-lag relationship of oil price changes on China's macroeconomy. Based on the empirical results, we found specific periods and frequencies where the strong correlation between oil prices and the China 's inflation exists.

Keywords: Multiscale relationship Inflation; Oil price; Wavelet coherency

1 Introduction

With the rapid development of China's economy, China has become the second largest world oil consumer. The fluctuation of the international oil prices will have more significant impact on China's macroeconomy than ever (Du, He et al. 2010). The relationship between the world oil prices and economic activities of China has been extensively studied. Most of researches focus on the oil price shocks on the stock market in China (Cong, Wei et al. 2008, Li, Zhu et al. 2012, Fang and You 2014), on the real exchange rate (Huang and Guo 2007) and on the Chinese exports (Faria, Mollick et al. 2009). Some scholars provide the evidence that the world oil price have significant and non-linear impacts on China's economic growth and inflation (Du, He et al. 2010). However, most of the existing studies have been performed based on a holistic analysis throughout the observed periods in the time domain. The frequencies domain is left out, and some researchers provide evidence that there exists some interesting relations between the international oil prices and China's inflation at different