Can Scarce Energy Resources Slow Down China's Economic Growth?

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JEL Codes: F, G.

Abstract

China's demand for energy resources, - in particular for coal -, will continue to increase until 2025, after which date the country will be able to experience a decline of its dependency on coal due to the development of efficiency-led technologies (IEA, 2007; Exxonmobil, 2012). China's energy mix will also increasingly include oil and gas resources. The country's dependency on non-renewable fossil fuels implies that China is becoming one of the world's largest emitters of greenhouse gases, leading to the challenge of minimizing the contamination levels that affect health (Watts, 2010). The country increasingly needs to look at the potential role of renewable energy sources that will allow its economy to grow.

Early research on the importance of energy resources to economic development (Hamilton, 1983) concluded that increases in oil prices lead to declines in real GNP. It is thus reasonable to expect the existence of high correlations between oil prices and the country major macroeconomic variables such as consumption, investment and production levels.

The behavior of oil prices has recently received special attention, with oil prices on a new high path. The rises in both oil prices and oil price volatility are explained by many drivers including strong demand from emerging economies, lack of spare capacity in upstream oil, distributional bottlenecks and the increasing role of speculators and traders (Fattouh, 2007). The level of volatility in energy markets influences the corporate sector's investment decisions and the bank's willingness and ability to extend credit facilities (Panetta et al., 2006). Therefore, it is important to understand how energy markets instability can affect economic growth. Consequently, this paper proposes to analyze the extent to which the current energy markets situation impacts upon Chinese economic development. The main research question seeks to investigate how energy scarcity might impact on economic and financial stability in China, if renewable energy resources are not developed fast enough to allow the country to diversify its energy resources. The methodologies used will be a combination of Granger causality with selected causal methodologies such as Hsiao's version of Granger causality, the Toda-Yamamoto test of causality and other recent methodologies that will be considered when establishing the optimal framework of analysis for this study.

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