

Why the Effects of Oil Price Shocks on China's Economy are Changing

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In recent years, some studies reveal that the effects of oil price shocks on the macro economy have decreased in some developed countries, while studies about China are still not clear enough. A TVP-VAR model is established to investigate how the effects of oil price shocks on China's economy are changing. Results show that both responses of output and inflation to the oil price shock are decreasing but fluctuating over the whole period (January 1997 to December 2018), and responses on real output are much greater and last longer than those on inflation.

Reasons for effects changing in China may be different from those of some developed oil importing countries. First, China is a net crude oil importing country and its dependency on imported crude oil has gradually increased over the last twenty years. This is different from some developed countries for which oil import dependency has decreased (United States¹) or remained relatively stable (Japan and most countries in the European Union) over the same period. Second, China has undergone a series of economic reforms and structural changes (Huang et al., 2019) and is a typical transition economy since the 1970s (Campos and Coricelli, 2002). Stylized facts and many deep parameters in the structural model of China have changed over time. That is very different from some developed countries which have relatively stable parameters (such as the U.S.).

Based on these facts, a DSGE model is used to explore which factors play important roles in determining these changes. The model accurately summarizes the features of the economic structure and oil consumption in China. The two critical features of this model are the inclusion of oil inputs in the production function and the inclusion of transportation sector. These features provide important channels by which oil price shocks can affect the dynamics of the Chinese economy. Results indicate that, among all the factors, decreasing oil intensity and monopoly power reduce the effects of oil price shocks, while increasing capital intensity in production amplifies them. Other factors, such as changing price stickiness, deregulations of refined oil prices, and shifts in monetary policy targets, have limited effects on the relationship between oil price shocks and China's macro-economy.

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