

# Oil Price Shocks in Major Emerging Economies

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As a gradual shift occurs in terms of economic power from the advanced G7 countries—Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States—to the emerging E7 countries—Brazil, China, India, Indonesia, Mexico, Russia, and Turkey—understanding the vulnerability of these economies to exogenous shocks becomes of growing importance.

Previous studies that investigated the impact of oil price uncertainty on the real economy were limited to the advanced economies and were also limited in terms of the econometric approach. This paper aims to fill the gap in the literature by investigating the impact of oil price uncertainty on the industrial production of seven of the largest emerging markets in the world today. Previous analyses that investigated this question for advanced economies using a bivariate analysis made a limiting assumption that the price of oil was exogenous to the real economy, without addressing demand side and supply side effects that drive both oil prices and macroeconomic variations such as industrial production. We extend the Elder and Serletis (2010) bivariate GARCH-In-Mean VAR model to a multivariate framework addressing concerns raised by Kilian (2009) and Kilian and Park (2009).

We find that oil price uncertainty has a negative and statistically significant effect on real economic activity in India, Indonesia, Mexico, Russia, and Turkey, but has a positive and statistically significant effect on real economic activity in China and Brazil. On first glance, the results for China and Brazil might seem puzzling, but having a closer look at the literature, we find that Brazil is the second largest producer of ethanol in the world, a substitute for crude oil. A rise in the price of the substitute will increase the demand for the good, hence explaining why uncertainty about crude oil prices has a positive effect on economic activity of Brazil. Chinese data on the other hand has been criticized in the literature for lack of reliability, as in Cheng et al. (2019). We also find uncertainty about the impending realization of oil prices has a negative effect on world oil production and that the relationship between oil prices and economic activity is in general symmetric.

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