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Country-Specific Oil Supply Shocks and the Global Economy: A Counterfactual Analysis

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Abstract This paper investigates the global macroeconomic consequences of country-specific oil-supply shocks. Our contribution is both theoretical and empirical. On the theoretical side, we develop a model for the global oil market and integrate this within a compact quarterly model of the global economy to illustrate how our multi-country approach to modelling oil markets can be used to identify country-specific oil-supply shocks. On the empirical side, estimating the GVAR-Oil model for 27 countries/regions over the period 1979Q2 to 2013Q1, we show that the global economic implications of oil-supply shocks (due to, for instance, sanctions, wars, or natural disasters) vary considerably depending on which country is subject to the shock. In particular, we find that adverse shocks to Iranian oil output are neutralized in terms of their effects on the global economy (real outputs and financial markets) mainly due to an increase in Saudi Arabian oil production. In contrast, a negative shock to oil supply in Saudi Arabia leads to an immediate and permanent increase in oil prices, given that the loss in Saudi Arabian production is not compensated for by the other oil producers. As a result, a Saudi Arabian oil supply shock has significant adverse effects for the global economy with real GDP falling in both advanced and emerging economies, and large losses in real equity prices worldwide.

Keywords Country-specific oil supply shocks, identification of shocks, oil sanctions, oil prices, global oil markets, Iran, Saudi Arabia, international business cycle, Global VAR (GVAR), interconnectedness, impulse responses.

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