

Resilience of Saudi Arabia's economy to oil shocks: effects of economic reforms

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Overview

We assess the extent to which the implementation of Vision 2030 policies enhances the Saudi economy's resilience to shocks to the oil price and production, and to the productivity of tradable and non-tradable goods. We extend Blazquez et al.'s (2021) Dynamic Stochastic General Equilibrium model to capture the economic diversification policies and build a resilience index. We find that without economic diversification, policy reforms stimulating long-term economic growth, such as introducing a Value Added Tax, may increase the volatility of macroeconomic aggregates. However, when the economic diversification policy is accounted for, Vision 2030's economic policies lead to a less volatile, more resilient economy. Thus, the resilience of Saudi Arabia's GDP to oil price shocks increases by up to 60% (even if the oil price remains the main driver of macroeconomic fluctuations).

Methods

To address the question of economic resilience, we extend K-DSGE, the dynamic stochastic general equilibrium model that Blazquez et al. (2021) use for their long-term analysis, by introducing public investment as a driver for economic diversification. Other model's modifications are also made. We define resilience as the capacity of an economy to resist a particular shock and recover rapidly to (or above) its pre-shock level. In this paper, we consider shocks to the oil price, shocks to oil production, and shocks to tradable goods and non-tradable goods productivity. We propose a quantification of Saudi economy's resilience before and after the implementation of the economic policies considered. We build a resilience index to shocks that summarizes the numerical information contained in the impulse response functions.

Results

We find that introducing a VAT or domestic energy price reforms may increase the volatility of the Saudi GDP (even if these policies are beneficial to long-term economic growth). When the implemented policy package includes Vision 2030's economic diversification policies, the resilience of GDP to oil price shocks increases by up to 60%, depending on the time horizon and fiscal channel considered. The Saudi non-oil GDP becomes two to three times more resilient to oil price shocks.

Conclusions

With Vision 2030's economic policies, the Saudi economy becomes much more resilient to shocks. We quantify this with a resilience index based on impulse functions. Our results show that introducing a VAT or reforming domestic energy prices is beneficial to economic growth in the long term but does not render the economy more resilient. When the implemented policy package includes Vision 2030's economic diversification policies, the economy's resilience substantially increases.

Reference

Blazquez, J., Galeotti, M., Manzano, B., Pradhan, S., Pierru, A., 2021. Effects of Saudi Arabia's economic reforms: Insights from a dynamic stochastic general equilibrium model. *Economic Modelling* 95: 145–169.