

Energy Shocks and Economic Dynamics: Crisis and Transition

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Abstract

The COVID-19 pandemic and the Russian invasion of Ukraine had a massive impact on macroeconomic variables and global energy demand. In this paper, we analyze the main forces driving these unusual observations.

We propose a two-sector macroeconomic model, that includes a core sector and an energy sector. The model incorporates oil, coal, and gas to assess their relative impacts, reflecting the energy mix of euro area economies. The analysis is based on a dataset up to the end of 2022, to identify the contributions of both pandemic-induced shocks and energy price shocks. The findings indicate that crude energy shocks are responsible for 30% of the increase in the price level during this period, with oil and gas being the primary drivers.

The study reveals that low substitutability between energy and other inputs amplifies the economic impacts of energy shocks. The results suggest that energy shocks do not behave as Keynesian supply shocks, and monetary policy significantly affects their transmission. The research also explores the role of fiscal policy in mitigating the impact of energy shocks. Fiscal interventions, such as subsidies to cap energy prices, can reduce the negative GDP effects but have fiscal multipliers below one.

The interplay between crude energy markets and the adoption of green technologies is critical, as price spikes in traditional energy sources can drive both supply and demand-side shifts towards renewable energy. This paper also considers the implications for the green energy sector, offering insights into the interaction between energy markets, economic policies, and the transition to green energy.