UNIVERSITÄT ZU KÖLN

ewi Energiewirtschaftliches Institut an der Universität zu Köln

Autor: Markos Farag

Title: Revisiting the Dynamics and Elasticities of the U.S. Natural Gas Market

Abstract: The U.S. natural gas market is crucial for domestic energy and increasingly important in global trade. This study develops a Structural Vector Autoregression model that incorporates external gas flows and distinguishes between domestic and export-driven demand shocks, contributing to policy discussions on price fluctuations, particularly after the surge in U.S. gas exports following the Russia-Ukraine war. The model uses monthly data to reduce information loss and better capture market dynamics compared to models using quarterly data. The results indicate that supply and domestic demand shocks cause price overshoots, followed by a steady decline, with limited effects on economic activity. Export demand shocks cause short- and medium-term price increases and gradually expand supply, while inventory demand shocks trigger brief price spikes with minimal long-term impact. A decomposition of 2022–2023 price fluctuations shows domestic demand and inventory demand shocks were the main drivers, while export demand shocks—though important—played a smaller role, influencing prices through alternating effects from increased LNG exports and maintenance disruptions.