Becoming green: Decomposing the macroeconomic effects of green technology news shocks

ENERGY ECONOMICS
DOI:
https://doi.org/10.1016/j.eneco.2026.109228
Publicado:
Jueves, 5 Marzo 2026
Authors:
Oscar Fernando Jaulín-Méndez[a],
Andrey David Ramos Ramírez[e]
Ver más
[a]Banco de la República, Colombia
[e]Externo
Clasificación JEL:
E32, O31, O44
Palabras clave:
Green innovation; Green transition; Technology news; Patents; Impulse-responses
Resumen:

This paper studies the macroeconomic effects of news about future technological improvements in the green sector. Utilizing the economic value of green patents granted to publicly listed companies in the U.S., we identify green technology news shocks via a convenient and meaningful rotation of the innovations from a Bayesian Vector Autoregression Model (BVAR). These shocks are decomposed into two orthogonal components: (i) a common technological component shared by both green and non-green innovation, that reproduces response patterns similar to those expected from a technology news shock with long-run impacts on productivity; and (ii) an idiosyncratic green-specific component inducing inflationary pressures and stock price reductions. The responses to the idiosyncratic component suggest the existence of a green transition news mechanism related to expectations of more rigorous carbon policies or stricter environmental standards in the future. Fossil-fuel intensity improvements and changes in oil prices also play a key role. The focus on green innovation deepens our understanding of the effects of technology-specific news shocks and provides information of practical importance for macroeconomic and environmental policies.

Descargar documento

Lo más reciente

Cambio demográfico y sus impactos económicos en Colombia
Juliana Jaramillo-Echeverri, Karina Acosta, Olga Lucia Acosta Navarro, Oscar Iván Ávila-Montealegre, Jhorland Ayala-García, Jaime Bonet-Morón, Jesus Botero, Luz A. Flórez, Daniela

Galvis-Aponte, Karelys Guzmán-Pinto, Eduardo A. Haddad, Ana María Iregui-Bohórquez, David Camilo López-Valenzuela, Ligia Alba Melo-Becerra, Juan J. Ospina-Tejeiro, Andrea Otero-Cortés, Julian A. Parra-Polania, Gerson Javier Pérez-Valbuena, José Pulido, María Teresa Ramírez-Giraldo, Mario A. Ramos-Veloza, Charles Rahal, Jorge Leonardo Rodríguez-Arenas, Shadia Zardibia

Tasa de interés de la liquidez colateralizada: Una nueva medición del precio del dinero a 1 día

Miguel Felipe Vanegas-Vanegas

Efectos Heterogéneos de los Choques de Clima sobre los Precios de Alimentos en un País con Agricultura Diversa

Camilo Bohorquez-Penuela, Leonardo Bonilla-Mejía, Anabelle Couleau, Alexánder Almeida

Otras Publicaciones