

Contrasting the Connectedness: A Cross-Country Analysis of Asymmetric Links between Stock, Energy, and Carbon Markets in Europe and China

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Abstract

With the rapid growth of the carbon trading market around the world, the interaction between carbon prices, energy prices, and the stock market has attracted increasing attention. However, few research studies have investigated their connectedness and dynamic volatility spillovers. This paper examines the dynamic asymmetric connectedness between the stock market, energy prices, and carbon permit trading market prices, specifically in the European carbon permit market (EUA) and China's major carbon permit markets: HBEA, SZA, and GDEA. For this analysis, we use multivariate GARCH methods to capture the asymmetric and dynamic conditional correlation to examine the time-varying linkages between these markets.

Our results show significant volatility spillover between the stock market, energy prices, and carbon markets, suggesting the importance of asymmetric links between financial markets, energy, and carbon markets, especially during the COVID-19 crisis. These findings have major implications for investors, policymakers, and industrial companies.

Keywords: Stock market. oil price; Carbon Market; Asymmetric spillover;

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