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When markets panic: How green finance fails (or thrives) in times of geopolitical crisis

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Abstract This study investigates how green finance responds to extreme geopolitical turbulence, revealing when sustainable investments collapse or unexpectedly flourish amid global instability. Specifically, we examine the time-varying causal relationship between green finance and geopolitical risk, together with eight other financial market indices: carbon allowances, bitcoin electricity consumption, clean energy, renewable energy, world equity, climate change, volatility, and oil price.

Our dataset spans 12 years of weekly data from January 2012 to December 2024. Using a recursive evolving time-varying Granger causality estimation, we find that green finance and geopolitical risk strongly influenced the world equity market index in 2015 and 2024, respectively. Geopolitical risk exerted a strong causal influence on the volatility index in 2024. We document moderate bidirectional causality between green finance and clean energy, between green finance and renewable energy, and between geopolitical risk and clean energy. Interestingly, the Bitcoin Electricity Consumption index strongly influenced both green finance and geopolitical risk from 2020 to 2022. This finding reveals that the energy consumption of bitcoin mining carries significant environmental and geopolitical consequences, with direct effects on green finance and geopolitical risk.

Keywords

Author Keywords: [green finance](#); [geopolitical risk](#); [time-varying causality](#); [green bond](#); [Bitcoin electricity consumption](#)
Keywords Plus: [RISKS](#)

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Data availability statement

The data supporting this study’s findings are available from me upon reasonable request. The geopolitical risk (GPR) index is publicly available from Matteo Iacoviello’s website, and the BEC data is publicly available from Digiconomist. The remaining financial indices are available via subscription from Refinitiv.

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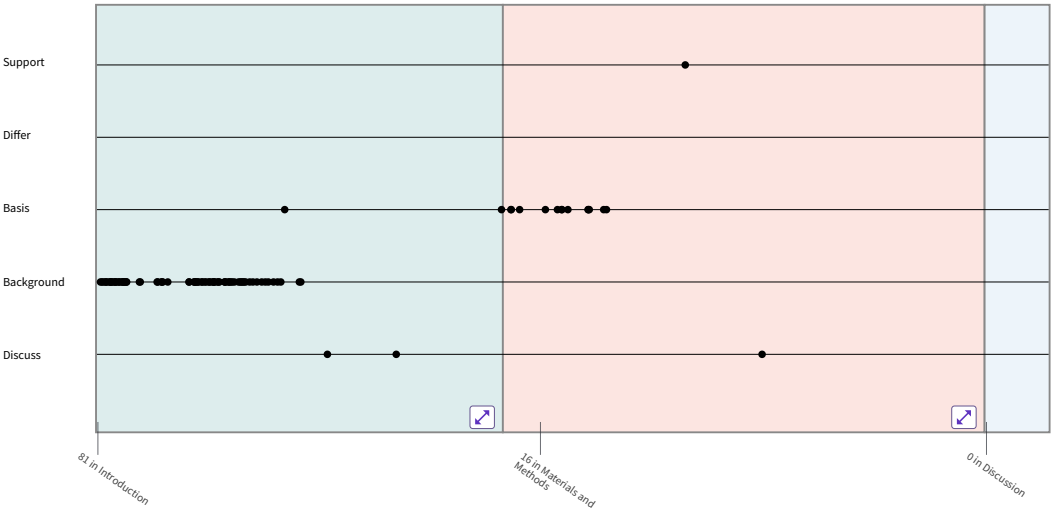
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