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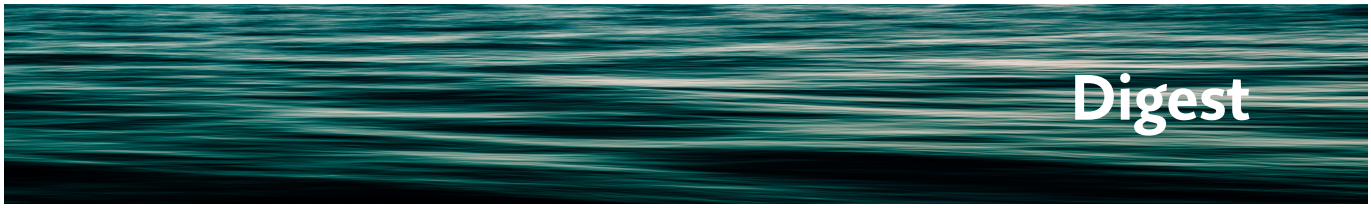

Climate news shocks and their economic impact

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In recent years, there has been a growing interest in understanding the intersection of climate dynamics, economic activity, and financial markets. Projected changes in climate patterns are anticipated to significantly alter economic operations across different regions, industries, and companies. Concurrently, investors are increasingly incorporating climate risk factors in the valuation of financial assets. Despite this, there has been limited focus on the relationship between climate-related news shocks and international economic indicators, such as currencies and global capital flows. To address this gap, we develop climate attention indices that capture the impact of climate news on macro-financial outcomes, focusing on key financial variables like exchange rates, capital flows, and stock returns.

Specifically, we construct climate attention indices for 25 advanced and emerging economies by analyzing the text of over 23 million Twitter posts published by leading newspapers between 2014 and 2022. To measure the influence of climate news globally, we first construct a global climate news index as a weighted average of the country-specific climate indices. This global index serves as a benchmark, capturing the overall intensity of climate news at any given time. A key advantage of our methodology is that it allows us to construct these indices on a daily basis, enabling us to measure the impact of climate attention on financial markets almost in real time.

We then measure each country's exposure to climate news shocks by evaluating the sensitivity of its climate attention index to the global index. Specifically, we estimate the relationship between each country-level index and the global index, with the resulting sensitivity coefficient representing the degree to which each country is exposed to global climate news. In our analysis, countries such as Saudi Arabia and South Korea exhibit high exposure, while countries like South Africa

and Brazil have relatively low exposure. This allows us to quantify how responsive different countries are to changes in global climate awareness.

These indices help us study the relationship between climate news and key economic variables, such as exchange rates, capital flows, and stock returns. We find that countries exposed to sizeable climate news shocks often experience persistent currency appreciation and increased capital inflows, while high-emission firms (often referred to as "brown" firms) in these countries face significant, long-lasting declines in equity returns. These patterns reveal that markets actively price climate-related risks and that climate news significantly impacts global economic flows.

Currency Appreciation and Capital Flows

In our analysis, we document how global climate news shocks affect exchange rates. When a country is highly exposed to climate news, its currency tends to appreciate following large global news shocks. This aligns with the predictions of a simple international macro-finance model, where investors price climate-related news. In this framework, adverse climate news drives currency appreciation in more exposed economies.

The implications extend beyond currencies. We find that highly exposed countries experience a capital inflow following a large shock to climate attention. This suggests that investors perceive them as critical players in managing or adapting to climate-related risks. These findings complement earlier studies that focused mainly on physical climate shocks, such as temperature changes, without incorporating the broader influence of media and global information flows.

Impact on High-Emission Firms and Equity Markets

Our work also highlights the implications for equity markets. We show that high-emission firms in highly exposed countries tend to experience declines in returns following climate news shocks, though the extent and persistence of these effects can vary. The fact that the impact is more pronounced in countries with heightened sensitivity to climate attention is a striking result, which underscores the importance of considering climate awareness in understanding its influence on financial markets. These findings are consistent with other studies on corporate exposure to climate risks, but we extend the scope by linking firm-level emissions to country-level climate exposure indices.

This dynamic suggests that attention to climate news may influence investment patterns, potentially encouraging greener projects. A possible interpretation of our findings is that market mechanisms may reallocate capital in response to climate news, potentially leading to a shift towards more sustainable projects. Our

results indicate that while this shift may support green investments, the overall economic impact is complex and depends significantly on the level of a country's exposure to climate news.

Must-Read Related Literature

Our research builds on several key studies that explore the intersection of climate awareness and financial markets. Engle et al. (2020) provide a foundation for our approach by developing a methodology for constructing climate news indices through textual analysis, which we adapt to create our climate attention indices. This allows us to quantify climate awareness and assess its impact on financial markets. Sautner et al. (2023) identify the attention paid by earnings call participants to firms' climate change exposures. We complement their work by providing a high-frequency measure from the Twitter posts of major global newspapers. Pastor et al. (2021) analyze the impact of climate risk on green and brown stocks, showing that green assets have lower expected returns but can outperform when there are positive shocks to the demand for sustainable investments. Our analysis similarly examines how climate news affects both green and brown firms, emphasizing the differential impact that climate-related information can have in high- and low-exposure countries. These studies complement our findings and underscore the importance of considering climate news as a significant factor in global financial markets.

Conclusion

Our analysis documents that climate news shocks are increasingly priced into currencies, capital flows, and equity markets, providing new insights into how information plays an important role for global economic outcomes. By quantifying the impact of climate attention, we highlight the significance of integrating climate awareness into economic strategies and decision-making processes. Our findings emphasize the importance of understanding the economic consequences of climate awareness, which could influence global investment patterns and international risk-sharing in the cross-section of countries.

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