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EXTREME WEATHER, CLIMATE CONCERN, AND CORPORATE GREEN INNOVATION

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Abstract

Against the backdrop of global warming and sharply rising carbon emissions, extreme weather events have increased significantly in both frequency and intensity, heightening public awareness of climate change. Drawing on matched data of weather conditions across Chinese prefecture-level cities and listed companies from 2012 to 2023, we treat extreme precipitation as a tangible climate risk shock and empirically examine its impact on corporate green innovation. We find that extreme precipitation events significantly increase green innovation activities among affected firms. Mechanism analyses reveal that extreme precipitation promotes corporate green innovation by strengthening managerial attention to climate change and triggering environmental regulatory pressure from local governments. Heterogeneity analyses show that the effect of extreme precipitation on corporate green innovation is more pronounced among firms with geographically concentrated operations and greater media coverage. Analysis of economic consequences demonstrates that green innovation induced by extreme weather effectively reduces corporate carbon emission intensity. Unlike most studies that focus on the negative impacts of disasters, we examine whether extreme weather can stimulate firms to proactively address climate challenges through innovation activities, thereby enriching the literature on how extreme weather affects micro-level corporate economic behavior.

Key words: carbon emissions, climate concern, extreme weather, green innovation

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