

Weather Shocks and Income Inequality*

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Abstract

Governments and nongovernmental organizations (NGOs) rely on economic models to identify at-risk communities when addressing the issues of income inequality because resources are scarce. However, models developed to date neglect the impact of weather shocks. Because climate change is predicted to increase the frequency and severity of weather shocks that destroy crops, in this paper, I study the impact of weather shocks on household welfare and how it exacerbates household income inequality via increasing crop income inequality. I first recognize the limitations of existing measures of weather shocks and propose an absolute measure of weather shocks that does not depend on the length of weather samples obtained. Next, I study the impact of the newly constructed weather shocks on household welfare measured by different income sources and different types of consumption. The findings suggest that weather shocks have a significant negative impact on crop revenue and that the impact varies across households with different characteristics. Next, I consider how this diverse impact of weather shocks impacts household income inequality. The Gini decomposition of income sources suggests that crop income contributes to reducing income inequality in the provinces. Because weather shocks reduce income from crops, they contribute to increasing income inequality. Our model can assist governments and NGOs to identify at-risk communities to best target resources.

Keywords: weather shocks, income inequality, Gini decomposition

JEL Classification: D63, O13, O18

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