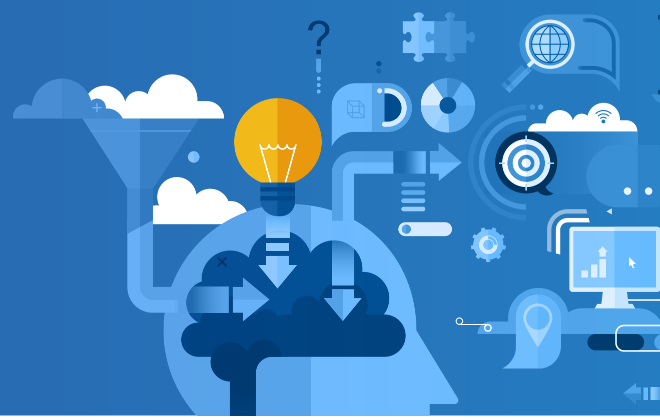
RESEARCH INSIGHTS



IDB

Can Financial Inclusion Reduce Extreme Weather Impacts on Rural Children?

- **Extreme rainfall induces rural households to choose immediate benefits over long-run investments in education by increasing the incidence of child labor and household chores at the expense of school attendance.**
- **Over-indebtedness through pre-existing formal loans reinforces the likelihood that a child works due to rainfall shocks.**
- **Asset insurance, foreign remittances, and natural disaster aid reduce or eliminate the shock-induced shift toward domestic activities and away from schooling.**

CONTEXT

Climate change has made both heavy rainfall and extended droughts more frequent, and developing countries are especially vulnerable. Colombia is one of the most vulnerable countries in Latin America due to its position on both the Caribbean and the Pacific Ocean, with exposure to the El Nino-Southern Oscillation climate patterns. Facing barriers to access and usage of financial services, rural Colombian households whose livelihoods depend on natural resources sometimes resort to informal risk coping mechanisms, such as child labor, to smooth their consumption, thus perpetuating the cycle of poverty by foregoing investments in children's human capital.

Key Concept

FINANCIAL INCLUSION

Access to and use of regulated and safe formal financial services, such as those provided by banks and insurance companies.

PROJECT

This research project examines the effect of rainfall shocks on rural households' time allocations between children's domestic activities (labor and chores) and school attendance. In particular, how do these transitory shocks affect household decisions to increase child labor supply at the expense of schooling, and do different types of household financial inclusion mitigate or exacerbate these choices? Data on household outcomes and characteristics are drawn from three rounds of a longitudinal survey of Colombian rural households, matched with station-level meteorological data. Several measures of rainfall shocks are considered and validated with shocks reported by households.

RESULTS

It is found that labor and chores increase in age, labor more for boys and chores more for girls, while schooling decreases with age roughly equally for boys and girls (see Figure 1). Rainfall shocks increase the likelihood of child labor by 6 percentage points and of chores by 9 percentage points, while decreasing the probability that a child attends school by 4 percentage points. These findings are consistent with household-level changes in economic decisions rather than being driven by school closings or damaged public infrastructure.

Most of the literature has studied the role of financial inclusion as a direct effect on household welfare, not as a moderating factor. When credit and insurance markets function poorly or do not exist, children act as an insurance asset to smooth household consumption in the presence of uncertainty about future income. Given this research, it seems likely that financial inclusion may act as a moderating factor in households' response to weather shocks through the re-allocation of child activities, as reflected in the Colombian data. We find that holding asset insurance, being a recipient of foreign remittances, and receiving natural disaster aid indeed mitigate the substitution of child labor and chores for schooling in response to rainfall shocks. However, we also find that over-indebted households that held more than two formal loans before the rainfall shock display a greater increase in child labor as they adjust more on this margin. This suggests that prior responsible use of access to finance is important in overcoming significant budget shortfalls.

Key Concept

RISK COPING

Changes in human decisions in response to a difficult unforeseen circumstance so as to contain or manage its effects.

Key Concept

RAINFALL SHOCK

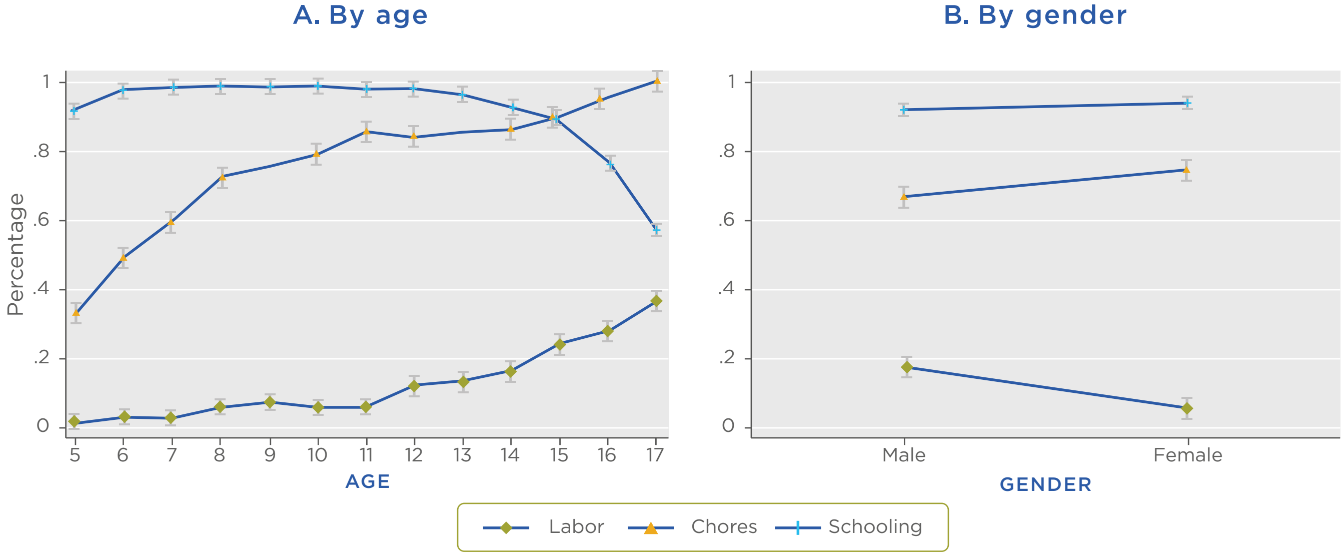
Monthly rainfall significantly above the normal range for the municipality over the previous 30 years.

POLICY IMPLICATIONS

Considering the current and future impacts of changes in climate on the frequency and intensity of extreme weather events, and its effects on human capital formation, it is essential to promote appropriate financial inclusion in rural Colombia as a public policy goal. In particular, it is important to facilitate access to affordable loans and agricultural insurance for small producers. At the same time, allowances must be made for the most vulnerable households to restructure debt in cases of unforeseen shocks to alleviate pressures on household consumption and productive capacity.

Rural financial inclusion should help mitigate the adverse impacts of weather-related shocks, improve the capacity to smooth consumption, protect savings, and avoid informal financial mechanisms such as high-interest moneylenders, or negative adjustments in education investments by relying on child labor at the expense of schooling. Since extreme weather events produce aggregate shocks affecting entire communities, local informal networks of support are limited in serving as a coping mechanism; on the other hand, digital technologies may help tap into wider social networks. Finally, it is important to promote rural financial education to spread awareness of the benefits of having and actively using financial services such as asset insurance and low-cost remittance channels.

Figure 1. Share of Labor, Chores, and Schooling



Note: Panel A shows the share of labor, chores, and schooling by age 5 to 17. Panel B shows the share of children who work, do chores, and attend school by gender between male and female children. Confidence intervals are at a 95% level.

COLLABORATION WITH OTHER DEPARTMENTS

This research project is a collaboration between the IDB Research Department and the Social Protection and Health Division.

FULL STUDY

Bernal, Carolina, and Razvan Vlaicu. 2023. "Child Labor, Rainfall Shocks, and Financial Inclusion: Evidence from Rural Households." IDB Working Paper No. 1461. Washington, DC: Inter-American Development Bank.

DEPARTMENT OF RESEARCH AND CHIEF ECONOMIST

The Department of Research and Chief Economist generates new ideas to enrich the knowledge base that supports the policy agenda of the Inter-American Development Bank (IDB) and its member countries for achieving sustainable and equitable development in the region. To maximize the impact of its research, the Research Department carries out activities that serve as inputs to other IDB departments, governments, the academic community and public opinion in the region.

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