1. Introduction

The authors study a drought insurance experiment in Ethiopia. They examine whether uptake of index-based insurance is enhanced if farmers are allowed to pay after harvest (addressing a liquidity constraint). They also test to what extent uptake can be enhanced by promoting insurance via informal risk-sharing institutions (*Iddirs*). The main results of the paper are that the delayed payment insurance product increases uptake substantially when compared to standard insurance, from 8% to 24%, and leveraging informal institutions results in even greater uptake (43%). They also find suggestive evidence that the delayed premium product is indeed better at targeting the liquidity constrained.

In this paper we report on the outcomes of an RCT in rural Ethiopia that focused on two major reasons for low adoption of insurance: (i) lack of liquidity to pay for the insurance premium, and (ii) lack of information about, or trust in, the insurance product. To study the role of liquidity constraints during the planting season we allow (randomly selected) farmers to pay the premium after harvest—they allow smallholders to postpone premium payment until after the harvest, and henceforth call this insurance product IOU. Second, we randomly vary the marketing channel, and leverage support of leaders of *Iddirs*, which are informal social institutions in Ethiopia, for the product in some experimental arms—the leaders are informed of how the insurance works and are responsible for promoting it.

This paper extends the important findings of Casaburi and Willis (2018) outside the contract farming setting by analyse the uptake increase under other contracting arrangements, taking into consideration that most smallholders are not engaged in contract farming. Their design also further extends the findings of Dercon et al. (2014) because it combines marketing through informal groups with delayed premium—with possible synergies both in terms of uptake and defaults. Their result is in line with the findings of Casaburi and Willis (2018) in the context of contract farming, but they find some evidence that the demand-increasing effect of the IOU may be larger for people with low savings or income, supporting the idea that liquidity constraints impede uptake of insurance.

1. Methodology

They worked together with Oromia Insurance Company (OIC) in Ethiopia and used multi-level randomization at the *Iddir* level to assign the 144 Iddirs to six experimental arms: 1) Standard Index Insurance (control group); 2) Standard Index Insurance via *Iddir* promotions; 3) IOU insurance; 4) IOU insurance with Contract; 5) IOU insurance via *Iddir* promotions; and 6) IOU insurance via *Iddir* promotions with Contract. And they collected data on household demographic characteristics including age, sex, marital status, education and family size; household income, households’ level of exposure to drought, experience in buying crop insurance before the experiment, household production and saving variables.

To verify whether randomization resulted in balanced groups we regress household observables and farming variables on treatment group dummies and a constant. The constant reflects the comparison group. The coefficients indicate whether other groups are significantly different from the comparison group, and we test for differences between other groups by Wald tests. The results suggest the randomization worked well.

Then, they present insurance uptake across treatment arms and do regression analysis, both showing that uptake change induced by *Iddir* promotions in isolation is statistically insignificant, as is IOU with binding contract.

They perform a heterogeneity analysis, to figure out if we can attribute the increase in uptake under IOU insurance to the relaxation of the liquidity constraint. To proxy for liquidity, we distinguish between households with above and below-median income, and between households with and without savings (self-reported). And for both proxies, the coefficients of the simple IOU product are higher for the liquidity-constrained. However, while the IOU coefficient of the (more) constrained subsample is consistently different from zero, and the coefficient for the complementary sample is not, the relevant coefficients are not statistically different from each other (according to a Wald test). This can also be seen by the insignificance of the coefficients using the interaction term instead of subsamples.

1. Replication
   1. Variable Generation

We generate five dummies indicating whether each individual is in one of the five treatment groups and a dummy indicating the status of uptake. And we also generate the controls used in the article, including demographic variables: Age (in years), Sex (male=1; female=0), Marital status (married=1; not-married=0), Education (years of schooling), Family size, Total income in the last month (in Birr), Drought (a dummy taking value of 1 if the household experienced a drought in the last three years), and Insurance (a dummy taking the value of 1 if the household had purchased index insurance during the past three years); and farming variables: capturing quantities of crops produced in the last cropping season (maize, haricot, teff, sorghum, wheat, and barely), a measure of total land under cultivation, and a dummy taking the value 1 if the household had any formal savings.

* 1. Balancing Tests

To verify whether randomization resulted in balanced groups we regress observable controls on treatment group dummies and a constant. The results of regression of demographic variables and farming variables are respectively shown in Table 1 and 2.