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Summary

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Time vs. State in Insurance: Experimental Evidence from Contract Farming in Kenya

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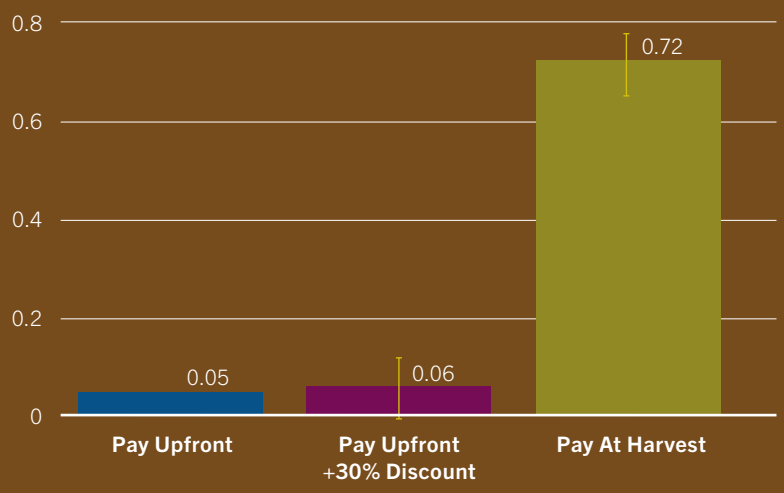
In the textbook model of insurance, income is transferred across states of the world, from good states to bad. In practice, however, most insurance products also transfer income across time: the premium is paid upfront with certainty, and any payouts are made in the future, if a bad state occurs. As a result, the demand for insurance depends not just on risk aversion, but also on several additional factors, including liquidity constraints, intertemporal preferences, and trust. Since these factors can also make it harder to smooth consumption over time, and hence to self-insure, charging the premium upfront may reduce demand for insurance precisely when the potential gains are largest, for example among the poor.

This paper provides experimental evidence on the consequences of the transfer across time in insurance, by evaluating a crop insurance product which eliminates it. Crop insurance offers large potential welfare gains in developing countries, as farmers face risky incomes and have little savings to self-insure. Yet demand for crop insurance has remained persistently low, in spite of heavy subsidies, product innovation, and marketing campaigns.

The authors show that the intertemporal transfer can help explain low insurance demand, especially among the poor, and in a randomized control trial in Kenya they test a crop insurance product which removes it. The product is interlinked with a contract farming scheme: as with other inputs, the buyer of the crop offers the insurance and deducts the premium from farmer revenues at harvest time. The take-up rate is 72%, compared to 5% for the standard upfront contract, and take-up is highest among poorer farmers. Additional experiments and outcomes indicate that liquidity constraints, present bias, and counterparty risk are all important constraints on the demand for standard insurance. Finally, evidence from a natural experiment in the United States, exploiting a change in the timing of the premium payment for Federal Crop Insurance, shows that the transfer across time also affects insurance adoption in developed countries.

Fig. 1 **Main Experiment: Insurance Take-Up by Treatment Group**

Insurance take-up rates across treatment groups (N=605)



Notes: The figure shows insurance take-up rates across the three treatment groups in the main experiment. In the *Pay Upfront* group, farmers had to pay the full-price premium when signing up to the insurance. In the *Pay Upfront + 30% Discount* group, farmers also had to pay the premium at sign-up, but received a 30% price reduction. In the *Pay At Harvest* group, if farmers signed up to the insurance, then the premium (including accrued interest at 1% per month) would be deducted from their revenues at (future) harvest time. The bars capture 95% confidence intervals.

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