Information Asymmetries in Crop Insurance Contracts

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Introduction

Failure of crop insurance markets

- Agriculture is risky and there is much evidence for incomplete insurance.
- Near universal failure of insurance schemes for crops
- Literature credits the failures mainly to:
  - Adverse selection – farmers who are more susceptible to damage have higher demand of insurance
  - Moral hazard – insured farmers have less incentive to prevent damage
  - Time and spatial co-variability of shocks
Index insurance

- To get around adverse selection and moral hazard problems, people have tried index insurance, but
  - Take-up has been low
  - Possibly low correlation between shocks to individual farms and the index
Field experiment in the Philippines

- A multi-peril crop insurance scheme for rice is offered by the government:
  - Covers typhoons, drought, pests and crop diseases.
- The program is heavily subsidized but still has very low take-up.
- Experiment is designed to identify the role of information asymmetries in the failure of the market.
Data collection and experimental design is based on:

- Collecting plot level data on inputs, outputs and damages.
- Spatial data.
- Overlaying a randomized experiment of insurance, with plot level randomization.
Mechanics of moral hazard and adverse selection

In my context, hypothesized mechanics of moral hazard include:

- Amounts of pesticides, insecticides, rat poison.
- Labor use (e.g. in preventing rat damage, apply pesticides, etc)
- Seed choice

Hypothesized mechanics of adverse selection, in this context include:

- Elevation
- Location (closeness to rivers, residential areas)
Experimental Design

- Insured by choice
- Insured by randomization
- Uninsured, but affected by resource allocation
- Unaffected

Identification of moral hazard and plot level adverse selection
Experimental Design

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Identification of moral hazard and plot level adverse selection

Random

Expected Damages

Aggregate reallocation (MH)

- Reallocation to uninsured plots
- Moral Hazard counterfactual

Unaffected

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Experimental Design

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Insured by choice
Insured by randomization
Uninsured, but affected by resource allocation
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Reallocation to uninsured plots
Moral Hazard counterfactual

Selection

Uninsured, but affected by resource allocation
Unaffected

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