



A Quasi-experimental Study of a Discontinued Insurance Product in Haiti

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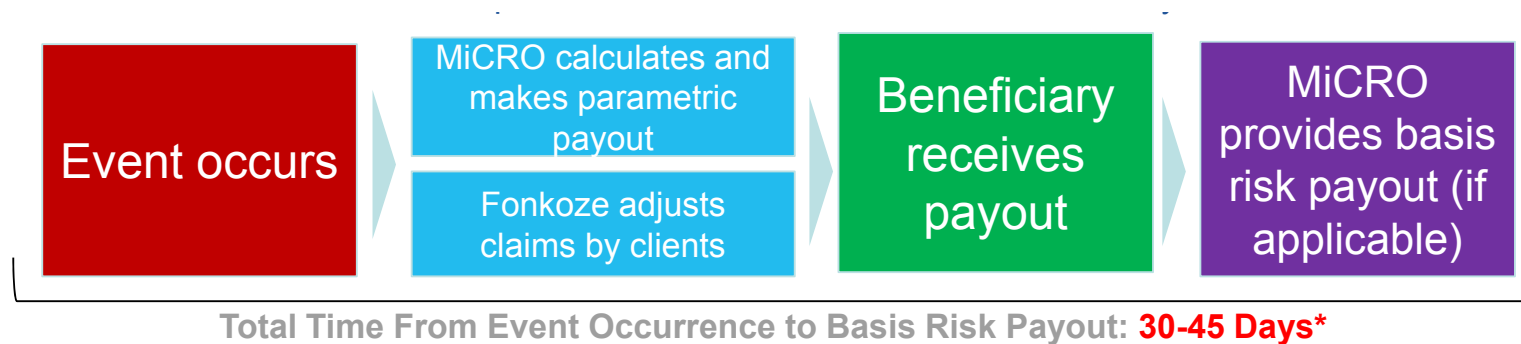
Motivation

- MFI infrastructure
 - Platform to deploy (group) index-insurance in settings where capital and risk market imperfections jointly bind (Karlan, Osei, Osei-Akoto, Udry, 2013)
 - Damages from extreme weather to non-farm businesses reducing ability to repay loans
- Group index-insurance
 - Averages basis risk across spatially disbursed groups
 - May reduce individual-level basis risk: groups allocate funds ex-post based on individual-level loss assessments (Clark, 2011)
- Social networks' role in within-group allocations
 - Loss assessment by peers exploits private information not observable to the insurer
 - May be subject to collusion in settings with certain network properties

We are analyzing a hybrid index insurance product that was linked to microfinance groups in Haiti

Institutional Setting

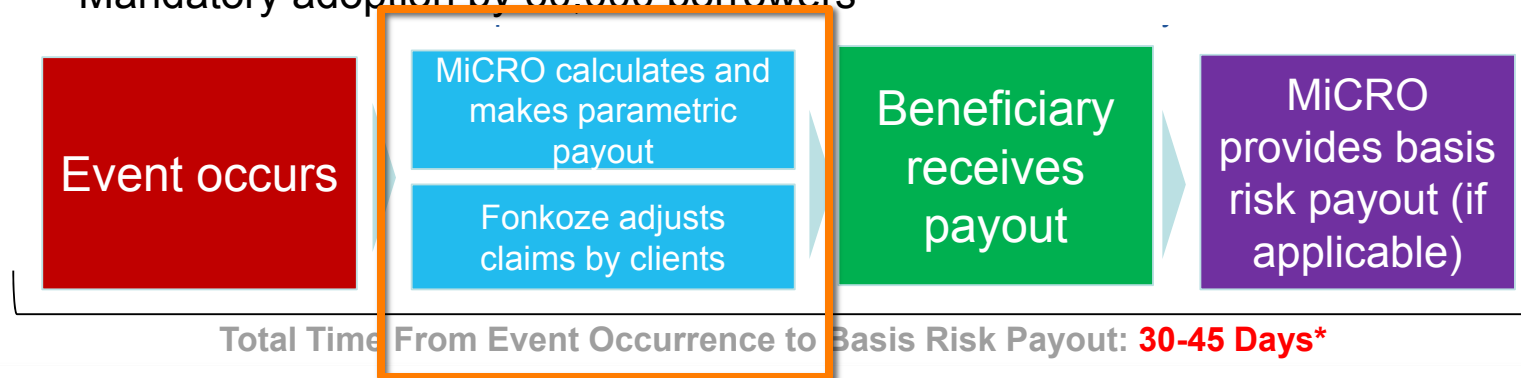
- Hybrid “catastrophe” insurance offered by Haiti’s largest microfinance institution covering home and merchandise
 - Index-based: covered the microfinance institution against rainfall, wind and seismic shocks based on sharp parametric thresholds in geographic regions
 - Indemnity-based: covered the property (merchandise and house) of borrowers
 - Mandatory adoption by 60,000 borrowers



- Payout
 - Reimbursement of the client’s existing Fonkoze loan balance
 - A 5,000 HTG (~US\$125) cash payment
 - A new loan to recapitalize their business

Institutional Setting

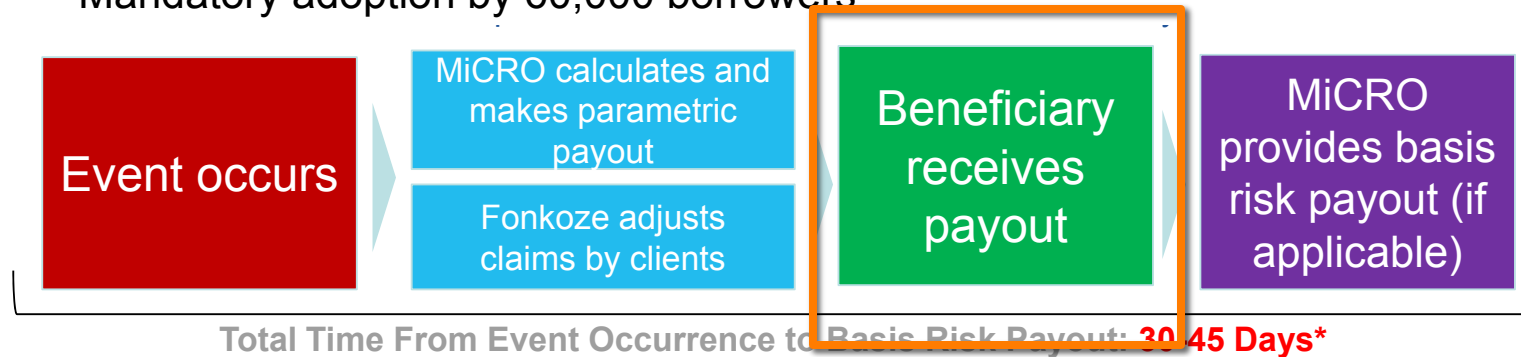
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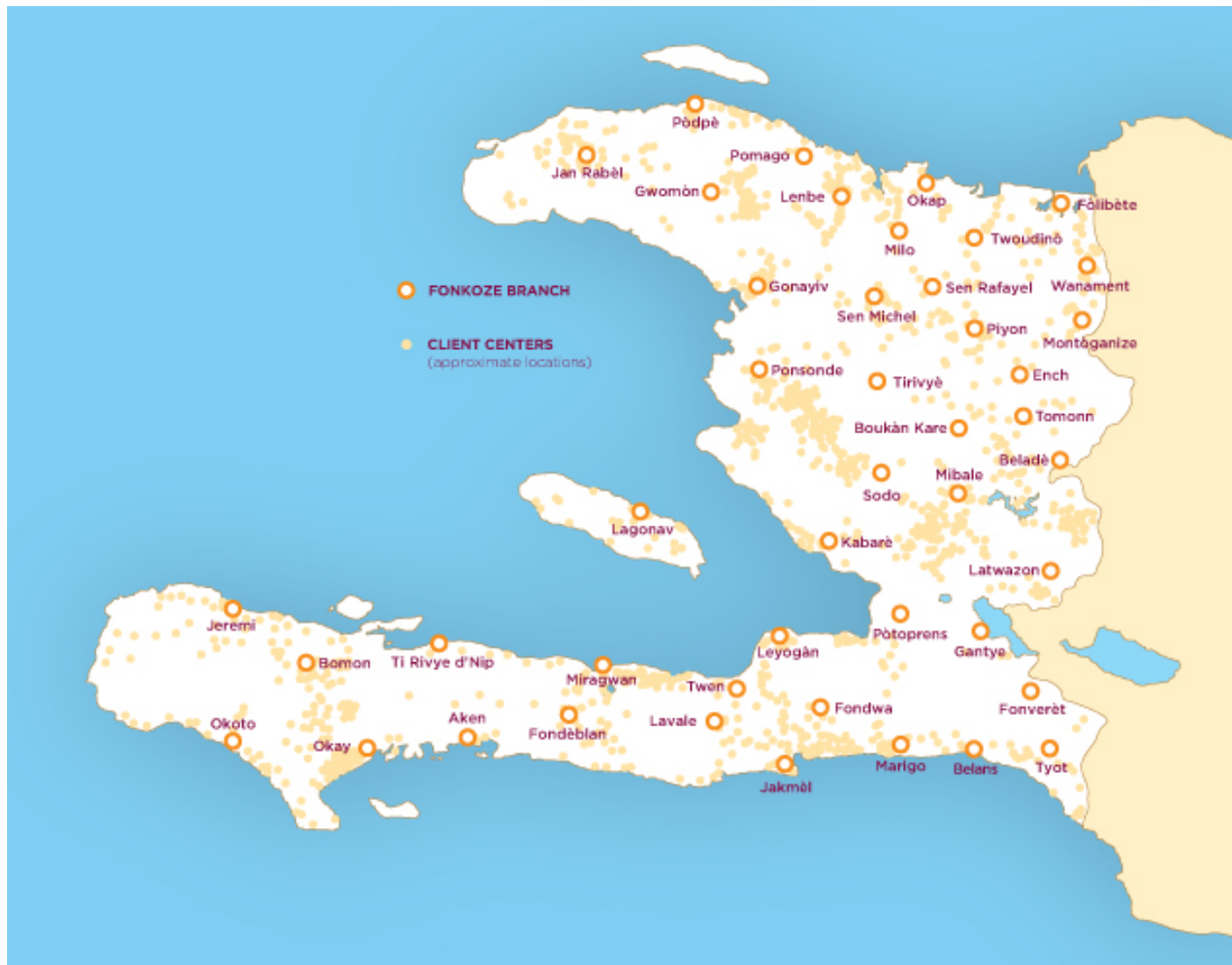
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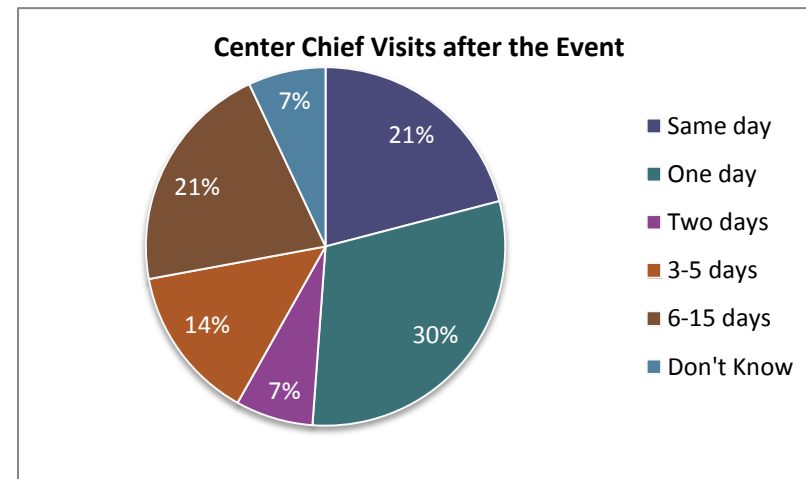
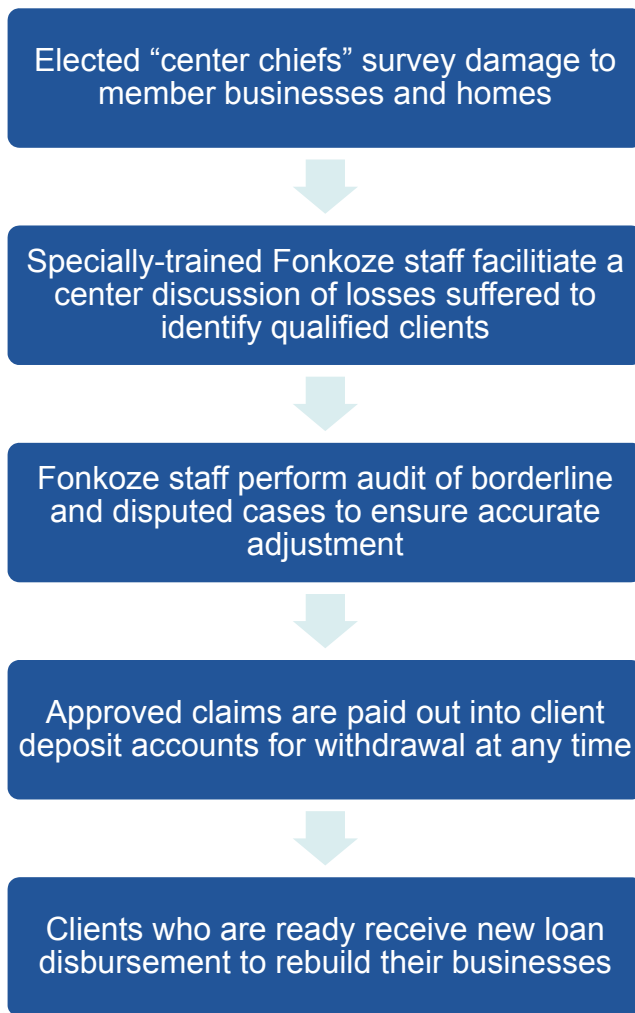
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Map of MFI: 50 branches & 2,000 credit centers



Institutional Setting (cont.)

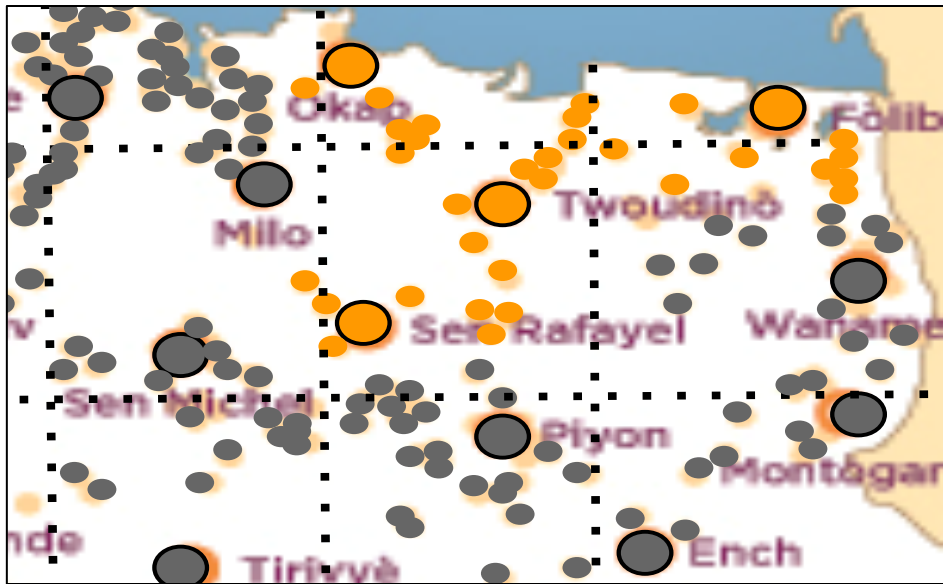
- “Ideal” loss adjustment by peers (center chiefs + group discussion)



Objectives of Project

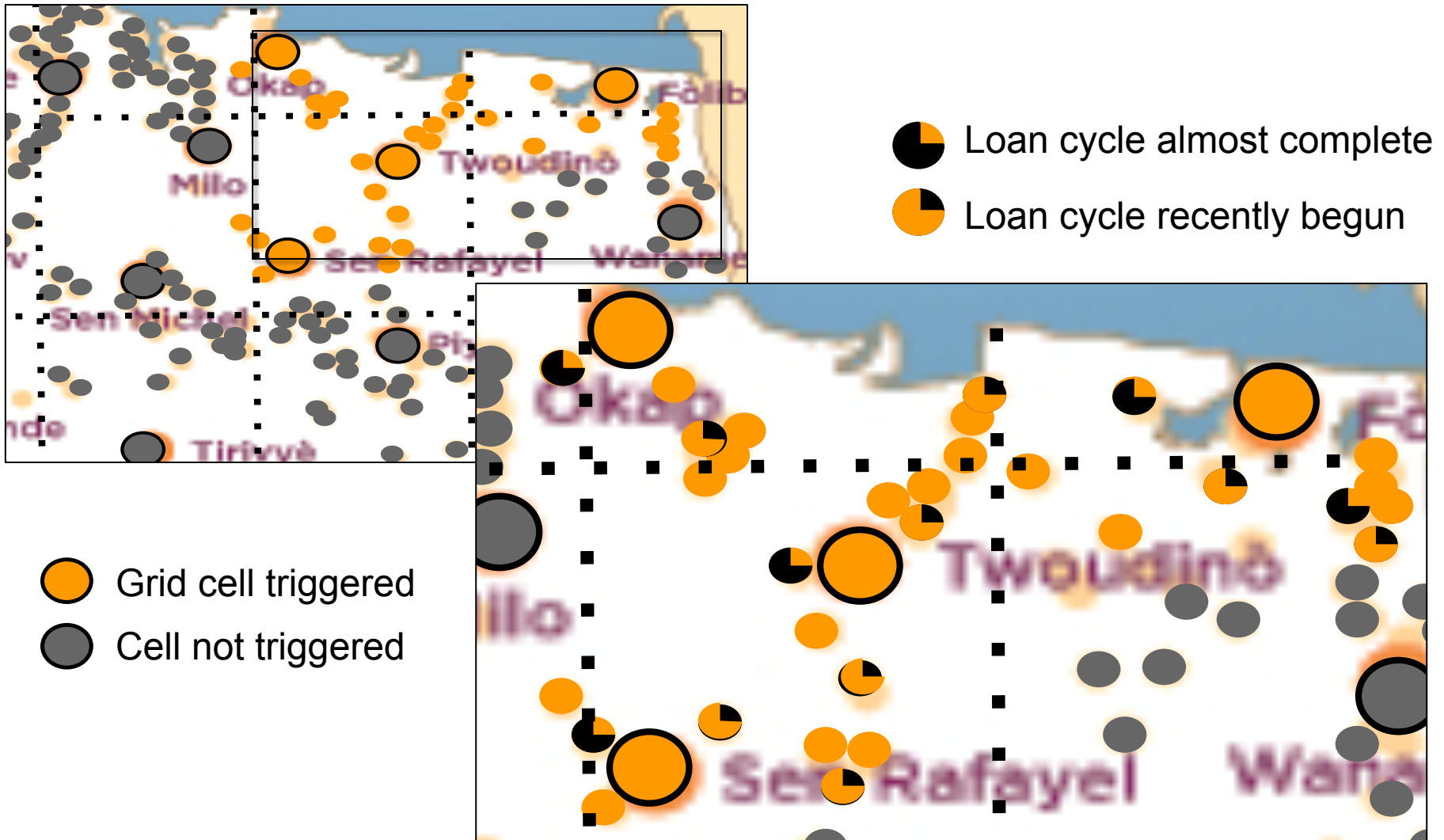
- The indemnity-based insurance covering borrowers was abruptly discontinued in 2012
 1. What went wrong with the product and why?
 2. What were the effects of the indemnity-based insurance on beneficiaries?
 3. What can we learn about peer-based loss adjustment and collusion?
- Unique opportunity to investigate the failure of an integrated hybrid and microfinance-linked insurance product
 - Exploit natural variation for casual inference
 - Generate recommendations to set stage for testing potentially improved models

Variation in index across grid cell borders



- Grid cell triggered
- Cell not triggered

Credit center level variation - loan cycle thresholds



What we want to do

- Survey ~2,000 borrowers
 - Business size, consumption, etc.
 - Geographic location of HHs
 - Social network module
- Use data on:
 - Claims, verifications, payouts
 - Loans, joint liability groups
 - Weather, topography
- To answer two questions:
 - What was the impact on beneficiaries?
 - Did the peer verification mechanism work better in some settings than others?

Estimating impacts on enterprises & beneficiaries

- What are the effects of post-shock transfers (loan forgiveness) on beneficiaries?
- Difference-in-difference estimation exploiting quasi-random variation
 - Centers on either side of border between a triggered vs. not triggered grid cell
 - Centers where borrowers just received a new loan when weather event occurred (large loan forgiveness) vs. centers where borrowers have nearly completed repayment on loan (small loan forgiveness)
- Outcomes
 - Business earnings, consumption
 - Migration, remittances
 - Education, mortality
 - Also moral hazard (incidence and rejection rate of claims)

Peer-based loss adjustment

- In what social settings does peer-based loss adjustment provide accurate verification?
 - Quality of information
 - Incentives for making false claims
- Outcomes:
 - Incidence of claims
 - Verification of claims
 - Probability of an audit
- Independent variables
 - Social proximity to center chief
 - Social network survey module
 - Joint liability group membership
 - Distance from center chief to borrower HH
 - Predicted damage based on weather/hurricane models + topographic maps

Data

- Survey of 2,000 beneficiaries with sampling strategy based on thresholds
 - Business size, consumption, etc. with geographic location of HH & features
 - Social network module
- Administrative data
 - Loans: Cycles; Amounts; Repayments
 - Insurance: Claims, verifications, audits; gridded parametric thresholds
 - GPS: location of branches and centers
 - Social ties: joint liability group composition
 - Mortality: life insurance data
- Existing panel (since 2004)
 - A 3-year cycling panel of 2,000 Fonkoze borrowers across 13 branches
 - Poverty score questionnaire: assets, food security, business activities, children's schooling, etc.
- Physical data
 - Weather data; topographic data of Haiti

References

- Daniel Clarke. "A Theory of Rational Demand for Index Insurance," Economics Series Working Papers 572, University of Oxford, Department of Economics, 2011.
- Dean Karlan, Robert Osei, Isaac Osei-Akoto, and Christopher Udry. "Agricultural Decisions after Relaxing Credit and Risk Constraints." The Quarterly Journal of Economics, 2014.
- MiCRO and Fonkoze. "First-Year Experiences with Catastrophe Insurance for Haitian Microentrepreneurs", 2012. Available at www.munichre-foundation.org
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