The Paradox of Social Protection and Its Implications for Poverty Reduction Policy

Michael R Carter

University of California, Davis, University of Cape Town & NBER

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Accra
There are decades of evidence that risk:

- *Makes people poor* by reducing incomes & destroying assets & creditworthiness
- *Keeps people poor* by discouraging investment in risky but profitable activities

Can well designed risk transfer mechanisms reverse this situation?

- *Directly* offset the impacts of shocks on the assets of the current (& future) generation
- *Indirectly* allow households to prudentially invest more in risky, but high returning agricultural activities by protecting them against the worst consequences of shocks
- That is, if insurance protects farmers assets & capital after the drought, it should also enable farmers to safely invest more before the drought (the “risk reduction dividend”)
So can we design risk transfer mechanisms that achieve these goals?

In tomorrow morning’s 9:30 session, Duncan Khalai of the International Livestock Research Institute will share details on the 'IBLI' insurance contract that exactly achieves these goals.

Here I want to quickly summarize some of the evidence on the impact of IBLI in order to frame a broader discussion about how we move from evidence to action.
The 2011 Drought as Learning Opportunity

- Survey of 673 Households in October 2011 in Marsabit County
- Experimental procedures to randomize uptake of insurance
- 25% of the study households purchased insurance
- Nature created a cruel opportunity to study insurance impacts
Differentiated Coping without Insurance

M.R. Carter

Social Protection Paradox

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average Response</th>
<th>By Livestock Wealth</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Lowest Quartile</td>
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<tr>
<td>Asset Smoothing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q3 Probability Reduce Meals (%) (prior to payout)</td>
<td>72 (1.7)</td>
<td>82 (3.0)</td>
</tr>
<tr>
<td>Q4 Probability Reduce Meals (%) (after receiving payout)</td>
<td>62 (1.8)</td>
<td>72 (3.5)</td>
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<tr>
<td>Consumption Smoothing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q3 Probability Sell Livestock (%) (prior to payout)</td>
<td>29 (1.7)</td>
<td>12 (2.6)</td>
</tr>
<tr>
<td>Q4 Probability Sell Livestock (%) (after receiving payout)</td>
<td>27 (1.7)</td>
<td>12 (2.6)</td>
</tr>
<tr>
<td>Observations</td>
<td>675</td>
<td>163</td>
</tr>
</tbody>
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Note that the poorest households do not sell assets to cope with drought, simply stop eating.
Differentiated Impacts of Insurance

- After the 2011 drought, we found that insurance had the following impacts:
  - For the better off households insurance leads to a 82% drop in distress asset sales, allowing households to exit the drought with their more of their productive assets intact
  - For less well-off households (who were already doing everything they could to keep from loosing their productive assets) insurance to a 40% drop meal reduction as a coping strategy
- Other studies have found that insurance caused livestock owning households to invest more in the quality of their herds (veterinary care, breeding stock)—the risk reduction dividend in action!
- So we have the evidence on a tool that works, but what action do we take? How do we use insurance as a tool in social protection & poverty reduction policy?
What Role Can Insurance Play within a System of Social Protection?

- Having insurance or other shock-responsive funding mechanisms in place promises to make disasters “dull” (politically & financially)
- Some evidence that such mechanisms speed payment and disaster recovery
- Today dig beneath the more macro perspective of this other work and explore the microeconomics of integrating index insurance into a system of social protection
- In 2008, as Kenya launched the HSNP cash transfer program, I suggested that an insurance subsidy for the vulnerable could reduce the overall costs of social protection (Social Protection Paradox)
Today we use economic theory to explore this claim, exploring 3 mechanisms:

- **Vulnerability reduction effect**: Insurance protects the vulnerable, not just the poor, reducing the descent into poverty.

- **Investment Incentive Effect**: Insurance enhances investment incentives for both poor and vulnerable households, opening pathways from poverty.

- **Budget Match Effect**: Insurance can be offered on a partial subsidy basis, stretching public dollars further.

Find that because of these mechanisms, insurance markets can reduce the cost of social protection, and that subsidies can be smart policy.
To gain purchase on these questions, we developed a theoretical model of risk, accumulation and insurance inspired by pastoralist regions of Africa where climate shocks drive poverty.

Model has three key implications:

- **Shocks Can Have Irreversible Consequences for the Vulnerable**
  A shock that pushes a household below its critical asset level has irreversible consequences as the household becomes mired in chronic poverty.

- **Shocks Can Induce Asset Smoothing by the Vulnerable**
  To try to avoid this fate, highly vulnerable households in the neighborhood of this critical level will “asset smooth” when hit with a shock (i.e., cut consumption to preserve capital and avoid collapse into chronic poverty).

- **But Asset Smoothing is Costly across the Generations (asset shifting)**
  While asset smoothing is understandable, it potentially has deleterious long-term consequences as consumption doubles as investment into future human capital.
Findings

- **Paradox of Social Protection:**
  Using social protection dollars to issue contingent (post-shock) transfers to the vulnerable non-poor reduces the long-run extent and depth of poverty relative to a conventional cash transfers that target the already poor;

- **Inter-temporal Tradeoff:**
  But, given a budget constraint, targeting the vulnerable induces a tradeoff between the short- & the long-term well-being of the poor;

- **Insurance Can Mitigate this Tradeoff:**
  Can mitigate this tradeoff if the public budget is stretched by having the vulnerable fund a portion of the premium load for an insurance that functions as contingent social protection;

- **Insurance Subsidies can be Smart Policy:**
  However, the ability of the vulnerable to self-finance their own social protection is limited and their demand for insurance is highly price elastic; Insurance subsidies can be smart!

- **Climate Change Stress Test:**
  Climate change makes insurance more effective, *up to a point*
Consider an infinitely lived household dynasty, which is comprised of a sequence of generations & each generation lasts for 25 years.

- Enjoys initial endowments of physical assets and human capabilities
  - Assets and human capital combine to produce income using either a low or high (fixed cost) technology
  - Assets are subject to random depreciation (mortality) shocks
  - Consumption cannot be more than cash on hand (value of income plus assets) as no borrowing is assumed possible
  - Initially assume human capital fixed across generations at $H_{do}$
  - Will then allow human capital to be updated for each new generation, where updating sensitive to 'childhood' nutrition in the prior generation

Households optimally manage resources to optimize dynasty’s stream of economic well-being.
Across full endowment space see the following:

- For fixed human capital, partitions space into: Always poor ($H_{d0} < 1.05$); Never poor ($H_{d0} > 1.35$); and, Multiple equilibrium potentially poor in between.
- At any point in time, define the Vulnerable as those in the multi-color band.
- It is this 'colorful' group that will find it optimal to asset smooth.
Even if optimal for the decisionmaker, asset smoothing can be costly over time.

Know that the 'First 1000 Days’ matter for human potential.

Evidence that the poor households asset smooth by cutting nutritional and educational investments.

Model assumes that household decisionmaker myopically ignore the long-term consequences on children of these cuts (because of discounting, information, middle age bias & present bias).

But what are its consequences?
Again simulate the dynamic model, but this time allowing future human capital to deteriorate when consumption falls.

- Micawber Frontier has moved to the northeast. Initial endowment positions in the lower right of the diagram, which used to have some probability of escape from long-term poverty have seen those prospects drop to zero.
- Vulnerability matters more!

(a) Fixed Capabilities

(b) Evolving Capabilities
How Effective are Poverty-targeted Cash Transfers?

- The inability of poor households to sustain investment in the human capital of their children has motivated the outpouring of cash transfers we now see across the world.
- Kenya’s Hunger Safety Net Program (HSNP) is one such example.
- And yet, evidence is that at best HSNP helps the poor tread water, but does not fundamentally alter poverty dynamics (Hurrell and Sabates 2015).
- But can we make even better use of public dollars?
- Let’s use our model to compare poverty dynamics in a world with and without an risk transfer/insurance mechanism.
Simulating Poverty Dynamics under Alternative Schemes

Compared to the no insurance counterfactual, presence of an index insurance market cuts poverty headcount in half

Driven primarily by vulnerability reduction
To explore measure public finance implications, assume a social contract under which the government commits to closing the poverty gap for all poor households (assume perfect targeting of cash transfer in contrast to sloppy targeting of subsidies).

Using a 5% discount rate, the present value government social compact expenditures are 55% lower when the insurance market is in place.

Note that cost savings reflects reductions in both the number of poor and the poverty gap.
Compared to unsubsidized markets, insurance subsidy scheme reduces chronic poverty by an additional 30%.

Additional impact coming almost entirely from investment incentive effect (price elastic demand for insurance of the most vulnerable).

But Insurance subsidies cost money & present value of government expenditures on subsidies plus social compact are now 'only' 18% less than no insurance social protection expenditures.
Analysis so far assumes current climate, but ..
Worsen climate at each generation change
Reprice insurance based on new disaster probabilities
Weather & other shocks may be an important driver of poverty
Coping strategies of the vulnerable are partially effective in the short-term, but may fail in the longer-term as the consequences of reduced nutrition are transmitted through to the next generation
Logic of contingent social protection for the vulnerable is clear:
- Prevent the growth of the number of destitute (which crowds the social protection budget & increases the poverty gap)
- Reduce the inter-generational transmission of poverty caused by asset smoothing
Strong synergies between insurance & conventional forms of social protection (true in theory, but still need to gather evidence)
However, if climate change & risk become too severe, then even vulnerability-targeted program lose their efficacy.
There are also challenges to making insurance work (tomorrow’s session)
But Wait, There is More: The BOMA-IBLI Experiment

- Ongoing, 5-year study in Samburu county to look at the individual and interacting impacts of a graduation program & index insurance on poverty rates
- Graduation randomly offered to some in the poorest quartile via cohort wave strategy and oversubscription
- Insurance subsidies offered to random sub-sets in first and second quartiles
- Goal is to gain evidence on ability to alter poverty dynamics at both household and community levels
Thank You!

M.R. Carter  Social Protection Paradox