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

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Accra

Insurance & Poverty Dynamics

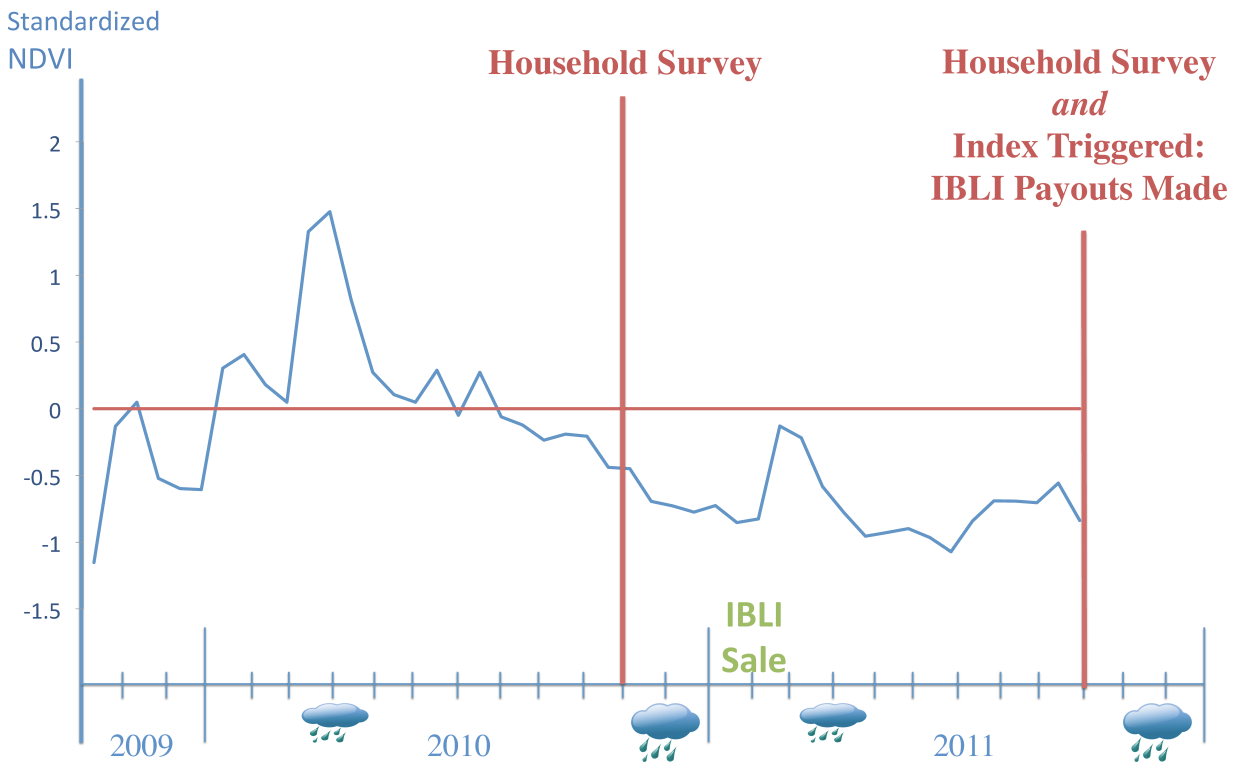
- There are decades of evidence that risk:
  - *Makes people poor* by reducing incomes & destroying assets & creditworthiness
  - *Keeps people poor* by discouraging investment in risky but profitable activities
- Can well designed risk transfer mechanisms reverse this situation?
  - *Directly* offset 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")

The Evidence

- 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

Variable	Average Response	By Livestock Wealth: Lowest Quartile	By Livestock Wealth: Highest Quartile	By Livestock Wealth: Difference in Means
Asset Smoothing				
Q3 Probability Reduce Meals (%) *(prior to payout)*	72	82	61	21***
	(1.7)	(3.0)	(3.8)	(4.9)
Q4 Probability Reduce Meals (%) *(after receiving payout)*	62	72	51	21***
	(1.8)	(3.5)	(4.0)	(5.3)
Consumption Smoothing				
Q3 Probability Sell Livestock (%) *(prior to payout)*	29	12	44	32***
	(1.7)	(2.6)	(3.9)	(2.5)
Q4 Probability Sell Livestock (%) *(after receiving payout)*	27	12	42	30***
	(1.7)	(2.6)	(3.9)	(4.7)
Observations	675	163	161	

- 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)

Exploring Insurance & Social Protection

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

Approach

- 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 levle 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

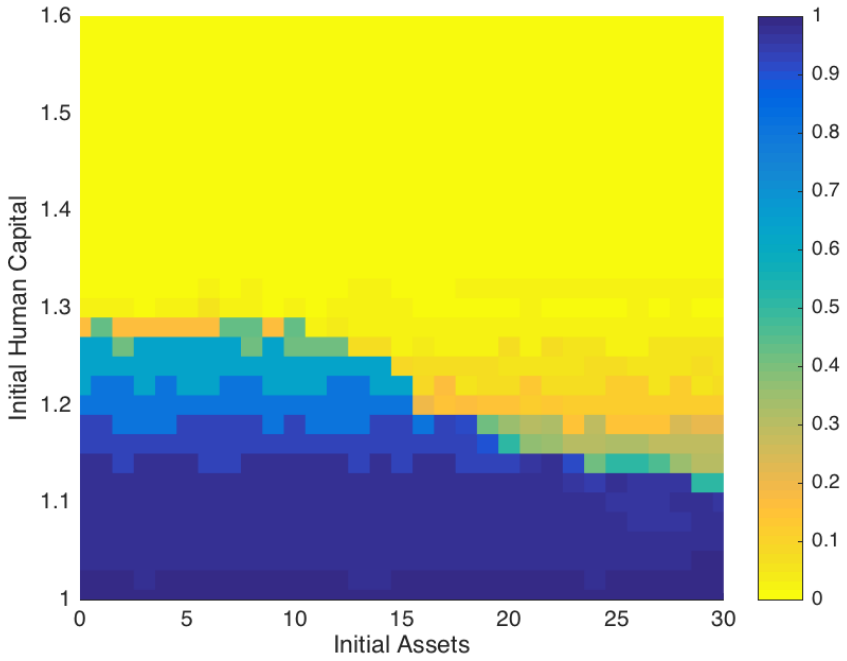
- *Paradox of Social Protection*:
  Using social protection dollars to issue contingent (post-shock) transfers to the *vulnerable non-poor* reduces the long-run extent and depth of poverty relative to a conventional cash transfers that target the *already poor*;
- *Inter-temporal Tradeoff*:
  But, given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

Economics of Consumption & Accumulation in the Face of Risk

- 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 fo economic well-being

Chronic Poverty Map, 1 (Assuming fixed capabilities)

- Across full endowment space see the following:



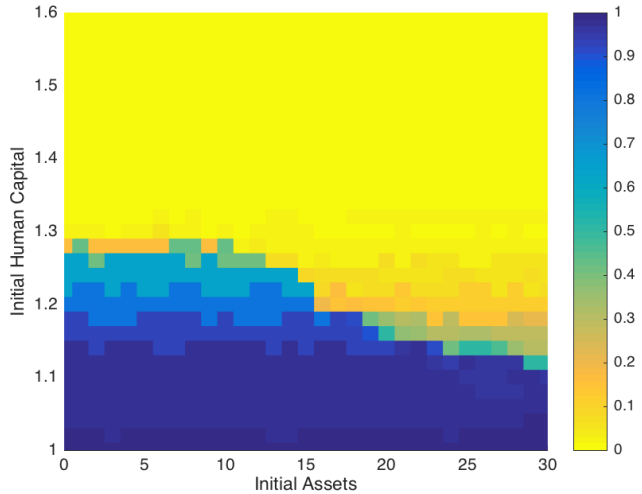
- For fixed human capital, partitions space into: Always poor ($H_{d0} < 1.05$); Never poor ($H_{d0} > 1.35$); and, Multiple equilibrium potentially poor in between
- At any point in time, define the Vulnerable as those in the multi-color band
- It is this 'colorful' group that will find it optimal to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

Asset Smoothing as Intergenerational Asset Shifting

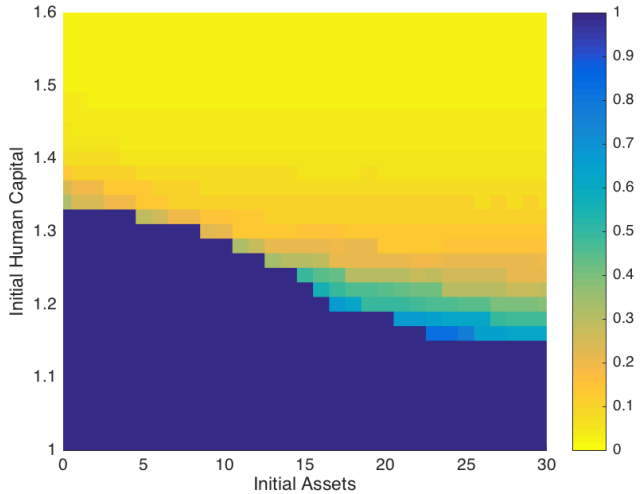
- Even if optimal for the decisionmaker, asset smoothing can be costly over time
- Know that the 'First 1000 Days' matter for human potential
- Evidence that the poor households asset smooth by cutting nutritional and educational investments
- Model assumes that household decisionmaker myopically ignore the long-term consequences on children of these cuts (because of discounting, information, middle age bias & present bias)
- But what are its consequences?

Chronic Poverty Map, 2 (Allowing capabilities to evolve)

- Again simulate the dynamic model, but this time allowing future human capital to deteriorate when consumption falls



(a) Fixed Capabilities



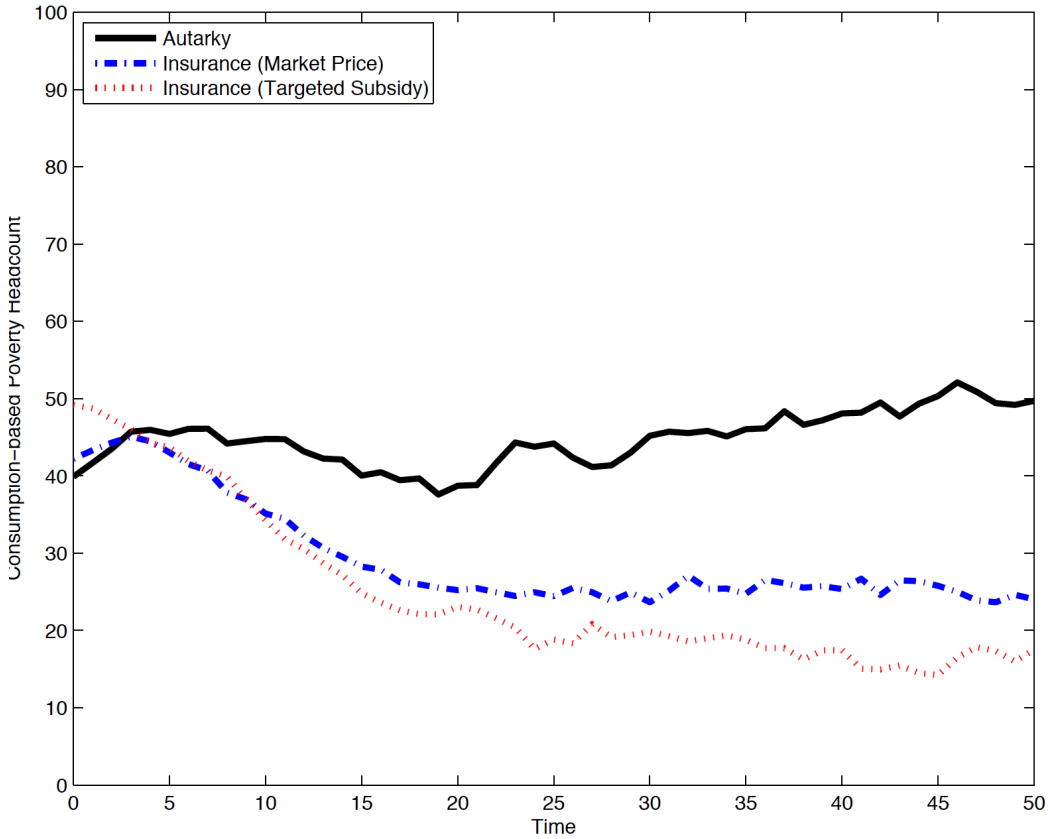
(b) Evolving Capabilities

- 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!

How Effective are Poverty-targeted Cash Transfers?

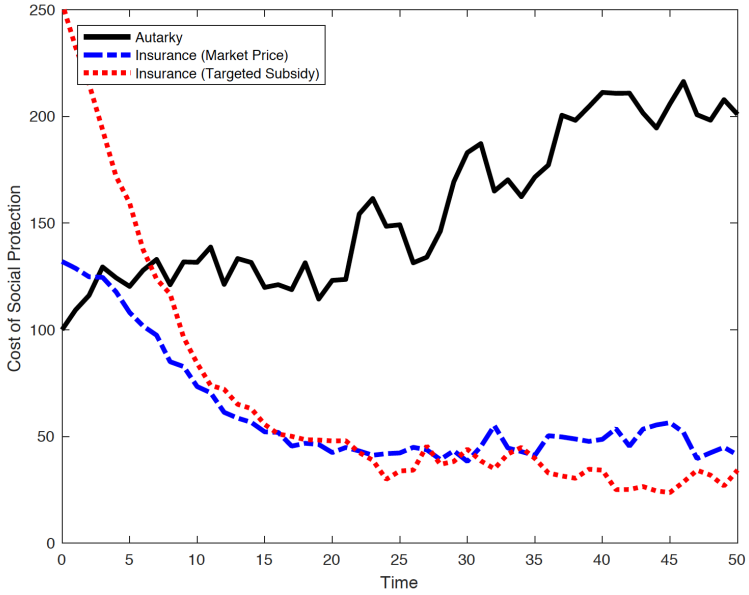
- The inability of poor households to sustain investment in the human capital of their children has motivated the outpouring of cash transfers we now see across the world
- Kenya's Hunger Safety Net Program (HSNP) is one such example
- And yet, evidence is that at best HSNP helps the poor tread water, 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



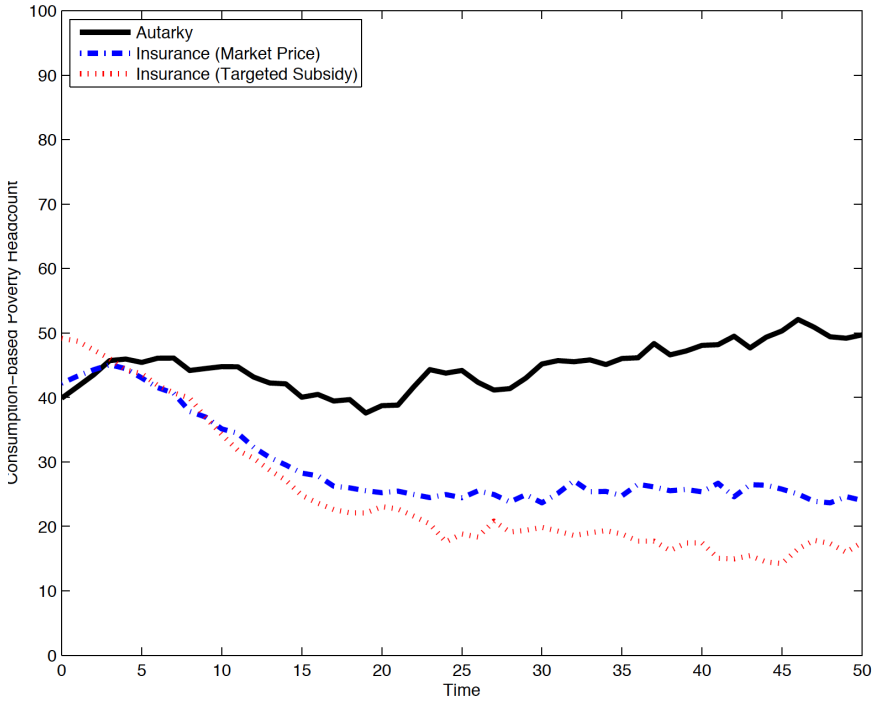
- Compared to the no insurance counterfactual, presence of an index insurance market cuts poverty headcount in half
- Driven primarily by vulnerability reduction

Public Finance Implications



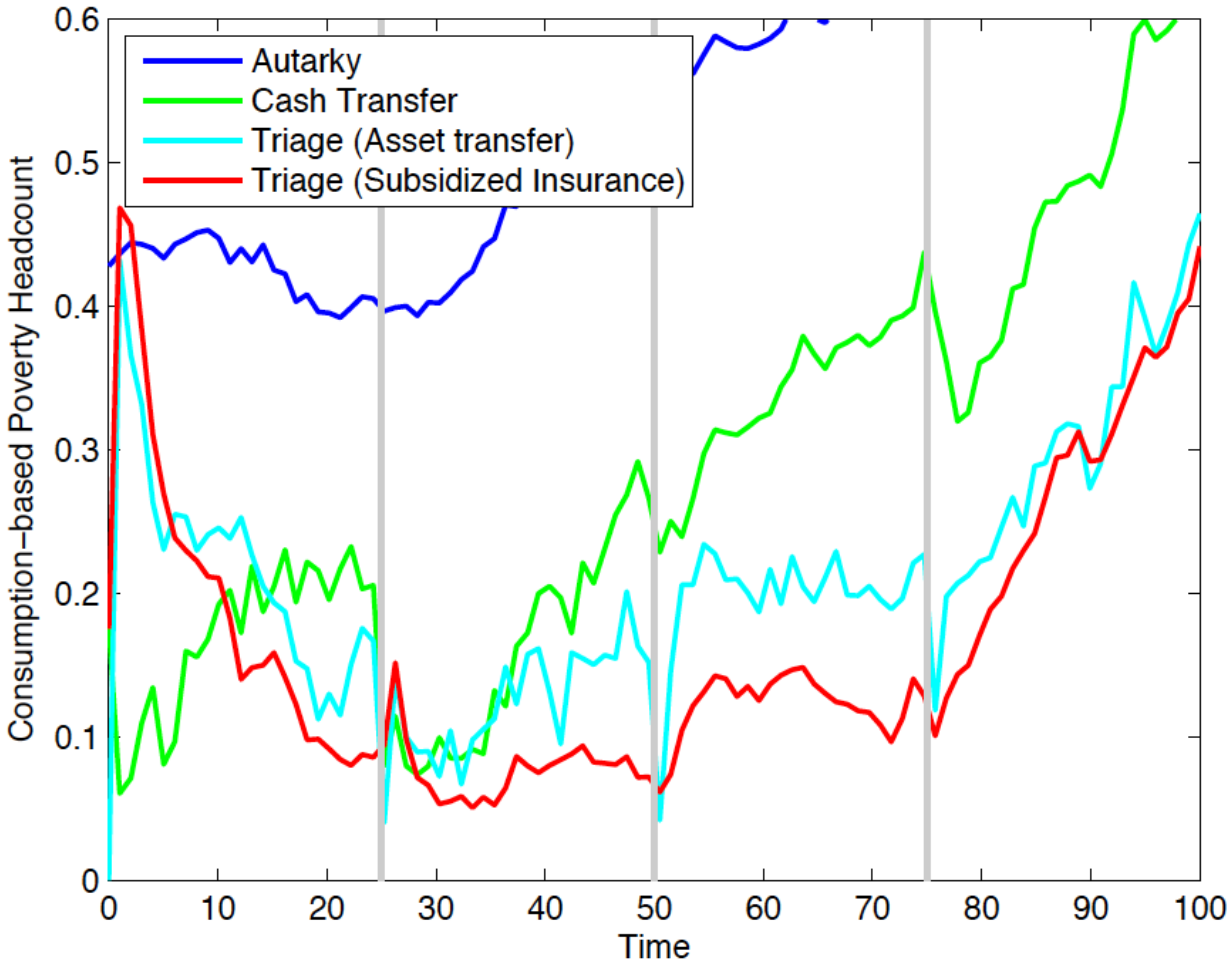
- To explore measure public finance implications, assume a social contract under which the the government commits to closing the poverty gap for all poor households (assume perfect targeting of cash transfer in contrast to sloppy targeting of subsidies)
- Using a 5% discount rate, the present value government 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

Impact of Insurance Subsidies



- 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

Climate Change Stress Test of Social Protection



- Analysis so far assumes current climate, but ..
- Worsen climate at each generation change
- Reprice insurance based on new disaster probabilities

Conclusion

- 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!