

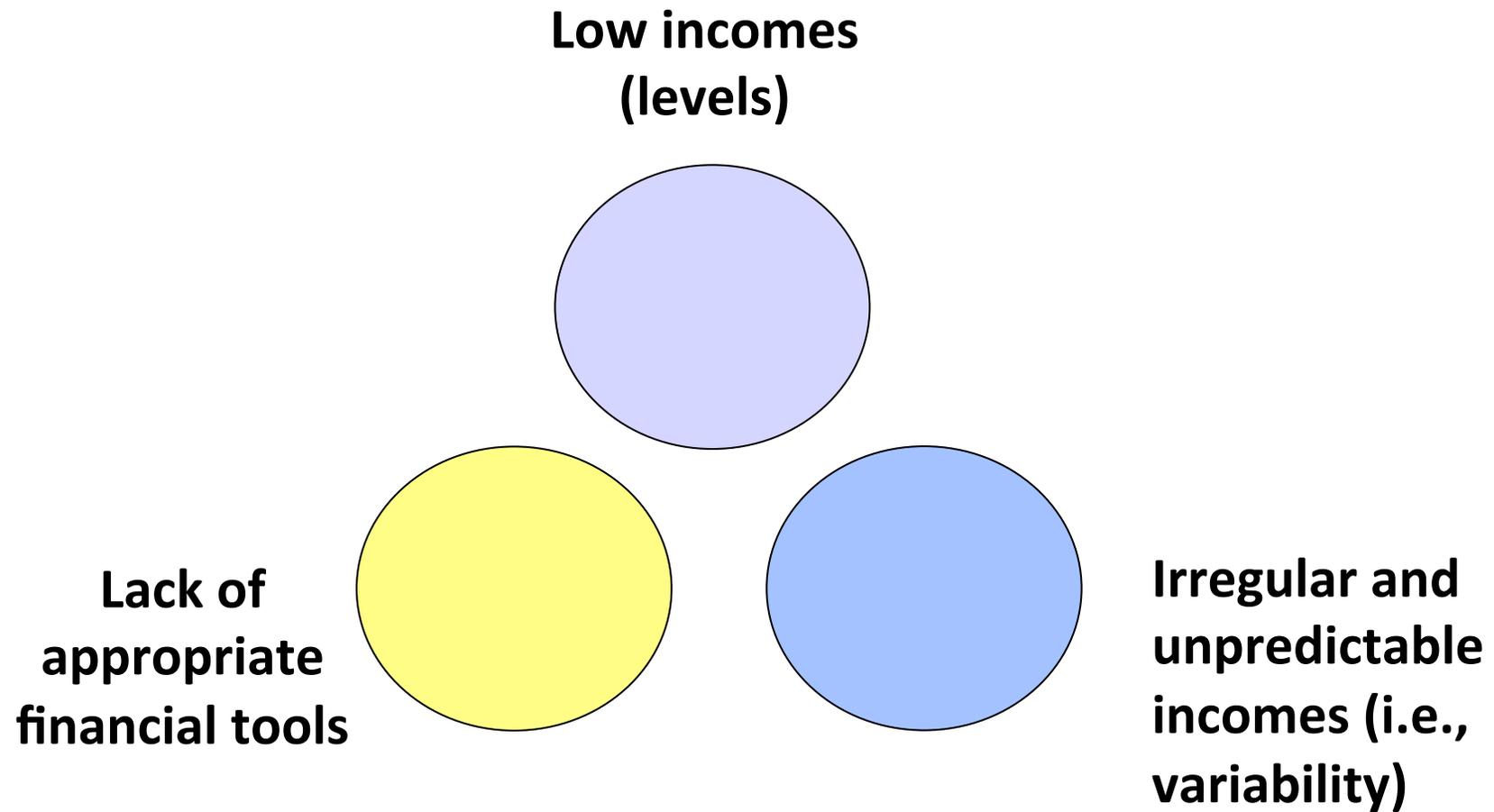
Risk, Insurance, and Safety Nets

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Agenda

1. The problem: risk in income and expenditure.
2. Vulnerability: static and dynamic.
3. Responses: patching.
4. Responses: limits to informal insurance.
5. Microinsurance: challenges and markets.
6. Last words

Portfolios of the Poor: triple whammy



1. Risk in income and expenditure

Feizal, Uttar Pradesh, India

Household monthly income for 4: \$36

Broke his leg, no insurance

Delayed treatment

Lost 8 months of wages

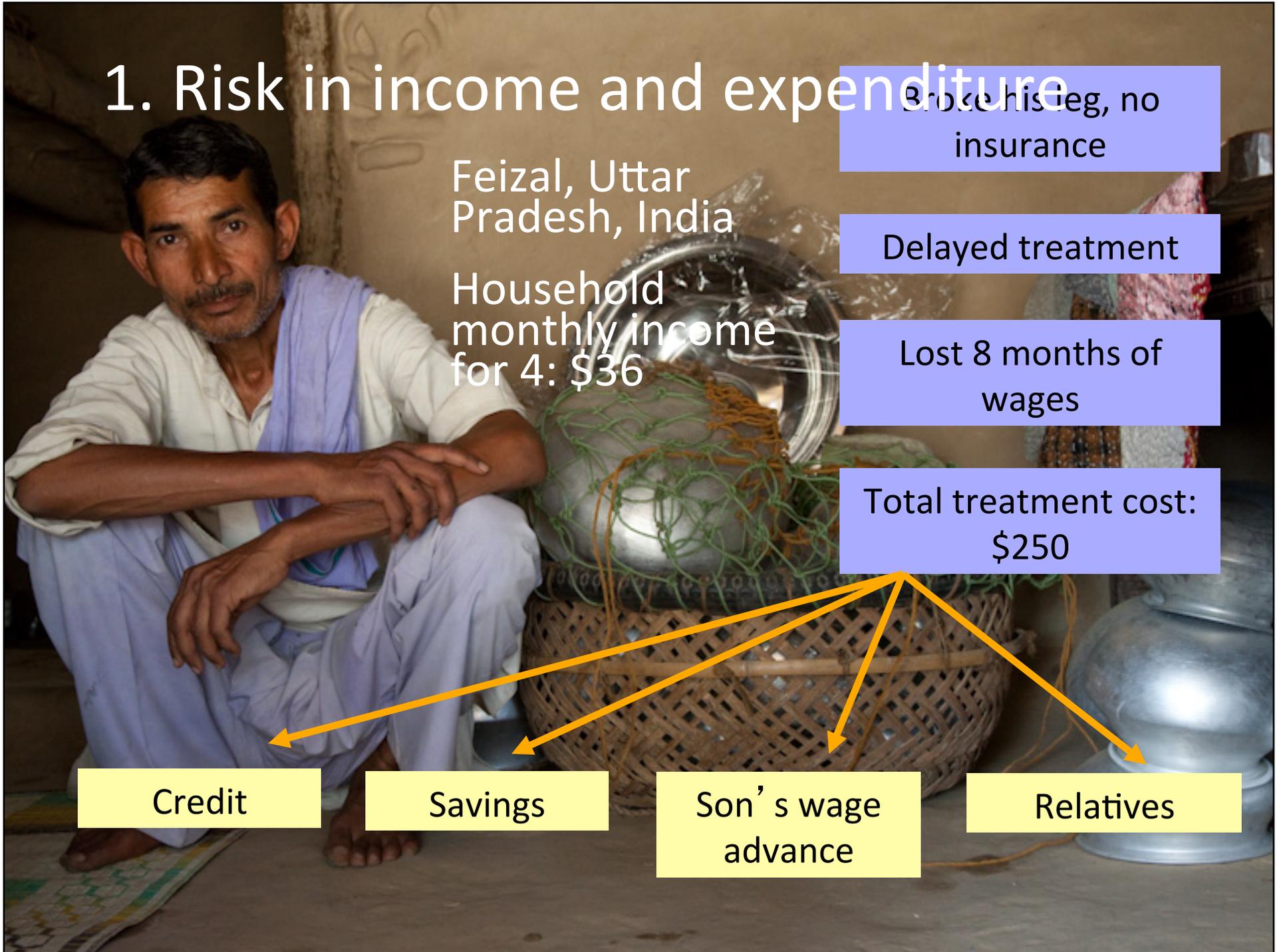
Total treatment cost: \$250

Credit

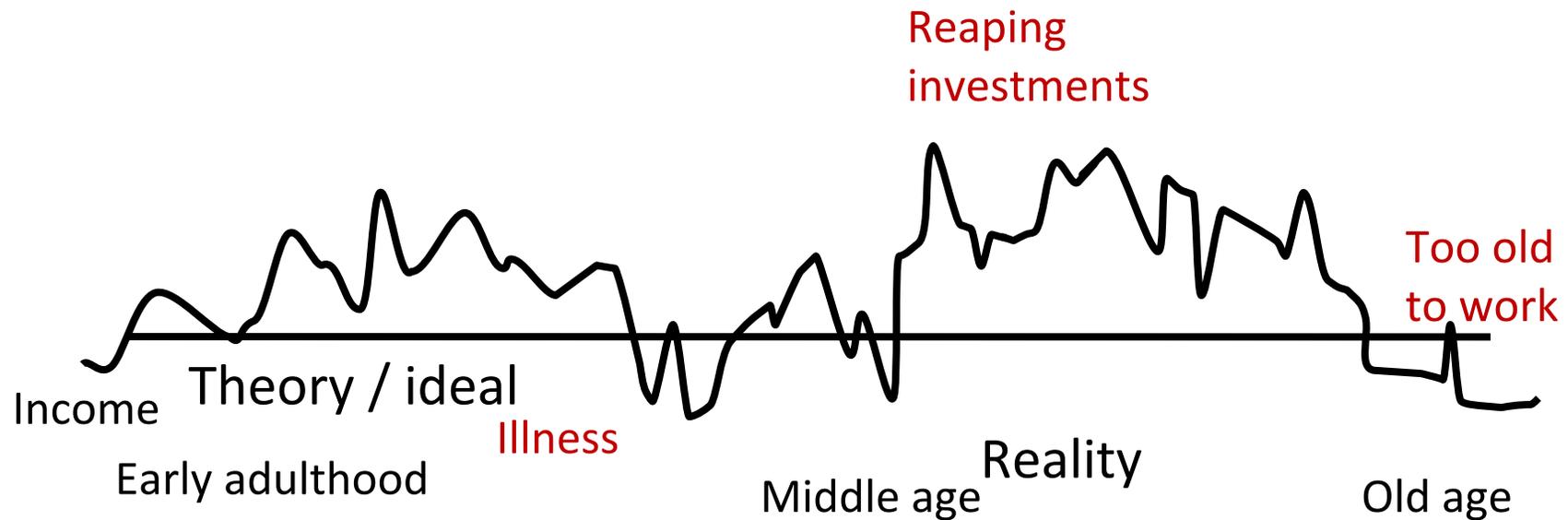
Savings

Son's wage advance

Relatives

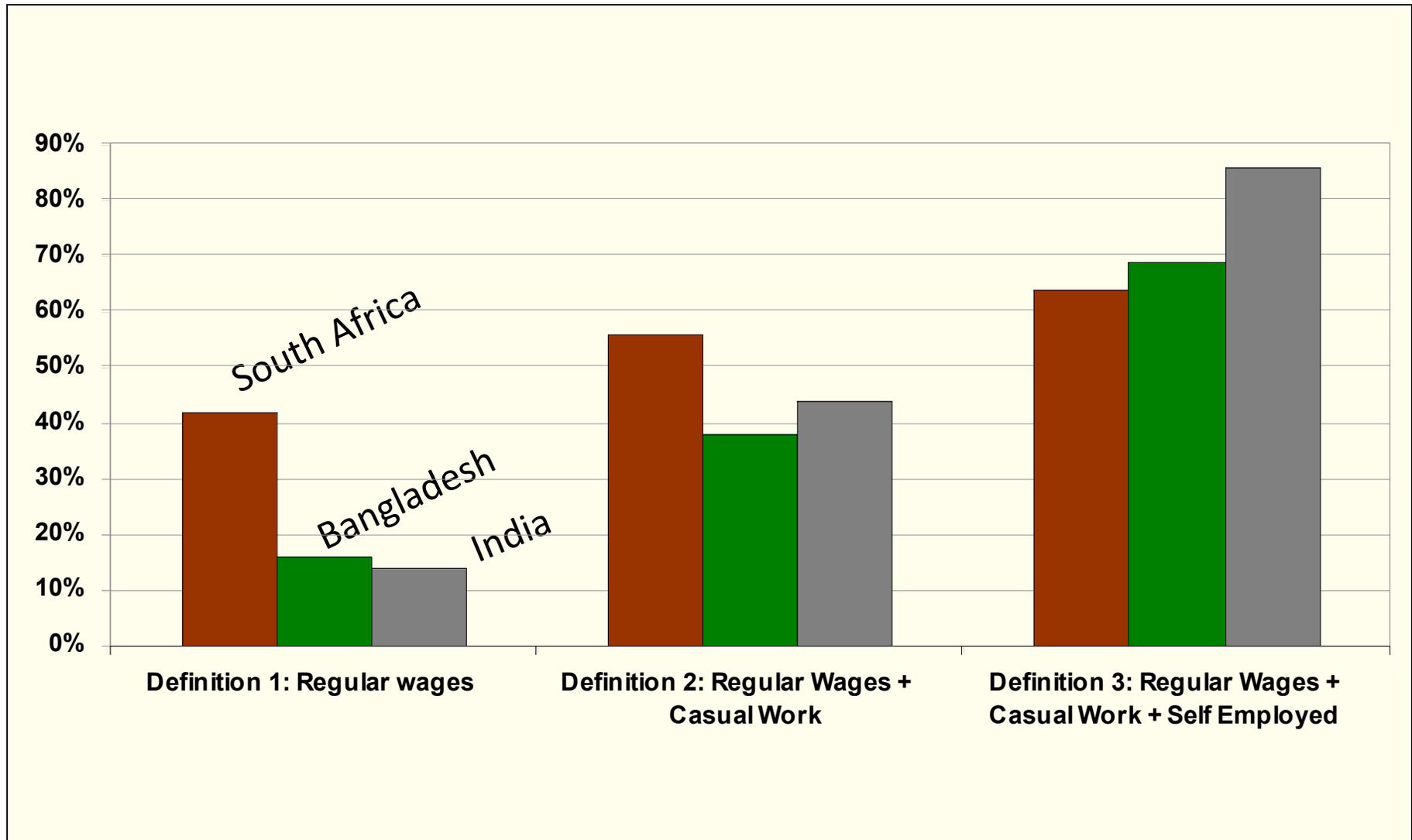


Poverty entails more than low average incomes



Why reliability matters

Ups and downs: employment types



Share of adult individuals within each category (percent)

Most frequent events causing a financial emergency,

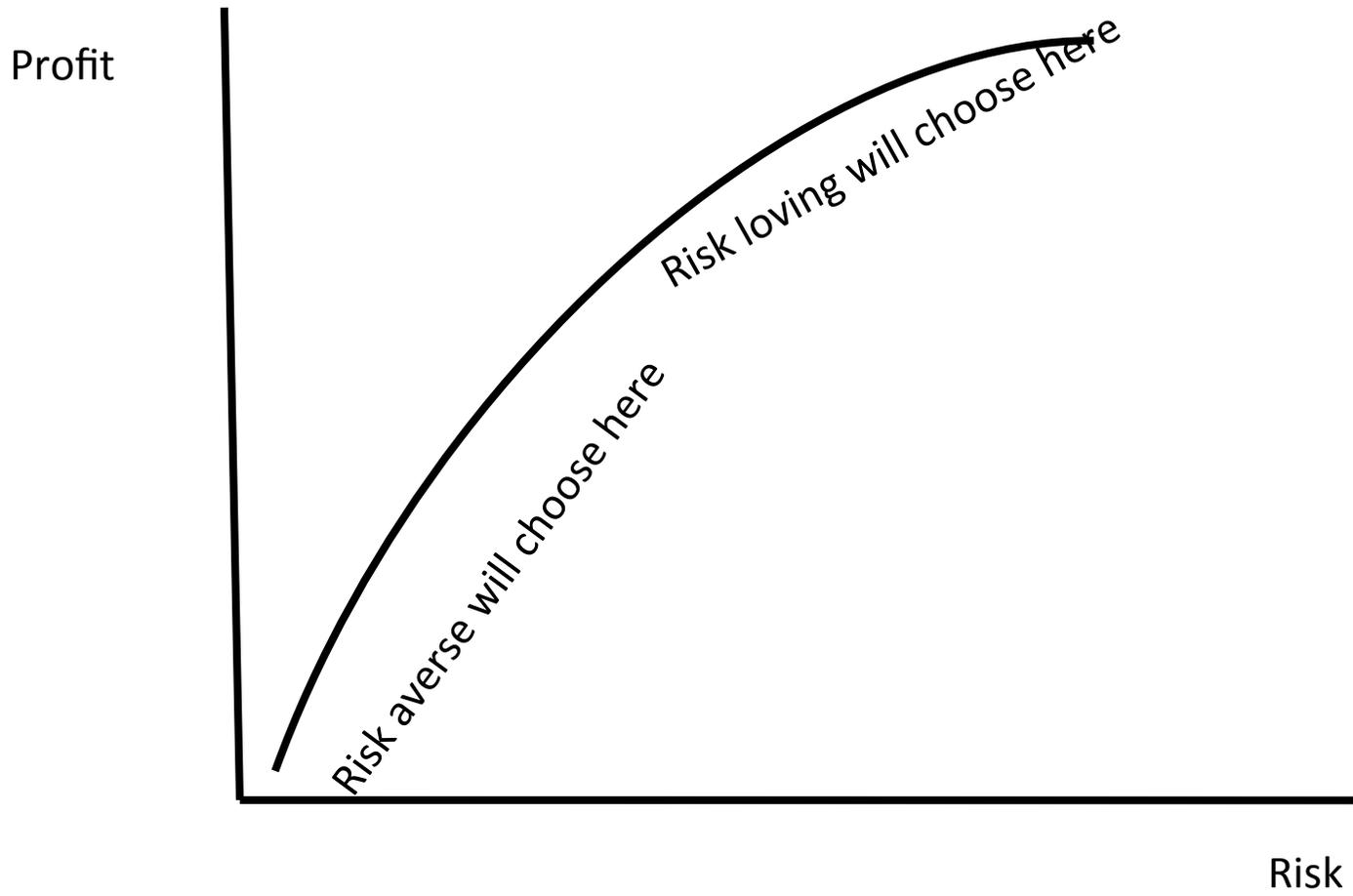
By country, with the percent of country sample affected at least once during the study year

Bangladesh 42 households		India 48 households		South Africa 152 households	
Event	%	Event	%	Event	%
Serious injury or illness	50	Serious injury or illness	42	Funeral of family outside the household	81
Did not receive expected income	24	Loss of crop or livestock	38	Serious injury or illness	10
Fire/loss of home or property	19	Loss of regular job	10	Funeral of member of the household	7
Loss of crop or livestock	7	Theft	4	Theft	7
Business failure	7	Abandonment or divorce	4	Violent crime	4
Cheated/cash loss	7	Serious harassment by officials	4	Fire/loss of home or property	3

2. Risk aversion and vulnerability

- Before a shock (“ex ante”), choices under uncertainty are affected by
 - Inherent risk aversion
 - Vulnerability
 - What financial tools are available?
 - How great are expected shocks?
 - Richer households may be as risk averse as poorer households, but they may worry less about risk knowing that they have assets and solid coping other mechanisms.

Risk aversion:
trading off risk and return



The insidious interaction

- To summarize this strand: part of being poor means you are exposed to substantial risk.
- But being vulnerable (endemically poor) increases your exposure to risk because:
 - You are unable to take protective measures.
 - You are less inclined to take risks that could help.

3. Informal alternatives to insurance = “patching”

■ Individual:

- Borrow from friends, family, neighbor, boss, money lender.
- Crop / business diversification
- Child labor
- Draw down savings (and/or sell assets)
- Belt tightening (consume less)

■ Group:

- Labor assistance
- Land sharing
- Bequests / loans in village or kin network.

Thembi's brother's funeral

US\$ converted from South African rand at \$=6.5 rand, market rate

Uses of funds

Undertaker	\$538
Tent	91
Pots	35
Food	649
Sheep	100
Total:	\$1,413

Thembi's brother's funeral

US\$ converted from South African rand at \$=6.5 rand, market rate

Sources of funds			
Payout from burial society	\$154	Borrow from aunt's burial society (no interest)	154
Contribution from relative	231	Borrow from cousin's savings club (30%/month)	92
Contribution from relative	154	Borrow from cousin (no interest)	108
Contribution from relative	154	Thembi's grant money	92
Rental of tent by relative	91	Brother's grant money	49
Rental of cooking pots by relative	35		
Purchase of sheep by relatives	100		

Saving or insuring?

- In theory, households should save for expected fluctuations
 - Pensions
 - Building up bequests
 - Base savings for common exigencies
= “Self insurance” or buffer stock
- In practice, saving can be difficult (next lecture).
 - Anticipated shocks are often treated with the same tools as unanticipated shocks:
- Unanticipated shocks:
 - Borrowing, dissaving, belt-tightening, working more, etc., to the extent possible

4. Limits to informal insurance

- Gaps
- Unreliability
- Stress and shame
- Time and energy
- Lack of transparency

Low-income households seek reliable formal and informal **financial tools for a wide range of purposes.**

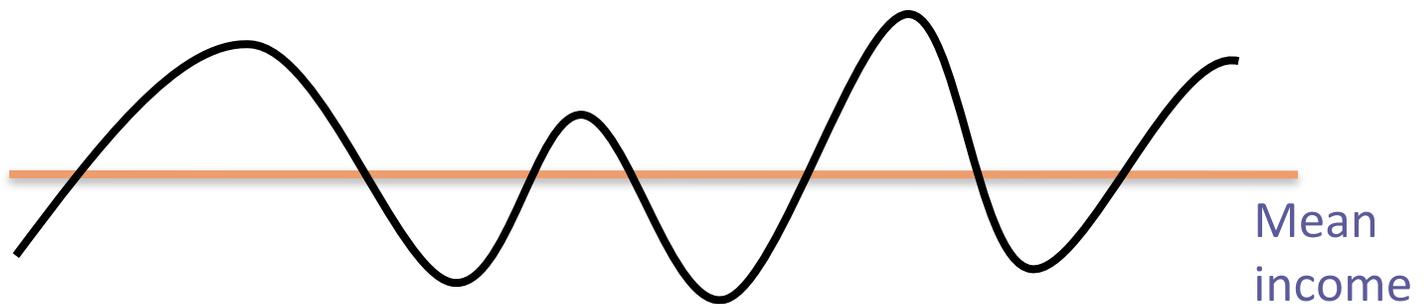
When can patching work?

Anticipated vs unexpected risks

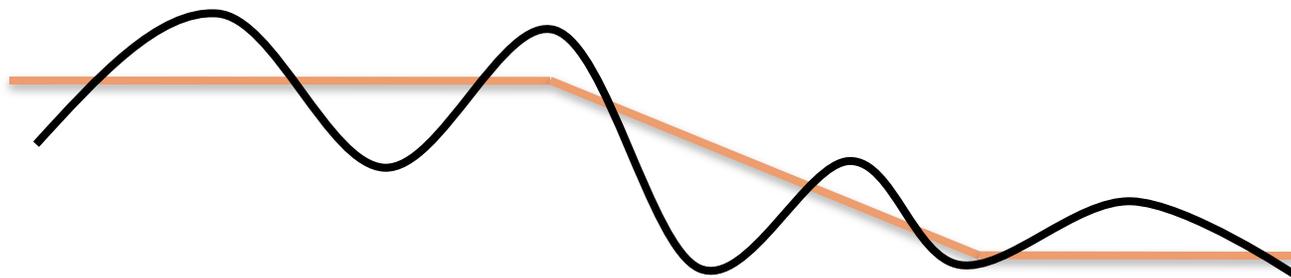
- Anticipated ups and downs
 - Old age
 - Death (i.e., funeral expenses)
 - Births
 - School fees
 - Marriages
 - Basic income fluctuation (e.g., seasonal)
- Unexpected risks
 - Major illness
 - Major crop loss
 - Global financial crisis?

Transient versus chronic shocks

Transient shocks

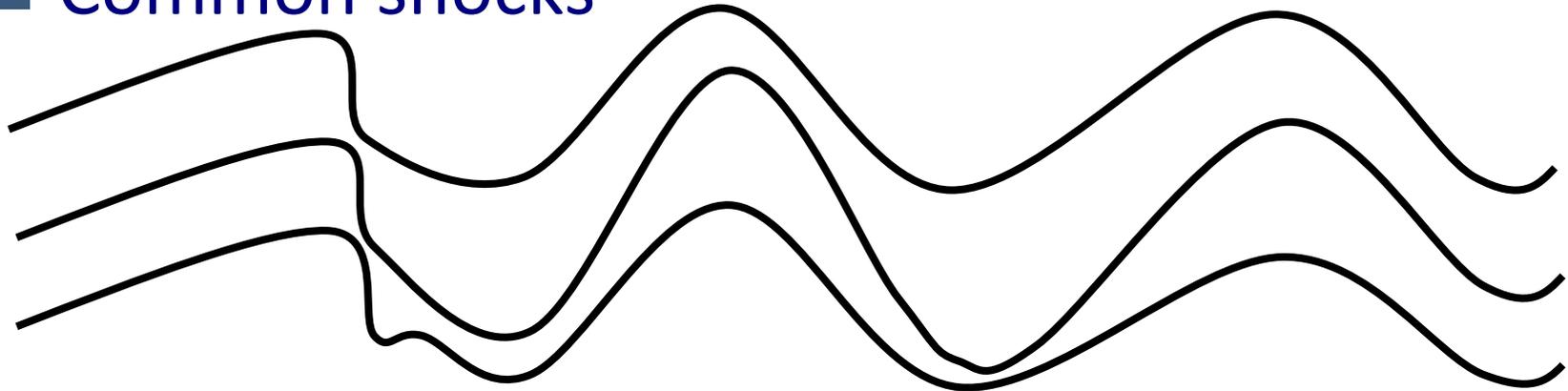


Chronic shocks

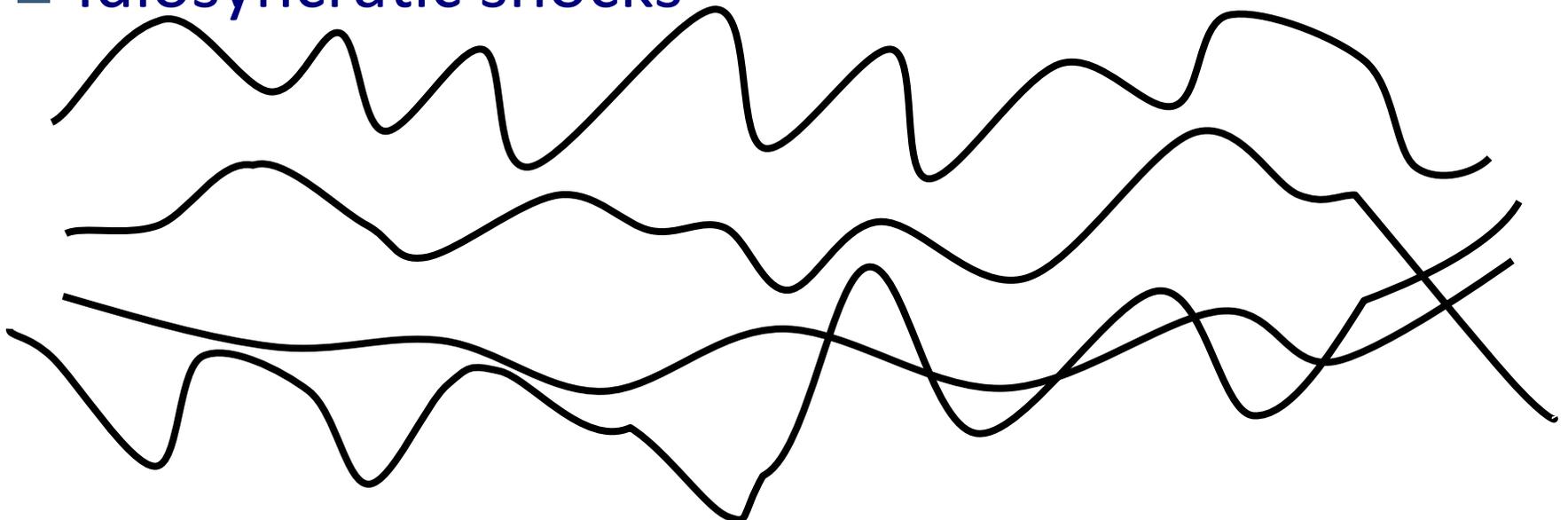


Common versus idiosyncratic shocks

■ Common shocks



■ Idiosyncratic shocks



Types of risks and implications for informal insurance

■ Chronic vs. transient

- Transient losses handled more easily than chronic.
- When does insurance become redistribution?
- Problems for elderly, hardcore poor.

■ Common vs. idiosyncratic

- Idiosyncratic shocks handled more easily than common shocks (e.g., can be handled informally).
- But then true common shocks require large-scale (hence formal) pooling of risk.

■ Limits to community sharing in face of big calamities.

■ Repeated vs. one-time losses

- First year of drought can often be handled with local resources.
- Second + year of drought hits hardest.

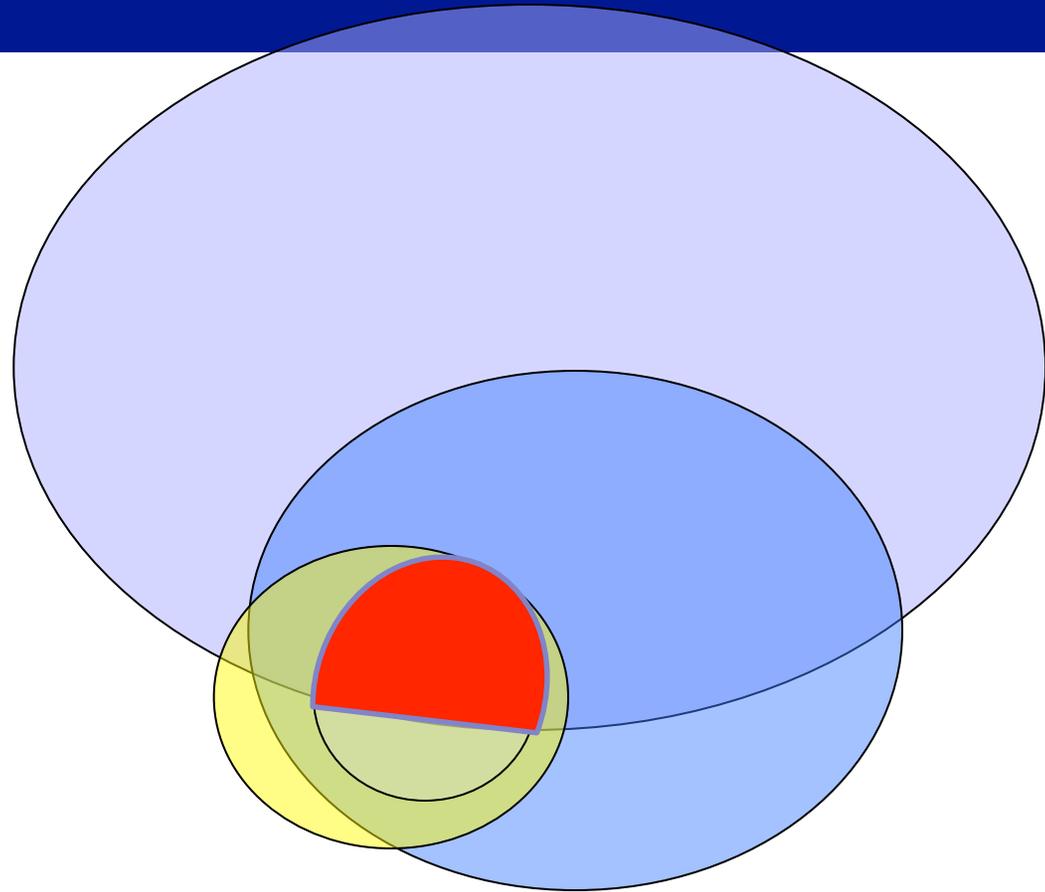
If aim is to reduce vulnerability...

- Informal insurance is ubiquitous, but highly imperfect. Providing better ways to:
 - Save for anticipated shocks
 - Borrow in emergencies (unexpected shocks)may be as important as insurance *per se*.
- Works least well in the most difficult circumstances
 - Big shocks
 - Regional shocks
- At the same time, insurance can be a critical tool:
 - When coping with “catastrophic” losses
 - Because savings is difficult.
 - Because insurance is the only instrument for aggregating risks on a larger scale.

5. Real-world: challenges and markets

Risk truly undermines families

Quality insurance product can be delivered feasibly



Risk is insurable

Customers will purchase it

The challenge

Can households afford insurance?

- Yes, if actuarially fair (or close).
- But how high is load factor (transactions costs)?
- Total cost is not the only issue.
- Q: how well does product fit into household's economic life? "Portfolio" management?

5.1 Funeral insurance

- From Stuart Rutherford, *The Poor and their Money*.
- Burial societies in the fishing communities of Cochin, India.
- The societies are typically based around a church, temple, mosque, or social club.
- Each involves 300 people or more.

Lessons from Cochin

- In a typical fund, each member contributes at least 2 rupees per **week** (about 4 cents).



- For each rupee per week contributed, the society guarantees that if a member of the contributor's family dies within the year, the family gets Rs. 500 (about \$10) from the fund.
- Exclusions for infants and partial exclusions for young children – no other age adjustments.

Small change

Where is the private sector?

- Why don't private companies edge their way into this market?
- Private companies have far better opportunities to
 - diversify risks
 - manage customized terms
 - offer a range of products
- Classic answers:
 - Adverse selection (hidden information/ type)
 - Moral hazard (hidden action: limited here)
 - Transactions costs

Small change

- An answer specific to developing countries: burial societies handle a lot of small change:
 - Four cents a week, collected from each of 300 families.
- Burial societies' advantage: they are based out of local institutions where people already gather weekly.
 - The societies can thus collect small payments as part of other activities.

5.2 Crop Insurance

Why do farmers have difficulty finding effective insurance?

■ Moral hazard

- Once insured, farmers are less likely to apply the extra fertilizer, labor, and other inputs needed to maximize chances of success: the **very fact of being insured raises the probability of losses.**

■ Adverse selection

- Farmers in the riskiest situations are naturally the most eager to purchase insurance. When insurers cannot tell beforehand who is most risky, they have to charge everyone the same price for insurance, but often that only ends up pushing “safer” farmers further away.

■ Transactions costs;

- Contracts are generally for small amounts
- **Damages** have to be assessed by insurers on an individual basis;
- **Limited scale economies.**

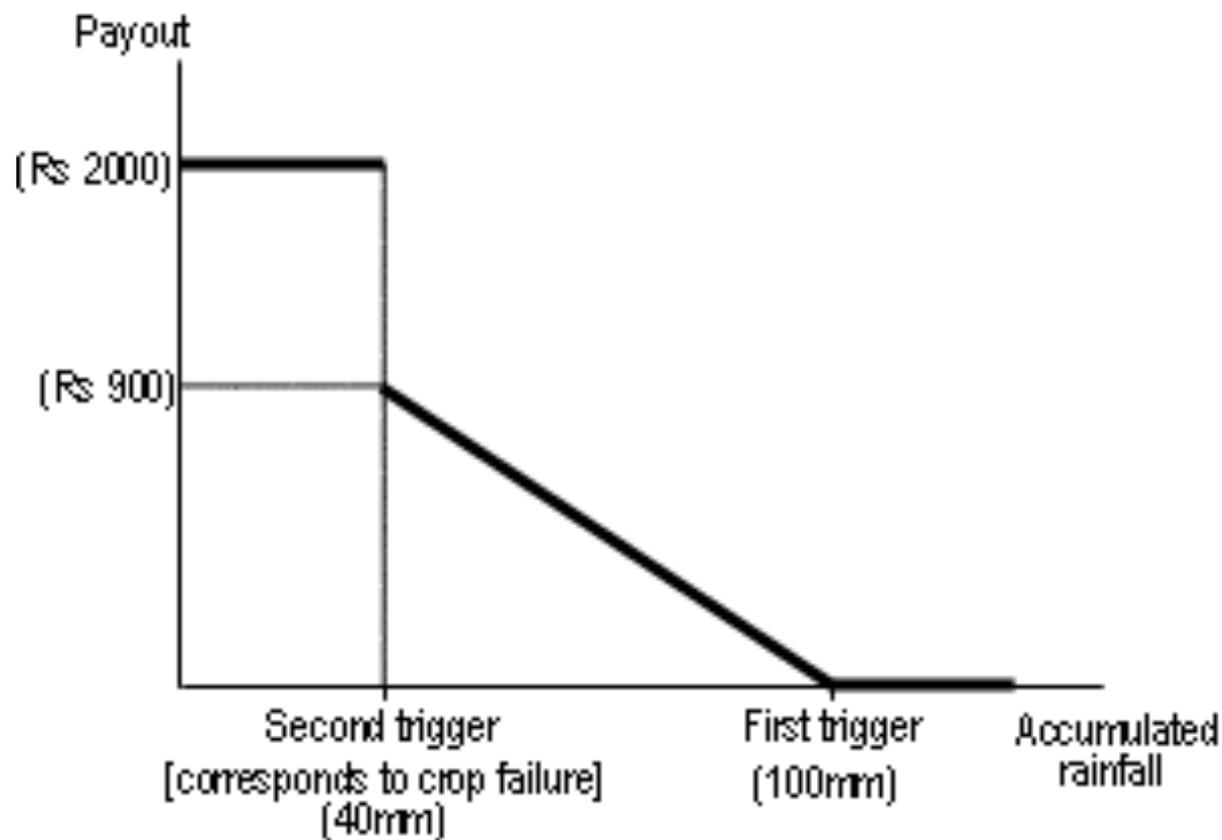
An innovation: rainfall insurance

“Barriers to Household Risk Management: Evidence from India,”
Cole, Giné, Tobacman, Topalova, Townsend, Vickrey.

- Rainfall is primary cause of income variability in semi-arid India.
 - Drought cited as the most important risk by 89%.
 - Seems like a great insurance market (why?)

Rainfall insurance: contract

Insurance against deficient rainfall



Rainfall insurance: challenges

- **Demand low so far: only 5-10% of households purchase insurance.**
- Insurance only imperfectly covers risks.
 - Need more weather stations
 - But then need more historical data
 - Added challenges with global warming
- Crowded out by safety nets?

Rainfall insurance: low demand puzzle

Table 9: Stated Primary Reason for Insurance Non-Adoption

	Andhra Pradesh 2004	Andhra Pradesh 2006	Gujarat 2006
Insufficient funds to buy insurance	27	81	28
It is not good value (low payout/high premium)	16	8	15
Do not trust insurance provider	2	5	
It does not pay out when I suffer a loss	18	3	
Do not understand insurance	21	2	11
Do not need insurance	3	1	25
No castor, no groundnut	6		
Other	7	0	33

“Barriers to Household Risk Management: Evidence from India.” 12/10 .Shawn Cole, et al.

Rainfall insurance: low demand puzzle

“Barriers to Household Risk Management: Evidence from India.” 12/10 .
Cole, Giné, Tobacman, Topalova, Townsend, Vickrey.

Price?

- Policies can be bought for increments of \$1.
- Low demand is not just due to price:
 - High price elasticity (-0.66 to -0.88)
 - Even if “actuarially fair” would only see adoption by 25-50% of households
 - So what’s going on?

Rainfall insurance: low demand puzzle

“Barriers to Household Risk Management: Evidence from India.” 12/10 .
Cole, Giné, Tobacman, Topalova, Townsend, Vickrey.

Ability to finance (liquidity)

Treatment: Randomly assign some households cash rewards.

- “Giving the household enough cash to buy one policy increases take-up by 150% of the baseline.”
- Effect is several times the effect of cutting price by half.
- Biggest effect for poor.
- Richest households (with best financial access) most likely to purchase

Rainfall insurance: low demand puzzle

“Barriers to Household Risk Management: Evidence from India.” 12/10 .
Cole, Giné, Tobacman, Topalova, Townsend, Vickrey.

Trust

Treatment: What happens when insurance educator is endorsed by a “known local agent”?

- Demand up by 36%

Treatment: Gujarat: add religious symbol to insurance flyer:

- Notably increases demand

Rainfall insurance: low demand puzzle

“Barriers to Household Risk Management: Evidence from India.” 12/10 .
Cole, Giné, Tobacman, Topalova, Townsend, Vickrey.

Literacy/numeracy

Households can correctly answer simple numeracy/literacy questions 60% of time.

Treatment: short education module

- No effect.
- No effect of “behavioral” (psychological) framing.

Rainfall insurance: low demand puzzle

“Barriers to Household Risk Management: Evidence from India.” 12/10 .
Cole, Giné, Tobacman, Topalova, Townsend, Vickrey.

Marketing/salience

Any treatment (receiving flyer, educator, or rewards) led to take up of:

- 28% (Andhra Pradesh)
- 24-29% (Gujarat)

But if ***outside of any treatment group***:

- Take-up “close to zero”.
- “**Salience**” effect?

Data: lesson from India

- Rainfall insurance plan was difficult due to heterogeneity with little solid actuarial data.
- How to gather actuarial data?
 - Is data available to set appropriate prices?
- Data is often a public good. Role for World Bank?

6. Conclusion: small change

Fundamental challenge for companies:

- Insurance companies typically collect insurance premiums one-by-one.
- So, hard to justify costs of record-keeping and staff salaries for 4 cents a week per household.
 - Delta Life's *Gono Bima* of Bangladesh did, though, base its life insurance program on individual weekly collections of premia, so it is not impossible.
- Another problem: lack of historical data on risks make it hard to accurately price some kinds insurance.
- Risks can be big, so helpful to have a large, established partner to provide “reinsurance.”

Small change: challenges for buyers

- It is not just customers' finding the money to pay, but also...
- Ability to pay in a way consistent with cash flows of households.
 - Timing and transactions costs of payments.
 - Reliability, timing, and ease of payouts.

Small change: solutions?

- Insurance companies, coming from outside, piggy-back on local institutions, MFIs?
 - What happens to non-customers of MFIs?
 - Non-active borrowers?
- Outsider lacks a reputation that insurees can trust. They piggy-back on that too?
- In other words, we truly move from microcredit to microfinance.

A deeper challenge

- Even when hurdles overcome, demand is low.
- Will private/public insurance just squeeze out informal insurance?
 - Evidence from South Africa
 - Open questions. In general, case over-stated.
- Will public assistance squeeze out demand for private insurance?
 - Real concern, especially with large losses.