Microinsurance:
Reducing poverty one policy at a time?

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Microinsurance

Agenda

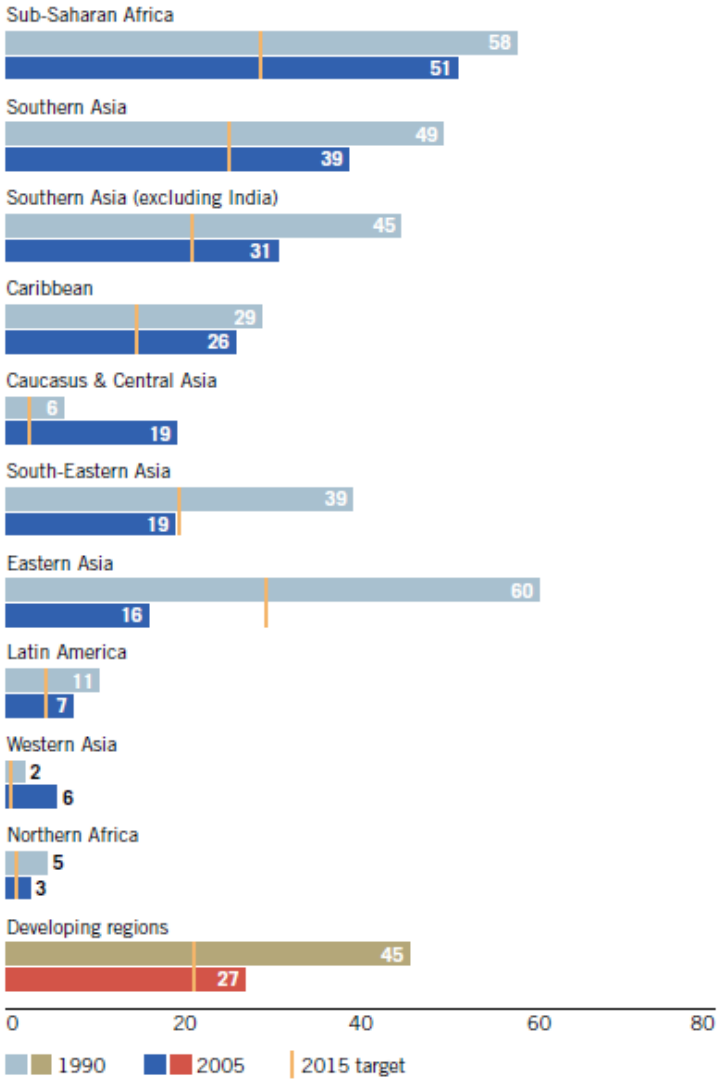
- Context
- Risk management by those on low incomes
- What is microinsurance?
- Who buys, who sells?
- Product design
- Pricing challenges
- Measuring the impact
- Actuarial involvement

Context

- 27% of developing world population live on less than $1.25 a day
- “Of the 4 billion people on earth today who live on less than $2 a day, fewer than 10 million have access to insurance” (Munich Re Foundation)

Sustained growth in developing countries, particularly in Asia, is keeping the world on track to meet the poverty-reduction target

Proportion of people living on less than $1.25 a day, 1990 and 2005 (Percentage)



Risk management by those on low incomes

Low income people live in risky environments and are vulnerable to numerous perils, including:

- illness
- accidental death and disability
- loss of property due to theft or fire
- agricultural losses and
- disasters of both the natural and man-made varieties.

The poor are more vulnerable to many of these risks than the rest of the population, and they are least able to cope when a crisis does occur.

Risk management by those on low incomes

- “We cannot stop natural calamities, but we can and must better equip individuals and communities to withstand them.” (Kofi Annan)
- Informal risk management strategies:
  - buffer stocks
  - community support
  - diversification of income sources and assets
  - migration
  - selling assets
  - reducing consumption, taking children out of school

What is microinsurance?

It is not necessarily:

- Small insurance companies
- Just another product offered by microfinance institutions
- Regular insurance products with smaller sums insured and premiums

What is microinsurance?

Microinsurance can be defined in terms of:

- Customer

  The protection of people on **low incomes** against specific perils in exchange for premium payments proportionate to the likelihood and cost of the risk involved.

- Product

  In 2007 in Peru, microinsurance was defined as massive, cheap and low coverage insurance. Specific microinsurance regulations were applied to any insurance product that didn't exceed USD 3,300 coverage limit or USD 3.3 monthly premium and had certain policy features e.g. few exclusions, no previous evaluations of policyholders or insured values, no deductibles or copayments, and payment of claims must be done within 10 days.

What is microinsurance?

Microinsurance can also be defined in terms of:

- Level of society

  Microinsurance units [are] community-funded health insurance schemes that are neither commercial nor national. These microinsurers do not have access to resources and financial techniques of commercial insurance.

What is microinsurance?

"How poor do people have to be for their insurance protection to be considered micro?"

The answer varies by country. Generally MI is for:

- persons ignored by mainstream commercial and social insurance schemes
- persons who have not had access to appropriate products
- persons working in the informal economy who do not have access to commercial insurance nor social protection benefits provided by employers directly, or by the government through employers
- informal economy workers with irregular cash flows

Microinsurance products

Examples:

- Crop insurance in India
- Index-based livestock insurance project of Mongolia
- Funeral insurance in Zambia
- Property insurance in Jakarta

Specific features of microinsurance

- Clients are essentially low-net-worth (but not necessarily uniformly poor)
- Transactions are low-cost (and reflect members' willingness to pay);
- Simple
- Target the key risks faced by the poor
- Few if any exclusions and as inclusive as possible
- Balance adequate cover against affordable premium

Specific features of microinsurance

- Straightforward claims assessment processes
- Often group or community based e.g. women's associations, trade unions, self-help groups and the communities are involved in the important phases of the process (such as package design and rationing of benefits)

Specific features of microinsurance

- Stakeholders:

  Microinsurance is developed by commercial insurers, mutual funds, microfinance institutions, NGOs, governments or semi-public bodies. Regulators and other international bodies (e.g. IAA are interested)

- Products:

  Microinsurance covers an extremely broad variety of services such as, for example, life insurance, health, cattle breeding, crop and asset insurance.

- Portfolio size:

  A microinsurer may cover between a few tens and millions of policyholders.

Who buys and who sells microinsurance?

- Supply
  - Traditional insurers, national and international
  - Non traditional players (NGOs, Mutual organisations, government and supranational organisations)
- Demand
  - Generally those on low incomes **but**:
    - Demand is not the same as need
    - Lack of understanding of risk
    - Low level of financial literacy
    - Lack of trust in financial organisations

Who buys and who sells microinsurance?

- Series of experiments on drought (index-based) insurance in India in Gujarat and Andhra Pradesh
  - 5-10% buy the product, despite basic marketing effort
  - Very little renewal
- Credit linked with insurance vs credit alone in Malawi
  - Fewer people want insured credit than uninsured (22% vs 33%)
- Drought insurance in Ethiopia (via cooperatives)
  - 3% bought product
- Troubling that risk averse buy less insurance

Microinsurance product design

- Need to avoid self-selection and moral hazard
- Exclusions
- Indexed or indemnity insurance
  - Basis risk

Field work - scenario

An Ethiopian farmer starts with 65 but will incur a loss of 50 with probability ½

$50 \cong 35$ days of casual farm labour wage

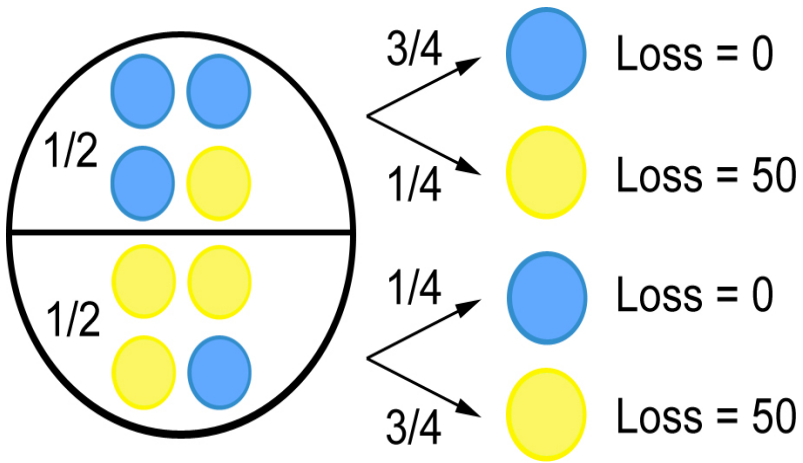
Compound lottery:

$\mathbb{P}$(Good weather)=½

$\mathbb{P}$(Bad weather)=½

$\mathbb{P}$(Loss=50|Good weather)=¼

$\mathbb{P}$(Loss=50|Bad weather)=¾



Field work - trials

378 participants over 39 sessions

From seven rural sites around Ethiopia

Played 3 out of 5 games per session, 40 minutes per game

Paid real money, with potential loss of 50

≅ 35 days of casual farm labour wage

Experiments funded by Microinsurance Innovation Facility

Participant was:		Maths question answered correctly:	
Male	67%	5+3	86%
Household Head	70%	3×7	54%
Spouse of HH Head	10%	1/10th of 300	30%
Literate	77%	5% of 200	1%

Field work - Indemnity insurance

Insurance premium	Claim income if incur loss of 50 $\mathbb{P}=1/2$	Claim income if incur no loss $\mathbb{P}=1/2$
0	0	0
8	10	0
16	20	0
24	30	0
32	40	0
40	50	0

Premium includes a loading of 60% (i.e. premium is expected loss * 1.6)

Field work - Index insurance

Insurance premium	Claim income if weather is bad $\mathbb{P}=1/2$	Claim income if weather is good $\mathbb{P}=1/2$
0	0	0
3	5	0
6	10	0
9	15	0
12	20	0
15	25	0

Premium includes a loading of 20% (i.e. premium is expected loss * 1.2)

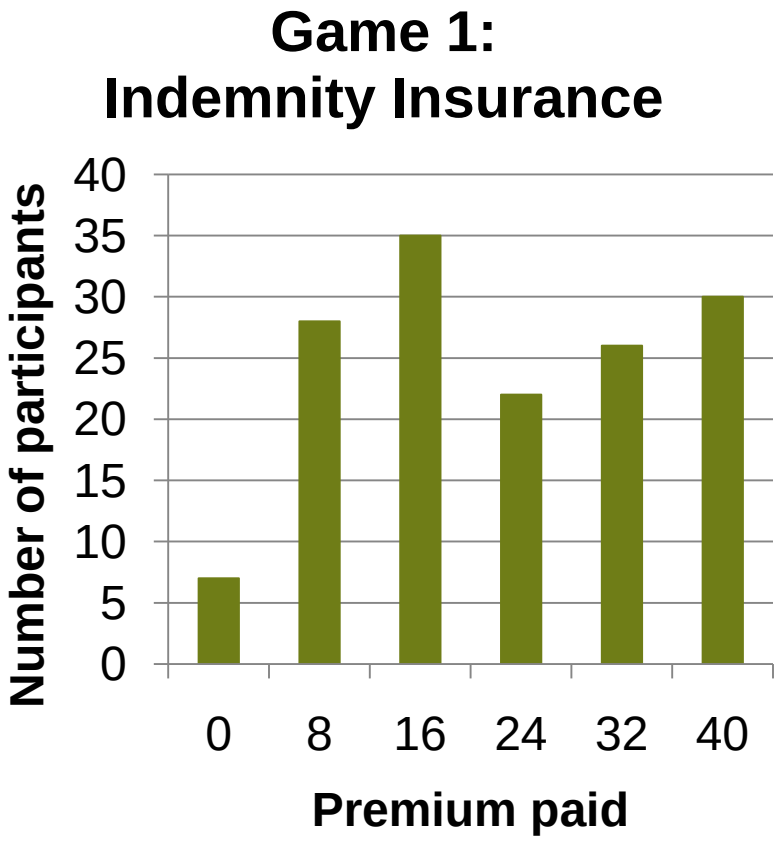
Field work - Index insurance

Insurance premium	Net wealth			
	50 loss		No loss	
	Good W.	Bad Weather	Good Weather	Bad W.
	$\mathbb{P}=1/8$	$\mathbb{P}=3/8$	$\mathbb{P}=3/8$	$\mathbb{P}=1/8$
0	15	15	65	65
3	12	17	62	67
6	9	19	59	69
9	6	21	56	71
12	3	23	53	73
15	0	25	50	75

Field work – results indemnity insurance

Classical economic theory doesn't restrict rational choice for Game 1:

- A very risk averse participant might reasonably purchase full insurance
- A risk neutral participant might reasonably purchase zero insurance



Field work – results index insurance

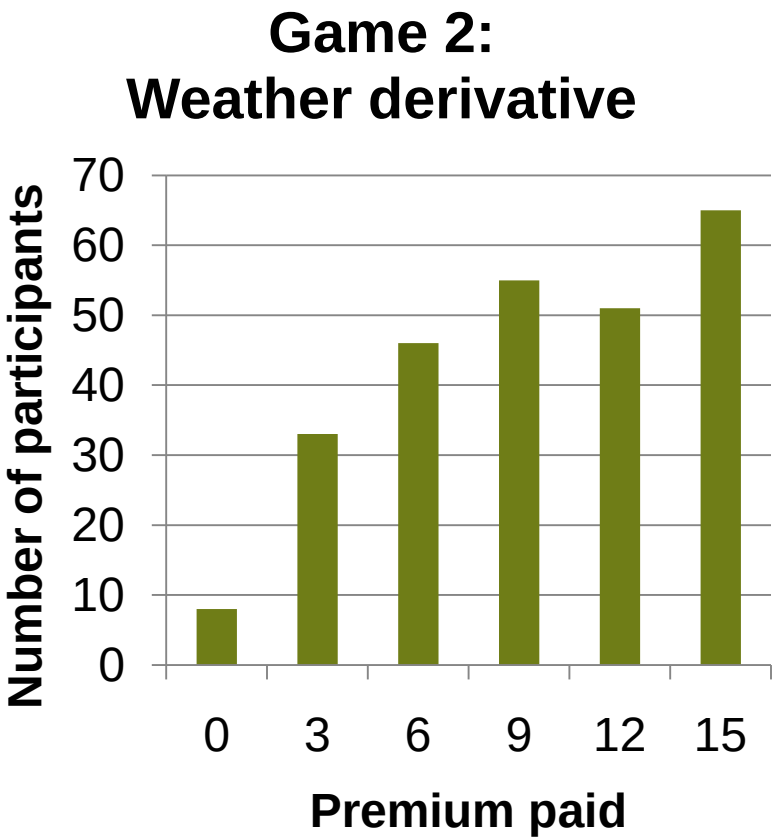
Classical economic theory does restrict rational choice for Game 2:

If care enough about risk to purchase derivative...

... (and risk averse expected utility maximiser with decreasing absolute risk aversion) ...

... then must care about downside basis risk enough to limit cover

Premiums above 6 are irrational



Pricing and reserving challenges

- The product has to be “good value” as can be very price sensitive
- Data
  - Quality,
  - Credibility
- Loadings for expenses, risk and profit

Pricing and reserving challenges - data

Four key data issues:

- New industry so limited historical experience data.
- Many microinsurers are relatively small so insufficient own experience data.
- Internal and external reporting standards are often poor.
- Limited availability of macro-level data such as inflation, demographics, meteorological data, and health costs.

Pricing challenges - data

- Look for as much appropriate data as possible.
- Transfer data from similar environments and adjust as much as possible
- Be bold! Despite deficiencies, launch product priced with best guess (but limit exposure i.e. enrolment volumes and time).
- Be vigilant! Monitor and analyse claims experience intensively.
- Be quick! Take corrective action as soon as you see something‘s wrong.

But in a TAS M and D world?

Pricing challenges – experience monitoring

Issues:

- Timeliness of experience data
- Lack of reliable management information systems
- More to the story than just the numbers
- Difficulty in implementing the necessary corrective measures due to ownership issues

Other challenges

- Marketing
- Distribution, especially in rural areas
- Administration, for example:
  - collecting premiums
  - verifying and paying valid claims
- Legal & regulatory environment
- Poor infrastructure e.g. lack of healthcare facilities

Measuring the impact

- Debate about the impact of microfinance
- Issues in measuring the impact of microinsurance:
  - whose viewpoint
  - timescale
  - diversification issues
  - adding up costs and benefits across whole of value chain
  - impact on culture

Actuarial involvement

- PROCEED WITH CAUTION! ...
- ...Actuaries do “Caution”!
- Knowledge asymmetry - insurance know-how
- Pricing, Product Design, Reserving, Monitoring
- Collaborate with academics, professionals
- Actuarial toolkit & Guidance Notes for Micro-insurance.

Other actuarial roles

- Help people understand the concept of risk pooling (and why some demands are unreasonable).
- Help people understand the need for experience monitoring.
- Help design and implement the necessary processes for experience monitoring.
- Help people understand the results of experience analysis.
- Help people understand need for reserving
- Help people understand reinsurance; analyse reinsurance needs and availabilities; help arrange and administer reinsurance.

IAA microinsurance working group

To serve as the IAA body that coordinates the microinsurance efforts of the various IAA Committees and Sections and provides a focal point for IAA efforts to help facilitate the development of micro-insurance and actuarial involvement in this rapidly growing, and socially meaningful area.