The role of the Actuary in Micro-insurance

Yangon, Myanmar
14 July 2014

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Agenda

• What is micro-finance?
• What is micro-insurance?
• A case study
• Specific challenges
• Micro-insurance versus traditional insurance: what is the role of actuaries?
What is Microfinance?

- Basic financial services to poor & excluded
- Social outcomes more important than profit
- Target groups:
  - Micro Entrepreneurs, Medium-sized enterprises
- Typical products:
  - Savings, credit, money-transfer, insurance
- **Innovating** to meet needs:
  - Eg: Mobile phone banking for remote communities
What is Micro-insurance?

• Sometimes called “Inclusive Insurance”
• **Targeted** protection for low-income people
• Simple products
• Affordable
• Work best when supported with **advice** & **innovation**
Main Product Groups

- Credit / Term Life
- Property
- Annuities / endowment
- Health / disability
- Crops

Role of actuary varies along this spectrum

Less complex

More complex
Case Study: Health insurance in India’s slums

62 million people live in India’s slums.
300 million people in India live in poverty.
Health care is limited & basic.
Micro health insurance

- Covers insured people in Pune’s slums
- Annual premium: 60 rupees ($2)
- Reimburses max 5,000 rupees hospital costs
- Other benefits
  - health camps, discounts, 24 hour hotline
- More than 60,000 members
- Scheme expanded to other slums
Community-based decision-making helps manage risk.

Some benefits remain discretionary → minimises solvency requirements.
Local systems can be basic – simplicity essential

Performance monitoring at the community level
What did I do?

• Supported product redesign
• Pricing model
• Performance monitoring tool
• Minimum Solvency requirements
• Reviewed accounting procedures
• Advised on data requirements

…All in a three week visit…. 
Other roles for actuaries

• Identifying needs, gaps and opportunities
• Risk Management
• Reserving / outstanding claims
• Forecasting
## Original Benefit Structure

<table>
<thead>
<tr>
<th>Premium</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis</td>
<td>60</td>
</tr>
<tr>
<td>Family 2+2</td>
<td>240</td>
</tr>
<tr>
<td>Child</td>
<td>60</td>
</tr>
<tr>
<td>Individual</td>
<td>100</td>
</tr>
<tr>
<td>Max Benefit</td>
<td>5,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Payable</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special</td>
<td>5,000</td>
</tr>
<tr>
<td>General</td>
<td>2,500</td>
</tr>
<tr>
<td>One Day</td>
<td>1,000</td>
</tr>
<tr>
<td>OPD</td>
<td>none</td>
</tr>
</tbody>
</table>

**Benefits**

- **Sub Limits**
  - **One Day**: 1,000
  - **General**: 2,500
  - **Special**: 5,000
  - **OPD**: none

**Max Benefit**

- 80% of Health Event Bills up to:
  - Family 2+2: 40,000
  - Child: 5,000
  - Individual: 100

**Payable**

- 80% of Health Event Bills up to:
  - Family 2+2: 40,000
  - Child: 5,000
  - Individual: 100

**Discounts**

- **OPD**: none

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### Claims

- **40,000 claim**
  - 5,000 reimbursed

- **5000 claim**
  - 4,000 reimbursed

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### Notes

- **Contributed Basis**
  - 60
  - 100
  - 150

- **Family 2+2**
  - 240
  - 400
  - 600

- **Child**
  - 60
  - 100
  - 150

- **Premium**
  - HMF
  - Option 1
  - Option 2
  - Option 3
  - Option 4
<table>
<thead>
<tr>
<th>Benefits</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub Limits</td>
<td>50% discount coupon</td>
</tr>
<tr>
<td>OPD</td>
<td>50,000</td>
</tr>
<tr>
<td>One Day</td>
<td>3,000</td>
</tr>
<tr>
<td>General</td>
<td>50,000</td>
</tr>
<tr>
<td>Special</td>
<td>50,000</td>
</tr>
<tr>
<td>Payable Benefits</td>
<td>80% of Health Event Bills up to:</td>
</tr>
<tr>
<td>Individual</td>
<td>Max</td>
</tr>
<tr>
<td>Child</td>
<td>Max</td>
</tr>
<tr>
<td>Family 2+2</td>
<td>Max</td>
</tr>
<tr>
<td>Basis</td>
<td>Max</td>
</tr>
<tr>
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<td>80% of Health Event Bills up to:</td>
</tr>
<tr>
<td>Individual</td>
<td>Max</td>
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<tr>
<td>Child</td>
<td>Max</td>
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<tr>
<td>Family 2+2</td>
<td>Max</td>
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<td>Max</td>
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<td>Max</td>
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<td>Child</td>
<td>Max</td>
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<td>Max</td>
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<td>Max</td>
</tr>
<tr>
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<td>Max</td>
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<td>Family 2+2</td>
<td>Max</td>
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<td>Basis</td>
<td>Max</td>
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<tr>
<td>Payable Benefits</td>
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<tr>
<td>Individual</td>
<td>Max</td>
</tr>
<tr>
<td>Child</td>
<td>Max</td>
</tr>
<tr>
<td>Family 2+2</td>
<td>Max</td>
</tr>
<tr>
<td>Basis</td>
<td>Max</td>
</tr>
</tbody>
</table>

Option 2

5000 claim nil reimbursed

28,000 reimbursed

5000 claim nil reimbursed

40,000 claim nil reimbursed
### Option 3

<table>
<thead>
<tr>
<th>Premium</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis</td>
<td>100</td>
</tr>
<tr>
<td>Family 2+2</td>
<td>400</td>
</tr>
<tr>
<td>Child</td>
<td>100</td>
</tr>
<tr>
<td>Individual</td>
<td>150</td>
</tr>
<tr>
<td>Max Benefit</td>
<td>35,000</td>
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</tbody>
</table>

**Payable**

<table>
<thead>
<tr>
<th>Benefits Sub Limits</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>L1:</strong> 50% of Health Event Bills up to:</td>
<td><strong>L2:</strong> 80% of Health Event Bills up to:</td>
</tr>
<tr>
<td>Special</td>
<td>5,000</td>
</tr>
<tr>
<td>General</td>
<td>5,000</td>
</tr>
<tr>
<td>One Day</td>
<td>5,000</td>
</tr>
</tbody>
</table>

**Special Benefits**

- **50% discount coupon** on consultations with local providers.

**OPD Discounts**

- **40,000 claim** reimbursed 29,000
- **5000 claim** reimbursed 2500
Unique aspects for Actuaries

Product design

- Does it meet social needs? Understand the customer
- Limited data – how to price?
- Keep product affordable and simple: minimise need for actuaries

Monitoring

- Minimise data collection burden. What do you really need?
- Measure social outcomes as well as financial
- Short-tail products: Pricing more important than reserving.

Managing Uncertainty

- Products with risk levers reduce need for solvency reserves

Offer ideas from the industry – innovate!
Micro-insurance versus Traditional insurance

• Micro-insurance is insurance, so actuarial functions remain the same.

BUT

➢ Shortage of actuaries or cost may mean actuarial advice is not available.

➢ Common for actuarial functions in micro-insurance to be undertaken by people with limited actuarial training.
Regulating actuarial functions in micro-insurance

“A proportionate approach…
....regulatory interventions that minimise the need for qualified actuaries
...careful definition of areas where qualified actuaries are necessary”

See also: The IAIS published an Application Paper on “Regulation and Supervision Supporting Inclusive Insurance Markets” in October 2012
Regulating actuarial functions in micro-insurance

“Simple, low-risk products, with little price differentiation ... may be adequately supported by well-trained non-actuaries

“Actuarial support at ... the regulator or insurance association could help to ensure that overall premiums in the market are sensible and that appropriate technical provisions are maintained.”
## Required Actuarial Involvement

<table>
<thead>
<tr>
<th>Actuarial Involvement</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benefit Type</strong></td>
<td>Fixed lump sum</td>
<td>Varies according to event, but modest cap</td>
<td>Uncapped or high cap</td>
</tr>
<tr>
<td><strong>Term</strong></td>
<td>Short</td>
<td>Medium</td>
<td>Long-tail</td>
</tr>
<tr>
<td><strong>Frequency of event</strong></td>
<td>Regular</td>
<td>Less than once per year</td>
<td>Rare / uncommon</td>
</tr>
<tr>
<td><strong>Moral hazard</strong></td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td><strong>Product Examples</strong></td>
<td>Credit Life insurance,</td>
<td>Life insurance, Health insurance</td>
<td>Crop insurance, Livestock, Disability, Pensions</td>
</tr>
<tr>
<td></td>
<td>Funeral insurance, Term life</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See page 19 of “Issues Paper: Addressing the Gap in Actuarial Services in Inclusive Insurance Markets”
Further Information…

Consultative Group Assisting the Poor
www.cgap.org

Microfinance Information Exchange
www.themix.org

Microinsurance Academy
www.microinsuranceacademy.org/

Micro insurance Innovation Facility
www.ilo.org/public/english/employment/mifacility/
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