Managing Catastrophe Risk at the Country Level: The Role of Risk Financing*

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*In this presentation, the term “risk financing” denotes all external ex-ante sources of market or quasi-market funding secured by a country to finance adverse economic consequences of natural disasters prior to occurrence of such events.
Outline

I. Donor post-disaster funding vs. ex-ante risk financing.
II. Role of ex-ante financing in catastrophe risk management at the country level.
III. Risk financing instruments and programs.
IV. National risk financing programs: key design considerations.
V. How can international experience in risk financing apply in South Asia?
VI. World Bank role in catastrophe risk financing.
VII. Conclusions
I. Donor Post-disaster Funding vs. Ex-ante Risk Financing

- What is the most prevalent way of financing the risk of natural disasters today?
- Is the donor funding truly costless for the receiving nations?
The South Asia Tsunami disaster alone is likely to raise over $5 billion in post-disaster donor funding and private donations!
IBRD Lending for Natural Disasters over 20 Years: $40 billion

<table>
<thead>
<tr>
<th>Region</th>
<th>Funding ($m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Asia</td>
<td>8,558</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>2,383</td>
</tr>
<tr>
<td>Latin America and Caribbean</td>
<td>9,016</td>
</tr>
<tr>
<td>Europe and Central Asia</td>
<td>4,384</td>
</tr>
<tr>
<td>East Asia and Pacific</td>
<td>7,288</td>
</tr>
<tr>
<td>Africa</td>
<td>9,154</td>
</tr>
</tbody>
</table>
Why Relying on Post Disaster Funding is no Longer a Solution?

- Excessive reliance on ex-post disaster funding dampens countries’ incentives for proactive risk management.
- Results in underinsurance, and as a result increases countries’ vulnerabilities.
- Lack of liquidity in the aftermath of natural catastrophes, caused by underinsurance, severely retards economic recovery.
- Large catastrophe events may entail years of unsustainable fiscal deficits and thus can jeopardize the country’s chances for economic growth.
- In the absence of insurance, personal savings, and effective mechanisms of targeted social assistance, the poorest segments are most vulnerable to natural disasters.
Vulnerability Curves in Developed vs. Developing Countries

Source: GeoHazards, Munich Re, 2005
Fiscal and Economic Effects of Disasters can be Significant

Uninsured Economic Loss as % of GDP and Government Revenues

Catastrophe Insurance Penetration in Developing Countries

- India – under 0.5%
- the Philippines – under 0.3%
- Sri Lanka – under 0.4%
- Iran – under 0.05%
- Romania – under 5%
- Bulgaria – under 3%
- China – under 0.5%
- Turkey – 16%
II. Role of Ex-Ante Risk Financing

- Why do we need an alternative to the current mode of risk financing today?
Role of Ex-Ante Risk Financing

- Brings an economic perspective on risk through price discovery and thus introduces strong incentives for physical risk management (mitigation).
- Greatly reduces government fiscal exposure to adverse consequences of natural disasters thus ensuring stable economic growth and fiscal management.
- Makes much needed liquidity readily available to governments and households immediately following a natural disaster thus greatly facilitating economic recovery and addressing social inequities.
III. Risk Transfer Instruments and Programs

- What are the key risk financing and risk transfer instruments available to countries today?
Risk Transfer Instruments and Programs

- Turkish Catastrophe Insurance Pool - TCIP
- Florida Hurricane Cat Fund - FHCF
- Indonesian Earthquake Reinsurance Pool - IERP
- EQ Council - EQC New Zealand
- California Earthquake Authority - CEA

Risk Carriers
- Insurers/reinsurers
- Insurance Pools
- Self insurance / captives

Solutions
- Reinsurance
- Contingent Capital
- Insurance-Linked Securities
- Weather Derivatives
- Finite Risk Reinsurance
III. Risk Financing Instruments and Programs: Key Definitions

- Reinsurance – an exchange of premium for a risk transfer contract
- Contingent Debt - Contractual commitment to provide capital in the form of debt after an adverse event
- ILS (cat bonds) – a way of transferring catastrophe risk to the capital markets via a bond issue. Capital received is transferred to a special purpose vehicle SPV who then acts much like a traditional (although a fully collateralized) reinsurer.
III. Risk Financing Instruments and Programs: Are They Affordable?

- **Reinsurance** – 4.2% ROL for TCIP (and will decrease further with accumulation of surplus)
- **Contingent Debt** – 0.3% ROL for TCIP
  - Weighted Average Cost – 3.5% per $1 billion in claims paying capacity (TCIP, 2004);
  - Overall cost of TCIP’s coverage in Turkey is well under 0.5% of average household income (without government subsidies!).
- **ILS (cat bonds)** – 3-5% over Libor (but for only top layers of risk).
IV. National Risk Financing Programs: Major Design Considerations

- How can one put together a national risk financing program that would be:
  - Financially efficient;
  - Create strong incentives for risk management;
  - Address social equity concerns???
National Risk Financing Programs: Major Design Considerations

Source: Eugene Gurenko and Olivier Mahul, 2004
National Risk Financing Programs: Major Design Considerations

An Integrated Risk Financing Approach
National Risk Financing Programs: Major Design Considerations

- **Risk Prevention Plans (“PPR”)**: mapping of the risk is used to develop durable urban planning (land use and construction codes)
  - 13,000 towns have a PPR

- **Deductibles**: multiplicative factor applied to towns without a PPR where events are frequent:
  - 1 or 2 decrees: basic deductible
  - 3 decrees: doubled deductible
  - 4 decrees: tripled deductible
  - 5 or more decrees: quadrupled deductible

**French CATNAT’s Approach:**
Insurance and Risk Reduction:
### Turkish Catastrophe Insurance Pool: Major Highlights

<table>
<thead>
<tr>
<th></th>
<th>2000/1</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2010 forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claims Paying Capacity</td>
<td>$ 600 mm</td>
<td>$ 900 mm</td>
<td>$ 800 mm</td>
<td>$ 750 mm</td>
<td>$ 1.3 bb</td>
</tr>
<tr>
<td>Policy # (% of TH)</td>
<td>0.6 mm</td>
<td>2.48 mm</td>
<td>1.9 mm</td>
<td>2 mm</td>
<td>3.5 mm</td>
</tr>
<tr>
<td>Surplus</td>
<td>$ 0 mm</td>
<td>$ 2 mm</td>
<td>$ 10 mm</td>
<td>$ 70 mm</td>
<td>$ 150 mm</td>
</tr>
<tr>
<td>Premium Rate (average)</td>
<td>$ 13</td>
<td>$ 15</td>
<td>$ 25</td>
<td>$ 40</td>
<td>$ 50</td>
</tr>
</tbody>
</table>
Government will provide additional capital support in excess of $1 billion in TCIP’s claims paying capacity in case of a very large disaster.
V. How Can International Experience in Risk Financing Apply in South Asia?

- Combine risk reduction and risk transfer experience of CATNAT and TCIP!
- Utilize donors’ post-disaster support
- Ensure targeted and efficient delivery of aid to the most vulnerable segments of population in the next disaster.
A Catastrophe Risk Financing Strategy for South Asian Countries

Promotes active risk management;
Reduces vulnerability of the poor;
Limits government fiscal exposure

<table>
<thead>
<tr>
<th>Insured Risks</th>
<th>Links to Risk Reduction</th>
<th>Distribution</th>
<th>Risk Financing</th>
<th>Claims Settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of breadwinner;</td>
<td>Provides insurance to disaster prone communities which participate in risk reduction programs</td>
<td>Communities</td>
<td>IDA/World Bank</td>
<td>Communities</td>
</tr>
<tr>
<td>Loss of shelter and contents;</td>
<td></td>
<td>NGOs</td>
<td>Donors</td>
<td>Insurers</td>
</tr>
<tr>
<td>Post disaster morbidity;</td>
<td></td>
<td>Microfinance institutions</td>
<td>Reinsurers</td>
<td>NGOs</td>
</tr>
<tr>
<td>Loss of crops</td>
<td></td>
<td>Insurers/banks</td>
<td>Government</td>
<td>Microfinance institutions</td>
</tr>
</tbody>
</table>

Policy Trigger: Occurrence of a Large Natural Calamity
VI. World Bank Role in Catastrophe Risk Financing

- Is there a role for the World Bank in international ex-ante risk financing?
World Bank Role in Risk Financing: Key Objectives

- (i) increase insurance penetration for natural hazards in the client countries;
- (ii) reduce government catastrophe risk exposures;
- (iii) make catastrophe insurance management an integral part of overall government risk management practices;
- (iv) kick start the development of private insurance markets by assisting governments with regulatory infrastructure and institutional arrangements.
World Bank Role in Risk Financing: Risk Management Products

- (i) contingent capital facilities in support of national catastrophe reinsurance programs;
- (ii) loans to finance reinsurance premium;
- (iii) ex-ante (pre-disaster) liquidity facilities in support of government recovery efforts (still work in progress);
- (iv) technical assistance loans to finance risk management feasibility studies;
- (v) sectoral risk management studies (at no cost to the borrower), if included in the CAS;
- (vi) catastrophe risk management services to governments on a stand-alone basis separate from lending.
VII. Conclusions

- Donor emergency funding must find ways to build in incentives for ex-ante risk management in disaster prone countries.

- Ex-ante catastrophe risk financing is an important integral element of national catastrophe risk management.

- If properly utilized, capacity of international reinsurance and capital markets can be an important and affordable source of risk financing for governments.