This document is circulated for Session 3 of the Conference on Catastrophic Risks and Insurance, to be held on 22-23 November 2004 at the OECD Headquarters, 2 rue André Pascal, 75016 Paris, starting at 9:00 a.m.

For further information on this conference, please contact Cécile Vignial, Financial Markets Division (Cecile.Vignial@oecd.org), or Yosuke Kawakami or Morven Alexander, Outreach Unit for Financial Sector Reform (Yosuke.Kawakami@oecd.org or Morven.Alexander@oecd.org)
Catastrophe Insurance Programs in Emerging Countries: Field Experience

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Main Messages

- Catastrophe insurance penetration in disaster prone developing countries is very low and tends to lag behind other P&C lines.
- There are strong forces at work that impair the development of effective catastrophe insurance solutions in these countries.
- Alternative risk transfer arrangements/pools created as public/private partnerships and supplemented by ex-ante risk management and structured relief programs may be a way to go.
<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turkey</td>
<td>Ongoing risk financing for TCIP and TA</td>
</tr>
<tr>
<td>Romania</td>
<td>Lending program for cat pool related technical work</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Risk management study for a national cat completed</td>
</tr>
<tr>
<td>Iran</td>
<td>Lending program for cat pool related technical work</td>
</tr>
<tr>
<td>Colombia</td>
<td>Lending in support of risk financing initiatives of municipalities</td>
</tr>
<tr>
<td>India</td>
<td>Risk management study completed/cat pool is under consideration</td>
</tr>
<tr>
<td>Philippines</td>
<td>Risk management study completed/cat pool is under consideration</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Risk management study completed</td>
</tr>
<tr>
<td>Mexico</td>
<td>TA and lending under preparation for a national risk transfer program</td>
</tr>
<tr>
<td>Caribbean countries</td>
<td>Risk management study is completed/cat pool is under consideration</td>
</tr>
<tr>
<td>Russia</td>
<td>Expressed interest in risk management feasibility studies</td>
</tr>
<tr>
<td>China</td>
<td>Expressed interest in risk management feasibility studies</td>
</tr>
</tbody>
</table>
What All These Countries Have in Common?

**Insurance Industry**
- Very low insurance penetration for property and cat risk covers in particular.
- Insurance sector with insufficient capital base to support high cat risk retentions (with India being an exception).
- Often, weak regulatory oversight over companies’ risk management policies.

**Government**
- Strong tradition of governments providing considerable “reconstruction” subsidies to victims of disasters.
- Strong government reliance on ex-post funding sources, particularly donor aid and lending from development banks. (WB lending slide, see UN report, see Gujarat risk financing slide in our joint paper).

**Households**
- Low risk awareness and undeveloped risk management culture.
- Low incomes.
Catastrophe Insurance Penetration in Developing Countries

- India – under 0.5%
- the Philippines – under 0.3%
- Iran – under 0.05%
- Romania – under 5%
- Bulgaria – under 3%
- China – under 0.5%
- Turkey – 17%
Insured vs. Total Economic Loss
Major Natural Catastrophes

Bangladesh (Floods, 1998)
India (Gujarat/Bhuj, 2001)
El Salvador (San Salvador, 1986)
Turkey (Izmit, 1999)
Mexico (Mexico City, 1985)
Honduras (Mitch, 1998)
Poland (Floods, 1997)
Colombia
Indonesia (Floods, 1996)
Puerto Rico (Hugo, 1989)
USA (Northridge, 1992)
France (Storm Lothar, 1999)

Why Such Low Insurance Penetration for CAT?

1. **High Loss Potential.** The Northridge EQ in California, for instance, cost local insurers all the EQ insurance premium they have ever collected in the state since the inception of the business, with the EQ loss consuming over 4% of globally produced insurance premium in 1994.

2. **Difficulties with diversification of catastrophe risk** at the regional or even country level by insurance companies.

3. **Wide Spread Expectations of Government Post-Disaster Assistance.** ‘Many citizens simply expect public aid when calamity strikes. With 50 federal programs to supplement their courage, people have every incentive to build in flood prone areas and leave it to Uncle Sam.’
Romania: Insurers’ Risk Retentions vs. Surplus

EQ Risk Accumulation Ratios

<table>
<thead>
<tr>
<th>Company</th>
<th>Retained EQ accumulations in Bucharest to surplus</th>
<th>Retained EQ accumulations in Bucharest to total net risk retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>320%</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>222%</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>178%</td>
<td></td>
</tr>
<tr>
<td>Market</td>
<td>150%</td>
<td></td>
</tr>
</tbody>
</table>

Company A: 62%
Company B: 24%
Company C: 50%
IBRD Lending for Natural Disasters over 20 Years: $40 billion

- South Asia: 8,558
- Middle East and North Africa: 9,016
- Latin America and Caribbean: 9,154
- Europe and Central Asia: 9,154
- East Asia and Pacific: 7,288
- Africa: 4,384

Funding ($m)
Provision of Emergency/Relief Funds

The Iron Grip of Insurance Spending Law

PERSONAL INSURANCE PREMIUM = 1.3*(GDP/1000)^2
PERSONAL CAT INSURANCE PREMIUM = 0.1*PERSONAL INSURANCE PREMIUM

Sources: Graph – Eugene Gurenko and Rodney Lester (2003); Formula – John Seo (2004)
The most common outcome of these various forces at play is a political and social deadlock over when and how to move forward toward a more sustainable risk management system!
The Government Cat Risk Dilemma

- **Main doubts to consider:**
  - A potential political payoff from an investment into a national catastrophe risk management program may come too late due to the long return periods of cat events. In fact, in the absence of a major recent event, creating such a program may prove highly unpopular!
  - By creating a cat risk insurance program we will be limiting our discretion to provide popular disaster relief subsidies.
  - By building national cat reserves, we will be diverting national savings from investments into other potentially more economically productive projects.
  - By building a national cat insurance program, we would be undermining our ability to receive more aid from international donors, which would even further diminish the return on an investment in a national cat fund.
Creation of a cat pool may result in the loss of cat risk premium, no matter how insignificant.

In those markets, where local insurers “front” for international reinsurers due to the lack of capital, creation of a pool would result in the loss of reinsurance commissions.

In the markets with insufficient regulatory oversight, creation of a cat pool may be equivalent to a considerable reduction in companies’ retentions of cat risk, and thus, in reduced net premium income and reduced annual earnings during the years without major cat events.
The Consumers’ Cat Risk Dilemma

- “It will never happen in my lifetime!”
- Why pay for protecting against something remote and abstract when there are other more urgent spending priorities!
- Why buy insurance when I have my government to help me!
- Buying insurance may in fact reduce my chances of receiving government aid!
- Government sponsored insurance cover may not provide good value for money and, who knows, if they will pay me at the end at all!
Looking for a “Silver Bullet”? 

- Is there a solution that can address the main concerns of all key stakeholders in the process? 
  - No simple solutions. 
  - Any workable solution would require an intensive dialogue that involves government, insurance industry, global reinsurers, international donors, and consumer organizations. The social, technical and political complexity of the issues may be rather overwhelming.
Why Maintaining a Status Quo is no Longer a Solution

- A wide discrepancy between economic and insured losses in the World Bank client countries means that most of the risk is carried by governments and homeowners.
- Low penetration of insurance contributes to the growing funding gap between the size of economic losses caused by natural disasters and the amount of government resources available to finance them.
- 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.
Fiscal and Economic Effects of Disasters

Uninsured Economic Loss as % of GDP and Government Revenues

Uninsured Economic Loss as

- % of GDP
- % of Government Revenues

<table>
<thead>
<tr>
<th>Country/Event</th>
<th>Uninsured Economic Loss as % of GDP</th>
<th>Uninsured Economic Loss as % of Government Revenues</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA (Northridge, 1992)</td>
<td>0.3%</td>
<td>2%</td>
</tr>
<tr>
<td>India (Gujarat/Bhuj, 2001)</td>
<td>1%</td>
<td>7%</td>
</tr>
<tr>
<td>Columbia (Amenia, 1999)</td>
<td>3%</td>
<td>11%</td>
</tr>
<tr>
<td>Mexico (Mexico City, 1985)</td>
<td>3%</td>
<td>23%</td>
</tr>
<tr>
<td>Turkey (Izmit, 1999)</td>
<td>4%</td>
<td>26%</td>
</tr>
<tr>
<td>Bangladesh (Floods, 1998)</td>
<td>5%</td>
<td>21%</td>
</tr>
<tr>
<td>El Salvador (San Salvador, 1986)</td>
<td>17%</td>
<td>27%</td>
</tr>
<tr>
<td>Honduras (Mitch, 1998)</td>
<td>34%</td>
<td></td>
</tr>
</tbody>
</table>
Getting to a “Yes”

Any workable catastrophe insurance solution should be able to meet the following criteria of key stakeholders:

- Reduce government fiscal exposure to natural disasters while leaving enough room for politicians to provide some discretionary assistance to disaster victims.
- Reduce government reliance on ex-post donor funding by creating incentives for ex-ante risk management.
- Generate some tangible benefits for the insurance industry which would clearly outweigh potential loss in premium.
- Offer affordable catastrophe insurance products to homeowners backed by strong regulatory incentives to buy such insurance cover and government financial participation in the risk financing program.
A Possible Risk Management Approach for Emerging Markets

- Government Structured Relief
- Government Capital Support
- Reinsurers
- Catastrophe Pool
- Insurers
- Homeowners/SMEs

International Donors
Development Banks
Why government should be involved in risk transfer programs?
The insurance industry generally targets a 1-in-100 year to 1-in-250 year insolvency level, e.g. makes full capital provisions for once-in-a-century catastrophic events, not once-in-a-millennium events.

A policy that provides coverage for a major, once-in-a-century, catastrophe in any of the major US, European, and Japanese markets carries a market capital cost 3 to 6 times the actuarial cost.

The capital cost multiple versus actuarial cost decreases with increasing probability of the catastrophe—for example, a once-in-a-decade catastrophe coverage would have, all other things being equal, a capital cost much lower than 3 to 6 times actuarial costs.

Capital Costs Are the Key Cost Driver of Cat XL Coverage

How to provide affordable insurance coverage of acceptable credit quality despite high capital costs and in the environment of volatile reinsurance market?
Why National Catastrophe Insurance Pools is a Potential Way Forward?

- Public/private partnerships in catastrophe risk management can effectively secure programs’ access to relatively cheap capital (with government becoming a reinsurer of last resort) and operational efficiencies of private insurance and reinsurance markets.

- Can build overtime a formidable supply of additional domestic claims paying capacity thus stabilizing premium rates.
# 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>$ 40 mm</td>
<td>$ 150 mm</td>
</tr>
<tr>
<td>Premium Rate (average)</td>
<td>$ 13</td>
<td>$ 15</td>
<td>$ 17</td>
<td>$ 21</td>
<td>$ 25</td>
</tr>
</tbody>
</table>
World Bank Role

- The World Bank can add value by facilitating the development of catastrophe risk markets around the globe.

- Creation of specialized catastrophe insurance programs helps to:
  - Boost insurance penetration
  - Increase industry’s technical sophistication
  - Build up additional domestic claims paying capacity
  - Reduce government exposure to catastrophe risk.
Conclusions

- (i) Creation of national catastrophe risk management programs is gradually becoming an integral part of the government major policy priorities.

- (ii) Private insurance markets stand to gain from the creation of effective public/private partnerships in catastrophe risk transfer due to reduced capital costs, securing access to additional stable claims paying capacity and by defeating the “iron law of insurance spending.”

- (iii) World Bank can provide technical and capital support to national catastrophe insurance programs by working together with private insurance markets and governments.

- Donors countries should step up their efforts to encourage pro-active ex-ante risk management on the part of disaster prone developing countries.