

**CONFERENCE ON CATASTROPHIC RISKS
AND INSURANCE**

22-23 November 2004

**RATING AGENCY'S PERSPECTIVE
ON CATASTROPHE BONDS
AND RISK-LINKED SECURITIES**

Rodrigo Araya (Moody's)

Powerpoint presentation

This document is circulated for Session 2 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)

Rating Agency's Perspective on Catastrophe Bonds and Risk-linked Securities

Rodrigo Araya
VP, Senior Credit Officer

OECD

Conference on Catastrophe
Risks and Insurance

November 22-23, 2004



Moody's Investors Service

Introduction

- **This presentation will cover the following items:**
 - **A Review of Securitization of Catastrophic Risks**
 - **Moody's Rating Approach**
 - **Future Outlook**



Cat Bond Market: A Bit of History

- **First securitization of catastrophic risks in 1997**
- **Market has remained small (~\$1 billion/year)**
- **Usual perils covered: earthquakes, wind storms**
- **Risks analysis done by 3 modeling firms**
- **Limited to a few market participants (sponsors, underwriters, investors)**



Evolution of the Cat Bond Market

- **Issuance almost doubled in 2003 (~\$1.8 billion)**
- **The 1st Cat Bond Program to issue off-the-shelf Cat Bond Notes was introduced**
- **New Perils were introduced: Extreme Mortality, World Cup Cancellation**
- **Modeling of life-insurance risks performed by different specialists (Milliman)**



Cat Bond 101: Types of Cat Bonds

- **By Loss Triggers**

Type of Trigger	Basis Risk	Moral Hazard
Parametric	H	L
Index/Modeled Loss	M	M
Indemnity	L	H

- **By Type of Loss Covered: (i) Per Event (ii) Aggregate**
- **By Loss Mechanism: (i) First Event (ii) Second Event**



Summary of Perils Evaluated

■ KNOWN PERILS

- Earthquakes
- Wind-related
 - Hurricanes
 - Typhoons
 - Euro Windstorms

■ NEW PERILS

- Catastrophic Mortality
- Terrorist threats
 - Bomb Explosions
 - NBC attacks



Moody's Rating Approach

- **Evaluation of the Transaction Structure**
(Identification and quantification of transaction risks, perils covered, types of loss mechanism, losses covered, triggers)
- **Risk Assessment** (Model review, Stress testing of consultant's model, Independent in-house modeling)
- **Review of Legal Documentation**



What happens after the Rating is issued?

- **Moody's continues to monitor the outstanding ratings**
- **Monitoring involves update of expected losses due to: (i) Transaction seasoning; (ii) Resetting of attachment/exhaustion point; (iii) Occurrence of a triggering event (*second-event notes*); (iv) Accumulation of covered losses eroding first-loss layer; (v) New issuance of notes within an established program**



Cat Bond Market Outlook

- **Market will continue to grow as long as new perils/new structures are offered**
- **New perils are slowing starting to be added**
- **New types of sponsors are considering cat bond issuance**



References

- ***Moody's Approach to the Rating of Catastrophe-Linked Notes, Special Comment, September 12, 1997***
- ***Moody's Approach to Rating Catastrophe Bonds Updated, Rating Methodology, January 23, 2004***

