

CASE STUDY

# Insuring Against Natural Disaster Risk in Mexico

## OVERVIEW

Mexico, one of the most experienced emerging market countries in disaster risk management, has proactively sought to benefit from global diversification by sharing risks with international capital markets. It was the first country to issue a multi-peril multi-region cat bond using the World Bank's MultiCat Program. The MultiCat Program allowed Mexico to efficiently transfer a pool of disaster risk to the capital markets.



## Background

Mexico is vulnerable to a number of natural hazards, including hurricanes, large earthquakes, floods, and volcanic eruptions. In 1985, two earthquakes of magnitudes 8.0 and 7.5, respectively, killed more than 10,000 people and destroyed 100,000 housing units in the country. When such natural disasters occurred, the government had to shift budgetary resources away from planned public infrastructure expenses into reconstruction efforts. To avoid this problem, in 1996 the government created a fund for natural disasters — FONDEN — to which it transfers budgetary funds for disaster relief and reconstruction efforts. In addition, Mexico developed an institutional framework for disaster preparedness involving risk assessment, risk reduction, the promotion of a culture of prevention, and insurance.

With these initiatives, Mexico moved from an ex-post response to natural disasters to an ex-ante preparedness approach.

FONDEN uses various instruments to support local states and entities in responding to natural disasters, including reserve funds and risk transfer solutions. In 2006, FONDEN issued a US\$160 million catastrophe bond (CatMex) to transfer Mexico's earthquake risk to the international capital markets. It was the first parametric cat bond issued by a sovereign. After the CatMex matured in 2009, Mexico decided to further diversify its coverage by pooling multiple risks in multiple regions. In October 2009, it issued a multi-peril cat bond using the World Bank's newly established MultiCat Program, which helps sovereign

and sub-sovereign entities pool multiple perils in multiple regions and reduce insurance costs.

## Financing Objectives

- Transfer disaster-related risks to the capital markets and reduce pressure on public budgets
- Ensure that adequate funds are in place for relief activities
- Cover multiple perils

## Financial Solution

Mexico issued a four-tranche cat bond (totaling US\$290 million) with a three-year maturity under the MultiCat Program. The issuer is a Special Purpose Vehicle (SPV) that indirectly provides parametric insurance to FONDEN against earthquake risk in three regions around Mexico City and hurricanes on the Atlantic and Pacific coasts. The cat bond will repay the principal to investors unless an earthquake or hurricane triggers a transfer of the funds to the Mexican government.

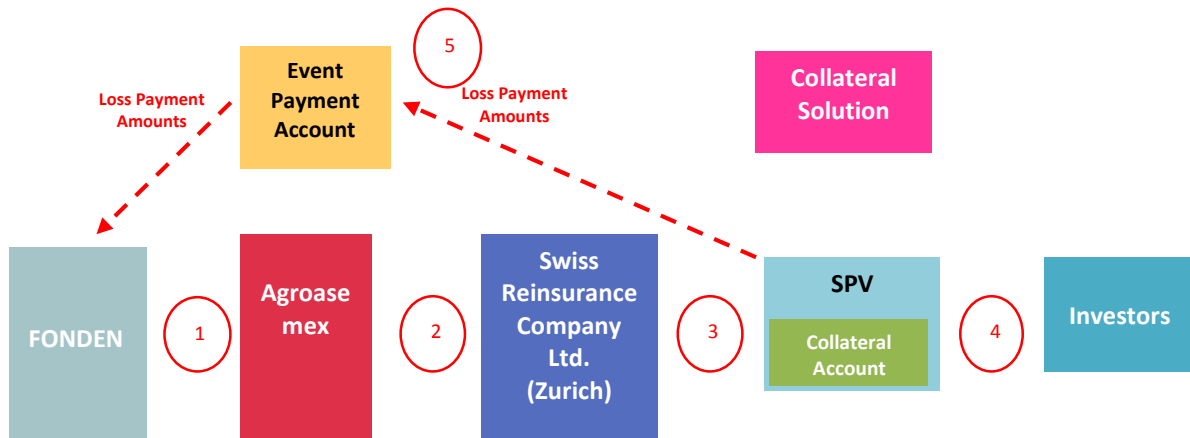
## Outcome

The bond was oversubscribed, with broad distribution among investors. With this bond, Mexico transferred a pool of disaster risk to the market for the first time; secured multi-year protection for the covered risks at a fixed price; and reduced potential pressure on public budgets. Mexico effectively locked in funding for disaster relief prior to the event happening, rather than relying only on public budgets after the event. The demonstration effect of this transaction for other emerging market countries is significant. It has paved the way for other highly exposed countries to manage fiscal volatility and stabilize government budgets by transferring extreme natural disaster risks to capital markets, while obviating the need to build up excessive budget reserves.

**Table 1: Summary of Terms: MultiCat Mexico 2009**

Issuer: MultiCat Mexico 2009 Ltd.				
Peril	Class A: Earthquake	Class B: Pacific Hurricane Zone A	Class C: Pacific Hurricane Zone B	Class D: Atlantic Hurricane
Notional (US\$)	140 million	50 million	50 million	50 million
Trigger	7.9; 8.0 magnitude (Richter Scale)	944 Central pressure	944 Central pressure	920 Central pressure
S&P Rating	B	B	B	BB-

**Figure 1: Operating Structure**



1. FONDEN enters into an insurance contract with local insurance company Agroasemex.
2. Agroasemex enters into a reinsurance contract with Swiss Re to transfer all of the catastrophe risk.
3. Swiss Re enters into a derivative counterparty contract with a Cayman Islands-based special purpose vehicle (MultiCat Mexico 2009 Ltd.) to transfer the catastrophe risk.
4. The SPV issues floating rate notes (Cat Bonds) to capital markets investors to hedge its obligations to Swiss Re under the counterparty contract. The proceeds received from investors are invested in US Treasury money market funds and deposited in a collateral account.
5. A separate event payment account is established with a third party bank to allow FONDEN to receive parametric loss payments directly from the SPV, subject to the insurance contract.

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