



DRM approach to earthquake: The Chilean experience

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Potential Advantages of Partnering between Property Insurers and
Government in Mitigating and Compensating Climate-related Catastrophes
26th September

Agenda

- The Magnitude of a Seismic Event such as the Maule's 27F
- Challenges Involved
- Lessons Learned
- Ongoing and Done Initiatives

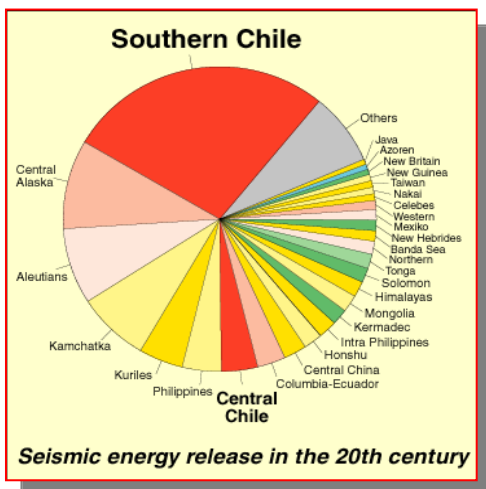
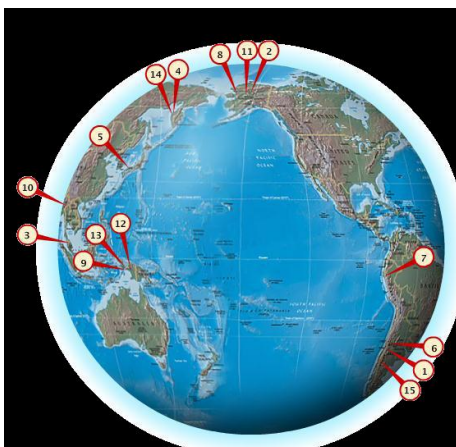


The Magnitude of a Seismic Event such as
the Maule's 27F



27F Earthquake

Chilean people **know** that they live in a seismic country.



1. Chile	22-5-1960	9.5
2. Prince William Sound, Alaska	28-3-1964	9.2
3. Off the West Coast of Northern Sumatra	26-12-2004	9.1
4. Kamchatka	4-11-1952	9.0
5. Honshu, Japan	11-3-2011	8.9
6. Chile, Offshore Maule	27-2-2010	8.8
7. Off the Coast of Ecuador	31-1-1906	8.8
8. Rat Islands, Alaska	4-2-1965	8.7
9. Northern Sumatra, Indonesia	28-3-2005	8.6
10. Assam, Tibet	15-8-1950	8.6
11. Andrean of Islands, Alaska	9-3-1957	8.6
12. Southern Sumatra, Indonesia	12-9-2007	8.5

27F Earthquake

At 2010, catastrophic reserves required companies to fix them in the Cresta zone for peak exposition, calculating a PML of 15% for engineering and business interruption, and 10% for all others, net of reinsurance.

In this context, modeling was made upon the 1985 San Antonio earthquake which was an USD 85 million loss for insurance industry.

By 2000, the AACH estimated that the highest “most probable earthquake” could lead to a USD 2.6 billion insured loss for the industry.

CRESTA: Catastrophe Risk Evaluating and Standardizing Target Accumulations



27F Earthquake

No one could imagine:

- An Earthquake 8.8 Richter, followed by a tsunami.
- 222.416 claims distributed in a 165.796 km² (959 km along the Chilean coast) .
- In 10 months, insurance industry got an equivalent to 9 years of claims in normal conditions.
- More than 7.5 billion dollars in insured losses.
- That was:
 - 2 times the industry's last 30 years accumulated premiums on seismic hazard, or
 - 300% of the total non life market annual premium, being, as such, the highest relative loss for an Insurance Market ever.
- A cost for the Chilean treasury of 8.4 billion dollars, mostly financed through a tax increase.
- And... 525 fatalities and 23 people disappeared in the tsunami.

Challenges Involved



Main Challenges

- Chilean insurer faced important **logistic challenges**:
 - Most claims received during the first 3 months.
 - Branches communications and even buildings in the zone not able to operate.
 - Basic utilities (water, electricity, etc) shut down for days and weeks.
 - Difficult or no access at all to damaged zones and buildings.
- Also, faced **strategic challenges**.
 - “Isolated” Contingency Plans that worked expecting others to be in “good shape”.
 - Lack of a “communication plan” as industry.
 - Insured client, media, and the regulator, inquiring information.
- And also:
 - **Financial challenges** (seismic hazard is a reinsurance market in Chile).
 - **Technical and Legal Challenges** (wide variety of policies and terms).

Lessons Learned



Insurance Penetration and National Policy

- Lack of insurance coverage aroused in several kind of infrastructure:
 1. House without mortgage credits (it is estimated that only 23% of total houses are insured, mostly because people that don't have mortgage do not buy seismic coverage).
 2. Medium and small size business companies.
 3. Central Government of Chile does not adopt the practice of buying insurance policies: uninsured losses in hospitals, public highways, bridges and public schools that had to be rebuild through a tax increase.
- Findings 1 and 2 are private sector challenges
- Finding number 3 leads to the question on how governments should prepare for natural catastrophes?

Lack of Information

- **Poor database information** in insured household properties.
 - Seismic coverage is sold as a Fire Risk additional.
 - Underwriting is made after fire risk.
 - Modest geo reference information in databases.
 - Most housing coverage is made through retail and banks, and the information was retained in their bases.
 - Trouble finding insured homeowners.
- **Poor information** to make accurate risk and pricing modeling.
 - And also to estimate the right face value.

Variety of Policies and Terms

- “Importing” terms and definitions from international reinsurance market without the right customization.
 - Among them: “Leeway”, “Swing”, “full Value”, “errors and omissions”.
- Spending on **post-event clean-up and demolition** were most the time not covered neither insured.
- **Looting** was covered, but definition varies.
- **Variety of policies** made homeowners confused.
- Common and complementary infrastructure in **condominiums** were a source of conflicts.

Ongoing and Done Initiatives



Initiatives

- New **basic and standard policy** was written.
 - It was granted for the regulator to make it mandatory for houses with mortgage credit.
 - Includes demolition coverage, temporary rent, complementary infrastructure.
 - Most part of new insurance is on behalf of this standard policy.

Initiatives

- A Seismic and Tsunami hazard model for calculating PML is being made.
 - The most seismic country in the world couldn't afford not to have this kind of PML customized model anymore.
 - After an international bidding process, a new model to estimate PML is on the line. It is expected to have the first numbers by December 2013.
 - It is the first model in the world to include tsunami hazard.
 - It is customized for Chilean infrastructure and soil.
 - It is expected to be a mandatory regulation for catastrophic reserve in the new Capital Risk Based model that it is being reviewed in Congress right now.

Initiatives

- A **“Master contingency plan”** is in the pipe.
 - It has to be agree with all stakeholders involved in natural catastrophes in the country.
 - Public and private actors.
- New **information and completeness** for the market.
 - A law was passed to make mortgage credit loaners to give and disclosure information needed for insurance purposes.
 - The new PML model will force insurers to have complete information on covered properties (lack of it should result in greater capital asked).
- **Public infrastructure coverage** is a pending matter.



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