

# The future of cat models

Cat models are evolving to meet new risk management challenges, says Richard Clinton, president of EQECAT.



## What will drive the future development and use of cat models among insurers and reinsurers?

The importance of companies understanding and managing their risk accumulations was graphically and painfully demonstrated by the recent financial crisis, which was largely driven by an under-appreciation of the risks associated with the subprime market. This lesson will not be lost on the (re)insurance industry's rating agencies, regulators and shareholders. Even before the current financial crisis these groups were already starting to require the (re)insurance industry to strengthen their enterprise risk management programmes. This

will translate into greater use of cat models, including the use of multiple models. It will also drive the demand for more robust models and better risk metrics from the modelling industry.

Understanding and managing risk, especially catastrophe risk, goes to the very core of the (re)insurance industry.

## How will EQECAT respond in terms of what it offers?

EQECAT has always prided itself in providing the industry with the most robust models available. We are updating our country/peril models on a regular basis to reflect the latest science and engineering research. We are also working with the (re)insurance industry to develop better risk metrics for managing risk. Plus, we are making it easier and more efficient for the industry to use our models by automating the process and integrating it into the company's management systems through XML protocol.

## In windstorm models, which areas do you expect greater focus on to improve their effectiveness?

Business interruption and contingent business interruption are very difficult coverages to model and we are always working on improving our ability to provide reliable loss estimates. This is also one of the major drivers for the development of industry specific models. The key to modelling these coverages is the understanding of the industry and the drivers of loss. This cannot be done in a standard model. So EQECAT is focusing on developing industry specific models that truly reflect the characteristics of the risk and for industries where BI and CBI are potentially major loss contributors.

Demand surge is another area where a lot of work continues to be done to improve the modelling process.

## What improvements can be expected in the effectiveness/coverage of flood models?

The flood peril is one of the more challenging models to develop and maintain due to the level of data required to model the risk and the constantly changing risk environment. EQECAT tackled

this problem after the 2005 hurricane season and incorporated the ability to model storm surge and the marginal impact of flooding associated with tropical storms into its US hurricane model. For many years we have also provided companies with a probabilistic flood model that they could use for underwriting individual risks in the US. Finally, we have also developed flood models for parts of Europe and a storm surge model for the UK. EQECAT is continuing to enhance and/or develop storm surge models where appropriate outside the US.

## What about earthquake risk. Are you confident that your models will stand up?

In many ways, earthquake is almost the forgotten peril because we have not had a major event from an insurance standpoint in many years.

EQECAT has a lot of confidence in its earthquake model. The model is based on over 70 field investigations of actual earthquakes around the world, which is by far the most of any modelling company. Plus, it is the only model that has been extensively reviewed by the USGS, CGS and Pacific Earthquake Engineering Research Center. This was done in conjunction with our work with the California Earthquake Authority (CEA) which uses our model in their rate-making activities.

## What new areas of insured risk do you expect models to be used for in the future?

EQECAT has done a number of unique analyses that may eventually lead to the development of models for non-cat lines of business. As an example, we analysed the liability exposure due to industrial accidents for one company in conjunction with a cat bond that was being issued. We also have developed methodologies for modelling pandemics, satellite launches, political risks and other exposures like supply chain risk. EQECAT also works with corporate risk managers to assist them in their understanding and management of their risk through the use of catastrophe modelling.

## What are the important advances that need to be made to make models more effective?

One of the most important advances is the ability to easily automate the modelling function and integrate it into a company's other management systems. EQECAT currently provides this capability through an XML interface, which more and more companies are implementing.

The other major area is the ability to easily transfer exposure data between models. The insurance industry has been pushing for this capability for a long time and EQECAT fully supports the development of a standard data format with common descriptive codes along with open sourcing of our current data formats (input and transfer file formats). If necessary to make this happen, we would also support the independent development of a conversion tool for data exchange. The time for this is now and there is no excuse for not doing it. ●

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