CAT MODELLING

Kyrill reawakens model debate

Wide variations in industry loss estimates raise fresh questions over modelling in the reinsurance industry

In the wake of Hurricane Katrina with its unprecedented and un-modelled levels of storm surge, urban flooding, demand surge and business interruption, the catastrophe modelling industry took almost as much of a battering as New Orleans itself.

Now with industry wide estimates following January's European Windstorm Kyrill up to EUR3-5bn apart at the three major modelling agencies, is the scrutiny about to start again?

Back in 2005 Brit Insurance CEO Dane Douetil told *IQ* (by his own admission somewhat flippantly) that there were "lies, damned lies and cat models".

Douetil continued: "As losses become larger and more complex it has been proven time and time again that models have their limitations when forecasting this type of loss."

The views were echoed across much of the industry at the time and, in the intervening 18 months, cat modelling companies have upgraded the systems they provide to the industry. New releases have been accompanied by declarations of the value of new methodologies used and the strength and accuracy of the underlying data.

On the launch of its new European windstorm model in May 2006, Risk Management Solutions (RMS) said it was "a highly powerful tool to help reconstruct past meteorological events at high-resolution and understand the development and life-cycles of these complex events".

But Kyrill – which struck Europe with hurricane-force winds over the course of 18-19 January causing significant travel and power disruptions, flooding, and building damage across the UK, France, the Netherlands and Germany – has brought the modelling industry sharply back into focus.

Marked discrepancies

This scrutiny is hardly surprising, given the marked discrepancies between estimates from the various agencies.

EQECAT has projected industry-wide insured losses of EUR2.5-5bn; but AIR Worldwide was far higher at EUR4-8bn; while RMS was in the mid-range as it released an initial estimate of EUR3-5bn.

Meanwhile, an analyst has described the differences in industry wide estimates for Kyrill as a "puzzling search for some EUR3-5bn".

Morgan Stanley's William Wilt noted: "EUR8bn is a lot of euros, and while we're not property experts, it seemed to us that a whole lot of 'stuff' has to be destroyed before insured losses reach that level.

"We're not downplaying the destruction, life tragedies, or the reality that insurers will have meaningful amounts of claims from this (roughly, as we understand it) 1-in-10 year event or so. But EUR8bn… EUR10bn? Did anyone call Germany to see if the phones were still being answered?"

Dr Claire Souch, director of model management at RMS explained: "Our estimate was released just two days after the event when there is still a lot of uncertainty, especially at the top end. And our model does not cover Poland or the Czech Republic, which were both affected. Since then we have done a lot of damage observation and we will soon be able to reassess the estimate, when we expect the top end to come down."

Industry-wide Kyrill loss estimates

Company	Eur(bn)
AIR Worldwide	4-8
Benfield	1.75-2
Converium	5-7
EQECAT	2.5-5
Hannover Re	4-7
Munich Re	5-7
RMS	3-5
Swiss Re	3.5
XL Capital	2.3-7.7

However, Dr Peter Dailey, director of Atmospheric Science for research and modelling at AIR said his company would not be updating its estimate in light of evidence gathered since Kyrill struck.

"Our initial estimate of losses in Germany was EUR2bn, whereas most early estimates were only EUR1bn. What we are now seeing is most estimates rising to the same level as ours."

The difference in industry-wide insured loss estimates was also highlighted by the projections of Europe's largest reinsurers.

At up to a maximum of EUR3.5bn Swiss Re gave one of the lowest industry loss estimates for Windstorm Kyrill, while German rivals Hannover Re and Munich Re both published significantly higher industry loss estimates of EUR4-7bn and EUR5-7bn, respectively.

"In Europe the modelling agencies are using fundamentally different approaches to windstorms," added Souch. "There is a big difference between Europe and the US with the available windstorm data too. In the US hurricane records go back over 100 years, but RMS has had to build up its own catalogue of data for Europe."

When it announced its initial loss estimate of $5-15mn, Bermudian reinsurer Arch Capital said its actual losses may vary due to "the potential inaccuracies and inadequacies in the data provided by clients and brokers, the modelling techniques and the application of such techniques".

Such differences across estimates led Wilt to conclude that catastrophe modelling "like any other aspect of underwriting or pricing (re)insurance, is as much art as it is science".

"Sometimes every stakeholder in the (re)insurance industry (whether policyholders, politicians, (re)insurers, modellers or investors) can benefit from stepping back and asking themselves: 'Does this make sense?'" concluded the analyst.

RMS reiterated the point made often after Katrina that models are only as good as the data fed in and the expertise of the user.

"Users of the models have to understand the basis of the models and then they remain an important tool for managing risk," added Souch.