reinsurance

Why models are not the whole story

Ryan Ogaard, managing director and global practice leader for Instrat®, explains the lessons to be learned about risk from the 2004–2005 storms

Ryan Ogaard: increasing return on capital is a business imperative.

The 2004–2005 North Atlantic storm seasons have put a spotlight on the industry's use of catastrophe models and exposure management. What are the lessons to be learned, and how will they spark the next phase of development in our understanding of risk?

Did the models do their job? Some will say that this simple question is really not so easy to answer. Natural catastrophe models are built partly on science, partly on historical data and partly on professional judgement. In light of recent events, the industry and all of the modellers are re-evaluating the notion of frequency, and there's no question that the models will be recalibrated based on the 2004 and 2005 storm seasons. But of equal importance is the need for the industry to take a more holistic approach to analysing catastrophe loss potential. Beyond pure frequency and severity, judging model performance also requires that we understand exactly what we expect modelled losses to represent.

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Should 'secondary' categories such as sea surge, demand surge and business interruption be represented more robustly in the models? Probably yes. However, we must temper this with reality. With limited science and data to understand secondary perils and coverages, and past losses from them being (generally) manageable, the industry was not focused on their potential for magnifying a hurricane loss.

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Modelling has come a long way over the last decade, and today we have a far greater understanding of natural perils than ever before. Just as importantly, the use of risk models has driven the industry to produce vastly improved exposure data. Still, the 2005 season showed us that further improvement in data capture and quality is essential. In many ways, understanding and verifying exposure data is as valuable an exercise as running probabilistic models.

It is important that we learn from any major loss event, and one major lesson of *Katrina* is that, along with the continued prudent use of models, companies must employ other strategies to test their exposure and management of risk concentration.

Portfolio management (PM)

Portfolio management has been an emerging best practice in the catastrophe modelling arena and as a basic tool for the management of risk. PM is defined as the continuous process of evaluating a portfolio of risks, seeking to improve profitability and decrease loss potential. Given a new focus on understanding and managing catastrophe-loss potential, PM will doubtless become increasingly more mainstream in the insurance industry.

The process of portfolio management is essentially a data mining and analysis exercise that is very complementary to the catastrophe-modelling process. It begins with questions like: Where am I overly concentrated relative to my exposure to catastrophic loss? Where am I highly exposed to multiple perils? If I can increase the total insured value, where should it be? Are there policies for which I am undercharging, despite having generally adequate rates? What geographies or perils are driving my reinsurance pricing? How do I grow without impacting my reinsurance programme?

While the term 'portfolio optimisation' is sometimes used to describe this process, the notion that an insurance portfolio can be optimised is illusory. A portfolio can be managed and improved, but it can never be totally optimised since market conditions are constantly changing, and insurance is not a highly liquid product. PM is a continuous and dynamic process in which the goals are to reduce concentration in catastrophe-prone areas, align underwriting and reinsurance strategies, increase reinsurance efficiency and get the right price for risk.

Portfolio management is really a subset of an overall enterprise risk-management process. Even before the 2004 and 2005 tropical storm seasons, insurance carriers were facing additional demands in terms of their return on capital and increased scrutiny of their capital adequacy. These conflicting pressures are only likely to increase in the wake of Hurricane *Katrina*. In this environment, the prospect of improving returns on capital without risking an unacceptable erosion of capital in a major event is a business imperative.

The hurricanes of 2004 and 2005 have focused the industry on the cost and frequency of natural catastrophes, but this isn't the whole story. Along with continued improvements to the models, better and more complete exposure data, as well as new strategies for exposure management, must be developed. re

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