

Record-Breaking 2004 Hurricane Season to Change Catastrophe Modeling and Approach to Aggregate Events

The 2004 hurricane season has led to a much greater focus on aggregate risk and this will prompt changes in catastrophe risk assessment, according to Randall Brubaker, senior vice president, Aon Corp, speaking at the spring meeting of the Casualty Actuarial Society (CAS) Spring meeting in Phoenix.

Brubaker noted that companies buying reinsurance today are much more interested in aggregate probable maximum losses (PMLs) than they were before.

"Our ceding company clients are continually more interested in understanding and reinsuring aggregate PMLs," he said.

Brubaker noted that up until last year, most of the hurricanes were missing the U.S. coastline, but that changed dramatically last season. This was due to a change in the upper atmospheric weather pattern in the United States.

"Last year we had a ridge of high pressure in the East that caused the hurricanes to get pulled further west into the Caribbean before turning north. That's what caused them to converge on Florida," he said.

Brubaker said the question is whether this is a trend. "Is this going to continue and something we're going to see several seasons in succession? I don't think anybody knows that."

He noted that hurricanes Charley, Frances, Ivan, and Jeanne resulted in estimated losses of \$22.8 billion, according to latest Property Claim Services (PCS) figures. While any of those four hurricanes by itself isn't a particularly rare event, the single season occurrence of all four together is rare.

Brubaker said that the four hurricanes initially had led to wide-ranging loss estimates among catastrophe modeling companies. In addition, actual losses differed from predicted losses in certain areas.

While information on 2004 losses is still being gathered and analyzed, he anticipated there would be a number of changes to catastrophe models this year and in 2006.

Adjustments for frequency, revised



damageability ratios at lower wind speeds and for select construction types, and a review of demand surge functions based on season losses, rather than individual occurrences, can be expected.

Brubaker also predicted a greater focus on the quality and completeness of exposure data for catastrophe models in the months to come. "Going forward, we're probably going to see more effort and discipline about putting together exposure data for catastrophe modeling," he said.

As for the impact on the reinsurance market, Brubaker remarked that the 2004 hurricane season hasn't driven up reinsurance pricing, although the changes in catastrophe models might affect future reinsurer pricing models.

"The 2004 hurricane season didn't have a significant impact on the renewal of treaties at 1/1/2005. The catastrophe reinsurance market is model-driven, not experience-driven. In fact, abundant capacity is having a bigger effect on reinsurance pricing than the 2004 hurricanes," he said.

In the industry in general, there is still abundant capacity and there are still significant amounts of investor capital looking to get into the property catastrophe business, he added.

Thomas Hettinger, managing director, EMB America LLC, noted that the post-2004 reinsurance market has reacted differently from post-hurricane Andrew in 1992. In the past, after a shock event the market would harden.

"After Hurricane Andrew, the catastrophe market hardened significantly. By contrast, these four events didn't have as big an impact on the reinsurance market as originally thought," he said.

Why not? "Actuaries have developed more sophisticated catastrophe model-

ing techniques that have become core tools for helping companies understand their risks," said Hettinger. He also noted that for the most part, reinsurance market premiums appear to be staying the same or softening.

Hettinger noted that last season's four hurricanes have led to a definite shift away from the traditional approach to buying reinsurance. Many insurers have a different view of risk after last year.

"This opened people's eyes to what could happen. In the past, people weren't that worried about aggregate events. Now, in Florida, many carriers are considering at least what would happen if there are two events," he said.

Specifically, carriers are looking at what happens when the Florida Hurricane Catastrophe Fund (FHCF) is used up, the speed of payment from the Cat Fund, and potential gaps in coverage created due to a second event and the timing of payments from the fund, said Hettinger.

He highlighted the need for carriers to use company enterprise risk models, with catastrophe model outputs being a core component. Carriers should use the different catastrophe model outputs to better understand the risks facing them, and stress the results from these models.

"Take this as a wake-up call to push modeling to help you," he said.

Hettinger noted that there is an ongoing process of change and improvement in catastrophe modeling and in helping people to better measure risk.

"When catastrophe models first came out, how many people understood what a one in 100-year event was? That was a great leap," he said.

The Casualty Actuarial Society is an organization dedicated to the advancement of the body of knowledge of actuarial science applied to property, casualty and similar risk exposures. The primary goal of the Casualty Actuarial Society is to provide education and research to help its members become leading experts in the evaluation of hazard risk and the integration of hazard risk with strategic, financial and operational risk. ●