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Reinsurance Criteria: Larger Losses And Better Modeling Prompt Changes To Property Catastrophe Criteria

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Since the early 1990s, catastrophic loss activity has increased in certain geographic areas—along with the insurance industry's potential for losses. At the same time, modeling firms and the leading reinsurance companies have improved their modeling and technology capabilities, resulting in significant improvements and more advanced techniques for assessing catastrophe risk. In recognition of these changes, Standard & Poor's Ratings Services has enhanced and updated its property catastrophe insurer criteria.

Standard & Poor's recognizes that catastrophic loss activity can have a significant impact on a company's overall financial strength. The revised criteria acknowledge that the most effective source of property catastrophe modeling data is that which is provided by the reinsurers themselves. Therefore, the approach adopted is to use mainly a reinsurer's own modeled output and verify consistency by obtaining additional relevant data. This also allows for enough flexibility for it to be applied consistently to a range of businesses and coverage types: quota share (proportional), direct and facultative reinsurance, surplus, share, risk excess of loss, catastrophe excess of loss reinsurance, and retrocessional reinsurance. Standard & Poor's currently only applies an exposure-based capital charge to reinsurance groups. However, it expects to apply similar criteria to primary insurance groups with catastrophe risk.

Capital Assessment

Standard & Poor's typically allocates capital according to premiums and reserves, with adjustments for asset quality. Standard & Poor's approach for reinsurers of catastrophic risk retains many of the same components and capital charges as its risk-based property/casualty capital model. However, Standard & Poor's does not believe that catastrophe premiums provide a consistent indication of exposure and risk. Therefore, Standard & Poor's assesses capital requirements for property catastrophe risk based on every active policy exposed to such catastrophe risk.

Standard & Poor's catastrophe capital model process uses a company's own gross and net modeled exposures on a global basis based on their respective third-party or proprietary model's probabilistic output—that is, the exceedence probability (EP) curve. Standard & Poor's capital charge for catastrophe risk is based on the company-specific net expected losses at the 1-in-250-year level. The EP scenarios are based on aggregate losses, not occurrence data, and the 1-in-250-year charge is for natural catastrophes within the property line of business only. The required capital needed at a 'BBB' level of confidence is the modeled 1-in-250-year scenario level.

Previously, a 1-in-100-year capital charge was applied to some reinsurance companies, but according to this updated criteria, a 1-in-250-year level charge will be applied to all reinsurers globally. The basis for the 1-in-250-year versus a 1-in-100-year charge is a recognition by Standard & Poor's that catastrophe losses in general are increasing from the perspectives of both frequency and severity.

The severity of property catastrophe risks is increasing with population growth in coastal areas, inflation, and higher building values. In the U.S., for example, more than 50% of the U.S. population now lives within 50 miles of a coastline. According to the U.S. EPA, there were three times as many natural catastrophes in the 1990s than there were three decades ago. As a result, insured losses from natural disasters are 15 times higher today than they were in the 1960s, even after adjusting for inflation. A case in point is Florida, which, according to ISO, sustained $18.8 billion in insured hurricane losses last year—after a 70% increase in the number of state residents from 1980 to 2001.

The Southeast U.S. was not the only area affected by an increase in frequency related to natural catastrophes in 2004. According to the Japan Meteorological Agency, 2.6 typhoons on average make landfall in Japan each year. However, this average was significantly exceeded in 2004, with 10 typhoons, which was well above the previous record of six. Typhoon Songda was the strongest typhoon to hit Japan in 2004, causing $3.6 billion in damage. In addition, Standard & Poor's has recognized that although some reinsurers maintain a very large capital base compared with peers, and diversification of exposures is important for managing catastrophe risk, a consistent capital charge approach was key for these new criteria. Establishing a uniform capital charge is critical, as reinsurers compete on a global basis for the same risks and exposures.

The losses calculated are adjusted on the basis of reinsurance retrocessional recoveries, reinstatements premiums, and the impact of catastrophe bonds. The retrocession must provide pure capital support (i.e., utilization is mandatory). In addition, bank lines of credit that provide capital upon a catastrophic event but that impose prudent financial covenants are analyzed from a liquidity standpoint and do not provide capital credit in determining a reinsurer's capital adequacy. In addition, to take into account the short-tail nature of property catastrophe risk, the net 1-in-250-year modeled loss is reduced by 70% of the associated net written premium. Net premiums written are granted 70% credit, as Standard & Poor's has applied a 30% expense ratio in general for this line of business. Some reinsurers have an expense ratio of less than 30%, but other companies (usually start-ups) have an expense ratio of more than 30%.

Standard & Poor's collects and analyzes a company's catastrophe exposure through 15 defined geographic zones and five defined perils around the world. However, the final capital charge is calculated on a global total-portfolio basis. Although the ultimate charge is based on a global portfolio of risks, thereby providing a benefit for uncorrelated exposures, having zone detail allows Standard & Poor's to assess concentrations and spread of risk. The capital charge will include EP curves for the following perils: hurricanes (wind), flood (outside the U.S.), earthquake, tornadoes, and hail. Additional perils—such as wildfires and winter storms—will be surveyed and analyzed but not specifically charged as part of the catastrophe criteria.

Qualitative Assessment

Besides the quantitative capital charge, Standard & Poor's collects additional data to better understand the qualitative factors related to catastrophe risk management. Standard & Poor's, though not adjusting the capital charge based on qualitative measures, will gain a better understanding of the risk-management and capital-management processes for each reinsurer and, ultimately, the conservative or aggressive approach assumed. The questions within the catastrophe survey include the following:

- Impact of catastrophe events on the loss ratio over the last 15 years or since inception.
- Model assumptions, including building condition, tree exposure, and year built.
- Detail on largest programs, exposures, and premiums related to property catastrophe risk.
- Description and credit quality of retrocessional protection.

Questions And Answers

This section provides answers to some frequently asked questions.

Which companies does Standard & Poor's evaluate with the exposure-based property catastrophe criteria?
All reinsurance companies writing property exposures are required to complete the survey.

Is a similar exposure-based charge applied to primary insurance companies?
Not yet, but Standard & Poor's expects to develop catastrophe criteria for primary insurance companies.

When will Standard & Poor's begin applying these new criteria to reinsurers?
Standard & Poor's has already received data with these updated criteria and analyzed capital adequacy under this new approach for many reinsurers. In 2005, this catastrophe survey will be collected from all reinsurance companies writing property exposures, and beginning in 2006, the criteria will affect published capital adequacy ratios and, ultimately, rating expectations.

Does Standard & Poor's tax-adjust the capital charge associated with property catastrophe risks?
No, Standard & Poor's will not tax-adjust the (C5) property catastrophe exposure-based capital charge. Standard & Poor's does not tax-adjust losses from other lines of business, and even though this exposure-based charge is often the largest charge within a company's risk-based capital model, the charge is applied directly with no tax adjustments.

Does Standard & Poor's adjust the (C3) premium (underwriting risk) charge within its risk-based capital model for companies that are charged a (C5) property catastrophe specific exposure-based charge?
Yes, the (C3) premium risk charge is adjusted. The property catastrophe criteria charges each company for its specific amount of property catastrophe exposure. Standard & Poor's does not believe that catastrophe premiums provide a consistent indication of exposure and risk. For the property catastrophe line of business, exposure is a more accurate measure of risk. Therefore, Standard & Poor's charges an exposure-based charge for (C5) and removes the directly corresponding (C3) net premium written charge specifically associated with these exposures, thus removing any double count.

Does Standard & Poor's adjust the (C4) reserve charge within its risk-based capital model for companies that are charged based on their property catastrophe exposure (C5)?
No, the (C4) reserve charge within the risk-based capital model is not adjusted for companies that are specifically charged for their property catastrophe exposure. According to GAAP accounting standards, a company can't establish a reserve until a catastrophe event occurs. Therefore, the reserve that is established on a company's financial statements relates to historical events. The (C5) property catastrophe charge that Standard & Poor's applies is a charge for prospective catastrophes and does not take into account the amount of reserves a company has already established. Since the reserve is for historical events and the property catastrophe charge is for future events, there is not a double count.

Is the reinsurance recoverables (C2) charge adjusted?
From a quantitative standpoint, no, but Standard & Poor's will take into account companies that use a significant amount of retrocessional protection, as some of the extreme events at the 1-in-250-year level could create an issue of collectibility, even for short-tail property risks.

How often does Standard & Poor's survey property catastrophe reinsurers?

As part of its rating analysis, Standard & Poor's collects exposure, premium, and other company-specific data semiannually, as of the Jan. 1 and July 1 renewal periods from reinsurers.