

Understanding increased extreme weather risk

23 October 2022

Tim Edwards, EMEA head of catastrophe analysis at TigerRisk, discusses the impact of Hurricane Ian and how (re)insurers can best prepare for more frequent and severe weather events.



What does the impact of Hurricane Ian mean for reinsurers?

At an individual firm level, it depends. Many top global reinsurers changed strategy over the past few months with half seemingly raising natural catastrophe appetite, given the more favourable rating environment, while others made reductions due to ongoing concerns over pricing adequacy and the impact nat cat volatility was having on earnings. As the second-largest catastrophe event

in 20 years behind Katrina, Hurricane Ian will test those two different strategies given the multiple headwinds the market also sees at present.

Based on a market-wide loss forecast of \$50bn-\$60bn, the event represents a significant hit to many (re)insurers' earnings. Although the bulk of storm losses will be in residential property, commercial property losses will also be substantial and exacerbated by flood damage, making the current loss projections uncertain given the time required to settle flood claims.

The hurricane follows an above-average first half of the year for catastrophes: windstorms and hailstorms in Europe, the largest Australian flood loss on record, an earthquake in Japan and several hail events in the US. Russia-Ukraine losses from the political violence and aviation hull markets could be significant, and from a financial year perspective there has been loss deterioration coming through from last year's drought in Brazil and Paraguay.

Those reinsurers that maintained their cat risk appetites entered the 2022 hurricane season with strong capital levels, but rising interest rates and declining asset prices have reduced the capital available to absorb this year's catastrophe losses. Adverse currency movements and the lack of available retrocession, increasing net retentions, have acted to amplify this shortage in available capital. At the same time, the cohort of reinsurers that have reduced their cat risk appetites exceed the volume of new entrants coming into the market, meaning there is a significant reduction in the amount of reinsurance capital available for this renewal season.

Should reinsurers assume an increased frequency and severity of natural catastrophes like this?

Looking at headline loss trends, it appears that the frequency of major nat cat events is increasing. Between 2001 and 2011 there was just one year with 10 or more \$1bn-plus catastrophe losses – since then, we've had six such years.

However, we don't think the headline trends are entirely linked to climate change. We should also consider other factors, such as the increase in insured values, as well as increasingly concentrated exposures in urban areas, especially on the coast and other regions exposed to catastrophe. Increasing insurance penetration also compounds these exposure-driven effects, driving up the risks to which (re)insurers are exposed.

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Climate and temperature have a strong impact on coastal and flash flooding, drought, subsidence and extreme cold from winter storms, but the link between increased temperature and hurricanes or windstorms is less clear and there is not always scientific consensus around the impacts on frequency and severity.

Property catastrophe is a volatile class within the (re)insurance market – we should expect favourable periods and also loss-making years. For example, there were 11 years after 2005 with no major landfalling hurricanes hitting the US, but we've since had a run of bad years.

How can reinsurers assess the risk from perils impacted by climate?

Techniques allowing for climate cycles or longer-term trends are arguably already well-embedded in the industry's models and capital levels. Reinsurers can use near-term views of risk that are elevated above long-run average levels, scenario analysis, or stress-testing approaches to assess these climate-driven impacts over various time periods.

A key challenge is that, even with these different catastrophe model approaches, the uncertainty from the overarching climate models is vast. Particularly over longer timescales, when this climate model output is implemented into catastrophe models the outputs then become somewhat redundant given the levels of uncertainty. Insurance pricing and capital setting may also be adjusted over longer-term durations, negating the impact of any long-term trends in hazard. Therefore, while many firms are spending time to assess the risk, some believe the impact may not be materially different to what they already have assessed, although the impacts are portfolio- and region-dependent.

Many firms allow for climate change within their catastrophe models already. For example, in February 2022, Lloyd's of London [conducted a thematic review](#) of catastrophe modelling and climate change. Lloyd's syndicates had in prior years been required to use modelling representing current climate conditions and not historical levels.