



Climate Change: A Call
for Weatherproofing the
Insurance Industry





A Call for Weatherproofing the Insurance Industry

While Hurricane Sandy reminded everyone that weather variability and extremes have always existed, there is increasing scientific evidence supporting the premise that extreme weather events are increasing in frequency and intensity, and will only grow more pronounced in the foreseeable future. In 2011, property/casualty insurers were exposed to over \$100 billion dollars in global natural disaster related losses, with over 50% of those losses stemming from severe storms, tornadoes, flooding, and wildfires alone.¹ This upward trend is of particular concern for North America, which has seen a disproportionate increase in the number of extreme weather events.² Recent reports have analyzed the effects of this worldwide 'new normal' of increased extreme weather events – and its effects on the insurance industry, and have called for insurer sector leadership to develop strategies to better predict and prevent losses from extreme weather events.

1. Ceres: "Stormy Future for U.S. Property/Casualty Insurers: The Growing Costs and Risks of Extreme Weather Events: September 2012. See <http://www.ceres.org/resources/reports/stormy-future>.

2. Munich Re: "2011 Natural Catastrophe Year in Review" by Peter Hoppe.

The Upward Trend in Extreme Weather Events

Statistical data shows that the global temperature average has increased, albeit moderately. The widely accepted scientific premise behind climate change is that growing concentrations of greenhouse gases released into the atmosphere cause the temperature increase. Although increases to the planet's average temperature over millennia have been recorded in ice core data, the majority of the scientific community postulate that the increase in consumption of fossil fuels since the industrial revolution is the cause of the current temperature increase (commonly referred to as 'climate change' or 'global warming'), citing the correlation in the average temperature curve rates with the fossil fuel consumption rates.

Regardless of whether climate change is ultimately anthropogenic (man-made), a natural phenomena, or a combination of both, it does affect the planet's weather patterns. Increased temperatures cause the earth's oceans to evaporate faster, resulting in more frequent and extreme humidity-driven 'convection events' such as hurricanes, tornadoes, and thunderstorms. Over land, increased temperatures produce drier and hotter weather conditions, spawning droughts and wildfires. Global warming has also accelerating the speed at which the polar ice caps are melting, leading to rising seas and the flooding of low-lying areas throughout the world.

In 2011, insurers responded to 99 weather-related disaster declarations in the U.S., exceeding the previous record of 81 set in 2010.³ Equally troubling is the fact that in addition to hurricane Sandy, 2012 saw 34,000 local record high temperatures set in the U.S., as well as large-scale heat waves and widespread drought through the lower 48 states, and may well be declared the most extreme weather year on U.S. record.⁴ According to the Munich Re study, North America is at greater risk than other continents for extreme weather events. The Gulf of Mexico, with its increasingly warmer water temperature, serves to incubate frequent and severe convection events. As sea temperatures rise, so too will the frequency and severity of these events and their effects on the North American population. In addition, the U.S. is naturally prone to severe convective weather events because it has no east-west mountain ranges (such as the Alps in Europe or the Himalayas in Asia) to block storms created by the intermingling and clashing of warm, humid air from the Gulf of Mexico and polar air from the Canadian north.

Over the last three decades the number of weather-related loss events has quintupled in North America, whereas similar increases have only doubled in Europe and quadrupled in Asia⁵. Given the increasing concentration of coastal populations in North America, it's not difficult to see the potential impact of an increase of extreme weather events on the insurance industry and society as a whole. In fact, Risk Management Solutions, a market leader in catastrophic risk modeling, no longer uses its historical 100 year old database of Atlantic hurricanes as a valid predictor of future risk in favor of a catastrophe model which predicts 'heightened' hurricane activity and correspondingly larger modeled losses, especially for the eastern seaboard and gulf regions in the U.S.⁶ This new modeling may lead to increases in insurance pricing, especially in light of the fact that it is estimated that 50% of the assets located in North America are insured, compared to only 7% of assets overseas.

Weather Event Challenges to the Insurance Industry and Society

According to the Ceres report, insurance payments relating to climactic events have increased a dramatic 15-fold over the past thirty years. On a global basis 2011 was the most expensive year for weather-related property and casualty insurers, and 2012 will likely follow suit. The report further argues that this trend line of increasing extreme weather – be it from hurricanes, droughts, heat waves or other weather events – poses a real threat to the insurance industry, which is already

3. FEMA: "Declared Disasters by Year or State". See: www.fema.gov/news/disaster_totals_annual.fema.

4. New York Times: "Not Even Close: 2012 Was Hottest Ever in U.S." January 8, 2013.

5. Munich Re: "2011 Natural Catastrophe Year in Review" by Peter Hoppe.

6. NAPCO LLC, "The Impact of Changes to the RMS U.S. Hurricane Catastrophe Model," 2011. See www.napcollc.com/articles/JuneReviewRMSHurricane.pdf.



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struggling to recover from lower than normal investment returns and from a weak overall economy. In fact, it argues that rising catastrophic losses on the increasing number of insured assets in areas vulnerable to extreme weather events could potentially threaten the insurance industry's viability.

Failure to adjust to this increasing threat could impact large numbers of consumers and businesses by leaving them unable to secure private insurance, particularly in high-risk geographic areas. Under these circumstances, governments may become insurers of last resort with taxpayers shouldering losses. This scenario has already begun to manifest itself in areas such as South Florida. Government exposure to losses in hurricane-exposed states has risen to a record \$885 billion in 2011⁷. Similarly, most crops in the U.S. are insured against extreme weather events, with the federal government heavily subsidizing premiums and claims, leading to additional burdens on taxpayers. Additionally, due to the interconnectivity of modern day commerce, disasters experienced in one country can have severe effects on the economy of another. In 2011, for example, the disastrous flooding experienced in Thailand resulted in a 20% drop in computer shipments to the U.S.⁸

A Call to Action

The Ceres report notes that the Insurance Commissioners of Washington, California and New York are now requiring major insurers to disclose how they are managing risks posed by climate change, with the hope that the data will provide regulators, insurers, investors and the public with a better understanding of its effects and challenges to the insurance industry. The report challenges the insurance industry to use its know-how and influence to lessen weather related risks much as it incentivized insureds to use seat belts and smoke detectors which not only saved indemnity costs but also drastically reduced the number of fatalities. Washington's Insurance Commissioner, Mike Kreidler, specifically endorsed the Ceres report and encouraged other states to utilize its recommendations, stating '...[J]ust as insurers historically asserted their leadership to minimize risks...insurers have a huge opportunity today to develop creative loss-prevention solutions and products that will reduce climate-related losses for consumers, governments and of course themselves...'

Recommendations

The Ceres report concludes that society is increasingly vulnerable to the impacts of extreme weather events, and favors a two-pronged approach to deal with climate change. It calls for what it terms 'strengthening resiliency' – that is, taking measures to mitigate the effects of climate change, while at the same time reducing greenhouse gas emissions. It identifies not only insurers, but also insurance sector investors and rating agencies and regulators as key agents to combat the effects of climate change on the insurance industry through the following recommendations:

Insurers and Reinsurers should:

- Incorporate new increased risk exposure analyses to account for emerging extreme weather patterns and implement risk management practices to provide appropriate rates and reserves
- Support research on national and local forecasting of future weather patterns
- Collaborate with climate scientists to develop new modeling capabilities
- Lend expertise to land use planners and other organizations in critically exposed markets. Develop underwriting guidelines and rate plans that reward insureds that increase resiliency (e.g., storm-resistant buildings).
- Favor new products and services that promote clean and efficient uses of energy.

7. Insurance Information Institute: "Residual Market Plans: From Markets of Last resort to Markets of First Choice-2012", July 2012

8. Ceres: "Stormy Future for U.S. Property/Casualty Insurers: The Growing Costs and Risks of Extreme Weather Events: September 2012. See <http://www.ceres.org/resources/reports/stormy-future>.

Insurance Sector Investors / Rating Agencies should:

- Encourage insurers to integrate climate change management into their risk management practices
- Judge the quality of an insurer's approach to climate change risks and opportunities

Regulators should:

- Demand increased climate risk disclosure, build climate risk considerations into their financial oversight process, create more resources to help insurers analyze and respond to climate-related risks and opportunities, and incentivize insurers and consumers to increase the resiliency of homes and businesses, and reduce the release of greenhouse gases

Conclusion

The growing threat posed by climate change producing extreme weather events may prove a threat to those insurers which do not incorporate the risks and opportunities associated with climate change. Society as whole has a vested interest in maintaining a strong insurance sector able to adapt to the 'new normal' of climate change and should demand all stakeholders within the insurance sector 'weatherproof' the insurance industry.



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