

Climate Change Risk Roundtable One: A level playing field for incorporating future climate risk into business practice – what's the 'new normal'?

Date:

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Location:

Hosted by Aviva at Aviva Investors, London

Setting the Scene

The objective of the Roundtable was to consider whether changing climate risk is being effectively considered across the insurance industry and explore possible responses by industry participants and the prudential regulator that enhance alignment of financial objectives with a changing environment.

What is Climate Change Risk? The IPCC has identified that climate change, to which human activity contributes, is accelerating, and most aspects of climate change will “persist for many centuries even if emissions of CO₂ are stopped.”¹ This is already manifesting itself through the increasing frequency and severity of extreme weather events such as heat waves, intense precipitation events and windstorms. In turn, these changes are increasing the frequency and severity of phenomena such as droughts, wildfires and floods. Climate change also causes long-term changes such as desertification and rising sea levels.²

Discussion contributed to building a common understanding of what was meant by climate change risk. It was agreed that the physical impacts of climate change are compounded by socioeconomic factors, such as population growth and urbanisation that currently determine exposure and vulnerability. There was also consensus that attribution was a key challenge in terms of distinguishing between natural climate variability and additional events that could be said to be a result of climate change. In this way it is potentially not helpful to try to separate climate change risk from climate risk more generally but instead to understand overall trends of how climate risk is impacting insurers.

Understanding Climate Change Risk and Catastrophic Events

The most common approach for quantifying the risk posed by catastrophic natural hazard events within the insurance industry and more widely is the use of Catastrophe Models. A review of Catastrophe Models indicated that existing impacts of climate change are assumed to be implicitly accounted for through the inclusion of current data.

As a provocation, Mark Nicholson, Credit Analyst at S&P Insurance Ratings presented the findings from a ‘Catastrophe Exposure & Climate Change’ analysis conducted by S&P in 2014. The exercise looked at all losses incurred from 2005-2014 (not just climate-related losses) based on the hypothesis that the last 10 years could be representative of a ‘new normal.’ On average, this scenario has shown that on a gross basis, both one-in-10 year losses and one-in-250 year losses may be being underestimated by approximately 50%. While there are challenges with the representativeness of data within a short time period, such analysis is useful at highlighting the potential scale and impacts of the changing risk landscape.

¹ Summary for policymakers of the IPCC Working Group I assessment report Climate Change 2013: the Physical Science, IPCC, 2013

² Turning down the heat, World Bank, 2012

S&P's analysis contributed to an increasing appreciation of the need to revisit the assumptions underpinning catastrophe models and in particular to give greater consideration to a forward-looking view of risk, as change is not likely to follow historical trends.

Understanding Climate Change Risk and non-modelled risks (NMR)

Many loss impacts are not necessarily a result of extreme weather events at all but the interaction between changing weather patterns and correlated risk factors. These impacts are characterised by complexity and uncertainty making them difficult to map and predict. For example, upstream deforestation in South America has been shown to cause pollutant run-off, negatively impacting insured fishing operations and water treatment plants. This complexity is also evident in terms of catastrophic events where for example the 2011 Thai floods had significant supply chain impacts on hard disc producers, ultimately having financial impacts on firms in Europe and beyond. In both cases, the insured's exposure was not well understood in advance.

Multiple lines of insurance such as health, political risk and business interruption are affected by such impacts. In addition it was observed that risk mitigation in one risk class may increase the riskiness in another class. In particular there was a real concern that losses that could be reasonably foreseen may give rise to claims under liability policies, raising the question as to where the duty of care lies for foreseeing exposure to related impacts.

In the context of overall growing "interconnectivity" and "interdependencies", understanding climate change as a risk multiplier across a range of business lines potentially challenges quantification and consequently practical questions of insurability and the interaction of market and public sector solutions to physical climate change risks were discussed..

Understanding Climate Change Risk implications for pricing

General insurance is generally able to adapt annually to changing risk levels meaning that, if risk factors become too high to insure at a socially acceptable price, exit from the market is theoretically possible through risk selection techniques. However, this is where understanding risk at the market level becomes more significant and better understanding is needed of the macro-economic impact of uninsurability, as well as the reputational impact of no longer being willing or able to provide cover to customers.

If risk is systematically under-priced, this raises the question as to what extent insurers should be incentivised to innovate in the products they offer to contribute to reducing certain risks, particularly where this supports the continued market viability of risk transfer. Currently, any one firm seeking to innovate in this way unilaterally may find themselves undercut by competitors in the short term.

Louise Pryor, member of the Institute and Faculty of Actuaries' Resource and Environment Board provided an input on the Actuaries' Climate Index being developed in North America. The Index uses publically available meteorological data from 1960 – 1991 and tracks the increasing instances of extremes in temperature, rainfall and changes in sea levels, simple information that is often not made visible to inform decision-making. Where the data is available, the algorithm could be applied to various geographies and various scales. Such an index is perhaps most useful for understanding what risks can continue to be underwritten, rather than for pricing and reserving.

Understanding Climate Change Risk implications for resilience planning and investments

Insurance markets are shaped by different policy landscapes. There is extremely limited private flood insurance available in the Netherlands while in the UK the recent creation of FloodRe to provide affordable flood insurance is predicated on anticipated Government investments in flood defences. In many markets maintaining commercial insurance is reliant on similar risk reduction investments. This raises broader macroeconomic questions as to what are the most efficient, equitable and socially acceptable ways of managing climate risk and whether financial regulation should also incentivise investment flows towards assets that contribute to risk reduction. The issue of balancing societal investment needs with regulatory capital requirements is an issue that is evolving as Solvency II is implemented and stress and scenario testing is further developed.

Issues for further consideration

The discussion highlighted that the complexity and uncertainty of future climate change risk impacts means that it is easy for them to be ignored and while current short term business models may protect the General Insurance industry from intolerable losses today, this same short term focus may result in wider systemic impacts for the industry and future policy-holders being over-looked. Consequently it is suggested that it might be helpful to:

Ensure there is space for cross-industry Knowledge Partnerships to:

- Jointly identify future scenarios for stress-testing
- Pool expert judgement to develop consensus on what Non Modelled Risk Factors are important and how they are material

Incentivise greater robustness at the industry level in:

- Assumptions underpinning probabilistic scenario modelling of hazard, vulnerability and exposure
- Correlated risk factors with multiple impacts on the liability side of the balance sheet i.e. a multi-hazard, multi-regional approach
- Understanding the links between risks on the liability and asset side of the balance sheet

Consider the role of financial regulation in climate risk management by:

- Exploring options for incentivising business model innovation that supports wider risk management approaches
- Considering how insurers' analysis of risk exposure might align with requirements for better disclosure from companies on climate risk such that investors can improve their own exposures