Data: Statements from organisations involved in the Knowledge Exchange work

The work reported in this *GC* article was conducted as part of a UKRI Knowledge Exchange Fellowship 'ROBUST' (NE/V018698/1) held by Hillier, and builds on a previous Fellowship INTER-ACTION (NE/R003297/1, which included sub-project TOGETHER). Individuals from organisations involved (Bank of England, Met Office and Aon) have provided statements intended for public dissemination on their view of the work (e.g. utility and limitations) as a means of translating university-based science into policy and practice changes in the insurance sector.

Bank of England

Part of the Bank of England is the Prudential Regulation Authority (PRA), which regulates the insurance sector. Partner in INTER-ACTION (including sub-project TOGETHER) and ROBUST, and publisher of two co-authored 'Bank Underground' blogs from this topic in 2021 and 2023.

"Quantifying tail risk can inform an insurer's business decisions including in relation to solvency capital. The potential for dependency in the annual incidence of perils, such as wind and flood, can alter the tail risk. It is therefore in the industry's interests for there to be a greater range of tools to capture these dependencies, which includes this R-code. These tools can help insurers develop their view of tail risk, if used appropriately. Possible applications include exploring the sensitivity of peril co-occurrence to different financial structures (e.g. number of reinstatements). Where tools such as this R-code are applied to inform a view of risk, caveats and assumptions should be considered; users should be satisfied a tool is being used in appropriate circumstances.

The outcome of an insurer exploring annualised dependency between perils might be to determine that dependency isn't a material factor in the calculation of solvency capital. However, it is more prudent to have explored potential dependencies in order to come to this conclusion, and have a better informed view of risk.

This statement is a means of Bank of England staff to share views that challenge – or support – prevailing policy orthodoxies. The views expressed here are those of the authors, and are not necessarily those of the Bank of England or its policy committees.."

Met Office

Project advisory board for ROBUST, and supplier of climate and weather data in the UK.

"Extreme weather events impact society through asset damage and loss of life and are often financially quantified through insurance losses. Publicly available weather and climate data are used by the research community to assess the likelihood of these extremes occurring. However, to assess risk to society, this hazard information must be combined with sector specific exposure and vulnerability data. Characterising this risk is a critical part of translating weather and climate research into a useful product for society which can inform the wider policies and practices of industry and embed a better understanding of weather and climate hazards into societal decision making. Often partnership between the research community and industry is required to develop methods to quantify weather and climate risk in a meaningful, transparent, and reproducible way.

Partnerships require good networks, time, and trust to develop, especially where the sharing of commercially sensitive information is required to combine hazard information with exposure and vulnerability. This project demonstrates a successful science to industry collaboration between expert weather and climate scientists and industry specialists across academia and the Met Office, Aon and the Bank of England. Crucially, this collaboration has produced an open-source method which can be further developed and utilised to look at different multi-variate hazards and using different data sets, depending on the final user, further testing its utility and usefulness in a transparent way, and increasing the likelihood of its widespread use in practice across industry."

Aon

Aon includes a UK-based reinsurance broker team. Project advisory board for INTER-ACTION (including sub-project TOGETHER) and ROBUST, and worked with Hillier to undertake the main analytical element of this *GC* paper.

"The method developed during this work provides a first step to understanding the statistical relationship between wind and flood stochastic event sets from catastrophe models. These risks are treated independently in catastrophe modelling, from a hazard/risk perspective, although recent scientific work has suggested that there is likely to be a correlation due to common meteorological drivers, for winter. Therefore, there is a need to understand the extent of this correlation between stochastic event sets from the catastrophe models, and what these implications may mean to losses and therefore the reinsurance industry.

New catastrophe models in development are now considering compound wind and flood events and building these into the stochastic event set, however these are still in development and take several years before they can be used. The advantage of the method developed here is not only that it can be applied to current catastrophe model event sets but also to different event sets from different catastrophe models, providing a greater understanding of the uncertainty associated with this work. It is important however that results from analyses built to model particular scenarios should not be over-interpreted, specifically should not be taken to necessarily indicate under-capitalisation of any particular firm nor of the sector in general.

This work is an important step in bringing together publicly funded climate model data and industry-based modelling in a transparent way, as currently this only done within the industry. The allows for an independent and open-source method to benchmark future work in this area."