

## Climate Risk Roundtable Two: Market implications of climate risk with a focus on the property sector

**Date:** 11 March 2015

**Location:** Hosted by RSA, London

### Background

The Bank of England's Prudential Regulatory Authority (PRA) has agreed to respond to a request from Defra to assess the impact of climate change on the PRA's objectives, with a focus on insurance. As the global insurance industry's leadership group on climate change risk, ClimateWise – convened by the University of Cambridge Institute for Sustainability Leadership (CISL) – has agreed to convene three roundtable discussions to help inform the PRA's report, which will be submitted to Defra later this year.

The first roundtable in this series focused on how the impacts of changing levels of climate risk affect insurers' business practice, focusing on the underwriting side of the balance sheet. During that roundtable, the question was raised of whether insurers' core risk management expertise could be better applied to manage the risks to which insurers are exposed on the asset side of their balance sheet as a result of the physical impacts of climate change. The objective of the second roundtable – facilitated by CISL – was to address this question, using the real estate sector as a case study. The discussion was split into two broad sections:

1. Is there sufficient shared understanding of the direct and indirect exposure to climate risk across an insurer's business [using real estate as a case study]?
2. In this context, what are possible responses by insurers, the prudential regulator and wider stakeholders which could enhance the alignment of financial objectives with a changing environment?

To frame the discussion, participants noted the Urban Land Institute's 2014 paper '*Extreme weather events and property values*', which argues that "to a large degree, a major consequence of climate change – extreme weather events – has yet to be seriously addressed by the [real estate] industry. Many real estate investors and associated players are simply not aware that these events – the escalation in the occurrence and magnitude of which is all too evident – pose a rising, compelling and more immediate threat to property value, and are therefore overlooking the related risks within their investment decision-making."

### Analysing the problem

Participants first populated a list of ways in which the physical impacts of climate change on real estate can either directly or indirectly create losses, with potential impacts across an insurer's balance sheet:

## Direct exposures:

- **Flooding** (storm surge, pluvial, fluvial, rising ground water)  
**Drought and low ground water** (subsidence, heave, sink holes, landslides)  
**Temperature stress** (extreme heat and cold, expansion and contraction, burst pipes)  
**Sea level rise and salination**  
**Storm** (water and wind-related damage, snow, hail)
- **Fire** (wild and urban fire)

## Indirect exposures:

- **Political and civil unrest following natural disasters** (looting, riot, fire)
- **Supply chain** (business continuity impacts)
- **Infrastructure failure** (failure in water, energy or other critical services supply)
- **Multiplier effects on other industries** (relating both to interests insurers have in industries the 'real economy' and in the financial economy, such as through holdings in banks with mortgage books)
- **Macro-economic impacts** (increases in cost of sovereign debt causing interest rate rises, emergency measures imposed, longer-term policy change)

The roundtable then explored the extent to which market forces could be expected to enable proactive adaptation to such risks as they materialise. The following themes surfaced:

**Uninsured and indirect exposures pose the greatest challenges** – thus far, the (re)insurance market has largely proven to be resilient to the direct physical impacts of climate change and, where free to do so, will reflect rising levels of risk in its pricing. This *can* lead to an effective 'adaptation' response (the case of the Bahamas was noted where insurers were forced to withdraw cover for properties flooded three times in a decade by storm surges made more destructive by the removal of mangroves and when the government did not take the role of 'insurer of last resort', some people abandoned their properties while others undertook their own adaptation measures, resulting in their properties becoming insurable once more). However, this does not account for assets and markets that remain uninsured, where the social and economic impacts are significant. Equally, the ways in which the physical impacts of climate change on real estate can create indirect losses for insurers are typically much harder to foresee and therefore manage.

**Direct and indirect risks are often correlated, but not always anticipated** – anecdotal evidence was shared of extreme weather events having resulted – quite apart from direct losses affecting real estate – in indirect macro-economic impacts such as interest rate movements as the cost of national borrowing is affected. Insurers are often heavily exposed to fixed income as an asset class, meaning these kind of correlated risks can be material in unanticipated ways.

**There are limits to the logic of unilateral investments in resilience** – the uncertainty around the extent and timing of the changing physical impacts of climate change on real estate means that it can be difficult for owners of real estate assets to justify capital expenditure to increase the resilience of their assets ahead of time. Equally, attempts to secure a price premium in the market to reflect enhanced resilience can prove uncompetitive if the market does not recognise the threat.

**Market pricing decisions may lack necessary data** – those making valuation decisions typically use historical data and are market-driven so the onus is largely on those investing in, or lending to, the real estate sector to

factor resilience to the physical impacts of climate change into pricing. However, without a consistent and transparent evidence base to inform assessments of changing risk exposures, action may be limited.

**The signalling effect of insurance pricing may also be muted** – investors in commercial real estate often have their whole portfolios, rather than individual assets, insured which means that any role insurance could play in signalling the rising risk exposure of individual assets is masked from the perspective of the real estate investor.

**Approaches to risk management could be enhanced using insurers' own expertise** – insurers are familiar with using geographic and catastrophe modelling techniques to ensure that their underwriting portfolios are well diversified with respect to the geographic impacts of climate risks. While there is some anecdotal evidence that banks are starting to apply similar techniques to their mortgage portfolios, it does not appear to be a systematic approach by all those with financial exposures to real estate, leading to possible aggregation of risk exposures.

**Timescale mismatch** – insurers' exposure to real estate on the underwriting side of their balance sheet is typically framed by a one-year time horizon, ie the length of non-life insurance contracts. Real estate investors will have a longer time horizon, while mortgage lenders (in whom insurers may be invested) will have multi-decadal exposures. The resultant lack of alignment in incentives may have contributed to the fact that expertise from the liability side of insurers' balance sheets has not systemically been put to use to manage risk elsewhere in the financial system.

## Exploring solutions

The roundtable concluded by exploring a number of possible ways forward in the context of the above discussion:

**Robust and transparent approaches to preventing development in harm's way:** where direct exposures to the physical impacts of climate change are known to be, or are likely to become, unacceptably high, signals from public authorities and the private sector must consistently dissuade or prevent new real estate assets being put in harm's way. This is particularly important given the information asymmetries between, and different incentives of, real estate investors, developers and local authorities. In the UK, for example, the fact that FloodRe will not provide cover for new properties built on known flood plains was cited as a good case in point.

**Mortgage lenders and real estate investors:** it was noted that some mortgage lenders in the UK are starting to make more use of the Geographic Information Systems (GIS) and models that insurers routinely deploy to understand their exposure to climate-related perils such as flood risk. There is scope for this kind of collaboration to be made routine given the multi-decadal exposures of such lenders. That said, eyes should be open to the fact that this may expose unexpected or even unacceptable levels of risks not currently being taken into account. Equally, it was felt that real estate investors may benefit from such analytics at a portfolio level, perhaps even raising the possibility of reducing their insurance premia in response to effective risk selection and management and therefore offering a financial incentive in the short-term for action that may only yield other benefits in the longer-term.

**Performance data for investors:** There have been a number of attempts at producing metrics and benchmarks on the performance of real estate assets in terms of climate change mitigation in the past, originally to examine whether there is a 'green premium'. GRESB, for example, has been an industry-driven example to assess the broader sustainability performance of real estate portfolios and the IPD sustainable property index also made an attempt at a comprehensive measure of performance of investment portfolios. Participants were not aware of metrics about the performance of real estate assets in response to the physical impacts of climate change being

made available to investors in a systematic and transparent manner. Collaboration between insurers, real estate professionals and academics may be helpful in exploring what is possible in this regard.

**Infrastructure investment:** it was noted that at a European level, financial regulators are seeking to promote 'good quality' securitisation so as to connect investment needs with pools of institutional capital invested by, amongst others, insurance companies. Policy-makers also want to ensure investment is supporting infrastructure that will be resilient long into the future, including to the physical impacts of climate change. It was suggested that there may be an opportunity to harness the insurance industry's risk management expertise in this context via ClimateWise, which could draw both on insurers' risk analysis capabilities and their broader incentives to hold longer-dated, climate-resilient investment assets.

In closing, it was noted that ClimateWise has a number of attributes that could make it a valuable group to help explore these solution pathways further, including relationships with business, financiers and policymakers working to increase investment flows in climate resilient infrastructure and access to academics researching in the real estate and finance space.