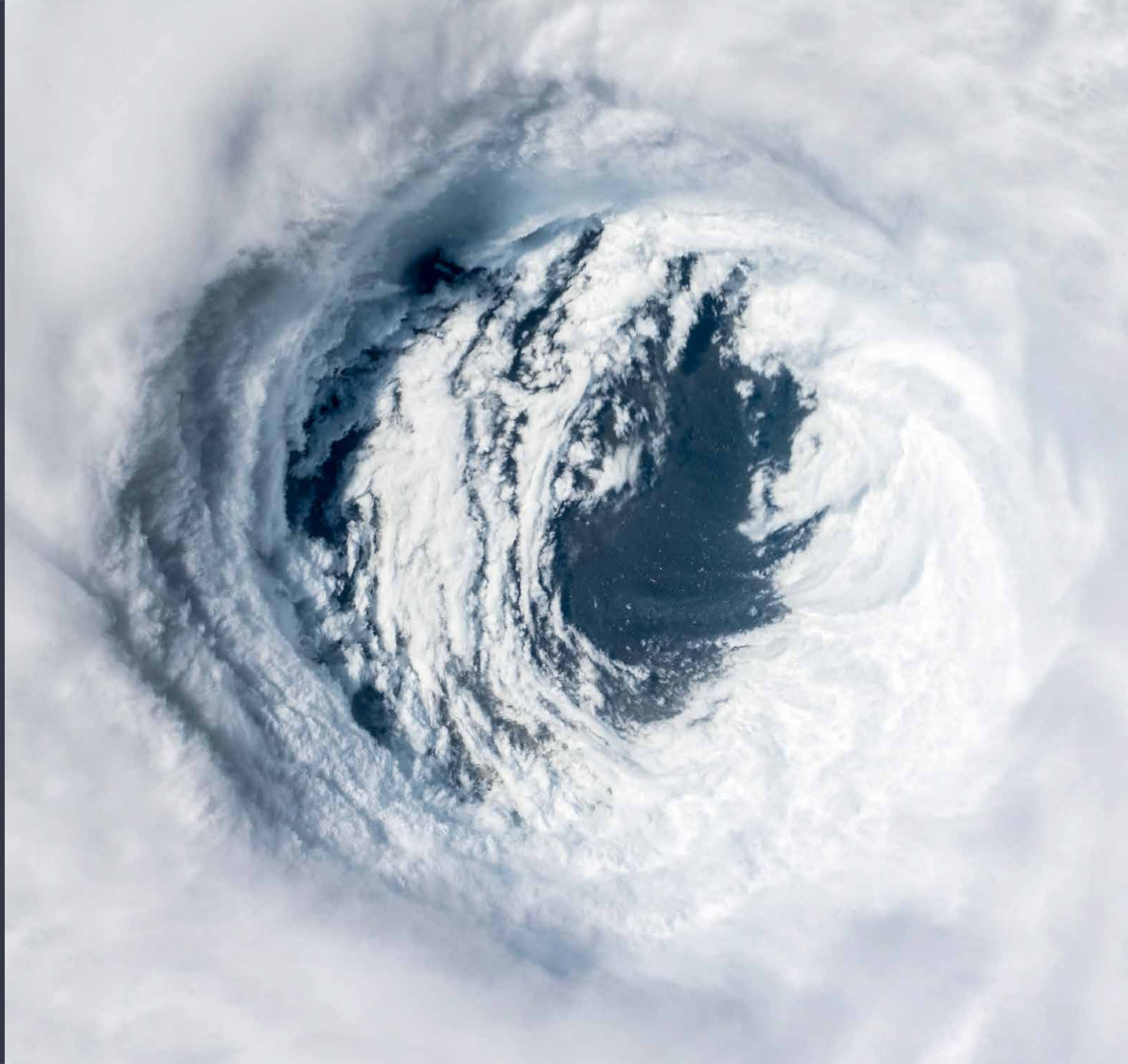


AON

Why is Climate Change Important For Financial Institutions?



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Climate change is an intergenerational issue that has broad societal, economic and financial impacts. The term “climate change”, or more recently just “climate”, is shorthand for a wide gamut of topics that span the physical impacts of changing weather behaviour, the net zero energy transition, and the evolving legal and regulatory environment that is designed to price climate into global markets.

Given this broad scope, climate can impact organisations in a myriad of ways. The pathways to financial risks (and opportunities) are diverse, and require a range of tools and expertise to properly assess them.



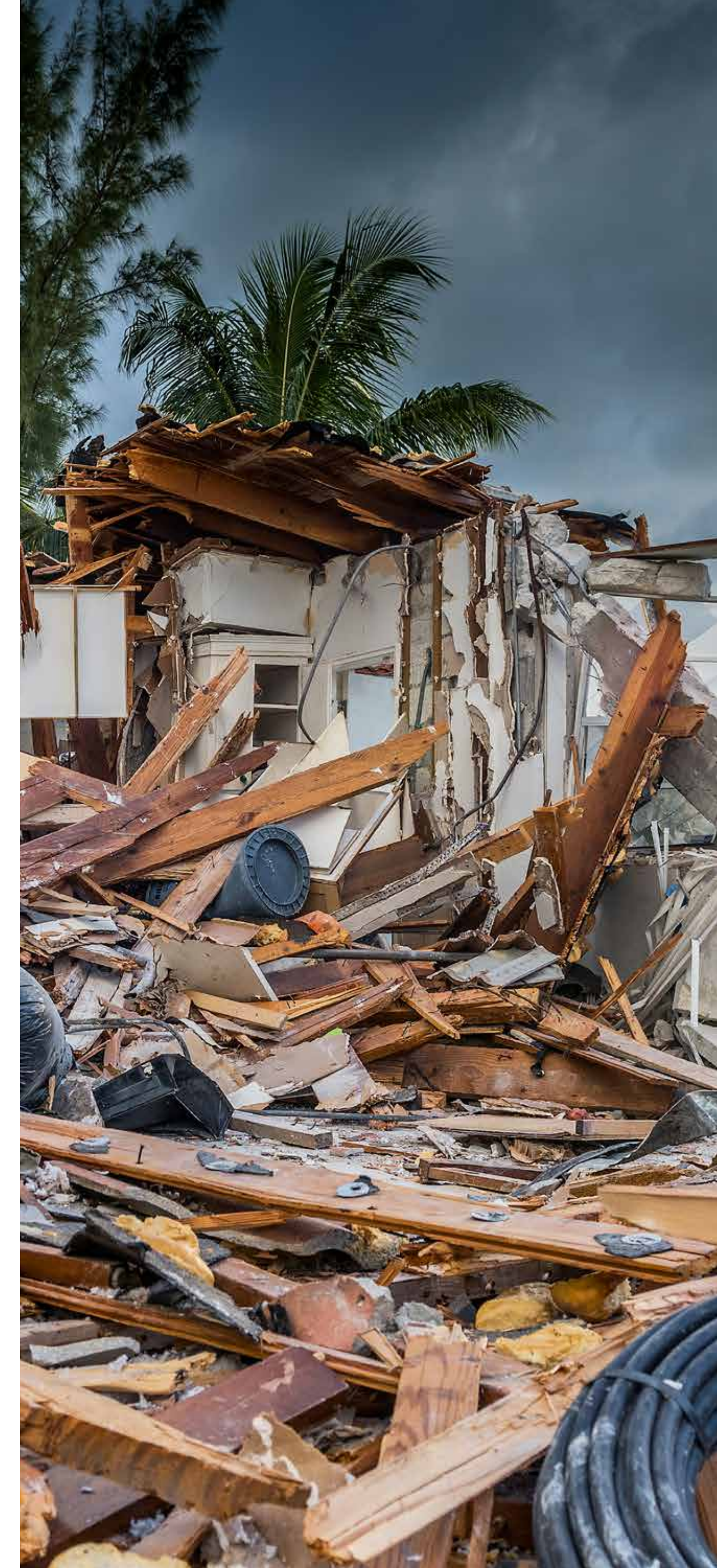
Key Physical Climate Risks

Financial institutions have been undertaking sustainability reporting for several decades¹. More recently, there has been a focus on climate as a separate topic worthy of its own reporting line². With the release of global sustainability reporting standards specific to climate³, and the alignment of multiple jurisdictional legislation on mandatory climate reporting with these standards⁴, there is an increasing focus on climate reporting as a distinct financial risk separate to the broader ESG agenda.

A review of some of the major banks' climate reporting suggests there are four broad areas that financial institutions are focussing on when it comes to physical climate risk:

- **Credit risk**
Physical risks can impact the ability of households and businesses to repay their loans and the severity of these defaults may increase due to the decline in the value of the assets held as collateral by the bank, particularly for customers in high-risk zones who are not able to secure adequate insurance cover.

- **Liquidity risk**
A natural catastrophe event such as a flood or cyclone could lead to an increased demand for liquidity to support customers.
- **Operational risk**
Losses due to physical damage and an inability to meet customers' demands due to business interruptions associated with severe weather-related events, could occur at branches impacting the ability to service customers in affected areas.
- **Capital stress**
While not a financial risk type in itself, a high number of defaults resulting from a single or series of natural catastrophe events may materially deplete the bank's capital, leading to capital stress.



¹Baldissera, Corporate Social Responsibility and Environmental Management, Wiley Online Library, [Sustainability reporting in banks: History of studies and a conceptual framework for thinking about the future by learning from the past](#), April 2023

²For example, [2023 Climate Report \(nab.com.au\)](#), [2023 Climate Report - CommBank](#), and [Westpac-2023-Climate-Report.pdf](#)

³FRS, [IFRS S2 Climate-related Disclosures](#), 2023

⁴Examples across the Asia Pacific region include Australia [Climate-related financial disclosure - consultation paper \(treasury.gov.au\)](#), New Zealand [Appendix 1. Climate and sustainability reporting progress | Ministry of Business, Innovation & Employment \(mbie.govt.nz\)](#), Singapore [Singapore to implement ISSB Standards from 2025 | XBRL](#), Hong Kong [Hong Kong Exchange to Require IFRS-based Climate Disclosure Beginning 2025 - ESG Today](#) and Malaysia [Malaysia consults on adoption of ISSB standards \(iasplus.com\)](#)

Climate as a Credit Risk

Climate as a credit risk is perhaps the most material risk to many retail banks today.

When an extreme weather event occurs – such as a flood, fire, or cyclone – there may be multiple properties within the same or neighbouring suburbs that experience damage to the land, building, and/or the contents inside the property. If adequate home insurance is in place, then this damage can be repaired or reimbursed such that there is no lasting impact on the homeowner or property market value. In this case, there is no residual risk to the lender as the risk is borne by the individual insurer, or in the case of a large loss, is spread across the global reinsurance market. Most lenders will require a certificate of home insurance currency on inception of the loan for this very reason.

While there may be a contractual requirement of the homeowner to maintain adequate insurance cover over the lifetime of the loan, in many cases, there are no ongoing checks made by the lender. If insurance premiums rise relative to income over the loan period, then the insured may be inclined to either under-insure

(i.e., reduce the sum insured, or make policy exclusions), or allow the policy to lapse. In fact, research indicates that one of the first things households look to save on when there is a squeeze on discretionary income, is home insurance^{5, 6}.

When insurance affordability pressures become acute, under-, or non-insurance may emerge as a “silent” risk on a bank’s loan book, as the lender becomes more exposed to natural hazard risk without necessarily knowing about it.

In this case, a natural hazard event may lead to irreparable damage to buildings, impacting the building values. In the case of a landslip or earthquake, the land values may also be impacted. The desirability of whole suburbs can take a hit after natural hazard events^{7, 8}, irrespective of whether an individual property has been impacted. This can further compound the downward pressure on property values post-event. Likewise, if a property is sold but has a history of natural hazard impacts, the high insurance premium may further contribute to a decrease in the property value⁹.

When this happens, there may be two outcomes. Either the homeowner continues to service their loan despite significant out-of-pocket repair costs and a drop in the property value, or they default on their loan. Neither outcome is good for the lender. Outcome one means that while the loan repayments are still being made, the loan to value ratio (LVR) increases. If this occurs across multiple loans (i.e., within the same suburb), it may impact the lender’s regulatory capital requirements.

Outcome two results in the bank selling the asset at a potential loss. For customers borrowing at high LVRs, the probability of outcome two may be higher¹⁰. Financial institutions should not rely on Lenders Mortgage Insurance (LMI) to cover default in this case, as it may be beyond the definitions of what is covered as leading to default.

⁵ Melbourne Institute: Applied Economic & Social Research, [Absorbing shocks by accumulating risk: Do financially stressed households take on underinsurance risk to manage liquidity constraint?](#), November 2023

⁶ Melbourne Institute: Applied Economic & Social Research, [Household insurance and financial stress: do households maintain coverage on their most important assets?](#), November 2023

⁷ Webb, Sydney Morning Herald, [How the 2011 floods hit Brisbane’s property market, and what will happen this time](#), March 2022

⁸ Springer, The Journal of Real Estate Finance and Economics, [Flood Hazards Impact on Neighborhood House Prices](#), June 2018

⁹ Emerald Insight, Journal of Financial Management of Property and Construction, [The impact of flood insurance on residential property prices: Towards a new theoretical framework for the United Kingdom market](#), December 2007

¹⁰ Science Direct, [House price, loan-to-value ratio and credit risk](#), July 2018

Climate Change and the Tail

The accumulation of a large number of small weather-related losses by insurers (that do not make their way through to reinsurance), can contribute to a high premium environment, in turn increasing the likelihood of under-insurance. This can lead to an increase in the exposure of a financial institution to natural perils risk, even if the risk at the tail itself is not changing.

Because banks are typically committed to a position for a longer period of time than an insurer, they are inevitably more exposed to physical climate risk. What seems like a remote probability over the course of 12 months increases in likelihood as time passes. This is called compound probability. For example, living in the 100-year floodplain is the same as having a 1-in-4 chance of flooding over a period of 30 years.

In addition, climate change is modifying the long-term probabilities of tail events over these time periods. In some areas, what is regarded as a “100-year” flood event in 2024, may be more like an “80-year” event by 2050¹¹. Climate variability (for example, El Niño/La Niña) superimposes year-on-year volatility to all of this.

¹¹Nature Climate Change, [Global flood risk under climate change](#), June 2013

It's Not Just About the Climate

Over these multi-year periods that banks hold a position for, it's not only the climate that can change the risk environment. Our present day understanding of natural hazard risk is uncertain and can move around. For example, if new data or modelling becomes available, floodplain mapping may change leading to sudden jumps in the cost of insurance and property prices¹².

Recent extreme events may also skew our heuristic understanding of risk, and appetite for it, due to "recency bias"¹³. Even the actuarial approach to risk is inherently uncertain¹⁴. Inputting the same data into different catastrophe models will likely render different numbers. Sometimes, this spread of views can eclipse the future climate change signal.

What Can be Done?

Until recently, climate risk has largely not featured in lenders' risk assessments. The assumption has been that insurance sufficiently covers this risk. However, with the ongoing threat of climate change, insurance affordability pressures, and evolving regulatory requirements, banks are now treating climate as a financial risk.

The first step to understanding climate risk is quantification. Banks need to know where climate risk lies on their books before they can do anything about it. Given the importance of insurance in terms of absorbing financial costs and as a cost to consumers that could impact affordability, it makes sense that financial institutions should leverage tools and datasets that insurers themselves use for pricing climate risk. In doing so, lenders can assess where climate risk is high; insurance premiums may be unaffordable; and by corollary, where under- or non-insurance may lie across their lending.

You Can't Price What You Can't Measure

A good metric to consider is the Technical Hazard Rate (THR). The THR represents the fraction of a property value that is expected to be damaged due to natural hazard events, in any given year, over a large number of years. When the THR is multiplied by the property value (usually, the Sum Insured), it becomes the Average Annual Loss (AAL). AAL is a widely adopted metric for insurance pricing and is used as the base premium that an insurer may charge to break-even when risk-based pricing. The market premium includes additional layers on top and varies by insurer and by jurisdiction.

A well calibrated set of THRs can provide powerful insights on climate risk across large portfolios. THRs can be calculated at the property level, and separately for each individual insured peril (typically, cyclone, fire, and flood, but also for storm and hail in some areas). THRs are additive, which means they can be summed across locations, perils, and years, making them suitable for a variety of applications.

¹²ABC News, [Experts say thousands of home owners face property value loss due to new flood modelling. In Melbourne, the process has begun, June 2024](#)

¹³Kahneman, Thinking, Fast and Slow, July 2012

¹⁴Aon, [Climate Risk: Reconciling Experience and Statistics](#), August 2023

Building Resilience

Once climate risks are quantified, the conversation around what to do about them can begin. There are several options:

1. Adjust risk appetite

Additional internal checks and balances can be made with regards to new loan provisioning by either limiting exposure to climate risks associated with new lending, checking customer insurance coverage at high-risk locations, or adjusting the cost of capital lent to high-risk properties.

2. Improve customer awareness

Financial institutions can actively promote awareness of climate risks and the importance of adequate insurance coverage, with both new home buyers and existing customers. A more informed customer base can make more informed risk-based decisions, benefiting the bank's lending activities over the long term.

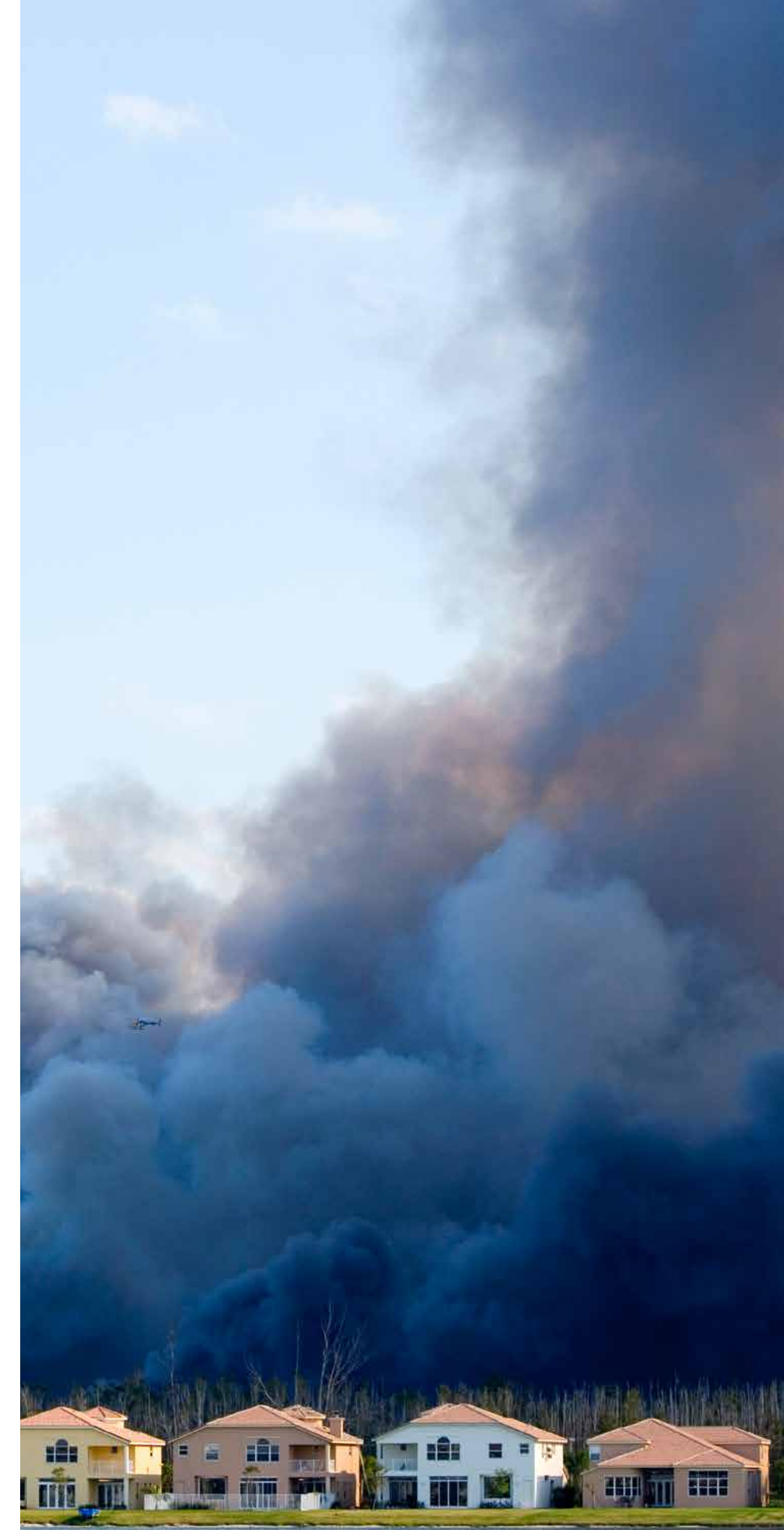
3. Explore alternative risk transfer

Additional risk transfer mechanisms may be required to adequately protect the lender against loss given a mass default producing climate event. Lenders Mortgage Insurance will likely be insufficient to cover the bank against losses for highly leveraged customers where

loss given default will be highest. Mortgage Impairment Insurance, or a finely tailored Parametric Insurance product, may provide an additional layer of protection in an environment where insurance affordability pressures can contribute to a silent increase in exposure of the lender to climate risk.

4. Build resilience

As populations grow, ensuring that both community- and property-level resilience is considered in the future built environment, will be necessary to mitigate the downside impacts of climate on the broader economy. This goes beyond any one financial institution, but lenders have a big role to play. For example, banks can work more closely with insurance partners to tailor more affordable solutions for customers. Banks can work with customers and insurers to source more accurate property data for insurers to risk-price premiums with less conservative assumptions. Banks can work with government to advocate for more climate-aware floodplain development controls or encourage the concept of "build-back-better" instead of "like-for-like" replacement post disaster.



No One-Size-Fits-All

Physical climate risks manifest from the bottom-up and accumulate over time. For this reason, granular, property-level data and analytics are required to understand the nature and materiality of climate risks on large lending portfolios. Future climate projections can be overlaid on top of this, but with an appropriate understanding of uncertainties, and at a necessarily coarser level. The nexus between climate change and insurance is inextricable, as is the link through to credit risk. Banks have a lot to gain in leveraging the tools currently used by insurers to price climate risk, and work collaboratively with them to build a more resilient and sustainable property market for all.





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