

# Turning up the heat – climate risk assessment in the insurance sector<sup>1</sup>

## Executive summary

**Climate risks<sup>2</sup> are recognised as a critical threat to society, with potentially adverse implications for financial stability and the viability of insurers.** Climate change is under way, affecting the economy and posing material financial risks. The effects of weather-related natural catastrophes are being amplified by climate change, and are causing hundreds of billions of dollars<sup>3</sup> in economic losses worldwide. As the transition to a climate-resilient and low-carbon future gains momentum, technological innovations, market forces, policy frameworks and social sentiment create new risks and opportunities for corporates and financial institutions. Over the last few years, the impacts of climate change have become a growing concern of financial regulators and central banks worldwide, triggered partly by the Financial Stability Board Task Force on Climate-related Financial Disclosures and its recommendations.

**Efforts have been made by insurance supervisors<sup>4</sup> and insurers in some jurisdictions to better understand climate risks but further efforts are needed to increase awareness.** In the crowded regulatory and supervisory space, there is limited scope for focusing attention on new issues but climate risks need immediate action in order to limit or reverse the impact of some of the negative trends under way. It is incumbent on supervisors to put in place the necessary measures for insurers to address any significant risks that could adversely affect policyholders and financial stability. In previous financial crises, events once deemed implausible have materialised. Climate change poses the same threat.

**Climate risks comprise at least three elements: physical risks, transition risks and liability risks.** Physical risks arise from weather and climate-related events, for example rising sea levels due to melting ice caps. Transition risks arise as society adjusts to a low-carbon economy, including the risk that investments may lose value as a result, leading to so-called stranded assets. Liability risks relate to climate-related insurance claims under liability insurance policies and direct legal claims against insurers for failing to manage climate risks. Currently, in the surveyed jurisdictions, physical climate risk assessment is most advanced, followed by transition risk assessment. Assessing liability risk exposures is still at an early stage as there has been only limited litigation related to climate risks to date.

**This paper covers climate risk assessment from both regulatory and supervisory perspectives.** Based primarily on a survey of 18 insurance authorities, it describes the range of regulatory approaches that specify how insurers are expected to assess their climate risk exposures and techniques that supervisors can use to conduct their own assessment of climate risks. In most cases, supervisors rely on existing rules related to enterprise risk management (ERM) to express their expectations to insurers on how climate risk should be assessed, addressed and managed. Using tools such as stress testing and

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<sup>2</sup> In this paper, the term “climate risks” is used to denote financial risks arising from climate change in the insurance sector in the broadest sense.

<sup>3</sup> See Munich Re (2019).

<sup>4</sup> In this paper, the terms “insurance supervisor” and “insurance regulator”, and “supervisor” and “regulator” are used interchangeably.

scenario analysis, supervisors themselves can take steps to better understand how climate risk could impact the financial and solvency position of insurers as well as the financial system.

**All insurance authorities that provided information for this paper see climate risks as being “reasonably foreseeable and relevant material risks”, as stated in the Insurance Core Principles.** By implication, these authorities would expect insurers to address climate risks in their ERM frameworks, mainly in terms of their manifestation in other risk categories. However, few authorities have set explicit requirements in this regard. One reason is that most authorities deem existing principles-based requirements to be sufficiently broad to apply to climate risks. For example, climate risks are implicitly covered under the European Union Solvency II framework, as insurers are expected to cover these risks in their ERM frameworks if deemed material. Moreover, flexibility and adaptability in the regulatory approach, rather than prescriptive requirements, are probably needed in fast-developing policy areas.

**It is important for supervisors to clearly express their expectations on how insurers are expected to manage climate risks.** Clear articulation of supervisory expectations will help insurers develop concrete responses. For example, almost all of the surveyed supervisors expect insurers to consider climate risks, if material, in their own risk and solvency assessments (ORSAs), even if no explicit regulatory requirements have been set.

**Risk quantification techniques and models that explicitly cover climate risks are most advanced for physical risks but are still at an early stage for transition and liability risks even in the most developed jurisdictions.** It is challenging for both supervisors and insurers to fully assess the impact of climate risks and consequently determine insurers’ ability to honour their obligations to policyholders under adverse climate scenarios. Nevertheless, there are risk assessment tools such as stress testing and scenario analysis that can be used by insurers to improve their understanding of climate risk exposures as well as provide illustrative loss estimates. The models typically involve translating potential future climate outcomes (such as global average temperature rises) into stress factors, and applying those factors to financial statements or risk variables.

**Undertaking climate risk modelling and the associated governance processes can facilitate helpful discussion on risk strategy within an insurer, which some may argue as being more important than the numerical results from the models.** Given current uncertainties surrounding the modelling of future climate outcomes, models can be most useful in supporting discussions within insurers on their climate risk strategy and enhancing their understanding of the risks. Scenario outputs can still be useful, even if the results are subject to uncertainty. From a corporate governance perspective, most of the surveyed authorities expect corporate decision-making to be informed by climate risk reporting to the board, while recognising the limitations and assumptions underlying the risk assessment models. The results are also useful to insurers in meeting the growing demands to disclose their climate risk exposures.

**Although few authorities currently undertake supervisory or system-wide stress tests that explicitly cover climate risk, supervisors appear to have a growing interest in including climate-related events in such exercises.** Climate-related stress testing is at an early stage and faces many methodological and capacity challenges. Supervisors may need to liaise with experts such as climate specialists to develop appropriate stress tests, including time horizons that are relevant for different business lines. Supervisors can use generally available information and risk assessment techniques and tailor them to their specific market and geography. Despite the various challenges, supervisors are increasingly aware that they need to start this process early and improve steadily. It is likely that the early exercises will be far from perfect but the quality of outcomes should gradually improve with experience, advancements in risk modelling and better data.

**Looking ahead, there is room to enhance international cooperation among insurance supervisors and other climate-related forums to improve understanding of climate risks and their potential impact on insurers, policyholders and financial stability.** Such initiatives can build on the work done by the International Association of Insurance Supervisors (IAIS), the Sustainable Insurance Forum (SIF) and the Network for Greening the Financial System (NGFS). Addressing climate risks is an area

where there is willingness and openness both among supervisors and industry players to share experience and collaborate. There is a broad agreement that not enough is known about the nature of climate risks and that time is quickly running out. Nevertheless, the main point is to get insurers to build capacity while accepting that the first step will not be perfect. Supervisors can enhance their technical expertise by taking advantage of the capacity-building efforts offered by various international bodies.

**Other key policy issues that require consideration relate to potential financial exclusion and the potential use of capital requirements to address climate risks.** On financial exclusion, as insurers become more aware of their climate risk exposures and are better able to quantify the risks, they may end up raising premium rates or withdrawing cover from certain business lines or geographical areas. As regards capital, it is currently not obvious if additional requirements are the right tool to explicitly address climate risks. Currently, most of the surveyed supervisors do not use insurers' climate stress-testing or scenario analysis results when assessing the capital adequacy of insurance firms. These issues might benefit from further thought at the international level.