ORTEC FINANCE

Report

Translating the cost of climate change for the European insurance industry: 2025 update

A multi-asset class assessment using top-down climate scenarios

December 2025

Contents

Executive summary

Following the positive response to last year's inaugural Climate risk assessment – European insurance companies report, we are pleased to present an update with our latest 2025 climate scenario release to the global institutional investment community.

This update also reflects the growing regulatory momentum, with European Insurance and Occupational Pensions Authority (EIOPA) urging insurers to strengthen climate risk analyses and integrate it into their risk management frameworks.

Our 2025 update translates the financial consequences of climate change for the European insurance industry, using Ortec Finance's latest climate scenarios to generate decision-useful insights for CIOs, directors, actuaries and investment teams.

We encourage you to explore the findings in detail and consider their implications for short-term liabilities, investment targets and the overall balance sheet.

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Key takeaways

Key takeaways from this further analysis include:

Climate change shapes the economic backdrop. The European insurance industry could be facing significant macroeconomic shifts. Under the current warming trajectory, structural climate-driven inflation (climateflation[1]) and slowing growth pose systemic risks that remain widely underestimated.

Rising physical risks compromise insurability. As these risks drive up claims and inflation, policy payouts can exceed what reinsurance and other risk-transfer mechanisms can absorb, while rising premiums strains the clients, challenging the industry's ability to provide affordable coverage.

Transition improves long-term outcomes. Transition scenarios involve steeper short-term drawdowns and upfront costs, their benefits outweigh these impacts over the long-term by mitigating climateflation, maintaining premium affordability, stabilizing policy payouts, and preserving business continuity through more stable macroeconomic conditions.

Geography matters. The location of assets and liabilities shapes how physical risks affect the insurer's balance sheet, often resulting in divergent outcomes that could challenge stability. Climate aware strategies are essential for building resilience and ensuring business continuity.

Climate change affects insurance lines differently. Property and casualty insurers are more exposed on their liability side but can adapt quickly due to shorter liabilities and frequent repricing, while life insurers are more vulnerable to deteriorating macroeconomic conditions especially when transition is delayed or limited.

[1] A new age of energy inflation: climateflation, fossilflation and greenflation – European Central Bank

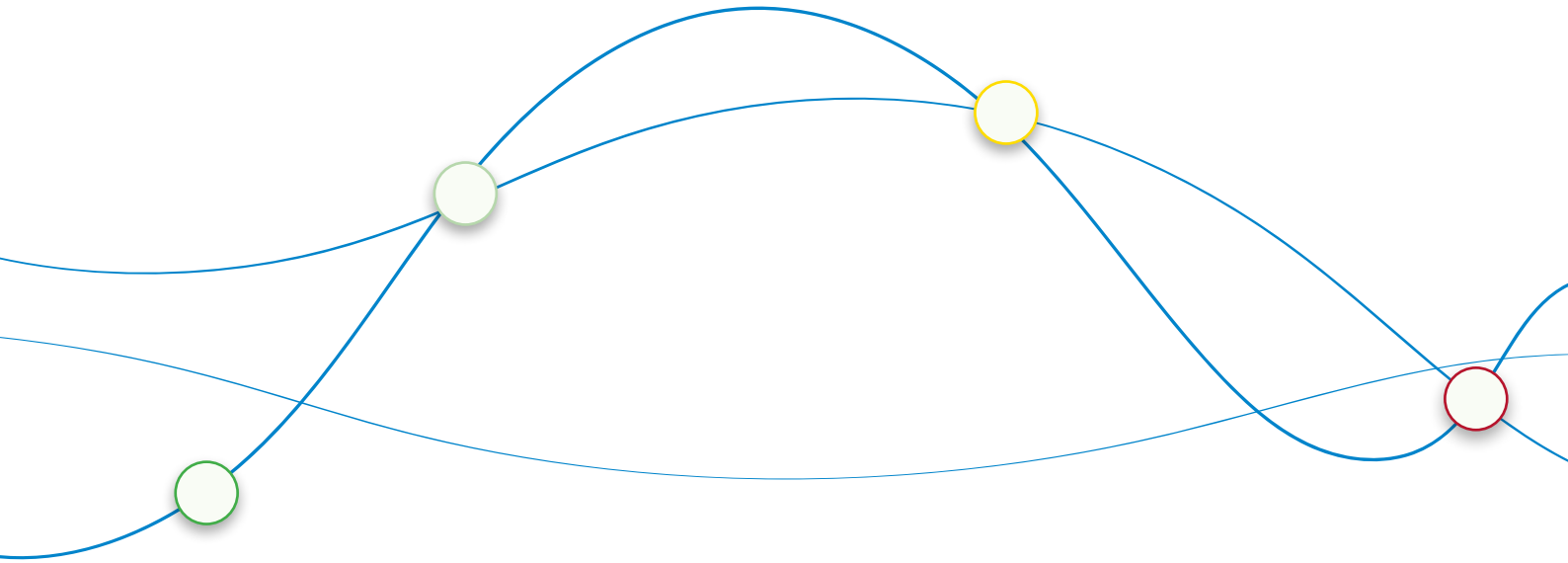
Why it matters: Insights for action

Climate change continues to pose a material risk to financial markets and economies. Following the warmest year on record, the likelihood of limiting global temperature rise to 1.5°C by 2100 is diminishing, and potentially already out of reach. Physical risks are escalating, further compounded by geopolitical uncertainty that continues to shape the trajectory of transition policy outcomes.

While climate change is now widely recognized as a significant risk, its fundamental uncertainty continues to pose a conundrum for institutional investors, such as insurers. What investment decisions should they make now - not only to maintain short-term target returns, but also to prepare for market-wide responses to rising climate risks? Meanwhile, they are obliged to meet long-term investment objectives and ensure portfolio resilience by actively engaging stakeholders on sustainable strategies.

From a business continuity perspective, insurers must also consider how climate change affects their liabilities, such as policy payouts, and evaluate whether premium revenues can remain stable, given affordability concerns and the ability to recover and resume normal activities following natural disasters.

Given the cascading, systemic effects of climate change, one effective approach to address this challenge is to generate more granular decision-useful insights with top-down climate scenario analysis. Such analysis allows insurers to simulate how climate impacts may vary across economies, asset classes, geographies, and sectors under a range of future scenarios. When based on plausible assumptions that incorporate physical risks, transition policies, low-carbon technology adoption, and real-world financial market dynamics, these insights can provide a realistic and comprehensive framework to inform investment decisions.

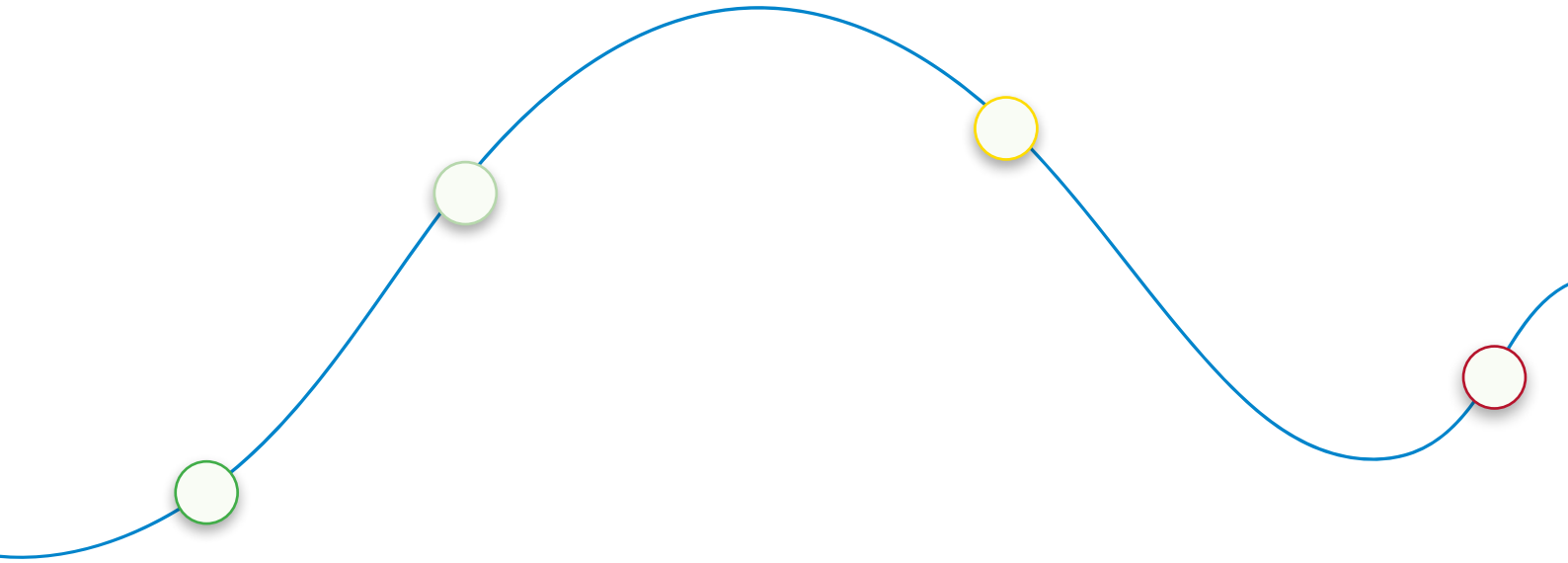


Objective and scope

Plausible climate scenarios assess how different policy implementations, emission levels, and physical risks can affect worldwide economies and financial markets, enabling investors to quantify the cost as well as risks of climate change on a forward-looking basis under a range of plausible outcomes.

To demonstrate how climate change could specifically impact insurers globally under such futures, Ortec Finance compared the effects of interconnected physical, transition and market-pricing risks on **economies, regions**, and **asset returns of a global portfolio of an European insurance investment portfolio**. The analysis considers both the costs and benefits of rapid policy action and highlights why the urgency to take action should not be overlooked.

Our analysis is derived from an asset-only reference investment portfolio that reflects the average asset allocation of a European insurance company. This portfolio is based on the EIOPA Reference Portfolios, utilizing data published in March 2023[2]. The reference portfolios are designed to capture the typical asset allocations of European insurers, including life, non-life, and composite (other) insurance companies, which have remained broadly stable over time. The analyses are conducted using four of Ortec Finance's proprietary climate scenarios, known as the 2025 Ortec Finance Climate Scenarios, described below.



[2] EIOPA is a leading regulatory authority in the European Union that provides comprehensive and reliable data from over 1,000 insurance undertakings across more than 30 European countries. It is a robust and representative benchmark for our current assessment.

Net-Zero (NZ)

This is an orderly version of Ortec Finance's most ambitious transition scenario in their 2025 update. It does not anticipate the world reaching net zero until the mid-2050s and shows a global temperature rise of 1.6°C by 2100. It is an orderly and rapid low-carbon policy and technology transition, with comparatively lower physical risks due to lower global temperatures, and assumes adaptation takes place.

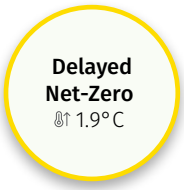
This scenario captures significant transition drivers, including low-carbon regulatory and fiscal policies, technology uptake, energy demand, and emissions, to provide a realistic assessment of how an orderly low-carbon transition, when combined with real-world financial dynamics, will impact financial markets and economies.

Net-Zero Financial Crisis (NZFC)

This is a financially disruptive version of Ortec Finance's Net-Zero scenario in their 2025 update. It does not anticipate the world reaching net zero until the mid-2050s and shows a global temperature rise of 1.6°C by 2100. There are comparatively lower physical risks due to lower global temperatures and assumes adaptation takes place.

This scenario is designed to test the resilience of the financial system in response to a sudden repricing of assets, leading to market dislocation, particularly in high-emitting sectors. It explores the disruptive effects of abrupt divestments starting in 2026 to align with the Paris Agreement, resulting in sudden repricing, the emergence of stranded assets, and a widespread sentiment shock.

This scenario captures significant transition drivers, including low-carbon regulatory and fiscal policies, technology uptake, energy demand, and emissions, to provide a realistic assessment of how a low-carbon transition, when combined with real-world financial dynamics and the current insufficient pricing of climate risk, will impact financial markets and economies.



Delayed Net-Zero (DNZ)

This scenario assesses the effects of a sudden step-up in policy action in 2030 that triggers a shock in financial market sentiment. It assumes limited additional policy action until that point, when a highly ambitious set of low-carbon policies is introduced. In response, markets rapidly price in both transition and physical climate risks, leading to the emergence of stranded assets and widespread financial disruption.

As the name implies, the delayed net-zero scenario captures the effects on financial markets and economies if a low-carbon transition occurs at a delayed pace, with responses unfolding amid real-world financial dynamics and insufficient pricing of climate risk.

High Warming (HW)

This failed transition scenario simulates the outcomes of current global climate policies and incorporates the 0.2°C temperature jump observed last year. It anticipates a global temperature rise of 3.7°C by 2100, where the transition to a low-carbon economy occurs only on economic grounds, without the introduction of any new climate policies.

The scenario is designed to evaluate the implications of a future with no additional policy action to limit climate change. It assumes the triggering of multiple climate tipping points, leading to very severe chronic and acute physical risks. Financial markets begin to price in climate-related risks during two distinct periods as the magnitude of these risks becomes more widely acknowledged and understood.

> **This scenario captures a realistic assessment of physical climate risks, generating escalating impacts that are in alignment with the Institute and Faculty of Actuaries' (IFoA's) recommended use of a logistic damage function. This function is particularly suitable for higher warming scenarios (above 2°C) and helps deliver a credible evaluation of how severe physical risks, when combined with real-world financial dynamics and current insufficient pricing of climate risk, will affect financial markets and economies.**

Climate change and the future of growth, inflation, and financial stability

> ***"Over the years, we realised that we [central bankers and supervisors] completely underestimated physical risk"***
>
> Sabine Mauderer, Head of the Network for Greening the Financial System (NGFS)

Insurers face significant macroeconomic shifts, driven by both transition and physical climate risks, that threaten the economic stability necessary to meet future liabilities, sustain investment targets and maintain affordable premium levels.

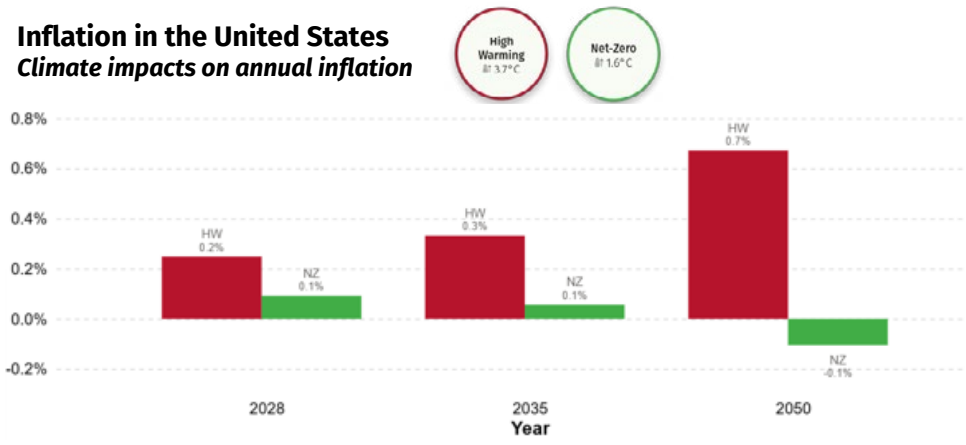
Climate change is intrinsically linked to economic fundamentals and is disrupting the vital pillars of economic stability. From GDP growth to inflation, the effects are structural, persistent, and increasingly visible in economic forecasts.

Climateflation: A challenge for central banks and long-term investors

*Climate-induced inflation **-climateflation-** is emerging as a serious threat to price stability.*

As physical risks such as heat stress and reduced agricultural productivity intensify, they push inflation above central bank targets and alter long-term inflation expectations. This structural shift limits the effectiveness of conventional monetary policy. As climateflation is primarily supply-driven, conventional monetary tools, like raising interest rates, are typically ineffective, and can even lead to stagflation where inflation persists as a result of supply shortages while economic activity declines. Addressing climateflation will require targeted fiscal policy measures to manage the structural impacts of climate change and support economic resilience.

Inflation in the United States
Climate impacts on annual inflation



In the United States, unaddressed climate change in a High Warming scenario (HW) is projected to add 0.7%-points to annual inflation expectations by 2050.

Given the **historical average of 2.5% inflation since the early 2000s**, a 0.7%-points increase is material and may lead to destabilizing consequences for the real economy.[3]

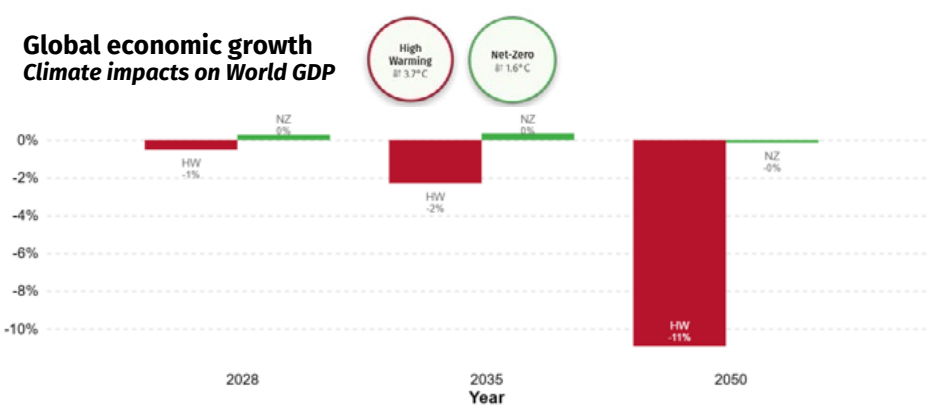
[3] Consumer Price Index, 1913- | Federal Reserve Bank of Minneapolis

Net-Zero transition: A strategic opportunity to control inflation and maintain growth

A globally coordinated, orderly, and immediate transition to a low-carbon economy in a Net-Zero (NZ) scenario offers the most favorable macroeconomic pathway in the face of climate change.

When supported by transparent communication between policymakers and market participants, this transition helps preserve GDP growth projections while keeping climate-induced inflationary pressures in check.

The NZ scenario's key strength lies in the strategic recycling of the carbon tax revenues to provide macroeconomic stability. Rather than acting solely as a fiscal burden, carbon pricing is designed to stimulate green investment, reduce taxation, and support household consumption and consequently GDP growth. By improving energy efficiency of the economy and boosting consumer spending, the NZ pathway creates a more resilient economic environment.



While the transition may involve short-term inflationary impacts, these will be off-set by long-term benefits.

Rapid emissions reductions and the containment of physical climate risks allow the global economy to remain close to current growth trajectories. This stability is particularly important for long-term investors and institutions including insurers, which rely on predictable macroeconomic conditions to meet future liabilities and sustain premium revenues.

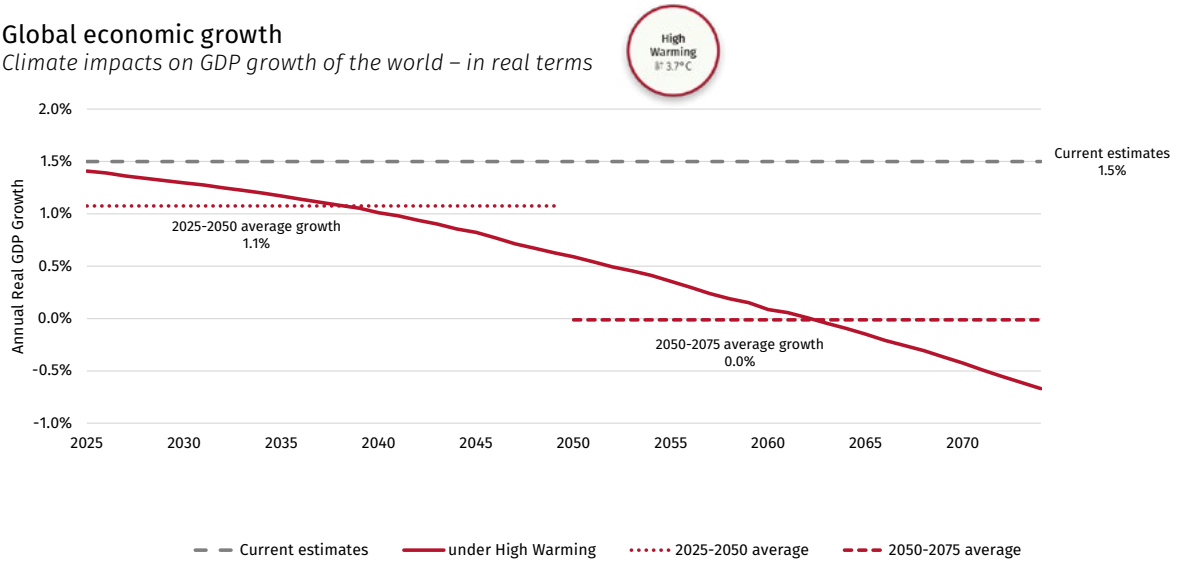
In contrast, the High Warming (HW) scenario to rising temperatures and intensifying physical risks that steadily undermine economic performance, where global GDP is projected to fall **over 10% below current expectations by 2050 in real terms.**

High warming world: A path to economic disruption

Failing to address climate change comes with severe macroeconomic consequences, and some regions are even projected to face economic collapse by the end of the century.

Global economic growth

Climate impacts on GDP growth of the world – in real terms



The compounding effects of rising temperatures and extreme weather events steadily erode economic performance across regions. Among the most immediate impacts are disruptions to labor productivity and agricultural output, both highly sensitive to heat stress and climate volatility. These pressures drive persistent inflation, elevate food prices, policy premiums, and payouts. Together, these dynamics trigger ripple effects across the global economy and challenge long-term global financial stability.

Under the High Warming (HW) scenario, GDP growth for developed economies is projected to average just **1% annually over the next 25 years**, followed by a complete stall - **0% growth** - in the following 25 years (2050-2075). Compared to the current expectations of 1.5%, this represents a dramatic slowdown with profound implications for long-term financial planning and investment strategies.

Beyond inflation and growth, the HW scenario introduces long-term structural challenges that are difficult to model but that are deeply influential to financial and economic stability.

These include supply chain disruptions, rising healthcare costs, and climate-driven migration – factors that further strain insurers globally. Some regions are projected to face economic collapse by the end of the century, particularly where chronic physical risks intersect with climate tipping points such as ice sheet loss and rainforest dieback. These cascading effects amplify systemic risk, posing a serious challenge to global financial stability.

Insurance industry in a warming world – What's at stake?

For insurers, these macroeconomic shifts are not just theoretical; they erode the fundamental business model of insurance by challenging the ability for insurers to offer affordable coverage and by directly affecting asset performance and solvency ratios.

Inflationary pressures under the HW scenario erode real returns and policyholders' purchasing power, while GDP contraction increases systemic risk across investment portfolios. At the same time, increasing physical risks will also lead to more severe damage, resulting in larger policy payouts for property and casualty insurers to support recovery and rebuilding, pressures that even traditional risk-transfer mechanisms like reinsurance cannot fully absorb. These effects would be further amplified by persistent inflation - raise broader questions about insurability.

Conversely, the NZ scenario offers a more stable environment for long-term planning, especially when carbon pricing is recycled to stimulate economic activity, spending, and investment.

As climate change is systemic and anticipated to have portfolio-wide cascading effects, analyzing the macroeconomic impacts helps insurers better position themselves for structural economic shifts, reassess asset allocation strategies, and enhance resilience against broader economic disturbances driven by climate change.

Why do these results differ vastly from other analyses?

Other assessments of physical risks and the transition's impact on inflation and economic growth have relied on analyses using NGFS climate scenarios, which take a significantly different approach compared to the modeling framework used in the Ortec Finance Climate Scenarios.

Modeling differences

Transition

In contrast to the NGFS climate scenario modeling framework[4], which primarily relies on a theoretical shadow carbon price and assumes equilibrium-based macroeconomic responses, the Ortec Finance Climate Scenarios capture real-world frictions, policy interactions, and sector-specific dynamics[5] that more realistically influence transition outcomes and market-based carbon pricing.

By incorporating a wider array of transition policies, including energy efficiency regulations, technology subsidies, and fiscal incentives and by modeling positive feedback loops between policy, technological adoption, and market sentiment, these scenarios offer a more nuanced and accurate representation of the economic benefits associated with low-carbon transitions including inflation trajectories and sector-level impacts.

Physical risk

Compared to the NGFS climate scenarios, which have been acknowledged by the NGFS itself as underestimating physical risks[6], Ortec Finance's failed transition (High Warming - HW) scenario offers a more comprehensive reflection of the compounding effects of chronic and acute climate impacts,, such as heat stress, water scarcity, and extreme weather events. These impacts affect labor productivity, agricultural output, and infrastructure resilience.

Additionally, the HW scenario includes the consequences of irreversible climate tipping points, which remain excluded from the NGFS scenarios - a gap that has drawn criticism from the Institute and Faculty of Actuaries, who view the omission of tipping points as one key reason behind NGFS's underestimation of physical risks[7].

[4] Refers to the framework used by the Network for Greening the Financial System (NGFS) to develop publicly available and most widely utilized climate scenarios to assess the potential impacts of climate change on the economy and financial system under different policy and emissions pathways.

[5] Developed in exclusive partnership with Cambridge Econometrics: Ortec Finance extends exclusive partnership with Cambridge Econometrics | Ortec Finance

[6] Top central banker defends climate work after US pushback – Financial Times, July 21 2025

[7] Planetary Solvency – finding our balance with nature actuaries.org.uk/document-library/thought-leadership/thought-leadership-campaigns/climate-papers/planetary-solvency-finding-our-balance-with-nature/

Counting the cost: The real financial toll of climate inaction on insurers

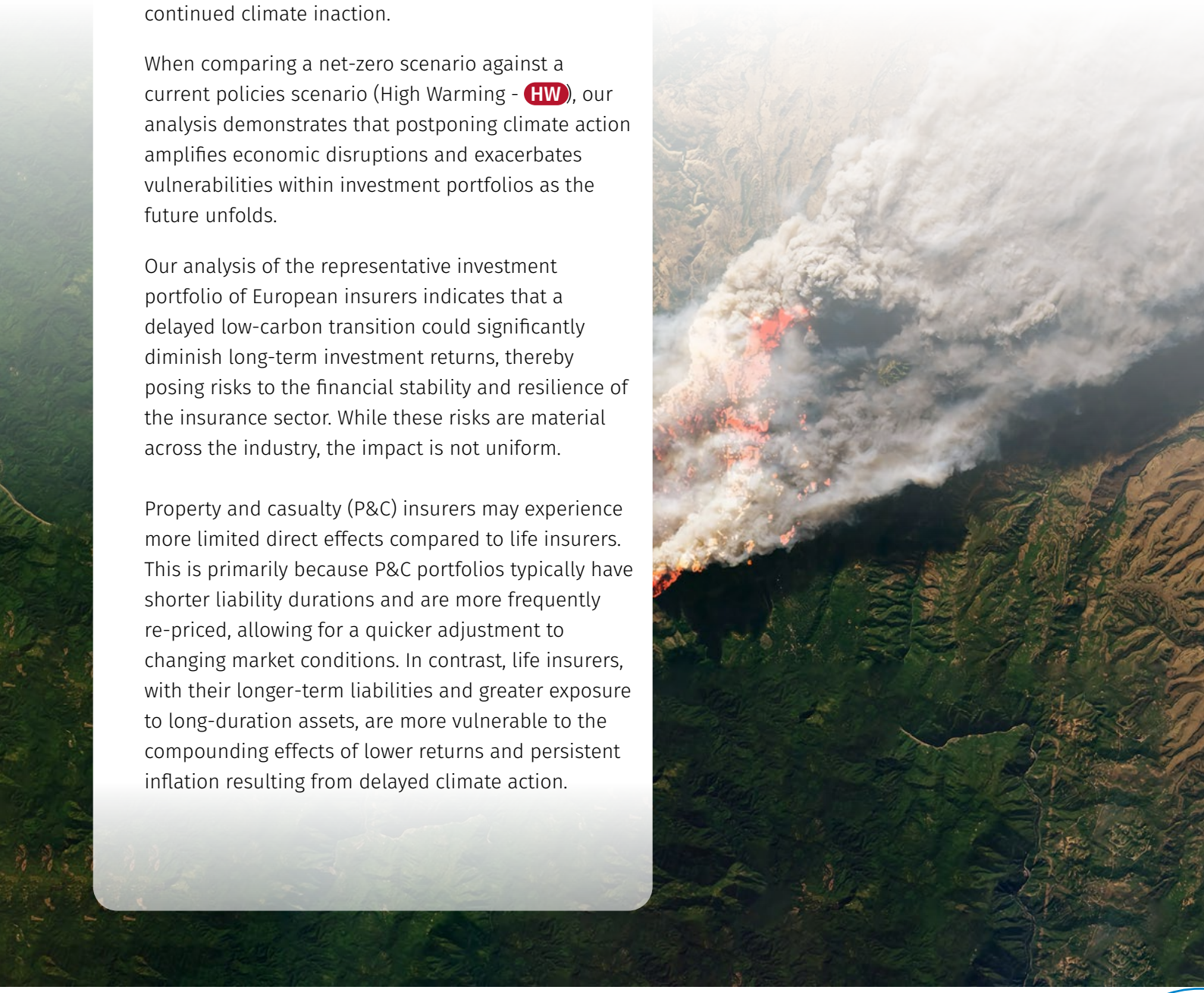
Delaying the transition to a low-carbon economy introduces significant financial risks to the insurance industry.

The immediate costs of transitioning to a low-carbon economy are significantly outweighed by the long-term physical impacts and escalating costs of continued climate inaction.

When comparing a net-zero scenario against a current policies scenario (High Warming - HW), our analysis demonstrates that postponing climate action amplifies economic disruptions and exacerbates vulnerabilities within investment portfolios as the future unfolds.

Our analysis of the representative investment portfolio of European insurers indicates that a delayed low-carbon transition could significantly diminish long-term investment returns, thereby posing risks to the financial stability and resilience of the insurance sector. While these risks are material across the industry, the impact is not uniform.

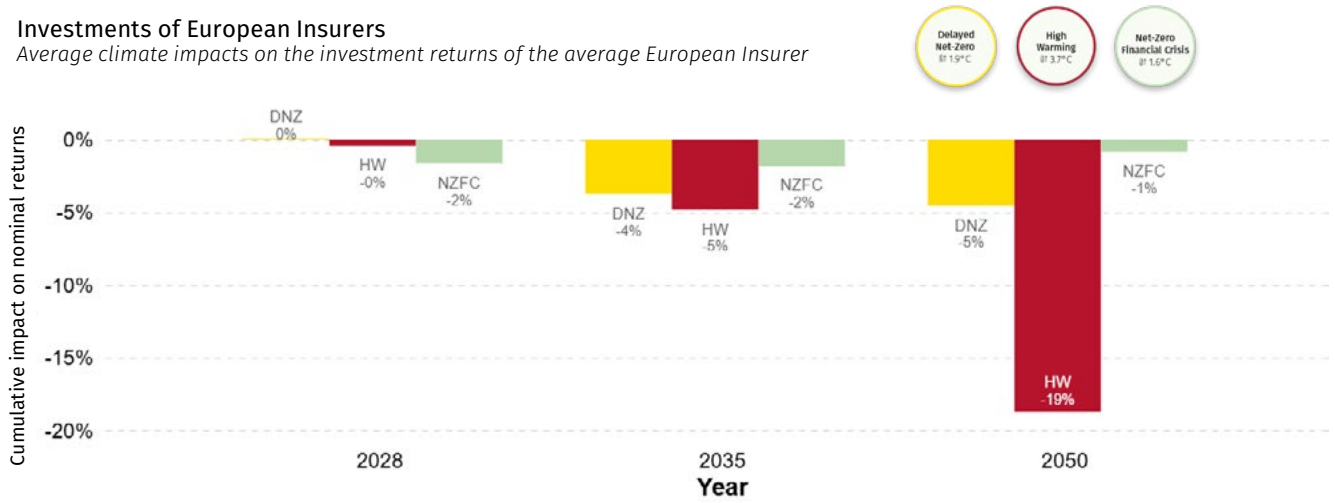
Property and casualty (P&C) insurers may experience more limited direct effects compared to life insurers. This is primarily because P&C portfolios typically have shorter liability durations and are more frequently re-priced, allowing for a quicker adjustment to changing market conditions. In contrast, life insurers, with their longer-term liabilities and greater exposure to long-duration assets, are more vulnerable to the compounding effects of lower returns and persistent inflation resulting from delayed climate action.



Avoiding costs, harnessing opportunities together – A insurer's collective perspective

Investments of European Insurers

Average climate impacts on the investment returns of the average European Insurer



Under continued climate inaction in the **HW** scenario, the average near-term (2028) impact on nominal European insurer portfolio returns is minimal. However, losses accelerate over time, with returns declining 5% by 2035 and deepening to 19% by 2050. The picture worsens when adjusted for inflation. As illustrated in 'Climateflation: A challenge for central banks and long-term investors' US annual inflation is expected to run 0.7% higher by 2050 in this scenario.

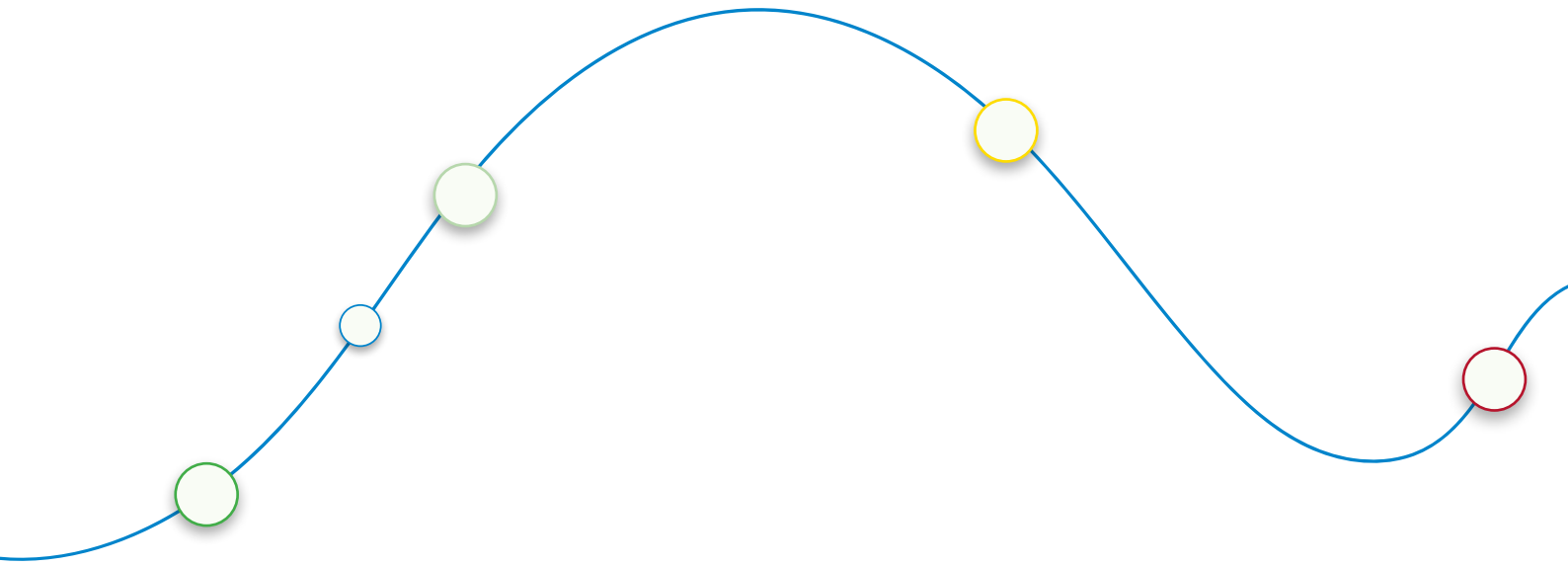
The combination of declining nominal returns coupled with persistent and structural inflation further erodes real purchasing power for policyholders – meaning policy premium revenues may fall as affordability declines, even as portfolio returns shrink. In practical terms, the insurance industry faces a dual headwind from climate change: shrinking portfolio returns, even more so in real terms, and rising policy payouts. Traditional risk-transfer methods such as reinsurance will be susceptible to these pressures, resulting in limited availability and higher prices for their services. Together, these challenging circumstances place greater stress on the financial stability of insurance companies and increase pressure on business continuity and profitability.

By contrast, a low-carbon transition results in a steeper short-term drawdown of returns, but the relationship reverses over time. By 2035, the impact on returns under **HW** is already worse than under disruptive transition scenarios such as Net-Zero Financial Crisis **(NZFC)** or Delayed Net-Zero **(DNZ)**. By 2050, the gap widens significantly: 19% decline under **HW**, 5% under **DNZ**, and 1% under **NZFC**. Inflation dynamics reinforce this divergence: by 2050, **HW** adds about 0.7%-points to annual inflation, while transition scenarios show flat to slightly lower inflation in the longer term (for the US). Lower inflation under transition scenarios supports real returns, reduces the solvency gap, and the pressure on policy affordability and revenue generation.

Climate change poses a profound risk to insurers, but it also presents an opportunity to avoid larger long-dated losses. An immediate and coordinated transition to a low-carbon economy is widely recognized as the most beneficial long-term outcome for pension funds: it reduces physical risks, and drawdowns in portfolio returns, moderates inflation pressure, and helps preserve an insurer's long-term business continuity.

In contrast, delaying or avoiding this transition could result in significant financial losses, with insurance portfolios exposed to stranded assets, structurally higher inflation, and escalating long-term climate impacts. While no single insurer can shift the global trajectory alone, the collective influence of institutional investors is substantial. By systematically incorporating climate analytics into investment decision-making processes, insurers can help steer the world toward a more sustainable future - one that protects both the planet and the profitability of the business itself.

In conclusion, this analysis highlights why it is in the best interest of insurers to contribute towards a low-carbon transition of the economy. Transition scenarios deliver materially better nominal and real portfolio returns in the long term, foster a more stable macroeconomic environment, and support the continuity and resilience of the insurance industry.



The geography gap: When assets and liabilities reside in different geographies

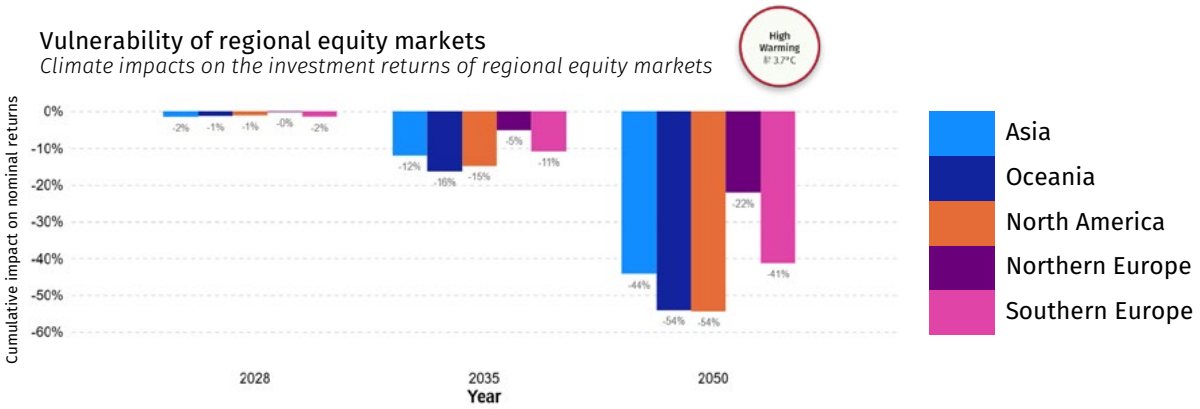
Real estate can sit on both sides of the balance sheet, amplifying climate risk for insurers especially when geographic exposures of assets and liabilities diverge.

Climate impacts do not manifest uniformly across insurer balance sheets. The same global climate scenario can produce materially different outcomes depending on where assets are located, where risks are underwritten, and the line of business the insurance company is in (life vs. non-life). For insurers, resilience is as much about geography and line of business as it is about markets and asset allocation.

Climate risk, especially physical risk, is highly geography specific. In practice, the geographical distribution of assets and liabilities often lacks alignment. Insurers typically hold diversified assets domiciled across regions with deep, liquid financial markets, while underwriting policies in a more geographically concentrated manner. Inevitably, some of these policies are in hazard-prone areas.

The geography gap between the climate sensitivities of the asset and liability side of the balance sheet adds further complexity to insurers' risk management. Climate change introduces a new dimension to the insurers' risk frameworks that can drive unexpected and asymmetric movements in the balance sheet due to uneven exposure of assets and liabilities to climate risk. Catastrophic events trigger large claims and depress local asset values, compounding losses for insurers when both assets and liabilities are concentrated in the affected region. Geographic diversification across both assets and liabilities can reduce this vulnerability.

However, achieving effective diversification in a warming world is increasingly challenging as climate change reshapes the risk landscape and links distant geographies through shared physical risk vulnerabilities. The erosion of traditional diversification benefits creates structural vulnerabilities for insurers. Real estate remains central to the geography gap, influencing both sides of the insurers' balance sheet and warranting additional consideration to ensure their strategies remain resilient in a warming world.



Real estate, mortgages and mortgage-backed securities frequently appear on the asset side of the insurers' balance sheet. The market value and investment performance of these assets are highly sensitive to physical risks such as flooding, heat stress, and storm damage. Under High Warming HW, property valuations in hazard-prone regions will decline sharply. By 2050, real assets in high-risk zones within North America and Europe, two very distant geographies, face almost identical cumulative underperformance of more than 50%. In contrast, low-risk zones in both regions show much smaller declines, around 16% - 17%. These differences underscore how geographic exposure and climate sensitivity can amplify risk and erode portfolio returns.

On the liability side, non-life insurers are subject to similar hazards, which exert inflationary pressure on claims and result in increased payouts for property damage and reconstruction, particularly in areas susceptible to such risks. Alongside the rise in extreme weather events, these factors collectively impact the solvency, pricing capabilities, and ongoing operations of insurers across various jurisdictions. Reinsurance offers partial relief from the challenges faced by insurers on the liability side. P&C insurers can reduce liability concentration risk through reinsurance, as global reinsurers are better positioned to diversify location-specific exposures. However, under higher warming scenarios, reinsurance pricing and availability are expected to tighten, limiting its effectiveness.

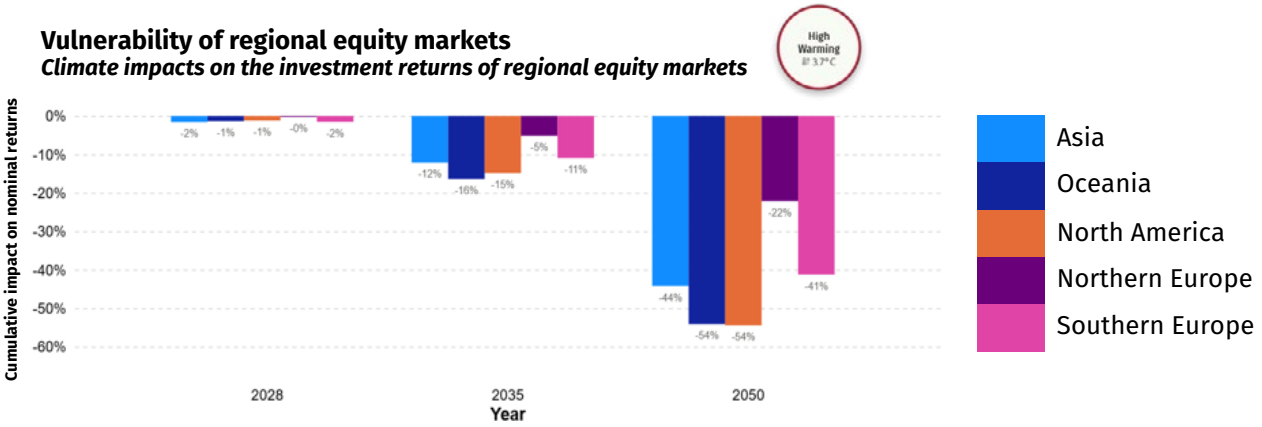
This challenge links directly to the broader question of insurability - to what extent can risk-transfer mechanisms continue to provide coverage in an era of increasing climate hazards?

Uneven heat: Uncovering regional climate risk and equity market vulnerability

From heat stress to flooding, physical climate risks are driving divergent equity returns across geographies.

Climate risk isn't evenly distributed across regions - and neither are the consequences for equity markets.

Climate risk is systemic, but it doesn't impact all regions equally. This divergence underscores the need for region-sensitive investment strategies. Traditional diversification will no longer be sufficient if it overlooks the climate sensitivity of regional exposures. For insurers, this means rethinking strategic asset allocation-not just in terms of geographic spread, but in terms of climate resilience. Allocating capital across regions without accounting for climate-adjusted risk can undermine long-term returns and increase funding volatility.



Under the High Warming (HW) scenario, equity markets across **North America, Australia, Asia,** and **Southern Europe** are projected to suffer steep declines in performance, ranging from **41% to 54% below current projections by 2050**. These losses are driven by escalating exposure to wildfires, hurricanes/ cyclones, heat stress, and water scarcity. **Northern Europe**, supported by cooler climate conditions and limited exposure to extreme weather events, shows relative resilience with a more modest **22% decline**.

Pricing climate risk: A crucial missing link in market valuation

While climate risk awareness has grown across the financial sector, **markets are still lagging in pricing these risks sufficiently.**

Many physical risks, especially those that are **non-linear, uninsurable,** or irreversible, such as **tipping points**, remain underrepresented in current asset valuations. Regional equity indices often mask underlying vulnerabilities such as **sectoral exposures** and **infrastructure resilience/fragility**, especially in geographies facing escalating exposure to heat stress and flooding. The disconnect between current pricing and potential escalating physical risks leaves portfolios exposed to **underestimated downside risks**, particularly for long-term investors such as insurers.

Limited recognition of these climate risks leads to pricing gaps, creating a challenge for insurers: to evaluate how pricing of climate risk could affect portfolio performance. At the same time, it presents an opportunity to position portfolios ahead of repricing, driving value and increasing resilience.

A further challenge lies in the reevaluating the effectiveness of traditional risk-transfer tools, such as reinsurance, which offer only partial relief in the face of growing constraints under high warming scenarios and raises broader questions about long-term insurability.

Where will climate change hit hardest? Portfolio geography's influence.

As climate impacts intensify, **the geographic footprint of an equity portfolio** is becoming a **critical determinant of performance.**

Investment decisions that rely solely on traditional metrics, such as historical returns or market size, risk overlooking the **climate sensitivity of regional exposures.**

For insurance companies, this means rethinking strategic asset allocation, not just in terms of geographic diversification, but in terms of climate resilience. Home bias, often driven by familiarity, regulatory constraints, and perceived stability, can become a source of concentrated climate risk and amplify portfolio vulnerability, especially where domestic markets are disproportionately exposed to physical risks. Investment frameworks will need to evolve and integrate **regional climate sensitivities**, **infrastructure resilience, policy uncertainty, and the limits of risk-transfer mechanisms** into portfolio construction.

Conclusion

Climate change is not only about emissions; it represents a macroeconomic regime change that will shape growth, inflation, and market pricing, cascading directly into an insurer's policy revenues and payouts, solvency, real returns, and profitability.

Climate change represents a fundamental shift in the economic environment for insurers. Escalating physical risks, persistent inflation, and geographic mismatches between assets and liabilities are reshaping balance sheets and challenging business continuity. In a warming world, inaction is the costliest strategy, amplifying future risks, destabilizing macroeconomic indicators, and putting both global economic stability and the insurance business continuity at risk.

The long-term viability of the insurance industry will depend on the trajectory of global carbon emissions and how the transition to a low-carbon economy unfolds, or whether it happens at all. Outcomes depend as much on macroeconomic conditions, such as growth and inflation, as on investment returns. Portfolio impacts vary by sector and geography, and liabilities, especially for non-life insurers, are highly sensitive to regional exposures. This underscores the need for insurers to assess physical, transition, and market-pricing risks at a granular level and to develop robust investment strategies that address these interconnected economic and financial challenges.

Our modelling shows that early transition efforts and climate-aware strategies deliver steadier economic growth, maintain sustainable inflation levels and preserve affordable coverage, strengthening long-term resilience and stability. Over the long run, the cost of unmanaged physical risks far exceeds the near-term costs of transition, even an abrupt one. Delaying the transition defers the transition costs further into the future while compounding future losses.

To secure long-term stability, insurers should integrate climate scenario analysis into investment and risk management processes, adopt climate-aware asset allocation and resilience strategies tailored to local exposures, and continuously adapt risk-transfer mechanisms to reflect evolving climate risks. Regulators are reinforcing this direction, with EIOPA actively pushing insurers to enhance climate risk analyses and embed it into their governance and risk frameworks. By fostering industry collaboration and accelerating the transition to a low-carbon economy, insurers can better manage climate risks, protect policyholders, and ensure the sustainability of their business models.

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This is accomplished via the delivery of leading technologies and solutions for investment decision making to financial institutions around the world. Ortec Finance's strength lies in an effective combination of advanced models, innovative technology, and in-depth market knowledge. This combination of skills and expertise supports investment professionals in achieving a better risk-return ratio and thus better results.

Headquartered in Rotterdam, The Netherlands, Ortec Finance has offices in Amsterdam, London, Toronto, Zurich, Melbourne, New York and Singapore. Ortec Finance helps 600+ clients manage €14 trillion assets under management.

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