From Emerging Risk to Business-as-Usual: Integrating Climate Risk Management and Scenario Analysis into ERM

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INTRODUCTION

Climate risk has often lingered in the shadow of risk management. It rarely has clean spreadsheets or a tidy model output. Typically, it shows up as a question that doesn't quite fit anywhere yet. How were we impacted by that severe weather event that garnered national attention? I'm hearing that insurance costs are moving faster than expected, how does that impact us? I just received a new survey from a regulator, who should handle this?

Early on, it was tempting to treat these as edge cases. Interesting, important, but not quite ready for the core risk framework. I've seen climate risk evolve from an actuarial student in ERM filling out an annual survey, to regularly showing up in emerging risk reports, to client inquiries and regulatory requests. As this progression unfolded, climate risk went from "worth watching" to "we need someone to own this, now."

From an actuarial and risk management perspective, that's uncomfortable territory. When we pause to think, we realize we have the tools to manage this: ERM frameworks, governance groups, risk tolerances, scenario analysis. The challenge with climate risk is not that it is unmanageable, it's that it's very uncertain and far-reaching. It's complex and requires significant judgment in the absence of solid models or data.

However, I believe climate risk becomes manageable when we stop treating it as something fundamentally different and start treating it as business-as-usual risk management work.

WHY CLIMATE RISK BELONGS IN ERM

Climate risk doesn't respect organizational boundaries. Physical risks can disrupt operations, third-party vendors, and investment portfolios. Transition risks can affect asset values, regulatory compliance, reputation, and long-term strategy. None of these live neatly in a single department.

That's why ERM is the right home for climate risk. ERM exists to do three things well:

- Bring people together across silos.
- Apply consistent structure to messy problems.
- Elevate the right information to decision-makers.

Climate risk management needs all three.

I've found it helpful to think of climate risk not as a new risk category, but as a risk amplifier. It intensifies risks we already manage: market risk, operational risk, underwriting risk, and strategic risk. Framing it this

way lowers the barrier to integration. We don't need a new philosophy of risk management. We need to apply the one we already have to a new context.

MOVING PAST "EMERGING RISK"

Most organizations start in the same place. Climate risk shows up on a watch list and is then elevated to a high priority due to regulatory requirements, executive concern, or simply prudent risk management. A group of associates form a task force, perform initial analysis, maybe a qualitative assessment, and report to leadership. This is good work, necessary work, but it's not the end goal.

The shift happens when climate risk moves from that initial assessment and scoping to an embedded process. When different aspects of climate risk are mapped into existing risk categories and become a part of the ongoing governance of those risks. When the team monitoring mortality risk owns monitoring the impacts from climate risk on acute and chronic mortality. When climate considerations are embedded in your asset underwriting. And when third-party risk teams bring in geographic location and concentration into their risk assessment.

There are increasing external expectations around managing climate risk and governance matters. Cross-functional groups or committees, led by ERM, can help aggregate and coordinate risk and impact monitoring across the enterprise. They can own reporting and oversight of the management structure. Having a dedicated group also sends a signal this isn't a side project; it's part of how we manage risk.

SCENARIO ANALYSIS: WHAT IT IS AND WHAT IT ISN'T

Scenario analysis is often described as the cornerstone of climate risk management. That's true, but only if we're honest about what it can and can't do. Climate scenarios are not forecasts, they're not probability-weighted expectations of the future, and they are not precise predictions. Treating them that way sets everyone up for frustration, but it also doesn't mean they are useless.

What scenarios are good at is something actuaries already value deeply, stress-testing our assumptions. They help us ask, "If the world moves in this direction, how exposed are we, and how prepared are we to respond?" That's familiar risk management territory. We do this with interest rates, mortality improvement, and market shocks all the time. Climate scenarios are unique in that they extend that thinking further out in time and across more dimensions.

CHOOSING SCENARIOS AND TIME HORIZONS

It is now standard practice to use externally developed climate scenarios. Network for Greening the Financial System (NGFS) and Intergovernmental Panel on Climate Change (IPCC) scenarios are widely referenced, because they are independently created, explore a variety of pathways, and most importantly, not designed to tell a convenient story.

Typically, a company will want to look at a minimum of two scenarios. One where the transition to a lower-carbon economy happens in an orderly way, and one where the world does not respond to climate change and global temperature rise. It is increasingly common to include a disorderly transition scenario, where the world waits to act and then enacts significant change very quickly. None of these scenarios are "right," but they can all be useful.

Time horizons matter quite a bit in climate scenarios and are typically longer than most stress testing done by insurance companies. Some climate risks show up quickly, such as insurance availability, operational disruptions, and regulatory change. Others unfold over decades, such as long-term mortality or morbidity

trends. These long time horizons force us to confront an uncomfortable truth: the risks that matter most long-term are often the hardest to quantify today; the data simply doesn't exist.

LIVING WITH UNCERTAINTY

If you're waiting for perfect data on climate risk, you're going to be waiting a long time. Mortality impacts, migration patterns, and asset repricing all depend on pathways we can't assign probabilities to with confidence.

I've seen organizations respond to this in two unhelpful ways. One is paralysis, "We don't know enough yet, so we won't act." The other is overconfidence in complex models that produce very specific numbers without much transparency.

Actuarial judgment lives in the space between those extremes. Actuaries have always worked with imperfect information. Contrary to what many of our friends and families think, the actuarial profession hasn't persisted for almost 200 years because we're good at math, it's because we've developed sound judgement amid uncertainty.

QUALITATIVE FIRST, QUANTITATIVE WHERE IT COUNTS

A practical way forward is to implement a staged approach. Start with qualitative scenario analysis focusing on the key risks of your organization. Focus on the scenario narratives, not the numbers. Assess how and when your key risks may be impacted in these scenarios. Assess not just the impact and likelihood, but also your organization's response capability. Ask hard questions about where existing processes are strong and where they aren't.

This qualitative analysis will give you a roadmap for targeted quantification. Focus on the areas you rated highest in the qualitative assessment and determine how you can stress test that risk. You could look at acute impacts from severe weather on your liabilities. You could measure the impact of insurance cost increases on your investment portfolio. Or you could model the impact of a ratings migration in carbon-intensive assets. This targeted approach will give you insights you, and your leaders, can trust and understand. Trying to quantify everything at once isn't ambitious, it's inefficient.

BRINGING CLIMATE RISK INTO RISK REPORTING

Scenario insights should feed directly into ERM processes and reports. If any climate-related risks are deemed material, they should impact your risk appetite, capital planning, risk mitigation decisions, and strategic discussions. Integrating climate risk into your ERM framework leads to clear and consistent reporting as well. If climate risk is integrated into ERM, it fits naturally in a company's Own Risk and Solvency Assessment (ORSA). Leveraging your established ERM framework also makes Taskforce for Climate related Financial Disclosures (TCFD) aligned reports, such as the NAIC Climate Survey, straightforward and clear.

Risk reporting doesn't require false precision, but a thoughtful discussion of risk and management response. Qualitative climate scenarios fit well here when presented honestly with clear articulation of the implications and next steps.

Senior executives, boards, and regulators don't need complex climate science (nor are most actuaries qualified to provide it), they need clarity. What assumptions are we making, where are we exposed, how does this affect our strategy, what are we doing now, and what might we need to do later?

WHAT THIS HAS TAUGHT ME

Climate risk doesn't require us to reinvent ERM, it requires us to trust and leverage it. Scenario analysis doesn't require us to predict the future; it requires us to take it seriously. Most importantly, integrating climate risk is not about getting the answer right. It's about making sure the risk is seen, discussed, owned, and managed before it forces its way into the room on its own terms. Our understanding of climate risk and its impacts will continue to evolve and change as global warming unfolds. ERM frameworks are built to evolve and change with it.

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