

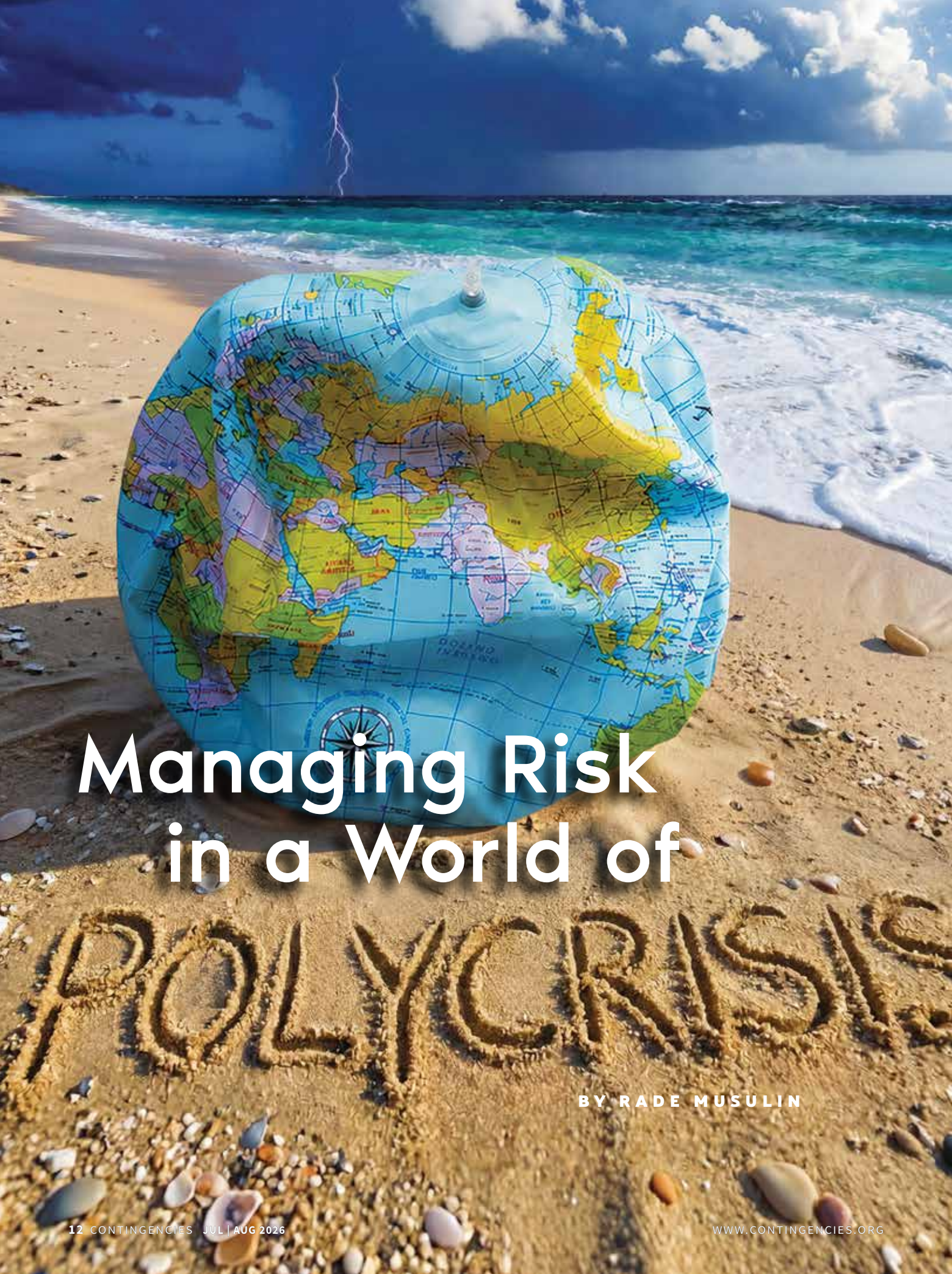
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Managing Risk
in a World of

POLYCRISIS

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Managing Risk in a World of

POLYCRISIS

BY RADE MUSULIN



From extreme weather and cyberattacks to geopolitical conflict and economic volatility, multiple crises are weighing on an increasingly interconnected world. How can actuaries help insurers and policymakers prepare for these risks?



he decades following World War II saw the creation of strong institutions designed to support a stable, rules-based global order.

In reaction to the extreme destruction and trauma of the war years, frameworks for international relations, such as the United Nations, emerged to manage conflicts without global war, helping to create prosperity and peace. Many supranational organizations were established, including the World Health Organization, the World Trade Organization, the World Bank, and the International Court of Justice. Most of today's business leaders have grown up in this rules-based world, and business systems have been adapted to operate efficiently within it.

During this period there were occasional geopolitical crises, such as the Middle East wars and the ensuing oil embargo of the 1970s, the dissolution of the Soviet Union in the early 1990s, the 9/11 terrorist attacks, the Global Financial Crisis (GFC) in the late 2000s, and the Arab Spring in 2010-2012. All of these occurred in the context of this post-World War II order, which absorbed shocks and

appeared extremely resilient.

Recently, that rules-based order has been placed under extreme—perhaps even terminal—stress. We have seen the rise of autocracies in many countries, endured a pandemic, begun to experience severe consequences of global warming, witnessed the outbreak of wars in several regions, and are now dealing with one of the worst oil shocks in history. Recent U.S. policies have contributed to a more fragmented, multipolar world, with countries operating in competing blocs. This period has been marked by rapid and sometimes unpredictable policy actions. By contrast, earlier approaches, such as during the Iraq War, emphasized multilateral engagement and working through international institutions.

Geopolitical risk has risen dramatically, alongside risks from artificial intelligence (AI), climate change, and economic imbalances. These risks interact with a global financial system that has become extremely complex, opaque, and awash with debt accumulated during the pandemic. Systematic stress is increasing and can spread quickly.

This raises the question of whether the risk management frameworks of financial institutions—and the mindset of actuaries who help sustain them—need to evolve to meet the challenges presented by the emerging world (dis)order, and if so, how?

Growing Volatility and Rapid Change

Compared with past cycles, 2026 is marked by simultaneous disruptions across trade, technology, security, energy, and resource markets—a situation described as a “polycrisis” by the World Economic Forum. Relationships, personalities, psychology, and contagion may increasingly be overtaking rules and institutions as the framework for international relations and trade. Organizations (or institutions) across the world must now confront challenges for which there may be no reliable data or modern precedent. For example, U.S. tariff rates are now at their highest levels since the early 1940s, while fallout from the closure of the Strait of Hormuz could affect economies across the world for an extended period.

Actuaries, along with other risk management professionals, may find themselves challenged by this environment. Over recent decades, actuarial practice has become increasingly data driven. That has delivered major benefits: better segmentation, improved reserving tools, more rigorous capital modeling, and an expanding discipline of model governance. This mirrors how “big data” has transformed economics, investment strategies, supply chain management, and many other disciplines.

Unfortunately, this progress may also introduce new vulnerabilities. When organizations become highly reliant on large volumes of historical data and models built upon that data, systems can become vulnerable when conditions shift quickly, correlations change, or entirely new drivers appear.

The Need to Think in New Ways

Geopolitical risk is a clear example of this problem, as is climate risk. In both cases, the past remains informative but may no longer be sufficient to understand the future. This may mean that some older actuarial techniques familiar to practitioners trained before the “big data” era may become newly valuable. Today’s volatile world may require disciplined reasoning, explicit storyline construction, and scenario analysis designed to explore plausible futures to complement data-driven modeling.

In 2010, *New York Times* columnist David Brooks used a

Signposts

Build a small set of indicators that warn when the geopolitical regime is shifting: breadth and tempo of sanctions announcements; persistent shipping delays on key routes; sustained increases in cyber activity against critical infrastructure; commodity spikes that drive construction costs; rapid changes in alliance behavior; sustained divergence in regional inflation. Attach triggers: When two or three signposts move together, pre-authorize actions such as adjusting reinsurance structure, tightening underwriting appetite, adding pricing overlays, or increasing liquidity buffers.



phrase that captures the structural nature of the challenge: “catastrophic complexity.” When complex systems are stressed, surprises can become a structural feature, not merely a low-probability exception. That matters for financial institutions that operate within a wider political and economic system.

Geopolitical risk is not new. Insurance markets have long dealt with war risk, expropriation, terrorism, political violence, and trade disruption. What feels different today is the combination of speed, global interdependence, and weakening guardrails. The seeds are being sown for shocks to ripple through the financial system rapidly and in ways that are hard to understand using traditional methods.

From an actuarial perspective, we can say that the distribution of plausible futures has widened. Volatility is higher. Tail outcomes are more plausible. Correlations between previously separate risks may arise.

Uncertainty Has a Cost

A basic principle of economics applies in the current environment: Uncertainty carries a positive price. In finance, investors generally require higher expected returns for more volatile risks, which is why equities have historically delivered higher long-run returns than government bonds. In insurance, a stable book of motor insurance requires a smaller risk load than catastrophe reinsurance exposed to low-frequency, high-severity losses.

In a polycrisis environment, geopolitical volatility becomes a direct input to risk loads across the system. When uncertainty increases, the cost of capital tends to rise, and the capacity



available to support volatile risks tends to contract. In reinsurance, this often appears as higher attachment points, tighter terms, exclusions for emerging perils, and a greater focus on aggregation and clash risk. At the retail level, it can appear as claims inflation, coverage restrictions, and greater sensitivity to model uncertainty.

Uncertainty is not merely a forecasting problem. It is also a pricing problem. If volatility increases, someone pays, either through higher premiums, reduced coverage, or, in some cases, public intervention. In the broader economy, uncertainty can lead to higher inflation, less investment, lower productivity, and a contraction in economic activity.

How Can Geopolitical Risk Impact Insurer Finances?

Consider four broad groups of effects:

1. Claims: frequency, severity, and inflation. Traditional insured losses from political violence or terrorism are only part of the story. Claims impacts may arise from supply chain disruption, labor constraints, repair delays, and price volatility for key materials. Even when the underlying peril is not political, geopolitical shocks can increase loss severity by raising repair costs, prolonging business interruption, or limiting the availability of specialized components.

2. Assets and capital: correlated stress. Geopolitical shocks can impact interest rates, credit spreads, equity prices, and currency values. (Re)insurers may experience asset value declines even as claims rise. Correlation is the enemy of risk diversification, and geopolitical shocks can increase correlations across risks traditionally thought to be independent.

3. Operations: cyber, continuity, and infrastructure. Operational resilience is now intertwined with geopolitical competition. State-sponsored or state-tolerated cyber activity can target critical infrastructure, logistics systems, and financial institutions. According to the 2022 Microsoft Digital Defense Report, the share of nation-state cyber operations targeting critical infrastructure was reported to have doubled from 20–40% over a one-year period. Even if insured losses are limited by policy language, operational disruption can be significant. In systemic events, legal, regulatory, and reputational responses can be as consequential as the direct operational costs.

4. Legal and contractual complexity. Tariffs, export controls, stress in the judicial system, or rapid changes in regulatory standards introduce uncertainty in contract performance. Consider the rapid change in requirements for U.S. firms to provide climate risk disclosures. Such firms can face a complex environment where federal and state regulations conflict, or where global counterparties are subject to different rules and

reporting requirements. This can increase operational costs, particularly if a future U.S. administration abruptly reverses the policies of the current one.

Geopolitical risk is best understood as a set of correlated stressors that can interact. The actuarial task is to identify where those interactions could concentrate loss, weaken solvency, or destabilize operations.

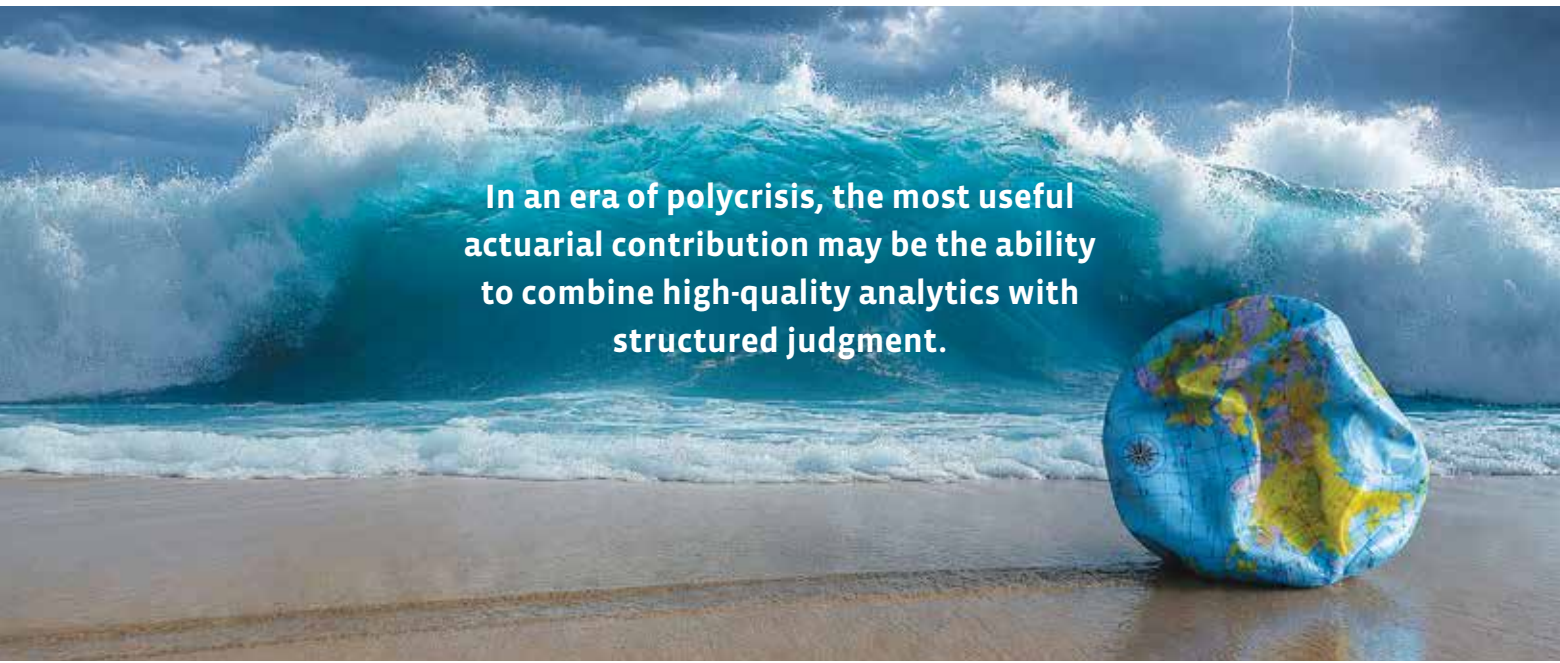
Geopolitics and Claims Inflation—An Example

During the early 2000s, reconstruction demand associated with the Iraq War was cited as one factor contributing to higher lumber prices in the United States. I recall working in Florida during the 2004 hurricane season, when four hurricanes struck and rebuilding costs rose sharply. Our models underestimated the likely magnitude of the problem, partly because they failed to consider hurricane-induced demand surge occurring in a period of supply shortages triggered by a geopolitical event.

This illustrates that extreme events do not occur in economic isolation. Loss severity is shaped by the broader economic environment: labor availability, material prices, logistics, and financing. By studying historical examples like these, we can create scenarios that supplement modeling and yield a more robust understanding of risk. The pathway from geopolitical conditions to insurance balance sheets is often indirect, involving second-order effects such as inflation, shortages, delays, and volatility.

Five Questions for the Board

1. Where are our largest dependencies by geography, supplier, and critical infrastructure?
2. Which policy contracts could be hard to fulfill if impaired by tariffs or trade restrictions (e.g., an inability to source parts for repairs)?
3. Have we tested policy language for cyber, war, and political violence in realistic scenarios?
4. What is our plan if claims inflation spikes while investment markets fall?
5. What decisions are pre-approved if the signposts dashboard deteriorates?



In an era of polycrisis, the most useful actuarial contribution may be the ability to combine high-quality analytics with structured judgment.

A Climate Analogue: Scenario Analysis and Systems Thinking

Climate risk has forced actuaries to confront the limits of using the past to predict the future. Historical loss experience remains valuable, but non-stationarity matters. The forward-looking techniques developed for climate risk have direct relevance to geopolitical risk, even though the underlying drivers differ.

For example, climate change is not a surprise. It is visible, measurable, and politically difficult. That makes it a useful analogy for geopolitics: in both cases, the most damaging outcomes often arise when known vulnerabilities interact within complex systems.

Three elements of how actuaries approach climate risk are particularly helpful.

1. Scenario analysis. Climate scenario analysis is a structured exploration of plausible pathways designed to test resilience under uncertainty. A well-designed scenario makes its assumptions explicit, identifies signposts that would increase or decrease confidence in the pathway, and quantifies impacts where possible.

For geopolitical risk, the same concepts can be applied: building plausible pathways; articulating assumptions about trade, sanctions, energy markets, cyber escalation, and institutional responses; then testing impacts on claims, assets, and operations. The value is not in trying to identify a correct scenario, but in clarifying vulnerabilities and identifying strategies that remain robust across a range of futures.

2. Systems thinking and second-order effects. One of the most important lessons from climate work is the role of feedback loops. A hazard does not only damage assets. It can disrupt supply chains, strain public budgets, shift migration patterns, and change political preferences. Geopolitical shocks can produce similar cascades: Conflict affects energy prices, energy prices drive inflation, inflation drives interest rates, interest rates affect asset values and housing affordability, affordability affects political stability, and political stability affects policy responses, which in turn influence the next iteration of risk.

3. Updating scenarios and integrating with enterprise risk management. Scenario analysis is not a one-off exercise conducted solely to inform a disclosure report. As the environment changes, scenarios should be refreshed, assumptions revisited, and findings integrated into risk appetite, reinsurance strategy, liquidity planning, and governance. For actuaries, that means connecting scenarios to solvency assessments and being transparent about limitations: what was quantified, what was not, and what factors might change the conclusions.

Building Scenarios and Using Signposts

A practical approach is to build a range of plausible scenarios, understand the interdependencies to which systems the scenarios apply, develop relevant quantitative metrics and measures, and combine this with more traditional forms of analysis. This can lead to a better understanding of the range of possible outcomes and the factors that may drive them,

including identifying signposts that can provide early warning of whether scenarios are playing out as envisioned.

Signposts refer to specific parts of scenarios that can be monitored to identify when events are diverging from the larger narrative. Signposts should link to actions: changes in reinsurance purchasing, revisions to pricing and reserving assumptions, adjustments to investment strategy, or efforts to strengthen operational resilience.

For example, if a scenario calls for 50% penetration of electric vehicles (EVs) by 2040, one might have a signpost tracking how many charging stations are constructed by 2030 or whether a tax policy is enacted by 2029 that encourages EV sales. The EV example illustrates the importance of systems thinking. Many nations are likely to double down on electrification and reducing dependence on fossil fuels following the Iran war—an outcome that might be anticipated in a scenario analysis examining how countries might react to a major oil market disruption. It also illustrates the importance of considering policy reversals by governments, as seen when the Trump administration rapidly changed the Biden-era EV policies. Elections are therefore a specific risk that should be considered when building robust scenarios.

How Actuaries Add Unique Value

Actuaries are often described as quantitative professionals, and that is true. Yet the profession's value proposition is broader. It includes disciplined reasoning under uncertainty, the ability to connect risk drivers to financial outcomes, and experience in designing systems that can survive tail events.

In an era of polycrisis, the most useful actuarial contribution may be the ability to combine high-quality analytics with structured judgment. Consider these four actions:

1. Clarify where models are reliable and where they are not. Some risks can be modeled with high confidence, some with moderate confidence, and some must be understood through scenario analysis and expert judgment. Clarity about those boundaries is itself a governance strength. It is also a safeguard against overconfidence, which is a common failure point in complex systems.

2. Translate complexity into decision-relevant measures.

Boards and policymakers do not always need larger or more complex models. Instead, they value a clear map of exposures, correlations, and vulnerabilities. Actuaries are trained to translate complex risk into decision metrics: ranges, tail outcomes, capital needs, and sensitivity to assumptions. In a world of catastrophic complexity, the ability to explain uncertainty is often as important as the capability to calculate it.

3. Make risk load explicit. When uncertainty rises, the cost of capital rises. That must be reflected in pricing, reserving margins, and capital planning. Ignoring this can create fragility.

4. Engage in public policy. When tail risks become salient, policy responses often follow. Actuaries have experience designing public-private mechanisms, explaining trade-offs, and quantifying costs and benefits. In a polycrisis environment, that skill set is likely to be in high demand, as affordability and insurability are not guaranteed. Insurance works best when risks are measurable, diversifiable, and priced with sufficient margin to support capital. When risks become too correlated, too ambiguous, or too politically constrained, insurance becomes less effective and more likely to require public mechanisms. Recognizing those boundary conditions early is preferable to discovering them during a crisis, when options are limited and political discourse is likely to be fraught.

Model Risk

Treat geopolitical scenarios as high-impact, high-uncertainty models. Document assumptions. Identify what is not captured: second-order inflation, operational disruption, legal constraints, and correlation shifts. Run sensitivities that are easy to explain: repair-cost inflation, prolonged business interruption, currency shocks, and reinsurance counterparty stress.

Back to the Future with Better Tools

The actuarial profession can integrate two strengths. The first is modern quantitative capability: data, models, and analytics that are far more powerful than those available to prior generations. The second is disciplined reasoning under uncertainty: constructing narratives, testing scenarios, and recognizing that the future can differ meaningfully from the past. In the era before big data, the second set of skills was more important. Perhaps it is time to revisit some of these qualitative skills to complement today's powerful analytics. A polycrisis environment demands both strengths: rigorous analytics where data is informative, and structured judgment where data is silent or misleading. If actuaries apply those skills to geopolitical risk, while leveraging the scenario- and systems-thinking toolkit developed for climate risk, the profession can help insurers and policymakers navigate an era of catastrophic complexity. ▲

RADE MUSULIN, MAAA, ACAS, recipient of the 2025 Jarvis Farley Service Award, is a former Academy casualty vice president, Board member, and active contributor to multiple committees and work groups. He currently serves on the Academy's International Committee and the Actuarial Standards Board's ASOP 39 Task Force.