18th Annual Survey of Emerging Risks Key Findings

JANUARY | 2025

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18th Annual Survey of Emerging Risks
Key Findings

AUTHORS   David Schraub, FSA, CERA, MAAA, AQ
David Schraub Actuarial Consultancy

Max J. Rudolph, FSA, CERA, CFA, MAAA
Rudolph Financial Consulting, LLC

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Executive Summary

The *18th Survey of Emerging Risks* compiles trends about risks that extend longer than the time horizon used for standard industry planning cycles. This analysis provides helpful ways to understand how actuaries and risk managers disconnect from day-to-day operations and take a long-term view of risk and to see how these views have evolved over time.

Risk manager concerns in the current survey focus on climate, disruptive technology, and wars, continuing previous years' trends. Artificial Intelligence (AI) risks were also surveyed, with concern mainly on cybersecurity and manipulation, and many departments within companies being involved in managing components of these AI risks. In terms of broad categories, it was noteworthy through the survey that geopolitical risks are still of a major concern to respondents in total, with technological risks trending up and economic risks receding. The survey indicates optimism for the economic outlook for 2025.

To contextualize this report, the reader should note that surveys were tied to their specific time and environment, with recency bias (a belief that recent events are more likely to reoccur) always present. The survey response period was between November 7 and 25, 2024, which fell just after the 2024 fall U.S. elections, sending Donald Trump to the presidency and the Republican party to lead U.S. Congress. The timing of the survey was such that the COVID-19 pandemic was clearly in the rear-view mirror, the Hamas-Israeli hostilities had extended into Lebanon, the Russia-Ukraine war continued, and as the COP29 climate conference in Azerbaijan was taking place. Inflation was continuing its downward trends, and the Federal Reserve had been cautiously lowering its target interest rate in 2024. Hurricanes Milton and Helene had battered the U.S. Atlantic coast in succession, highlighting the climate change impact on property insurance in the public discourse. The survey period was prior to the regime change in Syria and the California wildfires.

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Background and Methodology

Using the foresight of risk managers to identify relative changes to responses across consistent topics, the annual study is sponsored by the Casualty Actuarial Society (CAS) and the Society of Actuaries Research Institute (SOA). Questions are both quantitative and qualitative, maintaining response options to show how risk management perceptions are evolving. The survey results, especially the comments, provide risk managers a way to network with peers.

Respondents were asked to choose their top current risk, top five emerging risks, overall top emerging risk, and risk combinations from 23 risks allocated to five categories.[1] Results have been trended since the initial survey in 2008.[2] A shortened version of this survey (e.g., not asking combination questions) has been offered in May since 2023, showing slightly more volatile results than the yearly full survey. A user's guide was produced in 2022 that walks the reader through the data and shows how it can be used to incorporate foresight into risk analysis.[3]

The survey went on to ask questions about practices related to enterprise risk management (ERM), AI, staffing challenges, and other current topics. Open-ended qualitative questions were used to directly ask for current thoughts about risk management practices. The survey, completed in November 2024, included 201 participants. The online survey respondents were primarily based in North America (95%), with additional responses from Europe, Asia, Africa, and the Caribbean and Bermuda regions.

The reader should remember that the choices between one risk and another are relative and do not necessarily mean that one risk has dissipated or increased, but rather that the chosen risk(s) were considered less or more important than the other choices. Incomplete surveys for a given question, or the selection of "Other" were removed from the numerical results.

Survey questions focused on four ways of looking at risk, from which we measure the frequency a given risk was chosen:

- Top current risk (participants vote for one);
- Top five emerging risks (vote for five);
- Top emerging risk (vote for one); and
- Top emerging risk combinations (vote for three combinations of two risks).

The 23 risks were presented to the participants (list and definitions in Appendix A), and participants could add an alternative risk, except for the combination questions. These risks are grouped into five categories: economic, environmental, geopolitical, societal, and technological.

This report presents the major quantitative findings from the survey. The full report covering the *18th Survey of Emerging Risks*, with complete updates and analysis of open-ended questions, will be released later in 2025.

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[1] A glossary of risks and definitions are provided to respondents and are replicated in Appendix A.
[2] Reports on past surveys can be found at https://www.soa.org/resources/research-reports/2024/17th-survey-emerging-risks/. To learn more about the past surveys, including a discussion of last year's report, please visit https://www.pathlms.com/cas/courses/80928.
[3] Rudolph, Max J., Emerging Risks Survey: Guide for Use. August 2022. https://www.soa.org/resources/research-reports/2022/15th-survey-emerging-risks/

Key Finding 1: Risk Manager Concerns Focus on Climate, Disruptive Technology, and Wars

The context of 2024 is of continued trends of severe storms and hail, heat waves and drought, a weakened but continuing respiratory infection pandemic, and geopolitical concerns within and between countries. AI is trumpeted to revolutionize business unless the technology facilitates a doomsday scenario.

Across all four questions, the *Climate change* risk used to dominate, and is now joined at the top by *Wars (including civil wars)* and *Disruptive Technology*. The risk of *Failed and failing states* has been in steady decline from its high in the early 2010s until 2023, but steeply increased since. The *Asset price collapse* risk, as well as the *Financial volatility* risk also reached a new low. *Loss of freshwater services*, *Tropical storms*, *Earthquakes*, *Severe weather*, *Terrorism*, *Weapons of mass destruction* and *Chronic diseases/medical delivery* risks are not favored by respondents. The geopolitical category, led by *Wars (including civil wars)*, reached a high level and the Societal category hit a low level as the *Pandemic/infectious diseases* risk continued to mean revert following a surge due to COVID-19.

Keep in mind that current risks tend to be impacted by recency bias for new highs and are potential contrarian indicators for new lows. Also, mid-year surveys tend to show more volatile results.

Table 1
HIGHEST RANKED WHEN CHOOSING TOP FIVE EMERGING RISKS, 2021–2024

	2024		2024m	2023	2023m	2022	2021
1	War (including civil wars)	Climate change	Disruptive technology	Climate change	Disruptive technology	Climate change	Climate change
2			Cyber/networks	Wars (including civil wars)	Climate change	Wars (including civil wars)	Cyber/networks
3	Disruptive technology		Wars (including civil wars)	Disruptive technology	Cyber/networks	Cyber/networks	Pandemics/infectious diseases
4	Cyber/networks		Climate change	Demographic shift	Wars (including civil wars)	Financial volatility	Disruptive technology
5	Demographic shift		Financial volatility	Cyber/networks	Financial volatility	Demographic shift	Financial volatility

Focusing on the top five emerging risks, this table shows the relative evolution of the leading results over time. *Climate change* reclaims the first spot, shared with *Wars (including civil wars)*, and *Disruptive technology* completing the leading trio. *Cyber/network* and *Demographic shift* complete the table. Compared to 2023, the only evolutions are the tie in first place and the flip of #4 and #5. Interesting to see that *Financial volatility* is considered less critical by respondents. *Pandemics/infectious diseases* is likely to disappear from this table as the COVID-19 pandemic becomes more distant.

Wars, *Climate* and *Disruptive Technology Risks* are three elevated risks with risks interesting evolutions. The following graphs represent the results over time across the four questions, current risk, top five emerging risks, top emerging risk, and top combination.[4]

Climate change risk has several observations to note:

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[4] The ranking shows which risks were chosen most within these combinations.

- The green arrows capture the general trend, based on the emerging risk response (light blue bars), and show a slight dip from previous highs, but remains as a top emerging risk. Note that the 2024 midyear and 2023 midyear numbers are slightly out of trend as these are based on the flash survey results, a lighter version of the survey conducted in May and not the full survey conducted in November.
- The current risk in dark blue shows a similar trend, slight dip from recent history but remains high. Note that *Climate change* is the third current risk after *Wars (including civil wars)* and *Financial volatility*.
- *Climate change* is chosen frequently when the respondents are picking their top five risks, red bars, but also a slight dip compared with historical trends. Note that *Climate change* is the most popular choice, tied with *Wars (including civil wars)*.
- Remaining elevated after a slight decrease is the trend shown by the yellow bars, representing the relative number of times *Climate change* has been selected in risk combinations. This risk is one of the most selected within these combinations, just after *Wars* and *Financial volatility*. Note that the mid-year flash surveys do not ask for combination of risk, thus present no yellow bars.

Figure 1
CLIMATE CHANGE, 2017–2024
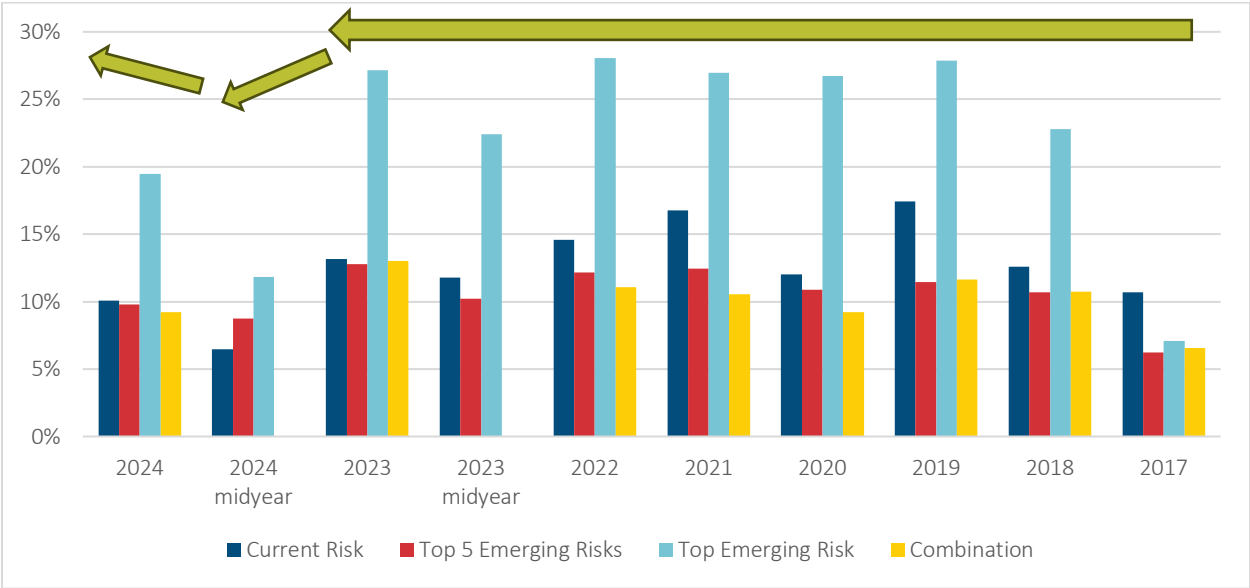
AI (Artificial Intelligence) and Generative AI (GenAI) are helping to bring the *Disruptive technology* risk to the forefront. While this risk is down from the peak seen in the midyear survey, it remains one of the top concerns, likely due to the rapid development and adoption of AI and GenAI.

Figure 2
DISRUPTIVE TECHNOLOGY, 2017–2024
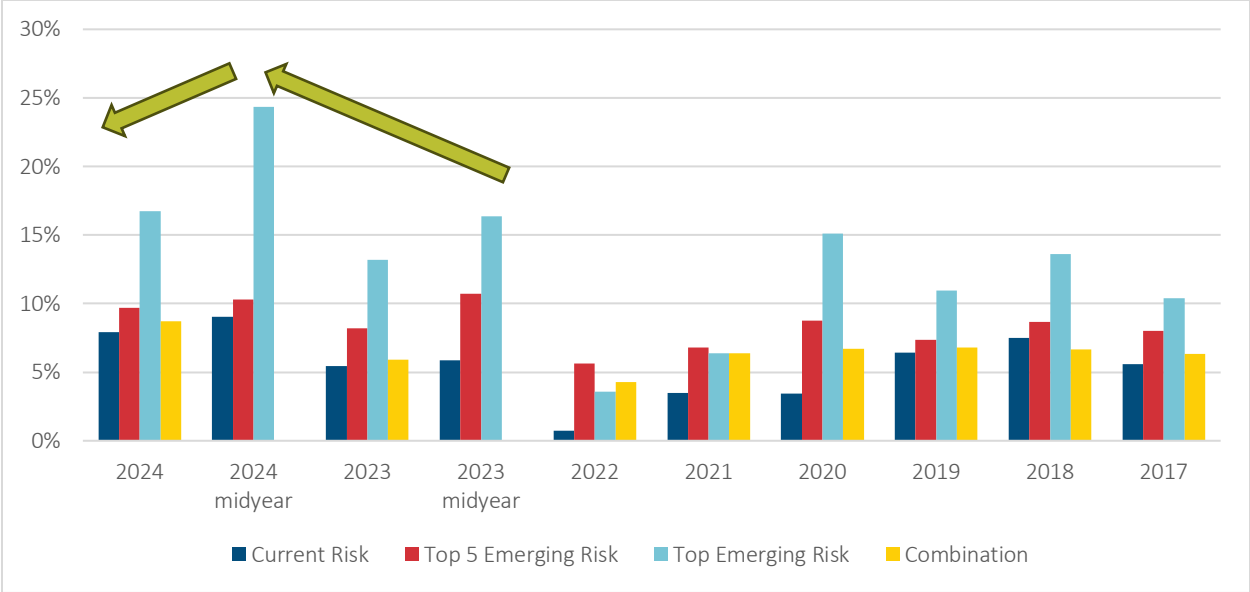
Wars (including civil wars) dropped from its recent high as current risk, potentially due to the upcoming change in U.S. administration changing the U.S. approach in the Middle East and/or Ukraine conflicts. Regardless, risk managers definitely consider this risk to be higher, relative to other risks, than a few years ago as an emerging risk.

Figure 3
WARS (INCLUDING CIVIL WARS), 2017–2024
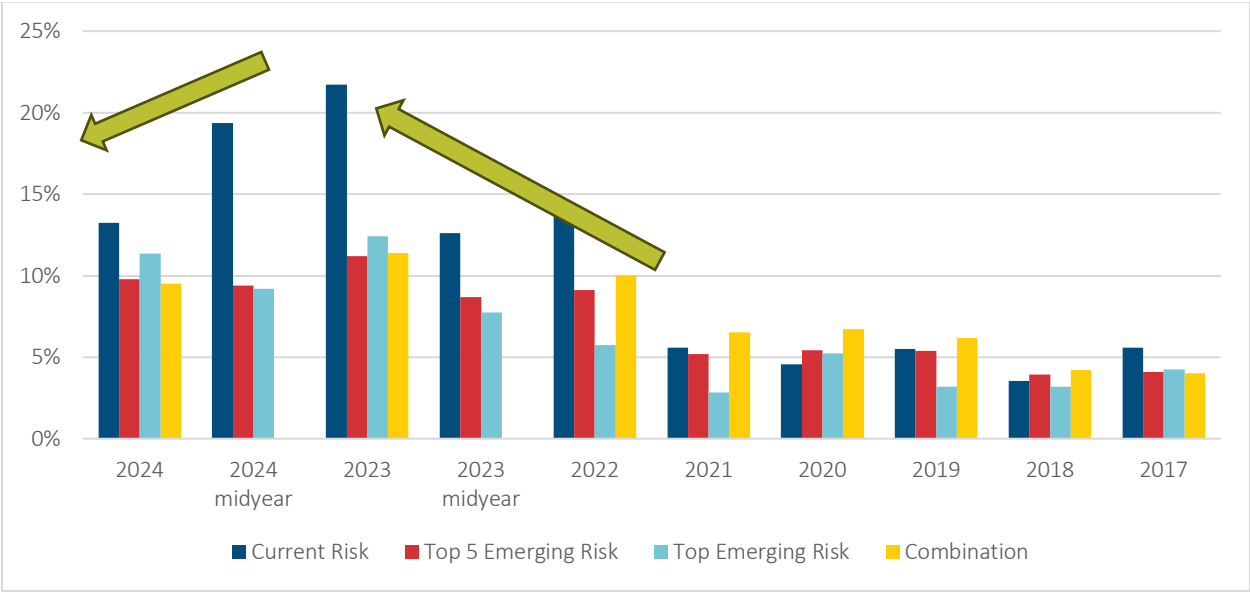
Another risk showing an interesting evolution is *Failed and failing States*. While the risk is not at the same level as the three previous risks (please note the different Y-axis scale), it is coming back into risk managers' minds, but not to the extent it has been at its peak in 2011 (not shown, 12%, 10%, 13%, 9% for Current risk, Top five risks, Emerging risk and Combination, respectively). It should be noted that some responses of "Other" in which the text field

indicated political uncertainty in the U.S. (political instability, the results of the U.S. election, immigration, etc.) were reclassified as *Failed and failing states*.

Figure 4
FAILED AND FAILING STATES
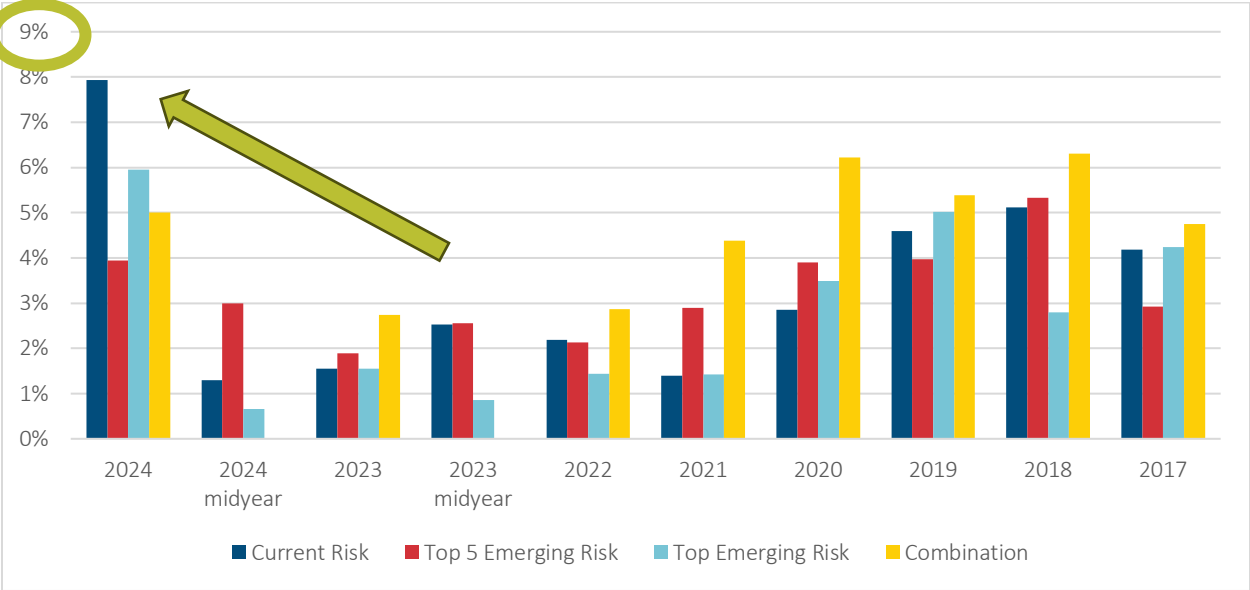
Key Finding 2: Cybersecurity and Manipulation concerns are major aspects of AI Risks

A series of questions regarding the risks posed by AI and GenAI was introduced this year.

Survey participants were asked to rank 1-10 the various AI risks. From this prioritization, a few metrics[5] were created to test if some risks are more often chosen than others. Respondents are clearly selecting the pair *Cybersecurity* and *AI manipulation* as the top two AI risks, and the quartet *Synthetic data degradation*, *Hallucination*, *Copyright issues*, and *Risk of not using AI* are deemphasized. The exact order within these groups depends on the metric used. The table below shows how often a risk is selected in the top three. An "Other" option was provided but rarely used, so risk managers view this list as currently capturing the most thought of risks when considering AI.

Table 2
TOP AI RISKS

Rank	Risk	Selected 1-3
1	AI rank - Increased Cybersecurity risk	94
2	AI rank- Manipulation leveraging AI capabilities, including Deepfake	90
3	AI rank- Bias and discrimination	61
4	AI rank- Overreliance on AI responses	51
5	AI rank- Lack of transparency	44
6	AI rank- Impact on workforce with AI replacing positions	36
7	AI rank- Risk of not using AI	26
8	AI rank- Synthetic data (Using AI to train AI) degrading the quality of the response	25
9	AI rank- Hallucinations	24
10	AI rank- Copyright infringement	22

Survey participants were asked which department(s) is(are) involved in managing AI risk. IT is involved for almost 80% of the respondents, consistent with cyber security impact being a major component of the AI risk. Some "Other" responses indicate that an ad-hoc department has been created.

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[5] How often a risk is selected as top one, how often a risk is selected within the top five, or a point system based on the 1-11 ranking

Figure 5
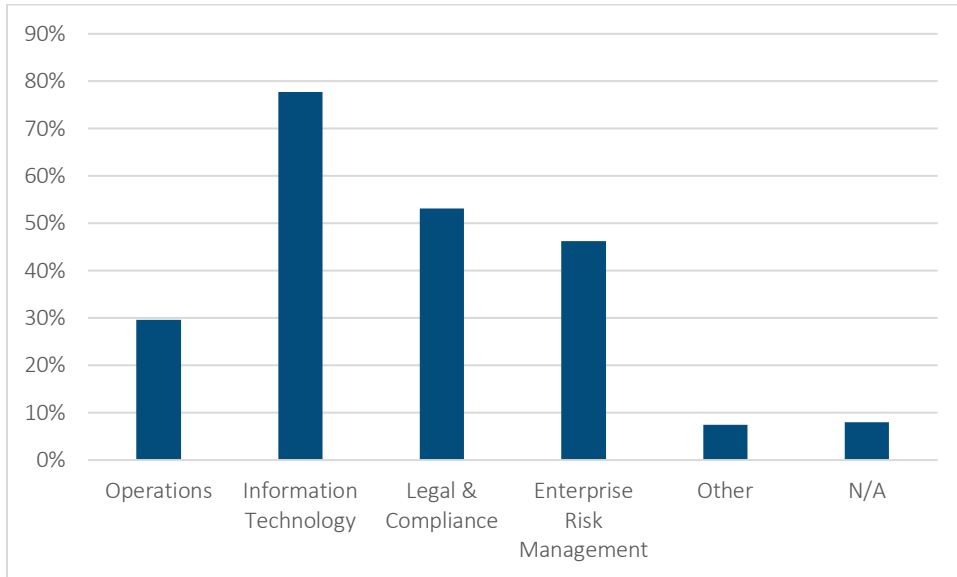WHICH DEPARTMENT(S) IS(ARE) RESPONSIBLE FOR AI RISK MANAGEMENT (CHECK ALL THAT APPLY)

Figure 6 shows respondents indicating a single department responsibility only 27% of the time, which can be due to the multifaceted aspect of this risk. For example, legal and compliance may be responsible for the AI risk as the department performing the reporting to the regulators on the topic, and IT may be involved in the cybersecurity aspect of that same risk.

Figure 6
COUNT OF DEPARTMENTS IN FIGURE 5 INVOLVED IN COMPANY AI RISK MANAGEMENT
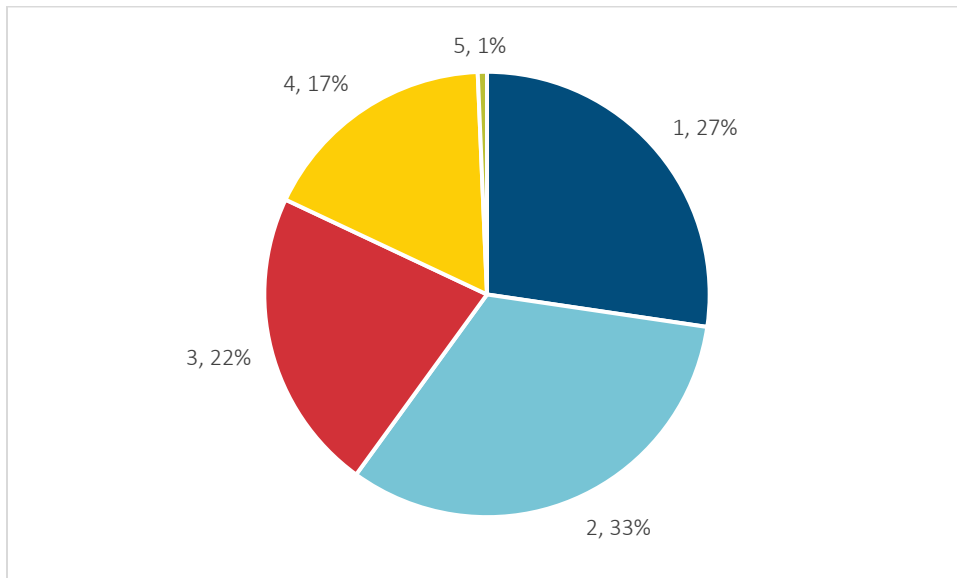
Key Finding 3: Geopolitical Risks Still Lead in Total, Technological Risks Trending Up, and Economic Risks Receding

For the top five emerging risks in this year's survey, the geopolitical category rose at the expense of the economic category. The societal and technological categories, increasing from fall 2023 to spring 2024, are reversing course with an increase from 2024m to 2024. This may represent that risk managers consider these risks less prominent (e.g., AI risks are being addressed now) or as seasonal (e.g., hurricanes taking place in the fall). Similarly, the environmental category, declining from fall 2023 to spring 2024, is now reversing course. Geopolitical remains the top ranked category, driven by *Wars (including civil wars)* and *Failed and failing states*.

Figure 7
EMERGING RISKS BY CATEGORY (UP TO FIVE RISKS CHOSEN PER SURVEY)
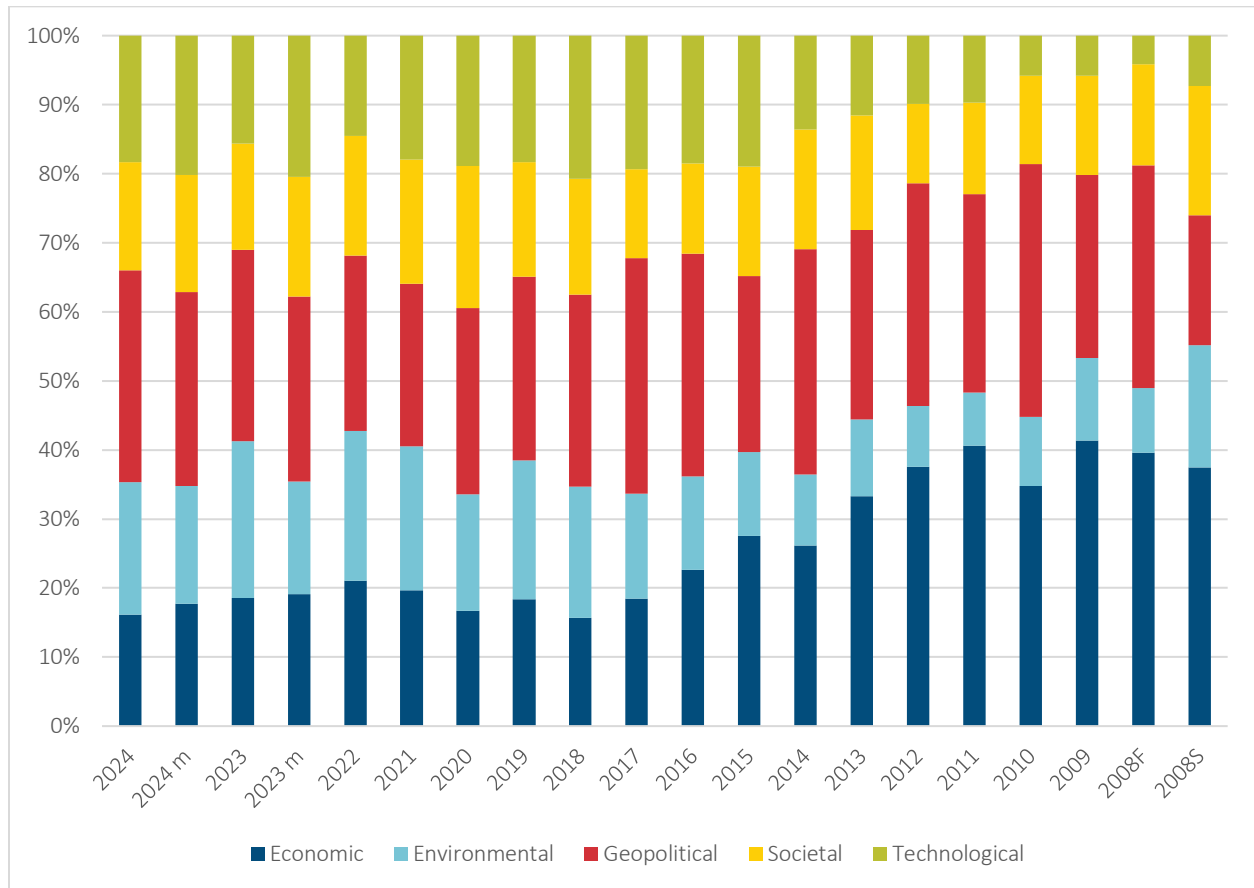
The multiyear trend on economic risks is resolutely downwards. The recent multi-year trend shows an upward trend for the geopolitical risk. The more distant multiyear trend shows an increase in environmental risks, which has now stabilized at a level above average. Societal and technological categories are trending around their recent levels.

Key Finding 4: Global Economic Outlook – Improving 2025 Expectations

The U.S. Federal Reserve led a global central bank initiative to raise short-term interest rates by tightening monetary policy as the world exited the pandemic era. The U.S. Federal Reserve is lowering interest rates. In response, survey participants may feel the U.S. is no longer in a recession. However, global economic expectations are higher, with more respondents having positive views compared to the previous survey. Similar results are seen elsewhere in the survey, with fewer concerns about risks such as *Financial volatility* and *Asset price shock*.

Figure 8
GLOBAL ECONOMIC EXPECTATIONS FOR THE FOLLOWING YEAR
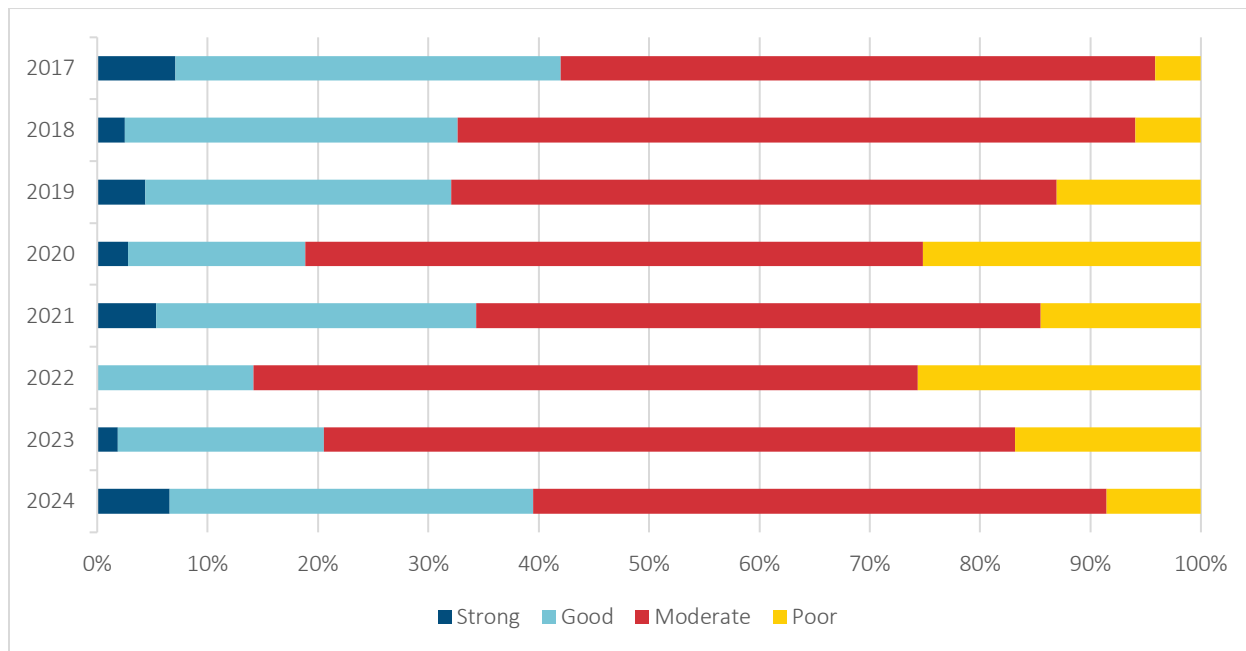
This year's survey shows a very strong optimism (7% Strong, 33% Good, and only 9% Poor), almost to the level of the heights of 2017 (7% Strong, 35% Good, and only 4% Poor) and far from the lows of 2011 (1% Strong, 5% Good, and a significant 51% Poor; not shown here). Overall, the results of this question have demonstrated volatility over the years.

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Appendix A: Glossary of 23 Risks across Five Categories, Fall 2024

ECONOMIC RISKS

- Energy price shock—Price instability and extremes of energy prices.
- Currency shock—Material disruptions to currency equilibrium, including central bank devaluations (currency wars), de-dollarization, and digital currencies.
- Emergent nation destabilization—Fast growing country's economic growth slows, potentially as a result of protectionism, demographics, internal politics, and/or economic difficulties.
- Asset price shock—Price instability and extremes of assets such as housing and equities.
- Financial volatility—Price instability and extremes of sectors, including commodities, equities, or interest rates.

ENVIRONMENTAL RISKS

- Climate change—Change in climate patterns generates both extreme events and changes in trend, impacting infrastructure, agricultural yields, soil degradation, ocean currents, ecosystem biodiversity (e.g., insects, shellfish), and human lives. Drivers of physical and transitional risks include, but are not limited to, space weather, pollution, and release of greenhouse gases.
- Loss of freshwater services—Water shortages impact agriculture, businesses, and human lives. Drivers include, but are not limited to, climate change and human influence (e.g., pollution, aquifer depletion).
- Natural catastrophe: tropical storms—Hurricanes, typhoons, and cyclones lead to disruption, catastrophic economic losses, and/or high human loss of life.
- Natural catastrophe: earthquakes—Strong seismic/volcanic activity leads to disruption, catastrophic economic losses, and/or high human loss of life.
- Natural catastrophe: severe weather—Meteorological phenomena lead to disruption, catastrophic economic losses, and/or high human loss of life. Includes inland flooding, tornados, thunderstorms, heatwaves, drought, wildfires, high winds, snowstorms, and dust storms.

GEOPOLITICAL RISKS

- Terrorism—Attacks lead to disruption, catastrophic economic losses, and/or high human loss of life.
- Weapons of mass destruction—Nuclear, biological, radiological, or chemical technologies lead to disruption, catastrophic economic losses, and/or high human loss of life.
- Wars (including civil wars)—Wars erupt between or within countries, leading to disruption, catastrophic economic losses, and/or high human loss of life.
- Failed and failing states—The trend of a widening gap between order and disorder or widening social rifts.
- Transnational crime and corruption—Corruption is endemic. Non-government entities successfully penetrate the global economy.
- Globalization shift—Preference changes to imports and immigration. Changes include populism, democracy, socialism, communism, religiosity, and political uncertainty. Changes in use of technological platforms allow misinformation and disinformation to spread. Countries retrench and become more nationalistic and protectionist or open up their economies to outsiders. Inequality, privacy, and food insecurity challenge the concepts of fairness and egalitarianism.
- Regional instability—Unstable regions cause widespread political and other crises.

SOCIETAL RISKS

- Pandemics/infectious diseases—A pandemic emerges with high mortality/incidence of diseases such as HIV/AIDS, Ebola, coronavirus, or influenza. Antimicrobial resistance becomes common.
- Chronic diseases/medical delivery—Diseases such as obesity, diabetes, cardiovascular, and substance abuse become widespread, or treatments appear. Material changes to medical delivery or financing.
- Demographic shift—Evolving populations size and mix (e.g., age, size, race, fertility rate, mortality rate, migration, skills, workplace environment) drive changes in economic growth and levels of government intervention.
- Liability regimes/regulatory framework—Costs increase faster than GDP, with increases in the spread and size of litigiousness (e.g., social inflation, climate litigation, systemic liabilities due to chemicals, microplastics or hazardous waste) and speed of regulatory revisions. Material changes in tax policy.

TECHNOLOGICAL RISKS

- Cyber/networks—A major disruption in the availability, reliability and resilience of critical information infrastructure caused by cyber risks, terrorist attacks, or technical failure. Results are felt in supply chains, major infrastructure: power distribution, water supply, transportation, telecommunication, emergency services, and/or finance.
- Disruptive technology—Unintended consequences of technology lead to abrupt change (e.g., artificial intelligence, drones, self-driving cars, additive manufacturing, internet of things, nanoparticles). Models become more complex but less descriptive over long time horizons.

About the Casualty Actuarial Society

The Casualty Actuarial Society (CAS) is a leading international organization for credentialing and professional education. Founded in 1914, the CAS is the world's only actuarial organization focused exclusively on property and casualty risks and serves over 9,100 members worldwide. CAS members are experts in property and casualty insurance, reinsurance, finance, risk management and enterprise risk management. Professionals educated by the CAS empower business and government to make well-informed strategic, financial and operational decisions.

The purposes of the Casualty Actuarial Society are:

- To advance the body of knowledge of actuarial science applied to general insurance, including property, casualty and similar risk exposures

- To expand the application of actuarial science to enterprise risks and systemic risks

- To establish and maintain standards of qualification for membership

- To promote and maintain high standards of conduct and competence

- To increase the awareness of actuarial science

- To contribute to the well-being of society as a whole

In principle and in practice, the CAS values and seeks diverse participation within the property/casualty actuarial profession. In support of those values, the CAS encourages an inclusive community where differences are celebrated, and all have the opportunity to participate to their fullest potential in its success. The CAS commits time and resources to accomplish this objective.

Actuaries are required to adhere to the high standards of conduct, practice and qualifications of the actuarial profession, thereby supporting the actuarial profession in fulfilling its responsibility to the public.

The Casualty Actuarial Society
4350 N. Fairfax Drive, Suite 250
Arlington, VA 22203
https://www.casact.org/

About the Society of Actuaries Research Institute

Serving as the research arm of the Society of Actuaries (SOA), the SOA Research Institute provides objective, data-driven research, bringing together tried and true practices and future-focused approaches to address societal challenges and business needs. The institute provides trusted knowledge, extensive experience and new technologies to help effectively identify, predict and manage risks.

Representing the thousands of actuaries who help conduct critical research, the SOA Research Institute provides clarity and solutions on risks and societal challenges. The institute connects actuaries, academics, employers, the insurance industry, regulators, research partners, foundations and research institutions, sponsors and non-governmental organizations, building an effective network which provides support, knowledge and expertise regarding the management of risk to benefit the industry and the public.

Managed by experienced actuaries and research experts from a broad range of industries, the SOA Research Institute creates, funds, develops and distributes research to elevate actuaries as leaders in measuring and managing risk. These efforts include studies, essay collections, webcasts, research papers, survey reports, and original research on topics impacting society.

Harnessing its peer-reviewed research, leading-edge technologies, new data tools and innovative practices, the institute seeks to understand the underlying causes of risk and the possible outcomes. It develops objective research spanning a variety of topics with its strategic research programs: aging and retirement; actuarial innovation and technology; mortality and longevity; diversity, equity and inclusion; healthcare cost trends; and catastrophe and climate risk. The Institute has a large volume of topical research available, including an expanding collection of international and market-specific research, experience studies, models and timely research.

Society of Actuaries Research Institute
8770 Bryn Mawr Ave, Suite 1000
Chicago, IL 60631
www.SOA.org