

SIR 2025 Annual Conference

CHICAGO, IL
Fairmont Hotel in Chicago

May 4-6, 2025



SIR | SOCIETY OF
INSURANCE
RESEARCH

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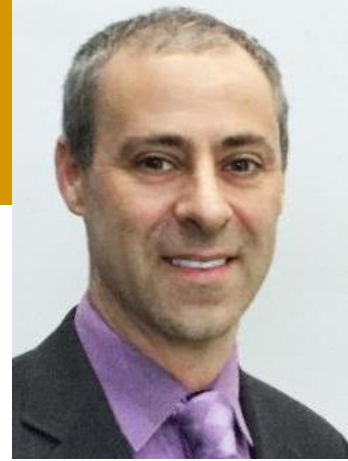
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Emerging Risk Survey

David Schraub, David Schraub Actuarial Consultancy

Bio – David Schraub



- Focus on
 - Industry research
 - Model Risk Management and Bias Testing Algorithm
 - Startup Founder – Improving the appeal process for health claim through AI-enabled jury decision
- Background and Contact
 - Consultant with 25 years of actuarial experience, focused on bias testing, life insurance pricing and reserving, and Enterprise Risk Management. Frequent speaker in industry meetings
 - Fellow of the Society of Actuaries, Chartered Enterprise Risk Analyst, Member of the Academy of Actuaries, and Qualified Member of the Institut des Actuaire (France)
 - [linkedin.com/in/davidschraub](https://www.linkedin.com/in/davidschraub), and david@davidschraubactuary.com



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Survey Context

Trend of Surveys

- Annually since 2008 – 18th survey in 2024
- Sponsored by actuarial organizations
 - Casualty Actuarial Society
 - Society of Actuaries
 - Canadian Institute of Actuaries (historically)
- Mix of quantitative trended results and qualitative assessments



Why this is interesting

- Long term view
- ORSA
- Risk management in day-to-day operation
- Help suggest scenario planning
- Adjusting P&C coverage



Risk Taxonomy

| Economic | Environmental | Geopolitical | Societal | Tech |
|---------------------------------|--|------------------------------------|--|-----------------------|
| Energy price shock | Climate change | Terrorism | Pandemics / infectious diseases | Cyber/ networks |
| Currency shock | Loss of freshwater services | Weapons of mass destruction | Chronic diseases / medical delivery | Disruptive technology |
| Emergent nation destabilization | Natural catastrophe: tropical storms | Wars (including civil wars) | Demographic shift | |
| Asset price shock | Natural catastrophe: earthquakes | Failed and failing states | Liability regimes & regulatory framework | |
| Financial volatility | Natural catastrophe: severe weather (except tropical storms) | Transnational crime and corruption | | |
| | | Globalization shift | | |
| | | Regional instability | | |



Definition

- Four ways to look at risks
 - 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).
- Definition of Emerging Risk
 - Time horizon: Beyond tactical plans (at least 5-10 years)
 - New: Never happened before (e.g., disruptive technology)
 - Evolving: Risk is changing (e.g., climate change)



Additional Context

- Elicitation period Nov 7-25, 2024 (Recency bias)
 - AFTER the 2024 Fall U.S. elections
 - COVID-19 pandemic rear-view mirror
 - Wars – Hamas-Israeli hostilities had extended into Lebanon, Russia-Ukraine war continued, but prior to Syria change of regime
 - COP29 in Azerbaijan, Hurricanes Milton and Helene, but before the California wildfires
 - Inflation downward trends, Fed cautiously lowering interest rate
- 95% respondents based in North America
- Mid Year Flash Survey vs. Full Survey



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Survey Findings

Key Findings

1. Risk Manager Concerns Focus on Climate, Disruptive Technology, and Wars
2. Cybersecurity and Manipulation concerns are major aspects of AI Risks
3. Geopolitical Risks Still Lead in Total, Technological Risks Trending Up, and Economic Risks Receding
4. Global Economic Outlook – Improving 2025 Expectations



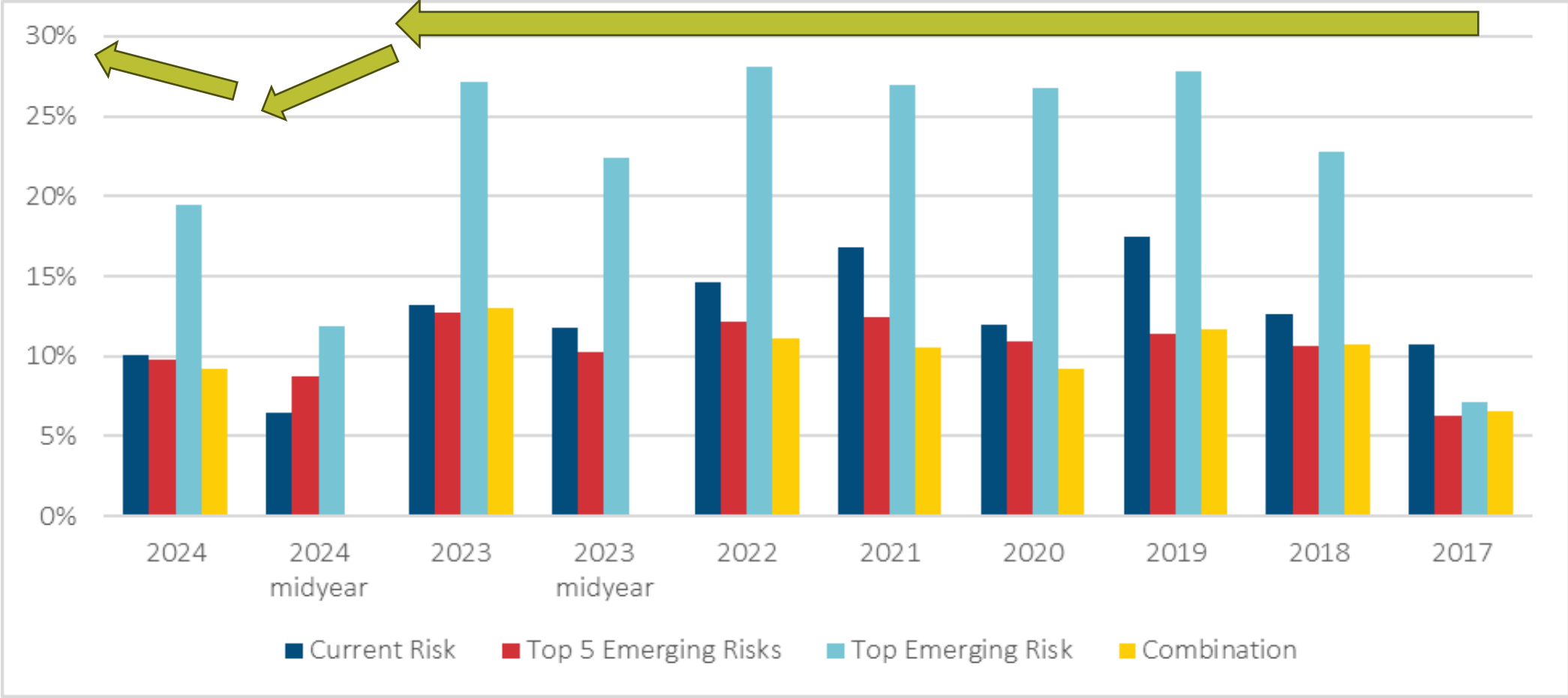
1. Focus on Climate, Disruptive Technology, and Wars

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

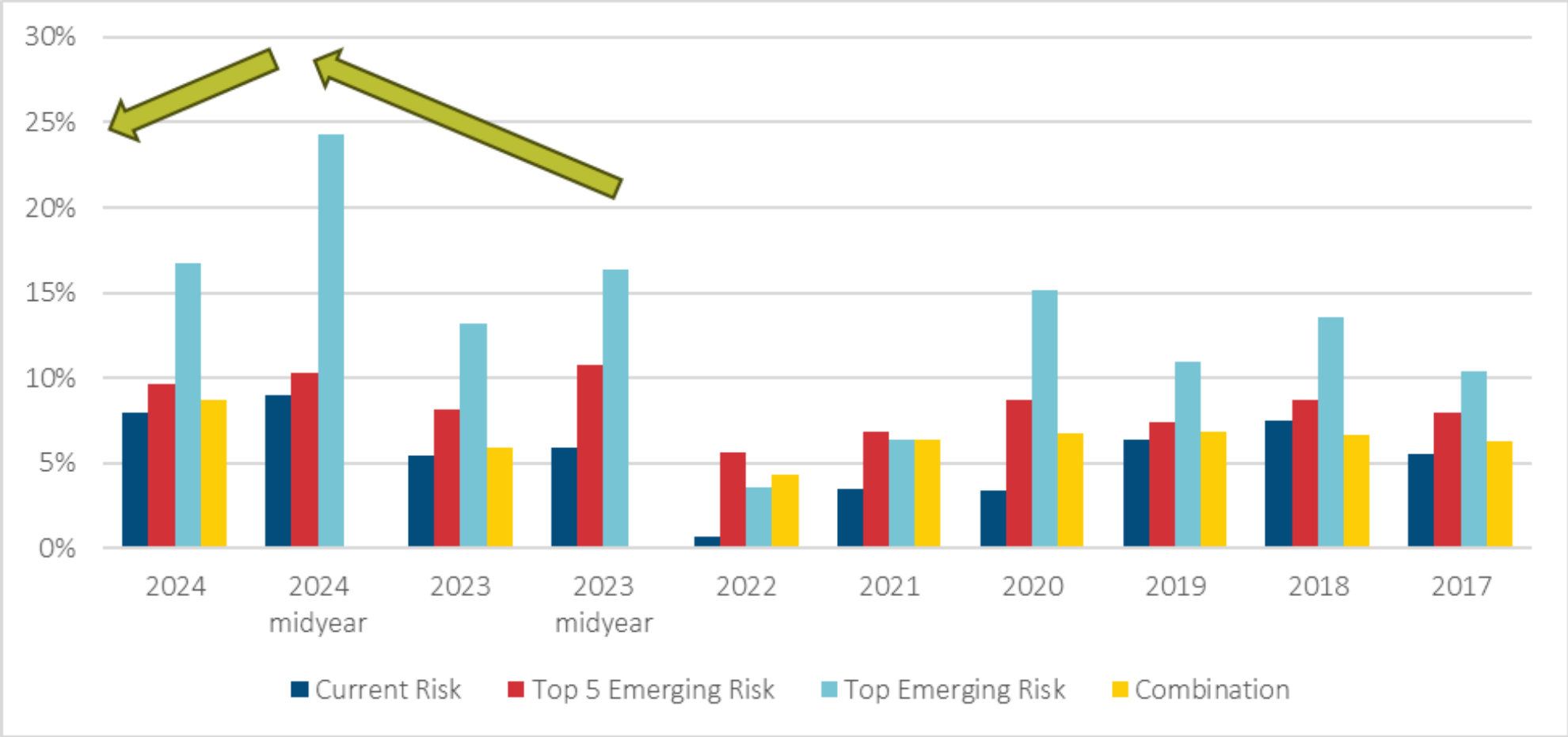
| | 2024 | | 2024m | 2023 | 2023m | 2022 | 2021 |
|---|----------------------------|----------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------|
| 1 | War (including civil wars) | Climate change | 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 |



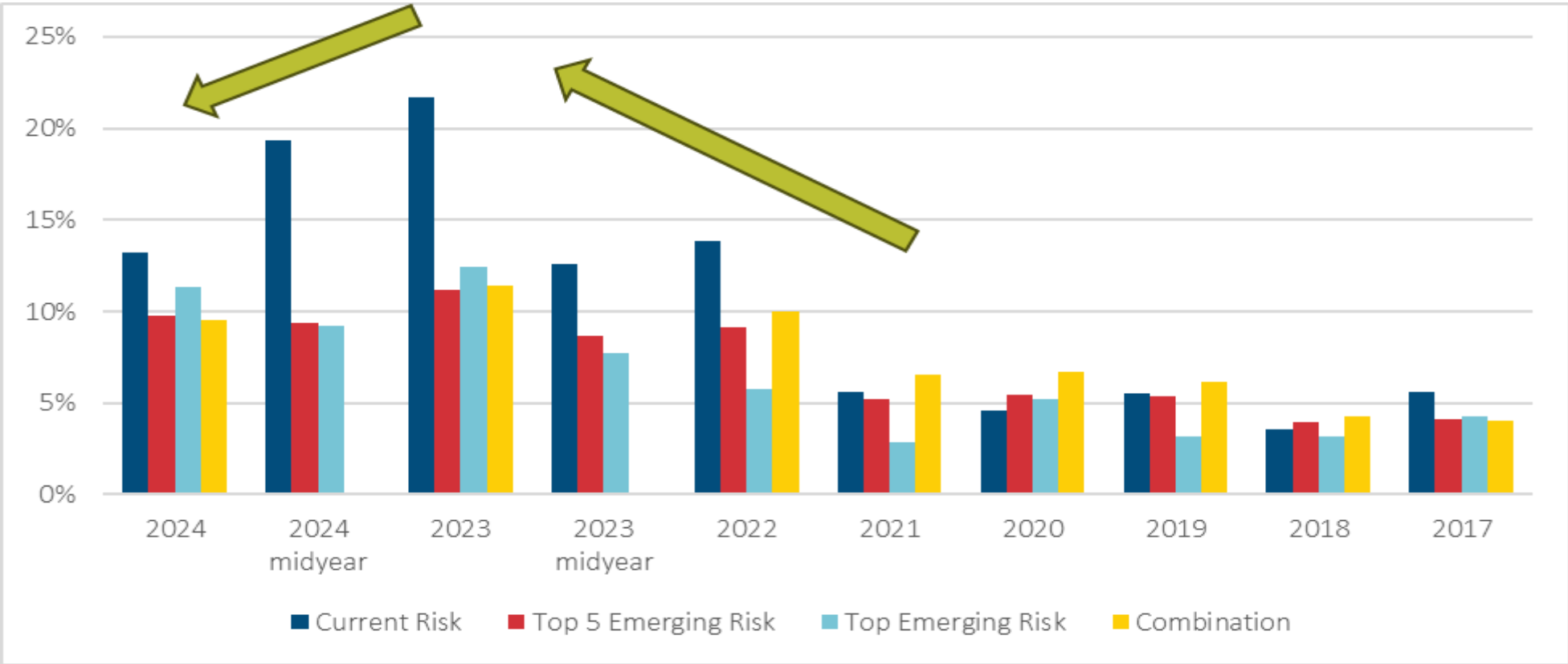
1. Climate Change



1. Disruptive technology



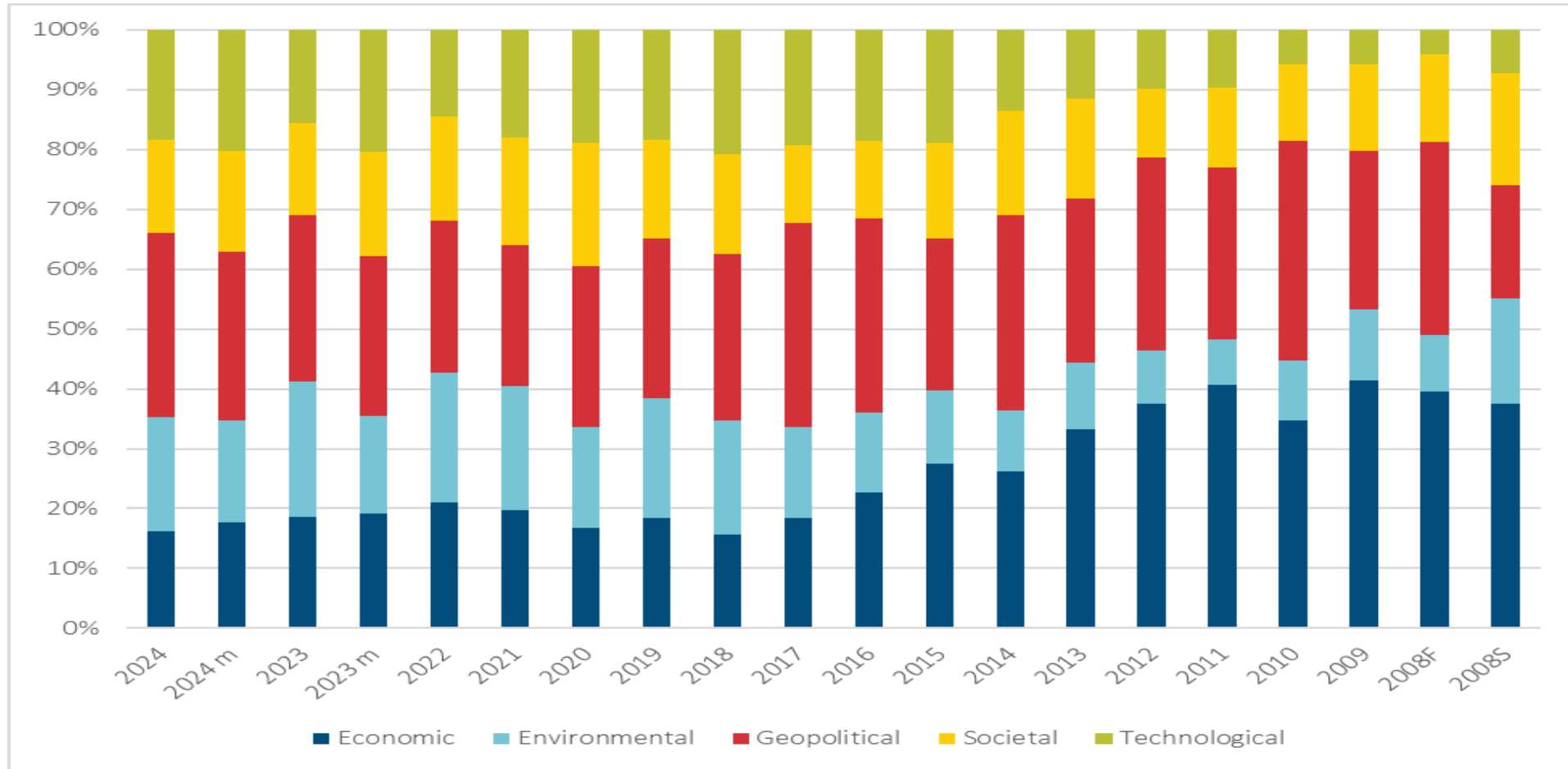
1. Wars (including civil wars)



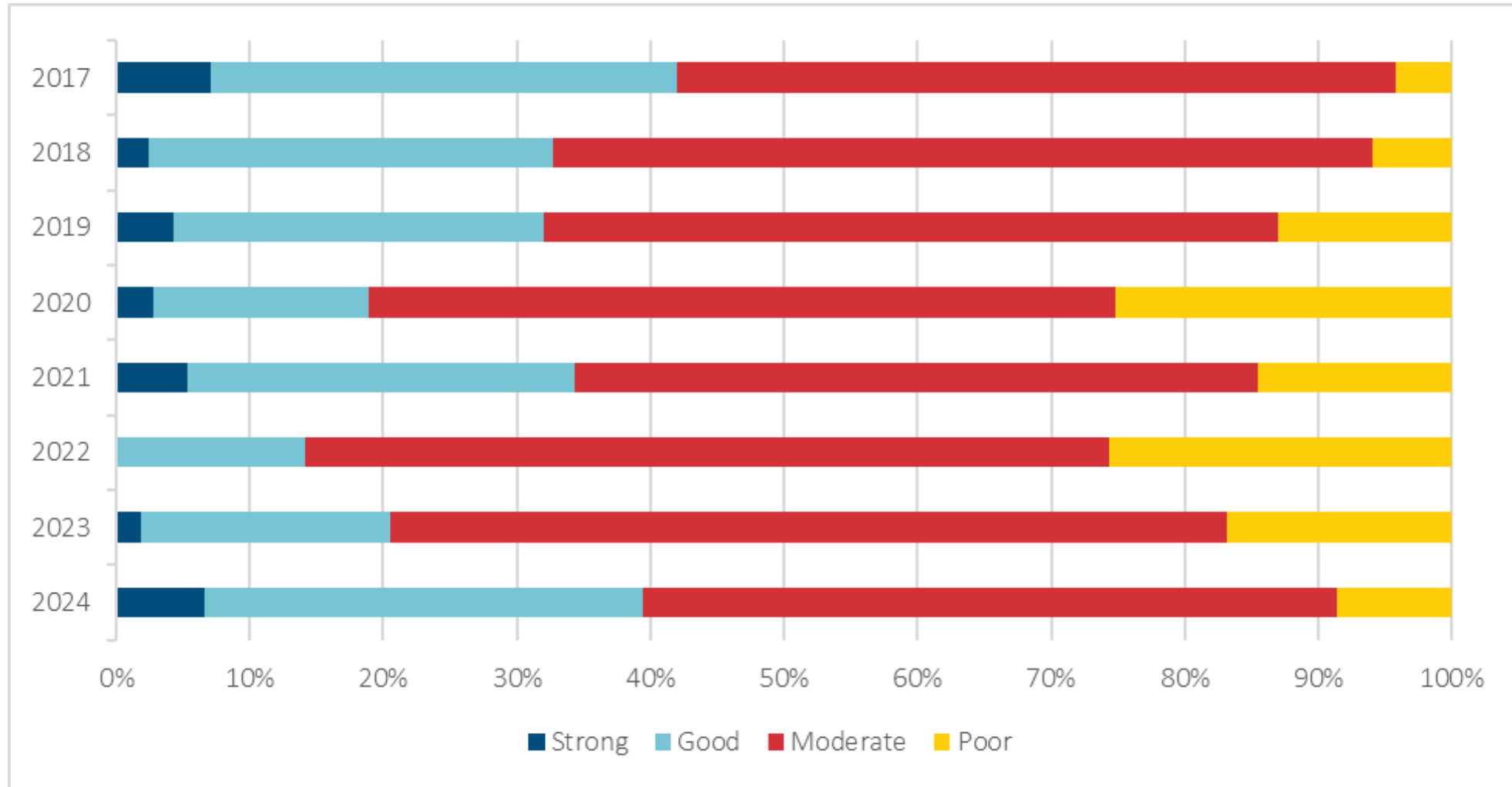
| # | Risk | Pts |
|----|--|-----|
| 1 | AI rank - Increased Cybersecurity risk | 94 |
| 2 | AI rank- Manipulation leveraging AI capabilities, including Deepfake | 90 |
| 3 | AI rank- Bias and discrimination | 61 |
| 4 | AI rank- Overreliance on AI responses | 51 |
| 5 | AI rank- Lack of transparency | 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 |



3. Category View



4. Economic Expectation



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Bonus Topic
**SOA-CAS Single Deterministic
Scenario**

Bonus topic – SOA-CAS Single Deterministic Scenario

- Dual goal
 - How companies analyze single scenario impact
 - What would the impact be
- Aimed to test resiliency through a deterministic, moderately adverse event
- Engaged a diverse set of insurers: large, small, multi-line, monoline, U.S. and international
- Create scenario, ask companies to play it, ask process and results



Bonus topic – Scenario Description

- A major cyberattack targets global cloud service providers
- SWIFT Banking system compromised; payment processing delays
- Massive disruptions to daily life: ATMs, gas, flights, trade affected
- Healthcare services severely limited; military aids local law enforcement
- IT systems recover over 2-3 months with patchwork solutions
- Insurance sector operations halt for weeks; partial recovery in weeks 3–5
- Regulators and Authorities supportive and understanding



Bonus topic – Scenario Impact

- Categorized as an operational risk with earnings impact, not solvency impact
- Material impact due to halted operations, disrupted claims processing
- Sales force, especially commission-based agents, highly affected
- Policyholder behavior minimally reactive due to swift system recovery
- Healthcare disruption secondary, but major for health insurers
- Liquidity preserved via central bank support; reputational damage minimal



Bonus topic – Scenario Analysis Process

- Most companies used non-quantitative, table-top scenario exercises
- Input came from cross-departmental teams, often in workshops
- Senior leadership, ERM teams guided the discussions and insights
- Scenarios are integrated into annual ERM cycles and ORSA requirements
- Analyses emphasized realistic impact estimation, not hard modeling
- Some firms tailor scenarios to their business blocks or product lines



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Thank You