



# **Emerging Risks Initiative**

Major Trends and Emerging Risk Radar

2025



## **Executive Summary**

We are pleased to present the 2025 update of the Emerging Risk Radar.

Emerging risks are those that may newly develop or that already exist but continue to evolve. They are characterized by a high degree of uncertainty regarding their likelihood and potential impact. These risks may have significant implications for underwriting, investments, and operations within the insurance sector. The extent of their impact may vary across companies, depending on factors such as product offerings, market presence, and the composition of investment portfolios.

The Radar provides a consolidated view of emerging risks and related major trends that could influence the insurance industry over the next five years and beyond. Risks are categorized as small, medium, or high based on their perceived materiality. Both the risk inventory and the assessments of impact and timing are informed by expert judgment from the Emerging Risk Initiative (ERI) working group of the CRO Forum, supported by a member-wide survey.

The major trends have been reassessed and updated. Compared to 2024, Sustainability has been removed as a stand-alone trend, with its content integrated into Environment and Climate.

All risks in the risk inventory have been reassessed and updated accordingly. The following changes were made to the new radar compared to 2024:

- Climate Engineering and Storage Techniques and Metabolic Syndrome have been removed as stand-alone risks. Their content is now integrated under Climate Change - Transition Risk or captured within the major trend Ageing and Health.
- Deterioration of Public Healthcare Systems has been introduced as a new risk.
- For various risks, the assessed impact and/or time horizon has changed. Notably, the impact has increased for Economic Trade Conflicts & Sanctions and for Space Risks.

We trust this report will serve as a valuable resource and welcome your comments and feedback.



**Emerging Risk Radar** 

2025

## **Trends**



Ageing and Health



Economic Development



Environment and Climate



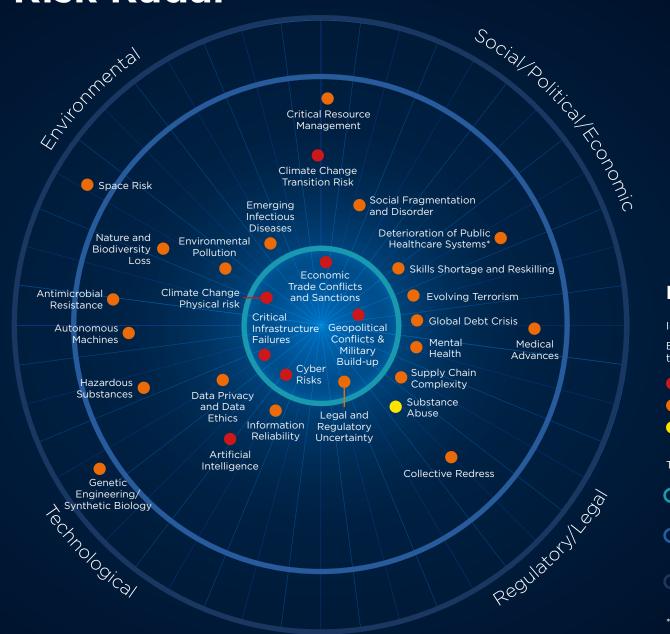
Shifting Geopolitical Landscape



Technological Development



Demographic and Social Change



## Key

Impact Assessment:

Bullet colour corresponds to potential impact of risk

- Risk category: High
- Risk category: Medium
- Risk category: Small

#### Time Horizon:

- Significant impacts already seen on the insurance sector
- First significant potential impacts on the insurance sector expected within 1-5 years
- First significant potential impacts on the insurance sector expected within 5-10 years



<sup>\*</sup> New risk in 2025

# **Major Trend Descriptions**



Medical advances in prevention, diagnostics and treatments continue. There are, however, a number of factors that may offset improvements in lifespan and have an impact on the related topic of time spent in good health. Lifestyle patterns such as sedentary habits, unhealthy diets, sleep disorders, and substance abuse increase risk factors such as metabolic syndrome and are contributing to chronic diseases. Ageing populations in developed countries are increasingly affected by neurodegenerative diseases. Physical health is also closely linked to mental health, which is deteriorating in many geographies. Environmental pollution including air pollution and substances such as endocrine disruptors and plastics pose short- and long-term health risks that are not yet fully understood. Climate change-related factors such as the increasing prevalence of heatwaves pose a threat especially to vulnerable populations, such as the elderly and people with pre-existing health conditions. Socio-economic conditions and access to good healthcare are further key elements that shape the future burden of disease, intertwined with the challenges from rising demand, escalating costs, and underinvestment in infrastructure faced by health care systems.



A series of major events – from the financial crisis and the COVID-19 pandemic to ongoing geopolitical conflicts and trade tensions – have led to profound challenges for economic stability. The aftereffects of these crises are still countributing to considerable uncertainty. A long period of low interest rates and massive quantitative easing measures have led to high levels of debt, accelerated inflation and the risk of asset bubbles. Following a sharp rise in 2022, higher interest rates are currently slowing down the global economy and increasing the risk of defaults and a possible recession. Central banks around the world face the complex challenge of controlling inflation, with the risk of sudden, unpredictable inflationary shocks that could be triggered, among others, by escalating geopolitical conflicts or new trade restrictions. Partly fuelled by growing economic inequality in many societies, there has been a political rise of populism and a backlash against multinational institutions, which has fostered nationalism and fragmented regulatory environments. At the same time, technological decoupling and trade fragmentation are transforming global supply chains and redefining the innovation landscape. Furthermore, it is foreseeable that the impacts of climate change will be another major factor, exacerbating negative consequences and uncertainty for global economic development.



Environmental issues stay firmly in the spotlight, dominated by climate change, resource scarcity, biodiversity loss and pollution of the biosphere. Scientific research moves on with new knowledge and insights on future impacts of climate change. There is growing concern about the consequences of the still increasing emissions of greenhouse gases driving climate change, with the more frequent occurrence of extreme weather events and sea-level rise. Over time this could give rise to tension between climate change-related risks and insurability. To mitigate climate change, new technologies in the green energy transition such as energy storage systems are taking centre stage in the global economy but there is still a long way to go. This creates challenges in pricing for (re)insurers. Pressure on the planet from a growing human population is causing resource scarcity, driven by unsustainable practices in mineral extraction, and food and energy production. Anthropogenic activities are also polluting the land, rivers and sea with non-biodegradable waste such as plastics, and the air with particulate and gaseous pollutants. All forms of pollution are becoming omnipresent, with harmful consequences for life on Earth, including a decline in biodiversity, with the potential to disrupt entire ecosystems. Globally, there is a trend of retreating from ESG commitments, which could slow down the transition to a low-carbon economy and impact CO2 reduction targets by 2050. Geopolitical factors, including the US stance, are contributing to this shift. In Europe, regulatory changes related to climate transition and sustainability are underway, but the outcomes are uncertain.



# **Major Trend Descriptions**



Shifting Geopolitical Landscape The global geopolitical order is undergoing profound transformation. The era of Western-led liberalisation and global economic integration is giving way to a more fragmented and contested world, including a loss of trust in and relevance of international institutions and agreements. Trade is increasingly regionalised, with countries prioritising economic resilience over efficiency through strategies like friend-shoring and near-shoring. Financial systems are being weaponised, with sanctions, export controls, and currency restrictions becoming tools of statecraft. Protectionist policies are on the rise, challenging the multilateral frameworks that once underpinned global cooperation. Strategic rivalry between the US and China continues to intensify, with both powers asserting influence across trade, technology, and security domains. This competition is reshaping global alliances and fuelling geopolitical uncertainty. Meanwhile, Russia's ongoing war in Ukraine has entrenched divisions between the West and authoritarian regimes, reinforcing a multipolar world order. Europe remains exposed to a volatile periphery. Instability in the Middle East and North Africa, regions critical to Europe's energy security and migration flows, continues to evolve. In East Asia, tensions around Taiwan and the South China Sea persist, while global military spending is rising and arms control frameworks are eroding. These dynamics collectively signal a more unstable and unpredictable geopolitical landscape.

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Technological Development Modern technologies such as artificial intelligence (AI), automation and robotics are driving economic growth by improving quality, (cost) efficiency and minimising errors. Al is evolving towards autonomous decision-making, transforming industries and raising ethical, legal and employment concerns. Autonomous machines, including drones and self-driving vehicles, offer benefits but also pose cybersecurity and legal and ethical risks. As digitalisation deepens, cyber threats grow, fuelled by Al-driven attacks and geopolitical tensions. Technological advances such as quantum computing will pose new challenges to existing encryption and security protocols, and innovations in drones and space-based systems will play an increasingly vital role in defence. The continued concentration of technological abilities in selected countries and a few global companies poses various risks for access to these technologies and represents an obstical for a levelling of the playing field. While weaknesses in critical infrastructure and increasing complexity can raise the risk of cascading failures, technology can also help to become more resilient. Ensuring equitable digital access, protecting data, and fostering public-private collaboration are essential to increase acceptance of new technologies and integration in daily life. To stay competitive, organisations must embrace modern technologies, invest in reskilling, and build resilient, adaptive systems. If this is not done in a forward-looking and responsible manner, it can lead to economic losses and serious social conflicts.



Demographic and Social Change

Several demographic developments are changing the way that society functions. Among them is urban population growth and the development of resilient urban infrastructure, affecting how people move, work and socialise. Social cohesion is declining in many countries and mental health is deteriorating, influenced by the use of digital media and services and by geopolitical trends. Many countries are facing population decline and ageing populations, while some see a rapidly growing middle class. Migration of people both within and between countries is a key aspect, fuelled by a range of environmental, economic and geopolitical factors. Although migration could translate into pressure on welfare systems and infrastructure and cause political unrest, it is also crucial in the context of skills gaps that are created by the changing needs of ageing societies. These complex and interconnected phenomena have a range of consequences, including the potential for widening inequality, societal and geopolitical conflicts and increasing environmental pressure.



## **Emerging Risk Descriptions\***

TOPIC

ASSOCIATED TRENDS

DESCRIPTION

IMPACT ERI ASSESSMENT PUBLICATION

Antimicrobial Resistance



Drug resistance occurs when microorganisms such as bacteria, viruses, protozoa, fungi, and parasites mutate in a way that renders the medications currently available against them ineffective. This is an inevitable part of the natural coevolution of pathogen and host and can prolong related infections, require more harmful alternative treatments, or even be fatal. Antibiotics, in particular, are needed for both the prevention, (e.g., during chemotherapy, hip replacement surgery) and treatment of bacterial infections. Antimicrobials are also used in animal husbandry and food production, and resistance can endanger food security. The supply of antimicrobial drugs is highly dependent on global supply chains and thus vulnerable to geopolitical risks. Climate change, environmental pollution, poorly funded health systems and lack of stewardship can aggravate antimicrobial resistance.



#### Main impacts may include:

- Increased healthcare costs directly related to infections needing longer and more complex treatment
- · Indirect costs through higher rates of medical and disability claims when preventive antimicrobial treatments fail
- Higher mortality and morbidity claims
- Liability claims (allegations of inadequate infection control practices, over-prescription of antibiotics, unsound manufacturing practices)
- Business interruption in healthcare, farming, agriculture, or food production

Artificial Intelligence



Artificial Intelligence (AI) has evolved from task-specific functions to pursuing General AI, capable of emulating or surpassing human abilities. Interactions between AI systems can create unexpected dynamics and risks. As AI decision-making becomes more complex, it raises concerns about unforeseen outcomes and liability. Users also face challenges with compliance in a shifting regulatory landscape. Malicious use by third parties poses additional threats. Al's impact on the workforce, including job displacement, will reshape industries. Market and customer responses remain uncertain, but to stay competitive, companies must embrace AI opportunities, foster continuous learning, and optimise data use. Navigating these changes is essential for future-proofing operations and maintaining a competitive edge.



2015

#### Main impacts may include:

- Al adoption introduces risks such as biased or opaque processes, leading to potential discrimination, disputes, or regulatory scrutiny.
- Increased use of AI heightens data privacy and cybersecurity concerns, risking non-compliance and reputational harm.
- Workforce shifts like job displacement and skill gaps—may reduce agility across insurers and clients. Additionally, underinvestment in Al talent compounds these issues.
- All is transforming traditional risk profiles across sectors, requiring continuous reassessment of exposure, modelling, and pricing strategies to maintain effective risk management.
- Al-driven threats increase cyber incidents, driving higher insurance claims, challenging underwriting models, and stressing insurers' risk management and pricing strategies.

\*The risks are listed in alphabetical order.















**IMPACT** 

ERI **PUBLICATION** 

ASSESSMENT

2017

## **TRENDS**

**Autonomous** Machines



Advances in mechatronics, machine learning, artificial intelligence, and data transmission speeds have led to rapid developments in autonomous machines that are impacting various industries. Their increasing interconnection, including the integration of Al and IoT, leads to efficiency gains but also introduces new complexities, risks and failure modes. Autonomous machines, e.g., self-driving cars and drones, could change the demand for traditional insurance products and give rise to new offerings. For instance, the need for conventional car insurance may decrease as the risk of human error-related accidents lessens, while concerns around cybersecurity, software malfunctions, and product liability will drive innovative insurance products within an evolving legal landscape. The integration of machine learning algorithms is enhancing the decision-making capabilities of these machines, allowing for real-time adjustments based on environmental data. The use of autonomous weapons in military conflicts and terror attacks brings a new dimension to these threats.

#### Main impacts may include:

DESCRIPTION

- Reduced need for conventional car insurance due to fewer human error-related accidents and a shift of personal to product liability.
- New insurance offerings driven by cybersecurity, software malfunctions, and product liability concerns.
- Ethical guestions around decision-making algorithms and data privacy introduce new challenges for the insurance industry.
- Autonomous machines are impacting various industries and their insurance demand, including transportation (e.g., self-driving cars), agriculture (e.g., autonomous tractors), healthcare (e.g., robotic surgery), and logistics (e.g., automated warehouses).
- Navigating Legal Frameworks: adapting to complex and evolving regulations.
- Enhanced Processes: advanced data analytics needed for risk assessment and underwriting.
- Accumulation Risks: potential cascading breakdown and unexpected behaviour of interconnected machines potentially leading to large-scale losses.
- Connected autonomous systems are prime targets for cyberattacks that could manipulate data, disrupt processes, or even cause physical damage. Safeguarding both systems and customer data must be a top priority.















DESCRIPTION

**IMPACT** ASSESSMENT

ERI **PUBLICATION** 

2018

Climate Change Physical Risk



The risks associated with climate change manifest in both acute and chronic shifts in climate patterns, driven by global warming. Acute impacts include extreme weather events such as intense rainfall (often leading to flooding), hailstorms, droughts, wildfires, heatwaves, and hurricanes. In recent years, the frequency and severity of these events have increased significantly, causing widespread damage to infrastructure, disrupting communities, and placing considerable strain on the economy.

Chronic impacts involve long-term changes in weather patterns, including changes in precipitation levels, local temperature variations, and the already observable rise in sea levels. These gradual developments introduce a range of risks, such as health concerns like heatstroke during prolonged heatwaves and hypothermia during extreme cold spells.

The economic consequences are equally substantial. Property damage, agricultural disruption, and heightened supply chain vulnerabilities impose a heavy financial burden on affected regions. Moreover, these changes adversely affect overall human well-being.

Overall, climate change influences nearly every aspect of where and how people live, underscoring the urgent need for adaptive strategies to mitigate its physical risks.

- Non-life insurers are exposed to higher claims, which together with reduced reinsurance capacity could lead to higher direct insurance premiums and to insurability issues in the long-term.
- · Changes in weather patterns affect risk assessment and make accurate risk pricing more difficult.
- From a life and health insurance perspective, key physical risks include extreme temperatures, infectious diseases, air pollution, and mental health, all resulting in higher claims under morbidity and mortality covers.
- Future impacts will also be influenced by government and infrastructure adaptation measures and how insurance companies succeed in supporting clients to prevent losses.
- Investments can be directly or indirectly impacted, if invested companies suffer damage to production locations or supply chains.
- Physical risks can potentially impact the operations of insurers causing business disruption to offices or IT infrastructure.















IMPACT ASSESSMENT

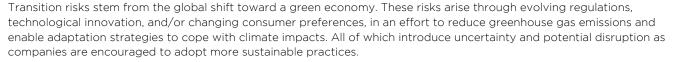
ERI PUBLICATION

#### DESCRIPTION

Climate Change Transition Risk









2018

Financial performance across sectors may be influenced by the pace and scope of global commitment to climate action. While green industries are poised to benefit from supportive policies and growing demand, the development and deployment of emerging technologies, such as advanced energy storage and carbon capture, carry significant uncertainty and risk. In contrast, carbon-intensive sectors are likely to face declining demand, shifting investor sentiment, stricter regulations, legal challenges, and resource management pressures.

The social dimension of transition risks includes shifts in employment patterns, necessitating reskilling and upskilling of the workforce. Geopolitically, the transition may alter global power dynamics, with countries leading in green technologies gaining influence, while those reliant on fossil fuels may experience economic setbacks.

The path to a sustainable economy is non-linear, and its impacts will depend on technological progress and the level of global commitment to climate action.

- Underwriting pricing challenges in relation to new technologies and other changes linked to the transition.
- From a Life and Health perspective, upheavals in the economy, reductions in GDP, and struggling market segments could lead to higher claims under disability covers, driven by mental health issues.
- Investment risk and stranded assets: (re)insurers can face stranded assets and reduced returns from companies that suffer from the transition to a greener economy. On the other hand, investments in new energy techniques or other sustainable investments might result in financial losses if these techniques are not proven yet.
- Insurers are prone to legal risks including liability issues and litigation, as well as political, regulatory and compliance issues (including greenwashing).
- Reputational risks result from shifts in consumer preferences, stigmatization of sectors, increased stakeholder concern or negative stakeholder feedback.















2008 & 2011

TOPIC Collective Redress



Collective redress refers to legal mechanisms that allow multiple individual claims with similar facts to be bundled into a single court action, primarily for reasons of procedural efficiency and enforcement strength. While long-established in North America via class actions, the expansion of such frameworks across the EU represents a structural shift in the European litigation landscape. As more EU member states implement or expand collective redress procedures particularly post-2024—the insurance industry may face increased exposure to large-scale litigation. This trend may drive claims inflation, elevated legal defence costs, and heightened reputational exposure, particularly in long-tail lines such as liability, D&O, and cyber.



#### Main impacts may include:

DESCRIPTION

- Claims inflation both in volume and severity.
- Modelling difficulty: poor historical data and scenario variability challenge accurate premium setting and capital allocation. Current actuarial models may not adequately capture the fat-tailed nature of such aggregated risks, creating difficulties in reserving and underwriting accuracy.
- Public interest and media attention around group litigation may amplify brand damage beyond pure financial loss. The reputational high-profile nature can also damage the insured's reputation.
- Litigation hotspots could emerge: collective redress mechanisms are increasingly used in data privacy breaches, ESG and greenwashing litigation, and consumer protection cases. These are often areas where regulatory standards are still evolving, compounding legal ambiguity and highlights the need for both legal and reputational resilience.

Critical Infrastructure **Failures** 







Many regions face chronic underinvestment in the modernisation and security of physical and digital infrastructure, including electricity, water, communication, and transport. Financial pressures, supply chain disruptions, and an ageing workforce further constrain long-term upgrades. Capacity limits, deterioration, overload, and external threats - natural disasters, cyberattacks, geopolitical conflicts, and sabotage - can lead to failures and outages. Renewable energy transitions and smart grid integrations may destabilize energy supplies. As complexity of interconnected systems increases, failures in one area can cascade across different sectors. Infrastructure failures often have far-reaching consequences, underscoring the importance of preparedness and, amid increasing demand in urban areas and industrial parks, the need for resilient and adaptable infrastructure planning. Technological innovations, such as AI, drones, satellite surveillance and IoT, play a vital role in monitoring and maintaining infrastructure, predicting failures, and enhancing operational efficiency. Since critical infrastructure often involves private ownership, collaboration between government and private sector is crucial towards understanding shared responsibilities and improving resilience.



- Higher-than-expected frequency and severity of (large) claims due to property and non-property damages and business interruptions.
- Failing government services and disrupted economic activities could lead to loss of economic growth and as a result to lower insurance demand.
- Severe and prolonged or repeated infrastructure breakdowns have potential to trigger social unrest and affect political stability.
- Immediate and/or long-term impacts on human health and even human life as a result of, e.g. leakages of harmful substances, breakdowns in hospitals and care facilities, delayed emergency responses.
- Infrastructure failures may cause leakages of harmful substances, sewage leaks, fires (like wildfires or industrial fires).

















Critical Resource Management







Global demand for critical resources - such as water, energy, rare earth minerals, and arable land - is intensifying due to population growth, rapid industrialisation, climate change, biodiversity loss, geopolitical instability and an increased need for self-reliance. At the same time, quality and quantity of some resources are declining and access to resources is sometimes in the hands of a limited number of parties. This also results in an increasing need to access these resources in extreme or sensitive environments.



Resource scarcity can trigger cascading effects across societies and economies. It can lead to displacement, social unrest and geopolitical tensions. Supply chains can be severely disrupted, inflationary pressures can rise and consumer purchasing power can decline. In the environmental sector, ecosystems may deteriorate and dependence on high-risk extraction methods (e.g. deep-sea mining, Arctic drilling, fracking) may increase further. Emerging technologies and unconventional extraction in extreme environments introduce new liabilities and prototype risks. These include novel claim types, reputational exposure for insurers, and uncertainty around long-term environmental impacts.

#### Main impacts may include:

DESCRIPTION

- Business interruption and increased reliance on a limited number of third parties
- · Market volatility and negative impact on assets.
- Reputation and/or liability risk for insurers covering disputed operations or new types of technology.

Cyber Risks



Cyber risks have already emerged as a persistent threat, spanning geographies, industries, and financial sectors. Increasingly sophisticated and evolving attacks can be observed, sometimes leveraging the complexity of software supply-chains, exploiting vulnerabilities in outdated software, or using new technologies. For instance, Artificial Intelligence (AI) is being used by cyber criminals to enhance their attacks, among others with deepfakes and AI powered malware. However, Al not only increases cyber risks but can also be used to defend against malicious actors. In the future, quantum computing could disrupt current encryption protocols. Despite growing awareness of quantum threats, there is limited industry readiness for post-quantum cryptography, posing a latent systemic risk to data security and digital infrastructure. Rising geopolitical tensions increase the risk of cyber warfare, i.e., politically motivated hacker attacks by nation-state actors for sabotage and espionage purposes. At the same time, the ongoing digitalisation of all areas of life and technological power concentration (e.g., software, cloud services, digital payment services) are creating new vulnerabilities.

- Main consequences include financial, operational and reputational losses due to, for example, business interruption, claims on cyber policies and data theft.
- Spillovers into the physical realm also affecting critical infrastructure (e.g., power blackouts) as well as cyber-bullying, disinformation and data leakages can have implications for Life and Health, and Property and Casualty insurance claims.
- Certain assets can be impaired by cyberattacks, e.g. by causing lasting damage to the operations of companies in which investments have been made
- · Challenging complex regulatory landscapes related to cyber insurance, including data protection laws and regulatory requirements for cybersecurity risk management.















DESCRIPTION

Data Privacy and **Data Ethics** 



The regulatory frameworks surrounding data ethics and privacy (e.g., GDPR, Al Act, DSA) are imposing stricter controls on data collection, processing, and usage, while public awareness of digital rights, surveillance, and algorithmic bias continues to grow. Insurers are under pressure to balance data-driven business models with ethical and regulatory expectations, amidst increasing scrutiny over fairness, transparency, and obtaining informed consent.



As data privacy regulations empower individuals with greater control over their personal information, insurers face potential restrictions on accessing critical data used for risk assessment, underwriting, claims management, and fraud detection. Missteps in data usage may expose insurers to reputational damage, litigation, and regulatory sanctions. These challenges are especially acute in the context of Al-driven decisions, health data processing, and behavioural profilina.

- · Restrictions on the use of certain data types such as genetic, health, or behavioural data could limit product innovation and personalisation across both Life and Health and Non-life lines.
- · Regulatory limits on data use in pricing models may erode risk-based pricing, threatening the principle of actuarial fairness and reduced affordability for higher-risk groups.
- Limited access to predictive data increases the risk of adverse selection. Actuarial models may become less reliable, leading to premium volatility, reserve uncertainty, and reduced capital efficiency.
- A rise in litigation over data misuse, especially under collective redress frameworks, may increase claims and compliance costs. High-profile cases could damage trust in insurers' handling of sensitive data.
- Navigating overlapping regulatory regimes creates compliance complexity and cost. Ensuring compliance across jurisdictions demands significant investment in data governance, staff training, and legal expertise. It may also delay or deter adoption of advanced analytics, AI, or connected devices due to legal uncertainty.















**IMPACT** 

ERI ASSESSMENT PUBLICATION

DESCRIPTION

Deterioration of Public Healthcare Systems





Public healthcare systems are under increasing strain, with consequences for public health, including mortality and the ability to respond to future pandemics. This is linked to several other trends and risks: An aging population and in particular the gap between lifespan and time spent in good health place increasing demands on healthcare, exacerbated by the rise in chronic conditions and diseases such as diabetes. Meanwhile, medical advances have the potential to increase public healthcare costs - especially if they require lifetime use. A shortage of trained medical professionals adds a further strain on public healthcare. Governments face an increasing funding gap between public healthcare demand and available expenditure. Mental health services are also impacted by the deterioration of public healthcare systems. Inequalities in healthcare provision can fuel social tensions and conflicts. Overall, deteriorating public health systems can negatively influence morbidity and mortality both for general and insured populations, with knock-on effects on private medical and life insurance, absenteeism and the wider economy.

- Increased mortality adversely impacting Life Protection Claims, but with a potential decreasing impact for Lifetime Annuity Claims.
- · Increased morbidity adversely impacting Private Medical Insurance (PMI) claims and Income Protection claims, and leading to absenteeism, weakening economic productivity.
- · Public healthcare demand for clinical staff and medicines may act as a driver for medical expense inflation impacting PMI claim costs.
- Concerns over social equity, i.e. differing health outcomes for those who can and cannot afford PMI, may drive government intervention in PMI market such as premium taxes, or redesign of the existing system.















Sanctions





Sanctions, trade tariffs and barriers by individual states (or collectively) against other states are used to exert influence and achieve economic and non-economic objectives. In order to reduce dependence on geopolitical competitors and to increase industrial competitiveness, mechanisms such as state aid, subsidies and investment controls may be introduced alongside tariffs, and regional trade alliances can be formed that favour reshoring versus global trade. Sanctions and export restrictions can undermine competitive advantages by limiting access to advanced technologies, critical resources (e.g. rare earths), and reduce investment and innovation. The significant and volatile tariffs imposed by the new US administration carry the risk of an escalating trade war and negatively impact growth. The extensive use of USD in trade gives extended extraterritorial reach of US sanctions to impact third country trade, while large-scale foreign ownership of US treasuries could be used as leverage in trade negotiations. However, longer-term this is incentivising settlement of international transactions in regional / local currencies and may erode the USD hegemony in international



#### Main impacts may include:

trade and finance.

DESCRIPTION

- Complex and evolving sanction regimes restrict international insurance business and increase operational costs.
- Increased regulatory challenges may impact compliance costs and reputational risk for companies.
- Trade conflicts heighten economic uncertainty and market volatility, affecting macroeconomic growth, interest rates, inflation, and asset values and returns.
- Breach of sanctions may lead to frozen assets or blocked transactions, complicating claims payments, premium flows, and reinsurance recoveries, and potentially triggering legal disputes or reputational fallout.
- · Supply chain disruptions may lead to price inflation, business activity slow down or even interruption and, from an insurance standpoint, higher exposure or demand for business interruption coverage.
- Policyholder behaviour impacted by economic uncertainty and inflation resulting in increased surrenders/ lapses and appetite for safe-assets (i.e., cash) and products with guarantees.
- Increased foreign trade dynamics may impact exchange rate risk and multi-currency transactions.















#### **TOPIC**

**Emerging** Infectious Diseases





Pathogens are evolving, and global factors like climate change, trade, travel, demographics, and human behaviour are increasing opportunities for their spread. New communicable diseases pose serious health risks and pandemic potential, especially when they are poorly understood, highly contagious, or hard to treat. Zoonoses - diseases transmitted from animals to humans - can lead to new diseases or mutated threats. Pre-existing diseases may re-emerge due to waning immunity and rising antimicrobial resistance. Infections can also cause long-term health effects. Beyond human health, pathogens affecting food crops, livestock, and pollinators like honeybees, as well as drug shortages, present critical risks. The response to potential outbreaks will depend heavily on the capacity of the healthcare system, but also on factors such as international cooperation and the attitude towards pharmaceutical and non-pharmaceutical interventions.

2007

#### Main impacts may include:

DESCRIPTION

- Higher claims and financial strain on the insurance company across income (disability), damage (trip and event cancellations), life, funeral and pensions (elevated mortality and morbidity rates) and health (hospitalisation, diagnostic testing, and treatment).
- Business interruptions, reduced operations, and healthcare system stress worsen impacts.
- Actuarial models and premium assumptions may become unreliable.
- Poor pandemic response can damage reputation.
- Overall, pandemics disrupt financial stability.

#### Environmental Pollution





Environmental pollution refers to the introduction of harmful substances or contaminants into the natural environment, which can cause adverse effects on ecosystems, biodiversity, human health, natural resources, and the overall quality of life. Pollution can originate from industrial activities, mining/extraction, agricultural practices, waste disposal, transportation and household products. Different types of pollution exist and are typically described by the environment impacted (e.g., air, water, and soil pollution) or by the source (including but not limited to light, noise, and plastic pollution).



2009

- Increased liability claims(in frequency and severity) and potential higher insurance premiums in Non-Life. Additionally, underwriting pricing challenges in relation to new environmental technologies.
- Higher mortality and higher health claims.
- Reputational damage for insurers involved in the underwriting or investing in polluting companies, among others, through protests and boycotts.
- Investments in polluting companies losing value.
- In the long run, quality of life and economic developments are negatively impacted.















**IMPACT** ASSESSMENT

ERI **PUBLICATION** 

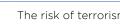
2007

**TRENDS** 

**Evolving Terrorism** 







DESCRIPTION

The risk of terrorism is an evolving threat, challenging to assess due to its inventive and adaptive nature, which undermines probabilistic modelling based on past events. Future attacks may target various entities using both old methods and new technologies, such as drones, Al, and cyberterrorism, including space terrorism. Non-conventional methods like EMP (Electromagnetic Pulse) and NBCR (Nuclear, Biological, Chemical, and Radiological) attacks further complicate the landscape, especially amid significant geopolitical investments in weaponry. Nuclear terrorism poses severe risks if state-owned military resources are involved, while the rise of 'eco-terrorism' reflects increasing environmental activism. Criminal groups also play a role as logistical facilitators for terrorist organizations and statesponsored operations, creating complex intersections between organized crime and geopolitical threats. Effective

counterterrorism requires international collaboration and intelligence sharing, alongside public awareness and technological countermeasures. State-sponsored terrorism introduces advanced technologies and military-grade weaponry, exacerbated by global conflicts, necessitating resilience planning and addressing socioeconomic disparities. Furthermore, the increasing use of social media platforms for radicalisation and recruitment poses new challenges for counterterrorism efforts.

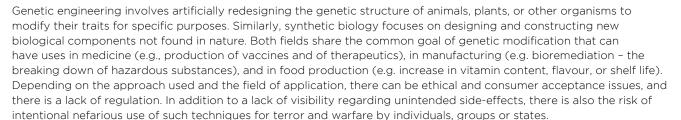
#### Main impacts may include:

- Direct threat to Property Business (including Business Interruption)
- Increase of Life and Health claims
- Cyber insurance: cyberterrorism and related disruptions.
- Impact on financial markets and economic growth may result in losses in asset values and increased credit risks.

Genetic Engineering / Synthetic Biology









- Liability and product risks, intellectual property disputes.
- Environmental impacts including health and safety hazards and environmental liability, D&O.
- Potential for bioterrorism, pandemics and man-made catastrophes with impact on morbidity and mortality as well as on assets and operations.

















#### DESCRIPTION

Geopolitical Conflicts & Military Build-up





The various geopolitical tensions and ongoing conflicts have broadened the range of scenarios considered possible, and defence has moved into focus of the political agenda. In general, geopolitical tensions may lead to armed conflicts, economic warfare and erosion of the post-WW2 rules-based order that governs relations between states and the multilateral institutions that supervise this (e.g., UN and EU). Existing conflicts (e.g., Russia-Ukraine, Israel-Palestine/Iran) and tensions (e.g., China-Taiwan) could escalate into wider regional or even global conflicts. Further threats arise from proxy war, grey-zone activities and unconventional warfare (e.g. through cyber-attack, large-scale use of (commercial) drones and social media manipulation). The increased geopolitical risk is compounded by nuclear proliferation, new military technologies, such as autonomous weapons and a significant rise of military expenditure in many countries. The military build-up is often accompanied by a reprioritisation of other government spending priorities. Escalations and geopolitical crises threaten financial markets and political stability and likely disrupt global supply chains and trade relationships showing high interconnectivity among all related elements.

- Escalation of armed conflict may lead to mass migration affecting the economy and leading to an increase of political tensions in neighbouring countries.
- Increased sanctions (e.g., on Russia and Iran), may lead to compliance challenges.
- Naval conflicts may lead to increased maritime insurance rates and transportation costs; Supply chain disruption impacting operations and claims resolution (i.e. auto repairs) and inflation.
- Increased tensions may impact losses under property schemes (e.g., Business Interruption (BI/CBI) and Strikes, Riots and Civil Commotions (SRCC)) and give rise to claims and legal disputes related to BI and SRCC policy wording
- Impact of (trade) wars on financial markets and economic growth result in losses in asset values and increased credit risks.
- The lower priority that governments give to other important public tasks such as climate protection could exacerbate these risks and necessitate a reassessment.















#### Global Debt Crisis





Many sovereign states, corporates and consumers have accumulated record debt relative to their income and assets compared to historic norms. Much of this debt was issued during the post-Financial Crisis era of very low interest rates and will require refinancing over the next 5 years at significantly higher interest rates. Emerging market economies with foreign-denominated debt face additional risks if their currency depreciates, making repayment more costly. Rising sovereign debt levels increase servicing costs, straining national budgets and reducing funds for infrastructure investment and essential services like healthcare and education. Specifically, rising US federal debt and loss of confidence in US federal institutions could result in credit downgrades for US government debt and loss of its safehaven status triggering a wider global financial crisis. Furthermore, the interconnectedness of global financial markets means that a debt crisis in one region can have widespread ripple effects, impacting economies and financial institutions worldwide.

#### Main impacts may include:

DESCRIPTION

- Defaults, downgrades and depressed asset prices adversely impacting insurers' capital and solvency.
- · Liquidity impacts from customer mass lapses and derivative margin calls depending on hedging strategies.
- Change in customer appetite for investment risk, shift to cash or propositions with guarantees.
- Possible flight into safe-haven assets (high rated government bonds) and high losses on risky assets like equities, real estate and alternative credits.

#### Hazardous Substances









Many chemicals can be harmful to the environment and impact health if inhaled, ingested, or absorbed through the skin. They can be carcinogenic, cause specific diseases and act as endocrine disruptors, and can be bio-accumulative and persistent, such as per- and polyfluoroalkyl substances (PFAS). Small particles like fine dust and microplastics can also be harmful. The biological mechanisms of nanoparticles in consumer products are not fully understood yet and could also pose health risks. In addition to these man-made substances, human activity also increases the prevalence of naturally occurring hazardous substances such as ozone and NO2. For many substances, their widespread use, chemical stability, and accumulation through the food chain and long lifespan make them prone to serial and cumulative losses. Hazardous substances can contribute to environmental pollution, but also occur in food and consumer products.



2010 & 2012

- Increase in liability claims from policies underwritten before scientific links to environmental and health harm had been identified.
- Higher morbidity and mortality claims due to long-term health impacts.
- · Higher risks for assets linked to these substances.
- Uncertain (prototype-) risk from new substance innovation.
- Potential regulatory changes affecting coverage for environmental impacts and cleanup efforts.
- Impacts on the economy and on society from chronic health conditions, lower fertility, poorer mental health, poorer workplace performance, and from the effects that hazardous substances can have on the food chain.















Information Reliability

TOPIC



New digital abilities to manufacture fake content e.g., photos and videos (incl. "deepfakes"), audio (incl. "voice fake"), and text are proliferating. The rise in generative AI applications is notably making it easier to create and distribute sophisticated fakes, even for those with limited technical expertise. The increased use of social media is also contributing to the spread of misinformation, as viral content is driven more by emotional appeal than by its reliability. Fake contents can be used for fraud, to incite social unrest, harass/defame individuals and social groups, and destabilize political systems and markets.



Information reliability also relates to erasing and altering historical data (incl. online), resulting in misleading representations of past wrongdoings by individuals or companies. Trust in reliable evidence may thus be eroded, and false information could overshadow the facts needed for informed decisions, affecting both consumer behaviour and democracies.

- Increase in fraud; e.g., fake evidence and supporting material in claims submissions, social engineering attacks and vishing, employees submitting altered or fake invoices/receipts
- Risk selection/underwriting and pricing errors
- Reputation and credibility of the insurance industry, a robust and verifiable information environment is essential for insurers to operate effectively
- Operational losses and claims from social unrest and cyber events.
- Deepfake technology drawing regulatory attention worldwide
- · Potential impact on mental health















TOPIC Legal and

Regulatory

Uncertainty



#### DESCRIPTION

The pace and scope of legal and regulatory change continue to accelerate, especially in cross-cutting domains such as ESG, data governance, artificial intelligence, and market conduct. While aimed at strengthening systemic resilience and societal outcomes, this regulatory evolution introduces significant uncertainty and asymmetry for insurers operating across jurisdictions.



Increasingly principles-based regulation — while more flexible — can generate interpretative ambiguity, complicating compliance and exposing firms to divergent supervisory expectations. This is compounded by emerging risks related to overregulation, misregulation, regulatory gaps (non-regulation), and the extraterritorial reach of certain frameworks (e.g. GDPR, CSRD, US climate disclosure laws).

In politically charged areas such as ESG, data, and corporate accountability, the regulatory landscape may become more volatile, regionally fragmented, and subject to political interference. This volatility may undermine legal certainty, increase compliance burdens, and weaken public trust in the predictability of the rule of law.

- · Rapid, varied regulatory change drives up compliance costs and demands ongoing process adjustments, especially in disclosure, data handling, and third-party oversight.
- · Ambiguous standards increase legal exposure, including greenwashing, fiduciary breaches, and Al-related claims, with implications for D&O and class action risk.
- Diverging rules and uneven enforcement challenge cross-border insurers, creating market asymmetries and strategic friction.
- Legal uncertainty affects product viability, ESG-aligned portfolios, and solvency planning, adding governance and risk-modelling complexity.
- · Broader industry disruption: regulatory volatility affects not only compliance costs but also insurers' ability to innovate, differentiate, and adapt to shifting market conditions. Inconsistent frameworks across jurisdictions create competitive imbalances, forcing firms to rethink long-term strategies.















#### DESCRIPTION

**IMPACT** ASSESSMENT

ERI **PUBLICATION** 

Medical Advances



Significant advances that have recently been made in several medical fields could bring considerable benefits in predicting, preventing, diagnosing, and treating illnesses and thus will improve human health and longevity. As an example, diabetes/weight loss drugs may have wider benefits for other chronic diseases and possibly add significantly to longevity. At the same time, these advances could increase the cost of some insurance products, such as health covers, and present new opportunities for other products, such as life insurance in the form of Long-Term Care coverage. Improvements in data processing algorithms and artificial intelligence are expected to increase the accuracy and reliability of predictive genetic testing. However, adverse selection and information asymmetry between insurers and applicants may arise, affecting the availability, accessibility and affordability of insurance policies, and an increase in claims. The legal landscape and related ethical implications are complex and constantly evolving and could impact Liability insurance and brand reputation.

2019

2021

#### Main impacts may include:

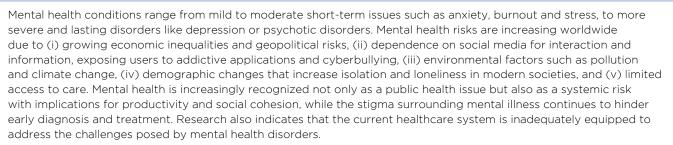
- Increase in the average cost of claims for some insurance products, such as health and liability coverage.
- · Uncertainty in the underwriting assumptions used to set limits and deductibles on predominantly healthcare products.
- Challenges in setting proper assumptions for annuities and life insurance
- Reputational impact stemming from the legal landscape and related ethical implications for some methodological processes, e.g. predictive genetic testing.

#### Mental Health









- Increase in claims for Life (higher suicide rates), Health (higher medical expenses), Protection (occupational disability claims), and P&C (Workers' Compensation, Employers' Liability, Accident and Health, etc.) products, exacerbated by the shift from public coverage to private insurance
- Challenges in introducing parameters with little historical series in product pricing and reserving.
- Potential burden for insurers own operations, also due to absenteeism and loss of productivity.
- Potential reputational impact for companies not covering this type of risk.

















DESCRIPTION

IMPACT ASSESSMENT

ERI PUBLICATION

2009











Nature encompasses all elements of the natural world, such as plants, animals, and landscapes, while biodiversity refers to the variety and variability of life that underpins ecosystem services essential to human wellbeing. Despite growing awareness, biodiversity continues to decline globally due to changing use of land and sea (e.g. agricultural expansion and urbanisation) leading to habitat loss, overexploitation of natural resources (e.g., overfishing, deforestation), pollution, invasive species, and climate change. Biodiversity loss is increasingly recognized as a material financial risk. It affects not only ecosystems but also the stability of economies and financial systems. The insurance sector is particularly exposed through underwriting, investment, and operational channels. Global frameworks like the TNFD are guiding insurers to better understand and report their nature-related risks. Expectations on insurers are especially relevant with respect to clients and investees in high-impact sectors such as agriculture and mining.

- Potential liability claims linked to physical impacts such as a decline in soil or water quality, more frequent and more severe natural catastrophes.
- Reputational impact if insurers do not contribute sufficiently to protecting nature and biodiversity.
- Investment portfolio devaluation due to nature-related transition risks or stranded assets.
- Underwriting risk from increased exposure in sectors dependent on ecosystem services (e.g., agriculture, fisheries, forestry).
- Regulatory and compliance risk due to new disclosure requirements and supervisory expectations (e.g., TNFD).
- Operational impacts e.g., disruption of value/supply chain, relocation of activities due to ecosystem degradation.
- · Impact on mental health as well as on food quality and availability having negative effects on morbidity and mortality.













**IMPACT** 

ERI ASSESSMENT PUBLICATION

#### DESCRIPTION

#### Skills Shortage and Reskilling



Skills shortages across industries, intensified by retirements, evolving job demands, and societal shifts, are difficult to track and quantify, yet they may silently influence insurance claims through unnoticed and unattributed impacts. The urgency and scale for reskilling and upskilling needs increase due to fast-paced technological advances. Reskilling can be resource-intensive and time-consuming. In the absence of lifelong learning, robust reskilling programs, and adaptation to new technologies and work trends, companies could risk losing competitiveness, while more industries could see a growing skills gap. The interaction of this development with the growing use of AI brings opportunities as well as additional challenges. From an operational perspective, the insurance industry relies on highly skilled actuaries, loss adjusters, underwriters, claims and risk managers, IT specialists, and asset managers and is thus directly exposed to this risk.

#### Main impacts may include:

- Senior experts often draw on years of experience to identify subtle risk patterns. When that depth of insight is lost, it can lead to mispriced policies and insufficient risk mitigation strategies.
- · Loss adjusters and risk engineering services must account for the potential for human errors, particularly during onsite assessments.
- Inability to sustain risk prevention measures, longer business interruption periods, costlier repairs, more product failures, and as a result higher Property & Casualty claims.
- · Mistakes by inexperienced or overworked healthcare staff, along with delays or gaps in medical services, can increase malpractice claims and worsen mortality and morbidity.
- · Overtired or undertrained employees may experience longer-term impacts on mental health, leading to absenteeism and reduced productivity.
- Without timely reskilling, insurers may fall behind in innovation and competitiveness.

#### Social Fragmentation and Disorder





Societal divisions, i.e. unequal access to resources and opportunities, and disparities, e.g. differences in income and life expectancy, have increased, accompanied by growing polarisation such as irreconcilable political views and declining social cohesion. Social media can serve as an additional catalyst to amplify anger and frustration and harness it for a specific purpose, such as gaining political power or triggering unrest. From a macro perspective, democratic processes and market stability are particularly influenced by increasing social tensions and movements. These divisions can also significantly impact insurers in various ways. Social fragmentation can influence the risk profiles of individuals and communities. Factors like income inequality, urban-rural divides, and social unrest affect the likelihood and severity of claims, as witnessed with the riots in Chile, France and South Africa. Social fragmentation can also lead to changes in regulations and government policies that could impact the industry, seen for example in the UK's guidance on fair treatment of vulnerable customers.

- Risk of SRCC (strike, riot, civil commotion) events leading to property damage, business interruption and loss of life with potential substantial losses for society and the insurance industry.
- Regulatory pressure and reputational damage increasing focus on affordability and equitable access to insurance driving further the need to adapt product design, underwriting and pricing.
- Widening insurance protection gap leading to fewer business opportunities for insurers.

















#### Space Risk





Space is currently receiving heightened attention in politics and business. In modern society, humankind's dependency on technology and space-based infrastructure continues to grow. The number of objects in orbit has increased rapidly due to a significant increase of satellite launches since the last decades increasing collision risk and space debris, potentially damaging critical operational systems. Other space risks arise from space weather events, like solar storms, and cyber-attacks that can disrupt vital infrastructure supporting critical terrestrial services, like communication, defence, GPS and Earth observation. Cyber threats may fuel geopolitical tensions, while concentrated control over space assets may raise concerns of political or economic misuse.

#### Main impacts may include:

- Direct physical damage to insured space infrastructure, such as satellites and spacecraft and terrestrial infrastructure i.e. destruction of transformers leading to electricity blackouts
- Wider secondary impacts on Earth, resulting from outages of critical space infrastructures essential for example communications systems, GPS systems and defence.
- Escalation of geopolitical tensions due to companies from a small number of countries dominating the space resource or nation-state backed attacks on the critical infrastructure of a rival country.

#### Substance Abuse



Substance abuse is the use of illegal substances or the misuse or excessive use of legal substances, ranging from opioids and prescribed medications to alcohol and nicotine. The common denominator is the harmful impact on physical and mental health, with the problem often aggravated by addiction. Drug overdoses, predominantly by opioids, are the leading cause of death of Americans under the age of 50. Alcohol abuse shortens life expectancy by 24 years on average. E-cigarettes, which were promoted as an aid to help smokers quit, sometimes have the opposite effect by making more people addicted to nicotine. Hundreds of new psychoactive substances are discovered every year in the EU and distributed faster than they can be monitored and regulated. They have the specific risk of unknown effects and side-effects. The abuse of illegal drugs causes social problems such as acquisitive crime. Substance abuse is also implicated in traffic and workplace accidents and negatively impacts work performance.



- Increase of morbidity and mortality.
- Higher healthcare costs.
- Potential impact on Property and Casualty lines such as motor.
- Litigation similar to what happened in the US with the painkiller "OxyContin".
- Additional burden on social systems.
- Poorer performance of the economy















Supply Chain Complexity





DESCRIPTION

The high degree of optimisation and interconnectivity in global supply chains makes them vulnerable to concentration risk that may lead to operational disruption, higher-than-expected insured losses and market volatility. Triggers for supply chain disruption include cyberattacks that target digital networks of firms and their third party suppliers, and geopolitical risks including conflicts, sanctions and trade wars. ESG compliance may also change global supply chains over the medium to longer term in line with shifting investor preference for sustainable investments. Economies and firms are building greater supply chain resilience by nearshoring, regionalisation, building strategic storage and diligent sourcing of scarce resources.

- Trade finance or transport insurance may be impacted through higher premiums and claims.
- · Companies may suffer business interruption, leading to higher claims and/or impact on outsourced processes of insurers themselves. Regulatory fines may be issued if operational resilience tolerances are breached.
- · Changing supply chains or building resilience may drive up prices and inflation in general and risk premiums for specific industries, which both could lead to negative impact on investments and insurance claims.
- · Quality of operational services to clients may suffer if required resources are not available to repair, e.g. cars or houses, leading to higher claims and expenses.
- · Market volatility and shifting investor preferences could lead to firms reviewing their investment strategies more frequently.









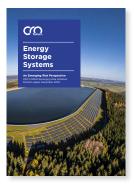






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Title





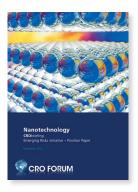






















Year



