



# Emerging Risks Initiative

Major Trends and  
Emerging Risk Radar

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2023



# Executive Summary

We are pleased to present the 2023 update of our Emerging Risk Radar.

Emerging Risks are risks which may newly develop or which already exist and are continuously evolving. They are characterised by a high degree of uncertainty in terms of impacts and likelihood and may have a substantial potential impact on underwriting, investments and/or operations of an insurance company.

The Radar is a summary of emerging risks and associated major trends that could affect the insurance sector over the next five years and beyond. Risks are classified low, medium or high according to their perceived materiality. Both the list of risks and the assessment of impact and timing are based on the expert opinion of the Emerging Risk Initiative (ERI) working group of the CRO Forum, using a survey amongst CRO Forum members as basis.

The major trends have been assessed and updated and compared to 2022 largely remained unchanged.

All risks have been assessed and updated as part of working group sessions.

The following changes were made to risks that were already included in 2022:

- [Endocrine Disruptors](#) merged into [Hazardous Chemicals and Small Particles](#).
- [Monetary Policies](#), [Socio-economic Inequalities](#) and [Growth of Leverage](#) merged into [Global Debt Crisis](#).
- [Passive Investments](#) has been removed.


The following new risks have been added to the Radar in 2023:

- [Energy Storage Systems](#): In the context of the green energy transition and attempts to decrease fossil fuel dependencies also in light of geopolitical conflict and tension, large-scale energy storage systems are taking central stage in the global economy.
- [Data Ethics](#): The legal landscape and related ethical implications around data privacy are complex and in constant evolution. Combined with growing customer awareness and the increased integration of technology into everyday life, this raises questions about equal access to digital resources, data security and ethics.
- [New Insurance Competition](#): The traditional role of insurers is impacted by value chain disintermediation, embedded insurance products and services offerings, and Big Tech companies providing advanced digital capabilities/ecosystems/interaction with customers. Besides being a threat, insurers may as well benefit from their digital and communication capabilities by entering into partnerships.

We hope you find the report useful and welcome your comments and feedback.


# Emerging Risk Radar 2023

## Trends

 Ageing and Health Concerns

 Economic Instability

 Environment and Climate

 Environmental, Social, Governance (ESG) Issues

 Shifting Geopolitical Landscape

 Technological Developments & Impacts on Society

 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

\* New risk in 2023

# Major Trend Descriptions



## Ageing and Health Concerns

Although Covid has resulted in a spike in mortality, wider medical advances in diagnostics and treatments continue, with populations in developed countries increasingly exposed to age-related risks such as neurodegenerative diseases and chronic conditions associated with aging. There are, however, a number of factors that may offset the improvements in life span achieved through medical advances. In particular, lifestyle patterns (including sedentary habits, unhealthy diets, sleep disorders, and substance abuse, including e-cigarettes/vaping), are contributing to the rise in chronic diseases in younger populations. Physical health is also closely linked to mental health. Hazardous chemicals and Small particles, such as PFAS, endocrine disruptors and microplastic or man-made nanoparticles, may also pose risks that are not yet fully revealed, for instance, and climate-related factors such as the increasing prevalence of heatwaves pose a threat to elderly populations. It remains unclear whether medical advances will counterbalance the impacts of these developments on morbidity and mortality.



## Economic Instability

Post the financial crisis, lower income groups are still to see a return to income growth, and for many, standards of living remain stagnant. This rising inequality compounds instability in economic systems, and politically, these factors fuel the rise of populism and a backlash against multinational institutions, leading to nationalism and fragmented regulation. Prolonged low yields and the stimulus tool of massive quantitative easing have led to massive debt levels, stoked inflation risks and created asset bubbles. The recent and unprecedented rise in interest rates tackling high inflation will slow down the global economy and increase the risk of widespread debt defaults, which may lead to a deep recession. The financial sustainability of social security and pension systems is more at risk than ever.



## Environment and Climate

Environmental issues are firmly in the spotlight, dominated by climate change, resource scarcity, biodiversity loss and pollution of the biosphere. There is growing concern about the consequences of unchecked emissions of greenhouse gases driving climate change, with the more frequent occurrence of extreme weather events, which over time 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. 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 ubiquitous, with harmful consequences for life on Earth, including a decline in biodiversity, with the potential to disrupt entire ecosystems.



## Environmental, Social, Governance (ESG) Issues

As well as responding to environmental challenges, the ESG agenda requires consideration of human rights violations, bribery, corruption, social divides and unethical corporate behaviour. How organisations respond to these factors is coming under increasing scrutiny from stakeholders such as investors, regulators and consumers, with the expectation that companies both manage the risks to which they are directly exposed and contribute to broader sustainable economic and social development goals. Organisations are also expected to engage wider societal groups in their stakeholder management. Failure to respond adequately can have a negative impact on the brand and reputation. This trend includes all risks associated with ESG influences and threats from outside or inside a company, regardless of general environmental and climate aspects.



# Major Trend Descriptions



## Shifting Geopolitical Landscape

The recent period of Western-based globalisation and liberalisation is being challenged by a global trend towards defragmentation of financial markets with regionalisation of trade, friend shoring and financial weaponisation and towards more conservative social policies. Tensions between the US and China are increasingly flexing the economic and political clout and shifting overall global economic power from the West to the East, increasing the complexity and instability of global balances, e.g. the expansion of BRICS economies (Brazil, Russia, India, China, South Africa) is challenging the petrodollar system. Conflict escalation becomes more likely. This has been demonstrated by Russia's invasion of Ukraine. Heightened conflict risk is also visible in many other areas of the World, such as the recent tensions around Taiwan and between Serbia and Kosovo, in addition to long-standing tensions in the Middle East and continental Africa. Escalation to a military conflict of global proportions and even the use of nuclear weapons seems possible. In the current geopolitical landscape, with a global increase in military spending, evolving terrorism threats become more concerning when state-owned military means are available. Finally, increasing attention to environmental and social matters may fuel protests and violent unrest.



## Technological Developments & Impacts on Society







Modern (disruptive) technologies, including big data and artificial intelligence (AI), digitisation, automation and robotics are boosting economic growth, performing repetitive tasks, and making processes and systems faster, cheaper and less prone to errors. Autonomous machines are increasingly being integrated into many areas of society, and AI is also enabling a shift towards the automation of more value-added tasks. The integration of these new technologies into human societies comes with numerous benefits, including assisting people in their daily lives, for example, by providing an improved customer experience (including greater product and provider choice, and speed of delivery); by improving healthcare; and by facilitating social interactions. However, there are many uncertain consequences of their adoption, including replacing jobs currently performed by people and the need for reskilling of some sections of the working population. In addition, changes in education systems may be required in the longer term. With the use of advanced AI techniques, information reliability is more and more at risk. The increased integration of technology into daily life also raises questions about the equal access of all sections of society to digital resources, data security and ethics regarding the use of data and AI algorithms. As digitisation is accelerating, new players may enter the insurance industry to compete or collaborate with traditional insurers.







## Demographic and Social Change

Several demographic trends are changing the way that society functions. Among them is urban population growth with the development of urban infrastructure, affecting how people move, work and socialise. Social cohesion is declining in many countries due to the adoption of social values that emphasise the individual. This trend has been boosted by the use of digital media and services. Depending on the country, the demographic and, consequently, social make-up is changing. For example, increasingly ageing populations in many developed countries, a rapidly growing middle class in developing countries and mass migrations of people both within and between countries, fueled by a range of economic, climatic and geopolitical factors. Although uncontrolled migration could translate into increased pressure on welfare systems and infrastructure, migration of skilled people is also crucial in the context of skills gaps created by retirement waves. These complex and interconnected phenomena have a range of consequences, including the potential for widening wealth gaps, societal and geopolitical conflicts and increasing environmental pressures.




# Emerging Risk Descriptions







TOPIC	ASSOCIATED TRENDS	DESCRIPTION	IMPACT ASSESSMENT	ERI PUBLICATION
Antimicrobial Resistance		Drug resistance occurs when microorganisms such as bacteria, viruses, mold, fungi, and parasites mutate in a way that renders certain medications ineffective. When microorganisms become resistant to most antimicrobials, they are often referred to as 'superbugs' that may cause long-lasting ailments or even become fatal. Some of the main risks associated with antimicrobial resistance from an insurance perspective are: Increased Healthcare Costs (longer and more complex treatment), Liability Claims (allegations of inadequate infection control practices or over prescription of antibiotics), Business Interruption (in healthcare, farming, agriculture, or food production with supply chain disruptions, or product recalls due to outbreaks of drug-resistant infections), Public Health and Life Insurance (higher mortality rates).		
Artificial Intelligence		There are several relevant aspects linked to the progress of Artificial Intelligence from 'weak' AI, designed to solve a specific problem such as winning at GO, to General AI, capable of what humans can do, but not achieved so far. The use of AI creates a risk related to decision transfer, where AI takes decisions without adequate transparency or human oversight, which may result in unpredictable outcomes and complex liability issues. Also, ethical and social aspects linked to AI are getting more prominent, e.g. regarding its use in automated underwriting, pricing and claims handling, exposing insurers to data privacy and security risks, bias and discrimination risks, and reputational risk. On the other hand, AI could be used by third parties to exploit weaknesses in an insurer's underwriting or claims processes. The predicted impact on the workforce, with the loss of certain jobs to AI, will also change the operating landscape for all lines of insurance. Finally, insurers have to deal with liability issues and compliance with regulations, such as the 'EU AI Liability Directive', which would significantly lower evidentiary hurdles for victims of damages caused by AI-related products or services to bring civil liability claims and create a 'presumption of causality' against the developer, provider, or user of the AI system.		2015
Autonomous Machines		Thanks to new developments in mechatronics, speed learning and artificial intelligence, rapid progress has been made in the field of autonomous machines, affecting many industries, the military and, eventually, also everyday life. Autonomous machines, such as self-driving cars and drones, have the potential to change the demand for traditional insurance products and create new types of insurance products. For instance, demand for traditional car insurance products could be lower as the risk of accidents caused by human error is reduced. However, cybersecurity, software failures, product liability claims against manufacturers and software providers, and other risks associated with autonomous machines will create demand for new types of insurance products. The developing legal situation around the use of autonomous machines as well as the increased related cyber risk and malicious use of the technology are emerging aspects that are difficult to predict.		2017







TOPIC	ASSOCIATED TRENDS	DESCRIPTION	IMPACT ASSESSMENT	ERI PUBLICATION
Biodiversity Loss		<p>All life on the planet depends on biodiversity, which is the variation in living organisms within species, between species and between ecosystems on Earth. Biodiversity provides a variety of 'ecosystem services' necessary for life on Earth, and biodiversity also provides various cultural services. Biodiversity continues to decline in every region on the planet due to human population pressure that has resulted in changing land use (particularly conversion to agricultural land and increasing urbanisation), overuse of natural resources (overfishing, deforestation), introduction of invasive species, pollution and climate change. Scientists are not able yet to determine tipping points. At the moment, Insurance companies seem to be affected more gradually than by sudden, unexpected shocks. But much work remains to be done to properly understand the consequences of biodiversity loss. Certain impacts of Natural Catastrophes can be strongly linked to biodiversity loss (e.g. reduction of natural coastal flood protection by mangroves and sand dunes). The impact on insurance companies varies by region, causing potential losses to both life and non-life business lines. Investment returns may also be impacted. Due to changing societal views on biodiversity, activism (partly together with climate activism) is on the rise. If insurers do not contribute sufficiently to improving biodiversity, reputational damage is possible.</p>	●	
Blockchain Technology and Digital Currencies		<p>Widespread adoption of blockchain technology has the potential to disrupt the financial industry. An example of this is Decentralised Finance (DeFi), which is a platform for managing financial transactions without the need for an intermediary such as a bank or an insurer. Adoption of the technology within the financial industry could have implications for data protection, anti-money laundering, financial stability, financial inclusion and cyberthreats. Digital currencies also use blockchain technology with transactions recorded on a distributed ledger. Central banks are at various stages of developing their own Central Bank Digital Currencies (CBDCs), with multiple pilot projects and implementation programmes currently underway. CBDCs could disrupt the electronic payment system, making it more frictionless, further removing the need for physical cash and intermediaries such as banks and insurers.</p>	●	



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Climate Change - Physical Risk		<p>Direct physical consequences of rising global temperatures include observed changes in the frequency and severity of extreme weather events (e.g. windstorms, drought, precipitation). Heatwaves are likely to occur more frequently and last longer as average global temperatures rise. Globally, gradually increasing sea levels in combination with stronger windstorm surges will amplify the risk in coastal areas over time. There are regional differences across the world. Since the climate system is highly non-linear and may trigger so-called climate tipping points (e.g. thawing of Siberian permafrost), climate change patterns are still difficult to predict and uncertain. Current trends can accelerate towards more extreme weather and have broader impacts on climate and ecosystems. Drought and different precipitation patterns may also affect the future public water supply.</p> <p>Potential impacts differ for Non-Life and Life and Health insurers. For example, Life and Health Insurers are more exposed to cold- and hot-related mortality, which is highly regionally related. Potential impacts will also differ in the extent to which impacts can be passed on to clients through premium adjustments and insurance conditions. Future coverage by Reinsurance will influence this. This may create socially undesirable effects and insurability dilemmas. Future impacts will also be influenced by government adaptation measures (e.g. enforcements of dikes regarding river flooding and sea level rise, heat plans) and how Insurance companies will support clients to prevent losses (e.g. reinforced greenhouses). Assets can also be affected by physical climate change (e.g. property/mortgages, shares, credits).</p>	●	
Climate Change - Transition Risk		<p>Climate change transition risk refers to the danger associated with the necessary shift towards a low-carbon economy and addressing climate change. For an insurer, the emergence of climate change presents a range of transition risks that must be considered. These risks may arise from product design, including underwriting new risks without loss history and large losses under environmental liability. In addition, stranded assets may become a concern, such as the shrinking market value of the coal sector, greenwashing, and energy efficiency labels in real estate. There may also be legal risks, including liability issues, as well as political risks, such as new regulations. Market risks can also arise from changing consumer behaviour, while technological risks can lead to a failure to keep pace with advancements, resulting in competitive disadvantages. Reputational risks may also be a concern, such as shifts in consumer preferences, stigmatisation of sectors, increased stakeholder concern, or negative stakeholder feedback. Finally, there is the possibility of business continuity management (BCM) risks in case of climate activist actions.</p>	●	2018









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Climate Engineering		<p>Climate engineering, also referred to as ‘geo-engineering’, involves large-scale international interventions in the Earth’s climate system aimed at combating climate change. These interventions can be categorised into two types: Carbon Dioxide Removal (CDR) techniques and Solar Geoengineering or Solar Radiation Management (SRM) techniques. CDR techniques focus on reducing carbon emissions and include solutions such as reforestation, carbon capture and storage (CCS), ocean fertilisation, and artificial trees. SRM techniques aim to rapidly cool the Earth’s temperature with technologies like marine cloud brightening, which releases droplets of seawater into clouds to reflect sunlight, and stratospheric sulfur injection, mimicking the cooling effect of volcanic eruptions. However, active geoengineering techniques run a significant risk of releasing additional substances into the atmosphere, which can potentially contribute to environmental pollution. Since these techniques are new, it might be risky for insurers to provide technical coverage for corporate business as well, because it is based on factors such as technology effectiveness, regulatory frameworks, operational procedures, and environmental impacts, which are not properly known. Additionally, more radical geoengineering concepts like large-scale ocean seeding and SRM carry various risks, including environmental and geopolitical risks, and lack of a policy framework.</p>	●	
Collective Redress		<p>Collective redress is defined as a “procedural mechanism which allows, for reasons of procedural economy and/or efficiency of enforcement, many single claims (relating to the same case) to be bundled into a single court action”. The development of collective redress mechanisms in Europe can create an inflation of claims, as seen with Class Actions in North America. This legal sophistication may lead to more successful – and expensive – insurance claims and ballooning defence costs for the insurer. This creates challenges for insurers in anticipating outsized losses and accounting for them in underwriting and pricing risks. Further, as it mostly impacts ‘long tail’ lines, it may take several years to determine the impact to the book. A reputation risk is also associated with these types of penalties with media coverage of judicial cases.</p>	●	
Critical Infrastructure Failures		<p>In many regions of the world, there is a chronic failure to adequately invest in, upgrade and secure physical and digital infrastructure networks such as electricity provision, water supply, or communications and transport infrastructure. The lack of capacity, deterioration, and overload may result in outages. This could lead to a higher-than-expected frequency and severity of large property and non-property losses (incl. BI/ CBI). In addition, external factors such as the risk of natural catastrophes, solar storms, cyberattacks or geopolitical conflict increase the likelihood of disruption to critical infrastructure. Furthermore, the transition to renewable energy may impact the stability of the energy supply.</p>	●	2008 & 2011







TOPIC	ASSOCIATED TRENDS	DESCRIPTION	IMPACT ASSESSMENT	ERI PUBLICATION
Cyber Risks		<p>Certain aspects of cyber risk have already emerged and should be considered as a persistent threat, spreading across geographies, industries and financial sectors. Continuously emerging elements can be noticed in increasingly sophisticated attacks and in the widening of the attack surface, leveraging on the evolution of new technologies. Just to mention a few examples, the rise of quantum computing could lead to the disruption of current encryption protocols, exposing confidential data to potential breaches. Artificial Intelligence might be leveraged to perpetrate several cyber-related activities: from the massive distribution of deep-fake information, leading to even more difficulties in discerning the truth, to the development of sophisticated malware powered by AI. Geopolitical tensions are also increasing the risk of cyberwarfare, with politically motivated hacking to conduct sabotage and espionage. While supply chain attacks are primarily associated with state-backed actors, cybercriminals are becoming more interested and proficient in the supply chain as an attack vector to conduct their operations. From an insurance perspective, the main consequences include financial, operational and reputational losses due to, for example, business interruption, claims on cyber policies and data theft.</p>		
Data Ethics		<p>The legal landscape and related ethical implications around data privacy and data use are complex and constantly evolving. This, combined with growing customer awareness and the increased integration of technology into everyday life, raises questions about access to digital resources, data security and ethics, loss of privacy, data fraud, and data theft. Data could be used in ways that stakeholders find unacceptable. With the individual more in charge of 'owning their data', it becomes more difficult for insurers to know enough about their customers, potentially increasing the risk of adverse selection. In addition, regulators/governments could decide that the use of certain data in insurance pricing is not admissible/discriminatory and restrict the information that can be used to price insurance products and handle claims. This, in turn, could endanger the principle of risk pooling and lead to lower access to insurance coverage for certain groups and higher insurance claims.</p>		
Emerging Infectious Diseases		<p>Pathogens are constantly evolving, and the impacts of climate change (e.g. defrosted pathogens from thawing permafrost), international trade, travel networks, demographic factors and human agricultural and forestry practices are creating new opportunities for them to spread. There are considerable risks from new communicable diseases that seriously affect human morbidity and mortality and pave the way for new pandemics, especially from pathogens that are poorly understood, highly contagious and difficult to treat or that infect humans who have not been previously exposed to them. Some of the main risks associated with new infectious diseases from an insurance perspective are: Increased Healthcare Costs (hospitalisation, diagnostic testing, treatment), Business Interruption (reduced operations), Travel Insurance (trip cancellations), Entertainment Insurance (Event Cancellations), Reputational Risks, Life and Health Insurance (higher mortality rates). Pandemics can also have a significant effect on the whole economic and financial landscape, but the large number of variables influencing the outcome, including non-medical interventions, supply chain resilience, and political positions, is making it difficult for insurers to predict the severity of the next pandemic. Pathogens affecting major food crops and domesticated animals (including, more broadly, insects such as honeybees) are another emerging risk of growing importance.</p>		







TOPIC	ASSOCIATED TRENDS	DESCRIPTION	IMPACT ASSESSMENT	ERI PUBLICATION
Energy Storage Systems		In the context of the green energy transition and attempts to reduce fossil fuel dependencies, also in light of geopolitical conflicts and tensions, large-scale energy storage systems are taking centre stage in the global economy. New storage technologies, ranging from batteries to store electricity over hydrogen in tanks and rock caverns to mechanical storage systems, come with prototype risk and a lack of loss experience. On regional and international levels, the integration of different storage systems and their connection with smart grids and energy supply chains also entail systemic risks. The high demand for both traditional (hydro dams) and innovative storage systems brings about new supply chain challenges and political and sustainability risks.		2022
Environmental Pollution		Environmental pollution has major damaging impacts on the human population and the wider biodiversity of the planet through the introduction of harmful materials into the environment. There are different types of pollution, resulting in varied levels and types of harm, including: air pollution, water pollution, noise pollution, light pollution and soil pollution. More recently, there has been a focus on risks of pollution from plastic litter and debris of all kinds, including microplastic 'smog', which is now ubiquitously found on all surfaces of the planet and in the food chain, with implications for human health and liability claims. Non-Life Insurance may face increasing losses due to liability claims. Health Insurance is exposed to greater health losses, but the impacts depend on the solidarity mechanism in Health systems. Moreover, environmental pollution has the potential to affect real estate investments, as it can cause damage to the surrounding environment. Activism may arise. Insurers involved in the underwriting of polluting companies may face reputational damage.		2009
Evolving Terrorism		The risk of terrorism is an evolving threat, making it difficult and subjective to assess. Its inventive and adaptive nature undermines probabilistic modelling inferred from the past. Future terrorist attacks may aim at any type of target and leverage old and new developments, for example, digital innovations like drones and AI-based technologies, which may also take the form of cyberterrorism and even space terrorism. Other non-conventional methods include Electromagnetic Pulse (EMP) and NBCR (Nuclear, Biological, Chemical, Radiological) attacks. All these threats become even more concerning in the current geopolitical landscape with significant investments in weapons. Nuclear terrorism, for example, can have even more disruptive consequences if state-owned military means are available. The increasing attention towards environmental matters has also led to a rise in 'eco-terrorism', acts of violence committed in the name of an environmental cause. For insurers, these evolving terrorist attacks not only constitute a threat to properties and business interruptions but can even lead to the loss of lives.		2007

TOPIC	ASSOCIATED TRENDS	DESCRIPTION	IMPACT ASSESSMENT	ERI PUBLICATION
Genetic Engineering / Synthetic Biology		<p>Genetic Engineering is simply the technique used to artificially redesign the genetic structure (DNA) of animals, plants, or other organisms to make them stronger or more suitable for a particular purpose. Synthetic biology, the field of science that involves the design and construction of new biological parts, devices, and system can alter the genetic material in viruses, bacteria, yeasts, plants, or animals to give them useful new characteristics. What they all have in common is the modification of the genetic material. So far, controversy, ethical issues and claims have been seen mainly in gene therapy, in the field of gene foods, and in food mismatches, with incompatibilities, ecological damage and various product recalls, which raised concerns with regard to human and environmental health. Some of the main risks associated with Synthetic biology from an insurance perspective are: Liability &amp; Product Risks (causing harm to individuals, property, or the environment), Intellectual Property and Patent (patent disputes or infringement cases), Environmental Impacts (release of engineered organisms or genetically modified organisms into the environment), Health &amp; Safety Risks (workplace safety, occupational hazards, and potential exposure to harmful substances), Reputational risks (ethical issues), Bioterrorism (misuse of engineered organisms or genetic materials for harmful purposes).</p>	●	
Geopolitical Tensions and Conflicts		<p>Increasing disputes between countries may result in trade and military conflicts, as demonstrated by US-China tensions and the Ukraine war. The first shows how bans, sanctions and technology decoupling can impact the global economy and supply chain and how military tensions around Taiwan exacerbate this situation. The second proves that Europe is not immune to wars. Increasing tensions can also be observed between Serbia and Kosovo as well as in other regions where conflicts are a long-standing reality, such as the Middle East and continental Africa. Moreover, the global equilibrium is changing: the petrodollar system, for example, is challenged by the increased interest in trading oil in yuan, drawn by the expansion of BRICS economies (Brazil, Russia, India, China, South Africa). Geopolitical risk is compounded by nuclear proliferation, global rise in military expenditure, new military technologies, such as autonomous weapons, and by pressures through commodities and rare earth minerals. The stability of the global economy is also under threat, with emerging markets being less resilient. A defragmentation of financial markets is visible with regionalisation of trade, friendshoring and financial weaponisation. Furthermore, different interests in environmental and social topics, such as green economy and human rights, may fuel social tensions and violent unrest. Among the social consequences, mass migration is a pervasive one. Insurers may be affected by the economic and financial implications of geopolitical instability and by losses under property schemes (including BI/CBI and SRCC - strike, riot, civil commotion).</p>	●	



TOPIC	ASSOCIATED TRENDS	DESCRIPTION	IMPACT ASSESSMENT	ERI PUBLICATION
Global Debt Crisis		Since the great financial crisis, loose monetary policies have led to governments, businesses and consumers accumulating high levels of debt. As a result, there is a risk of mass bankruptcies or insolvencies, liquidity crises or defaults and sovereign debt crises. This risk is further exacerbated by the recent and unprecedented rise in interest rates across developed economies to tackle high inflation not seen since the 1970s. As new debt is financed at higher interest rates, servicing new and existing debt becomes more challenging, further increasing the risk of defaults. A debt crisis could have similar consequences to the great financial crisis or worse if countries were to default on their debt, leading to a deep recession and significant drawdown in assets, which would adversely impact the balance sheet of insurers. Elevated debt levels and stretched social safety nets post-Covid-19 also increased income and wealth gaps within and across countries, leaving the younger generation, in particular, at a disadvantage. A slowdown in the global economy would impact insurance demand and potentially lead to higher claims ratios as lower-risk individuals and businesses opt out of paying for insurance.		
Hazardous Chemicals and Small Particles		Many chemicals can be harmful to the environment or health if inhaled, ingested or absorbed through the skin. In particular, chemicals such as PFAS are carcinogenic, others, such as endocrine disruptors, could be bio accumulative or have the character of 'forever chemicals' that pose a high risk. Another group are small particles, like fine dust, microplastics or man-made nanoparticles. For many substances, their widespread use, chemical stability and accumulation through the food chain and lifespan make them prone to serial and cumulative losses. There is the potential for long latent major losses in various insurance sectors, including a long-term impact on morbidity and mortality claims. While some legal action against certain substances has already been taken, liability claims may arise due to the legacy tail from the time when policies were underwritten before scientific links to human harm had been established, its mass litigation potential and high defence costs.		2010
Information Reliability		New digital abilities to manufacture fake content (photos, videos, audio, text) are proliferating, and the speed and the effortlessness to produce and distribute sophisticated fakes are increasing, particularly with the recent launch of generative AI technologies such as Midjourney. Deep fakes (e.g. AI-enabled simulated videos) or fake information can be used for fraud, to harass individuals, defame social groups, blackmail organisations or destabilise political systems and markets, with negative side effects on individuals but also on democracy. Another aspect of information reliability is with respect to the past. Erasing online data, for example, on past wrongdoings committed by individuals or companies, can lead to false representation. For insurance, there are implications for underwriting, claims handling, and reputational risk, as well as implications for cyber and social unrest. More generally, trust in objective evidence may be diminished, and false information may supersede facts needed to take adequate decisions.		



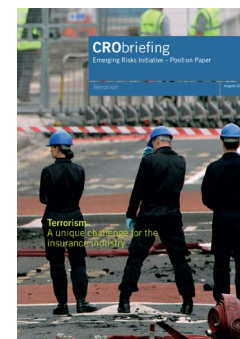
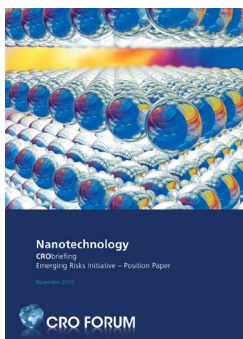
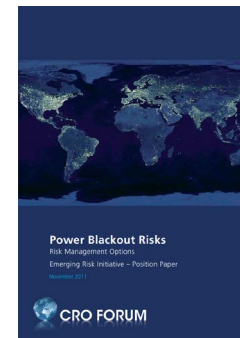
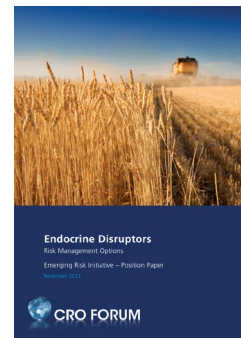
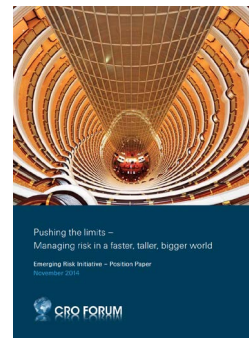
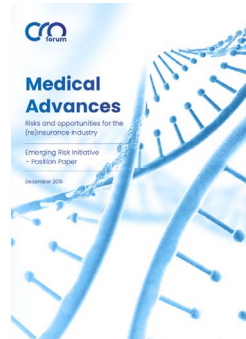
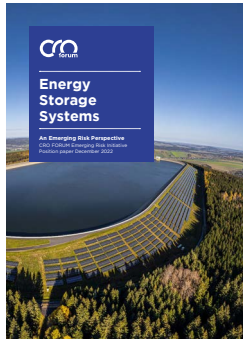
TOPIC	ASSOCIATED TRENDS	DESCRIPTION	IMPACT ASSESSMENT	ERI PUBLICATION
Legal and Regulatory Uncertainty		New regulations can lead companies to review the effectiveness of their governance and processes. The continued adoption of new or proposed regulations, with regard to ESG, data, or conduct can lead to compliance and operational challenges and to increasing complexity. Conduct regulation continues to gain prominence and is one key example of where this risk can emerge. Furthermore, overregulation, misregulation, nonregulation, and the extraterritoriality of regulation have been identified as risks in some areas. Those changes have wide impacts on the investment chain and the insurance business (from operational consequences with reporting and disclosure obligations to design of products and provision of insurance). There could also be impacts on litigation risk (such as allegations of greenwashing ) and D&O coverage.		
Medical Advances		Significant advances that have recently been made in several medical fields can bring considerable benefits in predicting, preventing, diagnosing, and treating illnesses and thus will improve human health and longevity. However, adverse selection and information asymmetry between insurers and applicants may arise, affecting the availability, accessibility and affordability of insurance policies, and many more claims. 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 covers. For predictive genetic testing in particular, while improvements in data processing algorithms and artificial intelligence are expected to increase accuracy and reliability, the legal landscape and related ethical implications are complex and constantly evolving and could impact Liability insurance and brand images.		2019
Mental Health		Mental health is not just the absence of mental illness but rather a complete mental ability and state of well-being. Accordingly, being mentally healthy is fundamental to performing everyday activities. Yet 20% of the world's population suffer from a mental disorder at some point in their lives. Many mental health issues are neither severe nor lasting but mild to moderate short-term mental health conditions such as depression, anxiety, stress, and burnout. Although most mental illnesses are treatable, most people suffering from mental health issues go unsupported. Furthermore, mental health risks are increasing worldwide. Stress and isolation caused by the Covid-19 pandemic outbreak have exacerbated this trend. Research shows that the current healthcare system is not ready to cope with the impacts of mental disorders. Consequently, an increase in claims related to medical expenses for Health insurance, occupational disability claims, Life insurance claims (because of higher suicide rates), and P&C claims (e.g. Workers' Compensation, Employers' Liability, Accident and Health, etc.) can be expected. This shift in insurance claims from somatic to mental illnesses over the last years highlights the necessary implications for insurers and their role in addressing the related evolving and costly risks.		2021

TOPIC	ASSOCIATED TRENDS	DESCRIPTION	IMPACT ASSESSMENT	ERI PUBLICATION
Metabolic Syndrome		<p>Metabolic syndrome is generally understood as the combination of three out of five conditions: Obesity, Hypertension, type 1 or 2 Diabetes, low levels of high-density lipoprotein (HDL) cholesterol and high Triglyceride levels in individual patients. It is associated with the risk of developing severe and chronic complications such as cardiovascular disease, myocardial infarction, stroke or kidney and liver disease. Many factors, such as inactive lifestyle, age, race, and sex, play a role in exacerbating the risks. About 20-25% of the world's adult population may be affected by the metabolic syndrome, and its prevalence is predicted to increase in the future. Metabolic syndrome has a negative impact on life expectancy and healthcare costs, but it also has a liability aspect. Risks associated with it can be reduced with prevention measures, in line with education, physical activity, not smoking, moderate alcohol consumption and healthy diet, in which the insurance sector must invest.</p>		
New Insurance Competition		<p>The traditional role of insurers is impacted by non-traditional competition entering markets. On the one hand, there is the risk of value chain disintermediation, forcing insurers to choose which position to take in the value chain (white label producer, 'owner of customer relationship' or not). It is becoming more common for insurance products to be incorporated into regular products and services (embedded insurance). More informed and tech-savvy customers expect insurers to provide a seamless digital experience, leading to an increased focus on technology and innovation. Insurers seek to implement digital strategies by partnering with startups or Insurtechs and through their own innovation labs. In certain markets, general agents take over the market, stepping in between the customer and the insurers, which mainly impacts P&amp;C insurers. Furthermore, there is the risk of big tech companies coming into play, which may be better positioned than traditional insurers: their investment potential is high, they have much better digital capabilities, they already have access to large amounts of valuable data on potential customers, and individuals are more likely to share data with them than with insurers.</p>		
Resource and Supply Management		<p>All the resources on which our lives and the global economy depend can become scarce if not managed sustainably throughout the entire product value chain. As the global economy grows and the world's population increases and lives longer - mainly driven by industrialisation, growth in developing countries and medical advances - the need for food, water and natural resources is also increasing, putting pressure on resources that are already limited and expected to be even scarcer in the future due to climate change and biodiversity losses. The increasing shortages can lead to wide-ranging effects: social, such as reduced quality of life, migration and geopolitical disorders; economic, such as rising commodity prices affecting people's spending capacity; and even environmental. The latter not only includes the ripple effects on natural ecosystems that depend on resource availability but also the potential environmental damages resulting from exploring previously pristine areas (e.g. drilling in the Arctic) and using new technologies in extreme environments. For example, the development and extraction of unconventional oil and gas deposits like fracking, oil sands or subsea methane hydrates require procedures and technologies that differ significantly from those for conventional resources. From an insurance perspective, the main consequences are financial losses due to business interruption and further impacts on life and health.</p>		

TOPIC	ASSOCIATED TRENDS	DESCRIPTION	IMPACT ASSESSMENT	ERI PUBLICATION
Skills Shortage and Reskilling		<p>Skills shortages across different industries are difficult to identify and measure, resulting in an impact on insurance claims that may go unnoticed and unattributed. Mismatches and shortages in engineering and medical skills have been reported for decades and are now exacerbated by retirement waves and technological advances. In the absence of lifelong learning and adaptation to new technologies and work trends, more industries could see a growing skills gap. The interaction of this development with the growing use of AI will bring additional challenges. For Property and Casualty business, skills shortages may result in the inability to sustain risk prevention measures, longer business interruption periods, costlier repairs and more product failures. Inappropriate decisions or mistakes made by inexperienced or overworked medical staff and less or delayed medical services could lead to an increase in medical malpractice claims and worsening mortality and morbidity. Mental health impacts on overtired or under-skilled employees could be another longer-term consequence. From an operational perspective, the insurance industry relies on highly skilled actuaries, loss adjusters, underwriters and asset managers and is thus directly exposed to this risk.</p>	●	
Space Risk		<p>Private space companies, space tourism and microsattellites are driving the ‘space risks’ of our time. The current expansion in the deployment of satellite mega-constellations by commercial space companies has the potential to significantly increase the number of objects in orbit. The risk of damage to operational systems due to collisions (with space debris, other operational systems or meteorites) increases accordingly. More space debris is also connected with higher risks when it re-enters Earth’s atmosphere and can cause various kinds of damage. Other relevant factors in terms of space risks include solar flares, cyberattacks and military-operated satellites. Here, the potential exists for massive impacts on critical infrastructure on Earth and potential geopolitical tensions as a result.</p>	●	
Substance Abuse		<p>Substance abuse is usually defined as the use of illegal substances or the misuse or excessive use of legal substances. Those substances can range from opioid drugs, prescribed medications to alcohol and nicotine, they cause addiction and harm the brain and the body. Currently, the United States and many other countries are facing a significant ‘Opioid Crisis’ with more than 2 million Americans suffering from an addiction to prescription opioids or heroin. Drug overdoses are the leading cause of death of Americans under the age of 50. The number of death cases from drug overdoses is increasing year after year. Similar substance abuse crises may develop in the rest of the world as well. E-cigarettes (vaping), which were promoted as a tool to help smokers quit, have the opposite result by making more people, especially young adults and teenagers, addicted to nicotine, particularly the flavoured ones. Making matters worse is that teens buy the smuggled and cheap e-cigarettes, which carry a heavier risk, as they are not controlled by the legal authorities. For insurers, there were and still are many health-related risks in addition to a bad economic impact. Furthermore, it appears that illicit drugs such as cannabis, cocaine, amphetamines and opiates are increasingly implicated in traffic accidents, also affecting motor insurance.</p>	●	

TOPIC	ASSOCIATED TRENDS	DESCRIPTION	IMPACT ASSESSMENT	ERI PUBLICATION
Supply Chain Complexity		<p>The high degree of optimisation and interconnectivity makes global supply chains vulnerable to risk concentration and disruptions that may lead to higher-than-expected insured losses. Cyberattacks pose a further existential threat to digitalised networks. Non-economic disruptors capable of reshaping the global supply chain network include pandemic events, as evidenced by the Covid-19 experience, international sanctions, increased public scrutiny of ESG compliance and the rise of geopolitical turmoil. All above-mentioned dynamics, especially when it involves sensitive areas for global commerce, can lead to rising costs, disruption of supply chain operations, and business interruption for enterprises with ripple effects at the global level. To achieve greater resilience, alternative solutions could be adopted, including nearshoring, regionalisation, the build-up of strategic storage and diligent sourcing of scarce resources. All emerging trends suggest that the world is entering a deglobalisation phase, resulting in financial instability and challenges, especially for those countries and companies that are most dependent on global trade. The impacts are expected to be more severe in countries that are more dependent on energy and technology imports. The impact on the insurance business not only creates potential operational challenges but can also be indirect and affect investment and underwriting activities.</p>		

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