Allianz

Global Risk Dialogue

Allianz Global Corporate & Specialty

Analysis and insight from the world of corporate risk and insurance

Key challenges for financial services companies

Minimizing exposures in a time of global turmoil

The persistent peril of PFAS: toxic 'forever chemicals'

Top risk drivers in the tech and telecoms sector

Tornadoes: how to weather the ravages of a twister

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Feature articles

Photo: State Farm/ Wikimedia Commons
The devastating power of tornadoes and how you can prepare for them

Photo: Adobe Stock
Trends for directors and officers to watch and other insights on the AGCS website

In conclusion

Let's start the dialogue

Welcome to **Global Risk Dialogue**, the biannual exchange of ideas and opinions from insurance professionals, risk managers, brokers, and the media. In this time of global turbulence, we have gathered the expert insights of AGCS risk engineers, underwriters, claims experts, and leaders, to help you stay informed of emerging exposures and chart your way through a risk landscape in a state of flux.

We hope you enjoy this latest issue.

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Global Risk Dialogue
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Cover image: Adobe Stock

News from AGCS and Allianz

Photo: Adobe Stock

Employee donations will be matched up to €2.5mn

Allianz pledges up to €12.5mn in aid for Ukraine

Allianz SE has announced it will donate €10mn to support humanitarian efforts following the invasion of Ukraine. It will also match donations made by Allianz employees with up to €2.5mn. The first million euros will be donated immediately to the German Red Cross to provide aid for those displaced by the conflict or who are in need in Ukraine. Included in the €10mn sum will be a donation of €375,000 to SOS Children's Villages, a long-term partner of Allianz, which will provide children and their families with support for relocation and shelter, family reunification, material support, and trauma care.

Allianz is also providing free insurance coverage to Ukrainian refugees and their helpers in Austria, the Czech Republic, Germany, Hungary, Poland, Slovakia and the UK. This includes people who provide private accommodation.

Find out more here: **Overview of Where Allianz Offers Free Insurance to Ukrainian Refugees and their Helpers.**

AGCS names Max Benz new Global Head of Energy & Construction

Max Benz joined AGCS in February 2022 to head up the Energy & Construction line of business, which generated about 13% of AGCS's gross written premium in 2020.

A swiss national, Benz was previously AXA XL's Global Chief Underwriting Officer (CUO) for Construction as well as Regional Product CUO Construction for Asia Pacific and Europe. Until the merger of Axa and XL Catlin in 2018 he was a Construction Underwriting Manager, overseeing all markets outside North America for XL Catlin's insurance operations. From 1999 to 2015, he held similar underwriting roles for XL and Winterthur International. Benz is a trained mechanical engineer with a degree in mechanical engineering from ZHAW (Zurich University of Applied Sciences) Winterthur and worked in industry for several years before moving into corporate insurance in 1994.

Gender equality certification for Allianz insurance entities

GLOBAL CERTIFICATION FOR GENDER EQUALITY
EDGE
ASSESS
CERTIFIED

The globally recognized EDGE Assess Certification for gender equality has been awarded to Allianz's insurance entities. The assessment covers almost 80% of Allianz Group's headcount and 68 individual entities, including AGCS.

EDGE was launched at the World Economic Forum in 2011 and stands for Economic Dividends for Gender Equality. It is a leading global assessment and business certification for gender and intersectional equity, measuring where organizations stand in terms of representation, policies, pay equity, and inclusivity.

Allianz has made great strides towards gender equality in recent years. A quarter of all boards of management across the group are women, and the company has gender-balanced succession plans for its global executive positions. It also committed to equal pay – same pay for the same work, irrespective of gender – by the end of 2021.

Loss log: Construction claims

AGCS analysis of over €11bn worth of construction and engineering claims over five years identifies the top causes by value and frequency.

Fire and explosion incidents are the biggest cause of losses for construction and engineering companies, accounting for over a quarter (26%) by value, according to a new report from **AGCS, Managing the New Age of Construction Risk – 10 Trends to Watch as the Sector Builds Back Better**.

Analysis of close to 30,000 claims over five years with an approximate value of €11.3bn ($12.8bn) (*see graphic*) shows that fires have caused in excess of €2.3bn of insured losses. Although the frequency of such claims is relatively low (less than 7%), when such incidents do occur, their financial impact can be severe, driven by the increasing values associated with engineering and construction projects today – the largest are in the tens of billions of dollars and can run for many years.

Natural hazards are the second largest cause of claims, accounting for 20% of those analyzed, the report notes. They are also the most frequent driver of activity, accounting for around one in five claims by number. Recent events such as the Bernd floods in Western Europe and weather events in China and the US – such as Winter Storm Uri, the most expensive on record – have showed the construction industry, as well as other sectors, that secondary hazards including flooding, heavy rain and tornadoes are increasing in frequency and severity and companies need to become more weather-resilient.

The third most expensive cause of claims is design defects and poor workmanship, again accounting for around 20% of the value of losses analyzed over five years. The report notes that in a post Covid-19 environment any accelerated deployment of cost-cutting strategies, together with implementation of competitive technologies and designs, may well result in a heightened risk environment for the construction industry and insurers alike. Continued risk monitoring and management controls will be key, especially for new designs, advanced construction materials and innovative technologies. Design reviews and on-site quality controls are essential to safeguard cost-effective project execution and delivery outcomes.

Top five causes of loss: engineering and construction claims

By value of claims:

Fire, explosion	26%
Natural hazards	20%
Defective product	12%
Faulty workmanship/maintenance	8%
Human error/operating error	6%
Other	30%

FIRE IS RESPONSIBLE FOR MORE THAN A QUARTER (26%) OF THE VALUE OF ALL ENGINEERING INSURANCE LOSSES

By number of claims:

Natural hazards	17%
Defective product	14%
Human error/operating error	10%
Faulty workmanship/maintenance	8%
Damaged goods (including handling and storage)	7%
Other	44%

NATURAL HAZARDS ACCOUNT FOR ALMOST ONE IN FIVE CLAIMS BY NUMBER

Percentage totals have been rounded up, so may total more than 100%

Based on analysis of 29,640 insurance industry claims between January 1, 2016 and December 31, 2020 with an approximate value of €11.3bn (US$12.8bn). Claims total includes the share of other insurers in addition to AGCS.

Source: Allianz Global Corporate & Specialty

Find out more about risk trends in the construction sector in the AGCS **Managing the New Age of Construction Risk – 10 Trends to Watch as the Sector Builds Back Better** report.

Photo: Adobe Stock

Businesses expanding overseas are facing an increasingly complex risk landscape

4 questions for...

Nigel Leppitt, Global Head of Multinational and Client Services at AGCS

For businesses with an international presence, navigating a world of regulatory frameworks and multiple perils can be fraught. Here, Nigel Leppitt, Global Head of Multinational and Client Services at AGCS, explains how multinational programs can support businesses with complex needs by bundling risks into one flexible master policy.

What issues make global companies interested in multinational insurance programs and why?

Most companies considering expansion overseas start by looking at the opportunities this can offer – new revenue sources, higher brand awareness, growth, profitability, or lower production and supply costs. But as well as scale, any company crossing borders must address uncertainty and operational risk along with their developing footprint.

Since the early days of ship and cargo insurance, international organizations have sought to protect their assets at home and abroad. Arguably, risk prevention and protection has never been so complex. Consider how the level of intangible assets on a company's balance sheet has increased by over 255%[1] since 2009, compared to 97% for tangible assets in the same period. And it's not just physical assets that need protection, but also knowledge assets in the cloud or brand reputation.

Risks are also harder to predict, especially where there are limited historical trends to work from. Take concerns around ESG (environmental, social, governance) – the 'S' for social risks has been heightened by Covid-19, with reported insured losses of over US$44bn[2].

[1] PWC Viewpoint, The Unbalanced Balance Sheet: Making Intangibles Count, February 11, 2021
[2] Insurance Journal, COVID-19 Claims of $44B are 3rd Largest Catastrophe Loss: Howden, January 4, 2022

Recently, AGCS clients ranked cyber incidents, business interruption (BI) and natural catastrophes as the three biggest risks they face[3]. Multinational programs – where a business can bundle all its risks into a single master policy covering its global assets and operations – are therefore attractive to corporate risk managers. These programs have become more sophisticated over the years, and AGCS can provide clients with flexible solutions to cover the spectrum of risk transfer and non-risk transfer needs.

Many clients want to vary their risk portfolio over time, deciding which risks to place in the insurance market and which to retain on their own balance sheet or in a captive. AGCS helps design such multinational insurance programs and provides a global network to support international companies wherever they are based.

Why are international insurance programs (IIPs) a solution to the global disruptors affecting multinational clients?

BI is one of the biggest concerns facing multinationals. In 2021, insured losses caused by natural catastrophes were estimated at US$105bn and the summer's European floods are believed to have caused economic losses amounting to over US$40bn[4]. So, whether BI is caused by existential risks such as a natural catastrophe impacting physical property, cyber-attacks interrupting the supply chain, or a pandemic affecting individuals, companies have to consider the best ways to manage disruption and continue to trade.

Businesses can mitigate through measures such as diversifying or digitalizing supply chains or rigorous quality control, but ultimately they need further protection in the markets where they operate. This requires risk coverage in different regulatory and political jurisdictions and ensuring it is provided on time, at the right level.

The main advantage of a global program is simplification and coordination. IIPs provide a centrally coordinated master program linked to locally admitted policies. They cater for the range of cross-border risks, conditions and limits that a global entity needs to protect its business – while complying with local regulations. For example, one of our international clients recently wanted a multi-line (property/liability), multi-country solution, with partial self-retention of the intangible risks in their captive. By leveraging our network capability, both the risk transfer and non-risk transfer components are now serviced to the required service level agreements. This has reduced workload for the client and created cost savings.

In a world that is both fragmented and connected, what are the other benefits of a multinational insurance program?

Most companies are experts in their sector, but not necessarily in understanding the global regulatory frameworks or license rules linked to insurance. A benefit of using a partner such as AGCS is that the multitude of insurance guidelines and regulations are managed by the carrier rather than the client. AGCS can handle these in an international program rather than a patchwork of country-level or individual agreements, policies and coverages. A global program delivers full coverage, or "bridges" the risk of coverage gap, by having a master policy that specifies the difference in coverage and limits. This caters for the current risk footprint of the international business but can also "flex forwards", as the business grows, acquires, divests or enters new markets. If a business has to adapt to emerging intangible or tangible risks, it can be taken care of in this partnership.

Regular multinational program stewardship meetings allow the program to be changed as client needs evolve. Design reviews allow for the evolving coverage versus self-retention decisions, depending on the risk manager's appetite and portfolio.

How is AGCS strengthening its service offering for multinational programs?

We recognize each business has its own risk appetite, prevention and protection needs. Our global presence and breadth of scope allow us to provide bespoke or standardized solutions. For example, we recently packaged a solution for a multinational retailer that required a one-stop-shop insurance solution spanning its markets of interest, including property, energy and construction, marine, and political violence.

We have overhauled service levels across our network, and this year we will extend our offering to new segments and markets. In future, we expect the use of data and digital data exchange to become integral to how we interact with clients and partners.

Biography

Nigel Leppitt is an expert in strategic consulting and executive management with 35 years' experience, helping companies adapt to change and navigate uncertainty. He has spent the last 20 years in financial services and is now focused on tailoring the AGCS multinational strategy and service offering to the complex geographic and operational needs of international clients.

[3] Allianz Risk Barometer 2022, January 18, 2022
[4] Swiss Re, Global Insured Catastrophe Losses Rise to USD112 Billion in 2021, the Fourth Highest on Record, December 14, 2021

And the award goes to...

Insuring half the Best Picture nominees at the Academy Awards this year, AGCS has earned its place in the front row of risk-managing movie productions, with a heritage that goes back to the early days of celluloid.

The Oscars returned to (show) business as almost usual on Sunday March 27, 2022, after two years of Covid-related modifications and three years without the customary wisecracking hosts. Having decamped in part to the Union Station in Los Angeles last year, the 94th Academy Awards was firmly rooted back at its regular haunt, the Dolby Theatre, for a ceremony that was emceed by comedic powerhouses Regina Hall, Amy Schumer and Wanda Sykes.

The trio marked the first all-female line-up in the event's history and represented an industry that has been shocked into change, like so many others over the last couple of years. As Covid-19 lockdowns halted film productions and closed movie theaters around the world, new technology and streaming services were changing the way films were seen and enjoyed. As a result, five out of the 10 Best Picture nominees were pure streaming or hybrid releases[1] (available to stream and in movie theaters on the same day) and five were purely theatrical releases.

Although the film industry has been through a time of tumult, moviegoers are returning to theaters with more confidence as Covid restrictions have been lifted. Global cinema box office totaled $21.4bn[2] in 2021, according to Gower Street Analytics – that's 78% more than 2020, but still less than half the $41.3bn average of the three pre-pandemic years from 2017 to 2019. The industry is not expected to return to pre-pandemic box-office levels until at least 2023.

Rolling with the changes

AGCS has been a witness to Hollywood history during its 100 years of insuring blockbusters, from silent slapstick comedies like the Keystone Cops to the visual wizardry of the Harry Potter and Marvel films. The company has insured every James Bond film to date, including *No Time To Die*, which was up for three Oscars this year – Best Visual Effects, Best Sound and Best

Photo: Adobe Stock

An Aston Martin DB5 on the set of *No Time To Die* – AGCS has insured every James Bond film to date

2022 Best Picture nominees

And the winner is... Coda

- Belfast
- Don't Look Up
- Drive My Car
- Dune
- King Richard
- Licorice Pizza
- Nightmare Alley
- The Power of the Dog
- West Side Story

Original Song. AGCS also underwrote the Iowa cornfields in *Field of Dreams* and the treasures of the Louvre in *The Da Vinci Code*. This year, continuing its long-standing connection to the film industry, it insured five of the Best Picture nominees, which have garnered nearly $550m* of box-office receipts and 31 Oscar nominations between them.

"The AGCS link to the film industry goes as far back as the 1900s, with the movies of Charlie Chaplin," says **Wanda Phillips, Head of North America Entertainment Insurance, AGCS**. "We have adapted to change along with the moviemakers. With visual effects now such a major part of the movie-going experience, we have honed our underwriting expertise to cover

[1] Screen Daily, Six Talking Points From the 2022 Oscar Nominations, February 9, 2022
[2] Gower Street Analytics, That's All Folks! Despite a Strong Finish 2021 Ends the Year Well Below Pre-Pandemic Levels, January 6, 2022

AGCS has been insuring Hollywood productions for over 100 years

the complexities of digital technology. But we're not just an insurer of choice for the big-hitting mega-releases. We've also insured thousands of arthouse and independent films, TV shows and documentaries, as well as commercials, photography, and post-production, which would take in things like CGI [computer-generated imagery]. We were rooting for all our entertainment clients when those magical envelopes were opened on Oscars night."

Premium productions

Depending on the genre of a film, its insured budget, deductibles and other risk factors, insurance premiums can range from 0.7% to 1.5% of the total budget – that would be $1.4mn-$3mn on a $200mn movie.

There is not much hard data available on insurance figures, but Hollywood accounts for the most premiums, estimated to be around $400mn-$500mn a year, followed by the UK with approximately $60mn-$70mn. China, at $45mn, is growing, as are France and Germany, each with about $25-30mn total market premium.

As well as full-length movies, AGCS insures post-production facilities, TV shows and 'DICE' productions – documentaries, industrial, commercial and educational productions.
For more information, see **www.agcs.allianz.com/solutions/entertainment-insurance.html**
*As of March 9, 2022

Action-packed and fraught with risk

The AGCS Entertainment Insurance team plays more than just a cameo role in the movie-making process. Without insurance, many films simply could not make it to our screens. Before underwriting a film, scripts must be read and locations assessed. Some productions are so complex a risk engineer will be sent to the set to check out risks in situ, because if things depart from the script on a big-budget action blockbuster, there could be thrills and spills off screen as well as on. Pyrotechnics, explosions, car chases and stunts are potentially perilous operations, and insurers must take them into account when assessing risks, as well as potential injuries, illness, and medical histories.

Add animals into the mix, costly delays, or the particular risks of shooting in certain locations, with moving machinery, and you have a potent cocktail of potential mishaps, or worse, that could afflict cast and crew. Then there are delays to production, damage to sets, equipment or costumes, and weather events to factor in. Even after a film has 'wrapped', there are post-production risks to be aware of – a growing area in this age of visual effects and CGI.

Our expert

Wanda Phillips | wanda.phillips@agcs.allianz.com

Seven risk drivers in the tech and telecoms sector

Jody Yee, the new Global Industry Solutions Director for Technology, Media & Telecoms at AGCS, discusses some of the main drivers behind the top risks facing the sector, as ranked by **Allianz Risk Barometer** respondents – from the specter of cybercrime to the acute talent shortage

The following risks were identified by respondents from the technology and telecoms sectors in the annual **Allianz Risk Barometer 2022**. This annual report reveals the top corporate risks for the next 12 months and beyond, based on the insights of more than 2,650 risk management experts from 89 countries and territories.

The 1 minute dialogue

- Cybercrime threatens to outpace society's ability to manage and respond to it
- The Covid crisis has created new demands for functionalities and improved service offerings from technology and telecoms providers
- Investor activism and ESG (environmental, social and governance) will be one of the hottest issues facing the sector in the next few years
- Robust and resilient operations will be essential to navigate the increasingly interconnected risk landscape

1 Cyber incidents

Over the last two years, the pivot to remote working has seen many industries undergo an accelerated process of digitalization, a trend boosted by a proliferation of platforms and devices. This has enabled business activities to continue, but also increased entry points for cybercrime. A shortage of cybersecurity professionals and patchwork governance mechanisms has aggravated this risk.

Cyber insurance claims have increased significantly over the past three years, driven by the rise of losses from external manipulation of systems, as well as the increased uptake in cyber insurance. Overall, claims seen by AGCS (across all industry sectors) increased from almost 500 in 2018 to around 1,100 last year. Ransomware attacks have emerged as a growing threat. In 2020, the number of ransomware claims AGCS was involved in increased by over 40%, although this represented a small proportion of claims overall. This activity is so potentially lucrative criminals are now offering 'Ransomware as a Service' for as little as $40 a month.

The surge in cybercrime threatens to outpace society's ability to manage and respond to it. At the same time, hackers are eyeing up bigger and more critical targets – such as the breach of American tech firm SolarWinds in 2020 that compromised multiple US government departments and agencies – with potentially wide-scale consequences across society. The ensuing physical disruptions and business interruptions of attacks like that on the Colonial Pipeline in 2021 have financial consequences for companies, consumers, and insurers.

There are intangible costs too – the effect on victims' mental health, the impact on brand reputation, and the undermining of public trust in businesses and institutions.

All organizations should ensure compliance with the legislation and regulations that govern their activities in all jurisdictions they operate in. As the risk landscape changes, businesses need to

Risks are interrelated and aggregated in the modern networked world

be aware of how this will impact their activities and take steps to protect their assets. The invasion of Ukraine is a salient reminder of the omnipresent danger of state-sponsored cyber-attacks that aim to disrupt and disable IT systems. Many companies are on alert for an escalation in hacking attempts and Russian reprisal cyber-attacks after the imposing of sanctions by Western nations, resulting in a number of the country's lenders being kicked off the global payments messaging system Swift.[1]

2 Business interruption

Cyber-attacks can cause widespread disruption – indeed, business interruption costs account for around 60% of the value of cyber claims, AGCS analysis shows – but recent geopolitical upheaval and the pandemic have exposed other vulnerabilities in our supply chains. Whether it was shortages in lumber or semiconductors, these chinks became all too apparent as companies faced up to their overreliance on critical suppliers. Supply chain challenges can result in business interruption and contingent business interruption claims as a result of delayed components, or in D&O (directors and officers) securities claims if operational management is deemed inadequate. Liability for third-party risk could arise if lower-quality components are used because of a shortage, for example, and defective products lead to bodily injury.

Building resilience has been key during the pandemic, which saw businesses scramble to deploy new mechanisms in response to a crisis. But the situation was fluid. During the first lockdowns, many people were at home, so systems needed to be in place to enable activities to continue – video-conferencing for work or online grocery services for the daily necessities. Although these facilities existed pre-Covid, they had not been fully adopted, and the urgency of the pandemic heightened demand, creating opportunities for the tech and telecoms sector, but also piling on pressures as it galvanized to meet fulfilments while facing supply chain and workforce disruption.

When lockdown rules were relaxed, people became more mobile and further adjustments had to be made by service providers. Workers could continue with video-conferencing or remote workspaces, but if they were out and about, they needed additional mobile functionalities to ensure frictionless connections and adequate security. And where consumers once accepted the limitations of delivery hours, they came to expect a 24/7 service culture, so businesses have had to adapt to meet new demands, including building their online presence and improving service. Whether it was groceries delivered by taxi or in an hour through Amazon Fresh, or new movies released simultaneously in cinemas and via an app, customer service adapted to enable choice.

[1] FT, Banks on Alert for Russian Reprisal Cyber Attacks on Swift, March 15, 2022

3 Pandemic outbreak

The tech and telecoms sector has fared relatively well through Covid lockdowns, propelled by the world's drive to digitize. The sector was offering much-needed products and services, but that was not the only reason it weathered the storm – it was also buoyed by robust distribution chains. A very large online retailer can own its supply chain almost from end to end. It might need access to raw materials, but it likely owns its own storage centers and employs its own staff and drivers, which cushions it from shortages other industries struggled with – labor being one of them.

4 New technologies

With the widespread rollout of new technologies, we are seeing increased reliance on cloud providers, data aggregators, APIs (application programming interfaces), and other intermediaries. These are all part of the new interconnected world and depend upon critical infrastructure. If a cloud provider goes down, the knock-on effects on an organization's supply chain can be considerable – the failure of automated systems that rely on shared data could result in lost orders, non-delivery of goods and services, and delays to back-office functions. A global outage at Facebook in October 2021 is thought to have cost the company $100m[2] in lost revenue.

With technology advancing so rapidly, we must be mindful of its potential impacts on our society and environment. Everybody is talking about 5G, which on paper will greatly benefit society – people will be able to access more data faster and, in the long run, more cheaply. But in January 2022, the rollout of 5G mobile phone services near airports in the USA was postponed because airlines had concerns about its potential interference with aviation systems. As with any new technology, we need to be aware of associated health risks and unintended consequences.

Digital currencies and payments are also innovations we're watching with interest, although the infrastructure is not yet available to handle them by default, and regulation is likely to create barriers to wider adoption. Digital currencies are emerging as a new asset class, but there is uncertainty around potential asset bubbles and concerns about money laundering, ransomware attacks, third party liabilities and ESG issues.[3]

5 Changes in legislation and regulation

Regulatory changes often lag behind technological advances, which can inhibit the adoption of innovations. They can also affect a company's bottom line as they require new ways of working and incur fines and penalties for businesses that do not comply.

Changes in legislation are being driven by a combination of factors, including advancing technology and high-profile cyber incidents. Data security and privacy laws are top concerns in tech with a number of companies receiving significant fines for falling foul of the General Data Protection Regulation (GDPR). At the same time, society is changing. As investor activism exerts pressures and a younger generation make their voices heard about ESG concerns, companies must evolve or face more shareholder and class actions around areas such as climate change, diversity, and executive pay. Interestingly, **Allianz Risk Barometer** respondents cited cyber security resilience as their main ESG priority – increasingly, cyber security considerations are incorporated into the ESG risk-analysis frameworks of data providers, who look into companies' data protection and information security practices to evaluate their preparedness for cybercrime. This

[2] The Times, What Caused The Facebook Outage and How Much Did It Cost Mark Zuckerberg's Company? October 6, 2021
[3] AGCS, Financial Services Risk: Unintended Consequences Of Innovation And New Technologies, May 2021

will be a major consideration for companies in years to come.

6 Natural catastrophes

Natcat remains a concern even for companies whose main assets are in the cloud. They may not store large amounts of goods or inventory, but they have physical servers and office buildings. Many are located in coastal cities or campuses, so if they were hit by an earthquake or another natural catastrophe, there could be additional losses from flooding. With climate change and extreme weather events increasing, businesses might find their premises are now located in flood zones or are at heightened risk of windstorms, winter storms or wildfires.

7 Shortage of skilled workforce

Access to talent is challenging the tech sector, as well as many other industries, and there is an ongoing need to upskill working populations and reduce barriers to entry for skilled workers from overseas. The older generation is retiring and we do not have enough talent in the pipeline so a number of organizations are aggressively recruiting. Amazon recently more than doubled its maximum base salary for tech and corporate workers, citing a competitive labor market. Higher salaries like this in the US will make it harder for tech companies around the world to compete, so we will need more global mobility in the workforce.

Corporates also face competition from start-ups, which attract a younger generation with a different kind of package – the promise of equity and a flexible working culture. On a more optimistic note, we see a number of universities and colleges developing IT security programs that should swell the ranks of talented graduates in the next few years. With so many new technologies on the horizon, from cryptocurrencies to the metaverse, we need bright enquiring minds to help us create the solutions of the future.

Risk mitigation: how to future-proof your operations

What these seven trends reveal is the extent to which risks are interrelated and aggregated in the networked world we live and work in. Faced with loss scenarios that can fall like dominoes, businesses need robust, resilient operational processes to safeguard their supply chains and ensure business continuity.

Business continuity planning (BCP) reviews are essential and must be regularly updated. Cyber protection should include regular backups, segmentation of data, the right end-point detection and multi-factor authentication. Data is paramount. Insurers such as AGCS can leverage company data to facilitate a tailored risk assessment and help draw up a personalized mitigation strategy.

Growing interest in ART solutions

AGCS offers a number of traditional insurance solutions for the tech and telecoms sectors, with particular focus on hardware manufacturing, software and IT services, telecom network operations, and the semiconductor and hi-tech sub-sectors. These traditional solutions include Liability, Property, and Financial Lines cover.

However, tech and telecoms businesses often have strong risk management procedures and access to a lot of data, which is driving growing interest in Alternative Risk Transfer (ART) solutions. This is especially true if risk managers have a non-traditional exposure and believe their current risk profile has not been fairly considered in the current market environment. These companies are interested in exploring alternative insurance vehicles, like captives or the capital markets. An ART solution, such as a multi-year and multi-line program, could help them reduce volatility over the long term. For example, this could be for a company that wants to organize cover for any potential liabilities for its directors and officers in their official capacities.

Larger tech companies can share relevant data with the ART team at AGCS, allowing them to synthesize this information and provide a bespoke solution. ART experts can also provide tailored support with captives and fronting. Depending on your jurisdiction, captives may not be licensed to issue policies internationally, so AGCS can call upon its ART team to provide expertise in these transactions.

Find out more at **Alternative Risk Transfer** on the AGCS website

Cyber risk management for the cloud

AGCS and Munich Re have developed a cyber risk insurance solution called Cloud Protection + for customers of Google Cloud enrolled in Google's new Risk Protection Program. The program consists of Risk Manager, a tool that helps determine a customer's security risk posture on the cloud, and Cloud Protection +. Under Cloud Protection +, companies are offered protection against cyber incidents within their own corporate environment as well as incidents related to Google Cloud. Customers are US-based at present, although it may be offered globally in future.

Useful information

- **Ransomware Protection** – What Does Good IT Security Look Like?
- **Risk Consulting:** Business Continuity Plan

Our expert

Jody Yee | jody.yee@allianz.com

The hidden cost of 'forever chemicals'

PFAS are a family of chemicals used in an array of domestic products and industrial applications, but as concerns mount about their impact on human health, they are increasingly coming under scrutiny. Here, we ask AGCS experts to fill us in on the potential hazards of compounds some are calling 'the new asbestos'.

Waterproof jackets, burger wrappers, non-stick pans, stain-resistant carpets, and dental floss. These are just some of the products in our homes that contain per- and polyfluorinated alkyl substances, or PFAS, a family of over 4,700 synthetic chemicals ominously nicknamed the 'forever chemicals'.

They have been in use since the 1940s and their application in industrial processes is even more wide-ranging, including chemical processing, the manufacture of semiconductors, roofing, metal coatings, grouting, sealant, electrical wiring, automotive waxes, batteries, drilling fluid, paints, and firefighting foams.


Photo: Adobe Stock

PFAS used in firefighting foams can get into groundwater and persist for decades in the environment

The 1 minute dialogue

- PFAS or 'forever chemicals' occur across industry sectors and are used in a wide range of applications
- The chemicals are persistent and bioaccumulative, taking many years or decades to break down in the environment
- As they accumulate in the body, they have been linked to a range of health problems in humans, including cancers and birth defects
- Class actions have been brought around the world and litigation is expected to continue

"The ability of these chemicals to repel oil, grease and water has made them highly efficient for the construction, aerospace, electronics, automotive, and other industries," says **Cindy Wilk, Global Environmental Liability Expert, Allianz Risk Consulting at AGCS**. "They owe their properties to the carbon-fluorine bond they contain, which is often called the strongest in organic chemistry, hence their 'forever chemicals' nickname – it makes them very difficult to break down. They accumulate in humans, animals, plants, and the wider environment."

Contaminants of concern

PFAS have been linked to a range of human health problems, including kidney cancer, testicular cancer, ulcerative colitis, thyroid disease, low birth weight, birth defects, and immunosuppression.

Their widespread use means there are many routes to PFAS exposure for humans – through food packaging, contaminated food or water, exposure at work, or domestic and cosmetic products. Drinking water is the most likely pathway, and this is often localized and associated with a source such as a factory where PFAS were produced or used in manufacturing, or an oil refinery, chemical facility, or military base where firefighting foams containing PFAS were used to extinguish fires or in training exercises.

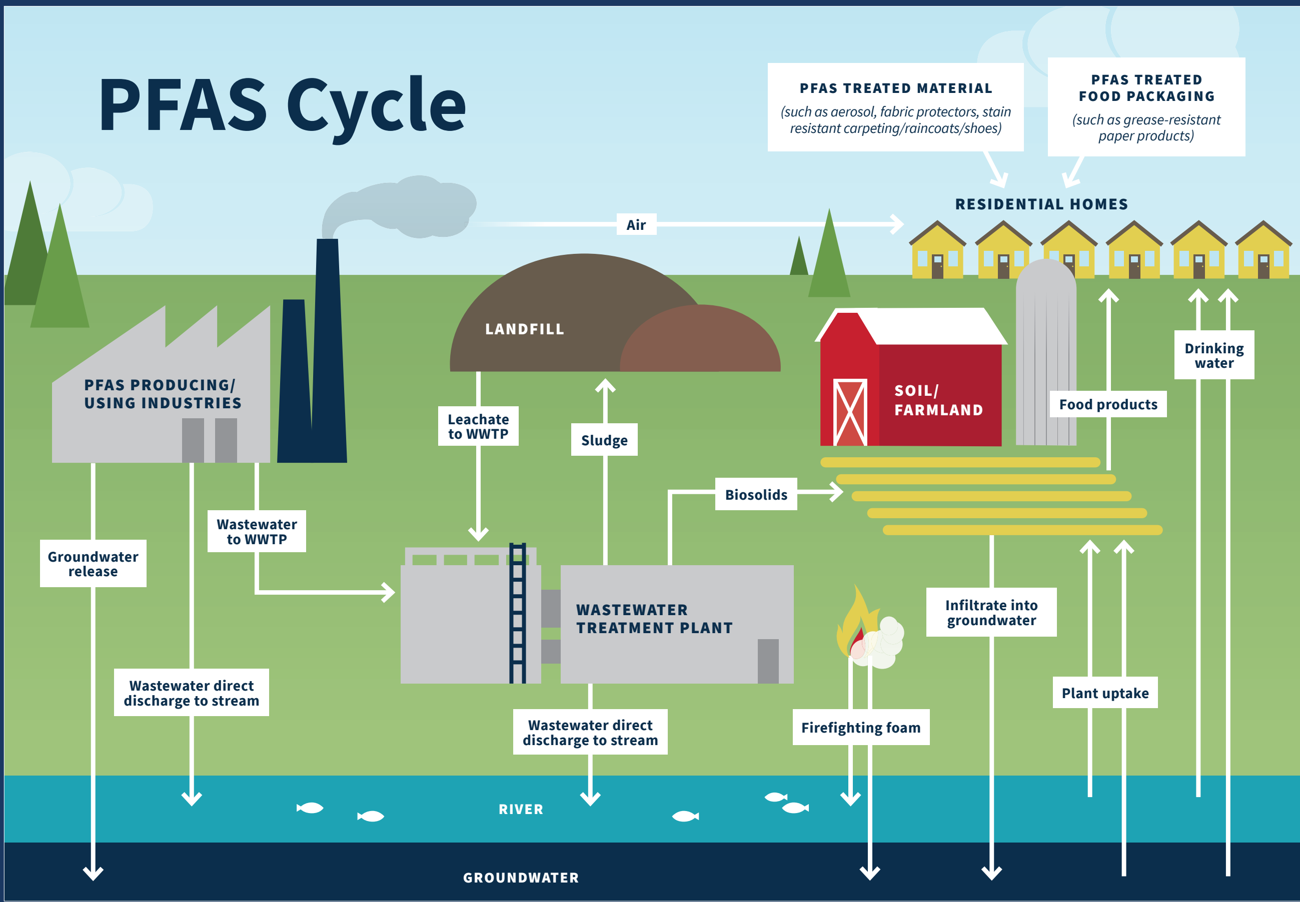
"PFAS are water soluble and dissolve readily in soil," says Wilk. "An industrial accident or firefighting incident can result in their release into water sources, making local communities vulnerable, but PFAS can also migrate quickly through groundwater pathways to contaminate areas far from their original source.

"How they are disposed of is of particular concern," Wilk adds. "Improper dumping can cause PFAS to leach out into landfill facilities, which then send wastewater to public treatment plants, only for it to be discharged somewhere else – an ocean or a large body of water. It gets into the water cycle. The so-called 'half-life'[1] of PFAS in water – which is the time it takes to decrease by 50% – is 92 years for PFOA [perfluorooctanoic acid] and 41 years for PFOS [perfluorooctanesulfonic acid]. These two PFAS have been phased out in the USA, but they still circulate in imported products."

The science surrounding the treatment and detection of PFAS is evolving, and the full impact on human health is not yet known. Health-related costs to society across Europe from PFAS exposure are estimated to be €52-€84bn[2] – and that is likely to be an underestimate. Most people in the United States are believed to have PFAS in their blood[3].

[1] Cooperative Research Centre for Contamination Assessment and Remediation of the Environment, Technical Report series, no. 42, A Human Health Review of PFOS and PFOA, August 2016
[2] European Environment Agency, Emerging Chemical Risks in Europe — 'PFAS', December 12, 2019
[3] ATSDR (Agency for Toxic Substances and Disease Registry), PFAS in the US Population

PFAS Cycle



Graphic: Michigan EGLE

A diagram illustrating the sources of PFAS and pathways for their release into the water cycle and environment

Remediation is costly and complex

"PFAS have such staying power that clean-up and remediation options are limited and expensive, complicated by the fact that not all PFAS are the same," says **Steve Tagert, Regional Environmental Practice Leader, North America, at AGCS**. "They have varying degrees of toxicity, and accurate testing and detection is a real challenge because they can be harmful at very low levels."

Many governments around the world have already restricted or phased out the use of certain PFAS, and this is likely to continue as more scientific information on the compounds is gathered. However, contamination from legacy PFAS and questions over the safety of alternative PFAS, which could also prove hazardous further down the line, are a cause for ongoing concern.

Several states in the US have taken steps to regulate on a patchwork basis, but recently the country's Environmental Protection Agency (EPA) published a three-year roadmap that includes "steps to control PFAS at its sources, hold polluters accountable, ensure science-based decision making, and address the impacts on disadvantaged communities."

€52bn

Minimum estimated health costs of PFAS exposure to society across Europe

The Australian state of New South Wales banned PFAS[4] in firefighting foams in 2021, except for "catastrophic or special circumstances", following similar legislation in the states of Queensland and South Australia. In Europe, Germany, Denmark, the Netherlands, Norway, and Sweden have announced their intention to restrict PFAS to the European Chemicals Agency. Denmark banned their use in food packaging paper and cardboard in 2020.

[4] Sydney Morning Herald, 'The Product is Dangerous': NSW Moves to Ban Toxic Firefighting Chemical, March 1, 2021

2,000

Approximate number of companies named as defendants in PFAS litigations

Wastewater treatment plants can receive water contaminated with PFAS then discharge it back into the water cycle

The pressure is mounting

As public concerns grow about the impact of PFAS on human health, regulation and litigation surrounding their use is rising at such a rate they have been dubbed "the new asbestos". According to insurtech analytics company, Praedicat, there have been, to date, over 5,000 cases[5], with over 2,000 companies named as defendants in various PFAS litigation.

The primary targets for litigation are manufacturers, and airports and military bases where firefighting foam has been used in training exercises. Many companies are trying to phase out the use of PFAS, but there could be claims for historical legacy issues.

There have been long-running, high-profile cases against chemical manufacturers in the US, and class actions in Australia focused on firefighting foams. One class action brought by an Aboriginal community against the Federal Government included a claim for 'cultural loss'[6] because of the community's particularly close connection with the land.

Cases like these are thought to be just the beginning.

"Increasing regulation in the US is going to include reporting requirements from companies, based on testing of their wastewater effluent and disclosures on what they use in their processes," says Tagert. "Up until now, there has been very little information available on this. In the US, once the EPA finalizes its clean-up standards, there will be more data in the public domain to use against companies, and this will lead to increased claim activity. In addition, the number of PFAS subject to regulation will probably increase over time. Most litigation has been focused on the producers of PFAS and firefighting foams, but we expect it to expand to secondary users of the chemicals in future."

As well as sky-high liability costs and risks to their reputation, companies also face considerable financial risks in terms of the high cost of remediation. "A wastewater treatment plant, for example, may not have known about the presence of PFAS in its wastewater and wouldn't have had the technology to treat it, resulting in significant capital expenses," says Tagert. "They could then sue a manufacturer that discharged the PFAS for costs related to this. As regulations become more stringent, we expect the investigation and remediation or treatment costs to increase substantially."

How can you mitigate against PFAS?

- **Stop using PFAs in your processes where possible and find a safer alternative**
- **Consider switching to PFAS-free firefighting foams**
- **Identify where PFAS are used or produced in your operations and identify their potential impacts**
- **Investigate whether PFAS have ever been used on your site, including before purchasing, in order to determine any liability for past actions on that facility**
- **Determine whether PFAS have been used on neighboring or nearby sites**
- **Consult specialist risk experts to assess any current exposure if you work in the aviation or oil and gas industry, where PFAS may still be in use**
- **Assess any existing PFAS contamination with specialist risk consultants and work with them to find solutions to remediate this**
- **Check with your insurer to determine the extent and scope of your environmental liability coverage.**

Our experts

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[5] The Insurer, Praedicat's Reville: PFAS the Biggest Emerging Risk Facing Casualty Carriers, February 22, 2022
[6] ABC News, PFAS Contamination Class Action Filed by Jervis Bay Community for Cultural Loss, February 2, 2021

Tornadoes are capable of lifting substantial houses up from their foundations

Tornadoes: looking into the eye of the storm

As we head into peak tornado season in the US from now through June, we ask AGCS experts how much of a threat are tornadoes and is climate change affecting their frequency or severity?

In December 2021, a massive storm swept across the US, carrying heavy snow and rain into the West and northern Midwest of the country. In the South, which was enjoying near record-breaking heat via warm air from the Gulf of Mexico, the cold, dense air hit the warm air to create the perfect conditions for tornadoes.

Just outside Searcy, a small city in Arkansas (pop. 23,660), the supercell, a strong thunderstorm with rotating updrafts, began spawning a family of tornadoes with astounding staying power. One ripped through the rich surrounding farmlands, destroying barns, hurling cotton bales with fury and destroying power lines.

Another sliced through a nursing home in Monette and jumped the Mississippi River, where it plowed through the western edge of Tennessee. One EF4 tornado carved a 166-mile (267km) path of destruction.

Altogether, 66 tornadoes[1] were reported from December 10-11, causing widespread power outages, damage and 93 fatalities[2]. The devastating swarm of twisters marked the highest number of tornadoes recorded in December. This record stood only until December 15, when a larger outbreak produced around 100 tornadoes[3] across eight states.

The 1 minute dialogue

- December 2021 saw the highest number of tornadoes ever recorded for the month in the US
- The tornado outbreak is estimated to have caused $4bn in insured losses
- Even if property is not directly hit, tornado losses can be extensive, with roofs and windows blown out, and water damage to equipment
- A possible link between climate change and tornadoes is still the subject of ongoing scientific research

Nightmare before Christmas

The peak tornado season in the US is March to June, although tornadoes can occur at any time. A tornado struck New Orleans on 22 March this year (2022), killing at least one, after several swept through Texas and Oklahoma the day before.

Andrew Higgins, Senior Regional Technical & Expertise Manager for Allianz Risk Consulting at AGCS, remembers visiting Moore, Oklahoma, in 1999, six months after an EF5 tornado had passed. Tornado strengths are measured on the Enhanced Fujita (EF) Scale, which bases assessment on a scale of 0 to 5 estimated wind speeds and damage done. An EF5 tornado is the strongest, with winds over 200mph (322kmh) capable of lifting substantial houses and throwing them considerable distances.

$4bn

Estimated insured losses from the US tornado outbreak in December 2021

"It was as if a mile-wide bulldozer had plowed through the landscape," Higgins marvels. "There was nothing there to see except for downed trees and concrete slabs where buildings used to stand. A tornado can have such power it can wipe everything away down to the very foundations."

Higgins has long been fascinated by the weather. As part of his duties today, Higgins develops technical procedures and policies used for risk assessing the facilities of Fortune 1000 companies. He also develops resources to evaluate the damage caused by windstorms, specifically hurricanes and tornadoes.

"The December 2021 tornado outbreaks were unusual, but not unprecedented," Higgins says. "And these tornadoes did not set records for intensity or duration on the ground. They did, tragically, set a record for December fatalities."

The death toll of 90 (with three additional non-tornadic fatalities) surpassed the previous December record of 38 recorded during the Vicksburg, Mississippi, tornado of December 5, 1953. In some ways, it is surprising it has taken so long for the December record to fall. As Higgins notes, in 1950, the US had a population of 151 million. Today it is 330 million. Double the population means many more people living in areas where tornadoes are common.

The caprice of tornadoes

It's the sheer randomness of tornadoes that astounds **Steven Kennedy, Regional Head of Property, Marine, Construction & Energy and Entertainment Claims, North America**. Individually, they can be unpredictable to the point of caprice. As a young field adjustor, he once followed a tornado path through cornfields. The tornado had run straight and then suddenly veered off for a brick schoolhouse, which it smashed to pieces.

Today, Kennedy is in charge of many of the areas where losses can potentially occur due to tornadoes. So what is his assessment of the December outbreak, which is estimated as causing $4bn in insured losses?[4]

"Assessments are still ongoing, but we are involved in two large claims. One is a car manufacturing plant at around €150mn," Kennedy explains, of which AGCS only has a small exposure.

[1] National Weather Service, NWS Storm Damage Summaries, December 10-11, 2021
[2] ABC News, 93 Dead Across 5 States: the Deadly Tornado Outbreak by the Numbers, December 18, 2021
[3] The Weather Channel, December U.S. Tornado Record Smashed by Two Outbreaks in Two Days; New State Record for Iowa, January 7, 2022
[4] Munich Re, Hurricanes, Cold Waves, Tornadoes: Weather Disasters in USA Dominate Natural Disaster Losses in 2021, January 10, 2022

Secondary perils: a growing threat

Insured losses from secondary perils have increased globally over the last two decades. Winter Storm Uri and other secondary peril events caused more than **half of total insured losses**[1] in 2021. In 2020, 7**1% of all natural catastrophe losses**[2] resulted from secondary perils.

Secondary perils include tornadoes, straight-line winds (*derechos*) and hail (collectively termed severe convective storms). "Together, these constitute the biggest loss drivers worldwide, despite their localized geographical footprint," says **Bastian Manz, Senior Atmospheric Risk and Climate Risk Analyst at Allianz Re**.

Derecho comes from the Spanish adjective for "straight" (or "direct"), in contrast with a *tornado*, which is a "twisted" wind. According to the US National Weather Service, a derecho is a band of storms where the wind damage extends more than 240 miles (400km) and includes gusts of at least 58mph (93kmh) along most of its length. Derechos can be hazardous to aviation due to wind systems such as microbursts, downbursts and downburst clusters.

Steps to avoid the worst if the storm hits

To minimize losses in the event of a windstorm, businesses need to develop and implement a comprehensive written emergency plan. This should include actions to take before, during and after the storm arrives. The plan should cover areas such as training, assembling emergency supplies, business continuity, building inspections, anchoring or relocating equipment and stock, protecting windows, flood protection, monitoring, salvage and recovery, and damage assessment.

For more information, Allianz Risk Consulting has produced a **Windstorm Checklist** with information on what actions to take before, during and after a tornado or other windstorm event.

1 Swiss Re, Global Insured Catastrophe Losses Rise to USD 112 Billion in 2021, the Fourth Highest on Record, Swiss Re Institute Estimates, December 14, 2021
2 Swiss Re, Natural Catastrophes in 2020: Secondary Perils in the Spotlight, but Don't Forget Primary-Peril Risks, 2021

Allianz has little residential book exposure to tornadoes in the United States. Most is on the commercial risk side. The company has shared losses on claims of up to $400mn on direct tornado hits in the past.

"Even if not directly hit, the damage can be extensive, as it was to the car manufacturing plant," Kennedy explains. "Typically, the roof is damaged, and all windows blown out. That's when the torrential rains enter, and you can have extensive water damage."

While the building can be quickly sealed, significant downtime can occur as the machinery dries and is tested to see what needs to be replaced. The costs can soon mount.

An American style of disaster

All the famous cultural images of tornadoes — from Dorothy's house being whisked away in *The Wizard of Oz* to the storm chasers in the surprise hit *Twister* (1996) – are set in the US. The reason is that tornadoes are mainly an American phenomenon.

"Every year, the United States gets about four times as many tornadoes as Europe," says **Hannes Roemer, Expert Cat Risk Analyst at AGCS in Munich, Germany**. "In a typical year, Europe experiences 250-300[5] tornadoes. In comparison, the United States experiences around 1,200."[6]

The reason is the Great Plains, the broad expanse of flatlands stretching east of the Rocky Mountains and west of the Mississippi River. This vast interior of grasslands and prairie – including the famed Tornado Alley – is an ideal breeding ground for tornadoes. There, warm, humid air from the Gulf of Mexico meets cold, dry air from Canada and the Rocky Mountains.

The dry air acts as a convection cap that prevents warm air from rising. The pressure builds until a cold front moves in and weakens the cap. Then the warm, humid air can burst out, billowing upwards and swelling into 50,000-foot-tall thunderstorms in minutes. Some storms begin rotating through most of their depth and generate tornadoes.

No other place on earth has the intense conditions of warm, moist air on the equatorial side and a wide, high range of mountains running north to south on the west side. This favors the mixing of different-temperature air masses, whereas in Europe, air convergence is hindered by the Alps running west to east.

But tornadoes do occur elsewhere. Roemer notes that in Europe, most tornadoes are EF0, EF1 or EF2 (max wind speed 135mph/217kmh), while in the US, there are multiple EF4 and EF5 tornadoes every year. But there are exceptions.

"Only last year, a tornado with wind speeds of up to 260mph/418kmh in the Czech Republic killed at least five people and injured more than 200. The UK on average reports 30 tornadoes a year[7] and Germany 20 to 60,"[8] says Roemer. The most-deadly tornado on record occurred in Bangladesh in 1989, when 1,300 people were killed, 12,000 injured and 80,000 left homeless.

Is the tornado outbreak linked to climate change?

The record-warm December helped fuel the fourth-warmest year[9] for the US in 127 years of

5 CNN, Here's Why the US Has More Tornadoes Than Any Other Country, March 7, 2021

6 National Oceanic and Atmospheric Administration (NOAA), US Tornadoes, January 2022

Top 10 costliest US catastrophes involving tornadoes[1]

Rank	Date	Event	Number of states affected	Estimated insured loss ($ millions): Dollars when occurred	Estimated insured loss ($ millions): In 2021 dollars[2]
1	August 8-12, 2020	Includes August 10 Midwest Derecho	16	$9,200	$9,580
2	April 22-28, 2011	Late April 2011 Super Tornado Outbreak	13	$7,300	$8,800
3	May 21-27, 2011	Joplin Missouri Tornado	20	$6,900	$8,270
4	May 2-5, 2003		18	$3,205	$4,730
5	December 10-12, 2021		10	$4,000	$4,000
6	May 27-30, 2019		15	$3,650	$3,860
7	April 10-15, 2016	San Antonio Hailstorm	7	$3,200	$3,620
8	April 6-12, 2001	St Louis Hailstorm	14	$2,200	$3,370
9	May 18-23, 2014		11	$2,950	$3,360
10	October 5-6, 2010	Phoenix Hailstorm	1	$2,700	$3,350

[1] Defined by Aon as severe convective storms including insured thunderstorm events and may include tornado, hail, damaging straight-line winds (derechos) and flash flood impacts from events. Includes events that occurred through 2020. Subject to change as loss estimates are further developed. As of February 1, 2022.
[2] Adjusted for inflation using the US Consumer Price Index.

Source: Aon and Insurance Information Institute

Graphic: AGCS

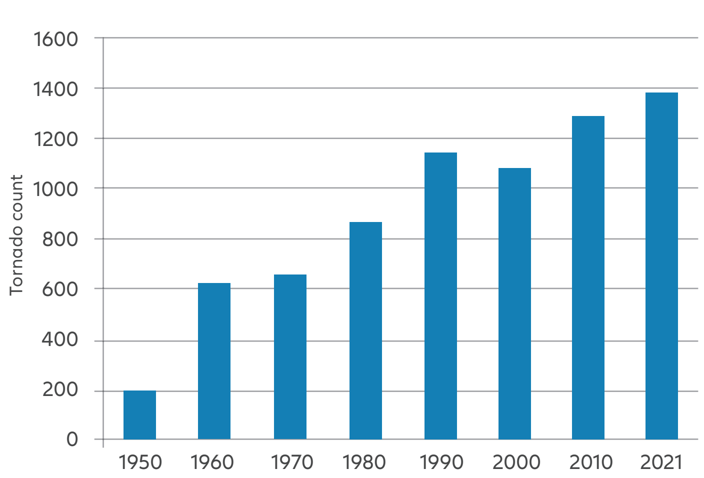
records. The temperature averaged 2.5F degrees above normal and fits into a long-term trend toward rising temperatures. All six of the warmest years on record in the US have occurred since 2012, says the US National Oceanic and Atmospheric Administration (NOAA).

Yet, scientists have low confidence in detecting a link between tornado activity and climate change[10], primarily because of the short length of high-quality data records. However, some scientists say warmer winter temperatures will create conditions favourable to the formation of severe thunderstorms and tornadoes, but such effects are not yet detectable.

NOAA noted the two December tornado outbreaks helped make 2021 the third costliest year of disasters on records[11]. The $145bn price tag, of which some $85bn[12] was insured, includes exceptional heat and drought in the western states, wildfires, a cold snap in Texas, four tropical storms and hurricanes, and nine severe thunderstorm/tornado events. The only costlier years were 2005, when Hurricane Katrina struck, and 2017, when hurricanes Harvey, Irma and Maria made landfall.

US Tornadoes – January to December

1991-2010 average tornado count: 1,251. 2021 tornado count: **1,376**



Source: National Oceanic and Atmospheric Administration (NOAA)

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[7] Met Office, Tornado
[8] Munich Re, Thunderstorms Over Germany, June 9, 2016
[9] NOAA, U.S. Saw its 4th-Warmest Year on Record, Fueled by a Record-Warm December, January 10, 2022
[10] Carbon Brief, Tornadoes and Climate Change: What Does the Science Say?, May 31, 2019
[11] NOAA, Billion-Dollar Weather and Climate Disasters, January 2022
[12] Munich Re, Hurricanes, Cold Waves, Tornadoes: Weather Disasters in USA Dominate Natural Disaster Losses in 2021

Escape plan: when water pipes fail

Water damage poses high risks for commercial property, whether it is from frozen pipes in colder climes or corrosive seawater used for flushing toilets in Hong Kong. Here we look at the potential losses and outline the best mitigation practices.

If the restaurants and bars of Calgary, Canada, weren't reeling enough from the financial blows the Covid-19 pandemic has inflicted, they received another kick at the end of 2021. A cold snap over the Christmas holiday weekend meant staff returned to find burst pipes and flooded premises at some businesses.

On December 29, Native Tongues Taqueria, an upscale Mexican restaurant, posted a video[1] of water pouring into the restaurant like a torrential downpour. Kevin Warner, an Assistant General Manager at The Unicorn, another local bar affected by the cold spell, said it was just one more body blow for the business. "It seems like any time you gain some momentum, something knocks you down..." he commented to the *Calgary Herald*[2].

[1] Twitter, December 29, 2021
[2] Calgary Herald, Cold Snap Has Some Calgary Restaurants and Bars Dealing with Burst Pipes, Floods, December 29, 2021

Photo: Adobe Stock

Damage to construction projects often occurs on weekends or holidays

The 1 minute dialogue

- Escapes of water often go unnoticed in commercial premises if they happen at weekends or when no personnel are present
- Frozen pipes is a common cause of loss as low temperatures/ice can cause pipes to split or move. When they thaw water can escape
- As well as damaging buildings and property, water can also destroy valuable confidential documents and artwork and can cause significant business interruption losses
- Leak detection and flow-monitoring systems, as well as preventive maintenance, can head off or mitigate water damage

#3 Water damage is the third most frequent cause of insurance claims for businesses around the globe

Escape of water damage from frozen and burst pipes is one of the most common domestic property insurance claims. It is also a surprisingly regular source of damage in the commercial sector.

In a study of over 470,000 claims[3] from 200 countries and territories over a five-year period, Allianz Global Corporate & Specialty (AGCS) found water damage accounted for the third-highest number of insurance claims for global business (6% overall) and was also the eighth top cause of loss according to value of claims (3% overall). Water damage includes such incidents as:

- flooding damage in basements
- flooding due to burst pipes
- water damage resulting from condenser water system failure
- boiler leakage.

"Every type of commercial property – offices, shopping centers, hotels, high-rise buildings, you name it – has a network of pipes that connect to a water supply," says **David Vanek, Account Engineering Manager MidCorp for Allianz Risk Consulting, AGCS**. "Failure of older and poorly-maintained sprinkler and plumbing systems can result in large property damage and costly business interruption losses."

On its way through a building, water can cause significant damage to everything in its path. "This includes floors, walls, ceilings, insulation, furniture, computer, electrical and mechanical equipment," says Vanek. "It's therefore crucial that building owners and property managers understand their exposure, so water damage losses can be either prevented or mitigated."

According to another claims analysis conducted by AGCS, North American insurers alone have paid out claims totaling more than $2bn over the past 10 years resulting from water damage. In commercial property the worst events can cause millions of dollars' worth of damage.

It is not only the physical destruction driving these costs. The resulting damage can lead to a business interruption loss and possibly create a liability claim by guests, tenants, or other property owners.

[3] Allianz Global Corporate & Specialty Global Claims Review: The Top Causes of Corporate Insurance Losses, December, 2018

Sinkholes, like this one in Jerusalem, can have many causes, including burst underground pipes

Weekends, holidays and out of hours a problem

Many water damages result from leaks in pressurized drinking water or fire water systems, which often go unnoticed because the release occurs at weekends or when no personnel are present. These leaks are most costly when interior work has been completed, or water-sensitive equipment was installed before the pipe burst.

In addition to expensive repairs, rework can also lead to project delays. In a famous 2010[4] incident, the Deutsche Bank twin towers in Frankfurt made headlines when water in one tower flowed from the ninth floor to the basement and in the other from the sixth floor downwards, causing extensive damage after the towers had been renovated.

While many damages could be avoided if existing water pipes and water-bearing fittings were regularly checked and maintained, carelessness and the lack of monitoring on non-working days are often one of the main causes of damage in construction projects. Water damage was the third most frequent driver of construction losses during the first three quarters of 2021, accounting for 11% of claims received, according to AGCS claims analysis. It was also the fifth most expensive cause of loss.

If a system is shut down over the weekend or holidays, but there is residual water in the pipes, it can freeze in low temperatures and the pipes can burst. AGCS claims analysis in Germany showed that on New Year's Eve alone, more than 36% of all property insurance claims over 10 years could be attributed to this cause, with the chemical industry particularly affected.

"We repeatedly see losses occurring on public holidays, weekends, and out of hours when many employees are absent or there is only a limited workforce on site to detect any problems," says **Manfred Schneider, Regional Head of Risk Consulting Engineering and Construction, AGCS Central & Eastern Europe**.

Water always finds a way

Typically, the water pipes that burst in winter are ones that have frozen. While water has a density of 1g/cm^3, ice is less dense with 0.92g/cm^3 – that is why it floats. Forget the mathematics; this means when water freezes into ice, the amount does not change, but the volume does – by about 9% more. This places pressure on the pipes, causing them to split or a joint to move. When the ice thaws, water escapes.

Of course, water escapes do not only happen in freezing winters. The first time Gordon Lee saw a

[4] Spiegel, Unbekannte Setzen Deutsche-Bank-Tuerme Unter Wasser, November 14, 2010

burst pipe was when he was a young engineer involved in a railway viaduct project in Hong Kong. An excavator punctured a pipe while working on an adjoining road for the project.

"The gush reached four to five storeys," Lee recalls. "The power of water under pressure can be astounding. The big problem was that it was seawater."

In Hong Kong, scarce freshwater supplies are not used for flushing toilets; instead seawater is used, reducing the city's freshwater consumption by about 20%.

"But the problem with seawater is it can be particularly corrosive, and there were a lot of cars in the area that sustained damage to their components or finishes."

Today **Lee is a Senior Risk Consultant for AGCS in the Asia Pacific region**. He is also **Global Expert Group Leader for Construction and Heavy Construction**. He explains bursts caused by aging or poorly-maintained pipes or accidents happen more often than you imagine.

During renovation work on an office/retail tower five years ago, workers hit a seawater pipe in one of the higher floors. The water cascaded down through lawyers' offices with confidential documents and into storage space for luxury brands in the underlying mall.

"Claims can quickly mount up in such situations or on construction projects," says Lee, "particularly if business interruption is a factor."

Sinkholes created by burst pipes

Conversely, although they look dramatic, sinkholes rarely see claims as high. Although there can be many reasons for sinkholes, one common cause is when an underground pipe bursts. Water pipes are typically two to three meters below ground, and the power of the water erodes the surrounding soil, forming a sinkhole that collapses, swallowing objects on top of it.

In June 2021, a giant sinkhole[5] opened below a hospital car park in Jerusalem. The cause is believed to be a nearby highway tunnel project. While the sinkhole swallowed cars, the loss is likely to be comparatively light, Lee estimates. "In comparison, during building construction projects, a lot of equipment can be stored for security reasons in the basement," says Lee. "If there is water escape, the basement is where the water pools and a lot of damage to expensive equipment can result."

Innovative solutions for surveillance and leak detection

AGCS risk consultants recommend water damage prevention solutions to reduce the frequency and severity of leaks or floods. Best used with effective preventive maintenance plans, there are a number of solutions available including:

- **Property-wide remote protection systems:** These allow the shutting off of water supply after hours or during extended absence at the touch of a button, protecting property from flooding by failed plumbing lines, split hoses or ruptured fixtures. They can monitor temporary work sites such as rented office buildings and construction sites and detect the entry of liquids into rooms and containers.

- **Point-of-use detection systems:** An economic option to help prevent damage caused by aging or malfunctioning pipes or appliances, they shut off water supply to selected valves when a leak is detected.

- **Leak detection alarm systems:** These use strategically placed sensors to detect water-flow abnormalities, such as on pressurized drinking water or fire-water pipes, and sound an audible alarm. Used with a monitored alarm system, they can signal to an offsite monitoring station or point of contact after hours for added protection. A failed circuit alarm is another option, for appliances such as hot tubs or pumps where it is important to know if a breaker or fuse has blown or if there has been a power outage.

For more prevention and mitigation advice, download the following Allianz Risk Consulting Risk Bulletins: **Water Damage During Construction** and **Water Damage Prevention Solutions**.

Close monitoring for damage minimization

Fortunately, there are economical products designed to reduce or prevent water issues at their source [*see box above*]. In addition to these technologies, an active maintenance program plays a significant role in preventing water damage. "Sensitive areas, in particular, should be closely inspected by experts to reduce downtime and increase reliability," recommends **Wolfgang Goschenhofer, Senior Risk Consultant for the Central and Eastern European region at AGCS**. "Timely detection is crucial in helping to avoid significant damage."

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[5] The Indian Express, "What a Nightmare": Watch a Sinkhole Swallowing Cars at Parking Lot in Jerusalem, June 10, 2021

Financial services was the sector most targeted by cybercrime in the third quarter of 2021

Key challenges facing the financial services industry

Financial services companies are facing multiple risk management challenges in the current climate. Economic and political uncertainty prevails, while the risk of asset bubbles and inflation is rising in different parts of the world. However, it is a number of "non-financial" risks that are most concerning firms in the sector, according to **Allianz Risk Barometer** 2022 respondents.

The **Allianz Risk Barometer** annual survey highlights some of the most significant risk trends for the year ahead, as identified by banks, asset managers, private equity funds, insurers and other players in the financial services sector. Cyber incidents (51% of respondents), the closely interlinked peril of business interruption (BI) and supply chain disruption (30%), and the impact of changes in legislation and regulation (26%) rank as the top three sector risks for 2022, based on the opinions of almost 900 respondents (872) who participated in AGCS's latest research, which was conducted at the end of 2021.

The 1 minute dialogue

- Cyber incidents is the sector's most significant peril, according to over half of respondents – the highest ever total
- Business interruption and supply chain outages, and the increasing compliance burden and impact of regulation, complete the top three risks for the sector
- Regulators are increasingly focusing on business continuity, operational resilience and the management of third party risk following the number of major outages at banks and payment processing companies
- Companies are challenged by the growing raft of ESG regulation and guidance leading to tougher disclosure and reporting rules, particularly around sustainability

Financial services companies most targeted by cyber criminals

Cyber incidents maintains its position as the top risk for financial services companies, with over half of respondents – the highest ever total – naming it as the greatest concern for their business.

"Despite investing in significant levels of cyber security spend every year, sector respondents view the financial services industry as still being highly exposed to cyber threats, given that information and communications technology (ICT) plays an indispensable role in the operation of the daily functions of financial institutions," says **Paul Schiavone, Global Industry Solutions Director for Financial Services at AGCS**.

Digitalization covers not only payments, but also lending, securities clearing and settlement, trading, insurance underwriting, claims management and back office operations. The Covid-19 pandemic has heightened opportunities for attackers, with new vulnerabilities being exploited by new tools. The financial services industry was the sector most targeted by cyber criminals during the third quarter of 2021, with the number of publicly-reported incidents jumping by over 20%, according to a report by Trellix[1], a cyber company formed out of what was McAfee Enterprise and FireEye. Financial services companies were the target of around 40% of advanced persistent threat (APT) observations and also led all industries in terms of detected ransomware samples.

This is mirrored by an AGCS analysis of more than 7,500 insurance claims for the financial services segment over the past five years – with a total value in excess of $1bn. The analysis shows that cyber incidents, including crime, is the top cause of loss for companies, producing the most expensive insurance claims.

In addition, a heightened cyber risk environment is anticipated for many industry sectors in future, in the wake of Western nations slapping a raft of sanctions against Russia for invading Ukraine. In 2017, the NotPetya cyber-attack began as an attack on the Ukrainian government and the country's businesses and quickly spread to the rest of the world, impacting companies including shipping company Maersk, US pharma group Merck and food group Mondelez. The attack was later blamed on the Russian military by the UK and the US.

Business interruption and third-party disruption

"Finance has not only become largely digital, but digitalization has also deepened interconnections and dependencies within the sector and with third-party infrastructure and service providers," says Schiavone. "Recent high-profile cyber-attacks have shown a worrying trend for incidents where hackers target technology or software supply chains or digital single points of failure."

In December 2021, it was reported that hackers had launched well over a million attacks on companies globally around the world in just four days, through a previously unnoticed vulnerability in a widely-used piece of open-source software called Log4J[2]. This followed cyber criminals inserting ransomware into a software update issued by Kaseya[3], in itself an attack that had echoes of the SolarWinds[4]

[1] Trellix Advanced Threat Research Report: January, 2022
[2] FT, Hackers Launch More Than 1.2m Attacks Through Log4J Flaw, December 14, 2021
[3] Bloomberg, Kaseya Says It Didn't Pay a Ransom To Hackers, July 26, 2021
[4] Mondaq, Lessons Learned from the SolarWinds Cyberattack, and the Future for the New York Department of Financial Services' Cybersecurity Regulation, June 11, 2021

TOP RISKS FROM ALLIANZ RISK BAROMETER

incident which targeted bank and regulatory agencies, demonstrating the potential vulnerabilities of the sector to outages via their reliance on third-party service providers.

"It is unsurprising then that disruption to digital supply chains and cloud platforms ranks fourth in the cyber risks of concern in this year's **Allianz Risk Barometer** (33% of respondents)," Schiavone adds. IT outages, service disruptions or cyber-attacks can result in significant BI costs and greater operating expenses from a variety of causes, such as customer redress, consultancy costs, loss of income and regulatory fines. Last, but not least, brand reputation and, ultimately, a company's stock price can also be negatively impacted, while management can also be held responsible for the level of preparedness. Insurers already see a rising number of losses from outages or privacy breaches.

"For companies, and their senior management, this ultimately requires them to maintain an active role in steering the ICT risk management framework, encompassing the assignment of clear roles and responsibilities for all ICT-related functions, a continuous engagement in the control of the monitoring of the ICT risk management, as well as an appropriate allocating of ICT investments and trainings," says **David Van den Berghe, Global Head of Financial Institutions, AGCS**.

1,000

Number of climate change-related litigation cases worldwide in the last six years

Legislative and compliance challenges mount

Compliance and the impact of increasing regulatory activity is one of the biggest drivers of insurance claims for financial institutions, and this is reflected in the fact that changes in legislation and regulation ranks as the third top risk for the sector.

The compliance burden for financial institutions has increased significantly over the past decade. Regulatory enforcement has intensified as banks and senior management are more readily held to account by lawmakers and prosecutors, as well as shareholders. At the same time, they are subject to a growing body of rules and regulations in a diverse range of areas, including sanctions, whistle-blowing and, of course, data protection and cyber security laws.

The consequences of data breaches are far-reaching with more aggressive enforcement, higher fines and regulatory costs, and growing third party liability, followed by the prospect of litigation. Regulators are increasingly focusing on business continuity, operational resilience and the management of third party risk following the number of major outages at banks and payment processing companies. Companies need to operationalize their response to regulation and privacy rights and not just look at cyber security.

Then there are a number of other environmental, social, and governance (ESG) issues and requirements to handle in addition. "Companies are challenged by the growing raft of regulation and guidance in many territories, leading to tougher disclosure and reporting rules, particularly around sustainability. The most recent of these is the EU taxonomy for sustainable activities regulation, which provides a common dictionary for sustainability criteria and thus aims to enable comparability of sustainability performance," says **Michael Bruch, Global Head of Risk Consulting Liability/ESG at AGCS**.

Ultimately, these changes will influence how, and in which sectors, companies and funds invest, as they consider whether a particular asset fits within the taxonomy or ESG strategy, how they will report about it and what stakeholders and shareholders will think. "The financial services sector may be ahead of other sectors when it comes to addressing ESG topics but regulations and guidance will still be a driver of risk going forwards," says Bruch.

At the same time, activist shareholders or stakeholders are increasingly focusing on ESG issues. Recent years have seen a surge in climate change-related litigation cases in particular. The cumulative number has more than doubled since 2015, according to a recent Oxford University/Climate Neutrality Forum report presented at the COP26 summit. Just over 800[5] cases were filed between 1986 and 2014, while over 1,000 cases have been brought in the last six years and there are a growing number of cases involving financial institutions. Such cases ultimately seek to influence emissions trends by increasing the cost of capital for high-emissions activities. Early examples of this type of litigation focused primarily on the disclosure of climate change-related risks and their relevance to investment decisions, often drawing on guidance produced by the Task Force for Climate-related Financial Disclosures (TCFD). However, recent cases appear to mark a move beyond being focused just on disclosure to focusing on due diligence. In November 2020, a case was settled involving a $57bn superannuation fund in Australia, Rest[6]. The claimant alleged Rest's failure to disclose and address climate risk breached legislation. The fund committed to a raft of new disclosure and climate change-related initiatives in response.

Digitalization has increased dependencies within the sector and with third parties

Besides climate change, broader social responsibilities are coming under scrutiny, with board remuneration and diversity being hot topics and regulatory issues.

"AGCS regularly engages in open dialogues with the banking, insurance and asset management segments to discuss risk trends and challenges," concludes Schiavone. "We are investing heavily in our network and expertise, in underwriting, claims and operations, so we can best respond to customers' needs and contribute to a better management of risks in a complex environment that constantly evolves."

Further information on the results of the **Allianz Risk Barometer** 2022 can be found here.

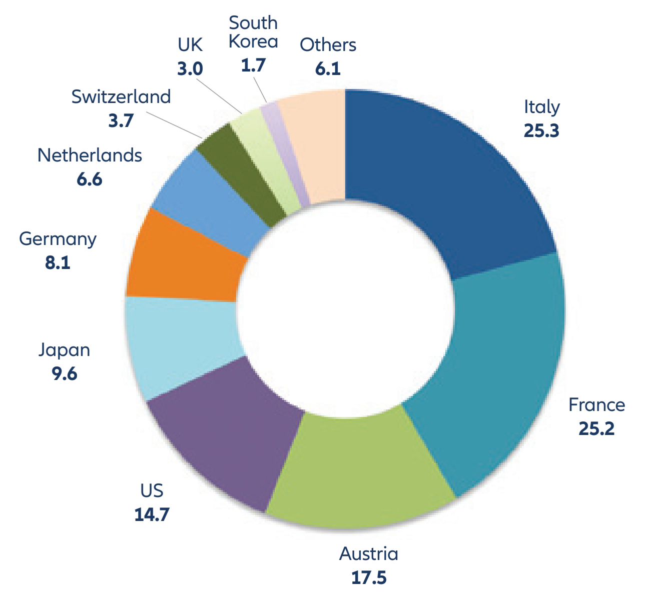
[5] Net Zero Climate, Climate Neutrality Forum, Autumn, 2021
[6] Clifford Chance, Climate Change Test Case Settles: $57bn Australian Super Fund Responds to Pressure on Climate Change Policy, November 6, 2020

Ukraine invasion impact

The unprovoked attack poses a complex threat to the operations of financial services companies. AGCS experts highlight some of the initial impacts.

Immediately after the invasion we saw a panicked reaction on the capital markets, explains **David Van den Berghe, Global Head of Financial Institutions, AGCS**. In particular European banking stocks were negatively impacted, with banks from Italy and France most exposed to Russia (*see graphic*), accounting for more than 40% of the total exposure of foreign banks in Russia at $25.3bn and $25.2bn respectively. These numbers only account for very low single-digit percentages of their total foreign claims. Banks with large Eastern European activities also saw stock prices declining materially.

Foreign banks' exposure to Russia ($USbn)



Source: Bank for International Settlements. Total exposure = lending to all borrowers physically located in Russia as of September 30, 2021

Stocks of Russian banks saw massive declines, and interest rates on (expected to default) Russian and Ukrainian sovereign debt, as well as the cost for credit default swaps, went through the roof.

"Equity and bond markets have clearly seen volatility and the impact of geopolitical tensions shows how uncertain the current (not even post-Covid) environment is in which financial services companies (and financial lines underwriters) operate today," says Van den Berghe.

Furthermore, we see the macroeconomic impact and higher inflation expectations fueled by elevated commodity prices. In Europe the risk of stagflation has increased and markets are watching the next steps central banks around the world are taking. Increasing inflation, with low economic growth, may lead to lower profit generation for banks and negatively impact results from retail operations.

When it comes to US-headquartered financial institutions, some asset managers and banks do have physical assets exposure to Russia and Ukraine. However, evidence suggests such direct exposure (whether these are leased airplanes, real estate, equity investments, or Russian and Ukrainian debt/bond investments denominated in USD/Russian Roubles/Ukrainian Hryvnia, etc.) and other related exposure is in low single digit percentage points, if that.

"Underwriters expect US-based financial institutions to conduct full write-downs of investments in Russia and Ukraine during fiscal 2022 and possibly later as the outcome of the conflict is uncertain," says **Anton Lavrenko, Regional Head of Financial Institutions North America, at AGCS**. "It's also likely US assets in Russia will be nationalized in response to US-imposed sanctions, ruling out future recoveries."

A number of US asset managers have highlighted sanctioned Russian nationals are limited partners in their funds and are working to buy back their interests to cease these affiliations. At the same time, certain US hedge funds are buying up Russian and Ukrainian bonds, perhaps betting on an early resolution of the conflict. "While doing so is somewhat of a common practice by hedge funds, aiming to profit from the situation in Eastern Europe may be viewed as an environmental, social and governance (ESG) issue by the investment community and regulators," says Lavrenko.

Read the full article at **Ukraine invasion - Impacts for financial services** | AGCS (allianz.com).

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5 mega trends for directors and officers to watch

Investors are increasingly concerned about climate-related reporting

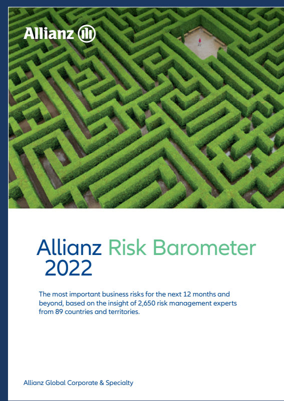
A recent report from AGCS highlights the increased scrutiny directors and officers (D&O) are coming under from a range of stakeholders. **Directors and Officers Insurance Insights 2022** pinpoints five key trends for risk managers, brokers and insurers.

Uncertain insolvency issues remain a concern, the report finds, as pandemic-related risks have been milder than expected, but still mixed across the world. The financial sector faces multiple challenges, including volatile markets, asset bubbles, and rising inflation, while the growth in Special Acquisition Companies (SPACS), or 'blank-check companies', carries its own specific D&O insurance risks.

Investor emphasis on environmental, social, and governance issues is increasing, including adequate climate-related reporting, and in the US, shareholder derivative suits are being brought against foreign companies more frequently. Robust cyber resilience remains a priority for D&Os to watch.

Read more insights from the report or download it in full here.

Allianz Risk Barometer reveals all



Discover what the most important business risks are for the next 12 months and beyond, based on the insight of 2,650 risk management experts from 89 countries and territories. The top trio of concern in the **Allianz Risk Barometer** this year are cyber incidents, business interruption, and natural catastrophes, with cyber topping the list for only the second time in the annual survey's history, largely driven by concerns around ransomware. Climate change has climbed to its highest ever ranking at number six, while pandemic outbreak has dropped to fourth on the list, with 80% of respondents believing they are adequately or well-prepared for a future incident.

You can download the report in full here, including the top 10 risks by country, industry sector, and company size: **Allianz Risk Barometer 2022 (report)**. Alternatively, this short video gives a quick run-down of the top 10 risk factors: **Allianz Risk Barometer 2022 (video)**.

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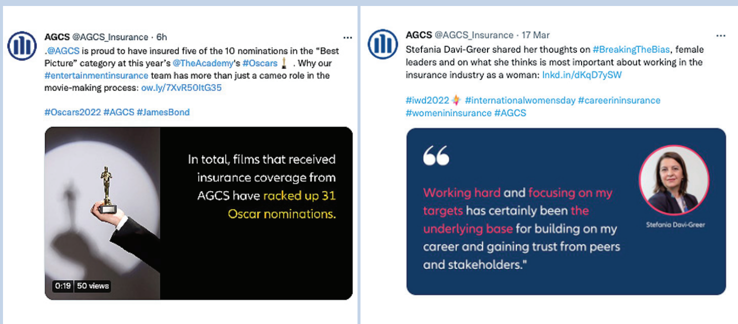

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