

GLOBAL RISK DIALOGUE

ALLIANZ GLOBAL CORPORATE & SPECIALTY

ANALYSIS AND INSIGHT FROM
THE WORLD OF CORPORATE
RISK AND INSURANCE



I PREDICT A RIOT

Civil unrest is on the rise. What is the fall-out for business? And what are the triggers for political violence insurance?

5 ESG ISSUES TO WATCH IN 2020

How companies manage environmental, social and governance risks is increasingly under scrutiny

DRONES TAKE-OFF

Unmanned aerial vehicles have the potential to both solve problems and save costs but the risk of misuse is increasing

ALTERNATIVE RISK TRANSFER SOLUTIONS

AGCS experts identify the latest trends in this rapidly-growing space

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(www.agcs.allianz.com)



LET'S START THE DIALOGUE

Thank you for taking the time to read the latest edition of **Global Risk Dialogue** from Allianz Global Corporate & Specialty (AGCS), our biannual conversation between AGCS experts and thought leaders for a global audience of risk managers, broker partners, insurance professionals and media about issues of interest to the industry. It's one way we showcase the considerable depth of talent AGCS underwriters, claims experts, risk engineers and leaders can bring to the table.

Thanks for stopping by.

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NEWS FROM AGCS AND ALLIANZ

MUELLER TAKES OVER AS AGCS CHIEF EXECUTIVE OFFICER



Joachim Mueller has been named the new CEO of AGCS, succeeding Chris Fischer Hirs who stepped down in November 2019. Mueller

was CEO of Allianz Versicherungs-AG, the property and casualty insurance arm of Allianz Germany, from 2016, and simultaneously CEO of Allianz Beratungs- und Vertriebs-AG (ABV),

the sales company of Allianz's German unit, from 2014.

With extensive experience in the financial services industry, Mueller has demonstrated in previous CEO roles how long-term revenue growth can be combined with sustainable underwriting profitability. He also has successfully led large-scale insurance businesses through transformation and digitalization, while maintaining a strong focus on customers and sales in sectors ranging from retail and SME up to large businesses, including in highly competitive market environments.

AGCS NAMES HAAGEN GLOBAL HEAD OF SPECIALTY LINES

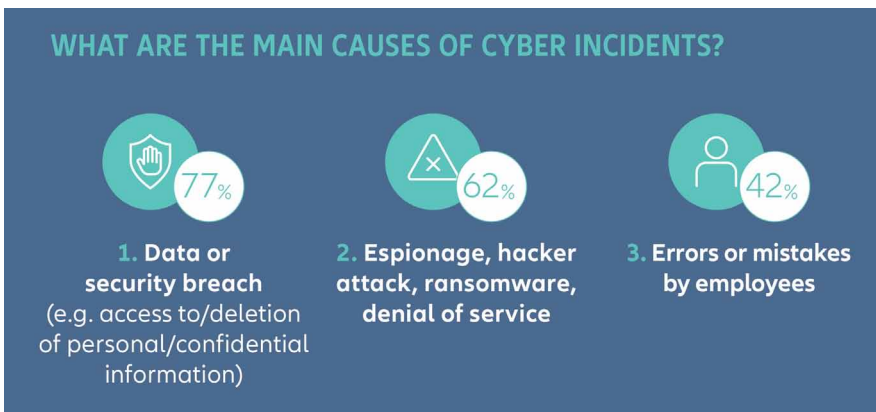


Henning Haagen has been appointed Chief Underwriting Officer Specialty and member of the AGCS Board of Management to succeed Paul O'Neill, who left in 2019.

In his new role, Haagen is responsible for AGCS' aviation, entertainment, marine and mid-corporate lines of business, as well as the AGCS Global Underwriting Integrity and Solutions function, which establishes common underwriting practices across all AGCS lines of business, and the AGCS Underwriting Academy, which offers expert trainings to AGCS staff.

Haagen previously was Regional Head of Specialty and also Northeast Zone Executive for North America, a role he held since January 2017. Prior, he was Global Head of Aviation and before that Chief Aviation Underwriting Officer for the Europe, Middle East, Africa and Asia-Pacific regions. He has over 20 years in the insurance and reinsurance industries.

CYBER TOPS ALLIANZ RISK BAROMETER



Cyber ranks as the top business risk for the first time

For the first time ever, **Cyber Incidents** (39% of responses) ranks as the most important business risk globally in the ninth **Allianz Risk Barometer 2020**, relegating perennial top peril **Business Interruption** (37% of responses) to second place. Awareness of the cyber threat has grown rapidly in recent years, driven by a number of high-profile incidents. Seven years ago it ranked only 15th with just 6% of responses.

Changes in legislation and regulation (#3 with 27%) and **Climate change** (#7

with 17%) are the biggest climbers globally, underlining the US-China trade war, Brexit and global warming as increasing concerns for companies and nations. The annual survey on global business risks from AGCS incorporates the views of a record 2,718 experts in over 100 countries including CEOs, risk managers, brokers and insurance experts.

Download the full report
www.agcs.allianz.com/news-and-insights/reports/allianz-risk-barometer.html



LOSS LOG

AVIATION TRENDS

Although the improvement in the aviation sector’s safety record – particularly regarding the number of fatal accidents – cannot be questioned, it continues to see a high volume and growing magnitude of insurance claims, meaning aviators and insurers alike cannot be complacent.

Analysis of more than 50,000 aviation insurance industry claims worth more than €14.8bn (\$16.3bn) over the past five years shows **collision/crash incidents** account for over half the value of all claims (57%) – equivalent to €8.4bn (\$9.3bn) – and over a quarter by number (27%), according to new research from AGCS and Embry-Riddle Aeronautical University, the world’s largest university specializing in aviation and aerospace. Loss of control in flight is the most frequent cause of fatal accidents.

Collision/crash claims also incorporate incidents such as hard landings, bird strikes and runway incidents such as incursions and excursions. The research shows there have been 470 runway incidents resulting in claims over five years, totaling more than €800mn (\$883mn) of insured damages. The average runway claim totals around €1.7mn (\$1.9mn).

Increasingly sophisticated aircraft are also contributing to more expensive claims. In particular, more complex engines and, in some cases, composite materials – such as carbon fiber layers bonded with resin which are strong and light and help improve fuel efficiency – can be costly and more time-consuming to repair. More and more aircraft are using composite materials and significant damage is more expensive to repair than in traditional metal alloys.

The growing complexity of aircraft design, technology and manufacturing is also leading to more costly grounding incidents, involving entire fleets, as in the case of the aftermath



Faulty workmanship/maintenance is the second major cause of aviation insurance claims

of the two fatal crashes involving the redesigned Boeing 737 Max within five months in 2018 and 2019. Such incidents highlight the challenge in finding technical solutions to complex problems, which increases the time it takes to get grounded aircraft back into operation. Even if a fix is found, the task of retrofitting a fleet takes considerable time. Civil aviation and airline safety authorities have grown increasingly cautious and rightly so. However, this will also likely result in more, and longer, groundings of aircraft in future.

Insurers are also seeing a higher level of foreign object damage claims. Bird strikes are a notable contributor, resulting in excess of €330mn (\$364mn) of damages over five years.

Find out more about this research. Download the report **Aviation Risk 2020: Safety And The State Of The Nation** at www.agcs.allianz.com/news-and-insights/reports/aviation-risk-report.html

LIABILITY INSURANCE TRENDS

4 QUESTIONS FOR ...

CIARA BRADY – GLOBAL HEAD OF LIABILITY AT AGCS

Increasingly serious, and potentially more costly, “smart” exposures, the growth of third party litigation funders, as well as a host of emerging risk scenarios – from opioids in the US to collective redress in Europe – are challenging the liability insurance market. Businesses need to do everything possible to ensure their products are safe and their operations have strict risk management processes which limit risk and prevent claims from arising, explains **Ciara Brady**.

\$3bn+

Insurance industry loss to date from the NotPetya cyber event

YOU HAVE BEEN AT THE HELM OF A GLOBAL LIABILITY INSURANCE UNDERWRITING TEAM FOR OVER A YEAR NOW. WHAT LESSONS HAVE YOU LEARNED?

After a full year in the role, I have relearned a few of the insurance basics I first learned many years ago. The insurance cycle is a challenging one to break and a first-mover is needed. The current insurance cycle is at a challenging point and, if rates and coverages don't firm up, I would not be surprised if capacity withdraws from the market. Pricing has deteriorated and claims trends such as larger court verdicts, expanded exposures for non-US companies doing business in the

US, an increase in automotive parts recalls, liability shifting due to technological advancements (for example, detailed component or ingredient tracking in end products), and rising medical costs are putting pressure on liability insurers. AGCS is committed to writing liability insurance and to do so the team has been charged with being first-movers. We have started adjusting our pricing and terms to reflect a refined appetite and we will continue to do so over the next year. My goal is two-fold: one, to be a reliable long-term partner to our customers; and, two, to do that I need to ensure that liability is a long-term contributor to underwriting profit for AGCS and the Allianz Group. The next 12 months will be challenging, as



Legalization of cannabis has become a hot topic for insurers

we review each account and challenge many customers. However, it is necessary after many years in a soft cycle.

BUSINESSES ARE FACED WITH INCREASINGLY SERIOUS AND POTENTIALLY MORE COSTLY EXPOSURES IN THE “SMART”, DIGITAL WORLD LIKE CYBER EVENTS. HOW CAN LIABILITY INSURANCE EASE SOME OF THE UNCERTAINTY?

Traditional liability insurance policies continue to provide coverage for bodily injuries and property damages resulting from cyber events. However, so-called “silent cyber” events are also occurring, such as the Petya/NotPetya attacks in 2017 which caused over \$3.3bn losses to businesses, and which can result in potential cyber-related losses stemming from traditional policies not specifically designed to cover cyber risk and therefore not implicitly including or excluding them. This coverage ambiguity can

result in a “silent cyber” scenario, whereby an insurer may have to pay claims for cyber losses off a policy not designed for that purpose. At AGCS, we have introduced contract language to address this silent cyber exposure, which has turned silent cover into affirmative coverage allowing customers and brokers to have clarity on what is covered under a general liability (GL) policy.

IN THE PAST, THE COST OF LEGAL FEES DISCOURAGED PLAINTIFFS FROM BRINGING QUESTIONABLE LAWSUITS AGAINST COMPANIES. BUT, NOW, THIRD-PARTY LITIGATION FUNDERS OF CLASS ACTIONS ARE THE NORM. WHAT CONCERNS YOU ABOUT THIS TREND FROM AN INSURANCE PERSPECTIVE? HOW CAN COMPANIES BETTER PREPARE?

Litigation funders are a growing concern for all liability insurers. Estimates are that this industry has grown to around \$10bn globally – up to half of that in the US market – although some put the figure much higher in the \$50bn to \$100bn range. The increased big business around US courts makes it extremely challenging to underwrite liability exposures, as well as for claims teams to accurately assess claims values. To prepare for this uncertainty, businesses need to do everything possible to ensure their products are safe and their operations have strict risk management processes which limit risk and prevent claims from arising.

LIABILITY INSURANCE EXPOSURES CAN ARISE FROM MANY SOURCES – FROM THIRD-PARTY ACTIONS, PRODUCTS OR EMERGING RISKS TO ENVIRONMENTAL DISASTERS. WHERE WILL LIABILITY INSURANCE GO NEXT? WHAT ARE SOME EMERGING TRENDS?

Liability insurance tends to evolve with regulation and new technology or new products. For this reason, we work closely with customers, claims, risk consulting and other Allianz entities to stay on top of local and emerging trends within our book. Such trends can be local or global and can range from legalization of cannabis in Canada to opioids

litigation in the US to collective redress in Europe. I believe liability insurance is moving through a time of intense challenge. Claims costs are increasing globally and consumers’ propensity to sue continues to increase, especially in the advent of social media. This will pressure businesses and ultimately consumers to adapt – as costs associated with claims do need to be reflected in insurance premiums. That said, however, it also permits businesses with strict risk management controls and disciplined implementation of these controls to receive differentiated insurance terms. They may be rewarded for their due diligence.

Find out more about AGCS’ liability insurance at www.agcs.allianz.com/solutions/liability-insurance.html



**BIOGRAPHY
CIARA BRADY**

Ciara Brady joined AGCS in January 2019 from Swiss Re, where she was Head of Casualty Treaty Global and International. In a career spanning almost 20 years in the insurance industry, both in Canada and Switzerland, Brady joined Swiss Re in 2005 in Toronto, and since that time has taken on increasingly senior roles in casualty underwriting. Brady is based in Zurich.

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\$2bn
combined global box office takings for the nine Best Picture nominees*

AGCS AT THE OSCARS!

As with every year, AGCS had a “front-row seat” at the 92nd Academy Awards “Oscars” ceremony and also played a major supporting role in this year’s Best Picture category, insuring every nominee, bar one, including movies produced by new customers.

AGCS’ history in motion pictures runs deep, spanning over 100 years into Hollywood’s silent beginnings – even before the first Oscars ceremony on May 6, 1929. We’ve become a leading insurer of Hollywood during that time.

From the Keystone Cops and Charlie Chaplin to *Spartacus*, *The Godfather* “threequel”, *Apocalypse Now*, Harry Potter and the latest Marvel superhero films, not to mention all 25 James Bond films – we’ve insured thousands of Hollywood blockbusters, many of which have been nominated for – and won – Oscars.

This year was no different. Of the nine Best Picture nominees (see box) – which together have earned a whopping \$2bn worth of receipts at the box office with over half of that coming from one movie, *Joker* – AGCS is insuring every nominee, bar one, including movies produced by new customers.

“AGCS has a long history at the movies. Our outstanding reputation is why today every second or third blockbuster is insured by us. We have built up true trust relationships over the decades and that’s why we are the

insurer of choice for so many companies,” says **Wanda Phillips, Head of North America Entertainment Insurance AGCS.**



AND THE WINNER IS... 2020 BEST FILM NOMINEES

The winner is **PARASITE**

- 1917

- FORD & FERRARI

- THE IRISHMAN

- JOJO RABBIT

- JOKER

- LITTLE WOMEN

- MARRIAGE STORY

- ONCE UPON A TIME ...
IN HOLLYWOOD

For more information
[www.agcs.allianz.com/
solutions/entertainment-
insurance.html](http://www.agcs.allianz.com/solutions/entertainment-insurance.html)



ENTERTAINMENT INSURANCE? – IT’S A WRAP

The global entertainment and media market is big business, expected to reach \$2.6trn in 2023. In the US, alone, the market is expected to grow to over \$720bn this year from \$678bn in 2018.

Although insurance figures are difficult to come by, Hollywood commands the most premiums with an estimated \$400mn annually in 2019, followed by the UK with approximately \$40mn to \$50mn, China at \$45mn and growing, and France and Germany at around \$45mn and growing.

Typically – depending on genre, insured budget, deductibles and other risk factors – insurance premiums can range from 0.6% to 1% of a movie’s total budget, which could amount to between \$1mn to \$2mn for a \$200mn movie.

Besides full-length movies and their production, insurance also covers TV shows and so-called DICE productions – documentaries, industrial, commercial and educational productions – as well as all elements of post-production, including computer-generated imagery (CGI).

Technology has changed the movies. Movie magic used to be added in post-production, but now visual effects are integral to principal photography. Underwriting complex, computerized visual effects is challenging, to say the least. Digital technology, visual effects, extravagant live events and other trends are changing the industry. With new technologies, however, cyber vulnerabilities are growing.

* As of February 10, 2020

PROTECTION AGAINST ALL STAGES OF RISK

Corporate risk managers need much more than traditional risk transfer in today's complex and fast-changing environment, which is why AGCS has launched a new suite of services.

AGCS recently established **AGCS Services**, which provides value-added risk solutions including risk mitigation, captive fronting and crisis management to companies, initially in two core markets – Central & Eastern Europe (CEE) and the Mediterranean region. The unbundled services will be offered on a pay-as-you-go basis or can be bundled with a traditional insurance program.

"These services allow risk managers to have a broader choice in searching for specific solutions in our complex, global environment," says **Tina Baacke, Global Head of Allianz Risk Consulting at AGCS** and project lead for AGCS Services. "Businesses can be supported and protected against all stages of risks from predicting,



Drone surveys is one of the services on offer

monitoring and mitigating risk to covering financial losses and enabling an effective crisis response in the event of a disaster."

The services are delivered through AGCS experts and engineers complemented by third-party providers. AGCS is also developing

services around industrial "internet of things" (IoT) technologies and supporting customers to manage supply chain risks.

"These services leverage the considerable expertise of AGCS' risk engineers, crisis managers, underwriters and digital analysts to co-create new solutions for customers," says Baacke. "This, in turn, allows customers to proactively address potential risks and become more resilient while also reducing complexity."

Find out more at
[www.agcs.allianz.com/
services.html](http://www.agcs.allianz.com/services.html)



RISK CONSULTING

- ✓ Predictive risk analytics in industrial/manufacturing sector
- ✓ Predictive monitoring
- ✓ Risk visualization
- ✓ Risk mitigation and prevention

Examples: digital remote risk assessment; bespoke natural catastrophe analysis; cyber security/resilience reviews; indoor 3D mapping of facilities (virtual factory mapping); technical loss analysis or damage prevention (with Allianz Center for Technology); drone surveys and inspections for construction or loss sites; environmental, social and governance (ESG) assessment (in operations or supply chains).

CAPTIVE FRONTING

- ✓ Complexity reduction
- ✓ Control enhancement (captive insurance programs)
- ✓ Compliance assistance (captive insurance programs)
- ✓ Cash flow/transaction improvement
- ✓ Retention management
- ✓ Collateral optimization
- ✓ Inclusion of difficult-to-insure risks

Examples: assist customers with efficient and compliant self-insurance; data integration; analytics; pricing; tailored wording; reporting; accelerated cash flow; claims management; claims adjusting with ability to place local policies in up to 150 countries; and participating in or leading the reinsurance panel.

CRISIS MANAGEMENT

- ✓ Geographical risk alerts of operational disruptions
- ✓ Early analysis and notification of events
- ✓ Complete portfolio analysis
- ✓ Reputational risk avoidance

Examples: transportation or infrastructure incidents; natural catastrophes; terrorism attacks.



DRONE USE READY TO TAKE-OFF

150+

Drone disruption air traffic incidents in Germany in 2019 – almost one every two days

Drones have the potential to both solve problems and save costs in the future across a number of industries around the world. However, the risk of misuse of this technology – particularly around airports – needs to be considered further as use rapidly increases and continues to evolve.

The rapid growth of unmanned aerial vehicles (UAVs), or drones in our skies, is one of the biggest issues to impact the aviation industry for decades. In 2020, it is estimated that global spending on drones will total \$16.3bn alone, according to analyst firm International Data Corporation (IDC)¹ and is forecast to grow at a 33% CAGR.

Aerospace analysis company, Teal Group, anticipates a \$93bn investment in commercial drone technology worldwide over the next 10 years and also expects the worldwide non-military drone market, dominated by manufacturers in China, to triple in size to \$14.3bn in sales over the same period from \$4.9bn in 2019, as it benefits from a gradual opening of US airspace by the Federal

¹ International Data Corporation Worldwide Robotics And Drones Spending Guide, January 2020

Photo: iStock



THE 1 MINUTE DIALOGUE

- ▶ Global spending on drones is set to soar in 2020, particularly for commercial use. Drones are increasingly used for a variety of tasks ranging from delivering medicine to remote communities to performing lifeguard duties
- ▶ Insurers are increasingly making use of the benefits drone technology can bring to businesses such as establishing cause of loss, site inspections, claims assessment and flood risk surveys
- ▶ As the number of drones in use increases, so do the risk exposures, with a significant rise in safety incidents around airports in the US, UK, Germany and around the globe
- ▶ The move towards electric powered flight and more autonomous drones that are able to fly beyond visual line of sight (BVLOS) will bring far greater challenges, as the regulatory landscape lags behind the technology

particular. For example, they can be used to undertake aerial surveys of terminal buildings or provide 3D maps of runways in order to identify and aid maintenance work – this can be much quicker and safer than using people. They can also be used to quickly detect foreign objects around airports, potentially eliminating the need to close down a runway, as well as offering support to security by identifying any threats, while also acting as a visual deterrent.

However, as the number of drones flying in the skies has increased, so have the risk exposures. AGCS has already experienced a small number of insurance claims resulting from drones falling to the ground, the majority of which have been caused by loss of battery power, often due to pilot inattention during the flight. Fortunately, no one has been hurt in these incidents.

Even more serious is the fact that the number of aircraft near-misses with drones and other incidents of reckless behavior in or around airports around the world is also increasing as more drones and pilots enter the airspace.

As more drones and pilots enter the airspace, the number of drone incidents in or around airports is increasing

Aviation Administration (FAA) and increased use by commercial industries².

In the US alone, almost 900,000 hobbyist owners had registered their drones by the end of 2018 according to the FAA since it mandated online registration for drones in 2015.

Meanwhile, the market for commercial drones – which can be used for anything from lifeguard duties to tackling crime to inspections of manufacturing sites to delivering of medical supplies to remote locations – is accelerating. Of the estimated \$16bn spending on drones in

2020, it is predicted that almost \$10bn – or 60% – will be spent in the commercial sector, driven by the utilities, construction and manufacturing and resource industries. In the US, the FAA also expects growth will continue – by 2023, the commercial drone market is expected to triple in size, with an estimated 823,000 drones flying at that time³. There is certainly a buzz about this market.

BENEFITS – AND RISKS – FOR THE AVIATION INDUSTRY

Drones bring a host of potential benefits to the aviation industry in

² Reuters, Global drone market estimated to reach \$14bn over next decade, July 2019

³ Federal Aviation Administration Forecast Fiscal Years 2019 - 2039



Drone footage of damage caused by flooding after Hurricane Harvey in Texas

DRONE RISK ASSESSMENT IS READY FOR LAUNCH

Along with a growing number of other sectors, the insurance industry is increasingly making use of some of the benefits drone technology has to offer for its customers, such as delivering greater certainty in risk and claims assessment, as well as improving overall service. Examples include:

- AGCS recently used drones, laser scanning and computer modeling to carry out analysis of the root cause of a machinery explosion at a construction site. The site, inaccessible to loss adjusters, was first explored by a drone, while a 3D laser scanner and computer modeling then simulated the explosion to establish the cause of the loss
- Drones and satellite imagery also helped AGCS to assess claims after recent natural catastrophes, such as wildfires in California and hurricanes in the US. This enabled loss adjusters to get a quick overview of the damage, as well as assess claims in hazardous or inaccessible areas.
- Together with the geodata factory of engineering firm IABG, AGCS has also developed a new flood risk survey based on topographic data from drones in order to model flood and drainage behavior on construction sites. By coupling 3D topographical data with hydrogeological modelling software and rainfall simulation data it is possible to assess water flow across a construction site and predict flash flooding risk. For more information www.agcs.allianz.com/news-and-insights/expert-risk-articles/global-risk-dialogue-drones-flood-test.html

Drones constitute a considerable risk to manned airplanes. Even though many can weigh only a few pounds, the motors and other metallic equipment that power them can cause significant damage to aircraft engines, windshields and wings. It is estimated that even a small drone could cause as much as \$10mn in physical damage alone if hitting an engine of an airplane (excluding liability costs), not to mention the risk of accident, injury or even death to passengers and crew. Commercial aircraft are at the greatest risk of an incident with a drone during

take-off and landing. In the event of an incident, aircraft could also be forced to make an emergency landing, resulting in delay or cancellation, incurring significant economic loss.

SIGNIFICANT RISE IN DRONE AIRPORT INCIDENTS

For example, in the US the number of safety reports involving drones soared from zero in February 2014 to 260 by June 2017⁴. In the UK, the number of times a drone endangered the safety of an aircraft rose by more than a third

in 2018 according to the UK Airprox Board. It recorded 125 “dangerously close” encounters in 2018, up from 93 in 2017 and 71 in 2016. Most famously, severe disruptions occurred at Gatwick Airport, London’s second busiest, resulting in 1,000 flight cancellations or diversions and affecting 140,000 passengers, when recreational drones reportedly appeared over the airport for three days in December 2018. Estimates put the cost of the Gatwick disruption in excess of \$60mn⁵, while airliner EasyJet confirmed it lost £15mn (\$18.5mn) as a result. In the wake of the incident, Gatwick spent about £5mn (\$6mn) on anti-drone equipment, which can detect and jam communications between a drone and its operator.

Drone incidents around airplanes or near airports have also occurred over the past year in Newark, New York, London’s Heathrow Airport, Frankfurt, Dubai and Singapore, to name but a few examples. In Germany, its busiest airport, Frankfurt, was also the most frequently impacted by drones in 2019 with 28 sightings alone, while drones disrupted air traffic in Germany over 150 times in 2019, according to data reported by Funke Media Group, even though they aren’t allowed to fly within 1.5 kilometers (0.9 miles) of German international airports. Anti-drone measures to protect German air traffic will cost around €30mn per airport, the federal government has said⁶.

REGULATORY STANDARDS AND MITIGATION STRATEGIES

Although significant strides have been made around the world when it comes to introducing regulations controlling drone use over the past five years, there is still much work to be done and although most drone operators operate within these correct regulations and boundaries, the above examples show there are a growing number of exceptions to these rules.

Standards of drone regulation can also differ significantly around the world. Some countries are well regulated, whereas in others regulation can be either very light or non-existent, which

⁴ Federal Aviation Administration and Bloomberg

⁵ Fortune, Gatwick’s December drone closure costs airlines \$64.5mn

⁶ Deutsche Welle, Securing Germany’s Airports Against Drones Will Cost Millions: Ministry

can increase the risk of a dangerous incident occurring, such as a collision.

At the same time, methods of mitigating and reducing the potential threats posed by drones to airports and airlines continue to evolve, such as “geo-fencing”, whereby software uses the global positioning system (GPS) or radio frequency identification (RFID) to define geographical boundaries. It can then pick up those signals, process them and display them on an on-screen map. If protecting an airport, the system should emit an audible tone announcing that it has spotted a drone and airport staff can immediately see where both the drone and operator are located. However, although geo-fencing technology is a good mitigation against hobbyists that may stray into the wrong area, it can be less effective against individuals with malicious intent if they have already found out how to override it.

Data sharing and collaboration on drone safety analysis are still in the early stages of maturity while the investigation of certain near-miss drone sightings would be useful in validating the effectiveness of safety controls. Such analyses would help guide the drone industry’s ongoing safety research and design. First and foremost, careless and reckless operators need to be held accountable.

THE FUTURE: BVLOS TAKES TO THE AIR

As drone technology and reliability has improved, insured losses from drones have shown a positive trend. However, the move towards electric powered flight and more autonomous drones will bring far greater challenges.

“AGCS insures drones globally – covering both hull risks and liability for operators – and we have seen losses improve to some degree, as drones have become more reliable and battery and guidance technology has improved,” says **Tom Chamberlain, Underwriting Manager Aerospace and General Aviation, UK at AGCS.**

“The drone industry is on the cusp of a transformative development, with the development of electric unmanned aircraft that are able to fly beyond



On-demand drone cover is now available
Photo: Shutterstock

PAY-AS-YOU-FLY INSURANCE

In the UK, together with InsurTech Flock, AGCS has already launched the UK’s first pay-as-you-fly drone insurance, using an App which leverages big data to provide pilots with real-time safety, risk and weather information. For more information on AGCS’ drone insurance solutions www.agcs.allianz.com/solutions/aviation-insurance/drone-insurance.html

visual line of sight (BVLOS),” adds **Axel von Frowein, Global Product Leader Aerospace at AGCS.** “If drones can be safely integrated into commercial airspace, commercial drones may soon become commonplace – used for deliveries, inspections, agriculture and even urban air mobility services that can carry tourists, serve offshore oil platforms and carry out emergency evacuations.”

In the US, the FAA recently granted licenses to a number of logistics companies to test drone delivery systems in the US and authorized its first BVLOS flight for a public safety agency, the Chula Vista California Police Department. Last year, Xcel Energy used a drone to inspect electric power lines in Colorado – marking the first BVLOS flight by a US utility company.

In addition to carrying cargo, small autonomous passenger drones are undergoing testing. Uber plans to test its air taxi technology in 2020, with the aim of launching commercial

operations from 2023. Dubai, Singapore and China are among the states and countries embracing the technology with plans to launch passenger services in coming years – Dubai conducted its first test of a drone taxi service in 2017.

One of the world’s largest manufacturers of consumer drones recently announced that its drones will be equipped with ADS-B sensors from 2019, which will enable them to be seen and tracked by other aircraft and air traffic control.

However, BVLOS flight has some significant regulatory and safety challenges ahead. Switzerland recently suspended a medical drone delivery service after the vehicle crashed close to a pre-school. The drone service, which delivers samples to Swiss hospitals, had made over 3,000 successful flights since its launch in 2017.

“Drones have become safer as the technology has improved,” says Chamberlain. “However, the regulatory landscape continues to lag behind technological advancement as we are seeing in the continued growth of the unmanned autonomous flight sector.

There are now over 200 companies developing passenger-carrying aircraft. With a lot of companies investing in this technology there will be another learning curve in aviation and drone safety.”

The growth of the drone industry is one of the many developments in the aviation sector featured in the AGCS report **Aviation Risk 2020: Safety And The State Of The Nation**. Download it at www.agcs.allianz.com/news-and-insights/reports/aviation-risk-report.html

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THE BUMPY ROAD TO THE ELECTRIC R-EV-OLUTION

8.4 MN

Estimated number of BEVs globally by 2025

With a global push towards a cleaner, greener and emissions-free future, governments and businesses alike are looking for new technologies to aid the push for a more sustainable society. However, as the rising number of Battery Electric vehicles (BEVs) sweeping across the automotive industry shows, there are always a few bumps in the road when such new technologies begin to take the wheel.

“The automotive industry is hurtling toward a future that will change transportation the same way electricity changed how we light the world,” wrote General Motors (GM) President Mark Reuss in an Op Ed for CNN Business¹. Reuss was making it clear that the primary question surrounding the transition of BEVs into the mainstream was “when” and not “if”.

Indeed, the race is already well underway for manufacturers, with legacy car brands throwing themselves

into multimillion dollar partnerships with electronics and battery experts. Whether it is Volkswagen and Swedish battery-maker Northvolt, Toyota and Panasonic, or even GM themselves and their \$2.3bn cooperation² with South Korean tech giant LG, the electric revolution is coming. The auto industry is banking on it.

OLD PLAYERS IN A NEW GAME

With so much skin in the game, some insurers and industry experts are looking at the rapid shift to BEVs with some trepidation.

¹ CNN, Perspectives: GM president: Electric cars won't go mainstream until we fix these problems, November 25, 2019

² Wall Street Journal, GM, LG to Spend \$2.3 Billion on Venture to Make Electric-Car Batteries, December 5, 2019



Electric vehicles have been predicted to transform transportation

THE 1 MINUTE DIALOGUE

- ▶ 2020 will be a landmark year for battery electric vehicle (BEVs) with one million sales expected in Europe
- ▶ BEV benefits: no refueling costs, zero exhaust emissions and up to 300 miles driving range from a single charge – but how viable and sustainable are the batteries?
- ▶ The increased complexity of the supply chain, new products and manufacturing processes will lead to new risk exposures
- ▶ Insurance implications include third-party liability, cyber, protection and indemnity (P&I), errors and emissions (E&O), new technologies, property and marine insurance, product guarantee insurance and credit insurance. Potential claims scenarios include overheated battery lead fires resulting in property damage

Insurers are supporting the automotive industry, whether it be for traditional manufacturers with very complex supply chains and numbers of components, to BEV manufacturers, with slightly less complex mechanics but equally complex supply chains, with a full-range of property, third-party and products liability, marine, financial services and other insurance products. Although exposures and responsible parties may shift somewhat, as we will see, most insurance products will be available for BEV exposures. In time, new products are likely to be introduced to cover specific BEV exposures.

BATTERY ISSUES

With a battery-powered vehicle, motorists get the benefit of no refueling costs and zero exhaust emissions and with many BEVs now capable of over 300 miles driving range from a single charge, “**range anxiety**” – the fear that the BEV will run out of power before the next charging possibility – has lessened. However, battery life before replacement is still a significant issue for manufacturers. “Manufacturers are pushing their suppliers to develop new

While the concept of an electric-powered vehicle is far from new (see box on page 17), its widespread adoption is. And it seems that outside factors have as much to do with this as advancements in the technology.

“Political promises and targets are certainly influencing the market,” says **Harald Wuesteney, Liability Risk Consultant at AGCS**. New legislation, such as the EU’s 2030 carbon dioxide emissions limits, aims to push manufacturers and suppliers into the technology.

“We will see a rise in BEVs over the next few years. Insurers and manufacturers alike must adapt and welcome the transformation to a carbon-neutral economy,” says Wuesteney.

While 2020 is set to be a landmark year for BEV sales – over one million BEVs are expected to be sold in Europe alone³, contributing to the rapid growth of a market forecasted to reach 8.4 million sales globally by 2025⁴ – there are still concerns about how legacy car brands will transition into the new market.

“From production processes to the supply chain – as well as the product itself – the automotive industry is having to evolve, which creates new exposures along the value chain – from data quality to operational transparency to just-in-time manufacturing to more obvious things like the weather and cyber-attacks,” says **Daphne Ricken, Senior Underwriter Liability at AGCS**.

³ Transport & Environment, One million EVs to be sold next year in Europe alone, September 9, 2019

⁴ JP Morgan, Driving into 2025: The Future of Electric Vehicles, October 10, 2018

batteries with ten to 12 year or even lifetime guarantees,” says **Andreas Bemm, Risk Consultant at AGCS**.

Other conditions, such as the climate of where the vehicle is situated, could play a part in the battery’s longevity, as studies have shown that batteries need more frequent charging if exposed to extreme temperatures⁵.

The potential failure to live up to the promised battery warranty period exposes the question of liability – namely, who is responsible if batteries underperform? How easily can parts be dismantled and reinstalled? With potentially high costs, determining liability can be a point of friction between the supplier and the manufacturer. With the possibility of numerous BEV batteries falling short of their warranty period, manufacturers could be impacted.

“If the defective part in the battery pack can be clearly identified, the liability then will fall back to the supplier or sub-supplier of the defective part,” says Wuesteney, “However, if this cannot be proven, the issue of replacing and disposing of the battery pack would then stay with the car manufacturer.”

Finally, what happens when a battery has reached the end of its life span? Environmentally, it’s a valid question. “For current lithium-based batteries, there’s no economical possibility to recycle when they reach the end of their life-cycle,” says Bemm. “Beyond that, the long-term damage to the environment of disposing batteries, and even to our health, isn’t known.” This could lead to potential liability and reputational exposures to BEV manufacturers due to environmentally dangerous battery disposal.

Likewise, battery production has received much environmental criticism. Local water shortages caused by lithium sourcing in South America, where up to a third of the world’s supply is captured in underground water pools and put through a rigorous extraction process, is causing shortages



– not to mention pollution problems – in active mining areas.

“Auto manufacturers have faced similar challenges in the past with combustion engine vehicles,” says **Phillip Blumenthal, ESG analyst at AGCS**.

“Deploying BEVs at scale is still an aspirational goal for many auto manufacturers. The innovations required to achieve this mean that some specific environmental aspects present new challenges – but it shouldn’t come as a surprise to the industry as a whole.”

INSURANCE IMPLICATIONS

The increased complexity of the supply chain, new products and manufacturing processes will lead to split, reallocated or newly-created risk exposures within the value chain. Those developments need to be evaluated and rated by insurance underwriters but they will also constitute a confusing environment which will increase claims complexity. Therefore, insurers have to review and foster their claims-handling abilities and processes to be able to manage the risk evolution caused by BEVs. Additional aspects to bear in mind are compliance (contract certainty), process design, quality and management, including documentation that will be vital to be able to determine triggering and affected parties and allocate responsibilities accordingly.

The specific insurance implications start with **liability** coverages – most importantly, **products liability**.

New uses for BEVs in which batteries are put to different applications, such as a dynamic environment like a sports car, confronted with G-forces and ground shocks while being driven, or different day-to-day uses, where the usual mode of operation will be challenged, are just a few examples of their impact.

A concern for insurers is the lack of real data regarding the rate degradation – the speed at which a battery’s capacity declines – of the battery’s life span,” says Bemm.

More **combined parts for new applications** will impact manufacturers. For example, BEVs will generally have fewer parts than current, motorized vehicles, but these will be combined more so that three separate parts today may become one part tomorrow. How they are combined will play an important role when assessing exposures. And while the number of sub-products will be reduced in BEVs, more microproducts will be available, each probably designed and produced separately.

“While the individual components are simple to insure, the uncertainty comes in the form of how the different parts interact in the battery, and how difficult it is to identify separate components within each part when a defect is found,” says **Wolfram Schultz, Global Practice Group Leader Heavy Industries & Manufacturing AGCS**.

⁵ Nature Communications, Predictive modeling of battery degradation and greenhouse gas emissions from U.S. state-level electric vehicle operation, June 21, 2018

Other, non-technical issues, such as contractual mismatches in various stages within the product chain, further complicate matters for insurers.

“Liability is a moving target,” adds Ricken. “The transition to electric vehicles shows again how we constantly have to be on top of new legal and technical environments.”

Existing hardware used differently may also have liability implications. For instance, **new production processes** – like 3D or 4D printing established hardware pieces – may change the characteristics, impacting liability responsibility. Or new untested applications could create a new exposure, as could the day-to-day evolution of products like sensors, which will be “smarter” than in the past.

Besides products liability exposures, other insurable risks will be **third party cyber-risks** resulting from increased data volumes and connection requirements; **professional indemnity (PI) risks** due to morphing pure products with embedded software; **errors and omission (E&O)** risks for suppliers who manufacture small batches of products; **fire and explosion, toxic fumes or contamination risks** related to the handling of lithium ion (Li-Ion) batteries; and **employers liability risks** due to toxic fumes, fire risks and heat exposure to 3D and 4D printing processes.

Other exposures apart from liability will be **property insurance** due to fire; **marine insurance** due to handling, labeling and special transport requirements of Li-Ion batteries; **first-party cyber insurance** due to the immense amount of data-handling by manufacturers or suppliers; **product guarantee insurance** related to product life-cycles; and **credit insurance** related to the change of suppliers within the supply chain.

Finally, new supply chain, products and process complexities will lead to **value chain exposures** that will shift from manufacturer to supplier, which will exacerbate **claims complexities**.

DESIGNING BEVS

Propelled by one or more electric motors using energy stored in rechargeable batteries, the basic principles behind battery-powered electric vehicles (BEVs) have been well-known for two centuries. Though apart from some interesting designs (see right), it seems that only now, due to technical advances – in terms of increased battery capacity and driving range – and the growing need for an alternative to combustion engines, BEVs are ready to take hold of the auto market.

The majority of BEVs currently being produced have the same layout, with a motor by the axle, a flat battery underneath the passenger compartment and a charger either in the front grille, wing or rear side. Likewise, the hardware of batteries are essentially the same, with the primary difference being the chemistry used by each manufacturer for the power cells.

Claims scenarios are manifold and AGCS, in cooperation with the Allianz Center of Technology, has reviewed a number of these in order to discuss the propensity and possible frequency with its clients within the automotive industry, be it original equipment manufacturers or suppliers.

Potential claims scenarios range from overheated battery lead fires resulting in property damage to insufficient charging station security leading to fraud and even blackmail. Many remote charging stations use credit card magnetic stripe-reading technology or chip-reading devices which can be manipulated by fraudsters to steal card numbers or verification codes.

Beyond this, breakdown – leading to battery fire or even bodily injury – as a result of electronic failure of the battery management system is also a concern. The first electric vehicle to



Henry Ford's experimental electric car c. 1914
Photo: Wikimedia Commons



Apollo 17 battery electric powered Lunar Rover, 1972
Photo: Wikimedia Commons

catch fire from a faulty battery was in 2013 when a Tesla driver accidentally ran over a piece of metal that punctured the quarter-inch thick armored undercarriage of the vehicle and penetrated its battery pack⁶. Within 30 minutes, the car was in flames. Battery technology has improved since then, but issues remain.

Download the full report on the risk and insurance implications of BEVs at www.agcs.allianz.com.

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⁶ Scientific American, Should battery fires drive electric cars off the road?, November 12, 2013



I PREDICT A RIOT

Recent events in Chile, Bolivia, Colombia, Hong Kong and France only confirm that the world is getting more unpredictable – and more uncertain. In the midst of political unrest, however, commerce continues. How is disruption to business caused by civil unrest covered by insurance? And how are losses and risk exposures trending?

75

Number of countries expected to experience an increase in civil unrest in 1H 2020

In our fast-changing world powered by social media, where a call to action around a common cause can be sent from one or a few smart devices to all corners of the earth in a matter of seconds, businesses are increasingly exposed to political risks of all types – from riots and civil unrest to strikes, and not forgetting, terrorism attacks – which can all cause severe disruption.

The past year alone has seen civil unrest in several global hotspots in South America, Hong Kong and France which highlight how easily protests can occur and prolong – resulting in

property damage, business interruption (BI) and a loss of income for many businesses.

POLITICAL VIOLENCE HOTSPOTS

Some of the most violent unrest broke out in Chile, where prolonged protests flared up initially in response to a four-cent fare increase by the Santiago Metro subway. Many subway stations were destroyed by protestors – causing \$370mn in damages. The protests paralyzed the city's economy, infrastructure and commerce, and soon overtook the country. All told, the



Photo: Wikimedia Commons

Civil unrest in Chile has resulted in one of the largest political violence losses ever

THE 1 MINUTE DIALOGUE

- ▶ Civil unrest incidents such as protests and riots are challenging terrorism as the main political risk exposure for companies
- ▶ Businesses that are in the vicinity of such incidents can suffer loss of income or revenues whether or not they incur physical damage due to disruption
- ▶ “Denial of access” and “loss of attraction” insurance coverages are growing in popularity
- ▶ Businesses need to plan for how quickly staff can recover and gain access to work following an incident

of at least three people in violent clashes, while in Ecuador, 11 days of protest in early October 2019 in response to austerity measures, including the cancellation of fuel subsidies, left at least seven dead and over a thousand injured, resulting in over \$1.3bn in economic losses to the country⁴.

Meanwhile, ongoing protests over proposed extradition legislation and loss of autonomy in Hong Kong have so far resulted in over four thousand arrests, a 24% year-on-year plummet in retail sales in October 2019 and a 40% fall in tourist activity during the same period⁵.

“Today’s highly connected supply chain is dependent on available transport infrastructure,” says Reusswig. “If roads, bridges, ports or airports are closed or blocked by protesters, or need to be repaired, this will delay or even interrupt the production process – especially if the company operates with ‘just-in-time’ supplies.”

In France, a tax increase on all fossil fuels, but particularly on diesel, resulted in extended “**Yellow Vest**” protests, rioting and looting, first by farmers in rural areas and then in city centers throughout the country. Government estimates suggest that total economic losses across France could surpass €4bn (\$4.43bn)⁶ due to a drop in foot traffic,

extended strikes, marches and protests could cause up to \$4bn in property damage claims with (re)insurers bearing the brunt of that¹.

The most striking example of commercial disruption, however, was to the retailer, Walmart, whose Chilean subsidiaries suffered significant losses – more than 128 of its 400 supermarkets looted, with 34 set on fire and 17 destroyed².

“Unfortunately, looting following a riot will never be limited to a small number of locations – once started it will spread rapidly,” says **Bjoern Reusswig, Head of Global Political Violence and Hostile Environment Solutions at AGCS.**

Protests also began in October 2019 and continued into November in Bolivia in response to alleged electoral fraud and caused an estimated \$167mn in losses, around \$16mn of which was attributed to shipping difficulties and production halts in Cochabamba, the country’s agricultural and industrial hub³. The protests successfully ousted dictator, Evo Morales, who promptly fled to Mexico and encouraged a civil war be waged by his remaining supporters against the new regime.

In Colombia, anti-government protests attracted as many as 250,000 during a national strike against corruption and austerity measures during November and December 2019, causing the death

¹ Insurance Insider, Chile riot claims expected to approach \$4bn, January 14, 2020

² Reuters, With stores burned and looted, Walmart seeks police protection in riot-hit Chile, November 18, 2019

³ Business Insurance, Bolivia loses nearly \$170 million amid protests, November 15, 2019

⁴ New York Times, Deal struck in Ecuador to cancel austerity package and end protests, October 13, 2019

⁵ CNBC ‘Very hard to imagine’ that Hong Kong tourist arrivals, retail sales will improve in November, December 2, 2019

⁶ France 24, Yellow vests, six months on: Unprecedented fury, uncertain future, May 22, 2019

VIOLENCE BY THE NUMBERS: "YELLOW VEST" PROTESTS (FRANCE)

Timeline: From November 17, 2018 to the present (March 2020)

Total number of protests across France: 50,000

Economic cost: €4bn (\$4.43bn)

Loss of GDP: 0.2%

Total insured losses: €200mn*

Percentage loss of business in downtown areas across France: 20% to 30%

Lost income to shopping centers: €2bn (\$2.2bn)

Lost income to cafes, hotels and restaurants across France: €850mn (\$942mn)

Sources: France 24, French Economic Affairs Commission

* As of May 2019

since all protests have targeted Saturday afternoons, as well as shops being unable to reopen quickly enough after incidents (see box above).

HOW HAS INSURANCE RESPONDED?

Globally, insurers are seeing an increase in political violence losses, in part because customers are buying more insurance but also because companies and supply chains are increasingly multinational, which makes them more exposed, given civil unrest events are increasing around the globe.

The fallout from the Chilean, Hong Kong and French protests, in particular, illustrate how insurance responded to the unrest.

In Chile, Walmart's approximate \$500mn in losses from the riots is a significant contributing factor to what could become the largest political violence insurance event ever, according to Reusswig.

In Hong Kong, all-sized businesses suffered smashed windows, graffiti and even fire for their perceived support of mainland China by activists. "Sadly, most impacted businesses were small and, although they have flooded insurers with claims for damage, few

are likely to be fully compensated as most would not have coverage for political violence," says Reusswig.

In France, protracted political unrest resulted in extensive property damage, BI and a general loss of income for many businesses, with an estimated €200mn in insurance claims reported as of May 2019.

Traditional property insurance typically responds to physical losses from fire, flood, wind or other natural occurrences, and may have an element of BI attached.

It might also include an element of terrorism insurance, but property terrorism insurance does not cover all forms of political violence. That's where political violence insurance "minds the gap."

POLITICAL VIOLENCE INSURANCE: WHAT IS IT?

Political violence insurance provides coverage for terrorist acts, acts of sabotage, riots, strikes, civil commotion (SRCC), malicious damage, insurrection, revolution, rebellion, coup d'état, war, civil war or counter-insurgency. Additionally, common extensions include denial of access (businesses shuttered because authorities have closed the area, whether damaged or not), loss of attraction (being closed, businesses cannot attract customers), and other civil disturbances.

"The full political violence product has existed for some time, but was never a widely bought cover," explains Reusswig. "That changed dramatically during and after the 'Arab Spring' in 2010 and 2011 when companies – especially in the Middle East and Africa – realized that the full product provided a gapless cover along the entire escalation process which could run the gamut from violent demonstrations to a rebellion and, in a worst case scenario, to a full-fledged civil war."

LONGER AND MORE VIOLENT EVENTS

In recent years, as major terrorism losses have declined somewhat, SRCC losses in particular have become more frequent. The events in Chile, Hong

Kong, France and elsewhere were clearly civil protests, rather than acts of terrorism. Yet, Reusswig notes, especially in Chile, the events were much more violent than anticipated, while the "Yellow Vest" and Hong Kong student protests were much longer in duration than expected.

MITIGATION

Businesses should be aware of their surroundings and what is happening around them, says Reusswig – particularly, if trouble is to occur. Also, businesses at street level should realize their vulnerability and have contingency plans in case of violence. On the Champs Elysees during the "Yellow Vest" protests, store-front windows of chic retailers were smashed and merchandise looted.

Tourism and business losses in city centers in France cost some businesses 20% to 30% of their turnover, while shopping centers suffered losses around €2bn (\$2.2bn) and cafes, hotels and restaurants around €850mn (\$933mn) according to government reports⁷.

Businesses located in the near vicinity of such incidents can suffer from a loss of income or revenues, whether or not they incur physical damage, during the time the area is cordoned off or until the infrastructure can be repaired to allow entry of customers, vendors and suppliers – an individual business doesn't have to be a direct victim of a rioter or terrorist to suffer a loss.

Insurance extensions such as a "denial of access" (access/ingress/egress) policy covers losses sustained during the period of time when ingress to or access from the insured property is prevented. The trigger is physical damage and insurers commonly apply a radius to the impact area to include in the coverage.

"Policy extensions for things like 'denial of access' are important coverages to consider and are increasingly requested by companies," says Reusswig.

Meanwhile, "loss of attraction" or "leader property" claim scenarios may occur where there has been no direct damage against a business' premises or where

⁷ RFI, French Yellow Vest protests have been an 'earthquake' for some businesses, May 17, 2019

COMPARING POLITICAL VIOLENCE AND TERRORISM INSURANCE – WHAT’S WHAT?

There are various types of insurance available to cover different political risk scenarios. Regardless of which type is selected, all political violence and terrorism insurance types include the following main coverages:

Property coverage:

- Physical damages/losses sustained

BI/CBI coverage:

- Denial of access due to civil or military authority; supply chain issues; reduction to gross earnings suffered due to the necessary interruption of a business' operations; and expenses incurred in attempting to reduce loss or increase operations elsewhere

Political violence insurance:

- **Malicious damage:** Physical loss/damage resulting from a malicious political act committed during a public disturbance
- **Insurrection, revolution and rebellion:** Deliberate, organized armed citizen/subject resistance to a sovereign government's laws
- **Coup d'état; mutiny:** Sudden, violent and illegal overthrow of a sovereign government; resistance by members of legally armed or peace-keeping forces to a superior officer
- **War; civil war:** Conflict between two or more sovereign nations, declared or undeclared; a war carried out between or among opposing citizens of the same country or nation

Standalone strike, riot and civil commotion insurance

- **Strikes:** Any willful act of any striker/locked-out worker during a strike; any act of a lawful authority to suppress or minimize the strike's consequence
- **Riots, civil commotions:** Any political act committed in the course of a disturbance of the public peace by a group of persons; any act of a lawful authority's act to suppress or minimize a riot

Standalone terrorism and sabotage insurance

- **Act of terrorism:** An act or series of acts, including the use of force or violence, by any person or group(s) of persons whether acting alone or on behalf of any organization(s) committed for political, religious or ideological purposes
- **Sabotage:** Any willful physical damage or destruction perpetrated for political reasons by known or unknown person(s)

Note: "Full" political violence insurance includes all of the above. Coverage for any of the above could include physical damage, BI, (CBI), denial of access, delay in start-up and advanced loss of profit for construction projects.

there has been no physical damage at all. A BI impact resulting from a physical loss of attraction to a property in the vicinity of the insured's premises or as a result of a non-damage/threat type event can be quantified. If there is a closure of an important landmark, airport, transport hub or of a particular place where large numbers of people come together (for example, a shopping mall, theme park or nightclub) a reduced number of visitors will result. Industries particularly exposed are retail, hospitality and leisure. Some

insurers use forensic accountants to determine whether a business has lost attraction following such an incident.

MARKET OUTLOOK

Currently, 47 jurisdictions have reported a significant uptick in civil unrest around the world over the past year, including activity in Chile, Hong Kong and France, but also in Nigeria, Sudan, Haiti and Lebanon, according to a recent study by risk consultant Verisk Maplecroft.⁸

The study projects that 75 out of 125 countries in its database will experience an increase in civil unrest through the first half of 2020. Its extreme risk countries include Ethiopia, India, Lebanon, Nigeria, Pakistan and Zimbabwe. Hong Kong and Chile were cited as the world's riskiest countries.

Recent events illustrate that political violence and civil unrest are eclipsing terrorist events as the main political risk exposure in 2020.

"The global political violence insurance market has been mainly focused on terrorism as the prime exposure in the last decade," says Reusswig. "This changed drastically in the wake of the spate of protests and riots around the world in 2019."

"SRCC events are now at the top of the agenda of risk managers, brokers, insurers and everyone else involved. While these events can be easier to anticipate than terrorist attacks, the possibility for them to quickly spread in a country, a region or even globally is far more concerning."

QUICK PLANNING TIPS

- Consider how quickly staff can recover and get back to work following an incident
- Investigate if your company is over-reliant on a particular supplier or customer; avoid aggregation of suppliers
- Think about supply chain vulnerabilities and the possible impact of terrorism or political violence on them and create a contingency plan; this can create a contingent BI (CBI) scenario
- Combine a physical damage (PD) BI all-risks product with terrorism to minimize coverage gaps.

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⁸ Verisk Maplecroft, Political Outlook 2020



5 ESG TRENDS TO WATCH IN 2020

30
 Number of countries in which climate change cases have been brought against companies

Managing environmental, social and governance (ESG) risks can be challenging for companies, due to possible resulting reputational damage or legal liabilities. **Global Risk Dialogue** looks at five important ESG issues for 2020.

ESG factors cover a wide spectrum of issues that have the potential to impact a company's reputation, including environmental stewardship such as climate change or carbon emissions; relationships with employees, suppliers and customers; human; and anti-corruption practices.

Sustainability-conscious investors, regulators, governments and potential customers increasingly expect companies and their boards to appropriately focus on ESG issues.

It is unsurprising, then, that investing in ESG is big business: worth over \$30trn in 2018, with estimates to surpass \$50trn over the next 20 years¹. But not every investor is the same. For example, some refuse to invest in companies not divested from tobacco, fossil fuels or weapons stock.

Conversely, some activist investors seek companies in order to influence improvements through shareholder proposals, board meeting attendance or direct communication with officers.

¹ Global Sustainable Investment Alliance, 2018: Global Sustainable Investment Review



Photo: iStock

Deforestation in the Amazon basin and other tropical rainforests is a result of increasing pressure from industrialization and related fires to clear land

Five key issues that will impact businesses' ESG footprint in 2020 and beyond are **climate change, water management, biodiversity, human rights** and **governance policies**. What challenges do companies face – and how can risk management respond?

1) CLIMATE CHANGE DRIVES INCREASED EXPOSURE FOR BUSINESSES

Climate change is a key challenge of the coming decade. In the **Allianz Risk Barometer 2020** climate change was selected by 17% of respondents as the top business risk – up from 13% in 2019. Its growing cost is already noticeable, as the number of weather-related or

flood loss events has increased by a factor of three to four since 1980². And according to a recent report from Climate Transparency, there are 16,000 fatalities in G20 economies due to extreme weather events every year, with the economic impact estimated to be \$142bn annually³.

Climate change can affect businesses in many ways. An increase in physical losses from more severe weather events is the exposure businesses fear most according to Allianz's survey, as rising seas, drier droughts, fiercer storms and massive flooding pose threats to factories and other corporate assets, as well as transport and energy links that tie supply chains together. Further, businesses are concerned about operational impacts, such as relocation of facilities, and potential market and regulatory impacts.

"There are also litigation risks, which can easily become reputational and financial risks, as in the case of fossil fuel companies," says **Christopher Bonnet, Head of ESG Business Services at AGCS**, "Climate change cases targeting **'carbon majors'** have already been brought in 30 countries around the world, with most cases filed in the US. It's not just governments and regulators who are putting pressure on companies to positively respond to climate change, however. Climate-linked activism against corporates is a developing trend – particularly in Europe – and boards are increasingly challenged by investors and other stakeholders."

Overall, Allianz estimates that responding to the challenges posed by climate change could cost companies worldwide as much \$2.5trn over the next 10 years. However, it can also provide new business opportunities, such as renewable energy production methods, battery production, rare earth mining or new technologies like hydrogen generation from excess renewable power.

Insurance is also responding: Allianz, selected by the **Dow Jones Sustainability Index** as the most



THE 1 MINUTE DIALOGUE

- ▶ ESG factors cover a wide spectrum of issues that have the potential to impact a company's reputation
- ▶ Investors, regulators, governments and the public increasingly expect companies and boards to focus on ESG issues
- ▶ Impact of climate change, water management, biodiversity degradation, exploitation in supply chains and corporate governance issues are main ESG trends to watch in 2020
- ▶ Effective management of sustainability issues is now a competitive advantage

sustainable insurer in the world over the last three years, has specifically addressed climate change in its ESG response to insurance and investing (see box on page 24).

While it takes an entire corporate team to prepare to adopt climate change guidelines – officers, management, governance and reporting, risk management, employees and market-facing functions – risk managers should drive ESG and climate change focus internally to influence decisions, says Bonnet.

"Many companies today focus on risk reporting rather than risk management. To understand the real impact of climate changes you have to look beyond the usual two- to five-year horizon and anticipate and prepare for various future scenarios."

2) WATER MANAGEMENT STRATEGIES CRITICAL, AS MISUSE COMES UNDER INCREASING SCRUTINY

By 2050, the world's population is expected to reach 9.7 billion⁴ – while global water demand is expected to increase by 20% to 30%, mainly due to demand in the industrial and domestic sectors.

Currently, over two billion people⁵ are living in areas of high water stress and

² Munich Re, Trends In Weather-Related Disasters: Consequences for insurers and society, March 2016

³ Climate Transparency, Brown To Green, The G20 Transition Towards A Net-Zero Emissions Economy, 2019

⁴ United Nations, World Population Prospects 2019: Highlights

⁵ Worldometer, Current world population (as of January 14, 2020)

almost half of the global population – about four billion people – experience severe water scarcity during at least one month of the year. Stress levels will only increase as the demand rises and the effects of climate change intensify.

Besides demand, there is the question of quality. Three out of 10 people can't access safe drinking water – almost half of those in Sub-Saharan Africa. Six out of 10 can't access safely managed sanitation services.

"Water is a big issue for citizens and companies, alike," says Bonnet. "Not just concerns about its abundance, but also its purity, its scarcity in a warming climate and its over-use and poor management."

Agribusiness and farmers, thermal power plants, textiles and garment manufacturers, meat processors, beverage manufacturers, mining and automotive manufacturers are some of the most water-intensive sectors demanding abundant, safe water, but how companies treat such resources is coming under increasing public scrutiny. Beverage giants, Coca-Cola and Nestlé SA, are among a number of companies who have been accused of abusing local water resources for production – the former facing accusations in India over water resources reserved for farmers⁶, and the latter facing accusations that it pays little for the product it bottles⁷, to name just a couple of examples, as companies come under growing pressure to adopt more sustainable water management and consumption practices for the society at large.

Today, more than ever, companies are expected to protect water resources, prevent pollution and reduce their consumption through modern water management practices. Rethinking existing water supply models can benefit local communities and release water stress in certain areas.

Insurers can help water-intensive businesses to identify and assess their dependency on local water supply and potential water shortages as part of their business continuity planning.

ALLIANZ CLIMATE STRATEGY AND PERFORMANCE: TIMELINE

2000:	Begins sustainability integration
2012:	Begins climate neutrality in business operations
2015:	Exits from coal investments – divested \$359.4mn in proprietary investments and around \$6.3mn in fixed-income securities
2017 to 2019:	Named most sustainable insurer in the Dow Jones Sustainability Index (DJSI)
2017:	Applies ESG scoring in the investment of policyholders' money
2018:	Implements climate package: Allianz investment portfolio (insurance policies) will be gradually adapted (interim targets every five years including reporting) to Paris climate targets; climate neutrality until 2050; all coal-based business models will be removed from the insurance portfolio in five-year steps until 2040; membership in the Science-Based Target Initiative; and will switch to 100% renewable electricity by 2023
2019:	Co-initiation of the Asset Owner Alliance , an association of asset owners, with the aim of making the portfolio carbon-neutral by 2050; has set ambitious climate target of reducing by 1.5°C by 2050.

3) BIODIVERSITY: INCREASING DEGRADATION BRINGS ISSUES FOR CORPORATES

Just a few statistics⁸ illustrate the problem our earth is facing in the 11th hour.

One million natural species are threatened with extinction, many in a few decades, as three-quarters of the land-based environment on earth and about 66% of the marine environment are impacted by human activity.

Land degradation due to storm or drought has reduced the productivity of 23% of the land's surface globally – costing up to \$577bn in annual global at-risk crop production while depriving up to 300 million people of their livelihoods due to coastal habitat loss. Plastic pollution has increased tenfold since 1980, even as 300 to 400 million tons of heavy metals, industrial waste and sludge are dumped annually into global waters.

Authorities warn continued focus primarily on economic growth and unregulated competition will only

exacerbate the crisis. Sustainable consumption practices can slow, but not completely eliminate, future biodiversity loss, in part because warming will continue in all scenarios.

Human disruption of key ecosystems can have a real impact on the environment. For example, a 28% reduction in mangrove cover in Southeast Asia to allow more commercial shrimp farming in recent decades contributed to a loss of natural protection against tsunamis and cyclones that impacted the devastation of the 2004 Boxing Day tsunami⁹. Other examples of disrupted biodiversity are deforestation in Amazonian and Indonesian rainforests, which both suffer increasing pressure from industrialization and related fires to clear land.

"There's no question human activity affects the earth's health," says Bonnet. "Businesses must understand profitability will actually be reduced if they continue to exploit natural resources without considering the reputational, fiduciary and

⁶ The Verge, Coke claims to give back as much water as it uses; An investigation shows it isn't even close, May 31, 2018

⁷ Bloomberg, Nestlé makes billions bottling water it pays nearly nothing for, September 21, 2017

⁸ Intergovernmental science-policy platform on biodiversity and ecosystem services (IPBES), Nature's dangerous decline 'unprecedented', May 7, 2019

⁹ World Economic Forum, Biodiversity and business risk, January 2010

regulatory consequences of their actions.”

More and more companies are adopting so-called **“circular economy”** strategies with the aim of no longer allowing products to become waste after their use. Instead, they are reintroduced into the production cycle as secondary raw materials. Products made of secondary materials range from leftover food to building materials from scrap tires. Nike’s **“Reuse-A-Shoe”** program recycles running shoes into athletics tracks and playground surfaces. Especially, resource-intensive industries benefit from the reprocessing of used materials.

“Companies which are leveraging the sustainable aspect of existing products or committing research and development resources to bring sustainable products to market are more likely to find a competitive advantage and be more efficient in managing other sustainability initiatives,” says Bonnet.

4) COMPANIES ARE ACCOUNTABLE FOR EXPLOITATION IN THE SUPPLY CHAIN

Although human exploitation can take on many forms, including forced labor and modern slavery, it can be difficult to detect in the supply chain. Industries such as textiles, food and agriculture, electronics, sports, construction, hospitality and domestic service have been especially connected to modern slavery and suppliers in those sectors are at-risk, although all sectors are vulnerable.

In the past five years, the Bangladesh Accord on Fire and Building Safety has greatly improved the dire safety situation in Bangladeshi garment factories, following the devastating Rana Plaza collapse, which killed 1,134 workers in 2013. The tragedy highlights how many global clothing multinationals exploited workers for long hours, six days a week, on poverty wages. Still, in the years since, at least 40 workers have died and over 500 have been injured in incidents¹⁰.

More enforcement in the area of human rights and holding directors responsible for transparency in supply chains is gaining traction. Corporations that fail to take appropriate steps to eliminate human exploitation from their supply chains could face shareholder derivative suits, more directors and officers (D&O) insurance claims and reputational risks.

Businesses need to consider that they are responsible for assessing and policing their supply chains. Insurance risk management can help, but the onus is on companies.

“Diligence is key,” says Bonnet. “Companies can instill a supplier code with various degrees of implementation rigor. Risk management can help if businesses supply an audit of a supply system and determine gaps and suggest solutions.”

Companies should hold vendors and suppliers contractually accountable to fair wages, fair working hours and humane treatment before doing business. By implementing the right checks and balances to address violations, companies can be compliant and forthright to customers, vendors, suppliers and investors. When an infraction is discovered, businesses must act quickly and state publicly that they won’t tolerate violations of their supplier code of conduct.

AGCS itself has a vendor integrity screening process, including prevention of corruption, bribery and other forms of noncompliance, modern slavery, human trafficking and child labor, and has a vendor code of conduct in place complying with essential human rights and standards of the UN and its International Labor Organization (ILO). AGCS maintains a system of quality assurance and auditing activities which cover an internal mechanism to ensure adequate controls for various types of global risks.

5) GOVERNANCE ISSUES CONTINUE TO DEMAND BUSINESS DILIGENCE

Increasingly, businesses and their directors are held responsible for corporate practices that foster good stewardship with the earth and its inhabitants, while maintaining sound corporate governance, even as more investors, in evaluating a company, hold it up to ESG standards.

“It’s important for company prospects if a company treats its employees right, operates ethically, avoids reputational risks and earns most of its revenues from sustainable activities,” says Bonnet.

Corporate misconduct has resulted from obvious practices such as bribery or corruption, as well as more common, if more recent, practices such as data privacy handling, allegations of financial misconduct and money-laundering schemes.

Having inclusive institutional structures in place for multi-stakeholder dialogue and cooperation is essential to ensuring good governance and compliance practices. Well-functioning accountability mechanisms help institutions fulfill their mandates to monitor and enforce the obligations of service providers in the supply chain, as well. Corruption, excessive regulation and/or rigid conformity to formal rules can increase transaction costs, discourage investments and potentially derail or hinder reforms.

“Good governance relates to systems that have qualities of accountability, transparency, legitimacy, public participation, justice and efficiency. Insurance rewards these best practices. Firms do not want to fail on governance – it’s literally their bottom line,” says Bonnet.

OUR EXPERT

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¹⁰ Clean Clothes Campaign, Six years after deadly garment factory fire, Bangladesh risks new wave of factory incidents, February 9, 2019



5 ALTERNATIVE RISK TRANSFER DEVELOPMENTS TO WATCH IN 2020

Alternative risk transfer (ART) – blended risk retention/transfer solutions which serve as an alternative to, or enhancement of, conventional commercial insurance – is growing in popularity as multinationals seek bespoke flexibility for an increasing array of risk scenarios – even damage to coral reefs. AGCS experts identify five hot issues in this space.

400%+
Growth in alternative capital over the past decade

A pharmaceutical company wants to manage its product liability exposure more efficiently, because of increased market complexities.

A multinational construction company is concerned about runaway premiums around exposures like cost overruns, liquidated damages and weather delays.

A power-generation company operating a windfarm is concerned wind patterns may change and seeks coverage in case wind speeds diminish in order to achieve better financing terms.

These are just a few examples of companies that might seek bespoke solutions in addition to or in replacement of traditional insurance to provide “fringe”-type or supplemental coverages like extended business interruption (BI), loss of profit following BI, cost overruns, delay in start-up and weather-related BI.

ART solutions can help companies in several key ways: self-financing atypical risks; transferring non-traditional risks; accessing alternative forms of capital; and bringing multiple lines of coverage into a single, multi-year contract. They



MENTS

Photo: iStock

The Mesoamerican coral reef off the coast of Mexico highlights how parametric insurance, one of several alternative risk transfer solutions, can be put to practical use in bettering the environment

are also attractive for companies impacted by reduced earnings due to specific non-damage events like political violence or terrorism where business is interrupted, but not by traditional events like fire or flood.

Given this booming market, AGCS experts have highlighted five key trends in the ART space.

1. HARDENING MARKET, NEW EFFICIENCIES AND CLAIMS EASE DRIVING ART POPULARITY

At AGCS, ART accounted for 20% of the gross written premium of €8.2bn in 2018 and is only projected to grow.

What is driving the growth of ART business? Firstly, a **hardening insurance**

market is encouraging businesses to seek more bespoke approaches as they look for efficiencies in terms of risk transfer spend versus increased risk retention and this trend is expected to continue. Most commentators agree that the past couple of years have seen the beginnings of such conditions globally, particularly for general liability, professional liability, errors and omissions (E&O), directors and officers (D&O) and financial lines insurance, which saw nearly a 10% global premium rate increase in 2018, and even in property lines, which saw an 8% increase in premium rates globally in the same time period.

Deloitte¹ predicts almost a 3% increase in property and casualty (P&C) premiums for full-year 2019 continuing into 2020, above the 10-year average of 2%, with less increase in established markets but up to 7% in emerging markets.

Such conditions clearly help attract more buyers to ART solutions as companies seek self-managed **risk management efficiencies**, which allow for tailored products for multi-year and multi-line cover spread over time and across a company's portfolio.

More companies want self-retention programs, as they start to rethink their risk approach, says **Christof Bentele, Alternative Risk Transfer Head of Global Client Management at AGCS**, even if they're not buying yet. "With more appetite and an alternative way of approaching risk management, the number of interested clients goes up. This flexibility is key to driving ART growth."

Secondly, **capital/structural efficiencies** allow companies to free-up capital for investment for allocation to other parts of the insurance program or general portfolio. But it is not just about efficiencies, according to Bentele, as much as it is about ease of operations. Finally, **ease of claims settlement** is also driving growth in ART. Claims handling for multinational companies is improved in a global program, which allows for local claims experience and service while taking advantage of a global network. All of these efficiencies, in more competitive market conditions,



THE 1 MINUTE DIALOGUE

- ▶ The global ART market is rapidly growing, driven by a hardening insurance market, structural and capital efficiencies and ease of claims settlement
- ▶ ART solutions are ideal for large, multinational companies with increasing complexities in their set-up
- ▶ Parametric solutions are growing in popularity and are able to cover an increasing number of risk scenarios outside of the weather
- ▶ Increasing numbers of multinational companies value the flexibility of loss-sensitive solutions

have and will continue to impact the rapid growth of ART solutions.

2. THE P&L PERSPECTIVE: STRUCTURED PROGRAMS GAINING STEAM

In a hardening insurance market, depending on the scenario, companies can manage exposures more intelligently from a non-siloed, profit and loss (P&L) perspective across multiple lines than with the traditional approach of managing risk differently from line-to-line. This solution is ideal for large, multinational companies with increasing complexities in their set-up.

For example, a pharmaceutical company that wants to more efficiently manage its product liability exposure, which becomes increasingly complex every year and needs a customized solution to complement traditional insurance, would benefit from a non-siloed approach. Consultations with an ART insurer results in a custom program that blends risk financing and risk transfer over a multi-year period, giving the company vertical protection with ample capacity and coverage terms, limits and rates locked in over multiple years.

"CFOs and treasurers tend to think in holistic, multiline solutions, so risk managers are taking note," says Bentele. "This approach gives companies an opportunity to create more risk management efficiency."

¹ Deloitte, 2020 insurance outlook: Insurers adapt to grow in a volatile economy, December 3, 2019

A good example of a holistic approach are certain loss-sensitive covers, such as trucking companies with significant theft, accident and negligence exposures that can be mitigated – and premium saved – by, for example, installing in-cab cameras and buzzers to alert drivers when they start to fall asleep while driving. The company manages the risk based on its performance and works with return premiums and additional premiums to balance the result over a longer period, like three or five years. Other types of companies benefiting from this set-up might be those with pollution, crime or commercial auto exposures.

“These ‘swing’ solutions – so called because premium costs or savings can move back and forth depending on performance –,” Bentele explains, “are increasingly popular in a hardening market as they help smoothen the risk P&L and make the program less volatile with regard to premium spend.”

“In summary, it’s about how a company is going to put their capital to work. Structured programs like these are very popular across most industries, because of their flexibility and built-in efficiency.”

3. FROM WIND FARMS TO CORAL REEFS TO A DECLINE IN SHOPPERS: PARAMETRICS SOLUTIONS COVER AN INCREASING NUMBER OF RISKS AND GROW IN POPULARITY

Parametric insurance, lauded as an attractive alternative or enhancement to some traditional insurance policies, is increasing in popularity globally. But what exactly is it? The short answer is coverage triggered by an index. For example, in a wind-farm, the amount of power generated is correlated to wind speed. Therefore, capital providers investing in such an operation seek protection of this key risk in order to provide favorable financing terms.

To develop a parametric solution, the company and insurer would structure an insurance policy with certain events plainly stated in order for coverage to be triggered. For example, if the wind in a predefined area decreases over a certain amount of time, the power

SOLUTIONS FOR ALL SEASONS – THE WORLD OF PARAMETRIC INSURANCE

For companies in any sector exposed to temperature, rain, snow, or wind risks, climate solutions can provide cover against:

- **financial volatility** from unexpected weather patterns
- **weather-related business interruption**
- **supply risks** like wind for wind farms, warmth for plant growth, water for hydro-power generation
- **operational risks** like snow and ice cancelling flights, low rivers impacting barge traffic, cooling of manufacturing plants
- **demand risks** like a mild winter affecting battery or coat sales
- **promotional risks:** Weather promotions can be a powerful marketing tool to drive sales of any product, from snowmobiles to sandwiches. ART solutions can enable creative weather covers which can help many industries finance and structure marketing campaigns.

company would receive an automatic and predetermined payment, greatly simplifying claims because there’s no adjusting or negotiating over settlement amounts. A recent case in Mexico illustrates how it works.

A policy covering hurricane-related damages to coral reefs was purchased in early 2018 to cover a part of the vast Mesoamerican Reef along Mexico’s Yucatán Peninsula. The policy was taken out by trustees on behalf of the Nature Conservancy and the State of Quintana Roo, Mexico, to protect the reef – badly depleted by as much as 80% since 1980 due to disease, bleaching events, diminishing herbivores and algae overgrowth. Hurricanes cause the most short-term damage to reefs, with between 20% to 60% of live coral cover lost after a Category 4 to 5 hurricane².

The agreed policy would trigger if wind speeds above 100kph (115 mph) were registered within the covered area, with a pay-out split of 50% for reefs and 50% for beaches – up to \$3.8mn. Once such a covered event occurred, was measured and independently verified, the “claim” would be paid within one week after the event. Settlements would be used for ongoing beach and reef repair and conservancy activities³.

“We’ve seen an uptick in the parametric appetite because natural catastrophe coverage can be expensive,” explains

Karsten Berlage, Regional Head of Alternative Risk Transfer North America at AGCS.

“Parametric insurance can support an overall risk management strategy of a structured insurance solution, or it can be standalone. This type of insurance is ideal for companies with diverse risk portfolios and multinational exposures – especially in the energy market but in other industries, too.

“Almost every industry – construction, energy, agriculture, aviation, retail, mining – has different weather exposures,” says Berlage. “If one component in a supply chain is affected by weather, for example, manufacturing processes can be delayed. Ultimately it is important to establish an index that represents minimal basis risk relative to actual business performance.”

Beyond weather, parametrics can be used for other exposures. For example, if a retailer’s income plummets because of reduced footfall in a London shopping district – say, following a political disruption – a payment can be made. Such policies also can be structured to cover non-physical damage risks and, potentially, reputation risk.

4. MULTINATIONAL CAPTIVE FRONTING SOLUTIONS ON THE RISE

Structured program solutions consist of multiline policies combining traditional

² Business Insurance, Parametric insurance policy launched for coral reefs, March 9, 2018

³ Business Insurance, Parametric insurance policy to cover Mexico coral reef, June 7, 2019

P&C coverages with others, including additional products like financial lines, transit risks and cyber exposures. Companies with diversified risk portfolios can best benefit from a structured program because spreading limits across various lines is more efficient if each line bears a substantial premium volume. The policies utilize customized wordings, developed by the company and insurer to meet specific business needs, and a global aggregate limit to provide better limits management.

"The increasing sophistication of customers' risk management approach to their use of captives along with their drive to increase global program efficiencies has prompted fronting insurers to respond accordingly," says **Brian McNamara, Regional Head of Global Fronting North America at AGCS**.

AGCS' structured fronting solution is a multinational program which provides multi-year protection (where permitted locally) and subject to "replenishment" of limit provisions to prevent mounting year-on-year exposure. It can also make judicious use of a financial interest clause in the master policy, which enables the parent company to recoup its losses occurring in territories where coverage is limited or not available, and such losses have negatively impacted the parent company's balance sheet.

The structured fronting approach allows companies to manage and control an aggregated retention across multiple territories and lines of business, while achieving contract certainty and ensuring compliance with all local regulations. Because of the cap on the global aggregate limit offered, it also has the advantage of reducing the insurer's credit exposure, consequently reducing the level of collateral the customer is required to provide. In terms of efficiency, the structured fronting program also reduces administration and cost due to the reduction in the number of policies issued as a result of the multiline approach.

Historically, the administration of multinational programs has been somewhat cumbersome and beset by manual processes requiring insurers to

ART AT AGCS

Four main areas:

- 1. Structured/integrated programs:** multiple products, multi-line, multi-year bespoke coverage
- 2. Global fronting solutions for captive companies:** issuance of mono-line "good local standard wording" policies to a multinational customer's local operating entities throughout the world to assume traditional property and casualty risks as well as cyber, financial lines, surety and performance bonds, trade credit, employee benefits and pandemic exposures
- 3. Parametric solutions:** coverage is triggered by a pre-agreed index or event, such as particular wind speeds or days without rain
- 4. Insurance linked securities (ILS):** alternative capital solutions selectively deployed into insurance business (as opposed to reinsurance or retro) and non-property catastrophe risks (such as cyber)

fund the premium from a central treasury. Insurers are responding with a greater use of technology like blockchain coupled with global insurance networks.

Companies are demanding "real-time" data on their program in terms of the movement of premium, status of claims and policy issuance. Insurers are responding with increasingly sophisticated client portals, which allow customers access to this data and enables them to extract it into customized reports. The customer is also provided with the facility of downloading all their global policy documents from the portal.

Many **Fortune 500** companies' multinational programs have premium volumes in the range of \$20mn to \$100mn – expeditious premium transfer is crucial. Insurers provide "cash flow guarantees" which govern the time taken to move the premium to the captive from the local territory's insurer. These guarantees can range anywhere from 24 hours to 20 days depending on the level of premiums and territories involved.

5. INSURANCE LINKED SECURITIES (ILS) DIVERSIFY BEYOND NAT CAT RISKS

Over the past decade, alternative capital has increased 410% globally from \$19bn in 2008 to over \$100bn in 2020, in contrast to a 50% growth in traditional insurance capital over the same time period. It now accounts for more available global reinsurance capital than traditional funding sources – 16% in 2018, compared to only 6% in 2008⁴.

At its core, ILS is the transformation of insurance risk into a format suitable for capital markets investors. ILS was initially founded on property catastrophe insurance risk. Key trends in the ILS space that will have broader impacts on the insurance market as a whole are: the continued movement of capital closer to the original risk source and the diversification of appetite beyond property catastrophe risk.

In the search for more and better ways to deploy capital, alternative capital is exploring new avenues through the selective deployment of capacity into the insurance business (as opposed to reinsurance or retro) and non-property catastrophe risks (such as cyber). The deployment of capital in these new ways increases overall market capacity and helps transfer catastrophic risks off insurers' balance sheets freeing them up to deploy more or more meaningful capacity to insureds.

Richard Boyd, Global Head of Capital Solutions at AGCS says, "As these trends continue to play out, they will continue to drive disruptive change through the industry to the benefit of the customer."

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⁴ Business Times, Alternative risk transfer taking insurance industry by storm, July 8, 2019

ENSURING FAIR WINDS BLOW FOR TAIWAN

Currently under construction and set to begin operations by the end of 2021, the **Formosa 2** wind farm will generate enough electricity to power 380,000 households per year. **Global Risk Dialogue** takes a look at the ambitious project – part of Taiwan’s new renewable energy grid that will expand energy capacity almost seven-fold.

Sustainable sources of renewable energy like offshore windfarms are critical to reducing carbon emissions

The **Formosa 2 Offshore Wind Project** involves the development, construction, commissioning, ownership, operation and maintenance of an approximate 378MW (megawatt) wind-generating facility and related infrastructure located off the northwestern coast of Taiwan in the straits which separate Taiwan and China, near Chunan Town, Miaoli County – encompassing 68.81km² (26.57mi²). Construction began in January 2020 and is scheduled to go-live by the end of December 2021.

The facility will be a part of Taiwan’s grander zonal development program being implemented by the Taiwan Government, which aims to add 5.5GW (gigawatt) of wind power to its energy mix by 2025, representing a significant 694% increase of the current capacity of 692MW. Formosa 2’s predecessor, Formosa 1, which consists of 22 offshore wind turbines with a total capacity of 128MW, is part of the project and began construction in 2018. Planning for the Formosa 3 field will follow in the near future.

“Sustainable sources of renewable energy like offshore windfarms are critical to reducing carbon emissions in the face of global warming,” says **Zhen Yi Choy, Senior Engineering Risk Engineer at AGCS**.

“Among the many things that can go wrong with offshore wind farms are being hit by high waves, earthquakes, typhoons and underwater currents.

FORMOSA 2 BY THE NUMBERS

\$2.05bn	Project cost
2021	Estimated project completion date
3.8 km to 9.5km	Minimum and maximum distances from shore
35m to 55m	Minimum and maximum water depth
47	number of turbines in the farm
167m	Rotor diameter (from center of gearbox to tip of turbine blade)
81.5m	Turbine blade length
8MW	Nominal power per turbine
1.4km	Average length of 43 inter-array cables connecting each tower to neighboring towers to form an interconnected underwater grid
7.6km	Average length of five export cables transporting power onshore

Weather can significantly impact the turbine blades, themselves, reducing performance, while underwater dynamics can threaten foundation stability,” says Zhen Yi.

Site investigations for both Formosa 1 and 2 examined the topography, geology and geotechnical conditions of the seabed from 2016 to 2018 to determine a model for engineers to select turbine and foundation types, design the towers and foundations, plan construction, evaluate safety measures, plan for operations and maintenance, assess energy yields and mitigate risks. The project also considered and made allowance for typhoon frequency and severity for

the construction and operation planning.

At the time that construction began on the projects, the type of turbine used was considered to be a prototype. The lack of historical performance data meant that technical expertise was required on turbine performance to carry out risk assessment – requiring special expertise from AGCS’ risk consulting team in Hamburg.

AGCS has a share of the insurance coverage in both projects, with construction all-risk (CAR), delay in start-up, the primary layer of third party liability coverages, terrorism and operational all risk cover, for the first year of operations.

CONTENT SHOWCASE

Visit www.agcs.allianz.com for the latest AGCS news and expert research on risk topics. Check out some of our most read content online.

DIRECTORS AND OFFICERS RISKS: FIVE MEGA TRENDS

The range of exposures facing directors and officers (D&Os) – as well as the resultant claims scenarios – have increased significantly in recent years. A special report from AGCS – **Directors and Officers Insurance Insights 2020** – highlights five mega trends (see table) for 2020 which may impact risk managers, their D&Os and their broker partners.

The report also looks at market trends in the D&O insurance space, noting that loss ratios for D&O insurance has been estimated by

various third parties to be in excess of 100% in numerous markets including the UK, US and Germany since 2017, due to event-driven litigation, collective redress developments, regulatory investigations, pollution, higher defense costs and a general cultural shift to bring more D&O claims both against individuals and companies in relation to securities.

Download the report at www.agcs.allianz.com/news-and-insights/reports/directors-and-officers-insurance-insights-2020.html

FIVE D&O MEGA TRENDS TO WATCH IN 2020

1. D&O “bad news” litigation
2. ESG (and climate change) in focus in the boardroom
3. Acceleration of securities class actions
4. Economic and political clouds ahead
5. Litigation funding now a global investment class

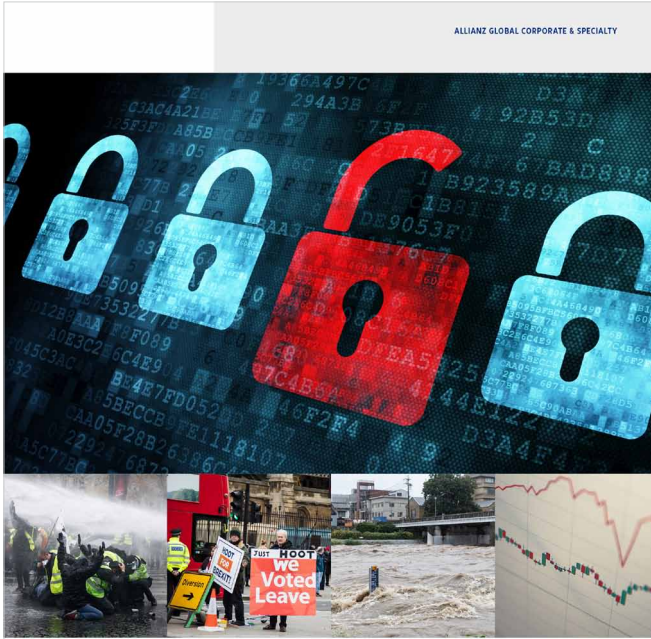
THE AGCS RISK BAROMETER PODCAST: CYBER

Which are the most important business risks for 2020? The **Allianz Risk Barometer 2020** survey found cyber-incidents to be the number one risk (39% of responses), besting perennial top risk, business interruption (BI) with 37% of responses.

To dive deeper into cyber risks, **Kelly Castriotta, Regional Head of Product Development Financial Lines North America at AGCS**, joined the most recent AGCS Podcast. Among this year’s biggest threats is business email compromise as well as ransomware, says Castriotta.

Hackers and cyber criminals appear to be moving down the scale of targeted companies – whereas large and mid-size corporations place BI neck-and-neck with cyber-incidents in importance, small-size companies see cyber as more important with BI coming in at number three, due to resource limitations and lack of understanding about cyber insurance. As to how small companies can be exposed, Castriotta notes, recently, a start-up company received a ransomware demand in excess of their annual revenues and insurance limits. That framed their decision to work with their insurer to develop a business continuity plan and get back to business.

Download the podcast at www.agcs.allianz.com/news-and-insights/podcasts/arb2020.html



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The most important corporate perils for the next 12 months and beyond, based on the insight of more than 2,700 risk management experts from 102 countries and territories.

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