# Brighton TNSIGHT SUNE 2025



Fungus Among Us: The Need to Address Fungal Risk False Sense of Certainty: The Trouble With Cat Model Caught In The Crosswinds: Geopolitics & Aviation Risk



**JUNE 2025** 

# Editor's Note



Dear Readers,

We kicked off the month of June with a special milestone—Brighton's 20th anniversary dinner, held on the 9th. It was more than a celebration. It was a moment to pause and reflect on two decades of service, growth, and unwavering commitment to our clients and partners across the region.

Over the past 20 years, Brighton has weathered market cycles, regulatory shifts, and emerging risks. We've built not just expertise, but relationships—based on trust, resilience, and a deep understanding of how risk evolves. That spirit of continuous learning is what drives each edition of Brighton INSIGHTS.

This month's issue takes a clear-eyed look at blind spots. In the article on "What's Missing from Your Cyber Strategies", we explore how hackers are now targeting operational technology, pushing businesses to rethink vulnerabilities beyond IT; and why traditional defences may no longer be enough. "Fungus Among Us" challenges us to rethink environmental risk through the lens of fungal threats, an issue quietly growing in relevance.

"Caught in the Crosswinds" examines how shifting geopolitical winds are reshaping the aviation insurance landscape. Meanwhile, "False Sense of Certainty", invites us to look critically at catastrophe models—not as infallible forecasts, but as tools that must be used with care and context.

Each article in this issue reflects our core belief: the better we understand risk, the better we can respond to it.

Happy reading!

Annie (Indikai

<sup>\*</sup> Annie<sup>®</sup>Undikai Managing Editor

# IN THIS ISSUE











# **02** Editor's Note

# 05 What's Missing from Your Cyber Strategy?

Cyber threats now have real-world impacts beyond IT systems. Insurers, with their broad risk insight, can play a key role. But organisations must rethink vulnerabilities, as traditional defences may fall short against modern attacks.

# 09 Fungus Among Us: The Need to Address Fungal Risk

Fungal threats are increasingly severe and widespread, now intersecting with climate change, public health, and urban life. Once considered minor, they have evolved into a significant multi-sector challenge, making losses from fungi harder to predict and manage.

# **15** Caught in the Crosswinds: Geopolitics and Aviation Risk

The aviation insurance market in 2025 is increasingly vulnerable due to global factors, as local conflicts disrupt international trade and legal rulings in one country significantly impact distant markets.

# 20 False Sense of Certainty: The Trouble With Cat Model

Catastrophe models have long helped insurers anticipate and price risk, but today's rapidly changing world is outpacing them. This is creating a widening gap between modelled losses and real-world outcomes.

# 25 Brighton's 20<sup>th</sup> Anniversary Celebration Dinner.

Brighton marked its 20th Anniversary with a celebration dinner on 9 June in Labuan, bringing together colleagues, partners, and friends to reflect on two decades of growth, collaboration, and shared succes



WWW.BRIGHTON.ASIA



# Empowering Your Insurance Journey You Insure, We Ensure

At Brighton, we don't simply offer solutions — we elevate your journey to unparalleled excellence.

Our cutting-edge software, business solutions and dedicated technical support are crafted to propel your business forward in the competitive insurance industry.

Rated LECAI by RAM Ratings, Brighton represents the pinnacle of capability and performance. We also stand at the forefront of global standards with the successful compliance to IFRS 17.

You insure, we ensure — driving your future forward with confidence and exceptional performance.

# **Our Solutions:**

- Licensing & Compliance
- Accounting Services
- Webbie, Cloud-Based Accounting Software
- Payroll Services
- GST/SST Reporting
- E-Invoicing
- Work Permit Application

- Corporate Tax Submission
- Internal Audit
- Shariah Advisory
- Comprehensive Captive Management
- Run-Off Management
- Serviced Office Facilities

For more information, visit us at www.brighton.asia or scan the QR code





JUNE 2025

# 



Cybersecurity has long been seen as a domain of firewalls, encrypted data, and antivirus software. It's a digital fortress designed to protect information. But many organisations haven't come to terms with something much more urgent: the physical systems that keep everything running are now targets too.

Electric grids, hospitals, transportation, and manufacturing are no longer isolated. They're increasingly connected, digitised, and in many cases exposed. However, the insurance industry, like much of the corporate world, is still catching up.

#### Digital Defences, Physical Vulnerabilities

Most organisations allocate their cybersecurity budgets into traditional IT security: protecting laptops, servers, cloud environments, and data. This focus made sense when attacks were mostly about stealing information or crashing websites. But that world as we know it has changed.

Today, hackers are targeting operational technology (OT), which is the physical systems that control valves, turbines, and industrial robots. Their intentions go beyond merely stealing data; they seek to create significant disruptions. The numbers are troubling. According to recent research by Dragos and the SANS Institute, onlv 31% of organisations have security operations centres dedicated to OT. About 46% of industrial cyber attacks start on the IT network but end up impacting OT environments. Nearly half of these attacks begin in places most companies think are "covered." But once inside, attackers pivot from the IT into operational environment the systems that keep critical services running.

And yet, many policies still treat IT and OT risks as separate worlds. The line between them has blurred, and attackers are well aware of this shift. For insurers, this isn't just a technical issue. It's a growing exposure and one that demands a closer look at how coverage is structured and where the real vulnerabilities lie.

About 46% of industrial cyber attacks start on the IT network but end up impacting OT environments.

JUNE 2025



Think of a power plant. The control room isn't just dials and manual switches anymore. It is now networked and often remotely accessible. The same applies to hospitals with connected medical devices, airports with automated logistics systems, and factories running programmable logic controllers (PLCs). These environments are often running on old systems that were never designed with security in mind.

In 2021, a ransomware attack on Colonial Pipeline forced a major shutdown of fuel supply in the US. The attackers didn't hack the pipeline's control systems directly, instead they breached the IT network. But the result was still the same: the physical operation came to a standstill. This incident highlights that IT and OT can no longer be regarded as distinct silos. Treating them as such poses a serious risk.

#### The Insurance Gap

From an insurance standpoint, the changing risk landscape presents ongoing challenges that are still being addressed. Over the last decade, cyber insurance has expanded significantly, with policies becoming more sophisticated in their coverage of data breaches, business interruptions, and liabilities. However, attacks on OT complicate matters further.

Many policies continue to focus on digital losses. However, when a cyberattack leads to tangible harm such as damaged machinery, interrupted production, or compromised goods; the distinction becomes unclear very quickly. For example, if malware disrupts factory operations, should it be seen as a cyber or property loss? If an attack leads to a fire or safety risk, how should it be categorised?



This ambiguity puts pressure on insurers, brokers, risk managers, and underwriters. It demands better clarity in contracts and better coordination between different lines of coverage. But most critically, it also requires a deeper understanding of how cyber threats are changing.

# **Closing the Gap**

So what can insurers do? First, it starts with awareness. Insurers need to understand how OT systems work, where the vulnerabilities lie, and how attackers are exploiting the IT-OT divide. This may mean investing in new underwriting expertise or partnering with cybersecurity firms that specialise in critical infrastructure.

Risk assessments need to evolve. It's no longer enough to ask how an organisation protects its data. We need to ask how it protects its machinery, its power supply, its sensors, and its control systems. And whether those systems are segmented from IT networks or wide open to them.

Third, policy language needs to catch up. Many current policies still don't explicitly address physical damage from cyber attacks, a gap commonly known as silent cyber. This refers to the unintended or unacknowledged exposure to cyber risks in traditional policies that were never designed to cover them. When coverage isn't clearly defined, it can lead to confusion, disputes, and delays during claims. Clearer definitions and tailored endorsements are key to addressing this exposure and bringing certainty to both underwriters and policyholders.

Finally, insurers can play a proactive role in helping clients close their own blind spots. That might mean offering OTspecific cyber risk assessments as part of a policy. Or working with brokers to educate clients about the growing risks of IT-OT convergence. The goal isn't just to respond to claims, but also to prevent them from occurring.

# A New Definition of "Cyber"

We must change our perception of "cyber" as merely existing within code and servers. The modern cyber threat has very real consequences. Insurers have a distinct advantage; they have a broad view across different industries and have a solid grasp on assessing risk.

Organisations must confront difficult questions regarding connections, vulnerabilities, and overlooked issues to tackle today's challenges. Traditional security measures like firewalls and antivirus software may be inadequate against critical infrastructure attacks, which could potentially be more severe than mere data breaches.



# FUNGUS

# THE NEED TO ADDRESS FUNGAL RISK





As the climate warms, it's not just storms or droughts that are changing the risk landscape. There's something quieter happening and harder to see, but just as disruptive over time. Fungi, long treated as background noise in risk models, are starting to move to the centre of the conversation. Fungi have always been around, but what used to be an occasional maintenance issue or localised crop blight is becoming something much larger and much more insurable.

Many fungal species depend on warmth and moisture to grow. However, warmer temperatures, longer rainy seasons, and a rise in intense weather create ideal conditions for fungi to grow, survive, and spread. The conditions that used to limit them, such as cooler climates, drier soil, and less humidity are all but disappearing.

As fungi adapt to these changes, they're also becoming more resistant to the few tools we have to fight them. Standard fungicides, once effective in managing crop disease or mold in buildings, are losing their edge. It's not just that these organisms are spreading, but they're getting smarter about their survival.

What used to be rare or manageable losses tied to fungi are becoming harder to predict, contain, and underwrite. In some cases, they are no longer working at all. This shift is already creating new pressure points for insurers.

In the recently released 2025 SONAR report, Swiss Re flags fungal disease as one of the eight most important emerging risks. It's not just a public health issue. It's an insurance issue and one that cuts across multiple lines of business.

# Agriculture: A Fragile Frontline

In agriculture, rising temperatures and shifting rainfall patterns are allowing fungal diseases to spread further and faster. Crops that were once resilient are now failing mid-season. Fungi are now responsible for an estimated 10 to 20% of global crop losses each year, according to the UN Food and Agriculture Organization. That translates to up to \$200 billion annually.

Across Asia, the risk picture is shifting fast. Warm, humid conditions in many parts of the region already make fungi a common presence, but several developments are amplifying the risk. In Malaysia and Indonesia, *Ganoderma* fungal rot has become a major threat to oil palm plantations—posing serious implications for insurers supporting parametric products or alternative risk transfer (ART) in the agricultural space.



With palm oil exports central to the economy, systemic fungal threats have the potential to impact not only insured yields but broader supply chains and sovereign risk exposure.

In another case, Wheat Blast, caused by the *Magnaporthe oryzae Triticum pathotype*, first appeared in Brazil before making a devastating leap to Bangladesh in 2016. In just one season, the disease wiped out over 15,000 hectares of wheat in Bangladesh alone. The outbreak was so severe that authorities had to ban wheat cultivation in certain regions to stop it from spreading further.

These aren't one-off events. They point to a broader shift, which is part of a pattern that is turning what were once considered secondary risks into primary drivers of loss. For insurers, especially those writing specialty or crop coverage, this change brings new layers of uncertainty.

Traditional models, built on decades of climate and yield data, are starting to break down. Patterns that held true in the past, where certain diseases stayed in certain regions, no longer apply. Fungal threats are moving into new territories, driven by climate rather than geography. This clearly means that the assumptions behind pricing need to evolve just as quickly as the risks themselves.



#### **Property Insurance: Mold Claims**

Property insurers are also seeing the effects, though they often show up later. After a major storm or flood, the first wave of claims is for physical damage. But the second wave, the one that arrives weeks or months later, often involves mold. It spreads quietly through drywall, ceilings, and air ducts.

In tropical cities where buildings don't fully dry out between weather events, these claims are becoming more common. As storms grow more frequent and severe, and as buildings age or face





conditions they weren't designed for, mold is becoming a more regular driver of claims.

In the wake of Hurricane Ian, a Florida homeowner filed a \$30,000 claim for mold remediation. Following a brief inspection, the insurer proposed only half of that amount. This disagreement progressed to an appraisal, ultimately ruling in favour of the policyholder. Consequently, the insurer had to bear the complete repair costs, in addition to extra legal and administrative fees related to the dispute. In Japan, a recent class action lawsuit involved tenants in a Tokyo apartment block who claimed long-term health impacts due to unchecked mold growth. The case highlighted potential gaps in property managers' liability policies and prompted several commercial insurers to review their general liability wordings related to mold and environmental damage.

Cases like this aren't rare. According to the Insurance Information Institute, US insurers pay out more than \$3 billion annually in mold-related claims. While most property policies cap mold coverage, the remediation costs often exceed those caps, especially when tied to business interruption or healthrelated litigation.

# Life & Health: Silent Killers

Fungal threats pose risks not only to crops and structures but also to human health. This is especially true for individuals with weakened immune systems and those who work in environments with high exposure and limited protection.

Across Asia, fungal infections are becoming more serious but often go underdiagnosed or misclassified. The Global Action Fund for Fungal Infections (GAFFI) estimates that over 80% of fungal infection-related deaths happen in low- and middle-income countries, many of them in this region. However, they're



often treated as secondary complications rather than primary causes. However, this doesn't make them any less deadly.

In 2021, India encountered a significant rise of more than 45,000 mucormycosis (black fungus) cases among survivors of COVID-19, which placed immense pressure on public hospitals. Private health insurers saw a surge in claims, while life reinsurers were caught off guard by the uptick in fatalities among vulnerable populations.

Globally, annual deaths from fungal infections exceed 1.5 million, surpassing malaria and, in some years, tuberculosis. Despite this significant toll, their impact is often overlooked in health planning and underwriting due to a lack of media coverage.

For life and health insurers, particularly those in Asia, this calls for a reassessment of existing assumptions. Many underwriting models were not originally designed to consider the slowmoving infectious risks that can build up over time. However, the risk is not just on the horizon; it is already present.

## **Casualty and Liability Lines**

Fungi also carry legal risk. Lawsuits have emerged in nearly every direction —tenants suing landlords, patients suing hospitals, and food producers defending against claims tied to fungal contamination. Some of the earliest warning signs for insurers came from toxic mold cases in the late 1990s.

The well-known case of Melinda Ballard, a Texas homeowner, involved a lawsuit against Farmers Insurance due to health issues linked to mold in her home. The case garnered national attention, resulting in a jury awarding her \$32 million, although the final settlement was less. This case notably impacted perspectives on mold and insurance coverage among insurers, landlords, and policyholders.

Legal disputes involving fungi have risen, with food companies facing litigation over mvcotoxins present arains and in processed foods. Additionally, landlords have been held responsible for moldrelated health issues stemming from insufficient responses moisture to damage. In both scenarios, the fungus may not always be visible.

Many underwriting models were not originally designed to consider the slow-moving infectious risks that can build up over time. However, the risk is not just on the horizon; it is already present.





## What the Industry Can Do

Fungal threats frequently go unnoticed, intertwined with trends such as climate antibiotic consumption, change, and globalisation, while significant data gaps persist. Numerous fungal infections go unreported, crop damage is often minimised, and cases of toxic mold are frequently resolved discreetly. This complex issue requires time to address, and turning a blind eye will not make it dissapear.

So what can insurers do? Insurers should focus on tracking fungal-related losses such as crop failures, toxic mold, and hospital admissions from drugresistant infections. These cases are not currently tracked uniformly, leading to unnoticed patterns. Improved visibility requires consistent reporting and classification of fungal-specific data.

Coverage language, particularly mold exclusions, is under scrutiny as fungal risks rise. Courts may challenge these exclusions, prompting customers to seek clarity on what is covered. Insurers need to be prepared to clarify, revise, or reevaluate these clauses.

Breaking down internal silos is crucial as fungal risks affect multiple areas. Crop diseases can disrupt food supply chains and pose health risks, while mold in buildings can cause property damage and liability issues. Early modelling of these connections helps insurers understand overlapping exposures and identify potential blind spots. Ultimately, underwriters must be armed with the proper knowledge. Many are unaware of how quickly fungicide resistance is escalating or how a simple issue like inadequate ventilation design can result in long-term mold claims. Understanding the scientific principles behind fungal threats will empower insurers to assess risks accurately and manage claims with confidence.

# **Looking Ahead**

Fungal threats have rapidly intensified and broadened their reach, affecting climate, public health, and urban environments. What was once deemed a minor risk has evolved into a significant problem that influences multiple sectors.



JUNE 2025

# Caught in the Crosswinds

# **Geopolitics and Aviation Risk**





The aviation insurance market has consistently been influenced by broader factors. Yet, in 2025, it seems particularly susceptible. Conflicts that were once perceived as localised are now affecting global trade. Legal rulings in one country can create ripples across markets thousands of miles away. Moreover, the associated costs-whether financial, operational, or reputationalare impacting the industry more swiftly and severely than many professionals had anticipated.

This year has already brought fresh turbulence. A series of significant losses in the Hull, Spares & Liability (HSL) segment is testing the resilience of insurers and reinsurers. At the same time, the Hull War (HW) market is under unprecedented strain.

The instability in the Middle Eat, layered over the long-running conflict in Ukraine, has pushed political violence and war risk exposures to the top of every aviation underwriter's list of concerns. But the most seismic development may have come not from a battlefield, but from a courtroom.

#### **Ruling That Shook the Market**

In April 2025, the UK High Court made a groundbreaking ruling that favoured aircraft lessors seeking coverage for planes and engines stranded in Russia. This decision revolves around a staggering \$4.7 billion in claims associated with 147 aircraft and 16 engines that were essentially expropriated after Russia's invasion of Ukraine and the subsequent international sanctions.

While the outcome of the case is subject to appeal, its immediate impact is hard to overstate. The ruling sets a powerful precedent on how courts may interpret policy language in politically charged disputes. Specifically, it challenges the application of war exclusions and potentially expands the obligations of insurers in contexts where insured assets are rendered unrecoverable; not by physical destruction, but by geopolitical paralysis.

This is no small matter. Some of this exposure had already been partially priced during the market hardening of 2022 and 2023. However, the full financial burden, coupled with the growing possibility of further claims in other jurisdictions, is now reverberating through the war risk and reinsurance markets.

Insurers are reevaluating aggregation clauses, while reinsurers are modifying their retrocession strategies. Meanwhile, brokers are receiving urgent inquiries from clients who are now aware that their current coverage might not be as secure as they once thought.

# War Risk Isn't Abstract Anymore

Aviation war risk was previously regarded as a minor concern-rare and distant. However, that perception has drastically changed. Consider the Red Sea: the persistent missile strikes on commercial vessels, alongside the potential for heightened tensions between regional powers, have compelled cargo insurers and aviation stakeholders to reevaluate their assumptions regarding proximity, corridors, and escalation secure timelines. In this evolving landscape, it takes very little to turn a commercial route into a high-risk area overnight.

The problem isn't just the frequency of these events. It's the ambiguity. When does political tension become a declared conflict? When does state confiscation become an act of war? How do insurers determine the proximate cause in an environment where attribution is murky and state actors may deny involvement altogether?

In risk evaluation, GenAl tools can surface relevant insights from historical claims, thirdparty databases, and narrative risk descriptions. These aren't academic questions. They directly affect coverage determinations, claims negotiations, and reinsurance recoveries. They also shape how capital flows into or out of aviation war risk pools.

# A Rising Demand for Legal Certainty

One of the more under appreciated consequences of this current environment is the growing demand for legal precision in policy language. In the wake of the UK ruling, underwriters are revisiting longheld assumptions about standard market clauses. Many are tightening wordings, reexamining exclusions, and askina tougher questions about jurisdiction, governing law, claims control and provisions.

At the same time, policyholders, especially aircraft lessors, financiers, and global operators; are pushing back. They want clarity. Not just on what is covered, but how claims will be handled in the face of shifting legal interpretations. The result is a surge in demand for tailored policy structures, manuscript wordings, and legal advice at the point of placement.

It's not only large clients who are raising these concerns. Mid-sized operators, regional airlines, and niche service providers are also in search of greater certainty. For many of them, a single denied claim could mean the difference staving between afloat and facing insolvency.



### **Broader Risk Environment**

While geopolitical conflict has dominated headlines, it's only one piece of the puzzle. The aviation sector is also grappling with several overlapping pressures.

Fragile supply chains, particularly in aircraft manufacturing and parts maintenance are creating delays in sourcing critical components. These disruptions are driving up operational risks and increasing exposure to business interruption losses.

Macroeconomic divergence characterised by interest rate volatility and currency fluctuations is complicating fleet financing and leasing models. This has direct implications for hull values, liability limits, and the financial solvency of operators.

Regulatory pressures are tightening, particularly concerning ESG disclosures, safety protocols, and emissions reporting. The risks associated with non-compliance are escalating, not only in terms of financial penalties but also due to potential litigation stemming from environmental claims or inaccurate data.

Litigation risk is also expanding beyond traditional issues like war and political instability. Rising claims regarding crew fatigue, maintenance oversights, and software errors are driven by complex systems, regulatory scrutiny, and increased operational accountability in aviation. Together, these challenges indicate a market facing sustained, multidirectional pressures.



### **Role of Brokers and Reinsurers**

In today's fragmented and unpredictable environment, the role of intermediaries has become increasingly vital. Clients are not merely purchasing insurance; they are also looking for insight, interpretation, and advocacy. They seek partners who comprehend the complexities of evolving risks, who can interpret court rulings into effective coverage strategies, and who can provide guidance not only on limits, but also on structure, jurisdiction, and retention.



This is particularly relevant for reinsurers, who frequently serve as the last line of defence in catastrophic loss situations. Their readiness to allocate capacity and the conditions under which they do so will significantly influence how primary markets react in 2025 and beyond. The firms that are best positioned at the moment aren't always the largest; instead, they are those that can adapt swiftly, navigate uncertainty with assurance, and foster relationships grounded in trust rather than relying on standard solutions.

As risks become increasingly intricate and unpredictable, one-size-fits-all solutions will prove inadequate. Brokers and reinsurers that focus on technical expertise, maintain close relationships with their clients, and adapt in real time will lead the market; not only in risk management but also in reshaping how risks are shared.

## **Looking Ahead**

There is no simple solution to the current situation. The aviation insurance market is undergoing a significant transformation. For insurers and reinsurers, this moment demands more than just deploying capacity. It requires judgement, creativity, and a clear understanding of how legal and political realities intersect with commercial needs.

For insured parties, whether managing a global fleet or leasing a few aircraft, the message remains unmistakable: risk is evolving. As such coverage must adapt accordingly. Although the skies may seem congested, the most significant threats are not always airborne. They can often be concealed within contracts, emerge from courtroom decisions, or stem from the geopolitical shifts that reverberate beneath the runway.

For insured parties, whether managing a global fleet or leasing a few aircraft, the message remains unmistakable: risk is evolving.



Brighton INSIGHTS

JUNE 2025

# FALSE SENSE GERTAINT THE TROUBLE WITH CAT MODELS



Catastrophe models were built to help insurers and reinsurers anticipate the worst. They take historical data, science, engineering, and probabilistic methods to create structured views of how risk might unfold. Over the past three decades, these models have become core to the industry's ability to price, underwrite, and allocate capital.

But as the world changes, so does its risk landscape. Many of those changes are unfolding faster than our models can keep up. The result is a growing disconnect between modelled losses and actual experience. In an era of climate extremes, rapid adaptation, and social volatility, this gap isn't just technical. It has real financial consequences and it raises difficult questions about whether current modelling frameworks are fit for purpose.

#### **Compound Events and Their Risks**

Most catastrophe models still focus on isolated perils: a single earthquake, a single hurricane, a single flood. This makes sense from a technical perspective, but it doesn't reflect how disasters play out in real life. Take the 2021 Western European floods. In July of that year, intense rainfall led to catastrophic flooding across Germany, Belgium, and the Netherlands.

More than 220 people were killed, and economic losses exceeded \$43 billion. But what made the event especially damaging wasn't just the rainfall. It was a combination of saturated soils, poorly maintained infrastructure. outdated floodplain high maps, and urban exposure. The losses were also amplified like by overlapping factors ageing drainage systems and limited earlywarning systems in some areas.

This is what scientists refer to as a compound event: multiple drivers that interact, overlap, and reinforce one another. These types of events are becoming more common, especially in the context of climate change.

Compound events are likely to increase in frequency and severity in a warming world. For instance, the combination of drought and heatwaves, or of tropical cyclones and heavy rainfall, can produce risks that exceed the bounds of traditional models. In Asia, Typhoon Doksuri (2023) flooded large parts of northern China, but the insured loss was far smaller than the economic one. Why? Because models had not fully accounted for the growing urban density and the fragility of the infrastructure grid in inland areas.



#### Climate Change: Unfolding in Real Time

One of the most pressing challenges is incorporating climate change into catastrophe models in a meaningful, operational way. While most models now provide climate-conditioned perspectives or alternative scenarios, the standard models used by many insurers still rely heavily on historical data. This poses a problem, particularly for perils like wildfires, floods, and convective storms; all of which are being reshaped by changing climate dynamics.

Consider wildfires in the US. According to the National Interagency Fire Center (NIFC), the average area burned annually by wildfires has more than doubled since the 1990s. But it's not just the frequency. The severity, speed, and location of fires have also shifted.

Swiss Re reported that insured losses from secondary perils like hail, straightline winds, and thunderstorms reached a record \$60 billion globally in 2023, with the US accounting for over 70%. These events are particularly difficult to model due to their localised nature, short timescales, and growing volatility under changing climatic conditions.

As reinsurers begin to adjust return period assumptions, many actuaries and catastrophe model users are questioning whether the historical average is still a safe foundation for forward-looking risk assessment.







# **Missing from the Equation**

Risk isn't static. As exposure changes, so does the effectiveness of existing defences and the role of adaptation becomes critical. Yet many catastrophe models treat adaptation measures as external to the risk itself. In reality, adaptation is part of the loss landscape.

When Tokyo invested heavily in flood protection and early-warning systems the following devastating 1958 Kanogawa Typhoon, its flood risk profile changed dramatically. Today, Tokyo is considered one of the most flood-resilient megacities in the world. That didn't happen by accident. It happened through long-term adaptation through massive underground reservoirs, strengthened levees, and coordinated emergency response planning.

Recently, countries such the as Netherlands and Singapore have incorporated climate adaptation into their national planning strategies. For instance, the Netherlands allocates nearly €2 billion each year towards water management infrastructure. This investment includes the 'Room for the program, which intentionally River' permits rivers to flood in designated safeguard more densely areas to populated urban regions.



Yet, even with these real-world changes, many models still assume static defences or outdated vulnerability assumptions. When adaptation is only accounted for through manual adjustments or postmodelling judgement, it opens the door

to inconsistencies in how risk is assessed,

Missing from the Equation

priced, and transferred.

Beyond hazard and exposure, the financial outcome of a disaster is deeply influenced by socio-economic dynamics such as inflation, supply chain disruption, demand surge, labor availability, even litigation.

During Hurricane Ian, which hit Florida with Category 4 intensity, the insured loss exceeded \$50 billion and making it one of costliest hurricanes the on record. However, a substantial part of this financial impact stemmed from elements beyond just wind speed or surge height. These included repair labour shortages, escalating construction costs, and extensive litigation within Florida's intricate claims landscape.

Demand surge, in particular, can inflate post-event costs dramatically. After Hurricane Katrina, material and labor costs in the Gulf Coast region spiked by 20-30% in the months following the storm. Yet only a handful of models capture this dynamically or allow users to adjust demand surge parameters easily. Another concern is social inflation — the rise in claims costs due to factors like increased litigation, broader definitions of liability, and more aggressive legal strategies. This is especially relevant in casualty-linked catastrophe events, such as industrial accidents or wildfires with disputed causes.

If models continue to overlook these economic amplifiers, insurers will struggle to close the gap between technical loss estimates and actual claims experience.

### Where Do We Go From Here?

The key to effective solutions lies in applying these CAT models with context, enhanced humility, and а broader array of tools. This encompasses providing clearer transparency regarding assumptions and limitations, particularly related to climate variables. Additionally, involves leveraging insights from it climatologists, engineers, economists, and behavioural scientists.

It is crucial to stress-test portfolios by employing scenario thinking and adopting frameworks that take into account adaptability, resilience, and socioeconomic volatility. Catastrophe models should not be seen as conclusive solutions. Rather, they should provoke deeper questions by not only asking, "What does the model show?" but also considering, "What might it miss?"



# CELEBRATION DINNER

JUNE **9** 2025 LABUAN























































