# RELENTLESSLY RESPONSIVE MEANS TRANSFERRING OUR EXPERTISE

AXIS | AXIS Re

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# How do reinsurers react to change?

**Steve Arora**

CEO, AXIS Re

Zurich

How do reinsurers react to change? We face a world where certainties are questioned, assumptions that have underpinned our businesses for decades are disproved and familiar processes are disrupted by automation. As the world changes, new risks emerge, protection gaps are revealed, and the political and economic outlook remains unstable, reinsurers must adapt.

*Here, we showcase the diverse range of expertise that, from different perspectives, enriches our business and industry, and prepares us for the future.*

At AXIS, we believe that the very model of the reinsurer must evolve to become responsive to the world around us. We realise that the days when reinsurance followed risk are over; we must anticipate, assess, and act in our role as the capital backstop for the global economy.

Our commitment to the industry is to add value in consultative means and act as strategic partners. This means listening to our clients and partners, who have first-hand experience of the risks they encounter. It means responding to their needs with fresh solutions. It means establishing genuine partnerships while maintaining a high degree of technical expertise from lean and agile teams. And it means continuing to pay claims fairly, quickly and efficiently to honour our promises.

Crucially, it also means being responsive to the world around us. Reinsurers need to invest the time to understand why risks are evolving and what the implications are for our clients and our industry. Our market is rapidly changing. Even the most established reinsurers are differentiating their offering. Changes in the cycle, technological developments and evolving client needs will all dictate the future of reinsurance. We will be judged on how responsive we are and on how we are able to predict the pace of that change and stay ahead of the curve.

To this purpose, we present here a collection of thoughts from a range of contributors across AXIS Re. This expert commentary is underpinned by the same realisation that the only thing we can solidly count on in the future is change. The challenges we face require an industry-wide response, and AXIS Re will be highlighting our expertise. Here, we showcase the diverse range of expertise that, from different perspectives, enriches our business and industry and prepares us for the future.

These perspectives won't resolve all questions that the industry faces. But I hope it will contribute to the debate this autumn, as the industry gathers for its annual conference season. I wish you an enjoyable and thought-provoking read.

# A U.S. casualty survival guide

**Jim Brown**

Head of General Liability

New York

With declining certainty of outcomes and rapidly escalating loss inflation, U.S. casualty is no place for the faint-hearted. Today, we're seeing simultaneous changes in client need and the market cycle, and though these issues are challenging, there is opportunity for our industry.

The market changed dramatically during the past 25 years and the pace will not slow any time soon. Bigger used to be better, but many learned the hard way not to price capacity inadequately and subsequently retrenched. The last five years brought a previously-unseen frequency of large loss events, and with them further painful lessons, still being learned. Claims continue to defy expectations, permeating deep into the layers of capacity and prompting carriers to the sobering realisation that if $50m of limit is sold, paying $50m of loss is a probable outcome.

This harsh reality has focussed minds across the casualty market, particularly among lead writers of umbrella /excess coverage, the layer that sits above primary policies in multilayer excess programs. Prices are increasing, but underwriters want primary insurers to increase their limits, which have remained largely unchanged for 30 years. They want limits pushed up from currently $1m to $2m, to $3m or even $5m – whatever they can achieve. Historic limits are too low to be an accurate barometer in the current claims climate. These limits melt away quickly to breach excess layers with surprising frequency.

Access to superior data has helped many carriers survive by fuelling the calculated balance of premium to limit. Better understanding of that equation has sustained profitability for those that have embraced data and factored it into their decision-making. But this alone will not stem the tide of ever-escalating loss inflation.

Jury verdicts are awarding settlements far higher than previous norms, driving much of this claims inflation. They are symptomatic of the litigious nature of U.S. society, but regardless of the inconsistencies and shortcomings of the tort system, customers buy insurance products for good reasons. It is our job to stand behind the promises we sell. The U.S. casualty market is intently focussed on grappling with this systemic challenge, but because the cost of our goods is increasingly unknowable on the day it is sold, the height of the claims ceiling is increasingly difficult to measure.

Reliable levels of certainty are not part of our future, or even present. A gas explosion in a suburban area might formerly be calculated at $300m based on the facts, but that is no longer the case. Underwriters must carefully consider the potential litigation costs to gain a more informed view of the totality of the risk before it is accepted.

Known unknowns further obscure the true height of the ceiling: named perils that underwriters consider unlikely to trigger a large loss. For example, most underwriters would say the most likely worst-case scenario for a hospitality risk is a fire but with all occupants evacuated safely. Sadly, recent events have shown the possibility of an active shooter must be also considered as a realistic possibility. Other examples of known unknowns, notably in auto and class 1 railroads, compound the unpredictability of the drivers of total loss, even as layers are burned with greater frequency.

All of this begs the question: how can we price our product adequately, given the incalculable uncertainties of these known unknowns? Managing this challenging combination requires dynamic limits management and the judicious deployment of capacity at a mutually acceptable price. Prudent portfolio management is also key, including the selection of lines of business with the greatest return potential from across a range of insurance entities, while imposing limits that cap potential exposures. It is equally important, while being prudent and selective, to be opportunistic. There is no better time for a treaty underwriter to deploy capacity than when many in the market are pulling back. When fear grips underwriters, an opportunity almost always lies behind it. It must be a measured bet though, capped by pessimistic limits.

Cautious, selective and enthusiastic support of those clients taking advantage of market dislocation is therefore the formula for success within the tumultuous environment for U.S. casualty reinsurance. By resisting these chaotic forces, addressing these evolving needs and pushing for higher standards, the best (re)insurers will continue in their vital damage-indemnity role, which enables society to thrive.

# Putting climate risk into context

**Ellissa Cavaciuti-Wishart**

Head of Cat Modelling – International

Zurich

Climate risk is one of the most pressing, complex and multifaceted issues facing the reinsurance industry. The unpredictability of climate-related impacts means reinsurance carriers must develop ever more sophisticated, data-oriented responses to quantifying risk against a changing and uncertain backdrop. In addition to navigating the physical impacts, business and market implications, reinsurers must direct our own attention and resources to mitigating this global challenge.

While we have certainty regarding the key consequences of a changing climate, such as increasing average temperatures and rising sea levels, it remains difficult to predict precise impacts and outcomes. From a natural catastrophe (NatCat) perspective, it is likely that we will see more extreme events. Examples include prolonged, hot, dry periods producing conditions conducive to wildfire and associated health risks; increased moisture in the atmosphere leading to intense rainfall and elevated flood risk; and warmer ocean temperatures which are favourable to tropical cyclone formation.

Sophisticated global models exist which enable reinsurers to make a range of projections regarding high-level trends; however, we cannot know with any certainty the extent to which specific areas will be affected and by when. Reinsurers write most of their business on an annual basis, and changes that take place over longer timescales are not something we can easily translate into the pricing of an individual annual policy. In the context of NatCat models, we are also faced with the prospect that for some perils, the historical data upon which the models were calibrated may no longer be perceived a sound indication of future events.

Rather than turn away from this problem, it is crucial for reinsurers to broaden their focus to explore wider risk-assessment practices. Testing of portfolio sensitivity to the various possible impacts of atmospheric warming scenarios can provide us with a range of information on which to base decisions and inform a strategic view of risk. To support such sensitivity testing, it is vital that we address the paucity of exposure data that exists for key perils such as flood.

In addition to assessing the potential impacts of climate risk and how we can navigate them, potential new opportunities may also arise. Sea-level rise and extreme weather events are likely to expand the range of risks considered uninsurable by many. Industry-wide cooperation could help to narrow the protection gap by developing ways to support potential insureds that have become marginalised by climate risk, for example through parametric products or microinsurance.

Another logical, proactive area of insurance-sector response to climate risk is the offer of support to international investment in renewable energy and hazard mitigation schemes. As an example of the latter, reinsurers could devise tailored flood solutions to support communities and businesses coming under increasing pressure as the risk of severe inundation increases.

We are likely to see changing geographies of risk brought about by climatic shifts. As an industry, we should start asking questions regarding potential future movements in population and insured values. It could be that coastal conurbations become increasingly untenable, thereby leading to inland development, or that we observe a population migration away from subtropical to more temperate zones.

Against the backdrop of a changing climate and disruption, it is likely that we will also observe new or expanded product offerings. Renewables and climate liability are likely to be key growth areas, as the uptake for clean energy increases and more organisations are held accountable for their role in global warming and its impacts.

While evaluating the role that climate risk will play in business and underwriting, we can also look at ways in which reinsurers can support global efforts to limit warming and to operate more sustainably. Various organisations have been established to provide guidance in terms of sustainability and disclosure initiatives and some reinsurers are already taking the necessary steps to increase their Corporate Social Responsibility activities which place a key focus on the environment and climate-risk strategies and initiatives.

Climate risk is increasingly dominating reinsurance conversations. As an industry, we must ultimately adapt, develop new products and improve our modelling techniques. In the meantime, we can proactively assess what it may mean for our business strategies and move to adopt climate-friendly internal practices. We often talk about the social role of (re)insurance. On this issue, both the business and the social case demand reinsurance-industry participation in the global response to climate change.

# Harvesting analytics

**Peter Griffin**

Head of Agriculture

Bermuda

Agricultural insurance, like agriculture itself, is continually evolving. As crop production transformed from the Green Revolution of 1960s to more recent advancements in genetics and equipment, crop insurance has benefitted from the growth in the big data and modelling capabilities. Along with the advancements in technology have come changes in crop prices, input costs, lending and credit availability, the economy, regulations, politics—and weather. Across all potential factors, contemporary models must detangle the extraneous and antiquated influences out of the experience data.

Interestingly, for all the research and data collected on agriculture, crop insurance modelling is fundamentally a low-data line of business. Each year, with some exceptions, generally provides one observation for a given region and crop. And while the link between weather and agriculture is clear, crop production generally has non-linear relationships with key weather variables. As a result, crop insurance models are generally bespoke and regionally specific.

Agricultural insurance expanded dramatically over the last decade, most notably in China and India. Of the estimated 570 million farms worldwide, 59% are in one of the two countries. While total crop insurance premiums in the U.S. have been flat since 2011, the market in China tripled in size to more than $7bn between 2011 and 2017. Premiums in India increased from about $700m in 2014 to $4bn in 2017. As greater proportions of the world's population and arable land are now insured, the industry anticipates a growth rate of premium of more than 10% for the next five years.

With nearly 1.4 billion people in China, and an annual population growth rate estimated by the World Bank to average 0.6%, the need for agricultural insurance can only become increasingly elemental. With such growth in a class of business where volatility is an inevitable consequence of weather patterns, models need to be continually updated and adaptable to changing climate dynamics.

India's government has made crop insurance a central feature of its plan to grow and stabilize the agricultural economy. Home to nearly a quarter of the world's farmers, India's average land holdings are smaller than can be administered under traditional crop insurance policies. To meet these needs, India's crop insurance program, the Pradhan Mantri Fasal Bima Yojana or PMFBY, uses a type of area-yield parametric index to deliver insurance coverage efficiently to farmers at a reasonable cost, notably related to loss adjustment.

Programmes in the U.S., China and India are all different. Each requires an individualized modelling approach to account for differing governmental policies, insurance operations and data availability, and of course weather and climatology. As a factor changes, such as historical experience, premium rates or market regulations, models adjust to account for the potential influence on program performance. Depending on model construction, the impacts of program changes can be assessed a priori with recalibration after one year.

Climate change has the potential to affect all markets. Modelling climate change requires a restatement of historical data, and altering frequency and severity of future events to levels that have not been observed.

As statisticians debate the influence of a given year, and if a certain anomaly is evidence of greater anomalies to come, the more immediate issue may be regulatory change.

Large corporations around the world are facing an upcoming expectation to disclose the financial implications of climate change on their income statements and balance sheets. Guidelines published by the financial stability board of the G20 task force on climate-related financial disclosures (TCFD) steer companies to not only address the "physical risk" such as extreme weather events but also the "transition risk" of economic and social change as the economies around the world adapt to meet the Paris Agreement targets that limit temperature risk.  Agriculture insurers are already well-versed in insuring extreme weather events. But TFCD, rightly, identified the agriculture industry as particularly susceptible to climate change.

A growing global population implies increasing interdependent for food security. Crop insurance allows farmers to specialise, increasing production and reaching higher economies of scale. In the process, farmers become more dependent on weather and limited scope of crops for revenue. Governments often support crop insurance programs to promote food security and stability of its populace. But governmental involvement comes additional uncertainty regarding program terms and conditions, subsidies and market openness.

Each agricultural insurance market presents its own underwriting challenges, ranging from drought, excess moisture, flooding, and freeze. Every season delivers only a single data point per region; evaluating reinsurance programs requires a highly sophisticated approach where historical data is supplemented detailed knowledge of weather patterns, soil conditions, political and regulatory changes.

These challenges notwithstanding, expanding take-up of agricultural insurance brings additional coverage and security to a greater segment of the global population. In these rapidly changing markets, only the reinsurers that develop highly sophisticated and adaptive techniques and models will remain ahead of the curve.

# European litigation funding: a tangled web

**Allison Janisch**

Head of Liability, Europe, Middle East, Africa and Latin America

Zurich

The sands of European litigation may shift decisively as the regulatory environment for liability evolves with the arrival of litigation funding, which seems set to spread. It will drive claims inflation across Europe by easing the ability of the plaintiffs' bar to finance legal redress, particularly through collective-action type suits. Insurers and reinsurers in both the United States and United Kingdom have felt the impact of contingency fees on the frequency of lawsuits. Although disallowed in many European Union jurisdictions, litigation funding skirts the fringes. The emerging environment presents a tangle of challenges. Our industry should be prepared to adapt.

The nine-member U.K. Association of Litigation Funders states on its website: "Litigation funding is where a third party provides the financial resources to enable costly litigation or arbitration cases to proceed." Funders' remuneration arises from an agreed share of monies awarded under financed cases. The practice is widespread in Australia, and has come to the shores of the United Kingdom. Given the advantages to claimants, it seems destined to spread further into Europe. The potential for an increase in litigation frequency should not be underestimated. The lenders underwriting the funding of litigation costs are selective in the cases they choose to fund, which theoretically will mean an increase in the number of successful lawsuits. The pattern of growth is difficult to predict, but, as a partial substitute for state funding mechanisms, such as the U.K.'s recently limited Legal Aid system, it may catch on.

Call it hedging, cannibalism, or opportunism, insurers grease the wheels with Before The Event (BTE) and After The Event products (ATE). In addition, public policy might be amenable to this contingency-fees loophole because it enables claimants to pursue claims when otherwise they might not be able to afford justice. Indeed, while initially limited to large corporate disputes, litigation funders are now increasingly attracted to those with the potential for relatively low-value awards.  Politicians may like the system, since it provides an ostensibly tax-free form of access to justice that enables under-represented classes of litigants to bring suits against corporations, thereby enhancing consumer protection. As an industry, we should be aware of the potential for increased defence costs, increased frequency of claims with legs, as well as the potential for new product offerings.

Class action lawsuits to settle compensation for multi-party bodily injury claims are prohibited in several European countries, but litigation funding can make them possible. In France, for example, the statutes enabling collective actions have been rather ineffective. Despite some bluster from the insurance industry, they have not often kept insurers awake at night. An association must be formed and approved by the court to launch a collective action suit. Few have been formed to pursue claims, in part due to the cost – about €50,000 to launch an action and remunerate jurists and lawyers. Finally, the incentives for associations are limited, since they may not claim fees, even when an action in successful. Litigation funding could kick-start the process, since it allows private arrangements to finance actions and remunerate lenders.

In Australia, funders successfully financed some massive multi-party actions and delivered large losses to liability carriers. All markets which operate under civil law jurisdictions are vulnerable. While the trend has emerged with vigour in the U.K., spawning specialist investment funds and a small army of solicitors who specialise in matching investors with plaintiffs, there is little to indicate that similar initiatives would not be attractive in Continental Europe.

Ironically, the potential proliferation might be partially facilitated by the very insurance market that will pay the increased litigation awards. While around for many years, the legal expense product has evolved over the years, fuelling growing appetite to offer products which indemnify losing parties' legal expenses. Litigation funders could indeed begin to work in tandem with insurance, such that our market finances litigation and ultimately pays claims, win or lose. For creative insurance minds, this could be viewed as a hedge.

It may also present an interesting dilemma with respect to conflict of interest for insurers who may end up unknowingly playing both sides in any given trial. It is typically not possible to learn who is funding underlying plaintiffs other than the law firm, the claimant or the insurer of the ATE covering a specific litigation. If the insurer also covers the defendant, the potential hedge could be mired in conflicts of interest. The claims process too must be very sensitive to conflicts, ensuring, for example, that different adjusters work either side of a case, and that no communication is made between them.

Litigation funding will impact European consumer protection and liability across the board – from products and pollution liability to professional indemnity, and any other line of business where an insured's practices may damage multiple parties. That's what we're here for, but European risk carriers would not welcome a U.S.-style class action and discovery process. The market should approach the emerging regime with rules of disclosure, professional as well as social consideration and responsibility, and careful planning for rising awards. Our industry is well-placed to address this emerging trend, and to help shape the changing European liability landscape.

# Fear of the unknown

**Fortunat Kind**

Head of Cat Modelling

Zurich

Our industry has become increasingly reliant on catastrophe models for pricing guidance since their first appearance about three decades ago. Today, their outputs are at least weighted heavily by all, and sometimes form the principal source of an underwriter's pricing intelligence. The impact has been positive, as reinsurers embrace the advances these tools have delivered for our changing work. However, we must be cognisant of those claims-influencing factors that are not considered by models and take a view of the risk they introduce. Only then will we effectively understand what models deliver.

Some perils are logically expected to be considered in their entirety in the modelling process, but in practice simply cannot be fully considered. These non-modelled aspects exist on multiple levels. The most obvious relate to regions which are less relevant to reinsurers, such that modelling companies and carriers are unable to devote sufficient resources to develop sophisticated tools. One example is flood risk in Italy or Canada. The risk is real, but commercial models address them in only limited ways.

Markets need not be small for perils to remain non-modelled. Flood severity, for example, is sensitive to multiple variables. A plethora of new U.S. flood models has been introduced, but they tend to deliver dramatically different outputs. The major reason for this is the high sensitivity of the peril to minor location and exposure differences. In the U.S., despite an enormous effort to build terrain models with five-metre resolution for many parts of the country, model outputs often miss the reality as the street address and occupancy cannot reflect how a single building, a mall, a campus, or an industrial site is actually situated in the terrain.

Some of this can be approached with probabilistic approaches for portfolios, but substantial uncertainty remains. Flood hazard maps have improved significantly, and allow insurers to get a good handle on the pricing of some risks, but small topographical variations – let alone collapsing levees or runoff channels clogged with debris – may lead to dramatic inundations that defy assumptions.

A major topic is the behaviour of science-based models in the very high frequency range, where the event concept breaks apart. There loss mechanisms leading to claims often have different physical characteristics than those with large event footprints. It is therefore crucial to complement pure modelling with non-modelled aspects and controls from recorded claims experience.

The greatest perils – windstorm and earthquake – have been well-modelled for developed urban areas with high levels of insurance penetration. The damage footprint extent follows simple formulae on a larger scale, and their approximation in models provides a very good basis for underwriters' calculations. But below the surface, non-modelled perils may weaken results for many possible events, so we cannot rely entirely on modelled outputs alone even for these well-analysed events.

Fire following, sprinkler leakage, storm surge, torrential rainfall with local flooding and landslides, claims inflation through repair delays, replacement-cost hikes due to resource scarcity after a very large event, supply chain interruption, loss adjustment expenses, or claiming behaviour as seen in the recent assignment of benefits issues in Florida are secondary, non-modelled factors that need to be considered when using cat models.

All of this means it remains very important that our assessments of clients' portfolios balance the output of standard tools against loss experience, both industry- and client-specific. We cannot rely entirely on the answers the software tells us. Instead we must invest heavily in making our own judgments about every portfolio of risk that comes before us. The relevance each reinsurer places on such factors is an important distinguishing characteristic in our non-static world of risk.

# Healthcare reform: a persistent U.S. debate

**Rich Phillips**

Head of U.S. Accident & Health Reinsurance

Princeton, U.S.

Healthcare reform has long dominated the U.S. political debate. With the 2020 presidential election looming, debates over a potential "Medicare-for-All" universal healthcare scheme, reforming the Affordable Care Act (ACA), and related issues are on the radar both of politicians and (re)insurers. As material change to the U.S. healthcare system appears likely in the years ahead, (re)insurers need to understand the impacts of that change, and adjust their business models accordingly.

Any discussion on the merits of the U.S. healthcare system must first differentiate between the delivery of healthcare and its financing. AXIS Re finances healthcare costs by providing wide support to U.S. insurers through excess of loss and quota share reinsurance arrangements. Historically, the reinsurance industry has paid attention to policy developments and their effects on our business but refrained from issuing support or criticism. However, as momentum builds behind potential reform and providers adopt new, expensive therapies, our industry has a responsibility to educate various stakeholders about the likely cost implications of any policy change.

Potential unintended consequences and overall cost implications of any structural changes made to address the plight of the uninsured must be carefully considered. Currently, the majority of healthcare costs for non-elderly Americans are funded through employer-sponsored plans. Whether fully insured or self-funded, such plans continually seek and implement innovative approaches to contain costs and improve quality. Any potential reform must further promote innovation, and avoid regression to a federal fee-for-service system which attempts to control costs through price controls.

Affordability is the fundamental issue to be addressed, but not at the expense of advances in medical technology. The U.S. is unsurpassed in attracting capital for the development of amazing new treatments for a range of devastating diseases. Predictably, these therapies come with a high price tag, as evidenced by the recently introduced gene-based therapy for spinal muscular atrophy, at an estimated cost of $2.1m. It is incumbent upon the (re)insurance industry to be active and vocal in developing pooling mechanisms for financing these new medical expenses.

Mainstream reform proposals now range from the abolition of all private health insurance in favour of a single-payer system via a "Medicare-for-All" scheme, to a complete repeal of the ACA. All would have consequences for the (re)insurance market. Much as the ACA prompted a shift in offering by insurers, and thus a change in scope and scale of reinsurance provision, so all reforms, minor or major, will impact our industry.

As policy debates gather pace, reinsurers must monitor developments closely, help to educate the public, and advocate, where necessary, for the role and value of reinsurance in a viable sustainable U.S. healthcare market.

Healthcare is a societal issue, and the (re)insurance industry should be part of this vital societal solution. As reinsurers, we adapt to a changing world and to its opportunities. We must remain responsive to changing market norms and client needs. The forward-thinking A&H reinsurer needs to be acutely aware of and attuned to ongoing public debates in the U.S. around healthcare – we cannot afford not to.

# Ballooning healthcare costs: a management issue

**Chee Kok Poh**

Head of Accident & Health Reinsurance – Asia Pacific

Singapore

Rising healthcare costs pose a mounting challenge which is changing the very dynamics of healthcare and (re)insurance. The issue is driven by the combination of aging populations and medical advances. As individuals live longer and increasingly seek treatments for improved living conditions, healthcare costs are outpacing GDP growth. Solutions are far from clear cut.

Insurance should be an integral part of any societal solution, so (re)insurers must react. Through industry-wide collaboration and an approach that responds to the changing landscape, we can address the challenge, and even find new opportunities, while securing the long-term viability of healthcare systems.

In Asia Pacific, against the backdrop of people living longer and having children later in life, the demographic pyramid is becoming heavier at the top. This puts pressure on the cost of healthcare. At the same time, treatments are becoming more sophisticated and expensive. As an example, proton beam therapy for cancer – which blasts tumours only when the beam reaches a specified depth below the skin – is a new form of radiotherapy known to be more effective against certain cancers. However, it costs significantly more.

Consequently, healthcare costs have become a burning-hot potato for governments and (re)insurers. Many countries have national health services or health insurance approaches which are heavily subsidised through taxation. This provision is becoming ever-more expensive for governments, but for politicians it may be sacrosanct spending. Managing the cost is an escalating challenge.

Solutions vary based on established funding methodologies. Some countries subsidise spending managed by market forces. Others fund and operate health provision directly. Under Singapore's hybrid system, government-run hospitals exist alongside private, commercial ventures. Government facilities are partly subsidised at levels which vary depending on patient choices. The hybrid system funds basic care for everyone.

Australia's publicly funded Medicare programme, in contrast, covers the bulk of residents according to rules which determine coverage and contributions. Those with earnings exceeding a certain threshold are required to buy private insurance. The Australian approach divides the funding of care between the state, individuals and insurers, but like everywhere else, mounting costs are driving the exploration of ways to increase affordability.

Various solutions, partial at best, have benefits and disadvantages. Cost-sharing is one. Singapore's national health insurance requires patients to pay a deductible and a vertical co-insurance on the hospitalisation bill. This is intended to keep premiums low and encourage prudent utilisation. Private insurance can be acquired to cover patient's retained share, but with some doctors willing to over-serve patients, it sometimes increases utilisation. Studies have shown this to be the case, and the industry is looking at ways to address the issue.

Information asymmetry is another challenge. Patients rarely question their doctors' advice, so utilisation levels rest almost entirely with physicians. In the absence of a system which allows doctors to allocate treatments on the basis of need and cost, the supply side is difficult to balance with funding. Some markets have attempted to address this by paying flat fees to providers, requiring them to treat patients over an agreed period. That begins to transfer cost-risk management to providers, making them risk-takers. It is one way to manage cost escalation.

No single model is a panacea. Most countries are, however, implementing tangible improvements. To complicate matters, many nations have legacy healthcare systems which cannot be easily expunged, so changes typically involve tweaking the status quo.

Meanwhile, private health insurance is seeing challenging results in almost every market. Unless the issues are addressed, premiums will continue to increase at least by the amount of healthcare-cost inflation, even as every insured gets one year older every year. Healthy people will avoid participation where they can, leaving insurers to cover only those who are likely to claim.

Providing adequate insurance and achieving satisfactory returns on capital is a challenge in this changing world. To address this, continued dialogue between funders, providers, and patients will be essential. Together, we can ensure that healthcare funding is stable, secure and effective for the long term.

**Five-year Figures,
Healthcare Costs as a Percent of GDP in Seven Asian Economies**

| Country | 1970 –75 | 1975 –80 | 1980 –85 | 1985 –90 | 1990 –95 | 1995 –2000 | 2000 –05 | 2005 –10 | 2010 –15 | 2015 –18 |
|---|---|---|---|---|---|---|---|---|---|---|
| Australia | 4.9 | 5.9 | 6 | 6.2 | 6.8 | 7.2 | 7.9 | 8.2 | 9 | 9.2 |
| China | | | | | | 4.5 | 4.3 | 4 | 4.7 | 5 |
| India | | | | | | 4.2 | 4.2 | 3.6 | 3.5 | 3.6 |
| Indonesia | | | | | | 2 | 2 | 2.7 | 3 | 3 |
| Japan | 4.7 | 5.7 | 6.4 | 6.1 | 6.1 | 6.6 | 7.5 | 8.3 | 10.6 | 10.9 |
| South Korea | 2.1 | 2.6 | 3.5 | 3.4 | 3.6 | 3.7 | 4.5 | 5.6 | 6.9 | 7.5 |
| Singapore | | | | | | 3.4 | 3.3 | 3.1 | 3.7 | 4.3 |

Source: OECD

## Five-year Figures, Life Expectancy at Birth

| Country | 1970 –75 | 1975 –80 | 1980 –85 | 1985 –90 | 1990 –95 | 1995 –2000 | 2000 –05 | 2005 –10 | 2010 –15 | 2015 –18 |
|---|---|---|---|---|---|---|---|---|---|---|
| Australia | 68.4 | 70.1 | 71.8 | 73.1 | 74.6 | 75.8 | 77.6 | 79 | 80 | 80.4 |
| China | 60.1 | 64.1 | 66.3 | 67.4 | 68 | 69.3 | 71.5 | 73.2 | 74.2 | 74.8 |
| India | 49.8 | 52.1 | 54.8 | 56.6 | 58.7 | 60.8 | 62.8 | 64.6 | 66.2 | 67.1 |
| Indonesia | 54.8 | 57.3 | 59.5 | 61.1 | 62.7 | 64.1 | 64.9 | 65.7 | 66.6 | 67.2 |
| Japan | 70.6 | 72.8 | 74.2 | 75.5 | 76.2 | 77.1 | 78.3 | 79.2 | 80.1 | 81 |
| South Korea | 59.5 | 61 | 63.2 | 66.1 | 68.6 | 71 | 73.6 | 76 | 77.9 | 79.3 |
| Singapore | 69.2 | 71.2 | 72.9 | 74.6 | 75.9 | 77.1 | 78.9 | 80.7 | 82.1 | 82.8 |

Source: OECD

# Mortgage reinsurance: emerging opportunities

**Jeffrey Ryan**

Head of Credit & Bond and Mortgage Credit

New York

In recent years, the mortgage reinsurance business has become an important area of opportunity for insurance and reinsurance companies. Many players have committed significant capacity to the market. Opportunities have grown over time and are expected to continue at a meaningful scale for the foreseeable future.

AXIS Re entered the reinsurance space in 2015 as the market began to expand, reinsuring ceded risks originating with the so-called Government Sponsored Enterprises (GSEs) – the U.S. mortgage guarantors Freddie Mac and Fannie Mae. These GSEs continue to explore new ways to diversify the capital behind mortgage lending risk and have turned to the commercial (re)insurance sector as one avenue of capital supply. AXIS Re also provides support to the U.S. and global mortgage insurance industry.

While initially utilising the capital markets through the issuance of debt instruments, known as Credit Risk Transfer Securities (CRT), the GSEs have gradually expanded their CRT programs with significant support from the global (re)insurance community. Both Fannie Mae and Freddie Mac issue numerous transactions through the year with various loan-to-value ranges, attachment points and aggregate excess of loss structure types allowing reinsurers discretions as to how they deploy capital in the space. In recent years, the GSEs have issued in excess of $3 billion worth of high-quality Credit Risk Transfer instruments annually into the reinsurance space. Significant transaction levels are likely to continue as new mortgage originations and refinances remain strong and the GSEs continue to play a key role in U.S. housing finance.

The quality of U.S. mortgage credit significantly improved following the Global Financial Crisis (GFC) as the Federal Housing Finance Agency and the GSEs implemented numerous reforms to mortgage products and mortgage underwriting. The high-risk mortgage lending practices leading up to the GFC have been eliminated in the GSE conforming market, including the acceptance of subprime credit, no documentation of borrower income and assets and negatively amortising loans. In addition, the GSEs and private mortgage insurers have provided extensive historical mortgage performance data to risk transfer partners enabling AXIS and other (re)insurers to perform stress testing and additional transaction modelling. Stress testing is important as the key risk to this business is a significant economic recession leading to a sharp increase in mortgage defaults and declining home prices.

Natural catastrophe exposures are sometimes seen as potential loss events for mortgage (re)insurers, but analysis shows little potential for an industry-turning event. The GSEs have a strong commitment to help individuals after a catastrophe, for example by supporting lenders' grants of forbearance in government specified disaster areas. With support and the backing of residential insurance, homeowners are much more likely to repair homes than they are to walk away. Earthquake risk may be the exception, with the homeowners' take-up of insurance for the peril at very low levels in high risk areas. This is clearly something that U.S. regulators and policy makers are examining, and there has been some initial progress in getting a handle on this issue. Initiatives such as the California Disaster Insurance Act are encouraging.

Credit quality of U.S. mortgage reinsurance transactions has remained strong, and performance to date has been supported by the buoyant U.S. economy and housing market generally. These conditions have attracted additional reinsurers and insurers to the mortgage market and, as a result, the market has become more competitive, but margins remain adequate. Mortgage reinsurance is a complex class of business, impacted by economic and housing market events, presenting a systemic risk which needs to be assessed over a considerable timeframe. Underlying market conditions can change, and the loss potential can be significant. Consequently, AXIS has committed substantial resources to the mortgage reinsurance business and has played a leading role in collaborating with the GSEs and mortgage insurers. We have invested heavily in staff, data and modelling which we firmly believe is required to adequately measure the risk in this business.

AXIS Re believes mortgage credit will continue to be a significant opportunity for the reinsurance market. The changes implemented by the GSEs and their regulators have resulted in a prudent underwriting environment that has created an attractive opportunity to participate on these transactions, however a sophisticated approach is required to navigate this dynamic market.

# Softly, softly to restore engineering market health

**Shahrokh Shahpoori Monfared**

Lead Underwriter – Engineering

Zurich

With rates halving between 2008 and 2018, the engineering (re)insurance market has reached the point of unsustainability. After a decade of transition to absolute soft-market conditions, during which the level of premium has been insufficient both to meet attritional claims and to pay large losses, a defining moment has arrived following a series of very large losses. The market's response throughout 2019 has been to increase rates and revise coverage terms, but while laudable, the soft market is far from over.

Over the past two years engineering (re)insurers have weathered a surge of large claims contributing to total engineering losses above $3bn.

With later underwriting years still to develop fully, it is likely they will exert further pressure on financial results over the years ahead – some exacerbated by hidden soft-market rate decreases including, for example, the expansion of coverage for missing or discounted sub-limits in policy extensions under the design clause. Fortunately, the rate correction which the market had expected as early as three years ago is finally underway.

While we are just at the beginning, rate increases have been achieved across the global insurance marketplace for large engineering projects. Increments are yet to filter through to regional and local levels, where pricing remains largely flat, and in some cases is declining still. These markets must catch up quickly to assist the effort to bring sustainability back to the engineering industry and its (re)insurers. It is also vital that the incremental pricing trend for larger risks is extended and accelerated but a delicate balance must be struck.

While the instinct to press for greater rate increases is correct, there is a danger in pushing rates too far, too fast. The turn finally arrived because about $500m of capacity exited engineering in 2018, most of it from Lloyd's. If rates rise too swiftly and overswing, this might have an impact on stability and the sustainability cycle. It would also be unhelpful for clients in this uncertain economic period. Instead, we should continue conversations with our clients to ease the way for further rate and coverage and terms and conditions improvements. If these are successful, engineering insurance is likely not only to recover, but to experience sustainable profitability in the coming years.

Development may be underpinned by increased demand for coverage across the regions. Current political and economic issues are holding back projects in some areas which otherwise would be poised to embark on large developments. Notable in this category are Latin America, which is still in recession, and the Middle East, parts of which are stifled by economic sanctions. Asia, where rates remain flat, lags behind the global trend. However, in the long term, the outlook is positive due to increase the population and lifestyle triggering and the need for improved infrastructure. On the other hand, huge investment by China through its Belt and Road initiative is likely to become an area of opportunity for international engineering (re)insurers that can demonstrate responsiveness in managing the market cycle while adapting to evolving client needs.

For now, the engineering (re)insurance market continues to suffer a protracted hangover brought on by the soft market of the past decade. Holding a consensus to drive through incremental improvements in pricing over time will ensure the market does not become crushed between adverse development and lossmaking current years and should usher in a new phase of growth.

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