AXA

XL Insurance Reinsurance

# GUIDE TO GOVERNMENT POOLS

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# GUIDE TO GOVERNMENT POOLS

## Contents

# Making the most of our strength

Reinsurance pools seek to provide insurance where there is none or where it is not readily available, but the demand for them is not as great as it should be. To introduce this special report, Jonathan Gale, chief executive, Bermuda Reinsurance and managing director at AXA XL, writes that the industry needs to develop a broader approach to how the risk is assumed and accounted.

Following on from our first report "The Protection Gap" issued in September 2017 we wanted to provide deeper insight into the role governments could play in the future and also our thoughts on what makes government-sponsored risk transfer mechanisms (referred to in this report as "pools") successful.

The complexity and divergent operations of our subject matter can make it difficult to generalise with a single word such as "pool" but throughout we are talking about entities sponsored or run by a government or quasi-governmental entities that seek to provide insurance where there is none or where it is not readily available.

We have kept this report focused on catastrophe risk rather than financial risk although governments, particularly the US government, are increasingly exporting mortgage and credit risk to the world's (re) insurance markets. In addition, we have compiled a detailed catalogue of 451 pools worldwide and we are happy to make an abridged version available on request (email joji.mathew@axaxl.com).

The catalogue of risk pools represents our best efforts to provide a close to comprehensive list but we may have inadvertently missed some and there are others—small municipal pools, for example, in the US—which we have chosen to omit.

Most of the pools referred to in this report provide cover to individual policyholders, either directly or through reinsurance. However, there is an increasing amount of coverage purchased for immediate disaster response, particularly from the World Bank, triggered by the scale of a disaster (parametric coverage) where the proceeds are used to facilitate response and recovery.

On the basis of "risk is risk is risk", we think the industry needs to develop a broader approach to how the risk is assumed, and accounted,

*"The covers we are envisioning are not indemnity-based due to the ultimate beneficiaries not having the financial wherewithal to purchase the insurance in the first place."*

be it traditional (re)insurance, cat bonds or derivatives. Speculation is a concern when the industry moves away from the principle of indemnity. The covers we are envisioning are not indemnity-based due to the ultimate beneficiaries not having the financial wherewithal to purchase insurance in the first place.

Having a fairly calibrated and understood parametric trigger allows for immediate payment of funds without claims assessment. This enables companies such as AXA XL to involve alternative capital more easily, increasing capacity and passing on any savings from reduced cost of capital requirements.

The importance of scale and speed of response following a disaster is intuitive and we are working with Cambridge Centre for Risk Studies at the University of Cambridge Judge Business School (CCRS) to prove with facts rather than intuition showing what increased insurance penetration means to a population. If done well, a region should actually benefit after a disaster with improved, affordable and more resilient housing, reduced indebtedness, and increased employment in construction and stability in other industries, but most important of all it should benefit from the immediate improvement and holding together of communities and families affected by disaster (See Case Study 1 and Case Study 2).

## The case for pools

We asked all of our contributors for their thoughts on what is limiting the growth of pools—there's no shortage of disasters or capital looking for risk but there doesn't seem to be the demand for pools.

If the first duty of any government is the safety and security of its people, it should be straightforward to make the case and as an industry we need to think how we do that more effectively, specifically:

- Demonstrate what works and show the scale and variety of pools worldwide—as demonstrated in this report;
- Develop models and accumulate, enrich and share data;
- Study, publish and learn from past events, eg, CCRS case studies;
- Understand the complexity of government, decision-making and different terminology and vocabulary;
- See Public-Private Practice Groups as a segment or industry vertical in their own right. All the brokers we spoke to do this but with a couple of notable exceptions, this business falls to underwriters as part of an overall portfolio;
- Similar to the above: if we organise around the segment we need to back it up with resource;
- Engage with regulators to help them understand the role insurance can play in closing the insurance gap including addressing flood and earthquake prone assets on the balance sheets of financial institutions; and
- Be patient.

*"The gap between total loss and insured loss needs to close and the only entities capable of making a meaningful difference are governments and bodies such as the World Bank."*

## Thinking ahead

The huge risks we underwrite as an industry don't respect the way we organise ourselves and whether we assume risk as insurance or reinsurance. The (re)insurance industry likes to silo itself into segments which suits first-level thinking in terms of how to organise ourselves, but second-level thinking involves seeing "risk as risk as risk" and bringing to bear the full might of the industry to address these enormous risks.

A good example of such second-level thinking comes from Richard Foster, managing director, Guy Carpenter in Seattle working closely with Eric Kolstad, managing director, Marsh San Francisco, who are accessing insurance and reinsurance and capital market capacity with coverage placed on both an indemnity and a parametric basis for their joint clients.

Another good example is Greg Case at AON, who recently retired AON Benfield and AON Risk Services as brands in order to "increase the rate of innovation across the firm and make it easier for colleagues to work together to bring the best of AON to clients".

One of the other conundrums faced by pools themselves is the low take-up rate by policyholders exposed to these risks. Build it and they don't necessarily come. The role of banks is seen as a key issue with loans secured on uninsured assets particularly for earthquake and flood. One other issue highlighted is the need for education on coverage and incentives for agents and insurers to sell policies.

It's clear the private market only goes so far in providing the necessary cover. The gap between total loss and insured loss needs to close and the entities capable of making a meaningful difference are governments and bodies such as the World Bank as well as effective public-private partnerships such as the Insurance Development Forum, of which AXA XL is a founding member.

Similar to the (re)insurance industry, events are opportunities for governments to shine. Pre-event planning including loss mitigation and catastrophe action planning together with comprehensive financing secured in advance and distributed quickly is a good way to do just that.

We are grateful to all the contributors involved in this report. It was an ambitious project but the level of collaboration from our underwriters, brokers and cedants was exceptional. We hope you enjoy reading it and if you have any comments or observations please do not hesitate to contact me or any of my colleagues. ■

# What makes a pool successful?

There are many factors to be considered during the formation and maintenance of a reinsurance pool to ensure it achieves its objectives, says Jonathan Gale, chief executive, Bermuda Reinsurance and managing director at AXA XL.

### Ability to attract and retain top insurance talent

This really speaks for itself and all the contributors from the pools to this report are experts with a strong sense of mission. To secure this type of talent, they need the autonomy to operate coupled with the confidence that the political process will not interfere with the mandate from the enabling legislation. Low frequency, high severity, single peril and single geography risks can build up retained earnings quickly and look profitable just by virtue of nothing happening in the catastrophe market. It is important to build up the retained earnings or buffer and allow the pool to function the way it was intended under direction of the pools executive and not allow short term political considerations to deviate away from the overall mission.

### Financial viability

A key test for the pool is that it will perform as expected after an event, i.e., that it will have the ability to pay the claims and help policyholders to get back on their feet. How does a pool do that?

- Charge an actuarially sound rate—almost all of our contributors highlighted the need to charge an accurate, risk reflective rate. The California Earthquake Authority (CEA) noted the benefit of this actually being included in their enabling legislation.
- Ensure access to multiple sources of funds pre-loss—premiums, retained earnings, contingent debt, traditional (re)insurance, derivatives and cat bonds. Post-loss premium surcharges are another form of potential funding cited, but involve assessing policyholders immediately after an event when rates are likely to have risen and also there may be a displacement of population, depending on the severity (See Cambridge Centre for Risk Studies at the University of Cambridge Judge Business School (CCRS) Katrina case study).
- Contingent debt i.e. debt financing secured in advance of an event is cited as a useful method of funding a catastrophe. However it is only useful to a point - 1) it has to be paid back and 2) the pool becomes very vulnerable to a second event. Adequate (re)insurance cover purchased in advance has certainty of cost and recovery and if required can include reinstatement or an option for renewal. There are more than enough risk transfer products and capital available currently to obviate the need for contingent debt.
- Invest in data collection and modelling—developing a robust framework for making and explaining the pool's decisions to governments and policyholders around the need for insurance and action in terms of built-in resiliency and preparedness. It's also important to build data to develop risk reflective rating as noted below.
- Spread of risk—another consistent theme is the need to achieve geographic diversification of risk within the pool. Ensuring adequate, risk-reflective rates and securing informed distribution by educating and training agents and underwriters will improve the quality of the risk pool and increase demand for its offerings.

*"The need to provide continuous coverage post-event to both affected and non-affected policyholders to get commerce back up and running needs to be thought through"*

- Financial backstop from the government—having the government itself act as a reinsurer of last resort for very extreme events and allowing the pool to focus on loss up to a pre-defined level provides for continuity of coverage post-loss. By their nature, pools are established to cover what the private market doesn't cover sufficiently and will have pre-arranged finance to cover up to a point: a $250 billion earthquake, flood or windstorm, for example, would prove unmanageable.
- The need to provide continuous coverage post-event to both affected and non-affected policyholders to get commerce back up and running needs to be thought through; the government agreeing to step in at a specified level would ensure stability.

## Collaboration with the private market

- Use the operating capability of local insurance companies to the greatest extent possible. This includes policy issuance, distribution and, most importantly, claims handling capabilities. For the most part, pools are established with a single peril in mind, which is usually high frequency and low severity in nature.

Utilising local insurance company claims staff allows for on demand staffing and also effective claims handling immediately post-event without the need to hire adjusters. Where the pool is primary to the private markets' excess position it allows seamless reserving and claims handling for policyholders.

Despite the above, it's not essential, as proved by the Massachusetts Property Insurance Association (MPIUA). Based in Boston and formed in 1968, it employs circa 150 staff with seasoned executives running day-to-day operations. Its mission is 1) to make basic property insurance more readily available to eligible applicants; and 2) to mutualise profits and losses among Massachusetts insurers.

MPIUA is ready to take on whatever the Commonwealth asks it to cover, ie, not just a single peril. It leverages local insurance executive expertise together with academia, enabling a more flexible approach to policy development and rating. Having the infrastructure in place also avoids the need to go through the pain of formation, but the pool may go a long time without being called upon and this could be expensive. The MPIUA is one of the oldest pools and is very successful in providing a stable market in a catastrophe-exposed state.

- Education and training of agents and underwriters—one consistent point with respects to low take-up rate was the lack of understanding of product at the insurer and agent level. Training agents and underwriters will increase sales and risk spread.
- Develop risk management materials—similar to increasing product knowledge above, push best practice for avoiding and mitigating loss through the agents and insurers.
- Don't compete with the private market—the purpose of the pool is to complement the existing private market. Closing the protection gap means the pool should be additive to the existing provision. Julian Enoizi from Pool Re prefers the expression "Protection Gap Entity" to pool to get across the overall mission.
- Push deductibles to policyholders and, if a reinsurer, push larger retentions to ceding companies. The more risk that is pushed to others will allow for the pools to be positioned for the most extreme events, avoiding attrition and ensuring increased retained earnings for the losses that really matter. Also, by ensuring skin in the game, policyholders are incentivised to make property more resilient, while ceding companies can push risk through existing treaties or retain manageable amounts up to their risk appetite.
- Transfer a risk to the private market leveraging the most appropriate mechanism available—traditional reinsurance, capital markets, cat bonds, etc; many large pools have shared risk successfully with the private market and this helps diversify risks and build resilience.

*"Utilising local insurance company claims staff allows for on demand staffing and also effective claims handling immediately post-event."*

## Collaboration with the government

There needs to be buy-in and alignment across the different stakeholders—governments, regulators, public (policyholders) and the private market.

- Make the case with models and data—"factfulness". A consistent theme from our broker contributors and a positive changing dynamic in terms of consideration at governmental level is the understanding of and receptiveness to models. Climate change and the increased frequency of extreme events are, unfortunately, the driving force, but all arguments should be numerically and factually backed.
- Think about terminology—the insurance business likes jargon and acronyms, making it difficult for everyone to understand everything intuitively. Adapting language to be more familiar to government officials was an interesting point made by Rowan Douglas from Willis.
- Set the pool up correctly from the start—the enabling legislation (which may be rushed post-event) needs to be correct at the outset, including provisions for adequate rates, backstops for extreme events, rules of engagement regarding retained earnings and premium rates.
- Establish format, process and reporting cadence—personnel changes in government are more frequent than in the private sector so pools need to establish working patterns that transcend terms.
- "Build back better" initiatives—it's not just about insurance proceeds post-event. Pools should work with the government to establish more effective building codes and planning regulations, eg, stop building in flood plains. In addition, through effective risk management and risk mitigation measures, loss can be avoided in the first place; if a loss occurs, the replacement of vulnerable housing should be to a better standard. Pools should work with reinsurers to consider ways to incorporate "build back better" provisions in treaties.
- Catastrophe action plans—similar to the above, having a plan for dealing with the catastrophe in advance of its happening—outside the immediate benefits of large sums of money being available quickly. The CCRS studies (see Case Study 1 and Case Study 2). show the importance of a joined up approach from central and local governments. Get it right and the community should actually benefit after a disaster, budget it wrong and the region or city may never recover.

## Being future-focused

- Staying relevant—most pools have a single peril and geographical focus. Perils evolve—for example, terrorism has evolved from the large-scale attacks seen in 2001 to more frequent events involving vehicles driven into crowds or mass shootings. Esoteric-type risks are also becoming more prevalent, such as cyber terrorism or the Novichok poisonings in Salisbury, UK.

  Pool Re, in particular, sees the need to evolve its offering and is now using what Julian Enoizi refers to as Pool Re's "ecosystem" to distribute risk on behalf of a leading specialty insurer in the UK. The government benefits from fees and policyholders and insurers benefit from evolving coverage outside of the pool's remit.
- Continuous capacity—noting comments about ultimate backstop it also makes sense to secure similar capacity for at least the following year. One of our longstanding pools pays an option premium every year securing at least the same amount of capacity at a pre-agreed price for the following year.

On the basis that rates go down more years than they go up, clients can be reluctant to commit to multi-year contracts but the value of pre-agreed capacity before a loss probably outweighs an option cost or slightly elevated pricing any one year. ■

# Build to withstand the biggest shocks

The California Earthquake Authority, formed in the aftermath of the 1994 Northridge earthquake, is ready for the ultimate test, says CEA chief financial officer Tim Richison.

A successful risk transfer government pool should have a viable product, viable pricing and a viable risk transfer programme; it should also define its success by its ability to provide coverage and pay claims.

That is the view of Tim Richison, chief financial officer of the California Earthquake Authority (CEA). "They must also have an economically accurate premium charged, without any subsidy, and a good financial backstop. Pools are always defined by 'the outcome'," Richison says. "CEA is not a typical government pool but more a public-private partnership.

"In addition, they should be able to take as many consumers in as possible, and offer a broad coverage level at a price that is affordable for people."

Richison agrees this would be the litmus test for the pool. He says there will be unanswered questions, including the CEA's ability to reload in the aftermath of a very big loss. This, he says, is why a

*"We have looked at the most efficient way to handle claims; we don't want to have two different groups competing on claims for the same policy. "*

government backstop sitting behind such initiatives would help. CEA does not do this, instead it buys all of its protection from the reinsurance or insurance-linked securities (ILS) markets.

"Efficient pricing and an efficient product for consumers is really possible only with some kind of a backstop for a cataclysmic event, so a pool can handle the day-to-day events," he says. He gives the example of the New Zealand earthquake fund, which was able to reload after big losses with similar levels of capacity because of its government backstop.

Richison believes that if CEA were hit by a very big event—in the region of a $250 billion statewide economic loss—the CEA would not be able to reload with the same capacity. "It is very difficult without a backstop," he says.

The CEA faces other challenges. It is limited by legislation in terms of how it can finance its activity, something Richison believes is restrictive and can cause difficulty.

"The organisation has to be able to manage its finances as flexibly as possible." he says.

This is important because he believes the CEA's biggest challenge will be refinancing and kickstarting the programme again post event. This is why the CEA has also been lobbying for a formal governmental-type backstop to be put in place.

The CEA doesn't have in-house claims adjustors or claims staff due to the infrequency of the claims. Instead, it relies on insurance companies operating in the state of California (referred to as participating insurers) to adjust claims.

"Having this process allows us to have access to several thousand claims adjusters. This prevents situations where the CEA is competing against the insurance industry to settle claims. For example, Florida didn't have adjusters in place so they were competing against the insurance industry," he says.

"We have looked at the most efficient way to handle claims; we don't want to have two different groups competing on claims for the same policy. But the claims process of managing claims needs to evolve in partnership with the insurance industry."

Given the success of the CEA, Richison says, valuable lessons can be taken on by other countries considering something similar. Such pools can be very beneficial especially where they increase insurance penetration and increase pools in developing countries.

## Best practices

Certain best practice criteria should be followed.

"Pools can provide a valuable product to the customer and give choice to the consumer," Richison says. "It is also important to consider how the product is distributed and that the agents understand the product and the pricing from the start.

"We have around 19,000 agents that sell for us. Consumers listen to them but agents need to understand the policy, what it does and how it is priced."

He also notes that getting pools off the ground in the first place can be hard: sourcing the initial capital to start up before a single policy has been sold.

One of the biggest hurdles of all is changing the perceptions of the public around risk transfer. Although he advocates for governments putting a backstop in place, Richison believes the government should not be on the front line for such claims—especially when the reinsurance and ILS markets can also be used to support pools.

## About the CEA

The California Earthquake Authority (CEA) is a not-for-profit, publicly managed, privately funded entity.

Its roots can be traced to the 1994 magnitude 6.7 earthquake known as the Northridge earthquake—which rocked California's San Fernando Valley, 20 miles north west of downtown Los Angeles—on a fault no-one knew existed.

The Northridge earthquake caused an estimated $20 billion in residential damages alone—and only half of that was covered by insurance.

After the dust settled, the Northridge earthquake shook the foundations of the residential insurance industry, which had greatly underestimated the potentially huge costs associated with damage from even a moderate earthquake. As a result of that earthquake and California's requirement that homeowners be offered earthquake insurance along with their homeowners' coverage, many residential property insurers started to withdraw from the market.

In 1996, the California Legislature created the CEA. Residential property insurers could offer their own earthquake insurance or become a CEA participating insurance company.

Insurers representing about a 76 percent share of California's residential property insurance market offer CEA earthquake policies. By selling CEA policies exclusively through these participating insurance companies, the CEA has become one of the largest providers of residential earthquake insurance in the world.

*"There needs to be a cultural change away from governments stepping in all the time."*

"There needs to be a cultural change away from people assuming that governments will always step in to indemnify," he says. "If people think they will always receive such protection by governments, then that needs to change. The goal should be to educate them on a different approach to risk management."

In terms of the way the CEA manages risk, Richison advocates using a wide spread of reinsurers and other risk transfer options. He believes that partnerships are essential as the knowledge in the private sector can be used to refine programmes and items such as the terms and conditions of contracts. CEA transfers some $8 billion of risk into the private markets.

Good partners can also help inform on pricing, ensuring rates and limits are adequate and fair to all parties. In California, the Insurance Commissioner signs off on what rates can be charged on personal lines insurance and these have changed with breakthroughs in risk modelling and science, Richison says.

He also notes that rates must be correct or they can become a political issue in some states and countries—not a healthy dynamic. With respect to the CEA, California law requires that the rates charged for earthquake insurance must be actuarially sound.

Another aspect to this is risk management: in the case of the CEA this often means lobbying for better building codes to retrofit older homes and constantly learning more about the way in which the land can respond to a big earthquake. For instance, Richison notes, heavy rain makes the land more unstable as does a lack of vegetation. These are things that can be managed in advance of an earthquake and potentially reduce the damage.

"We are doing research that will be reflected, hopefully, in the 2020 models," Richison says.

"Some make it into the coverage of policies, for example we offer options for increased building code upgrade costs. Another example of a loss driver is chimneys falling down; policy provisions say that if a chimney needs to be replaced it will not pay for a masonry chimney but offer a more earthquake-resistant option."

Richison predicts that there will be more pools formed globally in the next 10 years. He believes there will be a shift away from a reliance on governments but also warns that if pools are not formed properly and potentially fail that could stymie further developments. ■

## What makes a successful earthquake pool?

- Sufficient retained earnings, adequate reinsurance protection, and access to capital are key to ensuring post loss continuity.
- A well thought-out catastrophe response is vital to ensure loss adjustment expense and indemnity is kept down.
- Measures in place that ensure they are a true market of last resort, and are not competing with the private market.
- Adequate rate for the risk being taken, and ample insurance-to-value initiatives in place.

### How might more come into being?

To increase the number of pools worldwide, coordinated effort which involves representatives from these vulnerable populations, the private sector, and governmental/political support is needed.

Governmental involvement should assist with the barriers that may stand in the way of implementation, as well as providing potential subsidies and encouragement/enticement for the private sector's involvement.

### How might they close the insurance gap?

The following factors would need to be considered to develop a custom approach for each country to bridge the gap:

1) What is the state of the country/region's economy?
2) Is there significant infrastructure?
3) Does it have an active private insurance market?
4) Is there potential for diversification through partnerships with other non-correlated countries/perils?
5) Is technology prevalent among the vulnerable population?

### Characteristics of pools: earthquake

- Success of the pool in an emerging market is dependent on the market awareness of the risk which will drive the take-up rate, good view of the pricing structure because of their partnerships with modellers and academia.
- Modelling agencies play a key role in helping the pool manage limits and ensure adequate rates. The pools are also these days using universities to understand some of the risks better
- Closing the protection gap depends on risk awareness by the populace.
- The trend driven by the NGOs such as Oxfam, who are the leaders in promoting risk awareness and how (re)insurance, can be used to reduce the risk on the government balance sheets. NGOs play a key role in distribution of these products.

# A long-term commitment

## AXA XL has made a long-term commitment to working with the California Earthquake Authority, says Megan Kempe, underwriting director, Emerging Markets, Reinsurance at AXA XL in Bermuda.

For Megan Kempe, who has underwritten the California Earthquake Authority's (CEA) account with AXA XL since 2010, one of the CEA's great strengths is its business-like approach.

"It is highly analytical of the financial strength of its partners, so it has gone through a lot of due diligence," Kempe says.

"We work through a lot of financial information with them on a regular basis and they monitor how much limit they have placed with various counterparties.

"They realise that when an event as big as the limits they are buying hits California, it will definitely be a major event for the entire industry, so they have to be careful in choosing their counterparties. While they are being very prudent to try and get the best price, they are also very cognisant of the credit risk."

While the CEA is yet to be tested, Kempe is confident that its ability to pay claims is adequately backed by various sources of capital, not solely from the reinsurance market.

"They have some risk-paying ability from assessing their participating insurers, as well as from the traditional and collateralised reinsurance markets, so they have ensured that their sources of capital are robust."

In Kempe's view, a challenge that comes with government involvement in insurance perils is that individuals have to have some skin in the game; otherwise, if and when a catastrophe does strike, the government will simply be bailing them out, which is unsustainable in the long run.

"Individuals have to take some personal responsibility. I believe it is the role of government to assist in providing an affordable self-sustaining product rather than to just come in and rescue people," she says.

"The ability for governments to provide assistance is not infinite as such—helping to provide a viable risk transfer mechanism that individuals can access to protect themselves is a far more sustainable solution."

While Kempe sees the CEA's role as vital in making it possible to cover those at greatest risk, driving uptake and helping to achieve more affordable rates across the board, she also believes that every pool should have a limited lifespan.

"A pool like the CEA works very well for risks the private market isn't willing to take at a price that is acceptable to the market," she says.

"Government pools are great for risks the private market has not got a handle on yet, but eventually the risks need to transition back into the private domain."

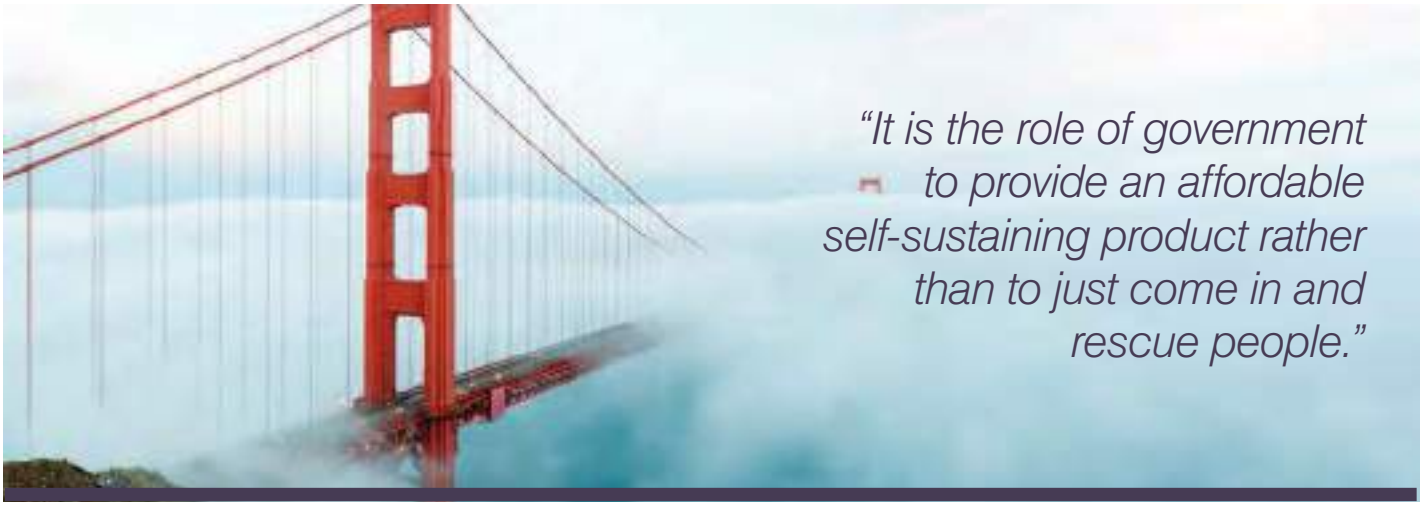
### A matter of choice

In the meantime, the CEA transfers its risk by deciding the rate it is willing to pay and letting reinsurers choose whether the price being offered is acceptable for the risk being transferred. For AXA XL, the answer remains 'yes'.

"We have traded with the CEA since it started—and while the limit we provide has fluctuated with how we view the adequacy of the pricing, the CEA is committed to maintaining this relationship as there is uncertainty around what types of capital that will be available following an event." says Kempe.

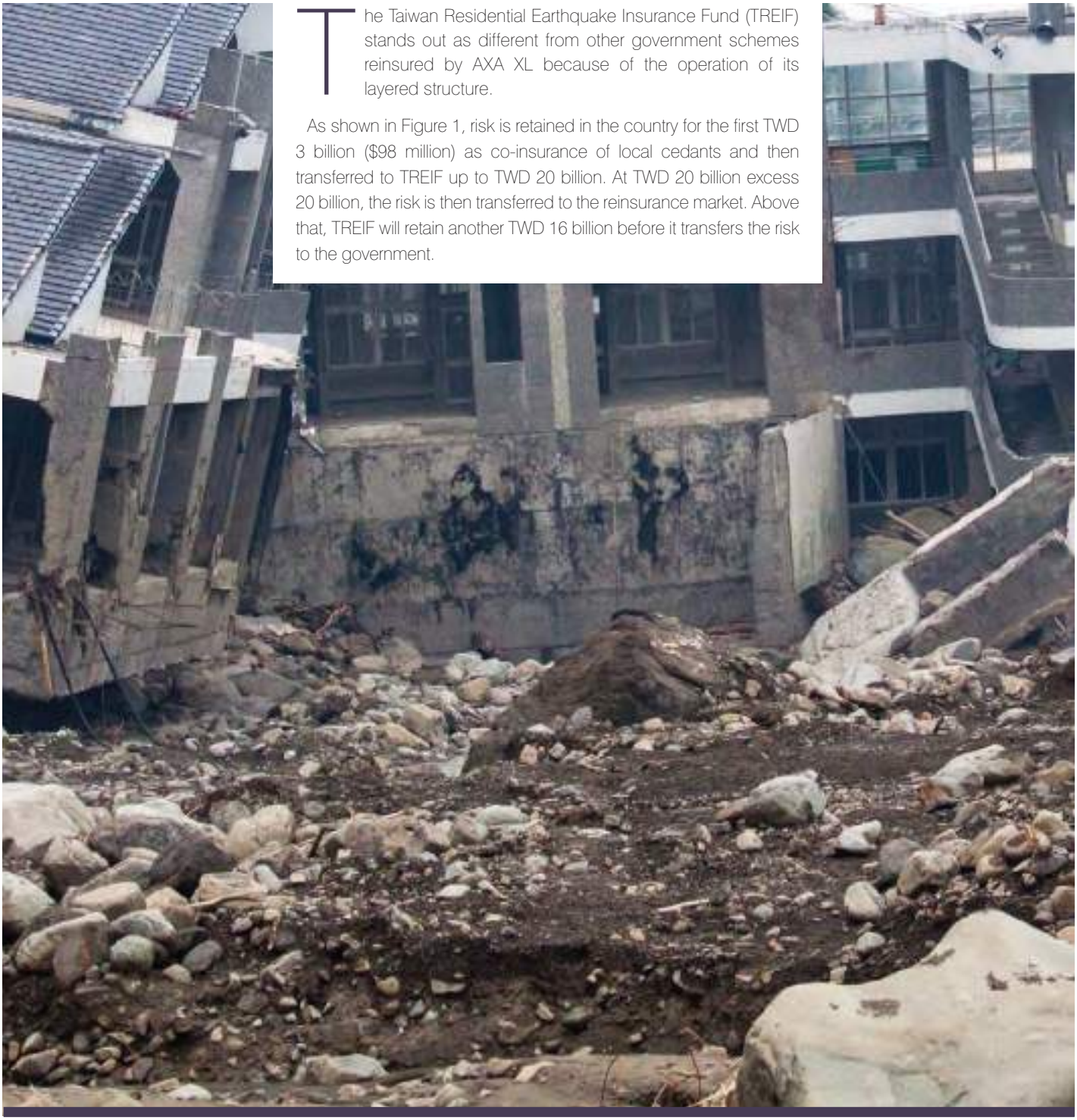
"We made a conscious decision that we will be continually supporting the CEA; there are very few ways to access the personal lines earthquake market in California. The CEA has the lion's share of it, so if you want that exposure, you have to do it through them.

"We meet with them regularly and they know we are committed to this for the long term, in a mutually beneficial relationship." ■



# A unique approach to risk

The unique structure of the Taiwan Residential Earthquake Insurance Fund sets it apart from other pools, says Ann Chua, head of Asia Pacific Reinsurance at AXA XL.



The Taiwan Residential Earthquake Insurance Fund (TREIF) stands out as different from other government schemes reinsured by AXA XL because of the operation of its layered structure.

As shown in Figure 1, risk is retained in the country for the first TWD 3 billion ($98 million) as co-insurance of local cedants and then transferred to TREIF up to TWD 20 billion. At TWD 20 billion excess 20 billion, the risk is then transferred to the reinsurance market. Above that, TREIF will retain another TWD 16 billion before it transfers the risk to the government.

*"There has to be government involvement in the whole thing as they are the insurer of last resort."*

Ann Chua believes that for a pool to be successful, it is important to achieve takeup rates that are high enough, and to achieve this it's important to make sure rates are affordable.

"The risk should be affordable to all the policyholders," she says. "The government can come in and subsidise it, and reinsurers come in to play their part. Also, the pool can play an important role in risk management as an advisor to the government such that the underlying risks are better managed or hedged."

Chua sees this type of partnership with third parties—especially with reinsurers—as vital. "When a cat event happens, if there are no reinsurers, then the one who pays for the claims is the government and the taxpayers," she says.

"Reinsurers have the ability to spread the risk to a much wider geography. They can offer more competitive rates, and make the policy premium more affordable."

Another important part of the jigsaw is the independent cat modelling firms who can help with deciding a suitable limit and rate to make sure the pool is sustainable in the long run, she adds.

## New markets

Looking to the future, Chua sees pools as offering great potential for expanding into new markets.

"While some are worrying about all the insurtech and disruption coming into the industry, there are so many things that are not insured yet. We should focus on that—and the pools allow more access to underserved segments," she says.

"There has to be government involvement in the whole thing as they are the insurer of last resort."

Chua sees product design evolving in this space, with a trend towards utilising more parametric, which would make it no longer necessary to send loss adjustors or claims surveyors to the locations where the cat losses are happening.

She also predicts that technology will play a growing role in the whole process, especially in ensuring that when cat losses happen, people receive their insurance payouts quickly and efficiently so that they are able to get on with their lives.

"The main challenge in this space is government's view of the pools," she says. "The nature of cat events happening is infrequent and therefore in most years, it will be a good year and the pool should be profitable and thus arises the temptation to self-retain this 'profitable' premium within the country, without realising it comes with the risk itself.

**Figure 1:** The layered structure of the Taiwan Residential Earthquake Insurance Fund


"By keeping most of the premium in the country, you are essentially self-insuring and cannot get the benefit of more competitive rates by spreading the risk globally."

Chua predicts that reinsurers will, however, keep working to find ways to reach underserved segments, spreading risks in order to achieve better pricing and greater protection for those who are most vulnerable to losses resulting from natural catastrophes.

"There is still a lot of untapped potential and most reinsurers are trying to find ways to close the gap between the economic and insurance," she says. ■

# Challenges and opportunities

AXA XL's long-standing relationship with the Caribbean Catastrophe Risk Insurance Facility typifies its flexible, adaptive approach to reinsuring pools, says Lourdes Robaina, assistant director of AXA XL's Latin America Reinsurance business.

Providing reinsurance for the Caribbean Catastrophe Risk Insurance Facility (CCRIF) is a way for AXA XL to enter a space it does not traditionally operate in, according to Lourdes Robaina, assistant director of AXA XL's Latin America Reinsurance business, based in Miami, Florida.

"It's also a way to help the governments to re-establish themselves after a storm, so it's a way for us to have a positive influence in the territories where we are working," she says.

Robaina believes that for a pool to be successful, it has to offer clear, tangible benefits to the countries in which it operates.

"The countries need to be able to see these benefits; they have to see they are getting remuneration for what they are buying. It's a very political product because the countries have to count on the fiscal budget for it and it has to go through government approvals—and if they don't see the benefit, they start opting out."

Part of the success of a pool depends upon adequate risk transfer, and this is something the CCRIF has taken seriously from the outset.

"Since the beginning they knew they needed risk partners to protect the donor pool they had, in order to be sustainable in the long term," says Robaina.

"They are operating in a very catastrophe-prone environment, with a high frequency of hurricanes and other events coming through the region—so they didn't want to be there for only a couple of years; they wanted to be there in the long term and to be able to expand into other territories and products.

"All of this means it is important for them to protect the base they have, and in order to protect that they need reinsurance."

AXA XL decides its limits and rates by using different types of vendor modelling to try to predict what the price should be for the buyers, and what the average loss cost would be for AXA XL's programme.

*"A recent incentive included an aggregate deductible cover which provides limited cover for losses that are not significant enough to trigger a payout under the policy."*

"It's very important for us that everything has gone through a very thorough and vetted approach," says Robaina.

"CCRIF has always been highly transparent and put us in front of the people who have created the models. We have gone back to them to get a view of how that has played out historically, so we can validate the price and limit against events we have seen in the region."

## More pools

Robaina believes the number of pools should be increased worldwide, but that the challenge is to try to show other countries the value and benefits of these pools.

"One important aspect of this is having local partners within the countries who know the local nuances, and who can be involved and advocate for them," she says.

Another challenge is competition from other products that are available to governments, such as post event loans.

"These may be attractive to some governments because they don't need to put any money up front," she says.

AXA XL's approach to reinsuring pools has always been flexible, always being open to evaluating new ways to make the pool attractive to buyers.

"For example, a recent incentive included an aggregate deductible cover which provides limited cover for losses that are not significant enough to trigger a payout under the policy," says Robaina.

"We've also always opened ourselves to be flexible in terms of the margins we require in order for the pool to be flexible and to keep buyers interested so they stay in."

Looking to the future, Robaina says the company will continue to develop in this space.

"It's very attractive to us; we have a team that is looking into it now in other parts of the world, to see how we can enter this space, and to explore which other products we provide." ■

# Effective risk transfer

## Katie Shaw, property treaty reinsurance underwriter, outlines how the Massachusetts Property Insurance Underwriting Association approaches reinsurance through its relationship with AXA XL.

AXA XL has supported the Massachusetts Property Insurance Underwriting Association (MPIUA) for 12 years—ever since it started buying reinsurance. The MPIUA was created to address a need for coverage that the private market could not provide, but it is not a typical wind pool.

"Since they began buying reinsurance, they have been a consistent buyer in the traditional market," says Katie Shaw, a property treaty reinsurance underwriter for AXA XL in Bermuda, who works with the MPIUA.

"The MPIUA is run like a voluntary company, with long-term management, a consistent board over time and full-time staff—so they value relationships and the traditional reinsurance product.

"They have bought cat bonds in the past and maintained that as part of their buying strategy, but in this most recent renewal, they replaced their cat bonds with reinsurance coverage in the traditional market—so they have definitely shown they are committed to the traditional market," Shaw says.

The reason for the shift away from cat bonds was that over time, pricing in the reinsurance market has gone down.

"It is now at a point where the price being paid in the traditional market versus the cat bond market is similar, but the product they are getting from the traditional market is more comprehensive and an easier product to deal with—you know exactly how it will respond after a loss," she says.

Shaw believes that a pool's success depends on achieving sufficient earnings, and having enough reinsurance protection and enough capital to ensure the pool can continue post-event.

"It also needs a well thought-out catastrophe response, and needs to ensure that it is maintaining adequate rate for the risk being taken, while also making sure it remains a market of last resort, not one that is competing with the private market," she says.

Shaw notes that where pools cover risks that the private market is not able, or does not want, to cover, it can be difficult to manage their

*"In this most recent renewal, they replaced their cat bonds with reinsurance coverage in the traditional market."*

exposure. In certain states, there are caps on how much business the private market can shed—which is how they ensure the pool is not flooded by additional exposure.

## Great potential

Shaw believes that done properly, there is great potential for the formation of more pools worldwide.

"It's not an easy task because you need to have buy-in from everybody in order to do it. You need buy-in from the representatives of the vulnerable populations, and political and private sector support are vital."

She adds that consideration needs to be given to the type of help that will be provided to the vulnerable populations: for example, in a developed country the focus may be on rebuilding houses, while in some underdeveloped countries—where housing is much more basic—the most significant issue might be restoring the infrastructure after an event so that people can get to work.

"All this would need to be considered in order to help these pockets of vulnerable populations," she says.

To ensure strong performance from pools in the future, Shaw believes it is necessary to move with the times, keeping abreast of technical developments that can enable them to deliver the support they promise.

"If these pools were formed in the 1990s, for example, they have often not been investing money into technology and adequate computer systems," she says.

"Over time this creates issues, for example, around tracking their data and continuing to function as needed. At AXA XL, we seek out the newest technology and systems to stay ahead of the curve and provide the best solutions for our clients."

"If pools cannot invest similarly, we offer our services to them as part of our value proposition, with open arms," she concludes. ■

# A powerful partnership

## Wade Stier, vice president and US property treaty reinsurance underwriter based in AXA XL's Bermuda office, explains how a strong partnership with reinsurers helps keep pools and similar schemes afloat.

AXA XL's relationship with the Florida Hurricane Catastrophe Fund (FHCF) began in 2016 when the fund started buying reinsurance.

"They're a newer buyer of reinsurance and hopefully will continue to be for the foreseeable future. Insurance companies that write certain lines of business in Florida are required to participate in the fund," Wade Stier, vice president and US property treaty reinsurance underwriter based in AXA XL's Bermuda office, explains.

"It's not a wind pool, although they do provide a similar function as a wind pool since the FHCF's existence directly impacts homeowners' insurance availability and affordability in the state of Florida," he says.

"The aim of schemes such as this, ie, funds/pools, is to assess the catastrophe market in the present environment as well as following a loss. If the market mechanism is not well enough capitalised to survive post-loss, it will actually serve the opposite purpose to that intended, potentially being the cause of turmoil and massive rate hikes.

"Ultimately, by the FHCF providing a set amount of affordable reinsurance limit to Florida insurers via the fund's capital, pre-event bonds, prospective post-event bonds, and reinsurance, the Florida insurers are able to pass on these savings to insureds by offering more affordable rates."

To ensure its resilience, the FHCF relies on a few different forms of capital: funds accumulated every year from participating insurance companies; pre and post-event bonds; and reinsurance.

"The smallest part of their capital base is from reinsurance so there is an opportunity to grow this source," says Stier.

"They are new to this market compared to other US market mechanisms, but they saw an opportunity to use some capital to buy reinsurance due to the excess reinsurance capacity in the market."

### Support for pools

Stier has seen ample evidence of the power of reinsurance to support pools, notably the National Flood Insurance Program (NFIP).

"Our goal and the goal of the greater reinsurance market it to prove to the NFIP powers that be, the more they access the reinsurance/alternative capital opportunity available in the current environment, the better the programme's impact will be on the long-term health and the functionality of the voluntary and involuntary flood markets. We see this as real opportunity."

Stier sees potential for the creation of more pools, but the key is that

*"Because of this demand, we may see a lot less need for pools, and this could lead to consolidation in wind pools, with multiple wind pools joining together."*

all stakeholders must buy into a pool, understanding the need for it and its benefits.

"One of the main reasons for the quick success in the creation of US coastal market mechanisms is access to data," he says.

"You have to have buy-in at the state level and from the insurance companies; you have to have people providing the data needed to transfer risk. Without data it's going to be difficult for banks, reinsurers and third parties to support new ventures and pools. The better the data, the more easily pools will be created."

## Future outlook

Looking to the future for US-domiciled pools, Stier sees a 'business-as-usual' picture, with the usual competitive forces at play.

"In the short-term, wind pools will continue to function with a business-as-usual mentality. Eventually, they may find they are not needed. Catastrophe risk is attractive now to capital markets, especially coastal catastrophe risk which arguably comes with higher risk:reward metrics.

"Because of this demand, we may see a lot less need for pools, and this could lead to consolidation in wind pools, with multiple wind pools joining together, say a Southeast or Mid-Atlantic wind pool, or just moving the remaining coastal exposure into a state's Fair Access to Insurance Requirements (FAIR) plan," he says.

"In a perfect market, reinsurance allows wind pool rates to be higher than the private market's, so the private market would absorb that business and make the pool obsolete in the long-term," he adds.

"Coverage would entirely be provided by private market insurance companies and there would be no need for wind pools. We're getting there, and third party capital is causing enough competition that rates are getting closer to levels that private markets will write."

AXA XL has no limitations on how much wind pool business it will write. It has its own risk transfer programmes and can grow or reduce its exposure in any pool. Its approach to schemes such as the FHCF is strongly relationship-driven.

"Wherever we can, we create a new partnership, and wherever we can, we provide leadership and support. We are the third largest catastrophe writer in the world from a broker-market perspective," Stier explains.

"It is something we will always find attractive. It's in our DNA, and our plan is to grow with these schemes as they grow their buying strategy, and hopefully to be looked at as a provider of innovative solutions and consistent support." ■

# Flood Re: ready to be tested

The success of a reinsurance pool relies on alignment of the interests of all stakeholders, as Adam Golding (left), Flood Re's chief finance officer, and Dermot Kehoe (right), Flood Re's transition director, explain.

Demand for reinsurance pools is on the rise due to the global increase in climate hazards. In the UK, where flood is the paramount issue, the government has worked with the insurance industry to develop Flood Re, a not-for-profit organisation that takes on the flood risk from home insurance policies bought by the public.

Founded in 2000, Flood Re will remain in place for another 23 years. It is designed to make flood cover affordable for those households at highest risk of flooding; to increase availability and choice of insurers for customers; to allow time for the government, local authorities, insurers and communities to become better prepared for flooding; and to create a level playing field for new entrants and existing insurers in the UK home insurance market.

The success of pools such as Flood Re depends upon support from the industry, the government and the buyers of home insurance. Adam Golding, Flood Re's CFO, explains: "The challenge in this space is around aligning the interests of the stakeholders in order to get a political and economic agreement on what can be done and how a pool can be created. This is especially so if there is going to be a transfer of risks between public and private sectors."

## Stakeholder alignment

Flood Re is funded by the premiums it charges insurers for the risks it takes on, and by an annual levy that is paid by all insurers authorised to write home insurance in the UK. This is set at a total of £180 million per year for the first five years of Flood Re's operations. The total amount is divided between insurers and charged based on each insurer's market share.

"Flood Re is essentially funded by home insurance payers who are paying for the perils, so you need to maintain consent for that, otherwise it doesn't work," says communications and transition director Dermot Kehoe. "That's why you need the state sector involved, because it has to be done through consent."

Golding agrees. "Ensuring the interests of the stakeholders align has meant very strong political and industry support," he says.

He expects that more pools will form in the UK and in developing markets, with the aim of closing the protection gap and helping the most vulnerable people. The success of these programmes will, to a large extent, rely on proper education of the public.

"You have to start by increasing the knowledge of the risk and the potential for loss, improving the evidence base and communicating that risk," Golding says.

*"There needs to be real economic and political agreement in order to ensure the scheme is sustainable in the long term."*

"You also have to decide on the best risk transfer mechanisms. In different countries, with different perils, the circumstances will be very different, so the innovation of new solutions is essential because it's very unlikely to find one model that fits all."

He adds that there is potential to learn from the different models that currently exist.

"We've also found that you need to get real clarity around the role of the public and the private sector: there needs to be real economic and political agreement in order to ensure the scheme is sustainable in the long term."

When making decisions about risk transfer, Flood Re closely examines how it can most efficiently aggregate the peril and place this on the global reinsurance market.

"We spend a lot of time fine-tuning our risk appetite and understanding that of our stakeholders," says Golding.

"Some of this is embedded in legislation, in terms of limits, and we are working to develop an optimal global programme that supports that appetite and those limits."

Flood Re's approach to risk is also guided by the growing amount of data available in the UK.

"We are constantly getting richer and more informed data and that will lead us to understand the peril and the pricing more, and improve our abilities to efficiently reinsure more," says Golding.

### The proof of the pudding

Ultimately, the success of the pool depends on whether it performs as it is expected to when required.

"Ensuring the interests of the government and those of the insurers remain aligned is important, and the limitations of both of them are a bit different," says Kehoe.

"We haven't been through a crisis yet—those are the events that will show up those differences."

Golding adds that performing as expected includes having an operating system that is fit for purpose and that responds when it needs to so that claims can be validated and paid efficiently.

"Success isn't just about having the financial measures and the political measures—it's about being able to operate and perform as expected," he says.

"Ultimately, you need that real desire from everyone around the process of designing and creating the pool for it to work and operate successfully." ■

## About Flood Re

Flood Re is a flood reinsurance scheme that helps homeowners in need of insurance in flood risk areas. A collaboration between insurers and the government, it is designed to make flood cover affordable for those households at highest risk of flooding; increase availability and choice of insurers for customers; allow time for the government, local authorities, insurers and communities to become better prepared for flooding; and create a 'level playing field' for new entrants and existing insurers in the UK home insurance market.

### Characteristics of pools: flood

- Need a good geographic spread of risk, coverage clarity (what is provided is specific and measurable) and appropriate pricing relative to the risk (while also meeting market terms).
- The challenge is harnessing data points and making them relevant to what the pool is ultimately trying to achieve. There is a plethora of data, which may create opportunities.
- Need to understand the demographics (geographically, politically, economic and otherwise) of insureds that need/want insurance. Do we understand the exposure?
- Ultimately, success is needed to pay these losses.
- Understanding culture needed to avoid moral hazard.

# Protecting the most vulnerable

## AXA XL's involvement with Flood Re makes business sense, but also helps close the protection gap, says Catherine Turner, head of international property treaty, London Reinsurance at AXA XL.

AXA XL's entrance into a relationship with Flood Re was different from the majority of their reinsurance contracts, in that Flood Re tendered their reinsurance protections, without knowing what their ultimate exposures would be.

"We ran the modelling based on their expectated portfolio, but we also did some extensive scenario testing to make sure we understood our potential exposures," says Catherine Turner.

"It then became a matter of putting forward what we felt was an appropriate price."

Three years after AXA XL's successful tender, the relationship is still going strong. The appeal of working with Flood Re was not solely financial.

"It's also the fact that it gives cover to those who are most vulnerable in their times of need. It closes the protection gap for those people who need the coverage but struggle to obtain it," says Turner.

She believes that a crucial ingredient in ensuring the success of a pool is the way it prepares to respond to a catastrophic event.

"When a large catastrophe happens, a successful pool will have reinsurance protection. "Three years ago Flood Re had a choice of reinsurance partner. We like to think that they chose us because of our stability and persistence of appetite post event," she says.

From Turner's point of view, pools are there for the peak catastrophes—the events that hit the news headlines. She believes there is a strong case for the creation of more pools worldwide, but not in every instance.

"The majority of pools are currently in developed countries. We should be speaking to governments in emerging markets to see

*"It closes the protection gap for those people who need the coverage but struggle to obtain it."*

if we could close that protection gap and sell a product that is meaningful for the most susceptible to loss and destruction," she says.

"The first step is identifying areas where there is a protection gap, making contact with the powers that be, discussing it and coming up with a strategic plan to bridge that gap."

In the future, Turner expects to see an increase in the number of pools in those countries where there is less insurance penetration. Encouraging their respective governments to sponsor them, rather than relying on the help of other governments around the world when a disaster occurs.

"It's about being proactive rather than relying on post-loss bailouts; opening people's eyes to the benefits, making them more resilient after an event."

## Reaching emerging markets

AXA XL is actively exploring ways protection can be brought into the emerging markets.

"We are being future-focused, working to see how we can bridge the protection gap," says Turner.

The attraction of the space is partly to do with creating genuine new business, she adds.

"We are not targeting competitors' business. It's about creating opportunities, and we are also doing something good. This is not like protecting the balance sheet of a major conglomerate—it's a way we can protect vulnerable people who can't afford or obtain coverage.

"It's this combination of new business and helping to close the protection gap that made us excited about Flood Re coming to the market for reinsurance protection." ■

# Spreading the terror protection load

Pool Re, the UK's terrorism reinsurance pool, aims to maximise involvement of the private market. CEO Julian Enoizi explains how it achieves this.

A significant portion of the (re)insurance industry is currently focused on artificial intelligence (AI) and insurtech, the effect of which is to make the provision of the current insurance portfolio more efficient, but not to broaden the types of risk that are covered.

A minority, however, are looking at the protection gap and public private partnership space, as a way not of nationalising risk but growing the amount of shareholder capital that can be attributed to difficult-to-insure risk.

Pool Re operates in this space, with the aim of promoting industry involvement. It was established in 1993 as a response to the market failure that was triggered by the bombing of the Baltic Exchange. The costs of the Provisional IRA's mainland bombing campaign in the 1990s led to reinsurers withdrawing cover for terrorism-related damage, with insurers compelled to follow suit.

Pool Re was founded by the insurance industry in cooperation with, and backed by funding from, Her Majesty's Treasury, to form a private sector solution to a public policy objective.

Since its foundation, Pool Re has provided effective protection for the UK economy and currently underwrites more than £2 trillion of exposure in commercial property to terrorism risk across the UK mainland. To date, Pool Re has paid out claims of more than £600 million at no cost to the UK taxpayer.

## Increased resilience

Julian Enoizi, chief executive of Pool Re, explains how he sees Pool Re's approach to terrorism risk.

"This risk has to be addressed through public-private partnership, which if designed and regulated properly, is a 'win-win' for both the government and commercial market. For the government, it closes a protection gap, protects the economy, creates resilience and monetizes their guarantee.

"Meanwhile the private insurance and reinsurance market can benefit from a stable opportunity for growth, innovation and untapped premium opportunities, rather than the boom and bust cycle you would see with cyclical market failure," he says.

For this reason, Enoizi prefers the term "protection gap entity" rather than "pool". Other countries such as China, Mexico and Brazil are now using the Pool Re model as an example of how to package these types of risk and involve the private market.

*"The principal challenge is the insurance industry itself and whether it is willing to apply itself to finding a way we can write more premium by developing new products in new areas of risk."*

"The principal challenge is the insurance industry itself and whether it is willing to apply itself to finding a way we can write more premium by developing new products in new areas of risk," he says.

The second challenge is the reticence of governments to embrace this approach, but he says more are beginning to realise that anything they can do to build a buffer between themselves and a loss is an advantage.

"It's an advantage to their own balance sheet, to the resilience of their country and to their economy if they can get their insurance and reinsurance industries writing more risk," he says.

"It's about demonstrating that a public policy objective, and profit for the industry, are not in conflict—in fact, as Pool Re shows, they can support and enable each other, which is why I call it a 'win-win'."

## Risk retention

Historically the government has retained the majority of the risk within a pool arrangement; this has led to a wariness of pools due to a perception that they are 'nationalising' risk and taking risk away from the market.

"The solution is to design an entity that will allow your market to thrive and will involve your direct insurers who will be able to diversify that risk to the international reinsurance market," says Enoizi.

The model that has been created at Pool Re, and which continues to evolve, makes sure the industry takes more of the retention than has been the case in other pool arrangements; this is a realistic retention, and with the reinsurance market fully engaged, the pool has the largest terror retro placement in the world, with otherwise prohibitive solvency requirements for all parties facilitated by the government's guarantee.

"The aim is to bring the private market back to play in this industry," he says. "In anticipation of approval of legislation currently passing through parliament, Pool Re is building a proposition to extend its cover to non-damage business interruption, and discussions are taking place with our members and key reinsurers including AXA XL, to structure cover appropriately.

"You then get the ILS and capital markets to play, and you have the retained surplus of the pool, built up through prudent pricing, prudent underwriting and prudent collection and management of money.

"What you've done in this scenario is pay the government for the guarantee it's giving you, but that guarantee is allowing those other parties to make a profit because they are going to deploy capital to underwrite and take risk, and they will assess and price the risk."

Enoizi says it is incumbent on the pool to carry out research and analysis and to provide the modelling; it is then up to the member insurers to retain as much of that risk as they choose.

"We are currently working with the industry on a private market solution for a new risk, which will use Pool Re primarily as a facilitation mechanism. Pool Re members will retain most of the risk through their retentions but then cede the rest to Pool Re, who will in turn purchase a working layer of retrocession from reinsurers such as AXA XL, thereby passing nearly all the exposure back to the private market. Once the legislation passes, our broker will enter into dialogue with key markets such as AXA XL.

"This is a concrete example of how Pool Re is using its position as an ecosystem not to nationalise risk but to create a new pool of premium that doesn't currently exist, which will go almost entirely to the private market and will not impact the government balance sheet at all. If it weren't for the government, the industry wouldn't have access to it."

Far from being a barrier to market normalisation, the pool in this sense enables a free market at insurance level, providing a growth opportunity it wouldn't otherwise have.

## Spreading the risk

One of the principles of the pool is that by spreading the risk—for example, with businesses across the UK taking out terrorism insurance—it is possible to reduce the unit cost of insurance in higher risk places such as central London to a point where it becomes affordable.

Gathering and analysing data from incidents such as the chemical attack in Salisbury (UK) in March 2018, and modelling scenarios such as truck bombs and dirty bombs, and using data on failed bomb plots or arrests for terrorism, all helps with modelling the risk, and Enoizi sees the provision of this data as part of Pool Re's role.

## About Pool Re

Pool Re was established in 1993 as a response to the market failure that was triggered by the bombing of the Baltic Exchange. Pool Re was founded by the insurance industry in cooperation with, and backed by funding from Her Majesty's Treasury, to form a private sector solution to a public policy objective. Since its foundation, Pool Re has provided effective protection for the UK economy and currently underwrites over £2 trillion of exposure in commercial property to terrorism risk across the UK mainland.

*"By spreading the risk—for example, with businesses across the UK taking out terrorism insurance—it is possible to reduce the unit cost of insurance in higher risk places."*

"We are working to create an ecosystem where we give members of Pool Re that data, then they will apply a price using their interpretation of it. I have a responsibility to help the market assume more and more of the risk as it understands it better, a risk which is nothing like the unknown quantity of 25 years ago.

"The more you reduce the pricing for people who don't think they have any terrorism exposure, the more they will decide to buy it, so you increase penetration in those places," Enoizi says.

Another aspect of Pool Re's role is to influence customer behaviour by giving premium discount to those who implement government-accredited security, and to provide the online tools they need to calculate what resilience and what protective security they can put in place, thereby creating more resilience to future attacks.

Enoizi says that in his view, "resilience is best achieved through an integrated ecosystem such as Pool Re which is designed at the outset to understand risk, measure and price it, and then optimise risk-sharing and be flexible in its ability to dynamically bridge protection gaps, balancing resilience, mitigation, profit and innovation".

### Maximising private market involvement

While a key aim of Pool Re is to maximise the participation of the private market, rather than shutting that market out, Enoizi acknowledges the challenge of this.

"That's a difficult thing to do because in the UK the private market is split between specialty players who have a much bigger appetite for esoteric perils like terrorism, and the commodity market, which has a very limited appetite for that, and is happy for a pool to take that headache away from them," he says.

"You have to maximise the distribution of the commodity market and maximise the ingenuity of the specialty market and wrap it into something that optimises the level of participation of all of those players, from the policyholder to the insurer to the reinsurer to the capital market, with the pool's own funds.

"You are creating an environment where each of them is holding the maximum amount of risk it can so that the government is left only with the societally catastrophic or tier one risk." Exploring what would be the world's first terror-related ILS is another example of how Pool Re is working to maximise global commercial capacity.

Enoizi adds that Pool Re is uniquely placed to work to normalise a market.

"You can only do that if you've got bright people working there. In the last two to three years we've introduced some major new projects, one being the first of the world's pools to offer some cover for cyber terror, and the other being non-damage business interruption.

"We've done that by industry consultation, working with the industry and figuring out what they want and what they won't swallow. You can only do that if you have an organisation, as opposed to just a piece of legislation." ■

## Characteristics of pools: terrorism

- Should fulfil the need of the consumer to have insurance coverage at a reasonable price and yet a high enough price to be commercially viable for the pool. Usually a pool is established because of the inability of the private market to offer coverage to certain risks.
- A pool needs large enough participation to deter only the worst risks just being pooled together and shipped out. This is why many pools only take risks from insurance companies on an all of nothing basis.
- The main challenge of pools is remaining relevant and to remain beneficial to both parties. Knowing when and if a risk can be ceded back into the private market is extremely important.
- Evolve coverage to remain relevant in an ever-changing risk environment, as many of the largest risks today were not issues for companies and people 25 years ago.
- The trend in terrorism today is smaller scale attacks against civilians and also cyber attacks.
- Balancing of not broadening coverage too quickly when there has not been loss but also to evolve coverage and remain relevant over time.
- To increase the number of pools the insurance/reinsurance industry as a whole needs to educate governments, world relief funds, and consumers about the benefits of pool coverage.
- The benefit of insurance is never truly seen until after a loss has happened but trying to setup a pool after a catastrophe when money is scarce is difficult.
- We as an industry need to be proactive about educating about the benefits of pools and showing in practice how these pools would benefit the society when they need it most.

# A different market

## Terrorism risk presents its own unique challenges to a pool, says Miles Brewer, assistant underwriter, international property treaty reinsurance, in AXA XL's Bermuda office.

In the UK, insurers have the choice of joining Pool Re if they wish to offer terrorism insurance in collaboration with their commercial portfolio book. By joining Pool Re insurers receive the reinsurance benefit of the pool.

Since 2015 AXA XL has been part of Pool Re, ceding its entire UK insurance terrorism portfolio to the pool. AXA XL benefits by receiving pool coverage for the insurance book and the other side of the business provides the pool with protection through its reinsurance arm.

"We have an open dialogue with the Pool Re team about the level of outwards protection they want to buy and review with them how they can provide the best offering to the UK consumer. Then at the reinsurance renewal each year we deliberate with the broker on what we think to charge Pool Re for their reinsurance protection," explains Miles Brewer.

Brewer believes that for a reinsurance pool to be successful it must fulfil the needs of three groups: consumers, insurers and reinsurers. A pool can make a market commercially viable for insurers as well as improve viability further by increasing the number of insureds.

"You can see from the protection gaps in the world that there is a lot of opportunity for these pools," Brewer says.

"Insurers don't want to take on certain individual risks, so sometimes it's better for the consumer to combine the good, the bad and the ugly in a pool so that pricing becomes more affordable for all."

While many pools have the benefits of modelling, Pool Re faces some difficulty with the modelling of terrorism risk.

"You can have event modelling for terror but to put a frequency on how often you think these attacks are going to happen is almost impossible—you can't put a frequency on human nature," says Brewer.

For this reason, he says, it is difficult for alternative capital to engage with this market.

"It's hard for alternative capital to get its head around this type of risk, especially as they don't have the expertise in writing it," he says.

"In contrast, if you look at some of the windstorm pools, alternative markets find these much easier, in that you are able to get historical statistics and modelled outputs.

"Although I do see many pools moving towards using third party capital, I think it will be a more difficult challenge for terrorism pools."

### Aggregation

When it comes to managing limits and deciding rates, AXA XL has a large scale aggregation system for the portfolios of all its reinsurance cedants, giving it an almost live view of the market for any peril.

"We do a lot of work with our enterprise risk management (ERM) team to establish the total exposure we are running and to make sure we are not overexposed by any specific area—and if we are, we make sure we buy reinsurance to protect ourselves," says Brewer. *(continued in box on page 31)*

# Resisting the opium of free reinsurance

If a pool does not transfer enough risk into the private market, it can be seen as a source of free reinsurance, subsidised by an increasingly dissatisfied government, says Will Farmer, Crisis Management, UK, AXA XL Division.

AXA XL has been deeply involved with the Australian Reinsurance Pool Corporation (ARPC), since 2004. It was involved as one of the lead quoting reinsurers from a reinsurance perspective from day one, and both legacy Catlin and legacy XL were members of the pool, enabling them to see the pool from two angles.

Will Farmer views ARPC as an example of a highly successful pool in that it is run by people who have expertise in insurance, and it engages well with modelling companies.

"These are two key factors that make a pool successful," he says. "A successful pool will also exist where it is actually needed—generally where the private market is not able to provide adequate coverage.

"Also for a pool to be successful it needs to have a core buy-in. One way to do that is to mandate it and make it compulsory. The ARPC is not compulsory for insurance companies to join but if they do join the pool, they have to cede all their risks that are within scope, so it generates a decent volume of business."

Farmer believes that it is vital for a pool to ensure it matches the requirements of its clients.

"Often the coverage requirement is driven by bank covenants, and in some territories it may be by mandated policy forms, eg, in the US, where there are liability forms for lines such as workers' compensation, whereby insurers have to offer certain coverages including terrorism.

"The pool needs to match the coverage the insurers are having to give either because of market forces or to comply with the law in that country," he explains.

Another key consideration for pools is the risk appetite of the parent (usually the government) that is supporting it.

*"Competition against a pool threatens the critical mass of insureds that it needs in order to maintain its pot of premium."*

"You then have to build a reinsurance and risk transfer programme around that, with coverage for your clients that is in line with your pot of capital. Just as, if you are running a private insurance company, where you have rating agencies looking at how much capital you've got your match in your exposures, a well-managed pool has to look at similar financial dynamics.

"It's just that the capital of a pool is a mixture of the pot of premium you collect every year; your fund, which is whatever you've been allowed to keep from the government from previous years; your private market reinsurance; and, in the case of Australia, a Commonwealth guarantee that sits on top of its reinsurance programme.

"Therefore the pool knows how much capital they have, they know what their single scenario exposures are, and it's a question of designing an appropriate reinsurance arrangement and making sure that there's premium coming in from the clients which is enough to cover the cost of the reinsurance and the cost of paying the government for any amount they want for their over-arching guarantee. It's not dissimilar to running an insurance company."

Farmer believes pools are appropriate only where the private market is unable to cope with a risk—and he expects pools to come under increasing pressure from governments that question whether a pool is necessary, in the light of the growth of the private market.

"Government budgets are always under pressure, and if the government perceives that they are subsidising the insurance industry where they don't need to, they will be asking whether they need a pool."

## Addiction warning

Farmer is suspicious of the "opium of free reinsurance" that a pool can provide.

"Insurers can get addicted to it, and want it to continue," he says.

In order to avoid being seen as source of free reinsurance, Farmer's view is that pools should engage with private markets, transferring more risk across to them.

"Most governments are in the insurance business reluctantly and pool managers are generally looking to transfer more risk to private markets and work with them, rather than the pool being just free reinsurance and a subsidy. We are there to help them do that," he says. ■

*(continued from p29)*

"The terror pools make it easier to know your terror exposure on the reinsurance side: as most account for about 95 percent of market, your percentage and limit of the pool is going to be the majority of your exposure for that country."

Brewer believes the number of pools should be increased worldwide to help the most vulnerable people.

"That is something we as an industry should be attacking on the front foot," he says. "The protection gap in the insurance industry is growing every year and you see this especially when less developed economies are hit with natural catastrophes and insurance penetration is low.

"We need to educate consumers in each of these countries on the importance of insurance as we as an industry try to increase penetration rates. Pools are a good way to begin this introduction into less insured areas."

Looking to the future, he sees a shift in terrorism claims from heavy property damage and mass casualties towards smaller attacks, as anti-terror surveillance increases.

"There is a huge opportunity to shift these pools to be able to offer different coverages and expand the coverage that can be made. Cyber terrorism, for example, is exponentially on the rise, and will cause larger attacks in future. This is something for which everyone needs to be ready," he says.

"Most people won't buy cyber insurance until they are affected by an attack but most don't know how vulnerable they are, so we as an industry need to educate them on the importance of buying these protections. Pool Re is starting to do that with its consumers."

Brewer also sees opportunities on the business interruption side of terror coverage, as demonstrated after the 2017 Westminster Bridge attacks, when stores lost money due to being closed during investigations.

"Another issue is that in the future, assets will become less tangible. For example, how much are pictures stolen from your laptop worth to you, to the insurer and to the regulator?

"That's something that will be discussed in the future but nobody has a way of answering that yet," he concludes. ■

# Government schemes: looking to the future

How will governments approach risk in the future? James Vickers, chairman, Willis Re International, and Rowan Douglas, CEO Capital Science & Policy Practice, Willis Towers Watson, give their views on how government schemes might—and should—develop.

Government schemes to tackle not only natural hazards, but also other risks such as pandemics and terrorism are set to be a growing theme in the coming years, but the (re)insurance industry still has work to do to help governments understand the economic and political value of this approach.

"Outside of some relatively niche people in government and some opinion leaders, this area is still pretty mysterious," says Rowan Douglas, CEO Capital Science & Policy Practice, Willis Towers Watson.

"Many people in the wider financial and economic world don't think that physical risks and natural disasters can be fully understood and modelled. They don't know how that's done, and economists don't necessarily argue that insurance is an economically sensible thing to do," he says.

"The real challenge is highlighting that this is economically relevant and that insurance has a role to play, particularly with governments that have big balance sheets."

Fortunately, knowledge around this topic has been growing for the past 20 years, and in the last five years there has been a sea-change in thinking, in the context of big global agreements and the visibility of disasters, especially in the developing world.

"Whether it's in nat cat, terrorism or other fields, there is a real revolution going on," says Douglas. "Now it's a matter of helping to accelerate the business impact of that revolution to make it happen in a few years, not just a decade."

One issue is that, when private sector players speak to governments, they need to use language that the governments can understand and relate to.

"At the same time we have to educate them to move a bit more in our direction," says James Vickers, chairman, Willis Re International.

"That can be very hard work because, particularly in the treasuries departments and ministries of finance in some countries, you get a turnover of staff that means you can spend two years explaining to one person how it all works and how you can add value, and then he or she moves on and you have to start again from scratch."

## Public-private partnerships

In most cases, once an understanding of the economic risks is achieved, the solution involves public programs that obtain reinsurance protection from the private sector.

*"We have Willis Re operations in key parts of the world and they are bringing together critical parts of the jigsaw puzzle."*
James Vickers

*"You have to think through all aspects, particularly the claims-settling aspect."*
Rowan Douglas

Once a government has decided that this is a good idea, the process then normally involves a consultation process and an opportunity for private players to make bids, where they put forward a structure for a scheme.

"Our experience is that most of these schemes start reasonably small then grow up quite quickly," says Douglas.

The schemes can address, not only sovereign risks, but also risks faced by sub-sovereigns—cities and municipalities that are interested in transferring their risk and are often more nimble in finding solutions.

Willis Re's Public Private Sector Practice Group (PPSG) keeps its finger on the pulse of what is happening around the world via local conferences and broking teams.

"We have Willis Re operations in key parts of the world and they are bringing together critical parts of the jigsaw puzzle," says Vickers.

"The whole analytics side is key in this, for example, dealing with cities and delivering the analytical answers to what their risk is, how they might manage it, and the economic aspects of that.

"The other dimension is investment—for many entities, sovereign and sub-sovereign, what they really want is resilient investment, so the real way that risk protection is going to be sold and delivered is blending insurance protection and the investment side together. That is by far the most powerful way in many instances for getting increased traction."

## Managing the margins

One of the issues for the first movers in this space is that their pioneering work is not rewarded with large margins.

"The margins get more interesting only when the limits get big," says Vickers. "We have been advising underwriters who wish to get involved in this area not to be naïve about what the margin will be for the initial smaller deals, but to try to look at bidding for some of the consulting type work that perhaps isn't so badly paid and use that to try to augment the smaller margins."

From a customer's point of view, the emerging markets receive premium subsidies through donors so that the individual country might not be paying much, or any, of the premium.

"If you are going into schemes where you are trying to collect [funding] from individuals, the landscape is more sensitive because of what people can afford to pay; most governments don't want something to appear that looks like a new tax.

"In major economies you are not going to get donor help, but in emerging markets donor subsidy of premiums is pretty important," says Vickers.

## Incentivising resilience

Douglas believes that a key driver of change will be how the financial regulators begin to incorporate climate and natural disaster risk within public and private accounting regulation.

There are further interesting regulatory possibilities. For instance, if banks were to be penalised for holding assets that have risks within them which are not currently disclosed, this could cause sweeping changes, such as incentivising building techniques that can withstand natural catastrophes.

"Suddenly you'll see a lot more sustainable development," says Vickers.

"There would certainly be huge support from donors and enabling bodies if insurance-related contracts put those sorts of requirements in, to encourage and enforce better build backs as much as possible," agrees Douglas.

"If we can find a way of helping that kind of strategy to be executed if it's desired, that would be very helpful for our industry's perception."

## Passing the test

When considering the takeup rate and long-term sustainability of government pools, governance is an issue: Vickers cites the example of the Sri Lankan Strikes Riots and Terrorism pool set up after the riots of the early 1980s.

"It never had another claim, and 20 years later the government was fiscally constrained so they raided a significant portion of the reserves," he says.

"For some pools, their structure and operation has proved to be poor, whereas others have performed well from an operational point of view. For example, the Japan earthquake scheme paid U.S. $14.5 billion on 800,000 claims in six months because the architects of the scheme had carefully thought through all aspects of its operation in a stressed environment.

"You have to think through all aspects, particularly claims-settling. These schemes will run for years with hardly any claims at all until a big event happens, the banking system goes down and you have to settle 1.5 million claims within a month or two.

"The best schemes have thought through all those aspects and worked out how they are going to manage it." ■

# An urgent need to close the protection gap

The flood protection gap is particularly key for advanced and emerging markets and perhaps needs to be looked at with greater urgency, says Nick Frankland, UK CEO of Aon's Reinsurance Solutions business.

Well-structured government pools benefit society and the industry is well positioned to help initiate their use—but they are not easily set up and require considerable support initially, according to Nick Frankland, UK CEO of Aon's Reinsurance Solutions business.

He says the scale of the potential of pools to help solve risk transfer issues can be illustrated by the size of the protection gap, which represents some US $150 billion of cat events in the advanced world alone. He notes around US $90 billion of US government emergency supplemental appropriations to respond to natural disasters of 2017.

"The flood protection gap is particularly important for both advanced and emerging markets and perhaps needs to be looked at with greater urgency," Frankland says.

"As we expand this to various facets of economies, it becomes obvious that not enough limits are being bought; this may be due to variety of reasons. I hope the alternative market and advances in triggers result in plugging the solution and capital efficiency gaps.

"It is important that the price discovery happens in the open market for long-term sustainability of any market place."

The capital efficiency gap referred to by Frankland effectively builds on the protection gap metric, with a more nuanced approach that looks at the total cost of the risk in the context of natural catastrophes. Whereas

the protection gap is essentially the difference between insured losses and economic losses, the capital efficiency gap framework brings in costs associated with insurance premiums, administrative risk control costs and retained losses to provide an approach to addressing this serious problem facing society.

It is a more realistic approach since it considers public sector solutions as well as private sector solutions. The protection gap metric might initially identify an issue, but the capital efficiency gap framework presents an economic analysis for different sources of capital, and the need for a more holistic approach to bridging the protection gap.

Frankland stresses that pools can succeed only with a strong political commitment from the government or states currently on the hook for losses without such risk management in place.

He believes that strong political momentum and coordination among participating countries is essential, especially during the design and preparation stage.

Referencing examples including Flood Re and Pool Re, he believes that a strong regional organisation is often vital to facilitating the political and policy coordination needed between participating governments.

## Doing more

Frankland stresses that pools can do a lot more than simply fund losses in the aftermath of an event. He notes that the process of forming them and modifying them over time means they can foster policy dialogue on risk management and risk ownership.

"Risk pools are only one element of an effective approach to risk management," he says. To reduce the impact of disasters on people, their livelihoods and national budgets, governments should consider ways to identify and reduce the underlying drivers of risk.

Risk pools, along with other disaster risk finance and insurance solutions, complement risk reduction by helping governments address those risks that can't be mitigated. They also help to move risk management towards a proactive approach focused on planning financial responses in advance, rather than relying on fundraising efforts in the aftermath of disasters.

"They offer a vehicle to anchor financial planning; contingency planning; ownership of and collaboration on the climate risk management agenda between and within countries; and risk-informed investments," he says.

"Pools should be part of a comprehensive financial protection strategy. The parametric insurance products offered by risk pools provide rapid (but limited) liquidity in the immediate aftermath of infrequent and severe disasters.

"Other financial instruments, such as contingency funds and contingent loans, can be used to finance recovery and reconstruction efforts, as well as the cost of more frequent disasters. Governments can strengthen financial resilience by combining financial instruments that address different needs and have different cost implications."

He says it is also important to consider the cost, and the impact on the end user of such pools and the potential for the risk to be transferred into the commercial risk transfer markets—these two

*"Risk pools can reduce premiums by reducing the cost of capital, operating costs, and the cost of risk information."*

points are interlinked as the latter, done successfully, can lower the cost for users.

"Pools should offer cost-effective insurance solutions," Frankland says. "By helping countries develop standard products based on their respective needs, and structuring a portfolio of diversified country risks, risk pools offer larger transaction sizes that are more attractive to global reinsurance and capital markets.

"Additionally, risk pools can reduce premiums by reducing the cost of capital, operating costs, and the cost of risk information."

He also stresses that pools require upfront payment of an insurance premium, facilitating a shift toward proactive risk management. Participating countries have to pay upfront an insurance premium that reflects their actual risk exposure in exchange for the insurance coverage, thereby shifting payments to take place in predictable instalments before disaster strikes.

"It may be challenging for countries that previously relied on donor support to start paying an insurance premium for disaster risks with national resources. However, moving in this direction, even partially, can provide the right incentives for proactive planning and risk-informed investments in risk reduction."

### Out of poverty

Asked how the industry might help increase the number of pools worldwide to help the most vulnerable people, Frankland notes that it is ever more important to protect a society by making inroads in moving people out of poverty. He notes that more than one billion people have lifted themselves out of poverty in the past 15 years, but climate and disaster risks threaten these achievements.

A recent World Bank report finds that the impacts of disasters on wellbeing are equivalent to a US $520 billion drop in consumption (60 percent more than the asset losses usually reported) and force some 26 million people into poverty every year. The United Nations' humanitarian appeal for 2017, for example, stands at a record US $22.2 billion, to help almost 93 million people affected by conflicts and natural disasters.

## Case study: World Bank catastrophe bond, structured by Aon Securities

Due to a significant insurance protection gap, communities and governments often have to bear the majority of the cost of natural disasters, which can be particularly devastating to developing economies.

To help mitigate this situation, in February 2018 Aon Securities launched a US $1.4 billion catastrophe bond on behalf of the World Bank to bring emergency funding to the Pacific Alliance nations: Chile, Colombia, Mexico and Peru, when severe earthquakes strike. The transaction—the largest ever earthquake catastrophe bond and insurance-linked securities (ILS) sovereign risk transfer—provided a way for these countries to quickly receive disaster relief funding to help people, communities and businesses get back on their feet.

The catastrophe bond, the second largest in the history of the ILS sector, was made across five tranches of notes: one for each of Chile, Colombia and Peru, and two for Mexico. Under the issuance,

*"It provides not only risk capital but also technical expertise to inform the design of effective risk pools."*

Frankland notes that, since most governments are the insurers of last resort, improving knowledge of risk and transferring it to different pools is key. And the conversation needs to go beyond catastrophe and terrorism risks and also consider the livelihoods and financial inclusion that could be achieved.

He is aware of a lot more conversations that cover a wide range of risks in this context such as life, agriculture and health, with many interested stakeholders—scientists, economists, finance ministers and others—discussing this issue. He also believes that the private sector has contributed to making catastrophe risk pools cost-effective.

"The private insurance industry has been heavily involved in the preparation and implementation of sovereign catastrophe risk pools. It provides not only risk capital but also technical expertise to inform the design of effective risk pools," he says.

## Wider benefits

There are also wider benefits. Frankland notes that risk pools can drive improved insurance literacy, increased institutional capacity, and the availability of disaster risk data and modelling.

For example, the Pacific Risk Information System (a platform that includes an exposure database of over four million assets in the region) and its associated catastrophe risk model have been used by domestic insurers and brokers to inform their underwriting and pricing decisions. In Fiji, for example, the model was used to inform the provision of catastrophe risk insurance for hotels and resorts, he says.

"Key to the success of many pools in the long term will be the links they can forge with third parties and the commercial risk transfer sector," he says.

"This can be vital when it comes to its promise to pay claims. If the pool of capital is varied and global as in reinsurance and alternative capital, it makes the promise more sustainable.

"This dynamic was aptly demonstrated by New Zealand's Earthquake Commission which, out of some NZ $11 billion of losses, claimed NZ $4.5 billion back in reinsurance recoveries," he concludes. ■

Chile receives US $500 million, Colombia US $400 million, Mexico US $260 million and Peru US $200 million in earthquake risk protection. Coverage is provided on a three-year basis for the Chile, Colombia and Peru notes, and on a two-year basis for the Mexico notes.

In order to achieve a high level of ongoing societal impact, Aon Securities structured the bond in an innovative way, which would ensure that its value would be apparent not just in the event of a payout. Contrary to customary catastrophe bond structure, the proceeds of the bond were not held as collateral but were lent to member countries in order to fund sustainable development projects.

In this way, the bond is not only providing protection against natural disaster, but is also funding economic progress.

For investors, the bond provides a way to diversify their risks and support sustainable development initiatives.

The World Bank catastrophe bond offers protection to government budgets, and is pivotal to protect the development gains of Pacific Alliance nations. It is an important complement to emergency funds, budget reserves, contingent credit lines, and other financial instruments governments use in the aftermath of natural disasters. Using a parametric trigger allows for a quick recovery in the event of a disaster, providing liquidity within a couple of weeks and facilitating a rapid response. This rapid response could allow early action to potentially reduce humanitarian impacts.

The successful execution of the Pacific Alliance transaction may lead to new regions and perils as we see increased interest across the world

*"The Pacific Alliance transaction highlights the potential for a partnership between emerging markets seeking efficient sources of capital to fund emergency costs."*

for these types of solutions. Although the majority of the risks in the catastrophe bond market originate from North America, Europe and Japan, the Pacific Alliance transaction highlights the potential for a partnership between emerging markets seeking efficient sources of capital to fund emergency costs, and investors seeking to invest in diversifying risks to support sustainable development initiatives.

The catastrophe bond is a great example of how Aon can bring differentiated value to sovereign nations and governments, and highlights the social impact Aon has created with communities at risk, through our collective skills, talents and relationships, and our ability to bring innovative products to market using a variety of forms of capital. ■

# A loss leader that benefits society

Well-structured government pools benefit society and help economies recover faster following significant disaster risk events—but better data and more education are almost always required to get them off the ground, according to Jonathan Clark (left), managing director, Guy Carpenter, and Charles Whitmore (right), head of Placement Solutions Group, Guy Carpenter.

Reinsurance broker Guy Carpenter has its own Public Sector speciality practice, which it launched in 2015, that deals with government pools and related projects globally. Experts from across the globe collaborate and share information; the team is also in the process of expanding to allow for more colleagues to be dedicated to growing this segment of the business globally.

Such growth is naturally a good thing for Guy Carpenter, but the team also appreciates the difference this makes to the wider world. Individuals and societies benefit from better risk transfer, whether that is because homes are rebuilt faster in the aftermath of disasters, or damage is limited because of the advice and guidance from the industry before a gust of wind or a tremor has even taken place.

"We see enormous opportunity in this space," says Jonathan Clark, managing director, Guy Carpenter.

"There is increasing pressure on government budgets and balance sheets brought on by changing demographics and growing debt obligations; catastrophic loss scenarios caused by storms coupled with lack of insurance take-up create additional economic shocks to public entities which are largely un-budgeted.

"There is a healthy supply of risk capital looking to be deployed by capital providers to help government entities manage these risks and that has the potential to have a very positive social impact. Many stakeholders are focused on this subject and we are seeing g more governments showing an interest in exploring such arrangements.."

Charles Whitmore, head of Placement Solutions Group, Guy Carpenter, notes that, in a sense, the capacity is the easier side of the equation; the harder part is originating the opportunities.

*"Stakeholders must be open to new approaches and broader collaboration between the public and private sector to create solutions."*
Jonathan Clark

"There is a lot of capacity out there willing to accept these risks; the difficult part is originating the risks in the first place," he says.

"That is a challenge for the insurance industry globally. We do not speak the same language as treasuries or government departments. The other challenge is getting to grips with some of the products that could really help in these situations, that pay out quickly, while also considering risk mitigation techniques.

"It is one thing to pay out after these terrible events but there are instances where homes are being rebuilt in flood-prone areas for instance, which just puts people back in harm's way."

## Talking the talk

"The challenges associated with the 'insurance gap' are well documented in the context of emerging markets, but these challenges exist everywhere," says Clark.

"Stakeholders must be open to new approaches and broader collaboration between the public and private sector to create solutions. The work we have undertaken with FEMA and NFIP in the US, and FONDEN and the World Bank in Mexico are two examples of this."

Whitmore says that many deals that are effective for transferring government risks are structured using parametric triggers. This method can make risk transfer easily understandable and payments fast and quantifiable in the aftermath of an event. But even then, he argues, education is the single most important thing that is now needed in the industry—and much of this must be done by the industry with a long-term timeframe in mind.

Another crucial aspect to getting pools up and running smoothly is the availability of good data—parametric triggers can work only when there is a certain level of data and all parties become comfortable with the level of risk being transferred and the premium involved.

In some instances, the World Bank has helped structure deals, absorbing some of the costs involved and smoothing the process in terms of education and engagement. Whitmore says the key to such involvement is having a plan for such risk-transfer structures eventually working long-term without the bank's involvement.

Equally, however, commercial banks can play an important role in helping close the protection gap by insisting types of coverage are in place before they will offer mortgages, for example.

Asked how the number of pools operating globally might be increased, Clark says there is no silver bullet—it is just a question of the entire industry working collectively and consistently to keep the issue at the forefront of governments' agendas and education for the wider population on the advantages of risk transfer.

"Unfortunately too often it requires large catastrophic events to spur action. Communities and governments need to start doing more ahead of future events in order to achieve greater community resilience." ■

# Appendices of Government pools

| World Regional View | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Peril** | **Africa** | **Americas** | **Asia** | **Europe** | **Oceania** | **Global**** | **Total Count** |
| Agricultural Pool | - | - | - | 2 | - | - | 2 |
| Drought | 17 | 8 | 5 | 1 | | | 31 |
| Earthquake | - | 5 | 10 | 1 | 1 | - | 17 |
| Environmental Liability Risks Pool | - | - | - | 3 | - | - | 3 |
| Flood | 3 | 8 | 12 | 2 | 1 | | 26 |
| Motor | - | - | 2 | 2 | - | - | 4 |
| Multi - Peril | - | 6 | | - | - | - | 6 |
| Natural Catastrophe Pool | 15 | 31 | 21 | 13 | 1 | 3 | 84 |
| Nuclear | 2 | 7 | 4 | 14 | 1 | - | 28 |
| Other* | 38 | 57 | 60 | 35 | 1 | - | 191 |
| Terrorism | 3 | 2 | 4 | 10 | 1 | - | 20 |
| Wind | - | 28 | 6 | 5 | - | - | 39 |
| **Total Count** | **78** | **152** | **124** | **88** | **6** | **3** | **451** |

*Other Perils include Agriculture Insurance and Reinsurance, War, Energy, Medical, Aviation, Cargo, Engineering, Oil and Gas exploration, Micro Insurance, Marine, Loan Guarantee, Motor, Employers Liability, Disaster Micro Insurance Pools, Pools for Enterprises involved in Hazardous Activities.

**Global pools include Global Climate Insurance Pool (initiative put forward by MCII (Munich Climate Insurance Initiative); Global Index Reinsurance Facility (GIRIF) Managed by the World Bank; Global Centre for Disaster Protection funded by the DFID

## Highlights

**Oldest Pool –** The Sugar Insurance Fund Board (SIFB) in Mauritius – is a national fund started in 1946. This is an Agricultural Insurance Pool (Indemnity-based pool) created to protect the farmers from cat exposure – Cyclone, Drought, Excess rainfall and Fire.

United States Aircraft Insurance Group (USAIG) - formed in 1928 to provide Aviation Insurance.

**Newest Pool –** Catastrophe Risk Insurance Program for Philippines: launched in 2017 on a six years partnership with the World Bank. Its aim is to protect national and local government agencies against the financial losses from severe natural disasters. Providing US$206 million in aggregate coverage, the program protects assets of the national government and 25 provinces.

**Recognised pools –** Pool Re, Flood Re, Swiss Nuclear Pool, Gestion de l'Assurance et de la Reassurance des risques Attentats de Terrorisme (GAREAT), Terrorism Reinsurance and Insurance Pool (TRIP – Belgium), National Flood Insurance Program (NFIP), California Earthquake Authority (CEA), The South Carolina Wind and Hail Underwriting Association (SCWHUA), CCRIF SPC (former Caribbean Catastrophe Risk Insurance Facility), African Risk Capacity, Pacific Catastrophic Risk Insurance Pool, Turkish Catastrophe Insurance Pool (TCIP), World Bank Parametric Volcano Scheme.

| Peril | Africa |
|---|---|
| Drought | 17 |
| Flood | 3 |
| Natural Catastrophe Pool | 15 |
| Nuclear | 2 |
| Other* | 38 |
| Terrorism | 3 |
| Total Count | 78 |

*Other Perils include: Aviation, Transportation, Motor, Loan Guarantee, Energy, Personal Accident, Crop, Credit, Education, Agriculture, Marine.

### Key Facts

**Oldest Pool –** Nigerian Agricultural Insurance Corporation (NAIC) created in 1987 through the creation of the Nigerian Agricultural Insurance Scheme (NAIS). In 1993, the private company in charge of underwriting and implementing the NAIS was dissolved and replaced by a public-sector corporation, the Nigerian Agricultural Insurance Corporation, NAIC.

**Newest Pool –** Energy and Allied Risks Insurance Pool of Nigeria (EAIPN)

**Recognised Pools –** African Risk Capacity, Index weather crop insurance in African villages, Kenya Livestock Insurance Program (KLIP), Mozambique Index-based Agricultural Insurance (IAM).

| Peril | Americas |
|---|---|
| Drought | 8 |
| Earthquake | 5 |
| Flood | 8 |
| Natural Catastrophe Pool | 31 |
| Nuclear | 7 |
| Other* | 57 |
| Terrorism | 2 |
| Wind | 28 |
| Multi-Peril | 6 |
| Total Count | 152 |
| *Other Perils include: Agriculture, Motor, Disaster Micro insurance, Motor, Medical, Workers Compensation, Credit, Health, Passengers Liability. | |

| Peril | Asia |
|---|---|
| Drought | 5 |
| Earthquake | 10 |
| Flood | 12 |
| Natural Catastrophe Pool | 21 |
| Nuclear | 4 |
| Other* | 60 |
| Wind | 6 |
| Motor | 2 |
| Terrorism | 4 |
| Total Count | 124 |
| *Other Perils include: War, Energy, Motor, Agriculture, Aviation, Motor, Marine, Engineering, Credit, Political Risks, Medical and Health. | |

| Peril | Europe |
|---|---|
| Drought | 1 |
| Natural Catastrophe Pool | 13 |
| Nuclear | 14 |
| Other* | 35 |
| Agricultural Pool | 2 |
| Earthquake | 1 |
| Environmental Liability Risks Pool | 3 |
| Flood | 2 |
| Motor | 2 |
| Terrorism | 10 |
| Wind | 5 |
| Total count | 88 |
| *Other Perils include: Motor, Credit, Medical, Marine War Risks, PPP scheme to Insure travelers living in mobile homes. | |

| Peril | Oceania |
|---|---|
| Earthquake | 1 |
| Flood | 1 |
| Natural Catastrophe Pool | 1 |
| Nuclear | 1 |
| Other* | 1 |
| Terrorism | 1 |
| Total Count | 6 |
| *Other Perils include: Credit | |

**Americas: Key Facts**

**Oldest Pool –** MRA (MAERP Reinsurance Association) In the United States 2 mutual insurers pools were formed in 1957 MAERP (Mutual Atomic Energy Reinsurance Pool) and MAELU (Mutual Atomic Energy Liability Underwriters), but they now operate under the name MRA.

**Newest Pool –** Guatemala MiCRO - Esfuerzo Seguro - is the first index protection offering business interruption cover to rural populations in Guatemala for losses caused by severe drought, excess rain and earthquake. More specifically, the product is targeted to support financially vulnerable individuals engaged in small farming or entrepreneurial activities.

**Recognised Pools –** National Flood Insurance Program (NFIP), California Earthquake Authority (CEA), The South Carolina Wind and Hail Underwriting Association (SCWHUA), CCRIF SPC (former Caribbean Catastrophe Risk Insurance Facility), Florida Hurricane Catastrophe Fund (FHCF) / Citizens' Property Insurance Corporation

**Asia: Key Facts**

**Oldest Pool –** Japan Earthquake Reinsurance Co Ltd. (JER) was established with share capital of 1bn yen by 20 domestic Japanese non-life insurance companies on 30 May 1966. The Company was licensed for the earthquake insurance business and started its operation on 1 June 1966.

**Newest Pool –** ASEAN ADB cities scheme created in 2017 with the aim to enhance capacity building and knowledge sharing on disaster-informed decision making in 10 cities in South East Asia.

**Recognised Pool –** China Residential Earthquake Insurance Pool (CREIP), Taiwan Residential Earthquake Insurance Fund (TREIP), National Agricultural Insurance Scheme (NAIS) and the modified NAIS (mNAIS) project in India replaced by Pradhan Mantri Fasal Bima Yojana (PMFBY), Turkish Catastrophe Insurance Pool (TCIP), Malaysian Aviation Pool (MAP)

**Europe: Key Facts:**

**Oldest Pool –** Cobelias (Consortium Belge pour l'Assurance de la Responsabilite Professionnelle des Intermediaires d'Assurances) created in 1942.

**Newest Pool –** EGAP - Czech ECA created in April 2017.

**Recognised Pools –** Pool Re, Flood Re, Swiss Nuclear Pool, Gestion de l'Assurance et de la Reassurance des risques Attentats de Terrorisme (GAREAT), Terrorism Reinsurance and Insurance Pool (TRIP – Belgium)

**Oceania: Key Facts:**

**Oldest Pool –** Pacific Catastrophe RiskAssessment and Financing Initiative (PCRAFI) created in 2006.

**Newest Pool –** Pacific Catastrophic Risk Insurance Pool – pilot completed successfully (2012-15) and has now been expanded to PCRAFI.

**Recognised Pools –** Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), Australian Reinsurance Pool Corporation (ARPC), Drought Climate Adaptation Programme (DCAP).

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