

(Re)insurance for the greater good

Solutions for the Public Sectors

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What's happening in the (re)insurance market?

01



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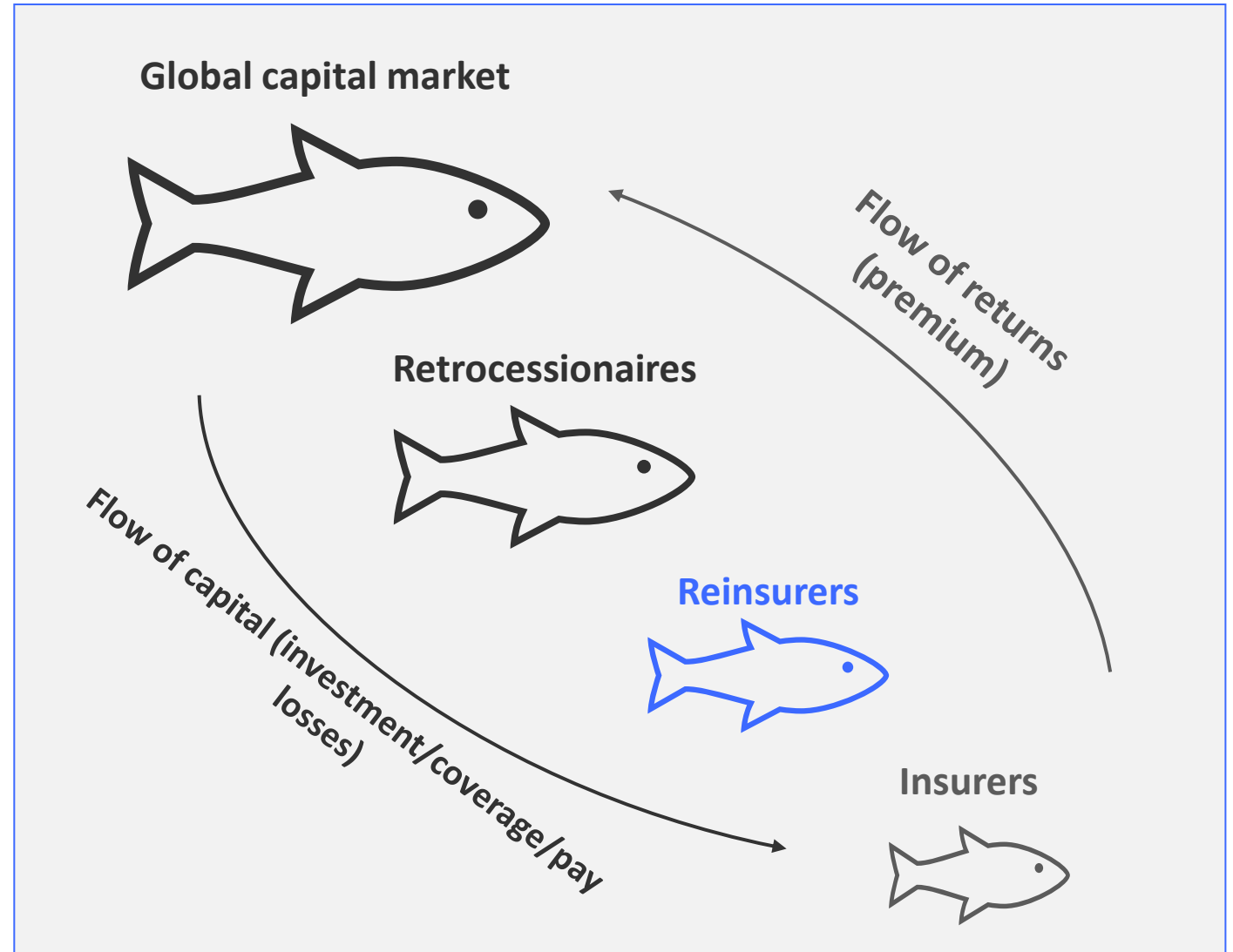
Presented at the 2024 All Actuaries Summit

Introducing "(Re)insurance"

- ✓ Cost (Luxury)
- ✓ Risk transfer
- ✓ Financing
- ✓ Capital
- ✓ Part of a holistic-approach to balance sheet management

It's in addition to

- ✓ Acceptance
- ✓ Mitigation
- ✓ Avoidance (e.g. adaptation)



Are we there yet?

General
Insurance
Seminar



Connecting Today
and Tomorrow
13 - 15 November 2016
Grand Hyatt • Melbourne



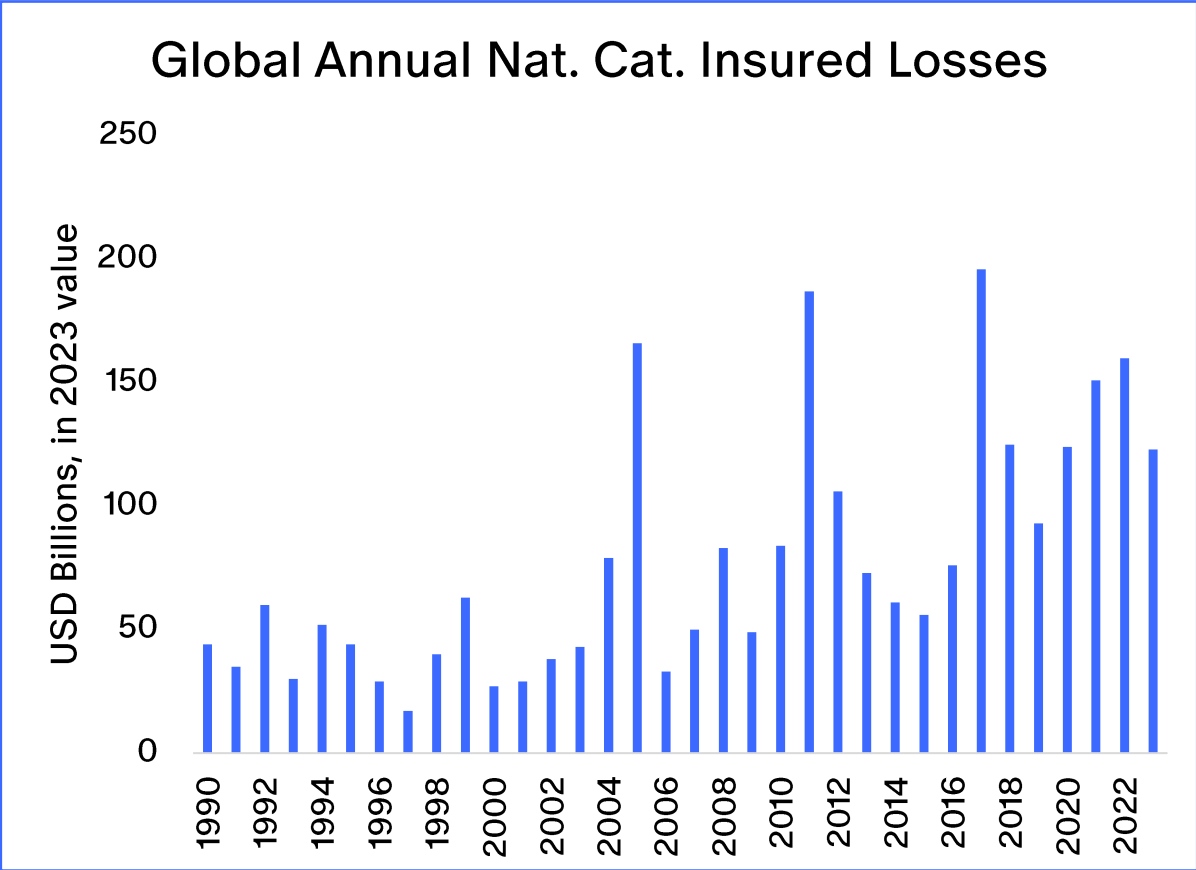
In the near future...

"The reports of my death are greatly exaggerated."

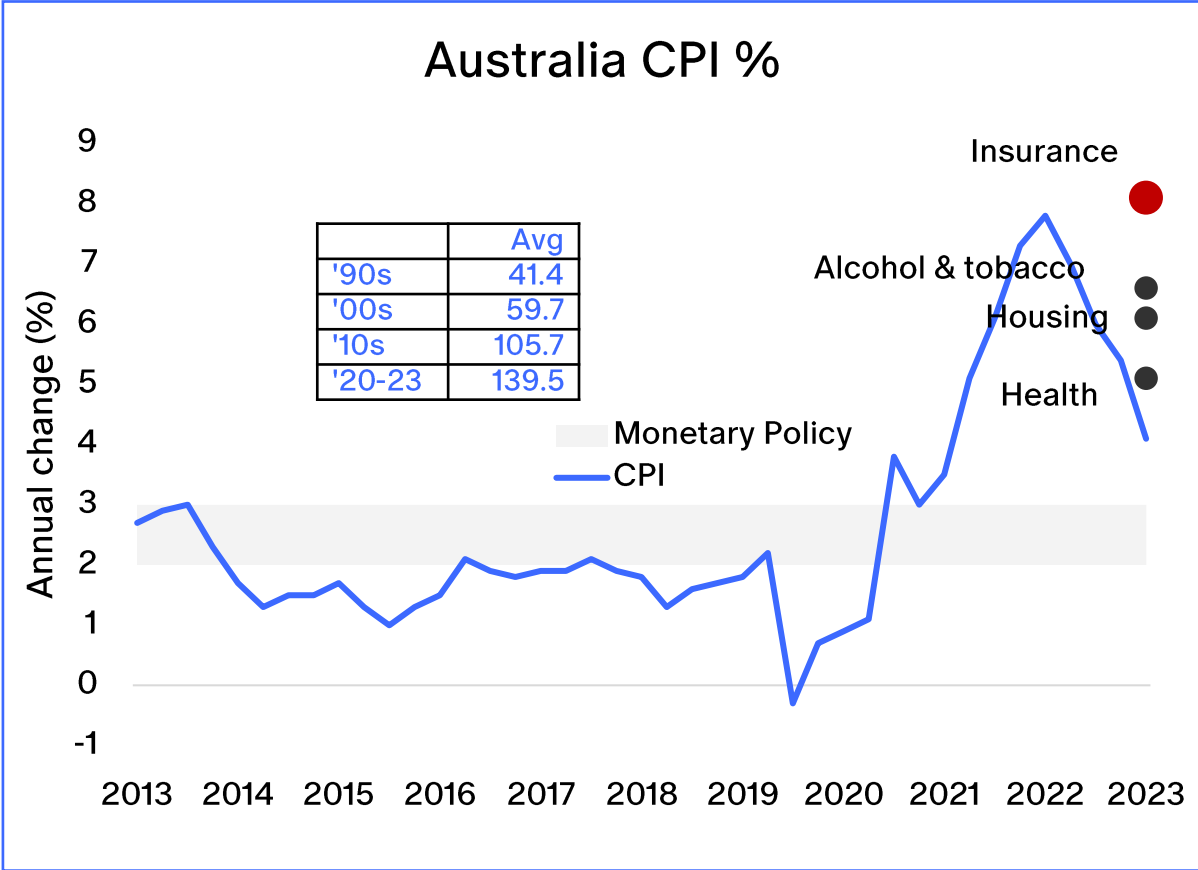


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More frequent severe claims & High inflation

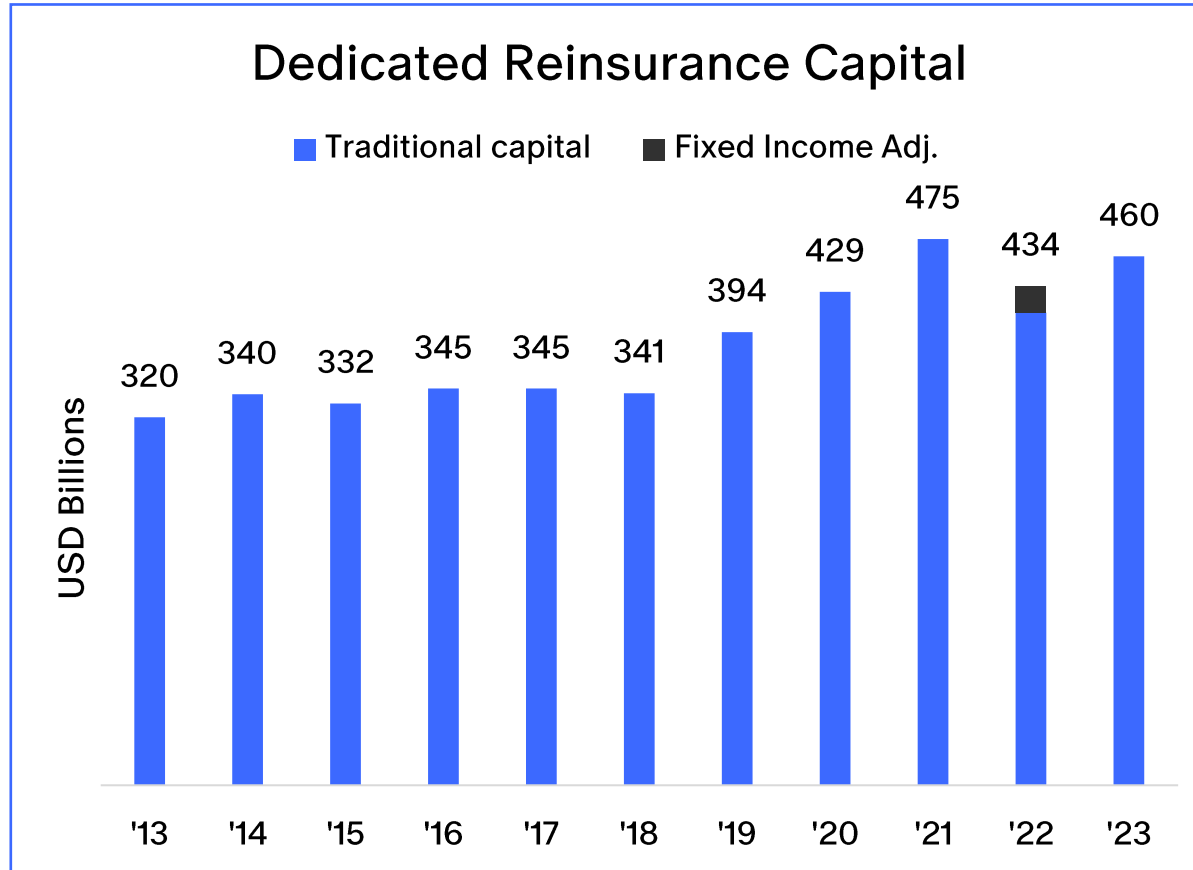


Source: Gallagher Re



Source: ABS

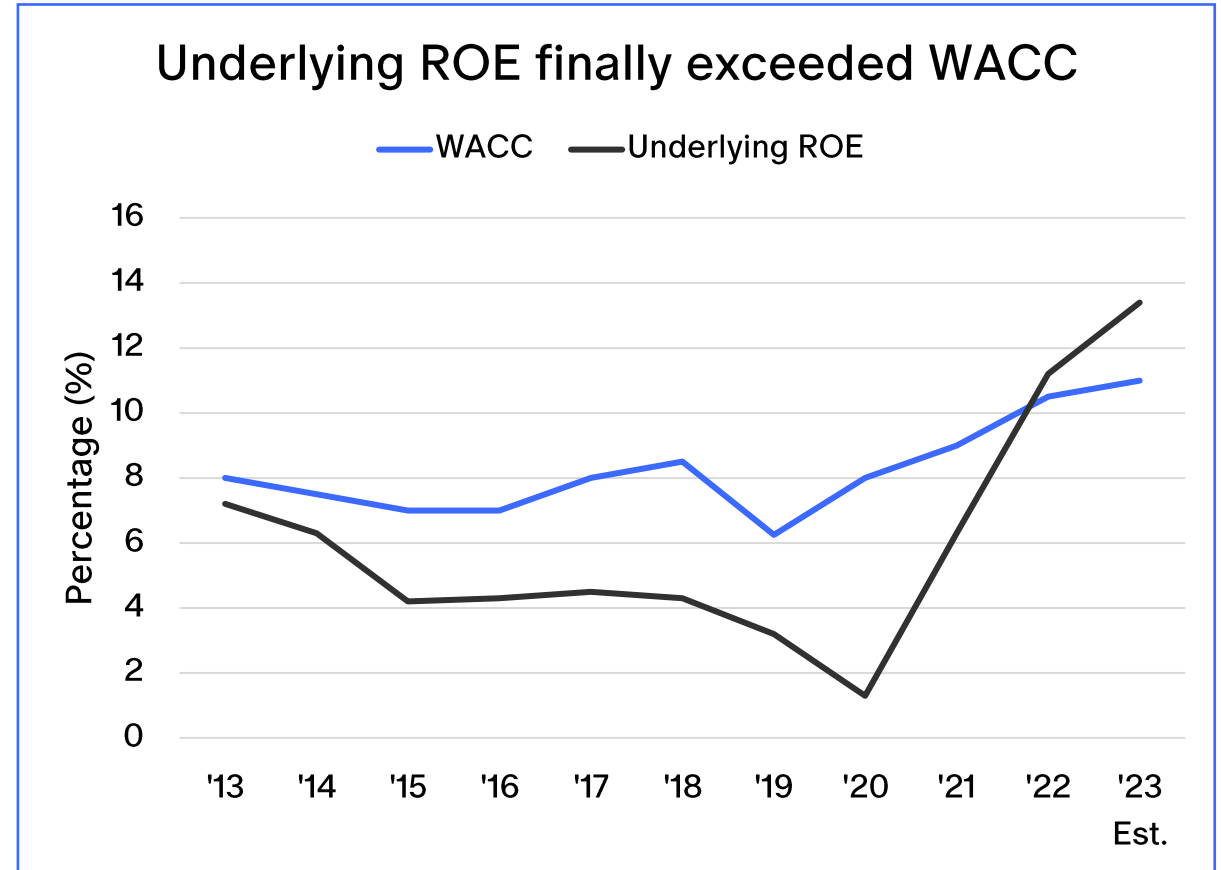
Ultimately, it is a decision on capital



Source: AM Best and Guy Carpenter

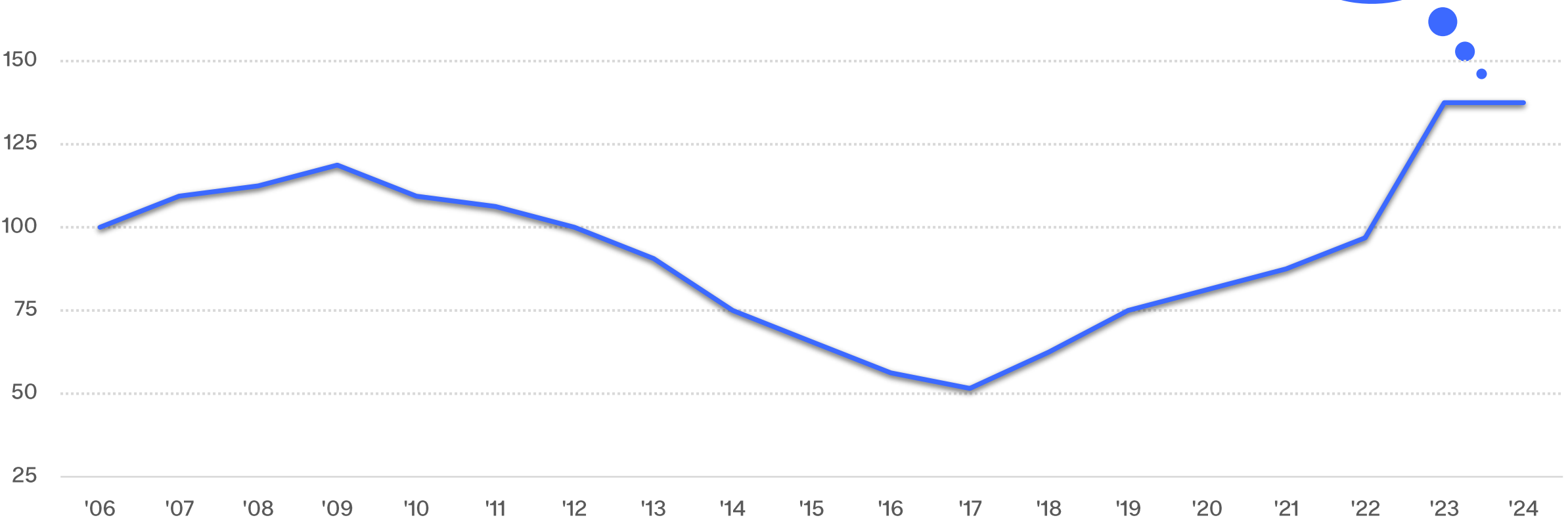


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Source: Gallagher Re and Swiss Re

Global direct and facultative reinsurance price index



Source: Howden

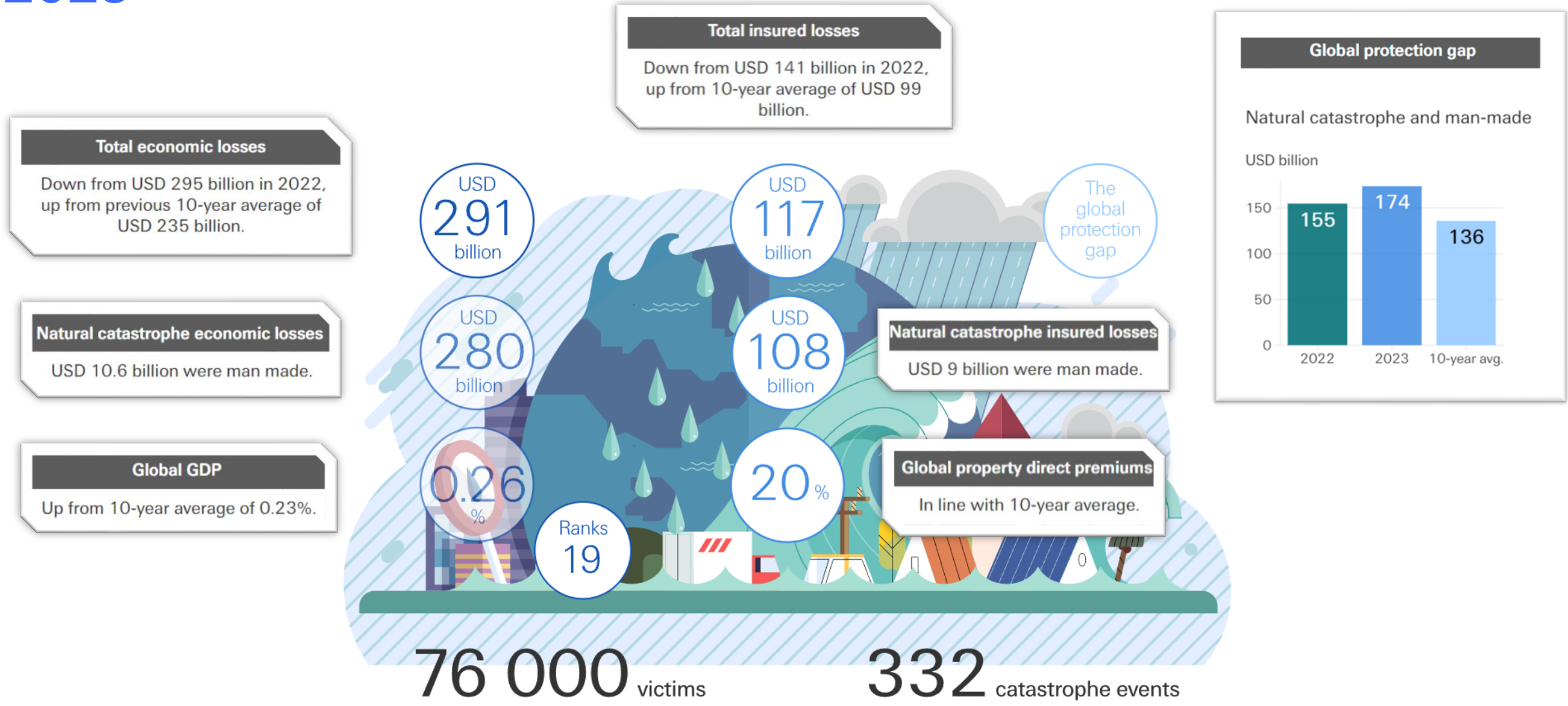
The unique challenges in the Public Sector

02

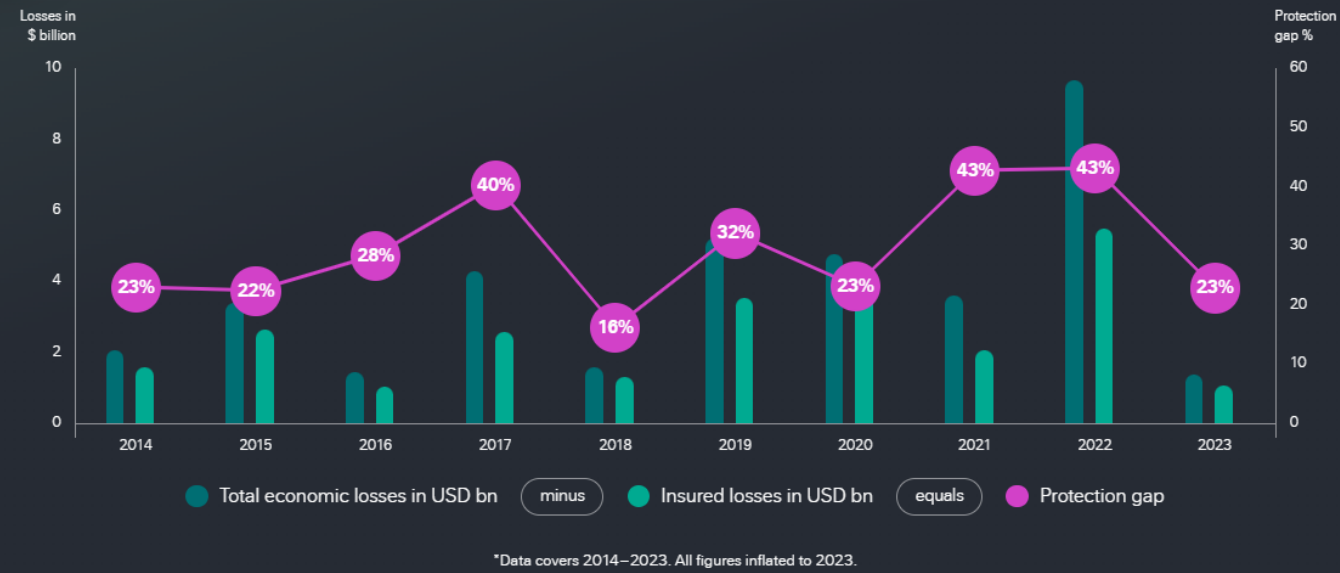


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Global Protection Gap in 2023

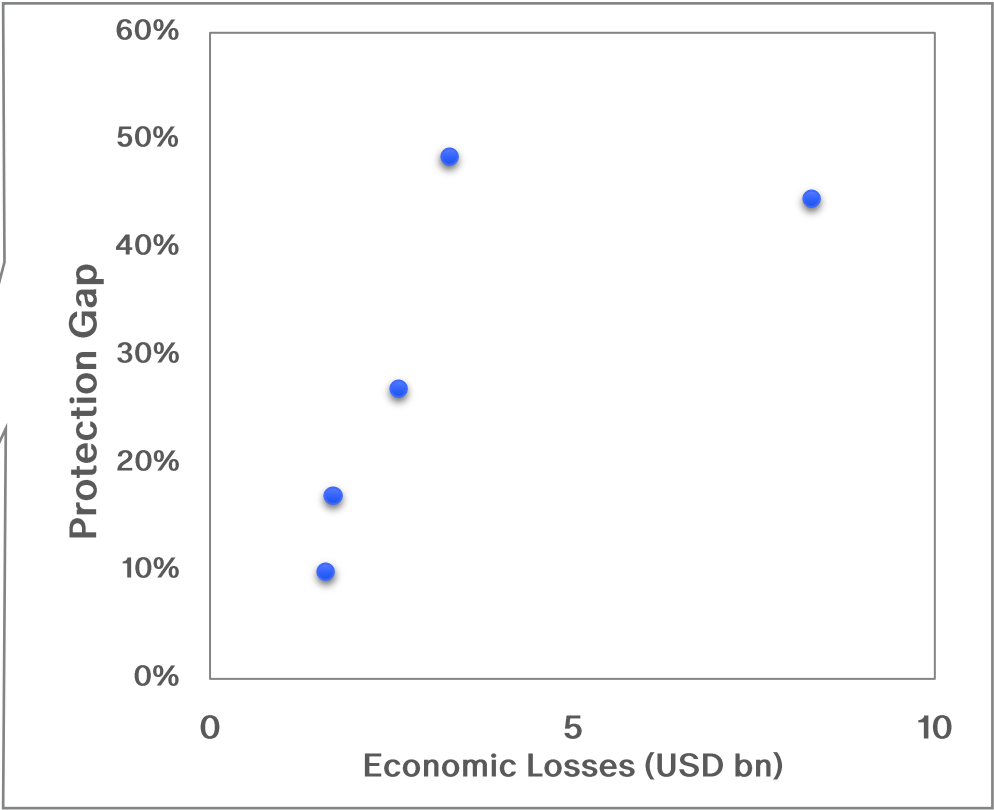


Protection Gap in Australia



Events	Year	Economic Losses (USD bn)	Insured Losses (USD bn)	Protection Gap
Lismore Flood (CAT 221)	2022	8.3	4.6	45%
Cyclone Debbie (CAT173)	2017	3.3	1.7	48%
2019/20 Bushfires (CAT195)	2019	2.6	1.9	27%
Brisbane Hailstorm (CAT144)	2014	1.6	1.5	10%
January Hailstorms (CAT201)	2020	1.7	1.4	17%

Source: Swiss Re, ICA



Governments are exposed to manifold risks

Contingent liabilities for the public sector are significant



Economic

- Fiscal crises
- Failure of financial mechanism
- Asset bubbles in major economies
- Un/der-employment
- Failure of critical infrastructures
- Energy price shock



Environmental

- Extreme weather events
- Failure of mitigation/adaptation
- Natural disasters
- Biodiversity loss & ecosystems collapse
- Man-made environmental disasters



Geopolitical

- Interstate conflict
- Failure of regional / global governance
- Terrorist attacks
- Failure of national governance
- State collapse/crisis



Societal

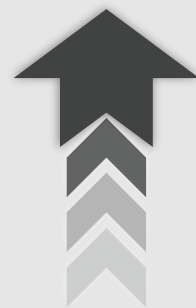
- Water crises
- Spread of infectious diseases
- Large-scale involuntary migration
- Food crises
- Profound social instability
- Failure of urban planning



Technological

- Cyber attacks
- Critical IT infrastructure breakdown
- Data fraud/theft
- Adverse consequences of advances

The public sector bears a large portion of the risks: Public budgets are put under twofold strain



Higher costs

Emergency response costs
Reconstruction of **public** property & infrastructure
Support for **non-insured** households
Cost of **replacements** (e.g., higher imports)

Lower **tax** income
Lower **tourism** income
Lower **export** revenues
Loss of **investor** confidence

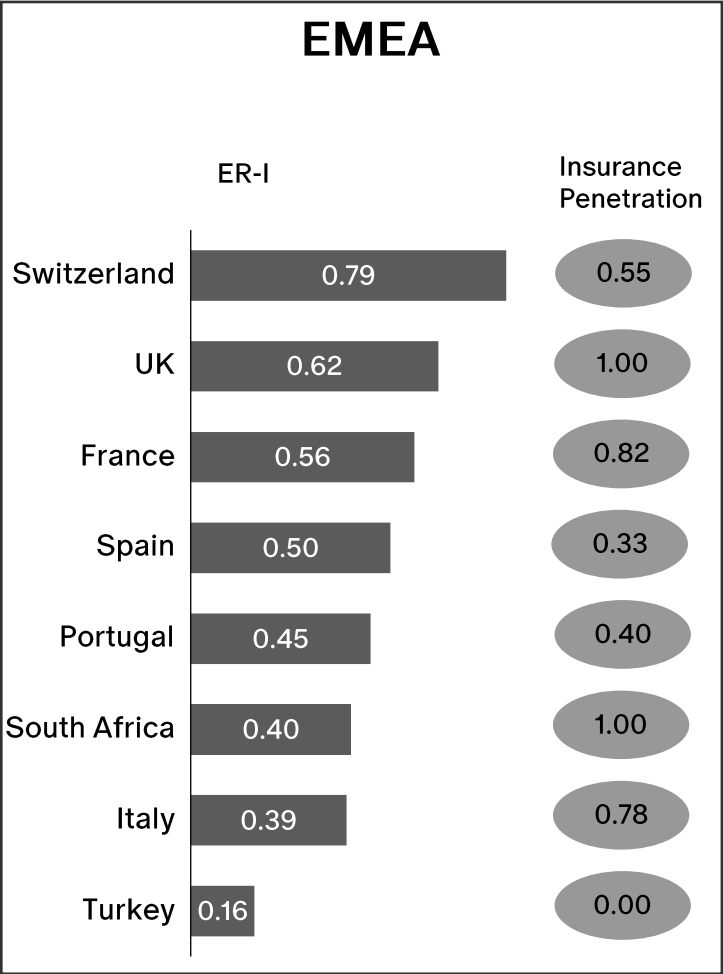
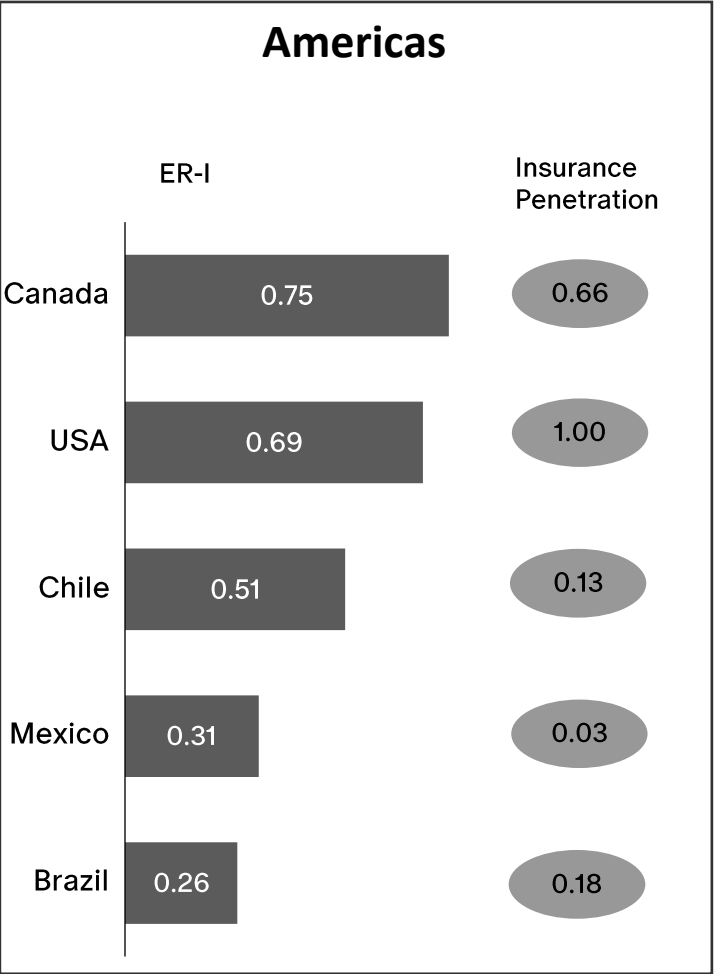
Lower revenues



Closing the financing gap between insured and uninsured losses is thus in the public sector's **vital interest**.

Macro Resilience Index

How resilient is your country?



Source: sigma June 2022, Swiss Re Institute; ER-I includes Health, Mortality and Natural Catastrophes; sigma-explorer.com



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Swiss Re

Affordability is the by-product of poor planning, but we also cannot (afford) to simply restart the world.



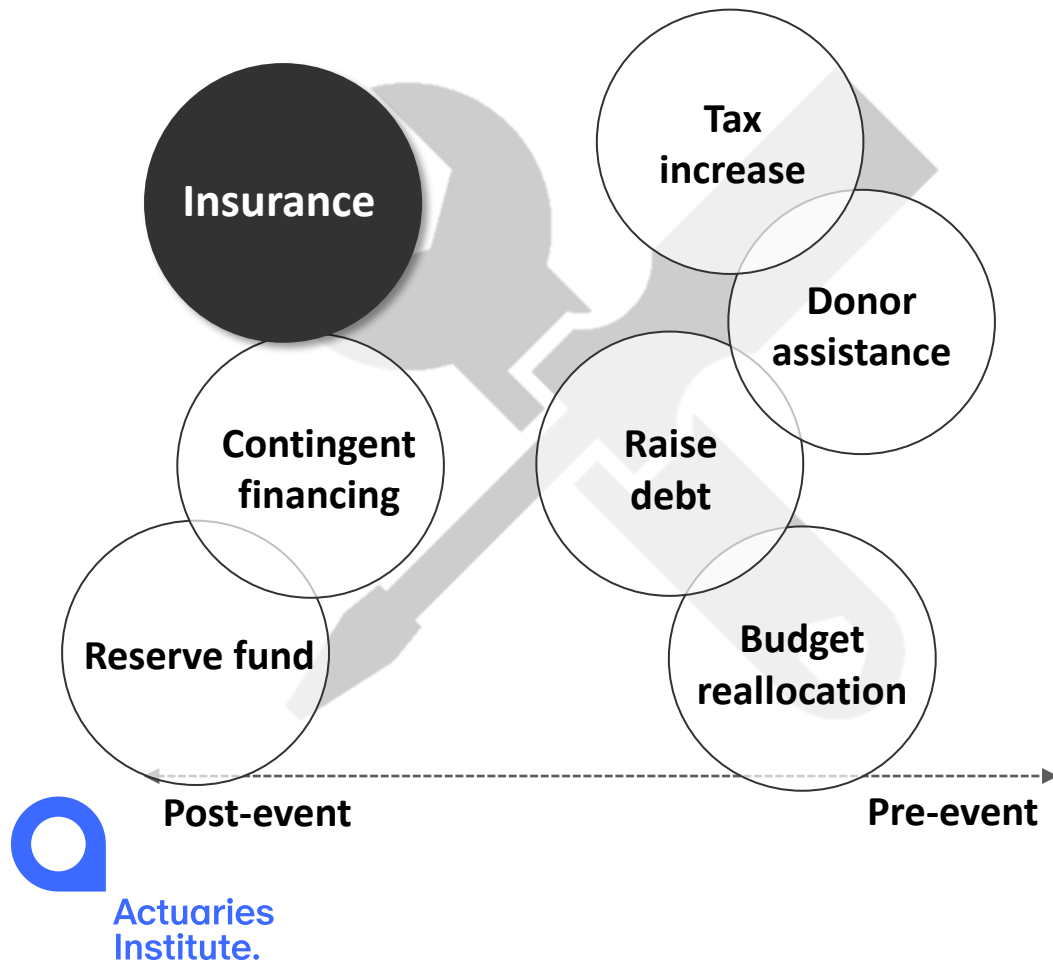
(Re)insurance for the greater good

03



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Tools for governments to increase financial resilience



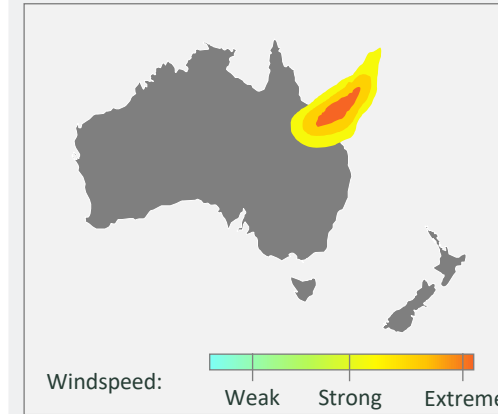
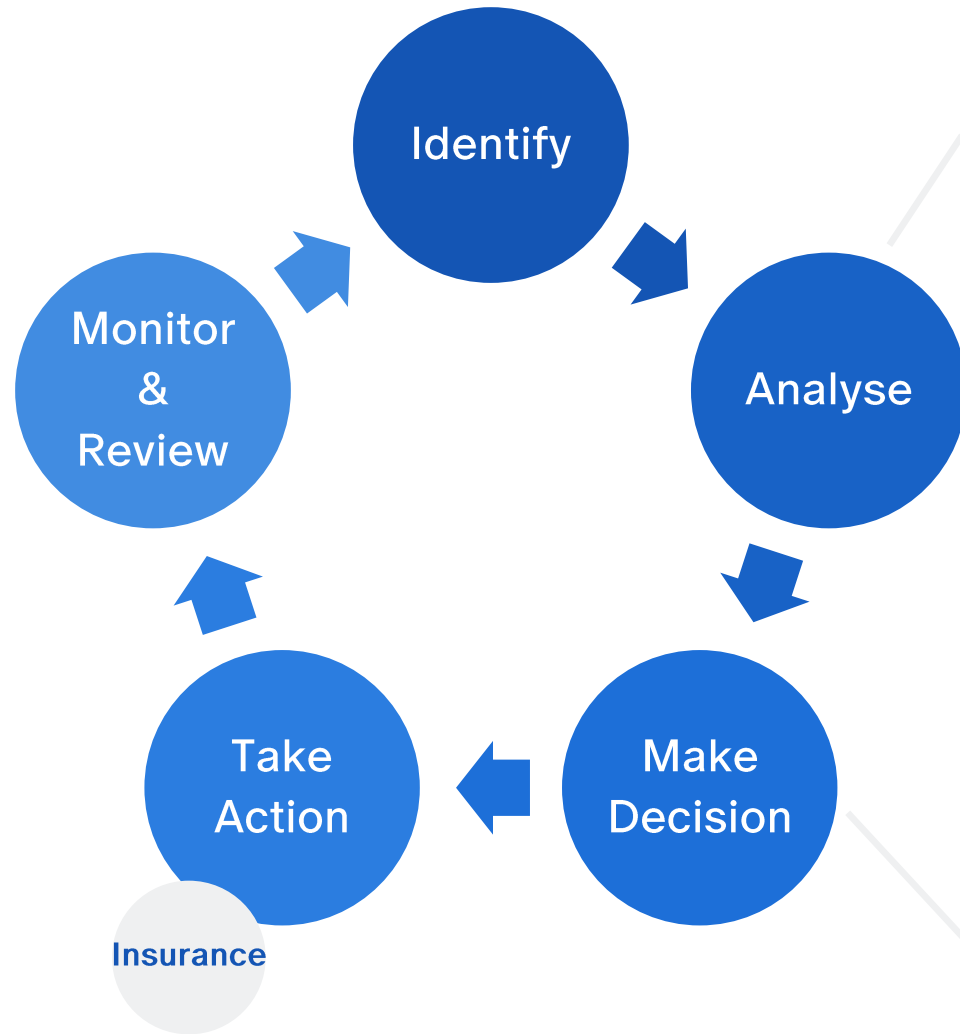
”

Financial policy makers play a central role in DRM given their responsibilities for economic, financial, fiscal and budget policy making, planning of **public investment**, and co-ordination of **public expenditures**. Finance Ministers [thus] have a key role in ensuring **financial resilience**, a critical component of effective DRM at all levels of government and society.



OECD
Disaster Risk Financing
2015

Risk Management Cycle



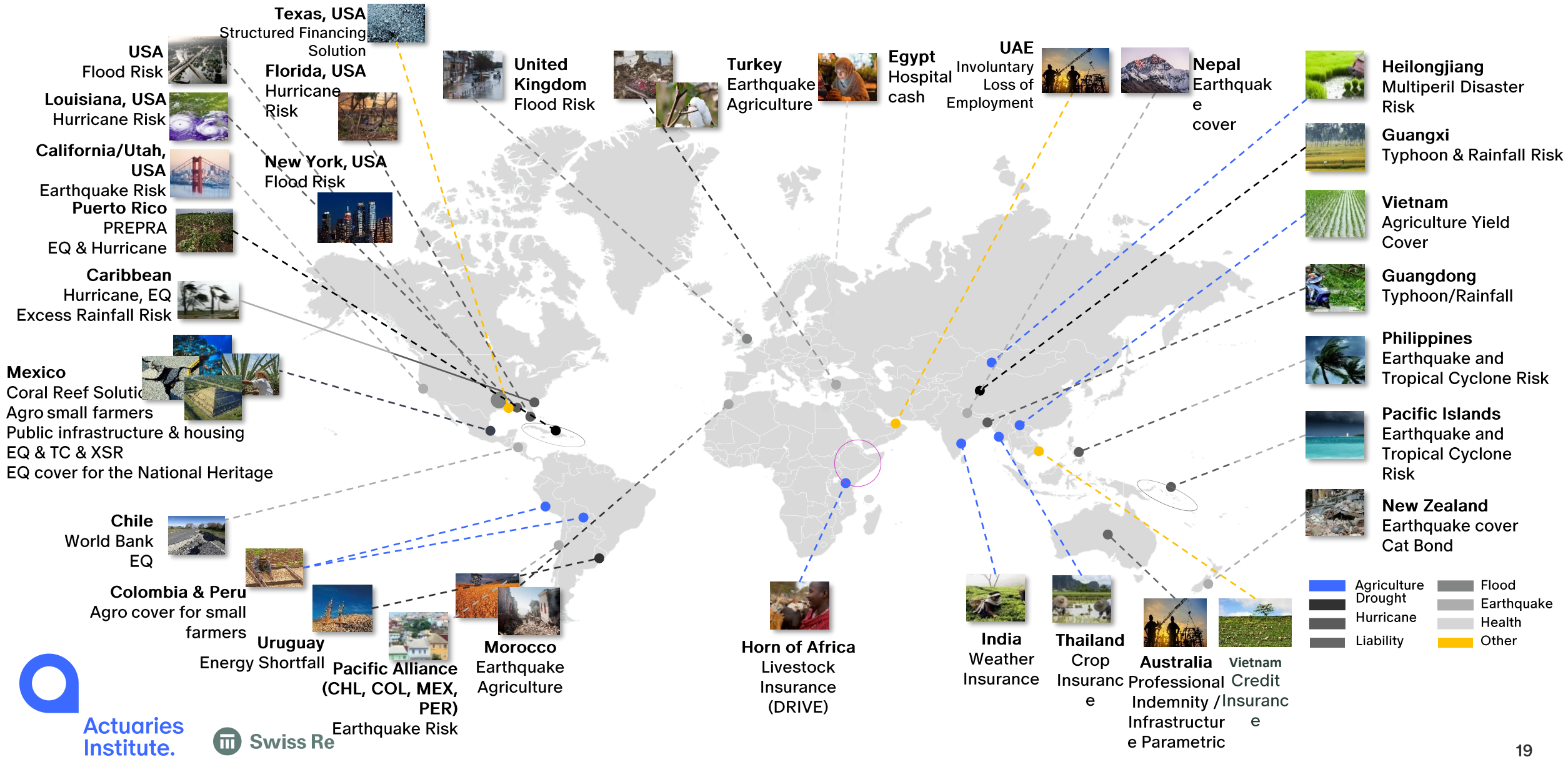
- Data quality = competitive advantage
- Modern risk measurement tools vs. asset register + spreadsheet
- Think & act as a (re)insurer
- Beware of the unknown-unknown

Borrowing some ideas from the insurers

- Risk Appetite Statement
- Risk / Return trade-off
- Insurance Management Statement
- Capital management framework



Examples of innovative public sector risk transfer solutions



Mexico Hurricane Coral Reef Cover

First insurance coverage to protect a natural asset

The challenge

- In 2017, we partnered with The Nature Conservancy (TNC) to design a unique type of insurance solution that offers protection against hurricane damage on the second-longest barrier reef system in the world
- 2018: World Ocean Summit, where TNC and the State Government of Quintana Roo in Mexico announced the establishment of a 'Coastal Zone Management Trust Fund'

Solution

- This **parametric hurricane design** is based on the experience and **technical analysis** the client anticipates the reef to be damaged in the event of a severe hurricane, so **covered area & structure payout pattern** have been **defined accordingly**
- **Faster recovery** from strong hurricanes
- **Swiss Re** acted as **Structurer** of the insurance coverage

The results

2018

Establishment of Coastal Zone Management Trust

1st

deal of its kind in the world



Pays an increased % of the limit as windspeeds increase; no need for loss adjustment processes

Government of Chile

Earthquake parametric insurance

The challenge

- Chile is one of the most seismically active countries in the world, experiencing some of the largest earthquakes ever recorded
- Chile's government took the decision to build up a layered financing scheme of ex-ante instruments to protect itself against the fiscal impact of strong earthquakes

Solution

- In 2023 Chile entered into a parametric earthquake agreement with the World Bank, who – with the help of Swiss Re – transferred the risk to the market
- Two separate formats were used to leverage the broadest possible risk appetite: Insurance-linked securities ("cat bonds") and derivative (swaps)
- Both tranches use the same risk parameters and triggers, providing combined risk coverage of USD 630m
- The transaction provides Chile with financial protection to mitigate the potentially disruptive economic impacts of earthquakes and resulting tsunamis

The results



The largest single sovereign sponsored parametric transaction, syndicated in dual format to ILS investors and (re)insurers, via the World Bank's intermediation platform

630m

USD million of earthquake insurance coverage



3 years coverage

Uruguay hydropower drought cover

Largest energy risk transfer to protect against drought risk

Our client's challenge

- High dependency on a single source of energy (90% is supplied by hydro power), that will be progressively affected by climate change
- A dry year can be costly: the country relies on imports of crude oil and electricity from Argentina and Brazil, thus draining the state budget
- **Uruguay** decided to decrease this uncertainty and price fluctuation in commodities

Solution

- **Payout** is triggered when water levels fall to a pre-determined point. The amount depends on drought severity and the 6-month daily average of crude oil prices
- The payout is used to **purchase alternative energy** to make up for the hydropower shortfall
- **Reduces budget uncertainty**
- **Easily replicable** structure for other types of energy (i.e., solar, wind)

The results



Back-up solution in case of a drought while guaranteeing a reliable source of power to Uruguay's citizens

186k

USD weather coverage agreement

Longevity Swap Solutions for NTCU Income, Singapore

The Challenge

- Many Asian markets are witnessing a rapidly ageing society.
- Coupled with longer lives, fluctuating interest rates and the increased need to plan for one's retirement, consumers are keen to gain better financial security in their golden years.
- It's important the re/insurance industry works with governments and society to plan and mitigate the risks of an ageing population.

Solution

- In this instance, Swiss Re leveraged its global longevity reinsurance expertise, deal-making track record and local market knowledge to tailor a solution that helps de-risk Income's legacy annuity book
- Annuity business can lead to high capital requirements under various solvency regimes.
- This partnership enables Income to improve its own capital efficiency and further strengthen its solvency position.

The results



First longevity arrangement of its kind in Singapore



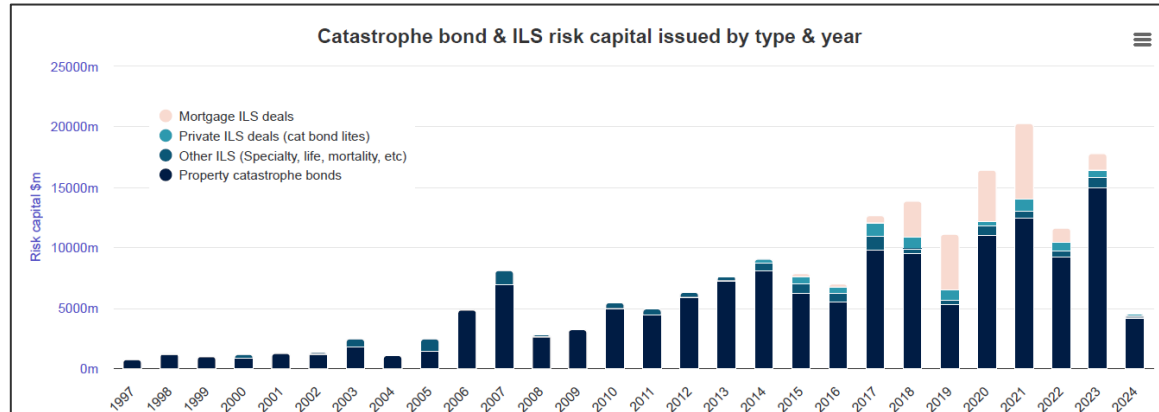
This is part of Swiss Re's mission to close the protection gap here in the region and around the world



Better financial wellbeing may we empower our seniors to age successfully and take charge of that narrative

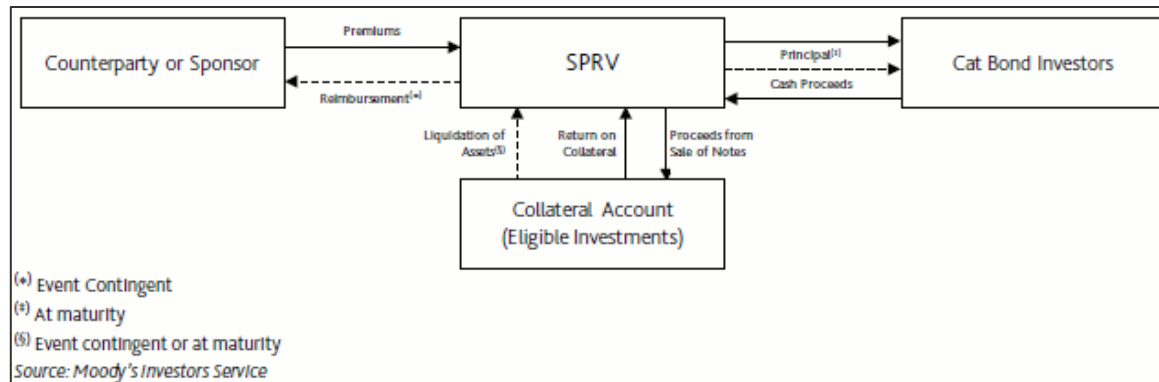
Using Alternative Capital

Catastrophe Bond & ILS capital issuance



Source: ARTEMIS

Catastrophe Bond Design



Source: ARTEMIS

NZ EQC Cat Bond in 2023

Totara Re Pte. Ltd. (Series 2023-1)

- **Issuer:** Totara Re Pte. Ltd.
- **Insured:** New Zealand Earthquake Commission
- **Placement:** Aon Securities
- **Bookrunner:** Swiss Re Capital Markets, jointly with Aon Security
- **Risk modelling:** RMS
- **Perils covered:** NZ earthquake, tsunami, landslide, volcanic eruption, hydrothermal, storm, flood
- **Size:** NZ\$225 million
- **Trigger type:** Indemnity
- **Ratings:** NR
- **Date of issue:** May 2023



Key Takeaways

- The (re)insurance market is still going through a hardening phase.
- Government faces unique challenges, struggling to keep up with the raising cost, while securing sustainable funding. The protection gap is widening.
- There are successful case studies that helps, but it requires private and public partnership – and planning is the key.





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Thank you

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