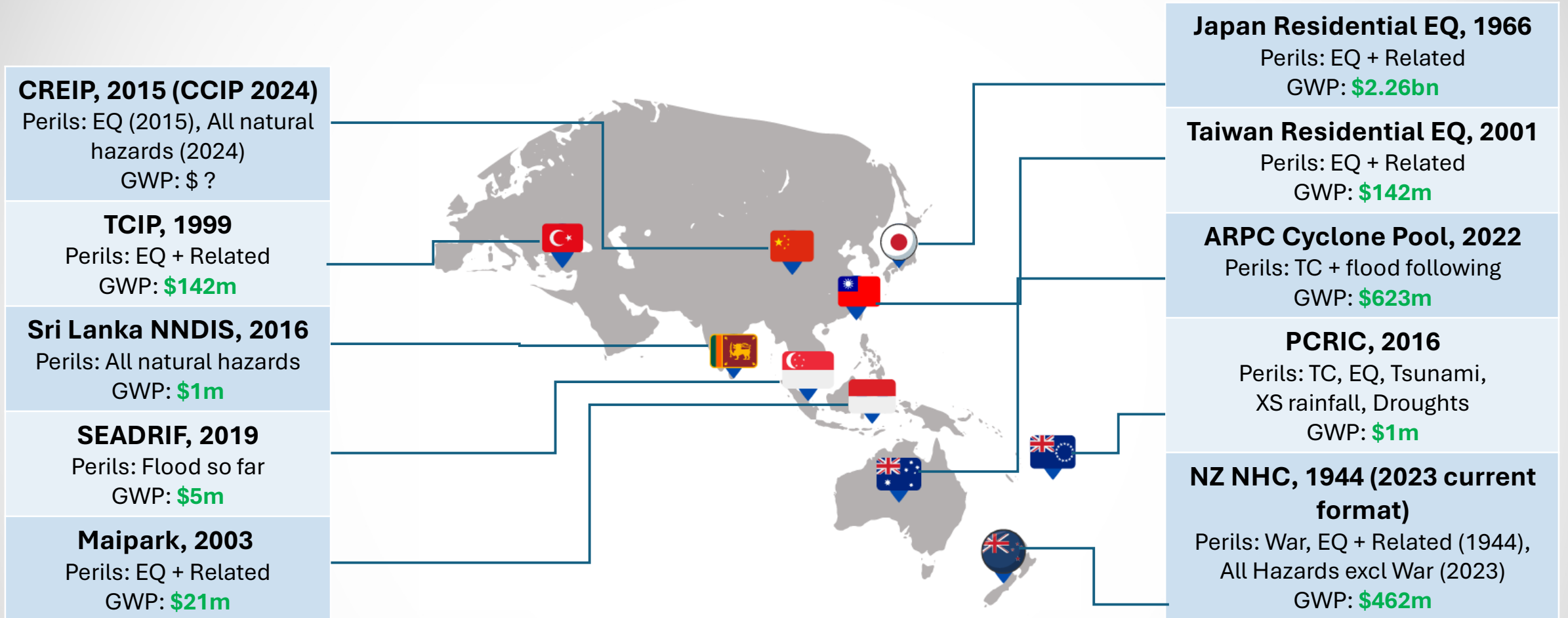


To Pool or Not to Pool?

A Dive into the use of Pools to provide Property Natural Hazards protection to vulnerable areas

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Overview of APAC Pools



All GWP shown in USD

Pool Proliferation – Why is it Happening?

1. Increased levels of Nat Cat economic losses

- Expansion of residential dwellings into vulnerable areas leading to ↑ losses from natural hazards.
- Climate change potentially resulting in larger/more frequent natural catastrophes.

2. Increased Public Sector Appetite to Participate in Natural Hazards Protection

- Governments and global public sector organisations increasingly aware of importance of insurance affordability and penetration. Insurance is no longer solely provided by private sector.
- Media effectively highlighting impact of catastrophes: becoming a relevant political topic.

3. Increased pricing granularity in de-tariffed markets

- ↑ Stratification → Unaffordable premiums in high-risk areas.
- Insurance is based on principle of pooling... yet “pricing progress” → smaller risk buckets → less pooling!
- Insurers have no incentive to cross-subsidise risk, so governments step in to ensure “fairness”.

Case Studies

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ARPC Cyclone Pool

History: Set up by Australian Reinsurance Pool Corporation (ARPC) on 1st July 2022.

Aim: **Make cyclone cover accessible and affordable for all Australians.** Government response to severe increases in Northern Australia property premium rates.

Cover: **Cyclone damage** and **cyclone-related flood**, with hours clause of **48 hrs**. Household, strata and small business policies eligible.

Pricing: ARPC calculate cyclone RI premiums which include some cross-subsidies, as well as risk mitigation discounts (see appendices). Insurers retain control over gross premiums.

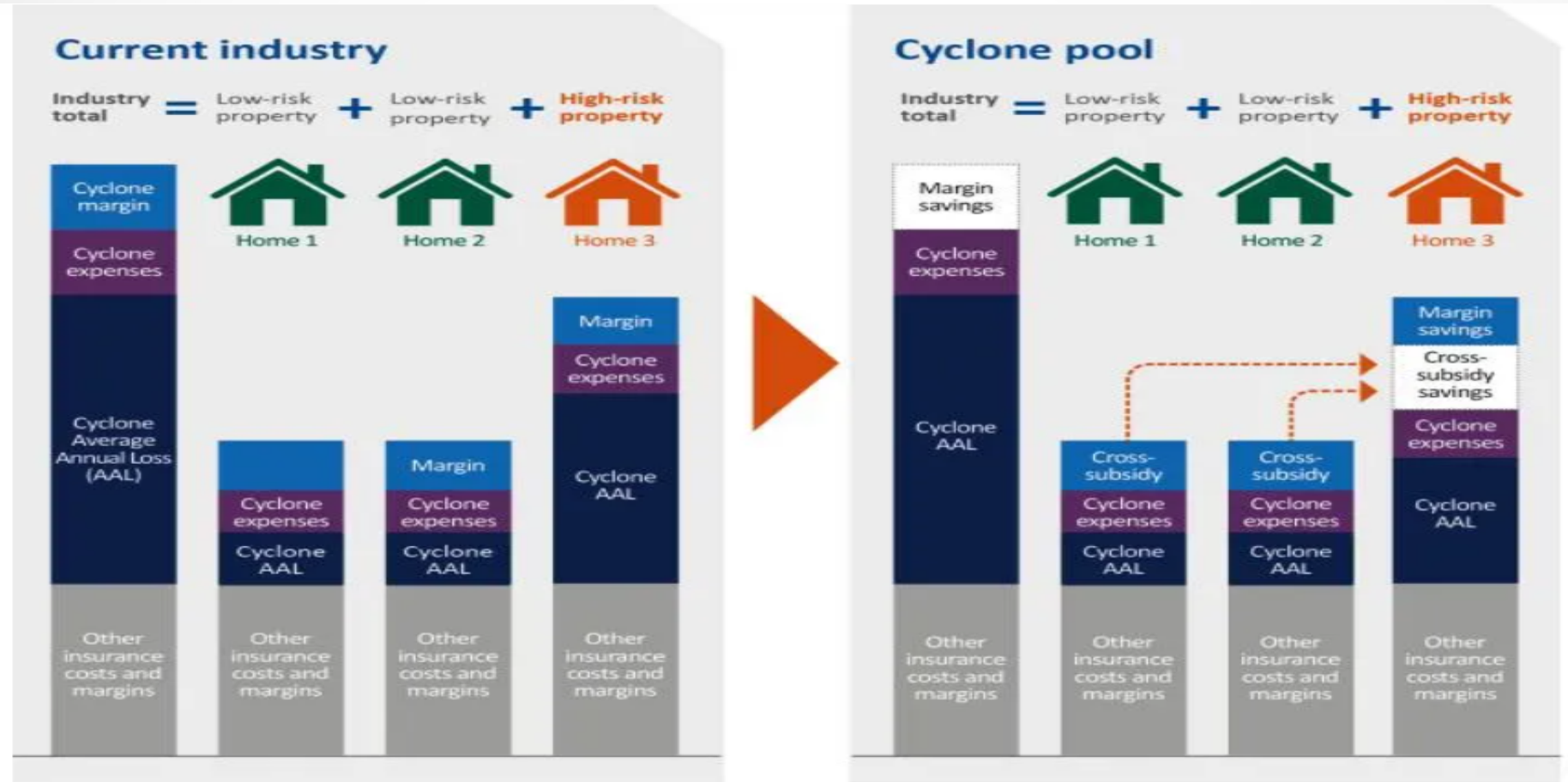
Pooling Arrangement: ARPC reinsure cyclone risk from direct insurers. **Compulsory** for authorised insurers with eligible GWP > AUD 10m (USD 6.8m) to join pool.

Admin: Pool run by ARPC, but **insurers handle claims**. Government monitors premiums to ensure savings are passed to policyholders.

Risk Spreading: **No RI purchased** to keep costs low, but a AUD10 bn (USD 6.8bn) government guarantee exists. **ARPC want to risk-share with insurers from 2025 onwards .**

Use of Surplus: Any profits cover OPEX and eventually could be distributed back to the government. ARPC plan to use data collected to inform Government disaster response plans.

ARPC Cyclone Pool



Source: 2022 Cyclone Reinsurance Pool: Summary of the Actuarial Premium Rate Assessment- Finity Consulting Pty Ltd

ARPC Cyclone Pool

Strengths

- Strong government guarantee.
- Clearly defined coverage and participation mandatory with mechanism for enforcement.
- Claims handling expertise and capabilities of insurer utilized.
- Premium discounts available for mitigation work. Intention of using data to guide government disaster response.

Weaknesses

- Short hours clause, potentially due to cost-neutral commitment made by government.
- No deterrent for future homes being built in high-risk cyclone areas.
- Secondary perils main driver of recent premium increases; Cyclone Pool doesn't address this issue.
- **As of December 2023, premiums still far more expensive in Northern Australia vs rest of country.**
- No contribution from postcodes for which cyclone risk deemed immaterial (e.g., South Australia, Tasmania).
- No RI protection, so government potentially exposed to loss volatility.

Turkish Catastrophe Insurance Pool (TCIP)

History: Set up by the Turkish government with the help of the World Bank following a catastrophic earthquake in 1999.

Aim: **Providing financial security to homeowners against earthquakes.**

Cover: **Earthquake property damage** up to ~USD 38k, including any consequential perils with a 2% deductible and hours clause of 72 hours. Cap increased each year in line with inflation.

Pricing: **TCIP set EQ tariffs which determine the premium rates.** Differentiated based on 7 geographic zones and two building types (see appendices for details).

Pooling Arrangement: **Compulsory for homeowners in urban areas.** The pool provides insurance guarantee to insureds, with ultimate funding by the Government.

Admin: By technical operator among the insurers selected by the Government. This includes claims handling: insureds directly submit claims to the TCIP.

Risk Spreading: Extensive RI purchased from international markets.

Use of Surplus: Surplus is primarily either reinvested in TCIP Fund or used for research.

Turkish Catastrophe Insurance Pool (TCIP)

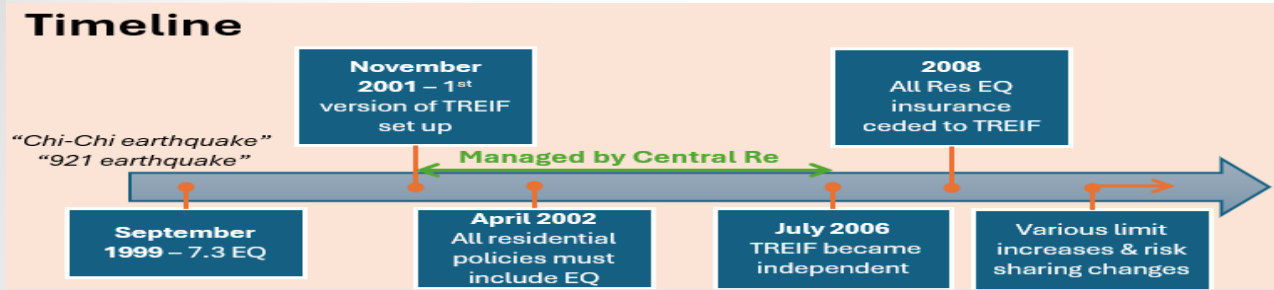
Strengths

- Diversification benefit across the country given EQ cover is compulsory for all urban residences.
- Premiums charged are partially risk-based, providing some incentive to build with reinforced concrete.
- Collaboration with and support from international RI market, led to fast payments following 2023 EQ's.
- Centralised resources e.g. disaster call center, loss adjustors, claims handler for quick disbursement.
- **Penetration of 58% for EQ insurance, one of the world's highest rates.** Only 5% before the pool was set up.

Weaknesses

- Lack of enforcement for compulsory earthquake coverage. Government trying to change this by offering discounts upon renewal and increasing distribution channels.
- Does not cover multiple perils, so no diversification benefit by peril. Minor issue since EQ is key peril in Turkey.
- Does not embed earthquake mitigation measures in addition to indemnification.
- Underinsurance evident in 2023 EQ's: cover cap too low.

Taiwan Residential EQ (TREIF)



Aim: Increase take-up rates for EQ insurance and reduce the financial burden to the government.

Cover: EQ + related perils. Residential buildings only with SI ≤ USD 47k. Contingent living expenses of USD 6k.

Pricing: All residential fire insurance policies must include basic coverage for EQ risk, flat premium of USD 42.

Risk Spreading: Losses are split into two tiers:

Tier 1 – Up to NTD 5bn (USD 157m)

- Loss covered by the Co-Insurance Pool, managed by TREIF

Tier 2 – NTD 5bn to NTD 120bn (USD 157m to 3.77 bn)

- Assumed by TREIF and spread between:
 - TREIF reserves
 - Domestic & Overseas reinsurance markets
 - Government

Taiwan Residential EQ (TREIF)

Strengths

- Non-profit statutory insurance “*benefit ourselves as well as others*”.
- Ensured that all fire policies now include EQ cover.
- Stable flat pricing makes insurance affordable to all.

Weaknesses

- Pricing does not reflect the risk characteristics of the property, so no incentive to mitigate risk.
- Does not cover multiple perils, so no diversification benefit by peril. Typhoon also a key risk in Taiwan, which the pool does not address.
- Relatively low take-up rate despite flat pricing: only 39% of households have cover.

NZ Natural Hazards Commission Toka Tū Ake

History: Started as Earthquake and War Damage Commission in 1945; restructured by Earthquake Commission Act, 1993 and the Natural Hazards Commission Act 2023.

Aim/Cover: **First-layer residential insurance against Earthquake, Landslips, Tsunami, Volcanoes, Hydrothermal activity, Storms and Floods.** Building cover cap of \$300,000 (USD 186k). Land cover cap is calculated using a pre-defined formula.

Pricing: **NHI Levy of 16c per \$100 of SI** through homeowners' fire insurance policies.

Admin: The NHI Act establishes a Crown entity, Natural Hazards Commission Toka Tū Ake (NHC).

Risk Spreading: Any **shortfall** in the claims payments due after exhausting the NDF and Reinsurance cover is **fulfilled by the Government**, either as a loan or as a grant.

Use of Surplus: Any profits contribute towards the Natural Disaster Fund (NDF), research activities.

NZ Natural Hazards Commission Toka Tū Ake

Strengths

- Crown guarantee comes with an assurance to the insured that the claim will be paid in all situations.
- Clearly defined coverage and participation mandatory with a mechanism for enforcement through a levy.
- Claims handling expertise and capabilities of insurer utilized.
- Premium isn't fully risk-based, making it affordable even for high-risk properties.
- Third-party Reinsurance coverage means that risk is diversified away in the international markets.

Weaknesses

- Pricing isn't fully risk-based, so less motivation to invest in risk-mitigation measures by the high-risk insureds.
- Levy isn't sufficient to cover the projected cost of claims, so it is not self-sustaining.
- Crown Guarantee means the risk isn't being managed by the private players, so it still a budgetary liability.

Summary of Pools

Details	Australia	Turkey	Taiwan	New Zealand
Name/Agency	ARPC	TCIP	TREIF	NHC
Established	2022	1999	2001	1944;2023
Annual GWP (USD)	642m	142m	142m	462m
Perils Covered	Cyclones and cyclone-related floods	Earthquake + Related Perils	Earthquake + Related Perils	Earthquake, Volcanoes, Tsunami, Floods, and more
Claims Management	Private Insurers	TCIP	Private Insurers	Private Insurers
Pricing	Partially risk-based	Partially risk-based	Fixed Premium	Fixed Rate
External Reinsurance	No	Yes	Yes	Yes
Government Funding	Yes	Yes	Yes	Yes

Lessons Learnt?

- **Pricing:** Pools should not implement full **risk-based pricing**, since this causes affordability challenges if risk is unevenly distributed. **A balancing act is needed** to reflect risk whilst ensuring there is enough pooling.
- **Flat premiums/fixed premium rates are also not desirable**, since they provide no incentives for high-risk insureds to implement risk mitigation measures (e.g. TREIF).
- **Indexation:** If cover is capped at a \$ amount, there needs to be a process for increasing the cap over time.
- **RI:** Over-dependence on reinsurers should be avoided to lessen **sensitivity to market cycle**, but some RI may be useful to **dampen volatility**.
- **Claims handling:** It is best to utilise the expertise and capabilities of private insurers where possible (e.g. NZ).
- **Role in Insurance Penetration:** The presence of pools can play a critical role in enhancing this; vital in the context of increased construction in disaster-prone areas and climate change (e.g. Flood Re).
- **Eligibility criteria set by Pools :** These can be a powerful tool to help governments incentivise building habits which reduce a country's vulnerability to natural hazards.
- **Parametric solutions:** Good alternative option for **extending cover to less-developed insurance markets**.

The Future – What role should pools play?

- In today's landscape, pools are an **important tool** in ensuring that insurance meets the needs of society.
- The fact that pools exist is a function of the **rising levels of economic losses resulting from natural catastrophes**.
- **In de-tariffed markets**, unless the insurance industry reaches general agreement to deploy some level of cross-subsidization, **pools are necessary to avoid unaffordable insurance for high-risk customers**.
- Successful pools require a **high level of collaboration between the public and private sector**.
- Pools should also prioritise research, investment and pricing strategies which **mitigate natural hazards and encourage sustainable building practices**.
- Overall, they are both a symptom of the **failures of the insurance industry** and **an example of healthy public/private collaboration**.

Pools WP Members

Adam George

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Special thanks to the SAS GI Committee Pools sub-group from 2014/15 for sharing your research!

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Appendices

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ARPC Mitigation Discounts

Table 7 - Premium discount per mitigation measure

Mitigation activity	Wind premium discount
Roller door bracing upgrade or retrofit replacement of roller door (compliant with AS 4505:2012) – on homes built pre-2012	8%
Window protection to all windows (e.g. cyclone shutters)	10%
Roof structure tie-down upgrades (e.g. over-batten roof system) – on homes built pre 1982	20%
Complete roof replacement and structure tie-down upgrades to current standards - on homes built pre 1982	30%

TCIP EQ Tariffs

To calculate your premium, first of all find the insurance amount (guarantee amount), which determines the highest limit you can receive after the earthquake.

Your premium is the guarantee amount is multiplied by the tariff.

There are 14 tariffs determined based on seven risk groups and two different building types:

Ratios on a regional basis by type of building (‰)	1st Group	2nd Group	3rd Group	4th Group	5th Group	6th Group	7th Group
A- Reinforced concrete	2,33	2,07	1,76	1,65	1,24	0,88	0,60
B- Other	4,10	3,51	3,08	2,88	2,31	1,54	0,90