



18 June 2021

The Manager
Cyclone Reinsurance Pool Taskforce
The Treasury
1 Langton Crescent
PARKES ACT 2600

Email: ReinsurancePool@treasury.gov.au

Dear Sir/Madam,

Response to Consultation Paper – Reinsurance pool for cyclones and related flood damage

The Actuaries Institute (“the Institute”) is the sole professional body for actuaries in Australia. The Institute is committed to promoting and maintaining a high standard of actuarial practice and contributing to public policy through submissions, thought leadership and expert analysis.

The Institute provides commentary on public policy issues where there is uncertainty of future financial outcomes. We strive to act in the public interest and our contributions to public policy issues are guided by the principles of transparency, a ‘level playing field’ and good regulation (proportional and the most appropriate regulatory tool/s).

General comments

The Institute has extensively contributed to the many public policy discussions regarding natural disasters in Australia. The Institute’s focus has been particularly on understanding the current and future risks, ensuring sustainable coverage for and pricing of those risks, and related measures to improve the resilience of the community. This reflects the role actuaries play in advising insurers on pricing for property (and other) insurance, including an allowance for natural disaster costs. Under the prudential standards set by the Australian Prudential Regulation Authority (APRA), all APRA-regulated insurers must designate an Appointed Actuary to provide independent advice to Boards and Senior Management on its financial condition.

In recent years, the Institute has made submissions to many related inquiries, including to the Australian Competition and Consumer Commission, the Productivity Commission, The Treasury and the Royal Commission into National Natural Disaster Arrangements¹. These submissions provide useful additional references to some of the questions raised by this consultation paper.

Also, in November 2020 the Institute published the Research Paper [Property Insurance Affordability: Challenges and Potential Solutions](#). This paper detailed the likely causes of

¹ Detailed references to all are available in the Institute [submission of 16 April 2020](#) and [Witness Statement of 21 May 2020](#) to the Royal Commission.

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insurance affordability pressure and a range of possible solutions to assist with public policy development.

Points from the Research Paper relevant for this consultation include:

- A key part of addressing the affordability pressures created by mitigation gaps and economic challenges involves increased mitigation and revisions to building codes; this will take many years and sustained funding. Current effort is nowhere near enough to address the issue rapidly.
- While the Institute strongly supports cost-effective mitigation, it is generally agnostic towards which other methods (pools or other) should be adopted to address the affordability problem.
- The Institute suggests certain guiding principles which can help identify the best other method/s:
 - Creating proper incentives for mitigation to lower overall losses over time is fundamentally important.
 - Generally, well-functioning competitive private insurance markets which limit government intervention are desirable in an economy such as Australia's.
 - All else being equal, we believe robust private markets and risk-based pricing support long term public policy goals.
 - As conditions change over time, we believe any solution framework needs periodic review.
 - Temporary and targeted government intervention can be useful to manage affordability issues until mitigation and other measures address the issue.
- We have identified several design features which should be part of any framework to address affordability:
 - the ability to target more vulnerable consumers most impacted by insurance affordability and the risks these consumers are exposed to;
 - the sending of economic signals to consumers as to their underlying risk through pricing and other means;
 - the identification of what changes in behavior are being encouraged, if any, in the short, medium and long term; and
 - what cost that may have for the communities and governments.

In this context the Institute also welcomes the other Budget measures of the \$600m program of disaster preparation and mitigation through the National Recovery and Resilience Agency (NRRRA) and deeper understanding of the mitigation gaps as our climate changes through the new Australian Climate Service.



Specific comments

The Institute's further comments on this consultation are confined to the following areas:

- Reinsurance pool coverage;
- Reinsurance product design; and
- Links to risk reduction.

Reinsurance Pool Coverage

1. How should 'cyclone' and 'cyclone-related flooding' be defined for the purposes of defining the reinsurance pool's coverage?

The consultation paper has provided a cyclone definition by the Bureau of Meteorology (BoM), which is commonly accepted by the insurance industry.

Property damages caused by a 'cyclone' event are commonly classified by the insurance industry into the following categories: 1. Wind damage (including the impact of debris and flying objects); 2. Wind induced water damage, such as rain damage through broken window or roof; 3. Pure water damage, including three sub-categories of flooding – pluvial (rainfall) flooding, fluvial (river) flooding, and (storm) surge flooding.

The flood definition quoted by the consultation paper (Page 8, 6th paragraph), refers to the fluvial flooding only.

As mentioned in the consultation paper, there is no standard legal definition for 'cyclone-related flooding'. In relation to cyclone damage, all three sub-categories of flooding (fluvial, pluvial and surge flooding) and combinations of the sub-categories are possible.

From the reinsurance pool's perspective, clarity is necessary regarding a clear definition on the peril(s) covered under the pool. Additional consideration should also be given to whether losses caused by bypassing events (i.e. cyclones that do not make landfall), tropical depressions (a similar weather system but do not declared by BoM as cyclone), and post-tropical systems will also be covered by the reinsurance pool.

From a timing perspective, while losses caused by pluvial flooding and surge flooding typically occur during the cyclone event, fluvial flooding damages may occur significantly after the cyclone event due to the gradual build-up of the water level from rainfall and the distance between the rainfall area to the flooding area downstream. This timing difference might have a technical impact if the (re)insurance policy contains an 'Hours Clause' which restricts the recoveries.

From a geographical perspective, (storm) surge flooding typically occurs at the coastal front impacted by the cyclone. In contrast, both pluvial flooding and fluvial flood damages may occur over a greater area. A good example of a wide-scale pluvial loss was that some insurer(s) managed to claim post-tropical storm losses as far away as in the Greater Melbourne area from Cyclone Yasi in North Queensland.



While a typical property insurance policy covers cyclone, with the wind damage and wind induced water damage commonly covered, coverage for pure water damages varies significantly based on policy wording (and exclusions), territories, class of business and market practices.

It is also worth noting that at this stage many existing household insurance policies provide quite broad coverage regarding 'cyclone' and 'cyclone-related water damages', and often do not attribute the losses towards detailed wind damage vs flooding damage vs storm surge damage. Hence most catastrophe models available in the market are constructed and calibrated on such historical data. The potential challenge to assess the pure 'wind' damage to existing policies should not be under-estimated. Typically, in catastrophe models the wind component is modelled separately to the flood component without linking the flood associated with a wind event in the same model.

The Institute supports a clear definition of 'cyclone' and 'cyclone related water' damage for the coverage provided by the proposed reinsurance pool.

The Institute recommends broad coverage of 'cyclone related water damage' to be provided by the proposed reinsurance pool, including all pluvial, fluvial and surge flooding losses caused by a 'cyclone' event. Benefits of doing so include, but are not limited to, the following:

- Consistency with the majority of existing household policies in the market;
- Remove ambiguity to policy coverage and avoid confusion;
- Avoid effort and judgement being required for post loss assessment on loss attributions (whether loss is caused by cyclone wind damage or sub-types of water damages)
- Be consistent with existing data collected by the market; and
- Reduce current pricing challenges.

The Institute notes, however, with a broad coverage in place, the cost of the proposed reinsurance pool will be higher than otherwise.

2. Should storm surge be covered by the pool and included in a definition of 'cyclone-related flooding'?

Please refer to the answer to Question 1, storm surge flooding is one type of the flooding loss that may be caused by cyclone events. A clear definition in the policy wording will be helpful for transparency and avoid confusion. Also, in many cases storm surge losses are combined with pluvial and/or fluvial flooding losses, and it is difficult to attribute the damages to each sub-category of flooding.

The Institute therefore recommends "storm surge" losses be covered by the proposed reinsurance pool.



3. Is it desirable for the use of standard definitions of 'cyclone' and 'cyclone-related flooding' to be required in policies covered by the pool?

Yes, a standard definition will be helpful to policy holders as well as the insurance industry to provide better transparency and avoid ambiguity. A standard definition may encourage more consistency between insurers and improve consumer understanding.

While the definitions must be clear for the reinsurance arrangements, household policies may not require clarification between storm and cyclone as both are typically covered. However, there are differences in the level of flood cover provided. When considering the appropriate level of flood, an understanding of how a definition links to pricing and the claims process is important. The simple plain English flood definitions work well for households; however, as noted in the response to Question 1 these definitions tend to be broad and related claims come at a higher cost.

4. Are there any difficulties which may arise from including home building, home contents, or residential strata policies in the reinsurance pool and how should the scope of this coverage be clarified?

Inclusion of home building, home contents and residential strata policies in the reinsurance pool should be relatively straightforward, except for the following:

- A. Coverage for additional living cost or temporary accommodation;
- B. Residential components of a mixed (or commercial) strata exposure;
- C. Existing differences in coverages across different type of policies, definition of contents, temporary work tools, valuables and electronic items etc.; and
- D. Clarity on coverage within the sum insured or in addition to sum insured. Each insurer's policy is different in terms of coverage, particularly for items such as removal of debris.

5. Are insurers able to separately price or estimate the value of the property component of business insurance packages?

Some insurers do separately price the value of the property component of business insurance packages. The level of sophistication of pricing is generally correlated with insurer size.

Tools are available in the current market which can assist most insurers to do separate pricing or estimate the value of the property component.

Larger and medium insurers are more likely to price by individual peril due to having access to a greater depth of claims data.

Some insurers may not do so for various reasons, including, but not limited to, resources available, data collected and, economies of scale.



6. Are insurers able to separately price or estimate the value of the residential and small business components of mixed-use strata title policies?

Comments in response to Question 5 above are also applicable to Question 6 on the mixed-use (or commercial) strata title policies. Also, for insurers utilising catastrophe modelling as a reference to their pricing, the level of pricing and modelling granularity differs due to the original data granularity. It is difficult to obtain a detailed breakdown of exposure values in a mixed-use strata title policies, as there are components (such as an electric switch board) which are used by the entire strata and difficult to attribute to the residential or business part.

Overseas pools such as the Florida Hurricane Catastrophe Fund have experienced some issues with mixed strata exposures (residential in, commercial out), which required rulemaking and a multi-year clarification process. There may be some further commercial reinsurance complications if large buildings have facultative, first loss or layered covers.

7. Are there any difficulties which may arise from including mixed-use strata title policies in the reinsurance pool and how should the scope of this coverage be clarified?

Following the comments on Question 6 above, the first challenge to include mixed-use strata title policies in the reinsurance pool would be (data) transparency to identify residential and small business exposures within the mixed-use strata policy.

In addition, there is a wide variation in policy wording and coverage details for different types of mixed-use strata policies in the market today. Sharing policy conditions of the residential and small business components such as deductibles and peril-specific limits would further complicate the issue.

9. Are there any difficulties which may arise from including small business property insurance policies in the reinsurance pool and how should the scope of this coverage be clarified?

Compared with residential exposures, there is a wide variation in policy wording and coverage detail across different insurers for the SME property market. This presents a challenge for the construction of wordings/definitions for the pool that achieves alignment with wordings/definitions and the nature of the risks being reinsured.

Reinsurance Product Design

10. What is the current approach used by insurers to assess and measure cyclone, storm surge, and related flood damage risks, to what extent are individual policy level data available, and how are cyclone related risk premiums calculated in insurer pricing models?

Depending on the size and sophistication of the insurers, a variety of approaches is adopted in the market today regarding assessment of cyclone and related loss potentials. This can include one or a combination of the following approaches: risk rating, (loss) experience rating, hazard and exposure rating, referencing to competitor/industry rates, catastrophe modelling and reinsurance transfer pricing (allocation) etc. For the same



insurer, internal approaches can also differ between classes of business, coverage, exposure and policy types.

One of the key items impacting the selection of pricing and product design is the availability, granularity and reliability of the data available. The Institute believes that to ensure sustainability of the reinsurance pool, collection of data with sufficient granularity and quality to assess natural peril risk is a top priority.

Often, an individual householder may not be aware of the resilient design features built into their home to inform insurers. Insurers can use third party data, such as satellite imaging, loss mitigation data and building risk resilience data to supplement information from policyholders for risk assessment and pricing. The Institute strongly recommends taking appropriate action to closing the data gap and provide more transparency in the assessment and pricing of the underlying hazard.

Overseas experience suggests tools such as Florida's "Uniform Mitigation Verification Inspection Form" have proven to be very useful for the community and insurance industry as a whole.² Importantly, this also strengthens the signals to policyholders of the benefits of mitigation investment.

11. How should the reinsurance pool design a risk rating system for cyclone and related flood damage risks, and what are the trade-offs associated with using risk tiering and with the level of granularity used?

Generally speaking, a detailed risk rating system has a much higher requirement for granular data, to enable more reliable and accurate rating of individual exposures. On the other hand, approaches such as risk tiering and community rating relax some of the criteria required, focusing on the overall rate of adequacy of the entire portfolio.

Risk rating strives to ensure accurate pricing and minimise subsidies between risks, and is often adopted in competitive commercial markets. Where some competitors target a portfolio in low hazard risk regions, they can charge lower premiums as they do not have to pool or share the costs associated with higher hazard risk regions. This generates competition for lower hazard regions and less competition for higher risk regions, contributing to affordability pressure.

Community rating requires insurers to charge the same premium to customers with different risk characteristics. In contrast to free (i.e. unrestricted) risk rating by insurers, this rating option inherently creates cross-subsidies within the insured population. Dilution of the risk pricing signal reduces the incentive of property owners to manage and reduce their risk yet can achieve a different public policy goal of reducing acute affordability pressure in the short term. The trade-off between sending risk signals and promoting affordability is a key challenge to be addressed in pool design.

Partial community rating has been in existence for many years within Australia's statutory schemes (i.e. where insurance is compulsory). In such schemes, the scheme designer

² See <https://www.floir.com/siteDocuments/OIR-B1-1802.pdf>



makes value judgements on which risk factors can be rated and which cannot. Through careful selection of these factors and placing limits to which such factors can be used, a system of cross-subsidies can be created, thus alleviating affordability concerns for select policyholders while increasing costs for others.

Where the level of cross-subsidy within the system becomes significant, the sustainability of the scheme can become challenging if the scheme is not compulsory. Optional schemes run the risk of insurers refusing to underwrite high risk customers, while lower risk individuals may become reluctant to purchase coverage at a price above that reflecting their risk. Even compulsory schemes require strong regulations to prevent insurers from being able to manipulate their portfolios towards preferred risks. Compulsory schemes with limited risk rating can increase the overall insurance costs over time where the incentives of a policyholder to manage and reduce their own risk are reduced.

12. How much risk exposure should primary insurers retain?

and

14. What is the appropriate level of participation in the pool, and how should considerations of coverage and the amount of risk to be ceded be addressed?

Under the existing commercial reinsurance system, primary insurers can choose to transfer catastrophe exposures in proportional or non-proportional (excess of loss) methods. The level of risk retained net of reinsurance is often determined by individual insurer's risk appetite, capital position, strength of the balance sheet, cost of reinsurance etc.

Although technical methods are available to allocate the cost of reinsurance to primary pricing (cost allocation) for both proportional and non-proportional approaches, each alternative can lead to a different outcome depending on the insurer's objectives. It is more straightforward for proportional cessions to be reflected in the primary pricing, and from the proposed reinsurance pool's perspective, more transparent to primary policyholders in terms of the benefits provided by the pool.

The proposed reinsurance pool, through its own modelling, will develop an understanding of the financial means available to address insurance affordability and access. Where there are financial constraints that prevent benefits to all property owners exposed to cyclone nationally, consideration should be given to eligibility criteria to ensure those with the greatest affordability pressure receive the greatest benefit.

The Institute research referred to earlier considered affordability pressure to be greatest where an annual retail premium is more than 4-6 weeks of a household income after housing costs. There is correlation between regions with low levels of income available after housing costs to pay insurance premiums. Socioeconomic factors such as incomes levels would assist in ensuring the benefit of the pool is applied to those in need. Sum Insured can also be a proxy of socioeconomic position.



Links to Risk Reduction

19. To what extent do insurers price in discounts into insurance premiums for mitigation action undertaken by or affecting policyholders?

There are widespread examples of successful retrofit efforts, including the Queensland Reconstruction Authority financing of roof upgrades, window protection and strengthening of doors for cyclone risk.

The Queensland Government's 'Household Resilience Program' has already proved successful in supporting local jobs and helping people save on household insurance premiums. The State Government notes 1,749 households from Bundaberg to Cape York Peninsula have already seen insurance premiums reduced by an average of \$310 p.a. under the program.

As the actuarial understanding of natural perils risk and the resilience or otherwise of properties has advanced to a granular location level with increasing sophistication, insurance pricing has become an important risk signal to a household and homeowner. Insurers will, where possible, include discounts for "good" risks or "risks with improvements", as a financial incentive to encourage risk reduction/prevention actions. However, as noted in responses to previous questions, their ability to do so is constrained by data limitations. Improving the quality of available data on mitigation status will enable additional risk signals, in particular price reduction, to mitigation actions, to be sent.

20. How might mitigation be encouraged by the reinsurance pool's design? For example:

20.1 Should the pool provide discounts for properties that undertake mitigation?

20.2 Should the pool have an explicit mandate to encourage mitigation?

The Roma flood levee has provided a great example of the impact of risk mitigation on insurance premiums over the short and longer term, improving affordability for consumers. Details of this example are included in Section 5.4.2 of the Institute's Property Insurance Affordability Research Paper.

Many insurers have already proved willing to recognise improvements that lower risk to cyclones via lower premiums. For example, Suncorp's Cyclone Resilience Benefit provides customers in the region with premium reductions of up to 20 per cent for making their homes more cyclone resilient.

The Institute is supportive of the pool having an explicit mandate to encourage mitigation given the importance of longer-term resilience.

21. How should the pool's design seek to discourage any increase in risky behaviour? For example:

21.1 Should there be a time-based cut-off to exempt new builds from the pool?

21.2 Should the pool only allow new builds that have been built to adequate standards and in suitable locations?



Product design choices impact how funding is allocated across different consumers and risk exposures to reduce the ultimate cost to the consumer. Consequently, these design factors will have a significant impact on the success or otherwise of any selected method(s).

The Institute opposes extending the coverage of the proposed reinsurance pool to new buildings that have been constructed in poor (vulnerable) locations and/or to inadequate standards.

Eligibility restrictions and risk-rating provide important signals to the market, including discouraging new construction in high-risk areas or with below-standard building types. For potential new builds either in a poor selected location or with poor design/construction, extending the coverage (and the insurance pricing subsidies) from the proposed reinsurance pool would send a contradictory signal to the market, dampen the pricing signals, encourage excessive risk-taking behaviours and put potential people's lives and assets at risk.

22. To encourage further action by states and territories on insurance affordability:

22.1 What settings could be included in the design of the pool?

22.2 Which policy options could be introduced alongside the pool?

There is a range of activities that States and Territories could reduce affordability pressure due to cyclone and related risk. Options include:

- Community level infrastructure funded by government
- Land use planning
- Stronger building standards
- Reducing tax and other costs

Please refer to Section 3 of the of the Institute's Research Paper on Property Insurance Affordability.

If you would like to further discuss this submission, please contact Vanessa Beenders, Executive General Manager Public Policy and Professionalism of the Actuaries Institute, at vanessa.beenders@actuaries.asn.au or phone (02) 9239 6107.

Yours sincerely,

Jefferson Gibbs
President